# CADD USERS MANUAL

#### Issued by STATE OF CALIFORNIA CALIFORNIA STATE TRANSPORTATION AGENCY DEPARTMENT OF TRANSPORTATION DIVISION OF DESIGN OFFICE OF CADD & ENGINEERING GIS SUPPORT

# FOREWORD

This manual establishes the CADD standards used by Caltrans. Local agencies and consultants must also use these established standards on projects within the Caltrans' right of way. This manual illustrates some of the workflow involved throughout the project delivery process.

This manual details many of the standard resource files needed to complete a project within the Caltrans' right of way. For local agencies and consultants the Caltrans resource files can be accessed on the internet at:

https://misc-external.dot.ca.gov/cadd/webpage.php

The CADD Users Manual will be available only from the internet website and will be incrementally updated by section (as needed). The CADD Users Manual is not published as a printed manual. The CADD Users Manual can be found at:

https://dot.ca.gov/programs/design/manual-cadd-users-manual

You can subscribe to automatic email notifications of Manual changes and updates at the above website.

If a user chooses to print a hard copy of the Manual, the user is responsible for keeping their hard copy up to date and current.

Questions concerning the contents of the Manual can be directed to:

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# 1. Purpose/Intent of Manual

### 1.1 <u>Purpose of Manual:</u>

The purpose of this manual is to establish uniform policies and procedures to assist Planning, Design and Drafting in the handling of electronic files and information for the Departments project delivery process. This manual will explain the Departments methods and standards when Computer-Aided Design and Drafting (CADD) tools are used to develop a project (from inception to completion). Guidelines for the reusability of electronic files and information for future projects are also included in this manual.

### 1.2 <u>Users of the Manual:</u>

- Designers, Delineators, Detailers, Planners and Surveyors who create CADD drawings for others to utilize
- Support units who utilize the CADD drawings to work on portions of a project from the planning stages through as-built plans

The manual establishes uniform policies and procedures to carry out the Computer-Aided Design and Drafting (CADD) functions of the Department of Transportation. These uniform policies will assist the Department in maintaining Quality Control, thus increasing productivity and efficiency in the sharing of electronic files and information. It is neither intended as, nor does it establish, a legal standard for these functions.

The policies established herein are for the information and guidance of the officers and employees of the Department and for those entities doing work for the Department.

A few of the instructions given herein may be subject to amendment or change as conditions, experience and technology warrant. Special situations may call for slight deviations from Department policy, subject to prior approval by the Office of CADD and Engineering GIS Support (HQ CADD). Any proposed deviation needs to be submitted to HQ CADD with enough time to allow for any changes and suggestions to be incorporated into the plans before final submittal. It is not intended that any standard of conduct or duty toward the public shall be created or imposed by the publication of this manual. Statements as to duties and responsibilities of any given classification of officers or employees mentioned herein refer solely to duties or responsibilities owed by those in such classification to their superiors. However, in their official contacts, each employee should recognize the necessity for good relations with the public.

### 1.3 Scope of the Manual:

This manual is not a textbook, nor a substitute for engineering or drafting knowledge, experience, or judgment. This manual identifies the standard resource files and the standard conventions used within the Department. It also includes techniques and procedures not ordinarily found in textbooks. The standards in this manual are mainly focused on roadway standards. Some standards for structures are shown within this manual and are to be followed. If structures plans are submitted within the roadway portion of the project, the roadway standards are to be used. If standards for structures are not mentioned in this manual, refer to the appropriate structures manuals. For detailing standards on bridges and other transportation-related structures, this manual should be used in conjunction with the Bridge Design Details Manual.

### 1.4 Intent of the Manual:

The standards found in this manual are to be followed throughout the project development process, in order to benefit all users. Standards used at the beginning of the project development process leads to efficient use of electronic files and information by all, thus promoting the sharing of information rather than promoting the development of information for a single user. The standards contained within this manual are meant to allow each user along the project development path to extract and utilize information that is pertinent or vital to them, without changing or deleting information that is important to another user. The standards are not only meant to be a requirement or task to meet at the end of the delivery process, but rather it should be initiated at the beginning so all users can take advantage of efficient use of the electronic information available.

# 2. Caltrans Data Format

### 2.1 Drawing Types and Codes

#### A. <u>Drawing Types</u>

CADD drawings for highway projects are categorized into two types: geographical\_and non-geographical.

- <u>Geographical</u> drawings are drawings wherein the graphical elements (lines, points and curves) are located by their on-ground horizontal locations (northing and easting coordinates). Base maps are always geographical. Base maps are generally created by combining the Master Topographic files and the Master Design files. Plan sheets such as Layout, Drainage and Pavement Delineation are considered geographical because these plan sheets utilize base maps. Geographical plan sheets can be used by GIS mapping and other functional units to easily reference files located by the California Coordinate System (CCS). All plan view sheets are to utilize and maintain the appropriate CCS.
- 2. <u>Non-geographical</u> drawings are drawings wherein the graphical elements describe the spatial relationship of an object or planned construction without a direct relationship to specific horizontal coordinates (northings, eastings). An example is a detail drawing for a drainage inlet. Project plan sheets like Typical Cross Sections, Construction Details and Summary of Quantities are not coordinately based, thus they are non-geographical. Drawings with a direct relationship to a horizontal or vertical location, such as Cross Sections and Profiles, are also considered non-geographical.

In several cases, the listing in Section B categorizes a drawing as nongeographical when it appears to meet the definition of a geographical drawing because the drawings are cartographic rather than precise engineering drawings. A Title Sheet or Project Control Sheet is an example of this type of drawing.

#### B. <u>Project Plans Drawing Codes</u>

The various drawings used for roadway, landscape and electrical systems design are classified in this section by drawing type and are in the proper sequence for a final submittal of Project Plans. These drawings are those designated by the Plans Preparation Manual.

All contract plans (except the Title Sheet) require a Plan Sheet ID (on the plan sheet) to facilitate the numbering of each type of sheet. Each type of

plan sheet requires a print sequence code within the electronic name of the file. This will facilitate plotting plan sheets in the correct sequence. The Plan Sheet ID and print sequence code system are shown in the following table for the various types of roadway plan sheets.

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
	Title		ab
	Index of Plans	IOP	ac
	Locations of Construction	LC	ba
	Identification of Project Structures	IPS	bc
	Typical Cross Sections	Х	са
	Key Map & Line Index	K	da
	Aerial Identification	AI	db
	Project Control	PC	dc
Layout (With or without profile shown or with or without superelevation diagram shown)		L	ea
	Profile (Without superelevation diagram shown)	P	fa
	Profile and Superelevation Diagram	PS	fb
	Superelevation Diagram	SE	fc
	Construction Details	С	ga
Temporary Water Pollution Control Plan ( <i>With or without</i> <i>details or quantities</i> )		WPC	gb
	Temporary Water Pollution Control Details ( <i>With or</i> <i>without quantities</i> )	WPCD	gc
	Temporary Water Pollution Control Quantities	WPCQ	gd

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Water Pollution Control Plan (With or without profiles details or quantities)		W	gi
	Water Pollution Control Profiles ( <i>With or without</i> <i>details or quantities</i> )	WP	gj
	Water Pollution Control Details ( <i>With or without</i> <i>quantities</i> )	WD	gk
	Water Pollution Control Quantities	WQ	gl
Contour Grading		G	ha
Drainage Plan		D	ia
¥	Drainage Profiles	DP	ib
	Drainage Details	DD	ic
	Drainage Quantities	DQ	id
Subsurface Drainage Plan	<u> </u>	SB	ie
	Subsurface Drainage Profiles	SBP	if
	Subsurface Drainage Details	SBD	ia
	Subsurface Drainage Quantities	SBQ	ih
Sanitary Sewer Plan		SS	ja
	Sanitary Sewer Profiles	SSP	jb
	Sanitary Sewer Details	SSD	jc
	Sanitary Sewer Quantities	SSQ	jd
Utility Plan (With or without profiles, details or quantities)		U	ka
	Utility Profiles (With or without details or quantities)	UP	kb
	Utility Details ( <i>With or without quantities</i> )	UD	kc
	Utility Quantities	UQ	kd
	Construction Area Signs	CS	la
	Motorist Information Plan ( <i>With or without details or</i> <i>quantities</i> )	MI	lb
	Motorist Information Details ( <i>With or without quantities</i> )	MID	lc
	Motorist Information Quantities	MIQ	ld

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Stage Construction Plan (With or without Traffic Handling Plan) (With or without Detour Plan) (With or without details or quantities)		SC	ma
	Stage Construction Details ( <i>With or without quantities</i> )	SCD	mb
	Stage Construction Quantities	SCQ	mc
Traffic Handling Plan (When not included on SC sheet) (With or without details or quantities)		TH	md
	Traffic Handling Details ( <i>With or without quantities</i> )	THD	me
	Traffic Handling Quantities	THQ	mf
Detour Plan (when not included on SC or TH sheet) (With or without quantities)		DE	mg
	Detour Quantities	DEQ	mh
Pavement Delineation Plan		PD	na
	Pavement Delineation Details	PDD	nb
	Pavement Delineation Quantities	PDQ	nc
Sign Plan		S	oa
	Sign Details	SD	ob
	Special Design Signs	SDS	oc
	Sign Quantities	SQ	od
	Summary of Quantities	Q	ра
	Key Map (overview) for Walls	KW	pf
	Architectural Treatment	AT	pg

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
For 1 <sup>st</sup> Retaining Wall Plan, Elevation, Typical Section, Architectural Treatment, Details, Quantities and Log of Test Boring		R1	qa
(All information pertaining to the 1 <sup>st</sup> wall is to be grouped together before the next wall. The typical, details and quantities can be placed on the plan (if room allows) or on their own sheets or in combination)			
	Retaining Wall Typical Section (1 <sup>st</sup> wall)	R1	qa
	Retaining Wall Details (1 <sup>st</sup> wall)	R1	qa
	Retaining Wall Quantities (1 <sup>st</sup> wall)	R1	qa
	Log of Test Boring (1 <sup>st</sup> wall)	R1	qa
For 2 <sup>nd</sup> Retaining Wall Plan, Elevation, Typical Section, Architectural Treatment, Details, Quantities and Log of Test Boring ( <i>Information which pertains to</i> <i>more than 1 wall, such as details</i> <i>or log of test boring, can be</i> <i>shown with the 1<sup>st</sup> wall, and a</i> <i>reference made to that 1<sup>st</sup> wall</i> <i>on subsequent walls</i> )		R2	qb
	Retaining Wall Typical Section (2 <sup>nd</sup> wall)	R2	qb
	Retaining Wall Details (2 <sup>nd</sup> wall)	R2	qb
	Retaining Wall Quantities (2 <sup>nd</sup> wall)	R2	qb
	Log of Test Boring (2 <sup>nd</sup> wall)	R2	dþ
Print Sequence Code for all subsequent walls will be "qc" through "qz" (26 walls) For more than 26 walls in one project, see Note 4 in this section			

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
For 1 <sup>st</sup> Sound Wall Plan, Elevation, Typical Section, Architectural Treatment, Details, Quantities and Log of Test Boring		SW1	ra
(All information pertaining to the 1 <sup>st</sup> wall is to be grouped together before the next wall. The typical, details and quantities can be placed on the plan (if room allows) or on their own sheets or in combination)			
	Sound Wall Typical Section (1 <sup>st</sup> wall)	SW1	ra
	Sound Wall Details (1 <sup>st</sup> wall)	SW1	ra
	Sound Wall Quantities (1 <sup>st</sup> wall)	SW1	ra
	Log of Test Boring (1 <sup>st</sup> wall)	SW1	ra
For 2 <sup>nd</sup> Sound Wall Plan, Elevation, Typical Section, Architectural Treatment, Details, Quantities and Log of Test Boring ( <i>Information which pertains to</i> <i>more than 1 wall, such as details</i> <i>or log of test boring, can be</i> <i>shown with the 1<sup>st</sup> wall, and a</i> <i>reference made to that 1<sup>st</sup> wall</i> <i>on subsequent walls</i> )		SW2	rb
· · · · · · · · · · · · · · · · · · ·	Sound Wall Typical Section (2 <sup>nd</sup> wall)	SW2	rb
	Sound Wall Details (2 <sup>nd</sup> wall)	SW2	rb
	Sound Wall Quantities (2 <sup>nd</sup> wall)	SW2	rb
	Log of Test Boring (2 <sup>nd</sup> wall)	SW2	rb
Print Sequence Code for all subsequent walls will be "rc" through "rz" (26 walls) For more than 26 walls in one project, see Note 4 in this section			

DRAWING NAMEPLAN SHEET IDPRINT SEQ. CODERoadside Cross SectionsXRsaLandscape Key MapLKscRoadside Clearing PlanRCsdPlant Removal PlanPRse
Roadside Cross Sections       XR       sa         *       sb         Landscape Key Map       LK       sc         Roadside Clearing Plan       RC       sd         Plant Removal Plan       PR       se
*     sb       Landscape Key Map     LK     sc       Roadside Clearing Plan     RC     sd       Plant Removal Plan     PR     se
Landscape Key MapLKscRoadside Clearing PlanRCsdPlant Removal PlanPRse
Roadside Clearing PlanRCsdPlant Removal PlanPRse
Plant Removal Plan PR se
Maintain Existing Planted Areas MEPA sf
Establish Existing Planting Plan
* sh
Safety Roadside Rest Area Plan SRRA si
Landscape Layout Plan
Landscape Details
Landscape Quantities LQ sl
Irrigation Sprinkler Schedule ISS sm
Irrigation Removal Plan
Irrigation and Planting Plan
Irrigation Plan
Irrigation Details ID sq
Irrigation Quantities IQ sr
Plant Legend PL st
Planting Plan PP su
Planting Details PLD sv
Planting Quantities PQ sw
* SX
* sy
* SZ
Erosion Control Key Map ECK ta
tb
Erosion Control Legend ECL to
Erosion Control Plan EC te
Erosion Control Details ECD T
E Ua
Electrical Systems Quantities ED UD
Special Electrical Structures SES ub
Log of Test Borina LOTB ul

- \* Reserved for additional landscape sheets (including the rest of the "T" series) only when necessary. Contact HQ Landscape Architecture office before using.
- \*\* The name for an Electrical Systems plan view sheet will be the lump sum bid item for that individual sheet. If a sheet has only notes, legends, abbreviations or index of electrical systems plans applicable to all electrical systems sheets, the sheet name is Electrical Systems.

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
	Revised Standard Plan		va
	Vendor Drawings		vb
General Plan		GP	wa
	Architectural Plan	А	wc
	Structural Plan ***	ST	we
	Mechanical Plan ***	М	wg
	Mechanical Plumbing	MP	wh
	Electrical Plan ***	EE	wj
	Sanitary Plan	SS	wl

- \*\*\* Booster pumps will be shown on their respective discipline sheets.
- Note 1: The sheet number following each unique print sequence code begins with the number "001." This will allow the Print Sequence Code sheet number to be identical to the Sheet ID number.

File Name Convention Examples using Project Number and Phase

"0400001234ia001"Drainage Plan"0400001234ib001"Drainage Profiles"0400001234ic001"Drainage Details"0400001234id001"Drainage Quantities

- Note 2: Print sequence codes do not utilize the same letter twice (example "aa" or "gg." If this happens, it may be confused with the CADD Alpha Code within the file name convention for mapping and preliminary drawings (see Section 2.1 D).
- Note 3: All landscape sheets within the "s" or "t" series (whether combined with roadway construction or not) must use the Sheet ID and print sequence code from the table above. Do not include any non-landscape sheets within the "s" or "t" series (e.g., title sheet, utility sheets, construction area signs sheet, etc.).
- Note 4: Each retaining wall or sound wall (submitted by the district) will have a different print sequence code for each wall. The plan sheet for each wall is to contain all the information pertaining to that wall (including log of test boring and architectural treatment information that is specific to the indiividual wall). Separate sheets are allowed for typical sections, details and quantities when needed for clarity. All

information pertaining to a specific wall is to be shown before showing any information pertaining to the next wall.

The Sheet ID for each retaining wall or sound wall (submitted by the District) has a sequential number in addition to the alpha character(s). The sequential number represents the first, second, third, etc., wall presented within the roadway portion of the project plans submitted for PS&E (see above table).

The quantities for each wall are to be shown within the plan sheets for that specific wall, but the total quantities for all retaining walls or sound walls submitted by the District (when there is more than one wall) must be shown on the Summary of Quantities sheets. If the District and Structures submit wall plans under a separate submittal, then there needs to be, at the minimum, a cross reference note below the quantity table for walls on the Summary of Quantities sheets saying "for additional quantities see Structures plans." If a separate row can be added to the quantity table for the total wall quantities from Structures, (especially for the items of work used by both District and Structures), this would be ideal.

Retaining wall profiles must be shown at a horizontal to vertical (H/V) scale ratio of 1 to 1 (no exaggeration). It is preferred that sound wall profiles also be shown at a (H/V) scale ratio of 1 to 1.

Note 5: For those projects that have more than 26 retaining walls or 26 sound walls, one more character will be added to the electronic file name to handle the 27<sup>th</sup> wall to the 52<sup>nd</sup> wall. For the 53<sup>rd</sup> wall to the 78<sup>th</sup> wall, one additional character will be added to the electronic file name. For any further questions, contact the editor of this CADD Users Manual.

# Wall Plan File Name Convention Examples using Project Number and Phase

	<u>Retaining Wall</u>	<u>Sound Wall</u>
26 <sup>th</sup> wall	1200001234qz001	1200001234rz001
27 <sup>th</sup> wall	1200001234qz <u>a</u> 001	1200001234rz <u>a</u> 001
28 <sup>th</sup> wall	1200001234qz <b>b</b> 001	1200001234rz <mark>b</mark> 001
52 <sup>nd</sup> wall	1200001234qz <u>z</u> 001	1200001234rz <mark>z</mark> 001
53 <sup>rd</sup> wall	1200001234qzz <u>a</u> 001	1200001234rzz <u>a</u> 001
78 <sup>th</sup> wall	1200001234qzz <u>z</u> 001	1200001234rzz <u>z</u> 001

#### C. <u>Drawing Codes for Mapping & Preliminary Drawings</u>

Mapping and preliminary CADD prepared drawings require a file name convention (CADD Alpha Code) in the electronic name of the file. This allows for easy identification of the type of drawing file it is. The CADD Alpha Code system utilized by Photogrammetry and Design is shown in the following table for mapping and preliminary drawings.

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS	
DRAWING NAME	DRAWING NAME	CADD ALPHA CODE
Master Design Files *		aa
Master Topographic Files *		bb
3D Terrain Data		3d
	Scanned Drawings	CC
	Digitized Drawings	dd
	Created Drawings	ee
	Project File Directory	ff
	Route Adoption Map	gg
	Area of Interest Map	hh
	Strip Map	ii
	Freeway Agreement Map	jj
	New Connection Report Exhibit	kk
	PUC Exhibit (A, B, C etc.)	
	Geometric Approval Drawing	mm
Bridge Site Map		nn

#### File Name Convention using Project Number and Phase

The file name is the Project Number (composed of 2 digits representing the district and 8 digits representing a sequential number) plus the CADD alpha code (e.g. 1200007777aa.dgn).

For further information concerning the Master Design "aa file" and Master Topographic "bb file" see Section 3.8.

#### D. Old File Name Convention Examples using Expenditure Authorization

412345ia001 Drainage Plan
412345ib001 Drainage Profiles
412345ic001 Drainage Details
412345id001 Drainage Quantities

	<u>Retaining Wall</u>	Sound Wall
26 <sup>th</sup> wall	c12345qz001	c12345rz001
27 <sup>th</sup> wall	c12345qz <u>a</u> 001	c12345rz <u>a</u> 001
28 <sup>th</sup> wall	c12345qz <b>b</b> 001	c12345rz <b>b</b> 001
52 <sup>nd</sup> wall	c12345qz <b>z</b> 001	c12345rz <b>z</b> 001
53 <sup>rd</sup> wall	c12345qzz <u>a</u> 001	c12345rzz <u>a</u> 001
78 <sup>th</sup> wall	c12345qzz <b>z</b> 001	c12345rzz <b>z</b> 001

For mapping and preliminary drawings the file name is District and Expenditure Authorization (EA) plus the CADD alpha code (e.g. c12345aa.dgn).

### 2.2 Drawing File Names

#### A. <u>Description</u> - (Overview)

The "File Name" is a unique identification for each drawing. The windows operating system is case-aware, not case-sensitive, but the preference is lower case lettering for the file names of all contract plan sheets. This unique "File Name" allows for the searching of a drawing for any project.

#### 1. Highway Construction and Highway Planting Projects

The old naming convention used the DISTRICT & EXPENDITURE AUTHORIZATION (EA). The file name is 11 characters long, combining both alpha and numeric characters.

The new naming convention uses the PROJECT NUMBER. The PROJECT NUMBER is comprised of 2 digits representing the District and 8 digits representing a sequential number. The file name is 15 characters long, combining both alpha and numeric characters.

2. Structures Projects

For Structures drawings, the file name length varies with the type of sheet, and also combines both alpha and numeric characters.

#### B. <u>Need for Naming Uniformity</u>

Uniformity in the naming of electronic files is necessary for the following reasons:

• Without a uniform naming convention, it is impossible to keep the system free of duplicate files, which could eventually use up a significant amount of system storage.

• Transfer of project files (design files), from district to district requires the use of a uniform naming convention to avoid repetitious explanations, misinterpretations, and additional record keeping.

• As with most records at Caltrans, the basis of the naming convention was the district/expenditure authorization. As of July 1, 2010, the basis of the naming convention will now be the Project Number. This facilitates the design files to be project specific. The use of a uniform naming convention allows for quick searches for design files, whether on current files or archived files.

• The Print Sequence Code (formerly known as CADD Alpha Code), which is part of the naming convention, automates the plotting of the contract plan sheets in the standard specified order as shown in the Plans Preparation Manual and Section 2.1 of this manual.

- C. <u>Naming Convention</u>
  - 1. District Codes

A district code is to be included in every drawing name. These codes are as follows:

Old Naming Convention (single digit)

District	Code
Districts 1-9	1-9, respectively
District 10	а
District 11	b
District 12	С

<u>New Naming Convention</u> (two digits)

District	Code
Districts 1-12	01-12, respectively

2. Highway Construction Project

### Old Naming Convention

All Highway Construction Projects (Roadway) shall be named in accordance with the following naming convention:

### d12345ppXXX

d	<ul> <li>District code. The district code represents the district where the project is being constructed, (not the district creating the CADD drawings). Districts 1-9 use a single numeric character (1-9 respectively). Districts 10 through 12 use a single alpha abaracter (a a respectively).</li> </ul>
	alpha character (a-c respectively).

- **12345** = First 5 characters of the project expenditure authorization.
- **pp** = Print Sequence Code (2 alpha characters).
  - Note: For projects with 27 to 52 Retaining Walls or Sound Walls, a third alpha character will be added to assist in the wall plan sheets being printed in the proper sequence. See Note 3 in Section 2.1 B of this manual.
- **XXX** = Respective sheet numbers (numerical characters) for each Print Sequence Code used in the project.

### New Naming Convention

pp

All Highway Construction Projects (Roadway) shall be named in accordance with the following naming convention:

### dc12345678ppXXX

- dc = District code. The district code represents the district where the project is being constructed, (not the district creating the CADD drawings). Districts 1-9 are to have a zero preceding their single digit district number. Districts 10 through 12 are to use their two digit district number.
- 12345678 = Eight digits (called the "Project"), with sequential numbering for each successive project. This eight digit number is not unique for each district. For all districts this eight digit number will start with the number 1, preceded first by 7 zeros (0000001). To make the Project Number unique, it must contain the 2 digit district code.
  - = Print Sequence Code (2 alpha characters).
    - Note: For projects with 27 to 52 Retaining Walls or Sound Walls, a third alpha character would be added to assist in the wall plan sheets being printed in the proper sequence. For projects with 53 to 78 Retaining Walls or Sound Walls, a fourth alpha character would be added to assist in the wall plan sheets being printed in the proper sequence. See Note 3 in Section 2.1 B of this manual.
- **XXX** = Respective sheet numbers (numerical characters) for each Print Sequence Code used in the project.

### Example 1:

### Old Naming Convention

### 512121ic007.dgn

5	= District 05.
12121	<ul> <li>First 5 characters of the project expenditure authorization.</li> </ul>
ic	= Print Sequence Code (Drainage Details)
007	<ul> <li>Sheet number (7<sup>th</sup> Drainage Detail sheet).</li> </ul>

### New Naming Convention

### 050000001ic007.dgn

05	=	District 05.
00000001	=	Eight digit "Project".
ic	=	Print Sequence Code (Drainage Details)
007	=	Sheet number (7 <sup>th</sup> Drainage Detail sheet).

### Example 2:

### Old Naming Convention

### b1a039ea004.dgn

b	= District 11.
1a039	<ul> <li>First 5 characters of the project expenditure authorization.</li> </ul>
ea	= Print Sequence Code (Layout)
004	= Sheet number (4 <sup>th</sup> Layout sheet).

### New Naming Convention

### 1100004567ea004.dgn

11	=	District 11.
00004567	=	Eight digit "Project".
ea	=	Print Sequence Code (Layout)
004	=	Sheet number (4 <sup>th</sup> Layout sheet).

- Note 1: A second Print Sequence Code character has been added to the electronic name for each contract plan sheet. Each individual type of contract plan sheet will have its own unique Print Sequence Code. Only plan sheets within the same Print Sequence Code might need to change the electronic name of the file when inserting additional sheets (plan sheets with another Print Sequence Code will not be affected). This will also eliminate the need for recreating InterPlot parameter files (Iparms) except for those affected plan sheets within the same Print Sequence Code.
- Note 2: The sequence order of several sheets has been changed to better group information of similar type and to emulate the sequence of constructing a project.
- Note 3: Several new sheet types have been added to allow information to be utilized without cluttering existing plan sheets with too much information or extraneous information unnecessary for that plan sheet.
- Note 4: New Sheet Identifications (ID's) have been created to accommodate a unique Sheet ID for each Print Sequence Code (with the exception of signal, lighting and electrical system sheets).
- Note 5: The sheet number following the Print Sequence Code will be the same as the Sheet ID number (with the exception of signal, lighting and electrical system sheets).
- Note 6: Highway Planting sheets (that are part of a Highway Construction project) will no longer have HP as the Sheet ID. See Section 2.1 B of this manual.

### 3. Highway Planting Project

When Highway Planting is a separate project (not part of a Highway Construction project), additional Print Sequence Codes will be used (see Section 2.1 C of this manual). Highway Construction sheets, which need to be included in a Highway Planting project (ie - Title Sheet, Construction Area Signs or Traffic Handling plans), will have a different Print Sequence Code than when they are included in a Highway Construction project but the Sheet ID will remain the same. All Highway Planting sheets shall be named in accordance with the following naming convention:

Old Naming Convention

### d12345ppXXX

- **d** = District code (same as Roadway).
- **12345** = First 5 numerals of project expenditure authorization.
- **pp** = Print Sequence Code.
- **XXX** = Respective sheet numbers for each Print Sequence Code used in the project.

### New Naming Convention

All Highway Planting sheets shall be named in accordance with the following naming convention:

### dc12345678ppXXX

- dc = District code. The district code represents the district where the project is being constructed, (not the district creating the CADD drawings). Districts 1-9 are to have a zero preceding their single digit district number. Districts 10 through 12 are to use their two digit district number.
- 12345678 = Eight digits (called the "Project"), with sequential numbering for each successive project. This eight digit number is not unique for each district. For all districts this eight digit number will start with the number 1, preceded first by 7 zeros (0000001). To make the Project Number unique, it must contain the 2 digit district code.
- **pp** = Print Sequence Code (2 alpha characters).
- **XXX** = Respective sheet numbers (numerical characters) for each Print Sequence Code used in the project.

### Example 3:

### Old Naming Convention

### 712345te002

7	= District 7.
12345	<ul> <li>First 5 numerals of project expenditure authorization.</li> </ul>
te	= Print Sequence Code (Plant List).
002	= Sheet number (2 <sup>nd</sup> Plant List sheet).

### New Naming Convention

### 0700009876te002

07	=	District 7.
00009876	=	Eight digit "Project".
te	=	Print Sequence Code (Plant List).
002	=	Sheet number (2 <sup>nd</sup> Plant List sheet).

- 4. Structures Drawings
  - a. All Structure drawings shall be named in accordance with the following naming convention:

### cc-1234rl-p-sss.dgn

- cc = County Code
- 1234rl = Bridge number designation for a specific bridge in a multi-bridge project. The right (r) and left (l) can be a separate project. A single bridge does not need the (r) or (l) designation. The bridge number is always a four digit number
- p = Print Sequence Code. This allows for the files to be listed and plotted in chronological order; same as the logical plan order stated in the <u>Bridge Design Details</u> <u>Manual.</u>
- sss = Sheet type identifier. The number of characters (both alpha and numeric) for the sheet type identifier can vary according to the type of sheet (see <u>Bridge Design Details Manual</u>).

#### Extensions:

- **dgn** is through expedite.
- **rev** is for revisions after expedite to second notice.
- **add** is from second notice through bid opening.
- **cco** is from bid opening through end of construction.
- **avd** is for archived vector data.

#### Example 4:

#### 56-3434rl-e-fpl01

- **56** = Riverside County
- **3434rl** = bridge number with a Right and Left bridge
- **e** = Print Sequence Code (Foundation Plan sheet).
- **fpl01** = Sheet type identifier (1<sup>st</sup> Foundation Plan sheet).

b. Structures Plan Sheets require a Print Sequence Code (single letter) in the electronic name of the file for plotting sheets in the correct sequence. The Print Sequence Code system utilized by Structures is shown in the following table with the Sheet Type and an example of how the electronic name should be handled.

PRINT SEQUENCE CODE	SHEET TYPE	ELECTRONIC NAME (EXAMPLE)
а	GENERAL PLAN	59-2482rl-a-gp01.dgn
а	INDEX TO PLANS	59-2482rl-a-itp.dgn
b	GENERAL NOTES	59-2482rl-b-gnote.dgn
С	STRUCTURE PLAN	59-2482rl-c-sp01.dgn
d	DECK CONTOURS	59-2482rl-d-dc01.dgn
е	FOUNDATION DATA	59-2482rl-e-fdat01.dgn
е	FOUNDATION PLAN	59-2482rl-e-fpl01.dgn
f	ABUTMENT LAYOUT	59-2482rl-f-a01_lo1.dgn
f	ABUTMENT DETAILS	59-2482rl-f-a01dt01.dgn
f	ABUTMENT RESTRAINER DETAILS	59-2482rl-f-a01rdt01.dgn
g	RETAINING WALL LAYOUT	59-2482rl-g-rw_lo01.dgn
g	RETAINING WALL DETAILS	59-2482rl-g-rwdt01.dgn
g	RETAINING WALL FOOTING	59-2482rl-g-rwftg.dgn
h	BENT LAYOUT	59-2482rl-h-b01_lo01.dgn
h	BENT DETAILS	59-2482rl-h-b01dt01.dgn
h	BENT FOOTING DETAILS	59-2482rl-h-b01fdt01.dgn
h	BENT FOOTING RETROFIT DETAILS	59-2482rl-h-b01frdt01.dgn
i	PIER LAYOUT	59-2482rl-i-p01_lo01.dgn
i	PIER DETAILS	59-2482rl-i-p01dt01.dgn
i	PIER FOOTING	59-2482rl-i-p01fdt01.dgn
i	PIER FOOTING RETROFIT	59-2482rl-i-p01frt.dgn
i	PIER RESTRAINER	59-2482rl-i-pres.dgn
j	COLUMN DETAILS	59-2482rl-j-cdet01.dgn
j	COLUMN ISOLATION CASING	59-2482rl-j-ciso01.dgn
j	COLUMN RESTRAINER DETAILS	59-2482rl-j-crdt01.dgn
k	TYPICAL SECTION	59-2482rl-k-ts01.dgn
k	PART TYPICAL SECTION	59-2482rl-k-tsp01.dgn
I	GIRDER LAYOUT	59-2482rl-l-g_lo01.dgn
I	GIRDER DETAILS	59-2482rl-l-gdt01.dgn

PRINT SEQUENCE CODE	SHEET TYPE	ELECTRONIC NAME (EXAMPLE)
m	CAMBER DIAGRAM	59-2482rl-m-cam.dgn
m	LONGITUDINAL SECTION	59-2482rl-m-lsec.dgn
n	HINGE	59-2482rl-n-hinge.dgn
n	HINGE DETAILS	59-2482rl-n-hingedt01.dgn
n	HINGE BEARING DETAILS	59-2482rl-n-hngbdt.dgn
n	HINGE RESTRAINER	59-2482rl-n-hngres.dgn
0	GIRDER REINFORCEMENT	59-2482rl-o-gir_rf01.dgn
0	GIRDER REINFORCEMENT TOP	59-2482rl-o-gr_top01.dgn
0	GIRDER REINFORCEMENT BOTTOM	59-2482rl-o-gbot01.dgn
р	PILE DETAILS	59-2482rl-p-pdt01.dgn
q	BEARING DETAILS	59-2482rl-q-brgdt01.dgn
q	JOINT DETAILS	59-2482rl-q-jntdt.dgn
r	DECK DRAINS	59-2482rl-r-dd01.dgn
r	DRAIN DETAILS	59-2482rl-r-ddet01.dgn
s	STRUCTURE APPROACH DRAIN DETAILS	59-2482rl-s-sadd.dgn
t	BARRIER RAILING DETAILS	59-2482rl-t-brdt.dgn
t	CRASH CUSHIONS	59-2482rl-t-crc.dgn
t	RESTRAINER UNIT	59-2482rl-t-resunit.dgn
u	MISCELLANEOUS DETAILS	59-2482rl-u-miscdt01.dgn
V	END DIAPHRAGM DETAIL	59-2482rl-v-eddt.dgn
W	ADDITIONAL SLAB REINFORCEMENT	59-2482rl-w-asr.dgn
х	LADDER DETAILS	59-2482rl-x-ldt.dgn
у	ACCESS OPENING DETAILS	59-2482rl-y-aodt.dgn
у	GIRDER ACCESS DETAIL	59-2482rl-y-gadt.dgn
у	EARTHQUAKE RETROFIT DETAILS	59-2482rl-y-erdt.dgn
Z	LOG OF TEST BORINGS	59-2482rl-z-ltb01.dgn

- 5. Topographic Maps
  - a. All topographic map files originating in or reviewed by the DES Office of Photogrammetry from fiscal year 05 (yy = 05 in file name) and onward, shall be named in accordance with the following convention:

Old Naming Convention

### dyypnnuxxss.dgn

- **d** = District Code (single digit for all districts).
- **yy** = Fiscal year of the Office of Photogrammetry Aerial Survey Contract (ASC).
- **p** = Project type.
  - 0 or 1 = Normal Internal Project.
  - 2 = Oversight Project.
  - 3 = A&E Project.
- **nn** = ASC Order number.
- **u** = Map unit system (**e**nglish)
- **xx** = Scale.

- **ss** = Sheet number (zero filled).
- .dgn = MicroStation File Format.

New Naming Convention

### ddyypnnuxxss.dgn

nn

- **dd** = District Code (2 digits for all districts).
- **yy** = Fiscal year of the Office of Photogrammetry Aerial Survey Contract (ASC).
- **p** = Project type.
  - 0 or 1 = Normal Internal Project.
  - 2 = Oversight Project.
  - 3 = A&E Project.
  - = ASC Order number.
- **u** = Map unit system (**e**nglish)
- **xx** = Scale.

```
<u>english</u>
02 = 1"=20'
05 = 1"=50'
10 = 1"=100'
20 = 1"=200'
```

- **ss** = Sheet number (zero filled).
- .dgn = MicroStation File Format.
- Notes: 1"=50' is the default scale for both roadway and bridge design. Other scales may be used for special purposes, if requested.

If an addition is made to an existing mapping file, the letter **"a"** is appended to the end of the file name (see example 6 below). If there is a second addition to an existing mapping file, the letter **"b"** is appended to the end of the file name, and so on.

All topographic map files are created in 3D.

Example 5:

### Old Naming Convention

### b05016e0521.dgn

- **b** = District 11.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- **0** = Normal Internal Project.
- **16** = Order number of the Aerial Service Contract.
- **e** = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **21** = Sheet number 21.
- .dgn = MicroStation File Format.

#### New Naming Convention

### 1105016e0521.dgn

- **11** = District 11.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- **0** = Normal Internal Project.
- **16** = Order number of the Aerial Service Contract.
- **e** = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **21** = Sheet number 21.
- .dgn = MicroStation File Format.

### Example 6:

### Old Naming Convention

### 405103e1004a.dgn

- **4** = District 4.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which the original mapping was flown.
- 1 = Normal Internal Project.
- **03** = Order number of the Aerial Service Contract.
- e = English units mapping (US Survey Feet).
- **10** = 1"=100' scale mapping.
- **04** = Sheet number 4.
- a = This mapping includes the first new addition to the original map sheet, compiled using the original photography.
- .dgn = MicroStation File Format.

### New Naming Convention

#### 0405103e1004a.dgn

- **04** = District 4.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which the original mapping was flown.
- 1 = Normal Internal Project.
- **03** = Order number of the Aerial Service Contract.
- e = English units mapping (US Survey Feet).
- **10** = 1"=100' scale mapping.
- **04** = Sheet number 4.
- a = This mapping includes the first new addition to the original map sheet, compiled using the original photography.
- .dgn = MicroStation File Format.

### Example 7:

### Old Naming Convention

### 805207e0521.dgn

- **8** = District 8.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- **2** = Oversight Project.
- **07** = Order number of the Aerial Service Contract.
- e = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **21** = Sheet number 21.
- .dgn = MicroStation File Format.

#### New Naming Convention

### 0805207e0521.dgn

- **08** = District 8.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- **2** = Oversight Project.
- **07** = Order number of the Aerial Service Contract.
- **e** = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **21** = Sheet number 21.
- .dgn = MicroStation File Format.

#### Example 8:

### Old Naming Convention

#### b05322e0527.dgn

- **b** = District 11.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- **3** = A&E Project
- **22** = Order number of the Aerial Service Contract.
- **e** = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **27** = Sheet number 27.
- .dgn = MicroStation File Format.

#### New Naming Convention

### 1105322e0527.dgn

- **11** = District 11.
- **05** = Fiscal year (2005) of the Aerial Service Contract under which this mapping was flown.
- 3 = A&E Project
- **22** = Order number of the Aerial Service Contract.
- e = English units mapping (US Survey Feet).
- 05 = 1"=50' scale mapping.
- **27** = Sheet number 27.
- .dgn = MicroStation File Format.

- b. Topographic map files from fiscal year 04 (yy = 04 in file name) or earlier, shall be named in accordance with the following convention:
  - 1. Files originating in the DES Office of Photogrammetry

### dyynnnwxx.dgn

- d = District code.
- yy = Fiscal year of the Aerial Survey Contract (ASC) under which the mapping was flown.
- **nnn** = Order number of the Aerial Survey Contract (zero filled).
- w = 3D mapping (b was previously used for 2D mapping).
- Sheet number (zero filled). If the sheet number is 100 or greater, the "w" is eliminated. If map scale is 1:200, sheet number is 200 series. If map scale is 1:1000, sheet number is 100 series.
- **.dgn** = MicroStation File Format.
- Note: 1:500 scale mapping is the default roadway. Bridge sites were mapped at 1:200 prior to 2001. Other scales, such as 1:1000 and 1:2000 may be used. See the sheet number key above for identification.

If an addition is made to existing mapping, the letter **"a"** is appended to the end of the sheet number. If there is a second addition to an existing mapping file, the letter **"b"** is appended to the end of the file name, and so on.

#### Example 9:

#### a94041w07a.dgn

- a = District 10.
- **94** = Fiscal year (1994) of the Aerial Service Contract under which the original mapping was flown.
- **041** = Order number of the Aerial Service Contract.
- w = 3D map file.
- **07** = Sheet number 7.
- a = This mapping includes the first new addition to the original map sheet, compiled using the original photography.
- .dgn = MicroStation File Format.

2. Files developed from Oversight projects

### dyyrnnnwxx.dgn

- **d** = District code.
- **yy** = Fiscal year of the Aerial Survey Contract (ASC) under which the mapping was flown.
- **rn** = Review number (fixed at 20)
- **nn** = Order number of the Aerial Survey Contract (zero filled).
- w = 3D mapping (b was previously used for 2D mapping).
- **xx** = Sheet number (zero filled).
- .dgn = MicroStation File Format.

### Example 10:

### 3022004w01.dgn

- **3** = District 3.
- **02** = Fiscal year (2002) of the Aerial Service Contract under which the original mapping was flown.
- **20** = Review number (fixed at 20).
- **04** = Order number of the Aerial Service Contract.
- **w** = 3D map file.
- **01** = Sheet number 1.
- .dgn = MicroStation File Format.



### 2.3 Working Units

#### A. Roadway Design Files

The current Caltrans standard design presentation software (MicroStation CONNECT) defines a design file by U.S. Survey Foot with Master Unit set to "US Survey Feet" and Sub Unit set to "Survey Tenths". The resolution for roadway design files is "10,000 per Distance US Survey Foot". These standard values define the size of the working area of the design file. Caltrans roadway seed files have the settings shown below:

📕 Design File Settings		×
Category	Linear Units	
Active Angle	Format: MU 🔻	
Active Scale Angle Readout Axis	Master Unit:US Survey FeetLabel:FTSub Unit:Survey Tenths✓Label:TN	
Color Fence	Accuracy: 0.123 ▼ <u>Custom</u>	
Isometric Locks Snaps Stream Views Working Units	Advanced Settings Resolution: 10000 per Distance US Survey Foot Working Area: 1.70591E+08 Miles Solids Area: 81.3442 Miles Solids Accuracy: 4.29497E-06 US Survey Feet <u>E</u> dit	
	Focus Item Description Select category to view.	
	<u>O</u> K	Cancel

Figure 1 – Current roadway design file working unit settings

Older Caltrans roadway MicroStation seed files used Master Unit and Sub Units as shown in the following picture:


Design File Settings	
Category	Modify Working Unit Settings
Active Angle Active Scale Angle Readout Axis Color Element Attributes Fence	Linear Units <u>F</u> ormat: <u>MU</u> ▼ <u>Master Unit: Feet</u> ↓ <u>Label: FT</u> Cancel <u>Sub Unit: Tenths</u> ↓ Labe <u>l: TN</u> <u>A</u> ccuracy 0.123 ▼ <u>C</u> ustom
Grid Isometric Locks Snaps Stream Views Working Units	Advanced Settings         Resolution:       10000 per Distance Foot         Working Area:       1.70591E+008 Miles         Solids Area:       81.3442 Miles         Solids Accuracy:       4.29497E-006 Feet
	Focus Item Description Select category to view.

Figure 2 – Older roadway design file working unit settings

When an existing MicroStation design file created using older Caltrans MicroStation V8i seed file is opened using MicroStation CONNECT, the Master unit and Sub unit should automatically switch to US Survey Feet and Survey Tenths. If working units for an existing MicroStation design file opened using MicroStation CONNECT does not display the Working Unit settings as shown in Figure 1, the file may have been created using International feet.

To maintain the California coordinate system in the design files for all roadway projects, the resolution must remain at 10,000. Changing this value will change the coordinates and the linear measurement of elements.

B. Structure Design Files

Current design files for Structures bridge design are based on 1'-0" = 1'-0" with the Master Unit set to "US Survey Feet" and the Sub Unit set to "US Survey Inches." The resolution and working area are set as shown in the following picture:

Format:	MU 🔻		
Master Unit:	US Survey Feet 🔹	Label:	
Sub Unit:	US Survey Inches 🔹 🔻	Labe <u>l</u> :	
Accuracy:	0.1234 🔹		
		Custom	
Advanced Setting	gs —		
Resolution:	1728000 per Distance US	Survey Foot	
Working Area:	987218 Miles		
Solids Area:	0.470742 Miles		
Solids Accuracy:	2.48551E-08 US Survey F	eet	
		Edit	

Figure 3 – Current structures design file working unit settings

Older Caltrans structures MicroStation files used different Master Unit and Sub Unit as shown in the following picture:

Modify Working	g Unit Se	ettings	
- Linear Units -			
<u>F</u> ormat:	MU	•	
Master Unit:	Feet	-	Label: '
Sub Unit:	Inches	-	Labe <u>l</u> : "
<u>A</u> ccuracy	0.1234	•	
			<u>C</u> ustom
Advanced Sett	ings		
Res	Resolution: 1728000 per Distance Foot		
Working Area:		987218 Miles	
Solid	Solids Area: 0.470742 Miles		
Solids Accuracy: 2.48551E-008 Feet			

Figure 4 - Older Structures design file working unit settings

There are much older versions of Structures seed files that used a different resolution and working area too. Those settings are shown in the following picture:

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	Resolution:	1152000 per Distance Foot
	Working Area:	1.48083E+006 Miles
	Solids Area:	0.706113 Miles
	Solids Accuracy:	3.72827E-008 Feet
Figu	re 5 - Obsolete structu	res design file working unit setting

It is not necessary to update structures files already created with the older settings shown in figure 4 and 5 above. The project should be completed using those settings.

The resolution and working area for a Structures design file differs from a roadway design file.

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### 2.4 Drawing Data Levels

#### A. <u>Standardization of Level Convention</u>

The use and application of the leveling convention defined in this section should be uniformly observed for the following reasons:

1. Work Transfer

To efficiently transfer work between functional units, CADD drawings must conform to a uniform leveling convention. If the same leveling convention is used, considerable time and effort is saved in obtaining the desired information.

2. Multiple-Users

It is not uncommon for more than one person to work on the same drawing file. For the drawing file to be effectively and efficiently used by all, each user must conform to the uniform leveling convention.

3. Drawing Life

At Caltrans, drawings are active for several years or more. Base maps stored as MicroStation dgn files can be quickly used to start a new project or preliminary study. How the data is entered today (i.e., the levels used for storing different data) must be clearly understood for a long period, often after the original users who created the drawings are no longer available. Confusion can be minimized with a uniform leveling convention.

4. Expanding the Caltrans Leveling Convention

The leveling convention that is currently used in Caltrans is referred to as the "Named Levels". This convention supersedes the leveling convention that Caltrans used until recently, referred to as "V8 Standards". The V8 Standards convention will remain the same to support the legacy plans maintained by Caltrans. This also accommodates any files that may be submitted for future PS&E submittals.

The named level DGNLIB files were released in 2017 along with the deployment of Civil 3D 2016. Level numbers were also assigned to the Named Levels. The Named Levels start from level number 1000 to transition the various functional units within Caltrans who had been using the V8 Standards leveling convention. The levels will be referred to by the level name instead of the numbers. Caltrans started implementing named

levels for projects that use survey data delivered to Design groups after December 1, 2017.

The Default Level (Level 0) should not be used to store elements in any Caltrans MicroStation design file.

#### B. <u>Highway/Landscape Leveling Convention</u>

1. Caltrans' general content of Highway/Landscape levels was as follows before implementation of the V8 Standards convention:

Level(s)	Content
Level 1	Control Data
Levels 2-8, 11 & 12	Basic topographic map data
Levels 9 & 10	Sheet formats & Seal Information
Levels 13 – 28, 30	Alignments and Construction Details
Levels 31 - 33	Right of Way data
Levels 29, 34 - 59	Data for specific type of plan sheet
Level 60	Non-geographical drawing data
Levels 61 & 62	HQ & As-Built changes
Level 63	Engineer's Signature

#### Pre-V8

V8 Standards convention added the following levels to the Pre-V8 convention:

### V8 Standards

Level(s)	Content
Levels 64 - 69	No_Plot
Level 70	Plot Shape for IPlot (does not plot)
Levels 71 - 74	Survey Information
Levels 75 - 100	Undefined (non-dropout)
Levels 128 - 137	Right of Way data
Levels 812 - 849	Utilities (line styles) (non-dropout)
Levels 871 - 890	Staging Dropout
Levels 891 - 895	Striping Dropout
Levels 896 - 900	Miscellaneous Dropout
Levels 966 - 999	Additional Staging (non-dropout)

Note 1: The Caltrans V8 Standards convention DGNLIB has various preset level filters. When selecting the Roadway filter, the above V8 Standards expanded levels are displayed in Level Manager or Level Display.

Note 2: For projects using the V8 Standards convention that have a lot of stages for Stage Construction (or sequencing) levels 966 through 999 supplement the Pre-V8 levels of 51 through 56 (for a total of 20 stages).

Work left in place (line work only, not labels, annotation or callouts) from a previous stage is to be dropped out for the next stage(s). Levels 871 through 890 (which will dropout information when printing) were created to facilitate dropping out the completed line work from a previous stage.

For Example:

Level 871 for dropping out Stage 1 Level 872 for dropping out Stage 2 Level 879 for dropping out Stage 9 Level 880 for dropping out Stage 10 Level 881 for dropping out Stage 11 Level 890 for dropping out Stage 20

## Named Levels

Level names used by Highway, Electrical, Hydraulics, Storm Water, Landscape, Traffic and Utilities are made up of three parts, the first part is used to identify the group name and can be also used for level filtering purposes, lower case letters are used for group names. The second part of the level name is prefixed with an underscore character ('\_'), it describes the specific item, task or sheet the level applies to and uses a mix of upper-case and lower-case letters. Upper case letters are used for task names followed by an optional sub-task name in lower case letters; task name and optional subtask names are separated using a hyphen character ('-'). The third part of the level name is prefixed with an underscore character ('\_') and it is used to indicate the level's plot style (plot style uses all upper-case letters or all lowercase letters).

Level name for all levels except (right of way, topo and structures) use one of the styles below:

- 1. groupname\_TASKNAME\_PLOTSTYLE
- 2. groupname\_TASKNAME\_plotstyle
- 3. groupname\_TASKNAME-subtaskname\_plotstyle
- 4. groupname\_TASKNAME-subtaskname\_PLOTSTYLE
- 5. groupname\_plotstyle
- 6. groupname\_PLOTSTYLE

Group Name Designations:

Group Name/Filter	Description
Name	
align	Alignment elements and related information
df	Drainage Facilities and related elements and information
es	Electrical System and related elements and information
esa	Environmentally Sensitive Area and related elements and information
advplan & gis	Advance planning elements and relation information
ls	Landscape item related data
mc	Miscellaneous items (Dikes, Curbs Sidewalks etc.) and
	related elements and information
border	Project plan border related items and information
rd	Roadway item and related information
stage	Stage construction and related elements and information
temp	Temporary item related elements and information
tcd	Traffic control device elements and related information
ut	Utility elements and related information
vis	Visualization related element data and related information
wall	Sound wall and Retaining wall element data and related information
wpc	Water pollution control element and related information
рр	Project plan element and related information including
	annotation, raster related information, change orders, as-
	built, notes, key maps, construction area sign maps, title
	sheet map, masking elements tables, log of test boring etc.

Task name and Plot Style by Group:

Group Name/ Filter Name (Uses lower case letters)	Task name or Sheet (prefixed with an "_") Uses upper case letters except for Right of Way & Topo. Sub Item, Sub task (prefixed with "- ") Uses lower case letters	Plot Style
align	20-SCALE-anno, 100-SCALE-anno, BARRIER, BARRIER-anno, COLLECTOR-RD, COLLECTOR-RD-anno, CULVERT, CULVERT- anno, CURB-FLOW-LINE, CURB-FLOW-LINE- anno, CURVE-DATA, DITCH, DITCH-anno, FRONTAGE, FRONTAGE-anno, LOCAL-ST, LOCAL-ST-anno, MAIN, MAIN-anno, PM-	NO-PLOT, drop

Group Name/	Task name or Sheet	Plot Style
Filter Name	(prefixed with an "_") Uses upper case	-
(Uses lower	letters except for Right of Way & Topo.	
case letters)	Sub Item, Sub task	
	(prefixed with "- ")	
	Uses lower case letters	
	REFERENCE-LINE, PM-REFERENCE-LINE-	
	anno, RAMP, RAMP-anno, ROUNDABOUT,	
	ROUNDABOUT-anno, SECONDARY-HWY,	
	SECONDARY-HWY-anno, TEMP, TEMP-anno,	
	WALL, WALL-anno	
df	BASIN, CULV-ARCH, CULV-BOX, CULV-	NO-PLOT,
	TEMP, DETAIL, DRAIN-EDGE, DRAIN-	drop
	HORIZONTAL, DRAIN-OVERSIDE, DRAIN-	•
	UNDER, FES, FLOW-LINE, HEADWALL,	
	INLET, MISC, PIPE, PIPE-APC, PIPE-BIT-CTD-	
	CSP, PIPE-CSP, PIPE-PP, PIPE-RCP, PIPE-	
	SCSP, PROFILE, QTY-TABLE, SYSTEM-UNIT,	
	WATERSHED	
es	CCTV, CELL, CELL-CONDUIT-RISER, CELL-	NO-PLOT,
	LIGHTING, CELL-MISC-COMPONENTS, CELL-	drop
	NOTE-SYMBOL, CELL-SIGNALS, CMS,	•
	DETAIL, EMS, EVD, EXIST, FLASHING-	
	BEACON, FO, HAR, INTERCONNECTION,	
	LEGEND, LIGHTING, LIGHTING-CITY,	
	LIGHTING-TEMP, MODIFY-CCTV, MODIFY-	
	EMS, MODIFY-EVD, MODIFY-FO, MODIFY-	
	HAR-EMS, MODIFY-RAMP-METERING,	
	MODIFY-RWIS, MODIFY-SIGNAL-LIGHTING,	
	MODIFY-SIGN-ILLUMINATION, QTY-TABLE,	
	RAMP-METERING, REMOVE, RWIS,	
	SERVICE-BOOSTER-PUMP, SERVICE-	
	IRRIGATION. SIGNAL-LIGHTING. SIGNAL-	
	LIGHTING-CITY, SIGN-ILLUMINATION,	
	STAGE-1. STAGE-2. STAGE-3. STAGE-4.	
	STAGE-5, TMS	
esa	AREA, BIOLOGICAL, CULTURAL, HISTORIC,	NO-PLOT,
	PALEONTOLOGICAL	drop
advplan & gis	ALTERNATIVE-1, ALTERNATIVE-2,	NO-PLOT
	ALTERNATIVE-3, ENV-STUDIES, SHAPE-	
	FILES	
ls	AREA, AREA- CULTIVATION, AREA-EC,	NO-PLOT,
	AREA-EC-DRILL-SEED, AREAS-EC-DRY-	drop
	SEED. AREA-EC-ROLLED-PRODUCT, AREA-	•
	HARDSCAPE, AREA-MULCH, AREA-	
	ROADSIDE-CLEARING, CONDUCTOR,	

Group Name/	Task name or Sheet	Plot Style
Filter Name	(prefixed with an "_") Uses upper case	_
(Uses lower	letters except for Right of Way & Topo.	
case letters)	Sub Item, Sub task	
	(prefixed with "- ")	
	Uses lower case letters	
	CONDUIT,CONDUIT-EXIST, CONTROLLER,	
	CONTROLLER-EXIST, DETAIL, DLOW-	
	SENSOR-CABLE, KEYMAP, MISC, MISC-	
	CELL, PLANT, PLANT-AREA, PLANT-	
	CUTTING, PLANT-GROUNDCOVER, PLANT-	
	LINER, PLANT-SHRUB, PLANT-TREE, POINT-	
	FEATURE, QTY-TABLE, SCHEDULE-LEGEND,	
	SPRINKLER, SPRINKLER-EXIST, SUPPLY-	
	LINE, SUPPLY-LINE-BRIDGE, SUPPLY-LINE-	
	CLASS315, SUPPLY-LINE-COPPER, SUPPLY-	
	LINE-EXIST, SUPPLY-LINE-GSP, SUPPLY-	
	LINE-LATERAL, SUPPLY-MAIN, SUPPLY-	
	LINE-SCH4U, SUPPLY-LINE-TUBING, VALVE,	
me	DDIVEWAY FENCE FENCE DW FENCE CI	NO-PLOT, drop
	EENICE TEMD EENICE WM ISLAND MISC	urop
	SIDEWALK SLOPE-PROTECTION	
border	CLIP-FRAME CLIP-FRAME-20SCALE CLIP-	
border	FRAME-100SCALE DATUM-LINE GRID-	drop
	MAJOR GRID-MINOR INSIDE-BORDER	urop
	PLOTTING-ELEMENTS, PROJ-ID-BLOCK.	
	SEAL. SHEET. SIGNATURE. WITHIN-	
	BORDER, ADDENDUM, AERIAL-	
	IDENTIFICATION, ARCHIVE, AS-AWARDED,	
	AS-BUILT, CAS,CA-TABLE, CO, KEY-MAP-	
	LINE-INDEX, LEGEND, LOTB, MASKING,	
	MISC, MOTORIST-INFO, PRESENTATION,	
	PROJECT-CONTROL, PROJECT-CONTROL-	
	MAP, RASTER, TITLE-LOC-TABLE, TITLE-	
	SHEET, TITLE-SHEET-MAP	
rd	BACKFILL-STRUCTURE, BASE-MATERIAL,	NO-PLOT,
	CONST-DETAIL, CONTOUR, CONTOUR-	drop
	MAJOR, CONTOUR-MINOR, DESIGN-X-	
	SECTION, EARTHWORK, EMBANKMENT-	
	ROADWAY, EP, ES, ETW, EXCAVATION-	
	DITCH, EXCAVATION-ROADWAY,	
	EXCAVATION-ROCK, EXCAVATION-	

Group Name/	Task name or Sheet	Plot Style
Filter Name	(prefixed with an "_") Uses upper case	_
(Uses lower	letters except for Right of Way & Topo.	
case letters)	Sub Item, Sub task	
	(prefixed with "- ")	
	Uses lower case letters	
	STRUCTURE, FINISH-GRADE, FINISH-	
	GRADE-BREAKLINE, FINISH-GRADE-POINT,	
	HMA-DIKE, HMA-DIKE-TYPE-A, HMA-DIKE-	
	TYPE-C, HMA-DIKE-TYPE-D, HMA-DIKE-	
	TYPE-E, HMA-DIKE-TYPE-F, LAYOUT-NOTE,	
	MISC, PAVEMENT, PAVEMENT-STRUCTURE,	
	PROFILE-BARRIER, PROFILE-FINISH,	
	PROFILE-OG, PROFILE-WALL, QTY-TABLE,	
	RIGHT-OF-WAY, RIGHT-OF-WAY-TCE,	
	SLOPE, SUBBASE-MATERIAL,	
	SUPERELEVATION, SURFACE-BOUNDARY,	
	SURFACE-REMOVAL-AC, SURFACE-	
	REMOVAL-CONC, TRIANGLE, TYP-X-	
	SECTION, TORUS-anno, TRDESIGNSYMBOL,	
	TRFASTESTPATH, TRGRADING, TSTORUS	
рр	CAS-TABLE, TITLE-LOC-TABLE, MASKING,	NO-PLOT
	IIILE-SHEET-MAP, IIILE-SHEET-anno, CAS,	
	CAS-anno, KEY-MAP-LINE-INDEX, KEY-MAP-	
	LINE-INDEX-anno, LOTB, LOTB-anno, AERIAL-	
	IDENTIFICATION, AERIAL-IDENTIFICATION-	
	CONTROL-anno, MOTORIST-INFO,	
	PRESENTATION, AS-AWARDED, ARCHIVE,	
	KASTER, AS-DUILT, CO, ADDENDUM,	
ataga		
slage	1, 2, 3, 4, 5, 6, 7, 6, 9, 10	NO-PLOT,
temn		
temp	anno TRAFFIC-CONFS TRAFFIC-DRUMS	
	PORTABLE-DELINEATORS CHANNELIZERS	
	BARRICADES RAILING-TYPE-K CRASH-	
	CUSHION PVMT-DELINEATION FLASHING-	
	ARROW-SIGN FLASHING-BEACON	
	PORTABLE-CMS_SIGNAL-SYSTEMS	
	SIGNAL-SYSTEMS-anno, HIGH-VISIBII ITY-	
	FENCE, HIGH-VISIBILITY-FENCE-anno.	
	CONSTRUCTION, CONSTRUCTION-anno.	
	FACILITIES	
tcd	BARRIER-CONC, BARRIER-CONC-anno.	NO-PLOT

Group Name/	Task name or Sheet	Plot Style
Filter Name	(prefixed with an "_") Uses upper case	
(Uses lower	letters except for Right of Way & Topo.	
case letters)	Sub Item, Sub task	
	(prefixed with "- ")	
	Uses lower case letters	
	BARRIER-CONC-TYPE-25, BARRIER-CONC-	
	TYPE-26, BARRIER-CONC-TYPE-27MOD,	
	BARRIER-CONC-TYPE-50, BARRIER-CONC-	
	TYPE-60, BARRIER-CONC-TYPE-60-	
	PORTABLE, BARRIER-CONC-TYPE-732,	
	BARRIER-CONC-TYPE-736, BARRIER-CONC-	
	TYPE-742, BARRIER-CONC-TYPE-80,	
	BARRIER-CONC-TYPE-90, BARRIER-CONC-	
	TYPE-K, BARRIER-THRIE-BEAM, BARRIER-	
	THRIE-BEAM-anno, BARRIER-THRIE-BEAM-	
	EXIST, CMS, CRASH-CUSHION, CRASH-	
	CUSHION-anno, DELINEATOR, DOUBLE-	
	RAIL, GSBWFILL, GSCOLORFILL, GSDIMS,	
	GSOUTLINE, MARKER, MARKER-anno, PD-	
	QIY-IABLE, PVMI-MARKER, PVMI-	
	MARKER-anno, PVMT-MARKING, PVMT-	
	MARKING-anno, RAILING, RAILING-anno,	
	RAILING-BR-ST10, RAILING-BR-ST20S,	
	RAILING-BR-ST30, RAILING-BR-ST40,	
	KAILING-BR-ST70, KAILING-CABLE, KAILING-	
	EXIST, RAILING-MGS, RUMBLE-STRIP,	
	RUMBLE-STRIP-ANINO, SIGN-OVERHEAD,	
	SIGN-OVERHEAD-ANNO, SIGN-PANEL, SIGN-	
	PANEL-AIIIO, SIGN-QIT-TABLE, SIGN-	
	STDIDE TDAEEIC STDIDE appo	
ut		
u	ELECT-ADN, ELECT-ON-F, ELECT-ON-A,	
	FIBEROPT-ARN FIBEROPT-OH-P	
	FIBEROPT-OH-X FIBEROPT-P FIBEROPT-X	
	GAS-ABN GAS-P GAS-X IRR-C-ABN IRR-C-	
	X JOINT-OH-P JOINT-OH-X JOINT-TRENCH-	
	P. JOINT-TRENCH-X. MISC. NATGAS-ABN.	
	NATGAS-P, NATGAS-X, OIL-ABN, OIL-P. OIL-	
	X, RCWATER-ABN, RCWATER-X, RCWATER-	
	P, SEWER-ABN, SEWER-X, SEWER-P,	
	STORMD-ABN, STORMD-X, STORMD-P,	
	TELECOM-ABN, TELECOM-P, TELECOM-X,	
	TELEPH-ABN, TELEPH-X. TELEPH-P, TEST-	
	HOLE, TV-ABN, TV-OH-P, TV-OH-X, TV-P, TV-	

Group Name/	Task name or Sheet	Plot Style
Filter Name	(prefixed with an "_") Uses upper case	-
(Uses lower	letters except for Right of Way & Topo.	
case letters)	Sub Item, Sub task	
	(prefixed with "- ")	
	Uses lower case letters	
	X, UTILITY-anno, VARIOUS-POINT-	
	FEATURES, WATER-ABN, WATER-P,	
	WATER-X, DEFAULT, FEATURE-OUTLINE-	
	CABINET, FEATURE-OUTLINE-PULLBOX,	
	FEATURE-OUTLINE-PUMP, FEATURE-	
	OUTLINE-VAULT, FEATURE-OUTLINE-	
	OTHER, TRAFFIC-CONTROL-ABN, TRAFFIC-	
	CONTROL-P, TRAFFIC-CONTROL-X,	
	POSITIVELOCATION-MISC-X, ITS-X	
vis	BRIDGE, BUILDING, CAR, GRASS, LINEAR-	NO-PLOT
	FEATURE, MAN-MADE-OBJ, MATERIAL,	
	NATURAL-OBJ, PLANT, POINT-FEATURE,	
	SKY, SURFACE, TIME-LAPSE, TREE	
wall	SW-ELEVATION, SW-ELEVATION-anno, SW-	NO-PLOT,
	TYPICAL-SECTION, SW-TYPICAL-SECTION-	drop
	anno, SW-ARCH-TREATMENT, SW-ARCH-	
	TREATMENT-anno, SW-DETAIL, SW-DETAIL-	
	anno, SW-QTY, SW-LOTB, SW-LOTB-anno,	
	RW-ELEVATION, RW-ELEVATION-anno, RW-	
	TYPICAL-SECTION, RW-TYPICAL-SECTION-	
	anno, RW-ARCH-TREATMENT, RW-ARCH-	
	TREATMENT-anno, RW-DETAIL, RW-DETAIL-	
	anno, RW-QTY, RW-LOTB, RW-LOTB-anno,	
	SYMBOLOGY	
wpc	COMPOST-BERM, COMPOST-SOCK, FIBER-	NO-PLOT
	ROLL, FIBER-ROLL-anno, TEMP-anno, TEMP-	
	DITCH-SWALE, TEMP-EARTH-BERM, TEMP-	
	FIBER-ROLL, IEMP-GRAVEL-BAG, TEMP-	
	SILI-FENCE, IEMP-SLOPE-DRAIN, TEMP-	
	STRAW-BALE, TREATMENT, TREATMENT-	
	anno, SOIL-STABILIZATION, TEMP-POINT-	
	Feature	

# Named Levels - Right of Way and Topo

The named level convention used to represent Right of Way and Topographic data is made up of five parts. The first part consists of discipline the data is associated to and the quality of the topographic data. The second part of the name is prefixed with an underscore symbol ('\_') with the optional object type information. The third part of the name is prefixed with an underscore symbol ('\_')

with optional data grouping information. The fourth part of the name is prefixed with an underscore symbol ('\_') with optional information about data details. The fifth part of the name is prefixed with an underscore symbol ('\_') with optional plot style information.

The level names for Right of Way and Topo levels use the following general style:

# Discipline & Quality\_Object Type\_Data Group\_Data Details\_Plotting Style

Discipline	Description
& Quality	
rw	Right of Way (R/W) and Survey mapping specific features
rw_topo	Features common to R/W and topographic templates
topo	Topographic specific features
topo_al	Aerial LiDAR quality topographic data
topo_ml	Mobile Terrestrial Laser Scanned (MTLS) quality topographic
	data
topo_ph	Photogrammetric quality topographic data
topo_su	Survey quality topographic data

Discipline & Quality Designations:

Object Type Designations:

Designation	Object Type Description
align	Alignment related data
anno	Annotation related data
border	Border related data
dtm	Digital Terrain Model (DTM) surface data
parcel	Parcel related data
profile	Line work related to profile data
section	Cross section data

Data Grouping Data Designation and Detail abbreviations:

Data Grouping	Description
appr	Appurtenance
bndy	Boundary
Brk	Breakline
Cont	Surface contour
Ctrl	Control related features include project control, found
	monuments & R/W, and directional information.
deck	Bridge deck surface
df	Drainage facility

Data Grouping	Description		
EASE	Easement		
FD	Found Point		
gnv	Ground Not Visible		
proposed	Proposed Conditions		
hydro	Topographic hydrographic features include natural and open & closed manmade drainage facilities including banks, canals, catch basins, cleanouts, culverts, ditches, drainage inlets, headwalls, lakes, pools, rivers, streams, lakes, drainage vents, and weirs		
LANDNET	Landnet boundaries and elements of ownership		
LINE_PTS	Points associated to survey data linework		
Itg	Lighting		
MARKER	Pavement and utility markers		
MARKING	Pavement markings include arrows, lane lines, stripes and other pavement markings		
map	Map sheet specific data		
MISC	Miscellaneous		
rdbed	Topographic roadbed features in that portion of the roadway extending from curb line to curb line or shoulder line to shoulder line. Note, divided highways are considered to have two roadbeds. Roadbed features include cattle guards, curbs & dikes along the road, roadbed breaks & edges, and valley gutters. Many of these features can be coded for ground surface or bridge deck surface areas Topographic roadside features lie in the area adjoining the outer edge of the roadbed extending outside of the right of way line when necessary. Extensive areas between the roadbeds of a divided highway may also be considered roadside. Roadside features include bollards, driveways, flag poles, fences & gates, mailboxes, breaks & edges in original ground and paved areas, parking lots, railroad features, sidewalks both on ground surface and bridge deck surface areas, tanks, trails, etc.		
RW	Right of Way boundary		
spot	Spot Elevation		
study	Lower accuracy study quality data including unregistered point clouds for MTLS data and +/- 2.5 feet for aerial LiDAR & photogrammetric data.		
STR	Structure		
str	The topographic structures grouping is subdivided into three groups to assist with 3D surface creation: ground, bridge deck, and bridge surface. Ground features include bridge abutments & wingwalls.		

Data Grouping	Description		
	bridge bents, footings of columns & piers, buildings,		
	Bridge deck features include bridge rails, paving notches, and other features on the bridge deck. Many of the roadbed features can be coded for bridge deck surface areas including asphalt, concrete and curb features.		
	Bridge surface features include faces of columns & piers, girders, soffits, and other features on the underside of the bridge surface		
underside	The underside area of a bridge		
tcd	Topographic traffic control devices include barriers, crash cushions, guide post & pavement markers, signs, and pavement marking		
ut	Topographic utility features include call boxes, fire hydrants, hosebibs, lighting, manholes, overhead & underground facilities, poles, pull boxes, pumps, sprinklers, standpipes, RR & traffic signals, transmission towers, valves, vaults, gas & sewer vents, and wells		
veg	Topographic vegetation features including brush, orchards, trees, and vineyards.		

Plot Style Designations:

Plot Style	Description	
_dither or _drop	Information on these levels will be dropped when plotting	
Info_only	Data on these levels will be for information only and will not be plotted.	
No_plot	Plot attributes for these levels are disabled.	

Discipline & Quality wise breakdown of Object Type, Data Group, Data Details and Plotting Styles used by Right of Way and Topo levels is presented in the following table:

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style
	anno	no_plot
border	SEAL, rw_22x34, rw_22x34_Cut_Lines, rw_22x36, rw_22x36_Cut_Lines, rw_anno_filename, SEAL, WITHIN- Border_anno topo_GridTicks, topo_ph_ctrl	info_only
rw_EASE	EXIST, EXIST_align, EXIST_anno, EXIST_point, EXIST_point_anno, EXIST_Public_Utility, EXIST_Public_Utility_align, EXIST_Title_Encumbrance, PROPOSED, PROPOSED_align, PROPOSED_anno, PROPOSED_Drainage, PROPOSED_Drainage, PROPOSED_point, PROPOSED_point_anno, PROPOSED_Slope, PROPOSED_TEMP, PROPOSED_Slope, PROPOSED_TEMP, PROPOSED_TEMP_anno, PROPOSED_TEMP_Construction, PROPOSED_TEMP_Drainage, PROPOSED_TEMP_Slope	
rw_LANDNET	anno, Fed_Part, Govt_Lot_Sub_Section, Interior_Lot, Parcels_Ownership, point, point_anno, Public_Boundary, Qtr_Section_Tract, Section_Rancho, Subdiv_Boundary, Town_Range	
rw_map	anno, anno_Appraisal_Map, anno_Detail, anno_Detail_Outline_Dashed, anno_Detail_Outline_Solid, anno_even_sheet, anno_odd_sheet, anno_Record_Map, anno_ROS, anno_Vestee_Block, Appraisal_Map, Record_Map, ROS	
rw_MISC	Abandonment, anno, CCUA, CCUA_align, FLA, JUA, JUA_align, point, point_anno, Supplemental_Reference, Vacation	

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style
-	anno, anno_Annotation_Area_no_plot,	
	anno_Easement_Area_no_plot,	
	anno_Existing_Area_no_plot,	
	anno_Proposed_Area_no_plot, COLOR,	
	COLOR_Aqua,	
	COLOR_Aqua_Easement_UF,	
	COLOR_Aqua_Remainder,	
	COLOR_Blue,	
	COLOR_Blue_Easement_UF,	
	COLOR_Blue_Light	
	COLOR_Blue_Light_Barginder	
	COLOR_Dide_Light_Remainder,	
	COLOR_BIDE_Remainder,	
	COLOR Brown Easement LIE	
	COLOR Brown Remainder	
	COLOR Excess COLOR Green	
	COLOR Green Fasement UF	
	COLOR Green Light	
	COLOR Green Light Easement UF.	
	COLOR Green Light Remainder,	
	COLOR Green Remainder,	
rw_parcei	COLOR Lavender,	
	COLOR_Lavender_Easement_UF,	
	COLOR_Lavender_Light,	
	COLOR_Lavender_Light_Easement_UF,	
	COLOR_Lavender_Light_Remainder,	
	COLOR_Lavender_Remainder,	
	COLOR_Orange,	
	COLOR_Orange_Easement_UF,	
	COLOR_Orange_Light,	
	COLOR_Orange_Light_Easement_UF,	
	COLOR_Orange_Light_Remainder,	
	COLOR_Orange_Remainder,	
	COLOR_PINK,	
	COLOR_PINK_Easement_OF,	
	COLOR_FILIK_LIGHT Essement LIE	
	COLOR_FINK_LIGHT_EaseInent_OF,	
	COLOR Pink Remainder COLOR Tan	
	COLOR Tan Easement UF	
	COLOR Tan Remainder Fasement	
	Parcels, Existing Parcels, Parcel	
	Annotation, PATTERN Directors Deed.	

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style
	PATTERN_Relinquishment, Proposed Parcels, SEGMENT, SEGMENT_anno, SEGMENT_Easement Parcels, SEGMENT_Existing Parcels, SEGMENT_Parcel Annotation, SEGMENT_Proposed Parcels	
rw_retracement	anno	
rw_RW	EXIST, EXIST_Access_Left, EXIST_Access_Left_Ticks, EXIST_Access_Left_Ticks_Detail-5, EXIST_Access_Left_Ticks_Detail-20, EXIST_Access_Left_Ticks_Detail-30, EXIST_Access_Left_Ticks_Detail-30, EXIST_Access_Left_Ticks_Detail-40, EXIST_Access_Left_Ticks_Detail-40, EXIST_Access_Right, EXIST_Access_Right_Ticks, EXIST_Access_Right_Ticks_Detail-5, EXIST_Access_Right_Ticks_Detail-10, EXIST_Access_Right_Ticks_Detail-10, EXIST_Access_Right_Ticks_Detail-20, EXIST_Access_Right_Ticks_Detail-30, EXIST_Access_Right_Ticks_Detail-30, EXIST_Access_Right_Ticks_Detail-30, EXIST_Access_Right_Ticks_Detail-40, EXIST_Access_Right_Ticks_Detail-40, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Access_Right_Ticks_Other, EXIST_Point, EXIST_Conventional, EXIST_Point_anno_no_plot, EXIST_Point_no_plot, EXIST_Previous, EXIST_Relinquished_Access_Left, EXIST_Relinquished_Access_Left, EXIST_Superceded, EXIST_Superceded_Access_Right, EXIST_Superceded_Access_Right, EXIST_Superceded_Access_Left, EXIST_Superceded_Access_Left, PROPOSED_Access_Left_Ticks, PROPOSED_Access_Left_Ticks_Detail-5, PROPOSED_Access_Left_Ticks_Detail-5, PROPOSED_Access_Left_Ticks_Detail-10,	

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style
	PROPOSED_Access_Left_Ticks_Detail-	
	20,	
	PROPOSED_Access_Left_Ticks_Detail-	
	30,	
	PROPOSED_Access_Left_Ticks_Detail-	
	40, DDODOOED Assess Left Tisks Other	
	PROPOSED_Access_Left_licks_Other,	
	PROPOSED_Access_Right_Ticks	
	PROPOSED Access Right Ticks, Detail-	
	5.	
	PROPOSED Access Right Ticks Detail-	
	10,	
	PROPOSED_Access_Right_Ticks_Detail-	
	PROPOSED Access Right Ticks Detail-	
	30,	
	PROPOSED_Access_Right_Ticks_Detail-	
	PROPOSED_Access_Right_Licks_Other,	
	PROPOSED_anno, PROPOSED_Conventional	
	PROPOSED_conventional,	
	PROPOSED point anno	
	anno, anno TABLE, Images, Notes,	
	point, point anno,	
rw topo	point_NON_STANDARD,	
	Reference_Files, Wipeout_Areas	
	Calcs, Calcs_anno	no_plot
	cont_anno, cont_anno_deck, cont_index,	
	cont_index_deck, cont_inter,	drop
topo_dtm	cont_inter_deck, pt, tri	
		info_only
	anno, bndy, bndy_deck	info_only
topo profile		
topo_promo	anno	
topo section		
	anno	
bndy	anno, void	drop
bildy	gnv, map_lmt, ortho	info_only
topo_al, ph	data	info_only
topo al, ph	MISC check, MISC one, MISC two	no plot

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style
topo_su	LINE_PTS	info_only
ctrl	LNWK, point_AS_STAKED, point_FD, point_FD_anno, point_MON, point_MON_anno DIRECTION, LINE_PTS point_FD, point_FD_anno	info_only no plot
dtm	anno, brk_gnv, brk_spot_anno, brk_spot_anno_deck, brk_spot_anno_subterranean, brk_spot_anno_underside, brk_spot, brk_spot_deck, brk_spot_subterranean, brk_spot_underside, cont_index_anno, cont_index, cont_index_deck, cont_inter, cont_inter_deck	info_only
hydro	anno, df_CULV, df_CULV_FL, df_MISC, df_MISC_CLO, df_OPEN, df_STR_deck, df_STR, FL, MISC, WATER, WATER_HWAT	drop
	anno, LINE_PTS	info_only
rdbed	anno, AC, AC_deck, CONC, CONC_deck, CURB, CURB_deck, DIKE, DIKE_deck, DIRT, DIRT_deck, FL, FL_deck, MISC, MISC_deck, ROCK	drop
	anno, LINE_PTS	info_only
rdside	anno, AC, AC_deck, CONC, CONC_deck, CURB, CURB_deck, DIKE, DIKE_deck, DIRT, DIRT_deck, FENCE, FENCE_deck, FENCE_POST, FL, FL_deck, MISC, MISC_BOLLARD, MISC_deck, MISC_DWS, MISC_FP, ROCK, RR, RR_APPR, RR_deck, RR_POST, SLIDE, SW, SW_deck	drop
	anno, anno_deck, LINE_PTS	info_only
str	anno, anno_deck, ABUTWW, BLDG, BLDG_deck, BRDG_RAIL_deck, COL, GIRDER, MISC, MISC_deck, MISC_underside, PN_deck, SUBTERR, WALL, WALL_deck	drop
	anno, anno_deck, anno_subterranean, anno_underside, LINE_PTS, LINE_PTS_deck, LINE_PTS_subterranean, LINE_PTS_underside	info_only

Discipline & Quality	Object Type_Data Group_Data Details	Plot Style		
	anno	drop		
study	brk_gnv, brk_spot, brk_spot_deck, brk_spot_underside, hydro, water	info_only		
tcd	anno, BARRIER, BARRIER_deck, MARKER, MARKER_deck, MARKER_GUIDE, MARKING, MARKING_deck, MARKING_LL, MARKING_LL_deck, MISC, MISC_CC, MISC_deck, SIGN	drop		
	anno, anno_deck, LINE_PTS	info_only		
ut	APPR, APPR_SPR, CAB, CABLE, COND, LTG, MARKER, METER, MH, MISC, OH, PB, POLE, UG, VALVE, VAULT			
	anno, APPR, LTG, MISC, POLE	drop		
	anno, LINE_PTS	info_only		
Nog	anno, MISC, TREE	drop		
veg	anno, LINE_PTS	info_only		
topo	TopoDOT_Data_Tiles, TopoDOT_PT_Blue, TopoDOT_PT_Green, TopoDOT_PT_Orange, TopoDOT_PT_Red, TopoDOT_PT_Teal, TopoDOT_PT_Yellow, TopoDOT_Scan_Postions, TopoDOT_SurveyPT, TopoDOT_TEMP	info_only		
topo al, ml	POINT CLOUD			

## Named Levels – Structures

The named level convention used to represent Structures data is made up of four parts. The first part is used for group name and can be used for level filtering purposes, lower case letters are used for group names. The second part of the level name is prefixed with an underscore character ('\_'), it describes the specific item, task or sheet the level pertains to and uses title case for task name. Task name is followed by an optional sub-task name using the title case; task name and optional subtask names are separated using a hyphen character ('-'). The optional third part of the level name is prefixed with a hyphen character ('-') and it is used to indicate the level's plot designation using all lower-case letters or title case letters. The optional fourth part of the level name describes the data designation of the elements in the level. A single uppercase letter prefixed with a hyphen character ('-') is used

as data designation for the level. This uppercase letter is used for separation or grouping of elements having similar properties in the same level.

Level names for structures uses one of the following styles:

- 1. groupname\_Taskname-Subtaskname-plotdesignation-DATADESIGNATION
- 2. groupname\_Taskname-Subtaskname-PlotDesignation-DATADESIGNATION

Group Name Designations:

Group Name/Filter Name	Description
str	Structural elements and related information

Task name and Plot Style:

Named Level convention drops out or does not print the information as follows:

Level Name	Content
*_*_drop, *_*dropout	Dropout
*_*_dither (see Note below table)	Dropout
*_*_no_plot, *_*_noplot, *_*_NoPlot	Does not print
*_*_info_only	Does not print

Note: Level names ending with "\_dither" are being replaced with level names ending with "\_drop" in the latest dgnlib files. Support for level names ending with "\_dither" will still be available when plotting.

2. Summary of Highway/Landscape levels is as follows:

Level	Content
1	Control (Includes Survey Monuments)
2	Existing Manmade Features
3	Existing Roadway Features
4	Existing Vegetation and Natural Features
5	Existing Utilities and Utility Facilities
6	Existing Hydrographic Features
7	Relief Features - Contours
8	Spot Elevations and Contour Annotations
9	Profile Grid
10	Border Sheets & Seal Information
11	Break Line, Terrain Features for 3D & Profile Grid
12	Coordinate Grid Ticks and Labels and Construction
	Staking Survey Control Data
13	Ramp, Over and Under Crossing Alignment Data
14	Ramp, Over and Under Crossing Annotation
15	Mainline Alignment Data
16	Mainline Alignment Annotation
17	Frontage Road Alignment Data
18	Frontage Road Alignment Annotation
19	Undefined
20	Pavement Edges
21	Curbs, Gutters, Dikes, Overside & Edge drains
22	Miscellaneous Construction Features
23	Layout Notes
24	Obliteration, AC Resurfacing & Cold Planing
25	Temporary Road Connections and Alignments, also for
	Railroad, Bike & Pedestrian Paths & Creek Alignments

### <u>Pre-V8</u>

Level	Content			
26	Undefined			
27	Undefined			
28	Undefined			
29	Existing Irrigation - Includes Annotation			
30	Cut and Fill Data			
31	Existing Right of Way Boundaries			
32	New Right of Way, Fences & ESA's			
33	Right of Way Text & Annotation			
34	Temporary Water Pollution Control			
35	Permanent Erosion Control			
36	Drainage			
37	Drainage Annotation			
38	Sanitary Sewer			
39	Sanitary Sewer Annotation			
40	New Utilities - Includes Annotation			
41	Contour Grading			
42	Pavement Elevations			
43	Pavement Markers and Striping			
44	Pavement Markers and Striping Annotation			
45	Signing			
46	Construction Area Signing			
47	Electrical			
48	Electrical Annotation			
49	Planting and Landscaping			
50	New Irrigation - Includes Annotation			
51	Stage 1 Construction and Temporary Traffic Facilities			
52	Stage 1 Construction and Temporary Traffic Facilities			
53	Stage 2 Construction and Temporary Traffic Facilities			
54	Stage 2 Construction and Temporary Traffic Facilities			
	Annotation			
55	Stage 3 Construction and Temporary Traffic Facilities			
56	Stage 3 Construction and Temporary Traffic Facilities			
	Annotation			
57	Undefined			
58	Sound Walls & Retaining Walls			
59	Sound Walls & Retaining Walls Annotation			
60*	Non-geographical Drawing Data*			
61	Headquarters Changes			
62	As-Built Changes			
63	Engineer's Signature			

(\*) in a Pre-V8 MicroStation design file, Key Map; Title Sheet; Profiles; Typical Cross Sections; Superelevation Diagrams, Construction Details

and Quantity of Summaries should reside on Level 60. Using Level 60 for multiple purposes works because each type of sheet is a separate DGN file. When creating additional base maps (e.g., for Stage Construction) in a Pre-V8 MicroStation design file, level 11 (which is a drop out level) can be used to move or copy the proposed line work from the previous stage to. This would facilitate showing already constructed design information as dropped out for a later stage within the constructing or sequencing of a project. In a dgn file using the "V8 Standards" convention, information may be separated, if desired, and placed on any of the undefined levels between 75 and 100 when working with only one model. Undefined levels may be used for information that has not been assigned to a specific level. Levels 896 through 900 have been set aside as Undefined (miscellaneous) dropout levels for roadway projects. In a dgn file using the "V8 Standards" convention, levels 871 to 890 have been set aside to facilitate the dropping out of the line work from previous stages when working with only one model.

Levels for Highway projects using the V8 Standards convention are as follows:

Level(s)	Content		
64 - 69	Information on these levels will not plot		
70	Plot shape for lplot – will not plot		
71-74	Additional Survey information for Roadway Design		
75-100	Undefined Roadway levels when using one Model		
128	Existing Easement line work		
129	Existing Easement annotation		
130	Existing R/W annotation		
131	Existing R/W line work		
132	New R/W line work		
133	New R/W annotation		
134	New Easement line work		
135	New Easement annotation		
136	Temporary Easement line work		
137	Temporary Easement annotation		
812-849	Utilities - each level is a unique Caltrans custom line style		
871-890	For dropping out line work from previous stage		
891-895	For dropping out design info on striping sheets		
896-900	Miscellaneous dropout		
966-999	For Stage Construction – stages 4 through 20		

# V8 Standards

Levels for Highway projects using the Named Levels convention are as follows:

## Named Levels

Level Names	Content	
*_no_plot, *_info_only	Information on these levels will not print/plot	
align_*	Levels used for storing alignment data	
df_*	Levels used for storing drainage work	
es_*	Levels used for storing electrical work	
esa_	Levels used for storing information about	
_	environmentally sensitive areas	
adv_*, gis_*	Levels used for storing advance planning	
	information and GIS shape file data.	
ls_*	Levels used for storing Landscape data	
mc_*	Levels used for storing data for	
	miscellaneous construction item work.	
border_*, pp_*	Levels used for storing sheet elements,	
	project control, locations of construction, title	
	sheet, title sheet data, raster data, motorist	
	information, construction area signs, As-built	
	data, addendum data, license seal &	
	signature, grid line and clip frame	
	information.	
_rd_*	Levels used for storing roadway data	
_rw_*	Levels used for storing right of way data	
topo_*	Levels used for storing survey data, survey	
	baselines, project control monument, aerial &	
	mobile Lidar, Photo data, Bathymetry and	
	DTM surface related information	
stage_*	Levels used for storing stage construction	
	information	
temp_*	Levels used for storing information about	
	temporary items of work	
tcd_*	Levels used to store traffic control device	
	data including signs and striping	
_ut_*	Levels used for storing utility data	
vis_*	Levels used for storing visualization	
	information	
wall_*	Levels used for storing retaining wall	
	information	
wpc_*	Levels used for storing information about	
	temporary and permanent water pollution	
	control item work	

3. For projects using Pre-V8 and V8 Standards convention, the following table identifies the levels, their associated color and the specific information belonging on each level for Highway/Landscape Construction projects.

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
1	Violet/5	Control	All photo control data, and topographic map survey information. Also includes district- added control information.
2	Yellow/4	Existing Manmade Features	All existing man-made features not otherwise included in any other level, includes all buildings.
3	Yellow/4	Existing Roadway Features	Edges of existing surfaced areas accessible to vehicles, bicycles or pedestrians within the Existing Roadway limits. Examples of Roadway Features are traveled way, edge of pavement lane striping and dikes. The limits of the Existing Roadway are the outside edges of the existing surfaced shoulders, curbs or dikes. Roadway includes all public highways, streets, surfaced and unsurfaced roads, and railroads if the railroads are being improved as part of the project. Roadway does NOT include private roads such as driveways, ranch roads, parking lot streets and roads and streets within large commercial establishments. Railroads (not to be improved), private roads, guard railing, median barriers, right of way fences, existing sidewalks contiguous to the outside curbs are to be placed on Level 2.
4	Green/2	Existing Vegetation and Natural Features	All natural vegetation, existing highway plantings, orchards, vineyards, marshes, and miscellaneous natural features such as rock outcrops, slides, etc.
5	Orange/ 6 (Note 1)	Existing Utilities and Utility Features	All existing underground and aboveground utility-type facilities (including signals, power and telephone poles and transmission poles for utility, railroad, highway, street, and private improvements.) All existing drainage structures including culverts and headwalls, excluding substantial structures such as buildings. Also, includes district-added underground utilities.
6	Blue/1	Existing Hydro- graphic Features	All lakes, rivers, streams, natural channels, swamps, and standing water.

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
7	Brown/7	Relief Features Contour Lines Only	Contours (lines only) of the original terrain.
8	Brown/7	Spot Elevations and Contour Elevation Annotation	Spot elevations and contour elevation annotation.
9	Red/3	Profile Grid	Dropout grid for full profile and combination plan and profile standard sheets (red grid lines).
10	White/0	Border Sheets	Standard Border Sheets, Project Engineer's seal information, printed names of engineers, District-County-Route-Post Mile block, plan sheet name, match lines & north arrow (information associated with the border).
11	White/0 & Green/2	Terrain features for dtm, profile grid and dropout level for base maps	Terrain features that define the ground surface for a 3D digital terrain model. Green grid lines for profile sheets. Can be used for dropping out information on non-dropout levels for possible additional base maps.
12	Violet/5	Coordinate Grid	Coordinate grid ticks and labels. Construction Staking Survey Control Data.
13	White/0	Ramp, Over & Under Crossing Alignment	Ramp, Over Crossing & Under Crossing alignment(s), includes station line and tick marks.
14	White/0	Ramp, Over & Under Crossing Annotation	Ramp, Over & Under Crossing annotation, includes Route designation, alignment bearing and station number.
15	White/0	Mainline Alignment	Mainline Alignment(s) for the main roadways, includes station line, station number and tick marks.
16	White/0	Mainline Alignment Annotation	Mainline Alignment Annotation, includes Route designation, alignment bearing.
17	White/0	Frontage Road Alignment	Frontage Road Alignment(s), includes station line, station number and tick marks.
18	White/0	Frontage Road Alignment Annotation	Frontage Road Annotation, includes Route designation, alignment bearing.
19	White/0	Undefined	
20	White/0	Pavement Edges	All lines necessary to depict the edges of pavement to be constructed, including traveled

LEVEL NO.	COLOR/ NAME &	TITLE	DESCRIPTION/CONTENT
	NUMBER		
			way, shoulders, road approaches and driveways.
21	White/0	Curbs, Gutters, Dikes and	All drawing information required to depict curbs, gutters, dikes, overside & edge drains,
22	White/0	Miscellaneous Construction Features	All drawing information required to depict the construction shown on the layout plan, not specifically on other levels; e.g., new railings & barriers, crash cushions, sidewalks, bridge structures, miscellaneous paved areas.
23	White/0	Layout Notes	All notes, dimensions, and labeling required to describe the construction shown on the layout plan sheets, (except annotation specifically included on other levels) includes related lines and symbols such as leader lines, arrows, arrowheads, curve table, and legend.
24	Red/3	Obliteration and AC Resurfacing	All drawing information required to depict planing, grinding, obliterating and resurfacing of roadways.
25	Red/3	Temporary Road Connections and Alignments	All drawing information required to describe temporary road connections alignments, includes station line, tick marks and annotation. Also alignments for Railroad, Bike Paths, Creeks & Pedestrian Paths
26	White/0	Undefined	
27	White/0	Undefined	
28	White/0	Undefined	
29	Brown/7	Existing Irrigation	All drawing information required to describe existing irrigation facilities, includes annotation.
30	Red/3	Cut & Fill Data	All drawing data required to describe the top of cut or toe of slope, includes annotation.
31	Orange/ 6	Existing Right of Way Boundaries	All drawing information required to describe property lines, township lines, section lines, existing Right of Way lines, existing easement lines.
32	Orange/ 6	New Right of Way Lines and Fences	All drawing information required to describe proposed Right of Way lines, easement lines, rights of entry, controlled access, fences and ESA boundaries and fences – (if too cluttered, then put on undefined level).
33	Orange/ 6	Right of Way Text	All Text and Annotation that describes new and existing Right of Way on levels 31 and 32.
34	Orange/	Temporary	All drawing information required to describe

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
	6	Water Pollution Control	Temporary Water Pollution Control, includes annotation.
35	Orange/ 6	Permanent Erosion Control	All drawing information required to describe Permanent Erosion Control, includes annotation.
36	Blue/1	Drainage	All drawing information required to describe drainage facilities to be constructed, including pipes, box culverts, headwalls, manholes, surfaced & unsurfaced ditches, ABM gutters and drains. Also includes irrigation facilities, except those included on Levels 29 or 50.
37	Blue/1	Drainage Annotation	All Annotation that describes drainage facilities.
38	Violet/5	Sanitary Sewer	All drawing information required to describe sanitary sewer facilities to be constructed, including manholes and sewer lines.
39	Violet/5	Sanitary Sewer Annotation	All Annotation that describes sanitary sewer facilities.
40	Yellow/4 (Note 1)	New Utilities	All drawing information required to describe utility relocation work above and below ground, includes annotation. (See Note 1 for chosen Caltrans colors associated with a particular utility).
41	Violet/5	Contour Grading	Proposed grading contours, slope lines, bench lines, includes annotation.
42	White/0	Pavement Elevations	Elevation of pavement, shoulders, curbs, and gutters.
43	Red/3	Pavement Markers and Striping	All drawing information required to describe pavement markers, striping and markings.
44	Red/3	Pavement Markers and Striping Annotation	All annotation that describes pavement markers, striping and markings.
45	Red/3	Signing	All drawing information required to describe sign installations, guide markers, etc., includes annotation.
46	Red/3	Construction Area Signing	All drawing information required to describe Construction Area signing, including tables, details and annotation.
47	White/0 (Note 2)	Electrical	All drawing information required to describe signal and lighting installations.
48	Yellow/4	Electrical	All annotation that describes signal and lighting

LEVEL	COLOR/	TITLE	DESCRIPTION/CONTENT
NO.	NAME & NUMBER		
		Annotation	installations.
49	Green/2	Planting and Landscaping	All drawing information required to describe highway planting, landscaping, erosion control, etc., includes annotation.
50	Blue/1	New Irrigation	All drawing information required to describe new irrigation facilities for highway planting and landscaping (shown on Level 49), includes annotation. (The construction of other irrigation facilities is to be included on Level 36.)
51	Red/3	Stage 1 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 4, Stage 7, etc., if necessary.
52	Red/3	Stage 1 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 4, Stage 7, etc., if necessary.
53	Red/3	Stage 2 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 5, Stage 8, etc., if necessary.
54	Red/3	Stage 2 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 5, Stage 8, etc., if necessary.
55	Red/3	Stage 3 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 6, Stage 9, etc., if necessary.
56	Red/3	Stage 3 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 6, Stage 9, etc., if necessary.
57	White/0	Undefined	
58	White/0	Sound Wall and Retaining	All drawing information required to depict the construction of Sound Walls and Retaining

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
		Wall	Walls, includes the plan and elevation views.
59	White/0	Sound Wall and Retaining Wall Annotation	All annotation that describes sound walls and retaining walls, includes curve table for layout lines of walls.
60	White/0	Non- geographical Drawing Data	All drawing information that is non- geographical, such as, details, sectional views, cross sections, profiles, quantities and strip maps. Plan sheets that typically place elements on this level include: Title sheet, Typical Cross Sections, Key Map, Profiles, Superelevation Diagrams, Construction Details and Summary of Quantities.
61	Yellow/4	Headquarter Changes	All final plan revisions performed by HQ Office Engineer after PS&E Submittal and before Advertising and Award.
62	Red/3	As-Built Changes	Changes made during construction that need to be shown on the signed original plans. Revisions are depicted by lining out the original information (do not obscure) and placing the new information.
63	White/0 & Red/3 (Note 3)	Engineer's Signature	Project Engineer's signature. Identification stamps for electronic As-Awarded plans and electronic As-Built plans.

For projects using Named Level convention the following tables identify the Level number and the corresponding Level name for non-Right of Way and Structures Design levels.

Number	Name	Description
1000	topo_ph_bndy_anno_drop	Photo data - Annotation of
		boundary features
1001	topo ph hady any info only	Photo data - GNV boundary
		shape
1002	topo_ph_bndy_map_lmt_info_only	Photo data - Mapping Limits
1003	topo_ph_bndy_ortho_info_only	Photo data - Ortho imagery tiles
1004	topo_ph_bndy_void_drop	Photo data - Void boundary
		shape
1005	topo_ph_dtm_anno_drop	Photo data - Annotation for DTM
		features - spot elevation text
		including bridge deck spots
		(floating)

Number	Name	Description
1006	topo_ph_dtm_brk_spot_info_only	Photo data - Random breaklines, spots and mass points in ground DTM areas
1007	topo_ph_dtm_cont_index_anno_drop	Photo data - Index contour annotation including floating contour annotation
1008	topo_ph_dtm_cont_index_drop	Photo data - Index, index GNV, index depression, index depression GNV
1009	topo_ph_dtm_cont_inter_drop	Photo data - Intermediate contour, intermediate GNV, intermediate depression, intermediate depression GNV
1010	topo_ph_dtm_brk_spot_deck_info_only	Photo data - Random breaklines, spots and mass points on bridge deck DTM areas
1011	topo_ph_dtm_cont_index_deck_drop	Photo data - Float index contours - all linestyles
1012	topo_ph_dtm_cont_inter_deck_drop	Photo data - Float intermediate contours - all linestyles
1013	topo_ph_dtm_brk_gnv_info_only	Photo data - GNV breaklines in ground DTM areas
1014	topo_ph_hydro_anno_drop	Photo data - Annotation for all
1015	topo_ph_hydro_df_STR_drop	Photo data - Drainage facility structures on ground surfaces including drop inlets, exposed drainage pipes, headwalls, etc.
1016	topo_ph_hydro_WATER_drop	Photo data - Water Edges (non flowing); Flowlines through natural or manmade structures
1017	topo_ph_MISC_check_no_plot	Photo data - Miscellaneous lines and text with editing information
1018	topo_ph_MISC_one_no_plot	Photo data - Data cleaning and processing
1019	topo_ph_MISC_two_no_plot	Photo data - Data cleaning and processing
1020	topo_ph_rdbed_anno_drop	Photo data - Annotation for roadbed features
1021	topo_ph_rdbed_AC_drop	Photo data - Asphalt features in roadbed areas on ground surfaces
1022	topo_ph_rdbed_CONC_drop	Photo data - Concrete features in roadbed areas on ground surfaces

Number	Name	Description
1023	topo ph rdbed CURB drop	Photo data - Curbs in roadbed
1020		areas
1024	topo ph rdbed DIKE drop	Photo data - Dikes in roadbed
		areas
1025	topo ph rdbed DIRT drop	Photo data - Dirt features in
		Deste data Missellanagua
		Photo data - Miscellaneous
1026	topo_ph_rdbed_MISC_drop	and other roadbed features not
		already assigned to a level
		Photo data - Rock features in
1027	topo_ph_rdbed_ROCK_drop	roadbed areas
		Photo data - Annotation for
1028	topo_ph_rdside_anno_drop	roadside features
		Photo data - Asphalt features in
1029	topo ph rdside AC drop	roadside areas including
		driveways, paths, etc.
		Photo data - Concrete features in
1030	topo_ph_rdside_CONC_drop	roadside areas including
		driveways, paths, etc.
1031	topo ph. rdside CURB drop	Photo data - Curbs in roadside
1001		areas
1032	topo_ph_rdside_DIKE_drop	Photo data - Dikes in roadside
		areas
1000	topo_ph_rdside_DIRT_drop	Photo data - Dirt features in
1033		roadside areas including trails
		Dhoto data Eances dates &
1034	topo_ph_rdside_Fence_drop	rificio dala - i ences, gales a
		Photo data - Miscellaneous
		roadside features including posts
	topo_ph_rdside_MISC_drop	flag poles, tanks, miscellaneuos
1035		boundaries for areas under
		construction and ruins and other
		roadside features not already
		assigned to a level
		Photo data - Edges of rock areas
1036	topo_ph_rdside_ROCK_drop	& edges of rock slope protection
		areas, large individual rocks
1037	topo_ph_rdside_RR_drop	Photo data - Railroad rails
1038		Photo data - Annotation for
	topo_ph_str_anno_drop	ground surface structures
		Teatures
1039	topo_ph_str_BLDG_drop	Photo data - Buildings, decks,
1		covered patios, carports, stairs

Number	Name	Description
		and ramps etc.
1040	tone physic opposited drap	Photo data - Annotation for bridge
1040		deck features
10/1	topo nh tod BARRIER deck dron	Photo data - Barriers & rails on
1041		bridge decks
1042	topo ph rdbed AC deck drop	Photo data - Asphalt features in
1042		roadbed areas on bridge decks
1043	opo ph rdbed CONC deck drop	Photo data - Concrete features in
		roadbed areas on bridge decks
1044	topo ph rdbed CURB deck drop	Photo data - Curbs on bridge
		decks
1015		Photo data - Pavement marking
1045	topo_ph_tcd_MARKING_deck_drop	on bridge decks including EIW,
		Deste data Missellanaeus bridge
1046	topo_ph_str_MISC_deck_drop	Photo data - Miscellaneous bridge
		Deck realures
1047	topo_ph_str_PN_deck_drop	stem wall of the abutment)
		Photo data - Walls including crib
1048	topo_ph_str_WALL_drop	retaining masonry & sound walls
		Photo data - Annotation of study
1049	topo_ph_study_anno_drop	features
		Photo data - Breaklines and
1050	topo ph study brk spot info only	masspoints for +- 2.5 ft surface in
1000		ground DTM areas
	tone of study but and deals info cal	Photo data - Breaklines and
1051	liopo_pn_study_brk_spot_deck_inio_oni	masspoints for +- 2.5 ft surface in
	y	bridge deck DTM areas
		Photo data - GNV breaklines for
1052	topo_ph_study_brk_gnv_info_only	+- 2.5 ft surface in ground DTM
		areas
1053	topo ph study water info only	Photo data - Flowline and edge of
		water body for +- 2.5 ft surface
1054	topo ph tcd anno drop	Photo data - Annotation for sign,
		markers & marking features
1055	topo ph tcd BARRIER drop	Photo data - Barriers & rails on
		ground surfaces
1056	topo ph tod MARKING drop	Photo data - Pavement marking
1050		stripes etc.
		Photo data - Miscellaneous traffic
1057	topo ph ted MISC drop	control features including crash
1001		cushions K-rail etc
1058	topo ph tcd SIGN drop	Photo data - Signs

Number	Name	Description
1059	topo_ph_ut_anno_drop	Photo data - Annotation for utility features
1060	topo_ph_ut_APPR_drop	Photo data - Utility appurtenances - standpipes and wells
1061	topo_ph_ut_LTG_drop	Photo data - Lighting including electroliers, lamp posts, pole-arm- electrolier, traffic signals, railroad signals, etc.
1062	topo_ph_ut_MISC_drop	Photo data - Miscellaneous utility features including call boxes, fire hydrants, manholes, call boxes, and transmission towers
1063	topo_ph_ut_POLE_drop	Photo data - Individual power poles, utility poles, guy anchors
1064	topo_ph_veg_anno_drop	Photo data - Annotation for vegetation features
1065	topo_ph_veg_drop	Photo data - Trees, brush, marsh, vinevards, orchards
1066	border_topo_GridTicks_info_only	Grid ticks with annotation
1067	border_topo_ph_ctrl_info_only	Photogrammetric photo centers and ground control
1068	topo_ph_data_info_only	Photo data - General photo data including file layout diagram, title block and north arrow
1069	topo_ph_hydro_df_STR_deck_drop	Photo data - Drainage facility structures on bridge decks including drop inlets
1100	topo_al_bndy_anno_drop	Aerial LiDAR data - Annotation of boundary features
1101	topo_al_bndy_gnv_info_only	Aerial LiDAR data - GNV boundary shape
1102	topo_al_bndy_map_lmt_info_only	Aerial LiDAR data - Mapping Limits
1103	topo_al_bndy_ortho_info_only	Aerial LiDAR data - Ortho imagery tiles
1104	topo_al_bndy_void_drop	Aerial LiDAR data - Void boundary shape
1105	topo_al_data_info_only	Aerial LiDAR data - General aerial LiDAR data including file layout diagram, title block and north arrow
1106	topo_al_dtm_anno_drop	Aerial LiDAR data - Annotation for DTM features - spot elevation text including bridge deck spots (floating)
Number	Name	Description
--------	-------------------------------------	--
1107	topo_al_dtm_brk_spot_info_only	Aerial LiDAR data - Random breaklines, spots and mass points in ground DTM areas
1108	topo_al_dtm_cont_index_anno_drop	Aerial LiDAR data - Index contour annotation including floating contour annotation
1109	topo_al_dtm_cont_index_drop	Aerial LiDAR data - Index, index GNV, index depression, index depression GNV
1110	topo_al_dtm_cont_inter_drop	Aerial LiDAR data - Intermediate contour, intermediate GNV, intermediate depression, intermediate depression GNV
1111	topo_al_dtm_brk_spot_deck_info_only	Aerial LiDAR data - Random breaklines, spots and mass points on bridge deck DTM areas
1112	topo_al_dtm_cont_index_deck_drop	Aerial LiDAR data - Float index contours - all linestyles
1113	topo_al_dtm_cont_inter_deck_drop	Aerial LiDAR data - Float intermediate contours - all linestyles
1114	topo_al_dtm_brk_gnv_info_only	Aerial LiDAR data - GNV breaklines in ground DTM areas
1115	topo_al_hydro_anno_drop	Aerial LiDAR data - Annotation for all hydrographic features
1116	topo_al_hydro_df_STR_deck_drop	Aerial LiDAR data - Drainage facility structures on bridge decks including drop inlets
1117	topo_al_hydro_df_STR_drop	Aerial LiDAR data - Drainage facility structures on ground surfaces including drop inlets, exposed drainage pipes, headwalls, etc.
1118	topo_al_hydro_WATER_drop	Aerial LiDAR data - Water Edges (non flowing); Flowlines through natural or manmade structures
1119	topo_al_MISC_check_no_plot	Aerial LiDAR data - Miscellaneous lines and text with editing information
1120	topo_al_MISC_one_no_plot	Aerial LiDAR data - Data cleaning and processing
1121	topo_al_MISC_two_no_plot	Aerial LiDAR data - Data cleaning and processing
1122	topo_al_POINT_CLOUD	Aerial LiDAR data - Point clouds and associated features

Number	Name	Description
1100	tone of rehad onne drop	Aerial LiDAR data - Annotation for
1123		roadbed features
		Aerial LiDAR data - Asphalt
1124	topo_al_rdbed_AC_deck_drop	features in roadbed areas on
		bridge decks
		Aerial LiDAR data - Asphalt
1125	topo_al_rdbed_AC_drop	features in roadbed areas on
		ground surfaces
		Aerial LiDAR data - Concrete
1126	topo_al_rdbed_CONC_deck_drop	features in roadbed areas on
		bridge decks
		Aerial LiDAR data - Concrete
1127	topo_al_rdbed_CONC_drop	features in roadbed areas on
		ground surfaces
1128	topo al rdbed CURB deck drop	Aerial LiDAR data - Curbs on
		bridge decks
1129	topo al rdbed CURB drop	Aerial LiDAR data - Curbs in
		roadbed areas
1130	topo al rdbed DIKE drop	Aerial LiDAR data - Dikes in
		roadbed areas
1131	topo al rdbed DIRT drop	Aerial LiDAR data - Dirt features
		In roadbed areas
		Aerial LIDAR data -
1100	tang al with a d MICO due w	Miscellaneous roadbed features:
1132	topo_al_rdbed_MISC_drop	cattle guards and other roadbed
		features not already assigned to a
		level
1133	topo_al_rdbed_ROCK_drop	Aerial LIDAR data - Rock leatures
		A origination for
1134	topo_al_rdside_anno_drop	readside features
		Aorial LiDAR data Apphalt
1135	topo al reside AC drop	features in roadside areas
1155		including driveways naths etc
		Aerial LiDAR data - Concrete
1136	topo al rdside CONC drop	features in roadside areas
1100		including driveways paths etc
		Aerial LiDAR data - Curbs in
1137	topo_al_rdside_CURB_drop	roadside areas
		Aerial LiDAR data - Dikes in
1138	topo_al_rdside_DIKE_drop	roadside areas
		Aerial LiDAR data - Dirt features
1139	topo_al_rdside_DIRT_drop	in roadside areas including trails
		and other dirt areas
1140	topo al rdside MISC drop	Aerial LiDAR data -

Number	Name	Description
		Miscellaneous roadside features
		including posts, flag poles, tanks,
		miscellaneuos boundaries for
		areas under construction and
		ruins and other roadside features
		not already assigned to a level
		Aerial LiDAR data - Edges of rock
		areas & edges of rock slope
1141	topo_al_rdside_ROCK_drop	protection areas, large individual
		rocks
1142	topo al rdside RR drop	Aerial LiDAR data - Railroad rails
		Aerial LiDAR data - Annotation for
1143	topo al str anno drop	ground surface structures
		features
		Aerial LiDAR data - Buildings.
1144	topo al str BLDG drop	decks, covered patios, carports.
		stairs and ramps etc.
		Aerial LiDAR data - Annotation for
1145	topo_al_str_anno_deck_drop	bridge deck features
		Aerial LiDAR data -
1146	topo al str MISC deck drop	Miscellaneous bridge deck
		features
4447	tana al sta DNI de sla dusu	Aerial LiDAR data - Paving notch
1147	topo_al_str_PN_deck_drop	(back stem wall of the abutment)
1110	tana al relaida. Canaa dran	Aerial LiDAR data - Fences, gates
1146		& gate posts
		Aerial LiDAR data - Walls
1149	topo_al_str_WALL_drop	including crib, retaining, masonry
		& sound walls
1150	tono al atudu anno dron	Aerial LiDAR data - Annotation of
1150		study features
		Aerial LiDAR data - Breaklines
1151	topo_al_study_brk_spot_info_only	and masspoints for +- 2.5 ft
		surface in ground DTM areas
	topo al study brk spot dock info onl	Aerial LiDAR data - Breaklines
1152		and masspoints for +- 2.5 ft
	y	surface in bridge deck DTM areas
		Aerial LiDAR data - GNV
1153	topo_al_study_brk_gnv_info_only	breaklines for +- 2.5 ft surface in
		ground DTM areas
1154		Aerial LiDAR data - Flowline and
	topo_al_study_water_info_only	edge of water body for +- 2.5 ft
		surface
1155	tono al tod anno dron	Aerial LiDAR data - Annotation for
1155		sign, markers & marking features

Number	Name	Description
1156	topo_al_tcd_BARRIER_deck_drop	Aerial LiDAR data - Barriers & rails on bridge decks
1157	topo_al_tcd_BARRIER_drop	Aerial LiDAR data - Barriers &
1158	topo_al_tcd_MARKING_deck_drop	Aerial LiDAR data - Pavement marking on bridge decks including ETW, lane lines, stripes, etc.
1159	topo_al_tcd_MARKING_drop	Aerial LiDAR data - Pavement marking including lane lines, crosswalks, stripes, etc.
1160	topo_al_tcd_MISC_drop	Aerial LiDAR data - Miscellaneous traffic control features including crash cushions, K-rail, etc.
1161	topo_al_tcd_SIGN_drop	Aerial LiDAR data - Signs
1162	topo_al_ut_anno_drop	Aerial LiDAR data - Annotation for utility features
1163	topo_al_ut_APPR_drop	Aerial LiDAR data - Utility appurtenances - standpipes and wells
1164	topo_al_ut_LTG_drop	Aerial LiDAR data - Lighting including electroliers, lamp posts, pole-arm- electrolier, traffic signals, railroad signals, etc.
1165	topo_al_ut_MISC_drop	Aerial LiDAR data - Miscellaneous utility features including call boxes, fire hydrants, manholes, call boxes, and transmission towers
1166	topo_al_ut_POLE_drop	Aerial LiDAR data - Individual power poles, utility poles, guy anchors
1167	topo_al_veg_anno_drop	Aerial LiDAR data - Annotation for vegetation features
1168	topo_al_veg_drop	Aerial LiDAR data - Trees, brush, marsh, vineyards, orchards
1200	topo_ba_dtm_brk_spot_info_only	Random breaklines, spots and mass points in ground (bottom) bathymetric DTM areas
1300	topo_su_ctrl_DIRECTION_info_only	Survey data - Linework indicating the direction to or from a feature
1301	topo_su_ctrl_LINE_PTS_info_only	Survey data - Points associated to control linework
1302	topo_su_ctrl_LNWK	Survey data - Surveyed found linework for retracement work

Number	Name	Description
1303	topo_su_ctrl_point_FD	Survey data - Surveyed found points
1304	topo_su_ctrl_point_FD_anno	Survey data - Annotation for surveyed found points
1305	topo_su_ctrl_point_MON	Survey data - Project control monuments
1306	topo_su_ctrl_point_MON_anno	Survey data - Annotation for project control monuments, including survey baselines
1307	topo_su_dtm_brk_spot_anno_deck_inf o_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in bridge deck DTM areas
1308	topo_su_dtm_brk_spot_anno_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in ground DTM areas
1309	topo_su_dtm_brk_spot_anno_undersid e_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in bridge underside DTM areas
1310	topo_su_dtm_brk_spot_deck_info_only	Survey data - Random breaklines, spot elevations and masspoints in bridge deck DTM areas
1311	topo_su_dtm_brk_spot_info_only	Survey data - Random breaklines, spot elevations and masspoints in ground DTM areas
1312	topo_su_dtm_brk_spot_underside_info _only	Survey data - Random breaklines, spot elevations and masspoints in bridge underside DTM areas
1313	topo_su_hydro_anno_info_only	Survey data - Annotation for all hydrographic features
1314	topo_su_hydro_df_CULV_drop	Survey data - Culverts
1315	topo_su_hydro_df_MISC_drop	Survey data - Drainage facility appurtenances including cleanouts, flared end sections, vents, etc.
1316	topo_su_hydro_df_OPEN_drop	Survey data - Open drainage facilities including basins, canals, catch basins, ditches, spillways, etc all aspects except flowlines & random breaklines
1317	topo_su_hydro_df_STR_deck_drop	Survey data - Drainage facility structures on bridge decks including inlets

Number	Name	Description
1318	topo_su_hydro_df_STR_drop	Survey data - Drainage facility structures on ground surfaces including inlets & outlets, headwalls, wingwalls, weirs, gates, etc.
1319	topo_su_hydro_FL_drop	Survey data - Flowlines of all hydrographic & drainage facilities
1320	topo_su_hydro_LINE_PTS_info_only	Survey data - Points associated to hydrographic linework
1321	topo_su_hydro_MISC_drop	Survey data - Miscellaneous hydrographic features
1322	topo_su_hydro_WATER_drop	Survey data - Edges, threads & high water marks of water features including streams, creeks, rivers, ponds, lakes, shorelines, pools, etc.
1323	topo_su_rdbed_AC_deck_drop	Survey data - Asphalt features in roadbed areas on bridge decks
1324	topo_su_rdbed_AC_drop	Survey data - Asphalt features in roadbed areas on ground surfaces
1325	topo_su_rdbed_anno_info_only	Survey data - Annotation for roadbed features
1326	topo_su_rdbed_CONC_deck_drop	Survey data - Concrete features in roadbed areas on bridge decks
1327	topo_su_rdbed_CONC_drop	Survey data - Concrete features in roadbed areas on ground surfaces
1328	topo_su_rdbed_CURB_deck_drop	Survey data - Curbs in roadbed areas on bridge decks
1329	topo_su_rdbed_CURB_drop	Survey data - Curbs in roadbed areas on ground surfaces
1330	topo_su_rdbed_DIKE_drop	Survey data - Dikes in roadbed areas
1331	topo_su_rdbed_DIRT_drop	Survey data - Dirt features in roadbed areas
1332	topo_su_rdbed_FL_deck_drop	Survey data - Flowlines in roadbed areas on bridge decks
1333	topo_su_rdbed_FL_drop	Survey data - Flowlines in roadbed areas on ground surfaces
1334	topo_su_rdbed_LINE_PTS_info_only	Survey data - Points associated to roadbed linework
1335	topo_su_rdbed_MISC_drop	Survey data - Miscellaneous roadbed features on ground

Number	Name	Description
		surfaces excluding asphalt,
		concrete & dirt lines - all aspects
		except flowlines & random
		breaklines - including roadbeds &
		cattle guards
1336	topo su rdbed ROCK drop	Survey data - Rock features in
1000		roadbed areas
		Survey data - Asphalt features in
1337	topo su rdside AC drop	roadside areas including
1001		driveways, parking lots, paths,
		etc.
1338	topo su rdside anno info only	Survey data - Annotation for
		roadside features
		Survey data - Concrete features
1339	topo su rdside CONC drop	in roadside areas including
		driveways, parking lots, paths,
		etc.
		Survey data - Dirt features in
1340	topo_su_rdside_DIRT_drop	roadside areas including
		driveways, trails and other dift
		Burrov data Flowlings in
12/1	tana ay rdaida El dran	Survey data - Flowlines In
1341	topo_su_rasiae_⊢∟_drop	surfaces
		Survey data - Points associated
1342	topo_su_rdside_LINE_PTS_info_only	to roadside linework
		Survey data - Miscellaneous
		roadside features on ground
		surfaces excluding asphalt.
		concrete, dirt & rock lines and all
1343	topo_su_rdside_MISC_drop	aspects except flowlines &
		random breaklines - includes
		bollards, driveways, flag poles,
		mailboxes, parking lots, tanks,
		trails, etc.
1244	topo su resido POCK drop	Survey data - Edges of rock areas
1344		& rock slope protection areas
		Survey data - Railroad rails,
1345	topo_su_rdside_RR_drop	ballast and appurtenances
		including switches & gate posts
1346	topo su rdside SLIDE drop	Survey data - Edges of slide
1040		areas
1348	topo_su_rdside_SW_drop	Survey data - Sidewalks
1349	topo su str ABUTWW drop	Survey data - Abutments & wing
10-3		walls

Number	Name	Description
1350	topo_su_str_anno_deck_info_only	Survey data - Annotation for bridge deck features
1351	topo_su_str_anno_info_only	Survey data - Annotation for ground surface structures features
1352	topo_su_str_anno_underside_info_only	Survey data - Annotation for bridge underside features
1353	topo_su_str_BLDG_drop	Survey data - Buildings, decks, covered patios, carports, etc.
1354	topo_su_str_COL_drop	Survey data - Bents, columns & piers
1357	topo_su_str_GIRDER_drop	Survey data - Bridge girders
1358	topo_su_str_LINE_PTS_deck_info_only	Survey data - Points associated to bridge deck linework
1359	topo_su_str_LINE_PTS_info_only	Survey data - Points associated to ground surface structures linework
1360	topo_su_str_LINE_PTS_underside_info _only	Survey data - Points associated to bridge underside linework
1361	topo_su_str_MISC_deck_drop	Survey data - Miscellaneous bridge deck features
1362	topo_su_str_MISC_drop	Survey data - Miscellaneous structures features including structures slope protection, etc.
1363	topo_su_str_MISC_underside_drop	Survey data - Miscellaneous bridge underside features including bridge access openings, soffit, etc.
1364	topo_su_str_PN_deck_drop	Survey data - Paving notch (back stem wall of the abutment)
1365	topo_su_str_WALL_drop	Survey data - Walls including crib, masonry, retaining & sound walls
1366	topo_su_tcd_anno_info_only	Survey data - Annotation for sign, markers & marking features
1367	topo_su_tcd_BARRIER_deck_drop	Survey data - Barriers & rails on bridge decks
1368	topo_su_tcd_BARRIER_drop	Survey data - Barriers & rails on ground surfaces
1369	topo_su_tcd_LINE_PTS_info_only	Survey data - Points associated to sign & striping linework
1370	topo_su_tcd_MARKER_drop	Survey data - Non-utility related markers including guide posts, pavement markers, etc.
1371	topo_su_tcd_MARKING_deck_drop	Survey data - Pavement marking on bridge decks including lane

Number	Name	Description
		lines, stripes, etc.
1372	topo_su_tcd_MARKING_drop	Survey data - Pavement marking on ground surfaces including lane lines, crosswalks, stripes, turn arrows, etc.
1373	topo_su_tcd_MISC_drop	Survey data - Miscellaneous traffic control features including crash cushions, etc.
1374	topo_su_tcd_SIGN_drop	Survey data - Signs
1375	topo_su_ut_anno_info_only	Survey data - Annotation for utility features
1376	topo_su_ut_APPR	Survey data - Utility appurtenances including hose bibs, irrigation valves, sprinklers, standpipes, wells, etc.
1377	topo_su_ut_CAB	Survey data - Cabinets
1378	topo_su_ut_CABLE	Survey data - Cables when underground vs. overhead are unknown
1379	topo_su_ut_COND	Survey data - Conduit
1380	topo_su_ut_LINE_PTS_info_only	Survey data - Points associated to utility linework
1381	topo_su_ut_LTG	Survey data - Lighting including electroliers, lamp posts, pedestrian crosswalk buttons & signals, traffic signals, railroad signals, etc.
1382	topo_su_ut_MARKER	Survey data - Utility markers
1383	topo_su_ut_METER	Survey data - Meters
1384	topo_su_ut_MH	Survey data - Manholes
1385	topo_su_ut_MISC	Survey data - Miscellaneous utility features including call boxes, conduit, fire hydrants, laterals, public telephones & telephone pedestals, transmission towers, utility vents
1386	topo_su_ut_OH	Survey data - Overhead utility facilities
1387	topo_su_ut_PB	Survey data - Pullboxes
1388	topo_su_ut_POLE	Survey data - Individual poles & pole lines, guy anchors
1389	topo_su_ut_UG	Survey data - Underground utility facilities
1390	topo su ut VALVE	Survey data - Valves

Number	Name	Description
1391	topo su ut VAULT	Survey data - Vaults
		Survey data - Annotation for
1392	topo_su_veg_anno_info_only	vegetation features
4000		Survey data - Points associated
1393	topo_su_veg_LINE_PIS_Into_only	to vegetation linework
1204	tana ay yag MISC dran	Survey data - Miscellaneous
1394	lopo_su_veg_iviiSC_drop	vegetation features
1395	topo_su_veg_TREE_drop	Survey data - Trees
1396	topo_su_str_BRDG_RAIL_deck_drop	Survey data - Bridge rails
1307	topo su rdside CURB drop	Survey data - Miscellaneous
1007		curbs in roadside areas
1398	topo su rdside DIKE drop	Survey data - Miscellaneous
1000		dikes in roadside areas
1399	topo su rdside FENCE drop	Survey data - Fences, gates &
		gate posts
		Survey data - Miscellaneous
4.400		roadbed features on bridge decks
1400	topo_su_rdbed_MISC_deck_drop	excluding asphalt, concrete & dirt
		lines - all aspects except flowlines
		& random breaklines
1401	topo su rdside FL deck drop	Survey data - Flowlines in
1101		roadside areas on bridge decks
		Survey data - Miscellaneous
1402	topo su rdside MISC deck drop	roadside features on bridge decks
1402		excluding flowlines & random
		breaklines
		Survey data - Points associated
1403	topo_su_LINE_PTS_info_only	to Feature Lines imported through
		TBC shape files
1500	topo mi otri DIRECTION info only	MTLS data - Linework indicating
1500		the direction to or from a feature
		MTLS data - Annotation for
1501	topo_ml_dtm_brk_spot_anno_deck_inf o_only	random breaklines, spot
1301		elevations and masspoints in
		bridge deck DTM areas
		MTLS data - Annotation for
1500	tong mi dim brit angli ang info aniv	random breaklines, spot
1502	topo_mi_dtm_brk_spot_anno_info_only	elevations and masspoints in
		ground DTM areas
		MTLS data - Annotation for
1503	topo_ml_dtm_brk_spot_anno_undersid e info only	random breaklines, spot
		elevations and masspoints in
		bridge underside DTM areas
4504	tana nalahar balan satular balan b	MTLS data - Random breaklines.
1504	topo_mi_atm_brk_spot_deck_into_only	spot elevations and masspoints in

Number	Name	Description
		bridge deck DTM areas
		MTLS data - Random breaklines,
1505	topo_ml_dtm_brk_spot_info_only	spot elevations and masspoints in
		ground DTM areas
	tono mi dim brik anot undersido info	MTLS data - Random breaklines,
1506		spot elevations and masspoints in
		bridge underside DTM areas
1507	topo ml hydro appo info oply	MTLS data - Annotation for all
1507		hydrographic features
1508	topo_ml_hydro_df_CULV_drop	MTLS data - Culverts
		MTLS data - Culvert - flowline
1509	topo_ml_hydro_df_CULV_FL_drop	single location - for TopoDOT use
		only
		MTLS data - Cleanout - drain,
1510	topo_ml_hydro_df_MISC_CLO_drop	sewer, storm, pool, etc for
		TopoDOT use only
		MTLS data - Drainage facility
1511	topo ml hydro df MISC drop	appurtenances including
		cleanouts, flared end sections,
		vents, etc.
		MTLS data - Open drainage
1=10		facilities including basins, canals,
1512	topo_ml_hydro_dt_OPEN_drop	catch basins, ditches, spillways,
		etc all aspects except flowlines
		& random breaklines
4540	tang ral budge of CTD deals drag	MILS data - Drainage facility
1513	topo_mi_nyaro_at_STR_aeck_arop	structures on bridge decks
		MTL S data Drainage facility
		MILS data - Drainage lacility
1514	tong ml hydro df STP dron	including inlots 8 outlots
1514	topo_mi_nyaro_at_STR_arop	headwalls wingwalls weirs
		neauwalis, wingwalis, wells,
		MTLS data - Flowlines of all
1515	topo_ml_hydro_FL_drop	hydrographic & drainage facilities
		MTLS data - Miscellaneous
1516	topo_ml_hydro_MISC_drop	hydrographic features
		MTLS data - Edges threads &
		high water marks of water
1517	topo_ml_hydro_WATER_drop	features including streams
		creeks, rivers, ponds. lakes.
		shorelines, pools, etc.
4540		MTLS data - High water mark - for
1518	topo_mi_nyaro_vvAIER_HVVAI_drop	TopoDOT use only
1519	topo_ml_POINT_CLOUD	MTLS data - Point clouds and

Number	Name	Description
		associated features
4500	tan a sel selle ad AQ deals dean	MTLS data - Asphalt features in
1520	topo_mi_rabea_AC_aeck_arop	roadbed areas on bridge decks
		MTLS data - Asphalt features in
1521	topo_ml_rdbed_AC_drop	roadbed areas on ground
		surfaces
1522	topo ml rdbod appo info oply	MTLS data - Annotation for
1522		roadbed features
1523	tong ml rdbed CONC deck drop	MTLS data - Concrete features in
1525		roadbed areas on bridge decks
		MTLS data - Concrete features in
1524	topo_ml_rdbed_CONC_drop	roadbed areas on ground
		surfaces
1525	topo ml rdbed CLIRB deck drop	MTLS data - Curbs in roadbed
1020		areas on bridge decks
1526	topo ml rdbed CLIRB drop	MTLS data - Curbs in roadbed
1020		areas on ground surfaces
1527	topo ml rdbed DIKE drop	MTLS data - Dikes in roadbed
1027		areas
1528	topo ml rdbed DIRT drop	MTLS data - Dirt features in
1020		roadbed areas
1529	topo ml rdbed FL deck drop	MTLS data - Flowlines in roadbed
		areas on bridge decks
1530	topo ml rdbed FL drop	MTLS data - Flowlines in roadbed
		areas on ground surfaces
		MILS data - Miscellaneous
		roadbed features on ground
1501	topo rel reliced MICO drep	surfaces excluding asphalt,
1531	topo_ml_rdbed_MISC_drop	concrete & dift lines - all aspects
		except nowines & random
		cattle quards
		MTLS data Pock foaturos in
1532	topo_ml_rdbed_ROCK_drop	roadbed areas
		MTLS data - Asphalt features in
		roadside areas including
1533	topo_ml_rdside_AC_drop	driveways parking lots paths
		etc
		MTLS data - Annotation for
1534	topo_ml_rdside_anno_info_only	roadside features
		MTLS data - Concrete features in
1535	topo_ml_rdside_CONC_drop	roadside areas including
		driveways, parking lots, paths.
		etc.
1536	topo_ml_rdside_DIRT_drop	MTLS data - Dirt features in

Number	Name	Description
		roadside areas including
		driveways, trails and other dirt
		areas
1537	topo ml rdside FL drop	MTLS data - Flowlines in roadside
		areas
		MTLS data - Bollards, protective
1538	topo_ml_rdside_MISC_BOLLARD_drop	pipes, etc for TopoDOT use
		only
		MILS data - Miscellaneous
		roadside features excluding
		asphalt, concrete, dirt & rock lines
1539	topo ml rdside MISC drop	and all aspects except flowlines &
		random breaklines - includes
		bollards, driveways, flag poles,
		MTLS data Elag polo for
1540	topo_ml_rdside_MISC_FP_drop	TopoDOT use only
		MTLS data - Edges of rock areas
1541	topo_ml_rdside_ROCK_drop	& rock slope protection areas
		MTLS data - Railroad
		Appurtenances including control
1542	topo_ml_rdside_RR_APPR_drop	box switch etc for TopoDOT
		use only
		MTLS data - Railroad rails, ballast
1543	topo ml rdside RR drop	and appurtenances including
		switches & gate posts
1511	tana mi rilaida DD DOST dran	MTLS data - Railroad gate post -
1544		for TopoDOT use only
1545	topo_ml_rdside_SLIDE_drop	MTLS data - Edges of slide areas
1547	topo ml rdside SW drop	MTLS data - Sidewalks on ground
1347		surfaces
1548	topo ml str ABLITWW drop	MTLS data - Abutments & wing
10-10		walls
1549	topo ml str anno deck info only	MTLS data - Annotation for bridge
1010		deck features
		MTLS data - Annotation for
1550	topo_ml_str_anno_info_only	ground surface structures
		features
1551	topo ml str anno underside info only	MILS data - Annotation for bridge
1552	topo ml str BLDG drop	MILS data - Buildings, decks,
		covered patios, carports, etc.
1553	topo ml str COL drop	NILS data - Bents, columns &
	· ·	piers

Number	Name	Description
1557	topo_ml_str_GIRDER_drop	MTLS data - Bridge girders
1550	tono mi str MISC deck dron	MTLS data - Miscellaneous
1555		bridge deck features
		MTLS data - Miscellaneous
1560	topo_ml_str_MISC_drop	structures features including
		structures slope protection, etc.
		MILS data - Miscellaneous
1561	topo_ml_str_MISC_underside_drop	bridge underside reatures
		soffit etc
		MTLS data - Paving notch (back
1562	topo_ml_str_PN_deck_drop	stem wall of the abutment)
		MTLS data - Walls including crib.
1563	topo_ml_str_WALL_drop	masonry, retaining & sound walls
1564	tone milited enne infe enly	MTLS data - Annotation for sign,
1004		markers & marking features
1565	topo mi tod BARRIER deck drop	MTLS data - Barriers on bridge
1000		decks
1566	topo ml tcd BARRIER drop	MTLS data - Barriers & rails on
1000		ground surfaces
4507		MTLS data - Non-utility related
1567	topo_mi_tca_MARKER_drop	markers including guide posts,
		MTLS data Marker guide post
1568	topo_ml_tcd_MARKER_GUIDE_drop	for TopoDOT use only
		MTLS data - Pavement marking
1569	topo ml tcd MARKING deck drop	on bridge decks including lane
		lines, stripes, etc.
		MTLS data - Pavement marking
1570	tong milited MARKING drop	on ground surfaces including lane
1570		lines, crosswalks, stripes, turn
		arrows, etc.
		MTLS data - Crash cushion -
1571	topo_ml_tcd_MISC_CC_drop	single location - for TopoDOT use
		Only MTLO data Missellar acus traffic
1570	tone milited MISC drep	MILS data - Miscellaneous traffic
1572		
1573	topo ml ted SIGN drop	MTLS data - Signs
		MTLS data - Annotation for utility
1574	topo_ml_ut_anno_info_only	features
		MTLS data - Utility appurtenances
1575	tono mi ut ADDD	including hose bibs, irrigation
15/5		valves, sprinklers, standpipes,
		wells, etc.

Number	Name	Description
1576	tono ml ut APPR SPR	MTLS data - Sprinkler - for
1070		TopoDOT use only
1577	topo_ml_ut_CAB	MTLS data - Cabinets
1579	topo_ml_ut_COND	MTLS data - Conduit
1580	topo_ml_ut_LTG	MTLS data - Lighting including electroliers, lamp posts, pedestrian crosswalk buttons & signals, traffic signals, railroad signals, etc.
1581	topo_ml_ut_MARKER	MTLS data - Utility markers
1582	topo_ml_ut_METER	MTLS data - Meters
1583	topo_ml_ut_MH	MTLS data - Manholes
1584	topo_ml_ut_MISC	MTLS data - Miscellaneous utility features including call boxes, conduit, fire hydrants, laterals, public telephones & telephone pedestals, transmission towers, utility vents
1585	topo_ml_ut_OH	MTLS data - Overhead utility facilities
1586	topo_ml_ut_PB	MTLS data - Pullboxes
1587	topo_ml_ut_POLE	MTLS data - Individual poles & pole lines, guy anchors
1588	topo_ml_ut_UG	MTLS data - Underground utility facilities
1589	topo ml ut VALVE	MTLS data - Valves
1590	topo ml ut VAULT	MTLS data - Vaults
1591	topo_ml_veg_anno_info_only	MTLS data - Annotation for vegetation features
1592	topo_ml_veg_MISC_drop	MTLS data - Miscellaneous vegetation features
1593	topo_ml_veg_TREE_drop	MTLS data - Trees
1594	topo_ml_rdside_FENCE_drop	MTLS data - Fences, gates & gate posts
1595	topo_ml_rdside_FENCE_POST_drop	MTLS data - Gate post - for TopoDOT use only
1597	topo_ml_rdside_CURB_drop	MTLS data - Miscellaneous curbs in roadside areas on ground surfaces
1598	topo_ml_rdside_DIKE_drop	MTLS data - Miscellaneous dikes in roadside areas
1599	topo_ml_bndy_gnv_info_only	MTLS data - Boundary outlining ground not visible areas (GNV)
1600	topo_ml_str_BRDG_RAIL_deck_drop	MTLS data - Bridge rails

Number	Name	Description
1601	topo_ml_rdbed_MISC_deck_drop	MTLS data - Miscellaneous roadbed features on bridge decks excluding asphalt, concrete & dirt lines - all aspects except flowlines & random breaklines
1602	topo_ml_rdside_MISC_ADA_drop	MTLS data - ADA detectable warning surface - for TopoDOT use only
1603	topo_TopoDOT_SurveyPT_info_only	TopoDOT data - Manually placed Survey Point - for TopoDOT use only
1604	topo_ml_study_brk_spot_deck_info_onl y	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in bridge deck DTM areas
1606	topo_ml_study_brk_spot_underside_inf o_only	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in bridge underside DTM areas
1607	topo_ml_study_brk_spot_info_only	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in ground DTM areas
1608	topo_ml_study_hydro_info_only	MTLS data - Flowlines and edge of water body from unregistered point cloud data in ground DTM areas
1609	topo_TopoDOT_Data_Tiles_info_only	TopoDOT data - Data Tiles - for TopoDOT use only
1610	topo_TopoDOT_PT_Blue_info_only	TopoDOT data - Blue Points - for TopoDOT use only
1611	topo_TopoDOT_PT_Green_info_only	TopoDOT data - Green Points - for TopoDOT use only
1612	topo_TopoDOT_PT_Orange_info_only	TopoDOT data - Orange Points - for TopoDOT use only
1613	topo_TopoDOT_PT_Red_info_only	TopoDOT data - Red Points - for TopoDOT use only
1614	topo_TopoDOT_PT_Teal_info_only	TopoDOT data - Teal Points - for TopoDOT use only
1615	topo_TopoDOT_PT_Yellow_info_only	TopoDOT data - Yellow Points - for TopoDOT use only
1616	topo_TopoDOT_Scan_Postions_info_o nly	TopoDOT data - Scan Postions - for TopoDOT use only
1617	topo_TopoDOT_TEMP_info_only	TopoDOT data - Temporary - for TopoDOT use only

Number	Name	Description
1610	tong milited MARKING II dock drop	MTLS data - Lane lines on bridge
1010		decks - for TopoDOT use only
1610	topo mitcd MARKING II. drop	MTLS data - Lane lines on ground
1013		surfaces - for TopoDOT use only
1900	align	General alignment
1901	align_anno	Annotation for general alignment
1903	align anno no plot	Annotation for non-plotting
1000		general alignment
1904	align_no_plot	Non-plotting general alignment
1905	rw topo anno	General R/W & topo data -
		General annotation
1906	rw topo anno TABLE	General R/W & topo data - Data
		tables
1907	rw topo Calcs anno no plot	General R/W & topo data - Non-
		plotting calculation annotation
1908	rw topo Calcs no plot	General R/W & topo data - Non-
		plotting calculations
1909	rw topo Images	General R/VV & topo data -
		Attached Image files
1010	nu tana Natao na plat	General R/W & topo data - Non-
1910		plotting holes and general
		General R/W & topo data -
1911	rw_topo_point	Miscellaneous point data
		General R/W & topo data -
1911	rw_topo_point	General point data
		General R/W & topo data -
1912	rw_topo_point_anno	General point annotation
1010		General R/W & topo data - Non-
1913	rw_topo_point_NON_STANDARD	standard point data
1014	nu tana Dafaranga Filas	General R/W & topo data -
1914		Attached drawing files
1015	ny topo Wincout Aroos	General R/W & topo data -
1915		Wipeout/masking shapes
		General topo data - General
1916	topo_dtm_anno_info_only	surface annotation other than
		contours
1917	topo dtm bndy deck info only	General topo data - Surface
		borders for bridge deck DTMs
1918	topo dtm bndy info only	General topo data - Surface
		borders for ground DTMs
1010		General topo data - Surface
1919	topo_dtm_cont_anno_deck_drop	contour annotation for bridge
		aeck D I MS

Number	Name	Description
		General topo data - Surface
1920	topo_dtm_cont_anno_drop	contour annotation for ground
		DTMs
1001	to a disc cout index, doct, door	General topo data - Surface index
1921	topo_atm_cont_index_deck_drop	(major) contours for bridge deck
		DTMS Concret topo data Surface index
1922	topo_dtm_cont_index_drop	(major) contours for ground DTMs
		General topo data - Surface
1923	topo dtm cont inter deck drop	intermediate (minor) contours for
		bridge deck DTMs
		General topo data - Surface
1924	topo_dtm_cont_inter_drop	intermediate (minor) contours for
		ground DTMs
		General topo data - General
1925	topo_dtm_info_only	surface miscellaneous features
		including gridded areas
1926	topo dtm pt info only	General topo data - General
		Surface points
1927	topo_dtm_tri_info_only	General topo data - General
		General topo data - Profile
1928	topo_profile	linework
4000		General topo data - Profile
1929	topo_profile_anno	annotation
1030	topo section	General topo data - Cross section
1930		data
		General topo data - Cross section
1931	topo_section_anno	data annotation including offsets
0000		& grade breaks
9000	align_20-SCALE-anno	Annotation for 20 scale alignment
9001	align_100-SCALE-anno	Annotation for 100 scale
9002	alian BARRIER	Alignment for barriers
9002	align_BARRIER-anno	Annotation for barrier alignments
9004	align_COLLECTOR-RD	Alignment for collector roads
		Annotation for collector road
9005	align_COLLECIOR-RD-anno	alignments
9006	align_CULVERT	Alignment for culverts-pipes
0007		Annotation for culvert-pipe
3007		alignments
9008	align_CURB-FLOW-LINE	Alignment for flow line of curb
9009	align_CURB-FLOW-LINE-anno	Annotation for flow line of curb
9010	align_CURVE-DATA	Curve data information in tabular

Number	Name	Description
		format
9011	align DITCH	Alignment for ditches
9012	align DITCH-anno	Annotation for ditch alignments
9013	align FRONTAGE	Alignment for frontage roads
0014		Annotation for frontage road
9014		alignments
9015	align_LOCAL-ST	Alignment for local streets
9016	align LOCAL ST-anno	Annotation for local street
3010		alignments
9017	align_MAIN	Alignment for Main line
9018	align_MAIN-anno	Annotation for Main line alignment
9019	align_PM-REFERENCE-LINE	Reference line for post mile
9020	align_PM-REFERENCE-LINE-anno	Annotation for post mile reference
9021	align RAMP	Alignment for ramps
9022	align RAMP-anno	Annotation for ramp alignments
9023	align ROUNDABOUT	Alignment for roundabout
0004		Annotation for roundabout
9024	align_ROUNDABOUT-anno	alignments
0025		Alignment for any secondary
9025		highway
0026	alian SECONDARY HWY anno	Annotation for any secondary
0020		highway alignment
9027	align_TEMP	Alignment for temporary roads
9028	align_TEMP-anno	Annotation for temporary road
0020		alignments
9029	align_WALL	Alignment for walls
9030	align_WALL-anno	Annotation for wall alignments
9031	align NO-PLOT	Elements on this level will not
0100		plot! Otrusture heal-fill featurelle sta
9100		Structure backfill for walls-etc
9101		Base material
9102		Construction details
9103	rd_CONST-DETAIL-anno	Annotation for construction details
9104	rd_CONTOUR-anno	Annotation for final grade
0105		Contours Final grade major contours
9105		Final grade major contours
9106		Pinal grade minor contours
9107		Appotation for design group
9108	rd_DESIGN-X-SECTION-anno	Annotation for design cross
0100		Farthwork
3103		Annotation for all types of
9110	rd_EARTHWORK-anno	earthwork

Number	Name	Description
9111	rd EMBANKMENT-ROADWAY	Roadway embankment
9112	rd EP	Edge of Pavement
9113	rd ES	Edge of Shoulder
9114	rd ETW	Edge of Traveled Way
9115	rd EXCAVATION-DITCH	Ditch excavation
9116	rd EXCAVATION-ROADWAY	Roadway excavation
9117	rd EXCAVATION-ROCK	Rock excavation
9118	rd EXCAVATION-STRUCTURE	Structure excavation for walls-etc
9119	rd_FINISH-GRADE-anno	Annotation for finish grade lines and points
9120	rd FINISH-GRADE-BREAKLINE	Breaklines for finish grade
9121	rd FINISH-GRADE-POINT	Points for finish grade
0400		Hot Mix Asphalt (HMA) dike all
9122		types
0122		Annotation for Hot Mix Asphalt
9123		(HMA) dikes all types
9124	rd_HMA-DIKE-TYPE-A	Hot Mix Asphalt (HMA) dike Type A
9125	rd_HMA-DIKE-TYPE-C	Hot Mix Asphalt (HMA) dike Type C
9126	rd_HMA-DIKE-TYPE-D	Hot Mix Asphalt (HMA) dike Type D
9127	rd_HMA-DIKE-TYPE-E	Hot Mix Asphalt (HMA) dike Type E
9128	rd_HMA-DIKE-TYPE-F	Hot Mix Asphalt (HMA) dike Type F
9129	rd_LAYOUT-NOTE-anno	Annotation for construction shown in Master Design
9130	rd_MISC	Miscellaneous cells line-styles and information used by roadway
9131	rd_PAVEMENT	Pavement material
9132	rd_PAVEMENT-anno	Annotation for pavement-base- subbase material
9133	rd_PAVEMENT-STRUCTURE	Pavement-base-subbase material
9134	rd_PROFILE-BARRIER	Barrier profile top or bottom
9135	rd_PROFILE-BARRIER-anno	Annotation for barrier profile
9136	rd_PROFILE-FINISH	Finish profile
9137	rd_PROFILE-FINISH-anno	Annotation for finish profile
9138	rd_PROFILE-OG	Original ground profile
9139	rd_PROFILE-OG-anno	Annotation for original ground profile
9140	rd_PROFILE-WALL	Wall profile
9141	rd_PROFILE-WALL-anno	Annotation for wall profile
9142	rd_QTY-TABLE	Tabular data for summary of

Number	Name	Description
		quantities
9143	rd_RIGHT-OF-WAY	Right of way
9144	rd_RIGHT-OF-WAY-anno	Annotation for right of way and TCE
9145	rd_RIGHT-OF-WAY-TCE	Temporary construction easement
9146	rd_SLOPE	Slopes
9147	rd_SUBBASE-MATERIAL	Subbase material
9148	rd SUPERELEVATION	Superelevation diagram
9149	rd_SUPERELEVATION-anno	Annotation for superelevation diagram
9150	rd SURFACE-BOUNDARY	Boundary of finish surface
9151	rd_SURFACE-BOUNDARY-anno	Annotation of finish surface boundary
9152	rd SURFACE-REMOVAL-AC	Area of RACS and cold plane AC
9153	rd_SURFACE-REMOVAL-anno	Annotation for areas of AC and CONC surface removal
9154	rd SURFACE-REMOVAL-CONC	Area of concrete surface removal
9155	rd TRIANGLE	Final grade triangles
9156	rd_TRIANGLE-anno	Annotation for final grade triangles
9157	rd TYP-X-SECTION	Typical Cross Sections
9158	rd_TYP-X-SECTION-anno	Annotation for Typical Cross Sections
9159	rd_NO-PLOT	Elements on this level will not plot!
9200	df BASIN	Retention or detention basin
9201	df_BASIN-anno	Annotation for retention or detention basin
9202	df CULV-ARCH	Arch culvert all types
9203	df_CULV-ARCH-anno	Annotation for arch culvert all types
9204	df CULV-BOX	Box culvert
9205	df CULV-BOX-anno	Annotation for box culvert
9206	df CULV-TEMP	Temporary culvert
9207	df CULV-TEMP-anno	Annotation for temporary culvert
9208		Drainage details
9209	df DETAIL-anno	Annotation for drainage details
9210	df DRAIN-EDGE	Edge drain
9211	df DRAIN-HORIZONTAL	Horizontal drain
9212	df DRAIN-OVERSIDE	Overside drain
9213	df DRAIN-UNDER	Underdrain
9214	df FES	Flared end section
9215	df FLOW-LINE	Direction of water flow

Number	Name	Description
9216	df HEADWALL	Headwall
9217	df INLET	Drainage inlet
0010		Annotation for proposed drainage
9218		inlet
0210	df INI ET anna dran	Annotation for existing drainage
9219		inlet
9220	df_INLET_drop	Existing drainage inlet
9221	df MISC	Miscellaneous drainage and
5221		hydraulic features
9222	df_MISC-anno	Annotation for misc drainage
		features
9223	df_PIPE	Drainage pipe all types
9224	df PIPE-anno	Annotation for drainage pipe all
		types
9225	df PIPE-anno drop	Annotation for existing drainage
0000		pipe all types
9226	df_PIPE-APC	Alternate pipe culvert
9227	df PIPE-BIT-CTD-CSP	Bituminous coating corrugated
0000		Steel pipe
9228		Corrugated steel pipe
9229		Plastic pipe
9230		Reinforced concrete pipe
9231	df_PIPE-SUSP	Slotted corrugated steel pipe
9232		Existing drainage pipe all types
9233		Drainage profiles
9234		Annotation for drainage profiles
9235	df_QTY-TABLE	
		Appotation for drainage system
9236	df_SYSTEM-UNIT-anno	and unit callout
0237	df WATERSHED	Watershed information
9231		Apportation for watershed
9238	df_WATERSHED-anno	information
		Elements on this level will not
9239	df_NO-PLOT	nlot!
		Default level for point features
9300	ut_DEFAULT	used by Bentley Map
		Electrical conduit abandoned
9301	ut_ELECT-ABN	underground
9302	ut ELECT-OH-P	Electrical new overhead
9303	ut ELECT-OH-X	Electrical existing overhead
0004		Electrical conduit new
9304		underground
9305	ut ELECT-X	Electrical conduit existing

Number	Name	Description
		underground
0000		Electrical systems conduit
9306	ut_ES-C-ABN	abandoned underground
0207		Electrical systems conduit
9307		existing underground
0200		Fiber optic abandoned
9300		underground
9309	ut_FIBEROPT-OH-P	Fiber optic new overhead
9310	ut_FIBEROPT-OH-X	Fiber optic existing overhead
0211		Public-Private fiber optic new
9311		underground
0212		Public-Private fiber optic existing
9312		underground
0212		Gasoline abandoned
9313	ul_GAG-ABN	underground
9314	ut_GAS-P	Gasoline new underground
9315	ut_GAS-X	Gasoline existing underground
0316		Irrigation conduit abandoned
9310		underground
0317		Irrigation conduit existing
3317		underground
9318	ut_JOINT-OH-P	Joint utility new overhead
9319	ut_JOINT-OH-X	Joint utility existing overhead
9320	ut JOINT-TRENCH-P	Joint utility trench new
5520		underground
9321	ut JOINT-TRENCH-X	Joint utility trench existing
0021		underground
9322	ut MISC	Miscellaneous utility cells and
0022		information
9323	ut NATGAS-ABN	Natural gas abandoned
0020		underground
9324	ut_NATGAS-P	Natural gas new underground
9325	ut_NATGAS-X	Natural gas existing underground
9326	ut_OIL-ABN	Oil abandoned underground
9327	ut_OIL-P	Oil new underground
9328	ut_OIL-X	Oil existing underground
9329	ut RCWATER-ABN	Recycled water abandoned
		underground
9330	ut_RCWATER-P	Recycled water new underground
9331	ut RCWATER-X	Recycled water existing
		underground
9332	ut_SEWER-ABN	Sewer abandoned underground
9333	ut_SEWER-P	Sewer new underground
9334	ut_SEWER-X	Sewer existing underground

Number	Name	Description
9335	ut STATE-FIBEROPT-P	State fiber optic new underground
0226		State fiber optic existing
9330		underground
9337	ut_STEAM-ABN	Steam abandoned underground
9338	ut_STEAM-P	Steam new underground
9339	ut_STEAM-X	Steam existing underground
9340	ut_STORMD-ABN	Storm drain abandoned
9341	ut STORMD-P	Storm drain new underground
9342	ut STORMD-X	Storm drain existing underground
9343	ut_TELECOM-ABN	Telemeter cable abandoned
0244		Telemeter cable new everband
9344		Telemeter cable new overneau
9345	ut_TELECOM-OH-X	overhead
		Telemeter cable new
9346	ut_TELECOM-P	underground
		Telemeter cable existing
9347	ut_TELECOM-X	underground
		Telephone line abandoned
9348	ut_IELEPH-ABN	underground
9349	ut TELEPH-OH-P	Telephone line new overhead
9350	ut TELEPH-OH-X	Telephone line existing overhead
9351	ut_TELEPH-P	Telephone line new underground
0252		Telephone line existing
9002		underground
9353	ut_TEST-HOLE	Test hole symbol and label
9354	ut_TV-ABN	Television line abandoned underground
9355	ut TV-OH-P	Television line new overhead
9356	ut_TV-OH-X	Television line existing overhead
9357	ut_TV-P	Television line new underground
9358	ut TV-X	Television line existing
0000		underground
9359	ut UTILITY-anno	Annotation for cells utility notes
		and information
9360	ut VARIOUS-POINT-FEATURES	Various point features-cabinet-
0261		Mater chandened underground
9301		Water pow underground
9363		Water existing underground
0361		Litility cabinet outline
0365		
9366		Pump outline
9366		Pump outline

Number	Name	Description
9368	ut FEATURE-OUTLINE-VAULT	Vault outline
9369	ut FEATURE-OUTLINE-OTHER	Outline of a utility - misc
0270		Traffic Control conduit abandoned
9370		underground
0371		Traffic Control conduit new
9371		underground
9372	ut TRAFFIC-CONTROL-X	Traffic Control conduit existing
0072		underground
9373	ut_POSITIVELOCATION-MISC-X	Positive Location of Misc Utilities
9374	ut_ITS-X	Intelligent Transportation Systems
9375	ut NO-PLOT	Elements on this level will not
0010		plot!
9400	tcd_BARRIER-CONC	Concrete barrier all types
9401	tcd BARRIER-CONC-anno	Annotation for concrete barrier all
		types
9402	tcd_BARRIER-CONC-TYPE-25	All Type25 concrete barriers
9403	tcd_BARRIER-CONC-TYPE-26	All Type 26 concrete barriers
9404	tcd_BARRIER-CONC-TYPE-27MOD	All Type 27Mod concrete barriers
9405	tcd_BARRIER-CONC-TYPE-50	All Type 50 concrete barriers
9406	tcd_BARRIER-CONC-TYPE-60	All Type 60 concrete barriers
9407	tcd_BARRIER-CONC-TYPE-60- PORTABLE	Type 60 portable concrete barrier
9408	tcd_BARRIER-CONC-TYPE-80	All Type 80 concrete barriers
9409	tcd_BARRIER-CONC-TYPE-90	Type 90 concrete barrier
9410	tcd_BARRIER-CONC-TYPE-732	All Type 732 concrete barriers
9411	tcd_BARRIER-CONC-TYPE-736	All Type 736 concrete barriers
9412	tcd_BARRIER-CONC-TYPE-742	All Type 742 concrete barriers
9413	tcd_BARRIER-CONC-TYPE-K	Type K concrete barrier-
9414	tcd BARRIER-THRIE-BEAM	Thrie Beam barrier
9415	tcd_BARRIER-THRIE-BEAM-anno	Annotation for Thrie Beam barrier
9416	tcd_BARRIER-THRIE-BEAM-EXIST	Existing Thrie Beam barrier to be modified
9417	tcd_CMS	Changeable message sign-
9418	ted CRASH-CUSHION	Permanent crash cushions
9419	tcd_CRASH-CUSHION-anno	Annotation for crash cushions
9420		Delineators all types
0420		Double railing or thrie beam
9421	tcd_DOUBLE-RAIL	barrier
9422	tcd GSBWFILL	GuideSIGN black and white fill
9423		GuideSIGN color fill
9424	tcd GSDIMS	GuideSIGN dimensions
9425	tcd GSOUTLINE	GuideSIGN outline

Number	Name	Description
9426	tcd MARKER	Markers all types
0407		Annotation for markers and
9427		delineators
0429		Tabular data for pavement
9420		delineation quantities
9429	tcd_PVMT-MARKER	Pavement markers
9430	tcd_PVMT-MARKER-anno	Annotation for pavement markers
9431	tcd_PVMT-MARKING	Pavement markings
9432	ted PVMT-MARKING-anno	Annotation for all type pavement
3432		markings
9433	tcd_RAILING	Railings all types
9434	tcd_RAILING-anno	Annotation for railings all types
9435	tcd_RAILING-BR-ST10	California ST10 bridge rail
9436	tcd_RAILING-BR-ST20S	California ST20s bridge rail
9437	tcd_RAILING-BR-ST30	California ST30 bridge rail
9438	tcd_RAILING-BR-ST40	California ST40 bridge rail
9439	tcd_RAILING-BR-ST70	California ST70 bridge rail
9440	tcd_RAILING-CABLE	Cable railing
9441	tcd_RAILING-EXIST	Existing guardrail to be modified
9442	tcd_RAILING-MGS	Midwest Guardrail System
9443	tcd_RUMBLE-STRIP	Rumble strips
9444	tcd_RUMBLE-STRIP-anno	Annotation for rumble strips
9445	tcd_SIGN-OVERHEAD	Overhead signs
9446	tcd_SIGN-OVERHEAD-anno	Annotation for overhead signs
9447	tcd_SIGN-PANEL	Sign panels
9448	tcd_SIGN-PANEL-anno	Annotation for sign panels
9449	tcd_SIGN-QTY-TABLE	Tabular data for sign quantities
9450	tcd_SIGN-ROADSIDE	Roadside signs
9451	tcd_SIGN-ROADSIDE-anno	Annotation for roadside signs
9452	tcd_TRAFFIC-STRIPE	Traffic strip for all type lane lines
9453	tcd_TRAFFIC-STRIPE-anno	Annotation for traffic strip for all
		type lane lines
9454	tcd NO-PLOT	Elements on this level will not
		plot!
9500	mc_CURB	Curbs
9501	mc_CURB-GUITER	Curb and gutters
9502	mc_CURB-RAMP	Curb ramps
9503	mc_DRIVEWAY	Driveways
9504	mc_FENCE	Fence all types
9505	mc_FENCE-anno	Annotation for fence all types
9506	mc_FENCE-BW	Barbed Wire fence
9507	mc_FENCE-CL	Chain Link tence
9508	mc_FENCE-TEMP	I emporary fence
9509	mc_FENCE-WM	Wire Mesh fence

Number	Name	Description
9510	mc_ISLAND	Islands
0511		Annotation for miscellaneous
9511		construction
9512	mc_PROFILE-CURB-RAMP	Profiles for designing curb ramps
9513	mc_PROFILE-FLOW-LINE	Profile of flowline of curb
9514	mc_PUMPING-EQUIPMENT	Pumping equipment
9515	mc_PUMPING-EQUIPMENT-anno	Annotation for pumping equipment
9516	mc SIDEWALK	Sidewalks
9517	mc SLOPE-PROTECTION	Slope protection
9518	mc_SLOPE-PROTECTION-anno	Annotation for slope protection
9519	mc_NO-PLOT	Elements on this level will not plot!
9600	wpc COMPOST-BERM	Permanent compost berm
9601	wpc_COMPOST-SOCK	Permanent compost sock
9602	wpc FIBER-ROLL	Permanent fiber roll
0000		Annotation for all permanent wpc
9603	wpc_FIBER-ROLL-anno	items
9604	wpc_SOIL-STABILIZATION	Temporary soil stabilization
0605	Who TEMD appa	Annotation for all temporary wpc
9605		items
9606	wpc_TEMP-DITCH-SWALE	Temporary ditch or swale
9607	wpc_TEMP-EARTH-BERM	Temporary earth berm
9608	wpc_TEMP-FIBER-ROLL	Temporary fiber roll
9609	wpc_TEMP-GRAVEL-BAG	Temporary gravel bag
9610	wpc_TEMP-SILT-FENCE	Temporary silt fence all types
9611	wpc_TEMP-SLOPE-DRAIN	Temporary slope drain flex pipe
9612	wpc_TEMP-STRAW-BALE	Temporary straw bale barrier
9613		Water pollution control treatment
5015		permanent facilities-vaults
9614	wpc_TREATMENT-anno	Annotation for treatment facilities-
		vaults
9615	wpc_TEMP-POINT-Feature	Temporary point feature
9616	wpc_NO-PLOT	Elements on this level will not plot!
9650	esa_AREA	Environmentally sensitive area
0651		Annotation for all environmentally
9031		sensitive areas
9652	esa_BIOLOGICAL	Biological resources
9653	esa_CULTURAL	Cultural resources
9654	esa_HISTORIC	Historic Structures
9655	esa_PALEONTOLOGICAL	Paleontological resources
9656	esa_NO-PLOT	Elements on this level will not plot!

Number	Name	Description
9700	wall_RW-ARCH-TREATMENT	Architectural treatment of retaining wall
9701	wall_RW-ARCH-TREATMENT-anno	Annotation for archl treatment of retaining wall
9702	wall_RW-DETAIL	Details of retaining wall
9703	wall_RW-DETAIL-anno	Annotation for details of retaining wall
9704	wall_RW-ELEVATION	Elevation view of retaining wall
9705	wall_RW-ELEVATION-anno	Annotation for elevation view of retaining wall
9706	wall_RW-LOTB	Log of test borings for retaining wall
9707	wall_RW-LOTB-anno	Annotation for log of test borings retaining wall
9708	wall_RW-QTY	Tabular data for retaining wall quantities
9709	wall_RW-TYPICAL-SECTION	Typical section of retaining wall
9710	wall_RW-TYPICAL-SECTION-anno	Annotation for typical section of retaining wall
9711	wall_SW-ARCH-TREATMENT	Architectural treatment of sound wall
9712	wall_SW-ARCH-TREATMENT-anno	Annotation for architectural treatment of sound wall
9713	wall_SW-DETAIL	Details of sound wall
9714	wall_SW-DETAIL-anno	Annotation for details of sound wall
9715	wall_SW-ELEVATION	Elevation view of sound wall
9716	wall_SW-ELEVATION-anno	Annotation for elevation view of sound wall
9717	wall_SW-LOTB	Log of test borings for sound wall
9718	wall_SW-LOTB-anno	Annotation for log of test borings for sound wall
9719	wall_SW-QTY	Tabular data for sound wall quantities
9720	wall_SW-TYPICAL-SECTION	Typical section of sound wall
9721	wall_SW-TYPICAL-SECTION-anno	Annotation for typical section of sound wall
9722	wall_SYMBOLOGY	Line styles representing wall symbology
9723	wall_NO-PLOT	Elements on this level will not plot!
9800	temp_BARRICADES	Temporary barricades
9801	temp_CHANNELIZERS	Temporary channelizers
9802	temp CONSTRUCTION	Temporary construction

Number	Name	Description
0803	tomp CONSTRUCTION appa	Annotation for temporary
3003		construction and facilities
9804	temp_CRASH-CUSHION	Temporary crash cushion
3004		modules
9805	temp_FACILITIES	Temporary facilities
9806	temp_FLASHING-ARROW-SIGN	Temporary flashing arrow signs
9807	temp_FLASHING-BEACON	Temporary and portable flashing beacons
9808	temp_HIGH-VISIBILITY-FENCE	Temporary high visibility fence
9809	temp_HIGH-VISIBILITY-FENCE-anno	Annotation for temporary high visibility fence
9810	temp_PORTABLE-CMS	Portable changeable message sign
9811	temp_PORTABLE-DELINEATORS	Temporary portable delineators
9812	temp_PVMT-DELINEATION	Temporary pavement delineation all types
9813	temp RAILING-TYPE-K	Type K temporary railing
9814	temp SIGNAL-SYSTEMS	Temporary signal systems
9815	temp_SIGNAL-SYSTEMS-anno	Annotation for temporary signal systems
9816	temp TRAFFIC-CONES	Temporary Traffic Cones
9817	temp TRAFFIC-CONTROL	Temporary traffic control devices
9818	temp_TRAFFIC-CONTROL-anno	Annotation for temp traffic control devices all types
9819	temp TRAFFIC-DRUMS	Temporary plastic traffic drums
9820	temp_NO-PLOT	Elements on this level will not plot!
9900	stage 1	Stage 1 construction
9901	stage_1-anno	Annotation for stage 1
		Drepout of stopp 1 construction
9902	stage_1_drop	for stage 2
9903	stane 2	Stage 2 construction
0000		Annotation for stage 2
9904	stage_2-anno	construction
		Dropout of stage 2 construction
9905	stage_2_drop	for stage 3
9906	stage 3	Stage 3 construction
0007		Annotation for stage 3
9907	stage_3-anno	construction
9908	stage_3_drop	Dropout of stage3 construction for stage 4
9909	stage 4	Stage 4 construction
9910	stage_4-anno	Annotation for stage 4

Number	Name	Description
		construction
0011	ataga 4 drag	Dropout of stage 4 construction
9911	stage_4_drop	for stage 5
9912	stage_5	Stage 5 construction
0013	stage 5 anno	Annotation for stage 5
3313		construction
9914	stage 5 drop	Dropout of stage 5 construction
3314		for stage 6
9915	stage_6	Stage 6 construction
9916	stage 6-anno	Annotation for stage 6
0010		construction
9917	stage 6 drop	Dropout of stage 6 construction
0017		for stage 7
9918	stage_7	Stage 7 construction
9919	stage 7-anno	Annotation for stage 7
		construction
9920	stage 7 drop	Dropout of stage 7 construction
		for stage 8
9921	stage_8	Stage 8 construction
9922	stage 8-anno	Annotation for stage 8
		construction
9923	stage 8 drop	Dropout of stage 8 construction
		for stage 9
9924	stage_9	Stage 9 construction
9925	stage 9-anno	Annotation for stage 9
		construction
9926	stage 9 drop	Dropout of stage 9 construction
0007		for stage 10
9927	stage_10	Stage TO construction
9928	stage 10-anno	Annotation for stage 10
		Dranaut of stage 10 construction
9929	stage_10_drop	bropout of stage 10 construction
		Flomonte on this lovel will not
9930	stage_NO-PLOT	Elements on this level will not
10000		
10000		Areas all types
10001		Annotation for areas an types
10002		Area for erosion control
10003		Area for crossion control drill acad
10004		Area for areasion control dry acad
0005	IS_AREA-EU-URI-SEEU	Area for areasion control rolled
10006	Is_AREA-EC-ROLLED-PRODUCT	product
10007		Area for bardagene
10007	IS_AREA-MARDOUAPE	AIEd IVI Halusudhe

10008     Is AREA-MULCH     Area for mulch all types       10009     Is AREA-ROADSIDE-CLEARING     Area for roadside clearing       10010     Is CONDUCTOR     Conductor all types       10011     Is CONDUTT     Conductor all types       10012     Is CONDUIT-anno     Annotation for conduits all types       10013     Is CONDUIT-EXIST     Existing conduits all types       10014     Is CONDUIT-EXIST     Existing conduits all types       10015     Is_CONTROLLER     Controller all types       10016     Is_CONTROLLER-ANNO     Annotation for existing controllers all types       10019     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST-anno     Annotation for existing controllers       10020     Is_DETAIL     Irrigation-planting-hardscape       10021     Is_DETAIL     Annotation for Irrigation-planting-hardscape       10022     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is FLOW-SENSOR-CABLE     Cable for flow sensor       10024     Is_KEY-MAP     Miscellaneous ce	Number	Name	Description
10009     Is     AREA-ROADSIDE-CLEARING     Area for roadside clearing       10010     Is     CONDUCTOR     Conductor all types       10011     Is     CONDUCTOR     Annotation for conduits all types       10012     Is     CONDUIT-anno     Annotation for conduits all types       10013     Is     CONDUIT-EXIST     Existing conduits all types       10014     Is     CONDUIT-EXIST     Annotation for controllers all types       10015     Is     CONTROLLER     Controller all types       10016     Is     CONTROLLER-anno     Annotation for controllers all types       10017     Is     CONTROLLER-EXIST     Existing controllers all types       10018     Is     CONTROLLER-EXIST     Annotation for existing controllers all types       10020     Is_DETAIL     Irrigation-planting-hardscape     details       10021     Is_DETAIL     Irrigation-planting-hardscape     details       10022     Is     FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is     FLOW-SENSOR-CABLE     Cable for flow sensor       10024     Is     KEY-MA	10008	Is AREA-MULCH	Area for mulch all types
10010     Is_CONDUCTOR     Conductor all types       10011     Is_CONDUT     Annotation for conductor all types       10012     Is_CONDUIT-anno     Annotation for conduits all types       10013     Is_CONDUIT-anno     Annotation for conduits all types       10014     Is_CONDUIT-EXIST     Existing conduits all types       10015     Is_CONTROLLER     Controller all types       10016     Is_CONTROLLER-anno     Annotation for existing controllers all types       10019     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST     Existing controllers all types       10010     Is_CONTROLLER-EXIST     Annotation for existing controllers       10020     Is_CONTROLLER-EXIST     Annotation for existing controllers       10021     Is_CONTROLLER-EXIST     Annotation for Irrigation-planting-hardscape       10022     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10024     Is_KEY-MAP     Irrigation-planting-hardscape key map       10025     Is_KEY-MAP-anno     Annotation for Irrigation-planting-hardscape key map       1	10009	Is AREA-ROADSIDE-CLEARING	Area for roadside clearing
10011     Is_CONDUCTOR-anno     Annotation for conductor all types       10012     Is_CONDUIT     Conduit all types       10013     Is_CONDUIT-EXIST     Existing conduits all types       10014     Is_CONDUIT-EXIST     Existing conduits all types       10015     Is_CONTROLLER     Controller all types       10016     Is_CONTROLLER     Controller all types       10017     Is_CONTROLLER-EXIST     Existing controllers all types       10018     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST-anno     Annotation for existing controllers all types       10020     Is_DETAIL     Irrigation-planting-hardscape details       10021     Is_DETAIL-anno     Annotation for Irrigation-planting-hardscape details       10022     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is_FLOW-SENSOR-CABLE-anno     Annotation for Irrigation-planting-hardscape key map       10024     Is_KEY-MAP     Irrigation-planting-hardscape key map       10025     Is_MISC-anno     Annotation for relis, utility notes and information       10026     Is_PLANT     Plants all types       10031	10010	Is CONDUCTOR	Conductor all types
10012   Is_CONDUIT   Conduit all types     10013   Is_CONDUIT-anno   Annotation for conduits all types     10014   Is_CONDUIT-EXIST   Existing conduits all types     10015   Is_CONDUIT-EXIST-anno   Annotation for existing conduits     10016   Is_CONTROLLER   Controller all types     10017   Is_CONTROLLER-anno   Annotation for controllers all types     10018   Is_CONTROLLER-EXIST   Existing controllers     10019   Is_CONTROLLER-EXIST-anno   Annotation for controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP-anno   Annotation for cells, utility notes and information     10025   Is_MISC-CELL   Miscellaneous cells and information     10026   Is_PLANT   Plants all types     10030   Is_PLANT-GROUNDCOVER   Groundcover type plants     10031   <	10011	Is CONDUCTOR-anno	Annotation for conductor all types
10013     Is_CONDUIT-exist     Annotation for conduits all types       10014     Is_CONDUIT-EXIST     Existing conduits all types       10015     Is_CONDUIT-EXIST     Annotation for existing conduits all types       10016     Is_CONTROLLER     Controller all types       10017     Is_CONTROLLER-anno     Annotation for controllers all types       10018     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST     Annotation for existing controllers all types       10019     Is_CONTROLLER-EXIST-anno     Annotation for existing controllers all types       10020     Is_DETAIL     Irrigation-planting-hardscape details       10021     Is_DETAIL-anno     Annotation for Irrigation-planting-hardscape details       10022     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is_FLOW-SENSOR-CABLE-anno     Annotation for linigation-planting-hardscape key map       10024     Is_KEY-MAP     Irrigation-planting-hardscape key map       10025     Is_KEY-MAP-anno     Annotation for cells, utility notes and information       10026     Is_PLANT     Plants all types     10030       10027     Is_PLANT	10012		Conduit all types
10014   Is_CONDUIT-EXIST   Existing conduits all types     10015   Is_CONTROLLER   Annotation for existing conduits all types     10016   Is_CONTROLLER   Controller all types     10017   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST-anno   Annotation for existing controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE-anno   Annotation for Irrigation-planting-hardscape key map     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_MISC-anno   Annotation for clus, utility notes and information     10026   Is_PLANT   Plants all types     10029   Is_PLANT-GROUNDCOVER   Groundcover type plants     10031   Is_PLANT-GROUNDCOVER   Groundcover type plants     10032   Is_PLANT-GROUNDCOVER   Groundcover type plants     10033   Is_PLANT-TREE   Tree type plants	10013	Is CONDUIT-anno	Annotation for conduits all types
10015     Is_CONDUIT-EXIST-anno     Annotation for existing conduits all types       10016     Is_CONTROLLER     Controller all types       10017     Is_CONTROLLER-anno     Annotation for controllers all types       10018     Is_CONTROLLER-EXIST     Existing controllers all types       10019     Is_CONTROLLER-EXIST-anno     Annotation for existing controllers all types       10020     Is_DETAIL     Irrigation-planting-hardscape details       10021     Is_DETAIL-anno     Annotation for Irrigation-planting- hardscape details       10022     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10023     Is_FLOW-SENSOR-CABLE     Cable for flow sensor       10024     Is_KEY-MAP     Irrigation-planting-hardscape key map       10025     Is_KEY-MAP-anno     Annotation for Irrigation-planting- hardscape key map       10026     Is_MISC-anno     Annotation for cells, utility notes and information       10028     Is_PLANT     Plants all types       10030     Is_PLANT-AREA     Area for a group of plants       10031     Is_PLANT-GROUNDCOVER     Groundcover type plants       10032     Is_PLANT-SHRUB     Shrub type plants       <	10014	Is_CONDUIT-EXIST	Existing conduits all types
10016   Is_CONTROLLER   Controller all types     10017   Is_CONTROLLER-anno   Annotation for controllers all types     10018   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST-anno   Annotation for existing controllers     10020   Is_DETAIL   Irrigation-planting-hardscape     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP-anno   Annotation for Irrigation-planting-hardscape key map     10026   Is_MISC-anno   Annotation for cells, utility notes and information     10027   Is_MISC-CELL   Miscellaneous cells and information     10028   Is_PLANT-AREA   Area for a group of plants     10030   Is_PLANT-AREA   Area for a group of plants     10031   Is_PLANT-GROUNDCOVER   Groundcover type plants     10033   Is_PLANT-SHRUB   Shrub type plants     10034   Is_PLANT-TREE   Tree type plants     10035	10015	Is CONDUIT-EXIST-anno	Annotation for existing conduits
10016   Is_CONTROLLER   Controller all types     10017   Is_CONTROLLER-anno   Annotation for controllers all types     10018   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST-anno   Annotation for existing controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE   Annotation for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP-anno   Annotation for Irrigation-planting-hardscape key map     10026   Is_MISC-anno   Annotation for Irrigation-planting-hardscape key map     10027   Is_PLANT   Plants all types     10028   Is_PLANT   Plants all types     10030   Is_PLANT   Plants all types     10031   Is_PLANT-CUTTING   Cutting type plants     10032   Is_PLANT-GUDECOVER   Groundcover type plants     10033   Is_PLANT-SHRUB   Shrub type plants     10033   Is_PLANT-	10010		all types
10017   Is_CONTROLLER-ANNO   Annotation for controllers all types     10018   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST   Existing controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP   Annotation for Irrigation-planting-hardscape key map     10026   Is_MISC-anno   Annotation for Irrigation-planting-hardscape key map     10027   Is_MISC-CELL   Miscellaneous cells and information     10028   Is_PLANT   Plants all types     10030   Is_PLANT-AREA   Area for a group of plants     10031   Is_PLANT-CUTTING   Cutting type plants     10032   Is_PLANT-SHRUB   Shrub type plants     10033   Is_PLANT-SHRUB   Shrub type plants     10034   Is_PLANT-THEE   Tree type plants     10035   Is_PLANT-THEE </td <td>10016</td> <td></td> <td>Controller all types</td>	10016		Controller all types
10018   Is_CONTROLLER-EXIST   Existing controllers all types     10019   Is_CONTROLLER-EXIST-anno   Annotation for existing controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE-anno   Annotation for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP   Annotation for Irrigation-planting-hardscape key map     10026   Is_MISC-anno   Annotation for cells, utility notes and information     10027   Is_MISC-CELL   Miscellaneous cells and information     10028   Is_PLANT   Plants all types     10030   Is_PLANT-AREA   Area for a group of plants     10031   Is_PLANT-GROUNDCOVER   Groundcover type plants     10033   Is_PLANT-LINER   Liners for plants     10034   Is_PLANT-TREE   Tree type plants     10035   Is_PLANT-TREE   Tree type plants     10036   Is_POINT-FEATURE   Tabular data for iririgation-planting-hardscape quantities	10017		Annotation for controllers all types
10019   Is_CONTROLLER-EXIST-anno   Annotation for existing controllers all types     10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE-anno   Annotation for Irrigation-planting-hardscape key map     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP-anno   Annotation for cells, utility notes and information     10026   Is_MISC-anno   Annotation for cells, utility notes and information     10027   Is_MISC-CELL   Miscellaneous cells and information     10028   Is_PLANT   Plants all types     10030   Is_PLANT-AREA   Area for a group of plants     10031   Is_PLANT-GROUNDCOVER   Groundcover type plants     10033   Is_PLANT-SHRUB   Shrub type plants     10034   Is_PLANT-TREE   Tree type plants     10035   Is_PLANT-TREE   Tree type plants     10036   Is_PCONT-FEATURE   Tabular data for irrigation-planting-hardscape quantities     10037   Is_CTY-TABLE   Tabular data for schedul	10018	IS_CONTROLLER-EXIST	Existing controllers all types
10020   Is_DETAIL   Irrigation-planting-hardscape details     10021   Is_DETAIL-anno   Annotation for Irrigation-planting-hardscape details     10022   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10023   Is_FLOW-SENSOR-CABLE   Cable for flow sensor     10024   Is_KEY-MAP   Irrigation-planting-hardscape key map     10025   Is_KEY-MAP-anno   Annotation for Irrigation-planting-hardscape key map     10026   Is_MISC-anno   Annotation for cells, utility notes and information     10027   Is_MISC-CELL   Miscellaneous cells and information     10028   Is_PLANT   Plants all types     10030   Is_PLANT-AREA   Area for a group of plants     10031   Is_PLANT-GROUNDCOVER   Groundcover type plants     10032   Is_PLANT-LINER   Liners for plants     10033   Is_PLANT-SHRUB   Shrub type plants     10034   Is_PLANT-TREE   Tree type plants     10036   Is_PLANT-FREE   Tree type plants     10037   Is_OTY-TABLE   Tabular data for irrigation-planting-hardscape equantities     10038   Is_SCHEDULE-LEGEND   Tabular data for schedules and legends     10039	10019	Is_CONTROLLER-EXIST-anno	Annotation for existing controllers all types
10021Is_DETAIL-annoAnnotation for Irrigation-planting-hardscape details10022Is_FLOW-SENSOR-CABLECable for flow sensor10023Is_FLOW-SENSOR-CABLE-annoAnnotation for flow sensor10024Is_KEY-MAPIrrigation-planting-hardscape key map10025Is_KEY-MAP-annoAnnotation for Irrigation-planting- hardscape key map10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-SHRUBShrub type plants10034Is_PLANT-TREETree type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATURETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10030Is_SPRINKLERSprinklers all types	10020	Is_DETAIL	Irrigation-planting-hardscape details
10022Is_FLOW-SENSOR-CABLECable for flow sensor10023Is_FLOW-SENSOR-CABLE-annoAnnotation for flow sensor10024Is_KEY-MAPIrrigation-planting-hardscape key map10025Is_KEY-MAP-annoAnnotation for Irrigation-planting- hardscape key map10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and 	10021	Is_DETAIL-anno	Annotation for Irrigation-planting-
10022Is_FLOW-SENSOR-CABLE-annoAnnotation for flow sensor10024Is_KEY-MAPIrrigation-planting-hardscape key map10025Is_KEY-MAP-annoAnnotation for Irrigation-planting- hardscape key map10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-AREAArea for a group of plants10030Is_PLANT-GROUNDCOVERGroundcover type plants10031Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-SHRUBShrub type plants10034Is_PLANT-TREETree type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types	10022	IS FLOW-SENSOR-CABLE	Cable for flow sensor
10026Is_KEY-MAPIrrigation-planting-hardscape key map10025Is_KEY-MAP-annoAnnotation for Irrigation-planting- hardscape key map10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-AREAArea for a group of plants10030Is_PLANT-CUTTINGCutting type plants10031Is_PLANT-CUTTINGCutting type plants10033Is_PLANT-LINERLiners for plants10034Is_PLANT-TREETree type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10038Is_SCHEDULE-LEGENDTabular data for irrigation- planting-hardscape quantities10039Is_SPRINKLERSprinklers all types	10023	Is FLOW-SENSOR-CABLE-anno	Annotation for flow sensor
10025Is_KEY-MAP-annoAnnotation for Irrigation-planting-hardscape key map10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-LINERLiners for plants10034Is_PLANT-TREETree type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter-sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation-planting-hardscape quantities10038Is_SPRINKLERSprinklers all types10040Is_SPRINKLERSprinklers all types	10024	Is_KEY-MAP	Irrigation-planting-hardscape key
10026Is_MISC-annoAnnotation for cells, utility notes and information10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-INERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLERSprinklers all types	10025	ls_KEY-MAP-anno	Annotation for Irrigation-planting-
10027Is_MISC-CELLMiscellaneous cells and information10028Is_PLANTPlants all types10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-INERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLERApproaction for sprinklers all types	10026	Is_MISC-anno	Annotation for cells, utility notes and information
10028Is_PLANTPlants all types10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-GROUNDCOVERGroundcover type plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-SHRUBShrub type plants10036Is_PLANT-TREETree type plants10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLERAnnotation for sprinklers all types	10027	Is_MISC-CELL	Miscellaneous cells and information
10029Is_PLANT-annoAnnotation for plants all types10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-INERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLERAnnotation for sprinklers all types	10028	Is PLANT	Plants all types
10030Is_PLANT-AREAArea for a group of plants10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-LINERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-Annotation for sprinklers all types	10029	Is PLANT-anno	Annotation for plants all types
10031Is_PLANT-CUTTINGCutting type plants10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-LINERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-Appropriation for sprinklers all types	10030	IS_PLANT-AREA	Area for a group of plants
10032Is_PLANT-GROUNDCOVERGroundcover type plants10033Is_PLANT-LINERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-Annotation for sprinklers all types	10031	IS_PLANT-CUTTING	Cutting type plants
10033Is_PLANT-LINERLiners for plants10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-Annotation for sprinklers all types	10032	Is_PLANT-GROUNDCOVER	Groundcover type plants
10034Is_PLANT-SHRUBShrub type plants10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-annoAnnotation for sprinklers all types	10033	Is_PLANT-LINER	Liners for plants
10035Is_PLANT-TREETree type plants10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-annoAnnotation for sprinklers all types	10034	Is_PLANT-SHRUB	Shrub type plants
10036Is_POINT-FEATUREVarious point features-meter- sensor-gate-etc10037Is_QTY-TABLETabular data for irrigation- planting-hardscape quantities10038Is_SCHEDULE-LEGENDTabular data for schedules and legends10039Is_SPRINKLERSprinklers all types10040Is_SPRINKLER-annoAnnotation for sprinklers all types	10035	Is_PLANT-TREE	Tree type plants
10030 Is_rolivial Extreme sensor-gate-etc   10037 Is_QTY-TABLE Tabular data for irrigation-planting-hardscape quantities   10038 Is_SCHEDULE-LEGEND Tabular data for schedules and legends   10039 Is_SPRINKLER Sprinklers all types   10040 Is_SPRINKLER-anno Annotation for sprinklers all types	10036		Various point features-meter-
10037   Is_QTY-TABLE   Tabular data for irrigation-planting-hardscape quantities     10038   Is_SCHEDULE-LEGEND   Tabular data for schedules and legends     10039   Is_SPRINKLER   Sprinklers all types     10040   Is_SPRINKLER-anno   Annotation for sprinklers all types	10030		sensor-gate-etc
10007 Is_CTTTABLE planting-hardscape quantities   10038 Is_SCHEDULE-LEGEND Tabular data for schedules and legends   10039 Is_SPRINKLER Sprinklers all types   10040 Is_SPRINKLER-anno Annotation for sprinklers all types	10037	Is_QTY-TABLE	Tabular data for irrigation-
10038   Is_SCHEDULE-LEGEND   Tabular data for schedules and legends     10039   Is_SPRINKLER   Sprinklers all types     10040   Is_SPRINKLER-anno   Annotation for sprinklers all types	10007		planting-hardscape quantities
10039 Is_SPRINKLER Sprinklers all types   10040 Is_SPRINKLER-anno Annotation for sprinklers all types	10038	Is_SCHEDULE-LEGEND	Tabular data for schedules and legends
10040 Is SPRINKI FR-anno Annotation for sprinklers all types	10039	IS SPRINKI FR	Sprinklers all types
	10040	Is SPRINKI FR-anno	Annotation for sprinklers all types

Number	Name	Description
10041	Is_SPRINKLER-EXIST	Existing sprinklers all types
10042		Annotation for existing sprinklers
10042	IS_SPRINKLER-EXIST-anno	all types
10043	Is_SUPPLY-LINE	Supply line all types
10044	Is SUPPLY-LINE-anno	Annotation for supply line all
10044		types
10045	Is_SUPPLY-LINE-BRIDGE	Bridge supply line
10046	Is_SUPPLY-LINE-CLASS315	Plastic pipe class 315 supply line
10047	Is_SUPPLY-LINE-COPPER	Copper supply line
10048	Is_SUPPLY-LINE-EXIST	Existing supply line
10049	Is_SUPPLY-LINE-EXIST-anno	Annotation for existing supply line
10050	Is_SUPPLY-LINE-GSP	Galvanized steel pipe supply line
10051	Is_SUPPLY-LINE-LATERAL	Lateral supply line
10052	Is_SUPPLY-LINE-MAIN	Main supply line
10053	IS SUPPLY-LINE-SCH40	Plastic pipe schedule 40 supply
10033		line
10054	Is_SUPPLY-LINE-TUBING	Tubing supply line
10055	Is_VALVE	Valves all types
10056	Is_VALVE-anno	Annotation for valves all types
10057	Is_VALVE-EXIST	Existing valves all types
10058	ls_VALVE-EXIST-anno	Annotation for existing valves all
10000		types
10059	Is_IRRIGATION	Irrigation
10060	Is_IRRIGATION-EXIST	Existing Irrigation
10061	Is_PLANT-VINE	Vine type plants
10062		Elements on this level will not
10002		plot!
10100	es_CCTV	Closed circuit television system
10101	es CCTV-anno	Annotation for closed circuit
10101		television system
10102	es_CELL-anno	Annotation for all cells
10103	es_CELL-CONDUIT-RISER	Cells for conduits and risers
10104	es_CELL-LIGHTING	Cells for lighting
10105	es CELL-MISC-COMPONENTS	Cells for other electrical
10100		components
10106	es_CELL-NOTE-SYMBOL	Cells for notes and symbols
10107	es_CELL-SIGNALS	Cells for signals
10108	es CMS	Changeable message sign
		system
10109	es CMS-anno	Annotation for changeable
		message sign system
10110	es_DETAIL	Electrical systems details
10111	es DETAIL-anno	Annotation for electrical system
		details

Number	Name	Description
10110		Extinguishable message sign
10112		system
10112		Annotation for extinguishable
10113		message sign system
10114		Emergency vehicle detection
10114		system
10115	es EVD anno	Annotation for emergency vehicle
10115		detection system
10116	es_EXIST	Existing electrical system
10117	es EXIST-anno	Annotation for existing electrical
10117		system
10118	es_FLASHING-BEACON	Flashing beacon system
10119	es ELASHING-BEACON-anno	Annotation for flashing beacon
10110		system
10120	es_FO	Fiber optic system
10121	es_FO-anno	Annotation for fiber optic system
10122	es_HAR	Highway advisory radio system
10123	es HAR-anno	Annotaion for highway advisory
10120		radio system
10124		Interconnection conduit and cable
10125	es INTERCONNECTION-anno	Annotation for interconnection
		conduit and cable
10126	es LEGEND-anno	Annotation for notes legends and
10107		abbreviations
10127		Lighting system
10128		Annotation for lighting system
10129		Lighting system city street
10130	es_LIGHTING-CITY-anno	Annotation for lighting system city
10121		Sileei
10131		Apportation for tomporary lighting
10132	es_LIGHTING-TEMP-anno	system
		Modify closed circuit television
10133	es_MODIFY-CCTV	system
		Annotation for modify closed
10134	es_MODIFY-CCTV-anno	circuit television system
		Modify extinguishable message
10135	es_MODIFY-EMS	sign system
10136		Annotaton for modify
	es_MODIFY-EMS-anno	extinguishable message sign
		system
40407		Modify emergency vehicle
10137		detection system
10138	es MODIFY-EVD-anno	Annotation for modify emergency

Number	Name	Description
		vehicle detection system
10139	es_MODIFY-FO	Modify fiber optic system
10140	es MODIEV EO anno	Annotation for modify fiber optic
10140		system
10141	es MODIFY-HAR-EMS	Modify highway advisory radio
		system
10142	es MODIFY-HAR-EMS-anno	Annotation for modify highway
10110		advisory radio system
10143	es_MODIFY-RAMP-METERING	Apportation for modify romp
10144	es_MODIFY-RAMP-METERING-anno	Annotation for modify ramp
		Modify roadside weather
10145	es_MODIFY-RWIS	information system
		Annotation for modify roadside
10146	es_MODIFY-RWIS-anno	weather information system
10147	es MODIFY-SIGNAL-LIGHTING	Modify signal and lighting system
10110		Annotation for modify signal and
10148	es_MODIFY-SIGNAL-LIGHTING-anno	lighting system
10149	es_MODIFY-SIGN-ILLUMINATION	Modify sign illumination system
10150	es_MODIFY-SIGN-ILLUMINATION-	Annotation for sign illumination
10130	anno	system
10151	es OTY-TABLE	Tabular data for electrical
		systems quantities
10152	es_RAMP-METERING	Ramp metering system
10153	es RAMP-METERING-anno	Annotation for ramp metering
10151		system
10154		Remove existing electrical system
10155	es_REMOVE-anno	Annotation for remove existing
		Roadside weather information
10156	es_RWIS	system
		Annotation for roadside weather
10157	es_RWIS-anno	information system
40450		Electrical service for booster
10158	es_SERVICE-BOOSTER-PUMP	pump
10150		Annotation for electrical service
10159	es_SERVICE-BOOSTER-POMF-allilo	for booster pump
10160	es_SERVICE-IRRIGATION	Electrical service for irrigation
10161	es SERVICE-IRRIGATION-anno	Annotation for electrical service
		for irrigation
10162	es_SIGNAL-LIGHTING	Signal and lighting system
10163	es_SIGNAL-LIGHTING-anno	Annotation for signal and lighting
10164		System
10164	ES_SIGNAL-LIGHTING-CITY	Signal and lighting system city

Number	Name	Description
		street
10165	es_SIGNAL-LIGHTING-CITY-anno	Annotation for signal and lighting system city street
10166	es_SIGN-ILLUMINATION	Sign illumination system
10167	es_SIGN-ILLUMINATION-anno	Annotation for sign illumination system
10168	es_STAGE-1	Stage 1 electrical construction
10169	es_STAGE-1_drop	Dropout of stage 1 electrical construction for stage 2
10170	es_STAGE-1-anno	Annotation for stage 1 electrical construction
10171	es STAGE-2	Stage 2 electrical construction
10172	es_STAGE-2_drop	Dropout of stage 2 electrical construction for stage 3
10173	es_STAGE-2-anno	Annotation for stage 2 electrical construction
10174	es_STAGE-3	Stage 3 electrical construction
10175	es_STAGE-3_drop	Dropout of stage 3 electrical construction for stage 4
10176	es_STAGE-3-anno	Annotation for stage 3 electrical construction
10177	es_STAGE-4	Stage 4 electrical construction
10178	es_STAGE-4_drop	Dropout of stage 4 electrical construction for stage 5
10179	es_STAGE-4-anno	Annotation for stage 4 electrical construction
10180	es_STAGE-5	Stage 5 electrical construction
10181	es_STAGE-5_drop	Dropout of stage 5 electrical construction for stage 6
10182	es_STAGE-5-anno	Annotation for stage 5 electrical construction
10183	es_TMS	Traffic monitoring station system
10184	es_TMS-anno	Annotation for traffic monitoring station system
10185	es_CELL	New cell components
10186	es_NO-PLOT	Elements on this level will not plot!
10187	es_MVDS	Micro vehicle detection system
10200	border_CLIP-FRAME	Clip frames for various type of plan sheets-50 scale
10201	border_CLIP-FRAME-20SCALE	Clip frames for 20 scale
10202	border_CLIP-FRAME-100SCALE	Clip frames for 100 scale
10203	border_DATUM-LINE	Datum lines separating datum information

Number	Name	Description
10204	border GRID-MAJOR drop	Major grid lines
10205	border_GRID-MINOR_drop	Minor grid lines
10206	border_INSIDE-BORDER-anno	Annotation inside the border
10207	border_PLOTTING-ELEMENTS	Elements for assiting in plotting
10209	bordor RROLID BLOCK appo	Annotation in the project
10200		identification block
10209	border SEAL	Seal information of licensed
10200		person
10210	border_SHEET	Border for any discipline
10211	border_SIGNATURE	Signature of licensed person
10212	border WITHIN-BORDER-anno	Annotation within the margin of
10212		border
10213	pp_ADDENDUM	Addendum changes
10214	pp_AERIAL-IDENTIFICATION	Aerial identification sheets
10215	pp AERIAL-IDENTIFICATION-anno	Annotation for aerial identification
		sheets
10216	pp ARCHIVE	Information added to archived
		Vector data file
10217	pp AS-AWARDED	Information added to as-awarded
10010		plans
10210		As-built changes
10219		Appotation for construction area
10220	pp_CAS-anno	signs man
		Tabular data for construction area
10221	pp_CAS-TABLE	signs
10222	pp CO	Change orders
10223	border	Border sheets for any discipline
10223	pp KEY-MAP-LINE-INDEX	Key maps
10224	pp KEY-MAP-LINE-INDEX-anno	Annotation for all key maps
40005		Annotation within the margin of
10225	border_WITHIN-Border_anno	border sheet
10005		Annotation for notes legends and
10225	pp_LEGEND-anno	abbreviations
10226	pp_LOTB	Log of test borings
10227	pp_LOTB-anno	Annotation of log of test borings
10228		Masking applied to cells and
10220	pp_masking	elements
10220	nn MISC	Miscellaneous cells line-styles
10223	pp_mise	and information on plans
10230	pp_MOTORIST-INFO	Motorist information sheets
10231		Annotation for motorist
.0201		information sheets
10232	border_SEAL	Seal information of licensed
Number	Name	Description
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		person
10000		Cells line-styles or other info for
10232	pp_PRESENTATION	design presentation
10233		Annotation for project control
10233		sheets
10234	pp_PROJECT-CONTROL-MAP	Project control sheets
10235	pp_RASTER	Raster images
10236		Tabular data for locations of
10200		construction
10237	pp_TITLE-SHEET-anno	Annotation for title sheet map
10238	pp_TITLE-SHEET-MAP	Title sheet map
10239	border NO-PLOT	Elements on this level will not
		plot!
10240	pp NO-PLOT	Elements on this level will not
40000		plot!
10300	advplan_ALTERNATIVE-1	Alternative number 1
10301	advplan_ALTERNATIVE-2	Alternative number 2
10302	advplan_ALTERNATIVE-3	Alternative number 3
10303	advplan_ENV-STUDIES	Environmental studies on
10204		Shana filoa
10304	US_SHAPE-FILES	Shape lies
10305	gis_NO-PLOT	
		Annotation for Torus design
10400	rd_TORUS-anno	information
10401	rd_TRDESIGNSYMBOI	Torus design symbols
10402	rd_TREASTESTPATH	Torus fastest path
10403	rd TRGRADING	Torus grading
10404	rd TSTORUS	Torus design information
40.405		Elements on this level will not
10405	rd_TORUS-NO-PLOT	plot!
10500	vis_BRIDGE	Visualization of bridges
10501	vis_BUILDING	Visualization of buildings
10502	vis_CAR	Visualization of cars
10503	vis_GRASS	Visualization of grassy areas
10504		Visualization of various linear
10304	VIS_LINEAR-FEATURE	features
10505		Visualization of man-made
10505		objects
10506		Visualization of various type
10000		materials
10507	vis_NATURAL-OBJ	Visualization of natural objects
10508	vis_PLANT	Visualization of various plants
10509	vis_POINT-FEATURE	Visualization of various point

Number	Name	Description
		features
10510	vis_PVMT-MARKING	Visualization of pavement striping and markings
10511	vis_SKY	Visualization of clouds and sky
10512	vis_SURFACE	Visualization of various surfaces
10513	vis_TIME-LAPSE	Visualization showing time lapse
10514	vis_TREE	Visualization of various trees
10515	vis_NO-PLOT	Elements on this level will not plot!

For projects using Named Level convention the following tables identify the Level number and the corresponding color assigned to the level.

Number	Name	Color
1000	topo_ph_bndy_anno_drop	Red/3
1001	topo_ph_bndy_gnv_info_only	Red/3
1002	topo_ph_bndy_map_lmt_info_only	Red/3
1003	topo_ph_bndy_ortho_info_only	Red/3
1004	topo_ph_bndy_void_drop	Peru/31
1005	topo_ph_dtm_anno_drop	Brown/7
1006	topo_ph_dtm_brk_spot_info_only	Red/3
1007	topo_ph_dtm_cont_index_anno_drop	Brown/7
1008	topo_ph_dtm_cont_index_drop	Brown/7
1009	topo_ph_dtm_cont_inter_drop	Brown/7
1010	topo_ph_dtm_brk_spot_deck_info_only	Gray/248
1011	topo_ph_dtm_cont_index_deck_drop	Gray/248
1012	topo_ph_dtm_cont_inter_deck_drop	Gray/248
1013	topo_ph_dtm_brk_gnv_info_only	Red/3
1014	topo_ph_hydro_anno_drop	Blue/1
1015	topo_ph_hydro_df_STR_drop	Blue/1
1016	topo_ph_hydro_WATER_drop	Blue/1
1017	topo_ph_MISC_check_no_plot	White/0
1018	topo_ph_MISC_one_no_plot	White/0
1019	topo_ph_MISC_two_no_plot	White/0
1020	topo_ph_rdbed_anno_drop	Yellow/4
1021	topo_ph_rdbed_AC_drop	Yellow/4
1022	topo_ph_rdbed_CONC_drop	Yellow/4
1023	topo_ph_rdbed_CURB_drop	Yellow/4
1024	topo_ph_rdbed_DIKE_drop	Yellow/4
1025	topo_ph_rdbed_DIRT_drop	Yellow/4
1026	topo_ph_rdbed_MISC_drop	Yellow/4
1027	topo_ph_rdbed_ROCK_drop	Yellow/4
1028	topo_ph_rdside_anno_drop	Green/2
1029	topo_ph_rdside_AC_drop	Green/2
1030	topo_ph_rdside_CONC_drop	Green/2
1031	topo_ph_rdside_CURB_drop	Green/2
1032	topo_ph_rdside_DIKE_drop	Green/2
1033	topo_ph_rdside_DIRT_drop	Green/2
1034	topo_ph_rdside_Fence_drop	247
1035	topo_ph_rdside_MISC_drop	Green/2
1036	topo_ph_rdside_ROCK_drop	Green/2

Number	Name	Color
1037	topo_ph_rdside_RR_drop	Green/2
1038	topo_ph_str_anno_drop	247
1039	topo_ph_str_BLDG_drop	247
1040	topo_ph_str_anno_deck_drop	Gray/248
1041	topo_ph_tcd_BARRIER_deck_drop	Gray/248
1042	topo_ph_rdbed_AC_deck_drop	Gray/248
1043	topo_ph_rdbed_CONC_deck_drop	Gray/248
1044	topo_ph_rdbed_CURB_deck_drop	Gray/248
1045	topo_ph_tcd_MARKING_deck_drop	Gray/248
1046	topo_ph_str_MISC_deck_drop	Gray/248
1047	topo_ph_str_PN_deck_drop	Gray/248
1048	topo_ph_str_WALL_drop	247
1049	topo_ph_study_anno_drop	29
1050	topo_ph_study_brk_spot_info_only	29
1051	topo_ph_study_brk_spot_deck_info_only	29
1052	topo_ph_study_brk_gnv_info_only	29
1053	topo_ph_study_water_info_only	Blue/9
1054	topo_ph_tcd_anno_drop	Dark Pink/30
1055	topo_ph_tcd_BARRIER_drop	Dark Pink/30
1056	topo_ph_tcd_MARKING_drop	Dark Pink/30
1057	topo_ph_tcd_MISC_drop	Dark Pink/30
1058	topo_ph_tcd_SIGN_drop	Dark Pink/30
1059	topo_ph_ut_anno_drop	Thistle/15
1060	topo_ph_ut_APPR_drop	Thistle/15
1061	topo_ph_ut_LTG_drop	Thistle/15
1062	topo_ph_ut_MISC_drop	Thistle/15
1063	topo_ph_ut_POLE_drop	Thistle/15
1064	topo_ph_veg_anno_drop	82
1065	topo_ph_veg_drop	82
1066	border_topo_GridTicks_info_only	White/0
1067	border_topo_ph_ctrl_info_only	White/0
1068	topo_ph_data_info_only	White/0
1069	topo_ph_hydro_df_STR_deck_drop	Gray/248
1100	topo_al_bndy_anno_drop	Red/3
1101	topo_al_bndy_gnv_info_only	Red/3
1102	topo_al_bndy_map_lmt_info_only	Red/3
1103	topo_al_bndy_ortho_info_only	Red/3
1104	topo_al_bndy_void_drop	Peru/31
1105	topo_al_data_info_only	White/0
1106	topo_al_dtm_anno_drop	Brown/7

Number	Name	Color
1107	topo al dtm brk spot info only	Red/3
1108	topo al dtm cont index anno drop	Brown/7
1109	topo al dtm cont index drop	Brown/7
1110	topo al dtm cont inter drop	Brown/7
1111	topo al dtm brk spot deck info only	Gray/248
1112	topo al dtm cont index deck drop	Gray/248
1113	topo al dtm cont inter deck drop	Gray/248
1114	topo al dtm brk_gnv_info_only	Red/3
1115	topo al hydro anno drop	Blue/1
1116	topo al hydro df STR deck drop	Gray/248
1117	topo al hydro df STR drop	Blue/1
1118	topo al hydro WATER drop	Blue/1
1119	topo al MISC check no plot	White/0
1120	topo al MISC one no plot	White/0
1121	topo al MISC two no plot	White/0
1122	topo al POINT CLOUD	White/0
1123	topo al rdbed anno_drop	Yellow/4
1124	topo_al_rdbed_AC_deck_drop	Gray/248
1125	topo_al_rdbed_AC_drop	Yellow/4
1126	topo_al_rdbed_CONC_deck_drop	Gray/248
1127	topo_al_rdbed_CONC_drop	Yellow/4
1128	topo_al_rdbed_CURB_deck_drop	Gray/248
1129	topo_al_rdbed_CURB_drop	Yellow/4
1130	topo_al_rdbed_DIKE_drop	Yellow/4
1131	topo_al_rdbed_DIRT_drop	Yellow/4
1132	topo_al_rdbed_MISC_drop	Yellow/4
1133	topo_al_rdbed_ROCK_drop	Yellow/4
1134	topo_al_rdside_anno_drop	Green/2
1135	topo_al_rdside_AC_drop	Green/2
1136	topo_al_rdside_CONC_drop	Green/2
1137	topo_al_rdside_CURB_drop	Green/2
1138	topo_al_rdside_DIKE_drop	Green/2
1139	topo_al_rdside_DIRT_drop	Green/2
1140	topo_al_rdside_MISC_drop	Green/2
1141	topo_al_rdside_ROCK_drop	Green/2
1142	topo_al_rdside_RR_drop	Green/2
1143	topo_al_str_anno_drop	247
1144	topo_al_str_BLDG_drop	247
1145	topo_al_str_anno_deck_drop	Gray/248
1146	topo_al_str_MISC_deck_drop	Gray/248

Number	Name	Color
1147	topo al str PN deck drop	Gray/248
1148	topo_al_rdside_Fence_drop	247
1149	topo al str WALL drop	247
1150	topo_al_study_anno_drop	29
1151	topo_al_study_brk_spot_info_only	29
1152	topo_al_study_brk_spot_deck_info_only	29
1153	topo_al_study_brk_gnv_info_only	29
1154	topo_al_study_water_info_only	Blue/9
1155	topo_al_tcd_anno_drop	Dark Pink/30
1156	topo_al_tcd_BARRIER_deck_drop	Gray/248
1157	topo_al_tcd_BARRIER_drop	Dark Pink/30
1158	topo_al_tcd_MARKING_deck_drop	Gray/248
1159	topo_al_tcd_MARKING_drop	Dark Pink/30
1160	topo_al_tcd_MISC_drop	Dark Pink/30
1161	topo_al_tcd_SIGN_drop	Dark Pink/30
1162	topo_al_ut_anno_drop	Thistle/15
1163	topo_al_ut_APPR_drop	Thistle/15
1164	topo_al_ut_LTG_drop	Thistle/15
1165	topo_al_ut_MISC_drop	Thistle/15
1166	topo_al_ut_POLE_drop	Thistle/15
1167	topo_al_veg_anno_drop	82
1168	topo_al_veg_drop	82
1200	topo_ba_dtm_brk_spot_info_only	Brown/7
1300	topo_su_ctrl_DIRECTION_info_only	43
1301	topo_su_ctrl_LINE_PTS_info_only	43
1302	topo_su_ctrl_LNWK	43
1303	topo_su_ctrl_point_FD	43
1304	topo_su_ctrl_point_FD_anno	43
1305	topo_su_ctrl_point_MON	43
1306	topo_su_ctrl_point_MON_anno	43
1307	topo_su_dtm_brk_spot_anno_deck_info_only	Gray/248
1308	topo_su_dtm_brk_spot_anno_info_only	Red/3
1309	topo_su_dtm_brk_spot_anno_underside_info_only	249
1310	topo_su_dtm_brk_spot_deck_info_only	Gray/248
1311	topo_su_dtm_brk_spot_info_only	Red/3
1312	topo_su_dtm_brk_spot_underside_info_only	249
1313	topo_su_hydro_anno_info_only	Blue/1
1314	topo_su_hydro_df_CULV_drop	Blue/1
1315	topo_su_hydro_df_MISC_drop	Blue/1
1316	topo_su_hydro_df_OPEN_drop	Blue/1

Number	Name	Color
1317	topo_su_hydro_df_STR_deck_drop	Gray/248
1318	topo_su_hydro_df_STR_drop	Blue/1
1319	topo su hydro FL_drop	Blue/1
1320	topo_su_hydro_LINE_PTS_info_only	Blue/1
1321	topo_su_hydro_MISC_drop	Blue/1
1322	topo_su_hydro_WATER_drop	Blue/1
1323	topo_su_rdbed_AC_deck_drop	Gray/248
1324	topo_su_rdbed_AC_drop	Yellow/4
1325	topo_su_rdbed_anno_info_only	Yellow/4
1326	topo_su_rdbed_CONC_deck_drop	Gray/248
1327	topo_su_rdbed_CONC_drop	Yellow/4
1328	topo_su_rdbed_CURB_deck_drop	Gray/248
1329	topo_su_rdbed_CURB_drop	Yellow/4
1330	topo_su_rdbed_DIKE_drop	Yellow/4
1331	topo_su_rdbed_DIRT_drop	Yellow/4
1332	topo_su_rdbed_FL_deck_drop	Gray/248
1333	topo_su_rdbed_FL_drop	Blue/1
1334	topo_su_rdbed_LINE_PTS_info_only	Yellow/4
1335	topo_su_rdbed_MISC_drop	Yellow/4
1336	topo_su_rdbed_ROCK_drop	Yellow/4
1337	topo_su_rdside_AC_drop	Green/2
1338	topo_su_rdside_anno_info_only	Green/2
1339	topo_su_rdside_CONC_drop	Green/2
1340	topo_su_rdside_DIRT_drop	Green/2
1341	topo_su_rdside_FL_drop	Blue/1
1342	topo_su_rdside_LINE_PTS_info_only	Green/2
1343	topo_su_rdside_MISC_drop	Green/2
1344	topo_su_rdside_ROCK_drop	Green/2
1345	topo_su_rdside_RR_drop	Green/2
1346	topo_su_rdside_SLIDE_drop	Green/2
1348	topo_su_rdside_SW_drop	Green/2
1349	topo_su_str_ABUTWW_drop	247
1350	topo_su_str_anno_deck_info_only	Gray/248
1351	topo_su_str_anno_info_only	247
1352	topo_su_str_anno_underside_info_only	249
1353	topo_su_str_BLDG_drop	247
1354	topo_su_str_COL_drop	247
1357	topo_su_str_GIRDER_drop	249
1358	topo_su_str_LINE_PTS_deck_info_only	Gray/248
1359	topo_su_str_LINE_PTS_info_only	247

Number	Name	Color
1360	topo_su_str_LINE_PTS_underside_info_only	249
1361	topo_su_str_MISC_deck_drop	Gray/248
1362	topo_su_str_MISC_drop	247
1363	topo_su_str_MISC_underside_drop	249
1364	topo_su_str_PN_deck_drop	Gray/248
1365	topo_su_str_WALL_drop	247
1366	topo_su_tcd_anno_info_only	Dark Pink/30
1367	topo_su_tcd_BARRIER_deck_drop	Gray/248
1368	topo_su_tcd_BARRIER_drop	Dark Pink/30
1369	topo_su_tcd_LINE_PTS_info_only	Dark Pink/30
1370	topo_su_tcd_MARKER_drop	Dark Pink/30
1371	topo_su_tcd_MARKING_deck_drop	Gray/248
1372	topo_su_tcd_MARKING_drop	Dark Pink/30
1373	topo_su_tcd_MISC_drop	Dark Pink/30
1374	topo_su_tcd_SIGN_drop	Dark Pink/30
1375	topo_su_ut_anno_info_only	Thistle/15
1376	topo_su_ut_APPR	Thistle/15
1377	topo_su_ut_CAB	Thistle/15
1378	topo_su_ut_CABLE	Thistle/15
1379	topo_su_ut_COND	Thistle/15
1380	topo_su_ut_LINE_PTS_info_only	Thistle/15
1381	topo_su_ut_LTG	Thistle/15
1382	topo_su_ut_MARKER	Thistle/15
1383	topo_su_ut_METER	Thistle/15
1384	topo_su_ut_MH	Thistle/15
1385	topo_su_ut_MISC	Thistle/15
1386	topo_su_ut_OH	Thistle/15
1387	topo_su_ut_PB	Thistle/15
1388	topo_su_ut_POLE	Thistle/15
1389	topo_su_ut_UG	Thistle/15
1390	topo_su_ut_VALVE	Thistle/15
1391	topo_su_ut_VAULT	Thistle/15
1392	topo_su_veg_anno_info_only	82
1393	topo_su_veg_LINE_PTS_info_only	82
1394	topo_su_veg_MISC_drop	82
1395	topo_su_veg_TREE_drop	82
1396	topo_su_str_BRDG_RAIL_deck_drop	Gray/248
1397	topo_su_rdside_CURB_drop	Green/2
1398	topo_su_rdside_DIKE_drop	Green/2
1399	topo_su_rdside_FENCE_drop	Green/2

Number	Name	Color
1400	topo su rdbed MISC deck drop	Gray/248
1401	topo su rdside FL deck drop	White/0
1402	topo su rdside MISC deck drop	White/0
1403	topo_su_LINE_PTS_info_only	White/0
1500	topo_ml_ctrl_DIRECTION_info_only	43
1501	topo_ml_dtm_brk_spot_anno_deck_info_only	Gray/248
1502	topo_ml_dtm_brk_spot_anno_info_only	Red/3
1503	topo_ml_dtm_brk_spot_anno_underside_info_only	249
1504	topo_ml_dtm_brk_spot_deck_info_only	Gray/248
1505	topo_ml_dtm_brk_spot_info_only	Red/3
1506	topo_ml_dtm_brk_spot_underside_info_only	249
1507	topo_ml_hydro_anno_info_only	Blue/1
1508	topo_ml_hydro_df_CULV_drop	Blue/1
1509	topo_ml_hydro_df_CULV_FL_drop	Blue/1
1510	topo_ml_hydro_df_MISC_CLO_drop	Blue/1
1511	topo_ml_hydro_df_MISC_drop	Blue/1
1512	topo_ml_hydro_df_OPEN_drop	Blue/1
1513	topo_ml_hydro_df_STR_deck_drop	Gray/248
1514	topo_ml_hydro_df_STR_drop	Blue/1
1515	topo_ml_hydro_FL_drop	Blue/1
1516	topo_ml_hydro_MISC_drop	Blue/1
1517	topo_ml_hydro_WATER_drop	Blue/1
1518	topo_ml_hydro_WATER_HWAT_drop	Blue/1
1519	topo_ml_POINT_CLOUD	White/0
1520	topo_ml_rdbed_AC_deck_drop	Gray/248
1521	topo_ml_rdbed_AC_drop	Yellow/4
1522	topo_ml_rdbed_anno_info_only	Yellow/4
1523	topo_ml_rdbed_CONC_deck_drop	Gray/248
1524	topo_ml_rdbed_CONC_drop	Yellow/4
1525	topo_ml_rdbed_CURB_deck_drop	Gray/248
1526	topo_ml_rdbed_CURB_drop	Yellow/4
1527	topo_ml_rdbed_DIKE_drop	Yellow/4
1528	topo_ml_rdbed_DIRT_drop	Yellow/4
1529	topo_ml_rdbed_FL_deck_drop	Gray/248
1530	topo_ml_rdbed_FL_drop	Blue/1
1531	topo_ml_rdbed_MISC_drop	Yellow/4
1532	topo_ml_rdbed_ROCK_drop	Yellow/4
1533	topo_ml_rdside_AC_drop	Green/2
1534	topo_ml_rdside_anno_info_only	Green/2
1535	topo_ml_rdside_CONC_drop	Green/2

Number	Name	Color
1536	topo ml rdside DIRT drop	Green/2
1537	topo ml rdside FL drop	Blue/1
1538	topo ml rdside MISC BOLLARD drop	Green/2
1539	topo ml rdside MISC drop	Green/2
1540	topo ml rdside MISC FP drop	Green/2
1541	topo_ml_rdside_ROCK_drop	Green/2
1542	topo ml_rdside_RR_APPR_drop	Green/2
1543	topo_ml_rdside_RR_drop	Green/2
1544	topo_ml_rdside_RR_POST_drop	Green/2
1545	topo ml_rdside_SLIDE_drop	Green/2
1547	topo_ml_rdside_SW_drop	Green/2
1548	topo_ml_str_ABUTWW_drop	247
1549	topo_ml_str_anno_deck_info_only	Gray/248
1550	topo_ml_str_anno_info_only	247
1551	topo ml str anno underside info only	249
1552	topo_ml_str_BLDG_drop	247
1553	topo_ml_str_COL_drop	247
1557	topo_ml_str_GIRDER_drop	249
1559	topo_ml_str_MISC_deck_drop	Gray/248
1560	topo_ml_str_MISC_drop	247
1561	topo_ml_str_MISC_underside_drop	249
1562	topo_ml_str_PN_deck_drop	Gray/248
1563	topo_ml_str_WALL_drop	247
1564	topo_ml_tcd_anno_info_only	Dark Pink/30
1565	topo_ml_tcd_BARRIER_deck_drop	Gray/248
1566	topo_ml_tcd_BARRIER_drop	Dark Pink/30
1567	topo_ml_tcd_MARKER_drop	Dark Pink/30
1568	topo_ml_tcd_MARKER_GUIDE_drop	Dark Pink/30
1569	topo_ml_tcd_MARKING_deck_drop	Gray/248
1570	topo_ml_tcd_MARKING_drop	Dark Pink/30
1571	topo_ml_tcd_MISC_CC_drop	Dark Pink/30
1572	topo_ml_tcd_MISC_drop	Dark Pink/30
1573	topo_ml_tcd_SIGN_drop	Dark Pink/30
1574	topo_ml_ut_anno_info_only	Thistle/15
1575	topo_ml_ut_APPR	Thistle/15
1576	topo_ml_ut_APPR_SPR	Blue/1
1577	topo_ml_ut_CAB	Thistle/15
1579	topo_ml_ut_COND	Thistle/15
1580	topo_ml_ut_LTG	Thistle/15
1581	topo_ml_ut_MARKER	Thistle/15

Number	Name	Color
1582	topo_ml_ut_METER	Thistle/15
1583	topo_ml_ut_MH	Thistle/15
1584	topo_ml_ut_MISC	Thistle/15
1585	topo_ml_ut_OH	Thistle/15
1586	topo_ml_ut_PB	Thistle/15
1587	topo_ml_ut_POLE	Thistle/15
1588	topo ml_ut_UG	Thistle/15
1589	topo_ml_ut_VALVE	Thistle/15
1590	topo_ml_ut_VAULT	Thistle/15
1591	topo_ml_veg_anno_info_only	82
1592	topo_ml_veg_MISC_drop	82
1593	topo_ml_veg_TREE_drop	82
1594	topo_ml_rdside_FENCE_drop	Green/2
1595	topo_ml_rdside_FENCE_POST_drop	Green/2
1597	topo_ml_rdside_CURB_drop	Green/2
1598	topo_ml_rdside_DIKE_drop	Green/2
1599	topo_ml_bndy_gnv_info_only	Red/3
1600	topo_ml_str_BRDG_RAIL_deck_drop	Gray/248
1601	topo_ml_rdbed_MISC_deck_drop	Gray/248
1602	topo_ml_rdside_MISC_ADA_drop	Green/2
1603	topo_TopoDOT_SurveyPT_info_only	White/0
1604	topo_ml_study_brk_spot_deck_info_only	White/0
1606	topo_ml_study_brk_spot_underside_info_only	White/0
1607	topo_ml_study_brk_spot_info_only	White/0
1608	topo_ml_study_hydro_info_only	White/0
1609	topo_TopoDOT_Data_Tiles_info_only	White/0
1610	topo_TopoDOT_PT_Blue_info_only	White/0
1611	topo_TopoDOT_PT_Green_info_only	White/0
1612	topo_TopoDOT_PT_Orange_info_only	White/0
1613	topo_TopoDOT_PT_Red_info_only	White/0
1614	topo_TopoDOT_PT_Teal_info_only	White/0
1615	topo_TopoDOT_PT_Yellow_info_only	White/0
1616	topo_TopoDOT_Scan_Postions_info_only	White/0
1617	topo_TopoDOT_TEMP_info_only	White/0
1618	topo_ml_tcd_MARKING_LL_deck_drop	White/0
1619	topo_ml_tcd_MARKING_LL_drop	White/0
1900	align	White/0
1901	align_anno	245
1903	align_anno_no_plot	245
1904	align no plot	White/0

Number	Name	Color
1905	rw topo anno	245
1906	rw_topo_anno_TABLE	245
1907	rw_topo_Calcs_anno_no_plot	245
1908	rw_topo_Calcs_no_plot	White/0
1909	rw_topo_Images	White/0
1910	rw_topo_Notes_no_plot	245
1911	rw_topo_point	Red/3
1912	rw_topo_point_anno	245
1912	rw_topo_point_anno	Red/3
1913	rw_topo_point_NON_STANDARD	239
1914	rw_topo_Reference_Files	White/0
1915	rw_topo_Wipeout_Areas	250
1916	topo_dtm_anno_info_only	Brown/7
1917	topo_dtm_bndy_deck_info_only	Red/3
1918	topo_dtm_bndy_info_only	Red/3
1919	topo_dtm_cont_anno_deck_drop	231
1920	topo_dtm_cont_anno_drop	Brown/7
1921	topo_dtm_cont_index_deck_drop	231
1922	topo_dtm_cont_index_drop	Brown/7
1923	topo_dtm_cont_inter_deck_drop	231
1924	topo_dtm_cont_inter_drop	231
1925	topo_dtm_info_only	Brown/7
1926	topo_dtm_pt_info_only	Red/3
1927	topo_dtm_tri_info_only	Brown/7
1928	topo_profile	231
1929	topo_profile_anno	231
1930	topo_section	231
1931	topo_section_anno	231
9000	align_20-SCALE-anno	Green/10
9001	align_100-SCALE-anno	Red/11
9002	align_BARRIER	Red/11
9003	align_BARRIER-anno	Red/11
9004	align_COLLECTOR-RD	Thistle/15
9005	align_COLLECTOR-RD-anno	Thistle/15
9006	align_CULVERT	Blue/9
9007	align_CULVERT-anno	Blue/9
9008	align_CURB-FLOW-LINE	Blue/9
9009	align_CURB-FLOW-LINE-anno	Blue/9
9010	align_CURVE-DATA	White/0

Number	Name	Color
9011	align_DITCH	Blue/9
9012	align_DITCH-anno	Blue/9
9013	align_FRONTAGE	Brown/14
9014	align_FRONTAGE-anno	Brown/14
9015	align_LOCAL-ST	Green/10
9016	align_LOCAL-ST-anno	Green/10
9017	align_MAIN	White/0
9018	align_MAIN-anno	White/0
9019	align_PM-REFERENCE-LINE	Thistle/15
9020	align_PM-REFERENCE-LINE-anno	Thistle/15
9021	align_RAMP	Violet/13
9022	align_RAMP-anno	Violet/13
9023	align_ROUNDABOUT	Brown/14
9024	align_ROUNDABOUT-anno	Broen/14
9025	align_SECONDARY-HWY	Cyan/8
9026	align_SECONDARY-HWY-anno	Cyan/8
9027	align_TEMP	Green/12
9028	align_TEMP-anno	Green/12
9029	align_WALL	Red/11
9030	align_WALL-anno	Red/11
9031	align_NO-PLOT	White/0
9100	rd_BACKFILL-STRUCTURE	Blue/1
9101	rd_BASE-MATERIAL	Blue/1
9102	rd_CONST-DETAIL	Blue/1
9103	rd_CONST-DETAIL-anno	White/0
9104	rd_CONTOUR-anno	Blue/1
9105	rd_CONTOUR-MAJOR	Green/2
9106	rd_CONTOUR-MINOR	White/0
9107	rd_DESIGN-X-SECTION	Blue/1
9108	rd_DESIGN-X-SECTION-anno	Blue/1
9109	rd_EARTHWORK	Blue/1
9110	rd_EARTHWORK-anno	Blue/1
9111	rd_EMBANKMENT-ROADWAY	Blue/1
9112	rd_EP	Blue/1
9113	rd_ES	Blue/1
9114	rd_ETW	Blue/1
9115	rd_EXCAVATION-DITCH	Blue/1
9116	rd_EXCAVATION-ROADWAY	Blue/1
9117	rd_EXCAVATION-ROCK	Blue/1
9118	rd_EXCAVATION-STRUCTURE	Blue/1

Number	Name	Color
9119	rd_FINISH-GRADE-anno	Blue/1
9120	rd_FINISH-GRADE-BREAKLINE	Blue/1
9121	rd_FINISH-GRADE-POINT	Blue/1
9122	rd_HMA-DIKE	Blue/1
9123	rd_HMA-DIKE-anno	Blue/1
9124	rd_HMA-DIKE-TYPE-A	Blue/1
9125	rd_HMA-DIKE-TYPE-C	Blue/1
9126	rd_HMA-DIKE-TYPE-D	Blue/1
9127	rd_HMA-DIKE-TYPE-E	Blue/1
9128	rd_HMA-DIKE-TYPE-F	Blue/1
9129	rd_LAYOUT-NOTE-anno	Blue/1
9130	rd_MISC	Blue/1
9131	rd_PAVEMENT	Blue/1
9132	rd_PAVEMENT-anno	Blue/1
9133	rd_PAVEMENT-STRUCTURE	Blue/1
9134	rd_PROFILE-BARRIER	Blue/1
9135	rd_PROFILE-BARRIER-anno	Blue/1
9136	rd_PROFILE-FINISH	Blue/1
9137	rd_PROFILE-FINISH-anno	Blue/1
9138	rd_PROFILE-OG	Blue/1
9139	rd_PROFILE-OG-anno	Blue/1
9140	rd_PROFILE-WALL	Blue/1
9141	rd_PROFILE-WALL-anno	Blue/1
9142	rd_QTY-TABLE	Blue/1
9143	rd_RIGHT-OF-WAY	Blue/1
9144	rd_RIGHT-OF-WAY-anno	Blue/1
9145	rd_RIGHT-OF-WAY-TCE	Blue/1
9146	rd_SLOPE	Blue/1
9147	rd_SUBBASE-MATERIAL	Blue/1
9148	rd_SUPERELEVATION	Blue/1
9149	rd_SUPERELEVATION-anno	Blue/1
9150	rd_SURFACE-BOUNDARY	Green/2
9151	rd_SURFACE-BOUNDARY-anno	Green/2
9152	rd_SURFACE-REMOVAL-AC	Blue/1
9153	rd_SURFACE-REMOVAL-anno	Blue/1
9154	rd_SURFACE-REMOVAL-CONC	Blue/1
9155	rd_TRIANGLE	Blue/1
9156	rd_TRIANGLE-anno	Blue/1
9157	rd_TYP-X-SECTION	Blue/1
9158	rd_TYP-X-SECTION-anno	White/0

Number	Name	Color
9159	rd_NO-PLOT	White/0
9200	df_BASIN	Blue/9
9201	df_BASIN-anno	Blue/9
9202	df_CULV-ARCH	Blue/1
9203	df_CULV-ARCH-anno	Blue/1
9204	df_CULV-BOX	Blue/1
9205	df_CULV-BOX-anno	Blue/1
9206	df_CULV-TEMP	Blue/1
9207	df_CULV-TEMP-anno	Blue/1
9208	df_DETAIL	Blue/1
9209	df_DETAIL-anno	Blue/1
9210	df_DRAIN-EDGE	Blue/1
9211	df_DRAIN-HORIZONTAL	Blue/1
9212	df_DRAIN-OVERSIDE	Blue/1
9213	df_DRAIN-UNDER	Blue/1
9214	df_FES	Blue/1
9215	df_FLOW-LINE	Blue/1
9216	df_HEADWALL	Blue/1
9217	df_INLET	Blue/1
9218	df_INLET-anno	Blue/1
9219	df_INLET-anno_drop	Blue/1
9220	df_INLET_drop	Blue/1
9221	df_MISC	Blue/9
9222	df_MISC-anno	Blue/9
9223	df_PIPE	Blue/1
9224	df_PIPE-anno	Blue/1
9225	df_PIPE-anno_drop	Blue/1
9226	df_PIPE-APC	Blue/1
9227	df_PIPE-BIT-CTD-CSP	Blue/1
9228	df_PIPE-CSP	Blue/1
9229	df_PIPE-PP	Blue/1
9230	df_PIPE-RCP	Blue/1
9231	df_PIPE-SCSP	Blue/1
9232	df_PIPE_drop	Blue/1
9233	df_PROFILE	Blue/1
9234	df_PROFILE-anno	Blue/1
9235	df_QTY-TABLE	White/0
9236	df_SYSTEM-UNIT-anno	Blue/1
9237	df_WATERSHED	Blue/9
9238	df_WATERSHED-anno	Blue/9

Number	Name	Color
9239	df_NO-PLOT	White/0
9300	ut_DEFAULT	Yellow/4
9301	ut_ELECT-ABN	Red/3
9302	ut_ELECT-OH-P	Red/3
9303	ut_ELECT-OH-X	Red/3
9304	ut_ELECT-P	White/0
9305	ut_ELECT-X	Red/3
9306	ut_ES-C-ABN	White/0
9307	ut_ES-C-X	White/0
9308	ut_FIBEROPT-ABN	Viloet/5
9309	ut_FIBEROPT-OH-P	Viloet/5
9310	ut_FIBEROPT-OH-X	Viloet/5
9311	ut_FIBEROPT-P	Viloet/5
9312	ut_FIBEROPT-X	Viloet/5
9313	ut_GAS-ABN	Brown/7
9314	ut_GAS-P	Brown/7
9315	ut_GAS-X	Brown/7
9316	ut_IRR-C-ABN	White/0
9317	ut_IRR-C-X	White/0
9318	ut_JOINT-OH-P	White/0
9319	ut_JOINT-OH-X	White/0
9320	ut_JOINT-TRENCH-P	White/0
9321	ut_JOINT-TRENCH-X	White/0
9322	ut_MISC	White/0
9323	ut_NATGAS-ABN	Green/2
9324	ut_NATGAS-P	Green/2
9325	ut_NATGAS-X	Green/2
9326	ut_OIL-ABN	Brown/7
9327	ut_OIL-P	Brown/7
9328	ut_OIL-X	Brown/7
9329	ut_RCWATER-ABN	Blue/9
9330	ut_RCWATER-P	Blue/9
9331	ut_RCWATER-X	Blue/9
9332	ut_SEWER-ABN	Orange/6
9333	ut_SEWER-P	Orange/6
9334	ut_SEWER-X	Orange/6
9335	ut_STATE-FIBEROPT-P	Viloet/5
9336	ut_STATE-FIBEROPT-X	Viloet/5
9337	ut_STEAM-ABN	Cyan/8
9338	ut_STEAM-P	Cyan/8

Number	Name	Color
9339	ut_STEAM-X	Cyan/8
9340	ut_STORMD-ABN	Blue/1
9341	ut_STORMD-P	Blue/1
9342	ut_STORMD-X	Blue/1
9343	ut_TELECOM-ABN	Viloet/5
9344	ut_TELECOM-OH-P	Viloet/5
9345	ut_TELECOM-OH-X	Viloet/5
9346	ut_TELECOM-P	Viloet/5
9347	ut_TELECOM-X	Viloet/5
9348	ut_TELEPH-ABN	Viloet/5
9349	ut_TELEPH-OH-P	Viloet/5
9350	ut_TELEPH-OH-X	Viloet/5
9351	ut_TELEPH-P	Viloet/5
9352	ut_TELEPH-X	Viloet/5
9353	ut_TEST-HOLE	White/0
9354	ut_TV-ABN	Viloet/5
9355	ut_TV-OH-P	Viloet/5
9356	ut_TV-OH-X	Viloet/5
9357	ut_TV-P	Viloet/5
9358	ut_TV-X	Viloet/5
9359	ut_UTILITY-anno	White/0
9360	ut_VARIOUS-POINT-FEATURES	White/0
9361	ut_WATER-ABN	Blue/1
9362	ut_WATER-P	Blue/1
9363	ut_WATER-X	Blue/1
9364	ut_FEATURE-OUTLINE-CABINET	Green/2
9365	ut_FEATURE-OUTLINE-PULLBOX	Red/3
9366	ut_FEATURE-OUTLINE-PUMP	Blue/1
9368	ut_FEATURE-OUTLINE-VAULT	Orange/6
9369	ut_FEATURE-OUTLINE-OTHER	Cyan/8
9370	ut_TRAFFIC-CONTROL-ABN	Red/3
9371	ut_TRAFFIC-CONTROL-P	Red/3
9372	ut_TRAFFIC-CONTROL-X	Red/3
9373	ut_POSITIVELOCATION-MISC-X	White/0
9374	ut_ITS-X	Red/3
9375	ut_NO-PLOT	White/0
9400	tcd_BARRIER-CONC	Cyan/8
9401	tcd_BARRIER-CONC-anno	Cyan/8
9402	tcd_BARRIER-CONC-TYPE-25	Cyan/8
9403	tcd_BARRIER-CONC-TYPE-26	Cyan/8

Number	Name	Color
9404	tcd_BARRIER-CONC-TYPE-27MOD	Cyan/8
9405	tcd_BARRIER-CONC-TYPE-50	Cyan/8
9406	tcd_BARRIER-CONC-TYPE-60	Cyan/8
9407	tcd_BARRIER-CONC-TYPE-60-PORTABLE	Cyan/8
9408	tcd_BARRIER-CONC-TYPE-80	Cyan/8
9409	tcd_BARRIER-CONC-TYPE-90	Cyan/8
9410	tcd_BARRIER-CONC-TYPE-732	Cyan/8
9411	tcd_BARRIER-CONC-TYPE-736	Cyan/8
9412	tcd_BARRIER-CONC-TYPE-742	Cyan/8
9413	tcd_BARRIER-CONC-TYPE-K	Cyan/8
9414	tcd_BARRIER-THRIE-BEAM	Brown/14
9415	tcd_BARRIER-THRIE-BEAM-anno	Brown/14
9416	tcd_BARRIER-THRIE-BEAM-EXIST	Brown/14
9417	tcd_CMS	Green/10
9418	tcd_CRASH-CUSHION	Green/10
9419	tcd_CRASH-CUSHION-anno	Green/10
9420	tcd_DELINEATOR	Green/10
9421	tcd_DOUBLE-RAIL	Brown/14
9422	tcd_GSBWFILL	White/0
9423	tcd_GSCOLORFILL	White/0
9424	tcd_GSDIMS	White/0
9425	tcd_GSOUTLINE	White/0
9426	tcd_MARKER	Green/10
9427	tcd_MARKER-anno	Green/10
9428	tcd_PD-QTY-TABLE	White/0
9429	tcd_PVMT-MARKER	Red/3
9430	tcd_PVMT-MARKER-anno	Red/3
9431	tcd_PVMT-MARKING	Red/3
9432	tcd_PVMT-MARKING-anno	Red/3
9433	tcd_RAILING	Brown/14
9434	tcd_RAILING-anno	Brown/14
9435	tcd_RAILING-BR-ST10	Brown/14
9436	tcd_RAILING-BR-ST20S	Brown/14
9437	tcd_RAILING-BR-ST30	Brown/14
9438	tcd_RAILING-BR-ST40	Brown/14
9439	tcd_RAILING-BR-ST70	Brown/14
9440	tcd_RAILING-CABLE	Brown/14
9441	tcd_RAILING-EXIST	Brown/14
9442	tcd_RAILING-MGS	Brown/14
9443	tcd_RUMBLE-STRIP	Red/3

Number	Name	Color
9444	tcd_RUMBLE-STRIP-anno	Red/3
9445	tcd_SIGN-OVERHEAD	Green/12
9446	tcd_SIGN-OVERHEAD-anno	Green/12
9447	tcd_SIGN-PANEL	Green/12
9448	tcd_SIGN-PANEL-anno	Green/12
9449	tcd_SIGN-QTY-TABLE	White/0
9450	tcd_SIGN-ROADSIDE	Green/12
9451	tcd_SIGN-ROADSIDE-anno	Green/12
9452	tcd_TRAFFIC-STRIPE	Red/3
9453	tcd_TRAFFIC-STRIPE-anno	Red/3
9454	tcd_NO-PLOT	White/0
9500	mc_CURB	Cyan/8
9501	mc_CURB-GUTTER	Cyan/8
9502	mc_CURB-RAMP	Cyan/8
9503	mc_DRIVEWAY	Cyan/8
9504	mc_FENCE	Red/11
9505	mc_FENCE-anno	Red/11
9506	mc_FENCE-BW	Red/11
9507	mc_FENCE-CL	Red/11
9508	mc_FENCE-TEMP	Red/11
9509	mc_FENCE-WM	Red/11
9510	mc_ISLAND	Cyan/8
9511	mc_MISC-CONST-anno	Cyan/8
9512	mc_PROFILE-CURB-RAMP	Yellow/4
9513	mc_PROFILE-FLOW-LINE	Yellow/4
9514	mc_PUMPING-EQUIPMENT	Blue/9
9515	mc_PUMPING-EQUIPMENT-anno	Blue/9
9516	mc_SIDEWALK	Cyan/8
9517	mc_SLOPE-PROTECTION	Thistle/15
9518	mc_SLOPE-PROTECTION-anno	Thistle/15
9519	mc_NO-PLOT	White/0
9600	wpc_COMPOST-BERM	Green/10
9601	wpc_COMPOST-SOCK	Green/10
9602	wpc_FIBER-ROLL	Green/10
9603	wpc_FIBER-ROLL-anno	Green/10
9604	wpc_SOIL-STABILIZATION	Brown/7
9605	wpc_TEMP-anno	Thistle/15
9606	wpc_TEMP-DITCH-SWALE	Thistle/15
9607	wpc_TEMP-EARTH-BERM	Thistle/15
9608	wpc_TEMP-FIBER-ROLL	Thistle/15

Number	Name	Color
9609	wpc_TEMP-GRAVEL-BAG	Thistle/15
9610	wpc_TEMP-SILT-FENCE	11
9611	wpc_TEMP-SLOPE-DRAIN	Thistle/15
9612	wpc_TEMP-STRAW-BALE	Thistle/15
9613	wpc_TREATMENT	Brown/14
9614	wpc_TREATMENT-anno	Brown/14
9615	wpc_TEMP-POINT-Feature	White/0
9616	wpc_NO-PLOT	White/0
9650	esa_AREA	White/0
9651	esa_AREA-anno	White/0
9652	esa_BIOLOGICAL	Green/12
9653	esa_CULTURAL	Red/11
9654	esa_HISTORIC	Violet/13
9655	esa_PALEONTOLOGICAL	Brown/14
9656	esa_NO-PLOT	White/0
9700	wall_RW-ARCH-TREATMENT	Violet/13
9701	wall_RW-ARCH-TREATMENT-anno	Violet/13
9702	wall_RW-DETAIL	White/0
9703	wall_RW-DETAIL-anno	White/0
9704	wall_RW-ELEVATION	Brown/7
9705	wall_RW-ELEVATION-anno	Brown/7
9706	wall_RW-LOTB	White/0
9707	wall_RW-LOTB-anno	White/0
9708	wall_RW-QTY	White/0
9709	wall_RW-TYPICAL-SECTION	Cyan/8
9710	wall_RW-TYPICAL-SECTION-anno	Cyan/8
9711	wall_SW-ARCH-TREATMENT	Violet/13
9712	wall_SW-ARCH-TREATMENT-anno	Violet/13
9713	wall_SW-DETAIL	White/0
9714	wall_SW-DETAIL-anno	White/0
9715	wall_SW-ELEVATION	Brown/14
9716	wall_SW-ELEVATION-anno	Brown/14
9717	wall_SW-LOTB	White/0
9718	wall_SW-LOTB-anno	White/0
9719	wall_SW-QTY	White/0
9720	wall_SW-TYPICAL-SECTION	Cyan/8
9721	wall_SW-TYPICAL-SECTION-anno	Cyan/8
9722	wall_SYMBOLOGY	Violet/13
9723	wall_NO-PLOT	White/0
9800	temp BARRICADES	White/0

Number	Name	Color
9801	temp_CHANNELIZERS	White/0
9802	temp_CONSTRUCTION	Green/12
9803	temp_CONSTRUCTION-anno	Green/12
9804	temp_CRASH-CUSHION	White/0
9805	temp_FACILITIES	Green/12
9806	temp_FLASHING-ARROW-SIGN	Yellow/4
9807	temp_FLASHING-BEACON	Yellow/4
9808	temp_HIGH-VISIBILITY-FENCE	Orange/6
9809	temp_HIGH-VISIBILITY-FENCE-anno	Orange/6
9810	temp_PORTABLE-CMS	Yellow/4
9811	temp_PORTABLE-DELINEATORS	White/0
9812	temp_PVMT-DELINEATION	Red/3
9813	temp_RAILING-TYPE-K	Cyan/8
9814	temp_SIGNAL-SYSTEMS	Green/2
9815	temp_SIGNAL-SYSTEMS-anno	Green/2
9816	temp_TRAFFIC-CONES	White/0
9817	temp_TRAFFIC-CONTROL	White/0
9818	temp_TRAFFIC-CONTROL-anno	White/0
9819	temp_TRAFFIC-DRUMS	White/0
9820	temp_NO-PLOT	White/0
9900	stage_1	Red/3
9901	stage_1-anno	Red/3
9902	stage_1_drop	Red/3
9903	stage_2	Violet/13
9904	stage_2-anno	Violet/13
9905	stage_2_drop	Violet/13
9906	stage_3	Cyan/8
9907	stage_3-anno	Cyan/8
9908	stage_3_drop	Cyan/8
9909	stage_4	Viloet/5
9910	stage_4-anno	Viloet/5
9911	stage_4_drop	Viloet/5
9912	stage_5	Brown/14
9913	stage_5-anno	Brown/14
9914	stage_5_drop	Brown/14
9915	stage_6	Red/3
9916	stage_6-anno	Red/3
9917	stage_6_drop	Red/3
9918	stage_7	Violet/13
9919	stage_7-anno	Violet/13

Number	Name	Color
9920	stage_7_drop	Violet/13
9921	stage_8	Cyan/8
9922	stage_8-anno	Cyan/8
9923	stage_8_drop	Cyan/8
9924	stage_9	Viloet/5
9925	stage_9-anno	Viloet/5
9926	stage_9_drop	Viloet/5
9927	stage_10	Brown/14
9928	stage_10-anno	Brown/14
9929	stage_10_drop	Brown/14
9930	stage_NO-PLOT	White/0
10000	Is_AREA	White/0
10001	Is_AREA-anno	White/0
10002	Is_AREA-CULTIVATION	White/0
10003	Is_AREA-EC	White/0
10004	Is_AREA-EC-DRILL-SEED	White/0
10005	Is_AREA-EC-DRY-SEED	White/0
10006	Is_AREA-EC-ROLLED-PRODUCT	White/0
10007	IS_AREA-HARDSCAPE	White/0
10008	Is_AREA-MULCH	White/0
10009	Is_AREA-ROADSIDE-CLEARING	White/0
10010	Is_CONDUCTOR	White/0
10011	Is_CONDUCTOR-anno	White/0
10012	Is_CONDUIT	White/0
10013	ls_CONDUIT-anno	White/0
10014	Is_CONDUIT-EXIST	White/0
10015	Is_CONDUIT-EXIST-anno	White/0
10016	Is_CONTROLLER	White/0
10017	Is_CONTROLLER-anno	White/0
10018	Is_CONTROLLER-EXIST	White/0
10019	Is_CONTROLLER-EXIST-anno	White/0
10020	Is_DETAIL	White/0
10021	Is_DETAIL-anno	White/0
10022	Is_FLOW-SENSOR-CABLE	White/0
10023	Is_FLOW-SENSOR-CABLE-anno	White/0
10024	Is_KEY-MAP	White/0
10025	Is_KEY-MAP-anno	White/0
10026	Is_MISC-anno	White/0
10027	Is_MISC-CELL	White/0
10028	Is_PLANT	White/0

Number	Name	Color
10029	ls_PLANT-anno	White/0
10030	IS_PLANT-AREA	White/0
10031	Is_PLANT-CUTTING	White/0
10032	Is_PLANT-GROUNDCOVER	White/0
10033	Is_PLANT-LINER	White/0
10034	Is_PLANT-SHRUB	White/0
10035	Is_PLANT-TREE	White/0
10036	Is_POINT-FEATURE	White/0
10037	Is_QTY-TABLE	White/0
10038	Is_SCHEDULE-LEGEND	White/0
10039	ls_SPRINKLER	White/0
10040	ls_SPRINKLER-anno	White/0
10041	Is_SPRINKLER-EXIST	White/0
10042	ls_SPRINKLER-EXIST-anno	White/0
10043	Is_SUPPLY-LINE	White/0
10044	Is_SUPPLY-LINE-anno	White/0
10045	Is_SUPPLY-LINE-BRIDGE	White/0
10046	Is_SUPPLY-LINE-CLASS315	White/0
10047	Is_SUPPLY-LINE-COPPER	White/0
10048	Is_SUPPLY-LINE-EXIST	White/0
10049	Is_SUPPLY-LINE-EXIST-anno	White/0
10050	Is_SUPPLY-LINE-GSP	White/0
10051	Is_SUPPLY-LINE-LATERAL	White/0
10052	Is_SUPPLY-LINE-MAIN	White/0
10053	Is_SUPPLY-LINE-SCH40	White/0
10054	Is_SUPPLY-LINE-TUBING	White/0
10055	Is_VALVE	White/0
10056	ls_VALVE-anno	White/0
10057	Is_VALVE-EXIST	White/0
10058	ls_VALVE-EXIST-anno	White/0
10059	Is_IRRIGATION	White/0
10060	Is_IRRIGATION-EXIST	White/0
10061	Is_PLANT-VINE	White/0
10062	Is_NO-PLOT	White/0
10100	es_CCTV	White/0
10101	es_CCTV-anno	White/0
10102	es_CELL-anno	White/0
10103	es_CELL-CONDUIT-RISER	Red/3
10104	es_CELL-LIGHTING	Yellow/4
10105	es_CELL-MISC-COMPONENTS	Viloet/5

Number	Name	Color
10106	es_CELL-NOTE-SYMBOL	White/0
10107	es_CELL-SIGNALS	Green/2
10108	es_CMS	White/0
10109	es_CMS-anno	White/0
10110	es_DETAIL	White/0
10111	es_DETAIL-anno	White/0
10112	es_EMS	White/0
10113	es_EMS-anno	White/0
10114	es_EVD	White/0
10115	es_EVD-anno	White/0
10116	es_EXIST	White/0
10117	es_EXIST-anno	White/0
10118	es_FLASHING-BEACON	White/0
10119	es_FLASHING-BEACON-anno	White/0
10120	es_FO	White/0
10121	es_FO-anno	White/0
10122	es_HAR	White/0
10123	es_HAR-anno	White/0
10124	es_INTERCONNECTION	White/0
10125	es_INTERCONNECTION-anno	White/0
10126	es_LEGEND-anno	White/0
10127	es_LIGHTING	White/0
10128	es_LIGHTING-anno	White/0
10129	es_LIGHTING-CITY	White/0
10130	es_LIGHTING-CITY-anno	White/0
10131	es_LIGHTING-TEMP	White/0
10132	es_LIGHTING-TEMP-anno	White/0
10133	es_MODIFY-CCTV	White/0
10134	es_MODIFY-CCTV-anno	White/0
10135	es_MODIFY-EMS	White/0
10136	es_MODIFY-EMS-anno	White/0
10137	es_MODIFY-EVD	White/0
10138	es_MODIFY-EVD-anno	White/0
10139	es_MODIFY-FO	White/0
10140	es_MODIFY-FO-anno	White/0
10141	es_MODIFY-HAR-EMS	White/0
10142	es_MODIFY-HAR-EMS-anno	White/0
10143	es_MODIFY-RAMP-METERING	White/0
10144	es_MODIFY-RAMP-METERING-anno	White/0
10145	es_MODIFY-RWIS	White/0

Number	Name	Color
10146	es_MODIFY-RWIS-anno	White/0
10147	es_MODIFY-SIGNAL-LIGHTING	White/0
10148	es_MODIFY-SIGNAL-LIGHTING-anno	White/0
10149	es_MODIFY-SIGN-ILLUMINATION	White/0
10150	es_MODIFY-SIGN-ILLUMINATION-anno	White/0
10151	es_QTY-TABLE	White/0
10152	es_RAMP-METERING	White/0
10153	es_RAMP-METERING-anno	White/0
10154	es_REMOVE	White/0
10155	es_REMOVE-anno	White/0
10156	es_RWIS	White/0
10157	es_RWIS-anno	White/0
10158	es_SERVICE-BOOSTER-PUMP	White/0
10159	es_SERVICE-BOOSTER-PUMP-anno	White/0
10160	es_SERVICE-IRRIGATION	White/0
10161	es_SERVICE-IRRIGATION-anno	White/0
10162	es_SIGNAL-LIGHTING	White/0
10163	es_SIGNAL-LIGHTING-anno	White/0
10164	es_SIGNAL-LIGHTING-CITY	White/0
10165	es_SIGNAL-LIGHTING-CITY-anno	White/0
10166	es_SIGN-ILLUMINATION	White/0
10167	es_SIGN-ILLUMINATION-anno	White/0
10168	es_STAGE-1	White/0
10169	es_STAGE-1_drop	White/0
10170	es_STAGE-1-anno	White/0
10171	es_STAGE-2	White/0
10172	es_STAGE-2_drop	White/0
10173	es_STAGE-2-anno	White/0
10174	es_STAGE-3	White/0
10175	es_STAGE-3_drop	White/0
10176	es_STAGE-3-anno	White/0
10177	es_STAGE-4	White/0
10178	es_STAGE-4_drop	White/0
10179	es_STAGE-4-anno	White/0
10180	es_STAGE-5	White/0
10181	es_STAGE-5_drop	White/0
10182	es_STAGE-5-anno	White/0
10183	es_TMS	White/0
10184	es_TMS-anno	White/0
10185	es_CELL	White/0

Number	Name	Color
10186	es_NO-PLOT	White/0
10187	es_MVDS	White/0
10200	border_CLIP-FRAME	Red/3
10201	border_CLIP-FRAME-20SCALE	Red/3
10202	border_CLIP-FRAME-100SCALE	Red/3
10203	border_DATUM-LINE	White/0
10204	border_GRID-MAJOR_drop	Green/2
10205	border_GRID-MINOR_drop	Red/3
10206	border_INSIDE-BORDER-anno	Violet/13
10207	border_PLOTTING-ELEMENTS	252
10208	border_PROJ-ID-BLOCK-anno	Violet/13
10209	border_SEAL	Yellow/4
10210	border_SHEET	White/0
10211	border_SIGNATURE	Yellow/4
10212	border_WITHIN-BORDER-anno	Violet/13
10213	pp_ADDENDUM	Orange/6
10214	pp_AERIAL-IDENTIFICATION	White/0
10215	pp_AERIAL-IDENTIFICATION-anno	White/0
10216	pp_ARCHIVE	Red/3
10217	pp_AS-AWARDED	Viloet/5
10218	pp_AS-BUILT	Red/3
10219	pp_CAS	White/0
10220	pp_CAS-anno	White/0
10221	pp_CAS-TABLE	White/0
10222	pp_CO	Green/10
10223	pp_KEY-MAP-LINE-INDEX	White/0
10223	border	White/0
10224	pp_KEY-MAP-LINE-INDEX-anno	White/0
10225	pp_LEGEND-anno	White/0
10225	border_WITHIN-Border_anno	245
10226	pp_LOTB	White/0
10227	pp_LOTB-anno	White/0
10228	pp_MASKING	250
10229	pp_MISC	White/0
10230	pp_MOTORIST-INFO	White/0
10231	pp_MOTORIST-INFO-anno	White/0
10232	pp_PRESENTATION	White/0
10232	border_SEAL	245
10233	pp_PROJECT-CONTROL-anno	White/0
10234	pp_PROJECT-CONTROL-MAP	White/0

Number	Name	Color
10235	pp_RASTER	Green/10
10236	pp_TITLE-LOC-TABLE	White/0
10237	pp_TITLE-SHEET-anno	White/0
10238	pp_TITLE-SHEET-MAP	White/0
10239	border_NO-PLOT	White/0
10240	pp_NO-PLOT	White/0
10300	advplan_ALTERNATIVE-1	Violet/13
10301	advplan_ALTERNATIVE-2	Green/12
10302	advplan_ALTERNATIVE-3	Red/11
10303	advplan_ENV-STUDIES	Brown/14
10304	gis_SHAPE-FILES	Thistle/15
10305	gis_NO-PLOT	White/0
10400	rd_TORUS-anno	White/0
10401	rd_TRDESIGNSYMBOL	White/0
10402	rd_TRFASTESTPATH	White/0
10403	rd_TRGRADING	White/0
10404	rd_TSTORUS	White/0
10405	rd_TORUS-NO-PLOT	White/0
10500	vis_BRIDGE	White/0
10501	vis_BUILDING	White/0
10502	vis_CAR	White/0
10503	vis_GRASS	White/0
10504	vis_LINEAR-FEATURE	White/0
10505	vis_MAN-MADE-OBJ	White/0
10506	vis_MATERIAL	White/0
10507	vis_NATURAL-OBJ	White/0
10508	vis_PLANT	White/0
10509	vis_POINT-FEATURE	White/0
10510	vis_PVMT-MARKING	White/0
10511	vis_SKY	White/0
10512	vis_SURFACE	White/0
10513	vis_TIME-LAPSE	White/0
10514	vis_TREE	White/0
10515	vis_NO-PLOT	White/0

## C. Exceptions or flexibility from the Caltrans Standard Leveling Convention

The Caltrans Standard Leveling Convention for Pre-V8 MicroStation files should not be changed. For projects using the "V8 Standards" leveling convention, there are times when an exception (or some flexibility) may expedite the handling of a project to achieve the desired intent. Utilizing

the undefined levels will handle most of the situations not defined by the standard leveling convention. When using undefined levels, communicate to others what was done to eliminate the loss of efficiency and productivity.

For projects using the "Named Levels" convention, additional levels may be created that conform to the level name styles described in this section. When new levels are created, it is encouraged to communicate the information over to other users and functional units working on the project.

Example: For Pre-V8 MicroStation design files existing utilities belong on level 5, color orange/6. Level 5 is a dropout level, which changes the weight of the lines representing the utilities to a zero weight and changes the solid line to a dotted line. In the past, some Contractors and Resident Engineers could not clearly see the utility line depicted on the Contract Plans, thus creating confusion and a possible source of conflict.

> One way to handle the situation is to move the utility information to an undefined level (which does not dropout). Thus, the lines representing the utilities will be more visible on the Contract Plans. If the existing utilities are placed on a non-dropout level, 2 features/attributes have been added to help distinguish existing from proposed. The symbology for existing utilities will have a lowercase letter while proposed utilities will have an uppercase letter. Existing utilities will be shown as a thinner line while proposed utilities will be shown as a thicker line. The difference in width is the important point in distinguishing between existing and proposed. The suggested difference in line weight (wt) is wt = 1 for existing and wt = 3 for proposed. On a crowded or cluttered plan sheet, another suggestion would be to use line weight wt = 0for existing and wt = 2 for proposed.

In a V8 Standards MicroStation design file, Levels 812 through 849 has been set aside under the "V8 Standards" leveling convention for all utilities (existing and new) shown in a Caltrans project. The only information on each of these levels is a specific Caltrans custom line style (see Appendix A9 of this manual for the specific line style assigned to each level). The existing utilities are not dropped out, so the symbology that distinguishes the existing from new utilities (as stated in the previous paragraph) is very important to adhere to.

- Note 1: Colors have been assigned to various utilities for 2 reasons:
  - 1. To easily distinguish between the various utilities when viewing the design files in the monitor.
  - 2. To assist in the future ability to plot utility verification maps in color. Yellow color is not used because it is difficult to see when plotted.

(See cell "<u>AAUTIL</u>" in the Caltrans English Cell Library for the assigned colors. Caltrans custom line styles depicting utilities have been defaulted to these assigned colors).

- Note 2: For projects using the "V8 Standards" leveling convention, Traffic Electrical has only 1 level (level 47) to place design information. To assist the CADD operator in distinguishing between the various electrical components, cells have been created in various colors, grouped by type of electrical components or symbols. The color scheme is listed below.
  - White =Notes and SymbolsYellow =LightingGreen =SignalsRed =Conduit and RiserViolet =Other Electrical Components
- Note 3: For projects using the "V8 Standards" and "Pre-V8" leveling convention, level 63 has been reserved for the Engineer's Signature. The color white/0 is for the Engineer's signature. The color red/3 is for the "As-Awarded" cell (asawrd) created to be used "in lieu" of the Engineer's Signature when the design file (dgn) is set to the Resident Engineer to assist with potential CCOs during the construction phase of the project.

## D. <u>Structures Design Leveling Convention</u>

1. General Content of Structures Design Levels is as follows:

## <u> Pre-V8</u>

Level(s)	Content
Level 1	Control Data
Levels 2 - 8	Pen table drop out code to be used for
	elements of existing features
Levels 10	Sheet Formats & Seal Information
Level 12	Dimensions
Levels 13, 16 - 19	Bar Reinforcement
Levels 14 & 15	Notes
Levels 20 - 25	Elements made of structural steel
Levels 30 - 35	Elements made of wood
Levels 36 & 37	Contours
Levels 40 - 50	Elements made of concrete
Level 51	Elements made of concrete masonry
Levels 52 & 53	Bridge Data
Levels 54 – 58	Topo, Original Ground & Survey Control
Level 59	Hydrology Data
Level 60	UBC Code
Level 61	Headquarter Changes
Level 62	As-Built Changes
Level 63	Engineer's Signature

Reassigned and expanded levels to be used in Structures Design projects are as follows:

#### V8 Standards

Level(s)	Content
Level 201	Control Data
Levels 202 - 208	Pen table drop out code to be used for
	elements of existing features
Levels 210	Sheet Formats & Seal Information
Level 212	Dimensions
Levels 213, 216 - 219	Bar Reinforcement
Levels 214 & 215	Notes
Levels 220 - 225	Elements made of structural steel
Levels 230 - 235	Elements made of wood
Levels 236 & 237	Contours

Level(s)	Content
Levels 240 - 250	Elements made of concrete
Level 251	Elements made of concrete masonry
Levels 252 & 253	Bridge Data
Levels 254 – 258	Topo, Original Ground & Survey Control
Level 259	Hydrology Data
Level 260	UBC Code
Level 261	Headquarter Changes
Level 262	As-Built Changes
Level 263	Engineer's Signature
Levels 264 - 269	No_Plot
Level 270	Plot Shape for Iplot (does not plot)
Levels 271 - 300	Undefined

- Note 1: There were a few levels that were named "<u>### Not Assigned</u>" in the Caltrans DGNLIB that were assigned (defined) per the V8 Standards Chart in the Structures seed files. Those levels are as follows:
  - Levels 246 through 250 are for Concrete Level 253 is for Bridge Level 254 is for Topo Data Level 255 is for Topo Level 256 is for Topo Data for Coutours Level 258 is for Survey Control Data Level 259 is for Hydrology Data Level 260 is for UBC Code

Use the "<u>### Not Assigned</u>" levels as they are defined above or in the Structures seed files, even though the actual name of the level does not reflect the purpose of the level.

Note 2: The "<u>Undefined</u>" levels 271 through 300 were created as place markers so they would not be available for MicroStation to randomly place information on a level slot number within the range of the Caltrans defined levels. Caltrans Structures Design does not use the undefined levels at this time. Anyone, Caltrans or Consultants, desiring to use the Structures Design undefined levels should first contact the editor of this manual and explain the reason so that need might be accommodated in the future by all users.

# 2. Summary of Structures Levels is as follows: <u>Pre-V8 and V8 Standards</u>

Levels	Content
1 or 201	Control (Includes Center Line, Station
	Line)
2 or 202	Existing Features for structural steel
	elements
3 or 203	Existing Features for wood elements
4 or 204	Existing Features for concrete elements
5 or 205	Existing Features for concrete masonry
	elements
6 or 206	Existing Features
7 or 207	Existing Features
8 or 208	Existing Features
9 or 209	Reserved for District use
10 or 210	Sheet Formats & Seal Information
11 or 211	Undefined
12 or 212	Dimensioning (Includes dimension lines,
	witness lines, dimension text, arrow
	heads & reinforcement leaders)
13 or 213	Bar Reinforcement
14 or 214	Detailing Information (Includes text,
	detail notes & titles)
15 or 215	Design Notes
16 or 216	Bar Reinforcement
17 or 217	Bar Reinforcement
18 or 218	Bar Reinforcement
19 or 219	Bar Reinforcement
20 or 220	Structural Steel
21 or 221	Structural Steel
22 or 222	Structural Steel
23 or 223	Structural Steel
24 or 224	Structural Steel
25 or 225	Structural Steel
26 or 226	Undefined
27 or 227	Undefined
28 or 228	Undefined
29 or 229	Undefined
30 or 230	Wood
31 or 231	Wood
32 or 232	Wood
33 or 233	Wood
34 or 234	Wood

Levels	Content
35 or 235	Wood
36 or 236	Minor Contours
37 or 237	Major Contours
38 or 238	Undefined
39 or 239	Undefined
40 or 240	Concrete
41 or 241	Concrete
42 or 242	Concrete
43 or 243	Concrete
44 or 244	Concrete
45 or 245	Concrete
46 or 246	Concrete
47 or 247	Concrete
48 or 248	Concrete
49 or 249	Concrete
50 or 250	Concrete
51 or 251	Concrete (Masonry)
52 or 252	Bridge Data
53 or 253	Bridge
54 or 254	Topo Data
55 or 255	Торо
56 or 256	Topo Data for Contours
57 or 257	Original Ground, batch plotting points
58 or 258	Survey Control Data
59 or 259	Hydrology Data
60 or 260	UBC Code
61 or 261	Headquarter Changes
62 or 262	As-Built Changes
63 or 263	Engineer's Signature

Summary of additional Levels for Structures Design is as follows: <u>V8 Standards</u>

Level(s)	Content
264 – 269	No_Plot
270	Plot Shape for Iplot (does not plot)
271 - 300	Undefined

## Named Levels

Levels names and Description for levels used by Structures Design is shown in the table below:

Number	Name	Description
7000	str_Arch-Treatment-A	Architectural Treatment
7001	str_Arch-Treatment-B	Architectural Treatment
7002	str_Arch-Treatment-C	Architectural Treatment
7003	str_Arch-Treatment-D	Architectural Treatment
7004	str_Arch-Treatment-E	Architectural Treatment
7005	str_As-Built-Changes-A	As-Built Changes
7006	str_As-Built-Changes-B	As-Built Changes
7007	str_As-Built-Changes-C	As-Built Changes
7008	str_Border-A	Alternate Border Elements
7009	str_Border-B	Alternate Border Elements
7010	str_Border-Plot-Shape-A	Border Plot Shape
7011	str_Border-PSE-OE-Rsvrd-A	Reserved for OE Information
7012	str_Border-PSE-Seal-A	Engineer's Seal
7013	str. Border-PSE-Signature-A	Engineer's Signature and
7013		Information
7014	str_Border-Text-A	Editable Border Elemants
7015	str_Border-Title-Block-A	Permanent Border Elements
7016	str_CCO-Changes-A	CCO Changes
7017	str_CCO-Changes-B	CCO Changes
7018	str_CCO-Changes-C	CCO Changes
7019	str_CCO-Sign-Seal-A	CCO Seal and Signature
7020	str_Center-Line-A	Item Center Lines
7021	str_Center-Line-B	Item Center Lines
7022	str_Center-Line-C	Item Center Lines
7023	str_Center-Line-D	Item Center Lines
7024	str_Center-Line-E	Item Center Lines
7025	str_Concrete-A	Concrete
7026	str_Concrete-B	Concrete
7027	str_Concrete-C	Concrete
7028	str_Concrete-D	Concrete
7029	str_Concrete-E	Concrete
7030	str_Concrete-F	Concrete
7031	str_Concrete-G	Concrete
7032	str_Concrete-H	Concrete
7033	str_Concrete-I	Concrete
7034	str_Concrete-J	Concrete
7035	str_Concrete-K	Concrete
7036	str_Concrete-L	Concrete
7037	str_Concrete-M	Concrete
7038	str Concrete-N	Concrete

Number	Name	Description
7039	str Concrete-O	Concrete
7040	str Deck-Contours-A	Deck Contours
7041	str Deck-Contours-B	Deck Contours
7042	str Deck-Contours-C	Deck Contours
7043	str Deck-Contours-D	Deck Contours
7044	str Deck-Contours-E	Deck Contours
7045	str_Dimensions-A	Dimensions
7046	str_Dimensions-B	Dimensions
7047	str_Dimensions-C	Dimensions
7048	str_Dimensions-D	Dimensions
7049	str_Dimensions-E	Dimensions
7050	str_Drainage-A	Drainage
7051	str_Drainage-B	Drainage
7052	str_Drainage-C	Drainage
7053	str_Drainage-D	Drainage
7054	str_Drainage-E	Drainage
7055	str_Dropout-A_dither	Dropout
7056	str_Dropout-B_dither	Dropout
7057	str_Dropout-C_dither	Dropout
7058	str_Dropout-D_dither	Dropout
7059	str_Dropout-E_dither	Dropout
7060	str_Dropout-F_dither	Dropout
7061	str_Dropout-G_dither	Dropout
7062	str_Dropout-H_dither	Dropout
7063	str_Dropout-I_dither	Dropout
7064	str_Dropout-J_dither	Dropout
7065	str_Dropout-K_dither	Dropout
7066	str_Dropout-L_dither	Dropout
7067	str_Engineering-Notes-A	Engineering Notes
7068	str_Engineering-Notes-B	Engineering Notes
7069	str_Engineering-Notes-C	Engineering Notes
7070	str_Existing-A	Existing
7071	str_Existing-Arch-Treatment-A	Existing Architectural Treatment
7072	str_Existing-Arch-Treatment-B	Existing Architectural Treatment
7073	str_Existing-Concrete-A	Existing Concrete
7074	str_Existing-Concrete-B	Existing Concrete
7075	str_Existing-Concrete-C	Existing Concrete
7076	str_Existing-Concrete-D	Existing Concrete
7077	str Existing-Non-Metallic-A	Existing Non-Metallic
_		Components
7078	str Existing-Non-Metallic-B	
7070		
7079	Su_EXISTING-Railroad-A	Existing Kallfoad
1080	str_existing-Railroad-B	Existing Railroad

Number	Name	Description
7081	str_Existing-Reinforcement-A	Existing Reinforcement
7082	str Existing-Reinforcement-B	Existing Reinforcement
7083	str_Existing-Reinforcement-C	Existing Reinforcement
7084	str_Existing-Reinforcement-D	Existing Reinforcement
7085	str_Existing-Reinforcement-E	Existing Reinforcement
7086	str_Existing-Reinforcement-F	Existing Reinforcement
7087	str_Existing-Reinforcement-G	Existing Reinforcement
7088	str_Existing-Reinforcement-H	Existing Reinforcement
7089	str_Existing-Reinforcement-I	Existing Reinforcement
7090	str_Existing-Reinforcement-J	Existing Reinforcement
7091	str_Existing-Reinforcement-K	Existing Reinforcement
7092	str_Existing-Reinforcement-L	Existing Reinforcement
7093	str_Existing-Reinforcement-M	Existing Reinforcement
7094	str_Existing-Roadway-A	Existing Roadway
7095	str_Existing-Roadway-B	Existing Roadway
7096	str_Existing-Steel-A	Existing Steel
7097	str_Existing-Steel-B	Existing Steel
7098	str_Existing-Steel-C	Existing Steel
7099	str_Existing-Steel-D	Existing Steel
7100	str_Existing-Steel-E	Existing Steel
7101	str_Existing-Steel-F	Existing Steel
7102	str_Existing-Steel-G	Existing Steel
7103	str_Existing-Steel-H	Existing Steel
7104	str_Existing-Steel-I	Existing Steel
7105	str_Existing-Steel-J	Existing Steel
7106	str_Existing-Steel-K	Existing Steel
7107	str_Existing-Steel-L	Existing Steel
7108	str_Existing-Steel-M	Existing Steel
7109	str_Existing-Utilities-A	Existing Utility Items
7110	str_Existing-Utilities-B	Existing Utility Items
7111	str_Existing-Wood-A	Existing Wood
7112	str_Existing-Wood-B	Existing Wood
7113	str_Grades-A	Grades
7114	str_Grades-Exec-Backfill-A	Excavation and Backfill
7115	str_Grades-Exec-Backfill-B	Excavation and Backfill
7116	str_Grades-Finish-Grade-A	Finish Grade
7117	str_Grades-Major-Grades-A	Major Grade Contours
7118	str_Grades-Minor-Grades-A	Minor Grade Contours
7119	str_Grades-Origonal-Ground-A	Origonal Ground
7120	str_Grades-Slope-Protection-A	Slope Protection
7121	str_Grades-Top-Toe-Slope-A	Top and Toe of Slope
7122	str_Grades-Water-A	Water and Flow Items
7123	str_Guideline-NoPlot-A	Guidelines - Does Not Plot
7124	str_Guideline-NoPlot-B	Guidelines - Does Not Plot
Number	Name	Description
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7125	str_Guideline-NoPlot-C	Guidelines - Does Not Plot
7126	str_Guideline-NoPlot-D	Guidelines - Does Not Plot
7127	str_Guideline-NoPlot-E	Guidelines - Does Not Plot
7128	str_Hatching-A	Hatching
7129	str_Hatching-B	Hatching
7130	str_Hatching-C	Hatching
7131	str_Hatching-D	Hatching
7132	str_Hatching-E	Hatching
7133	str_Layout-A	Layout Lines and Information
7134	str_Layout-B	Layout Lines and Information
7135	str_Layout-C	Layout Lines and Information
7136	str_Layout-D	Layout Lines and Information
7137	str_Layout-E	Layout Lines and Information
7138	str_Layout-F	Layout Lines and Information
7139	str_Layout-G	Layout Lines and Information
7140	str_Layout-H	Layout Lines and Information
7141	str_Layout-I	Layout Lines and Information
7142	str_Layout-J	Layout Lines and Information
7143	str_Masking-Shape-A	Masking Shape
7144	str_Masking-Shape-B	Masking Shape
7145	str_Misc-Steel-A	Miscellaneous Steel
7146	str_Misc-Steel-B	Miscellaneous Steel
7147	str_Misc-Steel-C	Miscellaneous Steel
7148	str_Misc-Steel-D	Miscellaneous Steel
7149	str_Misc-Steel-E	Miscellaneous Steel
7150	str_Misc-Steel-F	Miscellaneous Steel
7151	str_Misc-Steel-G	Miscellaneous Steel
7152	str_Misc-Steel-H	Miscellaneous Steel
7153	str_Misc-Steel-I	Miscellaneous Steel
7154	str_Misc-Steel-J	Miscellaneous Steel
7155	str_Non-Metallic-Components-A	Non-Metallic Components
7156	str_Non-Metallic-Components-B	Non-Metallic Components
7157	str_Non-Metallic-Components-C	Non-Metallic Components
7158	str_Non-Metallic-Components-D	Non-Metallic Components
7159	str_Non-Metallic-Components-E	Non-Metallic Components
7160	str_Prestressed-Components-A	Prestressed Components
7161	str_Prestressed-Components-B	Prestressed Components
7162	str_Prestressed-Components-C	Prestressed Components
7163	str_Prestressed-Components-D	Prestressed Components
7164	str_Prestressed-Components-E	Prestressed Components
7165	str_Railroad-A	Railroad
7166	str_Railroad-B	Railroad
7167	str_Railroad-C	Railroad
7168	str_Railroad-D	Railroad

Number	Name	Description
7169	str_Reinforcement-A	Reinforcement
7170	str Reinforcement-B	Reinforcement
7171	str_Reinforcement-C	Reinforcement
7172	str_Reinforcement-D	Reinforcement
7173	str_Reinforcement-E	Reinforcement
7174	str_Reinforcement-F	Reinforcement
7175	str_Reinforcement-G	Reinforcement
7176	str_Reinforcement-H	Reinforcement
7177	str_Reinforcement-I	Reinforcement
7178	str_Reinforcement-J	Reinforcement
7179	str_Reinforcement-K	Reinforcement
7180	str_Reinforcement-L	Reinforcement
7181	str_Reinforcement-M	Reinforcement
7182	str_Reinforcement-N	Reinforcement
7183	str_Reinforcement-O	Reinforcement
7184	str_Reinforcement-P	Reinforcement
7185	str_Reinforcement-Q	Reinforcement
7186	str_Reinforcement-R	Reinforcement
7187	str_Reinforcement-S	Reinforcement
7188	str_Reinforcement-T	Reinforcement
7189	str_Reinforcement-U	Reinforcement
7190	str_Reinforcement-V	Reinforcement
7191	str_Reinforcement-W	Reinforcement
7192	str_Reinforcement-X	Reinforcement
7193	str_Reinforcement-Y	Reinforcement
7194	str_Structural-Steel-A	Structural Steel
7195	str_Structural-Steel-B	Structural Steel
7196	str_Structural-Steel-C	Structural Steel
7197	str_Structural-Steel-D	Structural Steel
7198	str_Structural-Steel-E	Structural Steel
7199	str_Structural-Steel-F	Structural Steel
7200	str_Structural-Steel-G	Structural Steel
7201	str_Structural-Steel-H	Structural Steel
7202	str_Structural-Steel-I	Structural Steel
7203	str_Structural-Steel-J	Structural Steel
7204	str_Structural-Steel-K	Structural Steel
7205	str_Structural-Steel-L	Structural Steel
7206	str_Structural-Steel-M	Structural Steel
7207	str_Structural-Steel-N	Structural Steel
7208	str_Structural-Steel-O	Structural Steel
7209	str_Text-A	Text
7210	str_Text-B	Text
7211	str_Text-C	Text
7212	str_Text-D	Text

Number	Name	Description
7213	str_Text-E	Text
7214	str_Utilities-A	Utility Items
7215	str_Utilities-B	Utility Items
7216	str_Utilities-C	Utility Items
7217	str_Utilities-D	Utility Items
7218	str_Utilities-E	Utility Items
7219	str_Utilities-F	Utility Items
7220	str_Wood-A	Wood
7221	str_Wood-B	Wood
7222	str_Wood-C	Wood
7223	str_Wood-D	Wood
7224	str_Wood-E	Wood

3. The following table identifies each level, its associated color and the specific information belonging on each level for a Structures Design project.

## Pre-V8 and V8 Standards

The Level Number is shown twice, once for Pre-V8 and a second time for V8 Standards. The color numbers remain the same as it was for Pre-V8 whether using level numbers for Pre-V8 or V8 Standards.

LEVEL NO.	COLOR NAME AND NUMBER	TITLE	DESCRIPTION/CONTENT
1/201	Blue/1	Control	Control information (e.g. center line, station line)
2/202	Purple/2	Existing	Drop out, existing structural steel elements
3/203	Green/3	Existing	Drop out, existing wood elements
4/204	Orange/4	Existing	Drop out, existing concrete elements
5/205	Light Slate Blue/5	Existing	Drop out, existing concrete masonry elements
6/206	Med Spring Green/6	Existing	Drop out, existing features
7/207	Pink/7	Existing	Drop out, existing features
8/208	Cyan/8	Existing	Drop out, existing features
9/209	Undefined		Drop out, reserved for District Use
10/210	White/10	Sheet Formats	Standard Sheet with border, trim lines,registration seal, signature blocks, District-

LEVEL	COLOR NAME AND	TITLE	DESCRIPTION/CONTENT
NO.	NUMBER		County Kilomotor Doot ato
11/011	Lindofinod		County-Kilometer Post, etc.
11/211	Ondenned Green/12	Dimonoioning	Dimonoion lingo, withooo
12/212	Green/12	Dimensioning	lines, dimension text, arrow heads & reinforcement leaders
13/213	Red/13	Bar Reinforcement	Bar Reinforcement Symbols (excluding reinforcing text)
14/214	Yellow/14	Detailing Information	Text, detail notes and titles
15/215	Thistle/15	Design Notes	Design Notes
16/216	Hot Pink/16	Bar Reinforcement	Bar Reinforcement Symbols
17/217	Cyan/17	Bar Reinforcement	Bar Reinforcement Symbols
18/218	Honeydew/18	Bar Reinforcement	Bar Reinforcement Symbols
19/219	Light Blue/19	Bar Reinforcement	Bar Reinforcement Symbols
20/220	Aquamarine/20	Structural Steel	Structural Steel (plates, beams & misc. steel)
21/221	Cornflower Blue/21	Structural Steel	Structural Steel (plates, beams & misc. steel)
22/222	Orange/22	Structural Steel	Structural Steel (plates, beams & misc. steel)
23/223	Yellow/23	Structural Steel	Structural Steel (plates, beams & misc. steel)
24/224	Tan/24	Structural Steel	Structural Steel (plates, beams & misc. steel)
25225	Light Gray/25	Structural Steel	Structural Steel (plates, beams & misc. steel)
26/226	Undefined		
27/227	Undefined		
28/228	Undefined		
29/229	Undefined		
30230	Burleywood/30	Wood	Wood
31/231	Peru/31	Wood	Wood
32/232	Saddle Brown/32	Wood	Wood
33/233	Brown/33	Wood	Wood
34/234	Dark Goldenrod/34	Wood	Wood
35/235	Chocolate/35	Wood	Wood
36/236	Coral/36	Contours	Minor Contours
37/237	Magenta/37	Contours	Major Contours
38/238	Undefined		

LEVEL	COLOR NAME AND	TITLE	DESCRIPTION/CONTENT
NU. 30/230			
40/240	White/10	Concrete	Concrete
40/240	Steel Blue/41	Concrete	Concrete
41/241	Codet Blue/42	Concrete	Concrete
42/242	Med Violet Ped//3	Concrete	Concrete
43/243	It Dink/1/	Concrete	Concrete
44/244	Dark Orange/45	Concrete	Concrete
46/246		Concrete	Concrete
47/240	Pale Green/47	Concrete	Concrete
47/247	Dark Sea Green/48	Concrete	Concrete
40/240	Khaki/10	Concrete	Concrete
50/250	Light Coral/50	Concrete	Concrete
51/251	Deen Sky Blue/51	Concrete	Concrete (Masonry)
51/201		Masonry	
52/252	Salmon/52	Bridge	Bridge Data
53/253	Dark Khaki/53	Bridge	Bridge
54/254	Peach Puff/54	Topo	Topo Data
55/255	Med Sea Green/55	Торо	
56/256	Firebrick/56	Τορο	Topo Data for Contours
57/257	Dodger Blue/57	Original	Original Ground, Batch
		Ground	Plotting Points (circles)
58/258	Dark Orange/58	Survey Control	Survey Control Data
59/259	Pale Turquoise/59	Hydrology	Hydrology Data
60/260	White/60	UBC Code	UBC code information or
			level map.
61/261	Yellow/61	Headquarters	Final plan revisions
		Changes	performed by ESC- OE
		_	Drafting Services prior to
			reproduction.
62/262	Red/62	As-Built	Changes made during
		Changes	construction. Revisions are
			shown by lining out the
			original information and
			then placing the as-built
			information.
63/263	White/63	Engineer's	Project Engineer's
	(Red for Cells)	Signature	signature.

# Named Levels

The following table identifies the level name, level number and its associated color using the Named Level convention for Structures Design Projects.

Number	Name	Color
7000	str_Arch-Treatment-A	211
7001	str_Arch-Treatment-B	212
7002	str Arch-Treatment-C	213
7003	str_Arch-Treatment-D	214
7004	str_Arch-Treatment-E	211
7005	str_As-Built-Changes-A	136
7006	str_As-Built-Changes-B	136
7007	str_As-Built-Changes-C	136
7008	str_Border-A	0
7009	str_Border-B	0
7010	str_Border-Plot-Shape-A	252
7011	str_Border-PSE-OE-Rsvrd-A	0
7012	str_Border-PSE-Seal-A	0
7013	str_Border-PSE-Signature-A	0
7014	str_Border-Text-A	0
7015	str_Border-Title-Block-A	0
7016	str_CCO-Changes-A	138
7017	str_CCO-Changes-B	138
7018	str_CCO-Changes-C	138
7019	str_CCO-Sign-Seal-A	138
7020	str_Center-Line-A	152
7021	str_Center-Line-B	152
7022	str_Center-Line-C	152
7023	str_Center-Line-D	152
7024	str_Center-Line-E	152
7025	str_Concrete-A	0
7026	str_Concrete-B	84
7027	str_Concrete-C	220
7028	str_Concrete-D	225
7029	str_Concrete-E	0
7030	str_Concrete-F	84
7031	str_Concrete-G	220
7032	str_Concrete-H	225
7033	str_Concrete-I	0
7034	str_Concrete-J	84
7035	str_Concrete-K	220
7036	str_Concrete-L	225
7037	str_Concrete-M	0
7038	str_Concrete-N	84
7039	str_Concrete-O	220

Number	Name	Color
7040	str_Deck-Contours-A	64
7041	str_Deck-Contours-B	187
7042	str_Deck-Contours-C	185
7043	str_Deck-Contours-D	48
7044	str_Deck-Contours-E	32
7045	str_Dimensions-A	152
7046	str_Dimensions-B	152
7047	str_Dimensions-C	152
7048	str_Dimensions-D	152
7049	str_Dimensions-E	152
7050	str_Drainage-A	59
7051	str_Drainage-B	60
7052	str_Drainage-C	61
7053	str_Drainage-D	62
7054	str_Drainage-E	63
7055	str_Dropout-A_dither	85
7056	str_Dropout-B_dither	86
7057	str_Dropout-C_dither	87
7058	str_Dropout-D_dither	88
7059	str_Dropout-E_dither	89
7060	str_Dropout-F_dither	90
7061	str_Dropout-G_dither	91
7062	str_Dropout-H_dither	92
7063	str_Dropout-I_dither	93
7064	str_Dropout-J_dither	94
7065	str_Dropout-K_dither	95
7066	str_Dropout-L_dither	96
7067	str_Engineering-Notes-A	239
7068	str_Engineering-Notes-B	239
7069	str_Engineering-Notes-C	239
7070	str_Existing-A	199
7071	str_Existing-Arch-Treatment-A	211
7072	str_Existing-Arch-Treatment-B	212
7073	str_Existing-Concrete-A	0
7074	str_Existing-Concrete-B	84
7075	str_Existing-Concrete-C	220
7076	str_Existing-Concrete-D	225
7077	str_Existing-Non-Metallic-A	196
7078	str_Existing-Non-Metallic-B	196
7079	str_Existing-Railroad-A	81

Number	Name	Color
7080	str_Existing-Railroad-B	81
7081	str_Existing-Reinforcement-A	48
7082	str_Existing-Reinforcement-B	120
7083	str_Existing-Reinforcement-C	176
7084	str_Existing-Reinforcement-D	185
7085	str_Existing-Reinforcement-E	124
7086	str Existing-Reinforcement-F	180
7087	str_Existing-Reinforcement-G	32
7088	str_Existing-Reinforcement-H	56
7089	str_Existing-Reinforcement-I	10
7090	str_Existing-Reinforcement-J	64
7091	str_Existing-Reinforcement-K	122
7092	str_Existing-Reinforcement-L	178
7093	str_Existing-Reinforcement-M	187
7094	str_Existing-Roadway-A	195
7095	str_Existing-Roadway-B	196
7096	str_Existing-Steel-A	223
7097	str_Existing-Steel-B	222
7098	str_Existing-Steel-C	221
7099	str_Existing-Steel-D	200
7100	str_Existing-Steel-E	223
7101	str_Existing-Steel-F	222
7102	str_Existing-Steel-G	221
7103	str_Existing-Steel-H	200
7104	str_Existing-Steel-I	223
7105	str_Existing-Steel-J	222
7106	str_Existing-Steel-K	221
7107	str_Existing-Steel-L	200
7108	str_Existing-Steel-M	223
7109	str_Existing-Utilities-A	120
7110	str_Existing-Utilities-B	84
7111	str_Existing-Wood-A	231
7112	str_Existing-Wood-B	7
7113	str_Grades-A	7
7114	str_Grades-Exec-Backfill-A	200
7115	str_Grades-Exec-Backfill-B	231
7116	str_Grades-Finish-Grade-A	7
7117	str_Grades-Major-Grades-A	7
7118	str_Grades-Minor-Grades-A	200
7119	str Grades-Origonal-Ground-A	200

Number	Name	Color
7120	str_Grades-Slope-Protection-A	231
7121	str_Grades-Top-Toe-Slope-A	7
7122	str_Grades-Water-A	1
7123	str_Guideline-NoPlot-A	15
7124	str_Guideline-NoPlot-B	15
7125	str_Guideline-NoPlot-C	15
7126	str_Guideline-NoPlot-D	15
7127	str_Guideline-NoPlot-E	15
7128	str_Hatching-A	213
7129	str_Hatching-B	212
7130	str_Hatching-C	211
7131	str_Hatching-D	212
7132	str_Hatching-E	213
7133	str_Layout-A	1
7134	str_Layout-B	1
7135	str_Layout-C	1
7136	str_Layout-D	1
7137	str_Layout-E	1
7138	str_Layout-F	1
7139	str_Layout-G	1
7140	str_Layout-H	1
7141	str_Layout-I	1
7142	str_Layout-J	1
7143	str_Masking-Shape-A	250
7144	str_Masking-Shape-B	250
7145	str_Misc-Steel-A	
7146	str_Misc-Steel-B	
7147	str_Misc-Steel-C	
7148	str_Misc-Steel-D	
7149	str_Misc-Steel-E	
7150	str_Misc-Steel-F	
7151	str_Misc-Steel-G	
7152	str_Misc-Steel-H	
7153	str_Misc-Steel-I	
7154	str_Misc-Steel-J	
7155	str_Non-Metallic-Components-A	196
7156	str_Non-Metallic-Components-B	196
7157	str_Non-Metallic-Components-C	196
7158	str_Non-Metallic-Components-D	196
7159	str_Non-Metallic-Components-E	196

Number	Name	Color
7160	str_Prestressed-Components-A	6
7161	str_Prestressed-Components-B	6
7162	str_Prestressed-Components-C	6
7163	str_Prestressed-Components-D	6
7164	str_Prestressed-Components-E	6
7165	str_Railroad-A	81
7166	str_Railroad-B	81
7167	str_Railroad-C	81
7168	str_Railroad-D	81
7169	str_Reinforcement-A	48
7170	str_Reinforcement-B	120
7171	str_Reinforcement-C	176
7172	str_Reinforcement-D	185
7173	str_Reinforcement-E	124
7174	str_Reinforcement-F	180
7175	str_Reinforcement-G	32
7176	str_Reinforcement-H	56
7177	str_Reinforcement-I	10
7178	str_Reinforcement-J	64
7179	str_Reinforcement-K	122
7180	str_Reinforcement-L	178
7181	str_Reinforcement-M	187
7182	str_Reinforcement-N	126
7183	str_Reinforcement-O	182
7184	str_Reinforcement-P	48
7185	str_Reinforcement-Q	120
7186	str_Reinforcement-R	176
7187	str_Reinforcement-S	185
7188	str_Reinforcement-T	124
7189	str_Reinforcement-U	180
7190	str_Reinforcement-V	32
7191	str_Reinforcement-W	56
7192	str_Reinforcement-X	10
7193	str_Reinforcement-Y	64
7194	str_Structural-Steel-A	223
7195	str_Structural-Steel-B	222
7196	str_Structural-Steel-C	221
7197	str_Structural-Steel-D	200
7198	str_Structural-Steel-E	223
7199	str_Structural-Steel-F	222

Number	Name	Color
7200	str_Structural-Steel-G	221
7201	str_Structural-Steel-H	200
7202	str_Structural-Steel-I	223
7203	str_Structural-Steel-J	222
7204	str_Structural-Steel-K	221
7205	str_Structural-Steel-L	200
7206	str_Structural-Steel-M	223
7207	str_Structural-Steel-N	222
7208	str_Structural-Steel-O	221
7209	str_Text-A	12
7210	str_Text-B	12
7211	str_Text-C	12
7212	str_Text-D	12
7213	str_Text-E	12
7214	str_Utilities-A	120
7215	str_Utilities-B	84
7216	str_Utilities-C	11
7217	str_Utilities-D	13
7218	str_Utilities-E	6
7219	str_Utilities-F	7
7220	str_Wood-A	231
7221	str_Wood-B	7
7222	str_Wood-C	200
7223	str_Wood-D	7
7224	str_Wood-E	231

## E. Right of Way (R/W) Mapping Products Leveling Convention

The R/W Mapping leveling conventions are to be used for R/W Mapping Products only. These are <u>not intended</u> for Final Design contract plans. If R/W boundaries & annotation are delivered to Design in a Pre-V8 MicroStation design file, the contract plans leveling convention for Pre-V8 MicroStation design files must be adhered to (e.g., Existing R/W, Easement, and Property Boundaries reside on Level 31; New R/W and Easement Boundaries reside on Level 32; and the Text & Annotation describing data on Levels 31 & 32 reside on Level 33).

If R/W boundaries & annotation are delivered to Design in a V8 Standards MicroStation design file, the leveling convention for V8 Standards MicroStation design files must be adhered to (e.g., Levels 128 through 137).

1. General Content of R/W Mapping Levels is as follows:

Level(s)	Content
Level 1	Control Data
Levels 2 - 8	Basic topographic map data
Levels 9 - 11	Sheet formats
Levels 13 – 18	Alignments
Levels 19 - 27	Parcel Coloring
Levels 28 – 37, 43 – 46 *	R/W Data
Levels 38 – 42 *	Landnet Data
Levels 47 – 49 *	Point data
Levels 50 – 52 *	Project Surveyor Data
Levels 53 & 54 *	Clipping & Plotting Boundaries
Levels 12, 55 – 63 **	Undefined

#### <u> Pre-V8</u>

\* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)

\*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)

Reassigned and expanded levels to be used in R/W Mapping Products are as follows:

Level(s)	Content
Levels 101 - 108	Unassigned, still using Pre-V8 levels
	(1 through 8) for control and
	topographic map data
Levels 109 - 111	Sheet formats
Level 112 **	Undefined
Level(s)	Content
Levels 113 – 118	Unassigned, still using Pre-V8 levels
	(13 through 18) for alignments
Levels 119 - 127	Parcel Coloring
Levels 128 – 137 *	R/W Data
Levels 138 – 142 *	Landnet Data
Levels 143 – 146 *	R/W Data
Levels 147 – 149 *	Point data
Levels 150 – 152 *	Project Surveyor Data
Levels 153 & 154 *	Clipping & Plotting Boundaries
Levels 155 – 163 **	Undefined
Levels 164 – 169	No_Plot
Level 170	Plot Shape for Iplot (does not plot)
Levels 171 – 200 **	Undefined

#### V8 Standards

2. Summary of R/W Mapping Levels is as follows:

#### Pre-V8 and V8 Standards

Level(s)	Content
1	Photogrammetric Mapping Control
2	Existing Man-Made Features
3	Existing Roadway Features
4	Existing Vegetation and Natural Features
5	Existing Utilities and Utility Facilities
6	Existing Hydrographic Features
7	Relief Features - Contours
8	Spot Elevations and Contour Annotations
9 & 109	Appraisal Map Sheet Information
10 &110	General Sheet Formats
11 & 111	Record Map Sheet Information
12 & 112	Undefined **
13	Ramp, Over and Under Crossing Alignment Data
14	Ramp, Over and Under Crossing Annotation
15	Mainline Alignment Data
16	Mainline Alignment Annotation
17	Frontage Road Alignment Data
18	Frontage Road Alignment Annotation
19 & 119	Parcel Coloring
20 & 120	Parcel Coloring
21 & 121	Parcel Coloring
22 & 122	Parcel Coloring
23 & 123	Parcel Coloring
24 & 124	Parcel Coloring
25 & 125	Parcel Coloring
26 & 126	Parcel Coloring
27 & 127	Parcel Coloring
28 & 128	Existing Easement Boundaries *
29 & 129	Existing Easement Annotation *
30 & 130	Existing R/W Annotation *
31 & 131	Existing R/W Boundaries *
32 & 132	New R/W Boundaries *
33 & 133	New R/W Annotation *
34 & 134	New Easement Boundaries *
35 & 135	New Easement Annotation *
36 & 136	Temporary Easement Boundaries *
37 & 137	Temporary Easement Annotation *
38 & 138	Minor Landnet Boundaries *
39 & 139	Minor Landnet Annotation *
40 & 140	Major Landnet Boundaries *

Level(s)	Content
41 & 141	Major Landnet Annotation *
42 & 142	Political & Municipal Boundaries *
43 & 143	JUA/CCUA/Freeway Lease Boundaries & Annotation *
44 & 144	Relinquishment *
45 & 145	Directors Deed *
46 & 146	Vacation/Abandonment *
47 & 147	Landnet Point Data *
48 & 148	R/W Point Data *
49 & 149	Landnet & R/W Plotted Point Data *
50 & 150	Retracement Data *
51 & 151	Retracement Annotation *
52 & 152	Retracement Comments *
53 & 153	Clip Boundaries *
54 & 154	Plot Boundaries *
55 & 155	Undefined **
56 & 156	Undefined **
57 & 157	Undefined **
58 & 158	Undefined **
59 & 159	Undefined **
60 & 160	Undefined **
61 & 161	Undefined **
62 & 162	Undefined **
63 & 163	Undefined **

\* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)

\*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)

Expanded levels to be used in R/W Mapping Products are as follows:

## V8 Standards

Level(s)	Content	
164 - 169	No_Plot	
170	Plot Shape for Iplot (does not plot)	
171 – 200 **		Undefined

3. The following table identifies each level, the associated level name, and the specific information belonging on each level for R/W Mapping projects for both Pre-V8 and V8 Standards projects. Levels with only one number are for both Pre-V8 and V8 Standards projects and the levels <u>were not</u> reassigned. Level names are exactly as identified in MicroStation for Pre-V8 (including the level number). Level names for V8 Standards will now reflect the new level number instead of the Pre-V8 level number (see Appendix A9). Note: level naming has a character length restriction.

Pre-V8	and	<b>V</b> 8	<b>Standards</b>

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
1	1 Control	Control	All photo control data, and topographic map survey information. Also includes district-added control information.
2	2 Exist Man Made	Existing Man- Made Features	All existing man-made features not otherwise included in any other level, includes all buildings.
3	3 Exist Roadway	Existing Roadway Features	Edges of existing surfaced areas accessible to vehicles, bicycles or pedestrians within the Existing Roadway limits. See section 2.4_B_3 (page 2.4-4) for a complete description of this level.
4	4 Exist Veg_Nat	Existing Vegetation and Natural Features	All natural vegetation, existing highway plantings, orchards, vineyards, marshes, and miscellaneous natural features such as rock outcrops, slides, etc.
5	5 Exist Utilitie	Existing Utilities and Utility Features	All existing underground and aboveground utility-type facilities (including signals, power and telephone poles and transmission poles for utility, railroad, highway, street, and private improvements.) All existing drainage structures including culverts and headwalls, excluding substantial structures such as buildings. Also, includes district-added underground utilities.
6	6 Exist Hydro	Existing Hydro- graphic Features	All lakes, rivers, streams, natural channels, swamps, and standing water.
7	7 Contours	Relief Features Contour Lines Only	Contours (lines only) of the original terrain.
8	8 Spot Elev	Spot Elevations and Contour Elevation Annotation	Spot elevations and contour elevation annotation.
9/109	9 Appraisal Map	Appraisal Map	Data specific to Appraisal Map sheets.
10/110	10 Sheet Format	Sheet Format	Standard Border Sheets, (22" x 34" when plotted) with trim lines, District-County-Route-Post Mile block, plan sheet name, vestee block, geometry tables, North arrow, details, match lines & joining sheet data. (Information associated with the border).
11/111	11 Record Map	Record Map	Data specific to Record Map sheets.
12/112	12 Undefined	Undefined	** (See Note 2)
13	13 Ramp Align	Ramp, Over & Under Crossing Alignment	Ramp, Over Crossing & Under Crossing Alignment(s), includes station line and tick marks.
14	14 Ramp Anno	Ramp, Over & Under Crossing Annotation	Ramp, Over & Under Crossing Annotation, includes Route designation, alignment bearing and station number.
15	15 Main Align	Mainline Alignment	Mainline Alignment(s) for the main roadways, includes station line and tick marks.
16	16 Main Anno	Mainline Alignment	Mainline Alignment Annotation, includes Route designation, alignment bearing and station number.

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT	
		Annotation		
17	17 Front Align	Frontage Road Alignment	Frontage Road Alignment(s), includes station line and tick marks.	
18	18 Front Anno	Frontage Road Alignment Annotation	Frontage Road Annotation, includes Route designation, alignment bearing and station number.	
19/119	19 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
20/120	20 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
21/121	21 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
22/122	22 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
23/123	23 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
24/124	24 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
25/125	25 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
26/126	26 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
27/127	27 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)	
28/128 *	28 Exist Ease L	Existing Easement	Existing Easement line work including easements, public roadway alignments, public utilities, and other	

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
		Boundaries	title encumbrances.
29/129 *	29 Exist Ease A	Existing Easement Annotation	All Annotation that describes Existing Easements.
30/130 *	30 Exist RW A	Existing R/W Annotation	All Annotation that describes Existing & previously existing Rights of Way.
31/131 *	31 Exist RW L	Existing R/W Boundaries	Existing & previously existing R/W line work.
32/132 *	32 New RW L	New R/W Boundaries	New R/W line work.
33/133 *	33 New RW A	New R/W Annotation	All Annotation that describes New Rights of Way.
34/134 *	34 New Ease L	New Easement Boundaries	New Easement line work – excluding temporary easements.
35/135 *	35 New Ease A	New Easement Annotation	All Annotation that describes New Easement Annotation.
36/136 *	36 Temp Ease L	Temporary Easement Boundaries	New Temporary Easements Line work – Construction, Drainage, General, & Slope.
37/137 *	37 Temp Ease A	Temporary Easement Annotation	All Annotation that describes New Temporary Easements.
38/138 *	38 Minor Land L	Minor Landnet Boundaries	Minor Landnet Line work – Parcel ownership, Lots, Subsection Lines (1/16 & below), USPLS Gov't Lots.
39/139 *	39 Minor Land A	Minor Landnet Annotation	All Annotation that describes Minor Landnet.
40/140 *	40 Major Land L	Major Landnet Boundaries	Major Landnet Line work – Township & Range Lines, Ranchos, Section & ¼ Section Lines, USPLS Gov't Tracts, Subdivision Boundaries.
41/141 *	41 Major Land A	Major Landnet Annotation	All Annotation that describes Major Landnet.
42/142 *	42 PBndy FedPart	Political & Municipal Boundaries	All drawing information required to describe Political Boundaries, City & County limits, Municipal boundaries, Federal Boundaries, and Federal Participation, includes annotation.
43/143 *	43 JUA_CCUA	JUA/CCUA & Freeway Lease Areas	All drawing information required to describe JUA & CCUA, Freeway Lease Area, and Supplemental Reference Areas, includes annotation.
44/144 *	44 Relinquishmt	Relinquishment	All drawing information required to identify areas of Relinquishment, includes annotation.
45/145 *	45 DirectorsDeed	Directors Deed	All drawing information required to identify areas in Directors Deeds, includes annotation.
46/146 *	46 Vac_Abandon	Vacation / Abandonment	All drawing information required to identify areas of Vacation/Abandonment, includes annotation.
47/147 *	47 LandnetPts- NP	Landnet Point Data	Non-plotted Point data – Landnet Point data that will not be shown on R/W maps including name, description, coordinates, leaders, and cells.
48/148 *	48 RW Pts - NP	R/W Point Data	Non-plotted Point data – R/W Point data that will not be shown on R/W maps including name, description,

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
			coordinates, leaders, and cells.
49/149 *	49 Points-Plot	Plotted Point Data	Plotted Point data - Landnet & R/W Point data to be displayed on R/W maps including name, description, coordinates, leaders, and cells.
50/150 *	50 Retracement L	Retracement Data	Project Surveyors Retracement Line work.
51/151 *	51 Retracement A	Retracement Annotation	Project Surveyors Retracement Annotation.
52/152 *	52 Retracement C	Retracement Comments	Project Surveyors Retracement Comments.
53/153 *	53 Clip Boundary	Clip Boundaries	Reference file clip boundaries and clip masks.
54/154 *	54 Plot Boundary	Plot Boundaries	Boundary along sheet border used for fenceless IPLOT.
55/155	55 Undefined	Undefined	** (See Note 2)
56/156	56 Undefined	Undefined	** (See Note 2)
57/157	57 Undefined	Undefined	** (See Note 2)
58/158	58 Undefined	Undefined	** (See Note 2)
59/159	59 Undefined	Undefined	** (See Note 2)
60/160	60 Undefined	Undefined	** (See Note 2)
61/161	61 Undefined	Undefined	** (See Note 2)
62/162	62 Undefined	Undefined	** (See Note 2)
63/163	63 Undefined	Undefined	** (See Note 2)

- \* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)
- \*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)
  - 4. Exceptions or flexibility from the R/W Mapping Leveling Convention
    - Note 1: The R/W Mapping Standard Leveling Conventions were developed to provide users with a means of grouping similar data types while also separating line work from text. Many of the levels were assigned as a convenience for those users who desire to work across more levels. Not all of the data needs to be separated on all of the defined levels. However, some of the R/W Mapping Standard Leveling Conventions should not be deviated from.

The following table identifies those R/W Mapping Level Conventions that **must** be adhered to in both Pre-V8 and V8 Standards MicroStation design files:

Level 1	Control Data as described in Sections E 2 & 3
Levels 2 - 8	Basic topographic map data as described in Sections E
	2 & 3
Levels 9–11/109-111	Sheet formats as described in Sections E 2 & 3
Levels 13 – 18	Alignments as described in Sections E 2 & 3
Levels 19–27/119-127	Parcel Coloring as described in Sections E 2 & 3
Level 31 or 131	Existing R/W, Easement, and Property Line Boundaries
Level 32 or 132	New R/W and Easement Boundaries
Level 33 or 133	All Text & Annotation describing data on Levels 31 & 32
	or Levels 131 & 132
Level 38 or 138	All Landnet Boundaries
Level 39 or 139	Text & Annotation describing all Landnet
Level 47 or 147	All non-plotted Point Data
Level 49 or 149	All plotted Point Data

- Note 2: There are times when an exception (or some flexibility) may expedite the handling of a project to achieve the desired intent. Utilizing the undefined levels will handle most of the situations not defined by the V8-Standards leveling convention. When using undefined levels, communicate to others what was done in order to eliminate the loss of efficiency and productivity.
- Note 3: Specific colors in the Caltrans color table (ctcolor.tbl), 224, 226 231 & 233 239, have been designed and **must** be used for the parcel coloring. These colors were chosen because the Easement & Remainder colored lines are clearly visible while the filled Fee areas do not obscure the overlying topography and data. These colors should also provide enough variation to allow colorblind users of the maps to be able to distinguish between adjoining parcels.
- Note 4: The user may work with a separate referenced Pre-V8 DGN file for the parcel coloring. If this is the case, every level (1 – 63) may be used in this "Parcel Coloring" DGN file and the coloring for each parcel can reside on a separate level.

In a MicroStation design file using the V8-Standards convention, if the coloring for each parcel is to reside on a separate level within one DGN file (model), then one option is for the parcel coloring to be placed on one of the new "Undefined" levels (171 through 200).

### Named Levels

The following table identifies the level name, level number and the description for levels available for use on R/W Mapping projects using the Named Level convention.

Number	Name	Description
1719	rw_EASE_EXIST	R/W - Existing easement
1720	ny EASE EVIST align	R/W - Existing easement -
1720		Centerline
1721	ny FASE EXIST anno	R/W - Existing easement -
1721		Annotation
1722	ny EASE EXIST point	R/W - Existing easement - Point
1122		data
1723	rw EASE EXIST point anno	R/W - Existing easement - Point
		annotation
1724	rw_EASE_PROPOSED	R/W - Proposed easement
1725	rw EASE PROPOSED align	R/W - Proposed easement -
	····	Centerline
1726	rw EASE PROPOSED anno	R/W - Proposed easement -
		Annotation
1727	rw EASE PROPOSED point	R/W - Proposed easement - Point
		Oata
1728	rw_EASE_PROPOSED_point_anno	R/W - Proposed easement - Point
		Alliolation
1729	rw_EASE_PROPOSED_TEMP	R/W - Floposed temporary
		PAM Proposed temporary
1730	rw_EASE_PROPOSED_TEMP_anno	easement - Annotation
		R/W - Landnet (sectionalized land
1731	rw_LANDNET_anno	& lines of ownership) - Annotation
		R/W - Landnet (sectionalized land
1732	rw LANDNET Fed Part	& lines of ownership) - Federal
		Participation
		R/W - Landnet (sectionalized land
1733	rw_LANDNET_Govt_Lot_Sub_Section	& lines of ownership) - USPLS
		Government Lots & Subsections
		R/W - Landnet (sectionalized land
1734	rw_LANDNET_Interior_Lot	& lines of ownership) - Interior Lot
		Lines
		R/W - Landnet (sectionalized land
1735	rw_LANDNET_Parcels_Ownership	& lines of ownership) - Parcels
		and Ownership Lines
1736	rw LANDNET point	R/W - Landnet (sectionalized land
		& lines of ownership) - Point data
4707		R/W - Landnet (sectionalized land
1/3/	rw_LANDNE1_point_anno	& lines of ownership) - Point
1738	rw_LANDNET_Public_Boundary	K/W - Langnet (Sectionalized land
		a lines of ownership) - City,

Number	Name	Description
		County, State, & Federal
		Boundaries
		R/W - Landnet (sectionalized land
1720	ny LANDNET Otr Section Tract	& lines of ownership) - Quarter
1759		Section and USPLS Government
		Tract
		R/W - Landnet (sectionalized land
1740	rw_LANDNET_Section_Rancho	& lines of ownership) - Section
		Lines and Ranchos
		R/W - Landnet (sectionalized land
1741	rw_LANDNET_Subdiv_Boundary	& lines of ownership) -
		Subdivision Boundaries
		R/W - Landnet (sectionalized land
1742	rw_LANDNET_Town_Range	& lines of ownership) - Township
		& Range
1742		R/W - General map sheet
1743		annotation
1744	ru man anna Annraigal Man	R/W - Appraisal map sheet
1744		annotation
1745	nu man anna Datail	R/W - Annotation for details in
1745		map sheets
1746	nu man anna avan abaat	R/W - Annotation for edges of
1740		even numbered map sheets
1747	rw man anno odd sheet	R/W - Annotation for edges of odd
1/4/		numbered map sheets
1748	ny man anno Pecord Man	R/W - Record R/W map sheet
1740		annotation
1740	rw man anno ROS	R/W - Record of Survey (ROS)
1743		map sheet annotation
		R/W - Appraisal & Record map
1750	rw_map_anno_Vestee_Block	vestee block including the parcel
		coloring of the rows
1751	ny man Annraisal Man	R/W - Appraisal map
1751		miscellaneous data
1752	ny man Record Man	R/W - Record R/W map
1752	rw_map_Record_map	miscellaneous data
1752	ny man BOS	R/W - Record of Survey (ROS)
1755		map miscellaneous data
		R/W - Miscellaneous R/W data -
1754	rw_MISC	Unassigned supplemental
		reference area, vacated,
		abandonment, etc.
1755		R/W - Miscellaneous R/W data -
1755		Annotation
1756	rw MISC CCUA	R/W - Miscellaneous R/W data -

Number	Name	Description	
		Consent to Common Use	
		Agreement (Sideline)	
		R/W - Miscellaneous R/W data -	
1757	rw MISC CCUA align	Consent to Common Use	
		Agreement (Centerline)	
4750		R/W - Miscellaneous R/W data -	
1758		Freeway Lease Area	
1750		R/W - Miscellaneous R/W data -	
1759	rw_MISC_JUA	Joint Use Agreement (Sideline)	
1700		R/W - Miscellaneous R/W data -	
1760	rw_MISC_JUA_align	Joint Use Agreement (Centerline)	
		R/W - Miscellaneous R/W data -	
1761	rw_MISC_point	Point data	
		R/W - Miscellaneous R/W data -	
1762	rw_MISC_point_anno	Point annotation	
1763	rw parcel	R/W - Civil 3D parcels	
		R/W - Parcel area & name	
1764	rw_parcel_anno	annotation	
		R/W - Non-plotting Parcel area &	
1765	rw_parcel_anno_Annotation_Area_no_	name annotation - Parcels in the	
1100	plot	Parcel Annotation Site	
		R/W - Non-plotting Parcel area &	
1766	rw_parcel_anno_Easement_Area_no_	name annotation - Parcels in the	
	plot	Fasement Parcels Site	
		R/W - Non-plotting Parcel area &	
1767	rw_parcel_anno_Existing_Area_no_pl	name annotation - Parcels in the	
1101	ot	Existing Parcels Site	
	rw_parcel_anno_Proposed_Area_no_ plot	R/W - Non-plotting Parcel area &	
1768		name annotation - Parcels in the	
		Proposed Parcels Site	
		R/W - Miscellaneous parcel	
1769	rw_parcel_COLOR	coloring	
1770	rw parcel COLOR Aqua	R/W - Parcel coloring - Aqua	
1771	rw parcel COLOR Blue	R/W - Parcel coloring - Blue	
1772	rw_parcel_COLOR_Blue_Light	R/W - Parcel coloring - Light blue	
1773	rw_parcel_COLOR_Brown	R/W - Parcel coloring - Brown	
		R/W - Parcel coloring for excess	
1774	rw_parcel_COLOR_Excess	areas only - Yellow	
1775	rw parcel COLOR Green	R/W - Parcel coloring - Green	
1110		R/W - Parcel coloring - Light	
1776	rw_parcel_COLOR_Green_Light	areen	
1777	rw parcel COLOR Lavender	R/W - Parcel coloring - Lavender	
		R/W - Parcel coloring - Light	
1778	rw_parcel_COLOR_Lavender_Light	lavender	
1	1		

Number	Name	Description	
1779	rw_parcel_COLOR_Orange	R/W - Parcel coloring - Orange	
1790		R/W - Parcel coloring - Light	
1760		orange	
1781	rw_parcel_COLOR_Pink	R/W - Parcel coloring - Pink	
1782	rw_parcel_COLOR_Pink_Light	R/W - Parcel coloring - Light pink	
1783	rw_parcel_COLOR_Tan	R/W - Parcel coloring - Tan	
1784	rw_parcel_Easement Parcels	R/W - Parcels created in Easement Parcels Site	
1785	rw_parcel_Existing Parcels	R/W - Parcels created in Existing Parcels Site	
1786	rw_parcel_Parcel Annotation	R/W - Parcels created in Parcel Annotation Site	
1787	rw_parcel_PATTERN_Directors_Deed	R/W - Patterning for director's deed parcels	
1788	rw_parcel_PATTERN_Relinquishment	R/W - Patterning for relinguishment parcels	
1789	rw_parcel_Proposed Parcels	R/W - Parcels created in Proposed Parcels Site	
1790	rw parcel SEGMENT	R/W - Parcel segment linework	
1791	rw parcel SEGMENT anno	R/W - Parcel segment annotation	
1792	rw_parcel_SEGMENT_Easement Parcels	R/W - Parcel segment linework of parcels created in Easement Parcels Site	
1793	rw_parcel_SEGMENT_Existing Parcels	R/W - Parcel segment linework of parcels created in Existing Parcels Site	
1794	rw_parcel_SEGMENT_Parcel Annotation	R/W - Parcel segment linework of parcels created in Parcel Annotation Site	
1795	rw_parcel_SEGMENT_Proposed Parcels	R/W - Parcel segment linework of parcels created in Proposed Parcels Site	
1796	rw_retracement	R/W - General retracement data	
1797	rw_retracement_anno	R/W - General retracement annotation	
1798	rw_RW_EXIST	R/W - Existing R/W - Conventional & access controlled R/W (Fee or Easement)	
1799	rw_RW_EXIST_anno	R/W - Existing R/W - Annotation	
1800	rw_RW_EXIST_point	R/W - Existing R/W - Point	
1801	rw_RW_EXIST_point_anno	R/W - Existing R/W - Point annotation	
1802	rw_RW_EXIST_point_anno_no_plot	R/W - Non-plotting Existing R/W - Point annotation	

Number	Name	Description
1803	rw RW EXIST point no plot	R/W - Non-plotting Existing R/W -
1000		Point
1804		R/W - Existing R/W -
	rw RW EXIST Relinguished	Relinquished conventional &
		access controlled R/W (Fee or
		Easement)
1805	THE DWE EVICE Supercoded	conventional & access controlled
1005		R/W (Fee or Fasement)
1807	rw RW PROPOSED anno	R/W - Proposed R/W - Annotation
1808	rw RW PROPOSED point	R/W - Proposed R/W - Point
4000		R/W - Proposed R/W - Point
1809	rw_RW_PROPOSED_point_anno	annotation
1010		R/W - Existing easement - Public
1012		Utility (Sideline)
1813	ny EASE EXIST Public Litility align	R/W - Existing easement - Public
1013		Utility (Centerline)
1814	rw EASE EXIST Title Encumbrance	R/W - Existing easement - Title
		Encumbrance
1815	rw EASE PROPOSED Drainage	R/W - Proposed easement -
1816	rw_EASE_PROPOSED_Slope	R/W - Proposed easement -
		Slope
1817	IW_EASE_FROFOSED_TEMF_COnsti-	easement - Construction
	rw FASE PROPOSED TEMP Draina	R/W - Proposed temporary
1818		easement - Drainage
1010	rw_EASE_PROPOSED_TEMP_Slope	R/W - Proposed temporary
1819		easement - Slope
1000	A MICO Ab and a mont	R/W - Miscellaneous R/W data -
1020		Abandonment
	rw_MISC_Supplemental_Reference	R/W - Miscellaneous R/W data -
1821		Unassigned supplemental
		reference area
1822	rw MISC Vacation	R/W - Miscellaneous R/W data -
1000	THE DW EXIST Assess Loft	R/W - Existing R/W - Access
1823	rw_RW_EXIST_Access_Left	Controlled R/W (Fee of
		$R_{M}$ = Existing $R_{M}$ = $\Delta ccess$
1824	rw RW EXIST Access Right	controlled R/W (Fee or
		Easement) - Right
		R/W - Existing R/W -
1825	rw_RW_EXIST_Conventional	Conventional R/W (Fee or
		Easement)

Number	Name	Description	
		R/W - Existing R/W -	
1826	rw_Rw_EXIST_Relinquished_Access_	Relinguished access controlled	
	Leit	R/W (Fee or Easement) - Left	
		R/W - Existing R/W -	
1827	IN_RW_EXIST_Relinquished_Access_	Relinquished access controlled	
	Right	R/W (Fee or Easement) - Right	
	The DML EVICE Delinguished Comment	R/W - Existing R/W -	
1828		Relinquished conventional R/W	
		(Fee or Easement)	
	ny DW EXIST Superceded Access	R/W - Existing R/W - Superseded	
1829	IW_RW_ERIST_Superceded_Access_	access controlled R/W (Fee or	
		Easement) - Left	
1830	rw_parcel_COLOR_Aqua_Easement_	R/W - Parcel coloring for	
1050	UF	easement & UF areas - Aqua	
1831	rw_parcel_COLOR_Blue_Easement_U	R/W - Parcel coloring for	
1051	F	easement & UF areas - Blue	
1832	rw_parcel_COLOR_Blue_Light_Easem	R/W - Parcel coloring for	
1052	ent_UF	easement & UF areas - Light blue	
1833	rw_parcel_COLOR_Brown_Easement _UF	R/W - Parcel coloring for	
1055		easement & UF areas - Brown	
1834	rw_parcel_COLOR_Green_Easement_	R/W - Parcel coloring for	
1034	UF	easement & UF areas - Green	
	rw_parcel_COLOR_Green_Light_Ease	R/W - Parcel coloring for	
1835		easement & UF areas - Light	
		green	
1836	rw_parcel_COLOR_Lavender_Easeme	R/W - Parcel coloring for	
1000	nt_UF	easement & UF areas - Lavender	
	rw_parcel_COLOR_Lavender_Light_E asement_UE	R/W - Parcel coloring for	
1837		easement & UF areas - Light	
		lavender	
1838	rw_parcel_COLOR_Orange_Easement	R/W - Parcel coloring for	
1000	_UF	easement & UF areas - Orange	
	w parcel COLOR Orange Light Eas	R/W - Parcel coloring for	
1839	ement UF	easement & UF areas - Light	
		orange	
1840	rw_parcel_COLOR_Pink_Easement_U	R/W - Parcel coloring for	
1040	F	easement & UF areas - Pink	
1841	rw_parcel_COLOR_Pink_Light_Easem	R/W - Parcel coloring for	
1041	ent_UF	easement & UF areas - Light pink	
1842	rw_parcel_COLOR_Tan_Easement_U	R/W - Parcel coloring for	
	F	easement & UF areas - Tan	
1843	rw parcel COLOR Aqua Remainder	R/W - Parcel coloring for	
		remainder areas - Aqua	
1844	rw_parcel_COLOR_Blue_Remainder	R/W - Parcel coloring for	
1044		remainder areas - Blue	

Number	Name	Description	
1015	rw parcel COLOR Blue Light Remai	R/W - Parcel coloring for	
1845	nder	remainder areas - Light blue	
40.40	THE PARTICIP COLOR PROVIDE Remainder	R/W - Parcel coloring for	
1840		remainder areas - Brown	
1017	nu parcel COLOR Croop Remainder	R/W - Parcel coloring for	
1047		remainder areas - Green	
18/8	rw_parcel_COLOR_Green_Light_Rem	R/W - Parcel coloring for	
1040	ainder	remainder areas - Light green	
1849	rw_parcel_COLOR_Lavender_Remain	R/W - Parcel coloring for	
1043	der	remainder areas - Lavender	
1850	rw_parcel_COLOR_Lavender_Light_R	R/W - Parcel coloring for	
1000	emainder	remainder areas - Light lavender	
1851	rw_parcel_COLOR_Orange_Remaind	R/W - Parcel coloring for	
1001	er	remainder areas - Orange	
1852	rw_parcel_COLOR_Orange_Light_Re	R/W - Parcel coloring for	
1052	mainder	remainder areas - Light orange	
1853	ny parcel COLOR Pink Remainder	R/W - Parcel coloring for	
1000		remainder areas - Pink	
1854	rw_parcel_COLOR_Pink_Light_Remai	R/W - Parcel coloring for	
1004	nder	remainder areas - Light pink	
1855	ny parcel COLOR Tan Remainder	R/W - Parcel coloring for	
1000		remainder areas - Tan	
1856	TAL RW EXIST Previous	R/W - Existing R/W - Previous	
1050		R/W (Fee or Easement)	
	rw_RW_EXIST_Superceded_Access_ Right	R/W - Existing R/W - Superseded	
1857		access controlled R/W (Fee or	
		Easement) - Right	
	ny RW EXIST Superceded Conventi	R/W - Existing R/W - Superseded	
1858		conventional R/W (Fee or	
	ona	Easement)	
	rw_RW_PROPOSED	R/W - Proposed R/W -	
1859		Conventional & access controlled	
		R/W (Fee or Easement)	
		R/W - Proposed R/W - Access	
1860	rw_RW_PROPOSED_Access_Left	controlled R/W (Fee or	
		Easement) - Left	
1861		R/W - Proposed R/W - Access	
	rw_RW_PROPOSED_Access_Right	controlled R/W (Fee or	
		Easement) - Right	
		R/W - Proposed R/W -	
1862	rw_RW_PROPOSED_Conventional	Conventional R/W (Fee or	
		Easement)	

## Named Levels

The following table identifies the level name, associated level number and the color assigned to the levels available for use on R/W Mapping projects using the Named Level convention.

Number	Name	Color
1719	rw_EASE_EXIST	217
1720	rw_EASE_EXIST_align	217
1721	rw_EASE_EXIST_anno	217
1722	rw_EASE_EXIST_point	217
1723	rw_EASE_EXIST_point_anno	217
1724	rw_EASE_PROPOSED	218
1725	rw_EASE_PROPOSED_align	218
1726	rw_EASE_PROPOSED_anno	218
1727	rw_EASE_PROPOSED_point	218
1728	rw_EASE_PROPOSED_point_anno	218
1729	rw_EASE_PROPOSED_TEMP	214
1730	rw_EASE_PROPOSED_TEMP_anno	214
1731	rw_LANDNET_anno	209
1732	rw_LANDNET_Fed_Part	223
1733	rw_LANDNET_Govt_Lot_Sub_Section	210
1734	rw_LANDNET_Interior_Lot	209
1735	rw_LANDNET_Parcels_Ownership	208
1736	rw_LANDNET_point	209
1737	rw_LANDNET_point_anno	209
1738	rw_LANDNET_Public_Boundary	221
1739	rw_LANDNET_Qtr_Section_Tract	210
1740	rw_LANDNET_Section_Rancho	209
1741	rw_LANDNET_Subdiv_Boundary	208
1742	rw_LANDNET_Town_Range	208
1743	rw_map_anno	245
1744	rw_map_anno_Appraisal_Map	245
1745	rw_map_anno_Detail	245
1746	rw_map_anno_even_sheet	234
1747	rw_map_anno_odd_sheet	235
1748	rw_map_anno_Record_Map	245
1749	rw_map_anno_ROS	245
1750	rw_map_anno_Vestee_Block	245
1751	rw_map_Appraisal_Map	0
1752	rw_map_Record_Map	0

Number	Name	Color
1753	rw_map_ROS	0
1754	rw MISC	220
1755	rw MISC anno	220
1756	rw_MISC_CCUA	220
1757	rw_MISC_CCUA_align	220
1758	rw_MISC_FLA	218
1759	rw MISC JUA	219
1760	rw_MISC_JUA_align	219
1761	rw_MISC_point	220
1762	rw_MISC_point_anno	220
1763	rw_parcel	208
1764	rw_parcel_anno	245
1765	rw_parcel_anno_Annotation_Area_no_plot	245
1766	rw_parcel_anno_Easement_Area_no_plot	218
1767	rw_parcel_anno_Existing_Area_no_plot	216
1768	rw_parcel_anno_Proposed_Area_no_plot	219
1769	rw_parcel_COLOR	226
1770	rw_parcel_COLOR_Aqua	234
1771	rw_parcel_COLOR_Blue	235
1772	rw_parcel_COLOR_Blue_Light	229
1773	rw_parcel_COLOR_Brown	237
1774	rw_parcel_COLOR_Excess	224
1775	rw_parcel_COLOR_Green	233
1776	rw_parcel_COLOR_Green_Light	227
1777	rw_parcel_COLOR_Lavender	238
1778	rw_parcel_COLOR_Lavender_Light	228
1779	rw_parcel_COLOR_Orange	236
1780	rw_parcel_COLOR_Orange_Light	230
1781	rw_parcel_COLOR_Pink	239
1782	rw_parcel_COLOR_Pink_Light	226
1783	rw_parcel_COLOR_Tan	231
1784	rw_parcel_Easement Parcels	212
1785	rw_parcel_Existing Parcels	216
1786	rw_parcel_Parcel Annotation	245
1787	rw_parcel_PATTERN_Directors_Deed	232
1788	rw_parcel_PATTERN_Relinquishment	232
1789	rw_parcel_Proposed Parcels	218
1790	rw_parcel_SEGMENT	208
1791	rw_parcel_SEGMENT_anno	208
1792	rw_parcel_SEGMENT_Easement Parcels	212

Number	Name	Color
1793	rw parcel SEGMENT Existing Parcels	216
1794	rw_parcel_SEGMENT_Parcel Annotation	245
1795	rw parcel SEGMENT Proposed Parcels	218
1796	rw_retracement	0
1797	rw_retracement_anno	245
1798	rw_RW_EXIST	217
1799	rw_RW_EXIST_anno	217
1800	rw_RW_EXIST_point	217
1801	rw_RW_EXIST_point_anno	217
1802	rw_RW_EXIST_point_anno_no_plot	215
1803	rw_RW_EXIST_point_no_plot	215
1804	rw_RW_EXIST_Relinquished	215
1805	rw_RW_EXIST_Superceded	217
1807	rw_RW_PROPOSED_anno	218
1808	rw_RW_PROPOSED_point	218
1809	rw_RW_PROPOSED_point_anno	218
1812	rw_EASE_EXIST_Public_Utility	216
1813	rw_EASE_EXIST_Public_Utility_align	216
1814	rw_EASE_EXIST_Title_Encumbrance	215
1815	rw_EASE_PROPOSED_Drainage	212
1816	rw_EASE_PROPOSED_Slope	213
1817	rw_EASE_PROPOSED_TEMP_Construction	211
1818	rw_EASE_PROPOSED_TEMP_Drainage	212
1819	rw_EASE_PROPOSED_TEMP_Slope	213
1820	rw_MISC_Abandonment	220
1821	rw_MISC_Supplemental_Reference	218
1822	rw_MISC_Vacation	220
1823	rw_RW_EXIST_Access_Left	217
1824	rw_RW_EXIST_Access_Right	217
1825	rw_RW_EXIST_Conventional	217
1826	rw_RW_EXIST_Relinquished_Access_Left	215
1827	rw_RW_EXIST_Relinquished_Access_Right	215
1828	rw_RW_EXIST_Relinquished_Conventional	215
1829	rw_RW_EXIST_Superceded_Access_Left	217
1830	rw_parcel_COLOR_Aqua_Easement_UF	234
1831	rw_parcel_COLOR_Blue_Easement_UF	235
1832	rw_parcel_COLOR_Blue_Light_Easement_UF	229
1833	rw_parcel_COLOR_Brown_Easement_UF	237
1834	rw_parcel_COLOR_Green_Easement_UF	233
1835	rw parcel COLOR Green Light Easement UF	227

Number	Name	Color
1836	rw_parcel_COLOR_Lavender_Easement_UF	238
1837	rw_parcel_COLOR_Lavender_Light_Easement_UF	228
1838	rw_parcel_COLOR_Orange_Easement_UF	236
1839	rw_parcel_COLOR_Orange_Light_Easement_UF	230
1840	rw_parcel_COLOR_Pink_Easement_UF	239
1841	rw_parcel_COLOR_Pink_Light_Easement_UF	226
1842	rw_parcel_COLOR_Tan_Easement_UF	231
1843	rw_parcel_COLOR_Aqua_Remainder	234
1844	rw_parcel_COLOR_Blue_Remainder	235
1845	rw_parcel_COLOR_Blue_Light_Remainder	229
1846	rw_parcel_COLOR_Brown_Remainder	237
1847	rw_parcel_COLOR_Green_Remainder	233
1848	rw_parcel_COLOR_Green_Light_Remainder	227
1849	rw_parcel_COLOR_Lavender_Remainder	238
1850	rw_parcel_COLOR_Lavender_Light_Remainder	228
1851	rw_parcel_COLOR_Orange_Remainder	236
1852	rw_parcel_COLOR_Orange_Light_Remainder	230
1853	rw_parcel_COLOR_Pink_Remainder	239
1854	rw_parcel_COLOR_Pink_Light_Remainder	226
1855	rw_parcel_COLOR_Tan_Remainder	231
1856	rw_RW_EXIST_Previous	217
1857	rw_RW_EXIST_Superceded_Access_Right	217
1858	rw_RW_EXIST_Superceded_Conventional	217
1859	rw_RW_PROPOSED	218
1860	rw_RW_PROPOSED_Access_Left	218
1861	rw_RW_PROPOSED_Access_Right	218
1862	rw_RW_PROPOSED_Conventional	218

### 2.5 Plan Sheet Preparation - Levels Involved

#### A. <u>Plan Sheet Preparation</u>

Project plan sheets of the geographical type are prepared by combining various levels from the CADD master drawings. The master drawings consist of the Master Topographic file, Master Design file and Master Border Sheet file (see chapter 3 of this manual). This section provides guidelines on how the various levels are combined to create the required geographical contract plan sheets.

Base maps are created by combining the Master Topographic file and the Master Design file. This generally involves levels 1 thru 8 for the Master Topographic file for projects using pre-V8 and V8 Standards leveling standards and levels 13 through 18, 20, 21, and 30 through 32 in a pre-V8 DGN for the Master Design file. In a DGN file using the V8 Standards leveling convention, the levels involved would generally be 13 through 18, 20, 21, and 128 through 137 for the Master Design file. For DGN files created using the Named Level convention, Master Topographic file usually involves levels with group names "su" and "topo" and Master DGN files involves levels with group names "align", "rd" and "mc".

Base maps are referenced to the Active Design file (contract plan sheet). Base maps should be left as a referenced file for as long as possible. All functional units should use the base map created from the Master Topographic file and the Master Design file. Functional units can control the information displayed from the base maps by turning levels on or off.

Note: If the Caltrans leveling convention is used from the start of a project, the handling of the electronic information becomes very easy for all users and functional units working on the project.

Nongeographical type contract plan sheets are prepared on an individual basis and do not generally involve the use of base maps.

For details regarding individual plan sheet content and requirements, see the <u>Plans Preparation Manual.</u>

#### B. <u>Highway Design and Topographic Information</u> (Alphabetically and Corresponding Level)

The level information shown in the table below applies to projects using the V8 Standards, pre-V8 leveling and Named Levels convention. Two level numbers in the table below indicate in the Level Number column indicates the pre-V8 leveling convention and the V8 Standards leveling convention for Right of Way information. One level number indicates that it applies for both a pre-V8 and V8 Standards leveling convention. Level numbers are not shown for Named Levels.

Level Number	Element	Named Level
1	Control (Photogrammetry and Survey)	topo_su_ctrl_*
1	Survey Monuments	topo_su_ctrl_point_MON
2	Existing Man-Made Features	topo_*_str_*,topo_*_tcd_*, topo_*_rdside*
3	Existing Roadway Features	topo_*_rdbed_*, topo_*_tcd_*
4	Existing Vegetation/Natural Features	topo_*_veg_*, topo_*_dtm_brk_*
5	Communication Conduit	topo_*_ut_COND, topo_*_ut_MISC
5	Existing Utility Features	topo_*_ut_*
6	Existing Drainage Features	topo_*_hydro_*
6	Existing Hydrographic Features	topo_*_hydro_*
7	Contours	topo_*_dtm_cont_*
7	Relief Features	topo_*_dtm_brk_*
8	Contour Annotation	topo_*_dtm_anno_*
8	Spot Elevations	topo_*_dtm_anno_*
9	Profile Grid	border_GRID-MINOR_drop, border_GRID- MAJOR_drop
10	Matchline	pp_PRESENTATION
10	North Arrow	pp_PRESENTATION
10	Sheet Format (border)	border_SHEET
12	Construction Staking Survey Control Data	
12	Grid Ticks and Labels	border_WITHIN-Border_anno
13	Ramp Alignment	align_RAMP
14	Ramp Annotation	align_RAMP-anno
15	Mainline Alignment	align_MAIN
16	Mainline Annotation	align_MAIN-anno
17	Frontage Road Alignment	align_FRONTAGE
18	Frontage Road Alignment Annotation	align_Frontage-anno
19	Undefined	*_No-PLOT, *-NO-PLOT, *_info_only, rd_MISC,
20	Approach Slab Details	rd_CONST-DETAIL
20	Driveways	mc_DRIVEWAY
20	Pavement Edges/Edge of Traveled Way	rd_EP, rd_ETW, rd_ES
21	Curbs	mc_CURB
21	Dike	rd_HMA-DIKE,rd_HMA-DIKE-*
21	Edge Drains	df_DRAIN-EDGE
21	Gutters	mc_CURB-GUTTER
21	Overside Drains	df_DRAIN-OVERSIDE
22	Barricades	temp_BARRICADES
22	Bridge Structures	rd_MISC

Level Number	Element	Named Level
22	City Street Islands	mc_ISLAND
22	Crash Cushions	tcd_CRASH-CUSHION
22	Headlight Glare Screen	rd_MISC
22	Median Barrier	tcd_BARRIER-*
22	Miscellaneous Paved Area	mc_SLOPE-PROTECTION
22	Sidewalks	mc_SIDEWALK
22	Slope Protection	mc_SLOPE-PROTECTION
22	Wheelchair Ramps	mc_CURB-RAMP
23	Curve Alignment Data-Table Format	align_CURVE-DATA
23	Notes	*_LEGEND-anno, rd_LAYOUT-NOTE-anno
23	Symbols (Leader lines, arrows, Arrowheads, etc)	rd_MISC, rd_LAYOUT-NOTE-anno
24	AC Resurfacing	rd_PAVEMENT
24	Obliteration and AC Resurfacing	rd_SURFACE-REMOVAL-AC, rd_PAVEMENT
25	Bikepath Alignments	align_MISC***
25	Creek Alignment	align_MISC•••
25	Pedestrian Path Alignments	align_MISC•••
25	Railroad Alignment	align_MISC•••
25	Temporary Alignments	align_TEMP
25	Temporary Road Connections and Alignments	align_TEMP
26	Undefined	*_No-PLOT, *-NO-PLOT, *_info_only
27	Undefined	*_No-PLOT, *-NO-PLOT, *_info_only
28	Undefined	*_No-PLOT, *-NO-PLOT, *_info_only
29	Existing Irrigation Features	Is_IRRIGATION-EXIST
29	Sprinkler Control Conduit – Existing	ls_CONDUIT-EXIST
30	Cut and Fill Data	rd_EMBANKMENT-*, rd_EXCAVATION-*, rd_EARTHWORK_CUT•••, rd_EARTHWORK_FILL•••
30	Hinge point	rd_SLOPE
30	Toe of Slope	rd_SLOPE
31	Existing Right of Way	rw_EASE_EXIST_*,rw_RW_EXIST_*, rd_RIGHT-OF-WAY
32	ESA – boundaries and fences	esa_AREA
32	Fences	mc_FENCE
34	Temporary Water Pollution Control	wpc_TEMP-*
35	Erosion Control	Is_AREA-EC, Is_AREA-EC-*
36	Ditches	wpc_TEMP-DITCH-SWALE, rd_MISC,
36	Drainage	df_*
36	Drainage Details	df_DETAIL
36	Grate Details	df_DETAIL
36	Underdrains	df_DRAIN-UNDER

Level Number	Element	Named Level
37	Drainage Item Number	df_SYSTEM-UNIT-anno
38	Sanitary Sewer	ut_Sewer-*
39	Sanitary Sewer Annotation	ut_UTILITY-anno
41	Contour Grading	rd_CONTOUR-*, rd_CONTOUR-anno
42	Curb and Gutter Elevations	mc_MISC-CONST-anno
42	Pavement Elevations	rd_PAVEMENT-anno
43	Lane Lines	tcd_TRAFFIC-STRIPE
43	Pavement Markers	tcd_PVMT-MARKER
43	Pavement Striping	tcd_PVMT-MARKING
43	Traffic Arrows	tcd_PVMT-MARKING
43	Traffic Letters	tcd_PVMT-MARKING
43	Traffic Striping	tcd_TRAFFIC-STRIPE
45	Guide Markers	tcd_MARKER
45	Sign Installation	tcd_SIGN-*
46	Construction Signing	temp_*
47	Electrical	es_*
47	Lighting	es_LIGHTING-*
47	Signal & Lighting Installations	es_SIGNAL-LIGHTING-*
48	Electrical Annotation	es_*-anno
49	Landscaping	ls_*
49	Planting	Is_PLANT-*
49	Topsoil	ls_*
50	Irrigation - Proposed	Is_IRRIGATION
50	Sprinkler Control Conduit - Proposed	Is_CONDUIT
50	Water Supply Line	Is_SUPPLY-LINE
57	Undefined	*_No-PLOT, *-NO-PLOT, *_info_only
58	Retaining Wall Information	wall_RW-*
58	Sound Wall Information	wall_SW-*
59	Soundwall Annotation	wall_SW-*-anno
60	align	align_*
60	Construction Detail Notes	rd_CONST-DETAIL-anno
60	Construction Details	rd_CONST-DETAIL
60	County Boundary Lines	rw_LANDNET_Public_Boundary, pp_TITLE- SHEET-MAP
60	Diagrams for Superelevation	rd_SUPERELEVATION
60	Non-geographical Drawing Data	*_MISC
60	Profile Grade Information	rd_PROFILE-FINISH
60	Quantity Tables (not specifically assigned)	rd_QTY-TABLE
60	Strip Map for Title Sheet	pp_TITLE-SHEET-MAP
60	Structural Section Number	rd_TYP-X-SECTION-anno

Level Number	Element	Named Level
60	Typical Cross Sections	rd_TYP-X-SECTION
60	City Limits	pp_TITLE-SHEET-MAP
61	Headquarter Changes	pp_MISC
62	As-built changes	pp_AS-BUILT
63	Signatures – all registered engineers	border_SIGNATURE
31/128 •	Existing Easement Lines	rw_EASE_EXIST
31/131 •	Controlled Access - Existing	rw_RW_EXIST_*
31/131 •	Right of Entry - Existing	rw_RW_EXIST_*
31/131•	Right of Way Lines - Existing	rw_RW_EXIST_*
32/132 •	Controlled Access – New	rw_RW_PROPOSED
32/132 •	Right of Entry - New	rw_RW_PROPOSED_*
32/132 •	Right of Way Lines - New	rw_RW_PROPOSED
32/134 •	Proposed Easement Lines	rw_RW_PROPOSED_*
40 ••	Utilities - Proposed	ut_*-*-P
40 ••	Utilities – Relocated	ut_*-*-P
5 ••	Utilities - Existing	ut_*-X
51-56	Detours	temp_FACILITIES
51-56	Stage Construction	stage_*
51-56	Temporary Barriers (k-rail)	temp_RAILING-TYPE-K
51-56	Traffic Control (temporary facilities)	temp_TRAFFIC-CONTROL
51-56	Traffic Handling Plans	temp_TRAFFIC-CONTROL

- See Appendix A9 of this manual for the V8 Standards leveling convention for Right of Way.
- •• See Appendix A9 of this manual for the V8 Standards leveling convention for Utilities.
- ••• Levels included with MicroStation Connect resource files.

### C. Levels Involved for Various Plan Sheets (Highway Construction)

The following chart applies to projects using the V8 Standards and pre-V8 leveling convention. It shows the levels generally required to produce the various geographical project plan sheets. Depending on the complexity of the project, certain levels may or may not be needed when creating an individual type of sheet.

The chart is a "Type of Sheet" / "Information on a Specific Level" crossreference list. Plan sheet elements are listed on the left, and the information on a specific level is across the top.


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## NUMBERED LEVELS FOR PROJECT PLAN SHEETS (GEOGRAPHICAL TYPE)

Level Number	1	2	3	4	5	6	7	8	9	10	12	13	15	17	20	21	22	23	3 24	25	29	30	31	32	34	35	36	38	40	41	42	43	45	46	47	49	50	51	53	55	58	60	63
INDIVIDUAL PLAN SHEET FUNCTION																																											
Layout or Combination Layout/Profile	0	0	0	0	0	0	0	0		R		R	R	R	R	R	0	R	R	0	0	R	R	R	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	-	0		R
Contour Grading	0	0	0	0	0	0	0	R		R		R	R	R	R	0	0			0	0		R	R	0	0	0	0	0	R	0	-	-	-	-	-	-	-	-	-	-		R
Drainage	0	0	0	0	0	R	0			R		R	R	R	R	R	0				0		R	R	0	0	R	0	0	0	-	-	-	-	-	-	0	-	-	-	-		R
Irrigation	0	0	0	0	0	0	0			R		R	R	R	R	R	-				R		R	R	0	0	R	0	0	0	-	-	-	-	-	0	R	-	-	-	-		R
Signal and Lighting	0	0	0	0	R	0	0			R		R	R	R	R	-	-				-		R	R	-	-	-	0	0	-	-	R	0	0	R	-	-	0	0	0	-		R
Pavement Elevation	0	0	0	0	0	0	0			R		R	R	R	R	-	-				-		-	-	-	-	-	0	0	-	R	-	-	-	0	-	-	-	-	-	0		R
Pavement Markers & Striping	0	0	0	0	0	0	0			R		R	R	R	R	-	-				-		0	0	-	-	-	0	0	-	-	R	R	R	0	-	-	0	0	0	-		R
Planting & Landscaping	0	0	0	0	0	0	0			R		R	R	R	R	-	-				0		R	R	-	0	R	0	0	0	-	-	-	-	-	R	0	-	-	-	-		R
Temp Water Pollution & Erosion Control	0	0	0	0	0	0	0			R		R	R	R	R	-	-				-	-	0	0	R	R	0	0	0	0	-	-	-	-	-	0	0	-	-	-	-		R
Sanitary Sewer	0	0	0	0	0	0	0			R		R	R	R	R	-	I				-		R	R	-	-	0	R	0	-	0	-	-	-	0	-	-	-	-	-	-		R
Signing	0	0	0	0	0	0	0			R		R	R	R	R	1	-				-		0	0	-	-	0	0	0	-	-	R	R	R	0	0	-	0	0	0	-		R
Stage Construction and Traffic Handling & Detours	0	R	0	0	0	0	0			R		0	0	0	0	0	0			R			R	R	-	-	0	0	0	-	-		0	0	0	-	-	R	R	R	-		R
Sound & Retaining Walls	0	0	0	0	0	0	0			R		0	0	0	0	0	-						0	0	-	-	0	0	0	-	0	-	-	-	-	-	-	-	-	-	R		R
Utilities	0	0	0	0	R	0	0			R		R	R	R	R	0	0				0		R	R	-	-	0	0	R	-	-	-	-	-	0	-	-	-	-	-	R		R
Typical Cross Section & Details										R																																R	R
Standard Sheet Format									0	R																																R	R

## **LEGEND**

R – Required, O – Optional, - - Normally not needed, Blank – N/A

Notes:

1. Annotation Levels are Not Shown in the Above table

2. See Appendix A9 for reassigned or expanded levels for Right of Way or Utilities information.

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The following table applies to projects using the Named Levels leveling convention. It shows the levels generally required to produce the various project plan sheets. Depending on the complexity of the project, there may be other levels that may or may not be needed when creating individual sheets.

The table is a "Information on a Specific Level"/ "Type of Sheet" crossreference list. Plan sheet elements are listed across the top and the information on specific level or group of levels is to the left of the table.

# NAMED LEVELS FOR PROJECT PLAN SHEETS

INDIVIDUAL PLAN SHEET FUNCTION	Title Sheet	Locations of construct.	Typical Cross Section & Details	Project Control	Layout or Combined Layout/ Profile	Temp WPC & Erosion Ctrl	Contour Grading	Drainage	Sanitary Sewer	Utilities	Stage Const, Traffic Handling & Detours	Pavement Markers & Striping	Signing	Sound & Retaining Walls	Planting, Landscape & Erosion Ctrl	Irrigation	Signal and Lighting (Electrical)	Log of Test Boring
Named Levels																		
*_LEGEND-anno	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
*_MISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
align_*			0		R	R	R	R	R	R	R	R	R	0	R	R	R	
align_CURVE-DATA			0		R									0				
align_FRONTAGE			0		R	R	R	R	R	R	0	R	R	0	R	R	R	
align_MAIN			0		R	R	R	R	R	R	0	R	R	0	R	R	R	
align_RAMP			0		R	R	R	R	R	R	0	R	R	0	R	R	R	
align_TEMP			0		0	0	0	0	0	0	R	0	0	0	0	0	0	
border_GRID-*_drop		0	0	0	R	0	0	0	0	0	0	0	0	0	0	0	0	
border_SHEET	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
border_SIGNATURE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
border_WITHIN- Border_anno	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
border_PROJ-ID-BLOCK- anno	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
border_INSIDE- Border_anno	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
df_*			0		0	0	0	R	0	0	0		0		R	R		
df_DETAIL			R		0		0	R								R		
df_DRAIN-EDGE			0		0	0	0	R	0	0	0		0		R	R		
df_DRAIN-OVERSIDE			0		0	0	0	R	0	0	0		0		R	R		
df_DRAIN-UNDER			0		0	0	0	R	0	0	0		0		R	R		
df_SYSTEM-UNIT-anno			0		0	0	0	R	0		0		0		R	R		
es_*			0		0				0	0	0	0	0				R	
es_LIGHTING-*			0		0				0	0	0	0	0				R	
es_SIGNAL-LIGHTING-*			0		0				0	0	0	0	0				R	
esa_AREA	R		0		R	R	R	R	R	R	R	R	R	R	R	R	R	
ls_*			0		0		0	0					0		R	0		
ls_AREA-EC			0		0	R	0	0					0		R	0		
ls_AREA-EC-*			0		0	R	0	0					0		R	0		
Is_CONDUIT			0		0	0		0					0		R	R		
Is_IRRIGATION			0		0	0		0					0		R	R		
Is_IRRIGATION-EXIST			0		0	0	0	0		0			0		0	R		



INDIVIDUAL PLAN SHEET FUNCTION Title Sheet	Locations of construct.	Typical Cross Section & Details	Project Control	Layout or Combined Layout/ Profile	Temp WPC & Erosion Ctrl	Contour Grading	Drainage	Sanitary Sewer	Utilities	Stage Const, Traffic Handling & Detours	Pavement Markers & Striping	Signing	Sound & Retaining Walls	Planting, Landscape & Erosion Ctrl	Irrigation	Signal and Lighting (Electrical)	Log of Test Boring
Named Levels																	
ls_PLANT-*		0		0	0							0		R	0		
Is_SUPPLY-LINE		0		0	0		0					0		R	R		
mc_CURB		0		R		0	R		0	0			0		R		
mc_CURB-GUTTER		0		R		0	R		0	0			0		R		
mc_CURB-RAMP		0		R		0	0		0	0			0				
mc_DRIVEWAY		0		0		0	0		0	0							
mc_FENCE		0		0		0	0		0	0							
mc_ISLAND		0		0		0	0		0	0							
mc_MISC-CONST-anno		0		0		0	0		0	0			0				
mc_SIDEWALK		0		0		0	0		0	0							
mc_SLOPE-PROTECTION		0		0		0	0		0				0				
PP_CAS-ANNO												R					
pp_CAS-TABLE												R					
pp_LOTB																	R
pp_LOTB-anno																	R
pp_MISC O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pp_PRESENTATION R		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
pp_PROJECT-CONTROL- MAP			R														
pp_PROJECT-CONTROL- anno			R														
pp_TITLE-SHEET-anno R																	
pp_TITLE-SHEET-MAP R																	
rd_CONST-DETAIL		R															
rd_CONST-DETAIL-anno		R															
rd_CONTOUR-*					0	R	0							0	0		
rd_EARTHWORK				R													
rd_EMBANKMENT-*				R													
rd_EP				R	R	R	R	R	R	0	R	R	0	R	R	R	
rd_ES				R	R	R	R	R	R	0	R	R	0	R	R	R	
rd_ETW				R	R	R	R	R	R	0	R	R	0	R	R	R	
rd_EXCAVATION-*				R													
rd_EARTHWORK*				R													
rd_HMA-DIKE				R	0			R	R	0	0		0				



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INDIVIDUAL PLAN SHEET FUNCTION	Title Sheet	Locations of construct.	Typical Cross Section & Details	Project Control	Layout or Combined Layout/ Profile	Temp WPC & Erosion Ctrl	Contour Grading	Drainage	Sanitary Sewer	Utilities	Stage Const, Traffic Handling & Detours	Pavement Markers & Striping	Signing
Named Levels						••••	<u>ereisinig</u>	g					
rd LAYOUT-NOTE-anno					R								
rd MISC					R	0			0	0	0	0	
rd_PAVEMENT					R				R	0	0	R	0
rd_PAVEMENT-anno					R		0		0				
rd_SLOPE					R								
rd_SUPERELEVATION					0								
rd_SURFACE-REMOVAL- AC					R						0		
rd_TYP-X-SECTION			R		0								
rd_TYP-X-SECTION-anno			R		0								
rw_EASE_EXIST			0		R	R	R	R	R	R	R	0	0
rw_RW_EXIST_*			0		R	0	R	R	R	R	R	0	0
rw_RW_PROPOSED_*			0		R	0	R	R	R	R	R	0	0
stage_*					0						R	0	0
stage_*-anno					0						R	0	0
stage_*_drop					0						0	0	0
tcd_BARRIER-*					R						0	R	
tcd_CRASH-CUSHION					R						0	R	
tcd_MARKER					0						0	R	
tcd_PVMT-MARKER					0						R	R	R
tcd_PVMT-MARKING					0						R	R	R
tcd_SIGN-*					0						0	R	R
tcd_TRAFFIC-STRIPE					0						R	R	
tcd_TRAFFIC-STRIPE-*					0						R	R	
temp_*					0						0	R	R
temp_BARRICADES					0						0	R	
temp_RAILING-TYPE-K					0						0	R	
temp_TRAFFIC-CONTROL					0						0	R	
topo_dtm_*					0	0	R	0	0	0	0	0	0
topo_*_dtm_anno_*					0	0	R	0	0	0	0	0	0
topo_*_dtm_cont*					0	0	R	0	0	0	0	0	0
topo_*_hydro_*					0	0	0	R	0	0	0	0	0
topo_*_rdside_*					0	0	0	0	0	0	R	0	0
topo * rdbed *					0	0	0	0	0	0	0	0	0



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	Sound & Retaining Walls	Planting, Landscape & Erosion Ctrl	Irrigation	Signal and Lighting (Electrical)	Log of Test Boring
	-				
	0				
	0				
	0	R	R	R	
	0	R	R	R	
	0	R	R	R	
				0	
				0	
				0	
				R	
				R	
				R	
				0	
				R	
				R	
				0	
_				0	
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	
	0	0	0	0	

INDIVIDUAL PLAN SHEET FUNCTION	Locations of Title Sheet construct.	Typical Cross Section & Details	Project Control	Layout or Combined Layout/ Profile	Temp WPC & Erosion Ctrl	Contour Grading	Drainage	Sanitary Sewer	Utilities	Stage Const, Traffic Handling 8 Detours	Pavement Markers & Striping	Signing	Sound & Retaining Walls	Planting, Landscape & Erosion Ctrl	Irrigation	Signal and Lighting (Electrical)	Log of Test Boring
Named Levels																	
topo_*_str_*				0	0	0	0	0	0	R	0	0	0	0	0	0	
topo_*_tcd_*				0	0	0	0	0	0	R	0	0	0	0	0	0	
topo_*_ut_*				0	0	0	0	0	R	0	0	0	0	0	0	R	
topo_*_ut_COND				0	0	0	0	0	R	0	0	0	0	0	0	0	
topo_*_ut_MISC				0	0	0	0	0	R	0	0	0	0	0	0	0	
topo_*_veg_*				0	0	0	0	0	0	0	0	0	0	0	0	0	
topo_su_ctrl_*				0	0	0	0	0	0		0	0	0	0	0	0	
topo_su_ctrl_point_MON				0	0	0	0	0	0		0	0	0	0	0	0	
ut_*-P				0	0	0	0	0	R	0	0	0		0	0	0	
ut_*-X				0	0	0	0	0	R	0	0	0		0	0	0	
ut_Sewer-*				0	0	0	0	R	R	0	0	0		0	0	0	
ut_UTILITY-anno				0	0	0	0	R	R	0	0	0		0	0	0	
wall_RW-*				0					R	0			R				
wall_SW-*				0					R	0			R				
wpc_TEMP-*				0	R	0	0			0					0		
wpc_TEMP-DITCH-SWALE				0	R	0	0			0					0		

See Appendix A10 for a list of Named Levels

LEGEND R- Required

O- Optional,

Blank – N/A or Normally not needed



### CADD Users Manual attrans

### 2.6 Text

### A. <u>Fonts</u>

The seven current standard MicroStation fonts used by various functional units that are acceptable at Caltrans are shown in Appendix A6. Outdated fonts remain in the Caltrans font resource file (ctfont.rsc) to facilitate plotting/printing old and archived files with fonts that were originally used.

Font number 3 (named CTFONT1) is the main standard Caltrans font used by all functional units. Font CTFONT1 is a replication of the previous standard font LEROY (font number 2), but with modifications to the kerning (space for each letter) of some letters. CTFONT1 was developed to improve the printing quality and clarity for half-size (11" x 17") plotting/printing. Additional characters were added to both CTFONT1 and LEROY (but more characters were added to CTFONT1). The LEROY font is still used for right of way maps.

Font 3 replaced font 23 for labeling waterways and as-built changes. Use font 3 with a slant angle of 25 degrees for waterways and a slant angle of 15 degrees for as-built changes. Years ago font 1 was created to reduce the spacing between characters. With the improved kerning in font 3 along with the improved enhancements for print quality and clarity, font 1 is no longer used.

Font 43 (BOLD) is used in the preparation of project plans. Fonts 4 (CTFONT-RW), 7 (ADLINE), 55 (FANCY–OLD MON. FONT2) and 56 (SHADOW) are used by Right of Way Engineering for their specific needs.

### B. <u>Text Size – Roadway Project Plans</u>

In the Caltrans CADD system, base maps are designed using State Plane Coordinates. Roadway project plans are developed at a ratio of 1 to 1 (real coordinate values), but are plotted at a desired scale. Standard text sizes were determined based on how the text looks relative to the sheet border and the relative prominence of various texts. Place text at the appropriate CADD standard size based on the intended plot scale for clarity and readability of text on hard copy plans.

The table below defines the text sizes to be used for roadway project plan sheets and photogrammetry based on a plot scale of 1" = 50' (Caltrans base scale). See Appendix A6 for text sizes at other acceptable plotting scales (font, weight and slant remain the same.)

	TEXT HEIGHT/ WIDTH (FEET)			
DESCRIPTION	at 1"=50'	FONT	WEIGHT	SLANT
Title Project Description	14.5 *	43	0	0
Name and ID Code of Individual Plan Sheets, (does not apply to the Title Sheet)	14.5 *	43	0	0
Titles for Quantity Tables and Detail Drawings. Begin and End Construction on Title Sheet	12	43	0	0
For Pacific Ocean	12	3	2	25
Country and State boundary	11	43	0	0
City Names on the Title Sheet Strip Map	10 **	43	0	0
County Names on the Title Sheet Strip Map	10	43	0	25
Begin and End Work on Title Sheet. Titles for Informational Tables	10	3	2	0
Subtitles for Tables and Detail Drawings. Route & Route No, Line Designation. *** Headings inside a Quantity Table	8.75 ****	3	2	0
Bays	8.75	3	2	25
As-built Changes	8.75	3	2	15
River Names (Water Ways)	7	3 *****	1	25
Majority of Text, (including text with drawings, tables and dimensioning). County Lines and City Limit Lines	7	3	1	0
Restricted Space for Placement of Text	7 6	3	0	0
Name, Date, License Number Inside Seal and Date of Signature	7 5	3	1	0
Printed Names in Margin of Sheet Border	6	3	1	0
Photogrammetric Mapping and Survey Topographic Mapping Text	6	2	1	0

For additional information about text sizes on contract plans not listed in the above table see the individual sections and examples in the Plans Preparation Manual.

- \* Adjustable if necessary (text height/width = 12 minimum).
- \*\* For projects spanning multiple counties identified on the title sheet, the text size and font for cities may be reduced to text height/width

= 7, font = 3 and Wt= 1 to show counties more prominently than cities.

\*\*\* If a layout sheet has multiple routes and is a busy, cluttered sheet making it difficult to see route labels, then the route, route number and line designation may be placed using;

text height/width = 10, Font = 43, Wt = 0 for routes *with* work or text height/width = 7, Font = 3, Wt = 1 for routes *without* work.

For title sheet strip maps that cover a large area (multiple counties), the route identification may be placed using;

text height/width = 7, Font = 3, Wt = 1 for routes *without* work.

- \*\*\*\* Reduce text width to 7 (minimum), if needed for restricted space when placing a heading inside a quantity table.
- \*\*\*\*\* Do not use Font 23. It is obsolete and does not have the appropriate spacing for characters or the desired appearance for certain letters. Use Caltrans standard Font 3 (CTFONT1) at a slant angle of 25 degrees.

# C. <u>Text Size - Structures</u>

The text size values listed in the table below applies to both a pre-version 8 (pre-V8) and a V8 format design file. In a pre-V8 format design file the text size values are in feet. But in a V8 format design file the text size values are in inches. The reason the text size values changed from feet to inches is that the sheet border in a pre-V8 format design file was 22' x 34'. In a V8 format design file the sheet border was changed to 22" x 34".

DESCRIPTION	TEXT HEIGHT/ WIDTH (INCH)	FONT	WEIGHT
Informational notes - majority of	0.1400	3	1 or 2
plan lettering requirements and			
border information			
Detail Titles	0.2400	3	4
Detail Titles	0.2400	43	0
Sheet Titles and Border information	0.2400	43	0

Structures seed files contain further explanation of the appropriate text size, font and weight to use within a structures design file.

## D. <u>Text Size – Right of Way Map Products</u>

In the Caltrans CADD system, all right of way drawings are designed using State Plane Coordinates. Maps are developed at a ratio of 1 to 1 (real coordinate values), but are plotted at a desired scale. Standard text sizes were determined based on how the text looks relative to the sheet border and the relative prominence of various texts. Place text at the appropriate CADD standard size based on the intended plot scale for clarity and readability of text on hard copy prints.

The size for the text listed in the table below is based on a plot scale of 1"= 50' (Caltrans base scale).

	TEXT HEIGHT/ WIDTH		
	(FEET)		
DESCRIPTION	at 1"=50'	FONT	WEIGHT
Predominantly Numeric Annotation including bearings & distances, curve data, coordinates, and stationing.	5	3	1
Detail Labels (i.e. DETAIL "A" & SEE DETAIL "A")	10	3	3
"NO SCALE" label	5	3	2
Descriptive Annotation including easement descriptions, "EXISTING R/W", "CITY LIMITS"	5	4	1
Route Label along alignment	7	4	2
Map Sheet Reference Label (i.e. "SEE MAP 81328")	8	4	2
Block & Lot/Parcel Label Large (i.e. BLOCK 9) Medium (i.e. LOT 2, PARCEL 4)	12 10	4	1
County and City Labels	26	7	2
Government Landnet Label Township & Range Large (i.e. SECTION 1) Medium (i.e. GOVT TRACT 21)	14 12 10	55	3 1 1
Small (i.e. GOVT LOT 3)	8		1
Subdivision & Record Map Label Large (i.e. ROS 6-8) Medium (i.e. PM 2-3) Small (i.e. OR 7-11)	14 12 10	56	2 2 2

# 2.7 <u>Lines</u>

## A. Introduction

Project plans use lines with a variety of weights, styles and patterns to graphically provide the information needed to bid and construct a project. The Caltrans CADD system has various features with different symbology to easily distinguish them on a plan sheet, and standardizes symbology for consistency.

Standard Specifications Section 5-1.02, Contract Components states that written numbers and notes on a drawing govern over graphics. So even though symbology is used to represent various features, a label or callout takes precedence over symbology.

## B. Line Weight

Line quality is critical for readability of 11" x 17" project plans. Line weight (width) is varied to distinguish classes of features. The more basic outlining features are emphasized with heavier (wider) lines (e.g., alignment lines, construction layout lines and basic outline of objects).

Medium-weight lines are used for proposed construction and Right of Way. Light-weight lines are used for existing topography, dimensions and other less important details.

Weight	Feature	Appearence
1	Object Lines	Dark and sharp
0	Dimension Lines	Sharp, thin lines
0	Object Center Lines	Sharp, thin lines
1	Hidden Lines	Dark and sharp
0	Station Callout Lines	Sharp thin lines
1	Right of Way	Dark and sharp
4	Sheet Border	Heavy and dark
3*	Alignment lines for Main route(s)	Dark and bold
2*	Alignment Lines for	Dark and bold
	Ramps and Local Streets	
1	Stations for all Alignment	Dark and sharp
	Lines	

\* Using varying line weights makes the main route alignment appear more prominently than secondary alignment lines, which in turn, appear more prominently than proposed construction lines (e.g., edge of pavement, edge of shoulder, median barriers, etc). If the weight of an alignment line obscures or interferes with proposed construction lines, the weight of the alignment line may be reduced to provide greater clarity of the work to be performed.

WEIGHT	APPEARENCE (LINE CODE 0)	DESCRIPTION
0		Dimension lines, object centerlines and station callout lines. Interior horizontal lines (for rows) within a quantity table.
1		Edge of pavement, shoulders and gutters; obliteration; resurfacing; P.I. tangent lines and interior vertical lines (for columns) within a quantity table. Various data including drainage facilities, object lines, various details, and right of way lines.
2		Alignment Lines for ramps and local streets. Exterior borders for quantity tables and profile grade line.
3		Alignment line for main route(s)
4		Sheet border

Line Weight Examples

Line Weights for Structures Design are defined in a table in each Structures Design seed file.

# C. <u>Line Codes</u>

Line codes (particularly the solid line, LC = 0) depict a recognizable symbology used for the majority of features shown on project plans. Line codes should not be confused with line styles.

There are eight (8) standard line codes built into MicroStation that include one solid line and seven various dashed lines. The seven dashed lines are symbolic; they look the same when plotted regardless of the plot scale and on the monitor regardless of the view zoom.

Line Code	Sample	Definition							
0		Solid or continuous line. Use for proposed design elements, objects (not hidden) and dimension lines.							
1		Dotted line - sometimes used for existing features.							
2		Short dashed line – sometimes used for existing features.							
3		Long dashed line - used for depicting hidden details & existing non-structural features. Also used to show fill (toe of slope).							
4		Dash dot							
5		Medium dashed line - used to show cut (top of cut).							
6		Dash-dot-dot – used to show existing structural features.							
7	l	Long dash-short dash – used to show object centerlines.							

## D. Dashed Lines

Dashed lines are used to represent existing information as well as to graphically distinguish one item of work from another. Dashed lines may represent a variety of miscellaneous uses like easements, environmentally sensitive areas or various boundary lines. Dashed lines may be line codes, line styles or linear patterns. When a dashed line is used, it must be labeled for the specific use or bid item it represents.

## E. Line Styles

## 1. Overview

Line styles depict Caltrans standard line symbology. Line styles are scalable and allow an element to retain its geometry. The Caltrans Standard Plans include standard line symbology for design features, water pollution control, utilities, topographic mapping and other features. The Caltrans standard line style resource file is "ctlstyle-SS3.rsc." All Caltrans line styles are shown in Appendix A4.

Line styles are not part of the design file, unlike linear patterning which uses cells. The Caltrans line style resource file must be present on the workstation and MicroStation must be configured to use it.

2. Line Style Scale Factor

The size of all graphics for all line styles in Caltrans line style resource files (i.e., ctlstyle.rsc, and Ct\_Topo\_Istyle.rsc) are based on the metric scale 1:500, therefore, a scale factor must be applied when placing any line style. The scale factor varies depending on the intended plot scale. The intended plot scale must be expressed as a ratio before computing the line style scale factor. For example, a plot scale of 1"=50' expressed to a ratio is:

$$\frac{1"}{50'} \times \frac{1'}{12"} = 600, or \ 1:600$$

The formula for line style scale factor is:

 $line \ style \ scale \ factor = \frac{intended \ plot \ scale \ ratio}{resource \ file \ scale \ ratio} \times metric \ conversion \ factor$ 

The left number of the ratio is always 1 and is not used in the computation. The resource file scale ratio is 1:500. The metric conversion factor is 3937/1200. Therefore the line style scale factor for 1"=50' plot scale is:

*line style scale factor* 
$$= \frac{600}{500} \times \frac{3937}{1200} = 3.937$$

Line Style Scale I actors for Califaris Standard Flot Scales					
Caltrans Standard	Standard Plot	Line Style Scale			
Plot Scale	Scale Ratio	Factor			
1"=20'	1:240	1.5748			
1"=50'	1:600	3.937			
1"=100'	1:1200	7.874			

Line Style Scale Factors for Caltrans Standard Plot Scales

If there is a need to use a metric plot scale, the metric conversion factor is 1 for computing the line style scale factor used to place a line style.

## F. Line Symbology for Utilities

This section applies to project plans and utility verification maps.

In the Caltrans standard level convention for pre-version 8 (pre-V8) format design files, existing utilities go on level 5 (level 5 is dropped out when plotted) and proposed utilities go on level 40 (see Appendix A8). Existing utilities plotted as dropped out were not always sufficiently legible on project plans, inducing some users to move existing utilities to a non-dropout level. Subsequently, separate line styles were made to depict existing and proposed utilities. The line styles for existing utilities have lowercase letters and those for proposed utilities have uppercase letters.

To further differentiate existing and proposed utilities, use weight 1 for existing and weight 3 for proposed. On a utility plan that is busy and crowded with information, or on another project plan (other than a utility sheet) that also shows utilities for the convenience of the contractor and resident engineer, it is an option to adjust the line weight to 0 for existing and 2 for proposed.

	Underground electric line (Proposed)
-ee	Underground electric line (Existing)
	Overhead electric line (Proposed)
e	Overhead electric line (Existing)

In version 8 (V8) format design files, there is a dedicated level for each Caltrans line style representing a specific type of utility (in both the standard numbered level and named level conventions) to accommodate the district utility database. For more information on the standard level conventions for utilities, see Section 2.4 and Appendices A9 and A10. All of the utility levels (whether existing, abandoned or proposed) are non-dropout levels. If the decision is made to show existing utilities as dropped

out, change the color to obtain the dropped out plotting effect (see Chapters 2.8 C and 5.10). Do not move any utility to another level (such as an undefined dropout level) to obtain the dropped out plotting effect because this will hinder the ability to use the utility database.

If, in the future, utility verification maps are plotted in color for utility companies, the line styles depicting utilities were created to default to various colors. The cell "aautil" in the Caltrans standard cell libraries (CTCELLIB.cel and CTCELLIB\_NamedLevels) shows the established colors. The color yellow is not used because it is not legible when plotted. The Caltrans standard color table "ctcolor.tbl" must be used for correct color values to be displayed.

Color Number	Color Value	Utility Type
0	White (plots black)	Joint (Overhead or Trench)
1	Blue	Water
2	Green	Gas
3	Red	Electrical
5	Purple	Telecommunications
6	Orange	Sewer
7	Brown	Oil

## 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. <u>Caltrans Color Table files</u>

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	taemww_color.tbl
The Office of Electrical, Mechanical, Water	
and Waste Water	

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. <u>Standard Colors for Roadway Projects</u>

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).

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

Standard Colors for Roadway

(\*) 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	Plot
			Groups	Appearance
208	dark blue	25, 55, 255		
209	blue	75,155,255	Landnet Elements	
210	light blue	125,255,255		
211	dk. lavender	145,40,140		
212	med lavender	171,93,178	New Temporary	×
213	lt. lavender	198,146,216	Easements	lac
214	pale lavender	255,200,255		ot b
215	dark green	0,125,0		plq
216	med green	0,190,0	Existing Elements	Its
217	green	0,255,0		Jer
218	red	230,0,75		en
219	pink	242,92,152	New Elements	Ξ
220	light pink	255,185,230		
221	dk. rust brown	190,100,50		
222	rust brown	222,150,25	Landnet Elements	
223	lt. rust brown	255,200,0		
224	light yellow	252,253,195	Excess Land Parcels	
225	light gray	170,170,170	Topo **	
226	pink	255,180,255		S S
227	light green	200,255,170		tin
228	light lavender	208,227,255	Barcol Aroas	
229	light blue	200,255,255	Faicei Aleas	6
230	light orange	255,208,156		hir
231	tan	219,194,172		atc
232	dark gray	100,100,100	Relinquishment	h h
			Hatching	and
233	green	36,255,0		0
234	aqua blue	72,209,204		top
235	bright blue	36,255,255	-	Ď
236	orange	255,146,38	Parcel Areas	l
237	brown	182,109,38		
238	lavender	182,146,255		Ö
239	bright pink	255,73,255		LCe
250	black	20,20,20	Mask Area	Ба
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. <u>Standard Colors for Structures</u>

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. <u>Standard Colors for Office of Transportation Architecture, and</u> <u>Office of Electrical, Mechanical, Water and Wastewater</u>

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 Color Description		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

# 2.9 CALTRANS Cells and Cell Libraries

## A. <u>Cells</u>

Cells are small 2D drawings, complex elements or standard notes identified by name. They provide uniformity and eliminate the need for each designer/delineator to take the time to redraw frequently used items. The drop element tool can be used to disassociate the graphical elements in a cell from their group so that the elements can be edited.

When a cell is placed, the cell origin will be located at the selected data point. The origin point is defined when the cell is created.

Some specific uses of cells include:

- Terminator: used at the beginning or end of a line or arc
- Pattern: used repeatedly throughout an area or along a line or arc
- Plan sheet creation: for example, standard borders, tables, grids, notes, symbols, etc.

## B. <u>Types of Cells</u>

Two types of cells are utilized by Caltrans, point and graphic. The attributes (level, color, line style and weight) of a point cell are determined at the time the cell is placed by taking on the active settings. The attributes of a graphic cell are determined when the cell was created, and is independent of the active settings. The attributes of a graphic cell created on the default level takes on the active level when placed but takes on the active color, line style or weight only if ByLevel is defined for any of those attributes. A graphic cell rotates when a view is rotated, while a point cell is view-independent. A graphic cell created on the default level acts like a graphic cell when the view is rotated.

	Point	Graphic	Graphic created on Default Level
Level	placed on active level	level independent	placed on active level
Rotation	view independent	view dependent	view dependent
Snap	to cell origin	to key points	to key points
color	active color when placed	set when created	active color when placed
line style, weight	active settings when placed	set when created	set when created

Cell Type Comparison for Caltrans Standard Cells

#### C. <u>Cell Libraries</u>

Standard cells are stored in a design file called a cell library that is available to all users. Cell libraries make it easy to update and add standard cells. Cells in each standard Caltrans cell library are listed and shown in the appendices.

Discipline	File Name	
Roadway (numbered levels)	CTCELLIB.cel	
Roadway (named levels)	CTCELLIB_NamedLevels.cel	
Right of Way (numbered levels)	RWEnglish.cel	
Right of Way (named levels)	Ct_RW_NamedLevels.cel	
Topographic (named levels)	Ct_Topo_NamedLevles.cel	
Structure Bridge Design (numbered levels)	stcel_english.cel	
Structure Bridge Design (named levels)	stcells.cel	

#### Caltrans Standard Cell Libraries

Districts and some functional units within various districts may have their own cell libraries for local agency standards or standards unique to a certain functional unit. Districts or individuals should not recreate or copy cells that are already in one of the Caltrans standard cell libraries.

The roadway cell library for numbered levels (CTCELLIB.cel) includes cells for the following eight (8) functional units:

- Project Plans
- Roadway Design
- Landscape Architecture
- Traffic Electrical Systems
- Right of Way for Roadway projects\*
- Photogrammetry
- Surveys
- Water Pollution Control

\*The cells in CTCELLIB.cel for Right of Way are used by Design to depict right of way features on project plans. Right of Way Engineering has a cell library (RWEnglish.cel) for producing Right of Way map products and is not used for roadway project plans.

The roadway cell library for named levels (CTCELLIB \_NamedLevels.cel) includes cells for the following six (6) functional units.

- Project Plans
- Roadway Design
- Landscape Architecture

- Traffic Electrical Systems
- Water Pollution Control
- Utilities

Right of way and survey cells are not included in CTCELLIB \_NamedLevels.cel. There are separate named level cell libraries for Right of Way Engineering and topographic maps. The topographic named level cell libraries include four (4) separate cells with the same graphical representation for each item, but each cell is placed on one of four (4) separate named levels depending on the data collection method (i.e., photogrammetry, survey, mobile LIDAR or aerial LIDAR).

If "display all cells in path" is checked on in the cell library dialog, all of the cells in all of the cell libraries listed in the dialog box File drop down menu are listed together, in addition to the cells in the attached cell library. This is useful, for example, because Caltrans standard roadway cells and right-of-way cells are in separate libraries.

Cell selectors allow users to find and place cells from a pre-selected group of related cells using a customized dialog. A cell selector can contain cells from more than one cell library.

### D. <u>Cells and Conventional Levels</u>

Most Caltrans cells are graphic cells which means that the functional unit that created the cell has predetermined the level, color, line style and weight. Because Caltrans has two separate standard level conventions (i.e., numbered levels and named levels), Caltrans also has separate cell libraries to work with each level convention. For example, cells in both the CTCELLIB \_NamedLevels.cel cell library and the CTCELLIB.cel cell library have the same graphics but use different levels. Before placing a cell, it's a good habit to verify that the desired cell library is attached to the active file, depending on which levels you want to use.

### E. <u>Cells and Plot Scale</u>

Cells must be sized proportionally for the intended plot scale of the drawing. All cells in Caltrans cell libraries are sized for use at the Caltrans base plot scale of 1" = 50' using the MicroStation active scale set to 1 when placing a cell.

The formula for active scale setting for a different intended plot scale is:

 $active \ scale \ setting = rac{intended \ plot \ scale}{cell \ library \ file \ base \ plot \ scale}$ 

Therefore the active scale setting for placing a cell for the intended plot scale of 1"=20' is:

active scale setting 
$$=\frac{20}{50}=0.4$$

Active Scale Setting for Placing a Cell

Caltrans Standard Plot Scale	Active Scale Setting for Placing Cell
1"=20'	0.4
1"=50'	1.0
1"=100'	2.0

Line style scale for placing Caltrans custom line styles is different than the active scale for cell placement (see Section 2.7 E for more information).

## F. <u>Cell Features and Options Not Used by CALTRANS</u>

Relative: If the active cell is a graphic cell and "Relative" is turned on, the element with the lowest level in the cell is placed on the active level and elements on higher levels in the cell are placed on levels relative to the active level.

Interactive: Allows a cell to be interactively scaled to any size.

Shared Cells: The first time a cell is placed in a design file, the cell library in which it is stored must be attached. If the cell is placed as a shared cell, it is not necessary to have the cell library attached to place additional instances of that cell. All instances of a shared cell in the design file are replaced when any instance of that shared cell is replaced using the Replace Cells tool. The location of shared cells can be associated with points on other elements if Association Lock is on.

# 3.2 <u>Map Projection</u>

## A. <u>What is a Map Projection</u>

A map projection is the means by which a map is produced. It is a transformation between the curved reference surface of the earth and the flat plane of the map.

Each projection has a set of equations, which allow one to transform a set of Geographic Coordinates (latitude and longitude) representing positions on the reference surface of the earth (an ellipsoid) to a set of Cartesian Coordinates (x and y) representing positions on the flat two-dimensional surface of the map. Scale is not constant throughout the map, thus the various scales of the map projection need to be understood and known.

The projections in common use fall into one of three categories: conic, cylindrical (regular or transverse) or azimuthal. The State Plane Coordinate Systems in the USA are based on either the Transverse Mercator Projection - a conformal cylindrical projection, or on the Lambert Conformal Conic Projection - a conformal conic projection. The California State Plane Coordinate System uses the "Lambert Conformal Conic Projection".

## B. <u>The Lambert Conformal Conic Projection</u>

The "Lambert Conformal Conic Projection" projects shapes from the earth's surface onto a cone. It corrects for the distortions that occur in both distance and direction. The projection cone enters the earth at a standard parallel (AB) and emerges at a different standard parallel (CD). These parallels are known as standard parallels of the projection. Direction is the same at any point on the map, and the distance scale <u>at a</u> <u>particular point</u> is the same in all directions. At the standard parallels of the projection, the



Conic Projection

distance scale for the whole map is 1.000. In other words, along these two parallels the distances on the projection are the same as the distance on the sealevel surface. The area/plane of the cone between the standard parallels has a distance scale for the whole map less than 1.00, which means that between the two parallels a distance on the projection is smaller than the corresponding distance on the sea-level surface. The area/plane outside of the standard parallels has a distance scale for the whole map greater than 1.00. This means that outside of the parallels a distance on the projection is greater than the corresponding distance on the sea-level surface.

The discrepancy between these corresponding distances depends on the position of the line being considered with respect to the two standard parallels. It is seen that the scale of a line running in a north-south direction varies from point to point. It is also seen, however, that a due east-west line (a parallel of latitude) has a constant scale through its length, whether this scale be larger than, equal to, or less than that on the corresponding sea-level line.

To apply the Lambert conformal conic projection to a state or a zone, the width of the projection in a north-south direction is limited to 158 miles (or 254 km), and the standard parallels are separated by about two-thirds this distance. At no point within these limits will the discrepancy between a sea-level distance and the grid distance be greater than 1 part in 10,000.

Diagram (a) below shows the sea-level surface of the earth or the spheroid intersected by the cone along two parallels of latitude  $AL_1B$  and  $CL_2D$ .

Diagram (b) below shows a portion of the conical surface developed into a plane surface on which the meridians and parallels of the earth's surface have been projected mathematically.



Lambert Conformal Projection

Reference: "Surveying -Ninth Edition" - written by Francis H. Moffitt and Harry Bouchard

# 3.3 North American Datum (NAD) 83

## A. <u>Description of NAD83</u> (Taken from the Caltrans Surveys Manual **4.1-2**)

The sea-level surface of the Earth is called the geoid and is defined as the surface that is perpendicular to the direction of gravity at all points. The geoid is not a mathematically definable geometric shape. It is irregular because the direction of gravity varies from point to point as the result of the irregular distribution of mass within the earth.

Because of its irregular non-mathematical shape, the geoid cannot be used for calculations of the relative horizontal positions of points on the earth's surface. So, a representative geometric surface that approximates the geoid is used to perform positional calculations. The reference surface used for the North American Datum of 1983 (NAD83) is an ellipsoid named the Geodetic Reference System of 1980 (GRS80). GRS80 is a worldwide best-fit model. It meets the needs of worldwide geodetic systems or the Global Positioning System (GPS).

(GRS80 has replaced the Clarke's Spheroid of 1866 which is a best-fitting model for North America, and which was the reference surface for NAD27.)

NAD83 was established by first performing a least squares adjustment of all the observations used to establish the NAD27 network and then redefining the mathematical reference surface from Clarke's Spheroid to the GRS80. NAD83 has geodetic coordinates that measure 70 to 100 m different from those of NAD27. There is no direct mathematical method to accurately transform coordinates from one system to the other. Data conversion programs such as NADCON, developed by NGS (National Geodetic Survey), and CORPSCON, developed by the Army Corps of Engineers, are only approximations that are not accurate enough for boundary or engineering surveys. With a general accuracy of 0.15 m these programs are satisfactory for some map conversions.

The geodetic coordinate system for NAD 83 is based on longitude defined as angular distance East or West of the prime meridian, which runs through the observatory at Greenwich, England, and latitude defined as the angular distance North or South of the Equator.

# B. <u>NAD83 Epochs</u> (Taken from the Caltrans Surveys Manual **4.1-3**)

The initial NGS station coordinates based on NAD83 were the result of a simultaneous nationwide adjustment of the original observation that incrementally built up the NAD27 network. The adjustment results were published in 1986. Subsequently, in 1991 the California High Precision Geodetic Network (CA-HPGN) was established using GPS technology. The GPS survey was more precise than the methods used to establish the NAD83 reference system in 1986. Consequently, coordinates for stations determined with reference to the CA-HPGN are more accurate and may differ from those referenced to the original NAD83 positions by as much as 3 feet. To avoid confusion, an epoch (date) must be designated for all NAD83 data.

Much of California is affected by relatively large crustal motions, both secular (constant slip) and episodic (earthquake). Secular crustal motions can exceed 0.15 foot per year, and episodic events are observable with GPS surveys. As of October 1995, portions of the CA-HPGN have been resurveyed because of the Landers, Northridge, Mendocino, and Hector Mine earthquakes. These resurveys will continue to be necessary to maintain the accuracy of the CA-HPGN as the crustal motion constantly works to degrade the network. Each CA-HPGN resurvey is labeled with an epoch and all surveys using CA-HPGN for control must note the applicable epoch. The epoch of the original CA-HPGN survey is 1991.35. This is a dating system which indicates the mean date that the survey was conducted. The numbers to the right of the decimal point are derived from the day of the year. In this case, multiply 0.35 times 365 days to find that the mean date of the original CA-HPGN survey took place on the 128<sup>th</sup> day of the year, or May 8, 1991.

Sections taken from the Caltrans Surveys Manual may not be complete. Please refer to the 2006 Caltrans Surveys Manual for additional information on horizontal and vertical datums, an epoch and the California Coordinated System.

http://www.dot.ca.gov/hq/row/landsurveys
### C. <u>CA Coordinate System (CCS) – NAD 83</u>



 $(N_b, E_o) \& (B_b, L_o) - Origin of Grid$   $N_b = 500,000.00 \text{ m or } \frac{1640416.67 \text{ ft}}{1666.67 \text{ ft}}$  (For all 6 zones)  $E_o = 2,000,000.00 \text{ m or } \frac{6561666.67 \text{ ft}}{1666.67 \text{ ft}}$  (For all 6 zones)

#### $(N_o, E_o) \& (B_o, L_o) - Origin of Projection$

N<sub>o</sub> – North coordinate of Projection Origin – (A tabled constant) Each zone has a different value.

- N<sub>o</sub> Zone 1 = 2187504.09 ft
- N<sub>o</sub> Zone 2 = 2156844.53 ft
- N<sub>o</sub> Zone 3 = 2095943.33 ft
- N<sub>o</sub> Zone 4 = 2110955.38 ft
- N<sub>o</sub> Zone 5 = 2095707.85 ft
- N<sub>o</sub> Zone 6 = 2065126.16 ft
- B<sub>o</sub> Central Parallel
- $L_o$  Central Meridian through origin of projection and grid
- B<sub>b</sub> Standard Parallel that defines south limit of zone
- B<sub>n</sub> Standard Parallel that lies north of the projection's Central Parallel
- B<sub>s</sub> Standard Parallel that lies south of the projection's Central Parallel



\*\* Legally Defined by Division 8 Chapter 1 of the Public Resources Code

The <u>Central Meridian</u> is the <u>line of longitude</u> at the <u>center of a projection</u>. By defining the Central Meridian, the cone becomes oriented with respect to the ellipsoid.

- The central meridian for Zone 1 is 122° 00'
- The central meridian for Zone 2 is 122° 00'
- The central meridian for Zone 3 is 120° 30'
- The central meridian for Zone 4 is 119° 00'
- The central meridian for Zone 5 is 118° 00'
- The central meridian for Zone 6 is 116° 15'

#### D. <u>Summary</u>

It is very important for users to remember that each "CA Coordinate System -NAD 83" zone, of which there are 6, is a separate Lambert projection. Please refer to the Caltrans – Surveys Manual – Section 4.3-2 for a thorough explanation of CCS83. <u>http://www.dot.ca.gov/hq/row/landsurveys</u>

Now, knowing some basic projection information concerning the calculation of CCS NAD 83 coordinates, one should understand the following:

- Each zone is a unique coordinate system.
- Since the Grid Origin  $(N_b, E_o)$  for each zone has the same coordinate values, each zone consists of coordinates in the same numerical range.
- If we convert the geodetic limits of each zone to CCS NAD 83 coordinates, the zones would appear to lie on top of one another due to their coordinates (as shown below).



- Each CCS NAD 83 coordinate needs to include at minimum its Zone, Epoch and scale factor.
- A project that extends from one zone into another zone should use CCS83 coordinates based upon only one zone. CCS83 coordinates for one zone can be converted to coordinates of a second zone by first converting the CCS83 coordinates (Northing and Easting) to their geodetic positions of latitude and longitude and then converting these geodetic positions to the CCS83 coordinates (Northing and Easting) for the second zone. <u>The conversion of coordinates from one zone to another zone must be done by your District Surveys unit</u>.

# 3.6 Roadway Design

### A) Introduction

Civil 3D is the roadway design software used for surveying and roadway design work at Caltrans. It is the Department's policy that all new projects that require earthwork to be performed shall be designed using Civil 3D (RDS) starting July 1, 2014. MicroStation remains the standard drafting software and has been used by all functional units since 1995.

Caltrans has developed custom resource files for all these applications to maximize the efficiency of the CADD System. These resource files are based on information from the various guidance and policy documents such as the *Highway Design Manual, CADD Users Manual,* and the *Plans Preparation Manual.* The purpose of this section is to provide requirements and guidance to the engineer and surveyor in the use of these CADD tools as they relate to the roadway design process.

It is recommended that RDS users document their work. The suggested method of documentation is to create a text file named "Readme.txt" and saving it in the project directory under the appropriate functional sub-directory e.g. Design, Survey, Traffic, etc. This file is known as a "read me" file. During the design processes many files are created at different times representing different things. A "Readme" file documents the points, alignments, surfaces, cross-sections, etc. along with when they were created, by whom, and what they represent. The documentation becomes an invaluable source of information for the users of the project data. Caltrans projects can be active for several years. How the project is organized must be clear for a long period, even after the original operators are no longer available. This problem is minimized when a "Readme" file is maintained in the project directory.

### B) Project and Data Management

Data management is a very important consideration when working with large and complex datasets. Decisions regarding data storage can have a significant impact on the drawing performance during the Plan Production process.

### Referencing External Data

It is possible to use or display data from other files without storing the information in the current drawing. This is accomplished using external references (XREF) for dwg, dgn, and pdf files, and data references for RDS object data. Referencing, rather than inserting data reduces the amount of data in a drawing file and enables sharing of project data amongst different users.

# <u>XREFs</u>

XREFs display an AutoCAD drawing (dwg or dxf) file, a MicroStation design (DGN) file, PDF's and non-georeferenced images in the current drawing as a block. The display of the XREF appears "transparent" (i.e. greyscale, or halftone) to indicate the data being displayed from that file does not actually reside in the current file. The location, scale and rotation can be set when attaching the XREF. XREF [Enter] at the command line launches the dialog box used to load a reference file.

The two main ways to share data between drawings is Data References and External References. Starting 2013, polylines, survey figures and feature lines can be targeted in a corridor from an externally referenced file. This eliminates most of the need to copy elements from a referenced file into the active file. There are still some situations where it is desirable to copy objects from externally referenced files. Usually this can be done using the "NCOPY" command in the RDS. With Data References, only some of the RDS objects can be shared (alignments, profiles, surfaces, pipe networks and view frames). Quite often that is sufficient, however, if the user needs to reference photo or survey data objects, an AutoCAD element, or a DGN element the user must use an external reference to see the object. Using RDS the user can apply labels to the elements through the XREF or use object snaps to select key points along the XREF'ed line.

Although Caltrans will be changing the way it processes data in RDS and will eventually abandon the use of the survey database, there are still projects that contain elements in a survey database. Certain objects like survey figures and survey points, cannot be data referenced or NCOPY'ed into a drawing. In this situation the objects must be inserted from the Survey Database. For example, the designer needs to use the existing EP for rehab work. In this situation they must open the Survey Database to insert the survey figure into the active drawing. However, if they only wish to visually see where the data lies, they can use XREFs to see the graphics.

## Data Shortcuts

A data shortcut is an instrument that allows sharing an object from a source file, where the object resides to another file(s). Data shortcuts can be created from the following objects; surfaces, alignments, profiles, pipe networks, corridors and view frame groups. The creator of the object establishes a data shortcut for other users to use via a data reference.

The advantage of using data shortcuts is that these objects can be shared with other team members which reduces duplicate data and allows the workload to be divided into more manageable segments. Data shortcuts also allow the design to be synchronized across a set of drawings. If any of the source objects are edited or updated, all drawings that reference these objects will be synchronized and thus contain the latest changes. Caltrans frequently uses data shortcuts for surfaces, alignment, and profiles.

## Data References

To use the Source object in another drawing, the user needs to create a Data Reference to the object. The data reference maintains an active link to the source object. The referenced objects have read-only geometry but provide the user with the ability to apply a local objects style and annotation, perform analysis and access to the source object's properties. The referenced object takes up less file space when the drawing is saved. A single design object can be referenced into all drawings which require that object. If the source object is edited, the synchronization process ensures that changes are reflected in the referenced object. Synchronization occurs when the consumer drawing is opened and can also be done manually by a user.

Data references are essential when working with large datasets. In general, data references offer the following benefits:

- Each drawing only needs to reference the object(s) pertinent to the drawing.
- A referenced object consumes very little space in its host drawing.
- Each data reference is automatically updated when the source object changes.
- The data reference is a read-only copy and is protected from unintentional changes.
- The source object in the data reference is available for analysis. For example, you can reference a surface and then create a profile based on that surface in the host drawing.

### Data File Structure

At Caltrans all data associated with a project is kept on a server under a common directory. This directory name is usually called "projects" or proj1, proj2, proj3, etc. Under the "projects" directory there are directories usually named by the expenditure authorization (EA) of the project or the project EFIS number.

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Figure 1 – Typical District projects directory

#### Working Folder

The working folder is the folder where all the projects for a district are stored. The image above shows the district 7 projects U:\District07\projects.

### The Data Shortcuts Project Folder

The data shortcut projects folder is the sub-folder of the projects data folder. For example any of the sub-directories0m3001, 0m6401,..., 0n0801 could be data shortcut project folders where Civil 3D files for that project reside.

### Data Shortcut Environment Variable DSSYSVAR

There is an environment variable on the computer that is used by the RDS to help determine the location of the Working Folder. This folder is used when making or reading data shortcuts. The name of this variable is DSSYSVAR.

To prevent problems created by differently mapped-drives across multiple functional groups, a Windows system environmental variable representing the Working Folder should be used. When data shortcuts are written to an XML file, the path includes the variable %DSSysVar% as part of the project path.

Without the use of this variable, when a user attempts to load a shortcut on a computer that has a different Working Folder than was used to create a data shortcut, the data shortcut would not resolve. As soon as the Windows Environmental variable is set the data shortcuts will resolve, as long as the folder structure is similar on both computer workstations below the %DSSysVar% path.

District Project Servers, Data Shortcut System Variables and Working Directories

For District Projects use the following table to set up project directories and folders.

The following table identifies all the mapped locations of the Project directories on the District servers. The drive that is mapped to this location is the drive that the DSSysVar should be set to when working with data shortcuts and references on the server.

### District Project Servers, Data Shortcut System Variables & Working Directories

This information changes often. HQ Office of CADD and Engineering GIS Support recommends checking with the local district CADD and/or IT support staff to make sure that the latest information is being used.

This information is also available on the Caltrans internal website at the following location:

https://cadd.onramp.dot.ca.gov/node/438

### C) Caltrans MicroStation Standard Resource Files

The MicroStation resource files are discussed in Chapter 2 of this manual.

### D) Existing Topography

#### <u>Overview</u>

Topographic (topo) survey products are the basis for planning studies and engineering design. Existing topography data can be collected using different methods with distinct accuracies. Data types include photogrammetric data, aerial Light Detection and Ranging (LiDAR) scanned data, bathymetric data, and field collected survey data. Field collected data may be surveyed with conventional methods, a total station, as well as Mobile Terrestrial Laser Scanning (MTLS). The standard topographic products in a roadway design project are topographic data, surface(s), and topographic mapping drawings.

The Office of Photogrammetry administers and processes photogrammetric, aerial LiDAR and bathymetric data. The resulting topographic maps conform to the standards outlined in Standards and Symbols for Photogrammetric Mapping (SSPM) and "Standard Plan A10D". The standards of the resulting roadway design projects are provided in this section.

Field collected survey data is gathered in accordance with Chapter 11 and Chapter 15 of the "Surveys Manual." The deliverables for the resulting topo maps and Civil 3D roadway design products are provided in this document.

Existing topo data is provided in Civil 3D as Points, Linework, and Surfaces in a collection of drawings and databases. The data is delivered as outlined in this document to improve performance, while providing the necessary information for all functional units to design and deliver a project.

For a complete listing of the standard layers, styles, and tools used in the delivery of topo data, see Appendix A7 in this manual.

#### Drawing Templates

Two templates contain all the layers, styles, and page setups required to create drawings for processing and delivering different types of topo data, *Ct\_2016\_Topo\_Surveys\_MTLS.dwt* and *Ct\_2016\_Topo\_Aerial\_Photo.dwt*.

- *Ct\_2016\_Topo\_Surveys\_MTLS.dwt* used to create drawings containing survey and MTLS data.
- **Ct\_2016\_Topo\_Aerial\_Photo.dwt** used to create drawings containing aerial LiDAR, bathymetric and photo data.

Either template can be used to create the final *EG\_Surface* and *EG\_Linework\_Points* drawings.

When saving drawings, file names can be alphanumeric with underscores or dashes. They should not include spaces or special characters to prevent unforeseen program errors.

### Civil 3D Project Folders for topo data

The Caltrans Civil 3D project folder structure supports dynamic data sharing of many Civil 3D objects. The following is a brief overview of the folder structure as it pertains to topo deliverables.

Data in the Caltrans project folder structure is protected with an organized system of access permissions. Typically *Read/Write* access is assigned to all project members at the project level, and then restrictions are applied to project sub-folders based on functional unit.

- Engineers have *Read*-only access to the Surveys folders and files including Drawings and Survey Databases. They have *Write* access to the Design folders and files.
- Surveyors have *Read*-only access to the Design folders and files. They have *Write* access to the Survey folders and files including Drawings and Survey Databases.

The Civil 3D Project Folder structure must be in place on the server before the topo data can be delivered and shared. The folders are created by the appropriate District IT or CADD Support personnel at the request of the Project Engineer. The District Surveyors and HQ Photogrammetry DTM processors must be given permission to *Read* and *Write* to the appropriate folders.

Ideally, all the drawings and Survey Database(s) are prepared directly on the server within the Civil 3D Project Folder structure; however, this may not always be possible. If the project folders are not available on the server or access to the server is limited, a project folder structure can be created locally on the user's computer. The data can then be prepared locally and later copied to the server. When working locally, only the drawings and database folders should be copied to the project folders on the server. The Data Shortcuts <u>MUST</u> be recreated directly on the server.

• All the drawings and database files in the <Project name>\Surveys\ folder are accessible as *Read*-only for the functional units outside of the Surveys functions.

#### Multi-tiered Data Shortcut Levels

Caltrans utilizes two multi-tiered shortcut levels within a project folder; a lower-tiered Surveys level and an upper-tiered Project level. This gives Surveyors the ability to compartmentalize individual topo data Surfaces at the lower-tiered Surveys level,

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Aug 30, 2019

allowing them to be merged into a single existing ground Surface. The merged Surface is shared at the upper-tiered Project level for all project users. This ensures that all users will be working with the same exact Surface and will only be working with the Surface that the Surveyors consider complete.

- The upper-tiered *Project* Data Shortcut level is for use by everyone working on the project. This is where the merged existing ground Surface Data Shortcut is set, as well as Data Shortcuts to the existing and new roadway alignments and profiles.
- The lower-tiered *Surveys* Data Shortcut level is for use by Photogrammetry and Survey users only. This is where the individual Surface Data Shortcuts are set. These Surfaces are not to be used directly in the design process.

### The Data Shortcut System Variable (DSSYSVAR)

The Windows System Environmental Variable representing the Working Folder, DSSysVar, will be used to prevent problems created by differently mapped-drives across multiple functional groups. This variable <u>must</u> be set to the appropriate location prior to creating a Data Shortcut and prior to creating a Data Reference. When a Data Shortcut is created, the path includes the variable DSSysVar instead of the entire path up to the Working Folder. Subsequent Data References will resolve if the folder structure for all users is the same below the DSSysVar path. Without this variable the reference will not resolve when a user attempts to load a Data Reference on a computer having a different path or mapped drive than what was used to create the Data Shortcut.

### Survey Data Collection

### Caltrans Data Collection (CTDC)

During the 80s and 90s, Caltrans worked with the California State University Fresno to create a DOS based data collection system, **Caltrans Data Collection (CTDC)**, and a data processing system, **Caltrans Data Processing (CTDAP)**. At the time, data was collected in the field using standard numeric Topo codes with CTDC and processed using the CTDAP. When the data was processed, the final values were recorded in a column delimited text file formatted in a **Total Station Survey (TSS)** file format. When using the Caltrans standard resource files, the Caltrans CADD standards are adhered to while the TSS file is imported and translated into Points and Lines with specific attributes within the roadway design software. As survey field equipment and roadway design software evolved, there became a need to develop new routines to continue using the TSS file format.

CTDC data is collected today using Trimble Access on Trimble data collectors. Once collected, the data is transferred to **Trimble Business Center (TBC)** where it is processed and exported to a TSS file. The resulting TSS files are imported into a Civil 3D Survey Database, creating Survey Points and Survey Figures. All corrections and edits to the topo data are typically made within Civil 3D.

The CTDC data collection was a robust method for collecting data when it was developed but it has its limitations with newer equipment and software. Some of the limitations of CTDC include:

- Requires numeric coding instead of the industry standard alpha coding.
- Descriptive information is included in the Description field of the Survey Points, providing pertinent information to the design process. However, this attribute coding is limited to two entry fields and is only displayed in the Point Descriptions. Therefore, the Points used to generate the linework must be displayed to see the information about the Survey Figure.



Figure 2 - Information about the culvert Survey Figure (diameter and material) are only displayed in the Point's Description

- Coding for Surface type is limited to *ground* or *feature*.
- Doesn't support Trimble Line Control codes on the data collector, preventing real-time display of linework in the field.
- Symbology of the features in TBC do not reflect the same symbology in Civil 3D, making it difficult to identify errors.

CTDC data is used today but it is being phased out with a new method of data collection. This document focuses on working with the new **Caltrans Survey Asset Collection (CSAC)** data. For information regarding the use of TSS files, Survey Databases, Survey Points, and Survey Figures, see the Caltrans internal training manual "*Civil 3D 2016 Survey Data Processing and DTM*" found on the OLS FTP site,

<u>ftp://cadd.dot.ca.gov/OLS\_FTP/Software/Civil3D/Training/Survey\_Data\_Processing</u> \_\_\_\_\_\_DTM/Civil\_3D\_2016/Civil\_3D\_2016-Survey\_Data\_Processing\_and\_DTM.pdf

### Caltrans Survey Asset Collection (CSAC)

In January 2014, Caltrans began work with Autodesk and Trimble representatives to establish a different method to collect data, a method that would leverage the strengths of both applications. The goal was to improve data collection methods in the field while providing attribute-rich features that transfer smoothly into Civil 3D and other asset management systems. The result of these efforts culminated in the creation of Caltrans Survey Asset Collection (CSAC).

CSAC data is collected using Trimble Access on Trimble data collectors with the Caltrans **Feature Code Library (FCL)**. Once collected, the data is transferred to TBC where it is processed, edited, and exported to Shape files (.shp). The resulting Shape files are imported into a Civil 3D drawing, creating AutoCAD Points, COGO Points, Feature Lines, and Polylines.

<u>All</u> corrections and edits to the data are made within TBC, new Shape files are exported, and the data is re-imported and updated in Civil 3D.

Some key aspects of the CSAC data collection include:

- Alpha coding
- Robust variable attribute coding that provides more information with all features, including Point and Line Features





- Coding for Surface type is variable, including *Ground*, *Bridge deck*, *Bridge underside*, and *Ground underside* with the potential for more options
- Supports Trimble Line Control codes that enable real-time visualization on the data collector
- Photos and documents can be associated to all features and the association is transferred to Civil 3D for use in the design process
- Supports the ability to use multiple codes at the same location, "stacking codes," where multiple features converge at the same Point
- Symbology of the features in TBC reflect the same symbology in Civil 3D, making it easier to identify errors
- TBC is used to make all corrections and edits to the data
- TBC is used to export the CSAC data in Shape files

Note: Shape files do not support curved linework, they only contain one type of geometric data: Lines or Points. This is discussed in more detail later in this document.

• Civil 3D is used to create and share Surfaces, as well as deliver the topo and attribute information

The CSAC workflow relies on tools that are only available in Civil 3D 2016 or more recent versions. CSAC objects cannot be delivered in Civil 3D 2012.

Data should only be collected with the CSAC FCL when a <u>NEW</u> Civil 3D 2016 project is being prepared for and delivered to Design. An exception may be made to the direction above if an existing Civil 3D 2016 project has less than 30% of the design work performed and the Survey Figures are <u>NOT</u> referenced to a Corridor or in Cross Sections. If the Project Engineer approves, additional topo data can be collected with the CSAC FCL and existing Civil 3D 2016 Survey Databases and their associated drawings can be converted for use with the Civil 3D Shape Tools. <u>DO NOT</u> collect additional topo data with the CSAC FCL for an existing project or convert existing Civil 3D 2016 projects without the Project Engineer's approval. See the rollout memo on the following page for more information about the rollout of the CSAC FCL.

The CSAC process introduces significant changes to the deliverables and tasks performed in TBC and Civil 3D. This section provides an overview of the deliverables, project organization, tasks, and tools.

### **TBC Project Details**

<u>ALL</u> processing and corrections to the topo data are performed in TBC. This ensures that the TBC project is complete for the location of data collected. Multiple TBC projects may be created for a single Civil 3D project to accommodate different site locations and the involvement of different crews during the data collection process.

Surfaces are created in TBC for review QA/QC purposes <u>only</u>. Transferring a Surface from TBC to Civil 3D should not be done because of potential translation issues and other issues that are caused when merging multiple data sets.

### Shape files

A set of Shape files are exported from every TBC project containing CSAC data for a Civil 3D project. The TBC project Shape files represent the final edited TBC project dataset and are stored in the TBC project's *.shp* folder within the *Field Surveys* folder of the Civil 3D project folders.

These files are typically only used by the Surveyor who loads the CSAC data into the Civil 3D drawing. However, these files can be used by others using GIS applications for asset management systems, such as the utility database.

A collection of at least four or five files are created for each CSAC FCL Feature Code that is used within the data set selected in the TBC project. The extensions of the three required files are DBF, SHP, and SHX. A file with the extension PRJ is included if a coordinate system is assigned to the data. If 50 different features codes in a TBC project are selected, then 50 collections of Shape files will be exported. Each

collection of Shape files contains one or more Points or Lines for each Feature Code. For example, if 12 lines in the TBC project use the Feature Code named *Curb\_Lip\_1* (code LIP1), then the Shape file collection named *Curb\_Lip\_1\** will create 12 *su\_CURB\_LIP* Feature Lines when imported into Civil 3D.



Figure 4 - A collection of 5 files represent a Shape file per each CSAC FCL Feature exported from a TBC project. Each Shape file can contain one or more Point or Line Features, but not Curve Features.

When more than one TBC project is used for a Civil 3D project, multiple sets of TBC project Shape files are created and delivered in <u>separate</u> TBC project *.shp* folders. These project *.shp* folders are delivered in the Civil 3D project's *Shape\_Files* folder. The TBC project's *.shp* folder creates a unique location to contain the different TBC project Shape files. This ensures that Shape files with the same name are stored separately and cannot be overwritten while allowing them to be imported into the same Civil 3D drawing.

#### Images and Documents

Images captured in the field and supporting documents including DOCX, PDF, and XLSX, can be associated to CSAC data in TBC. The images and documents are stored in folder(s) within the TBC project *.shp* folder in the Civil 3D project folders.

The images and documents can be viewed by any user working on the Civil 3D project through nested XREF's with tools provided in the Civil 3D Shape tools.

#### KML/KMZ Files

A KML or KMZ file can be used to digitally represent the project location and CSAC features in GIS environments or within Internet-based, two-dimensional maps and three-dimensional Earth browsers. A KML file is an XML file with specific notation for

expressing geographical information such as annotation and visualization in 2D and 3D geographical models available online (Google Earth). A KMZ file consists of a main KML file and zero or more supporting files that are packaged using a Zip utility into a single unit, called an Archive. Since a KMZ file contains the supporting files in its zipped file structure, photos or documents that are stored in that structure can be seen by other Earth browser users. A KML file does not offer this standalone file imbedding option.

KML/KMZ file(s) are exported from every TBC project containing CSAC data for a Civil 3D project. The TBC project KML/KMZ file(s) represent the final edited TBC project dataset and are stored in the *Deliverables* folder of the Civil 3D project folders.

- If images are associated to the CSAC data, a KMZ file <u>must</u> be delivered.
- If images are not associated to the CSAC data, a KML file can be delivered.

The KML/KMZ file(s) can be viewed by any user working on the Civil 3D project, even those who <u>DO NOT</u> work in Civil 3D. This makes the attribute information accessible by <u>ALL</u> users working on the Civil 3D project.

### Civil 3D Drawing Details

The CSAC data is stored in a Civil 3D drawing as COGO Points, Feature Lines, AutoCAD Points, Polylines, and associated Surfaces. The drawing(s) is shared for use in the design process as a nested XREF in the project's *EG\_Linework\_Points* drawing. The Surface is shared for use in the design process as a Data Shortcut in the *EG\_Surface* drawing. The *EG\_Linework\_Points* and *EG\_Surface* drawings will be discussed in more detail later in this document.

The only edits to CSAC data that are performed in Civil 3D is the trimming and clipping of overlapping data from multiple data sets in the same drawing. Two tools are included in the Civil 3D Shape tools to trim CSAC lines, **Trim Feature Lines** and **Trim Features at Boundary**.

Note: These tools can also be used to trim aerial LiDAR, photo, and MTLS topo data.

### Drawing Requirements

The CSAC import process relies on drawings that contain the appropriate Property Sets, Point Groups, Object Styles, and Import Settings. The CSAC Styles, Property Sets. Point Groups, and Import Settings were added to the Ct\_2016\_Topo\_Surveys\_MTLS.dwt template which was included in the Ct Resource 18.8.16.6 update for Civil 3D. Drawings created from the correct template contain the Custom Drawing Property **Topographic Data** that contains the value of **Surveys** & MTLS data v11 or higher.

To verify that the correct *Topographic Data* version is being used, in **CiviI3D** click the **Application Menu** button  $\implies$  > **Drawing Utilities** > **Drawing Properties** > in the **Custom** tab > verify that **Topographic Data** is **Surveys & MTLS data v11** or higher.

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Figure 5 Template versions in the Drawing Properties

#### Property Sets

A **Property Set** is a custom attribute that can be attached to AutoCAD elements and Civil 3D objects. The Property Set values can be geometry related such as the length of a Polyline or they can be user-defined Feature related attributes providing detailed information about the object, such as the asset ID of a power pole.

The descriptive information input in the Feature Code attributes is directly associated to the CSAC data in Property Sets. The Property Sets are used to display the CSAC FCL Attribute information associated to the objects. While working in the drawing containing the objects, the information can be displayed in the Properties Palette when the object is selected or with tools provided in the Civil 3D Shape tools. The information can also be viewed by any user working on the Civil 3D project through nested XREF's with tools provided in the Civil 3D Shape tools. The Property Set data is also used in **SHP Palette** queries and the **SHP tool's Point Table** provided in the Civil 3D Shape tools described in the next section.



Figure 6 Feature Code Attributes stored in Property Sets of the Civil 3D objects

The Points used to create the linework in TBC, *Line Points*, contain attributes that specify the Feature Code and the data collector's Point number. These points can be imported into Civil 3D for field notes review purposes, however, they don't contain any other feature attributes useful for design and <u>must</u> be hidden when the project is delivered.



Figure 7 Property Sets of the CSAC Line Points include the Feature Code and data collector's Point number

### CSAC Property Set Definitions

A Property Set Definition specifies the characteristics of a group of Property Sets that can be associated with an object, e.g., the Property Set Definition named *Feature* includes the object's attributes for *Category*, *Desc\_1*, *DTM\_Type*, etc. See Appendix A7 in this manual for a complete listing of the Property Set Definitions included in the *Ct\_2016\_Topo\_Surveys\_MTLS*.dwt template.

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	File_2	D:/_TBC_CSAC_FCL-Projects/	
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	Photo_1	D:/_TBC_CSAC_FCL-Projects/	
	Photo_2	D:/_TBC_CSAC_FCL-Projects/	Disp
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	Feature	-	
	Category	Control	
	Desc_1	ls5161	
	Desc_2		
	DTM_Type	None	
	Feature	Found point	
	Туре	Property corner	
	Point Information	-	
	Easting	6726683.074575	
	Elevation	41.072407	
	IgnoreElev	Yes	
	Northing	1962782.539806	
	PointID	1177	
	ShapeFileInformation	-	
	ImportDate	03/20/2019 15:17	
	ImportEventName	TBC project Redding UC	
	SHPFileDate	12/18/2018 05:22	
IES	SHPFileName	Found_Point.shp	
ERI	SHPFilePath	/Shape_Files/Redding UC.shp	
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Figure 8 Property Set Definitions and Property Sets assigned to a COGO Point

#### Point Groups

A **Point Group** is a named collection of Points that organizes and controls Point appearance in a drawing. Point Groups provide a flexible and convenient way to work with Points that share common characteristics or are used to perform a task, such as creating a Surface.

#### Pre-defined Topo Point Groups

The Civil 3D 2016 template,  $Ct_2016_Topo_Surveys_MTLS.dwt$ , contains Point Groups that are used by COGO Points created with the CSAC workflow and Survey Points created with the CTDC workflow. See Appendix A7 in this manual for a complete listing of the Point Groups included in the  $Ct_2016_Topo_Surveys_MTLS.dwt$  template.

### <u>Display Order</u>

The Point Group display order in a drawing determines the order in which Points belonging to multiple groups are drawn when the drawing is opened or when graphics are regenerated. This is a quick and easy way to set the display of Points when working with drawings. The display order is accessed through the properties of the Point Group collection in the **Prospector** tab. The first (highest) Point Group in the list is used when the graphics are regenerated. A Point that belongs to more than one Point Group is drawn by the Point Group that is highest in the display order, it is unaffected by the Point Groups that are lower in the display order.

### **Properties**

### CTDC Point Groups

The **Point Group Properties** are used to determine how Points are added to a Point Group. The properties can be pre-defined in queries where the properties describe the criteria that a Point must match to belong to the Point Group. This is the case of the Point Groups for CTDC Points. First the user-defined Point property identifying the DTM type, DTMAttribute, is used as the criteria for grouping the Points and then all the Points matching the specified criteria are added to the Point Group's Point list. If a Point's criteria in the drawing is changed, the Point Group will indicate the change.



Figure 9 CTDC Point Group with criteria that a Point must meet to be included in the group

## **CSAC Point Groups**

Point Groups can also be populated manually when the Point Group Properties are not pre-defined. This is the case of Point Groups for CSAC Points. The Points are

added to the Point Group during the import process and only the Point's Number is added to the Point Group Property.

The significant difference with these Point Groups is that the criteria determining if a Point belongs in the group is managed only when the Points are imported into the drawing. If the Point's DTM\_Type is changed in the drawing, the Point Group will NOT indicate the change. This Point Group will only indicate a change if the Point is removed from the drawing.



Figure 10 CSAC Point Group

## Point List

The Point Group's Point List is maintained dynamically, which means that an out-ofdate notification,  $\P$ , appears whenever a change occurs that affects the Point List. When a Point Group is out-of- date, one or more Points in the Point List no longer match the criteria specified on the tabs in the Point Group Properties.

A Point Group's Point List may be out-of-date when one or more of the following occurs:

- Points that belonged to the Point Group were deleted from the drawing.
- The property of a Point belonging to a Point Group was changed so that the Point no longer meets the criteria for being included in the Point Group.
- New Points were created that match the Point Group's criteria in the Properties.

### Point Group's role with topo data

Point Groups provide two fundamental roles when working with topo data:

• Point Groups are used to add COGO Points or Survey Points to a Surface

• Point Groups can be used to control how Points are displayed in the drawing

The **Point Group Overrides** are a quick way change the display of all Points in the Point Group, instead of changing each Point's style individually. For example, the **CSAC Line Points – display OFF** Point Group is set up to quickly hide the Points used to create the CSAC linework.

🛕 Point Group Properties - CSAC Line Points - display OFF — 🛛 🛛 🗙							
Information   Point Groups   Raw Desc Matching   Include	Exclude Query Builder Overrides Point List Summary						
Property	Qverride						
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Point Elevation	0.00'						
Style	🐴 _No Display						
Point Label Style	🚰 _No Display						

Figure 11 Point Group Properties Overrides control the display of the Points in the Point Group

### **Drawing Objects**

The CTDC workflow results in a Civil 3D Survey Database and a drawing containing Survey Figures and Survey Points. The Survey Points at each vertex of the Survey Figures, referred to as Survey Figure Points, contain additional metadata about the linework that is important in the design process, e.g., fence height or culvert material. However, working with Survey Figures and Survey Points can be cumbersome, create larger drawings, and are different objects than those created with the photo, aerial LiDAR, bathymetric, and MTLS topo workflows.

The CSAC workflow creates objects consistent with the photo, aerial LiDAR, bathymetric, and MTLS topo workflows; which is a combination of Civil 3D objects and AutoCAD elements. Topo features such as asphalt edges, fences, and trees are stored as Civil 3D Objects, COGO Points, and Feature Lines. Random breaklines and spot elevations are stored as AutoCAD Elements, AutoCAD Points, and Polylines.

Below is a table showing the Pros and Cons of using Civil 3D Objects and AutoCAD Elements:

	Civil 3D Objects	AutoCAD Elements			
Pro		Con			
	Are given unique names	Cannot be named			
Pro		Con			
	Use Styles to control the display attributes and symbology	Use layers to control the display attributes			
Pro	,	Con			
	Display symbology based on the style	Do not display symbology			
•	Feature Lines display custom linestyles COGO Points display custom symbols and	<ul> <li>3D Polylines do not display custom linestyles</li> </ul>			
	blocks	<ul> <li>AutoCAD Points do not display custom symbols or blocks</li> </ul>			
Pro		Con			
	Feature Lines and COGO Points are listed in the Prospector	3D Polylines and AutoCAD Points are not listed in the Prospector			

### Civil 3D Objects vs. AutoCAD Elements

Civil 3D Objects	AutoCAD Elements
Pro	Con
More commands are available for Feature Lines	Some commands cannot be performed on 3D Polylines
The Offset command can be performed on Feature Lines	<ul> <li>The Offset command does not work with Polylines</li> </ul>
<ul> <li>The Elevation Editor displays the elevation, length, and grade of each segment of a Feature Line</li> </ul>	<ul> <li>The Elevation Editor does not work with Polylines</li> </ul>
Con	Pro
The objects increase the drawing file size	The elements make the drawing simpler
<ul> <li>Feature Lines increase the drawing size by a factor of 2.3 when compared with 3D Polylines</li> </ul>	and lighter
<ul> <li>COGO Points increase the drawing size by a factor of 9.4 when compared with AutoCAD Points</li> </ul>	

### Civil 3D Objects

Each Civil 3D object has a base layer on which the object physically resides, the Object Layer, and has Component Layers that control the display of object components, such as Surface triangles, linework, or symbols. The Object Layer is defined in the Drawing Settings or when the object is imported into a drawing. The Component Layers are defined in the Object Styles. Objects are physically created on the Object Layer, but the display of components is governed by the associated Component Layers defined in the Object's Style.

The appearance of Civil 3D Objects is controlled by their style. A style is defined by subcomponents used for different viewing angles, such as 3D perspectives (Model), top-down Plan view, Profile view, or Section view. A style defines the component's color, line weight, symbol, and layer. The appearance can also be set to invisible (No Display). The ability to set a Civil3D object to an invisible state is helpful; the data does not need to be removed from the drawing if a temporary change of the display in a drawing is needed.

#### Feature Lines

CSAC, photo, aerial LiDAR, and MTLS linear topo features are stored as Feature Lines.

### Caltrans



Figure 12 Civil 3D Feature Line

A Feature Line is a 3D linear object that Surface and grading commands recognize and use as breaklines. Feature Lines can be drawn, created from existing objects, exported from Corridors, or created when importing a Shape file.

An option to store Feature Lines in a Site is available. However, if two Feature Lines in the same Site cross each other, they are forced to be at the same elevation at the intersection. The ability to control how the crossing is resolved is controlled by the Feature Line Styles and the order that they are created. Because of this, all topo linework stored as Feature Lines should not be stored in a Site. The Site <u>must</u> be designated as *None* to prevent any undesired crossing resolutions.

Unlike Survey Figures, Feature Lines do not require a Survey Database to be created, stored, or shared in other drawings.

1) Feature Line Style

The **Feature Line Style** contains a component that controls the visual display of the linework including color, line style, weight, etc. Another component is available to control the placement of markers at the vertices of the linework when a Feature Line is displayed in a profile or a cross section.

Feature Line Styles are stored within the drawing templates. This ensures that all styles are available in every new drawing created from the templates. The styles are configured for final plan production and should not be modified.

#### <u>Points</u>

There are two types of Civil 3D Points; COGO Points and Survey Points. CSAC, photo, aerial LiDAR, bathymetric, and MTLS point topo features are stored as COGO Points.

### Caltrans



Figure 13 Civil 3D COGO Point

A **COGO Point** is a 3D Point object that has coordinate data and a variety of properties including name, description, and style. COGO Points are included in Surfaces as DTM Points where appropriate through Point Groups. **Survey Points** are like COGO Points, except that they require a Survey Database to be created. The Survey Database prevents Survey Points from being edited in a drawing.



Figure 14: COGO Point Dragged

Figure 15: Survey Point Dragged State

The two forms of Points can be visually identified by the icon that appears in the Prospector's list view or in any list view panorama.



Figure 16: Survey Points vs. COGO Points

2) Point Style

A **Point Style** contains two components; a Marker and a Label. **Markers** can be a simple symbol such as an X or a custom block. The Marker is integral to the Point. If a Point's location changes, the symbol will always be synchronized. **Labels** can be a simple display of a COGO Point's information. Point Styles are stored within the drawing templates to ensure that all styles are available in every new drawing created from the templates. The styles are configured for final plan production and should not be modified.

CSAC Point Styles have been developed for the following types of Points:

- Individual Points
  - Such as manholes or utility poles. These are assigned a Point Style with a corresponding block as the Point Marker and a Label Style that includes the Point name and elevation.
- Line Points
  - The Points used to create the linework in TBC do not need unique symbols, so the Point Marker is a simple circle with an X in the middle. The Label Style includes the Feature Code input in the field and the data collector's Point number.
- 3) Label Styles

When a label is needed for a Point, whether in the analysis mode or for final plan production, a Point Label Style is used together with a Point Style.

A **Point Label Style** can be used to label standard Point information including:

- Point ID (Point Number or Point Name)
- Coordinates
- Elevation
- Description

Several Point Label Styles have been preconfigured and included in the templates. If needed, an existing Point Label Style can be copied and edited, or a new one can be created. Updated or new Point Label Styles that would be beneficial to all users should be provided to the Office of Land Surveys for inclusion into the template.

Note: Only the Point Markers of individual Points are plotted in the final design contract plans. The Point Markers of the Line Points and all Point Labels, except for control Point Labels, are not.



Figure 17 CSAC Individual Point and Line Point Styles and Labels

#### 4) Description Keys

Civil 3D can assign the Style and Layer of a Point object based on the Point's raw description. A Description Key Set is list of predefined properties that control certain properties of a Point when applied. When a Point or Points are inserted into a drawing, the raw description of each Point is evaluated by the Description Key Sets. When a Point has a raw description that matches a Description Key, the properties defined in the key are assigned to that Point. If a raw description doesn't match a Description Key, or it contains a null or empty value, the drawing's default setting is applied.

Each Description key contains a Code, Style, Point Label Style, Format, Layer, and other fields that control the scale and rotation of the Point Style's marker. The entire list of Caltrans Description Keys can be found in Appendix A7 in this manual.

								<b>&gt;</b>	?
	Code	Style	Point Label Style	Format	Layer	Scale Parameter	Apply to X-Y	Apply to Z	^
	- 🎄 MB	🔽 su_MAIL	🗹 Topo Points [Na	Mail box	🗹 topo_su_rdside_MISC_dro;	Parameter 1	No	No No	1
	🔹 MBGR	SU Figure Points [TC]	🗹 Topo Points [Na	Guard rail, face, metal	vopo_su_tcd_LINE_PTS_inf	Parameter 1	No	🗌 No	
	🔹 MBS	SU Figure Points [RDSIDE]	🔽 Topo Points [Na	Mail boxes	vopo_su_rdside_LINE_PTS_	Parameter 1	No	No No	
	stand the second	✓ su_ctrl_FD	🔽 Name	Meander Corner	✓ topo_su_ctrl_point_FD	Parameter 1	No	No No	
	AH 🚽	🔽 su_MH [True size]	🔽 Topo Points [Na	\$1' diameter manhole, unknown or other	🔽 topo_su_ut_MH	Parameter 1	Ves Ves	🖌 Yes	
	AHEL	✓ su_MH_ELEC [True size]	🔽 Topo Points [Na	\$1' diameter manhole, electric	✓ topo_su_ut_MH	Parameter 1	Ves 🗸	Ves 🗸	
8	AHFIBER 👷	✓ su_MH_FIBER [True size]	🔽 Topo Points [Na	\$1' diameter manhole, fiber optic	🔽 topo_su_ut_MH	🗹 Parameter 1	Ves 🗸	Yes	
	🔄 МНЈТ	✓ su_MH_JOINT [True size]	🔽 Topo Points [Na	\$1' diameter manhole, joint	✓ topo_su_ut_MH	Parameter 1	Ves Ves	Ves 🗸	~
A	<							>	,

#### Figure 18: Description Keys

The order in which Description Key Sets are processed or searched is significant. The Key Set at the top of the **Description Key Sets Search Order** dialog box is searched first. Consider the Points filtering through the Description Key Sets as if the sets were sieves. As soon as a Point's raw description has been *caught* by an upper sieve, its properties will be set. If all the Description Keys are unique, reordering the sets is not necessary, as Points will be able to pass through all the sieves until a corresponding Key is matched without the concern of a mismatch. If more than one Description Key Set includes an identical Key, the sets will need to be reordered, such that the Key Set containing the preferred Key is at the top of the list before inserting Points into the drawing.

To set the order of Description Key Sets, go to **Toolspace** > **Settings** > <drawing name> > **Point** > right-click **Description Key Sets** > **Properties**. In the **Description Key Sets Search Order** dialog box, select a Key Set and use the arrows to move the set up or down the list as necessary.



Figure 19: The Description Key Sets Search Order dialog box

### Caltrans

The following table lists the key properties of a Description Key that are used with CSAC Points.

Property	Description					
Code	Used during description key matching. The characters in the Code column act as a raw description <b>prefix</b> . Asterisks (*) may be used for wildcard raw description matching.					
	When the raw description of a Point matches the Code, the associated Styles and Layer are assigned to the resulting Point object.					
Style	The Style assigr	ned to the Point.				
Point Label Style	The Point Label Style assigned to the Point.					
Layer	Designates the Object Layer that will be assigned to the Point.					
Format	Used to translate parameters in the raw description into a full description. Parameters are elements that are included in the raw description of a Point. For example, the raw description MH 3 consists of a leading element, MH, followed by one parameter, 3, separated by a space. Up to nine space-delimited parameters can be incorporated into the full description. The parameters are preceded by a \$ symbol in the Format field. The numeric value indicates the matching Parameter in the Description Key row. If parameters are not included in the Format field, only the text specified in the Format field will be included in the Point's full description.					
	Format	Point's Raw Description	Resulting Point's Full Description			
	\$*	MH 3	MH 3			
	\$1' diameter manhole	MH 3	3' diameter manhole			
	Manhole	MH 3	Manhole			
Scale Parameter	When checked ON, the parameter specified in the field must be included in Format and the Point's raw description.					

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Apply to X-Y	When checked ON, the parameter entered in the Point's raw description will be applied to the Point Style's Marker in the X and Y directions.
Apply to Z	When checked ON, the parameter entered in the Point's raw description will be applied to the Point Style's Marker in the Z direction.



Figure 20 Example of Description Keys and Parameters in the Point's Raw Description

5) Object Styles, Layers, and Naming Conventions

The COGO Point and Feature Line Object Layers and Component Layers defined in the styles are based on common Feature Groups, e.g., Hydrographic Features, Roadbed Features, etc. This allows the user to quickly freeze or turn *OFF* the Layers of an entire Feature Group using the **Layer Filters**. Users can quickly manage a drawing and reduce the drawing's displayed objects without removing them from the drawing.

×	Current layer: rw_topo_anno : General	I R/W & topo o	data - Ge	neral annotatio	on Sei	sich for lay	er 🔍
	4758 0 0 m 4		6 📬	666			αæ
	Filters		Status	Name		+ On	Freeze A
8	Di Survey Data     Di Hydrographic Features     Di Poodbod Eastures	- su	-	topo_su_rdbe topo_su_rdbe	d_AC_deck_drop d_AC_drop		
PERTIES MANAGE	Readded Features - 0     Readded Features -     D Surface Objects - su     D Traffic Control Features -     D Utility Features - su	Visibility Lock Viewport Isolate Grou	up	2000 SU 7005	On Off Thawed Frozen		•
LAVER PRO	Invert filter	New Prope New Group New Stand	rties Filt Filter ards Filt	er	d_DIKE_drop		, ,

Figure 21 Changing the visibility of Layers in a Layer filter

The name of the Style specifies the method of data collection and specific details about the Feature. The names of the Civil 3D objects are shorter and more general because it will be used to label the Feature in drawings, cross sections, or profiles.

For example;

Style Name	me Feature Component Layer Name		Object Layer				
Face of thrie-beam, cable, or other rail barriers							
su_BARR_FACE_RAIL	FRAIL	topo_su_tcd_BARRIER_drop	topo_su_tcd_BARRIER_drop				
	Bottom of concrete barriers						
su_BARR_BOT_CONC	BBAR	topo_su_tcd_BARRIER_drop	topo_su_tcd_BARRIER_drop				
Asphalt edges in the roadbed on bridge deck							
su_rdbed_AC_EDGE_deck	AC	topo_su_rdbed_AC_deck_drop	topo_su_rdbed_AC_deck_drop				

Style Name	COGO Point Name	Component Layers Marker Layer Label Layer	Object Layer		
Center of a rectangular electric Pullbox					
su_PB_RECT_ELEC	I_PB_RECT_ELEC PB topo_su_ut_PB topo_su_ut_anno_info_only		topo_su_ut_PB		
	Center	of a round drainage inlet on bridge deck			
su_DI_RND_deck	DI	topo_su_hydro_df_STR_deck_drop topo_su_str_anno_deck_info_only	topo_su_ut_DI_deck_drop		
Cantilever Sign at post location					
su_SIGN_CANT	SIGN	topo_su_tcd_SIGN_drop topo_su_tcd_anno_info_only	topo_su_tcd_SIGN_drop		

## Object Layers and Surface Type

The CSAC Feature Line and COGO Point Object Layer assignments are different than those assigned to photo, aerial LiDAR, bathymetric, and MTLS data.

The Surface type of CSAC data is determined by the value of the object's Feature Code Attribute **DTM\_Type.** For example, if the value of the object's DTM\_Type is *Ground*, then the object will be included in ground Surfaces. The Object Layer assigned when Shape files are imported match the layer defined in the Feature Line or COGO Point Styles.

The Object Layers of photo, aerial LiDAR, bathymetric, and MTLS data are used to identify the type of Surface that the object should be included in. Feature Lines placed

on Object Layer **topo\_ml\_FEATURE\_LINE\_DTM\_Ground** will be included in ground Surfaces. COGO Points placed on Object Layer **topo\_ml\_POINT\_DTM\_None** will be excluded from all Surfaces. The Object Layer for this data is assigned when DWG files are imported into the Civil 3D drawing and can be changed afterwards if required.

For example,

Style Name	Feature Line Name	Component Layer	Object Layer		
Face of thrie-beam, cable or other rail barriers					
ml_BARR_FACE_RAIL	FRAIL	topo_ml_tcd_BARRIER_drop	topo_mI_FEATURE_LINE_DTM_None		
Bottom of concrete barriers					
ml_BARR_BOT_CONC	BBAR	topo_ml_tcd_BARRIER_drop	topo_mI_FEATURE_LINE_DTM_Ground		
Asphalt edges in the roadbed on bridge deck					
ml_rdbed_AC_EDGE_deck	AC	topo_ml_rdbed_AC_deck_drop	topo_mI_FEATURE_LINE_DTM_Deck		

Style Name	COGO Point Name	Component Layers Marker Layer Label Layer	Object Layer		
Center of a rectangular electric Pullbox					
ml_PB_RECT_ELEC	PB	topo_ml_ut_PB topo_ml_ut_anno_info_only	topo_ml_POINT_DTM_None		
	Cente	er of a round drainage inlet on bridge deck			
ml_DI_RND_deck	DI	topo_ml_hydro_df_STR_deck_drop topo_ml_str_anno_deck_info_only	topo_ml_POINT_DTM_None		
Cantilever Sign at post location					
ml_SIGN_CANT	SIGN	topo_ml_tcd_SIGN_drop topo_ml_tcd_anno_info_only topo_ml_POINT_DTM_Non			

### AutoCAD Elements

## Polylines

CSAC, photo, aerial LiDAR, bathymetric, and MTLS miscellaneous linear features are collected to enhance a Surface, e.g., random Breaklines, are stored as 3D Polylines.



Figure 22 Random Breakline stored as a 3D Polyline

There are 2 types of Polylines; 2D and 3D Polylines. A 3D Polyline is a 3D Line Element that Surface and grading commands recognize and use as Breaklines; however, they do not have a Name or Style. Polylines can be drawn, created from existing objects, or created when importing a Shape file.

## AutoCAD Points

CSAC, photo, aerial LiDAR, bathymetric, and MTLS miscellaneous Point features collected to enhance a Surface, e.g., spot elevation Points, are stored as AutoCAD Points.



Figure 23 Spot elevation Point stored as an AutoCAD Point

An AutoCAD Point is a simple 3D Point Element that Surface commands recognize and use as DTM Points; however, they do not have a Name or Style. AutoCAD Points can be can be drawn, created from existing objects, or created when importing a Shape file.

# Layers and Surface Type

The CSAC Polyline and AutoCAD Point Layer assignments are like those assigned to photo, aerial LiDAR, bathymetric, and MTLS data; the Layer that the Polylines and AutoCAD Points are placed on indicates the Surface type and the feature type. Only random Breaklines and spot elevation Points are assigned to these Layers. The

Layers are assigned when Shape files containing CSAC data or DWG files containing photo, aerial LiDAR, bathymetric, and MTLS data are imported.

Note: All elements on these Layers are <u>NOT</u> plotted in the final design contract plans.

- topo\_su\_dtm\_brk\_spot\_info\_only random Breaklines and spot Points in ground Surface areas
- topo\_su\_dtm\_brk\_spot\_deck\_info\_only random Breaklines and spot Points in bridge deck Surface areas
- topo\_su\_dtm\_brk\_spot\_underside\_info\_only random Breaklines and spot Points in bridge underside Surface areas
- topo\_su\_dtm\_brk\_spot\_subterranean\_info\_only random Breaklines and spot Points in subterranean Surface areas
# 6) Civil 3D 2016 Shape Tools

The CSAC workflow relies on the **Civil 3D SHP and Table Tools** available in Civil 3D 2016 or newer releases of Civil 3D. These tools are used to import the TBC Shape files into a Civil 3D drawing, display the object attributes, display images and/or files associated to the objects, query objects based on the attributes, navigate to and/or select objects, trim lines, copy objects with attributes through an XREF, and create Point Tables with the Point Attributes.

The **Civil 3D SHP and Table Tools** can be accessed on the **Toolbox** tab of the **Toolspace** Palette. Some of the more commonly used tools are in the **Caltrans** tab of the **Ribbon** and in the **Surveys** palette group of the **Ct Topo** tool palette.



Figure 24 Civil 3D SHP and Table Tools

The primary tools that will be used in the CSAC topo delivery process include:

- Import SHP Survey Data
- SHP Palette
- SHP File Links ON/OFF
- Trim Feature Lines & Features at Boundary
- Display/Hide Property Sets in Tooltips

Point Tables

SHP Import/Export Tools



Figure 25 SHP Import/Export Tools

# Import SHP Survey Data

The **Import SHP Survey Data** tool (IMPORTSHPSURVEYDATA command) is used to import data from Shape files into a Civil 3D drawing. The **Import SHP Survey Data** dialog box contains options to define import events, spatial filters, query filters, and import settings. Before importing the data, the import options are specified (SHP settings, data filters, queries, etc.), the import event is named, and the Shape files are selected. During the import into the active Civil 3D drawing, the settings will apply to the selected Shape files.

SHP settings:		Spatial filter
CSAC FCL files from TBC	× 🍺 ×	<ul> <li>All</li> </ul>
moort Event Name:		O Display
Import Event		○ Rectangle
		<ul> <li>Buffer from alignment</li> </ul>
HP files:		Alignment
	45	~ TD
	×	Start station:
		0
		End station:
		0
		Buffer from alignment:
		0
		✓ Filter by query
		Query data
		✓ Filter by query         Query data

Figure 26 Import SHP Survey Data

#### CSAC Import SHP Survey Data Settings

The Shape file data is imported and stored in the drawing based on the settings defined in the **Import SHP Survey Data Settings**. The settings contain instructions to interpret the Shape file attributes and control how the COGO Points, AutoCAD Points, Feature Lines, Polylines, and 3D Polylines will be configured during the import process.

The **CSAC FCL files from TBC** settings option is pre-defined for the CSAC Shape files and is stored in the Civil 3D 2016 template: *Ct\_2016\_Topo\_Surveys\_MTLS.dwt*. The Caltrans SSHPI settings files, *Ct-Survey\_Data-Feature\_Lines.XML* and *Ct-Survey\_Data-Points.XML*, determine how the Lines and Points in the CSAC Shape files will be stored when they are imported into a Civil 3D drawing. Additional configuration of the settings is <u>NOT</u> required when the Caltrans CSAC FCL is used.

🔥 Import SHP Survey Data	X
SHP settings:	Spatial filter
CSAC FCL files from TBC	<ul> <li>All</li> </ul>
	<ul> <li>Display</li> </ul>
Import Event Name:	○ Rectangle
Import Event	and the second

Figure 27 Preconfigured Settings in the Import SHP Survey Data Tool

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Ct_2016_Topo_Survey	SHP settings: CSAC FCL files from TBC	· 💽 ·	Spatial filter		
-			<ul> <li>Display</li> </ul>		
M Import SHP Survey Data Settings	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<	Rectangle		
Name: CSAC FCL files from TBC			<ul> <li>Buffer from alignme</li> </ul>	nt	
Settings files (optional)			Alignment		
SSHPI feature line settings:		52			
C:\Caltrans\HQ\C3D_2016\Survey\SHP_Imp	ort\Ct-Survey_Data-Feature_Lines.XML 🛛 🗊 🍺	×	Start station:		
SSHPI point settings:			0	10°	
C:\Caltrans\HQ\C3D_2016\Survey\SHP_Imp	ort\Ct-Survey_Data-Points.XML 🚸 🍺		End station:		
Property sets	0		0	" <b>0</b> "2	
			Buffer from alignment		
				lana and the	In a way of a state
Default feature line settings	Default point settings			Ct 2016 Tor	n settings stored in
Style:	Style:		Filter by query	C2010_10,	oo_oonreyo_mile.um
_Non-Standard	<ul> <li>_Non-Standard</li> </ul>		Query data		
Layer:	Label style:		Save queries into SH		
c3d_FEATURE_LINE	<ul> <li>_Non-Standard</li> </ul>			SSHPI Logical Query	>
Site:	Layer:		OK Can	SHP File Name Format	Query
<none></none>	v rw_topo_point_NON_STANDARD v			Lines.shp	(Name IS NULL)
	Point group:		· · · · ·	Points.shp	( Layer LIKE '%Line Points' )
	<none> Y</none>				
	OK Cancel Help				
Import SHP settin	gs stored in				
Ct_2016_Topo_Surv	/eys_MTLS.dwt				

Figure 28 Import SHP Survey Data Settings

7) Non-standard objects

The **CSAC FCL Survey Data** settings also includes options for Feature Lines and COGO Points that do not match any of the instructions provided in the Caltrans settings files.

For example, if a CSAC FCL Attribute field is *Required*, such as **DTM\_Type**, and the field is blank then the data will be imported with a non-standard style.



Figure 29 Non-standard COGO Point because a required Feature Code Attribute is blank

# Blank Required Attribute Fields

Required Attribute fields must be populated at the time of data collection when using the CSAC FCL with Trimble Access. However, if the data is processed in TBC using a different version of the CSAC FCL containing different Attributes, it is possible for required Attribute fields to be blank. Special attention must be made to ensure all required Attribute fields are populated when the data is edited in TBC.

Another situation where the data may not match the instructions provided in the Caltrans settings files is when a user creates their own Feature Code and an unexpected Shape file is imported.



Figure 30 Non-standard Feature Line because the Shape file name is not a standard Feature Code

#### 8) Spatial Filter

The **Spatial Filter** can be used to import only those features in the Shape files that fall within a boundary or within a buffer based on an Alignment.

SHP settings:		Spatial filter	
CSAC FCL Survey Data	- 🏹 -	All	
Torrest Frank Name		Display	
Import Event Name:		Rectangle	
Spatial filter - All		O Buffer from alignment	
SHP files:		Alignment	
Bridge_Abutment_Face_1.shp Bridge_Soffit_1.shp Bridge_Soffit_2.shp Building_Face_1.shp Column_Point.shp	▲ ■ ×	Start station:	جنا ب چا-
Control_Point.shp		End station:	
Culvert_Point.shp Curb_Flowline_1.shp		0	10°
Curb_Flowline_2.shp Curb_Lip_1.shp		Buffer from alignment:	
Curb Lip 2 shp		0	

Figure 31 Spatial Filter controls the area that CSAC objects will be imported

9) Filter by query

The **Filter by query** can be used to include or exclude features from specific Shape files based on queries during import.

<ul> <li>Filter by query</li> <li>Query data</li> <li>Save queries into SHP sett</li> </ul>
OK Cancel Help

Figure 32 Filter by query helps to include or exclude features

TBC creates two separate project Shape files (Lines.shp & Points.shp) that would create duplicate features if imported into Civil 3D without queries. Queries are used to exclude some of these duplicate objects during import. One query is used to exclude all features in the *Lines.shp* file, to avoid duplications with the other linear Shape files. Another query is included to only import the Points used to create linework in TBC, *Line Points*, in the *Points.shp* file. These queries are pre-defined for the CSAC Shape files and are stored in the Civil 3D 2016 template, *Ct\_2016\_Topo\_Surveys\_MTLS.dwt*, as shown in the Figure below.



Figure 33 Queries to exclude all lines in Lines.shp and only include a selection of Points in Points.shp

CSAC SSHPI Line and Point Settings

The SSHPI Line and Point settings files, *Ct-Survey\_Data-Feature\_Lines.XML* and *Ct-Survey\_Data-Points.XML*, contain queries to parse the attributes of the data in the TBC Shape files. Based on the query results, the data is assigned a Civil 3D or AutoCAD object type (COGO Point, Feature Line, AutoCAD Point, Polyline, or 3D Polyline) with the specified Name, Style, Object Layer, and Point Group, if applicable.

For a complete listing of the standard layers and styles, see Appendix A7 in this manual.

Different Features created from the same Shape (.SHP) file

In many cases, different features can be created based on the attributes in the Shape file that were assigned in the field.

For example, when **Asphalt\_Breakline\_\*.shp** files are imported, 6 different Line features can be created as shown in the table below:

Civil 3D Object	DTM_Type	Aspect	Description
Feature Line	ure Ground or Grade		Asphalt roadbed grade breaks – ground
Feature Bridge Line deck Grade brea		Grade break	Asphalt roadbed grade breaks - bridge deck
Feature Line	Feature LineGround or NoneFlowlineFeature LineBridge deckFlowline		Flowlines, roadbed - except curb flowlines - ground
Feature Line			Flowlines, roadbed - except curb flowlines - bridge deck
3D Polyline	3D Ground or Rando Polyline None breakli		Random breaklines in ground DTM areas
3D Bridge Random I Polyline deck breakline a		Random breakline	Random breaklines in bridge deck DTM areas

4	SSHPI Feature Line Settings - File C:\Caltrans\HQ\C3D_2016\Survey\SHP_Import\Ct-Survey_Data-Feature_Lines.XML										
[	🗅 🗁 🖶 🚰 SHP File Current SHP formatting file source: Select SHP file for source										
	⊕ ×										
	Feature Line Setting Name	SHP File Name	Feature Line Name Format	Style	Layer Name	Create Polyline	ls 3d Polyline	Query			
	ADA detectable warning surface	ADA_Detectable_Warnin	DWS<[Next	✓ su_DWS	✓ topo_su_rdside_MISC_drop			✓ *			
	Asphalt breaklines - roadbed	Asphalt_Breakline*.shp	ACBK<[Nex	✓ su_rdbed_AC_BRK	✓ topo_su_rdbed_AC_drop			✓ (( DTM_Type = 'Ground' ) Or ( DTM_Type = 'None' )) And ( Aspect i			
	Random breaklines in Bridge deck DTM are	Asphalt_Breakline*.shp			✓ topo_su_dtm_brk_spot_deck_info_only	✓	✓	✓ (Aspect = 'Random breakline' ) And (DTM_Type = 'Bridge deck' )			
	Flowline - roadbed	Asphalt_Breakline*.shp	FL<[Next C	✓ su_rdbed_FL	✓ topo_su_rdbed_FL_drop			✓ (Aspect = 'Flowline') And ((DTM_Type = 'Ground') Or (DTM_Type)			
	Random breaklines in Ground DTM areas	Asphalt_Breakline*.shp			topo_su_dtm_brk_spot_info_only	✓	✓	✓ (Aspect = 'Random breakline' ) And (( DTM_Type = 'Ground' ) Or			
	Flowline - roadbed deck	Asphalt_Breakline*.shp	FL<[Next C	✓ su_rdbed_FL_deck	✓ topo_su_rdbed_FL_deck_drop			(Aspect = 'Flowline') And (DTM_Type = 'Bridge deck')			
	Asphalt breaklines - roadbed deck	Asphalt_Breakline*.shp	ACBK<[Nex	✓ su_rdbed_AC_BRK_deck	✓ topo_su_rdbed_AC_deck_drop			(DTM_Type = 'Bridge deck') And (Aspect = 'Grade break')			
	Asphalt edges - roadbed	Asphalt_Edge*.shp	AC<[Next C	✓ su_rdbed_AC_EDGE	✓ topo_su_rdbed_AC_drop			(( DTM_Type = 'Ground' ) Or ( DTM_Type = 'None' ))			
١,	Asphalander rasil deck	And Felget		su_relied	su and AG deck de			Bridge de Bridge de Cartes			



When **Gen\_Roadbed\_Point.shp** files are imported, 4 different Point features can be created as shown in the table below:

Civil 3D Object	DTM_Type	Туре	Point Group	Description	
COGO Point	Ground or None	Other	CSAC Ground Points	Miscellaneous roadbed point features - ground	
COGO Point	Bridge deck	Other	CSAC Bridge Deck Points	Miscellaneous roadbed point features bridge deck	
AutoCAD Point	Ground or None	Spot	n/a	Spot elevations & mass points in ground DTM areas	
AutoCAD Point	Bridge deck	Spot	n/a	Spot elevations & mass points in bridge deck DTM areas	

	SSHPI Point Settings - File C:\Caltrans\HQ\C3D_2016\Survey\SHP_Import\Ct-Survey_Data-Points.XML											
Image: Sharp File       Current SHP formatting file source:       Select SHP file for source         Image: Sharp File       Current SHP formatting file source:       Select SHP file for source												
	Point Setting Name	SHP File Name	Description Key	Point Name Format	Raw Description	Is 2D Point	Create AutoCAD Point	Query				
	Miscellaneous hydro <u>c</u>	Gen_Hydro_Point.shp	HYDRMISC	HYDRO{PointID}	✔ {DK:Descripti	✓ IgnoreElev		(( Aspect <> 'High water mark' ) Or ( Aspect <> 'Spo.				
	Miscellaneous roadbe	Gen_Roadbed_Point.shp	RDWYMISC	RDBED{PointID}	✔ {DK:Descripti	✓ IgnoreElev		✓ (Type = 'Other') And ((DTM_Type = 'Ground') Or				
	Miscellaneous roadbe	Gen_Roadbed_Point.shp	RDWYMISC	RDBED{PointID}	✔ {DK:Descripti	✓ IgnoreElev		✓ (Type = 'Other') And (DTM_Type = 'Bridge deck')				
	Spot points in Bridge	Gen_Roadbed_Point.shp				✓ IgnoreElev	✓	(Type = 'Spot') And (DTM_Type = 'Bridge deck')				
	Spot points in Ground	Gen_Roadbed_Point.shp				✓ IgnoreElev	✓	✓ (Type = 'Spot') And (DTM_Type = 'Ground')				
	Miscellaneous roadsic	Gen_Roadside_Point.shp		RDSIDE{PointID}	✔ {DK:Descripti	✓ IgnoreElev		✓ (DTM_Type = 'Bridge deck')				
ų	the second s	Gran Road and Point sh	RDS MISC	- Zhonolos (Dointio)	DK:Descripti		State of Lot of	DTM Time - Nonch				

Figure 35 SSHPI Point settings file used when importing CSAC data

#### 2D Points are created when "IgnoreElev" is set to Yes

Points with the attribute **IgnoreElev** set to **Yes** are stored as 2D COGO Points where the elevation of the Point is not set.

Ĥ	Cogo Point	- 📽 🔶 📲	u		Cogo Point		- EUI	×
*	DOCUMENTATION		Desi		Raw Description	MARKMISC		=
	PROPERTY SETS				Style	su_MARKER_MISC		
	Associated Files				Point Label Style	Topo Points [Name Elev	ation D	
	Associated Images		play		Show Tooltips			
	Feature		Dis		Layer	topo_su_tcd_MA	RKE	
	Point Information		'		Primary point g			
	Easting 6447629.009511		:		Easting	6447629.01'		
	Elevation 96.163906		ded	/	Northing	1936855.77'		
	IgnoreElev Yes		ten		Point Elevation	*PROPERTY NOT SET*		
	Northing 1936855.769528				CgPoint.DTMAt			
TIES	PointID 1349		llass		Description (TS			
PER	ShapeFileInformation		ti T					
I PRO	2 m		Obje					

Figure 36 COGO Point elevation is not set when IgnoreElev = Yes

# COGO Points are added to Point Groups

COGO Points are added to one of the CSAC Point Groups based on the attribute **DTM\_Type**.

	New Point Group.
Point Group	Query
CSAC Ground Points	( DTM_Type = 'Ground' )
CSAC Feature Points	( DTM_Type = 'None' )
CSAC Bridge Deck Points	( DTM_Type = 'Bridge deck' )
CSAC Bridge Underside Points	(( DTM_Type = 'Bridge surface' ) Or ( DTM_Type = 'Bridge underside' )
CSAC Line Points - display OFF	( Layer LIKE 'Line Points' )

Figure 37 Queries to determine the CSAC Point Group that COGO Points are added to during import

#### SHP Palette

The **SHP Palette** is used to query, locate, and select the CSAC Points and Lines. The palette displays a list of the imported data in an expandable, hierarchical tree structure.

- When an import event is selected, the list of imported data is displayed in the lower window pane.
- When an import event is expanded, the list of the import Shape files is displayed.
- When an imported Shape file is selected, the list of Feature Lines or COGO Points is displayed in the lower window pane.

×											?	
×	🗏 🗈 Class_Datas	et										
	🗏 📄 SHP Import Events											
	🖃 🗑 TBC	Project Data										
	J Wall_Bottom_1.shp											
	1	Vault_Outline.sh	р									
E	ナ	Stripe_4.shp										
Ш	ナ	Stripe_3.shp										
Add	ナ	Stripe_2.shp										
E	<i>†</i> .	String 1 chn									Ŧ	
ORT	SHP File Name	SHP File Path	Name	Style Name	Layer Name	Import Date	SHP File Date	SHP Path And File	Length	Length	Area	
IMP	Vault_Outline.shp	D:\Software\Ci	VLT1	su_VAULT_ELEC	topo_su_ut_VAULT	6/18/2018 8:	6/8/2018 1:36	D:\Software\Civil3D	20.2864!	20.2880	24.1212	
	•								_	_	•	

Figure 38 Import SHP Palette with imported data

## SHP Palette Context Menus

A context menu is displayed when imported data or an import event is right-clicked, presenting commands for working with the selected import event or data contained in the event.

ETTE XX XX	Class_Dataset  Class_Dataset  SHP Import Events  V TBC Project Data  V Wall Bottom_1.sh  Vault_Outline.shp  Stripe_4.shp  Stripe_3.shp  Stripe_2.shp			Zoom To Pan To Select		<ul> <li>Class_Dataset</li> <li>SHP Import Events</li> <li>TBC Project Data</li> <li>Wall_Bottom_1.shp</li> <li>Vault_Outline.shp</li> <li>Stripe_4.shp</li> <li>Stripe_3.shp</li> <li>Stripe_2.shp</li> </ul>			?
PAL	SHP File Name	Impo		Rename	LA	SHP File Name		SHP File Path	
ISHP	Wall_Bottom_1.shp	6/8/2		Move to	È	Vault_Outline.shp		Zoom To	rkflo
ORI	Vault_Outline.shp 6/8/2		~		Š			Dan To	
WI	Stripe_4.shp	6/8/2	*	Delete					
	< III			Refresh	<u>A</u>	<		Select 🔓	•

Figure 39 Context menu access when right-clicking an import event or imported data

#### 10)SHP Palette Queries

The **SHP Palette** contains a tool, **SSHPI Drawing Query**, to define queries using COGO Point Properties, Feature Line Properties, Point UDP's, and/or Property Sets. The queries filter all objects in the active drawing or in an XREF, creating a list of the objects meeting the criteria in the SHP Palette.

The queries can be predefined in a template or created by the users.

×				?							
*	⊟ HQ-20190321 I Display="block">III Display="block">III Display="block">III Display="block">III Display="block"/>III Display										
	↓ Feature Lines				🔥 SSHPI Drawing Qu	ery					×
	▼ Queries ④ ♥ Ground Surface - Lines Ø ♥ No Surface - Lines			-	수 🗙 Query nar	ne: Ground Surface - Lir	nes				
	Bridge Deck Surface - Lines	is lines			Set Operator (	Туре	Property	Operator	Value	)	Ŧ
	Ground Surface - Spot Poi	nts			(	Property Set ~	(PS) Feature: DTM_Type	=	'Ground'	)	Ŷ
	<ul> <li>If Bridge Deck Surface - Spo</li> <li>If Bridge Underside Surface</li> <li>If Images Attached - Lines</li> </ul>	t Points - Spot Points			Object type filter	Feature Line	nhy O All abiastr				Ŷ
					( (PS) Feature: DTM_T	Property Set					」 公
LETTE	∀ Subterranean Ground Unc ∀ Documents Attached - Lin ⊮ ∀ Documents Attached - Po	lerside - Lines Jes ints									
НРРА	Query Name	Feature line count	Point count				OK	Cancel	He	lp	
ORTS	Ground Surface - Lines	70	0	^							
IMP	No Surface - Lines	27	0								
	Bridge Deck Surface - Lines	0	0	$\sim$							

Figure 40 Import SHP Palette and SSHPI Drawing Queries

#### 11) Query Context Menus

A context menu is displayed when a query or an object within the query is rightclicked, presenting commands for working with the selected query or data contained in the query.

×		?	X H				?
HPPALETTE 🗙	<ul> <li>Class_Dataset</li> <li>SHP Import Events → Feature Lines → Points</li> <li>♥ Queries</li> <li>♥ Ground Surface - Lin ♥ Bridge Deck Sur</li> <li>♥ Bridge Undersic</li> <li>♥ Bridge Lordersic</li> </ul>	Zoom To Pan To Select Edit Query Delete Query Export Query Refresh	HPPALETTE	<ul> <li>Class_Dataset</li> <li>SHP Impo ↓ Feature Li</li></ul>	t rt Events nes d Surface - Lines rface - Lines Zoom To Pan To Select Move to	6	is Points
PIMPORT			IMPORT	SHP File Name Wall_Bottom_1.sk	Refresh		flows\Tc ⊧

Figure 41 Context menu access when right-clicking an import event or imported data

#### 12) CSAC SHP Palette Queries

The Civil 3D 2016 template, *Ct\_2016\_Topo\_Surveys\_MTLS.dwt*, contains predefined queries to filter objects based on the value assigned to DTM\_Type to assist with Surface creation. For example, in the previous CTDC workflow, Survey Figures were added to a Surface directly from the Database as Breaklines. This isn't the case for Surface creation with CSAC. The Query function allows the user to select and add Feature Lines, 3D Polylines, and AutoCAD Points to a Surface. There are also queries pre-defined to filter objects that have images and/or documents attached.

The pre-defined queries include:

- Ground Surface Lines
- No Surface Lines
- Bridge Deck Surface Lines
- Bridge Underside Surface Lines
- Subterranean Ground Underside Lines
- Ground Surface Spot Points
- Bridge Deck Surface Spot Points
- Bridge Underside Surface Spot Points
- Images Attached Lines
- Images Attached Points
- Documents Attached Lines
- Documents Attached Points
- Point Name
- Feature Line Name

# Note

<u>COGO</u> Points cannot be loaded into a Surface from a selection set, they must be loaded into a Surface with a Point Group.

# SHP File Links On/Off

The **SHP File Links ON** command (SSHPFILELINKSON) is used to indicate that an object in the active drawing or in an XREF contains a referenced image or document. To access currently referenced File Links for the selected object, or, to save a new Link, **SHP File Links** <u>must</u> be turned ON.

When the **SHP File Links** is ON, the File Link icon displays as the cursor hovers over the object. To open a referenced Link, press **[Ctrl]** + left-click when the File Link icon is displayed.



Figure 42 Using SHP File Links to view linked images or documents

Property Set Visibility

Display/Hide Property Sets in Tooltips

The **Display Property Sets in Tooltips** tool (SSHPTOOLTIPSON command) is used to display the Property Set data in the tooltips when hovering over a CSAC object in the active drawing or in an XREF.



#### Figure 43 Property Set Visibility

## CADD Users Manual

#### **Display Property Sets in Tooltips**





Hide Property Sets in Tooltips

Figure 44 Display/Hide Property Sets of CSAC objects in the active drawing

# Geometry and Breakline Tools



Figure 45 Geometry & Breakline Tools

#### **Crossing Breaklines**

The **Crossing Breaklines** tool (CROSSINGBREAKLINES command) is used to identify intersecting lines in the active drawing. If crossing Breaklines are identified in Civil 3D they must be resolved in TBC and then re-imported into Civil 3D. This tool is like the **Resolve Crossing Breaklines** command found on the **Ribbon** > **Analyze** tab > **Ground Data** drop-down.

X H							?
*	Breakline 1	Breakline 2	Easting	Northing	Elevation Difference		Elevation Difference Threshold
	Breakline set1	Breakline set1	6726752.67'	1962967.42'	0.00'	*	0.00
	Breakline set1	Breakline set1	6726822.54'	1962839.02'	0.01'		🗹 Auto Pan
INES	Breakline set1	Breakline set1	6726859.70'	1962795.98'	0.01'		Den Te
AKL	Breakline set1	Breakline set1	6726795.55'	1962868.40'	0.01'		Pan IO
BRE	Breakline set1	Breakline set1	6726743.17'	1962915.61'	0.01'		
SING	Breakline set1	Breakline set1	6726847.89'	1962809.81'	0.02'		
ROS	Breakline set1	Breakline set1	6726783.91'	1962880.17'	0.02'		
PIC	Breakline set1	Breakline set1	6726827.74'	1962833.07'	0.03'		
S	Breakline set1	Breakline set1	6726747.25'	1962820.31'	0.03'		
	a 10 14	- 11° - 14	C705050401	4060703-001	0.401	-	

Figure 46 Crossing Breaklines tool for Feature Lines & Polylines

#### Trim Feature Lines

The **Trim Feature Lines** tool (SSHPITRIM command) is used to trim Feature Lines and Polylines along one or more cutting edges defined by other objects. This tool is like the **Trim** command found on the **Ribbon**  $\geq$  **Home** tab  $\geq$  **Modify** panel.



Figure 47 Trim Feature Lines command

Trim Features at Boundary

The **Trim Feature at Boundary** tool (SSHPIBOUNDARYTRIM command) is like the **Trim Feature Lines** tool except more options are provided to trim Feature Lines and Polylines inside or outside of a closed boundary.

SSHPI Trim Polylines at Boundary	E
Boundary	
Select boundary	Select <
Define boundary	Define <
Objects to trim	
Select automatically Select r	nanually Select <
Filter selected objects	
Filter on layers: *	Layers
Number of objects selected: 0	
Trim method	
Trim inside boundary	Retain property set data
Trim outside boundary	Delete objects inside/outside boundary
	OK Cancel Help

Figure 48 Trim Objects by Boundary



Figure 49 Trimmed Feature Lines & Polylines by Boundary

## External Reference Copy

The **External Reference Copy** tool (XREFCOPY command) is used to copy objects from an XREF into the active drawing when the object is required in a Design Drawing. A few examples of this would be to project and label the object in a cross section or to link to the object in a corridor. The Property Set data associated to the objects in the XREF is included with the copied data.

Point Table Tools



Figure 50 Point Tables Tools

The Point Tables tools consist three commands of to create (CREATEPOINTALIGNTABLE edit (EDITPOINTALIGNTABLE command), command), and update (UPDATEPOINTALIGNTABLES command) Point and Alignment Tables.

The table is customizable and can include CSAC Property Set information.



Figure 51 Point Table displaying CSAC Property Set Information

The tables can also include station and offsets to one or more Alignments with a variety of table sorting options.

	<u> </u>	• • •		_					
	<u> </u>	<u>ion &amp; 0</u>	ffset to T	frees					
Point Name	Feature	Diameter	Alignment Na	ne Station	Offset				
TREE1293 Tree		2.5	Mainline	51+16.11	31.52′RT				
TREE1306	Tree	1.5	Mainline	51+19.65	-31.95′LT				
TREE1296	Tree	3.5	Mainline	51+26.30	8.20′RT				
TREE1304	Tree	3	Mainline	51+27.18	-12.94′LT				
A Crea	ate Reports - Station	Offset to Points Repo	t				×		
Para			Alianananta			Delint Calenti			
Repor	rt settings:		Alignments:			Point Selecti	on:		
Stati	ion & Offset to Tree	s (Current 1 -	I: Mainline			[4] .4.	~		
AutoC	CAD table style:	Descent Cetting	2: (None)		↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓				~
Stan	ndard	C wi			<b>2</b> 1 1 - 201				^
Behav	vior:	Setting name:	Trans (Conset Table Catting)	Table title:					
⊖ St	tatic 💿 Dynamic	Station & Offset to	Trees (Current Table Setting)		Station & Onset to mees				
Table	preview:	Structure:			1				
Poir	nt Name	Header Name	Data Type	Object Property	Width	Sort By	Order	Sort Priority	52
TRE	E1293	Point Name	Point ~	Point Name	Automatic				×
TRE	TREE1306		Point ~	(PS) Feature: Feature	Automatic				Ŷ
TRE	E1296	Diameter	Point ~	(PS) Dimensions: Diame 🎽	Automatic				Ŷ
TRE	E1304	Alignment Name	Alignment1 ~	Alignment Name 🛛 👋	Automatic				Ŷ
		Station	Alignment1 ~	Station	Automatic	✓	Ascending ~	1 🖨	ۍ
		Offset	Alignment1 ~	Offset ~	Automatic	~	Ascending ~	2	
							-		

Figure 52 Point Table displaying CSAC Property Set Information and Station & Offsets to an Alignment

#### CSAC Project Organization & Deliverables

Trimble Project Files and Folders

A Trimble project folder will contain one or more TBC projects. An example project folder structure is shown below. The sub-folders are created by TBC when data is imported or exported.



Figure 53 Example of a Trimble Project Folder

Folder		Description						
Trimble Projects Folder	This is the (*.VCE) for	s the top-level folder containing the TBC projects; a TBC project file E) for each project and a TBC project folder for each TBC project.						
	TBC Project's Folder	Contains the TBC project's supporting files include attached FXL, the imported Access project folders, the of TBC Shape files folder, images associated to data that transferred with .job files, and KML/KMZ files exported TBC project. If images are associated to the data, a KMZ file slic created for delivery. If images are not associated to the data, a KML file created for delivery.						
		Trimble Access Project's <i>.job</i> Folder	Access Project's Files folder.When a Trimble Access .job file, or arJobXML (.jxl) file, is imported, a projesubfolder is created in the project foldercontain the imported data file along with arreferenced image files. This ensures thewhen multiple files of the same type atimported, any referenced image files with thsame name are stored separately and cannabe overwritten.TrimbleAccessProject'sFilesFolderContains the imagetaken from other sourceshould be copied to thlocation or to another folderthe TBC project's folder.					
		TBC Project's <i>.shp</i> Folder	Contains the Shape files of the features exported from a single TBC project. A collection of 5 files are created for every CSAC FCL Feature Code exported from the TBC project.					

## Civil 3D 2016 Project Files and Folders



Figure 54 Example of a Civil 3D Project Folder containing CSAC Files

Folder		Description							
Civil 3D Project's Folder	This is the top-level folder containing the Civil 3D project's files and folders.								
	Project's Topo Deliverables Folder	Contains the final design proces EG_Linework_Po folder containing t	Contains the final merged topo data drawings for use in the design process including <i>EG_Surface</i> and <i>EG_Linework_Points</i> drawings, topo data DGN files, and a folder containing the KML/KMZ files.						
		KML/KMZ FilesContains the KML or KMZ files exportedFolderfrom one or more TBC project.							
	Project's Field Surveys Folder	Contains folders for Civil 3D CSAC, CTDC or MTLS top drawings, files imported into the drawings, and supportin documentation.							
		Field Surveys Drawings Folder	Surveys ings r Points, Feature Lines, AutoCAD Points Polylines, and associated Surfaces.						
		Shape Files Folder	Contains folders for TBC project Shape files, associated images, and documents.						
			TBC Project's <i>.shp</i> Files Folder	Contains the Shape files of the features exported from a single TBC project. When more than one TBC project is imported into a Civil 3D project, multiple TBC project .shp folders are delivered					
				TBC Project's Images Folders	Contains images and documents associated to data in the TBC project's Shape files.				

#### Topo Data Deliverables

#### **Reasons for Delivery Methods**

The reasons for delivering topo data in Civil 3D as described in this section were determined based on a variety of factors:

- Improves the performance of Civil 3D
- Provides a consistent standard deliverable for all users, even if there is only a single topo data drawing
  - All users can view the topo lines and Points by XREF'ing the EG\_Linework\_Points drawing
  - All users can work with the merged Surface by data referencing the Existing\_Ground Surface stored in the EG\_Surface drawing
- Makes it easier to add additional topo data if the project scope changes in the future
  - All users will automatically see the changes
- Minimizes the number of drawings that other users need to manually XREF
- Provides a single merged Surface for all users
  - Ensures that all users are working with the same Surface
  - Ensures that overlapping and abutting Surfaces are managed properly

The active drawing's file size seriously impacts the performance of Civil 3D. For example, the process of viewing and exporting contours to a DGN file can take an extremely long time when the active drawing contains the Surface and possibly the topo data. However, the time to work with the same Surface can be <u>reduced by over 90%</u> when the Surface is data referenced in the active drawing.



Figure 55 File size comparison – EG\_Surface drawing vs. a drawing containing a data reference to the Surface

# **Standard Topo Deliverables**

The standard topo deliverables are a collection of drawings containing Civil 3D objects that are shared as XREF's or Data Shortcuts. The data is delivered this way to improve performance, while also providing the necessary information for all functional units to design and deliver a project.

Throughout most of the design process, the XREF and Data Shortcut deliverables are enough. However, when a cross section needs to refer to a topo feature, e.g., to project and label a feature in a cross section, the user must copy the object(s) into the drawing that contains the cross section. All topo data objects, except for Survey Figures, can be copied from a nested XREF with the Shape Tools **External Reference Copy** tool. Survey Figures are inserted into the drawing containing the cross sections from the Survey Database. In either situation, the design team must be informed if changes are made to the data because they need to reinsert the affected objects into their drawings.

13) Topo Data Drawings - <topo data>.dwg

One or more Civil 3D drawings containing Points, Lines, and their associated Surface(s). Data from different data types, including photogrammetric, aerial LiDAR, bathymetric, MTLS, and survey topo data, are stored in different drawings. These drawings and Surfaces <u>ARE NOT</u> directly referenced by other functional users.

Different types of topo data, including photo, aerial LiDAR, bathymetric, MTLS, and survey data are typically stored in different files to keep the Civil 3D drawings easier to manage. The data may also be divided further into different drawings to make the file sizes smaller.

These drawings are not directly referenced by other functional units, instead they are displayed as **Nested References** through the *<project name>-EG\_Linework\_Points.dwg*.

The Surfaces in these drawings are not directly visible to the functional units outside of the Surveys functions, instead they are data referenced into the *EG\_Surface.dwg* and then merged into the *Existing\_Ground*, *Existing\_Bridge\_Deck*, or *Existing\_Bridge\_Underside* Surfaces that are shared at the project shortcuts level.

## Drawing Management

One of two Civil 3D drawing templates should be used when creating a topo data drawing. Each template contains layers and styles identifying different data types and topo features. The styles ensure that the data and Surfaces are displayed with the appropriate properties to visually distinguish the features and the data types. For a complete listing of the layers, styles, and tools used in the delivery of topo data, see Appendix A7 in this manual.

- *Ct\_2016\_Topo\_Surveys\_MTLS.dwt* used for Survey & MTLS data
  - The CSAC Shape file workflow creates a mixture of Civil 3D objects and AutoCAD elements based on the Feature Codes and Feature Code Attributes. For this to occur, templates with the *Topographic Data* version, *Surveys & MTLS data v11* or higher, <u>must</u> be used when working with CSAC Shape file data.
  - <u>Do not</u> mix CTDC and CSAC data in the same Civil 3D project.
- Ct\_2016\_Topo\_Aerial\_Photo.dwt used for photo, aerial LiDAR, and bathymetric data
- When working with a new data set, it's best to check the data in a separate TBC project for CSAC data or working drawing for CTDC data. If everything checks out and all edits have been applied in the TBC project or Survey Database then the data can be added to an existing drawing or a new drawing can be created for the final *<topo data>.dwg*. This is especially important with CTDC data because inserting and removing Survey Points and Survey Figures over and over can lead to potential drawing corruption.
- Surfaces in the *<topo data>.dwg*:
  - Surfaces are created from the topo data drawing objects contained in the drawing.

- Surfaces should <u>not</u> be created from external files i.e., XML or point cloud files, when the topo data resides in the drawing.
- Surfaces for ground data and bridge data should be created as separate Surfaces.
- Use Surface names and descriptions to identify the data type such as Survey\_Data\_Ground or Photo\_Data\_Bridge\_Deck.
- Data Shortcuts are made to the individual Surfaces at the lower-tiered Surveys shortcut level.

Data references will be made to these Surfaces in the *<project* name>\_EG\_Surface.dwg. The individual Surfaces will be merged into the *Existing\_Ground*, *Existing\_Bridge\_Deck*, or *Existing\_Bridge\_Underside* Surfaces that exist in the *<project* name>\_EG\_Surface.dwg.

- When new data is added to a drawing and the new data overlaps other data in the drawing, the underlying older data must be trimmed and deleted from the drawing or moved to an unused frozen layer to ensure that it is not displayed nor used in the Surface.
- Different types of data such as, photo, aerial LiDAR, bathymetric, MTLS, or survey data, and their associated Surfaces are typically stored in different individual drawings. Survey data is not typically included in a drawing containing photo or aerial LiDAR data.
  - Projects are active for several years. Efficient data storage, archiving, and retrieval is facilitated by grouping data into import events and documenting the process in the **ReadMe** file. The ReadMe file is described in further detail later in this document.
  - In the following situations, different types of data, such as, photo, aerial LiDAR, bathymetric, MTLS, or survey data, can be stored in the same drawing to create a single Surface:
    - When data of one type is interspersed in the middle of a different data type, e.g., when survey data is collected to supplement areas not included with MTLS data.
    - When there are many regions of abutting data. This removes the need to clean the Surface triangles at those edges that would have been required when pasting the Surfaces.
- Resolve crossing breaklines to the following elevation differences:
  - o Survey Data
    - 0.00'
  - Photogrammetric Data

- 0.50' within the highway right of way and on any hard Surfaces
- 1.00' all other areas
- Prior to creating Data Shortcuts, verify that the DSSysVar is set appropriately.
- To improve the performance of Civil 3D, when possible, keep drawing file sizes from exceeding **9 MB**.
  - An exception to this is photo and aerial LiDAR data drawings. These drawings are large even when tiled into smaller sections. When possible, keep these drawing file sizes from exceeding **30 MB**.

## Folder Path

The folder path is based on the type of data:

- <project name>\Surveys\C3D\_<project name>\Field\_Surveys\Drawings\
- <project name>\Surveys\C3D\_<project name>\Photogrammetry\Drawings\

#### File Name

The file name varies based on the type of data.

Note: Once references are made to the drawing and/or Surface, the drawing and/or Surface name <u>must not</u> be changed.

Suggested file names:

- Drawings containing CSAC data should include the TBC project name and the survey request #, or other descriptive information about the data
  - o <TBC project name>\_SR08-22263.dwg
- Drawings containing data originating in a DGN file (photo, bathymetric, aerial LiDAR or MTLS data) should include the topo data type and the source DGN file name
  - o <data type>\_<source DGN name>.dwg
- Drawings containing CTDC data should include the Survey Database name and the name of the Import Event, survey request #, or other descriptive information about the data
  - o <survey database name>\_SR08-22263.dwg

## Drawing Objects

The topo data drawings contain a variety of objects based on the data type.

For information regarding the use of TSS files, Survey Databases, Survey Points, and Survey Figures, see the Caltrans internal training manual "*Civil 3D 2016 Survey Data Processing and DTM*" found on the OLS FTP site:

<u>ftp://cadd.dot.ca.gov/OLS\_FTP/Software/Civil3D/Training/Survey\_Data\_Processing</u> DTM/Civil 3D 2016/Civil 3D 2016-Survey\_Data\_Processing\_and\_DTM.pdf

- <u>All</u> topo data drawings contain a Surface created from the topo data contained in the drawing
  - Style = \_No Display
  - Do <u>not</u> create Surfaces from external files, e.g., XML or point cloud files, when the topo data resides in the drawing.

CSAC, MTLS, Photo, and Aerial LiDAR data

- Drawing objects
  - Topo features
    - COGO Points
    - Feature Lines
  - Miscellaneous features collected to enhance a Surface
    - AutoCAD Points
    - 3D Polylines
- Drawing <u>DOES NOT</u> contain
  - o Survey Points
  - Survey Figures

# CTDC data

- Drawing objects
  - o Survey Points
  - o Survey Figures
- Drawing <u>DOES NOT</u> contain
  - Survey Figure Points

When data edits are required

- If errors are found with the CSAC objects, <u>ALL EDITS</u> should be performed in TBC. When the edits are complete, the affected data is exported from TBC and reimported into Civil 3D.
  - Edit the affected data in TBC.
  - Export new Shape files of the affected features.
  - Copy and replace the shape files in the Civil 3D project folder.
  - Re-import and replace the objects in the drawing.

- If errors are found with the CTDC objects, all edits should be reflected in the Survey Database. When the edits are complete, insert or remove the affected data from the topo data drawing.
- After edits are made, save and close the topo data drawing.
  - Open the <project name>\_EG\_Surface.dwg, Synchronize the Data Referenced Surfaces, rebuild the impacted ground and bridge Surface(s), save and close the drawing.
  - Edits are automatically reflected in the *<project name>- EG\_Linework\_Points.dwg* when the drawings are saved.

Data Sharing

- Data Shortcuts to the individual topo data Surfaces are made in the lower-tiered *Surveys* shortcut level to prevent them from being referenced directly by other users.
- XREF the individual topo data drawings to the *<project name>-EG\_Linework\_Points.dwg* using **Relative Path** and the **Attachment Reference** type to ensure the references are nested.

# 14) Surface Drawing - <project name>\_EG\_Surface.dwg

A Civil 3D drawing containing the merged *Existing\_Ground* Surface(s) created from data references to the Surfaces in the topo data drawing(s). The *Existing\_Ground* Surface is data referenced by all users in need of the Surface data throughout the design process.

Instead of delivering multiple Surfaces for project design work, Caltrans typically delivers one merged Surface for ground data and separate Surfaces for bridge data. The merged ground Surface combines the ground Surfaces that are created from the different topo data Surfaces. The same is done for the bridge Surfaces. To keep the file size manageable, only the merged ground and bridge Surfaces are created and stored in the *<project name>\_EG\_Surface.dwg*. The topo data Surfaces are data refenced into this drawing.

This drawing is not directly referenced by other functional units, instead the Surfaces are shared through **Data Shortcuts**.

Only the merged Existing Ground, Existing Bridge Deck, and/or Existing Bridge Underside Surface is visible to the other functional units for use in the design process. Modifications made to the topo data Surfaces will automatically be reflected in the Existing\_Ground, Existing\_Bridge\_Deck, or *Existing\_Bridge\_Underside* Surface when the drawings are saved and synchronized.

**Drawing Management** 

- The <project name>\_EG\_Surface.dwg contains:
  - A Surface named *Existing\_Ground*, *Existing\_Bridge\_Deck*, and/or *Existing\_Bridge\_Underside*
  - Data references are made to the topo data ground and/or bridge Surfaces from the lower-tiered *Surveys* shortcut level
  - The topo data Surfaces are merged into the appropriate *Existing\_Ground*, *Existing\_Bridge\_Deck*, or *Existing\_Bridge\_Underside* Surface
  - A Data Shortcut to the Existing\_Ground, Existing\_Bridge\_Deck, and/or Existing\_Bridge\_Underside Surface is made in the upper-tiered Project shortcut level
- To provide a consistent standard deliverable for all users, the process above <u>must</u> be done, even if there is only a single topo data drawing.
- Managing Surfaces from data in adjoining drawings is important when creating a merged Surface. The methods used when Surfaces overlap are different than when Surfaces abut.
  - Overlapping Surfaces
    - When Surfaces are pasted into the merged *Existing Ground* Surface and one Surface overlaps another, the border of the last pasted Surface will clip

the data in the underlying pasted Surface. Extraneous triangle legs along the border <u>must</u> be deleted from the topmost Surface(s).

In some situations, overlapping Surfaces create a pocket or hole in an overlying Surface that needs to be filled-in with data from the underlying Surface.

- Abutting Surfaces
  - When Surfaces are pasted into the merged *Existing Ground* Surface and one Surface abuts another, the Surfaces <u>must</u> have a common breakline along the abutting edge to force the triangle vertices to match in that location. Extraneous triangle legs along the border <u>must</u> be deleted from one of the abutting Surfaces. The border is then added to the other Surface as a breakline.
- Prior to creating Data Shortcuts, verify that the DSSysVar is set appropriately.
- The *Existing\_Ground* Surface in this drawing is shared for use by others with Data Shortcuts. Since this drawing is not intended to be XREF'd, the file size should not cause any delays with users working through data references. However, if the response time becomes a serious issue, an additional drawing can be created where the *Existing\_Ground* Surface would be divided into multiple Surfaces.
  - For example,
    - <project name>\_EG\_Surface-North.dwg containing Surface
       Existing\_Ground-North
    - <project name>\_EG\_Surface-South.dwg containing Surface
       Existing\_Ground-South

## Folder Path

<project name>\Surveys\C3D\_<project name>\Deliverables\

#### File Name

- The name should contain the project name and *EG\_Surface* 
  - o <project name>\_EG\_Surface.dwg

#### Drawing Objects

- Data References to the individual topo data ground and bridge Surfaces from the lower-tiered *Surveys* shortcut level
  - Surface Style = \_No Display
- An Existing Ground Surface
  - A Surface named *Existing\_Ground*
  - Surface Style = \_Border Only

- The lower-tiered Data Referenced ground Surfaces are merged into this Surface
- A Bridge Surface(s) deck and/or underside Surface(s)
  - A Surface named *Existing\_Bridge\_Deck* and/or *Existing\_Bridge\_Underside*
  - Surface Style = \_Border Only
  - o The lower-tiered Data Referenced bridge Surfaces are merged into this Surface
- Drawing <u>DOES NOT</u> contain
  - o **Points**
  - Survey Figures
  - Feature Lines

## When edits are required

- <u>DO NOT</u> delete or rename the drawing if there are Data Shortcuts in the uppertiered *Project* shortcut level to any of the Surfaces in the drawing.
- <u>DO NOT</u> delete or rename the *Existing\_Ground*, *Existing\_Bridge\_Deck*, or *Existing\_Bridge\_Underside* Surfaces if there are Data Shortcuts in the upper-tiered *Project* shortcut level to any of these Surfaces.
  - If the one of the Surfaces must be edited, keep the original Surface as is and edit the Surface definitions to reflect the desired changes.
- If the individual topo data Surfaces are edited, the Data References to the Surfaces in the <project name>\_EG\_Surface.dwg must be Synchronized and the impacted Surface must be rebuilt.

Data sharing

- Data Shortcuts to the *Existing\_Ground*, *Existing\_Bridge\_Deck*, and *Existing\_Bridge\_Underside* Surfaces are made in the upper-tiered *Project* shortcut level.
- The Surfaces are Data Referenced as needed by other users from the upper-tiered *Project* shortcut level for corridor design and cross sections. The data referenced Surfaces:
  - Are a read-only copy and can be displayed with any style by any user without concern of unintentional changes to the Surfaces.
  - $\circ$   $\,$  Can be used for any type of analysis and reporting.
  - Can be masked by the user to block out areas of a Surface to prevent them from being displayed, enhancing the performance of Civil 3D.
- This drawing should <u>NOT</u> be directly XREF'd by any user.

15) Linework & Points Drawing - <project name>-EG\_Linework\_Points.dwg

A Civil 3D drawing containing nested External References (XREF's) to the individual topo data drawing(s). This drawing is XREF'd by all functional users in need of displaying the topo Points and Lines in the nested topo data drawings throughout the design process.

The topo Points and Linework need to be viewed during project design work. This is done by referencing the drawings containing the topo data. To minimize the number of files that the user needs to manually XREF, all the topo data drawings containing Point and Line topo features are referenced into a single drawing, *<project name>-EG\_Linework\_Points.dwg*, using the **Attachment** option. When this drawing is XREF'd, the other drawings will automatically be displayed as nested references. If modifications are made or additional topo data is added, anyone referencing this drawing will automatically see the changes.

**Drawing Management** 

- XREF the topo data drawings displaying only the Point and Line topo features. The following settings <u>must be</u> used when attaching the drawings:
  - **Reference Type** = *Attachment*
  - **Path type** = *Relative path*
- To provide a consistent standard deliverable for all users, this <u>must</u> be done even if there is only a single topo data drawing.
- If data in one drawing overlaps the data in another drawing, use **XCLIP** to mask the underlying data.
- If drawing response times become a serious issue or when the file size exceeds **9 MB**, additional drawings can be created.
  - For example,
    - oproject name>-EG\_Linework\_Points-North.dwg
    - <project name>-EG\_Linework\_Points-South.dwg
- When XREF'ing drawings on the project server, set the path to Relative Path.
  - If Relative Path is not allowed, save the active drawing and re-attempt XREF'ing the drawings.

## Folder Path

<project name>\Surveys\C3D\_<project name>\Deliverables\

## File Name

The name should contain the project name and EG\_Linework\_Points
 <project name>-EG\_Linework\_Points.dwg

# Drawing Objects

- XREF's to the topo data drawings displaying the Point and Line topo features
  - <u>DO NOT</u> XREF drawings containing Survey Figure Points to this drawing
- A closed Polyline that is used to XCLIP overlapping XREF's, if necessary.
- Drawing <u>DOES NOT</u> contain <u>ANY</u> topo data

# When edits are required

• Insert or remove affected data in the individual topo data drawings. The changes are automatically reflected in this drawing.

Data sharing

- The *<project name>-EG\_Linework\_Points.dwg* is XREF'd by other users as needed to display the topo Points & Linework.
- Topo data in the XREF drawings is displayed exactly as seen in the nested drawings.
  - Set the style of the Surfaces in the topo data drawings to *\_No Display*.
- The attribute information and associated images of CSAC data in the XREF'd drawings can be displayed by all users using the Civil 3D SHP and Table Tools, Display Property Sets in Tooltips (SSHPTOOLTIPSON), and SHP File Links ON (SSHPFILELINKSON).
- The attribute information of CSAC data in the XREF'd drawings can be queried using the Civil 3D SHP and Table Tools, **SHP Palette** (IMPORTSHPPALETTE).
- Information about all topo data in the XREF'd drawings can be seen in tool tips using the Caltrans developed tool **Ct Enable XREF Data Tips** (CTSTARTXRPROPS).
- Object snaps can be used on the topo data in the XREF'd drawings.

16) Topo Basemaps - <topo data>.dgn

One or more MicroStation DGN files containing the survey and MTLS topo data and the labeled contours of the *Existing\_Ground* Surface. These drawings are used as a basemap for the final design contract plans.

MicroStation DGN files of the Topo Basemaps are required for the final contract plan preparation and submittal for PS&E.

Civil 3D is used to export topo DGN files of the survey and MTLS topo features, and the *Existing\_Ground* Surface contours. Photo and aerial LiDAR data originate in DGN files, and <u>do not</u> need to be exported from Civil 3D. <u>The original DGN files for</u> the data described above should be available for use in the topo basemap instead. See *Standards and Symbols for Photogrammetric Mapping* (SSPM) and *2015 Standard Plans* for the required standards of photogrammetric and aerial LiDAR data in DGN files.

Caltrans Civil 3D resource files ensure that survey and MTLS topo features will display properly in Civil 3D and will export appropriately to MicroStation, i.e., they will export on the correct level, color, and line weight.

Drawing Management

- In general, Caltrans contract plans are printed at a scale of 1" = 50'. When creating the topo map in Civil 3D, display the data with the annotation scale set to 1" = 50'. This will scale the Linetypes, Blocks, and Annotation appropriately.
  - A larger scale may be requested by the engineer for smaller projects such as ADA ramp projects.
- When exporting to a DGN file from Civil 3D, the following Export Settings for MicroStation DGN <u>must</u> be used:
  - Use one of the appropriate Caltrans MicroStation seed files based on Zones 1 through 6, located in C:\Caltrans\HQ\MSV8i\seedV8\_zones\, to ensure that the coordinate system is imbedded in the DGN file.
  - Remapping Options
    - Turn ON Use remapping file
    - Use the 50\_Scale-Remap\_C3D\_to\_MSta.csv for 1" = 50' mapping
      - This file sets all linestyles to a scale of 3.937 in the DGN file
      - This file maps the Civil 3D Blocks, Fonts, Linestyles, and Layers to the appropriate MicroStation Cells, Fonts, Linestyles, and Levels
    - Turn ON Remap AutoCAD color book to color index
      - Use Ct Export
      - This file maps the Civil 3D color book color to the appropriate MicroStation color index

- Use the CT\_DwgSettingsInV8i.dws
  - This file maps the Civil 3D Lineweight in inches to the appropriate MicroStation Lineweight index
  - This file specifies the required advanced settings when opening a DWG file in MicroStation
- Turn ON Replace ByLayer properties with layer properties
  - This setting ensures that the elements in MicroStation will change the element's properties to the actual value instead of *ByLevel*
- When multiple data sets are used to create different topo maps, for example photo and survey data, older less accurate data underlying the newer more accurate data should be trimmed and removed.
- The drawing file size can cause problems during export. If problems are experienced when exporting the *Existing\_Ground* contours from the *EG\_Surface* drawing to a DGN file, create a data reference to the *Existing\_Ground* Surface in another drawing, display and label the contours, and export the labelled contours to a DGN file.

# Folder Path

<project name>\Surveys\C3D\_<project name>\Deliverables\

# File Name

- Topo features the name should be the same as the topo data drawing(s) used to export the data
  - o <topo data>.dgn
- Surface contours the name should contain the project name, Surface Name, and *Contours* 
  - o <project name>\_<Surface\_name>-Contours.dgn

Objects Exported from Civil 3D

# Survey and MTLS Data

- Point & Line topo features
  - Exported from the survey and MTLS topo data Civil 3D drawings
- CTDC Figure Points

# Surface Contours

- Labeled contours of the *Existing\_Ground* Surface
  - Use the Caltrans tool to Label Contours (CTLABLCONTOUR)

# Objects NOT Exported from Civil 3D

- Photo and aerial LiDAR topo data
  - The original DGN file is the topo DGN basemap deliverable for these data types because some of the data from the original DGN file is not loaded into Civil 3D. The original DGN files contain more information that is required in the topo basemap.

## When edits are required

- The impacted DGN files <u>must be</u> recreated
- If the Surface is impacted, the Surface contours DGN file <u>must be</u> recreated

Data Sharing

- The topo basemap DGN files can be provided as separate files. The end user can merge these files into the final DGN files for PS&E submittal.
- The topo basemap DGN files may be referenced by other users during the design process in MicroStation when other applications outside of Civil 3D are used, e.g., for hydraulics or landscape design work.
- The topo basemap DGN files are required for the plan preparation and PS&E submittal.
# CSAC Specific Deliverables

## 17) TBC Shape Files

When the edits to the CSAC data in TBC are complete, Shape files are exported from every TBC project containing topo data for a Civil 3D project. The TBC project Shape files represent the final edited TBC project dataset. These files are typically only used by the Surveyor who loads the CSAC data into the Civil 3D drawing. However, these files can be used by others using GIS applications for asset management systems, such as the utility database.

File Management

- Shape files are exported from a TBC project when all the edits to the data are complete.
- If modifications are made to the TBC project, new Shape files must be exported and copied to the Civil 3D project folders.

### Folder Path

 <project name>\Surveys\C3D\_<project name>\Field\_Surveys\Shape\_Files\<TBC project name>.shp\

#### File Name

- Shape file names
  - Shape files generated by TBC are automatically named using the Feature Code name. For example,
    - Curb\_Lip\_1.\*
    - Curb\_Lip\_2.\*
    - Sign\_Line.\*
    - Sign\_Point.\*

### When Edits are required

- Edit the affected data in TBC. <u>Do not</u> edit the data in Civil 3D.
- Since the exported Shape files are a collection of 5 files for every CSAC FCL Feature Code, the "affected data" that must be exported from TBC includes the edited object(s), <u>as well as, all the other objects in the project that have the same Feature Code as the edited object(s)</u>. For example, if the project contains 50 lines that use the Feature Code **TOC1** and only one **TOC1** line is edited in TBC, all 50 **TOC1** lines must be exported to ensure they are all included in the same Shape file that will be copied to the Civil 3D project.
  - Use the Advanced Selection tool to select all the features that use the same Feature Code as the edited object(s).
    - This ensures that the Shape files contain all the objects that are in the TBC projects.

- Transfer the new Shape files to the Civil 3D project folders and re-import into Civil 3D.
  - Copy the new Shape files from the TBC project.
  - Paste the new Shape files into the TBC project's *.shp* folder within the Civil 3D project folder.
  - Overwrite the existing shape files.
  - Re-import the new Shape files into the Civil 3D drawing.

#### Data Sharing

- These files can be used by others using GIS applications for asset management systems such as the utility database.
- 18) Images and Documents

Images captured in the field and supporting documents including DOCX, PDF, and XLSX, can be associated to CSAC data in TBC. The images and documents are stored in folder(s) in the TBC project's *.shp* folder within the Civil 3D project folders. The images and documents can be viewed by any user working on the Civil 3D project with tools provided in the Civil 3D 2016 Shape tools.

### File Management

- Images and documents associated to CSAC data are copied to a folder in the TBC project's *.shp* folder within the Civil 3D project folders.
  - If images were collected with the data collector, a folder containing the images is placed in the TBC project folder when the Trimble Access JOB file is loaded into the TBC project.
    - The folder named, <*Access JOB name*> *Files*, is copied to the TBC project's *.shp* folder within the Civil 3D project.
  - When an image from other camera sources or a document is associated to a feature in a TBC project, a copy of the file is placed in the TBC project folder.
    - A folder named *Files* is created in the TBC project's *.shp* folder within the Civil 3D project and these images and documents are copied to this folder.
- This gives all users the ability to view images and documents associated to CSAC objects in Civil 3D.

### Folder Path

- <project name>\Surveys\C3D\_<project name>\Field\_Surveys\Shape\_Files\<TBC project name>.shp\ <Access JOB name> Files\
- <project name>\Surveys\C3D\_<project name>\Field\_Surveys\Shape\_Files\<TBC project name>.shp\ Files\

## Caltrans

# File Name

- Images are automatically named by the data collector or camera.
  - The data collectors and cameras can be setup with a unique prefix or numbering sequence to minimize duplicate file names.

# When modifications are required

• If the association to images or documents changes in TBC, copy new files or remove unused files from the Civil 3D project folders.

# Data Sharing

- The associated images of CSAC data in the XREF'd drawings can be displayed by all users using the Civil 3D SHP and Table Tools, **Display Property Sets in Tooltips** (SSHPTOOLTIPSON), and **SHP File Links ON** (SSHPFILELINKSON).
- These files can be used by others using GIS applications for asset management systems such as the utility database.

# 19) KML/KMZ Files

The KML/KMZ file(s) exported from the TBC project represents the final edited TBC project dataset and are stored in the *Deliverables* folder of the Civil 3D project folders. This makes the attribute information accessible by <u>ALL</u> users working on the Civil 3D project, even those who <u>DO NOT</u> work in Civil 3D.

- If images are associated to the CSAC data, a KMZ file must be delivered.
- If images are not associated to the CSAC data, a KMZ or KML file can be delivered. When more than one TBC project is used for a Civil 3D project, multiple KML/KMZ files are created and delivered.

File Management

- A KML/KMZ file is exported from a TBC project when all edits to the data are complete.
- If edits are made to the TBC project, a new KML/KMZ file <u>must</u> be exported and copied to the Civil 3D project folders.
  - This ensures that the KML/KMZ files contain all CSAC objects that are in the TBC projects.

# Folder Path

• <project name>\Surveys\C3D\_<project name>\Deliverables\KML\

# File Name

• The name should contain the TBC project name.

# When Edits are required

- Edit the affected data in TBC. <u>Do not</u> edit the affected data in Civil 3D.
- Export and copy the new KML/KMZ file from the TBC project into the *Deliverables* folder within the Civil 3D project folder, replacing the existing file.

# Data Sharing

• These files can be used by others using GIS applications or Google Earth to see all the CSAC objects, feature attributes, and associated images and documents for the project.

# **CTDC Specific Deliverables**

The CTDC specific deliverables are being replaced by CSAC deliverables in newer Civil 3D 2016 drawings. For more information regarding the use of TSS files, Survey Databases, Survey Points, and Survey Figures, see the Caltrans internal training manual *"Civil 3D 2016 Survey Data Processing and DTM"* found on the OLS FTP site,

<u>ftp://cadd.dot.ca.gov/OLS\_FTP/Software/Civil3D/Training/Survey\_Data\_Processing</u> \_DTM/Civil\_3D\_2016/Civil\_3D\_2016-Survey\_Data\_Processing\_and\_DTM.pdf

20) Survey Databases

During the design process, topo data may need to be projected into a cross section. The Survey Database must be available as read-only for the data to be projected in a cross section.

Survey Database Management

The Survey Databases can be managed two different ways

- One database per project
  - Each Import Event represents a different set of survey or LiDAR topo data generated from TSS or XML files exported from CAiCE.
    - Additional databases may need to be created if the file size becomes unmanageable. When possible, keep the Survey Database (\*.sdbx) file sizes from exceeding 30 MB.
  - All the required data can be inserted into a single topo data drawing or into multiple drawings.
- Multiple databases per project
  - Each database represents a different set of survey or LiDAR topo data generated from TSS or XML files exported from CAiCE.
  - In this situation it is not recommended that data from different databases be inserted into a common drawing because it would make it difficult to determine which database maintains the data. It is suggested to create a separate drawing for each separate database.

#### Folder Path

<project name>\Surveys\C3D\_<project name>\\_Survey\_Database\

#### Database Name

• The database name <u>shall</u> contain the project name.

- Try to have a common name for the database and all associated drawings, especially when working with multiple databases per project. This makes it easier to determine which database contains the data in a specific drawing.
  - For example,
    - Database name: *0c180\_PM14-19*
    - Associated drawings:
      - 0c180\_PM14-19\_SR0053888-Survey\_Ground.dwg
      - 0c180\_PM14-19\_SR0053888-Survey\_Bridge.dwg.

When edits are required

- Make sure all changes are reflected in the survey database.
- Insert or remove data affected in all drawings.

This process must be followed for the following reasons:

- To use a Survey Database object in a cross section, the object <u>MUST</u> reside in the drawing containing the cross section.
  - $\circ$  A Surface does not contain breaklines that can be used in a cross section.
  - Survey Figures cannot be copied from one drawing to another.

Data Sharing

- The survey database is created and stored in the project folders on the server.
- If a survey database must be moved or copied from a local drive
  - The <u>ENTIRE</u> folder and its contents should be copied to the project's \\_Survey\_Database\ folder.
  - Copying just the folder contents will not work for users who have read-only access.

21) CTDC Figure Points Drawing - <survey\_database\_name>-

EG\_Figure\_Points.dwg

The CTDC <topo data>.dwg(s) and <project name>-EG\_Linework\_Points.dwg do not contain Survey Figure Points because they can cause network issues including longer file open and save times, and slow functions. These Points carry important descriptive information about the associated Survey Figures, therefore these Points are provided in a separate drawing to be displayed when needed.

Note: <u>Only CTDC topo data stored in a Survey Database will need a</u> <u><survey database name>-EG Figure Points.dwg</u>.

Drawing Management

- The Survey Figure Points from each Survey Database(s) can be inserted directly into this drawing.
- If response times become a serious problem or when the file size exceeds **9 MB** additional drawings can be created.

#### Folder Path

<project name>\Surveys\C3D\_<project name>\Deliverables\

#### File Name

- The name should contain the Survey Database name and EG\_Figure\_Points
  - o <survey\_database\_name>-EG\_Figure\_Points.dwg

#### Drawing Objects

- Survey Figure Points inserted from Survey Database(s)
- Drawing **DOES NOT** contain
  - Individual Survey Points
  - Survey Figures
  - o Surfaces

When edits are required

• Insert or remove affected data.

This process must be followed for the following reasons:

- Survey Figure Points are extraneous and are not required in the *<topo* data>.dwg(s). However, the information they contain may be needed during the design process e.g., to see the descriptive information about Survey Figure such as the height of a fence.
- XREF'd drawings containing large numbers of Survey Figure Points cause slow response times in Civil 3D and can prevent the export to DGN command from succeeding.
- Keeping this data in a separate drawing gives user the ability to XREF the drawing only when needed.

Data sharing

- Information about the topo data in the XREF'd drawings can be seen in tool tips using the Caltrans developed tool Ct Enable XREF Data Tips (CTSTARTXRPROPS)
- The <*survey\_database\_name>-EG\_Figure\_Points.dwg* is XREF'd by other users <u>ONLY</u> when the descriptive information associated to the Figure Points is required.

## ReadMe File

- Prepare a project ReadMe document
  - Deliver the ReadMe document to Design providing necessary project information including:
    - Project Units
    - Horizontal and Vertical Datums
    - Data Quality
      - Design quality
      - Study quality
    - Civil 3D Settings
      - DSSysVar
      - Working Folder
      - Data Shortcuts Project Folder
      - Survey Database name, if any
    - A brief explanation of data including:
      - Data type CSAC, CTDC, MTLS, aerial LiDAR, or photo data
      - Final Surface name(s)
      - EG\_Linework\_Points drawing name that should be used by the design team
    - A listing with paths to additional delivered files including:
      - Shape files
      - KML/KMZ files
      - Attached images/documents
    - Links to videos showing how design can use CSAC data, if applicable
      - <u>http://cadd.dot.ca.gov/manuals/civil3d/videos/CSAC\_New%20SurveyD</u> <u>eliverable.mp4</u>
      - <u>http://cadd.dot.ca.gov/manuals/civil3d/videos/CSAC\_PhotoQuery.mp4</u>
    - Tables listing the features and the associated Civil 3D Styles can be found in Appendix A7 in this manual.
  - Retain a copy of the ReadMe for Surveys
    - Additionally, note the Field Survey data files' names and directory folder paths

### Workflow Checklist

The following is a general workflow outline for creating and delivering topo data. Exercises demonstrating the general workflows described in this section can be

found in the in the Caltrans internal training manual "CSAC Data and Surface *Processing*" found on the OLS FTP site:

<u>ftp://cadd.dot.ca.gov/OLS\_FTP/Software/Civil3D/Training/Survey\_Data\_Processing\_DTM/Civil\_3D\_2016/CSAC\_Data\_and\_Surface\_Processing\_C3D-2016.pdf</u>

#### Determine where the project will be prepared

22) Does the Civil 3D project folder structure exist on the server?

- □ **Yes** Create all the drawings, and Survey Database if working with TSS data, in the project folder structure on the server.
- □ No Create a local project folder structure. Save all the drawings, and Survey Database if working with TSS data, in the local project folder structure and copy the drawings to the server when the project folder structure is available.

# Create the Individual Topo Data Drawings and Surfaces

23) Survey Data from CSAC Shape files

Copy the Trimble files to the Civil 3D project folder

Copy the TBC project's *.shp* folder, the images captured in the field, and the TBC project's KML/KMZ file from the TBC Project folder into the Civil 3D project folders.
 For detailed instructions refer to Exercise 5-1 in Chapter 5.

Does the CSAC project data exist in a Civil 3D drawing?

- □ **Yes** Edits were made to the CSAC data in TBC. The data was re-imported into an existing Civil 3D topo data drawing.
  - Copy the modified Trimble files to the existing TBC project's *.shp* folder in the Civil 3D project folders.
- □ No The CSAC data is new. The data needs to be imported into a new Civil 3D topo data drawing.
  - Copy the new TBC project's *.shp* folder and associated files to the Civil 3D project folders.

In Civil 3D

- □ Create a new survey data Civil 3D drawing
  - Use the Ct\_2016\_Topo\_Surveys\_MTLS template with *Topographic Data* version, *Surveys & MTLS data v11* or higher
- □ Import the Shape Files
  - Toolspace > Toolbox tab > Civil 3D SHP and Table Tools > SHP Import/Export > Import SHP Survey Data (IMPORTSHPSURVEYDATA)

-OR-

- Ribbon > Home tab > Palettes panel > Tool Palettes button > CT Topo palette > Surveys tab > Import SHP Survey Data (IMPORTSHPSURVEYDATA)
  - SHP settings: CSAC FCL files from TBC
  - Import Event Name: <TBC Project name> or <TBC Project name modified data>
- □ Turn On/Off Line Points
  - Toolspace ➤ Prospector tab ➤ right-click Point Groups ➤ Properties
  - Move CSAC Line Points display OFF or Line Points display OFF to the top of the list
- □ View object attributes
  - Toolspace > Toolbox tab > Civil 3D SHP and Table Tools > Property Set Visibility > Display Property Sets in Tooltips > hover over the object to see attribute information

-OR-

- Select the object > right-click > **Properties** > to see attribute information
- □ Check for non-standard objects
  - Toolspace ➤ Prospector tab ➤ Feature Lines or Points➤ click on the column header Style to sort the list in alphabetical order, placing \_Non-Standard at the top of the list
- View associated images and documents
  - Toolspace ➤ Toolbox tab ➤ Civil 3D SHP and Table Tools ➤ SHP Import/Export ➤ SHP File Links On ➤ the file link icon is displayed as the cursor hovers over an object that has an attached image ➤ press [Ctrl] and click on the object ➤ to view the associated image or document
- □ Query objects
  - Toolspace > Toolbox tab > Civil 3D SHP and Table Tools > SHP Import/Export > SHP Palette
    - In IMPORTSHPPALETTE palette,
      - <drawing name> > Queries > right-click the desired object(s) in the appropriate query > select the desired action Zoom to..., Pan To..., Select, or Refresh

-OR-

• <drawing name> > right-click Queries > New Query, Import Queries, or Export Queries

-OR-

- <drawing name> > Queries > right-click > Edit Query or Export
  Query
- □ Lock objects
  - Toolspace > Prospector tab > Drawing name > Points > Point Groups > right-click the Point Group to be locked > Lock Points

-OR-

• Select one or more COGO Points ➤ right-click ➤ Lock Points

-OR-

- □ Create the survey data Surface
- □ Load the Breaklines and spot elevation Points manually (there is also a macro available to do these steps)
  - Add the Breaklines to the Surface
    - Select the Feature Lines & Polylines for the desired Surface type > Toolspace > Toolbox tab > Civil 3D SHP and Table Tools > SHP Import/Export > SHP Palette
      - In the IMPORTSHPPALETTE palette > <drawing name> > Queries > right-click <the Surface type> Lines > Select
    - Add the lines to the Surface > Toolspace > Prospector tab > <drawing name> > Surfaces > <Surface name> > Definition > right-click Breaklines > Add...
  - Add the AutoCAD Points (spot Points) to the Surface
    - Select the AutoCAD Points for the desired Surface type > Toolspace > Toolbox tab > Civil 3D SHP and Table Tools > SHP Import/Export > SHP Palette
      - In the IMPORTSHPPALETTE palette > <drawing name> > Queries > right-click <the Surface type> Spot Points > Select
    - Group the selected points > key-in **GROUP** > press [Enter]
    - Add the points to the Surface > Toolspace > Prospector tab > <drawing name> > Surfaces > <Surface name> > Definition > right-click Drawing Objects > Add...
      - In the Add Points From Drawing Objects dialog box,

- Object type: Points
- Select one of the grouped Points in the drawing and press [Enter]
- End the Point grouping > select one of the grouped Points > key-in UNGROUP > press [Enter]

-OR-

- □ Load the Breaklines and spot elevation Points using the macro
  - Launch the macro
    - Ribbon > Home tab > Palettes panel > Tool Palettes button > CT Topo palette > Surveys tab > Select & load CSAC data into a Surface
- □ Add the COGO Points to the Surface
  - Update the Point Groups
  - Add the desired Point Group to the Surface > Toolspace > Prospector tab
    > <drawing name> > Surfaces > <Surface name> > Definition > right-click
    Point Groups > Add...
    - Select CSAC <Surface type> Points or <Surface type> Points if the CSAC Point Group doesn't exist
- □ Check the Surface
- □ Turn Off the CSAC Line Points
- □ Delete extraneous triangles
- □ Set the Surface style to \_*No Display*
- Set the Data Shortcuts Working Folder for the *Surveys* lower- tiered shortcut level
  - Select the Surveys folder within the project folder structure
  - Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
- □ Save the drawing
- □ Create a Data Shortcut to the Surface

## 24) Survey Data from a TSS file

The TSS specific deliverables are being replaced by CSAC deliverables in newer Civil 3D 2016 drawings. For more information regarding the use of TSS files, Survey Databases, Survey Points, and Survey Figures, see the Caltrans internal training manual "*Civil 3D 2016 Survey Data Processing and DTM*" found on the OLS FTP site,

<u>ftp://cadd.dot.ca.gov/OLS\_FTP/Software/Civil3D/Training/Survey\_Data\_Processing\_DT</u> M/Civil 3D 2016/Civil 3D 2016-Survey\_Data\_Processing\_and\_DTM.pdf

In Civil 3D

- □ Create a new survey data Civil 3D drawing
  - Set the Ct Launcher Profile to Ct\_Topography\_Surveys\_MTLS
  - Use the Ct\_2016\_Topo\_Surveys\_MTLS template
  - Save drawing as <survey database name>\_<import event name or SR#>.dwg
- □ Create a Survey Database
  - Set the Survey Database Working Folder
  - Select the \_Survey\_Database folder within the project folder structure
  - Create a new Survey Database
  - Set the database units & coordinate system
- □ Import the TSS file
- □ Insert the survey data into the drawing
  - Insert the Survey Points and Survey Figures into the drawing
  - Remove the Survey Figure Points from the drawing
- □ Create the survey data Surface
- □ Add the Breaklines to the Surface
  - Create Breaklines from the Survey Figures in the database
- □ Add the Points to the Surface
  - Update the Point Groups
  - Add the *Ground Points*, Point Groups to the Surface
- □ Check & correct any errors with the survey data and the Surface
- □ Delete extraneous triangles
- □ Set the Surface style to \_*No Display*
- Set the Data Shortcuts Working Folder for the *Surveys* lower- tiered shortcut level
  - Select the *Surveys* folder within the project folder structure

### Caltrans

- Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
- □ Save the drawing
- □ Create a Data Shortcut to the Surface

### Create the EG Surface Drawing and Existing Ground Surface

25) EG\_Surface.dwg & Existing\_Ground Surface

In Civil 3D

- □ Create the Civil 3D drawing, <project name>\_EG\_Surface.dwg
- □ Create the Surface, *Existing\_Ground*
- Set the Data Shortcuts Working Folder for the *Surveys* lower- tiered shortcut level
  - Select the Surveys folder within the project folder structure
  - Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
- □ Create a Data Reference to all the individual Surfaces
  - Set the Surface styles to \_*Border Only*
- □ Paste the data referenced Surfaces into the *Existing\_Ground* Surface in the following order:
  - Older &/or less accurate Surface(s)
  - Newer &/or more accurate Surface(s)
- □ Check & correct any errors with the *Existing\_Ground* Surface
  - Add underlying data in hole areas created with certain types of overlapping Surfaces.
  - When adjoining Surfaces do not overlap, add a breakline to the less accurate or older Surface that is created from the boundary of the more accurate or newer Surface
- □ Set the Surface styles
  - All the individual Surface styles should be \_*No Display*
  - The *Existing\_Ground* Surface should be *\_Border* Only
- Set the Data Shortcuts Working Folder for the *Projects* upper- tiered shortcut level
  - Select the *Projects* folder that the project folder structure resides in
  - Confirm that the Data Shortcuts Project Folder is set to <project name>
- □ Associate the current Data Shortcuts Project Folder to the drawing
- □ Save the drawing
- □ Create a Data Shortcut to the *Existing\_Ground* Surface

### Create the EG Linework Points Drawing

- 26) EG\_Linework\_Points.dwg
- In Civil 3D
- □ Create the <project name>-*EG\_Linework\_Points.dwg* drawing in the \*Deliverables*\folder
- □ XREF all the photo & survey data drawing(s)
  - Attach the drawings with the following settings:
    - **Reference Type**: Attachment
    - **Path type**: *Relative path*
  - Attach the drawings in the following order:
    - Older &/or less accurate Surface(s)
    - Newer &/or more accurate Surface(s)
- □ Use the border(s) of the Surface(s) in the overlying referenced drawing to mask the underlying referenced drawing(s)
  - For a single masking per XREF use XCLIP
    - Set the Data Shortcuts Working Folder for the Surveys lower-tiered shortcut level
      - Select the *Surveys* folder within the project folder structure
      - Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
    - Create a Data Reference to the overlying Surface using the \_Border style
    - Extract the Surface border
    - Delete the data referenced Surface from the drawing. Do NOT delete/remove the Surface from the Data Shortcuts node of the Prospector.
    - Convert the Surface border 3D Polylines to closed 2D Polylines
    - Key-in XCLIP
    - Select the underlying XREF and press [Enter]
    - Key-in N [Enter] for New boundary
    - Key-in I [Enter] for Invert, a hole boundary
    - Key-in **S** [Enter] for Select polyline
    - Select the closed 2D Polyline
    - Press [Enter] to exit the command
  - If multiple border areas need to be masked in the same XREF, merge the multiple areas into a single shape to be used with XCLIP

# Create the Topo DGN File(s)

- □ Open each of the survey data drawing(s)
  - Export Civil 3D Drawing to a DGN file of each drawing
- □ Open the EG\_Surface.dwg. To display the Existing\_Ground Surface contours
  - Style = <the appropriate contour style based on the data requirements>
  - Use the Caltrans tool to Label Contours (CTLABLCONTOUR)
  - Export Civil 3D Drawing to a DGN file

### Note

If problems are experienced when exporting the *Existing\_Ground* contours from the *EG\_Surface* drawing to a DGN file, create a data reference to the *Existing\_Ground* Surface in another drawing.

# Deliver the data

- 27) Were the drawings and Survey Database created within the project folder structure on the server?
- □ Yes
  - Go to Wrap up the project
- □ No
  - Go to Transfer the project to the server

# Transfer the project to the server

- 28) Copy all the local drawings to the project folder structure on the server
- □ Save and close all the local drawings and database(s)
- □ Close Civil 3D
- □ Copy the photo & survey data drawing(s) to the appropriate folders on the server
- □ Copy the topo DGN files to the \*Deliverables*\ folder on the server
- □ Copy the *EG\_Surface* drawing and the *EG\_Linework\_Points* drawing to the \*Deliverables*\ folder on the server
- 29) Re-create the Data Shortcuts on the server
- □ Set the *DSSysVar*
- □ Open each of the photo & survey data drawing(s) and do the following:
  - Rebuild the Surface if necessary

- Set the Data Shortcuts Working Folder for the Surveys lower-tiered shortcut level
  - Select the *Surveys* folder within the project folder structure on the server
  - Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
  - Associate the drawing to the lower-tiered Surveys shortcut level project
- Save the drawing
- Create a Data Shortcut to the Surface
- □ Open the *EG\_Surface* drawing and do the following:
  - Set the Data Shortcuts Working Folder for the Surveys lower- tiered shortcut level
    - Select the *Surveys* folder within the project folder structure on the server
    - Confirm that the Data Shortcuts Project Folder is set to C3D\_<project name>
    - Associate the drawing to the lower-tiered Surveys shortcut level project
  - Synchronize all the previously data referenced Surface(s)
    - In the Toolspace > Prospector tab > EG\_Surface > Surfaces > rightclick each data referenced Surface(s) > Synchronize
  - Rebuild the *Existing\_Ground* Surface
  - Save the drawing
  - Set the Data Shortcuts Working Folder for the *Projects* upper- tiered shortcut level
    - Select the *Projects* folder that the project folder structure resides in on the server
    - Confirm that the Data Shortcuts Project Folder is set to <project name>
    - Associate the current Data Shortcuts Project Folder to the drawing
  - Save the drawing
  - Create a Data Shortcut to the *Existing\_Ground* Surface
- 30) Copy the local database(s) to the project folder structure on the server
- □ Copy the Survey Database folder(s) and all files in the folder to the \\_*Survey\_Database*\ folder on the server

# Wrap up the project

- 31) Verify that all the Data Shortcuts work properly
- □ Save and close each of the individual topo data drawing(s)

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- □ In the *EG\_Surface* drawing do the following:
  - o If necessary, synchronize all the data referenced Surface(s)
    - In the Toolspace > Prospector tab > EG\_Surface > Surfaces > rightclick each data referenced Surface(s) > Synchronize
  - Rebuild the *Existing\_Ground* Surface
  - o Save and close the drawing
- □ On a different computer that was not used to deliver the project
  - Verify that a data reference to the *Existing\_Ground* Surface can be made
- 32) Verify that all the XREFs work properly
- □ In the *EG\_Linework\_Points* drawing do the following:
  - If necessary, reload each of the photo & survey data drawing(s)
  - o In the External References palette,
    - Verify that the Saved Path for all referenced drawings is a relative path and does not reference a drive letter
  - Save and close the drawing
- 33) Prepare and send the Readme document for the Design Group

Identify the following:

### Project information

- □ Project Units
- Horizontal and Vertical Datums
- Data Quality
  - o Design quality
  - o Study quality
- Data Type
  - o CSAC
  - o CTDC
  - o MTLS
  - Aerial LiDAR
  - o Photo

Civil 3D Settings

- □ The location that the *DSSysVar* should be set to, i.e.
  - o \\st01caddm02\CADD\
- □ The Project's Working Folder, i.e.

- o %DSSysVar%\PROJ\01\
- □ The Data Shortcut's Project Folder, i.e.
  - <project name>

Civil 3D Deliverables

- Data Shortcuts:
  - **Surfaces**: include all the Surface names, i.e.
    - <project name>\_Existing\_Ground
    - <project name>\_Bridge\_Decks
  - Alignments: include all the Alignment names if the district Surveys office provides the project's existing alignments
- □ Linework & Points drawing(s):
  - File Location: \<project folder name>\Surveys\C3D\_<project folder>\Deliverables\
  - File name: include the linework and point DWG name(s), i.e.
    - <project\_name>\_EG\_Linework\_Points.dwg
    - <survey\_database\_name>-EG\_Figure\_Points.dwg
- □ Topo Basemap drawings:
  - File Location: \<project folder name>\Surveys\C3D\_<project folder>\Deliverables\
  - **File name:** include the topo DGN file name(s), i.e.
    - <topo data>.dgn
    - 1220-06\_Topo\_Sheet\_01.dgn
    - <project name>\_<Surface\_name>-Contours.dgn
- □ KML/KMZ Files:
  - File Location: \<project folder name>\Surveys\C3D\_<project folder>\Deliverables\KML\
  - File name: include the TBC project named KML/KMZ file(s), i.e.
    - <TBC project name>.KMZ
- □ Shape Files:
  - File Location: \<project folder name>\Surveys\C3D\_<project folder>\Field\_Surveys\Shape\_Files\
  - **Sub-folder name:** include the TBC project named Shape file folder(s), i.e.
    - I<TBC project name>.shp\
- □ Images and Documents
  - File Location: \<project folder name>\Surveys\C3D\_<project folder>\Field\_Surveys\Shape\_Files\<TBC project name>.shp\

- **Sub-folder(s) name:** include the names of the Access project named image folder(s) and other images and documents folder, i.e.
  - \<Access JOB name> Files\
  - \Files\
- □ Survey Databases:
  - Database Location: \<project folder name>\Surveys\C3D\_<project folder>\\_Survey Databases\
  - **Database name(s):** include the survey database name(s)

#### CSAC Videos

- □ Links to videos showing how design can use CSAC data
  - <u>http://cadd.dot.ca.gov/manuals/civil3d/videos/CSAC\_New%20SurveyDelivera</u> <u>ble.mp4</u>
  - o http://cadd.dot.ca.gov/manuals/civil3d/videos/CSAC PhotoQuery.mp4

### CSAC Features & Styles Documentation

 Listings of the features and the associated Civil 3D Styles are found in Appendix A7 in this manual.

# E) Horizontal Alignments

Horizontal alignments can be simple graphical elements depicting the approximate location of an object or they can tightly control the location of an object, i.e. the layout line of a retaining wall. When a horizontal element is a constraint in the design of a facility and will be used in the construction stakeout process, it should be developed within the roadway design software with the appropriate state plane coordinate system. This ensures the ability to generate traverse reports and the ability to transfer the data electronically.

This section distinguishes between two different types of horizontal alignments, roadway alignments and other alignments, in order to address specific concerns related to each.

1) Roadway Alignments

A horizontal alignment is the mathematical definition of the horizontal path of a highway or roadway. For most roadway alignments at Caltrans this consists of straight-line sections that connect tangentially to circular curve sections. The roadway alignment is directional in that a stationing or length is recorded from the beginning of the alignment to the end. Surveyors and engineers build the roadway using these alignments. Further discussion and Caltrans design policy on horizontal alignments can be found in Chapter 200 of the *Highway Design Manual* (HDM) <a href="https://dot.ca.gov/-/media/dot-media/programs/design/documents/hdm-complete-14dec2018.pdf#page=143">https://dot.ca.gov/-/media/dot-media/programs/design/documents/hdm-complete-14dec2018.pdf#page=143</a>

- a) Best Practices & things to think about
  - i) Existing and New Alignments
    - Alignments are the backbone of contract plans as well as other record maps, i.e. Records of Surveys that are recorded at the County Offices. For this reason, it is important to make sure that the alignments are as accurate as possible and meet the following minimum criteria:
      - Tangency at least to the nearest tenth of a second, 00.0"
      - Coincidence between compound and reversing curves to the nearest hundredth of a foot, 0.01'
    - When you are creating the alignment in Civil 3D, the software will flag elements of your alignment and profile that do not meet requirements. Whether the alignment is new or existing, make sure to set the following items in the Design Criteria tab in Civil 3D.

- (a) Design speed (HDM section 101.1,2).
- (b) Highway type (HDM section 60.3) and turn on the design checksets.
- (c) Set the design criteria file for Civil 3D.
- (d) Select the maximum superelevation rate for the highway.
- ii) Existing Alignments
  - Consult with the District Surveys office for existing alignments in electronic format.
  - Research as-builts for existing alignments. If conversion is needed for units or datum, seek assistance from the District Survey office.
  - Develop alignment from a combination of as-builts and project control.
  - Priority of project control:
    - (a) Original project control, documented and archived in the District Survey office
    - (b) Centerline monuments, documented and archived in the District Surveys office (lead and tacks or tags, chiseled crosses, etc.)
    - (c) Reference ties to centerline
    - (d) Right of way monuments and found points with ties to centerline
    - (e) Field collected survey data
  - Priority of field collected survey data:
    - (a) Concrete features (edge of PCC, back of sidewalk, lip, etc.)
    - (b) Asphalt features (edge of pavement)
    - (c) Dirt or stripe features data of this type should only be used when project control and other field survey data is unavailable.
- iii) New Alignments
  - i) Follow requirements as specified in *Highway Design Manual*, Chapter 200, Topic 203 Horizontal Alignment
- iv) Naming Convention Recommendations
  - The alignment name should include the type of roadway, interstate, state route, county route, etc., and the route number. For example, I15 for Interstate 15 and SR20 for state route 20
  - At intersections,
    - (a) The alignment name of the street should include the entire street name, if possible, or use the first three or more letters followed by 1. For example, MAPLE1 for Maple Street.
    - (b) The alignment name of the ramps should include the first two letters of the street name and the quadrant number, as shown in the diagram.

## Caltrans



Figure 56 Multiple ramp alignments with names

# Format & Attributes

Make sure to use the alignment styles from the Caltrans template file along with the corresponding alignment labels so the program will automatically be assigning the correct graphics attributes to your alignment and stationing. There are two styles for each type of alignment style Production and [Analysis]. Production style is a style to use when the design is finished, and you are ready to print the plans. Analysis styles include design checks, use different colors for different parts of the alignment and show more information about the alignment not needed on the plans.

Alignment Type	Linestyle	Weight	Color	Level
MAIN	0	3	0	align_MAIN
FRONTAGE	0	2	14	align_FRONTAGE
LOCAL-ST	0	2	10	align_LOCAL-ST
RAMP	0	2	13	align_RAMP
ROUNDABOUT	0	2	14	align_ROUNDABOUT
SECONDARY-HWY	0	2	8	align_SECONDARY- HWY
ТЕМР	0	2	12	align_TEMP

Linear Feature Attributes Table

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# Stationing and Annotation Attributes Table

The text and tic sizes are based on a plotting scale of 1" = 50' (Caltrans Base Scale). It is important to place text at the appropriate CADD size within the drawing based on the intended scale of the plotted plan sheet. For any plot scale, the text will appear 0.14 inches when plotted on a 22" x 34" plan sheet.

All text annotation for alignments will use the font CTFont1 with a text size of 7' and the tic size shall be 7' for a 1" = 50' scale drawing.

The tic intervals for stationing will be every 100'. The whole number value of the station will be annotated without the "+00" portion of the station every 500'. The annotated value of the other 100' intervals will be the single hundred value for that station.

For example, with a station range of 265+00 to 271+00 the annotation would be as follows:



Figure 57 Alignment annotation

### Alignment TICS and Annotation Attributes Table

Feature	Weight	Color	Level
MAIN	1	0	align_MAIN-anno
FRONTAGE	1	14	align_FRONTAGE-anno
LOCAL-ST	1	10	align_LOCAL-ST-anno
RAMP	1	13	align_RAMP-anno
ROUNDABOUT	1	14	align_ROUNDABOUT-anno
SECONDARY-HWY	1	8	align_SECONDARY-HWY-anno
ТЕМР	1	12	align_TEMP-anno

### 2) Other Alignments

Other alignments represent all other linear elements that are an integral part of the design and construction stakeout processes. Typical elements include, but are not limited to:

- Flow line of curb returns and islands
- Pullouts that are not parallel with roadway alignments
- Fence lines not controlled by right of way
- Right of Way

Right of way requirements are initially developed early in the design process and are further refined by the surveyor performing the right of way engineering. These elements are used to acquire and document property; the roadway design software should therefore be used for the development and subsequent electronic transfer of this data.

• Structural Systems

Retaining walls and sound walls are typical structural systems. It is best to develop the layout lines of these systems in the roadway design software rather than creating a simple graphic element. These designed objects are needed during the design and construction stakeout processes.

• Bridge Systems

Bridge foundation plans typically include layout lines of wing walls, abutments, and bents. These plans, in a geographically correct DGN file, are useful during the design and construction stakeout processes.

• Drainage Systems

Typical drainage systems are pipes, culverts, and in-stream and channel facilities. It is best to develop the layout lines of these systems in the roadway design software rather than creating a simple graphic element. These designed objects are needed during the design and construction stakeout processes.

Develop plan views for drainage systems showing drainage features, manholes and drainage inlets.

- a) Best Practices & things to think about
  - i) The roadway design software should be used for the development and subsequent electronic transfer of this data when the alignment is not parallel with or controlled by a roadway alignment.
  - ii) When the alignment is parallel with and/or concentric to a roadway alignment, the same concerns about tangency and coincidence should be respected.
    - Tangency to the nearest tenth of a second, 00.0"
    - Coincidence between compound and reversing curves to the nearest hundredth of a foot, 0.01'
  - iii) If it is not feasible to develop the alignment with the roadway design software, then a layout of the graphical elements must be provided in a geographically correct DGN file.
  - iv) When stationing is applied to an alignment of a structural system, the stationing pattern should reflect the structures numbering system, i.e. Retaining Wall 7 starts at 70+00.
- b) Format & Attributes.

Always try to apply the appropriate style to any other alignment you may have. Some of these styles may also have Label styles as well, like retaining walls and drainage systems and others may have no labels, like edge of travelled way, edge of pavement, etc.

See Sections 2.4, 2.6, 2.7, and 2.8 for information about the attributes and annotation associated with linear elements.

# F) Vertical Alignments

The vertical alignment is the mathematical definition of the vertical path of a horizontal alignment of the highway or roadway. The vertical alignment is always associated with a horizontal alignment and consists of tangent sections (grades) that connect tangentially to parabolic vertical curve sections. It is defined by vertical points of intersection (VPI's) that are in turn defined by the horizontal alignment stationing and elevation. The vertical alignment is drawn in profile view. Requirements for vertical curves are given in terms of minimum curve length and are based on design speed, difference in grade, and adequate sight distance. The vertical alignment is needed by surveyors to set the elevation of the roadway. Further discussion and Caltrans design policy on vertical alignments can be found in Chapter 200 of the *Highway Design Manual*,

https://dot.ca.gov/-/media/dot-media/programs/design/documents/hdm-complete-14dec2018.pdf#page=143

- 1) Roadway Vertical Alignments (Profile)
  - a) Best Practices & things to think about
    - Naming Convention Recommendations
      - i) Each vertical alignment is intrinsically tied to a horizontal alignment through assigned stationing. The name of the vertical alignment should be the same as the name of the alignment to which it is associated. For example, SR20 for the name of the vertical alignment to match the horizontal alignment name of SR20.
    - Existing Vertical Alignments (Terrain Profiles)
      - i) In certain rehabilitation projects it is acceptable to use existing ground elevations as the points of intersection (PI's) for the vertical alignment when no vertical curve correction is needed. In this case it is best to use the original ground elevation from each cross section and station where a template is to be applied.
      - ii) When using existing ground data as the vertical alignment make sure to check the profiles of the finished grade at the centerline and edge of traveled way to assure a smooth profile for traffic. Avoid small series of dips by adding a leveling course.
    - New Vertical Alignments (Design Profiles)
      - i) Follow requirements as specified in *Highway Design Manual*, Chapter 200, Topic 204 Grade
      - ii) When you are creating the alignment in Civil 3D, the software will flag elements of your alignment and profile that do not meet requirements.

Whether the alignment is new or existing, make sure to set the following items in the Design Criteria tab in Civil 3D.

- (a) Design speed (HDM section 101.1,2).
- (b) Highway type (HDM section 60.3) and turn on the design checksets.
- (c) Set the design criteria file for Civil 3D.
- (d) Select the maximum superelevation rate for the highway.
- iii) Use customized tables developed from the HDM with roadway design software to assist in determining minimum vertical curve lengths.
- iv) When the alignment is complete make sure to check that the alignment is, at least, within minimum and maximum sustained grades and using the minimum curve length specified for the design speed.
- v) Offset alignments are not stationed, nor are they typically shown on the profile sheet. However, if it were a split roadway, the left and right profiles would use the centerline stationing with a callout, i.e. 30' left of SR20.
- 2) Other Vertical Alignments

Other vertical alignments represent all other vertical elements that are an integral part of the design and construction stakeout processes. Typical elements include, but are not limited to:

• Drainage Systems

Typical drainage systems are pipes, culverts, and in-stream and channel facilities.

- Barriers
- a) Best Practices & things to think about
  - Drainage Profiles
    - i) Develop profiles for all drainage systems that will be modified or added showing existing ground, proposed ground and the drainage feature.
    - ii) Profile annotation includes the roadway profile grade station, skew angle, if any, station and offset to end points, bends, risers, drain inlets, and wing walls. For larger lengths of pipe a centerline bearing is beneficial.
  - Barrier Profiles
    - i) It is recommended that a profile of the grade at the base of the barrier be created and reviewed to ensure that the top of the barrier is consistent with the edge of traveled way and will be constructed without dips. If necessary, i.e. at drainage swales, corrections should be made on the grade.

## Format & Attributes

As with alignments, use the appropriate profile style for your design and original ground profiles and profile label sets. There are only two styles for design profiles; Finish Grade [Production] and Finish Grade [Analysis]

Object type	Linestyle	Weight	Color	Level
PROFILE-FINISH	0	1	0	rd_PROFILE-FINISH
PROFILE-FINISH-ANNO	0	1	0	rd_PROFILE-FINISH- anno
PROFILE-OG	3	1	12	rd_PROFILE-OG
PROFILE-OG-ANNO	0	1	12	rd_PROFILE-OG-anno

Roadway Profile Attributes and Annotation Table

# Drainage System Profile Attributes Table

Object type	Linestyle	Weight	Color	Level
DRAINAGE PROFILE	0	1	1	df_PROFILE
DRAINAGE PROFILE-ANNO				df_PROFILE-anno
EXIST DR PROFILE	3	1	1	df_PROFILE-dither
EXIST DR PROFILE-ANNO	0	1	1	df_PROFILE-dither

Stationing and Annotation Attributes Table For Profiles

The text is based on a plotting scale of  $1^{"} = 50'$  (Caltrans Base Scale). It is important to place text at the appropriate CADD size within the drawing based on the intended scale of the plotted plan sheet. For any plot scale, the text will appear 0.14 inches when plotted on a 22" x 34" plan sheet.

All text annotation for vertical alignments will use the font CTFont1 and have a text size of 7' for a 1" = 50' scale drawing.

# G) Superelevation and Cross Slope

Through horizontal curved sections, the cross slope of the roadbed is sloped to counter the effects of radial forces developed as the vehicle travels through the curve. The cross slope of the roadbed through curved sections is referred to as a "superelevated" sections. The superelevation diagram is necessary for the construction engineers and surveyors to set the cross slope of the roadbed.

Caltrans has developed a table that prescribes the superelevation rates based on roadway type (design speed) and horizontal curve radius. This table is found in the HDM, Superelevation Rates Table 202.2.

Along tangent sections, the roadway cross section is sloped at 2% away from the centerline to provide for drainage of the surface water. This is called a normal crown section. The change from a cross slope of the roadbed in a tangent section to a superelevated section in a curve requires a transition length. The rates at which the cross slopes can change per distance along the roadway can be found in the HDM. Factors determining the transition lengths are the total change in cross slope and the width of the roadway, The Superelevation Transition and Runoff Lengths is found in the HDM, Figure 202.5A. Caltrans has developed superlevation roadway design standards based on HDM, Topic 202 that can aid in the development of superelevation definitions meeting department standards.

- 1) Best Practices & things to think about
  - a) Existing Cross Slopes
    - Roadway design software allows the engineer to sample existing cross slopes and build new roadway elements, such as lanes and shoulders, to match existing cross slopes. In these cases, it is important for the engineer to consider the following:
      - Monitor the longitudinal profile of the outside edge of that element to make sure it remains smooth and that the cross slopes fluctuate at a constant rate of change between stations.
      - Make sure that the slope of the roadbed is within allowable limits as found in the HDM.
      - Keep in mind where drainage inlets and low spots will be located.
  - b) New or Corrected Cross Slope and Superelevation
    - i) Use the roadway design software to generate superelevation definitions based on tables defined in the HDM.
      - When you are creating the alignment in Civil 3D, make sure to set the design speed and the maximum super elevation rate for the highway in

the Design Criteria tab in Civil 3D. The software has features that will help the engineer design a superelevation table for a given alignment.

- Take the time to carefully review the superelevation definitions, transition values, and cross slope standards against HDM Topic 202 – Superelevation, Topic 301 – Traveled Way standards and Topic 302 – Shoulder Standards.
- iii) In cases where the roadway consists of three or more lanes sloped in the same direction, refer to the HDM Topic 833 – Roadway Cross Sections.
- 2) Format & Attributes for Superelevation Diagram

The superelevation diagram is drawn on the profile sheet above the profile or separately on a superelevation sheet.

Object	Linestyle	Weight	Color	Level
LEFT ES	0	1	2	rd_SUPERELEVATION
RIGHT ES	0	1	3	rd_SUPERELEVATION
LEFT ETW	0	1	10	rd_SUPERELEVATION
RIGHT ETW	0	1	11	rd_SUPERELEVATION
AXIS/ROTATION	pp-axis	3	0	rd_SUPERELEVATION
SUPER-ANNO	0	1	0	rd_SUPERELEVATION- ANNO

### Superelevation Attributes Table

Annotation Attributes Table

The text is based on a plotting scale of  $1^{"} = 50^{"}$  (Caltrans Base Scale). It is important to place text at the appropriate CADD size within the drawing based on the intended scale of the plotted plan sheet. For any plot scale, the text will appear 0.14 inches when plotted on a 22" x 34" plan sheet.

All text annotation for superelevation diagram will use the font CTFont1 and have a text size of 7' for a 1" = 50' scale drawing.

# H) Alternate Design Techniques

While cross section design methods lend themselves well for roadway design, site design or three-dimensional (3D) design techniques may be useful for other types of civil facilities. Site design techniques are available that will let the user define the elevation along the path of a shape, specify parameters of cut/fill slopes, and work with existing terrain surfaces to extend slopes from the path of the shape. The result is a set of points and breaklines that are used to create a proposed surface. A combination of cross sections, alignments, and profiles can be created from the resulting surface for construction staking purposes. Examples of facilities that can be designed with these techniques include:

- Bridge fill cone areas
- Intersections with multiple layout lines that require more detailed information than slope stake listings
- Building pads
- Retention ponds
- Berms, dikes & levees
- Stockpiles & borrow pits
- General landscaping and contour grading
- Parks
- Parking lots
- Pedestrian Ramps
- 1) Best Practices & things to think about
  - When designing a facility with site design techniques the engineer is better able to visualize the finished product, generate accurate quantities, and produce contour grading plans.
  - Site design techniques involve the creation of breaklines and points from a alignment with an associated profile or fixed elevation, from survey figures or feature lines using specified slopes that extend to an existing surface or a defined elevation.

# I) Digital Design Model (DDM) and Design Contours

Engineers are familiar with digital terrain models (DTM's) that are used to define existing topography and three-dimensional mapping of existing terrain. There is now the capability to construct, from design cross sections and site design tools, digital design models (DDM) that represent a proposed construction model of the design project. In addition to creating design contours, DDM's can be used to view the design for completeness and accuracy; it can also be used for "stakeless construction".

- 1) Best Practices & things to think about
  - Check the catch lines carefully as this represents the point where the DDM and DTM surfaces elevations are the same. If they are not, there may be a "bust" in the design or original ground.
  - Use only the finished surfaces from your design cross sections for creating your DDM.
  - At-grade intersections will require that the design surface for the main line serve as the original ground for the crossing road. Manual edits to the DDM will be necessary to add profiles of the returns in order to accurately represent the proposed surface at the intersection.
  - Have one DDM for the project that was created from the same design files that were used for the final cross section plots, slope stake listings, and earthwork volumes.
  - Do not create DDM's from extraneous or alternate alignments and design information.
- 2) Format & Attributes

Feature	Linestyle	Weight	Color	Level
DESIGN BREAKLINES	0	1	3	c3d_GRADING
DESIGN MINOR CONTOUR	0	0	5	rd_CONTOUR_MINOR
DESIGN MAJOR CONTOUR	0	2	5	rd_CONTOUR_MAJOR

Digital Design Model Attributes Table

# Annotation Attributes Table

The text is based on a plotting scale of  $1^{"} = 50^{"}$  (Caltrans Base Scale). It is important to place text at the appropriate CADD size within the drawing based on the intended scale of the plotted plan sheet. For any plot scale, the text will appear 0.14 inches when plotted on a 22" x 34" plan sheet.

All text annotation for DDM's and contours will use the font CTFont1 and have a text size of 7' for a 1" = 50' scale drawing.

Object type	Linestyle	Weight	Color	Level
DESIGN CONTOURS-ANNO	0	1	3	c3d_GRADING- anno
DESIGN BREAKLINES- ANNO	0	0	5	rd_CONTOUR-anno

# Digital Design Annotation Attributes Table

# J) Design Cross Sections

Design cross sections are developed from the roadway design software as it applies typical sections at specific station intervals within given station limits. The cut/fill and roadbed slopes will change as the horizontal and vertical alignment, super elevation, and existing ground changes from station to station.

Cross sections are an integral part of the design and construction staking processes. They are needed by the engineer to help determine quantities of earthwork, structural roadway material, and right of way impacts or requirements. Surveyors and construction engineers utilize the cross sections and resulting slope stake listings throughout the construction of the project.

In Civil 3D the design cross sections come from the corridor models. Engineers should build sample lines for cross sections only at stations where there is a cross section in the corridor model.

- 1) Best Practices & things to think about
  - Cross sections, slope stake listings and earthwork quantities should be produced concurrently and based on identical design data depicted on the contract plans.
  - Slope stake listings and earthwork quantities are a direct result of the design cross sections.
  - Cross sections should be available for use by others as noted in Appendix QQ of the *Project Development Procedures Manual* (PDPM).
  - A typical cross section shows the pavement structure within a specified station limit range whereas a design cross section shows the cross-slope and earthwork at a specific station.
  - Design cross sections will show finished grades, sub grades, original ground, existing and proposed edge of traveled way, existing and proposed edge of pavement, hinge point and catch point. Include offsets to right of way if the slope catch point is within 15' of the right of way.
  - Provide cross sections for interim construction phases when projects with stage construction require partial fills, cuts, or detour work.
  - Refrain from the use of "Pavement Plane Projection" or "Match Existing Cross Slope" when topographic data is available unless approved by the Project Surveyor.
  - When two alignments are converging or diverging, develop a match line between slopes until the catch lines become completely separated.

See images below.



Figure 58 Cross-section showing match line

Section A-A



Figure 59 Alignment with match line

 Identify shear key location and final grades for rock slope protection (RSP) areas other than culverts. The typical below depicts an RSP area that should be identified on the cross sections.



Figure 60 Typical Cross section showing Rock Slope Protection

- 2) Format & Attributes
  - The recommended scale for cross sections is 1" = 10' for rural areas and 1" = 5' for Urban areas or depending on the cross section width along the project. The scale will be consistent for a given alignment. The vertical and horizontal
scales should be the same. The sheet may be oriented in either landscape or portrait views but must remain consistent throughout the job.

 The cross-section sheets must include the alignment name and stationing, sheet number and total number of sheets, District-County-Route, Expenditure Authorization (EA), vertical and horizontal scale, date of cross section plots, and the statement "Design Study Only" or "For Earthwork Calculations Only". The alignment name and stationing must be shown for each cross section and sheets must be arranged in order of increasing station.

Feature	Linestyle	Weight	Color	Level
DESIGN SECTION ELEMENTS	0	1	0	rd_DESIGN-X- SECTION
EXISTING GROUND	4	1	4	c3d_SECTION
MAJOR GRID	1	2	2	border_GRID- MAJOR-dither
MINOR GRID	1	0	3	border_GRID- MINOR-dither
FRAME	0	0	0	border_SHEET
BORDER	0	3	0	border_SHEET
LEADERS	0	1	0	c3d_SECTION

Cross Section Linear Feature Attributes Table

Feature	Wt.	Color	Level	Font	Text Size *	Text
DIST-CO- RTE	1	0	border_WITHIN- Border-anno	CTFONT1	1.75	0.175
EA	1	0	border_WITHIN- Border-anno	CTFONT1	1.75	0.175
Post Mile	1	0	border_WITHIN- Border-anno	CTFONT1	1.75	0.175
Sheet No.	1	0	border_WITHIN- Border-anno	CTFONT1	1.4	0.14
Scale	1	0	border_WITHIN- Border-anno	CTFONT1	1.4	0.14
Sheet Title	1	0		BOLD	6.0	0.60
Date	1	0	border_WITHIN- Border-anno	CTFONT1	1.4	0.14
Labels	1	0	c3d_SECTION- VIEW-anno	CTFONT1	1.4	0.14
Station	1	0	border_SHEET	CTFONT1	2.0	0.20
Grid Labels	1	0	c3d_SECTION- VIEW-anno	CTFONT1	1.4	0.14
Alignment	1	0	border_WITHIN- Border-anno	BOLD	2.4	0.24

Cross Section Annotation Attributes Table

\* The text size is relative to the border sizing.

\*\* For any plot scale, the plotted text will appear as noted above on a 22" x 34" cross section sheet. The default text sizes in the macro will use these recommended text sizes.

- 3) Intervals
  - Must not be greater than 50' station intervals.
  - Must not be greater than 25' station intervals when conditions noted below require additional attention, or when required by the engineer and surveyor.
    - On curves with a radius equal to or less than 1000'
    - When the profile grade is less than 0.3%
    - When the project is flagged for machine guidance
    - When the cross sections will be used to create a DDM
  - Cross section shall be created at the following key stations:
    - Begin and end of curves
    - Begin and end of roadway tapers, including parabolic increments
    - Roadway pullouts, including all corners
    - Angle point locations
    - High and Low points on a vertical alignment
    - Drainage structures
    - Begin and end of super transitions
    - Guardrail flares at the end of flare
    - Begin and end of curb returns
    - Begin and end of approach slabs to bridges
    - Begin and end of bridge
    - Major sign locations
  - Tapered sections at on/off ramp connections shall be included in the main line cross sections up to and including the gore point (23'). The remaining portion of each ramp is to be listed separately.
  - Depending upon the project, additional cross sections may be required. The Project Surveyor and Engineer shall determine the need when the Survey File Checklist, Appendix QQ of the *Project Development Procedures Manual* (PDPM), is reviewed.
- 4) Key Points
  - Grade breaks necessary for staking or for creating the finish roadbed surfaces shall be annotated with offset from the mainline and elevation. See the following table for a listing of point codes.

Point Code	Description
BARR	Barrier – used for both faces.
BBARR	Bottom of Barrier – Used for both faces. If point is coincidental with ES then use BBARR or BARR.
BEN	Bench – Can be used for both edges
TOE	Bench – Toe of the slope
BKWALL	Back of wall
BKCURB *	Back of curb – typically not staked by Surveys but this provides clarifying information for Construction
BKSW	Back of sidewalk
CL	Centerline
CONFM	Conform
CONT	Contour grading lines
СР	Catch point – intersection of design surface with existing surface
CPC	Cath point in cut condition.
CPF	Catch point in fill condition.
EP	Edge of pavement – only for use with miscellaneous roadway sections including bike paths, rest stops, dike pads, etc.
ES	Edge of shoulder
ETW	Edge of traveled way
FL	Paved or unpaved flow line
FSW	Front of sidewalk
FWALL	Face of wall

Point Code	Description
HP	Hinge point – top of slopes within the design surface
LIP	Lip of the gutter
LL *	Lane line – also used for Pavement Structure change
LOL	Layout line for retaining, sound, or wing walls
ML	Match line
PG	Profile grade
R/W	Right of way
RSP	Rock Slope Protection
S/C	Saw cut line
SL *	String line – the plane of the traveled way
TBAR	Top of the Barrier – Used for both faces
TBERM	Top of berm
TCURB *	Top of curb – typically not staked by Surveys but this provides clarifying information for Construction
TDIKE *	Top of dike – typically not staked by Surveys but this provides clarifying information for Construction
TDITCH	Top of ditch
TOE	Toe – bottom of slopes within the design surface, not the catch point
TWALL	Top of wall

\* **On** request only

See Chapter 2 of the Plans Preparation Manual for acceptable format examples

# 3.7 Roadway Design Deliverables

#### A) Introduction

Civil 3D is the roadway design software used for surveying and roadway design work at Caltrans. The survey and roadway design portion of a project is to be completed by Caltrans employees using Civil 3D. Consultants may use any roadway design software of their choosing. However, submitted electronic files must be submitted in the appropriate electronic files per Caltrans standards.

MicroStation is and remains the standard drafting software for design presentation of all advertised project plan sheets. Caltrans uses MicroStation to design details, typical cross sections, title sheet and traffic handling, landscape and electrical systems sheets.

The purpose of this section is to specify the deliverables from design and the acceptable formats for these deliverables.

# B) <u>Roadway Alignments</u>

Roadway alignments are used to define the horizontal path of a highway or roadway. Most roadway alignments at Caltrans consist of straight-line sections that connect tangentially to circular curve sections. The roadway alignment is directional in that a stationing or length is recorded from the beginning of the alignment to the end. Surveyors and engineers build the roadway using these alignments. Further discussion and Caltrans design policy on horizontal alignments can be found in Chapter 200 of the *Highway Design Manual*.

http://www.dot.ca.gov/hq/oppd/hdm/pdf/english/chp0200.pdf.

New alignments are created in Caltrans' roadway design software, Civil 3D by Caltrans employees.

As well as being shown in the advertised project plans (MicroStation DGN file format), horizontal alignments will be delivered in one or all the following formats;

- 1. 2012 or 2016 Civil 3D drawing file
- 2. LandXML file
- 3. Readable Horizontal Alignment report file

# C) <u>Vertical Alignments</u>

The vertical alignment is the mathematical definition of the vertical path of a horizontal alignment of the highway or roadway. The vertical alignment is always associated with a horizontal alignment and consists of tangent sections (grades) that connect tangentially to parabolic vertical curve sections. It is defined by vertical points of intersection (VPI's) that are in turn defined by the horizontal alignment stationing and elevation. The vertical alignment is drawn in profile view that has stationing along the horizontal axis and elevation along its vertical axis. The vertical alignment is needed by surveyors to set the elevation of the roadway. Further discussion and Caltrans design policy on vertical alignments can be found in Chapter 200 of the *Highway Design Manual*.

# http://www.dot.ca.gov/hq/oppd/hdm/pdf/english/chp0200.pdf

As well as being shown in the advertised project plans, vertical alignments will be delivered in one or all of the following formats;

- 1. 2012 or 2016 Civil 3D drawing file
- 2. LandXML file
- 3. Readable Vertical Alignment report file

# D) <u>Alternate Design Techniques and Digital Design Models</u>

While cross section design methods lend themselves well for roadway design, site design or three dimensional (3D) design techniques may be useful for other types of civil facilities. Site design techniques are available that will let the user define the elevation along the path of a shape, specify parameters of cut/fill slopes, and work with existing terrain surfaces to extend slopes from the path of the shape. The end result is a set of points and break lines that are used to create a proposed surface. Engineers are familiar with digital terrain models (DTM's) that are used to define existing topography and three-dimensional mapping of existing terrain. There is now the capability to construct, from design cross sections and site design tools, digital design models (DDM) that represent a construction model of the proposed design project. These are used to generate contours and help determine earthwork volumes. Examples of additional facilities that can be designed with these techniques include:

- Bridge fill cone areas
- Intersections with multiple layout lines that require more detailed information than slope stake listings can provide

- Building pads
- Retention ponds
- Berms, dikes & levees
- Stockpiles & borrow pits
- General landscaping and contour grading
- Parks
- Parking lots

Automated Machine Guidance (AMG) may be an option for some projects. AMG can reduce the amount of staking notes, but still needs to be based on the correct California Coordinate System (CCS) and datum.

These type of design features may still need to be drawn as a construction detail in the advertised project plans, but digital design models can augment the information provided to the contractor. DDM are to be delivered in one or all of the following formats;

- 1. 2012 or 2016 Civil 3D drawing files
- 2. LandXML file

# E) Design Cross Sections

Design cross sections are developed from the roadway design software as typical sections at specific station intervals within a given station limit range. In Civil 3D the cross-sections are derived from the corridor model that is created when the design templates are applied to the profile grade line and against the existing ground.

Design cross sections are an integral part of the design and construction staking processes. They are needed by the engineer to help determine structural roadway volumes and right of way impacts or requirements. Surveyors and construction engineers utilize the design cross sections and the resulting slope stake listings throughout the construction of the project.

Design cross-sections and ancillary information (i.e. layout lines, defined survey chains, etc.) will be delivered in the following formats;

- 1. 2012 or 2016 Civil 3D and/or MicroStation V8 design file
- 2. Portable Document Format, PDF file
- 3. LandXML file for the design corridors
- 4. Readable Slope stake notes
- 5. Earthwork volume reports

It is imperative that design cross sections, slope stake notes, and volume reports are delivered from the same roadway design model for each of the above deliverables for consistency and accuracy within each specific project.

# F) Design Presentation of Project Plans

The design presentation of all advertised project plans must be completed using MicroStation and submitted in DGN file format. A Design Memorandum, dated September 19, 2014, signed by Timothy Craggs states that MicroStation is the Caltrans' official drafting software. This includes As-Built plans as well as project plans for all projects (large or small) on the state highway system (SHS) regardless of the funding source or sponsoring agency.

Regardless of the roadway design software used, all pertinent information (i.e. existing topo, alignment information, profiles, superelevation diagrams, drainage systems, landscape design, etc.) must be included in the appropriate MicroStation DGN files for submittal of the final project plans. For further information on development of project plans, see Section 3.8 "Master Files" of the *CADD Users Manual* and the *Plans Preparation Manual*.



### 3.8 Master Files

#### A. <u>Overview</u>

Master files are used in the development and creation of Contract Plans for the purpose of bidding, constructing and inspecting a project. Master files are developed using the standard Caltrans Roadway Design Software (Civil 3D) and standard drafting software (MicroStation).

Master files should begin in the Surveys and Photogrammetry units. These units develop the mapping that depicts the existing conditions of the project in the Master Topographic file (referred to as the "<u>bb</u>" file). Design units then utilize this existing information to help develop the proposed permanent design information in the Master Design file (referred to as the "<u>aa</u>" file). These master files usually begin as files in the Roadway Design Software (Civil 3D) and then are converted to MicroStation design files when completed. Together they create what is referred to as the "<u>base map</u>" that serves as the basis for all the plan view sheets (i.e. Layouts, Drainage, Utilities, etc.) within a project. This base map can then be referenced to any other MicroStation design file (DGN).

The "**bb**" and "**aa**" files and all plan view sheets are to maintain the State Plane Coordinates that the project is based on in the MicroStation design file. California has 6 zones in the California Coordinate System 1983 (CCS83).

A base map reference is an effective and efficient way to develop plan view sheets. The base map remains unchanged as specific plan view sheets are developed using all or portions of the base map. By referencing, only one base map needs to be created, and should be utilized by the different functional design units. When any change is made to the base map (changes should only be made by the unit responsible for creating the base map), the change is automatically reflected in all the files that have the base map referenced to them when the base map remains referenced and is not copied into the active DGN file (individual Contract Plan Sheet).

The Master Clip Frame file, (which defines the appropriate area for each Contract Plan sheet), is generally referenced to the Contract Plan Sheet. The Master Plan Sheet file (which is the sheet border) is referenced to the appropriate Contract Plan Sheet file (which contains specific information only for that individual sheet). Once the design of the project is completed all sheet specific information, in any reference file, is merged into the final Contract Plan Sheet file. Each Contract Plan Sheet submitted for Plans, Specifications and Estimate (PS&E) is a standalone DGN file, with no reference files attached or any files linked, and should be thought of as a stand-alone legal document.



#### B. <u>Master Topographic Files</u>

The "<u>bb</u>" file contains all data representing existing topographic features of the project. These features are located or positioned using State Plane Coordinates. Usually this file remains static after the existing roadway features have been placed (Photogrammetry or Surveys usually develops this file). The topographic file contains existing natural and man-made features such as:

Trees or natural vegetation, all public and private roads, curbs, edge of road, power and telephone poles, signs, sidewalks, underground and above ground utilities, manholes, fences, buildings, hydrographic features such as lakes, rivers, streams and natural channels, drainage and irrigation structures, and contours of the original terrain.

The "**bb**" file is developed using Roadway Design Software. Once completed, it is then converted to a MicroStation design file, which can then be referenced to the "**aa**" file to assist Caltrans staff working on the project. The Project Number is to be part of the file name plus the letters "**bb**" (i.e. 0600009999bb.dgn). The first 2 digits represent the district while the next 8 digits represent a sequential number that replaces the first 5 characters of the old Expenditure Authorization (EA).

#### C. <u>Master Design Files</u>

#### 1. <u>Overview</u>

The "**aa**" file contains the design information that may be needed for the various plan view sheets (i.e. layouts, drainage, utilities, pavement delineation, stage construction, etc.). These features are to be placed in a design file created using proper State Plane Coordinates. The design file contains the proposed work such as:

Curbs, edge of road, relocated utilities, lights, signs, driveways, right of way lines, sidewalks, new utilities, drainage facilities, sound walls, retaining walls, guard railing, fences, top of cut or toe of slope, alignment lines, centerlines, station ticks and annotation. The "**aa**" file generally contains information that needs to be shown on each type of plan sheet (but not information specifically tied to one type of plan sheet).

Only the permanent physical design features (visible features that will become existing information for the next project or stage) should be added to the "**aa**" file. The project engineer/design unit staff develop and maintain this file. The Project Number is to be part of the file name plus the letters "**aa**" (i.e. 0600009999aa.dgn).

#### Utilizing the Master Design File in DGN Format

The "bb" file should always be referenced to the "aa" file while developing a project. If the Caltrans CADD standards (particularly level, color, style and weight) are adhered to from the inception of the project, it is easier for any individual or functional design unit to utilize the design information in either master file more effectively and efficiently. Master files may contain a lot of information, but only the necessary information needed for any specific Contract Plan Sheet (for the bidding or construction of the project), should be merged into that Contract Plan Sheet (active file). Too much information on a Contract Plan Sheet is just as bad as too little information.

**Note:** The "**bb**" and "**aa**" files should stay referenced to any DGN file as long as possible before having specific information merged into the active file. This allows any changes made to the "bb" and "aa" files to be automatically reflected in all DGN files referencing these master files.

After the "aa" file is completed using Roadway Design Software, the pertinent graphic elements are then converted to a MicroStation design file. All functional units involved in the project should be able to reference both the "bb" and "aa" files. Only surveys unit's staff should make changes to the "bb" file while only the design unit handling the project should make changes to the "aa" file. During the process of designing a project and when archiving the MicroStation design files, it is a best practice to maintain the "bb" and "aa" files as separate DGN files.

Usually one "aa" file is enough and is created by the responsible design unit and referenced by all functional units involved in the project. A second Master Design file named "aa1" may be necessary if a plotting scale other than the Caltrans base scale of 1" = 50' is used. This "aa1" file (or "aa20" file for a plotting scale of 1" = 20') would need to adjust the size of station annotation and the length of the station tick marks. Depending on the type of information in the file, the size of text, cells and line styles would also need to be adjusted. Another option for handling the alignment line information (at a different plotting scale) can be accomplished by placing the information on a level used for storing alignment annotation for that scale (e.g. align 20-SCALE-anno, align 100-SCALE-anno for projects using Named Levels or undefined level for projects that use the old V8 Standards level convention) in the Master Design file.

Depending on the size and complexity of a project, additional Master Design files for various functional units may be necessary. These additional Master Design files (now referred to as "base" files) start as copies of the "aa" file but are modified to meet a certain purpose.

For example: the "base" file for pavement delineation plan sheets is usually modified to show the proposed roadway design information (new ETW, curbs, gutters, sidewalks and the alignment line and annotation when it is in conflict with a stripe line) as existing (dropped out) since striping is the important information to show, not the completed road work. The "base" file name for pavement delineation sheets should be;

#### For PD plan sheets 06000099999PvmtDelin.dgn

The naming of additional "base" files should contain the abbreviated name of the type of sheet it is for or the Functional Unit it is created for.

**Note:** Each MicroStation design file references Caltrans DGNLIB files with level information stored in them. These DGNLIB files include dropout levels (level names that end with " drop") that can be utilized for various purposes. Thus, it may not be required to create a "base" file for pavement delineation sheets for showing proposed roadway design information as dropped out. Simply copying the proposed information to one of the dropout levels within the same DGN file will work.

Other techniques such as level symbology or using color numbers in the color table that drop out elements on non-dropout levels may be used temporarily to produce the dropout effect instead of creating a "base" file. But the "final" Pavement Delineation contract plan is to have the proposed roadway design information placed on a dropout level (usually a dropout level).

Level Symbology is not a substitute for adhering to the Caltrans standards. Level Symbology can be effectively utilized for preliminary design and during project development but is not recommended for use in the final PS&E submittal.

The staging of a project creates the need for showing the previous stage(s) as dropped out. Completed roadbed work from a previous stage **must** be shown as existing information (dropped out) for the next stage of work.

Using a MicroStation version 7 design files, a separate "**base**" file for each stage was the simplest and most efficient way to display the design information correctly for each stage. The "base" files used for any Stage Construction sheets during this process used the following naming convention:

Stage 2 plan sheets Stage 3 plan sheets

0600009999stage2.dgn 0600009999**stage3**.dgn



The "stage2" in the file name refers to the "base" file that has been modified (from the proposed Stage 1 work) for the Stage 2 construction sheets.

The "stage3" in the file name refers to the "base" file that has been modified (from the proposed Stage 2 work) for the Stage 3 construction sheets.

The latest MicroStation format files have pre-defined levels for showing stage construction work. There are 20 levels for proposed stage construction and 10 levels for showing a previous stage as existing (dropped out). See Chapter 2, Section 4, and Appendix A10 of this manual for further details on Caltrans' named level convention. When utilizing the latest MicroStation format files, there is no need to create separate DGN files for each stage of work, either proposed or existing. One DGN file can contain all the stage construction information, instead of having separate "base" files

At the completion of the design of the project, the **final** "aa" file (when using MicroStation version 7) may vary depending on the scope and specifics of each individual project. The "aa" file for the layout sheets usually serves as the final. When a project involves staging, the "base" file for the last stage may be the final one. Some consider the "base" file for the pavement delineation sheets to be the final one because the proposed roadway features are dropped out and ready to be utilized by a future project. But if an "aa" file or "base" file is used for a future project, the right of way lines and alignment lines are to be shown as solid lines (not dropped out).

Districts and structures should archive the "aa" and "bb" files locally on their servers (not on DRS). These files can be re-used on subsequent projects within the same work limits (i.e. landscape project or a local agency project) or for preliminary information in future planning documents. Archiving the "aa" and "bb" files allow another project to utilize the previous project's coordinate geometry and design information, thus saving time and effort. The information contained in these files must always be based on State Plane Coordinates.

Using the Contract Plans (layouts) to reconstruct the "aa" file with the correct coordinate geometry should only be considered when the "aa" file was not archived. Removing extraneous information from the individual layout sheets and making sure that the files are coordinately correct, is subject to more errors and will take more time than utilizing an archived "**aa**" file.

MicroStation design files developed for advance planning projects should be archived for all the alternatives that were considered. For various reasons some projects are shelved for years, but if the DGN files were archived, the project can guickly be restored to the point it was put on



hold. The naming convention for advance planning projects (including all alternatives) should be.

For Alternative 1	06000099999alt1.dgn
For Alternative 2	06000099999 <b>alt2</b> .dgn

#### 3. Functional Unit Master File

If a specific type of work (i.e. irrigation layout or planting plan) needs to be shown in one MicroStation design file because of a specific workflow associated with the process, then a Functional Unit Master File may be needed. The "**aa**" and "**bb**" files would be referenced to the Functional Unit Master File while the specific type of work would be added to the Functional Unit Master File. State Plane Coordinates are to be maintained in all Functional Unit Master Files. Legend, notes, abbreviations, callouts, plus stations and identified items of work should still be placed in the Contract Plan Sheet. The Project Number is to be included in the file name along with the name of the Functional Unit or type of work.

For planting work	0600009999planting.dgn
For Irrigation work	0600009999irrigation.dgn
For Drainage work	0600009999drainage.dgn
For Structures work	0600009999structures.dgn

Sharing of DGN files between any District and Structures (<u>during</u> <u>preliminary design stage of the project</u>) will be easier to achieve when proper naming convention and appropriate seed file tied to State Plane Coordinate System (CCS83) is used when creating/storing files. To easily share DGN files, the Structures Master File must use the same State Plane Coordinates (CCS83) that the District uses for the "**aa**" and "**bb**" files. Structures Preliminary Investigations team must also use the same State Plane Coordinates (CCS83) when surveying bridge site conditions. This also applies to local agencies or consultants who are an active participant in the Project Development Team (PDT).

The District is responsible for supplying Structures with a geo-referenced MicroStation design file based on the appropriate zone in the CCS83 (there are 6 zones in California). The District will use the Bridge Site Data Submittal (<u>https://des.onramp.dot.ca.gov/des-structure-design/pi-forms</u>) to convey all pertinent information for Structures to begin the design of the bridge or wall.

The Structures Master File should contain the footprint of the bridge, approach slabs, abutments, bents/piers and footings. The "begin and end" of bridge must be identified, the skew angle, the limits of any barrier, railing or sidewalk that will be designed. It is important that the above items be located at the identical coordinate values that are in the District



"**aa**" and "**bb**" files so any right of way or environmental issues can be accurately identified and addressed. The Structures Master File is to be shared with the District or any active member on the Project Development Team (PDT).

If the roadway project engineer makes any changes to the geometrics of the highway (alignment, profile, superelevation or width of roadbed), the Structures unit working on the project must receive the updated District "**aa**" file immediately or the Roadway unit could also provide the path to the location of the latest "aa" file on the District Project Directory to the Structures unit staff working on the project. The sharing of the updated District "**aa**" file and updated Structures Master File is imperative to assist any active PDT member in updating their files with any changes made that may affect them.

#### D. <u>Master Clip Frame Files</u>

The Master Clip Frame file will contain both the maximum clip frames and the minimum clip frames. The maximum clip frames (shapes that fit within the sheet borders) are MicroStation cells that reside in the Caltrans named level cell library (CTCELLIB\_NamedLevels.cel). They create the maximum limits, within the border, for the individual plan view sheets. When initially positioning the maximum clip frames, the "**aa**" file should be referenced to the Master Clip Frame file. Once completed, the Master Clip Frame file should then be referenced to the "**aa**" file or directly to the Contract Plan Sheet(s). Clip frames should not be added to the "**aa**" file since clip Frame can be used to develop the Key Map and Line Designation sheet if the project needs to have a Key Map.

The minimum clip frame is constructed manually (for each plan view sheet) within the maximum clip frame. Between the two clip frames, the minimum clip frame is the most important. The minimum clip frame defines the appropriate amount of area to be displayed for each specific plan view sheet. The minimum clip frame should be used to define the match line between consecutive sheets. Match lines are to be placed perpendicular to the alignment line. The minimum clip frames are placed approximately 1 inch outside the right of way line (for a full-size, 22" x 34", printed plan sheet). This allows the placement of text, callouts and notes in a blank area created between the maximum and minimum clip frames.

Clip frames are used for all plan view sheets. The clip frames created for the Layout Sheets are generally used for Drainage, Contour Grading, Utilities, Pavement Delineation, Signing, Landscape and perhaps Stage Construction/Traffic Handling sheets. Stage Construction/Traffic Handling sheets may need their own clip frames because of the unique staging or phasing of a project. Signals, Lighting and Electrical Systems plan view sheets usually develop their own clip frames because their work doesn't always coincide with the clip frames created for the Layout sheets.

Clip frames for most plan view sheets are usually created for the Caltrans base scale of 1" = 50'. If different plotting scales are needed for various plan sheets (i.e. 1" = 20' for Signals, Lighting and Electrical Systems), more than one Master Clip Frame file is to be created. A Master Clip Frame file is to contain only the clip frames for one plotting scale unless they cover different areas within the project limits.

**Note**: Station tick marks and annotation will need to be adjusted for each plotting scale (see Master Design Files section).

#### E. Master Plan Sheet Files

The Master Plan Sheet file contains the appropriate sheet border (one sheet border per file) for each registered engineer that is responsible for signing one or more plan sheet(s). The Master Plan Sheet file (sheet border) is referenced to the appropriate Contract Plan Sheet file and is referenced to as many Contract Plan Sheets that each registered engineer is responsible for. The sheet border should never be placed in the Master Design file.

Note: The signature (which is placed in the Master Plan Sheet) for each responsible engineer is to be the final procedural step before finalizing the Contract Plan Sheets (see Section G).

There is no need to create different Master Plan Sheet file in the rare occurrence where the border may be used for more than just one plotting scale. Simply reference the Master Plan Sheet file at the appropriate scale ratio.

There should be one Master Plan Sheet file for each registered engineer, licensed landscape architect, land surveyor, certified engineering geologist or electrical engineer that is responsible for signing one or more plan sheet(s). The Master Plan Sheet File contains the following information:

The seal information, signature of the registered engineer, landscape architect or electrical engineer, approval date, the project number and phase, unit, name or initials of engineers involved in the project and the District/County/Route/Post Mile.

#### F. Contract Plan Sheet Files

The Contract Plan Sheet file is composed of information that is specific and unique to that plan sheet. The Contract Plan Sheet file generally contains descriptions, labeling, notes or symbology that define or quantify the items of work for that plan sheet. Any description that assists in bidding and construction of design features shown in the Master Design file should be placed in the Contract Plan Sheet file (plus stations, off-set distances, lane widths, etc.).

Each Contract Plan Sheet file is a separate MicroStation design file (DGN). Each MicroStation design file for PS&E submittal may also require an Iparm (see Chapter 5 of this manual) or a pdf file. The Caltrans naming convention applies to each Contract Plan Sheet file submitted for PS&E (see Section 2.2 of this manual).

The "**aa**" and "**bb**" files, Master Plan Sheet, Master Clip Frame and Functional Unit Master files are referenced to the Contract Plan Sheet files during the development of the project. This allows a project, with various types of plan sheets, to be worked on at the same time while referencing the same files.

Depending on the size, complexity and the functional units involved in the project, the merging of the various Master files (except for the Master Plan Sheet file) into the Contract Plan Sheet may be handled by either the design unit or the drafting unit. Because the incorporation of the signature into the Contract Plan sheet is the final procedural step, it is to be handled by the person(s) that have authority to access the signatures (this is usually a person in the drafting unit and may vary by District where the work is being done). The Master Plan Sheet file can be merged into the Contract Plan Sheet after the other Master files have been merged into the Contract Plan Sheet.

The delineation group in some districts (design squads in other districts) maintains the Contract Plan Sheet files. Contract Plans that depict the design information in "plan view" (Layouts, Drainage, Utilities, Landscape, etc.) are to maintain the State Plane Coordinates from the "**aa**" and "**bb**" files. Quantity sheets and detail sheets do not have to use State Plane Coordinates. Information generally found on a typical Contract Plan Sheet (layout, drainage, pavement delineation, etc.) may contain information such as:

Notes to the engineer, dimensions, callouts, legends, notes, curve data information, plus stations, lane widths, abbreviations not found in the Standard Plans Manual, elevations, identifying items of work, limits of work or construction such as BEGIN or END REMOVE AC DIKE, and hatched regions outlining or designating work to be done such as COLD PLANE or REPLACE AC SURFACING.

Information that pertains to a specific sheet belongs in the Contract Plan Sheet file and not in the other Master Files.



#### G. Final PS&E Submittal

The placement of the signature is the final procedural step before all appropriate and necessary information, in any attached reference file, is merged into the final Contract Plan Sheet for PS&E submittal. There must be a signature release form for each person responsible for signing any sheet in the project (this does not apply to NSPs or RSPs). This form allows the signature to be placed in the Master Plan Sheet file. Each signature release form is project specific and must not be used for any other project. If a person (responsible for signing a sheet) is working on more than one project, a second signature release form is required.

All signatures must be kept in a secured location that only authorized staff have access to. Only after a signature release form is submitted is the signature to be placed in the Master Plan Sheet file by authorized staff.

Contract Plan Sheet files, for PS&E submittal, shall not have any reference files attached. There is to be one DGN file for each Contract Plan Sheet. Each plan sheet is a snapshot of the information needed for review by the Office Engineer and then finalized as contract bid documents. Each Contract Plan Sheet is a "legal stand-alone document". There is to be no linkage to an external file (i.e. excel spreadsheet). In a MicroStation design file, only the default model is to be in the DGN file at the time of PS&E submittal.



# 4.1 For Plans, Specifications & Estimate (PS&E) Submittal

#### A. File Formats for PS&E

1. Acceptable Formats

Caltrans only accepts 100% electronic submittals. The standard file format for all PS&E submittals is a MicroStation design file with a .dgn extension. All Caltrans resource files used for PS&E submittal are for MicroStation. Caltrans does not provide AutoCAD resource files.

a) MicroStation File Format

Caltrans accepts MicroStation V8 format files for PS&E submittals. Final contract plans (2D MicroStation design files with no reference files attached) must be submitted. If there is a need to facilitate sharing of electronic data among Caltrans functional units and /or consultants, best practice procedures would have all participants involved on the project using the same file format and versions of MicroStation when possible. Caltrans preference would be the use of V8 format files created using MicroStation CONNECT.

b) Variations with Prior Approval

The following variations, with prior approval at approximately 60% completion, from Division of Design, Office of CADD and GIS Support will also be acceptable for PS&E Submittal. Specific circumstances are listed below:

- MicroStation design files with imbedded or imported raster data (aerial photographs or digital pictures). Raster data should be limited to detail sheets that require enhancing or emphasizing of a detail or a unique location (i.e., toll plaza at the San Francisco/Oakland Bay Bridge) that the contractor might need to see. The need for imported raster data should be based on an engineering need, not for aesthetics or location identification. Contract plans should first and foremost be engineered plans, not photogrammetric plans. Aerial photographs were designed for preliminary plans not final contract plans. If aerial mapping is needed for identifying specific locations, plan sheets have been established to handle the raster data. These sheets are called "Aerial Identification" and follow the "Key Map and Line Index" sheets. Raster data should not be used as background for other plan sheets such as layouts, drainage, utilities, pavement delineation, etc.
- (Tiff) or Tagged Image File Format is acceptable where legacy plans (in most cases this refers to Log of Test Boring sheets) are being considered

for submission as part of a new CADD submittal. This is a single, complete plan sheet with borders intact, submitted as a tiff raster image. The legacy sheet is to be scanned, sized (cropped), de-speckled and deskewed before submittal. For preferred size of the finished plot and other presentation information, refer to latest version of the <u>Caltrans Soil and</u> <u>Rock Logging Classification and Presentation Manual</u>.

- 2. Non-Acceptable Formats
  - Hard Copy Originals
  - **Reference Files** (vector or raster)
  - **CADD software Generated Raster-** Any file created as a MicroStation design file, but converted to raster format for convenience or expediency, will not be accepted for PS&E Submittal.
  - **Models** use the "Default" model for final submittals. Submittals must be one MicroStation design file for each contract plan sheet.
  - AutoCAD Files- Files started with AutoCAD (.dwg or .dxf file) must be converted into a MicroStation design file under the direction of the engineer of record.
- B. Reference Files

No reference files of any kind will be accepted with the PS&E Submittal. All information that is pertinent to any specific contract plan sheet needs to reside in just one specific MicroStation design file. This helps convey the fact that all final contract plan sheets are "legal contract documents" and should not be changed because a change was made in a reference file (or model). However, the use of reference files is a very important tool during the development and design of any project. Reference files should stay referenced until just before PS&E submittal, so any change made in a reference file will automatically be reflected in all files that have the reference file attached (not already copied in).

- C. Requirements for PS&E
  - 1. General Requirements

A PS&E CADD Submittal Form and a Project Plans Review Checklist must accompany the PS&E submittal.

For electronically generated plan sheet signatures and project plans development names, see Section 2-1.6 of the Plans Preparation Manual for detailed instructions.

- 2. Caltrans Current Standards
  - V8 format files with a \*.DGN extension.
  - One MicroStation design file per "contract plan sheet".

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- Each MicroStation design file can have an accompanying Interplot parameters file (requirements vary by District. Check with District OE).
- Must use the standard Caltrans MicroStation resource files (fonts, line styles, cell library, etc.).
- Use of the HQ CADD published standard Caltrans Interplot design scripts (pen tables).
- The current plotting requirements must be utilized (see Chapter 5 of the CADD Users Manual).
- All necessary information must be in the "contract plan sheet", no reference files are to be attached for PS&E submittal.
- Caltrans does not use Global Display/Global Freeze options to control display of elements in the dgn file. Element display must be controlled using View Display toggles.
- Must use the latest Caltrans sheet borders cells, which are included in the latest Caltrans MicroStation cell library (CTCELLIB\_NamedLevels.cel).
- Must use prescribed Caltrans text sizes and drafting conventions.
- Compliance with Caltrans named level convention required on all new projects.
- Compliance with Caltrans colors, line weights, line codes, file naming convention, standard abbreviations, and symbols.
- 3. General Plotting Requirements

All PS&E submittals must conform to Caltrans plotting standards. See below for some specific plotting requirements.

- The official Caltrans plotting application is ProjectWise InterPlot Organizer (IPOT).
- For each MicroStation design file submitted for PS&E (contract plan sheet), an Iplot parameters file (called an Iparm with an \*.i extension) or a pdf file can be created based on District OE's current practice and included in the final submittal.
- Snap to the outside edges of the sheet border cell (from lower left to upper right preferably) when defining a plot region. Plot size should equal exactly 34 inches x 22 inches.
- All levels used in the dgn file (must use Caltrans named level DGNLIBs) <u>are</u> to be turned on. Make sure only the information pertinent to that specific sheet is in the MicroStation design file. Too much information distracts from the real purpose of the sheet. But missing information may lead to inaccurate cost estimates and bids.
- Ensure that the view rotation is parallel to the sheet border lines. Rotation of elements in the file must be avoided.
- The accepted number of views for a PS&E submittal to District OE is a full plan view of the border sheet with file contents displayed in one monitor.
- Use the design script "CT\_FinalPSE.pen" for final submittals.

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- Prior to PS&E, design script "CT\_ReviewPSE11x17.pen" may be used to create half-size review check prints.
- One important reason that Caltrans uses a standardized level convention is to properly show existing information that is contained in the Master Topographic file. All linework on level names ending with "\_drop" will be plotted as dotted lines. See Appendix A10 of this Manual for additional information. Existing information located on non-dropout levels (e.g., utility linework) may be shown using lower thicknesses with linework properly identified.
- It is recommended that the Iparms delivered with the PS&E submittal be created after the naming all MicroStation design files so the Iparms reflect the correct name for each MicroStation design file (avoiding a plotting failure) and plot in the correct order when bath plotting. See Section 2.2 of the CADD Users Manual for the appropriate Caltrans naming convention. Full-size test prints to pdf of the Contract Plans should be made prior to PS&E submittal for plot verification.
- Construction Class elements should not plot when using the IPLOT design scripts supplied by Caltrans. IPLOT software should be configured to comply with this standard.
- Only Caltrans custom linestyles can be used for all Caltrans submittals. The Caltrans linestyle resource file is "Ctlstyle-2021.rsc".
- 4. Limitations/Restrictions when using V8 File Format
  - Only the "Default" model space shall be used, no extra model spaces must be contained in the contract plan sheets. Final plan sheet submittals must be one MicroStation design file for each "contract plan sheet".
  - Use California State Plane Coordinates.
  - Use the V8 seed files supplied by Caltrans-HQ CADD. For every MicroStation highway design file the resolution of <u>10,000</u> for the "Working Units" is required.
  - Must use the Units def file created and shared by Caltrans-HQCADD.
  - Must use the named level <u>DGNLIB</u> files created and shared by Caltrans-HQ CADD.
  - When creating a V8 format design file, a new DGNLIB (created by Caltrans HQ CADD) will be called upon or can be attached. This new DGNLIB will incorporate all the levels necessary for the various Caltrans functional units. Only Caltrans HQ CADD can add or change any information from these levels in the DGNLIB.
  - Roadway and associated elements must be stored on levels grouped under align, ds, es, esa, ls, mc, border, rd, stage, temp, tcd, wall, wpc and pp. Section 2.4 of this manual has additional information about Caltrans standard group names.
  - Right of Way and topo information will be stored on levels grouped under **rw**, **rw\_topo**, **topo**, **topo\_al**, **topo\_ml**, **topo\_ph** and **topo\_su**.

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- Structures Design will be stored on levels grouped under str.
- Structures Architectural plans stored on levels grouped under ar.
- Structures Mechanical plans will be stored on levels grouped under me.
- Structures Electrical plans will be stored on levels grouped under ee.
- Utility related information will be stored on levels grouped under **ut**.
- Dropout levels data on level names ending with \*\_drop or \_dither (Structures only)
- Structures Rebar will have levels named str\_Reinforcement-\*
- Stage Construction (non-dropout) will now have levels grouped under stage.

All new projects with survey data delivered using named levels must use named level convention when creating plan sheet deliverables. For a detailed list of named levels, see Appendix A10 in this manual.

D. Consultant Prepared Projects

Consultant prepared projects must comply with the requirements set forth in the Plans Preparation Manual (PPM) and CADD Users Manual. The latest versions of these two manuals are located on the Caltrans website and should be reviewed and followed by both Caltrans and consultants for any changes, deletions, or additions.

CADD Users Manual:

https://dot.ca.gov/programs/design/manual-cadd-users-manual

<u>PPM</u>:

https://dot.ca.gov/programs/design/manual-plans-preparation-manual-ppm

Consultants are to adhere to the same requirements as any Caltrans project engineer, being guided by the Highway Design Manual, Project Development Procedures Manual, and any directive Memorandums. This includes advanceplanning studies, preliminary design, Plans, Specifications and Estimate (PS&E) submittals, support through the construction of the project and completion of the as-built plans.

All consultant prepared projects are to be submitted to the district administering the oversight contract at the agreed upon stages of the project (30%, 60%, 90%, etc.). The district is responsible for verifying (both electronic files and plotted plan sets) and submitting a consultant project to Division of Engineering Services – Program/Project Management and Office Engineer (PPM&OE) and then keeping the consultants informed on comments, reviews, or questions from PPM&OE. Likewise, consultants are responsible for informing Caltrans Oversight staff of any modifications and/or additions during the various preliminary and final stages of project plan development. Any questions or requests by consultants should first be directed to the appropriate Caltrans' District Design Oversight Engineer.

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Consultants can obtain the Caltrans resource files at the following website:

### https://misc-external.dot.ca.gov/cadd/index.htm

Cooperative Agreements and Contract Agreements should state that the latest standards, identified in the CADD Users Manual and PPM (the latest versions being on the Caltrans website), are to be followed for all final products (deliverables) throughout the Project Delivery Process.

# 4.2 After Plans, Specifications & Estimate (PS&E)

### A. Draft Contract Ready

After the PS&E submittal by the district and upon receipt of the "First Notice," it is recommended that the district keep the MicroStation files (.dgn) of the project plans submitted to DES-Office Engineer (OE.) There may be cases where the district might need to submit revised, replacement or additional plan sheets, utilizing the MicroStation files from the original PS&E submittal. As a rule, the final redline corrections to the plans are made by DES-OE Project Plans Unit, with concurrence from the district.

#### B. <u>Certification for Ready-to-List (RTL)</u>

#### 1. Overview

The Ready-to-List (RTL) Certification documents the accomplishment of applicable RTL requirements. Two requirements for RTL that involve CADD files are Cross-Sections and the Survey File Checklist. For questions about the RTL Certification process, see the Ready-to-List and Construction Contract Award Guide (RTL Guide) at:

www.dot.ca.gov/hq/esc/oe/specifications/rtl\_guide/

2. Cross Sections

Earthwork cross-sections are a vital component in the development and construction of many projects. They assist the designer in developing the most efficient way to handle the earthwork items and assist the bidder in understanding the scope of the earthwork to be performed. Surveys, Construction and the Contractor utilize the earthwork cross-sections to construct the project as designed.

Although cross-sections are not included in contract bid documents, they are supplemental information for the convenience of bidders. When cross-sections are prepared, they shall be made available to bidders. Potential bidders will be notified in the "Notice to Contractors" that cross-sections will be available through the District/Region Construction Duty Senior in the district in which the project is located.

For guidance in developing earthwork cross-sections, see Chapter 3 of this manual.

#### 3. Survey File Checklist

The Survey File checklist shall be completed as described in the Project Development Procedures Manual "Appendix QQ". The Survey File checklist defines what Surveys will need to stakeout a project. It would be good business practice to submit a draft of the Survey File checklist to Surveys at PS&E for QA/QC, even though it must be completed and submitted to Surveys by the RTL date in order to achieve RTL Certification.

#### C. <u>As-Awarded</u>

After the project has been awarded to the winning bidder, DES-OE Project Plans Unit will notify the district to copy back the As-Awarded MicroStation files. This process is called "Second Notice." These MicroStation files will include any revisions or additions that may have occurred through the addenda process. The district will need to keep the As-Awarded MicroStation files for possible use by construction during the course of constructing the project. The District (or Consultant) **shall** use the As-Awarded MicroStation files when developing the As-Built plans at the completion of construction.

# D. <u>Contract Change Order</u>

Changes to a contract may be necessary during the construction of any project. A change is made with a Contract Change Order (CCO.) Construction is the lead in handling CCOs. Depending on the nature of the change, construction will usually consult with or get concurrence from the project engineer when the change affects the design of the project.

If replacement or additional project plan sheets (in MicroStation file format) are generated by the CCO, they must have the signature and seal of a registered engineer (whether the engineer is from design or construction) who is most responsible for the change. Before the As-Built plans can be completed, any replacement or additional project plan sheets (in MicroStation file format) added by CCO must contain the signature and seal of a registered engineer. To ensure that each engineer's signature is only used when authorized by the engineer, the electronic signature for each engineer is usually maintained and protected by one source in each district. Usually that source is the delineation unit or office engineer unit in each district.

# 4.3 As-Built Plans

#### A. <u>Overview</u>

As-Built plans are the "<u>As-Awarded</u>" project plan sheets that have been updated to reflect the changes, if any, which occurred during construction. As-Built plans represent the field conditions at the completion of a project. All As-Awarded plan sheets are to be included in the final As-Built plans, including those sheets with no recorded changes. Any New Standard Plan (NSP) or Revised Standard Plan (RSP) that was part of the contract must be included in the As-Built plans. Any sheets that may have been added or revised during the construction of the project must be included in the As-Built plans as well. As-Built plans are mandatory for accurately documenting the final field conditions at the completion of a project.

Certain type of projects that make improvements or changes to the state highway system (SHS) may not have any plan sheets. Examples may include "permit projects" or "Director's Order projects." Even though there may be no plan sheets associated with these types of projects, it is essential to preserve documents showing the improvements or changes to the SHS for storage on the Caltrans Document Retrieval System (DRS).

As-Built plans may be used as reference or the basis of plan sheets for future projects. Each sheet of the As-Built plans must be clearly identified with an As-Built stamp (except NSPs or RSPs). NSPs and RSPs are Caltrans standard plan sheets that are included with the final contract plans. All plan sheets (except the appropriate NSPs or RSPs for each specific project), whether they contain changes or not, must have (at a minimum) the name of the Resident Engineer (R.E.), the Construction Contract Acceptance (CCA) date, and the Contract Number.

The R.E., who is in responsible charge of the project, is the most qualified individual to note any field changes that may have occurred (called "redline corrections") during the construction of the project. Redline corrections must be completed using the As-Awarded project CADD files (MicroStation design files) so that the official As-Built plans can be created (this includes projects on the SHS administered by a local agency). The R.E. is to review, confirm and approve that the As-Built plans were completed according to his/her "redline corrections." The approval of the As-Built plan corrections is confirmed by the R.E.'s signature (whether he/she is registered or not) within the As-Built stamp placed only on the Title Sheet. The R.E.'s signature on the Title Sheet attests only to the accuracy and completeness of the redline changes and not to any design

change that may have occurred through a Contract Change Order. Only the R.E. who inspected the work can make "redline corrections," not the person delineating the As-Built plans.

The R.E. may also note other changes to the As-Awarded plans such as conditions discovered in the field that are not shown on the plans. This may include an existing abandoned pipe or buried utility line discovered during construction, but not shown on the As-Awarded plans (see the Construction Manual for further clarification).

As-Built plans **must** be completed for **all** projects on the SHS (<u>regardless</u> of funding source or who administers the contract, Caltrans or local agencies). The official As-Built plans are the microfilm copies stored with the Headquarters Microfilm Unit. For convenience, As-Built plans are also kept on DRS as Tagged Information Format Files (TIFF). The MicroStation design files, used to complete the official As-Built plans, must be stored on the DRS as "archived vector data" (AVD) files **but they are not** considered As-Built plans. The composition of the MicroStation design files **must** comply with the current CADD Users Manual and the Plans Preparation Manual.

The Districts must upload each project's archive-ready As-Built plans in TIFF format into DRS within the allotted time as described in Chapter 15 of the Project Development Procedures Manual (PDPM). For further guidance on submittal of As-Built plans to the DRS, see Part (D) later in this section.

The District is responsible for the completion of As-Built plans for all district projects (including Minor and Locally Funded Projects). The District and Structure Design is responsible for obtaining archive-ready As-Built plans (TIFF format) and the MicroStation design files used to create the official As-Built plans from consultants and Local Agencies. DES-Structure Design is responsible for archive-ready As-Built plans (TIFF format) for all structures, including those prepared by design consultants and local agencies.

The date of entry of the archived-ready As-Built plans into the DRS will be used as the milestone date indicating the As-Built plan set has been completed. As-Built completion status will be tracked and reported on for each project by the Headquarters CADD unit.

A clean set of stamped and signed As-Built plans with all redline corrections, additions, change orders and deletions incorporated (without clouding or strikethroughs showing on the plan sheets), shall be made available to the Legal Division upon request.

# B. Roadway As-Built Plans

#### 1. Responsibilities

When the construction of a project is finished, the timely completion of the As-Built plan process must be followed as described in the Caltrans Construction Manual. The R.E. is the person in responsible charge of completing the As-Built plans. The R.E. usually records the daily field changes on a hard copy set of plans. These field changes must be delineated in the As-Awarded MicroStation design files (which must reflect all addendums from when the project was advertised). All redline corrections must be delineated in the <u>As-Awarded</u> Microstation design files, which is the plan set that the contractor begins the construction of the project with.

In order to be in compliance with Caltrans policy, the signature and seal information of a registered engineer is to be secured and protected at all times when it is in a vector type file like a MicroStation design file. This applies particularly to the As-Awarded MicroStation design files that are stored. The As-Awarded files must keep the signature and seal information in the MicroStation design files while they are stored. These As-Awarded files must be stored in a "secure directory" that only a few authorized people can access, until they are needed for completing the As-Built plans. As-Awarded files may be used by the R.E. for Contract Change Orders. To obtain a copy of the MicroStation As-Awarded or AVD files, a written request must be made to an authorized person that will first remove the signature, seal information and printed names before giving out the files.

The signature and seal information of the engineer in responsible charge for any individual plan sheet in the project <u>must</u> remain on the official As-Built plans (<u>which is the microfilm copy</u>) and on the TIFF files located on the DRS. The appropriate As-Built stamp must also be on the microfilm copy and the TIFF files of the As-Built plans.

The MicroStation design files that were used to create the As-Built plans **<u>must</u>** be stored for future use, but they **<u>are not</u>** to be considered as As-Built plans. They are to be considered only as AVD files. The extension of these AVD CADD files is to be changed from ".dgn" to ".avd". The stored AVD CADD files are to be used if the Legal Division requests a clean set of stamped and signed As-Built plans. The original signature and seal information of the engineer in responsible charge for any individual plan sheet in the project <u>must</u> remain in the AVD files along with the appropriate As-Built stamp. For further information about AVD CADD files, see Section B Number 7 later in this section. 2. As-Awarded plans to As-Built plans Using MicroStation

As-Built plans must include <u>all</u> design feature changes that occurred during the construction of the project. These design feature changes include but are not limited to; revisions to alignments and Right of Way, grade revisions, drainage changes, changes to roadway features and revisions to the location of utility crossings and irrigation crossovers. For a complete listing of data to include on the As-Built plans, see Chapter 5 of the Construction Manual.

When using MicroStation to incorporate the As-Built changes:

- use level 62 and the color red (CO=3)
- denote changes by striking through the original information with a light-weight line (WT = 0 or 1)
- superseded information must remain legible and must not be deleted
- do not eradicate, obliterate or white-out original figures or make corrections over them
- all lettering and changes must be legible so they will produce good quality microfilm
- the text for the As-Built changes must be larger and slanted
- use the Caltrans standard font "ctfont1" at a size of 8.75 feet, weight (thickness) of 2 and at a slant of 15 degrees. Text size is based on the Caltrans base scale of 1" = 50'
- text size for Structure Design As-Built plans, see the Bridge Design Aids Manual

### 3. Contract Change Order Process

Any design feature change that affects the engineering design of the project (such as traffic safety devices or geometrics of the roadway) must be made through a Contract Change Order (CCO). A CCO is used to make changes to the construction contract.

Construction has the lead in handling CCOs. All engineered design feature changes made during construction must be identified on the As-Built plans with the CCO number that prompted the change, a "cloud" around what changed, and the striking through of superseded information. Depending on the nature of the change, Construction may take the responsibility for the change or when it affects the engineering design of the project, Construction must get prior concurrence from the original engineer in responsible charge of the plan sheet in question.

The signatures of the appropriate responsible engineers involved in the decision and review of a particular change, must be included in the CCO.

Some changes during construction may appear minor in nature (such as changing the length for hot mix asphalt dike or slightly shifting the location of a drainage inlet to avoid an underground pipe) **<u>but still must</u>** be shown on the As-Built plans. It is preferred that even minor changes have a cloud around it for easy distinction from the original design.

If any item of work that was part of the As-Awarded plans is not constructed, the item must be crossed out stating it was not constructed. If the item in question affects the engineering design of the project, the CCO number or the reason it was not constructed <u>must</u> be shown on the As-Built plans.

The signature and seal information of the original design engineer must remain on all of the As-Built plan sheets that were part of the As-Awarded plans. It is a Caltrans policy and practice to have only the signature and seal information of one engineer on each As-Built plan sheet.

All CCOs affecting design changes are to be archived.

If the MicroStation design files of the As-Awarded plans are requested by the Resident Engineer during construction (for example - to assist in the creating of a CCO), the signature, seal information and individual names of the functional supervisor, designer and checker, must be removed from any copies of the MicroStation design files before releasing them. The MicroStation design files of the As-Awarded plans must be stored in a "secure directory." Only a few authorized people (from each district) are to have access to the As-Awarded MicroStation design files.

Individuals wanting to use the As-Awarded MicroStation design files must make a request in writing to an authorized person in responsible charge of maintaining the As-Awarded MicroStation design files. Before releasing any copies of the As-Awarded MicroStation design files, the cell "<u>asawrd</u>" (which is in the Caltrans cell library) is to be placed where the engineer's signature was located (see cell below).



- 4. As-Built Changes; Revised or Additional Sheets
  - a. Adding Revised Sheets

As-Built changes must be made in the As-Awarded plans. If there isn't room on an As-Awarded plan sheet to clearly show the As-Built changes, then a revised plan sheet may be necessary in order to show the As-Built changes. A revised sheet is an additional sheet with <u>no</u> <u>new or additional work added</u>, and may show a portion of the As-Awarded plan (like a breakout detail) but in greater detail for clarity. A revised sheet may include the whole plan sheet but only showing those items pertaining to the As-Built changes. It is a Caltrans best practice to show the As-Built changes on the original As-Awarded plan sheet and only use a revised sheet when absolutely necessary. In the roadway portion of the project, the revised As-Built plan sheet must include the label "Revised Sheet" just above the sheet name. The lowercase "r" is also to be added to the sheet ID.

	REVISED SHEET	DATE PI TIME PI
LATOOT		L-6r
UNIT 0000	PROJECT NUMBER & PHASE	0000000001

<u>Revised Sheet</u>: Text Size = 10 feet, Weight = 0, Font = 43, Color = 3 and uppercase.

Since no new or additional work was added (just redline corrections), the signature and seal information of the original design engineer from the As-Awarded plan sheet is to be included on the revised plan sheet. Even though a <u>revised</u> plan sheet was created and made part of the As-Built plans, the original As-Awarded plan sheet <u>must not be deleted</u> <u>or removed</u> from the As-Built plan set. However, the portion (or the entire sheet) of the original As-Awarded plan sheet that was revised must be "crossed-out."

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b. Adding Additional Sheets

If new or additional work was designed and constructed, then an additional plan sheet needs to be included. An additional sheet is to show only new or additional work, not revisions. The additional As-Built plan sheet needs to include the label "Additional Sheet" just above the sheet name. The lowercase "a" is also to be added to the sheet ID.

	ADDITIONAL SHEET LAYOUT	E PLO
		L-258
UNIT 0000	PROJECT NUMBER & PHASE	00000000001

# <u>Additional Sheet</u>: Text Size = 10 feet, Weight = 0, Font = 43, Color = 3 and uppercase.

If additional sheets are generated during construction, they <u>must</u> have the signature and seal information of the registered engineer in responsible charge who initiated the new and additional changes (i.e. design, traffic, landscape, hydraulics, construction, etc) in the upper right corner of the appropriate standard Caltrans border sheet.

If a MicroStation design file of an As-Awarded plan is used to assist in the creation of an additional sheet, the signature and seal information of the responsible engineer for that new sheet will replace the cell (asawrd) that was used when sending the MicroStation design files to the Resident Engineer. The individual names of the functional supervisor, designer and checker should be filled out appropriately with the persons responsible for the additional plan sheet. c. The naming of revised or additional sheets

### File Name and Sheet ID

**Revised Sheet** = if the  $2^{nd}$  Typical Cross Section sheet is to be revised (it is the  $3^{rd}$  sheet in the project), the name of the MicroStation design file, Sheet Number and Sheet ID would add one additional character "<u>r</u>". The "<u>r</u>" would stand for revision. This will make it easier to distinguish when a sheet was revised from the As-Awarded Plans. The additional character would still accommodate the logic of printing the sheets in the proper order, both for ".dgn" and ".tif". For example;

EXAMPLE: Old Naming Convention using Expenditure Authorization (EA)

DGN File Name	TIFF File Name	Sheet ID
c12345ca002r.dgn	12-123454_0003r.tif	X-2r
EXAMPLE: New Naming Con	vention using "Project Number	<u>" and "Phase"</u>
DGN File Name	TIFF File Name	<u>Sheet ID</u>

1200007777ca002r.dgn 12000077774\_0003r.tif X-2r

In any revised sheet that is added during construction, make sure to include the revised sheet number (as shown below) in the Project Identification Block (in addition to the County, Route & Post Mile). Do not fill in the Total Sheets on any revised or additional sheet.

EXAMPLE: Revised Sheet Number: Text Size = 7 feet, Weight = 1, Font = 3 at a slant of 15 degrees and Color = 3.

ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
		3r	
File Name and Sheet ID

**Additional Sheet** = if two sheets are <u>added between</u> Layout sheets 7 and 8 (67<sup>th</sup> & 68<sup>th</sup> sheets in the project) and one sheet is added between Layout sheets 8 and 9 (68<sup>th</sup> & 69<sup>th</sup> sheets in the project), the name of the MicroStation design file, Sheet Number and Sheet ID would add one additional character, starting with "<u>a</u>", then "<u>b</u>" (if necessary). This will make it easier to distinguish when a sheet is added to the As-Built Plans. The additional character would still accommodate the logic of printing the sheets in the proper order, both for dgn and tif.

For example;

#### EXAMPLE: Old Naming Convention using Expenditure Authorization (EA)

DGN File Name	<u>TIFF File Name</u>	Sheet ID
c12345ea007.dgn	12-123454_0067.tif	L-7
c12345ea007a.dgn	12-123454_0067a.tif	L-7a
c12345ea007b.dgn	12-123454_0067b.tif	L-7b
c12345ea008.dgn	12-123454 0068.tif	L-8
c12345ea008a.dgn	12-123454 <sup></sup> 0068a.tif	L-8a
c12345ea009.dgn	12-123454_0069.tif	L-9

EXAMPLE: New Naming Convention using "Project Number" and "Phase"

DGN File Name	TIFF File Name	<u>Sheet ID</u>
1200007777ea007.dgn	12000077774_0067.tif	L-7
1200007777ea007a.dgn	12000077774_0067a.tif	L-7a
1200007777ea007b.dgn	12000077774_0067b.tif	L-7b
1200007777ea008.dgn	12000077774_0068.tif	L-8
1200007777ea008a.dgn	12000077774_0068a.tif	L-8a
1200007777ea009.dgn	12000077774_0069.tif	L-9

Note: Use same text size as used with a "revised" sheet.

ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
		<mark>68</mark> a	
	_		

If additional mapping is added because the project limits were lengthened during construction, then the additional plans sheets <u>are to</u> <u>be added at the end of those type of sheets</u>. Use the appropriate match line callout on the additional sheets.

If there were a total of 22 Drainage Plan sheets in the As-Awarded plans (with the  $22^{nd}$  drainage sheet being the  $97^{th}$  sheet in the project) and 3 additional Drainage Plan sheets were added, the 3 additional sheets would be added after the last Drainage Plan sheet. The three additional sheets would use the next number (23 for this example) after the last Drainage Plan sheet but add one additional character starting with "<u>a</u>". In this particular example, the last Drainage Plan sheet is 22 and is the  $97^{th}$  sheet in the project.

For example;

#### EXAMPLE: Old Naming Convention using Expenditure Authorization (EA)

DGN File Name	TIFF File Name	<u>Sheet ID</u>
c12345ia022.dgn	12-123454_0097.tif	D-22
c12345ia023a.dgn	12-123454_0097a.tif	D-23a
c12345ia023b.dgn	12-123454_0097b.tif	D-23b
c12345ia023c.dgn	12-123454_0097c.tif	D-23c

EXAMPLE: New Naming Convention using "Project Number" and "Phase"

DGN File Name	TIFF File Name	<u>Sheet ID</u>
1200007777ia022.dgn	12000077774_0097.tif	D-22
1200007777ia023a.dgn	12000077774_0097a.tif	D-23a
1200007777ia023b.dgn	12000077774_0097b.tif	D-23b
1200007777ia023c.dgn	12000077774_0097c tif	D-23c

For example; Sheet ID on lower corner of border sheet, using the New Naming Convention.



Note: A <u>lowercase</u> letter is used in the name of the MicroStation design file, TIFF file, Sheet ID and the sheet numbers in the Project Identification Block when revised or additional sheet are added to the As-Built plans. During the addendum process (which is prior to contract award), an <u>uppercase</u> letter is used in the Sheet ID when a sheet is added (see the Ready To List and Construction Contract Award Guide - RTL Guide).

When revised or additional sheets are included during construction, the added pages are to be listed under the "Index of Plans" on the Title Sheet. List the sheet number of the revised or additional sheets as shown in the example below:



The new total number of sheets will be added just under the Project Identification Block (upper right corner) on the Title Sheet only. The cell (addsht) and the numeric value for the new total number of sheets, are to be placed under the Project Identification Block as shown in the example below. The cell (addsht) also directs people to the Index of Plans. The cell (addsht) is in the Caltrans English Cell Library.



For sheet numbers added to the "Index of Plans" and the new number of total sheets under the Project Identification Block – use the following:

Text Size = 8.75 feet, Weight = 2, Font = 3 at a slant of 15 degrees.

#### 5. As-Built Stamps

In the standard Caltrans cell library, there are several cells that will assist in the As-Built plan process. One of these cells must be placed on every As-Built plan sheet (even Stage Construction sheets, Quantity sheets or sheets with no changes). The only As-Awarded plan sheets that are not to contain an As-Built stamp are the NSPs and RSPs. Revised and Additional sheets are also to contain an As-Built stamp. The two cells used for developing As-Built plans are "asblt2" and "asblt3" (see below). The size of text for the Contract No., C.C.A. Date and R.E. Name (inside each of the As-Built cells) is 7 feet, Weight = 1 and Font = 3.

"asblt2" = For any sheet, including revised and additional plan sheets, (except the title sheet).

AS	BUILT
CONTRACT NO. C.C.A. DATE	
R.E. NAME	

"asblt3" = <u>Only for the Title Sheet</u>. The R.E. (whether registered or not) is the most qualified individual to note the field changes that occurred (called "redline corrections") during the construction of a project. The "redline corrections" made by the R.E. are to be transferred and delineated in the CADD files (MicroStation design files). The R.E.'s approval that the As-Built plan corrections were accurately transferred and completed is confirmed by his/her signature within the As-Built stamp (asblt3) which is placed on the Title Sheet. The R.E.'s signature on the Title Sheet is used in court to demonstrate that the field conditions (after completion of the project) match the conditions shown on the As-Built plans.

AS BUILT CONTRACT NO. C.C.A. DATE R.E. NAME
R.E. Signature for final approval of As-Duilt information

There is to be the same number of As-Built plans as there were As-Awarded plans, unless revised and additional sheets were added during construction. Upon completion of the As-Built plans, TIFF files of the As-Built plans will be created from the MicroStation design files and stored in the DRS. These TIFF files will then be microfilmed for long-term storage (see Part (E) for Microfilming of As-Built plans). NSPs and RSPs are currently only available in PDF format and are located on the Division of Engineering Services – Office Engineer (DES-OE) Project Plans website. Any NSPs or RSPs, which were part of the contract plans, <u>must</u> be included in the archive-ready As-Built plans with no As-Built stamp (leave as PDF format). The signature of the responsible engineer (owner of the NSP or RSP) must be on the sheet. 6. Saving Base Maps and Final Contract Plan Sheets as DGN Files

It is recommended that the Base Map (Master Design and Master Topographic) be preserved for each project that developed a Base Map. The advantages of utilizing the Base Map over utilizing the individual final Contract Plan sheets as MicroStation Design files for new projects is;

- A. There are no signatures to remove.
- B. The Base Map covers the complete limits of the project in one MicroStation file.
- C. Base Maps are <u>always</u> based on the California Coordinate System.
- D. Base Maps do not contain specific notes, callouts or items of work that would have to be deleted before using in a new project.
- E. Most plan sheets (Layouts, Drainage, etc.) are derived from the Base Map.

The final base map (Master Design and Master Topographic) should be saved by each district and stored under a directory identified by the Project Number (see Section 3.8 of this manual). Any project being designed on the state highway system should have the base map submitted to the district (for long term storage) at the time of PS&E submittal, including those projects produced by local agencies or consultants.

7. Archived Vector Data

Once the <u>official</u> As-Built plans (microfilm) are created utilizing the As-Awarded MicroStation design files with the completed As-Built corrections, the MicroStation design files are to be stored in a "secure directory." These MicroStation design files are now to be referred to as "<u>Archived</u> <u>Vector Data</u>" (AVD) files. These MicroStation design files contain the redline corrections (on level 62) that reflect the final field conditions but are <u>NOT</u> considered As-Built plans. The extension of these AVD files is to be changed from ".dgn" to ".avd." Once the AVD files are stored in a "secure directory" on DRS, the As-Awarded MicroStation design files for that project have been superseded and are now "**obsolete**" and should be deleted from where they were stored. Any future projects that need to use or reference archived MicroStation design files, should only use AVD files, not As-Awarded files. The PDF copies of the As-Awarded plans are to be permanently kept on DRS.

These AVD CADD files are to be stored in a "secure directory" that only a few authorized people can access. This procedure is in compliance with Caltrans policy to secure and protect the signature and seal information of the registered engineer in responsible charge of any plan sheet. **The original AVD files must be kept permanently and must still contain the engineer's signature, seal information and As-Built stamp**. Individuals wanting to use the AVD CADD files must make a request in writing to an authorized person in responsible charge of maintaining the AVD CADD files. After a written request is made, the authorized person will make a <u>copy</u> of the AVD file(s) and strip the signature, seal information and individual names of the functional supervisor, designer and checker and the As-Built stamp. Before releasing the AVD CADD files, the cell "<u>AVD</u>" (which is in the Caltrans cell library) is to be placed where the engineer's signature was located (see cell below)

ARCHIVED VECTOR DATA OF COMPLETED PROJECT WITHOUT NAMES & SIGNATURES

Since a copy of any AVD file must not contain the signature, seal information, individual names and As-Built stamp, it can <u>never</u> be considered as an As-Built plan because it will not contain <u>all</u> the information that an official As-Built plan does.

## C. <u>Structure As-Built Plans Using CADD</u>

After construction is complete, the As-Built plans redline corrections can be placed on either a hardcopy set of the As-Awarded (Second Notice) plans or a copy of the "Second Notice" project CADD files. For redline corrections made, the Structure Representative uses the records of changes made to the structures during construction, to redline a set of contract plans. The corrections are shown, in red, to depict what was actually constructed. The Structure Representative then sends the As-Built plans redline corrections (either hardcopy or electronic) to DES Structure Construction. Structure Construction will log the redline corrections and forward them to the appropriate Design Branch (which may be a consultant if it was a consultant design project.)

Redline corrections are to be made using the As-Awarded MicroStation design files. Changes are to be made on Level 62 using Color 62 (per the structures color table.) Drafting standards will be maintained using the Caltrans U.S Customary Units Structural Detailing Standards. Contact the DES-Structures CADD Software Support Group (DES-SCSS) for further information about detailing standards.

The appropriate Caltrans Design Branch or consultant (if the consultant is tasked with completing the As-Built plans) must follow the DES-Structure Design As-Built plan process. The responsible project engineer must submit the form "Request for Electronic Contract Drawings" (either "In House" or "3<sup>rd</sup> Party) to DES-SCSS to obtain the "Second Notice" original project CADD files, Addendums and CCOs (in MicroStation design file format). The CCO CADD files include any revised, supplementary or added plans sheets that were generated after bid opening. For more information please see Bridge Memo To Designers 1-16.

The responsible project engineer must follow the procedures for completing the As-Built redline corrections as outlined in the Bridge Design Details Manual, pages 1-21.1 through 1-21.3, and Chapter 5 of the Construction Manual.

## D. Archive Ready As-Built Plans

After completion of the As-Built plans using MicroStation, archive-ready TIFF image files are to be created by plotting from the MicroStation design file. Procedures for plotting TIFF images generated by "TIFF Output" can be found in Section 5.6 of this manual. These TIFF files must contain the Engineer of Record signature and seal information, along with the appropriate As-Built stamp. The TIFF files are to be monochrome. Do not make color TIFF files. The archive-ready TIFF files are to be uploaded by the District into DRS. DES-Structure Maintenance and Investigations will upload the archive-ready TIFF files into the Bridge Inspection Retrieval Information System (BIRIS).

Districts are responsible for all district projects (including Minor and Locally Funded Projects.) The District is responsible for obtaining archiveready As-Built plans (in TIFF format) from consultants and Local Agencies in addition to the CADD files (MicroStation design files) that contain the redline corrections that the official As-Built plans were created from. DRS is the official repository for "roadway" As-Built plans.

DES-Structure Design is responsible for all structure projects (including those projects prepared by design consultants and local agencies). DES-Structure Design is responsible for obtaining archive-ready As-Built plans (in TIF format) from consultants and Local Agencies in addition to the CADD files (MicroStation design files) that contain the redline corrections that the official As-Built plans were created from. BIRIS is the official repository for structures As-Built plans.

#### E. <u>Microfilming of As-Built Plans</u>

The Headquarters CADD unit (HQ-CADD) will be responsible for administering a contract for microfilming all As-Built plan sheets statewide (including Minor and Locally Funded Projects.) The archived-ready TIFF files will be utilized to create the microfilm copies of the roadway and structure plan sheets. HQ-CADD will send the archived-ready TIFF files to the microfilm vendor. Each district and DES-Structure Maintenance and Investigations is to inform HQ-CADD that the archived-ready TIFF files for each project are completed. Districts have the option of administering their own microfilming contracts as long as they follow established standards. Microfilming standards can be found at:

//cadd.dot.ca.gov/html/drs/standards/default.shtml

If the Districts administer their own microfilming contracts, they must send HQ-CADD the microfilm transmittal information.

Sheet name abbreviations for each individual As-Built plan sheet will appear on each aperture card and will be completed by the microfilm vendor. The aperture card format limits the abbreviation to seven characters. When Districts submit the transmittal spreadsheet while submitting archive-ready TIFF image files to the vendor, they are to use the abbreviation used for aperture cards. The list of the aperture card sheet name abbreviations can be found at:

//cadd.dot.ca.gov/html/drs/standards/default.shtml

When the TIFF files are placed into DRS, the complete sheet description is generally used.

Included with each box of aperture cards submitted by the microfilm vendor will be a log sheet describing the contents of the box. The DRS website has a description of the log sheet which can be found at:

//cadd.dot.ca.gov/html/drs/standards/Microfilm\_Procedures.pdf

The original silver halide copy of each microfilmed plan sheet is to be sent to HQ-CADD by the microfilm vendor. HQ-CADD will then send the original silver halide aperture cards to the HQ Microfilm Unit.

If hard copy plans were given to the microfilm vendor by the District to create the aperture cards, then the vendor will send the hard copy plans back to the District.

Microfilming of Encroachment Permit As-Built plan sheets is the responsibility of the HQ Microfilm Unit. The Encroachment Permit As-Built plan sheets are to continue to be submitted by the District Encroachment Permit Engineer to the microfilm vendor for microfilming. These As-Builts are to be 34 X 44 inch paper plan sheets. Each Encroachment Permit plan sheet must be indexed consistent with the procedures on the DRS website at:

//cadd.dot.ca.gov/html/drs/standards/PermitsCaltransMicrofilming.pdf

## 5. Plotting at Caltrans

## 5.1 Purpose of Plotting

Plotting is the process of transferring the graphic information in a CADD file to paper. Each CADD file represents a single plan sheet that will be plotted as part of a set of project plans. Caltrans uses specific software to plot these plan sheets to standardized scale, line thickness, lettering, and other features of the plan sheet (hard copy), thus instilling integrity of information shared with the bidder/contractor when a project is finally ready for advertisement. Plotting is also used in documenting phases of a project and producing maps for public display.

## 5.2 Plotting Solution

### A. Overview

ProjectWise InterPlot (InterPlot) is a software from Bentley Systems, Inc. that is used as the plotting solution for plotting all final contract plans at Caltrans. InterPlot works within the Microsoft Windows environment that requires software and printers to be installed on the InterPlot server. Workstations that utilize InterPlot must have client version of the software installed on them.

## B. Why a Single Plotting Solution

InterPlot offers a convenient user interface both inside and outside of MicroStation for creating and saving plot sets for processing on an as needed basis. It also allows for easy creation and management of batch plotting.

A single plotting solution minimizes technical support and ensures uniform quality plotting statewide. It also allows centralizing both resource and settings files to produce the consistency in quality on all projects.

District Office Engineer (DOE) may require each design file (.dgn) to have an InterPlot parameter file (.i) included as part of the submittal to ensure that the plan sheets plot exactly as intended. This requirement to create and submit an InterPlot parameter file with MicroStation dgn file varies by District.

## C. Using InterPlot at Caltrans

Each workstation needs to be on a Caltrans domain or the same domain as the InterPlot server, which allows the user to create network attachments to printers that reside on the InterPlot server within the district. IT staff in the district along with CADD staff configure and maintain InterPlot for each district, which also includes the settings and resource files for plotting.

## 5.3 Terms and Definitions

#### ProjectWise InterPlot Organizer

Is a standalone Windows application that runs outside the drafting software environment. It is primarily used for batch plotting a variety of different types of files, such as MicroStation (dgn), AutoCAD (dwg) and raster image file formats such as TIFF and JPEG. It also supports the plotting and creation of PDF files. Plot requests can be added by selecting the CADD files, Image files or InterPlot parameter (iparm) files using this application.

#### <u>iparm (\*.i)</u>

iparm or iparms stands for "<u>InterPlot **par**</u>a<u>m</u>eter file(s)." These files contain instructions on how to process a single plot request for a single MicroStation design file (dgn). This file contains information such as the design file region, levels, and display attributes to be plotted. This file also lists the design script (formerly called a pen table) used to control the look of the plot. These iparm files usually get created from the design file using the "save" command from the "Iplot-Main" dialog. ProjectWise InterPlot Organizer can be used to read the iparm files for batch plotting later.

Note: Creating iparms for PS&E is covered under Section 5.5 of this manual.

#### InterPlot Plot Set file (\*.ips)

Contains a set of individual plot requests packaged into a single file, including all parameter settings for each plot request.

Note: Check with your District OE before creating/submitting "ips" files.

#### Settings files (\*.set)

Settings files contain default plotting parameters such as specifying a design script, paper size and display attribute settings.

They can be categorized as follows:

- 1. Automatic settings The settings file named "Iplot.set" found in the "auto" subdirectory on the district InterPlot servers is always read when opening InterPlot Organizer and applied when adding plot requests involving MicroStation design files. "Iplot.set" is also applied upon initiating the "IPLOT-Main" dialog within MicroStation. This file is meant to contain default settings that would be desirable no matter which plotter is to be used.
  - Note: Caltrans utilizes this file to turn off undesired display attributes like construction elements and 'fast' displays (such as 'fast cell' and 'fast text').
- 2. Printer settings Settings files can be set up with names that correspond with existing printer queues so that when a particular printer queue is selected, its corresponding settings file will be applied. These settings files reside in the "auto" subdirectory and are mainly used for setting up the most used paper size, plot size and design script for each plotter/printer.
- 3. Manual settings These settings files are manually selected by a user and are normally used for additional functions such as defining plot regions via a pre-defined shape.

#### Meta files

A Meta file (.m) is temporarily created when submitting a plot request from within MicroStation or the DOS command line. This Meta file contains information from the active design file, any reference files, and design script information controlling the plot when sent to the plot server.

#### Print Driver

In basic terms, a print driver is a translator between the plotting software's output to commands understood by a specific plotting device. InterPlot supports various plotters with enhanced print drivers. Other vendor supplied print drivers can also be used since InterPlot uses Windows print services. An administrator sets up print drivers at the time of creating the printer queues on the InterPlot server.

## Integrate

Integrate is a feature of the InterPlot client application which allows the user to select the CADD product that will process the plot request. It also allows the user to specify which CADD products will have the InterPlot Organizer available. Integrate is accessed via the "Integrate" button on the "ProjectWise InterPlot Organizer Configure" dialog.

## Translucent plotting

Translucent plotting allows the user to tint or colorize an area without obscuring the underlying image or element. For a detailed look at translucent plotting, see Section 5.10 in this chapter.

#### Paper Size

Defines the size of the paper that is selected, which then determines the maximum size that is available for plotting.

### Export to PDF

Export to PDF is used to create PDF files which can be shared without the need to print to paper. For further information about creating PDFs at Caltrans, see Section 5.7 in this chapter.

#### <u>Dropout</u>

At Caltrans, dropout is a dotted linear pattern that is applied to elements on certain levels, giving the effect of subduing (fading into the background) existing information. Dropout is used for all PS&E submittals. For a detailed look at how dropout is achieved at Caltrans, see Section 5.10 in this chapter.

#### <u>Grayscale</u>

Gray scale is a range of "shades of gray" that can be used to give the effect of subduing certain information on a plan sheet. Caltrans <u>does not</u> use gray scale for PS&E submittals.

#### Masking

Masking is the effect of covering over elements by placing a shape with a fill color in front. Color used for masking from Caltrans color table (ctcolor.tbl) is color # 250.

## 5.4 Accessing InterPlot

There are 3 ways that InterPlot can be accessed.

#### A. <u>Within MicroStation via "IPLOT - Main" dialog</u>:

This is best used for creating InterPlot parameter files (iparms) or for creating single preliminary "review" plots. On machines with InterPlot installed, it can be accessed by selecting "IPLOT" from MicroStation CONNECT's File tab, backstage view's Print section, typing "iplot" in the MicroStation CONNECT's Key-in window or by clicking the "IPLOT" tool icon from MicroStation CONNECT's user Interface.

#### B. From Windows via "ProjectWise Interplot Organizer":

InterPlot Organizer can read in "iparm files" to create plot request for batch plotting MicroStation design files. It allows one to quickly organize and send batches of plots. Besides MicroStation design files, it supports various other file types such as AutoCAD files, TIFF, PDF and JPEG. Organizer can be accessed using the Windows Start Menu from **Bentley** group of applications.

## C. <u>From the DOS command line</u>:

This requires that you have knowledge of the Interplot command line syntax. User can create, modify and submit iparms from the window's DOS command line. Caltrans made use of this functionality to enable scripts that modify "iparms" in batch mode.



## 5.5 Creating InterPlot Parameter Files (iparms) for PS&E

#### A. <u>Creating iparms</u>

Some districts may requires InterPlot parameter file (iparm) to be created/submitted for each final contract plan sheet (1 design file "dgn") submitted at PS&E. These iparm files should be created after the design file naming convention has been applied to the contract plan sheets. This will avoid the need to modify or create new iparm files. Changing the name of a design file after creating the iparm file requires the user to modify the iparm to specify the renamed DGN file.

The following procedure is recommended:

- Open the design file and fit the border sheet with the proper view parameters; (one view window, all levels on, and the view is to be rotated so that the border sheet is visually at "<u>exactly</u>" zero degrees rotation). See Section 4.1 of the Plans Preparation Manual for additional "General Plotting Requirements."
- 2. Place a fence by snapping exactly around the cut lines of the border sheet (place the fence by snapping from the lower left corner to the upper right corner).
- 3. Open the "IPLOT Main" dialog box.
- 4. Select the plotter that will accommodate a full-sized 22" x 34" plot. This is the official size of all contract plan sheets at PS&E.
- 5. Select a paper size that will accommodate a 22" x 34" plot size. Typically this would be "Arch D" which is 24" x 36".
- 6. Check that the correct plot size (22" x 34") is displayed in the Plot Size field and the appropriate Plot Scale is shown.
- 7. Under the "Select Plotting Files..." option, make sure the correct design script is selected for PS&E submittal (CT\_FinalPSE.pen).
- 8. Use the "File >Save" pull-down command from the "IPLOT Main" dialog to save an "iparm". The new iparm will either appear in the same directory as the design file or in a default directory depending on how Interplot is configured. If the "iparm" files are stored in a default directory, user should copy the iparm files to the same directory where the design (.dgn) files are located. This will allow the user to utilize the correct iparm throughout the design stage.

#### B. <u>Modifying iparms</u>

Changes or modifications to the MicroStation design (.dgn) file may or may not require modifications to the Iparm.

Modification or recreation of iparm files will be needed in the following situations:

- 1. Levels are turned **on** or **off** in the view to be plotted for either the active or referenced files.
- 2. Level Symbology is turned **on** or **off**.
- 3. Added, deleted or renamed reference file attachments.

Changes to iparm files is **NOT** needed in the following situations:

- 4. Any changes to element properties such as weight, style or color.
- 5. Any changes to element positions or geometry.
- 6. Changes to reference attachments (scale or position).
- 7. Changes to Level Symbology if it was already turned **on**.

### 5.6 Plotting to TIFF image files

#### A. How to plot to a TIFF image file

Caltrans established a printer queue on most of the Interplot servers named "Tiff Output". Instead of printing an actual plot on paper, this printer queue will create a TIFF image file at a pre-designated directory on the plot server, (usually "\\plot server name\TiffOut").

#### B. <u>Standard Properties of TIFF Images generated by "Tiff Output"</u>

TIFF image files at Caltrans should have the following properties:

File format:	400 dpi Monochrome Tiff
Compression:	CCITT group 4
Size:	22" x 34"

#### C. <u>Use of TIFF files</u>

TIFF files are used when project information and licensed professional' seal and signature is to be added to the final contract documents. PDF files may be directly created instead of creating TIFF files when there is no need to modify information on the contract documents.

## 5.7 Creating and Plotting PDF files

#### A. <u>Creating PDF files</u>

PDF files can be created from InterPlot Organizer or using the IPLOT -Main dialog from MicroStation using the "Export PDF..." command in the "File" menu.

#### B. Plotting PDF files

InterPlot Organizer supports batch creation of PDF files. It is recommended that users print from Adobe Reader or Adobe Acrobat Professional when print size and scale of the output needs to be changed from the InterPlot Organizer batch plots.

#### C. <u>PDF Standards</u>

The standards that are set at the "PDF Format Configuration" dialog are:

Resolution	600 DPI
Rotation	270 degrees

The standards that are set from the "IPLOT - Main" dialog are:

Use full paper size	yes
Paper Size	ANSI D
Size	22" x 34"
Design Script	CT_FinalPSE.pen

Note: It is recommended that the above PDF standards be used even if printing PDF files to 11" x 17" printers to ensure better quality and consistency. It is easy to "<u>fit to the paper size</u>" from the Adobe Print dialog when printing to printers that support 11" x 17" maximum page size.

#### D. Use of PDF files

PDF is currently the standard file format for final submittal of AADD projects.



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## 5.8 Things to watch out for when using Interplot

- When creating iparm files, it may be necessary to ensure that UNC protocol "\\" is used pointing to the directory containing design files. This ensures that iparm files remain functional as a mapped drive letter may not always be used or available for everyone working on a project.
- 2. It is recommended to always use InterPlot Organizer's browser when handling files.

Note: Do not use the "<u>drag and drop</u>" method to add files to Organizer.

This enables InterPlot to find corresponding design files that reside in the same directory as the iparm files when a different directory was originally listed in the iparm. This might happen when moving files to another directory during the PS&E submittal process.

- 3. When sending a request to an "offline" raster output queue, via InterPlot Organizer, to create TIFF image files, you should select "<u>separate print jobs</u>" under the "submit plots as" section. "Separate print Jobs" creates one TIFF image file per sheet. "<u>One print job</u>" (which is the default) will result in creating one TIFF image file with all the sheets in it.
- 4. Interplot has an auto align function that can be configured to behave in one of two ways (parallel or coincident). Both of these methods will determine how the "align\_x" or "align\_y" commands work. Caltrans defaults to the parallel method and the "align\_x" command.
  - "IPLOT\_ALIGN\_METHOD = parallel" When set to "parallel", InterPlot finds the longest side of the plot fence polygon (usually the top or bottom of the border) and rotates the border to the X or negative X axis (depending on the rotation angle).
  - "IPLOT\_ALIGN\_METHOD = coincident" This method is used when a user wants to generate a plot request from InterPlot Organizer using a plot shape. Caltrans has embedded a plot shape in each of the Caltrans border sheets. If the embedded shape is used, the border sheet will plot normal to the view (zero degrees).
- 5. When creating PDF files, "<u>Use full paper size</u>" is recommended (margins will be added later when printing to paper).

## 5.9 MicroStation Print

MicroStation "Print" refers to the printing solution that is packaged within MicroStation and is accessed by selecting "Print" command from the MicroStation CONNECT's File tab, backstage view. MicroStation "Print" is primarily used to plot raster images (especially long display maps). <u>MicroStation "Print" is not to be used for PS&E submittals</u>.

## 5.10 Caltrans Design Scripts

### A. <u>What is a Design Script</u>

Design scripts are files that contain instructions that are supplied to the plotting application to control how certain elements are to be plotted. Plotting application allows the user to choose which design script is appropriate when creating a plot request.

#### B. <u>The History of the Caltrans Design Scripts</u>

Caltrans established certain plotting standards for roadway drawings back when CADD was first introduced in 1987. The most noticeable feature of the Caltrans roadway design scripts is the changing of all elements on levels 2 through 9 and 11 to a fine dotted pattern (\*) when using the now obsolete numbered level convention or when printing elements on levels with names that end with "\_drop". These levels are commonly referred to as "dropout levels", which contain existing design information. This simulates the "screened out" affect that was used by the reprographics department on non-CADD drawings. Another feature is the adjustment of line weights. Weighted lines are reduced if they are on a dropout level. This allows the proposed design information to standout more boldly against the existing design information.

(\*) – This level range was extended when MSV8 was in use. See Section E for a list of dropout levels.

#### C. <u>Standard Caltrans Roadway Design Scripts</u>

Caltrans has several design scripts depending on the product being plotted. The various design scripts are based on the same plotting logic and process files in the same way. Full-Size plotting is 22" x 34", which is the standard size for all Final Contract Plans at PS&E. Half-Size printing is used for preliminary design review and check prints at various milestones. Design scripts for Right of Way Engineering have additional logic for color plotting.

## For Final PS&E

"CT\_FinalPSE.pen"

Full-sized monochrome plotters

For full-size black and white plotting (22" x 34"). This design script is always to be used for final PS&E submittals.

#### For Preliminary Design & Check Prints

"fullbw.pen" "fullbw-600.pen" "halfbw.pen" "halfbw-75.pen" "fullclr.pen" "halfclr.pen" "halfclr-75.pen"	Full-sized monochrome plotters Full-sized monochrome plotters Monochrome printers Monochrome printers Full-sized color plotters Color printers Color printers
Fullbw.pen	For full-size black and white plotting (22" x 34"). Can be used for full-size check prints. This is optimized for 400 dpi.
Fullbw-600.pen	For full-size black and white plotting (22" x 34"). Can be used for full-size check prints. This is optimized for 600 dpi.
Halfbw.pen	For half-size black and white printing (11" x 17"). Line weights and patterns are reduced to simulate a half-size reduction for check prints.
Halfbw-PCL.pen	For half-size black and white printing (11" x 17"). To be used with the "HP Generic PCL/5 Mono by Bentley" driver.
Halfbw-75.pen	For half-size black and white printing (11" x 17"). Dropout pattern is reduced by 75% from full-size.
FullClr.pen	For full-size color plotting. (A gray scale affect will result when submitting to a black and white printer/plotter).
HalfClr.pen	For half-size color printing. (A gray scale affect will result when submitting to a black and white printer/plotter). Line weights and patterns are reduced to simulate a half-size reduction.

HalfClr-75.pen For half-size color printing. (A gray scale affect will result when submitting to a black and white printer/plotter). Dropout pattern is reduced by 75% from full-size.

## For 11 x 17 Printers

Bentley Systems offers two drivers that can be used with Windows 64-bit machines. These drivers are the "HP Generic PCL/5 Mono by Bentley" and the "HP Generic PCL/5 Color by Bentley" drivers.

When printing black and white to an 11 x 17 printer, use the "HP Generic PCL/5 Mono by Bentley" driver along with the Caltrans design script "halfbw-PCL.pen."

When printing color to an 11 x 17 printer, use the "HP Generic PCL/5 Color by Bentley" driver along with the Caltrans design script "halfclr.pen."

#### For Right of Way Maps

The following four design scripts are similar to the preliminary design and check print design scripts.

"rwe\_fullbw.pen" "rwe\_fullclr.pen" "rwe\_halfbw.pen" "rwe\_halfclr.pen"

The following four design scripts are the same as the four above, but have been optimized for 600dpi.

"rwe\_fullbw-600dpi.pen" "rwe\_fullclr-600dpi.pen" "rwe\_halfbw-600dpi.pen" "rwe\_halfclr-600dpi.pen"

The following Right of Way design scripts are all designed to colorfill Parcel boundaries. The selection of a design script will affect whether line work is colored or black and whether line weights and patterns are reduced.

The eight design scripts with "<u>SetPriorities</u>" in the name are used to set "display priorities of elements prior to plotting". The eight design scripts with "<u>NoPriorities</u>" in the name are used when display priorities are accounted for by means such as "<u>Reference File</u> <u>Update Sequence</u>" or "<u>Move To Front/Back routine</u>". The design scripts with "-600dpi" in the name have been optimized for 600 dpi.

"RW full Parcel-color Line-bw NoPriorities.pen" "RW full Parcel-color Line-bw NoPriorities-600dpi.pen" "RW full Parcel-color Line-bw SetPriorities.pen" "RW\_full\_Parcel-color Line-bw SetPriorities-600dpi.pen" "RW full Parcel-color Line-color NoPriorities.pen" "RW full Parcel-color Line-color NoPriorities-600dpi.pen" "RW\_full\_Parcel-color\_Line-color\_SetPriorities.pen" "RW full Parcel-color Line-color SetPriorities-600dpi.pen" "RW half Parcel-color Line-bw NoPriorities.pen" "RW\_half\_Parcel-color\_Line-bw\_NoPriorities-600dpi.pen" "RW half Parcel-color Line-bw SetPriorities.pen" "RW half Parcel-color Line-bw SetPriorities-600dpi.pen" "RW half Parcel-color Line-color NoPriorities.pen" "RW half Parcel-color Line-color NoPriorities-600dpi.pen" "RW half Parcel-color Line-color SetPriorities.pen" "RW half Parcel-color Line-color SetPriorities-600dpi.pen"

D. <u>Functions and Features of Caltrans Design Scripts</u>

## <u>DROPOUT</u>

- Converts all elements on Levels 2-9, & 11 (and all specified dropout levels for a MicroStation V8 format file) from files created using the now obsolete numbered level convention and all elements on levels with names that end with "\_drop" in dgn files created using the current named level convention to the specified 'dropout' pattern, as long as the color of an element is not 101 through 116. For information about levels in MicroStation format files, see Appendix A9 of this manual.
- Note: Colors 101 through 116 are used when a user wishes to <u>not</u> dropout an element that resides <u>on</u> a dropout level.
- Converts all elements with color 85-100 (from ctcolor.tbl) to the specified 'dropout' pattern.
- Note: Colors 85 through 100 are used when one wishes <u>to</u> dropout an element that <u>does not</u> reside on a dropout level but maintain the RGB value while viewing the element on the monitor.

#### **WEIGHTS**

 Reduced weight (WT =) assignments for elements on dropout levels 2-8, & 11 (and all specified dropout levels in dgn files created using the obsolete numbered level convention) or for elements on levels with names that end with "\_drop" in dgn files created using

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the current named level convention except when using colors 101 through 116.

- Reduced weight (WT =) assignments for elements with dropout colors (85-100).
- The reduced weight assignments for dropout features are as follows:
  - a. Weight 1 is converted to weight 0.
  - b. Weight 2 & 3 are converted to weight 1.
  - c. Weight 4 & 5 are converted to weight 2.
  - d. Weight 6 & 7 are converted to weight 3.
  - e. Weights 8-31 are converted to weight 4.

LINE THICKNESS (Full Size Plot – 22" x 34")

- Weight 0 is set to .005 inches.
- Weight 1 is set to .0125 inches.
- Weight 2 is set to .02 inches with subsequent weights graduating at a .005 inch increment.

#### TIME / DATE STAMP

• Certain characters or text strings are substituted to print specific information at the time of a plot. These characters are included in the Caltrans standard sheet border cells. The substitutions are listed below:

Characters to be substituted	Information plotted
\$TIME	Time of plot
\$DATE	Date of plot
\$USER	Person who sent plot request
\$REQUEST	Design file name
Characters not part of border	
sheet	
\$FREQUEST	Directory path with design
	name
\$QUE	Name of the printer queue used

Note: There are additional characters or text strings included in the Caltrans design scripts that are not actively used.

## USING COLORS TO PLOT

- In the design script "CT\_FinalPSE.pen", all elements are set to black (0,0,0) in order to ensure black and white plotting/printing for final PS&E submittals.
- In the design scripts for preliminary design and check prints and the Right of Way Engineering design scripts, colors 0-127 are set to black to prevent grayscale occurring. Elements can be placed with colors 128-249 if needed for a color or a grayscale effect.
- R/W monument cells, landscape cells and some drainage cells use color 250 for area masking. Masking allows a shape to have a black fill color (on the workstation monitor) to match the preferred monitor background and then be plotted with a white fill to match the white paper. Color 251 is used as a boundary for masked areas when the boundary needs to be seen when printed.
- Translucent plotting is usually done over a raster image (aerial photo) to distinguish specific areas or parcels from one another. Translucent plotting can be accomplished with MicroStation V8i versions and later version and also with pre V8i versions.

## Pre MicroStation V8i:

Translucent plotting can be accomplished by placing shapes using the Caltrans line style "zz-fillshape1" (<u>Note: using "zz-fillshape1</u>" will not work in MicroStation V8i). The shape does not need to be filled with a color. This helps those using MicroStation V8-2004 since this version does not support translucent elements like V8i does.

When the line style "zz-fillshape1" is used to create a shape, the tinting (translucency) will take on the same color as the boundary of the shape. In addition to the tinting, the boundary will be converted to the color white in order to separate different tinted areas.

Translucent plotting, using the line style "zz-fillshape1" with MicroStation V8-2004, is only supported by color plotters/printers that use Interplot drivers. This also includes Raster Offline cues and Export PDF functionality.

Note: InterPlot only supports drivers for full-size plotters (not halfsize printers), which include the HP-1055 color plotter and the HP-4500 color plotter.

#### MicroStation V8i and later versions:

MicroStation V8i and later versions of the software support elements with translucent properties. Files with translucent elements can be sent to any color plotter/printer to achieve the tinting effect.

### **MISCELLANEOUS**

 Corners are set to curve (not mitered) for text, shapes, line strings and line styles to prevent the problem of a 'spiked' affect that occurs with some printers.

#### E. <u>Dropout logic and weight and patterning values</u>

Level	Dropout Levels	Dropout	Non-
Convention		Colors	Dropout
			Colors
Named Levels	*_drop (All levels with level names	85-100	101-116
	that end with _drop)		
Numbered Levels	2-9,11	85-100	101-116
(Obsolete)	202-208		
	302-309,311		
	402-409,411		
	502-509,511		
	602-609,611		
	702-709,711		
	802-809		
	871-900		

#### Dropout Levels and Dropout/Non-Dropout Colors

## Pattern for Dropout (dash/gap in inches)

(These random patterns give a better look than a straight dotted pattern)

Table	Dash	Gap	Dash	Gap	Dash	Gap	Dash	Gap
Full	.0075	.020	.010	.0225	.0125	.025	.010	.0225
Half	.00375	.01	.005	.011	.006	.012	.005	.01125
Half 75	.005625	.015	.0075	.0165	.009	.018	.0075	.016875

Non Dropout Weight	Dropout Weight
0	0
1	0
2-3	1
4-5	2
6-7	3
8-31	4

# Reduced Weight for Dropout

## Weight Thickness assignments

Weight	Full Pen Tables (inches)	Half Pen Tables (inches)	Half-PCL Pen Table (inches)
0	0.005	0.0025	0.005
1	0.0125	0.00625	0.007
2	0.020	0.010	0.010
3	0.025	0.0125	0.0125
4	0.030	0.015	0.015
5	0.035	0.0175	0.0175
6	0.040	0.020	0.020

Note: Weight 2 and above increment by 0.005" for Full, 0.0025" for Half.

# Appendix A1

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lyl / Co / Wt)	Cell Type	Cell Use	Cell Image
AIC	AUXILIARY IRRIGATION CONTROLLER (LvI = 50 IrrigationNew / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	
BP	BOOSTER PUMP (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
BPA	BACKFLOW PREVENTER ASSEMBLY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
BPE	BKFLOW PREVENTER ENCLOSURE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
BV	BALL VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\square$
САР	CAP (Lvl = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
CARV	COMB AIR RELEASE VALVE ASSY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	H
CCA	CAM COUPLER ASSEMBLY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
CES	CONNECT TO EXISTING SYSTEM (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\langle \hat{C} \rangle$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
CLG	CHAIN LINK GATE (LvI = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	0
CNC	OBSOLETE	Grph	Line Pattern	
COND	OBSOLETE	Grph	Line Pattern	
CV	CHECK VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
DIP	OBSOLETE	Grph	Line Pattern	—— D I P——
FCV	FLOW CONTROL VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
FS	FLOW SENSOR (Lvl = 50 IrrigationNew / Co = 1.250 / Wt = 1) (Masking)	Grph	Sym	FS
FV	FLUSH VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\vdash \bigcirc$
GARV	GARDEN VALVE ASSEMBLY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
GC1	OBSOLETE	Grph	Line Pattern	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
GC2	STAR GROUND COVER (Lvl = 49 Planting / Co = 2 / Wt = 0)	Grph	Sym	$\times$
GC3A	RABBITS FEET GROUND COVER (Lvl = 49 Planting / Co = 2 / Wt = 0)	Grph	Area Pattern	8 6 6 4 6 7 7 7 7 8 6 7 7 7 7 7 7 7 7 7 7 7 7 7
GC3B	DOTTED GROUND COVER (Lvl = 49 Planting / Co = 2 / Wt = 1)	Grph	Area Pattern	
GC3C	CHICKEN FEET GROUND COVER (Lvl = 49 Planting / Co = 2 / Wt = 0)	Grph	Area Pattern	4 + 4 + 4 + 4 + 4 4 + 4 + 4 + 4 + 4 4 + 4 +
GSPL	OBSOLETE	Grph	Line Pattern	
GSPM	OBSOLETE	Grph	Line Pattern	
GV	GATE VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
IC	IRRIGATION CONTROLLER (LvI = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
ICC	CONTROLLER ENCLOSR CABINET (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	
IQ1	IRRIGATION QUANTITY SHEET 1 (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sym	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
IQ2	IRRIGATION QUANTITY SHEET 2 (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sym	
IQ3	IRR QUANT SHT 1 CONSULTANT (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
IQ4	IRR QUANT SHT 2 CONSULTANT (Lvl = 10 Sheet Format / Co = 0,4 / Wt = 0-3)	Grph	Sheet	
IRCSCH	IRRIGATION CONDUIT SCHEDULE (Lvl = 50 IrrigationNew / Co = 0 / Wt = 0-2)	Grph	Table	
IRXSCH	OBSOLETE	Grph	Table	
LAMCLP	LANDSCAPE FULL CLIP (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
LANCLP	LANDSCAPE TITLE CLIP (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
LAND	LANDSCAPE BORDER SHEET (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
LAND2	LANDSCAPE BORDER CONSULTANT (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
LASEAL	LICENSED LANDSCAPE ARCHITECT SEAL (Lvl = 10 Sheet Format / Co = 0 / Wt = 0,2)	Grph	Sheet	

LANDSCAPE				
Cell Name	Cell Description	Cell	Cell	Cell Image
LMCLP2	LANDSCALE FULL CLIP CONSULTANT (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
LNCLP2	LANDSCAPE TITLE CLIP CONSULTANT-2 (LvI = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
LNCLP3	LANDSCAPE TITLE CLIP CONSULTANT-3 (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
LTITLE	LANDSCAPE TITLE SHEET (LvI = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
LTITL2	LANDSCAPE TITLE CONSULTANT-2 (Lvl = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
LTITL3	LANDSCAPE TITLE CONSULTANT-3 (Lvl = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
MIC	MASTER IRRIGATION CONTROLLER (LvI = 50 IrrigationNew / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	
PLTLGD	PLANT LEGEND (Lvl = 10 Sheet Format,49 Planting / Co = 0,23,4,252 / Wt = 0-3)	Grph	Sheet	
PLTLGD2	PLANT LEGEND CONSULTANT (Lvl = 10 Sheet Format,49 Planting / Co = 0,2,3,4,252 / Wt = 0-3)	Grph	Sheet	
PLTLST	OBSOLETE	Grph	Sheet	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PLTLT2	OBSOLETE	Grph	Sheet	
PLTQTY1	PLANT QUANTITIES OPTION -A (Lvl = 10 Sheet Format, 60 Nongeo Data / Co = 0,3,252 / Wt = 0-3)	Grph	Sheet	
PLTQTY2	PLANT QUANTITIES OPTION -B (Lvl = 10 Sheet Format, 60 Nongeo Data / Co = 0,3,252 / Wt = 0-3)	Grph	Sheet	
PLTQTY3	PLANT QUANTITIES OPTION -A CONSULTANT (Lvl = 10 Sheet Format, 60 Nongeo Data / Co = 0,3,252 / Wt = 0-3)	Grph	Sheet	
PLTQTY4	PLANT QUANTITIES OPTION -B CONSULTANT (Lvl = 10 Sheet Format, 60 Nongeo Data / Co = 0,3,252 / Wt = 0-3)	Grph	Sheet	
PPSL	OBSOLETE	Grph	Line Pattern	
PPSM	OBSOLETE	Grph	Line Pattern	
PRLV	PRESSURE RELIEF VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
PRV	PRESSURE REGULATING VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
QCV	QUICK COUPLING VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
QCVSP	QUICK COUPLING VALVE WITH SPRINKLER PROTECTOR (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
RCV	REMOTE CONTROL VALVE (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
S1	INDIVIDUAL SHRUB 10FT WIDE (Lvl = 49 Planting / Co = 2 / Wt = 1)	Grph	Sym	
S2	10 FOOT DIAMETER SHRUB WITH CENTER (Lvl = 49 Planting / Co = 2 / Wt = 0,1)	Grph	Sym	$\bigcirc$
S3	10 FOOT DIAMETER SHRUB WITH FULL CENTER (Lvl = 49 Planting / Co = 2 / Wt = 0,1)	Grph	Sym	
S4	10 FOOT DIAMETER SHRUB WITH PLUS CENTER (Lvl = 49 Planting / Co = 2 / Wt = 0,1)	Grph	Sym	(+)
S5	HEX SHRUB WITH TRIANGLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1)	Grph	Sym	
S6A	OBSOLETE	Grph	Line Pattern	
S6AF	OBSOLETE	Grph	Line Pattern	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
S6B	OBSOLETE	Grph	Line Pattern	
S6BF	OBSOLETE	Grph	Line Pattern	
S10A	OBSOLETE	Grph	Line Pattern	mhohom
S10AF	OBSOLETE	Grph	Line Pattern	
S10B	OBSOLETE	Grph	Line Pattern	
S10BF	OBSOLETE	Grph	Line Pattern	
S10C	OBSOLETE	Grph	Line Pattern	
S10CF	OBSOLETE	Grph	Line Pattern	
S15A	OBSOLETE	Grph	Line Pattern	
S15AF	OBSOLETE	Grph	Line Pattern	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
S15B	OBSOLETE	Grph	Line Pattern	
S15BF	OBSOLETE	Grph	Line Pattern	
S15C	OBSOLETE	Grph	Line Pattern	~~~~~~
S15CF	OBSOLETE	Grph	Line Pattern	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
S20A	OBSOLETE	Grph	Line Pattern	
S20AF	OBSOLETE	Grph	Line Pattern	
S20B	OBSOLETE	Grph	Line Pattern	unun
S20BF	OBSOLETE	Grph	Line Pattern	
SCC	OBSOLETE	Grph	Line Pattern	scc
SPRSCH	SPRINKLER SCHEDULE (Lvl = 10 Sheet Format,50 IrrigationNew,60 Nongeo Data / Co = 0,1,3,4,208,252 / Wt = 0-4)	Grph	Table	
LANDSCAPE				
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Cell Name	Cell Description (Svmbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
SPRSCH2	IRRIGATION SPRINKLER SCHEDULE CONSULTANT (Lvl = 10 Sheet Format, 50 IrrigationNew,60 Nongeo Data / Co = 0,1,3,4,208,252 / Wt = 0-4)	Grph	Sheet	
STA1F	SPRINKLER TYPE A1 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	1
STA1P	SPRINKLER TYPE A1 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	(1)
STA2F	SPRINKLER TYPE A2 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	2
STA2P	SPRINKLER TYPE A2 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	(2)
STA3F	SPRINKLER TYPE A3 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	3
STA3P	SPRINKLER TYPE A3 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	3
STA4F	SPRINKLER TYPE A4 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	4
STA4P	SPRINKLER TYPE A4 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	4

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
STA5F	SPRINKLER TYPE A5 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	5
STA5P	SPRINKLER TYPE A5 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	(5)
STA6F	SPRINKLER TYPE A6 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	6
STA6P	SPRINKLER TYPE A6 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	6
STA7F	SPRINKLER TYPE A7 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	7
STA7P	SPRINKLER TYPE A7 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\overline{7}$
STA8F	SPRINKLER TYPE A8 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	8
STA8P	SPRINKLER TYPE A8 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	8
STA9F	SPRINKLER TYPE A9 FULL (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	9
STA9P	SPRINKLER TYPE A9 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	9

LANDSCAPE				
Cell Name	Cell Description	Cell	Cell	Cell Image
STA10F	(Symbology: LVI / Co / Wt) SPRINKLER TYPE A10 FULL (LvI = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	10
STA10P	SPRINKLER TYPE A10 PART (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	(10)
STB1	SPRINKLER TYPE B1 (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
STB2	SPRINKLER TYPE B2 (LvI = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
STB3	SPRINKLER TYPE B3 (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
STB4	SPRINKLER TYPE B4 (LvI = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
STB5	SPRINKLER TYPE B5 (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\bigcirc$
STB6	SPRINKLER TYPE B6 (LvI = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
STC1	SPRINKLER TYPE C1 (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
STC2	SPRINKLER TYPE C2 (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
STC3	SPRINKLER TYPE C3 (LvI = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
SWCP	SPRINKLER WITH CONCRETE PROTECTOR (Lvl = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	3
T1	PLAIN CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 3)	Grph	Sym	$\bigcirc$
T1A	CIRCLE IN CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T1B	FULL CIRCLE IN CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T1C	TRIANGLE IN CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 0,3)	Grph	Sym	
T1D	SQUARE IN CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 0,3)	Grph	Sym	
T1E	PARALLELOGRAM IN CIRCLE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T2A	PIE CHART TREE WITH FULL CENTER (Lvl = 49 Planting / Co = 2 / Wt = 0,1,3)	Grph	Sym	
T2B	CIRCLE WITH 3 RADIATING LINES (Lvl = 49 Planting / Co = 2 / Wt = 0,3)	Grph	Sym	$\bigcirc$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T2C	CIRCLE WITH 5 RADIATING LINES (Lvl = 49 Planting / Co = 2 / Wt = 0,3)	Grph	Sym	$\mathbf{O}$
T3A	CIRCLE W SHORT LINES (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3B	CIRCLE W 4 SPIKES (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T3C	ORANGE SLICE TREE (Lvl = 49 Planting / Co = 2 / Wt = 0,1,3)	Grph	Sym	
T3D	OFFSET CIRCLE TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3E	TREE WITH 3 INVERTED ARCS (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3F	TREE WITH 5 INVERTED ARCS (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T4A	PUFFBALL TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T4B	ROUGH INVERTED ARC TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	ي ي ○ ي
T4C	SMOOTH INVERTED ARC TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T4D	STARBURST TREE 1 (Lvl = 49 Planting / Co = 2 / Wt = 1,2)	Grph	Sym	Marker of the second se
T4E	STARBURST TREE 2 (Lvl = 49 Planting / Co = 2 / Wt = 1,2)	Grph	Sym	Non and and a second se
T5A	HEXAGON TREE (Lvl = 49 Planting / Co = 2 / Wt = 3)	Grph	Sym	$\bigcirc$
T5B	HEX TREE WITH CIRCLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T5C	HEX TREE WITH FULL CIRCLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T5D	HEX TREE W TRIANGLE CTR (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T5E	HEX TREE WITH SQUARE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T5F	HEX GEAR TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\left< \right>$
T6A	PENTAGON TREE (Lvl = 49 Planting / Co = 2 / Wt = 3)	Grph	Sym	$\bigcirc$
T6B	PENTAGON TREE WITH CIRCLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T6C	PENTAGON TREE WITH FULL CIRCLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\textcircled{\bullet}$
T6D	PENTAGON TREE WITH BOX CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T6E	PENTAGON TREE WITH TRIANGLE CENTER (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	
T6F	PENTAGON GEAR TREE (Lvl = 49 Planting / Co = 2 / Wt = 1,3)	Grph	Sym	$\langle \circ \rangle$
TLS	TRUCK LOADING STDPIPE (LvI = 50 IrrigationNew / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\bigcirc$
VALVCD	VALVE CODE DETAIL (Lvl = 50 IrrigationNew / Co = 1 / Wt =0,1)	Grph	Notes	
VAU	DRIP VALVE ASSEMBLY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt =0,1) (Masking)	Grph	Sym	
VCB	CONTROL VALVE CODE BUBBLE (Lvl = 50 IrrigationNew / Co = 1 / Wt = 1)	Grph	Sym	
VINE1	OBSOLETE	Grph	Line Pattern	
VINE2	OBSOLETE	Grph	Line Pattern	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
VINE3	OBSOLETE	Grph	Line Pattern	
WM	WATER METER (Lvl = 50 IrrigationNew / Co = 1,250 / Wt =0,1) (Masking)	Grph	Sym	
WS	WYE STRAINER ASSEMBLY (Lvl = 50 IrrigationNew / Co = 1,250 / Wt =0,1) (Masking)	Grph	Sym	
XAIC	AUXILIARY IRRIGATION CONTROLLER (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBP	BOOSTER PUMP (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBPA	BACKFLOW PREVENTER ASSEMBLY (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBPAE	BACKFLOW PREVENTOR ENCLOSURE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBPNE	BACKFLOW PREVENTOR WITH NO ENCLOSURE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBV	BALL VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\begin{bmatrix} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
XCAP	CAPPED (Lvl = 29 Irriation-Ex / Co = 7 / Wt = 1)	Grph	Sym	
XCARV	COMBINATION AIR RELEASE VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	H(1)
XCCA	CAM COUPLER ASSEMBLY (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\langle $
XCLG	CHAIN LINK GATE (Lvl = 29 Irriation-Ex / Co = 7 / Wt = 1)	Grph	Sym	0 0
XCNC	OBSOLETE	Grph	Line Pattern	~~~~~
XCOND	OBSOLETE	Grph	Line Pattern	
XCV	CHECK VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XDIP	OBSOLETE	Grph	Line Pattern	dip
XFAU	FILTER ASSEMBLY UNIT (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XFCV	FLOW CONTROL V ALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	, , ,>

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
XFS	FLOW SENSOR (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	ſſS
XFV	FLUSH VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XGARV	GARDEN VALVE ASSEMBLY (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XGSPL	OBSOLETE	Grph	Line Pattern	
XGSPM	OBSOLETE	Grph	Line Pattern	
XGV	GATE VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\mathbf{k}$
XIC	IRRIGATION CONTROLLER (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XICC	IRRIGATION CONTROLLER IN CABINET (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XMIC	MASTER IRRIGATION CONTROLLER (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\langle \chi \rangle$

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
XPPSL	OBSOLETE	Grph	Line Pattern	
XPPSM	OBSOLETE	Grph	Line Pattern	
XPRLV	PRESSURE RELIEF VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	ς 7 Х ∠ 2
XPRV	PRESSURE REGULATING VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XQCVSP	QUICK COUPLING VALVE SPRINKLER PROTECTOR (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	┌╭──╮─ ╎<
XQCV	QUICK COUPLING VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XRCV	REMOTE CONTROL VALVE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XSCC	OBSOLETE	Grph	Line Pattern	\$cc
XSWCP	SPRINKLER WITH SPRINKLER PROTECTOR (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	

LANDSCAPE				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
XTLS	TRUCK LOADING STANDPIPE (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	< _>>
XVAU	DRIP VALVE ASSEMBLY (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XWM	WATER METER (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XWS	WYE STRAINER ASSEMBLY (Lvl = 29 Irriation-Ex / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	

	РНОТО			
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
ANCHT	ANCHOR TERMINATOR (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
ATC	AEROTRI CONTROL PUG (Active Symbology)	Pnt	Sym	Ð
C4	CODE 4 CONTROL POINT (Active Symbology)	Pnt	Sym	$\diamond$
СВХ	CALL BOX (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
DI	DROP INLET (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
DIAMND	HOV DIAMOND SYM (LvI = 3 Exist Rdwy / Co = 4 / Wt = 0)	Grph	Sym	
DRVWY1	FOR CURB AND GUTTER UCM (Active Symbology)	Pnt	Sym	
DRVWY2	FOR CURB AND GUTTER UCM (Active Symbology)	Pnt	Sym	
EL	ELECTROLIER (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
ELT	ELECTROLIER TERMINATER (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	

РНОТО					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
FH	FIRE HYDRANT (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	$+ \bigcirc +$	
HC	HORIZONTAL CONTROL (Active Symbology)	Pnt	Sym	Δ	
HVC	HORIZ N VERT CNTRL (Active Symbology)	Pnt	Sym		
LTA	LEFT TURN ARROW (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 0)	Grph	Sym		
MAPACC	PHOTO MAP ACCURACY (Lvl = 10 Sheet Format / Co = 0 / Wt = 1,2)	Grph	Sym	. K.S. S. L. S.	
МН	MANHOLE (Lvl = 5 Exist Utils / Co = 6 / Wt =0)	Grph	Sym		
MRSH	MARSH OR SWAMP (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 0)	Grph	Sym		
NA	NORTH ARROW (Lvl = 10 Sheet Format / Co = 0-2 / Wt = 1) [This north arrow is not to be used for PS&E, only for photo mapping]	Grph	Sym		
PC	AERIAL PHOTO CENTER (Active Symbology)	Pnt	Sym		
POLE	SOLID POLE (Active Symbology)	Pnt	Sym		

РНОТО					
Cell Name	Cell Description	Cell Type	Cell Use	Cell Image	
PP	POWER POLE (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym		
RDI	ROUND DROP INLET (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym		
SIGN1	SINGLE POST SIGN (Lvl = 2 Exist Man Made / Co = 4 / Wt = 0)	Grph	Sym		
SIGN2	DOUBLE POST SIGN (Lvl = 2 Exist Man Made / Co = 4 / Wt = 0)	Grph	Sym		
SP	STAND PIPE AND ETC (Active Symbology)	Pnt	Sym		
ТВ	TITLE BLOCK 0904 (Lvl = 10 Sheet Format / Co = 0 / Wt = 1,2)	Grph	Sym		
TBE	TITLE BLOCK ENGLISH (Lvl = 10 Sheet Format / Co = 0 / Wt = 1,2)	Grph	Note	STATE OF CALIFORNIA NOT OF THE THE OFFICE OF THE OFFICE OF THE OFFICE OF THE OFFICE OF THE OFFICE OF THE OFFICE OFFICE OF THE OFFICE OF THE OFFICE OF THE OFFICE OFFICE OF THE OFFICE OF THE OFFICE OFFIC	
TIC	GRID TIC (Active Symbology)	Pnt	Sym		
TR4	SMALL DIAMETER TREE (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 0)	Grph	Sym	$\sum$	
TR8	LARGE DIAMETER TREE (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 0)	Grph	Sym		

РНОТО				
Cell Name	Cell Description	Cell Type	Cell Use	Cell Image
TRNTOW	EXIST TRANS TOWER SYM (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
VC	VERTICAL CONTROL (Active Symbology)	Pnt	Sym	0
WIRE	OBSOLETE	Grph	Line Pattern	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
001AAA	VERSION AUGUST 1, 2016 (LvI = 10 Sheet Format / Co = 10 / Wt = 1)	Grph	Notes	CTCELLIB AUGUST 01, 2016
AAUTIL	EXISTING UTILITY CHART DESIGNATIONS (LvI = 5 Exist Utils / Co = 0-3,5-7 / Wt = 1,4)	Grph	Notes	- WATER - GAS ● ELECTRICAL - TELEPHONE - CABLE - TV © SEWER - OIL
ABANDN	SYM FOR ABANDON UTILITY (Lvl = 4 Exist Veg_Nat0 / Co = 0 / Wt = 1)	Grph	Sym	
ADDSHT	ADD SHEETS TO ASBUILTS (Lvl = 62 AsBuilt Chng / Co = 3 / Wt = 1)	Grph	Notes	NEW NUMBER OF TOTAL SHEETS- SEE INDEX OF PLANS FOR ADDED/REVISED SHEET NUMBERS
ADDSYM	ADDENDUM SYM (LvI = 10 Sheet Format / Co = 3 / Wt = 0,3)	Grph	Sym	1
ADNOTE	ADDENDUM NOTE (LvI = 10 Sheet Format / Co = 3 / Wt = 0,3)	Grph	Notes	€ navada da Andraina ku i kuju dinakana ku kuji
AHT	ARROW HEAD TERMINATOR (Active Symbology)	Pnt	Sym	
ASAWRD	REPLACES SIGNATURE ON DGN WHEN DOING A CONTRACT CHANGE ORDER (Lvl = 63 Seal and Sig / Co = 3 / Wt = 1,2)	Grph	Notes	THE SAME PARE A LEW
ASBLT2	ASBUILT STAMP WITH CORRECTIONS (LvI = 62 AsBuilt Chng / Co = 3 / Wt = 0-2)	Grph	Notes	AS BUILT CONTRACT NO. C.C.A. DATE R.E. NME
ASBLT3	TITLE SHEET STAMP RE SIGNATURE (Lvl = 62 AsBuilt Chng / Co = 3 / Wt = 0-2)	Grph	Notes	AS BUILT

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
ASBLT4	OBSOLETE	Grph	Notes	THE REAL PLACE ALLEW
AVD	FOR ARCHIVED DGN FILES (Lvl = 61 HQ Changes / Co = 4 / Wt = 1,2)	Grph	Notes	ANDITIED VECTOR DATA OF COMPLETED PROJECT NITHOUT NAMES & SIGNATURES
BLANK	THIS SHEET INTENTIONALLY LEFT BLANK NOTE (Lvl = 10 Sheet Format / Co = 3 / Wt = 0)	Grph	Notes	THIS SHEET INTENTIONALLY LEFT BLANK
BLOCKS	MASONRY BLK PATTERN (Active Symbology)	Pnt	Area Pattern	
BPLAN	BUILDING BORDER SHEET (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
BPLAN2	BUILDING BORDER_CONSULTANT (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
BRKLN	NON GEO BREAK LINE SYM (Active Symbology)	Pnt	Sym	
BTITLE	BUILDING TITLE SHEET (LvI = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
BTITL2	BUILDING TITLE_CONSULTANT2 (LvI = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
BTITL3	BUILDING TITLE_CONSULTANT3 (Lvl = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
CAS	TABLE FOR CONSTRUCTION AREA SIGNS (LvI = 46 Const Signing, 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
CESEAL	REGISTERED CIVIL ENGINEER STAMP (LvI = 10 Sheet Format / Co = 0 / Wt = 0,2)	Grph	Sym	
CFBOT	BOTTOM CLIP FRAME (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFFULL	FULL CLIP FRAME (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFFUL2	FULL CLIP CONSULTANT (LvI = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFTITL	TITLE SHEET CLIP FRAME (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFTIT2	TITLE CLIP CONSULTANT2 (LvI = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFTIT3	TITLE CLIP CONSULTANT3 (LvI = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFTOP	TOP CLIP FRAME (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	
CFTOP2	TOP CLIP CONSULTANT (Lvl = 61 HQ Changes / Co = 3 / Wt = 2)	Grph	Sheet	

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Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
CITY	OBSOLETE	Grph	Line Pattern	
CL	CENTERLINE TXT SYM (Active Symbology)	Pnt	Sym	
CLIM1	CLIMATE REGION ONLY (Lvl = 60 Nongeo Data / Co = 0 / Wt = 1,2)	Grph	Notes	PANEMENT CLIMATE REASON
CLIM2	CLIMATE REGION ADDED TO EXISTING DESIGN DESIGNATION (Lvl = 60 Nongeo Data / Co = 0 / Wt = 1)	Grph	Notes	<u>Paydert Climite Region</u> . Gouth Monitain
CONCP	CONCRETE SYM (Active Symbology)	Pnt	Area Pattern	
COUNTY	OBSOLETE	Grph	Line Pattern	
CTLOGO	CALTRANS LOGO (Lvl = 10 Sheet Format / Co = 0 / Wt = 1)	Grph	Sym	
CURVDA	TABLE FOR CURVE DATA INFORMATION (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
CURB RAMP	CURB RAMP SYM (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0)	Grph	Sym	
DCIR	DRAINAGE UNIT CIRCLE (Lvl = 37 Drain Anno/ Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
DDCLIM	DESIGN DESIGNATION WITH CLIMATE REGION (Lvl = 40 New Utility,60 Nongeo Data / Co = 0 / Wt = 1,2)	Grph	Notes	DESIGN DESIGN DESIGNATION   Art (ever) XXXXXXX 0 XXXXXX   Set (2008) XXXXXXX V XXX   PARENT CLEARS NOTION NOTION NOTION
DIRFLO	DIR FLO ARROW SYMB (Active Symbology)	Pnt	Sym	~~~ <b>\</b>
DRNSYS	DRAINAGE SYSTEM NO (Active Symbology)	Pnt	Sym	
DRNUNT	DRAINAGE UNIT (Active Symbology)	Pnt	Sym	
DSN	DRAINAGE SYSTEM NUMBER (Lvl = 37 Drain Anno / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	
DTABLE	TABLE FOR DRAINAGE QUANTITIES (LvI = 60 Nongeo Data / Co = 0,1 / Wt = 0-2)	Grph	Table	
EXPIPE	OBSOLETE	Grph	Line Pattern	
FHWA	FHWA SYM (LvI = 10 Sheet Format / Co = 0,1 / Wt = 1)	Grph	Sym	O
FLOWLN	OBSOLETE	Pnt	Line Pattern	
FOREST	OBSOLETE	Grph	Line Pattern	

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Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
FREQST	FULL REQUEST LABEL (Lvl = 10 Sheet Format / Co = 0 / Wt = 0)	Grph	Sym	\$FREQUEST
FULPLN	FULL PLAN SHEET (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
FUPLN2	FULL PLAN CONSULTANT (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
GPLAN	GEOLOGIST BORDER SHEET (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
GPLAN2	GEOLOGIST BORDER CONSULTANT (LvI = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
GRID1	GRID WITH 50 FOOT SPACING (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co= 0,2,3 / Wt = 0-2)	Grph	Sheet	
GRID1C	GRID 50FT SP CONSULTANT (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co= 0,2,3 / Wt = 0-2)	Grph	Sheet	
GRID2	GRID MINOR VERTICAL AND HORIZONTAL (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co= 0,2,3 / Wt = 0-2)	Grph	Sheet	
GRID2C	MINOR VER AND HOR CONSULTANT (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co= 0,2,3 / Wt = 0-2)	Grph	Sheet	
GRID3	DRAINAGE GRID 50 SPACING (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0,1,3)	Grph	Sheet	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
GRID4	DRAINAGE GRID WITH MINOR (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0,1,3)	Grph	Sheet	
INDEX	INDEX OF PLANS TEMPLATE (Lvl = 10 Sheet Format / Co = 0 / Wt = 1)	Grph	Notes	
LOC1	TABLE FOR LOCATIONS OF CONSTRUCTION – TITLE SHEET (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
LOC2	TABLE FOR LOCATIONS OF CONSTRUCTION – SEPARATE SHEET (LvI = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
LOCARR	KEY MAP LOCATION ARROW SYM (Active Symbology)	Pnt	Sym	
LPIPE	OBSOLETE	Grph	Line Pattern	
MATCH	OBSOLETE	Grph	Line Pattern	
NARR	NORTH ARROW - PROJECT PLANS (Lvl = 10 Sheet Format / Co = 0 / Wt = 1)	Grph	Sym	₽ 
NOTE1	OBSOLETE	Grph	Notes	
NOTE2	RIGHT OF WAY NOTE (Lvl = 23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	HOTEA FRA COMME HIRT OF IN ANA COTICE OF IN RAF OF HIT DAMAGENA AT IL COTICE OF IN.

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Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE3	NOT SEPARATE PAY ITEM, INFO ONLY (Lvl = 60 Nongeo Data / Co = 0 / Wt = 1)	Grph	Notes	(a) - NY A KUMAR PAY YEN, PA MPUNICIP OLY.
NOTE4	APPROVED FOR DRAINAGE ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR DALIMAGE NORK ONLY
NOTE5	APPROVED FOR SANITARY SEWER ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	ANNONES FOR EXECUTIV SEES NOTE OULY
NOTE6	OBSOLETE	Grph	Notes	APPROVED FOR UTILITY BOOK ONLY
NOTE7	APPROVED FOR STAGE CONSTRUCTION ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	JOINTING FOR STATE CONTINUETON MAR BOLY
NOTE8	APPROVED FOR TRAFFIC HANDLING ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Articles for TheFTS Andelso and ally
NOTE9	APPROVED FOR DETOUR CONSTRUCTION WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Aviando por actor constantion and only
NOTE10	APPROVED FOR PAVEMENT DELINEATION ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	annan fa manar alastan an est
NOTE11	APPROVED FOR PAVEMENT DELINEATION SIGN ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	
NOTE12	APPROVED FOR SIGN WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR SIGN WORK ONLY

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE13	APPROVED FOR RETAINING WALL ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR RETURNING BALL STORE OVER
NOTE14	APPROVED FOR SOUND WALL ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR SOLID BILL HONE OILY
NOTE15	APPROVED FOR PLANTING ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR PLANTONE NOR: ONLY
NOTE16	APPROVED FOR IRRIGATION ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR INVITATION NORE OILY
NOTE17	APPROVED FOR ELECTRICAL ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR ELECTRICAL HOME ONLY
NOTE18	APPROVED FOR WATER POLLUTION CONTROL ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	
NOTE19	APPROVED FOR EROSION CONTROL ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Arristen für Statsan cantas, ann all '
NOTE20	APPROVED FOR CONTOUR GRADING WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Arriente für conten deuten and oct
NOTE21	APPROVED FOR EDGE DRAIN ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR EDGE BALLIN HORE GIE?
NOTE22	APPROVED FOR UNDERDRAIN ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR LINEGRAPHICS HORE OF Y

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE23	OBSOLETE	Grph	Notes	ANNOLO FOR BOUNDE AN OTELYY BOR BEY
NOTE24	APPROVED FOR DRAINAGE AND CONTOUR ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	
NOTE25	THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	JOHNNA FOR UTILITY BUODMITCH OILY
NOTE26	OBSOLETE	Grph	Notes	
NOTE27	APPROVED FOR HORZ DRAIN WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR MOREONEX, GALEY MORE ONLY
NOTE28	APPROVED FOR UNDERDRAIN AND HORIZONTAL WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	
NOTE29	APPROVED FOR STAGE CONST AND TRAFFIC HANDLING WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	
NOTE30	APPROVED FOR CONST AREA SIGN WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Arristo for contractor sits any mit out
NOTE31	APPROVED FOR MOTORIST INFO WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	Arristo de latates presidentes en el y
NOTE32	PROJECT CONTROL AND MONUMENT DATA NOTE (Lvl = 23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	ann 19 an 19 an 19 19 an 19

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE33	PROJECT CONTROL NOTE (Lvl = 23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	ann Tha Fhangarachan Shar Tha Fhangarachan Shar
NOTE34	INDETERMINATE RW NOTE (LvI = 23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	- Ishulayyeander
NOTE35	APPROVED FOR WATER POLLUTION CONTROL WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	anten fa sita futatis casa, su  etr
NOTE36	APPROVED FOR PROJECT CONTROL INFORMATION ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	anang ng maan ang ang arawin at
NOTE37	APPROVED FOR HARDSCAPE WORK ONLY (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Notes	ANNOVED FOR MARSCHE NORK OILY
NOTE38	OBSOLETE	Grph	Notes	NECTOR Exerting other freeholts around the scaplese.
NOTE39	OBSOLETE	Grph	Notes	and a Date ville villes at at an and a tage rugs.
NOTE40	PAVEMENT STRUCTURE TOLERANCE NOTE (Lvl =23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	and of the second second
NOTE41	SUPERELEVATIONS SHOWN ON SUPERELEVATION DIAGRAMS NOTE (LvI =23 Layout Notes / Co = 0 / Wt = 1,2)	Grph	Notes	Enternantes de sue a la avalencia banan.
OG	OBSOLETE	Pnt	Line Pattern	7

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PARROW	PROFILE GRID ARROW (Lvl = 60 Nongeo Data / Co = 0 / Wt = 1)	Grph	Sym	
PCAS	PORTABLE CONSTR AREA SIGNS TABLE (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	PORTABLE CONSTRUCTION AREA BIONS
PDTABL	QUANTITY TABLE FOR PAVEMENT DELINEATION (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
PLNPRO	PLAN PROFILE GRID (Lvl = 9 Profile Grid, 10 Sheet Format,11 Undefined / Co= 0,2,3 / Wt = 0,1,3)	Grph	Sheet	
PLPR20	PLAN PROFILE GRID 20 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format,11 Undefined / Co= 0,2,3 / Wt = 0,1,3)	Grph	Sheet	
PLP100	PLAN PROFILE GRID 100 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format,11 Undefined / Co= 0,2,3 / Wt = 0,1,3)	Grph	Sheet	
PLSYM	POSITIVE LOCATION SYM (Active Symbology)	Pnt	Sym	
PLTAB1	TABLE (MIN) FOR POSITIVE LOCATION INFORMATION (LvI = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	PERTYYE LOGATION INFORMATION
PLTAB2	TABLE (MAX) FOR POSITIVE LOCATION INFORMATION (Lvl = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
PRFL20	FULL PROFILE GRID 20 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	

Cell Name	Cell Description (Symbology: Lyl / Co / Wt)	Cell Type	Cell Use	Cell Image
PRF10S	GRID FOR STACKED PROFILES – 100 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-2)	Grph	Sheet	
PRF20S	GRID FOR STACKED PROFILES - 20 SCALE (LvI = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-2)	Grph	Sheet	
PRF100	FULL PROFILE GRID 100 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFIL	FULL PROFILE GRID (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-2)	Grph	Sheet	
PROFLS	GRID FOR STACKED PROFILES - 50 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-2)	Grph	Sheet	
PROFL2	PROFILE GRID CONSULTANT (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL3	PROFILE CONSULTANT 100 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL4	PROFILE CONSULTANT 20 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL5	CONSULTANT GRID FOR STACKED PROFILES 50 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL6	CONSULTANT GRID FOR STACKED PROFILES 100 SCALE (LvI = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PROFL7	CONSULTANT GRID FOR STACKED PROFILES 20 SCALE (Lvl = 9 Profile Grid, 10 Sheet Format, 11 Undefined / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
QSHEET	OBSOLETE	Grph	Table	
QTABLE	TEMPLATE FOR QUANTITY TABLE (LvI = 60 Nongeo Data / Co = 0 / Wt = 0-2)	Grph	Table	
ROCK	ROCK SYM (Active Symbology)	Pnt	Area Pattern	
SAND	SAND SYM (Active Symbology)	Pnt	Area Pattern	
SECHDL	SECTION SYM - HORIZONTAL DOWN, LEFT SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECHDR	SECTION SYM - HORIZONTAL DOWN, RIGHT SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECHUL	SECTION SYM - HORIZONTAL UP, LEFT SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECHUR	SECTION SYM - HORIZONTAL UP, RIGHT SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECVLB	SECTION SYM - VERTICAL LEFT, BOTTOM SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
SECVLT	SECTION SYM - VERTICAL LEFT, TOP SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECVRB	SECTION SYM - VERTICAL RIGHT, BOTTOM SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SECVRT	SECTION SYM - VERTICAL RIGHT, TOP SIDE (Lvl = 23 Layout Notes / Co = 0 / Wt = 2)	Grph	Sym	
SL	STATION LINE TEXT SYM (Active Symbology)	Pnt	Sym	$\mathcal{S}$
SN	1 DIGIT SHEET NUMBER (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Sym	$\bigcirc$
SN2	2 DIGIT SHEET NUMBER (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Sym	$\bigcirc$
SN3	3 DIGIT SHEET NUMBER (Lvl = 10 Sheet Format / Co = 0 / Wt = 2)	Grph	Sym	$\bigcirc$
SPIPE	OBSOLETE	Grph	Line Pattern	
SRPAR1	BEG END STRIP ARROW 1 (Lvl = 43 Pave Marker / Co = 3 / Wt = 1)	Grph	Sym	
SRPAR2	BEG END STRIP ARROW 2 (Lvl = 43 Pave Marker / Co = 3 / Wt = 1)	Grph	Sym	

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Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image	
STATE	OBSOLETE	Grph	Line Pattern		
T1ARR	PAINT PAVEMENT ARROW TYPE 1 (Active Symbology)	Pnt	Sym		
T2ARR	PAINT PAVEMENT ARROW TYPE 2 (Active Symbology)	Pnt	Sym		
T3ARR	PAINT PAVEMENT ARROW TYPE 3 (Active Symbology)	Pnt	Sym		
T4ARR	PAINT PAVEMENT ARROW TYPE 4 (Active Symbology)	Pnt	Sym		
T5ARR	PAINT PAVEMENT ARROW TYPE 5 (Active Symbology)	Pnt	Sym		
T6ARR	PAINT PAVEMENT ARROW TYPE 6 (Active Symbology)	Pnt	Sym		
TILDE	SQUIGGLY TERMINATOR (Active Symbology)	Pnt	Sym		
TIME	TIME DATE STAMP (Lvl = 10 Sheet Format / Co = 0 / Wt = 0)	Grph	Sym	-	
TIME2	TIME DATA STAMP FULPLN (LvI = 10 Sheet Format / Co = 0 / Wt = 0,1)	Grph	Sheet	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
TITLE	TITLE SHEET - ROADWAY (LvI = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
TITLE2	TITLE CONSULTANT 2 (LvI = 10 Sheet Format / Co = 0-2 / Wt = 0-3)	Grph	Sheet	
TITLE3	TITLE CONSULTANT 3 (LvI = 10 Sheet Format / Co = 0-2 / Wt =0-3)	Grph	Sheet	
TRF45A	TRAFFIC DIRECTION 45 DEGREE ARROW (Active Symbology)	Pnt	Sym	
TRFALR	TRAFFIC DIRECTION L AND R ARROW ( <i>Active Symbology</i> )	Pnt	Sym	
TRFDI	TRAFFIC DIRECTION ARROW (Active Symbology)	Pnt	Sym	
WHCR	OBSOLETE	Pnt	Sym	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
A2_6	OBSOLETE	Grph	Line Pattern		
A2_8	OBSOLETE	Grph	Line Pattern		
AXIS	OBSOLETE	Grph	Line Pattern		
B11	CRASH CUSHION B11 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	0008888	
B14	CRASH CUSHION B14 (LvI = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	000088888	
B2CURB	OBSOLETE	Grph	Line Pattern		
B4CURB	OBSOLETE	Grph	Line Pattern		
BAC	BEGIN ACCESS CONTROL NOTE (Lvl = 3 Exist Rdwy / Co = 6 / Wt = 1)	Grph	Sym	BEGIN ACCESS CONTROL	
CALCO1	CALIFORNIA QUARTER CORNER (Active Symbology)	Pnt	Sym		
СМР	OBSOLETE	Grph	Line Pattern	$\sim$	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
CONCBP	OBSOLETE	Grph	Line Pattern		
DBLBAR	OBSOLETE	Grph	Line Pattern		
EAC	OBSOLETE	Grph	Sym	END ACCESS CONTROL	
EDGEP	OBSOLETE	Pnt	Line Pattern		
ELECTR	OBSOLETE	Grph	Line Pattern		
EXE	OBSOLETE	Grph	Line Pattern	e	
EXG	OBSOLETE	Grph	Line Pattern	gs	
EXGRP	OBSOLETE	Pnt	Line Pattern		
EXNG	OBSOLETE	Grph	Line Pattern	g	
EXO	OBSOLETE	Grph	Line Pattern	0	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
EXS	OBSOLETE	Grph	Line Pattern	s	
EXSTEM	OBSOLETE	Grph	Line Pattern		
EXSTMD	OBSOLETE	Grph	Line Pattern	sd	
EXT	OBSOLETE	Grph	Line Pattern		
EXTELC	OBSOLETE	Grph	Line Pattern	tc	
EXTV	OBSOLETE	Grph	Line Pattern	tv	
EXW	OBSOLETE	Grph	Line Pattern	w	
FDI	DI FOR VARIOUS LVLS (Active Symbology)	Pnt	Sym		
FENP	OBSOLETE	Grph	Line Pattern	X	
FMH	MANHOLE COVER FOR VARIOUS LVLS (Active Symbology)	Pnt	Sym		
ROADWAY					
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Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
FMONU	MONUMENT FOR VARIOUS LVLS (Active Symbology)	Pnt	Sym		
FNDCOR	FND QUAR CORNER EX_AS_DESC (Active Symbology)	Pnt	Sym		
FNDMON	MONUMENT EX_AS_DESCRIBED (Active Symbology)	Pnt	Sym		
GASOLN	OBSOLETE	Grph	Line Pattern		
GDRP	OBSOLETE	Grph	Line Pattern		
HEDGEP	OBSOLETE	Grph	Line Pattern		
KRAIL	OBSOLETE	Grph	Line Pattern		
KRAIL2	OBSOLETE	Grph	Line Pattern		
LSP	OBSOLETE	Pnt	Line Pattern		
MBGR	OBSOLETE	Grph	Line Pattern	<b>_</b>	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
NATGAP	OBSOLETE	Grph	Line Pattern		
NWALLP	OBSOLETE	Grph	Line Pattern	<b>_</b>	
OBJMAR	SYM FOR DELINEATOR OR OBJECT MARKER (Lvl = 45 Signing / Co = 3 / Wt = 1)	Grph	Sym		
OHS1	OVERHEAD SIGN - 1 POST (LvI = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
OHS2	OVERHEAD SIGN - 2 POST (LvI = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	<b></b>	
OHSIGN	SYM FOR OVERHEAD SIGN NUMBER (Lvl = 45 Signing / Co = 3,250 / Wt = 1) (Mask)	Grph	Sym		
OILP	OBSOLETE	Grph	Line Pattern		
PI	POINT OF INTERSECTION SYM (Active Symbology)	Pnt	Sym		
PI2	POINT OF INTERSECTION SYM WITH LABEL (Active Symbology)	Pnt	Sym	ΔΡΙ	
POINT	POINT SYM (Active Symbology)	Pnt	Sym	0	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
RR10P	OBSOLETE	Grph	Line Pattern		
RWACC	OBSOLETE	Pnt	Line Pattern		
SETUP	DGN FILE SETUP POINT (Lvl = 10 Sheet Format / Co = 0 / Wt = 1)	Grph	Sym	PROJECT SETUP POINT	
SEWERP	OBSOLETE	Grph	Line Pattern	s	
SGN1P	SIGN WITH 1 POST (Active Symbology)	Pnt	Sym		
SGN2P	SIGN WITH 2 POSTS (Active Symbology)	Pnt	Sym	Ш	
SGN3P	EXISTING SIGN WITH 1 POST (Active Symbology)	Pnt	Sym		
SGN4P	EXISTING SIGN WITH 2 POST (Active Symbology)	Pnt	Sym		
SGNATT	ROADSIDE SIGN ATTACHED (Active Symbology)	Pnt	Sym		
SIGN4S	SYM FOR SIGN (4 LETTERS) (Lvl = 45 Signing / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym		

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
SIGN5S	SYM FOR SIGN (5 LETTERS) (Lvl = 45 Signing / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym		
SIGN6S	SYM FOR SIGN (6 LETTERS) (Lvl = 45 Signing / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym		
STEAM	OBSOLETE	Grph	Line Pattern		
STORMD	OBSOLETE	Grph	Line Pattern	SD	
STRPS2	SYM FOR COMBO STRIPING (Lvl = 44 PaveMark Anno / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym		
STRPSY	SYM FOR STRIPING (Lvl = 44 PaveMark Anno / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym		
TB11	TEMPORARY ARRAY TB11 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
TB14	TEMPORARY ARRAY TB14 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
TELCOM	OBSOLETE	Grph	Line Pattern	—тс—	
TELEP	OBSOLETE	Grph	Line Pattern		

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
TERML	GUARDRAIL TERMINATOR – LEFT (Active Symbology)	Pnt	Sym		
TERMR	GUARDRAIL TERMINATOR – RIGHT (Active Symbology)	Pnt	Sym		
TKPRO1	KRAIL PROFILE 1 (LvI = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	$\square$	
TKPRO2	KRAIL PROFILE 2 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	$\square$	
TRAST2	TRAFFIC STRIP COMBO DETAIL SYM (Lvl = 43 Pave Marker Pave Marker / Co = 3 / Wt = 1)	Grph	Sym		
TRASTR	TRAFFIC STRIPE DETAIL SYM (Lvl = 44 PaveMark Anno / Co = 3 / Wt = 1)	Grph	Sym		
TREEP	OBSOLETE	Grph	Line Pattern	$\overline{}$	
TS11	TEMPORARY ARRAY TS11 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
TS14	TEMPORARY ARRAY TS14 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
TU11	TEMPORARY ARRAY TU11 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	000000000000000000000000000000000000000	

ROADWAY					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
TU14	TEMPORARY ARRAY TU14 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	000000000000000000000000000000000000000	
TU17	TEMPORARY ARRAY TU17 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym		
TU21	TEMPORARY ARRAY TU21 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	Daba 00000 00000	
TVP	OBSOLETE	Grph	Line Pattern	— īv — — — — — — — — — — — — — — — — — —	
TYPE_E	OBSOLETE	Grph	Line Pattern		
U11	CRASH CUSHION U11 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	0008888	
U14	CRASH CUSHION U14 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	000088888	
U16	CRASH CUSHION U16 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	0088888	
U21	CRASH CUSHION U21 (Lvl = 22 Misc Cnst Det / Co = 0 / Wt = 1)	Grph	Sym	00088888888	
VPI	VERTICAL POINT OF INTERSECTION SYM (Active Symbology)	Pnt	Sym	VPI A	

ROADWAY				
Cell Name	Cell Description	Cell Type	Cell	Cell Image
WALLP	OBSOLETE	Grph	Line Pattern	
WATERP	OBSOLETE	Grph	Line Pattern	
WATP	OBSOLETE	Grph	Line Pattern	
WFP	OBSOLETE	Grph	Line Pattern	x
XCEL	X SYM (Active Symbology)	Pnt	Sym	$\times$

SURVEYS				
Cell Name	Cell Description (Symbology: Lyl/Co/Wt)	Cell Type	Cell Use	Cell Image
BDRN	BRIDGE DECK DRAIN (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym	
BLC	BLOCK CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
BUAO	BRIDGE UTILITY ACCESS OPEN (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym	
BUS	BUS STOP (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
САВ	CABINET UTILITY (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
CALL	CALLBOX (Lvl = 5 Exist Utils / Co = 5 / Wt = 0)	Grph	Sym	
CCI	CRASH CUSHION INDIVIDUAL (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
CLH	CENTER LINE MONUMENT H (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
CLHV	CENTER LINE MONUMENT H V (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
CLNR	STREET CL FD NO RECORD (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	

SURVEYS					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
CLO	CLEAN OUT (Lvl = 6 Exist Hydro / Co = 6 / Wt = 1)	Grph	Sym		
CLPC	STREET CL PC (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
CLPT	STREET CL PT (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
COL	BENT COLUMN PIER (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym		
CPCC	STREET CL PCC (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
CPI	STREET CL PI (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
CPOC	STREET CL POC (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
СРОТ	STREET CL POT (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
CPRC	STREET CL PCC (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
CTRL	GENERIC CONTROL PT (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym		

SURVEYS				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
CUVT	CULVERT TOP ELEVATION (Lvl = 6 Exist Hydro / Co = 1 / Wt = 0)	Grph	Sym	$\mathbf{X}$
DICO	DRAIN INLET CURB OPEN - NO GRATE (Lvl = 6 Exist Hydro / Co = 1 / Wt = 0)	Grph	Sym	
DIRO	DRAIN INLET - ROUND (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	
DIS	DRAIN INLET - RECTANGULAR SURVEYS (Lvl = 6 Exist Hydro / Co = 1 / Wt = 0)	Grph	Sym	
DISD	DRAIN INLET - SIDE (LvI = 6 Exist Hydro / Co = 1 / Wt = 0)	Grph	Sym	
EDC	DRAIN EDGE CLEANOUT (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	
EDO	DRAIN EDGE OUTLET (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	
EDV	DRAIN EDGE VENT (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	
ELMH	ELECTRICAL MANHOLE (Lvl = 5 Exist Utils / Co = 3 / Wt = 0)	Grph	Sym	
ELS	ELECTROLIER STREET LIGHT (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	

SURVEYS					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
EM	ELECTRIC METER (Lvl = 5 Exist Utils / Co = 3 / Wt = 1)	Grph	Sym		
FDNR	FOUND POINT - NO RECORD (LvI = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$	
FDPT	GENERIC POINT OWNERSHIP LINE (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym		
FDR	FOUND POINT - RECORD (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$	
FES	FLARED END SECTION (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym		
FHS	FIRE HYDRANT SURVEYS (Lvl = 5 Exist Utils / Co = 1 / Wt = 0)	Grph	Sym	+ + + +	
FP	FLAG POLE (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym		
FRLC	FRAC LOT CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$	
GF	GATE POST - FREE END (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym		
GH	GATE POST - HINGE END (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym		

SURVEYS					
Cell Name	Cell Description (Symbology: Lv1/Co/Wt)	Cell Type	Cell Use	Cell Image	
GM	GAS METER (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym		
GUY	GUY ANCHOR (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym		
GVS	GAS VALVE (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym		
НВ	HOSE BIB (Lvl = 5 Exist Utils / Co = 1 / Wt = 0)	Grph	Sym		
HORZ	HORIZONTAL DRAIN (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym		
HWAT	HIGH WATER MARK (Lvl = 6 Exist Hydro / Co = 1 / Wt = 0)	Grph	Sym	$\times$	
HYDRP	GENERIC HYDRO POINT (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym		
INTT	ORCHARD TREE INTERIOR (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 1)	Grph	Sym		
IRRV	VALVE IRRIGATION (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym		
LOCT	SLIDE MONITORING (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 0)	Grph	Sym		

SURVEYS				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
LP	LAMP POST (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
LTC	LOT CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
MANP	GENERIC MAN MADE FEATURE (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
MARK	GUIDE POST MARKER (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym	
MB	MAIL BOX (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
MBS	MAIL BOXES (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
МС	MEANDER CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
OSH	OS LINE MONUMENT H (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
OSHV	OS LINE MONUMENT H V (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
PBS	PULLBOX (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	UB

SURVEYS					
Cell Name	Cell Description (Symbology: Lyl/Co/Wt)	Cell Type	Cell Use	Cell Image	
PED	PEDESTAL TELEPHONE (Lvl = 5 Exist Utils / Co = 5 / Wt = 1)	Grph	Sym	$\sim$	
РНН	PHOTO CONTROL MONUMENT - HORIZONTAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym		
PHHV	PHOTO CONTROL MONUMENT HORIZONTAL & VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\bigwedge$	
PHV	PHOTO CONTROL MONUMENT-VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym		
PIPR	PROTECTIVE PIPE (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym		
PLSO	PLS CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$	
PMC	PARCEL CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$	
РМН	PRIMARY CONTROL MONUMENT - HORIZONTAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\frown$	
PMHV	PRIMARY CONTROL MONUMENT- HORIZ. & VERT. (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\widehat{\bigcirc}$	
PMV	PRIMARY CONTROL MONUMENT - VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	•	

SURVEYS					
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image	
POINT0	POINT SYM (Lvl = 72 Survey Lins Point Data / Co = 0 / Wt = 1)	Grph	Sym		
POINT1	POINT SYM (Lvl = 72 Survey Lins Point Data / Co = 1 / Wt = 1)	Grph	Sym		
POINT2	POINT SYM (Lvl = 72 Survey Lins Point Data / Co = 2 / Wt = 1)	Grph	Sym		
POINT4	POINT SYM (Lvl = 72 Survey Lins Point Data / Co = 4 / Wt = 1)	Grph	Sym		
POINT6	POINT SYM (Lvl = 72 Survey Lins Point Data / Co = 6 / Wt = 1)	Grph	Sym		
POLES	POLE SURVEYS (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym		
PRH	PROJECT CONTROL MONUMENT - HORIZONTAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$ \land $	
PRHV	PROJECT CONTROL MONUMENT – HORIZ. & VERT. (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Line Pattern	$\bigwedge$	
PROJCTRL NOTES	Survey Project Control Notes (Lvl = 60 Nongeo Data Co = 0,3,4 Wt = 0-2)	Grph	Notes	Superior in the control of the	
PRVS	PROJECT CONTROL MONUMENT - VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	•	

SURVEYS				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
PTEL	PUBLIC TELEPHONE (Lvl = 5 Exist Utils / Co = 5 / Wt = 1)	Grph	Sym	$\langle \rangle$
PUMP	PUMP (Lvl = 6 Exist Hydro / Co = 1 / Wt = 0,1)	Grph	Sym	
QC	QUARTER CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
RCS	RANCHO CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
RDWYP	GENERIC POINT ROADWAY DELINEATION (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym	
REFR	REFERENCE POINT (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\times$
RMRK	MARKERS (Lvl = 3 Exist Rdwy / Co = 4 / Wt = 1)	Grph	Sym	
RO	RANCHO (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
RRGA	RAILROAD GATE POST (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
RRSG	RAILROAD SIGNAL (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	

SURVEYS				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
RRSW	RAILROAD SWITCH (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	$\times$
RWS	ROW MONUMENT (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	
SCS	SECTION CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
SDMH	STORM DRAIN MANHOLE (Lvl = 5 Exist Utils / Co = 1 / Wt = 0)	Grph	Sym	(
SINC	SIGN OVERHEAD CANTILEVER (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
SINS	SIGN - SINGLE POST (Lvl = 2 Exist Man Made / Co = 4 / Wt = 1)	Grph	Sym	
SLH	STATION LINE MONUMENT – HORIZONTAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
SLHV	STATION LINE MONUMENT – HORIZONTAL & VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
SPLAN	SURVEY BORDER SHEET (Lvl = 10 Sheet Format / Co = 0 Wt = 0-3)	Grph	Sym	
SPLAN2	SURVEY BORDER SHEET 2 (Lvl = 10 Sheet Format / Co = 0 Wt = 0-3)	Grph	Sym	

SURVEYS				
Cell Name	Cell Description (Symbology: Lyl/Co/Wt)	Cell Type	Cell Use	Cell Image
SPR	SPRINKLER HEAD (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	
SPS	STAND PIPE SURVEYS (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	o SP
SRCH	SEARCH COORDINATE (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	
SSEAL	PROFESSIONAL SURV STAMP (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-2)	Grph	Note	0
SSMH	SANITARY SEWER MANHOLE (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	
SUH	SUPP CONTROL MONUMENT - HORIZONTAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\land$
SUHV	SUPP CONTROL MONUMENT - HORIZONTAL & VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	$\bigwedge$
SUV	SUPP CONTROL MONUMENT - VERTICAL (Lvl = 1 Control / Co = 5 / Wt = 1)	Grph	Sym	•
TANK	TANK CENTER (Lvl = 2 Exist Man Made / Co = 4 / Wt = 0)	Grph	Sym	
тс	TOWNSHIP CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$

SURVEYS				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
TLMH	TELEPHONE MANHOLE (Lvl = 5 Exist Utils / Co = 5 / Wt = 0)	Grph	Sym	
TRAN	TRANSMISSION TOWER (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
TRC	TRACT CORNER (Lvl = 31 RW (exist) / Co = 6 / Wt = 0)	Grph	Sym	$\bigcirc$
TREE	TREE (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 1)	Grph	Sym	
TS	TRAFFIC SIGNAL (Lvl = 5 Exist Utils / Co = 6 / Wt = 0)	Grph	Sym	-X- TS
UTLA	UTILITY APPURTENANCE (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
UTLP	GENERIC POINT UTILITIES (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
VEGP	GENERIC POINT VEGETATION (Lvl = 4 Exist Veg_Nat / Co = 2 / Wt = 1)	Grph	Sym	
VENT	VENT (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	
VLT	VAULT (Lvl = 5 Exist Utils / Co = 6 / Wt = 1)	Grph	Sym	

SURVEYS				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI / Co / Wt)	Туре	Use	centinuge
WC	WITNESS CORNER (Lvl = 30 Cut and Fill / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
WDGR	WOOD GUARD RAIL (Lvl = 2 Exist Man Made / Co = 4 / Wt = 0)	Grph	Line Pattern	
WELL	WELL (Lvl = 6 Exist Hydro / Co = 1 / Wt = 1)	Grph	Sym	o WELL
WMS	WATER METER SURVEYS (Lvl = 5 Exist Utils / Co = 1 / Wt = 1)	Grph	Sym	
WV	WATER VALVE (Lvl = 5 Exist Utils / Co = 1 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
AB	ABANDON (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	AB
BC	INSTALL BOX IN CONDUIT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	BC
BPN	PEDESTRIAN BARRICADE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	BP
BREAKR	CIRCUIT BREAKER (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
СВ	INSTALL CONDUIT IN BOX (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	СВ
СС	CONNECT CONDUIT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	СС
CF	CONDUIT FOR FUTURE USE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	CF
COCOIL	CONTACTOR COIL (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	/
CONSCH	CONDUCTOR SCHEDULE (Lvl = 48 Elect Anno / Co = 4 / Wt = 1)	Grph	Sym	
CONTNC	CONTACTOR, NORMALLY CLOSED CONTACT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	//

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
CONTNO	CONTACTOR, NORMALLY OPEN CONTACT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
CRN	CONDUIT RUN NUMBER (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
DH	DETECTOR HANDHOLE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	DH
E12UA	EXISTING 12 UP ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	- +->
E170	EXISTING CONTROLLER CABINET (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
E21TS	EXISTING TYPE 21TS VEHICLE SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	``. ∅ <u>~</u> >>
E2RSM	EXISTING ROADSIGN ON MAST ARM – TWO STRAP (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	 
E312LA	EXIST 3_12 LEFT ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	++t:>>
E5YGRA	EXISTING SIGNAL RED, YELLOW, GREEN ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
ECC	OBSOLETE	Grph	Line Pattern	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
ECCTV	EXISTING CLOSED-CIRCUIT TV (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
ECE	EXISTING CITY ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$C \left( \underbrace{\bigcirc} \right)$
ECFB	EXISTING CANTILEVER FLASH BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
ECMS	EXISTING CHANGEABLE MESSAGE SIGN (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
EDH	EXISTING DETECTOR HANDHOLE (Lvl = 47 Electrical / Co = 2 / Wt = 0,1)	Grph	Sym	с dh
EDLPA2	EXISTING TYPE A DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPA5	EXISTING TYPE A DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPB2	EXISTING TYPE B DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPB5	EXISTING TYPE B DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPC2	EXISTING TYPE C DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	[====]

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
EDLPC5	EXISTING TYPE C DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	[====]
EDLPD2	EXISTING TYPE D DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	Г Ҳ Ҳ ӏ
EDLPD5	EXISTING TYPE D DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPE2	EXISTING TYPE E DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPE5	EXISTING TYPE E DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPQ2	EXISTING TYPE Q DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDLPQ5	EXISTING TYPE Q DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EDPIS	EXISTING 2 POST OVERHEAD ILLUMINATED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
EDZON2	EXISTING DETECTION ZONE – 20 SCALE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	「デデデデデス」 ド / / / / / /   レ
EDZON5	EXISTING DETECTION ZONE – 50 SCALE (Lvl = 47 Electrical / Co =0 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL					
Cell	Cell Description	Cell	Cell	Cell Image	
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image	
EELECT	EXISTING NON-STANDARD ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EEMS	EXISTING ELECTRONIC MESSAGE SIGN (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	⊂ = = ems	
EEVD	EXISTING EMERGENCY VEHICLE DETECTOR (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EFAC	OBSOLETE	Grph	Line Pattern	f	
EFB	EXISTING FLASHING BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	$\sum_{T}$	
EFBARM	EXISTING FLASHING BEACON WITH ARM (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	Σ <sup>1</sup> 	
EFFE	EXISTING ELECTROLIER FOUNDATION (FUTURE INSTALLATION) (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EFIBOP	OBSOLETE	Grph	Line Pattern	— fo — — —	
EGP	EXISTING GUARD POST (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EHAR	EXISTING HIGHWAY ADVISERY RADIO (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	$(\widehat{\land})$ $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$	

TRAFFIC / ELECTRICAL					
Cell Name	Cell Description (Symbology: Lyl/Co/Wt)	Cell Type	Cell Use	Cell Image	
EHML	EXISTING HIGH MAST LIGHT (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EIBMS	EXISTING ILLUMINATED BR. MOUNTED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EIISNS	EXISTING IISNS (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EISWL	EXISTING OVERHEAD SIGN WITH ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	∞=‡∛(±==)	
ELC	OBSOLETE	Grph	Line Pattern		
ELOWP	EXISTING LUMINAIRE ON WOOD POLE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	¢(∑́)	
EM15FB	EXISTING TYPE15 FLASH BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMA15	EXISTING 15 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	‡ ۲ ۲ ↔	
EMA20	EXISTING 20 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMAL25	EXISTING 25 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		

TRAFFIC / ELECTRICAL					
Cell	Cell Description	Cell	Cell	Cell Image	
Name	(Symbology: LvI/Co/Wt)	Туре	Use		
EMAL30	EXISTING 30 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	÷. ÷. 	
EMAL35	EXISTING 35 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMAL40	EXISTING 40 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMAL45	EXISTING 45 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	\$. ₽ ₽	
EMAL50	EXISTING 50 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	÷. ¥. + ⊰⊱	
EMAL55	EXISTING 55 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	÷	
EMAL60	EXISTING 60 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMAL65	EXISTING 65 FOOT MASTARM 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	÷-3⊁	
EMD	EXISTING MAGNETIC DETECT (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
EMO	OBSOLETE	Grph	Sym	(>{]]	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
EMSWLS	EXISTING MASTARM SIGNAL WITH ILLUMINATION (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	, , , , , , , , , , , , , , , , , , ,
EMSWOL	EXISTING MASTARM SIGNAL WITHOUT ILLUMINATION (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	+-:+
EMVDS	EXISTING MICRO VEHICLE DETECTOR (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	Г – – – – – – – – – – – – – – – – – – –
ENBOND	ENCLOSURE BOND (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
EOHL	OBSOLETE	Grph	Line Pattern	oh
EPB	EXISTING PULLBOX (Lvl = 47 Electrical / Co = 3 / Wt = 1)	Grph	Sym	
EPBAR	EXISTING PEDESTRIAN BARRICADE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	$\vdash - \dashv$
EPGUY	EXISTING POLE GUY WITH ANCHOR (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	)
EPLAN	ELECTRICAL BORDER SHEET (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	
EPLAN2	ELECTRICAL BORDER SHEET FOR CONSULTANT USE (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-3)	Grph	Sheet	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
EPMUT	EXISTING PAD MOUNT FOR UTILITY TRANSFORMER (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
EPOLE	EXISTING POLE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
EPPB	OBSOLETE	Grph	Sym	
EPBA	EXISTING PUSH BUTTON ASSEMBLY (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	() 、)
EPBAR	EXISTING PED BARRICADE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	┝
EPSH	EXISTING PEDESTRIAN SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
ER	EXISTING CONDUIT RISER STRUCTURE (Lvl = 47 Electrical / Co = 3 / Wt = 0,1)	Grph	Sym	r
ERSM	EXISTING ROAD SIGN ON MAST ARM – ONE STRAP (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
ESCDIS	EXISTING DUAL ILLUMINATED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ESCMIS	EXISTING ILLUMINATED SIGN -CENTERED (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
ESEAL	REGISTERED ELEC STAMP (Lvl = 10 Sheet Format / Co = 0 / Wt = 0-2)	Grph	Note	
ESFAV	EXISTING SIGNAL FACE WITH VISOR (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	──┼┆ <b>┊</b> ┦
ESMS	EXISTING VEHICLE SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	+(:>
ESOWLM	EXISTING SOFIT OR WALL LUMINAIRE TO MODIFY (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ESOWLU	EXISTING SOFIT OR WALL LUMINAIRE TO REMAIN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$\otimes - \triangleright$
ESSMIS	EXISTING ILLUMINATED SIGN -SIDE POST (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET15	EXISTING TYPE 15 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET15D	EXISTING DUAL ARM LUMINAIRE TYPE 15D ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET15DS	EXISTING DUAL ARM LUMINAIRE TYPE 15D ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET15S	EXISTING TYPE 15 ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
ET21	EXISTING TYPE 21 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET21D	EXISTING DUAL ARM LUMINAIRE TYPE 21D ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	<u> </u>
ET21DS	EXISTING DUAL ARM LUMINAIRE TYPE 21D ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	QQ
ET21S	EXISTING TYPE 21 ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	\$ <b>-</b> −-₩
ET30	EXISTING TYPE 30 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	℃\XX
ET31	EXISTING TYPE 31 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	℃(XX
ET32	EXISTING TYPE 32 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET33LA	EXISTING TYPE 33 WITH 2 LIGHT SIGNAL SIGN (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	* * 
ET35	EXISTING TYPE 35 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
ET36	EXISTING TYPE 36 20A ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	(

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
ETC	OBSOLETE	Grph	Line Pattern	
ETDC	EXISTING TELEPHONE DEMARCAT CABINET (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
ETIII	EXISTING TYPE 3 SERVICE ENCLOSURE (Lvl = 47 Electrical / Co = 3 / Wt = 1)	Grph	Sym	
ETITLE	ELECTRICAL TITLE SHEET (Lev = 10 Sheet Format / Col = 0-2 / Wt = 0-3)	Grph	Sym	
ETITL2	ELECTRICAL TITLE SHEET FOR CONSULTANT 2 (Lev = 10 Sheet Format / Col = 0-2 / Wt = 0-3)	Grph	Sym	
ETITL3	ELECTRICAL TITLE SHEET FOR CONSULTANT 3 (Lev = 10 Sheet Format/ Col = 0-2 / Wt = 0-3)	Grph	Sym	
ETS	EXISTING TRAFFIC SIGNAL (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	`` (_)— — →
ETSC	OBSOLETE	Grph	Line Pattern	
ETYPE1	EXISTING TYPE 1 STANDARD WITH VEHICLE SIGNAL FACES (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	`````````````````````````````````````
EWD15	EXISTING WIRING DIAGRAM TYPE 15 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL					
Cell	Cell Description	Cell	Cell Uno	Cell Image	
EWD15S	EXISTING WIRING DIAGRAM TYPE 15S (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWD21	EXISTING WIRING DIAGRAM TYPE 21 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWD21S	EXISTING WIRING DIAGRAM TYPE 21S (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWD30	EXISTING WIRING DIAGRAM TYPE 30 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWD31	EXISTING WIRING DIAGRAM TYPE 31 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWD32	EXISTING WIRING DIAGRAM TYPE 32 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
EWPP	EXISTING POWER POLE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym		
FA	FOUNDATION ABANDONED (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	FA	
GELECT	GROUNDING ELECTRODE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym		
IS	INSTALL SIGN (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	IS	

	TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Coll Imago	
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image	
LPHASE	LEFT TURN PHASE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	V	
LUM	MASTARM LUMINAIRE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$\sum$	
N112DL	NEW 3 SECTION - 12 RIGHT, DUAL LEFT ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	EXXX	
N12UA	NEW 12 UP ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	╶┼┭┣	
N15TS	TYPE 15TS AND VEHICLE SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
N170	NEW CONTROLLER CABINET (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
N212UA	NEW 3 SECTION-12 RED AND YELLOW, 12 UP GREEN ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	EXX	
N21TS	TYPE 21TS VEHICLE SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
N2RSM	NEW ROAD SIGN ON MAST ARM – TWO STRAP (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
N2RT	NEW 3 SECTION - 12 DUAL RED ARROWS (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
N312DL	NEW 5 SECTION - 12 RED-YEL-GREEN, DUAL LEFT ARROWS (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	<b>ESSIN</b>
N312DR	NEW 5 SECTION -12 RED-YEL-GRN, DUAL RED ARROWS (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N312LA	NEW 12 LEFT TURN (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N312RT	NEW 3 SECTION - TRI RED ARROWS (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N38112	NEW 3 SECTION - 8 RED-YEL-GRN, 12 LEFT ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N38DL	NEW 5 SECTION - 8 RED-YEL-GRN, DUAL 12 LEFT ARROWS (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N412LA	NEW 4 SECTION -12 RED-YEL-GRN, 12 LEFT ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N412LR	NEW 4 SECTION -12 RED-YELLOW, LEFT, RIGHT (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N412UL	NEW 4 SECTION - 12 RED-YEL, UP GRN ARROW, LEFT ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
N5YGRA	NEW SIG RED_YEL_GR ARROW (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image
NCC	OBSOLETE	Grph	Line Pattern	— c — — —
NCCTV	NEW CLOSED CIRCUIT TV (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
NCE	NEW CITY ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NCFB	NEW CANTILEVER FLASH BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NCMS	NEW CHANGEABLE MESSAGE SIGN (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	CMS
NDH	NEW DETECTOR HANDHOLE (Lvl = 47 Electrical / Co = 2 / Wt = 0,1)	Grph	Sym	● DH
NDLPA2	NEW TYPE A DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPA5	NEW TYPE A DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPB2	NEW TYPE B DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
NDLPB5	NEW TYPE B DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	$\diamond$
TRAFFIC / ELECTRICAL				
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Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
NDLPC2	NEW TYPE C DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPC5	NEW TYPE C DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPD2	NEW TYPE D DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPD5	NEW TYPE D DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPE2	NEW TYPE E DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPE5	NEW TYPE E DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPQ2	NEW TYPE Q DETECTOR LOOP – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDLPQ5	NEW TYPE Q DETECTOR LOOP – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NDPIS	NEW 2 POST OVERHEAD ILLUMINATED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	0
NDZON2	NEW DETECTION ZONE – 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	

	TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI / Co / Wt)	Cell Type	Cell Use	Cell Image	
NDZON5	NEW DETECTION ZONE – 50 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NELECT	ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$\sim$	
NEMS	NEW ELECTRONIC MESSAGE SIGN (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	EMS	
NEVD	NEW EMERGENCY VEHICLE DETECTOR (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NF70W	NEW 70W FLUSH MOUNTED (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
NFAC	OBSOLETE	Grph	Line Pattern	— F —— —	
NFB	NEW FLASHING BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NFBARM	NEW FLASHING BEACON WITH ARM (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NFFE	NEW ELECTROLIER FOUNDATION (FUTURE INSTALLATION) (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
NFIBOP	OBSOLETE	Grph	Line Pattern	— F0 — — —	

	TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Coll Imago	
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cen Image	
NGP	NEW GUARD POST (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NHAR	NEW HIGHWAY ADVISORY RADIO (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym		
NHML	NEW HIGH MAST LIGHTING (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
NIBMS	NEW ILLUMINATED BR MOUNTED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
NIISNS	NEW IISNS (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym		
NISWL	NEW OVERHEAD SIGN WITH ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	○>	
NLC	OBSOLETE	Grph	Line Pattern		
NLOWP	NEW LUMINAIRE ON WOOD POLE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	<b>∳</b>	
NM15FB	NEW TYPE15 FLASH BEACON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		
NMA15	NEW 15 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym		

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI/Co/Wt)	Туре	Use	
NMA20	NEW 20 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NMAL25	NEW 25 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	¤₽
NMAL30	NEW 30 FOOT MAST ARM - 30 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NMAL35	NEW 35 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	¤
NMAL40	NEW 40 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NMAL45	NEW 45 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	¤
NMAL50	NEW 50 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	¤₽
NMAL55	NEW 55 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	⊷¤₽
NMAL60	NEW 60 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	⊷ <u>¤</u> ∳
NMAL65	NEW 65 FOOT MAST ARM - 20 SCALE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	α <b>ŀ</b>

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell Tune	Cell Use	Cell Image
NMD	NEW MAGNETIC DETECTOR (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NMO	OBSOLETE	Grph	Sym	0
NMSWLS	NEW MAST ARM SIGNAL WITH LUMINAIRE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	Lat
NMSWOL	NEW MAST ARM WITHOUT LUMINAIRE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NMVDS	NEW MICRO VEHICLE DETECTOR (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
NOHL	OBSOLETE	Grph	Line Pattern	<del>0*_</del>
NP70W	NEW PENDANT - 70W (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NPB	NEW PULL BOX (Lvl = 47 Electrical / Co = 3 / Wt = 1)	Grph	Sym	
NPBAR	NEW PEDESTRIAN BARRICADE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NPGUY	NEW POLE GUY WITH ANCHOR (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	)

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
NPMUT	(Symbology: Lvi / Co / Wt) NEW PAD MOUNT FOR UTILITY TRANSFORMER (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
NPOLE	NEW POLE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NPPB	NEW PEDESTRIAN PUSH BUTTON (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
NPSH	NEW PEDESTRIAN SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NR	NEW CONDUIT RISER STRUCTURE (Lvl = 47 Electrical / Co = 3 / Wt = 1)	Grph	Sym	R
NRSM	NEW ROAD SIGN ON MAST ARM – ONE STRAP (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NS	NO SLIP BASE ON STANDARD (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	NS
NSCDIS	NEW DUAL ILLUMINATED SIGN (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	0
NSCMIS	NEW ILLUMINATED SIGN - CENTERED (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	0
NSFAV	NEW SIGNAL FACE WITH VISOR (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image
NSMS	NEW VEHICLE SIGNAL FACE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NSSMIS	NEW ILLUMINATED SIGN - SIDE POST (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	C
NT15	NEW TYPE 15 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NT15D	NEW DUAL ARM LUMINAIRE TYPE 15D ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	00
NT15DS	NEW DUAL ARM LUMINAIRE TYPE 15D ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	ũ
NT15S	NEW TYPE 15 ELECTROLIER STRUCTURE (1Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	o€))
NT21	NEW TYPE 21 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$\sim$
NT21D	NEW DUAL ARM LUMINAIRE TYPE 21D ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	QQ
NT21DS	NEW DUAL ARM LUMINAIRE TYPE 21D ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	<b>●</b> • • •
NT21S	NEW TYPE 21 ELECTROLIER STRUCTURE (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	o

TRAFFIC / ELECTRICAL				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image
NT30	NEW TYPE 30 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	•—————————————————————————————————————
NT31	NEW TYPE 31 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NT32	NEW TYPE 32 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	·
NT33LA	NEW TYPE 33 WITH 2 LIGHT SIGNAL SIGN (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
NT35	NEW TYPE 35 ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NT36	NEW TYPE 36 20A ELECTROLIER (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	$\sim$
NTC	OBSOLETE	Grph	Line Pattern	— T — — —
NTDC	NEW TELEPHONE DEMARCATION CABINET (Lvl = 47 Electrical / Co = 5 / Wt = 1)	Grph	Sym	
NTIII	NEW TYPE 3 SERVICE ENCLOSURE (Lvl = 47 Electrical / Co = 3 / Wt = 1)	Grph	Sym	
NTSC	OBSOLETE	Grph	Line Pattern	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
NTYPE1	NEW TYPE 1 STANDARD WITH VEHICLE SIGNAL FACES (Lvl = 47 Electrical / Co = 2 / Wt = 3)	Grph	Sym	
NW70W	NEW WALL SURFACE - 70W (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD15	NEW WIRING DIAGRAM TYPE 15 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD15S	NEW WIRING DIAGRAM TYPE 15S (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD21	NEW WIRING DIAGRAM TYPE 21 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD21S	NEW WIRING DIAGRAM TYPE 21S (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	NWD2IS
NWD30	NEW WIRING DIAGRAM TYPE 30 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD31	NEW WIRING DIAGRAM TYPE 31 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWD32	NEW WIRING DIAGRAM TYPE 32 (Lvl = 47 Electrical / Co = 4 / Wt = 1)	Grph	Sym	
NWPP	NEW WOOD POWER POLE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
PEC	PHOTOELECTRIC CONTROL (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	PEC
PEU	PHOTOELECTRIC UNIT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	PEU
РН	PHASE SYM (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	Ø
POLSCH	POLE SCHEDULE (Lvl = 48 Elect Anno / Co = 4 / Wt = 1)	Grph	Table	
PPHASE	PEDESTRIAN SIGNAL PHASE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	<>
PSI	POLE SCHEDULE IDENTIFIER (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
RC	REMOVAL BY CONTRACTOR (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	RC
RE	OBSOLETE	Grph	Sym	RE
RECEPT	RECEPTACLE (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	R
RL	RELOCATE EQUIPMENT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	RL

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
RR	REMOVE AND REUSE EQUIPMENT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	RR
RS	REMOVE AND SALVAGE EQUIPMENT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	RS
RSM	ROAD SIGN ON MAST ARM (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	
SC	SPLICE NEW 2 EX CONDUCTOR (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	SC
SD	SERVICE DISCONNECT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	SD
TERMBL	TERMINAL BLOCKS (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	
TIEPT	TIE POINT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	<b>e</b>
TPHASE	THROUGH SIGNAL PHASE (Lvl = 47 Electrical / Co = 2 / Wt = 1)	Grph	Sym	◀
TSP	TELEPHONE SERVICE POINT (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Sym	TSP
VOLTAC	VOLT (ALTERNATING CURRENT) (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Label	V(ac)

TRAFFIC / ELECTRICAL				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
VOLTDC	VOLT (DIRECT CURRENT) (Lvl = 47 Electrical / Co = 0 / Wt = 1)	Grph	Label	V(dc)
WARN	CIRCUIT WARNING MESSAGE (Lvl = 48 Elect Anno / Co = 4 / Wt = 1)	Grph	Notes	SAMOLAR Samo California (Locale and Locale Samo, a sector and a data sector many and set of the samolar and a data sector many and set of the samolar and sector and and set of the samolar and sectors.

WATER POLLUTION CONTROL				
Cell	Cell Description	Cell	Cell	Cell Image
Name	(Symbology: LvI/Co/Wt)	Туре	Use	
STPILE	TEMP STOCKPILE (LvI = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	SP
TCHDAM	TEMP CHECK DAM (Lvl = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	->)->)->)
TDIP	TEMP DRAIN INLET PROTECT (Lvl = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	
TEXIT	TEMP ENTRANCE EXIT (LvI = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	
TOUT	TEMP DRAIN OUTLET PROTECT (Lvl = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	
WASH	TEMP CONCRETE WASHOUT (Lvl = 34 WPC Temp / Co = 6 / Wt = 1)	Grph	Sym	WASH

Caltrans Right of Way Cell Named Levels				
Coll Namo	Cell Description	Cell	Cell	Coll Imaga
	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image
AAA_RW	Version March 2017 (Lvl = rw_map_anno / Co = 10 / Wt = 1)	Grph	Sym	APRIL 2017
rw_ACCESS	ACCESS OPENING SYM (Lvl = rw_topo_point / Co = 0 / Wt = 2)	Grph	Sym	
rw_ANGLPT	ANGLE POINT SYM (Lvl = 60 Nongeo Data / Co = 2,250,251 / Wt = 0,1) (Masking)	Grph	Sym	
rw_APPROV	APPROVED AS TO DESIGN (Lvl =border, rw_map_anno, rw_topo_Wipeout_Areas / Co = 250, 251 / Wt = 0,1) (Masking)	Grph	Sym	APPROVED AS TO DESIGN
rw_BLK51	PARCEL BLOCK 5 1 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BLK52	PARCEL BLOCK 5 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BLK61	PARCEL BLOCK 6 1 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BLK62	PARCEL BLOCK 6 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BLK722	PARCEL BLOCK 7 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	[]
rw_BLK822	PARCEL BLOCK 8 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BREAK	LINE EXTENSION (Lvl = rw_map_anno / Co =0,250 / Wt = 1) (Masking)	Grph	Sym	

	Caltrans Right of Way Cell Na	med L	evels	
Coll Name	Cell Description	Cell	Cell	Coll Imaga
	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image
rw_BUB51	PARCEL BUBBLE 5 1 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB52	PARCEL BUBBLE 5 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB522	PARCEL BUBBLE 5 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB61	PARCEL BUBBLE 6 1 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB62	PARCEL BUBBLE 6 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB622	PARCEL BUBBLE 6 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB722	PARCEL BUBBLE 7 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_BUB822	PARCEL BUBBLE 8 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	
rw_CCUA52	CCUA PARCEL BLK 5 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	CCUA
rw_CCUA62	CCUA PARCEL BLK 6 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	CCUA
rw_DART	DART ORIGIN AT TIP (Lvl = rw_map_anno / Co = 0 / Wt = 1)	Grph	Sym	

Caltrans Right of Way Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image
rw_DARTH	HORIZ DART POINT UP OR DOWN (Lvl = rw_map_anno / Co = 0 / Wt = 1)	Grph	Sym	
rw_DARTV	VERT DART POINT TO RT OR LT (Lvl = rw_map_anno / Co = 0 / Wt = 1)	Grph	Sym	
rw_DATA	CURVE LINE DATA TABLE 10 (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	DATA TABLE HG. PAGIUS 00.TA/SECONDC LCH/01ST HG. PAGIUS 00.TA/SECONDC LCH/
rw_DATA1	CURVE LINE DATA 1 EXT. (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	
rw_DATA5	CURVE LINE TABLE 5 EXT. (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	
rw_DATCV	CURVE DATA TABLE 10 (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	CLEYE DATA TABLE
rw_DATCV1	CURVE DATA 1 EXTENSION (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	, <u></u> ,,
rw_DATCV5	CURVE DATA 5 EXTENSION (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	
rw_DATLN	LINE DATA TABLE 10 (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	LINE DATA TABLE VD. BEARDIG DISTANCE 
rw_DATLN1	LINE DATA 1 EXTENSION (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	
rw_DATLN5	LINE DATA 5 EXTENSION (Lvl = rw_topo_anno_table / Co = 0,250,251 / Wt = 0-2) (Masking)	Grph	Table	

Caltrans Right of Way Cell Named Levels				
Coll Namo	Cell Description	Cell	Cell	Call Imaga
	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image
rw_DD522	DIRECTORS DEED BUBBLE 5 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	(DD)
rw_DD622	DIRECTORS DEED BUBBLE 6 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	(DD)
rw_DE522	DIRECTORS EASE BUBBLE 5 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	(DE
rw_DE622	DIRECTORS EASE BUBBLE 6 2 2 (Lvl = rw_map_anno, rw_parcel_CO / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	( <u>De</u> )
rw_EXTARR	EXTENSION ARROW (Lvl = rw_map_anno / Co = 0 / Wt = 0)	Grph	Sym	
rw_FCCM	FOUND CT CONTROL MON. (Lvl = rw_topo_point / Co=4 / Wt = 0-1)	Grph	Sym	
rw_FCM	FOUND 6X6 CONC. MON. (Lvl = rw_topo_point / Co= 1,4 / Wt = 0-1)	Grph	Sym	
rw_FDNR	FOUND PT. NO RECORD (Lvl = topo_su_ctrl_point_FD / Co=43 / Wt = 1)	Grph	Sym	
rw_HMB	HIGHWAY MAP BOOK PAGE (Lvl = rw_map_anno / Co=0 / Wt =0)	Grph	Sym	BOCK HICHWAY MAPS, PAGE .
rw_HOOK	OWNERSHIP HOOK (Lvl = rw_map_anno / Co = 0 / Wt =0)	Grph	Sym	
rw_HWYINT	INTERSTATE HWY SYM (Lvl = rw_map_anno / Co = 0,250 / Wt =0,1) (Masking)	Grph	Sym	

Caltrans Right of Way Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image
rw_HWYSTE	STATE HWY SYM (Lvl = rw_map_anno / Co = 0,250 / Wt =0,1) (Masking)	Grph	Sym	
rw_INDEX	RW MAP INDEX NO SEAL (Lvl = border, border_rw_22x36, border_WITHIN-Border_anno, rw_map_anno_Appraisal_Map, rw_map_anno_Record_Map / Co = 0,3,4,250,251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_INDEXS	RW MAP INDEX LS SEAL (border, border_rw_22x36, border_SEAL, border_WITHIN-Border_anno, rw_map_anno_Appraisal_Map, rw_map_anno_Record_Map / Co = 0,3,4,250,251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_INDXFA	FEDERAL APP. INDEX (border, border_rw_22x36, border_SEAL, border_WITHIN-Border_anno, rw_map_anno/ Co = 0,3,4,250,251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_INDXRV	RELINQ. AND VAC. INDEX (Lvl = border, border_rw_22x36, border_SEAL, border_WITHIN-Border_anno, rw_map_anno, rw_map_anno_Record_Map/ Co = 0,3,4,250,251 / Wt = 0-3, 5, 8) (Masking)	Grph	Sheet	
rw_INDXT	PARCEL TABLE INDEX SHEET (Lvl = rw_topo_anno_TABLE / Co = 0, 250,251 / Wt = 1, 2) (Masking)	Grph	Table	
rw_INDXT1	PARCEL TABLE 1 EXT. (Lvl = rw_topo_anno_TABLE / Co = 0, 250,251 / Wt = 1, 2) (Masking)	Grph	Table	
rw_INDXT5	PARCEL TABLE 5 EXT. (LvI = rw_topo_anno_TABLE / Co = 0, 250 / Wt = 1) (Masking)	Grph	Table	
rw_JUA522	JUA PARCEL BLOCK 5 2 2 (Lvl = rw_map_anno, rw_parcel_COLOR / Co = 0, 250,251 / Wt = 1, 2) (Masking)	Grph	Sym	JUA
rw_JUA622	JUA PARCEL BLOCK 6 2 2 (Lvl = rw_map_anno, rw_parcel_COLOR / Co = 0, 250,251 / Wt = 1, 2) (Masking)	Grph	Sym	

	Caltrans Right of Way Cell Na	med L	evels	
Cell Name	Cell Description	Cell	Cell	Cell Image
rw_LEGRW	(Symbology: Lti/Co/Wt) TYPICAL LEGEND (Lvl = border, border_WITHIN- BORDER_anno / Co = 0, 250,251 / Wt = 0-3) (Masking)	Grph	Notes	Lice on     the second se
rw_MAP	CALIFORNIA MAP (Lvl = rw_map_anno / Co = 3 / Wt = 0-2, 5, 8)	Grph	Sym	
rw_MONFP	FOUND SURVEY MONUMENT (Lvl = <i>Designated by User /</i> Co = 0 / Wt = 0)	Grph	Sym	
rw_MONOP	OPEN SURVEY MONUMENT (Lvl = <i>Designated by User /</i> Co = 250, 251 / Wt = 1, 2) (Masking)	Grph	Sym	$\bigcirc$
rw_NACT	CALTRANS NORTH ARROW (Lvl = rw_map_anno, rw_topo_point / Co = 1, 2, 250 / Wt = 0-2) (Masking)	Grph	Sym	es I
rw_NGSMON	NGS MONUMENT (Lvl = topo_su_ctrl_point_MON / Co = 1, 250 / Wt = 0, 1) (Masking)	Grph	Sym	Â
rw_NOSCAL	NO SCALE W MASK FOR RON MAP (Lvl = rw_map_anno / Co = 0, 250 / Wt = 0, 2) (Masking)	Grph	Sym	NOT TO SCALE
rw_NOTES1	GRANTOR NOTES (Lvl = border, border_WITHIN-Border_anno, rw_map_anno_Record_Map / Co = 0, 250, 251 / Wt = 0-2) (Masking)	Grph	Notes	The second secon
rw_NOTES2	CCS NOTES (Lvl = border, border_WITHIN_Border_anno / Co = 0, 250, 251 / Wt = 0, 2) (Masking)	Grph	Notes	Surfaces of the Para or on CCL Registry and the Para of the CCL Registry and the Para of the CCL Dura of the CCL Dura of the CCL Dura of the CCL And CCL Dura of the CCL Dura of the CCL And CCL Dura of the CCL Dura of the CCL And CCL Dura of the CCL Dura of the CCL And CCL Dura of the CCL Dura of the CCL And CCL Dura of the CCL Dura of the CCL Dura of the CCL And CCL Dura of the C
rw_PM	POST MILE SYM (Lvl = rw_topo_point / Co = 250, 251 / Wt = 0) (Masking)	Grph	Sym	
rw_PROJC	PROJECT ID CENTERED (Lvl = border_WITHIN_Border_anno / Co = 0, 250 / Wt = 0 - 2) (Masking)	Grph	Sym	

	Caltrans Right of Way Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image	
	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image	
rw_PROJL	PROJECT ID LEFT (Lvl = border_WITHIN_Border_anno / Co = 0, 250 / Wt = 0, 2) (Masking)	Grph	Sym	[PR0.457 IB 00 0000 0000 ]	
rw_RELBK5	RELINQUISHMENT BLOCK 5 (Lvl = rw_map_anno / Co = 0, 250 / Wt = 1) (Masking)	Grph	Sym	REL	
rw_RELBK6	RELINQUISHMENT BLOCK 6 (Lvl = rw_map_anno / Co = 0, 250, 251 / Wt = 1) (Masking)	Grph	Sym	REL	
rw_RELBK7	RELINQUISHMENT BLOCK 7 (Lvl = rw_map_anno / Co = 0, 250, 251 / Wt = 1) (Masking)	Grph	Sym	REL	
rw_RELBK8	RELINQUISHMENT BLOCK 8 (Lvl = rw_map_anno / Co = 0, 250, 251 / Wt = 1) (Masking)	Grph	Sym	REL	
rw_RELBK9	RELINQUISHMENT BLOCK 9 (Lvl = rw_map_anno / Co = 0, 250 / Wt = 1) (Masking)	Grph	Sym	REL	
rw_RELSG1	RELINQ. SEGMENT BLK 1 (Lvl = rw_map_anno / Co = 0, 250, 251 / Wt = 1, 4) (Masking)	Grph	Sym	SEGMENT	
rw_RELSG2	RELINQ. SEGMENT BLK 2 (Lvl = rw_map_anno / Co = 0, 250, 251 / Wt = 1, 4) (Masking)	Grph	Sym	SEGMENT	
rw_RVBLK1	REVISION BLK SURVEYOR (Lvl = border, border_WITHIN_Border_anno / Co = 0, 250, 251 / Wt = 1, 2) (Masking)	Grph	Table	Lo resto serone 	
rw_RVBLK2	REVISION BLOCK (Lvl = border, border_WITHIN_Border_anno / Co = 0, 250, 251 / Wt = 1, 2) (Masking)	Grph	Table	BATC         REVISIONS         DT           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -	
rw_RWS	ROW MONUMENT (Lvl = topo_su_ctrl_point_FD / Co = 43 / Wt = 1)	Grph	Sym		

	Caltrans Right of Way Cell Na	med L	evels	
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl/Co/Wt)	Туре	Use	
rw_SCALE	STANDARD SCALE BAR (Lvl = border_WITHIN_Border_anno / Co = 0 / Wt = 1)	Grph	Sym	FET 0
rw_SEALLS	PROF. L.S. SEAL (Lvl = border_SEAL / Co= 0, 250, 251 / Wt = 0-2) (Masking)	Grph	Sym	PROFESSIONAL LAND SURFEIN
rw_SECCOR	SECTION CORNER SYM (Lvl = <i>Designated by User /</i> Co = 0, 250, 251 / Wt = 0, 2) (Masking)	Grph	Sym	-\$-
rw_TARGET	TARGET GRID MARKER (Lvl = rw_map_anno / Co= 0, 250, 251 / Wt = 0)	Grph	Sym	- <del> </del> -
rw_TILDE	TERMINATOR SYM (Lvl = rw_map_anno / Co = 0 / Wt = 1)	Grph	Sym	$\sim$
rw_TIMERW	TIME DATE STAMP (Lvl = border, border_WITHIN-Border_anno / Co = 0, 3, 250, 251 / Wt = 0-2) (Masking)	Grph	Sym	
rw_TITLDD	DIRECTORS DEED TITLE (Lvl = border, border_WITHIN-Border_anno / Co = 0, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLEE	RW MAP ENGLISH BORDER (Lvl = border, border_rw_22x36, border_WITHIN-Border_anno, rw_map_anno_Appraisal_Map, rw_map_anno_Vestee_Block / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLEV	RW MAP TITLE NO VESTEE (Lvl = border, border_rw_22x36, border_WITHIN-Border_anno, rw_map_anno_Appraisal_Map, rw_map_anno_Record_Map / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLFA	FEDERAL APP. TITLE (Lvl = border, border_rw_22x36, border_WITHIN-Border_anno / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	

Caltrans Right of Way Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl/Co/Wt)	Туре	Use	
rw_TITLFL	FREEWAY LEASE TITLE (Lvl = border, border_WITHIN-Border_anno / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLHP	HARDSHIP PROTECT TITLE (Lvl = border, border_WITHIN-Border_anno / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLRN	RESO. OF NEC. TITLE (Lvl = border, border_WITHIN-Border_anno / Co = 0, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITLRV	RELINQ. AND VAC. TITLE (Lvl = border, border_rw_22x36, border_WITHIN-Border_anno, rw_map_anno, rw_map_anno_Record_Map / Co = 0, 3, 4, 232, 250, 251 / Wt = 0-3, 5, 8) (Masking)	Grph	Sheet	
rw_TITLSA	STATE APP. TITLE (Lvl = border, border_rw_22x36, border_SEAL, border_WITHIN-Border_anno, rw_map_anno / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITVDD	DIR DEED TITLE VERT (Lvl = border, border_WITHIN-Border_anno / Co = 0, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITVFL	FREE LEASE TITLE VERT (Lvl = border, border_WITHIN-Border_anno / Co = 0, 3, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITVHP	HARD PROTECT TITLE VERT (Lvl = border, border_WITHIN-Border_anno / Co = 0, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	
rw_TITVRN	RES OF NEC TITLE VERT (Lvl = border, border_WITHIN-Border_anno / Co = 0, 4, 250, 251 / Wt = 0-3, 5) (Masking)	Grph	Sheet	

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	Caltrans Right of Way Cell Named Levels					
	Cell Description	Cell	Cell			
Cell Name	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image		
rw_TRI	TRIANGLE SYM (Lvl = rw_topo_point / Co = 0, 239, 250 / Wt = 0, 1) (Masking)	Grph	Sym	$\sum_{i=1}^{n}$		
rw_VEST	VESTEE BLOCK (Lvl = rw_map_anno_Appraisal_Map, rw_map_anno_Record_Map, rw_map_anno_Vestee_Block, rw_parcel_COLOR / Co = 0, 250 / Wt = 0-2) (Masking)	Grph	Table			
rw_VEST1	VESTEE BLOCK 1 EXT. (Lvl = rw_map_anno_Record_Map, rw_map_anno_Vestee_Block, rw_parcel_COLOR / Co = 0, 250 / Wt = 0-2) (Masking)	Grph	Table			
rw_VEST25	VESTEE BLOCK 25 ROWS (Lvl = rw_map_anno_Record_Map, rw_map_anno_Vestee_Block, rw_parcel_COLOR / Co = 0, 250 / Wt = 0-2) (Masking)	Grph	Table			
rw_VEST5	VESTEE BLOCK 5 EXT. (Lvl = rw_map_anno_Record_Map, rw_map_anno_Vestee_Block, rw_parcel_COLOR / Co = 0, 250 / Wt = 0-2) (Masking)	Grph	Table			
rw_VEST5T	VESTEE BLOCK 5 ROWS (Lvl = rw_map_anno_Appraisal_Map, rw_map_anno_Record_Map, rw_map_anno_Vestee_Block, rw_parcel_COLOR / Co = 0, 250 / Wt = 0-2) (Masking)	Grph	Table			

Caltrans Topo Cell Named Levels				
Cell Name	Cell Description (Symbology: LvI/Co/Wt)	Cell Type	Cell Use	Cell Image
topo_BUS	BUS STOP – FOR TSS DATA ONLY (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Cabinet	CABINET (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Callbox	CALLBOX (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	₿
topo_circle	OPEN CIRCLE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	0
topo_Column	BENT COLUMN PIER – CIRCULAR (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_CTRL	GENERIC CONTROL PT - FOR TSS DATA ONLY (Lvl = Designated by User (Data Type) / Co= 0 / Wt = 1)	Grph	Sym	$\odot$
topo_ctrl_ Horizontal	HORIZONTAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\triangle$
topo_ctrl_ Horizontal_ Vertical	HORIZONTAL & VERTICAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	Â
topo_ctrl_ Vertical	VERTICAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\odot$
topo_DI_ rectangle	DRAINAGE INLET – RECTANGULAR (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_DI_round	DRAINAGE INLET – ROUND (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\oplus$

Caltrans Topo Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LvI/Co/Wt)	Туре	Use	cen image
topo_DIAMND	HOV DIAMOND SYM (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_DICO	DI CURB OPEN_NO GRATE - FOR TSS DATA ONLY (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	
topo_DISD	DI SIDE INLET FL - FOR TSS DATA ONLY (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	
topo_ECCTV	CLOSED CIRCUIT TV CAMERA (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	
topo_EDLPA5	LOOP DETECTOR (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_ Electrolier	ELECTROILER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	¥
topo_FES	FLARED END SECTION (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\Box$
topo_ FireHydrant	FIRE HYDRANT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	+0+
topo_Guy	GUY ANCHOR (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	)
topo_HC	AERIAL HORIZONTAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	$\triangle$
topo_Hosebib	HOSEBIB (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	Ю

Caltrans Topo Cell Named Levels				
Coll Namo	Cell Description	Cell	Cell	Coll Imago
	(Symbology: LvI/Co/Wt)	Туре	Use	Cell Image
topo_HVC	AERIAL HORIZONTAL & VERTICAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	<u> </u>
topo_ LampPost	LAMP POST (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	ょひ
topo_Lighting	GENERAL LIGHTING (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	ょひ
topo_LTA	LEFT TURN ARROW (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	Ĵ
topo_Mailbox	MAILBOX (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Manhole	MANHOLE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\bigcirc$
topo_Marker	PAVEMENT MARKER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\diamond$
topo_Meter	METER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\bigcirc$
topo_MRSH	MARSH OR SWAMP (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	٦L
topo_MVP	MOTOR VEHICLE PULLOUT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	MVP
topo_PC	AERIAL PHOTO CENTER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	

Caltrans Topo Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LvI/Co/Wt)	Туре	Use	Cen Image
topo_Pedestal	PEDESTAL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_POINT	POINT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	8
topo_Pole	POLE WITHOUT WIRE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Pole_ wire	POLE WITH WIRE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Pullbox	PULLBOX (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Pullbox_ rectangle	PULLBOX – RECTANGLE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	l l
topo_Pullbox_ round	PULLBOX – ROUND (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	:
topo_Pump	PUMP (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Sign_ bridge_post	OVERHEAD SIGN BRIDGE – COLUMN (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	
topo_Sign_ cantilever	OVERHEAD SIGN – CANTILEVER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	¢
topo_Sign_ multi-post	SIGN – MULTI-POST (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	

Caltrans Topo Cell Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LvI/Co/Wt)	Туре	Use	Cett Image
topo_Sign_ single-post	SIGN - SINGLE POST (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	<b>_</b>
topo_Signal_ RR	RR SIGNAL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	¥
topo_Signal_ traffic	TRAFFIC SIGNAL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	苍
topo_ Standpipe	STANDPIPE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	O SP
topo_Tank	TANK (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	Û
topo_TBE	TOPO MAP DATA (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1, 2)	Grph	Notes	STATE OF CALIFORNIA DEPARTERY OF TRANSPORTATION Define and the state of t
topo_ Telephone	PUBLIC TELEPHONE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\diamond$
topo_TERML	GUARDRAIL TERMINATOR – LEFT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	2
topo_TERMR	GUARDRAIL TERMINATOR – RIGHT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	Q
topo_TIC	GRID TIC (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	
topo_TR4	SMALL DIAMETER TREE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	$\Box$

	Caltrans Topo Cell Named Levels				
Coll Namo	Cell Description	Cell	Cell	Coll Imago	
	(Symbology: LvI/Co/Wt)	Туре	Use	Cen Image	
topo_TR8	LARGE DIAMETER TREE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Sym	$\bigcirc$	
topo_ TranTower	TRANSMISSION TOWER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\square$	
topo_Tree	TREE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\bigcirc$	
topo_Valve	VALVE (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\bigtriangleup$	
topo_Vault	VAULT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym		
topo_VC	AERIAL VERTICAL CONTROL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 2)	Pnt	Sym	©	
topo_Vent	VENT (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	$\bigcirc$	
topo_Well	WELL (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	0 WELL	
topo_WIRE	FOR TRANSMISSION TOWER (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 0)	Grph	Line Pattern		
topo_X	X SYM (Lvl = <i>Designated by User (Data Type) /</i> Co= 0 / Wt = 1)	Grph	Sym	×	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
A2_6	OBSOLETE	Grph	Line Pattern	
A2_8	OBSOLETE	Grph	Line Pattern	
AB	ABANDON (Lvl = es_CELL-NOTES-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	AB
AAUTIL	EX UTIL CHART DESIGNATIONS (Lvl = ut_misc / Co = 0-3, 5-7 / Wt = 1,4)	Grph	Notes	
ABANDN	SYMBOL FOR ABANDON UTILITY (Lvl = ut_MISC / Co = 0 / Wt = 1)	Grph	Sym	
ADDSHT	ADD SHTS TO ASBUILTS (Lvl = pp_AS-BUILT / Co = 3 / Wt = 1)	Grph	Notes	NEW NUMBER OF TOTAL SHEETS- SEE INDEX OF PLANS FOR ADDED/REVISED SHEET NUMBERS
ADDSYM	ADDENDUM SYMBOL (Lvl = pp_ADDENDUM / Co = 3 / Wt = 0,3)	Grph	Sym	$\overline{\mathbb{V}}$
ADNOTE	ADDENDUM NOTE (Lvl = pp_ADDENDUM / Co = 3 / Wt = 0,3)	Grph	Notes	₩ БЕРАЛСКО ИСТ АСОБНОМИ НЬ. • ВАТЕР ИОНТИ БАТ, ТЕЛЯ
AHT	ARROW HD TERMINATOR (Active Symbology)	Pnt	Sym	
AIC	AUXILIARY IRRIG CONTROLLER (Lvl = ls_IRRIGATION / Co = 1 / Wt = 0,1)	Grph	Sym	$\bigcirc$
ANCHT	OBSOLETE	Grph	Sym	$\frown$
ASAWRD	REPLACE SIG ON DGN IN CONST (Lvl = pp_AS-AWARDED / Co = 3 / Wt = 1,2)	Grph	Notes	AS-AWARDED CONTRACT PLANS THIS STAMP PLACED IN LIEU OF ORIGINAL STOATURE
ASBLT2	ASBUILT STAMP W_CORRECTIONS (Lvl = pp_AS-BUILT / Co = 3 / Wt = 0-2)	Grph	Notes	AS BUILT CONTRACT NO. C.C.A. DATE R.E. NAME

	CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image	
ASBLT3	TITLE SHEET STAMP RE_SIG (Lvl = pp_AS-BUILT / Co = 3 / Wt = 0-2)	Grph	Notes	AS         BUILT           CONTRACT NO.	
ATC	OBSOLETE	Pnt	Sym	$(\cdot)$	
AVD	FOR ARCHIVED DGN FILES (LvI = pp_ARCHIVE / Co = 4 / Wt = 1,2)	Grph	Notes	ARCHIVED VECTOR DATA OF COMPLETED PROJECT WITHOUT NAMES & SIGNATURES	
AXIS	OBSOLETE	Grph	Line Pattern		
B11	CRASH CUSHION B11 (Lvl = tcd_CRASH-CUSHION / Co = 10 / Wt = 1)	Grph	Sym	00088888	
B14	CRASH CUSHION B14 (Lvl = tcd_CRASH-CUSHION / Co = 10 / Wt = 1)	Grph	Sym	0000888888	
B2CURB	OBSOLETE	Grph	Line Pattern		
B4CURB	OBSOLETE	Grph	Line Pattern		
BAC	BEGIN ACCESS CONTROL (Lvl = rd_MISC / Co = 6 / Wt = 1)	Grph	Notes	BEGIN ACCESS CONTROL	
BC	INSTALL BOX IN CONDUIT (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	BC	
BDRN	OBSOLETE	Grph	Sym	$\bigcirc$	
BLANK	SHEET LEFT INTENT BLANK (Lvl = pp_MISC / Co = 3 / Wt = 0)	Grph	Notes	THIS SHEET INTENTIONALLY LEFT BLANK	
BLC	OBSOLETE	Grph	Sym	$\bigcirc$	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
BLOCKS	MASONARY BLK PATTERN (Lvl = pp_MISC / Co = 0 / Wt = 0)	Pnt	Sym	
BP	BOOSTER PUMP (Lvl = ls_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	ſſ
BPA	BACKFLOW PREVENTER ASSY (Lvl = ls_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	
BPE	BKFLO PREVENTER ENCLOSURE (LvI = Is_IRRIGATION / Co = 1 / Wt = 0)	Grph	Sym	L N N
BPLAN	BUILDING BORDER SHEET (Lvl = border_SHEET / Co = 0 / Wt = 0-3)	Grph	Sheet	
BPLAN2	BPLAN2 TYPE BPLAN2 (Lvl = border_SHEET / Co = 0 / Wt = 0-3)	Grph	Sheet	
BPN	PEDESTRIAN BARRICADE (Lvl = temp_BARRICADES / Co = 0 / Wt = 1)	Grph	Sym	BP
BREAKR	CIRCUIT BREAKER (LvI = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
BRKLN	NON GEO BREAK LINE SYMBOL (Lvl = pp_PRESENTATION / Co = 0 / Wt = 1)	Grph	Sym	
BTITL2	BUILDING TITLE_CONSULTANT2 (Lvl = border_SHEET / Co = 0 / Wt = 0-3)	Grph	Sheet	
BTITL3	BUILDING TITLE_CONSULTANT3 (Lvl = border_SHEET / Co = 0 / Wt = 0-3)	Grph	Sheet	
BTITLE	BUILDING TITLE SHEET (Lvl = border_SHEET / Co = 0 / Wt = 0-3)	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illage
BUAO	OBSOLETE	Grph	Sym	$\bigcirc$
BUS	OBSOLETE	Grph	Sym	
BV	BALL VALVE (LvI = Is_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	$\overline{\mathbf{A}}$
C4	OBSOLETE	Grph	Sym	$\langle \cdot \rangle$
CAB	OBSOLETE	Grph	Sym	
CALCO1	CAL_QUARTER CORNER (Lvl = rd_MISC / Co = 0 / Wt = 0)	Grph	Sym	$\rightarrow$
CALL	OBSOLETE	Grph	Sym	$\bigcirc$
САР	CAP (Lvl = ls_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	
CARV	COMBO AIR RELEASE VALVE (LvI = Is_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	Ĥ
CAS	CONSTR AREA SIGNS TABLE (Lvl = pp_CAS-TABLE / Co = 0 / Wt = 0-2)	Grph	Table	
СВ	INSTALL CONDUIT IN BOX (Lvl = es_CELL-NOTESSYMBOL / Co = 0 / Wt = 1)	Grph	Sym	СВ
СВХ	OBSOLETE	Grph	Sym	$\square$
СС	CONNECT CONDUIT (Lvl = es_CELL-NOTES SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	СС

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illiage
CCA	CAM COUPLER ASSEMBLY (LvI = Is_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	
CI	OBSOLETE	Grph	Sym	
CES	CONNECT TO EXISTING SYSTEM (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\Diamond$
CESEAL	REGISTERED CE STAMP (Lvl = border_SEAL / Co = 0 / Wt = 0,2)	Grph	Notes	
CF	CONDIUT FOR FUTURE USE (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	CF
CFBOT	BOTTOM CLIP FRAME (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFFUL2	FULL CLIP_CONSULTANT (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFFULL	FULL CLIP FRAME (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFTIT2	TITLE CLIP_CONSULTANT2 (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFTIT3	TITLE CLIP_CONSULTANT3 (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFTITL	TITLE SHEET CLIP FRAME (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFTOP	TOP CLIP FRAME (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
CFTOP2	TOP CLIP_CONSULTANT (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
CITY	OBSOLETE	Grph	Line Pattern	
CL	CENTERLINE SYMBOL (Lvl = pp_PRESENTATION / Co = 0 / Wt = 1)	Grph	Sym	(L
CLG	CHAIN LINK GATE (LvI = Is_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	0
CLH	OBSOLETE	Grph	Sym	$\bigcirc$
CLHV	OBSOLETE	Grph	Sym	$\bigcirc$
CLIM1	CLIMATE REGION ONLY (Lvl = rd_TYP-X-SECTION-anno / Co = 0 / Wt = 1,2)	Grph	Notes	PAVEMENT CLIMATE REGION South modifiain
CLIM2	CLIMATE ADD2 EX DD (Lvl = rd_TYP-X-SECTION-anno / Co = 0 / Wt = 1)	Grph	Notes	<u>Pavement climate region:</u> south mountain
CLNR	OBSOLETE	Grph	Sym	
CLO	OBSOLETE	Grph	Sym	
CLPC	OBSOLETE	Grph	Sym	
CLPT	OBSOLETE	Grph	Sym	
СМР	OBSOLETE	Grph	Line Pattern	$\langle$
CNC	OBSOLETE	Grph	Line Pattern	~~~~~~

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
COCOIL	CONTACTOR COIL (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	/
COL	OBSOLETE	Grph	Sym	
CONCBP	OBSOLETE	Grph	Line Pattern	
CONCP	CONCRETE SYMBOL (Active Symbology)	Pnt	Area Pattern	A A A
COND	OBSOLETE	Grph	Sym	
CONSCH	CONDUCTOR SCHEDULE (Lvl = es_QTY-TABLE / Co = 3,4 / Wt = 0-2)	Grph	Table	
CONTNC	CONTRACTOR NC CONTACT (Lvl = es_CELL-NOTES-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	//
CONTNO	CONTRACTOR NO CONTACT (Lvl = es_CELL-NOTES-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	
COUNTY	OBSOLETE	Grph	Line Pattern	
CPCC	OBSOLETE	Grph	Sym	$\bigcirc$
CIP	OBSOLETE	Grph	Sym	$\bigcirc$
CPOC	OBSOLETE	Grph	Sym	$\bigcirc$
СРОТ	OBSOLETE	Grph	Sym	$\bigcirc$
CTCELLIB Cell Library Named Levels				
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Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
CPRC	OBSOLETE	Grph	Sym	$\bigcirc$
CRN	CONDIUT RUN NUMBER (Lvl = es_CELL-CONDIUT-RISER / Co = 0 / Wt = 1)	Grph	Sym	
CTLOGO	CALTRANS LOGO (Lvl = pp_MISC / Co = 0 / Wt = 0-3)	Grph	Sym	<b>Gt</b> (altrans)
CTRL	OBSOLETE	Grph	Sym	$\bigcirc$
CURB RAMP	CURB RAMP SYMBOL (Lvl = pp_MISC / Co = 0 / Wt = 0)	Grph	Sym	
CURVDA	CURVE DATA TABLE (Lvl = align_CURVE-DATA / Co = 0 / Wt = 0-2)	Grph	Table	CURVE DATA
CUVT	OBSOLETE	Grph	Sym	$\times$
CV	CHECK VALVE (Lvl = ls_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	$\sum$
DBLBAR	OBSOLETE	Grph	Line Pattern	
DCIR	DRAINAGE UNIT CIRCLE (LvI = df_SYSTEM-UNIT-anno / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
DDCLIM	DESIGN DESIGNATION CLIMATE (Lvl = rd_TYP-X-SECTION-anno / Co = 0 / Wt = 1,2)	Grph	Notes	DESIGN DESIGNATION   ADT (2012) XXX,XXX D XXX   ADT (2022) XXX,XXX T XXX   DEV XX,XXX T XX   ESAL X,XXXX T XX   PAVEMENT CLIMATE REGION: SOUTH MOUNTAIN XX
DH	DETECTOR HANDHOLE (LvI = es_CELL-NOTES-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	DH
DI	OBSOLETE	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: LVI / Co / VVI)	Туре	Use	
DIAMD	OBSOLETE	Grph	Sym	
DICO	OBSOLETE	Grph	Sym	
DIP	OBSOLETE	Grph	Line Pattern	—DIP—
DIRFLO	DIR FLO ARROW SYMB (Lvl = df_FLOW-LINE / Co = 1 / Wt = 1)	Grph	Sym	
DIRO	OBSOLETE	Grph	Sym	
DIS	OBSOLETE	Grph	Sym	
DISD	OBSOLETE	Grph	Sym	
DRNSYS	DRAINAGE SYSTEM NO (LvI = df_SYSTEM-UNIT-anno / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
DRNUNT	DRAINAGE UNIT (LvI = df_SYSTEM-UNIT-anno / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
DRVWY1	OBSOLETE	Pnt	Sym	
DRVWY2	OBSOLETE	Pnt	Sym	
DSN	DRAINAGE SYS NO (Lvl = 37 Drain Anno / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
DTABLE	Q TABLE FOR DRAINAGE (Lvl = df_QTY-TABLE / Co = 0,1 / Wt = 0-2)	Grph	Table	

	CTCELLIB Cell Library Name	d Level	S	
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illage
	EXIST 12 UP ARROW			.< <b>1</b>
E12UA	(Lvl = es_CELL-SIGNALS /	Grph	Sym	╶┼┈┼∁╞╺
	Co = 2 / Wt = 1)			
	EXIST TRAFFIC SIGNAL			*`~~
E15TS	(Lvl = es_CELL-SIGNALS /	Grph	Sym	7-1
	Co = 2 / Wt = 1)			~~
	EX CONTROLLER CABINET			
E170	(Lvl = es_CELL-MISC-	Grph	Svm	$[\times 1/$
	COMPONENTS /		- ,	<u> </u>
	Co = 2 / VVt = 1)			<u> </u>
FOATO	EX TYPE 211S VEH SIG FACE	0	0	Ň.
E2115	$(LVI = es_CELL-SIGNALS / Constant of the second s$	Grpn	Sym	<i>₩</i> >
	CO = 27 W( = 0, 1)			
FOROM		Omb	0	<u> </u>
EZROM	$(LVI = es_CELL-SIGNALS / Co = 2 / Wt = 1)$	Grpn	Sym	
	$\frac{1}{100} = \frac{1}{2} \frac{1}{100} = \frac{1}{100} $			
	EXIST 3_12LT ARROW	Grob	Sum	
EJIZLA	$(LVI - es_CELL-SIGNALS / Co = 2 / Wt = 1)$	Gipii	Sym	' <del>''</del> '
E5YGRA	$(I_VI = e_S CEI - SIGNALS /$	Grnh	Svm	ᇉᅕᆑᇆᇍ
LUIDIX	$C_0 = 2 / Wt = 1$	Orpri	Oyin	─┼┼└╭⊁
EAC	END ACCESS CONTROL	Grph	Svm	END ACCESS
	$(LvI = rd_MISC / Co = 6 / Wt = 1)$			CONTROL
			Line	
ECC	OBSOLETE	Grph	Dattern	— c — — — —
			rallem	
ECCTV	EXIST CLOSE CIRCUIT TV	Grph	Sym	lı Ki
	$(EVI = eS_CCTV / CO = 5 / WI = 1)$			
	EXIST CITY ELECTROLIER			, <del>~</del> .
ECE	(Lvl = es_CELL-LIGHTING /	Grph	Sym	<{∩}
	Co = 4 / Wt = 1)			
	EX CNTLVR FLASH BEACON			$\gamma^{1} \checkmark \gamma^{1} \checkmark$
ECFB	(Lvl = es_FLASHING-BEACON,	Grph	Sym	
	Co = 2 / Wt = 1)			
				FIBER ROLL
ECITLG	OBSOLETE	Grph	Table	SECNENCE ITEN MATERIAL REWARKS

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
ECLEG	OBSOLETE	Grph	Table	EROSION CONTROL Stauer III: within Within Within Anti- 1997 - 1997 - 1997 -
ECLGIM	OBSOLETE	Grph	Table	ERGEION CONTROL LIGACHICI ITUU MUTUUA MILIUM CONTROL DI CONTROL
ECMS	EXIST C.M.S. (Lvl = ex_CMS / Co = 5 / Wt = 1)	Grph	Sym	cms ⊏ ⊒ ⊐
ECQARA	OBSOLETE	Grph	Table	
ECQITM	OBSOLETE	Grph	Table	1054 YOLL 1054 YOLL 1055 YOLL
ECQSHT	OBSOLETE	Grph	Table	
ECQSTA	OBSOLETE	Grph	Table	
EDC	OBSOLETE	Grph	Sym	$\bigcirc$
EDGEP	OBSOLETE	Pnt	Line Pattern	
EDH	OBSOLETE	Grph	Sym	î dh
EDI	EXISTING DRAINAGE INLET (LvI = df_INLET-drop / Co = 1 / Wt = 1)	Grph	Sym	
EDLPA2	EX TYPE_A DET_LOOP_20 (Lvl = es_CELL-MISC- COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPA5	EX TYPE_A DET_LOOP_50 (Lvl = es_CELL-MISC-	Grph	Sym	г — ¬         ∟ _ J

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	$\frac{\text{COMPONENTS /}}{\text{Co} = 2 / \text{Wt} = 1)}$	Туре	036	
EDLPB2	EX TYPE_B DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\langle \rangle$
EDLPB5	EX TYPE_B DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPC2	EX TYPE_C DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	[====]
EDLPC5	EX TYPE_C DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	[====]
EDLPD2	EX TYPE_D DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPD5	EX TYPE_D DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPE2	EX TYPE_E DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPE5	EX TYPE_E DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDLPF5	EX TYPE_F DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	(3)
EDLPQ2	EX TYPE_Q DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
EDLPQ5	EX TYPE_Q DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EDO	OBSOLETE	Grph	Sym	
EDPIS	EX 2POST_OH_ILLU_SIGN (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
EDV	OBSOLETE	Grph	Sym	$\bigcirc$
EDZON2	EXIST DETECT ZONE 20 SCALE (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
EDZON5	EXIST DETECT ZONE 50 SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
EELECT	EXIST NON STD ELECTROLIER (Lvl = es_CELL-SIGNALS / Co = 4 / Wt = 1)	Grph	Sym	$\sim (\hat{z})$
EEMS	EXIST E.M.S. (Lvl = es_EMS / Co = 5 / Wt = 1)	Grph	Sym	$\square \blacksquare \square$
EEVD	EX EMERG VEH DETECTOR (Lvl = es_EVD / Co = 2 / Wt = 1)	Grph	Sym	$\neg$
EFAC	OBSOLETE	Grph	Line Pattern	f
EFB	EXIST FLASHING BEACON (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	Σ <sub>T</sub> ζ
EFBARM	EXIST FLASH BEACON W ARM (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	Γ Γ Γ
EFFE	EXIST FDN FOR FUTURE ELECT (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	↔(Ţ)

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
EFIBOP	OBSOLETE	Grph	Line Pattern	— fo —
EGP	EXIST GUARD POST (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
EHAR	EXIST HWY ADVISE RADIO (Lvl = es_HAR / Co = 5 / Wt = 1)	Grph	Sym	
EHML	EXIST HIGH MAST LIGHT (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
EIBMS	EX ILLUM BR_MNTD SIGN (Lvl = es_SIGN-ILLUMINATION / Co = 4 / Wt = 1)	Grph	Sym	
EISNS	EXIST IISNS (LvI = es_SIGN-ILLUMINATION / Co = 4 / Wt = 1)	Grph	Sym	
EISWL	EX OH SIGN W_ELECTROLIER (LvI = es_SIGN-ILLUMINATION / Co = 4 / Wt = 1)	Grph	Sym	∞∦∓⊅
EL	OBSOLETE	Grph	Sym	
ELC	OBSOLETE	Grph	Line Pattern	
ELECTR	OBSOLETE	Grph	Line Pattern	
ELMH	OBSOLETE	Grph	Sym	000
ELOWP	EXIST LUM ON WOOD POLE (Lvl = es_SIGN-ILLUMINATION / Co = 4 / Wt = 1)	Grph	Sym	∳{́∕́)
ELS	OBSOLETE	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lyl / Co / Wt)	Cell Type	Cell Use	Cell Image
ELT	OBSOLETE	Grph	Sym	×-
EM	OBSOLETE	Grph	Sym	
EM15FB	EX TYPE 15 FLASH BEACON (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	<u>בר</u> גדָז גדָז
EMA15	EX 15FT MASTARM_20_SCALE (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	
EMA20	EX 20FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	
EMAL25	EX 25FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	- , - 
EMAL30	EX 30FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	
EMAL35	EX 35FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	↔ , , ,
EMAL40	EX 40FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	, , , , , , , , , , , , , , , , , , ,
EMAL45	EX 45FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	, , , , , , , , , , , , , , , , , , ,
EMAL50	EX 50FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	~ ↓}
EMAL55	EX 55FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	
EMAL60	EX 60FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	, +++ 

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
EMAL65	EX 65FT MASTARM_20_SCALE (Lvl = es_CELL-LIGHTING / Co = 2 / Wt = 1)	Grph	Sym	
EMD	EXIST MAGNETIC DETECT (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\subseteq$
EMSWLS	EX MASTARM SIG W_LUMIN (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
EMSWOL	EX MASTARM SIG WO_LUMIN (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	+נ>-      +נ>-
EMVDS	EX MICRO VEH DETECTOR (Lvl = es_MVDS / Co = 5 / Wt = 1)	Grph	Sym	г —
ENBOND	ENCLOSURE BOND (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
EOHL	OBSOLETE	Grph	Line Pattern	oh
EPB	EXIST PULLBOX (Lvl = es_CELL-MISC-COMPONENTS / Co = 3 / Wt = 1)	Grph	Sym	
EPBA	OBSOLETE	Grph	Sym	
EPBAR	EXIST PED BARRICADE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EPGUY	EXIST POLE GUY W ANCHOR (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	)

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
EPLAN	ELECTRICAL BORDER SHEET (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	Com
EPLAN2	EBORDER_CONSULTANT2 (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	marks
EPMUT	EX PAD_MT. FOR UTIL TRANS (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
EPOLE	EXIST POLE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
EPSH	EXIST PED SIGNAL FACE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
ER	EX CONDUIT RISER STRUCTURE (Lvl = es_CELL-CONDUIT-RISER / Co = 3 / Wt = 0,1)	Grph	Sym	r
ERSM	EXIST RD SIGN ON MAST ARM (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
ESCDIS	EXIST DUAL ILLUM SIGN (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
ESCMIS	EX ILLM SIGN_CENTERED (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
ESEAL	REGISTERED ELEC STAMP (Lvl = border_SHEET / Co = 0 / Wt = 0-2)	Grph	Notes	
ESFAV	EX SIGNAL FACE W_VISOR (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	<u>+</u> [>{ ~
ESGN1PES ELECT	EX OH SIGN W_ELECTROLIER (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
ESMS	EX VEHICLE SIGNAL FACE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
ESOWLM	EX SOFIT OR WALL LUM TO MOD (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
ESOWLU	EX SOFIT OR WALL LUM TO RMN (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
ESSMIS	EX ILLUM SIGN_CENTERED (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
ET15	EXIST TYPE 15 ELECTROLIER (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	0
ET15D	EX DUAL ARM LUM TY 15 ELECT (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	>~-~-~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ET15DS	EX DUAL ARM LUM TY 15 EL STR (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\frac{1}{2}$
ET15S	EXIST TYPE 15 ELECT STR (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	~
ET21	EXIST TYPE 21 ELECTROLIER (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	0
ET21D	EX DUAL ARM LUM TY 21 ELECT (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	Fr-o-Li
ET21DS	EX DUALARM LUM TY 21 EL STR (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	<u></u>
ET21S	EXIST TYPE 21 ELECT STR (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	\$
ET30	EXIST TYPE 30 ELECTROLIER (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Type	Use	)
ET31	EXIST TYPE 31 ELECTROLIER (Lvl = es_LIGHTING /	Grph	Sym	$c - \sqrt{x}$
	Co = 4 / Wt = 0,1)	•	,	X/X
FTOO	EXIST TYPE 32 ELECTROLIER		0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
E132	Co = 4 / Wt = 0,1)	Grpn	Sym	
	EX TYPE 33 W W_2 LT SIG_SIGN	•		
ET33LA	(LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
				_ <u>L</u>
ET35	EXIST TYPE 35 ELECTROLIER	Grph	Sym	(
	$(LVI = es_LIGHTING / C0 = 4 / WI = 1)$	•		
ET26		Crob	Sum	~_ <i>I</i>
E130	Co = 4 / Wt = 0,1)	Gipii	Sym	
			Line	
ETC	OBSOLETE	Grph	Pattern	— † —— —
	EX TEL DEMARCA_CABINET			с — ¬
ETDC	(Lvl = es_CELL-MISC-COMPONENTS /	Grph	Sym	+
	Co = 5 / VVI = 1)			
	EX TYPE 3 SERVICE ENCLOSURE			
ETIII	$(Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / W(t = 1)$	Grph	Sym	
	CO = 37 WI = 1)			
	ETITLE_CONSULTANT2	<b>.</b> .		
ETITL2	(Lvl = border_SHEET / Co = 0-2 252 / Wt = 0-3)	Grph	Sheet	
ETITI 3	EIIILE_CONSULIANI3 (Lyl = border_SHEET /	Grnh	Sheet	
211120	Co = 0.2,252 / Wt = 0.3	Cipii	Cheet	
	ELECTRICAL TITLE SHEET			
ETITLE	(Lvl = border_SHEET /	Grph	Sheet	% <u></u>
	Co = 0-2,252 / Wt = 0-3)			
сто	EXIST TYPE 1 WITH VSF	<b>O</b> I	<b>.</b>	<b>`</b> `~~
EIS	$(LVI = es_CELL-SIGNALS / Co = 2 / Wt = 1)$	Grpn	Sym	X-X>>

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
ETSC	OBSOLETE	Grph	Line Pattern	
ETYPE1	OBSOLETE	Grph	Sym	\
EVAULT	EXIST VAULT (Lvl = es_CELL-MISC-COMPONENTS / Co = 3 / Wt = 1)	Grph	Sym	
EWD15	EXISTING WIRING DIAGRAM TYPE 15 (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	Ц
EWD15S	EXISTING WIRING DIAGRAM TYPE 15S (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	Ś
EWD21	EXISTING WIRING DIAGRAM TYPE 21 (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	
EWD21S	EXISTING WIRING DIAGRAM TYPE 21S (LvI = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	Ø
EWD30	EXISTING WIRING DIAGRAM TYPE 30 (Lvl = es_LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	XX
EWD31	EXISTING WIRING DIAGRAM TYPE 31 (Lvl = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	X
EWD32	EXISTING WIRING DIAGRAM TYPE 32 (Lvl = es_LIGHTING / Co = 4 / Wt = 0,1)	Grph	Sym	×
EWPP	EXIST POWER POLE (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
EXE	OBSOLETE	Grph	Line Pattern	-0

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illaye
EXG	OBSOLETE	Grph	Line Pattern	gs
EXGRP	OBSOLETE	Pnt	Line Pattern	
EXNG	OBSOLETE	Grph	Line Pattern	g
EXO	OBSOLETE	Grph	Line Pattern	
EXPIPE	OBSOLETE	Grph	Line Pattern	===
EXS	OBSOLETE	Grph	Line Pattern	s
EXSTEM	OBSOLETE	Grph	Line Pattern	
EXSTMD	OBSOLETE	Grph	Line Pattern	sd
EXT	OBSOLETE	Grph	Line Pattern	
EXTELC	OBSOLETE	Grph	Line Pattern	tc
EXTV	OBSOLETE	Grph	Line Pattern	tv
EXW	OBSOLETE	Grph	Line Pattern	w
FA	FOUNDATION ABANDONED (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	FA

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
FCV	FLOW CONTROL VALVE (Lvl = ls_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	$\overline{\mathbf{A}}$
FDI	NEW DRAINAGE INLET (Lvl = df_INLET / Co = 1 / Wt = 1)	Grph	Sym	
FDNR	OBSOLETE	Grph	Sym	$\bigcirc$
FDPT	OBSOLETE	Grph	Sym	$\bigcirc$
FDR	OBSOLETE	Grph	Sym	0
FENP	OBSOLETE	Grph	Line Pattern	×
FES	OBSOLETE	Grph	Sym	$\Box$
FH	OBSOLETE	Grph	Sym	+0+
FHS	OBSOLETE	Grph	Sym	+0+
FHWA	FHWA SYMBOL (Lvl = pp_MISC / Co = 0,1 / Wt = 2,3)	Grph	Sym	The second states of the secon
FLOWLN	OBSOLETE	Pnt	Line Pattern	
FMH	OBSOLETE	Pnt	Sym	(°) (°)
FMONU	MONUMENT (Lvl = rd_MISC / Co = 0 / Wt = 1)	Grph	Sym	$\bigcirc$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
FNDCOR	FND QUAR_CORNER EX_AS_DESC (Lvl = rd_MISC / Co = 0 / Wt = 1)	Grph	Sym	
FNDMON	MONUMENT EX_AS_DESCRIBED (Lvl = rd_MISC / Co = 0 / Wt = 1)	Grph	Sym	
FOREST	OBSOLETE	Grph	Line Pattern	
FP	OBSOLETE	Grph	Sym	$\bigcirc$
FREQST	FULL REQUEST LABEL (LvI = border_WITHIN-BORDER-anno / Co = 0 / Wt = 0)	Grph	Sym	\$FREQUEST
FRLC	OBSOLETE	Grph	Sym	$\bigcirc$
FS	FLOW SENSOR (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	FS
FULPLN	FULL PLAN SHEET (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
FULPLN2	FULL PLAN CONSULTANT (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
FV	FLUSH VALVE (Lvl = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	9
GARV	GARDEN VALVE ASSEMBLY (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\bigotimes$
GASOLN	OBSOLETE	Grph	Line Pattern	03

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
GC1	OBSOLETE	Grph	Line Pattern	nellevesanannen
GC2	STAR GROUND COVER (Lvl = ls_PLANT / Co = 2 / Wt = 0)	Grph	Sym	*
GC3A	RABBITS FEET GC (Lvl = ls_PLANT / Co = 2 / Wt = 0)	Grph	Area Pattern	8 13 49 49 49 49 8 13 49 49 49 8 13 13 13 13 13
CC3B	DOTTED GROUND COVER (Lvl = ls_PLANT / Co = 2 / Wt = 1)	Grph	Area Pattern	
GC3C	CHICKEN FEET GC (Lvl = ls_PLANT / Co = 2 / Wt = 0)	Grph	Area Pattern	¥********
GDRP	OBSOLETE	Grph	Line Pattern	
GELECT	GROUNDING ELECTRODE (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	
GF	OBSOLETE	Grph	Sym	$\bigcirc$
GH	OBSOLETE	Grph	Sym	$\bigcirc$
GM	OBSOLETE	Grph	Sym	$\bigcirc$
GPLAN	GEOLOGIST BORDER SHEET (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
GPLAN2	GEOLOGIST BORDER CONSULTANT (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
GRID1	DRAINAGE GRID 50 SPACING (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
GRID1C	DRAINAGE GRID_CONSULTANT (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
GRID2	DRAINAGE GRID WITH MINOR (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
GRID2C	DRAIN GRID MINOR_CONSULTANT (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
GRID3	DRAINAGE GRID 50 SPACING (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
GRID4	DRAINAGE GRID WITH MINOR (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
GSPL	OBSOLETE	Grph	Line Pattern	
GSPM	OBSOLETE	Grph	Line Pattern	
GUY	OBSOLETE	Grph	Sym	
GV	GATE VALVE (Lvl = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	Ā
GVS	OBSOLETE	Grph	Sym	$\bigcirc$
НВ	OBSOLETE	Grph	Sym	Ю
НС	OBSOLETE	Grph	Sym	$\triangle$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
HEDGEP	OBSOLETE	Grph	Line Pattern	$\sim$
HORZ	OBSOLETE	Grph	Sym	$\bigcirc$
HVC	OBSOLETE	Grph	Pnt	<u>A</u>
HWAT	OBSOLETE	Grph	Sym	Х
HYDRP	OBSOLETE	Grph	Sym	$\bigcirc$
IC	IRRIG CONTROLLER (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\bigcirc$
ICC	CONTROLLER ENCLOSR CABINET (Lvl = ls_IRRIGATION / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	$\square$
INDEX	TEMPLATE FOR INDEX OF PLANS (Lvl = pp_TITLE-SHEET-anno / Co = 0 / Wt = 1)	Grph	Notes	Martin Constraints and a second secon
INTT	OBSOLETE	Grph	Sym	
IQ1	IRR QTY TABLE (LATERAL SUPPLY SIDE) (LvI = Is_QTY-TABLE / Co = 0,4 / Wt = 0-2)	Grph	Table	
IQ2	IRR QTY TABLE (MAIN SPPLY SIDE) (Lvl = ls_QTY-TABLE / Co = 0,4 / Wt = 0-2)	Grph	Table	1 1
IQ3	OBSOLETE	Grph	Table	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
IQ4	OBSOLETE	Grph	Table	Tils.
IRCSCH	IRRIGATION CONDUIT SCHEDULE (Lvl = ls_SCHEDULE-LEGEND / Co = 0,4 / Wt = 0-2)	Grph	Table	
IRRV	VALVE IRRIGATION (Lvl = ls_VALVE / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
IS	INSTALL SIGN (Lvl = es_CELL-NOTES-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	IS
ISO165	ISO CURVE LED LUM 165W (LvI = es_CELL-LIGHTING / Co = 0-7 / Wt = 0-2)	Grph	Sym	
KRAIL	OBSOLETE	Grph	Line Pattern	
KRAIL2	OBSOLETE	Grph	Line Pattern	
LAMCLP	LANDSCAPE FULL CLIP (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
LANCLP	LANDSCAPE TITLE CLIP (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	
LAND	LANDSCAPE BORDER SHEET (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
LAND2	LS_BORDER_CONSULTANT (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
LASEAL	LICENSED LANDSC ARCH SEAL (Lvl = border_SHEET / Co = 0 / Wt = 0,2)	Grph	Notes	
LMCLP2	LS_FULL CLIP_CONSULTANT (Lvl = border_CLIP-FRAME / Co = 3 / Wt = 2)	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
	LS_TITLE CLIP_CONSULTANT2			
LNCLP2	(Lvl = border_CLIP-FRAME /	Grph	Sheet	
	CO = 3 / Wt = 2)			
	LS_IIILE CLIP_CONSULIANI3	Own	0	
LNCLP3	$(LVI = DOrder_CLIP-FRAME / Co = 3 / Wt = 2)$	Grpn	Sneet	
	CO = 57 W( = 2)			
1001		Grob	Table	LOCATIONS OF CONSTRUCTION
LUCI	$C_0 = 0 / Wt = 0.2$	Gipii	Table	
	LOC OF CONSTRISEP SHEET			
LOC2	(Lv] = pp TITLE-LOC-TABLE /	Grph	Table	LOCATIONS OF CONSTRUCTION   Loc No.* COUNTY ROUTE PM DESCRIPTION DIRECTION
	Co = 0 / Wt = 0.2	<b>-</b>		
	LOCATION ARROW			1
LOCARR	(Lvl = pp_PRESENTATION /	Grph	Sym	
	Co = 0 / Wt = 1)			
				× /
LOCT	OBSOLETE	Grph	Sym	Х
		Croch	C) (700	$\bigcap$
LP	OBSOLETE	Gipn	Sym	$\bigcirc$
	LEET TURN PHASE			
IPHASE	(I vI = es_CELL-NOTE-SYMBOL /	Grph	Svm	
	Co = 2 / Wt = 1	C.p.	<i>c y</i>	▼
	,		Line	
LPIPE	OBSOLETE	Grph	Pattern	
			Line	
LSP	OBSOLETE	Pnt	Pattern	
1 7 4		Croch	C) (700	A
LIA	OBSOLETE	Gipii	Sym	
LTC	OBSOLETE	Grph	Svm	0
			,	9
	LS TITLE CONSULTANT2			
LTITL2	(Lvl = border SHEET /	Grph	Sheet	
	Co = 0-2,252 / Wt = 0-3)			

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
LTITL3	LS_TITLE_CONSULTANT3 (Lvl = border_SHEET / Co = 0-2,252 / Wt = 0-3)	Grph	Sheet	
LTITLE	LANDSCAPE TITLE SHEET (Lvl = border_SHEET / Co = 0-2,252 / Wt = 0-3)	Grph	Sheet	
LUM	MASTARM LUMINAIRE (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\square$
MANP	OBSOLETE	Grph	Sym	
MAPACC	OBSOLETE	Grph	Notes	Not we use this Table as the series of nonconsector in the table decomposition of the second
MARK	OBSOLETE	Grph	Sym	$\bigcirc$
МАТСН	OBSOLETE	Grph	Line Pattern	
МВ	OBSOLETE	Grph	Sym	
MBGR	OBSOLETE	Grph	Line Pattern	
MBS	OBSOLETE	Grph	Sym	
МС	OBSOLETE	Grph	Sym	$\bigcirc$
MH	OBSOLETE	Grph	Sym	000
MIC	MASTER IRRIG CONTROLLER (Lvl = ls_IRRIGATION / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	$\otimes$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
MRSH	OBSOLETE	Grph	Sym	Ъ
N112DL	NEW 3SEC 12 R DUAL LA (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	EWN
N12UA	NEW 12 UP ARROW (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	+++>
N15TS	TYPE 15TS AND VEH SIG FACE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NCNTRLCAB	NEW CONTROLLER CABINET (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
N170	NEW CONTROLLER CABINET (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
N212UA	NEW 3SEC 12 RY 12 UP GA (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N21TS	TYPE 21TS VEH SIG FACE PED LUM (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N2RSM	NEW RD SIGN ON MASTARM_2STP (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N2RT	NEW 3 SEC 12 DUAL RA (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N312DL	NEW 5 SEC 12 RYG DUAL_LA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
N312DR	NEW 5 SEC 12 RYG DUAL_RA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N312LA	NEW 12 LEFT TURN (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N312RT	NEW 3 SEC TRI RA (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N38112	NEW 3 SEC 8 RYG W 12 LA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N38DL	NEW 5 SEC 8 RYG DUAL 12 LA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N412LA	NEW 4 SEC W 12 RUG W 12 LA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N412LR	NEW 4 SEC W 12 RY LT RT (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N412UL	NEW 4 SEC W 12 RY UGA LA (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
N5YGRA	NEW SIG RED_YEL_GR ARROW (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NA	OBSOLETE	Grph	Sym	
NARR	NORTH ARROW_PROJ_PLANS (Lvl = pp_PRESENTATION / Co = 0 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NATGAP	OBSOLETE	Grph	Line Pattern	
NCC	OBSOLETE	Grph	Line Pattern	— c — — —
NCCTV	NEW CLOSED CIRCUIT TV (Lvl = es_CCTV / Co = 5 / Wt = 1)	Grph	Sym	
NCE	NEW CITY ELECTROLIER (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	) C
NCFB	NEW CNTLVR FLASH BEACON (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	
NCMS	NEW C.M.S. (Lvl = es_CMS / Co = 5 / Wt = 1)	Grph	Sym	
NDH	NEW DETECTOR HANDHOLE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 0,1)	Grph	Sym	₽ ₽
NDLPA2	NEW TYPE_A_DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPA5	NEW TYPE_A_DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPB2	NEW TYPE_B_DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\diamond$
NDLPB5	NEW TYPE_B_DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\diamond$
NDLPC2	NEW TYPE_C_DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NDLPC5	NEW TYPE_C_DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPD2	NEW TYPE_D_DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPD5	NEW TYPE_D_DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPE2	NEW TYPE_E_DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
NDLPE5	NEW TYPE_E_DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
NDLPF5	NEW TYPE_F_DET_LOOP_50 W SAWCUT (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
NDLPQ2	NEW TYPE_Q DET_LOOP_20 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDLPQ5	NEW TYPE_Q DET_LOOP_50 (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NDPIS	NEW 2POST_OH_ILLU_SIGN (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	0
NDZON2	NEW DETECT ZONE 20SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NDZON5	NEW DETECT ZONE 50SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
NELECT	ELECTROLIER SEE PRJ NOTES (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\sim - \bigcirc$
NEMS	NEW E.M.S. (Lvl = es_EMS / Co = 5 / Wt = 1)	Grph	Sym	EMS
NEVD	NEW EMERG VEH DETECTOR (Lvl = es_EVD / Co = 2 / Wt = 1)	Grph	Sym	
NF70W	NEW 70W FLUSH MOUNTED (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NFAC	OBSOLETE	Grph	Line Pattern	— F — — —
NFB	NEW FLASHING BEACON (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	
NFBARM	NEW FLASH BEACON W ARM (Lvl = es_FLASHING-BEACON / Co = 2 / Wt = 1)	Grph	Sym	
NFFE	NEW FDN FOR FUTURE ELECT (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	Ē
NFIBOP	OBSOLETE	Grph	Line Pattern	— FO — — —
NGP	NEW GUARD POST (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NHAR	NEW HWY ADVISORY RADIO (Lvl = es_HAR / Co = 5 / Wt = 1)	Grph	Sym	
NHML	NEW HIGH MAST LIGHTING (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NIBMS	NEW ILLUM BR_MNTD SIGN (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	

	CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image	
		Туре	Use		
NIISNS	NEW IISNS (Lyl = es_CELL-LIGHTING /	Grph	Svm		
	Co = 4 / Wt = 1	Cipii	e y m		
	NEW OH SIGN W_ELECTROLIER			XX	
NISWL	$(LvI = es_CELL-LIGHTING / Control = 1)$	Grph	Sym		
	C0 = 4 / VVI = 1)				
NLC	OBSOLETE	Grph	Line		
		•	Pallem		
	NEW LUM ON WOOD POLE				
NLOWP	$(LvI = es_CELL-LIGH   ING / Co = 4 / Wt = 1)$	Grph	Sym		
	NEW TYPE 15 ELASH BEACON				
NM15FB	(Lvl = es_FLASHING-BEACON /	Grph	Sym		
	Co = 2 / Wt = 1)		_		
NMA15	NEW 15FT MASTARM_20_SCALE	Grnh	Svm	<b>—</b>	
	Co = 2 / Wt = 1	Cipii	Cym	$\sim$	
	NEW 20FT MASTARM_20_SCALE				
NMA20	(Lvl = es_CELL-SIGNALS /	Grph	Sym	<b>—</b>	
	Co = 2 / Wt = 1)				
	NEW 25FT MASTARM_20_SCALE			▲	
NMAL25	$(LvI = es_CELL-SIGNALS / Control = 2 (1)/(t = 1)$	Grph	Sym		
	CO = 2 / VVI = 1				
NMAL30	(I vI = es_CELL-SIGNALS /	Grph	Svm		
	Co = 2 / Wt = 1	Cipii	e y m	• <u> </u>	
	NEW 35FT MASTARM_20_SCALE				
NMAL35	(Lvl = es_CELL-SIGNALS /	Grph	Sym		
	Co = 2 / VVt = 1			· \	
NMAI 40	( v  = es_CELL-SIGNALS /	Grph	Svm	<b>≜</b> -	
	Co = 2 / Wt = 1	Cipii	<i>c y</i>	•	
	NEW 45FT MASTARM_20_SCALE	_		<b>.</b>	
NMAL45	$(LvI = es_CELL-SIGNALS / Co = 2 / W/t = 1)$	Grph	Sym		
1	00 - 2/VVI - 1)	1	1		

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	oen mage
NMAL50	NEW 50FT MASTARM_20_SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NMAL55	NEW 55FT MASTARM_20_SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	~_¤
NMAL60	NEW 60FT MASTARM_20_SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	•_¤
NMAL65	NEW 65FT MASTARM_20_SCALE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	¤
NMD	NEW MAGNETIC DETECTOR (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NMSWLS	NEW MASTARM SIG W_LUMINAIRE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NMSWOL	NEW MAST ARM WO_LUMIN (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NMVDS	NEW MICRO VEH DETECTOR (Lvl = es_MVDS / Co = 5 / Wt = 1)	Grph	Sym	
NOHL	OBSOLETE	Grph	Line Pattern	он
NOTE10	APPROVED FOR PAV DELIN WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	истариса поп си жисит ассилентали части син с
NOTE11	APPROVED FOR PD SIGN WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPENDED FOR PENDERT DECIDENTION AND SIGN NOTIC (M.)
NOTE12	APPROVED FOR SIGN WORK ONLY (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR SIGN WORK ONLY

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE13	APPROVED FOR RET WALL WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR RETAINING WALL WORK ONLY
NOTE14	APPROVED FOR SOUND WALL (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR SOUND WALL WORK ONLY
NOTE15	APPROVED FOR PLANTING WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR PLANTING WORK ONLY
NOTE16	APPROVED FOR IRR WORK ONLY (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR IRRICATION WORK ON Y
NOTE17	APPROVED FOR ELEC WORK ONL (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR ELECTRICAL WORK ONLY
NOTE18	APPROVED FOR TEMP WPC WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	androna for there are a fortune to the course for t
NOTE19	APPROVED FOR ERO CNTL WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR ENOSION CONTROL WORK ONLY
NOTE2	RIGHT OF WAY NOTE (Lvl = rd_RIGHT-OF-WAY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	NOTE: TO ACOUNT CONTONING AN ANALOSING THE STAND OF THE MCCH OF MY ENGINEERS AT THE STAND OF THE
NOTE20	APPROVED FOR CONTOUR WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	артанеа гар сангала арасты жарк онц к
NOTE21	APPROVED FOR EDGE DRN WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR EDGE DRAIN WORK ONLY
NOTE22	APPROVED FOR UNDERDRAIN (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR UNDERDRAIN WORK ONLY

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE24	APPROVED FOR DRAIN AND CONT (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	armanes for callence lass control sposies mar or i
NOTE25	USED FOR UTIL INFO ONLY (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	nes fet a color de color de chili d'admendia de p
NOTE27	APPROVED FOR HORIZ DRAIN (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR HOPIZONTAL GRAIN NORM CALY
NOTE28	APPROVED FOR UNDERDRAIN AND HORIZONTAL DRAIN (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	istraine the watereasts was datacent and a bar da t
NOTE29	APPROVED FOR SC AND TH WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	JAMAN TA SINC LOGITICUM 45 TATU 446,05 MM 06.1
NOTE3	NOT A SEPARATE BID ITEM (LvI = rd_QTY-TABLE / Co = 0 / Wt = 1)	Grph	Notes	(N) NOT A STPARATT RID ITTM
NOTE30	APPROVED FOR CNST AREA SIGN (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	ATTROIZO FER CONSTRUCTION 4824, 5524 WOR, CA Y
NOTE31	APPROVED FOR MOTORIST INFO (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPRORED FOR BOTOMST DAPOMATION BOM OF Y
NOTE32	PROJ CNTRL AND MONU NOTE (Lvl = pp_PROJECT-CONTROL-anno / Co = 0 / Wt = 1,2)	Grph	Notes	10713 के महे के किस्तु के साथ सामयना का स्वरू के महे किस्तु के स्वरूप के साथ सामयना का स्वरूप के महे किस्तु के साथ
NOTE33	PROJECT CONTROL NOTE (Lvl = pp_PROJECT-CONTROL-anno / Co = 0 / Wt = 1,2)	Grph	Notes	NOTE THE SAME TO AN OF SECTION STOLEN. OF THE SECTION SECTION TO A SAME SECTION STOLEN AS A SECTION OF OC
NOTE34	INDETERMINATE RW NOTE (Lvl = rd_RIGHT-OF-WAY-anno / Co = 0 / Wt = 1.2)	Grph	Notes	NULL I COMPANY AND AN AND AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN I COMPANY AND AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AND AN AN AN AN AN AN AN AN AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN AN I COMPANY AN

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NOTE35	APPROVED FOR WATER POL CNTL (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	JAPROJED FOR WITER FOLLOTION CONTROL WHEN DUS
NOTE36	APPROVED FOR PROJ CNTL INFO (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	ANTWORLD I ON THROLET CONTROL DIE DIBANTON DIE T
NOTE37	APPROVED FOR HARDSCAPE WORK (LvI = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR HARDSCAPE WORK ONLY
NOTE4	APPROVED FOR DRAINAGE WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR URAINAGE WORK ONLY
NOTE40	PVMT STR TOLERANCE NOTE (Lvl = rd_TYP-X-SECTION-anno / Co = 0 / Wt = 1,2)	Grph	Notes	ere Novas anesar aleach 262
NOTE41	SUPERS ON DIAGRAMS NOTE (Lvl = rd_SUPERELEVATION-anno / Co = 0 / Wt = 1,2)	Grph	Notes	10°15 Romanalist og for er stæraletilt forset
NOTE42	FOR ELECTRICAL SYSTEMS QTY SHEETS (Lvl = es_LEGEND-anno / Co = 0 / Wt = 1,2)	Grph	Notes	HEILS HECKEL OFFICIAL STATE STATES HECKEL OFFICIAL STATES HELL FOR A STATES STATE STATES HELL FOR A STATES STATE STATES HELL FOR A STATES
NOTE43	UTILITIES-EXEMPT PROJECTS (LvI = ut_UTILITY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	<u>iote:</u> Hann Holler of land flowers, of the of level
NOTE44	UTILITIES-NONE WITHIN PROJECT LIMITS (LvI = ut_UTILITY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	in the second
NOTE45	UTILITIES-FOR SPOT LOCATIONS (Lvl = ut_UTILITY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	NIN Management of the second state
NOTE46	UTILITIES-FOR PROJECT FLEXIBLE IN NATURE (LvI = ut_UTILITY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	SOLU Too beging of content see, but as ALORE In white, he London whites we be been an advants who content with reacting.

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	oen mage
NOTE47	UTILITIES-NONE WITHIN SHEET (LvI = ut_UTILITY-anno / Co = 0 / Wt = 1,2)	Grph	Notes	NOTE: - UTILIT MACHINING NAS COMULTO AND NO UTILITES ROR FORM ROME NE LIMITS OF THE SALT.
NOTE48	OBSOLETE	Grph	Notes	APPROVED FOR PLANTING AND ERISSION CONTROL WORK ONLY
NOTE49	OBSOLETE	Grph	Notes	APPROVED FOR IRRIGATION AND PLANTING WORK ONLY
NOTE5	APPROVED FOR SANITARY WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APTHONED FOR SENITANT SEVEN MORE OVER
NOTE7	APPROVED FOR STAGE WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	Anymours for star construction work on t
NOTE8	APPROVED FOR TRAF WORK ONLY (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR TRAFFIC HARDEING BORG CHEY
NOTE9	APPROVED FOR DETOUR CO WORK (Lvl = border_INSIDE-BORDER-anno / Co = 0 / Wt = 2)	Grph	Notes	APPROVED FOR DETOUT SOMSTRUCTION WORK ONLY
NP70W	NEW PENDANT 70W (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NPB	NEW PULL BOX (Lvl = es_CELL-MISC-COMPONENTS / Co = 3 / Wt = 1)	Grph	Sym	
NPBA	NEW PUSH BUTTON ASSEMBLY (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	0
NPBAR	NEW PED BARRICADE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	<b></b>

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
NPGUY	NEW POLE GUY W ANCHOR (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	$\longrightarrow$
NPMUT	NEW PAD_MT. FOR UTIL TRANS (LvI = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
NPOLE	NEW POLE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	0
NPSH	NEW PED SIGNAL FACE (Lvl = es_CELL-MISC-COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	
NR	NEW CONDUIT RISER_STRUCTURE (Lvl = es_CELL-CONDUIT-RISER / Co = 3 / Wt = 0,1)	Grph	Sym	R
NRSM	NEW RD SIGN ON MAST ARM (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NS	NO SLIP BASE ON STD (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	NS
NSCDIS	NEW DUAL ILLUM SIGN (LvI = tcd_SIGN-ROADSIDE / Co = 4 / Wt = 1)	Grph	Sym	$\bigcirc$
NSCMIS	NEW ILLUM SIGN_CENTERED (Lvl = tcd_SIGN-ROADSIDE / Co = 4 / Wt = 1)	Grph	Sym	<u> </u>
NSFAV	NEW SIGNAL FACE W_VISOR (LvI = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NSGN1PEL ECT	NEW OH SIGN W_ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NSMS	NEW VEHICLE SIGNAL FACE (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	

	CTCELLIB Cell Library Named Levels			
Cell Name	Cell Description	Cell Type	Cell	Cell Image
NSSMIS	NEW ILLUM SIGN SIDE_POST (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	0
NT15	NEW TYPE 15 STANDARD (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	•—————————————————————————————————————
NT15D	NEW DUALARM LUM TY 15 ELECT (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 2)	Grph	Sym	
NT15DS	NEW DUALARM LUM TY15 EL STR (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NT15S	NEW TYPE 15 ELECT STRUCTURE (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NT21	NEW TYPE 21 ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	°−−O
NT21D	NEW DUALARM LUM TY 21 ELECT (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	00
NT21DS	NEW DUALARM LUM TY21 EL STR (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NT21S	NEW TYPE 21 ELECTROLIER STR (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NT30	NEW TYPE 30 ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	•—————————————————————————————————————
NT31	NEW TYPE 31 ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	·
NT32	NEW TYPE 32 ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	·
NT33LA	NEW TYPE 33 W_2 LT SIG_SIGN (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
NT35	NEW TYPE 35 ELECTROLIER (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	· · · · · ·
NT36	NEW TYPE 36_20A ELECTROLIER (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\sim$
NTC	OBSOLETE	Grph	Line Pattern	— T —— —
NTDC	NEW TEL_CDEMARCA_CABINET (Lvl = es_CELL-MISC-COMPONENTS / Co = 5 / Wt = 1)	Grph	Sym	
NTIII	NEW TYPE3 SERV ENCLOSURE (Lvl = es_CELL-MISC-COMPONENTS / Co = 3 / Wt = 1)	Grph	Sym	
NTSC	OBSOLETE	Grph	Line Pattern	
NTYPE1	NEW TYPE 1 WITH VSF (Lvl = es_CELL-SIGNALS / Co = 2 / Wt = 1)	Grph	Sym	
NVAULT	NEW VAULT (Lvl = es_CELL-MISC-COMPONENTS / Co = 3 / Wt = 1)	Grph	Sym	$\square$
NW70W	NEW WALL SURFACE 70W (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NWALLP	OBSOLETE	Grph	Line Pattern	
NWD15	NEW WIRING DIAGRAM TYPE 15 (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\bigcirc$
NWD15S	NEW WIRING DIAGRAM TYPE 15S (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	()
NWD21	NEW WIRING DIAGRAM TYPE 21 (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
CTCELLIB Cell Library Named Levels				
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Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	ocii intage
NWD21S	NEW WIRING DIAGRAM TYPE 21S (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NWD30	NEW WIRING DIAGRAM TYPE 30 (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	$\bigotimes$
NWD31	NEW WIRING DIAGRAM TYPE 31 (LvI = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NWD32	NEW WIRING DIAGRAM TYPE 32 (Lvl = es_CELL-LIGHTING / Co = 4 / Wt = 1)	Grph	Sym	
NWPP	NEW WOOD POWER POLE (Lvl = es_CELL-MISC-COMPONENTS / Co = 0 / Wt = 1)	Grph	Sym	
OBJMAR	FOR DELIN OR OBJ MARKER (Lvl = tcd_MARKER / Co = 10 / Wt = 1)	Grph	Sym	
OG	OBSOLETE	Pnt	Sym	7
OHS1	OVERHEAD SIGN 1 POST (Lvl = tcd_SIGN-OVERHEAD / Co = 12 / Wt = 1)	Grph	Sym	0
OHS2	OVERHEAD SIGN 2 POST (Lvl = tcd_SIGN-OVERHEAD / Co = 12 / Wt = 1)	Grph	Sym	( <u>*</u> )
OHSIGN	SYMBOL FOR OVERHEAD SIGN (Lvl = tcd_SIGN-OVERHEAD / Co = 12, 250 / Wt = 1) (Masking)	Grph	Sym	
OILP	OBSOLETE	Grph	Line Pattern	
OSH	OBSOLETE	Grph	Sym	O
OSHV	OBSOLETE	Grph	Sym	O

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CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
	PROFILE GRID ARROW	Croh	Sum	
FARROW	Co = 0 / Wt = 1	Gipii	Sym	
PBS	OBSOLETE	Grph	Sym	
		_	-	00
PC	OBSOLETE	Pnt	Svm	<u> </u>
10			e y	†
	PORTABLE CONSTR AREA SIGNS			PORTABLE CONSTRUCTION AREA SIGNS
PCAS	TABLE	Grph	Table	SIGN No.         DESIGNATION         PAREL SIZE         SIGN MESSAGE         MARKER SIGNS           A         20* × 30*         Get Unit of Text         SIGN
	$(LvI = pp_CAS - IABLE / Co = 0 (Wt = 0.2)$	- 1		C 200° x 20° 107 1020 C 2
PDTAB2	(Lvl = tcd PD-QTY-TBLE /	Grph	Table	
	Co = 0 / Wt = 0-2)	•		
	QTY TABLE FOR PVMT DELIN			
PDTABL	$(Lvl = tcd_PD-QTY-TBLE / Quert = 0.2)$	Grph	Table	65.105 5.25 mm <sup>-104</sup>
	C0 = 0 / Wl = 0-2)			
PEC	(I vI = es_CELL-NOTE-SYMBOL /	Grph	Svm	PFC
0	Co = 0 / Wt = 1	Cipii	0,	
				$\wedge$
PED	OBSOLETE	Grph	Sym	
				•
PEU	PHOTOELECTRIC UNIT (Lyl = ted PD-OTY-TBLE /	Grph	Svm	PEU
	Co = 0 / Wt = 1	Орп	Oyin	
	PHASE			~
PH	(Lvl = tcd_PD-QTY-TBLE /	Grph	Sym	$\bigcirc$
	Co = 0 / Wt = 1)			/-
рцц		Croh	S. m	Ä
РПП	OBSOLETE	Grpn	Sym	<u> </u>
5			_	Α
PHHV	OBSOLETE	Grph	Sym	Δ <sup>Ω</sup>
	00001575		0	$\frown$
PHV	OBSOLETE	Grph	Sym	$\odot$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PI	PI POINT (Active Symbology)	Grph	Sym	$\land$
PI2	PI SYMBOL WITH LABLE (Active Symbology)	Grph	Sym	$\land P$
PIPR	OBSOLETE	Grph	Sym	$\bigcirc$
PLNPRO	PLAN_PROFILE GRID (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0,1,3)	Grph	Sheet	
PLP100	PLAN_PROFILE GRID 100 SCALE (Lvl = border_DATUM-LINE / Co = 0 / Wt = 0,1,3)	Grph	Sheet	
PLPR20	PLAN_PRFILE GRID 20 SCALE (LvI = border_DATUM-LINE / Co = 0 / Wt = 0,1,3)	Grph	Sheet	
PLSO	OBSOLETE	Grph	Sym	$\bigcirc$
PLSYM	POSITIVE LOC SYMBOL (Active Symbology)	Grph	Sym	$\bigcirc$
PLTAB1	POS LOC MIN INFO TABLE (Lvl = ut_UTILITY-anno / Co = 0 / Wt = 0-2)	Grph	Table	POLITIVE LOCATION INFORMATION
PLTAB2	POS LOC MAX INFOR TABLE (Lvl = ut_UTILITY-anno / Co = 0 / Wt = 0-2)	Grph	Table	10000000000000000000000000000000000000
PLTLGD	PLANT LEGEND (Lvl = ls_SCHEDULE-LEGEND / Co = 0,2 / Wt = 0-3)	Grph	Sheet	
PLTLGD2	PLANT LEGEND CONSULTANT (Lvl = ls_SCHEDULE-LEGEND / Co = 0,2 / Wt = 0-3)	Grph	Sheet	
PLTQTY1	OBSOLETE	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PLTQTY2	OBSOLETE	Grph	Sheet	
PLTQTY3	OBSOLETE	Grph	Sheet	
PLTQTY4	OBSOLETE	Grph	Sheet	
PMC	OBSOLETE	Grph	Sym	0
РМН	OBSOLETE	Grph	Sym	$\triangle$
PMHV	OBSOLETE	Grph	Sym	Â
PMV	OBSOLETE	Grph	Sym	$\odot$
POINT	POINT SYMBOL (Active Symbology)	Grph	Sym	$\odot$
POINT0	OBSOLETE	Grph	Sym	$\otimes$
POINT1	OBSOLETE	Grph	Sym	$\otimes$
POINT2	OBSOLETE	Grph	Sym	$\otimes$
POINT4	OBSOLETE	Grph	Sym	$\otimes$
POINT6	OBSOLETE	Grph	Sym	$\otimes$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
POLE	OBSOLETE	Pnt	Sym	0
POLES	OBSOLETE	Grph	Sym	0
POLSCH	POLE SCHEDULE (LvI = es_QTY-TABLE / Co = 3,4 / Wt = 0-2)	Grph	Table	
PP	OBSOLETE	Grph	Sym	-@-
PPHASE	PED SIGNAL PHASE (Lvl = es_CELL-NOTE-SYMBOL / Co = 2 / Wt = 1)	Grph	Sym	
PPSL	OBSOLETE	Grph	Line Pattern	
PPSM	OBSOLETE	Grph	Line Pattern	
PRF100	FULL PROFILE 100 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PRF10S	GRID FOR STACK 100 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PRF20S	GRID FOR STACK 20 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PRFL20	FULL PROFILE 20 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PRH	OBSOLETE	Grph	Sym	$\triangle$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
PRHV	OBSOLETE	Grph	Sym	â
PRJCTRL NOTES	SURVEY PROJECT CONTROL NOTES (Lvl = pp_PROJECT-CONTROL-anno / Co = 0,3,4 / Wt = 0-2)	Grph	Notes	HELD
PRLV	PRESSURE RELIEF VALVE (LvI = Is_IRRIGATION / Co = 1, 250 / Wt = 1) (Masking)	Grph	Sheet	
PROFIL	FULL PROFILE GRID (LvI = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL2	PROFILE GRID_CONSULTANT (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL3	PROFILE CONSULTANT 100 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL4	PROFILE CONSULTANT 20 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL5	GRID CONSULT STACK 50 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL6	GRID CONSULT STACK 100 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFL7	GRID CONSULT STACK 20 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	
PROFLS	GRID FOR STACK 50 SCALE (Lvl = border_DATUM-LINE / Co = 0,2,3 / Wt = 0-3)	Grph	Sheet	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
PRV	PRESSURE REGULATING VALVE (Lvl = Is_IRRIGATION / Co = 1, 250 / Wt = 1) (Masking)	Grph	Sym	X
PRVS	OBSOLETE	Grph	Sym	$\odot$
PSI	POLE SCHEDULE IDENTIFIER (Lvl = es_CELL-MISC- COMPONENTS / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
PTEL	OBSOLETE	Grph	Sym	$\diamond$
PUMP	OBSOLETE	Grph	Sym	۲
QC	OBSOLETE	Grph	Sym	0
QCV	QUICK COUPLING VALVE (Lvl = Is_IRRIGATION / Co = 1, 250 / Wt = 1) (Masking)	Grph	Sym	$\bigcirc$
QCVSP	QCV W SPRINKLER PROTECTOR (LvI = Is_IRRIGATION / Co = 1,20 / Wt = 1)	Grph	Sym	$\bigcirc$
QTABLE	TEMPLATE FOR Q_TABLE (Lvl = rd_QTY-TABLE / Co = 0 / Wt = 0-2)	Grph	Table	
RC	REMOVAL BY CONTRACTOR (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	RC
RCS	OBSOLETE	Grph	Sym	$\bigcirc$
RCV	REMOTE CONTROL VALVE (LvI = Is_IRRIGATION / Co = 1, 250 / Wt = 1) (Masking)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
RDI	OBSOLETE	Grph	Sym	$\oplus$
RDWYP	OBSOLETE	Grph	Sym	$\bigcirc$
RECEPT	RECEPTACLE (Lvl = es_CELL0NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	R
REFR	OBSOLETE	Grph	Sym	Х
RL	RELOCATE EQUIPMENT (Lvl = es_CELL0NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	RL
RMRK	OBSOLETE	Grph	Sym	$\diamond$
RO	OBSOLETE	Grph	Sym	$\bigcirc$
ROCK	ROCK SYMBOL (Active Symbology)	Pnt	Area Patter n	
RR	REMOVE_REUSE EQUIP (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	RR
RR10P	OBSOLETE	Grph	Line Patter n	,
RRGA	OBSOLETE	Grph	Sym	$\bigcirc$
RRSG	OBSOLETE	Grph	Sym	
RRSW	OBSOLETE	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illaye
	REMOVE SALVAGE EQUIPMENT			
RS	(Lvl = es_CELL-NOTE-SYMBOL /	Grph	Sym	RS
	Co = 0 / Wt = 1)			
	ROAD SIGN ON MAST ARM		-	
RSM	(Lvl = es_CELL-NOTE-SYMBOL /	Grph	Sym	
	Co = 0 / Wt = 1)			
RWS	OBSOLETE	Grph	Sym	
			-	
				$\left( \right)$
S1	(I v) = Is PI ANT / Co = 2 / Wt = 1)	Grph	Sym	
	(201 - 13_1 2/00 - 2/00 - 1)			
<b>.</b>			Line	
S10A	OBSOLETE	Grph	Patter	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
			n	
\$10AE		Crob	Line	mynn
STUAF	OBSOLETE	Gipn	Paller	M
			l ine	
S10B	OBSOLETE	Grph	Patter	
0100	0000111	Cipii	n	
			Line	
S10BF	OBSOLETE	Grph	Patter	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
			n	
			Line	
S10C	OBSOLETE	Grph	Patter	
			n	
04005			Line	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
S10CF	OBSOLETE	Grph	Patter	
			n Line	
S15A		Grob	Line	
515A	OBSOLETE	Gipii	n	
			line	
S15AF	OBSOLETE	Groh	Patter	
		O.p.i	n	
			Line	
S15B	OBSOLETE	Grph	Patter	
			n	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	con intage
S15BF	OBSOLETE	Grph	Line Patter n	
S15C	OBSOLETE	Grph	Line Patter n	<u>~~~~~~~</u>
S15CF	OBSOLETE	Grph	Line Patter n	
S2	10FT DIA SHRB W CTR (Lvl = ls_PLANT / Co = 2 / Wt = 0,1)	Grph	Sym	$\bigcirc$
S20A	OBSOLETE	Grph	Line Patter n	
S20AF	OBSOLETE	Grph	Line Patter n	
S20B	OBSOLETE	Grph	Line Patter n	
S20BF	OBSOLETE	Grph	Line Patter n	
S3	10FT DIA SHRB W FULL CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1)	Grph	Sym	۲
S4	10FT DIA SHRUB W PLUS CTR (LvI = ls_PLANT / Co = 2 / Wt = 1)	Grph	Sym	$\oplus$
S5	HEX SHRUB W TRIANGLE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1)	Grph	Sym	$\langle \blacktriangle \rangle$
S6A	OBSOLETE	Grph	Line Patter n	
S6AF	OBSOLETE	Grph	Line Patter n	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
S6B	OBSOLETE	Grph	Line Patter n	
S6BF	OBSOLETE	Grph	Line Patter n	
SAND	SAND SYMBOL (Active Symbology)	Pnt	Area Patter n	
SC	SPLICE NEW2EX CONDUCT (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	SC
SCC	OBSOLETE	Grph	Line Patter n	——scc——
SCS	OBSOLETE	Grph	Sym	$\bigcirc$
SD	SERVICE DISCONNECT (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	SD
SDMH	OBSOLETE	Grph	Sym	() () () ()
SECHDL	SEC HORZ DOWN LT (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	
SECHDR	SEC HORZ DOWN RT (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	
SECHUL	SEC HORZ UP LT (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	
SECHUR	SEC HORZ UP RT (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	
SECVLB	SEC VERT LT BOTTOM (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	A

	CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image	
SECVLT	SEC VERT LT TOP (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym		
SECVRB	SEC VERT RT BOTTOM (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	A	
SECVRT	SEC VERT RT TOP (Lvl = pp_PRESENTATION / Co = 0 / Wt = 2)	Grph	Sym	A	
SEEDMX	OBSOLETE	Grph	Table	SEED MIX Provide Land Provide L	
SETUP	OBSOLETE	Pnt	Sym	PROJECT SETUP POINT	
SEWERP	OBSOLETE	Grph	Line Patter n		
SGN1P	OBSOLETE	Pnt	Sym		
SGN2P	OBSOLETE	Pnt	Sym		
SGN3P	SYM EXIST 1 POST OH SIGN (LvI = tcd_SIGN-ROADS / Co = 12 / Wt = 1)	Grph	Sym		
SGN4P	SYM EXIST 2 POST OH SIGN (LvI = tcd_SIGN-ROADS / Co = 12 / Wt = 1)	Grph	Sym		
SGNATT	ROADSIDE SIGN ATTACHED (Lvl = tcd_SIGN-ROADS / Co = 12 / Wt = 1)	Grph	Sym		
SIGN1	OBSOLETE	Grph	Sym		
SIGN2	OBSOLETE	Grph	Sym		

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illaye
	SYMBOL FOR SIGN 4LETTER			
SIGN4S	(LvI = tcd SIGN-ROADS /	Grph	Sym	( )
	Co = 12, 250 / Wt = 1) (Masking)			
	SYMBOL FOR SIGN 5LETTER			
SIGN5S	$(I vI = tcd_SIGN-ROADS /$	Grph	Svm	
	$C_0 = 12 250 / Wt = 1)$ (Masking)	0.5.	<i>c j</i>	
SIGNES	/Ivi = ted SIGN POADS /	Grob	Sum	
3161103	$(LVI - ICU_SIGIN-ROADS / Co = 12, 250 / W/t = 1) (Masking)$	Gipii	Sym	
	CO = 12, 250 / VVI = 1) (Masking)			
			-	
SINC	OBSOLETE	Grph	Sym	
SINS	OBSOLETE	Grph	Sym	
	STATIONLINE SYMBOL			
SL	(LvI = pp PRESENTATION /	Grph	Sym	
	Co = 0 / Wt = 1	•	,	
				$\frown$
SLH	OBSOLETE	Grph	Svm	
			- <b>j</b>	$\bigcirc$
				$\frown$
SLHV	OBSOLETE	Grph	Svm	
		<b>.</b>	- j	
SN	OBSOLETE	Grph	Svm	
	0000111	Cipii	Cym	
SN2	OBSOLETE	Grnh	Svm	$\bigcap$
ONZ	OBSOLLIE	Gipii	Sym	
CN12		Croh	Sum	$\bigcap$
5115	OBSOLETE	Gipii	Sym	
0.0		Dut	0	$\bigcap$
58	OBSOLETE	Pht	Sym	
00:05			Line	
SPIPE	OBSOLETE	Grph	Patter	
			n	

	CTCELLIB Cell Library Name	d Level	S	
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
SPLAN	SURVEY BORDER SHEET (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
SPLAN2	SURVEY BORDER_CONSULTANT2 (Lvl = border_SHEET / Co = 0,252 / Wt = 0-3)	Grph	Sheet	
SPR	SPRINKLER HEAD (LvI = Is_MISC-CELL / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
SPR-2	SPRINKLER HEAD (LvI = Is_MISC-CELL / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
SPRSCH	IRRIGATION SPRINKLER SCHEDULE (LvI = Is_MISC-CELL / Co = 0,1,250 / Wt = 0-2) (Masking)	Grph	Table	
SPRSCH2	IRRIGATION SPRINKLER SCHEDULE CONSULTANT (Lvl = ls_SCHEDULE-LEGEND / Co = 0,1,250 / Wt = 0-2) (Masking)	Grph	Table	
SPS	OBSOLETE	Grph	Sym	o SP
SRCH	OBSOLETE	Grph	Sym	$\bigcirc$
SRPAR1	BEG_END_STRIP ARROW 1 (Lvl = tcd_TRAFFIC-STRIPE / Co = 3 / Wt = 1)	Grph	Sym	
SRPAR2	BEG_END_STRIP ARROW 2 (Lvl = tcd_TRAFFIC-STRIPE / Co = 3 / Wt = 1)	Grph	Sym	
SSEAL	OBSOLETE	Grph	Sym	
SSMH	OBSOLETE	Grph	Sym	00

CTCELLIB Cell Library Named Levels				
Coll Namo	Cell Description	Cell	Cell	Coll Imaga
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illiage
	SPRINKLER TYPE A10 FULL			
STA10E	(Lvl = ls_MISC-CELL /	Grnh	Notos	10
STATU	Co = 1,250 / Wt = 1)	Gipii	NULES	
	(Masking)			
	SPRINKLER TYPE A10 PART			
STA10P	(Lvl = ls_MISC-CELL /	Grnh	Svm	(1)
STATUF	Co = 1,250 / Wt = 1)	Gipii	Sym	
	(Masking)			
	SPRINKLER TYPE A1 FULL			
STA1E	(Lvl = ls_MISC-CELL /	Grnh	Sym	1
SIAI	Co = 1,250 / Wt = 1)	Gipii	Sym	
	(Masking)			
	SPRINKLER TYPE A1 PART			
STA1D	(Lvl = ls_MISC-CELL /	Grnh	Sym	(1)
SIAIF	Co = 1,250 / Wt = 1)	Gipii	Sym	
	(Masking)			
	SPRINKLER TYPE A2 FULL			
STA2F	(Lvl = ls_MISC-CELL /	Grnh	Svm	
01721	Co = 1,250 / Wt = 1)	Orpri	Oyin	
	(Masking)			
	SPRINKLER TYPE A2 PART			$\bigcirc$
STA2P	(LvI = Is_IRRIGATION /	Grph	Svm	(2)
017(21	Co = 1,250 / Wt = 1)	Cipii	Oyini	
	(Masking)			
	SPRINKLER TYPE A3 FULL			
STA3F	(LvI = Is_MISC-CELL /	Grph	Svm	
	Co = 1,250 / Wt = 1)	<b>O</b> .P	- j	
	SPRINKLER TYPE A3 PART			$\overline{(z)}$
STA3P	$(LVI = IS_MISC-CELL / 0.000)$	Grph	Sym	$\bigcirc$
	Co = 1,250 / VVt = 1)		,	
	SPRINKLER I YPE A4 FULL			
STA4F	$(LVI = IS_IVIISC-CELL / Contact = 1.250 (1)(t = 1)$	Grph	Sym	4
	CO = 1,250 / VVI = 1)			
STA4P	$(LVI - IS_IVIISC-CELL)$	Grph	Sym	
	CO = 1,2507 VVI = 1)			
	(washing)			
STASE	SPRINKLER TYPE A5 FULL	Grob	Sym	5
	(Lvl = ls_MISC-CELL / Co = 1,250 /	Gipii	Gynn	
		1		

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Inlage
STASE	Wt = 1)	Croh	C) (m)	E
STAJ	(Masking)	Gipn	Sym	C
	SPRINKLER TYPE A5 PART			$\frown$
	(LvI = Is MISC-CELL /	Crock		(5)
STADP	Co = 1,250 / Wt = 1)	Grpn	Sym	
	(Masking)			
	SPRINKLER TYPE A6 FULL			$\Box$
STA6F	$(LvI = Is\_MISC-CELL / 0.50 (100) ($	Grph	Sym	0
	Co = 1,250 / VVt = 1)	•	, , , , , , , , , , , , , , , , , , ,	
	(Masking) SPRINKI ER TVDE A6 DART			
	( y  =  s  MISC-CE  ) /			(6)
STA6P	$C_0 = 1.250 / Wt = 1)$	Grph	Sym	
	(Masking)			
	SPRINKLER TYPE A7 FULL			
STA7F	(Lvl = ls_MISC-CELL /	Grnh	Svm	
STATE	Co = 1,250 / Wt = 1)	Orpin	Oyin	
	(Masking)			
	SPRINKLER TYPE A7 PART			$\overline{7}$
STA7P	$(LVI = IS_INISC-CELL )$	Grph	Sym	
	(Masking)			
	SPRINKLER TYPE A8 FULL			
07405	(Lvl = Is MISC-CELL /			8
STABE	Co = 1,250 / Wt = 1)	Grph	Sym	
	(Masking)			
	SPRINKLER TYPE A8 PART			$\bigcirc$
STA8P	(LvI = Is_MISC-CELL /	Grph	Svm	$\left( 8\right)$
	Co = 1,250 / Wt = 1)			_
	(Lyd = le MISC-CELL /			9
STA9F	$C_0 = 1.250 / Wt = 1$	Grph	Sym	
	(Masking)			
	SPRINKLER TYPE A9 PART			$\frown$
STAOD	(LvI = Is_MISC-CELL /	Grob	Sym	(9)
STA9P	Co = 1,250 / Wt = 1)	Gipii	Syn	
	(Masking)			
OTATE			Line	
SIAIE	OBSOLETE	Grpn	Pattern	
1		1	1	1

Cell NameCell Description (Symbology: Lvl / Co / Wt) TypeCellCell ImageSTB1SPRINKLER TYPE B1 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\bigwedge$ STB2SPRINKLER TYPE B2 (Co = 1,210 / Wt = 1) (Masking)GrphSym $\bigwedge$ STB3SPRINKLER TYPE B3 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB4SPRINKLER TYPE B4 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB5SPRINKLER TYPE B4 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB6SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB6SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB8SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB9SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB10SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	CTCELLIB Cell Library Named Levels				
Centraine(Symbology: Lvi / Co / Wt)TypeUseCentral definitionSTB1 $(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\bigtriangleup$ STB2(Lvl = Is, MISC-CELL / Co = 1 / Wt = 1) (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Co = 1,250 / Wt = 1) (Masking)GrphSym $\bigtriangleup$ STB3SPRINKLER TYPE B3 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB4(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB4(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB5SPRINKLER TYPE B5 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB6(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7SPRINKLER TYPE B6 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7SPRINKLER TYPE B7 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB8(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB9SPRINKLER TYPE B9 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB10(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB11(Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB12SPRINKLER TYPE B11 (Lvl = Is, MISC-CELL / Co = 1,250 / Wt = 1)	Cell Name	Cell Description	Cell	Cell	Cell Image
STB1SPRINKLER TYPE B1 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\bigwedge$ STB2SPRINKLER TYPE B2 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\bigwedge$ STB3SPRINKLER TYPE B3 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB4SPRINKLER TYPE B4 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB4SPRINKLER TYPE B5 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB5SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB6SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB8SPRINKLER TYPE B7 (Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB10(Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,00000000000000000000000000000000000		(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illiage
STB1       (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1) (Masking)       Grph       Sym       Image: Constraint of the sym         STB2       SPRINKLER TYPE B2 (Lvl = is_MISC-CELL/ Co = 1, Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB3       SPRINKLER TYPE B3 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB4       SPRINKLER TYPE B4 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB5       SPRINKLER TYPE B5 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB6       SPRINKLER TYPE B6 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB7       Co = 1,250 / Wt = 1) (Masking)       Grph       Sym       Image: Constraint of the sym         STB7       SPRINKLER TYPE B7 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB8       SPRINKLER TYPE B8 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB9       SPRINKLER TYPE B9 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)       Grph       Sym       Image: Constraint of the sym         STB10       SPRINKLER TYPE B11 (Lvl = is_MISC-CELL/ Co = 1,250 / Wt = 1)		SPRINKLER TYPE B1			
OTD1Co = 1,250 / Wt = 1) (Masking)Orp1Orp1Orp1Orp1 $\Box$ STB2 $(Lvl = ls_MISC-CELL /Co = 1 / Wt = 1)$ GrphSym $\bigtriangleup$ STB3 $(Lvl = ls_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\square$ STB4 $(Lvl = ls_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\square$ STB4 $(Lvl = ls_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\square$ STB5 $SPRINKLER TYPE B4$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB6 $(Lvl = ls_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\square$ STB7 $Ca = 1/Wt = 1$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7 $SPRINKLER TYPE B6$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB7 $SPRINKLER TYPE B8$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB8 $SPRINKLER TYPE B8$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB10 $SPRINKLER TYPE B10$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB10 $SPRINKLER TYPE B11$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\square$ STB11 $(Lvl = ls_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSym\squareSTB10SPRINKLER TYPE B11(Lvl = ls_MISC-CELL /Co = 1,25$	STB1	(Lvl = ls_MISC-CELL /	Grnh	Svm	
(Masking)GrphSTB2SPRINKLER TYPE B2 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB3 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB4(Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B4 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB5SPRINKLER TYPE B5 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB10SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB10SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB11(Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSym	OIDI	Co = 1,250 / Wt = 1)	Cipii	Oyin	$\square$
STB2SPRINKLER TYPE B2 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB3 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB4(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB5(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB6(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB6(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB7(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB8(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB8(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB9(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB9SPRINKLER TYPE B8(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB10(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB10SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB11(Lvl = Is_MISC-CELL /Co = 1/Wt = 1)GrphSym$		(Masking)			
STB2 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB3 $(Lvl = ls_MISC-CELL / Co = 1.250 / Wt = 1)$ GrphSymSTB4 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB4 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB5 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB6 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB6 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB7 $Co = 1 / Wt = 1$ GrphSymSTB7 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB8 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB7 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB8 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB9 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB10 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB10 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB11 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB11 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB12 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSym		SPRINKLER TYPE B2			A
Co = 1 / Wt = 1)Co = 1STB3SPRINKLER TYPE B3 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB4SPRINKLER TYPE B4 (LM = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B5 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1)GrphSymSTB6SPRINKLER TYPE B6 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B7 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B8 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B10 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B11 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (LM = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	STB2	(LvI = Is_MISC-CELL /	Grph	Sym	
SPRINKLER TYPE B3 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB4SPRINKLER TYPE B4 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B5 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1/Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		Co = 1 / Wt = 1)			
STB3 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB4SPRINKLER TYPE B4 $(Lvl = ls_{-}MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB5 $Co = 1 / Wt = 1$ $Co = 1,250 / Wt = 1$ ) $(Masking)$ GrphSymSTB6 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB6 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB6 $(Lvl = ls_{-}MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB7SPRINKLER TYPE B6 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB7SPRINKLER TYPE B7 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB8SPRINKLER TYPE B8 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB9 $SPRINKLER TYPE B9$ $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB10 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Co = 1,250 / Wt = 1)$ $(Masking)$ GrphSymSTB10SPRINKLER TYPE B10 $(Lvl = ls_{-}MISC-CELL / Co = 1/Wt = 1)$ GrphSymSTB11 $(Lvl = ls_{-}MISC-CELL / Co = 1/Wt = 1)$ GrphSymSTB12SPRINKLER TYPE B12 $(Lvl = ls_{-}MISC-CELL / Co = 1,250 / Wt = 1)$ $(Masking)GrphSym$		SPRINKLER TYPE B3			
ColorColorColorStyleStyleSTB4SPRINKLER TYPE B4 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B5 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	STB3	(Lvl = ls_MISC-CELL /	Grph	Svm	
(Masking)STB4SPRINKLER TYPE B4 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B5 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	0120	Co = 1,250 / Wt = 1)	Cipii	Cym	
STB4SPRINKLER TYPE B4 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB5SPRINKLER TYPE B5 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)GrphSym		(Masking)			
STB4 $(L \lor = Is MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSPRINKLER TYPE B5 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSymSTB5 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSymSTB6 $(L \lor = Is MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB7 $SPRINKLER TYPE B7$ GrphSym $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ $MiSC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B8GrphSymSTB8 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B9GrphSymSTB9 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B10GrphSymSTB10 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B11GrphSymSTB11 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B11GrphSymSTB11 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(Masking)$ SPRINKLER TYPE B12GrphSymSTB12 $(L \lor = Is MISC-CELL / Co = 1,250 / Wt = 1)$ GrphSym $(D = 2 / Wt = 1)$ $(D = 1 (Wt = 1)$ GrphSym	·	SPRINKLER TYPE B4			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	STB4	(LvI = Is_MISC-CELL /	Grph	Sym	
STB5SPRINKLER TYPE B5 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvi = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B8 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB9SPRINKLER TYPE B9 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvi = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		Co = 1 / Wt = 1)			
STB5 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7 $Co = 1 / Wt = 1$ GrphSymSTB7 $Co = 1 / Wt = 1$ GrphSymSTB7 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB8 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB8 $(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB9 $SPRINKLER TYPE B8$ (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		SPRINKLER TYPE B5			~
Co = 1,250 / Wt = 1) (Masking)GrphSymSTB6SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	STB5	(LvI = Is_MISC-CELL /	Grph	Svm	$\langle \rangle$
(Masking)SPRINKLER TYPE B6 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB6 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)$ (Masking)GrphSym $\checkmark$ STB7 $SPRINKLER TYPE B7$ (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\checkmark$ STB8 $(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)$ GrphSym $\checkmark$ STB9SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\checkmark$ STB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\blacksquare$ STB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym $\blacksquare$ STB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym $\blacksquare$ STB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\frown$ STB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym $\frown$	0.20	Co = 1,250 / Wt = 1)	0.6.	<i>c j</i>	$\sim$
STB6SPRINKLER TYPE B6 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB7SPRINKLER TYPE B7 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB8(Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		(Masking)			
STB6 $(Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)$ GrphSymSTB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9(Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1) (Masking)GrphSym		SPRINKLER TYPE B6		-	
Co = 1 / Wt = 1)STB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB7SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB8(Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym	STB6	(LvI = Is_MISC-CELL /	Grph	Sym	
STB7SPRINKLER TYPE B7 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym		Co = 1 / Wt = 1)			*
STB7 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB8SPRINKLER TYPE B8 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		SPRINKLER TYPE B7			Δ
Co = 1,250 / Wt = 1) (Masking)Co = 1 / (Masking)Co = 1 / (Masking)STB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB10SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB12SPRINKLER TYPE B12(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSym$	STB7	(LvI = Is_MISC-CELL /	Grph	Svm	
(Masking)STB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB10SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB12SPRINKLER TYPE B11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB11SPRINKLER TYPE B11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB12SPRINKLER TYPE B12(Lvl = Is_MISC-CELL /Co = 1,00000000000000000000000000000000000$		Co = 1,250 / Wt = 1)	•.p	- <b>j</b>	
STB8SPRINKLER TYPE B8 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9 $(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB10SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B10(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB12SPRINKLER TYPE B11(Lvl = Is_MISC-CELL /Co = 1,250 / Wt = 1)(Masking)GrphSymSTB12SPRINKLER TYPE B12(Lvl = Is_MISC-CELL /Co = 1 / Wt = 1)GrphSym$		(Masking)			
STB8(LVI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB9SPRINKLER TYPE B9 (LVI = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (LvI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (LvI = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB11SPRINKLER TYPE B11 (LvI = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (LvI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym	0750	SPRINKLER TYPE B8		0	A
Co = 1 / Wt = 1)STB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym	STB8	(LvI = Is_MISC-CELL /	Grph	Sym	
STB9SPRINKLER TYPE B9 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym		Co = 1 / VVt = 1)			
STB9 $(Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB10SPRINKLER TYPE B10 (Lvl = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = Is_MISC-CELL / Co = 1 (Wt = 1))GrphSym		SPRINKLER TYPE B9			
$\begin{array}{c c} Co = 1,250 / Wt = 1 \\ (Masking) \end{array} \qquad $	STB9	(LVI = IS_MISC-CELL /	Grph	Svm	
STB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / (Masking)GrphSym		Co = 1,250 / VVI = 1)	•	,	
STB10SPRINKLER TYPE B10 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSymSTB11SPRINKLER TYPE B11 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSym					
STB10(LVI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSymSPRINKLER TYPE B11 (LVI = Is_MISC-CELL / Co = 1,250 / Wt = 1) (Masking)GrphSymSTB12SPRINKLER TYPE B12 (LVI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym		SPRINKLER TYPE B10		0	
$\begin{array}{c c} & & Co = 1 / Wt = 1 \end{array} \\ \hline & & SPRINKLER TYPE B11 \\ (Lvl = ls_MISC-CELL / \\ Co = 1,250 / Wt = 1 ) \\ (Masking) \end{array}  Grph  Sym \qquad  \\ \hline & \\ STB12 \qquad \begin{array}{c c} & SPRINKLER TYPE B12 \\ (Lvl = ls_MISC-CELL / \\ Co = 1 / Wt = 1 \end{array} \\ \hline & \\ \hline \hline & \\ \hline & \\ \hline & \\ \hline & \hline \hline & \\ \hline & \\ \hline \hline & \\ \hline & \\ \hline \hline \hline & \\ \hline \hline \hline \\ \hline \hline \hline \hline$	SIBIO	$(LVI = IS_WISC-CELL / CONTROL = 1)$	Grpn	Sym	
STB11 $(Lvl = ls_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSTB12SPRINKLER TYPE B12 (Lvl = ls_MISC-CELL / Co = 1 / Wt = 1)GrphSym		CO = 1 / VVI = 1)			
STB11 $(LVI = Is_MISC-CELL / Co = 1,250 / Wt = 1)$ (Masking)GrphSymSPRINKLER TYPE B12 (LvI = Is_MISC-CELL / Co = 1 / Wt = 1)GrphSym		SPRINKLER TYPE B11			~
$\begin{array}{c c} Co = 1,250 / Wt = 1 \\ (Masking) \end{array}$ $\begin{array}{c c} SPRINKLER TYPE B12 \\ (LvI = Is_MISC-CELL / \\ Co = 1 / Wt = 1 \end{array}$ $\begin{array}{c c} Grph & Sym \end{array}$	STB11	$(LVI = IS_MISC-CELL / OF (100)$	Grph	Sym	$\langle \rangle$
SPRINKLER TYPE B12       STB12       (Lvl = Is_MISC-CELL /       Co = 1 (W/t = 1)		U = 1,250 / VVI = 1)			$\sim$
STB12 $(Lvl = ls_MISC-CELL / Grph Sym )$					
$  SIBIZ   (LVI = IS_IVIISU-UELL /   Grpn   Sym   )$	07040		Crist	C	
	SIBIZ	$(LVI = IS_IVIISU-UELL / Co = 1 / 1/1/4 = 1)$	Grpn	Sym	

	CTCELLIB Cell Library Name	d Level	s	
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
	SPRINKLER TYPE C1			× /
STC1	(LvI = Is_MISC-CELL /	Grph	Sym	$\sim$
	Co = 1,250 / VVt = 1)	•	,	$\sim$
STC2	SPRINKLER I I PE C2	Crob	Sum	$\bigcap$
3102	$(LVI - IS_IVIISC-CELL / Co = 1 / W/t = 1)$	Gipii	Sym	$\bigcirc$
STC3	$( y  =  s  M SC_CE  ) /$	Grnh	Svm	
0100	$C_0 = 1 / Wt = 1$	Orpri	Oyin	
	SPRINKI ER TYPE C4			
070/	(Lvl = Is MISC-CELL /			$\succ$
SIC4	Co = 1,250 / Wt = 1)	Grph	Sym	$\square$
	(Masking)			
	SPRINKLER TYPE C5			_
STC5	(LvI = Is_MISC-CELL /	Grnh	Svm	$\bigcap$
0100	Co = 1,250 / Wt = 1)	Cipii	Oyin	$\bigcirc$
	(Masking)			
	SPRINKLER TYPE C6			
STC6	$(LvI = Is_MISC-CELL / Canada = 1 (1)(k = 1))$	Grph	Sym	
	Co = 1 / VVt = 1)			)
OTEAN		Crph	Line	СТ
STEAM	OBSOLETE	Gipii	Pattern	
STORMD	OBSOLETE	Grph	Line	SD
		O.p.	Pattern	50
	TEMP STOCKPILE			Λ
STPILE	(LvI = wpc_SOIL-STABILIZATION /	Grph	Sym	
	$\overline{Co} = 6 / Wt = 1$	•		<u> </u>
	SYM FOR COMBO STRIPING			
STRPS2	(Lvl = tcd_TRAFFIC-STRIPE-anno /	Grph	Sym	$\langle \rangle$
	Co = 3,250 / Wt = 1) (Masking)			
	SYMBOL FOR STRIPING			
STRPSY	(Lvl = tcd_TRAFFIC-STRIPE-anno /	Grph	Sym	$\langle \rangle$
	Co = 3,250 / Wt = 1) (Masking)			
				$\wedge$
SUH	OBSOLETE	Grph	Sym	/ · \
		Crah	C) /ma	A
SULIA	OBSOLETE	Gipn	Sym	$\overline{\langle \cdot \rangle}$
1				

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
SUV	OBSOLETE	Grph	Sym	$\odot$
SWCP	SPRINKLER W CONC PROTECTOR (Lvl = ls_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	3
T1	PLAIN CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 3)	Grph	Sym	0
T1A	CIRCLE IN CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\odot$
T1ARR	PAINT PVMT ARR TYP1 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	
T1B	FULL CIRCLE IN CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\odot$
T1C	TRIANGLE IN CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 0,3)	Grph	Sym	
T1D	SQUARE IN CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 0,3)	Grph	Sym	
T1E	PARALLELOGRAM IN CIRCLE TREE (LvI = Is_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	
T2A	PIE CHART TREE W FULL CTR (Lvl = ls_PLANT / Co = 2 / Wt = 0,1,3)	Grph	Sym	$\bigcirc$
T2ARR	PAINT PVMT ARR TYP2 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	Æ.
T2B	CIRCLE W 3 RADIATING LINES (LvI = Is_PLANT / Co = 2 / Wt = 0,3)	Grph	Sym	$\bigcirc$
T2C	CIRCLE W 5 RADIATING LINES (Lvl = ls_PLANT / Co = 2 / Wt = 0,3)	Grph	Sym	$\overline{\mathbf{Q}}$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T3A	CIRCLE W SHORT LINES (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3ARR	PAINT PVMT ARR TYP 3 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	
ТЗВ	CIRCLE W 4 SPIKES (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	E)
T3C	ORANGE SLICE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 0,1,3)	Grph	Sym	
T3D	OFFSET CIRCLE TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3E	TREE W 3 INVERTED ARCS (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T3F	TREE W 5 INVERTED ARCS (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	
T4A	PUFFBALL TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\odot$
T4ARR	PAINT PVMT ARR TYP 4 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	Ĵ
T4B	ROUGH INVERTED ARC TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	yy ° ¢
T4C	SMOOTH INVERTED ARC TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	0
T4D	STARBURST TREE 1 (Lvl = ls_PLANT / Co = 2 / Wt = 1,2)	Grph	Sym	Malanda O Carton Marine Marine Marine
T4E	STARBURST TREE 2 (Lvl = ls_PLANT / Co = 2 / Wt = 1,2)	Grph	Sym	Juley and a start

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T5A	HEXAGON TREE (Lvl = ls_PLANT / Co = 2 / Wt = 3)	Grph	Sym	$\bigcirc$
T5ARR	PAINT PVMT ARR TYP 5 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	>
T5B	HEX TREE W CIRCLE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\langle \circ \rangle$
T5C	HEX TREE W FULL CIR CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\langle \cdot \rangle$
T5D	HEX TREE W TRIANGLE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	
T5E	HEX TREE W SQUARE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	
T5F	HEX GEAR TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T6A	PENTAGON TREE (Lvl = ls_PLANT / Co = 2 / Wt = 3)	Grph	Sym	$\bigcirc$
T6ARR	PAINT PVMT ARR TYP 6 (Lvl = tcd_PVMT-MARKING / Co = 3 / Wt = 1)	Grph	Sym	+
T6B	PENT TREE W CIRCLE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\bigcirc$
T6C	PENT TREE W FULL CIR CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\textcircled{\bullet}$
T6D	PENT TREE W BOX CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	
T6E	PENT TREE W TRIANGLE CTR (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
T6F	PENTAGON GEAR TREE (Lvl = ls_PLANT / Co = 2 / Wt = 1,3)	Grph	Sym	$\langle \rangle$
TANK	OBSOLETE	Grph	Sym	T
ТВ	OBSOLETE	Grph	Notes	STATE OF CALIFORMA           DEFAULTOR IN TO MARTING           DEFAULTOR IN TO MARTING           Participation           Default Action           Default Action
TB11	TEMP ARRAY TB11 (Lvl = temp_CRASH-CUSHION / Co = 10 / Wt = 1)	Grph	Sym	
TB14	TEMP ARRAY TB14 (Lvl = temp_CRASH-CUSHION / Co = 10 / Wt = 1)	Grph	Sym	00000
TBE	OBSOLETE	Grph	Notes	CTATE OF CALIFORNIA           CEPARTERIO OF TABLOGRAFICION           RED MELLO OF TABLOGRAFICION           PARTE MELLO ALCONTRATO           MARCENTARIA
тс	OBSOLETE	Grph	Sym	$\bigcirc$
TCHDAM	TEMP CHECK DAM (Lvl = wpc_SOIL-STABILIZATION / Co = 6 / Wt = 1)	Grph	Sym	
TDIP	TEMP DRAIN INLET PROTECT (Lvl = wpc_SOIL-STABILIZATION / Co = 6 / Wt = 1)	Grph	Sym	0
TELCOM	OBSOLETE	Grph	Line Pattern	——————————————————————————————————————
TELEP	OBSOLETE	Grph	Line Pattern	T
TERMBL	TERMINAL BLOCKS (LvI = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	$\otimes$
TERML	GUARDRAIL TERMINTR_L (Lvl = tcd_RAILING / Co = 14 / Wt = 1)	Grph	Sym	2

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
TERMR	GUARDRAIL TERMINTR_R (Lvl = tcd_RAILING / Co = 14 / Wt = 1)	Grph	Sym	q
TEXIT	TEMP ENTRANCE EXIT (Lvl = wpc_TREATMENT / Co = 6 / Wt = 1)	Grph	Sym	
TIC	OBSOLETE	Pnt	Sym	
TIEPT	TIE POINT (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	·•
TILDE	SQUIGGLY TERMINATOR (Lvl = pp_PRESENTATION / Co = 0 / Wt = 1)	Grph	Sym	$\sim$
TIME	TIME DATE STAMP_TITLE (Lvl = pp_PRESENTATION / Co = 0 / Wt = 0,1)	Grph	Sheet	20 - 2019 20 第2 - 2019 20
TIME2	TIME DATE STAMP_FULPLN (Lvl = border_WITHIN-BORDER-anno / Co = 0 / Wt = 0,1)	Grph	Sheet	
TITLE	TITLE SHEET_ROADWAY (Lvl = border_WITHIN-BORDER-anno / Co = 0-2,252 / Wt = 0-3)	Grph	Sheet	
TITLE2	TITLE_CONSULTANT2 (Lvl = border_SHEET / Co = 0-2,252 / Wt = 0-3)	Grph	Sheet	
TITLE3	TITLE_CONSULTANT3 (Lvl = border_SHEET / Co = 0-2,252 / Wt = 0-3)	Grph	Sheet	
TKPRO1	KRAIL PROFILE 1 (Lvl = temp_RAILING-TYPE-K / Co = 8 / Wt = 1)	Grph	Sym	厶
TKPRO2	KRAIL PROFILE 2 (Lvl = temp_RAILING-TYPE-K / Co = 8 / Wt = 1)	Grph	Sym	Д

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lyl / Co / Wt)	Cell Type	Cell	Cell Image
TLMH	OBSOLETE	Grph	Sym	(° ° °
TLS	TRUCK LOADING STD PIPE (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 1) (Masking)	Grph	Sym	$\diamond$
TOUT	TEMP DRAIN OUTLET PROTECT (LvI = Is_IRRIGATION / Co = 1 / Wt = 1)	Grph	Sym	占
TPHASE	THROUGH SIGNAL PHASE (Lvl = wpc_TREATMENT / Co = 6 / Wt = 1)	Grph	Sym	
TR4	OBSOLETE	Grph	Sym	Ø
TR8	OBSOLETE	Grph	Sym	$\bigcirc$
TRAN	OBSOLETE	Grph	Sym	$\boxtimes$
TRAST2	TRAF STRP COMBO DETAIL SYM (Lvl = tcd_TRAFFIC-STRIPE-anno / Co = 3 / Wt = 1)	Grph	Sym	$\bigcirc$
TRASTR	TRAFFIC STRP COMBO DETAIL SYM (LvI = tcd_TRAFFIC-STRIPE-anno / Co = 3 / Wt = 1)	Grph	Sym	$\bigcirc$
TRC	OBSOLETE	Grph	Sym	$\bigcirc$
TREE	OBSOLETE	Grph	Sym	$\bigcirc$
TREEP	OBSOLETE	Grph	Line Pattern	$\sim$
TRF45A	TRAF DIRECT 45 ARROW (Lvl = pp_PRESENTATION / Co = 0 / Wt = 1)	Grph	Sym	5

	CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image	
	(Symbology: Lvl / Co / Wt)	Туре	Use	een mage	
	TRAF DIRECT L R ARROW			$\sim$	
IRFALR	$(LVI = pp_PRESENTATION / Co = 0 / Wt = 1)$	Grpn	Sym	Ch ا	
	(1 vl = pp_PRESENTATION /	Grnh	Svm		
	Co = 0 / Wt = 1	Cipii	Cym		
TRNTOW	OBSOLETE	Grph	Sym		
				-¥-	
TS	OBSOLETE	Grph	Sym	Ťŝ	
TQ11	IEMP ARRAY ISTI	Grob	Sum		
1311	$C_0 = 10 / Wt = 1$	Gipii	Sym		
	TEMP ARRAY TS14				
TS14	(Lvl = temp_CRASH-CUSHION /	Grph	Sym	0000000000	
	$\dot{Co} = 10 / Wt = 1)$				
	TELEPHONE SERVICE PT				
TSP	(Lvl = es_CELL-NOTE-SYMBOL /	Grph	Sym	[TSP]	
	Co = 0 / Wt = 1)				
TUAA		Crech	0	aaa00000	
TUTT	$(LVI = es_CELL-NOTE-SYMBOL )$	Grpn	Sym	000000	
TU14	(Lyl = temp_CRASH-CUSHION /	Grph	Svm		
	Co = 10 / Wt = 1	Cipii			
	TEMP ARRAY TU17				
TU17	(Lvl = temp_CRASH-CUSHION /	Grph	Sym	<u>poo<mark>gččičč</mark></u>	
	Co = 10 / Wt = 1)				
	TEMP ARRAY TU21				
TU21	(Lvl = temp_CRASH-CUSHION /	Grph	Sym	000000000000000000000000000000000000000	
	Co = 10 / VVt = 1)				
T\/P	OBSOLETE	Grnh	Line	TV	
1 V I	OBGOLLIL	Cipii	Pattern	17	
TYPE_E	OBSOLETE	Grph	LINE Pattern		

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	oen mage
	CRASH CUSHION U11			
011	$(Lvi = tcd_CRASH-CUSHION / Co = 10 (1)(t = 1))$	Grph	Sym	0008888
	CO = 107 W(-1)			
1114		Grob	Sym	0000000
014	$C_0 = 10 / Wt = 1$	Сіріі	Sym	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	CRASH CUSHION U16			0000
U16	(Lvl = tcd CRASH-CUSHION /	Grph	Svm	0080800
	Co = 10 / Wt = 1)			~0000
	CRASH CUSHION U21			00000
U21	(LvI = tcd_CRASH-CUSHION /	Grph	Sym	000888888
	Co = 10 / Wt = 1)			
UT-POS-				$\times \times$
LOC	OBSOLETE	Grph	Sym	
				, , ,
		Grph	Sym	$\bigcap$
UILA	OBSOLLIE	Gipii	Sym	
				$\frown$
UTLP	OBSOLETE	Grph	Sym	
				REV SIZE JRRIGATION CONTROLLER CONTROLLER STATION VALVE IN PARALLEL (JF APPLICASLE) FPN
		Orm	NI-4	
VALVCD	$(LVI = IS_IRRIGATION / Contact = 1 / Wt = 0.1)$	Grpn	Notes	WAY SIDE MARER GPM GPM GPM TYPE SPRINGLERS (INEX SHORE)
	CO = 17  VVI = 0, 1)			<ul> <li>(2'-3-30-50)</li> <li>VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED EXCLOSURE.</li> </ul>
	DRIP VALVE ASSEMBLY			VALVE CODE
VAU	(LvI = Is IRRIGATION /	Grph	Sym	N A
	Co = 1,250 / Wt = 0,1) (Masking)			
				•
VC	OBSOLETE	Pnt	Sym	
	CONTROL VALVE CODE BUBBLE			
VCB	$(LVI = IS_IRRIGATION / Control = 1 (1)/(t = 1))$	Grph	Sym	
	CO = 1 / VVI = 1			
VEGP	OBSOLETE	Grnh	Svm	
VEOI	0000111	Orpri	Oym	
				$\frown$
VENT	OBSOLETE	Grph	Sym	
			-	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
VINE1	OBSOLETE	Grph	Line Pattern	
VINE2	OBSOLETE	Grph	Line Pattern	
VINE3	OBSOLETE	Grph	Line Pattern	
VLT	OBSOLETE	Grph	Sym	$\diamond$
VOLTAC	VOLT ALTERNATING CURRENT (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	V(oc)
VOLTDC	VOLT DIRECT CURRENT (Lvl = es_CELL-NOTE-SYMBOL / Co = 0 / Wt = 1)	Grph	Sym	V(dc)
VPI	VERTICAL PI SYMBOL (Lvl = rd_MISC / Co = 0 / Wt = 1)	Grph	Sym	VPI A
WALLP	OBSOLETE	Grph	Line Pattern	
WARN	CIRCUIT WARNING MESSAGE (LvI = es_CELL-NOTE-SYMBOL / Co = 4 / Wt = 1)	Grph	Notes	WARNING ecrore starting own or instruction sources lowing controls are conversion source and a bart softer creater controls where the start sources are derived in the control of the source and sources are derived in the source where the source source derived interest.
WASH	TEMP CONCRETEWASHOUT (Lvl = wpc_TREATMENT / Co = 6 / Wt = 1)	Grph	Sym	WASH
WATERP	OBSOLETE	Grph	Line Pattern	
WATP	OBSOLETE	Grph	Line Pattern	
WC	OBSOLETE	Grph	Sym	$\bigcirc$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
WDGR	OBSOLETE	Grph	Line Pattern	
WELL	OBSOLETE	Grph	Sym	o WELL
WFP	OBSOLETE	Grph	Line Pattern	
WIRE	OBSOLETE	Grph	Line Pattern	
WM	WATER METER (Lvl = ls_IRRIGATION / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	$\boxtimes$
WMS	OBSOLETE	Grph	Sym	$\boxtimes$
WS	WYE STRAINER ASSEMBLY (LvI = Is_IRRIGATION / Co = 1,250 / Wt = 0,1) (Masking)	Grph	Sym	
WV	OBSOLETE	Grph	Sym	$\bigcirc$
XAIC	AUXILIARY IRR CONTROLLER (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\langle \rangle$
ХВР	BOOSTER PUMP (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\Box \!$
ХВРА	BACKFLOW PREV ASSEMBLY (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBPAE	BACKFLOW PREVENTER ENCLOSURE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	
XBPNE	BACKFLOW PREVENTER WITH NO ENCLOSURE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illage
XBV	BALL VALVE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\overline{\mathbb{A}}$
XCAP	CAPPED (Lvl = ls_IRRIGATION-EXIST / Co = 7 / Wt = 1)	Grph	Sym	L L
XCARV	COMBO AIR RELEASE VALVE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	ē
XCCA	CAM COUPLER ASSEMBLY (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\bigcirc$
XCEL	X SYMBOL (Lvl = rd_MISC / Co = 0 / Wt = 0)	Grph	Sym	X
XCLG	CHAIN LINK GATE (Lvl = ls_IRRIGATION-EXIST / Co = 7 / Wt = 1)	Grph	Sym	<i>.</i> ~ °
XCNC	OBSOLETE	Grph	Line Pattern	~~~~~
XCOND	OBSOLETE	Grph	Line Pattern	
XCV	CHECK VALVE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\triangleright$
XDIP	OBSOLETE	Grph	Line Pattern	dip
XFAU	FILTER ASSEMBLY UNIT (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	—
XFCV	FLOW CONTROL VALVE (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	$\stackrel{\rm T}{\diamondsuit}$
XFS	FLOW SENSOR (Lvl = ls_IRRIGATION-EXIST / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	fs

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illage
	FLUSH VALVE			
XFV	(Lvl = ls_IRRIGATION-EXIST /	Grph	Sym	ю
	Co = 7,250 / Wt = 1) (Masking)			
	GARDEN VALVE ASSEMBLY			л Д
XGARV	(LvI = Is_IRRIGATION-EXIST /	Grph	Sym	XAS -
	Co = 7,250 / Wt = 1) (Masking)			
VCSDI		Grob	Line	
AGGEL	OBSOLETE	Gipii	Pattern	
			Line	
XGSPM	OBSOLETE	Grph	Lille Pattern	
			i alloini	
	GATE VALVE			х
XGV	(LvI = Is_IRRIGATION-EXIST /	Grph	Sym	$\wedge$
	Co = 7,250 / Wt = 1) (Masking)			
240			0	$\frown$
XIC	$(LVI = IS_IRRIGATION-EXIST / Co = 7.250 (10/14 = 1) (Maaking)$	Grpn	Sym	
VICC		Crph	Sum	$[\times]$
XICC	$(LVI - IS_IRRIGATION-EXIST)$	Gipii	Sym	
	MASTER IRR CONTROLLER			
XMIC	$(I_V I = I_S_I I R R I G A T I O N - F X I S T / I C A T$	Grnh	Svm	$\overline{\langle X \rangle}$
	Co = 7.250 / Wt = 1) (Masking)	Cipii	O y m	
			Line	
XPPSL	OBSOLETE	Grph	Line	
			гацетт	
			Line	
XPPSM	OBSOLETE	Grph	Pattern	
		Crah	0	$\overline{\mathbf{N}}$
APRLV	$(LVI = IS_IRRIGATION-EXIST / Co = 7.250 / W/t = 1) (Masking)$	Grpn	Sym	
YPR\/		Grnh	Svm	$\searrow$
	$C_0 = 7.250 / Wt = 1)$ (Masking)	Cipii	Oyin	arphi
XQCV	(Lvl = Is IRRIGATION-EXIST /	Groh	Svm	$\langle  \rangle$
	Co = 7,250 / Wt = 1) (Masking)			

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	
	QCV SPRINK PROTECTOR			[ <b>7</b> ]
XQCVSP	(LvI = Is_IRRIGATION-EXIST /	Grph	Sym	<u></u>
	Co = 7,250 / Wt = 1) (Masking)			
VDOV		Orm	0	
XRCV	$(LVI = IS_IRRIGATION-EXIST / Control = 1)$	Grpn	Sym	
	CO = 77 VVI = 1)			
XSCC	OBSOLETE	Grnh	Line	
7000	OBSOLLIE	Gipii	Pattern	SCC
	SPRINKLE W SPRNKLE PROTECTE			
XSWCP	(LvI = Is IRRIGATION-EXIST /	Grph	Svm	(3)
	Co = 7,250 / Wt = 1) (Masking)		- ,	· 2/
	TRUCK LOADING STANDPIPE			
XTLS	(Lvl = ls_IRRIGATION-EXIST /	Grph	Sym	$\diamond$
	Co = 7,250 / Wt = 1) (Masking)	-		~
	DRIP VALVE ASSEMBLY			
XVAU	(Lvl = ls_IRRIGATION-EXIST /	Grph	Sym	l l√l
	Co = 7,250 / Wt = 1) (Masking)			
			0	
XVCB	OBSOLETE	Grpn	Sym	()
	WATER METER EXIST			
хwм	(I v I = Is IRRIGATION-EXIST /	Grph	Svm	×1
	Co = 7,250 / Wt = 1) (Masking)	Cipii	e y	
	WYE STRAINER ASSEMBLY			
XWS	(LvI = Is IRRIGATION-EXIST /	Grph	Sym	ľ¥1
	Co = 7,250 / Wt = 1) (Masking)			
UT-				
APPURTEN	(Active Symbology)	Grph	Sym	
ANCE	(Fourie Cymbology)			•
UT-CAB-	CABINET ELECTRIC OH			
ELECT-OH-	$(LvI = ut\_ELECT-OH-P / OH)$	Grph	Sym	
P	CO = 3 / VVI = 1			-
		Croh	Sum.	
	$(LVI - UL_ELECI-OH-X)$	Grpn	Sym	
	00 - 07 Wt - 17			
UT-CAB-	CABINET ELECTRIC UG	Groh	Svm	
ELECT-P	(Lvl = ut_ELECT-P / Co = 3 / Wt = 1)			

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-CAB- ELECT-X	CABINET ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-CAB- FIBEROPT- OH-P	CABINET FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- FIBEROPT- OH-X	CABINET FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- FIBEROPT- P	CABINET FIBER OPTIC UG (Lvl = ut_FIBEROPT-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- FIBEROPT- X	CABINET FIBER OPTIC UG (Lvl = ut_FIBEROPT-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELECOM- OH-P	CABINET TELECOM OH (LvI = ut_TELECOM-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELECOM- OH-X	CABINET TELECOM OH (Lvl = ut_TELECOM-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELECOM- P	CABINET TELECOM UG (LvI = ut_TELECOM-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELECOM- X	CABINET TELECOM UG (LvI = ut_TELECOM-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELEPH- OH-P	CABINET TELEPHONE OH (Lvl = ut_TELEPH-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELEPH- OH-X	CABINET TELEPHONE OH (Lvl = ut_TELEPH-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELEPH-P	CABINET TELEPHONE UG (Lvl = ut_TELEPH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB- TELEPH-X	CABINET TELEPHONE UG (Lvl = ut_TELEPH-X / Co = 5 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-CAB- TRCNTRL-X	CABINET TRAFFIC CONTROL (Lvl = ut_TRAFFIC-CONTROL-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-CAB-TV- OH-P	CABINET TELEVISION OH (Lvl = ut_TV-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB-TV- OH-X	CABINET TELEVISION OH (Lvl = ut_TV-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB-TV- P	CABINET TELEVISION UG (Lvl = ut_TV-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB-TV- X	CABINET TELEVISION UG (Lvl = ut_TV-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-CAB-X	CABINET ( <i>Active Symbology</i> )	Grph	Sym	
UT- CALLBOX	CALLBOX (Active Symbology)	Grph	Sym	
UT- CONDUIT- POINT	NOT A POSITIVE LOCATION POINT (Active Symbology)	Grph	Sym	$\otimes$
UT-DI- SEWER-P	DRAINGE INLET SEWER (Lvl = ut_SEWER-P / Co = 6 / Wt = 1)	Grph	Sym	
UT-DI- SEWER-X	DRAINGE INLET SEWER (Lvl = ut_SEWER-X / Co = 6 / Wt = 1)	Grph	Sym	
UT-DI- STORMD-P	DRAINAGE INLET STORMDRAIN (Lvl = ut_STORMD-P / Co = 1 / Wt = 1)	Grph	Sym	
UT-DI- STORMD-X	DRAINAGE INLET STORMDRAIN (Lvl = ut_STORMD-X / Co = 1 / Wt = 1)	Grph	Sym	
UT-ECCTV	CLOSED CIRCUIT TV CAMERA (Active Symbology)	Grph	Sym	[_]<]

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-EDLPA5	LOOP DETECTOR (Active Symbology)	Grph	Sym	[_]
UT- ELECTROLI ER	ELECTROLIER (Active Symbology)	Grph	Sym	¥
UT-FH- WATER-P	FIRE HYDRANT WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	+0+
UT-FH- WATER-X	FIRE HYDRANT WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	+0+
UT- FIREHYDR ANT	FIRE HYDRANT (Active Symbology)	Grph	Sym	+0+
UT-GEN- UTFEATURE	GENERAL UTILITY FEATURE POINT (LvI = ut_VARIOUS-POINT- FEATURES / Co = 15 / Wt = 1)	Grph	Sym	$\otimes$
UT-GUY	GUY ANCHOR (Active Symbology)	Grph	Sym	$\left( \right)$
UT- HOSEBIB	HOSEBIB (Active Symbology)	Grph	Sym	ю
UT-ITS	INTELLIGENT TRANSPORTATION SYSTEM (Lvl = ut_ITS-X / Co = 3 / Wt = 0,1)	Grph	Sym	ITS
UT-LAMP- POST	LAMP POST (Active Symbology)	Grph	Sym	<
UT- LIGHTING	GENERAL LIGHTING (Active Symbology)	Grph	Sym	<
UT-LP- ELECT-OH- P	LAMP POST ELECTRIC OH (Lvl = ut_ELECT-OH-P / Co = 3 / Wt = 1)	Grph	Sym	$\alpha$
UT-LP- ELECT-OH- X	LAMP POST ELECTRIC OH (Lvl = ut_ELECT-OH-X / Co = 3 / Wt = 1)	Grph	Sym	$\mathcal{C}$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-LP- ELECT-P	LAMP POST ELECTRIC UG (Lvl = ut_ELECT-P / Co = 3 / Wt = 1)	Grph	Sym	$\sim$
UT-LP- ELECT-X	LAMP POST ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	$\sim$
UT- MAILBOX	MAILBOX (Active Symbology)	Grph	Sym	
UT- MARKER	UTILITY MARKER ( <i>Active Symbology</i> )	Grph	Sym	$\diamond$
UT-METER- ELECT-OH- P	METER ELECTRIC OH (Lvl = ut_ELECT-OH-P / Co = 3 / Wt = 1)	Grph	Sym	
UT-METER- ELECT-OH- X	METER ELECTRIC OH (Lvl = ut_ELECT-OH-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-METER- ELECT-P	METER ELECTRIC UG (Lvl = ut_ELECT-P / Co = 3 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-METER- ELECT-X	METER ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-METER- GAS-P	METER GASOLINE (Lvl = ut_GAS-P / Co = 7 / Wt = 1)	Grph	Sym	
UT-METER- GAS-X	METER GASOLINE (Lvl = ut_GAS-X / Co = 7 / Wt = 1)	Grph	Sym	
UT-METER- NATGAS-P	METER NATURAL GAS (Lvl = ut_NATGAS-P / Co = 2 / Wt = 1)	Grph	Sym	
UT-METER- NATGAS-X	METER NATURAL GAS (Lvl = ut_NATGAS-X / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-METER- WATER-P	METER WATER (Lvl = ut_WATER-P / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-METER- WATER-X	METER WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	
UT-METER- X	METER ( <i>Active Symbology</i> )	Grph	Sym	
UT-MH- ELECT-P	MANHOLE ELECTRIC (Lvl = ut_ELECT-P / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym	
UT-MH- ELECT-X	MANHOLE ELECTRIC (Lvl = ut_ELECT-X / Co = 3,250 / Wt = 1) (Masking)	Grph	Sym	(°) (°)
UT-MH- FIBEROPT- P	MANHOLE FIBER OPTIC (LvI = ut_FIBEROPT-P / Co = 5,250 / Wt = 1) (Masking)	Grph	Sym	(°) (°)
UT-MH- FIBEROPT- X	MANHOLE FIBER OPTIC (LvI = ut_FIBEROPT-X / Co = 5,250 / Wt = 1) (Masking)	Grph	Sym	(°) (°)
UT-MH- GAS-P	MANHOLE GASOLINE (Lvl = ut_GAS-P / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	00
UT-MH- GAS-X	MANHOLE GASOLINE (Lvl = ut_GAS-X / Co = 7,250 / Wt = 1) (Masking)	Grph	Sym	©
UT-MH- JOINT-P	MANHOLE JOINT TRENCH (Lvl = ut_JOINT-TRENCH-P / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	(°) (°)
UT-MH- JOINT-X	MANHOLE JOINT TRENCH (Lvl = ut_JOINT-TRENCH-X / Co = 0,250 / Wt = 1) (Masking)	Grph	Sym	00
UT-MH- NATGAS-P	MANHOLE NATURAL GAS (LvI = ut_NATGAS-P / Co = 2,250 / Wt = 1) (Masking)	Grph	Sym	(°) (°)
UT-MH- NATGAS-X	MANHOLE NATURAL GAS (LvI = ut_NATGAS-X / Co = 2,250 / Wt = 1) (Masking)	Grph	Sym	00
CTCELLIB Cell Library Named Levels				
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Coll Nome	Cell Description	Cell	Cell	Coll Image
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Inlage
	MANHOLE OIL			Ó
	(Lvl = ut OIL-P / Co = 7,250 / Wt = 1)	Grph	Sym	( 。 。)
P	(Masking)		,	$\bigcirc$
	MANHOLE OIL			(
UI-MH-OIL-	(LvI = ut OIL-X / Co = 7.250 / Wt = 1)	Grph	Svm	(
X	(Masking)	- I	- <b>,</b>	
	MANHOLE RECYCLED WATER			
UI-MH-	(Lvl = ut_RCWATER-P /		-	Ô
RCWATER-	$C_0 = 9.250 / Wt = 1$	Grph	Sym	(°°)
P	(Masking)			$\sim$
	MANHOLE RECYCLED WATER			
UT-MH-	( v  = ut RCWATER-X /			Ô
RCWATER-	$C_0 = 9250 / Wt = 1$	Grph	Sym	(• •)
X	(Masking)			$\sim$
	MANHOLE SEWER			
UT-MH-	(Lvl = ut SEWER-P /		-	Ô
SEWER-P	$C_0 = 6.250 / W_t = 1$	Grph	Sym	(°°)
02112111	(Masking)			$\sim$
	MANHOLE SEWER			
UT-MH-	(Lvl = ut SEWER-X /		•	°
SEWER-X	$C_0 = 6.250 / W_t = 1$	Grph	Sym	(°°)
	(Masking)			$\bigcirc$
	MANHOLE STEAM			
UT-MH-	(LvI = ut STEAM-P /		0	Ô
STEAM-P	Co = 8,250 / Wt = 1)	Grph	Sym	(••)
	(Masking)			$\bigcirc$
	MANHOLE STEAM			
UT-MH-	(LvI = ut STEAM-X /		0	Ô
STEAM-X	Co = 8,250 / Wt = 1)	Grpn	Sym	( )
	(Masking)			
	MANHOLE STORMDRAIN			_
UT-MH-	(Lvl = ut STORMD-P /	Create	C	Ô
STORMD-P	Co = 1,250 / Wt = 1)	Grpn	Sym	$( \circ )$
	(Masking)			)
	MANHOLE STORMDRAIN			_
UT-MH-	(Lvl = ut_STORMD-X /	Crah	Sum.	Ô
STORMD-X	Co = 1,250 / Wt = 1)	Gipn	Sym	(° )
	(Masking)			•
	MANHOLE TELECOMMUNICATION			
	(LvI = ut_TELECOM-P /	Grah	Sum	Ô
	Co = 5,250 / Wt = 1)	Gipii	Sym	( )
۲	(Masking)			

CTCELLIB Cell Library Named Levels				
Coll Nomo	Cell Description	Cell	Cell	Collimago
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Image
	MANHOLE TELECOMMUNICATION			-
	(LvI = ut_TELECOM-X /	Grob	Sum	(°)
Y	Co = 5,250 / Wt = 1)	Gipii	Sym	$\bigcirc$
~	(Masking)			—
	MANHOLE TELECOMMUNICATION			~
UT-MH-	(Lvl = ut_TELEPH-P /	Grnh	Svm	$(\circ)$
TELEPH-P	Co = 5,250 / Wt = 1)	Gipii	Sym	$\bigcirc$
	(Masking)			
	MANHOLE TELECOMMUNICATION			~
UT-MH-	(Lvl = ut_TELEPH-X /	Grnh	Sym	$(\circ)$
TELEPH-X	Co = 5,250 / Wt = 1)	Gipii	Sym	· · ·
	(Masking)			
	MANHOLE TELEPHONE			
	(Lvl = ut_TV-P / Co = 5,250 / Wt = 1)	Grph	Sym	(°°)
F	(Masking)			$\bigcirc$
	MANHOLE TELEPHONE			$\bigcirc$
	(Lvl = ut TV-P / Co = 5,250 / Wt = 1)	Grph	Sym	(
X	(Masking)	•	,	$\bigcirc$
	MANHOLE WATER			
UT-MH-	(Lvl = ut WATER-P /	0	0	Ô
WATER-P	Co = 1,250 / Wt = 1)	Grpn	Sym	$( \circ )$
	(Masking)			<u> </u>
	MANHOLE WATER			_
UT-MH-	(Lvl = ut_WATER-X /	Crnh	Sum.	Ô
WATER-X	Co = 1,250 / Wt = 1)	Gipn	Sym	69
	(Masking)			<u> </u>
UT-MH-X	(Active Symbology)	Grph	Sym	( • • )
	(Active Symbology)			$\bigcirc$
UT-				
OHUTILITY	(Active Symbology)	Grph	Sym	- HKI
FACILITY	(Active Symbology)			
		Grnh	Sym	
METED	$C_0 = 10 / W_t = 1$	Gipii	Sym	
	CO = 10 / Wt = 1)			
UT-PB-	PULL BOX ELECTRIC OH			
ELECT-OH-	(Lvl = ut_ELECT-OH-P /	Grph	Sym	
P	Co = 3 / Wt = 1)			۳
UT-PB-	PULL BOX ELECTRIC OH			
ELECT-OH-	(Lvl = ut_ELECT-OH-X /	Grph	Sym	
X	Co = 3 / Wt = 1)	-		۲

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-PB- ELECT-P	PULL BOX ELECTRIC UG (Lvl = ut_ELECT-P / Co = 3 / Wt = 1)	Grph	Sym	
UT-PB- ELECT-X	PULL BOX ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	E L
UT-PB- FIBEROPT- OH-P	PULL BOX FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- FIBEROPT- OH-X	PULL BOX FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- FIBEROPT- P	PULL BOX FIBER OPTIC UG (Lvl = ut_FIBEROPT-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- FIBEROPT- X	PULL BOX FIBER OPTIC UG (Lvl = ut_FIBEROPT-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- JOINT-OH- P	PULL BOX JOINT UTILITIES OH (LvI = ut_JOINT-OH-P / Co = 0 / Wt = 1)	Grph	Sym	
UT-PB- JOINT-OH- X	PULL BOX JOINT UTILITIES OH (LvI = ut_JOINT-OH-X / Co = 0 / Wt = 1)	Grph	Sym	
UT-PB- JOINT-P	PULL BOX JOINT TRENCH UG (Lvl = ut_JOINT-TRENCH-P / Co = 0 / Wt = 1)	Grph	Sym	
UT-PB- JOINT-X	PULL BOX JOINT TRENCH UG (Lvl = ut_JOINT-TRENCH-X / Co = 0 / Wt = 1)	Grph	Sym	
UT-PB- TELECOM- OH-P	PULL BOX TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELECOM- OH-X	PULL BOX TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELECOM- P	PULL BOX TELECOMMUNICATION UG (Lvl = ut_TELECOM-P / Co = 5 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-PB- TELECOM- X	PULL BOX TELECOMMUNICATION UG (Lvl = ut_TELECOM-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELEPH- OH-P	PULL BOX TELEPHONE OH (Lvl = ut_TELEPH-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELEPH- OH-X	PULL BOX TELEPHONE OH (Lvl = ut_TELEPH-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELEPH-P	PULL BOX TELEPHONE UG (Lvl = ut_TELEPH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- TELEPH-X	PULL BOX TELEPHONE UG (Lvl = ut_TELEPH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB-TV- OH-P	PULL BOX TELEVISION OH (Lvl = ut_TV-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB-TV- OH-X	PULL BOX TELEVISION OH (Lvl = ut_TV-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB-TV-P	PULL BOX TELEVISION UG (Lvl = ut_TV-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB-TV-X	PULL BOX TELEVISION UG (Lvl = ut_TV-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PB- WATER-P	PULL BOX WATER (Lvl = ut_WATER-P / Co = 1 / Wt = 1)	Grph	Sym	
UT-PB- WATER-X	PULL BOX WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	
UT-PB-X	PULL BOX (Active Symbology)	Grph	Sym	
UT-PED- ELECT-OH- P	PEDESTAL ELECTRIC OH (LvI = ut_ELECT-OH-P / Co = 3 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-PED- ELECT-OH- X	PEDESTAL ELECTRIC OH (Lvl = ut_ELECT-OH-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-PED- ELECT-P	PEDESTAL ELECTRIC UG (Lvl = ut_ELECT-P / Co = 3 / Wt = 1)	Grph	Sym	
UT-PED- ELECT-X	PEDESTAL ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-PED- FIBEROPT- OH-P	PEDESTAL FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- FIBEROPT- OH-X	PEDESTAL FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- FIBEROPT- P	PEDESTAL FIBER OPTIC UG (Lvl = ut_FIBEROPT-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- FIBEROPT- X	PEDESTAL FIBER OPTIC UG (Lvl = ut_FIBEROPT-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- JOINT-OH- P	PEDESTAL JOINT UTILITIES OH (Lvl = ut_JOINT-OH-P / Co = 0 / Wt = 1)	Grph	Sym	
UT-PED- JOINT-OH- X	PEDESTAL JOINT UTILITIES OH (Lvl = ut_JOINT-OH-X / Co = 0 / Wt = 1)	Grph	Sym	
UT-PED- JOINT-P	PEDESTAL JOINT TRENCH UG (Lvl = ut_JOINT-TRENCH-P / Co = 0 / Wt = 1)	Grph	Sym	
UT-PED- JOINT-X	PEDESTAL JOINT TRENCH UG (Lvl = ut_JOINT-TRENCH-X / Co = 0 / Wt = 1)	Grph	Sym	
UT-PED- TELECOM- OH-P	PEDESTAL TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELECOM- OH-X	PEDESTAL TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-X / Co = 5 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illiage
UT-PED- TELECOM- P	PEDESTAL TELECOMMUNICATION UG (Lvl = ut_TELECOM-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELECOM- X	PEDESTAL TELECOMMUNICATION UG (Lvl = ut_TELECOM-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELEPH- OH-P	PEDESTAL TELEPHONE OH (Lvl = ut_TELEPH-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELEPH- OH-X	PEDESTAL TELEPHONE OH (Lvl = ut_TELEPH-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELEPH-P	PEDESTAL TELEPHONE UG (Lvl = ut_TELEPH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED- TELEPH-X	PEDESTAL TELEPHONE UG (Lvl = ut_TELEPH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED-TV- OH-P	PEDESTAL TELEVISION OH (Lvl = ut_TV-OH-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED-TV- OH-X	PEDESTAL TELEVISION OH (Lvl = ut_TV-OH-X / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED-TV- P	PEDESTAL TELEVISION UG (Lvl = ut_TV-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED-TV- X	PEDESTAL TELEVISION UG (Lvl = ut_TV-P / Co = 5 / Wt = 1)	Grph	Sym	
UT-PED-X	PEDESTAL (Active Symbology)	Grph	Sym	
UT- PEDESTRIA N-BUTTON	EXIST PEDESTRIAN BUTTON (Lvl = ut_VARIOUS-POINT- FEATURES / Co = 11 / Wt = 1)	Grph	Sym	$\bigcirc$
UT- PEDESTRIA	EXIST PEDESTRIAN BUTTON POLE (Lvl = ut_VARIOUS-POINT-	Grph	Sym	$\langle \rangle$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
N-BUTTON- POLE	FEATURES / Co = 11 / Wt = 1)			
UT- PEDESTRIA N-BUTTON- SIGNAL	EXIST PEDESTRIAN SINGLE FACE (Lvl = ut_VARIOUS-POINT- FEATURES / Co = 11 / Wt = 1)	Grph	Sym	
UT-POLE	POLE WITHOUT WIRE (Active Symbology)	Grph	Sym	
UT-POLE- WIRE	POLE WITH WIRE (Active Symbology)	Grph	Sym	-@-
UT-POS- LOC	POSITIVE LOCATION MISCELLANEOUS ITEMS (Lvl = ut_TEST-HOLE / Co = 4 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- ELECT-X	POSITIVE LOCATION ELECTRICAL (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- FIBEROPT- X	POSITIVE LOCATION FIBER OPTIC (Lvl = ut_FIBEROPT-X / Co = 5 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC-GAS-X	POSITIVE LOCATION GASOLINE (Lvl = ut_GAS-X / Co = 7 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC-IRR-X	POSITIVE LOCATION IRRIGATION (Lvl = ut_IRR-C-X / Co = 0 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC-JOINT- X	POSITIVE LOCATION JOINT TRENCH (Lvl = ut_JOINT-TRENCH-X / Co = 0 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- NATGAS-X	POSITIVE LOCATION NATURAL GAS (Lvl = ut_NATGAS-X / Co = 2 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC-OIL-X	POSITIVE LOCATION NATURAL OIL (Lvl = ut_OIL-X / Co = 7 / Wt = 1)	Grph	Sym	$\bigotimes$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description	Cell	Cell	Cell Image
UT-POS- LOC- RCWATER- X	POSITIVE LOCATION RECYCLED WATER (Lvl = ut_RCWATER-X / Co = 9 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- SEWER-X	POSITIVE LOCATION SEWER (Lvl = ut_SEWER-X / Co = 6 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- STEAM-X	POSITIVE LOCATION STEAM (Lvl = ut_STEAM-X / Co = 8 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- STORMD-X	POSITIVE LOCATION STORM DRAIN (Lvl = ut_STORMD-X / Co = 1 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- TELECOM- X	POSITIVE LOCATION TELECOMMUNICATION (Lvl = ut_TELECOM-X / Co = 5 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- TELEPH-X	POSITIVE LOCATION TELEPHONE (Lvl = ut_TELEPH-X / Co = 5 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- TRFCNTRL- X	POSITIVE LOCATION TRAFFIC CONTROL (Lvl = ut_TRAFFIC-CONTROL-X / Co = 3 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC-TV-X	POSITIVE LOCATION TELEVISION (Lvl = ut_TV-X / Co = 5 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- LOC- WATER-X	POSITIVE LOCATION WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	$\bigotimes$
UT-POS- ELECT-OH- P	POWER POLE ELECTRIC OH (Lvl = ut_ELECT-OH-P / Co = 3 / Wt = 0)	Grph	Sym	-@-
UT-POS- ELECT-OH- X	POWER POLE ELECTRIC OH (Lvl = ut_ELECT-OH-X / Co = 3 / Wt = 0)	Grph	Sym	-@-
UT-PP- FIBEROPT- OH-P	POWER POLE FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-P / Co = 5 / Wt = 0)	Grph	Sym	-@-

	CTCELLIB Cell Library Name	d Levels	6	
Cell Name	Cell Description	Cell	Cell	Cell Image
Cell Name	(Symbology: Lvl / Co / Wt)	Туре	Use	Cell Illage
UT-PP-	POWER POLE FIBER OPTIC OH			
FIBEROPT-	(Lvl = ut_FIBEROPT-OH-X /	Grph	Sym	
OH-X	Co = 5 / Wt = 0)			>
UT-PP-	POWER POLE JOINT UTILITIES			
JOINT-OH-	OH (Lvl = ut_JOINT-OH-P /	Grph	Sym	(@)
Р	Co = 0 / Wt = 1)			)
UT-PP-	POWER POLE JOINT UTILITIES			
JOINT-OH-	OH (Lvl = ut_JOINT-OH-X /	Grph	Sym	(@)
Х	Co = 0 / Wt = 1)			)
	POWER POLE			
	TELECOMMUNICATION OH	Grnh	Svm	
	(LvI = ut_TELECOM-OH-P /	Olbii	Oyin	
	Co = 5 / Wt = 1)			
UT-PP-	POWER POLE			_
TELECOM-	TELECOMMUNICATION OH	Grph	Svm	
OH-X	(LvI = ut_IELECOM-OH-X /	<b>C</b> .P	- j	
	Co = 5 / Wt = 1)			
UT-PP-	POWER POLE TELEPHONE OH	<b>•</b> •	~	
IELEPH-	$(LvI = ut_IELEPH-OH-P / C_{I})$	Grph	Sym	
OH-P	Co = 5 / VVt = 0			
	POWER POLE TELEPHONE OH		0	
IELEPH-	$(LvI = ut_IELEPH-OH-X / OH-X / OH-X$	Grph	Sym	
OH-X	Co = 5 / VVt = 0)			
UT-PP-TV-	POWER POLE TELEVISION OH	O h	0	a
OH-P	(Lvl = ut_TV-OH-P / Co = 5 / Wt = 0)	Grpn	Sym	
UT-PP-TV-	POWER POLE TELEVISION OH	Croh	C) (m)	
OH-X	(Lvl = ut_TV-OH-X / Co = 5 / Wt = 0)	Gipn	Sym	
		Grob	Sum	
	( y  = ut DEFAULT / Co = 1 / W/t = 1)	Gipii	Sym	
		Grob	Sum	$\bigcap$
	$(I_{V}I - u_{t}) = 0$	Gipii	Sym	$\bigcirc$
		Grob	Sum	
	$ V  = \mu t \text{ DFFALUET} ( V  = \mu t \text{ DFFALUET} / Co = 4 / Wt = 1)$	Gipii	Sym	
		Grnh	Svm	$+ \frown +$
FH	(Lv] = ut DEFAULT / Co = 4 / Wt = 1)	Cipii	Cynn	

	CTCELLIB Cell Library Name	d Levels	S	
Cell Name	Cell Description	Cell	Cell	Cell Image
	(Symbology: Lvl / Co / Wt)	Туре	Use	oen mage
UT-	METER FOR BENTLEY MAP USE	_	_	<b>A</b>
PREVIEW-	ONLY	Grph	Sym	
METER	(Lvl = ut_DEFAUL1 / Co = 4 / Wt = 1)			9
UT-	MANHOLE FOR BENTLEY MAP	_	-	
PREVIEW-	USE ONLY	Grph	Sym	(••)
MH	$(LvI = ut_DEFAULI / Co = 4 / Wt = 1)$			<u> </u>
UT-	PULL BOX FOR BENTLEY MAP USE	<u> </u>		
PREVIEW-		Grph	Sym	
PB	$(LVI = ut_DEFAULI / Co = 4 / VVI = 1)$			
UT-	PEDESTAL FOR BENTLEY MAP			
PREVIEW-	USE ONLY	Grph	Sym	
PED	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			
UT-	LAMP POST FOR BENTLEY MAP			
PREVIEW-	USE ONLY	Grph	Sym	
LP	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)	-	-	
UT-	POSITIVE LOCATION FOR			$\times$
PREVIEW-	BENTLEY MAP USE ONLY	Grph	Sym	$(\times)$
POS-LOC	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)		-	
UT-	POWER POLE FOR BENTLEY MAP			
PREVIEW-	USE ONLY	Grph	Sym	(@)
PP	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			
UT-	TRANS TOWER FOR BENTLEY MAP			
PREVIEW-	USE ONLY	Grph	Sym	
TRAN	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			
UT-	VALVE FOR BENTLEY MAP USE			$\wedge$
PREVIEW-	ONLY	Grph	Sym	
VALVE	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			
UT-	VENT FOR BENTLEY MAP USE			
PREVIEW-	ONLY	Grph	Sym	$(\mathcal{A})$
VENT	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			)
UT-	VAULT FOR BENTLEY MAP USE			
PREVIEW-	ONLY	Grph	Sym	
VLT	(Lvl = ut_DEFAULT / Co = 4 / Wt = 1)			
	DIIMD			
UT-PUMP	(Active Symbology)	Grph	Sym	
UT-RR-	RAIL ROAD SIGNAL		_	$\sim$
SIGNAL	(Active Symbology)	Grph	Sym	
	(, louve cymbology)			

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-SPR	SPRINKLER (Lvl = ut_IRR-C-X / Co = 1 / Wt = 1)	Grph	Sym	$\bigcirc$
UT- STANDPIPE	STANDPIPE (Active Symbology)	Grph	Sym	O SP
UT-TANK	TANK (Active Symbology)	Grph	Sym	$(\overline{})$
UT- TELEPHON E	PUBLIC TELEPHONE (Active Symbology)	Grph	Sym	$\diamond$
UT- TRAFFIC- SIGNAL	TRAFFIC SIGNAL (Active Symbology)	Grph	Sym	Ц¥
UT-TRAN- ELECT-OH- P	TRAN TOWER ELECTRIC OH (Lvl = ut_ELECT-OH-P / Co = 3 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- ELECT-OH- X	TRAN TOWER ELECTRIC OH (Lvl = ut_ELECT-OH-X / Co = 3 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- FIBEROPT- OH-P	TRAN TOWER FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-P / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- FIBEROPT- OH-X	TRAN TOWER FIBER OPTIC OH (Lvl = ut_FIBEROPT-OH-X / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- JOINT-OH- P	TRAN TOWER JOINT UTILITIES OH (Lvl = ut_JOINT-OH-P / Co = 0 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- JOINT-OH- X	TRAN TOWER JOINT UTILITIES OH (Lvl = ut_JOINT-OH-X / Co = 0 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- TELECOM- OH-P	TRAN TOWER TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-P / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- TELECOM- OH-X	TRAN TOWER TELECOMMUNICATION OH (Lvl = ut_TELECOM-OH-X / Co = 5 / Wt = 1)	Grph	Sym	$\square$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-TRAN- TELEPH- OH-P	TRAN TOWER TELEPHONE OH (Lvl = ut_TELEPH-OH-P / Co = 5 / Wt = 1)	Grph	Sym	$\mathbf{X}$
UT-TRAN- TELEPH- OH-X	TRAN TOWER TELEPHONE OH (Lvl = ut_TELEPH-OH-X / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- TV-OH-P	TRAN TOWER TELEVISION OH (Lvl = ut_TV-OH-P / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN- TV-OH-X	TRAN TOWER TELEVISION OH (Lvl = ut_TV-OH-X / Co = 5 / Wt = 1)	Grph	Sym	$\square$
UT-TRAN-X	TRAN TOWER ( <i>Active Symbology</i> )	Grph	Sym	$\boxtimes$
UT-VALVE- AIR-X	AIR VALVE (Lvl = ut_VARIOUS-POINT- FEATURES / Co = 9 / Wt = 1)	Grph	Sym	
UT-VALVE- IRR-X	VALVE IRRIGATION (Lvl = ut_IRR-C-X / Co = 0 / Wt = 1)	Grph	Sym	$\bigtriangleup$
UT-VALVE- NATGAS-P	VALVE NATURAL GAS (Lvl = ut_NATGAS-P / Co = 2 / Wt = 1)	Grph	Sym	$\bigtriangleup$
UT-VALVE- NATGAS-X	VALVE NATURAL GAS (Lvl = ut_NATGAS-X / Co = 2 / Wt = 1)	Grph	Sym	
UT-VALVE- WATER-P	VALVE WATER (Lvl = ut_WATER-P / Co = 1 / Wt = 1)	Grph	Sym	
UT-VALVE- WATER-X	VALVE WATER (Lvl = ut_WATER-X / Co = 1 / Wt = 1)	Grph	Sym	$\sum$
UT-VALVE- X	VALVE (Active Symbology)	Grph	Sym	$\square$
UT-VENT- DRAINAGE- P	VENT DRAINAGE FACILITY (LvI = ut_VARIOUS-POINT- FEATURES / Co = 8 / Wt = 1)	Grph	Sym	$\bigcirc$

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-VENT- DRAINAGE- X	VENT DRAINAGE FACILITY (Lvl = ut_VARIOUS-POINT- FEATURES / Co = 8 / Wt = 1)	Grph	Sym	$\oplus$
UT-VENT- GAS-P	VENT GASOLINE (Lvl = ut_GAS-P / Co = 7 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- GAS-X	VENT GASOLINE (Lvl = ut_GAS-X / Co = 7 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- NATGAS-P	VENT NATURAL GAS (Lvl = ut_NATGAS-P / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- NATGAS-X	VENT NATURAL GAS (Lvl = ut_NATGAS-X / Co = 2 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- SEWER-P	VENT SEWER (Lvl = ut_SEWER-P / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- SEWER-X	VENT SEWER (Lvl = ut_SEWER-X / Co = 6 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- STEAM-P	VENT STEAM (Lvl = ut_STEAM-P / Co = 8 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT- STEAM-X	VENT STEAM (Lvl = ut_STEAM-X / Co = 8 / Wt = 1)	Grph	Sym	$\bigcirc$
UT-VENT-X	VENT (Active Symbology)	Grph	Sym	$\bigcirc$
UT-VLT- ELECT-P	VAULT ELECTRIC (Lvl = ut_ELECT-P / Co = 3 / Wt = 1)	Grph	Sym	
UT-VLT- ELECT-X	VAULT ELECTRIC UG (Lvl = ut_ELECT-X / Co = 3 / Wt = 1)	Grph	Sym	
UT-VLT- JOINT-P	VAULT JOINT TRENCH (Lvl = ut_JOINT-TRENCH-P / Co = 0 / Wt = 1)	Grph	Sym	

CTCELLIB Cell Library Named Levels				
Cell Name	Cell Description (Symbology: Lvl / Co / Wt)	Cell Type	Cell Use	Cell Image
UT-VLT- JOINT-X	VAULT JOINT TRENCH UG (Active Symbology)	Grph	Sym	
UT-VLT-X	VAULT (Active Symbology)	Grph	Sym	
UT-WELL	WELL (Active Symbology)	Grph	Sym	0 WELL
UT-WIRE	FOR TRANSMISSION TOWER (Active Symbology)	Grph	Line Pattern	

	STRUCTURE	ES		
Name	Cell Description (symbology)	Cell Type	Type of Use	Image
111-E	Cell Library Info	Graphic	Info	STRUCTURES CELL LIBRARY (U.S. Customary Units) LAST REVISION DATE: 09-12
1BAR-E	BAR REINF ORIG TOP (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
2BAR-E	BAR REINF ORIG RT TOP (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
3BAR-E	BAR REINF ORIG RT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
4BAR-E	BAR REINF ORIG BOT RT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
5BAR-E	BAR REINF ORIG BOT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
6BAR-E	BAR REINF ORIG BOT LT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
7BAR-E	BAR REINF ORIG LT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$
8BAR-E	BAR REINF ORIG TOP LT (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	
9BAR-E	BAR REINF ORIG CTR (Level=3, Color=13, Wt=0,3,5)	Graphic	Symbol	$\bigcirc$

ABUTMENT ELEVATION-E	ABUTMENT ELEVATION TITLE	Graphic	Title	ABUTMENT ELEVATION
ABUTMENT FOOTING-E	ABUTMENT FOOTING TITLE	Graphic	Title	ABUTMENT FOOTING
ABUTMENT PLAN-E	ABUTMENT PLAN TITLE	Graphic	Title	ABUTMENT PLAN 1" -
ABUTMENT SECTION-E	ABUTMENT SECTION TITLE	Graphic	Title	ABUTMENT SECTION -
ALT_JT-E	ALT. DECK CONST. JOINT	Graphic	Note	AT THE ATT OF THE ATT
ASBLT-E	AS-BUILT CORRECTIONS	Graphic	Sheet	
ASDES-E	AS-BUILTS NOT RECOVERABLE	Graphic	Sheet	
ATSYM-E	AT SYMBOL	Graphic	Symbol	
B05NTE-E	B05 DECK REINF NOTE	Graphic	Note	·*
BAR25L-E	BARRIER TYPE 25 LT	Graphic	Symbol	
BAR25R-E	BARRIER TYPE 25 RT	Graphic	Symbol	$\square$

BAR26L-E	BARRIER TYPE 26 LT	Graphic	Symbol	ſ
BAR26R-E	BARRIER TYPE 26 RT	Graphic	Symbol	,ſ
BAR27L-E	BARRIER TYPE 27 LT	Graphic	Symbol	
BAR27R-E	BARRIER TYPE 27 RT	Graphic	Symbol	$\square$
BAR28L-E	BARRIER TYPE 28 LT	Graphic	Symbol	
BAR28R-E	BARRIER TYPE 28 RT	Graphic	Symbol	7
BAR32L-E	BARRIER TYPE 732 LT	Graphic	Symbol	
BAR32R-E	BARRIER TYPE 732 RT	Graphic	Symbol	
BAR36L-E	BARRIER TYPE 736 LT	Graphic	Symbol	7
BAR36R-E	BARRIER TYPE 736 RT	Graphic	Symbol	
BAR_50-E	BARRIER TYPE 50	Graphic	Symbol	$\square$

BAR_60-E	BARRIER TYPE 60	Graphic	Symbol	
BAR_SP-E	BAR SPIRAL SPLICE DET	Graphic	Note	
BAR_TK-E	TEMP RAILING TYPE K	Graphic	Symbol	$\bigwedge$
BATCH-E	BATCH PLOT POINTS	Graphic	Symbol	
BENT CAP ELEVATION-E	BENT CAP ELEVATION TITLE	Graphic	Title	BENT CAP ELEVATION
BENT CAP SECTION-E	BENT CAP SECTION TITLE	Graphic	Title	BENT CAP SECTION -
BENT ELEVATION-E	BENT ELEVATION TITLE	Graphic	Title	BENT ELEVATION
BENT PLAN-E	BENT PLAN TITLE	Graphic	Title	BENT PLAN 1" =
BNTSDF-E	BENT STIRRUP DATA FIELD	Graphic	Note	# []] stirrups except as noted
BNTSTE-E	BENT STIRRUP TEXT EDIT	Graphic	Note	*? []] stirrups except as noted
BOLT-E	HEX HEAD BOLT 10MM	Graphic	Symbol	₩ ●

BORDER SHAPE-E	BORDER SHAPE	Graphic	Area	
BREAK-E	BREAK INDICATION SYM	Point	Symbol	, ,
BRG_PD-E	BEARING PAD DETAIL	Graphic	Detail	
CABLE-E	CABLE END ANCHORAGE 2 18 99	Graphic	Detail	
CCO-E	CONTRACT CHANGE ORDER	Graphic	Table	
CHECK-E	CHECK PRINT BY	Graphic	Sheet	CHECK PRINT BY:
COLUMN ELEVATION-E	COLUMN ELEVATION TITLE	Graphic	Title	COLUMN ELEVATION
COLUMN SECTION-E	COLUMN SECTION TITLE	Graphic	Title	<u>COLUMN SECTION -</u>
CONC-E	STRENGTH TYPE LIMITS	Graphic	Sheet	
CONT-E	DECK CONTOURS LABEL	Graphic	Sheet	
CTRLND-E	CENTERLINE DATA FIELD	Graphic	Note	¢

CTRLNE-E	CENTERLINE SYMBOL	Graphic	Symbol	Ę_
CTRLNT-E	CENTERLINE TEXT EDIT	Graphic	Symbol	€ Abut
CURVE DATA-E	CURVE DATA TITLE	Graphic	Title	<u>CURVE DATA</u>
DECK CONTOURS-E	DECK CONTOURS TITLE	Graphic	Title	DECK_CONTOURS 1" =
DELTA-E	DELTA SYMBOL	Graphic	Symbol	
DELTAD-E	DELTA SYM DATA FIELD	Graphic	Note	∆ =°′"
DETAIL-E	DETAIL TITLE	Graphic	Title	<u>DETAIL</u> 1" =
DIA-E	DIAMETER SYMBOL	Graphic	Symbol	Ø
DIAMOND-E	DIAMOND SYMBOL	Graphic	Symbol	$\Diamond$
DISCLM-E	DISCLAIM ELECT COPY	Graphic	Note	The first of destroying of the other of the second se
ELEVATION-E	ELEVATION TITLE	Graphic	Title	ELEVATION 1" =

END DIAPHRAGM-E	END DIAPHRAGM TITLE	Graphic	Title	END DIAPHRAGM 1" =
FALSWK-E	FALSEWORK REL NOTE	Graphic	Note	
FLOW-E	ARROW FOR WATER	Graphic	Symbol	$\sim$
FOOTING PLAN-E	FOOTING PLAN TITLE	Graphic	Title	FOOTING PLAN 1" =
FOOTING SECTION-E	FOOTING SECTION TITLE	Graphic	Title	FOOTING SECTION
FOUR SCALE-E	4 SCALE SHAPE	Graphic	Symbol	
GENERAL NOTES-E	GENERAL NOTES (3 TYPES)	Graphic	Note	
GIRDER ELEVATION-E	GIRDER ELEVATION TITLE	Graphic	Title	<u>GIRDER ELEVATION</u> 1" -
GIRDER LAYOUT-E	GIRDER LAYOUT TITLE	Graphic	Title	<u>GIRDER LAYOUT</u> 1" =
GIRFL-E	GIRDER FLARE NOTE	Graphic	Note	MYE. ∕⊂ Industra giraer atas vieth is sililinatora
GIRSEC-E	PART GIRDER SECTION	Graphic	Detail	

GP_EST-E	GP ESTIMATE DATA	Graphic	Table	MATE OF SETIMATE
GRAVEL-E	GRAVEL SYM PATTERN	Graphic	Symbol	
HOR and VERT-E	HORIZONTAL VERTICAL SCALES	Graphic	Symbol	1" = Horizontal 1" = Vertical
INCOMPLETE PLANS-E	FOR INCOMPLETE PLANS	Graphic	Symbol	INCOMPLETE PLAN FOR DESIGN STUDY PRINTED DATE: 28-AUG-2012 ortis of Structure Design STATE OF CALIFORNIA
INDEX TO PLANS-E	INDEX TO PLANS TITLE	Graphic	Symbol	INDEX TO PLANS
JOINT-E	JOINT PROTECTION DET	Graphic	Detail	
LEGEND-E	LEGEND TITLE	Graphic	Title	<u>LEGEND</u>
LIMITS OF EXCAV AND BACKFILL-E	LIMITS OF EXCAV AND BACKFILL TITLE	Graphic	Title	Lanta of Dicempton and Bacapal.
MAT_L-E	MAT L HAUL EQUIP LOAD	Graphic	Sheet	
MICRO-E	MICROMETER SYMBOL	Graphic	Symbol	ДШ
NEW SHAPE-E	NEW BORDER SHAPE	Graphic	Area	

NO ASBLT COR-E	NO AS-BUILT CORRECTIONS	Graphic	Note	
NORTHR-E	NORTH ARROW RDWY	Graphic	Symbol	<b>★⊕</b> ►
NORTHS-E	NORTH ARROW STRUCT	Graphic	Symbol	
NOTE FOR REINF-E	NOTE REINFORCEMENT	Graphic	Note	
N_SEAL-E	NOTE SEAL COURSE	Graphic	Note	- <b>Kara</b> ka
OG-E	ORIG GROUND SYMBOL	Graphic	Symbol	
ONE TO-E	1 TO 50 OR 100 SCALE NOTE	Graphic	Note	1'' =
PART ELEVATION-E	PART ELEVATION TITLE	Graphic	Title	PART ELEVATION 1" =
PART-PLAN-E	PART PLAN TITLE	Graphic	Title	PART_PLAN 1" =
PART TYPICAL SECTION-E	PART TYPICAL SECTION TITLE	Graphic	Title	PART TYPICAL SECTION
PLAN-E	PLAN TITLE	Graphic	Title	1" =

PM-E	PLUS MINUS SYMBOL	Graphic	Symbol	+
POINTB-E	POINT FOR BATCH PLOTTING	Graphic	Symbol	o
POINTL-E	LARGE POINT	Point	Symbol	
POINTS-E	SMALL POINT	Point	Symbol	
PROFILE GRADE-E	PROFILE GRADE TITLE	Graphic	Title	PROFILE GRADE
PSNOTE-E	PRESTRESSING NOTES	Graphic	Note	
PWELD-E	PILE WELDING DETAIL	Graphic	Detail	) 왕 왕
QUANTITIES-E	QUANTITIES TITLE	Graphic	Title	QUANTITIES
RAIL7L-E	CHAIN LINK RAIL T 7 LT	Graphic	Symbol	
RAIL7R-E	CHAIN LINK RAIL T 7 RT	Graphic	Symbol	
REINFORCEMENT @ DISTANCE-E	REINFORCEMENT WITH DATA FIELD	Graphic	Note	# @

ROUNDELEV-E	TARGET POINT	Graphic	Symbol	$\bullet$
RRNLF-E	RR GENERAL NOTE L F	Graphic	Note	
RRNWS-E	RR GENERAL NOTE W S	Graphic	Note	
RSYM-E	REINF SYMBOL	Graphic	Symbol	++
RSYME-E	REINF SYM TEXT EDIT	Graphic	Note	#??@??
SECHLD-E	SECTION HORZ LT DOWN	Graphic	Symbol	
SECHLU-E	SECTION HORIZ LT UP	Graphic	Symbol	
SECHRD-E	SECTION HORZ RT DOWN	Graphic	Symbol	$\mathbf{n}$
SECHRU-E	SECTION HORIZ RT UP	Graphic	Symbol	~?
SECTION-E	SECTION TITLE	Graphic	Title	<u>SECTION -</u> 1" =
SECVLB-E	SECTION VERT LT BOTTOM	Graphic	Symbol	

SECVLT-E	SECTION VERT LT TOP	Graphic	Symbol	
SECVRB-E	SECTION VERT RT BOTTOM	Graphic	Symbol	
SECVRT-E	SECTION VERT RT TOP	Graphic	Symbol	
SHEAR KEY PLAN-E	SHEAR KEY PLAN TITLE	Graphic	Title	SHEAR KEY PLAN 1" -
SHEAR KEY SECTION-E	SHEAR KEY SECTION TITLE	Graphic	Title	SHEAR KEY SECTION
SLOPE-E	SYMBOL TOP OR BOT	Graphic	Symbol	
STALSE-E	STA LINE SYMBOL ENGLISH	Graphic	Symbol	
STALST-E	STA LINE SYM TEXT EDIT	Graphic	Symbol	Ş Edit
STANDARD PLANS 2010-E	STANDARD PLANS DATED 2010 TITLE	Graphic	Note	STANDARD PLANS DATED 2010
STA_LS-E	STATION LINE SYMBOL	Graphic	Symbol	5
STDSDD-E	STD SHT AND DET NO DET	Graphic	Symbol	

STDSDG-E	STD SHT AND DET NO GP	Graphic	Symbol	STANDARD PLAN SHEET HO.
STEEL-E	STEEL SYM PATTERN	Graphic	Symbol	//////
STIRSN-E	STIRRUP SPACING NOTE	Graphic	Note	# ∬ or ∬ Stirrup Spacing
STLP140KIPS-E	STEEL PILE ANCHOR 140 KIPS	Graphic	Detail	
STLP200KIPS-3	STEEL PILE ANCHOR 200 KIPS	Graphic	Detail	
TERMA-E	ARROW TERMINATOR	Point	Symbol	
TERMAG-ASB-E	AS-BUILT TERMINATOR	Graphic	Symbol	
TERMAG-E	ARROW TERMINATOR GRAPHIC	Graphic	Symbol	
TERMDA-E	DOUBLE ARROW TERM	Point	Symbol	
TERMDAG-ASB-E	AS-BUILT DOUBLE TERMINATOR	Graphic	Symbol	
TERMDAG-E	DOUBLE ARROW TERM GRPH	Graphic	Symbol	

TERMT-E	TILDE TERMINATOR	Point	Symbol	
TERMTG-ASB-E	AS-BUILT TILDE TERMINATOR	Graphic	Symbol	5
TERMTG-E	TILDE TERMINATOR GRAPHIC	Graphic	Symbol	\$
TIEBAR-E	TIE BAR DETAIL	Graphic	Detail	
TRAFIC-E	TRAFFIC ARROW	Graphic	Symbol	
TURNB-E	TURNBUCKLE DETAIL	Graphic	Detail	
TYPICAL SECTION-E	TYPICAL SECTION TITLE	Graphic	Title	TYPICAL SECTION
UN_CHK-E	UNCHECKED DETAILS	Graphic	Detatil	UNIONE DETAILS
VEHIC-E	VEHICLE TRAFFIC NOTE	Graphic	Note	
VERIFY-E	CONTRACTOR VERIFICATION	Graphic	Note	NOTE CONTRACTOR SWILL YERFY ALL TOO TOOLING FILD DEFENSION BYONG CONSERVE OF FAMILIATING ANY BATCHILL
WATER ELEV-E	WATER ELEVATION SYMBOL	Graphic	Symbol	

WATER STOP-E	WATER STOP	Graphic	Symbol	
WEEP-E	HOLE GEOCOMP DRAIN	Graphic	Detail	
WINGWALL ELEVATION-E	WINGWALL ELEVATION TITLE	Graphic	Title	WINGWALL ELEVATION
WINGWALL SECTION-E	WINGWALL SECTION TITLE	Graphic	Title	WINGWALL SECTION

	RIGHT OF WAY				
Name	Cell Description (symbology)	Cell Type	Type of Use	Image	
AAA001	VERSION NOVEMBER 2011 (Level = 110, Color = 10, Wt = 1)	Graphic	Version	NOVEMBER 2011	
ACCESS	ACCESS OPENING SYMBOL (Level = 149, Color = 0, Wt = 2)	Graphic	Symbol		
ANGLPT	ANGLE POINT SYMBOL (Level = 149, Co=250,251, Wt = 0,1) (Masking)	Graphic	Symbol		
APPROV	APPROVED AS TO DESIGN (Lv=110,149, Co=2,250,251, Wt=0,1) (Masking)	Graphic	Sheet	APPROVED AS TO DESIGN NAME DATE	
BLK51	PARCEL BLOCK 5 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label		
BLK52	PARCEL BLOCK 5 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label		
BLK61	PARCEL BLOCK 6 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label		
BLK62	PARCEL BLOCK 6 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label		
BLK722	PARCEL BLOCK 7 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	<sup>_</sup>	
BLK822	PARCEL BLOCK 8 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label		

RIGHT OF WAY				
Name	Cell Description	Cell	Type of	Image
	(symbology)	Туре	Use	1111180
BREAK	LINE EXTENSION (Level=110, Co=0,250, Weight=1) (Masking)	Graphic	Symbol	
BUB51	PARCEL BUBBLE 5 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB52	PARCEL BUBBLE 5 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB522	PARCEL BUBBLE 5 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	(
BUB61	PARCEL BUBBLE 6 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB62	PARCEL BUBBLE 6 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB622	PARCEL BUBBLE 6 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	(
BUB71	PARCEL BUBBLE 7 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB72	PARCEL BUBBLE 7 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	-
BUB722	PARCEL BUBBLE 7 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	(

RIGHT OF WAY				
Name	Cell Description	Cell	Type of	Image
	(symbology)	Туре	Use	
BUB81	PARCEL BUBBLE 8 1 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB82	PARCEL BUBBLE 8 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	
BUB822	PARCEL BUBBLE 8 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	(
CCUA52	CCUA PARCEL BLK 5 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	CCUA
CCUA62	CCUA PARCEL BLK 6 2 2 (Lv=110,119, Co=0,250, Weight=1) (Masking)	Graphic	Label	CCUA
DART	DART ORIGIN AT TIP (Level=110, Color=0, Weight=1)	Graphic	Symbol	
DARTH	HORIZ DART POINT UP OR DOWN (Lv=110, Co=0, Weight=1)	Graphic	Symbol	
DARTV	VERT DART POINT TO RT OR LT (Lv=110, Co=0, Weight=1)	Graphic	Symbol	
DATA	CURVE LINE DATA TABLE 10 (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	bria Taska R. Leans St.T. Assasse LEV.HTT
DATA1	CURVE LINE DATA 1 EXT. (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	

RIGHT OF WAY				
Name	Cell Description	Cell Type	Type of	Image
DATA5	CURVE LINE TABLE 5 EXT. (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	
DATCV	CURVE DATA TABLE 10 (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	CURVE BATA TABLE BA. Batton BB.TA LORITO - Antonio Control Control - Control Control Control Control - Control Control Control Control - Control Control Control Control Control - Control C
DATCV1	CURVE DATA 1 EXTENSION (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	[]
DATCV5	CURVE DATA 5 EXTENSION (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	
DATLN	LINE DATA TABLE 10 (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	LINE BATA TABLE
DATLN1	LINE DATA 1 EXTENSION (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	[]
DATLN5	LINE DATA 5 EXTENSION (Level=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Table	
DD522	DIRECTORS DEED BUBBLE 5 2 2 (Lv=119,145, Co=0,250, Weight=1) (Masking)	Graphic	Label	(DD)
DD622	DIRECTORS DEED BUBBLE 6 2 2 (Lv=119,145, Co=0,250, Weight=1) (Masking)	Graphic	Label	(DD)
DE522	DIRECTORS EASE BUBBLE 5 2 2 (Lv=119,145, Co=0,250, Weight=1) (Masking)	Graphic	Label	(DE)

RIGHT OF WAY				
Name	Cell Description (symbology)	Cell Tvpe	<i>Type of</i> Use	Image
DE622	DIRECTORS EASE BUBBLE 6 2 2 (Lv=119,145, Co=0,250, Weight=1) (Masking)	Graphic	Label	(DE)
EXTARR	EXTENSION ARROW (Level=110, Co=0, Weight=0)	Graphic	Symbol	
FCCM	FOUND CT CONTROL MON. (Level=148, Color=4, Wt=0,1)	Graphic	Symbol	
FCM	FOUND 6X6 CONC. MON. (Level=148, Co=1,4, Weight=1)	Graphic	Symbol	
НМВ	HIGHWAY MAP BOOK PAGE (Level=110, Color=0, Weight=0)	Graphic	Symbol	BOOK HICHWAY MAPS, PAGE
НООК	OWNERSHIP HOOK (Level=110, Color=0, Weight=0)	Graphic	Symbol	1
HWYINT	INTERSTATE HWY SYMBOL (Level=110, Co=0,250 Wt=0,1) (Masking)	Graphic	Label	
HWYSTE	STATE HWY SYMBOL (Level=110, Co=0,250 Wt=0,1) (Masking)	Graphic	Label	
INDEX	RW MAP INDEX NO SEAL (Lv=109-111 Co=Var, Wt=Var) (Masking)	Graphic	Sheet	
INDEXS	RW MAP INDEX LS SEAL (Lv=109-111 Co=Var, Wt=Var) (Masking)	Graphic	Sheet	

	RIGHT OF W	AY		
Name	Cell Description (symbology)	Cell Type	Type of Use	Image
INDXFA	FEDERAL APP. INDEX (Lv=110,154, Co=Var, Wt=Var) (Masking)	Graphic	Sheet	
INDXRV	RELINQ. AND VAC. INDEX (Lv=110-112,154 Co=Var, Wt=Var) (Masking)	Graphic	Sheet	
INDXT	PARCEL TABLE INDEX SHEET (Level=110, Co=0,250,251 Wt=1,2) (Masking)	Graphic	Table	
INDXT1	PARCEL TABLE 1 EXT. (Level=110, Co=0,250,251 Wt=1,2) (Masking)	Graphic	Table	/
INDXT5	PARCEL TABLE 5 EXT. (Level=110, Co=0,250,251 Wt=1,2) (Masking)	Graphic	Table	
JUA522	JUA PARCEL BLOCK 5 2 2 (Lv=110,119, Co=0,250 Weight=1) (Masking)	Graphic	Table	JUA
JUA622	JUA PARCEL BLOCK 6 2 2 (Lv=110,119 Co=0,250 Weight=1) (Masking)	Graphic	Table	JUA
LEGRW	TYPICAL LEGEND (Level=110, Co=0,250,251 Wt=0-3) (Masking)	Graphic	Note	LEGEN Access Tribities Charles 1-3 Secretain Charles 1-3 Secretain Charles 1-3 Secretain Charles 1-3 Secretain Charles 1-3 Secretain Secretain 1-3 Secretain Secret
MAP	CALIFORNIA MAP (Level=110, Color=3, Wt=0,1,2,5,8)	Graphic	Sheet	
MONFP	FOUND SURVEY MONUMENT (Level=149, Co=0,1, Weight=0)	Graphic	Symbol	

RIGHT OF WAY				
Name	Cell Description (symbology)	Cell Type	Type of Use	Image
MONOP	OPEN SURVEY MONUMENT (Level=149, Co=250,251, Wt=1,2) (Masking)	Graphic	Symbol	
NACT	CALTRANS NORTH ARROW (Lv=110,49, Co=1,2,250, Wt=0-2) (Masking)	Graphic	Symbol	et I
NGSMON	MGS MONUMENT (Level=149, Co=1,250, Wt=0,1) (Masking)	Graphic	Symbol	
NOSCAL	NO SCALE FOR RON MAP (Lv=110, Co=0,250, Wt=1,2) (Masking)	Graphic	Symbol	NOT TO SCALE
NOTES1	GRANTOR NOTES (Lv=110,111, Co=0,250,251, Wt=1,2) (Masking)	Graphic	Note	
NOTES2	CCS NOTES (Lv=110,111, Co=0,250,251, Wt=1,2) (Masking)	Graphic	Note	NOTES Coordinates and bearings are an CCS Issi(1991.33 Zone Distances and statisting are grid distances. ground distances. All distances are in feet unless otherwise noted.
РМ	POST MILE SYMBOL (Level=149, Co=250,251, Wt=0) (Masking)	Graphic	Symbol	
PROJC	PROJECT ID CENTERED (Level=157, Co=0,250, Wt=0-2) (Masking)	Graphic	Label	<b>W6.461 B</b> + 00 1060 0007
PROJL	PROJECT ID LEFT OFFSET (Level=157, Co=0,250, Wt=0-2) (Masking)	Graphic	Label	(FR9.457 (Dr 0) 0008 6000
RELBK5	RELINQUISHMENT BLOCK 5 (Level=144, Co=0,250, Weight=1) (Masking)	Graphic	Label	REL
RELBK6	RELINQUISHMENT BLOCK 6 (Level=144, Co=0,250,251 Wt=1) (Masking)	Graphic	Label	REL
RIGHT OF WAY				
--------------	---	---------	---------	--------------------------
Name	Cell Description	Cell	Type of	Image
	(symbology)	Туре	Use	0
RELBK7	RELINQUISHMENT BLOCK 7 (Level=144, Co=0,250,251 Wt=1) (Masking)	Graphic	Label	REL
RELBK8	RELINQUISHMENT BLOCK 8 (Level=144, Co=0,250,251 Wt=1) (Masking)	Graphic	Label	REL
RELBK9	RELINQUISHMENT BLOCK 9 (Level=144, Co=0,250, Weight=1) (Masking)	Graphic	Label	REL
RELSG1	RELINQ. SEGMENT BLK 1 (Level=144, Co=0,250,251, Wt=1,4) (Masking)	Graphic	Label	SEGMENT _
RELSG2	RELINQ. SEGMENT BLK 2 (Level=144, Co=0,250,251, Wt=1,4) (Masking)	Graphic	Label	SEGMENT
RVBLK1	REVISION BLK SURVEYOR (Level=110, Co=0,250,251, Wt=1,2) (Masking)	Graphic	Table	
RVBLK2	REVISION BLOCK (Level=110, Co=0,250,251, Wt=1,2) (Masking)	Graphic	Table	
SCALE	STANDARD SCALE BAR (Level=110, Color=0, Weight=1)	Graphic	Symbol	net •
SEALLS	PROF. L.S. SEAL (Lv=110, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Sheet	TREFESSION, LAG SUPERIOR
SECCOR	SECTION CORNER SYMBOL (Lv=149, Co=0,250,251, Wt=0-2) (Masking)	Graphic	Symbol	

RIGHT OF WAY				
Name	Cell Description	Cell	Type of	Image
TARGET	(Symbology) TARGET GRID MARKER (Lv=110,149, Co=0,250,251, Wt=0) (Masking)	Graphic	Symbol	
TILDE	TERMINATOR SYMBOL (Level=110, Color=0, Weight=1)	Graphic	Symbol	
TIMERW	TIME DATE STAMP (Lv=110,153 Co=0,3,250,251 Wt=0-2) (Masking)	Graphic	Sheet	
TITLDD	DIRECTORS DEED TITLE (Lv=110,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITLEE	RW MAP ENGLISH BORDER (Level=Var, Color=Var, Wt=0-3,5) (Masking)	Graphic	Sheet	ent to serve a server
TITLEV	RW MAP TITLE NO VESTEE (Level=Var, Color=Var, Wt=0-3,5) (Masking)	Graphic	Sheet	And the second s
TITLFA	FEDERAL APP. TITLE (Lv=109-111,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITLFL	FREEWAY LEASE TITLE (Lv=110,112,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TILEHP	HARDSHIP PROTECT TITLE (Lv=110,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITLRN	RESO. OF NEC. TITLE (Lv=110,112,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	Lane

RIGHT OF WAY				
Name	Cell Description (symbology)	Cell Type	Type of Use	Image
TITLRV	RELINQ AND VAC. TITLE (Lv=110-112,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITLSA	STATE APP. TITLE (Lv=110,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	⇒ = 25
TITVDD	DIR DEED TITLE VERT (Lv=110,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITVFL	FREE LEASE TITLE VERT (Lv=110,112,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	FE
TITVHP	HARD PROTECT TITLE VERT (Lv=110-112,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TITVRN	RES OF NED TITLE VERT (Lv=110,154 Co=Var Wt=0-3,5) (Masking)	Graphic	Sheet	
TRI	TRIANGLE SYMBOL (Level=149, Co=1,239,250, Wt=0,1) (Masking)	Graphic	Symbol	
VEST	VESTEE BLOCK (Lv=109-111,119, Co=0,250, Wt=1,2) (Masking)	Graphic	Table	
VEST1	VESTEE BLOCK 1 EXT. (Lv=109-111,119, Co=0,250, Wt=1,2) (Masking)	Graphic	Table	
VEST25	VESTEE BLOCK 25 ROWS (Lv=109-111,119, Co=0,250, Wt=1,2) (Masking)	Graphic	Table	

RIGHT OF WAY					
Name	Cell Description (symbology)	Cell Type	Type of Use	Image	
VEST5	VESTEE BLOCK 5 EXT. (Lv=109-111,119, Co=0,250, Wt=1,2) (Masking)	Graphic	Table		
VEST5T	VESTEE BLOCK 5 ROWS (Lv=109-111,119, Co=0,250, Wt=1,2) (Masking)	Graphic	Table		

Caltrans Line Styles (Ctlstyle-2020.rsc)						
ID #	Name	Description	Image			
99	aa001	Version Date	Version: Sept 2021			

		Project Plans (100s) – Dashed Lines	
ID #	Name	Description	Image
100	pp-axis	Super Axis of Rotation	
101	pp-city	City Owner Line	
102	NOT USED	VACANT	
103	pp-cldet	Detail Center Line	
104	pp-county	County Owner Line	
105	pp-doto	Dotted Line	
106	pp-forest	Forest Boundary	
107	pp-Lc1	Dotted Line	
108	pp-Lc2	Medium Dash	
109	pp-Lc3	Long Dash	
110	pp-Lc4	Dash-Dot	
111	pp-Lc5	Short Dash	
112	pp-Lc6	Dash - Dot - Dot	
113	pp-Lc7	Long Dash - Short Dash	
114	pp-ldash	Long Dash	
115	pp-match	Match Line	
116	pp-mdash	Medium Dash	
117	pp-sdash	Short Dash	
118	pp-state	State Boundary	
119	pp-brkln	Break Line	\\

	Landscape (200s)			
ID #	Name	Description	Image	
201	ls-cnc-p	Control and Neutral Conductor		
202	ls-cnc-x	Control and Neutral Conductor (Existing)	~~~~~~	
203	ls-cond-p	Conduit		
204	ls-cond-x	Conduit (Existing)		
205	ls-dip-p	Ductile Iron Pipe	DIPDIP	
206	ls-dip-x	Ductile Iron Pipe (Existing)		
207	ls-gc1	Ground Cover	~&ML#252xtra_rajes/~AnsweraML#252xtra_r	
208	ls-gsp-p	Galvanized Steel Pipe		
209	ls-gsp-x	Galvanized Steel Pipe (Existing)		
210	ls-pp-x	Plastic Pipe (Existing)		
211	ls-ppil-p	Plastic Pipe Irrigation		
212	ls-ppil-x	Plastic Pipe Irrigation (Existing)		
213	ls-s10a	Arc Angle Shrub 1 Side	mhohmmhohm	
214	ls-s10af	Arc Angle Shrub 10 FT Wide	Market and the second second	
215	ls-s10b	Cloud Shrub 1 Side		
216	ls-s10bf	Cloud Shrub 10 FT Wide	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
217	ls-s10c	Round Shrub 10 FT CTRS 1 Side		
218	ls-s10cf	Round Shrub 10 FT CTRS 2 Side		
219	ls-s15a	Square Shrub 6 FT CTRS 1Side	<u> </u>	
220	ls-s15af	Square Shrub 6 FT CTRS 2 Side	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
221	ls-s15b	Round Shrub 15 FT CTRS 1Side	}	
222	ls-s15bf	Round Shrub 15 FT CTRS 2 Side	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
223	ls-s15c	Castle Shrub 1 Side	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
224	ls-s15cf	Castle Shrub 10 FT Wide	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

	Landscape (200s)			
ID #	Name	Description	Image	
225	ls-s20a	Round Shrub 20 FT CTR 1 Side		
226	ls-s20af	Round Shrub 20 FT CTR 2 Side	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
227	ls-s20b	Cloud Shrub 1 Side		
228	ls-s20bf	Cloud Shrub 10 FT Wide		
229	ls-s6a	Round Shrub 5 FT CTRS 1 Side		
230	ls-s6af	Round Shrub 5 FT CTRS 2 Side		
231	ls-s6b	Square Shrub 5 FT CTRS 1 Side		
232	ls-s6bf	Square Shrub 5 FT CTRS 2 Side		
233	ls-scc-p	Sprinkler Control Conduit	— scc — — — scc — —	
234	ls-scc-x	Sprinkler Control Conduit (Existing)	sccscc	
235	ls-vine1	Vine-Open		
236	ls-vine2	Vine-Full		
237	ls-vine3	Vine-Open with V	<u>*********************</u>	
238	ls-sleeve-p	Irrigation Sleeve		
239	ls-sleeve-x	Irrigation Sleeve (Existing)	▶	
240	ls-irxovr-p	(OBSOLETE)	Do Not Use	
241	ls-irxovr-x	(OBSOLETE)	Do Not Use	
242	ls-irxovrext-p	(OBSOLETE)	Do Not Use	
243	ls-acc-p	Armor-Clad Conductors	~>>>~>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
244	ls-acc-x	Armor-Clad Conductors- (Existing)	$\sim \sim $	
245	ls-cp-p	Copper Pipe (Supply Line)	СР СР	
246	ls-cp-x	Copper Pipe (Supply Line) (Existing)	cp cp	
247	ls-dit-p	Drip Irrigation Tubing	~.~·~DIT~·~.~·~	
248	ls-dit-x	Drip Irrigation Tubing (Existing)	dit	

Photogrammetry (300s)			
ID #	Name	Description	Image
300	Curb	(OBSOLETE)	Do Not Use
301	DepContour	(OBSOLETE)	Do Not Use
302	DepGNVCont	(OBSOLETE)	Do Not Use
303	Dirt	(OBSOLETE)	Do Not Use
304	EdgeAsph	(OBSOLETE)	Do Not Use
305	Fence	(OBSOLETE)	Do Not Use
306	GNV	(OBSOLETE)	Do Not Use
307	GuardRail	(OBSOLETE)	Do Not Use
308	LaneStripe	(OBSOLETE)	Do Not Use
309	Levee	(OBSOLETE)	Do Not Use
310	MedianBarrier	(OBSOLETE)	Do Not Use
311	MsnryWall	(OBSOLETE)	Do Not Use
312	Ret.Wall	(OBSOLETE)	Do Not Use
313	RR1000	(OBSOLETE)	Do Not Use
314	RR1000C	(OBSOLETE)	Do Not Use
315	RR200	(OBSOLETE)	Do Not Use
316	RR500	(OBSOLETE)	Do Not Use
317	Traveled Way	(OBSOLETE)	Do Not Use
318	Trees	(OBSOLETE)	Do Not Use
319	TW Other	(OBSOLETE)	Do Not Use
320	Wall&Fence	(OBSOLETE)	Do Not Use
321	Wall&Masonry	(OBSOLETE)	Do Not Use
322	Water	(OBSOLETE)	Do Not Use
323	ph-Build	Building	
324	ph-Deck	Deck	

Photogrammetry (300s)			
ID #	Name	Description	Image
325	ph-Dike	Dike	
326	ph-FL	Flow Line	
327	NOT USED	VACANT	
328	ph-MwallF	Masonry Wall (Float)	×××
329	ph-fBreak	Break (Float)	
330	ph-fBrgRail	Barrier Guard Rail (Float)	
331	ph-fConc	Concrete (Float)	
332	ph-fCont	Contour (Float)	
333	NOT USED	VACANT	
334	ph-fDepCont	Depression Contour (Float)	
335	NOT USED	VACANT	
336	ph-fCurb	Curb (float)	
337	ph-fLnStrp	Lane Stripe (Float)	
338	ph-fMedBar	Median Barrier (Float)	
339	ph-fETW	Edge of Traveled Way (Float)	
340	ph-fETW2	State Traveled Way (Float)	
341	ph-Hidden	Hidden	
342	NOT USED	VACANT	
343	NOT USED	VACANT	
344	NOT USED	VACANT	
345	NOT USED	VACANT	
346	ph-Cattle	Cattle Guard	
347	ph-Vines	Vines	� ·
348	NOT USED	VACANT	
349	NOT USED	VACANT	

Photogrammetry (300s)			
ID #	Name	Description	Image
350	ph-Curb	Curb	
351	ph-DepCont	Depression Contour	
352	ph-DepGNV	Depression Contour (Ground Not Visible)	
353	ph-Dirt	Dirt	
354	ph-Asph	Edge of Asphalt or Traveled Way	
355	ph-Fence	Fence	
356	ph-GNV	Ground (Not Visible)	
357	ph-GrdRail	Guardrail	
358	ph-LnStrp	Lane Stripe	
359	ph-Levee	Levee	
360	ph-MedBar	Median Barrier	
361	ph-Mwall	Masonry Wall	
362	ph-Rwall	Retaining Wall	
363	ph-RR1K	(OBSOLETE)	Do Not Use
364	ph-RR1KC	Rail Road (1000 scale)	<del></del>
365	ph-RR200	(OBSOLETE)	Do Not Use
366	ph-RR500	(OBSOLETE)	Do Not Use
367	ph-ETW	Traveled Way	
368	ph-Trees	Trees	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
369	ph-ETW2	State Traveled Way	
370	ph-RWallF	Wall and Fence	
371	ph-RwallM	Wall and Masonry	
372	ph-Water	Water Line	
373	ph-float	General Float Line	
374	ph-Wire	Wire	
375	ph-VinePart	Vines (Partial)	>
376	ph-rr600	Rail Road (600 scale)	

Photogrammetry (300s)					
ID #	Name	Description	Image		
377	ph-Void	Voided Project Area			

All current Photogrammetry line styles have a prefix of "ph", but older, outdated Photogrammetry line styles do not. Replace all outdated line styles with the updated, current version having the "ph" prefix. The outdated line styles create plotting problems when submitting projects for PS&E.

Roadway (400s)			
<i>ID</i> #	Name	Description	Image
*401*	rd-barrier	Concrete Barrier	<b>++</b>
402	rd-cmp	Corrugated Metal Pipe	~~~~~~
403	rd-curb	(OBSOLETE)	Do Not Use
404	rd-curbg	Curb and Gutter	
*405*	rd-dblbar	Double Thrie Beam Barrier or Double Guardrail	
406	rd-fence	Fence	
407	rd-flowln	Drainage Flow Line	_ <b>--</b>
408	rd-grind	Grind PCC	_
*409*	rd-mbgr-p	Guardrail	<u> </u>
*410*	rd-mbgr-x	Guardrail (Existing)	<u> </u>
411	rd-og	Original Ground	
412	rd-pipeL-p	Drain Line (3-6 FT)	
413	rd-pipeL-x	Drain Line (3-6 FT) (Existing)	
414	rd-planing	Planing	<u> </u>
415	rd-planresf	Resurface / Obliterate	<u>/ x / x / x / x</u>
416	rd-resurf	Resurface	_ / / / / / / / / /
417	rd-wallbar	Wall Top of Barrier	<b>_</b>
418	rd-wall-p	Wall	
419	rd-wall-x	Wall (Existing)	
420	rd-LnStrpDsh	Lane Stripe - Dash	
*421*	rd-Krail	Temporary K - Rail	
422	rd-wateredge	Body of Water Boundary	
423	rd-stream	Body of Water Centerline	
424	rd-walls-2	(OBSOLETE)	Do Not Use
425	rd-LnStrpDbl1	Lane Striping (Solid / Dash)	

Roadway (400s)			
<i>ID</i> #	Name	Description	Image
426	rd-LnStrpDbl2	Lane Striping (Dash / Solid)	
427	rd-LnStrpDbl3	Lane Striping (Double Solid)	
428	rd-barrier-x	Concrete Barrier (Existing)	
*429*	rd-ThrieBeam-p	Single Thrie Beam Barrier	••••••
*430*	rd-ThrieBeam-x	Single Thrie Beam Barrier (Existing)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
*431*	rd-CableRailing	(OBSOLETE)	Do Not Use
*432*	rd-rumble	Rumble Strip	
433	rd-rumble-c	Rumble Strip - Center	000000000000000000000000000000000000000

Right of Way (500s)			
ID #	Name	Description	Image
501	rw-climit	City Limit Line	
502	rw-ctrln	Center Line	·
503	rw-dashl	(OBSOLETE)	Do Not Use
504	rw-natim	(OBSOLETE)	Do Not Use
505	rw-natom	(OBSOLETE)	Do Not Use
506	rw-oatim	(OBSOLETE)	Do Not Use
507	rw-oatom	(OBSOLETE)	Do Not Use
508	rw-pacco	(OBSOLETE)	Do Not Use
509	rw-sectl	Section Line	
510	rw-subdl	Sub Division Line	
511	rw-tic	(OBSOLETE)	Do Not Use
512	rw-ArrDbl-Nar0	Double Ended Narrow Arrow with Solid Line	
513	rw-ArrDbl-Nar1	Double Ended Narrow Arrow with Dashed Line	
514	rw-ArrDbl-Std0	Double Ended Standard Arrow with Solid Line	
515	rw-ArrDbl-Std1	Double Ended Standard Arrow with Dashed Line	
516	rw-Arr-Nar0	Narrow Arrow with Solid Line	
517	rw-Arr-Nar1	Narrow Arrow with Dashed Line	
518	rw-Arr-Std0	Standard Arrow with Solid Line	
519	rw-Arr-Std1	Standard Arrow with Dashed Line	
520	rw-ArrSym- Nar0	Narrow Arrow to Symbol with Solid Line	
521	rw-ArrSym- Nar1	Narrow Arrow to Symbol with Dashed Line	
522	rw-ArrSym- Std0	Standard Arrow to Symbol with Solid Line	
523	rw-ArrSym- Std1	Standard Arrow to Symbol with Dashed Line	
524	rw-DimDbl	Double Ended Dimension Leader	¢,

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Right of Way (500s)			
ID #	Name	Description	Image
525	rw-DimSingle	Dimension Leader	ــــــــــــــــــــــــــــــــــــــ
526	rw-ColorEase	Parcel Easement Coloring	
527	rw- ColorRemain	Parcel Remainder Underline	
528	rw- DetailUnder	Detail Annotation Underline	
529	rw-FreeLease	Freeway Lease Area	•••••
530	rw-SuppRef	Unassigned Reference Area	
531	rw-EaseExist	Existing Easement	
532	rw-EaseNew	New Easement	
533*	rw-Access-Lt	R/W Access Prohibited (Left)	
534*	rw-AccSu-Lt	R/W Access Control (Left)	
535	rw-AccRel-Lt	Relinquished R/W Access Control (Left)	
536*	rw-Access-Rt	R/W Access Prohibited (Right)	····
537*	rw-AccSu-Rt	R/W Access Control (Right)	···· · · · · · · · · · · · · · · · · ·
538	rw-AccRel-Rt	Relinquished R/W Access Control (Right)	
539	rw-Superceded	Superceded R/W (Conventional)	
540	rw-Common	Common Property Line (Same Owner)	

The Right of Way line styles were created to develop mapping for Right of Way Engineering.

Right of Way Access line styles **533**, **534**, **536** and **537** are NOT to be used on any advertised contract plan sheet. These are only to be used for Right of Way record maps.

Traffic (600s)			
ID #	Name	Description	Image
601	tr-comm-p	Communications Conduit	cc
602	tr-comm-x	Communications Conduit (Existing)	cc
603	tr-fiberopt-p	Fiber Optic	FO FO
604	tr-fiberopt-x	Fiber Optic (Existing)	fo fo
605	tr-fire-p	Fire Conduit	F F
606	tr-fire-x	Fire Conduit (Existing)	fff
607	tr-lighting-p	Conduit Lighting	
608	tr-lighting-x	Conduit Lighting (Existing)	
609	tr-ohl-p	Overhead Line	
610	tr-ohl-x	Overhead Line (Existing)	
611	tr-signal-p	Traffic Signal Conduit	
612	tr-signal-x	Traffic Signal Conduit (Existing)	
613	tr-sprinkler-p	(OBSOLETE)	Do Not Use
614	tr-sprinkler-x	(OBSOLETE)	Do Not Use
615	tr-tele-p	Telephone Conduit	
616	tr-tele-x	Telephone Conduit (Existing)	t t
617	tr-term-p	Conduit with Terminator	
618	tr-term-x	Conduit with Terminator (Existing)	
619	tr-CT-fiberopt-p	CT Owned Fiber Optic Line	- <i>Ct</i> - F0 <i>Ct</i> - F0 -
620	tr-CT-fiberopt-x	CT Owned Fiber optic line (Existing)	- <i>Ct</i> -fo
621	tr-CT-tele-p	CT Owned Telephone Conduit	- <i>C</i> <sub>t</sub> - T <i>C</i> <sub>t</sub> - T
622	tr-CT-tele-x	CT Owned Telephone Conduit (Exist)	- <i>Ct</i> -+ <i>Ct</i> -+
623	tr-CT-fire-p	CT Owned Fire Conduit	- <i>C</i> <sub>t</sub> - F <i>C</i> <sub>t</sub> - F
624	tr-CT-fire-x	CT Owned Fire Conduit (Existing)	- <i>C</i> <sub>t</sub> -f

Utilities (700s)			
ID #	Name	Description	Image
701	ut-elec-p	Electrical	
702	ut-elec-x	Electrical (Existing)	
703	ut-gas-p	Gasoline	— 20 05 — — 20 05 —
704	ut-gas-x	Gasoline (Existing)	— gs — — — — gs —
705	ut-natgas-p	Natural Gas	
706	ut-natgas-x	Natural Gas (Existing)	
707	ut-oil-p	Oil	o
708	ut-oil-x	Oil (Existing)	o
709	ut-sewer-p	Sewer	ss-
710	ut-sewer-x	Sewer (Existing)	s
711	ut-steam-p	Steam Utility	—-st—-st–
712	ut-steam-x	Steam Utility (Existing)	
713	ut-stormd-p	Storm Drain	
714	ut-stormd-x	Storm Drain (Existing)	
715	ut-telecom-p	Telecommunication (and Telemeter)	— тс —— тс -
716	ut-telecom-x	Telecommunication (and Telemeter) (Existing)	tc tc -
717	ut-teleph-p	Telephone	
718	ut-teleph-x	Telephone (Existing)	
719	ut-tv-p	Television	— · · · Tv— — — · · · Tv—
720	ut-tv-x	Television (Existing)	tvtv
721	ut-water-p	Water	W W
722	ut-water-x	Water (Existing)	w w w
723	ut-elec-oh-p	Electric - (OH)	
724	ut-elec-oh-x	Electric - (OH) (Existing)	
725	ut-telecom-oh-p	Telecommunication (and Telemeter) (OH)	— тс ——

Utilities (700s)			
ID #	Name	Description	Image
726	ut-telecom-oh-x	Telecommunication (and Telemeter) (OH) (Existing)	tc
727	ut-telep-oh-p	Telephone (OH)	T (он)—
728	ut-telep-oh-x	Telephone (OH) (Existing)	
729	ut-tv-oh-p	Television (OH)	— · · · Тv — — — · · · {он}-
730	ut-tv-oh-x	Television (OH) (Existing)	tv
731	ut-fiberopt-oh-p	Fiber Optic (OH)	—— F0 —— —— {ОН}—
732	ut-fiberopt-oh-x	Fiber Optic (OH) (Existing)	fo (oh)
733	ut-joint-trench-x	Joint Utility (Existing)	— j † —- — j † -
734	ut-joint-trench-p	Joint Utility	JT JT -
735	ut-joint-oh-x	Joint Utility (OH) (Existing)	—jt —
736	ut-joint-oh-p	Joint Utility (OH)	— JT — — —
737	ut-rcwater-p	Recycled Water	RCW RCW -
738	ut-rcwater-x	Recycled Water (Existing)	rcw rcw -
739	ut-irrc-x	Irrigation Conduit (Public or Private Owned) (Existing)	—irr-c——irr-c–
740	ut-esc-x	Electrical Systems Conduit (Public or Private Owned) (Existing)	— es-c —— es-c –
741	ut-elec-Abn	Electric (Abandon)	//e
742	ut-gas-Abn	Gasoline (Abandon)	
743	ut-natgas-Abn	Natural Gas (Abandon)	//g
744	ut-oil-Abn	Oil (Abandon)	— <i>+</i> /o———–
745	ut-sewer-Abn	Sewer (Abandon)	—//s
746	ut-steam-Abn	Steam Utility (Abandon)	/-/
747	ut-stormD-Abn	Storm Drain (Abandon)	//sd
748	ut-telecom-Abn	Telecommunication (and Telemeter) (Abandon)	—//tc
749	ut-teleph-Abn	Telephone (Abandon)	

Utilities (700s)			
ID #	Name	Description	Image
750	ut-tv-Abn	Television (Abandon)	— <u> </u>
751	ut-water-Abn	Water (Abandon)	w
752	ut-fiberopt-Abn	Fiber Optic (Abandon)	// fo
753	ut-rcwater-Abn	Recycled Water (Abandon)	
754	ut-irrc-Abn	Irrigation Conduit (Public or Private Owned) (Abandon)	-//irr-c
755	ut-esc-Abn	Electrical Systems Conduit (Public or Private Owned) (Abandon)	/ es-c
756	ut-fiberopt-p	Fiber Optic (Public or Private Owned)	F0 F0
757	ut-fiberopt-x	Fiber Optic (Public or Private Owned) (Existing)	fo fo
758	ut-ct-water-p	CT Owned Water	C <sub>t</sub> - W C <sub>t</sub>
759	ut-ct-water-x	CT Owned Water (Existing)	Ct - w Ct
760	ut-ct-elec-p	CT Owned Electrical	— <i>Ct</i> - E — <i>Ct</i> -
761	ut-ct-elec-x	CT Owned Electrical (Existing)	
762	ut-ct-elec-oh-p	CT Owned Electrical (OH)	
763	ut-ct-elec-oh-x	CT Owned Electrical (Existing OH)	
764	ut-ct-fiberopt-p	CT Owned Fiber Optic	- <i>Ct</i> -FO - <i>Ct</i> -FO
765	ut-ct-fiberopt-x	CT Owned Fiber Optic (Existing)	- <i>Ct</i> -fo
766	ut-ct-fiberopt- oh-p	CT Owned Fiber Optic (OH)	- <i>Ct</i> - FO (OH)-
767	ut-ct-fiberopt- oh-x	CT Owned Fiber Optic (OH) (Existing)	- <i>Ct</i> - fo(oh)-
768	ut-ct-irrc-x	CT Owned Irrigation Conduit (Existing)	- <i>Ct</i> -irr-c
769	ut-ct-teleph-p	CT Owned Telephone	Ct-T
770	ut-ct-teleph-x	CT Owned Telephone (Existing)	Ct-+
771	ut-ct-telep-oh-p	CT Owned Telephone (OH)	- <i>C</i> <sub>t</sub> -T(OH)-

Utilities (700s)			
ID #	Name	Description	Image
772	ut-ct-telep-oh-x	CT Owned Telephone (Existing OH)	- <i>C</i> t-+(oh)-
773	ut-ct-telecom-p	CT Owned Telemeter Cable	- <i>Ct</i> -TC <i>Ct</i> -
774	ut-ct-telecom-x	CT Owned Telemeter Cable (Existing)	-Ct-tcCt-
775	ut-ct-telecom- oh-p	CT Owned Telemeter Cable	· <i>C</i> <sub>t</sub> -TC
776	ut-ct-telecom- oh-x	CT Owned Telemeter Cable (Exist OH)	· <i>C</i> t-+c(oh)
777	ut-ct-rcwater-p	CT Owned Recycled Water	
778	ut-ct-rcwater-x	CT Owned Recycled Water (Existing)	
779	ut-ct-stormd-p	CT Owned Storm Drain Line	
780	ut-ct-stormd-x	CT Owned Storm Drain Line (Existing)	
781	ut-force_main-p	Main Water	
782	ut-force_main-x	Main Water (Existing)	
783	ut-leach-p	Leach Line	
784	ut-leach-x	Leach Line (Existing)	
785	ut-vent-p	Vent Line	-vvvv
786	ut-vent-x	Vent Line (Existing)	-vvvv
787	ut-ct-joint- trench-x	CT Owned Joint Utility (Existing)	—j+— Ct —
788	ut-ct-joint- trench-p	CT Owned Joint Utility	—JT — Ct —
789	ut-ct-joint-oh-x	CT Owned Joint Utility (Exist OH)	-j+ — <i>Ct</i> —(oh)—
0/79 0	ut-ct-joint-oh-p	CT Owned Joint Utility (OH)	·JT — <i>С</i> t —(ОН)—

Water Pollution Control – WPC- BMPs (800s)			
ID #	Name	Description	Image
801	sw-TFESA	Temporary Fence type ESA	TFESA
*802*	sw-TSF	Temporary Silt Fence	××
*803*	sw-TFR	Temporary Fiber Roll	
*804*	sw-TGBB	Temp. Gravel Bag Berm	CONTRACTOR TO BB
*805*	sw-TSBB	Temp. Straw Bale Barrier	
806	sw-TSDFP	Temp. Slope Drain Flex Pipe	$\square$
807	sw-TEB	Temporary Earth Berm	
808	sw-TDS	Temporary Ditch/Swale	•~~-•~~-•~
809	sw-TLB1	Temp. Linear Barrier (Type 1)	• • • • • • • •
810	sw-TLB2	Temp. Linear Barrier (Type 2)	<b></b>
811	sw-TLB3	Temp. Linear Barrier (Type 3)	0-0-0-0-
812	sw-FR	Fiber Roll	·····
813	sw-CB	Compost Berm	······· CB ·········
*814*	sw-CS	Compost Sock	······· CS ··········
*815*	sw-TRSF	Temp. Reinforced Silt Fence	
*816*	sw-THVF	Temp. High Visibility Fence	-xx

Miscellaneous (900s)			
ID #	Name	Description	Image
901	zz-fillshape1	For Translucent Fill (pentable function)	
902	zz-arrow1	Leader Line with Arrow	
903	zz-arrow2	Dimension Line Arrows	
904	zz- variabledash1	Adjustable Dashed Line – Dash and Gap	
905	zz- variabledash2	Adjustable Dashed Line – Dash, Gap and Thickness	

These miscellaneous line styles are for preliminary design and advanced planning studies. Do not use for PS&E submittal.

Survey – (1000s)			
ID #	Name	Description	Image
1000	su-BLDG	Building Face	
1001	su-BLD3	(SUPERSEDED)	Do Not Use
1002	su-BLDR	Building Roof, Overhang	
1003	su-BLR3	(SUPERSEDED)	Do Not Use
1004	su-BWF	Fence, Barbed Wire	
*1005*	su-CLF	Fence, Chain Link	
1006	su-WRF	Fence, Wood Rail	
1007	su-BRF	Fence, Board	
1008	su-WMF	Fence, Wire Mesh	
1009	su-PRF	Fence, Pipe Rail	
1010	su-PCCM	Concrete, Edge, Misc.	
1011	su-ACM	AC, Edge, Misc.	
0/1012	su-BTHR	Barrier, Thrie	<u></u>
0/1013	su-BCON	Barrier, Concrete	
1014	su-MBGR	Guardrail, Metal Beam	_ <b></b>
1015	su-WDGR	Guardrail, Wood	<u> </u>
1016	su-RR	Railroad Track	
1017	su-SINM	Sign, Multipost	
1018	su-SINB	Sign, Overhead, Bridge	
1019	su-TANK	Tank, Center	
1020	su-RWB	Wall, Retaining, Bottom	
1021	su-RWT	Wall, Retaining, Top	
1022	su-SWB	Wall, Sound, Bottom	
1023	su-SWT	Wall, Sound, Top	
1024	su-MWB	Wall, Misc., Bottom	
1025	su-MWT	Wall, Misc., Top	

		Survey – (1000s)	
ID #	Name	Description	Image
1026	su-Deck	Deck, Wood, Edge	
1027	su-PAT	Patio, Edge	
1028	su-CARP	(SUPERSEDED)	Do Not Use
1029	su-CARL	Carport, Covered, Edge	
1030	su-MANL	Generic Line-Man Made General Feature	
1031	su-POOL	Pool, Edge	
1032	su-ABUT	Bridge, Abutment	
1033	su-EOD	Bridge, Edge of Deck	
1034	su-PN	Bridge, Paving Notch	
1035	su-BWW	Bridge, Wingwall	
1036	su-BRB	Bridge, Barrier Rail, Bottom	
1037	su-BRT	Bridge, Barrier Rail, Top	
1038	su-BSWB	Bridge Curb, Edge, Bottom	
1039	su-BSWT	Bridge Curb, Edge, Top	
1040	su-COLM	Bent/Column/Pier, (Linear)	
1041	su-BSOF	Bridge, Soffit	
1042	su-BSTP	Bridge, Pavement Stripe	
1043	su-BEP	Bridge, Edge of Pavement	
1044	su-BETW	Bridge, Edge of Traveled Way	
1045	su-BBWK	Bridge, Back of Walk/Curb	
1046	su-SW	Sidewalk, Edge Top, Front, Back	
1047	su-LIP	Curb, Lip	
1048	su-FLC	Curb, FL	
1049	su-TOC	Curb, Top Front, Back	
1050	su-DRWY	Driveway, Edge	

	Survey – (1000s)				
ID #	Name	Description	Image		
1051	su-DIKB	Dike, Bottom			
1052	su-DIKT	Dike, Top Front, Back			
1053	su-VGUT	Valley Gutter			
1054	su-AC	AC, Misc., Edge			
1055	su-ACFL	AC, Misc., FL Gutter			
1056	su-ACBK	AC, Misc., Break Line			
1057	su-PCC	Conc, Misc., Edge			
1058	su-PCFL	Conc, Misc., FL			
1059	su-PCBK	Conc, Misc., Break Line			
1060	su-CTLG	Cattle Guard			
1061	su-STRP	Stripes, Pavement			
1062	su-PMRK	Markers, Pavement, Non-Reflective			
1063	su-LL	Lane Line			
1064	su-EP	Edge of Pavement			
1065	su-ETW	Traveled Way, Edge			
1066	su-ES	Edge of Shoulder			
1067	su-RBRK	Break Line, Pavement			
1068	su-EOR	Edge of Road, Unsurfaced			
1069	su-HP	Hinge Point			
1070	su-TOE	Toe of Slope			
1071	su-TOP	Top of Slope			
1072	su-FB	Front of Bench			
1073	su-BB	Back of Bench			
1074	su-TRL	Trail, Center			
1075	su-RDWYL	Generic Line - Roadway Delineation			
1076	su-VEGE	Vegetation, Edge			

	Survey – (1000s)				
ID #	Name	Description	Image		
1077	su-CROP	Crop, Edge			
1078	su-ORCH	Orchard, Edge	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
1079	su-VY	Vineyard, Edge			
1080	su-OG	Original Ground			
1081	su-SLD	Edge of Slide			
1082	su-ROCK	Rock Area			
1083	su-VEGL	Generic Line-Natural & Vegetation Feature			
1084	su-POLL	Pole Line			
1085	su-TOW3	(SUPERSEDED)	Do Not Use		
1086	su-TRNT	Transmission Tower			
1087	su-OCAB	Overhead Cable			
1088	su-BCAB	Buried Cable			
1089	su-FIBO	Fiber Optic Cable	fo fo		
1090	su-ELC	Electrical Cable			
1091	su-TELC	Telephone Cable	t		
1092	su-TVC	Television Cable	tv		
1093	su-SS	Sewer, Top			
1094	su-SDR	Storm Drain, Top			
1095	su-GLN	Gas, Natural, Top			
1096	su-GLP	Gas, Petroleum	———— gs ——— ——— — — gs —		
1097	su-WL	Water	₩ ₩ ₩		
1098	su-COND	Conduit			
1099	su-CAB3	(SUPERSEDED)	Do Not Use		
1100	su-VLT3	(SUPERSEDED)	Do Not Use		
1101	su-UTLL	Generic Utility			
1102	su-CTOP	Canal, Top			

	Survey – (1000s)					
ID #	Name	Description	Image			
1103	su-CFL	Canal, Flow Line				
1104	su-DTOP	Ditch, Top				
1105	su-DFL	Ditch, Flow Line				
1106	su-OGFL	Original Ground, Flow Line				
1107	su-DI3	(SUPERSEDED)	Do Not Use			
1108	su-CBSN	Catch Basin				
1109	su-ODRN	Drain, Overside				
1110	su-SDRN	Drain, Slotted				
1111	su-ENT	Taper Entrance				
1112	su-SLP	Slope Protection Edge				
1113	su-HDWL	(SUPERSEDED)	Do Not Use			
1114	su-HDWB	Headwall, Bottom				
1115	su-HEAD	Headwall, Top				
1116	su-CULT	Culvert, Top				
1117	su-CULV	Culvert, Pipe Flowline				
1118	su-RCB	Culvert, Reinforced Concrete Box				
1119	su-RCA	Culvert, Reinforced Concrete Arch				
1120	su-CWW	Culvert, Wingwall				
1121	su-EW	Water Edge Lake, Pond, Swamp				
1122	su-RIV	River/Stream, Edge				
1123	su-STHR	Stream, Thread				
1124	su-TOB	Bank, Top				
1125	su-SPLY	Spillway, Edge				
1126	su-PUMH	Pump House				
1127	su-HYDRL	Generic Point Hydro-Drain- Irrigation				

	Survey – (1000s)				
ID #	Name	Description	Image		
1128	su-WEIR	Weir			
1129	su-WBOX	Weir Box			
1130	su-FDLINE	Generic Line-Ownership Lines			
1131	su-RR2	Railroad Line			

	Topo – (6000s)					
ID #	Name	Description	Image			
6070	aa006	Version Date	Version: Nov. 2022			
6000	LC1-dotted	Dotted Line				
6001	LC2- medium_dash	Medium Dash				
6002	LC3-long_dash	Long Dash				
6003	LC4-dash_dot	Dash-Dot				
6004	LC5- short_dash	Short Dash				
6005	LC6- dash_dot_dot	Dash-Dot-Dot				
6006	LC7- long_dash_ short_dash	Long Dash-Short Dash				
6007	topo-asphalt-x	Existing Asphalt				
6008	topo-barrier- conc-x	Existing Concrete Barrier				
6009	topo-building-x	Existing Building				
6010	topo-cattle-x	Cattle Guard				
6011	topo-concrete-x	Existing Concrete				
6012	topo-curb-x	Existing Curb	·			
6013	topo-deck-x	Existing Deck				
6014	topo-dep_cont- x	Existing Depression Contour				

	Topo – (6000s)				
ID #	Name	Description	Image		
6015	topo- dep_cont_GNV -x	Existing Dep. Cont. (Not Visible)			
6016	topo-dike-x	Existing Dike			
6017	topo-dirt-x	Existing Dirt			
6018	topo-ETW-x	Existing Edge Travelled Way			
6020	topo-fence-x	Existing Fence	xxx		
6021	topo-flowline-x	Existing Flow Line			
6022	topo-GNV-x	Existing Ground (Not Visible)			
6023	topo-hidden-x	Existing Hidden Line			
6024	topo- lane_stripe-x	Existing Lane Stripe			
6025	topo-levee-x	Existing Levee			
6026	topo-m_wall-x	Existing Masonry Wall			
6027	topo-m_wall_f-x	Existing Masn. Wall (Float)			
6028	topo-barrier- rail-x	Existing Rail Barrier			
6029	topo-r_wall-x	Existing Retaining Wall	oo		
6030	topo-r_wall_f-x	Existing Retaining Wall (Float)	^		
6031	topo-r_wall_m- x	Existing Retaining Wall (Mason)	xx		
6032	topo-rock-x	Existing Rock			
6033	topo-rr_2rail-x	Existing Railroad (2 Rail)			
6034	topo-sign_2-x	Existing Sign (2 post)	·		
6035	topo- sign_oh_1-x	Existing Overhead Sign (1 Post)			
6036	topo- sign_oh_2-x	Existing Overhead Sign (2 post)			
6037	topo-ut-elec- oh-x	Existing Overhead Elec. Utility	e		
6038	topo-ut-elec-x	Existing Electrical Utility			

	Topo – (6000s)				
ID #	Name	Description	Image		
6039	topo-ut- fiberopt-oh-x	Existing Overhead Fiber Optic Utility	— fo— — -(oh)— — — fo— — -(ot		
6040	topo-ut- fiberopt-x	Existing Fiber Optic Utility	fo fo		
6041	topo-ut-gas-x	Existing Gas Utility	— gs —— —— gs —		
6042	topo-ut-joint- oh-x	Existing Overhead Joint Utility	j t{on}j t{ot		
6043	topo-ut-natgas- x	Existing Natural Gas Utility			
6044	topo-ut-oh-x	Existing Overhead Utility	{on}{on}{on}		
6045	topo-ut-sewer-x	Existing Sewer Utility	ss-		
6046	topo-ut-tele-oh- x	Existing OH Telephone Utility	tc{oh}tc{oh		
6047	topo-ut-tele-x	Existing Telephone Utility	tc tc-		
6048	topo-ut- telecom-oh-x	Existing Overhead Telecom Utility	t{on}t{on}		
6049	topo-ut-tv-oh-x	Existing Overhead TV Utility	tv{oh}tv		
6050	topo-ut-tv-x	Existing TV Utility	tvtv		
6051	topo-ut-ug-x	Existing Underground Utility	—{ug}— — —{ug}		
6052	topo-ut-water-x	Existing Water Utility	w w w		
6053	topo-veg-x	Existing Vegetation	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
6054	topo-vine-x	Existing Vine	>		
6055	topo-vine_p-x	Vine	>		
6056	topo-void-x	Void			
6057	topo-water-x	Existing Water	<u> </u>		
6058	NOT USED	VACANT			
6059	NOT USED	VACANT			
6060	topo-PN-x	Existing Paving Notch			
6061	NOT USED	VACANT			
6062	NOT USED	VACANT			
6063	NOT USED	VACANT			

	Topo – (6000s)				
ID #	Name	Description	Image		
6064	NOT USED	VACANT			
6065	NOT USED	VACANT			
6066	NOT USED	VACANT			
6067	NOT USED	VACANT			
6068	NOT USED	VACANT			
6069	NOT USED	VACANT			
6070	NOT USED	VACANT			
6071	NOT USED	VACANT			
6072	NOT USED	VACANT			
6073	topo-ut-guy- wire-x	Existing Guy Wire			
6074	topo- bridge_rail-x	Existing Bridge Rail			
6075	topo-krail-x	Existing K-Rail			
6076	topo-ut-joint-x	Existing Joint Utility	— j t — j t -		
6077	NOT USED	VACANT			
6078	topo-ut-oil-x	Existing Oil Utility	oo		
6079	topo-ut-steam-x	Existing Steam Utility			
6080	topo-ut-stormd- x	Existing Storm Drain Utility			
6081	topo-ut- rcwater-x	Existing Recycled Water Utility	- — rcw — — rcw -		
6082	NOT USED	VACANT			
6083	topo-ut- telecom-x	Existing Telecom Utility	t		
6084	topo-ut-irrc-x	Exist Utility Irrigation Crossover	irr-cirr-(		

DESIGN PLANES - U.S. Survey Foot						
	COORDINATE	S FOR DESI	GN PLANE CENTE	R AND GLOBAL OF	RIGIN	
		Califor	nia Coordinate	System		
	NAD '83 - (3)	additio	ns/revisio	ns in 2005	- 2007)	
PLANE	NAME	GLOBAL CE	NTER	GLOBAL ORIG	IN	ZONE
NO.		x	Y	X GO	Y GO	
1	San Diogo	6380000	1997000	6165251 6352	1772251 6352	6
⊥ 1 ⊅	San Diego/Imp	6578000	2021000	6363251 6352	1806251 6352	6
2	Imperial	6799000	1983000	6584251 6352	1768251 6352	6
_ 2A	Imp/Riverside	7007000	2012000	6792251.6352	1797251 6352	6
3	Arizona	7212000	2053000	6997251.6352	1838251.6352	6
4	Orange	6068000	2156000	5853251.6352	1941251.6352	6
4A	Orange/Riverside	6280000	2216000	6065251.6352	2001251.6352	6
5	Riverside W	6493000	2216000	6278251.6352	2001251.6352	6
5A	Riverside Central	6742000	2155000	6527251.6352	1940251.6352	6
6	Riverside E	6922000	2155000	6707251.6352	1940251.6352	6
7R	Los Angeles	6476000	1927000	6261251.6352	1712251.6352	5
8	Santa Barbara	5951000	2021000	5736251.6352	1806251.6352	5
9	Ventura	6227000	2043000	6012251.6352	1828251.6352	5
9A	LA/San Bernardino	6710000	1985000	6495251.6352	1770251.6352	5
10	San Bernardino SW	6831000	1972000	6616251.6352	1757251.6352	5
11	San Bernardino S	7184000	2018000	6969251.6352	1803251.6352	5
12R	San Bernardino SE	7518000	2053000	7303251.6352	1838251.6352	5
13	San Luis Obispo	5763000	2350000	5548251.6352	2135251.6352	5
14	Kern West	6133000	2326000	5918251.6352	2111251.6352	5
15	Kern East	6482000	2305000	6267251.6352	2090251.6352	5
15A	Kern E/San Bern	6671000	2291000	6456251.6352	2076251.6352	5
16R	San Bernardino NW	6875000	2305000	6660251.6352	2090251.6352	5
16A	San Bernardino NE	7140000	2283000	6925251.6352	2068251.6352	5
17	San Bernardino NE	7295000	2326000	7080251.6352	2111251.6352	5
18R	Monterey	5892000	2016000	5677251.6352	1801251.6352	4
19	Kings	6299000	2010000	6084251.6352	1795251.6352	4
20	Tulare	6641000	2016000	6426251.6352	1801251.6352	4
21	Inyo S	6945000	2022000	6730251.6352	1807251.6352	4
22R	Inyo SE	7346000	2022000	7131251.6352	1807251.6352	4
22A	San Benito	5997000	2063000	5/82251.6352	1848251.6352	4
23	Fresno	6441000	2247000	6226251.6352	2032251.6352	4
23A	Fresho	6207000	2090000	5992251.6352	18/5251.6352	4
24R 247	Inyo N	705000	2247000	6020251.0352	2032251.0352	4
24A 25	Santa Clara	6163000	1906000	5049251 6352	2032251.0352	3
25	Morgod	6492000	1914000	6277251 6352	1600251 6352	2
20	Madera	6757000	1914000	6542251 6352	1720251 6352	2
2 / 28R	Mono South	7122000	2154000	6907251 6352	1939251 6352	2
20R	S F Bay Area	6045000	2109000	5830251 6352	1894251 6352	2
294	Contra Costa	6239000	2084000	6024251 6352	1869251 6352	3
30	Stanislaus	6464000	2150000	6249251.6352	1935251.6352	3
30A	Tuolumne	6684000	2168000	6469251.6352	1953251.6352	3
31	Mono North	6905000	2268000	6690251.6352	2053251.6352	3
31A	Tuolumne	6719000	2134000	6504251.6352	1919251.6352	3
32R	Sonoma	6280000	1982000	6065251.6352	1767251.6352	2
32A	Solano/Napa	6576000	1966000	6361251.6352	1751251.6352	2
33	Yolo	6648000	1982000	6433251.6352	1767251.6352	2
33A	Sac/El Dorado	6850000	2007000	6635251.6352	1792251.6352	2

PLANE	NAME	GLOBAL CE	NTER	GLOBAL ORIG	IN	ZONE
NO.		x	Y	X GO	Y GO	
34	El Dorado	7052000	2032000	6837251.6352	1817251.6352	2
35	Mendocino	6171000	2302000	5956251.6352	2087251.6352	2
35A	Colusa/Glenn/Lake	6460000	2213000	6245251.6352	1998251.6352	2
36	Butte	6589000	2354000	6374251.6352	2139251.6352	2
36A	Yuba/Nev/Placer	6868000	2219000	6653251.6352	2004251.6352	2
37	Sierra	6921000	2354000	6706251.6352	2139251.6352	2
38R	Humboldt	6103000	2017000	5888251.6353	1802251.6352	1
38A	Trinity	6336000	2017000	6121251.6352	1802251.6352	1
39	Tehama	6553000	2023000	6338251.6352	1808251.6352	1
39A	Tehama/Plumas	6659000	2017000	6444251.6352	1802251.6352	1
40R	Plumas	6911000	1951000	6696251.6352	1736251.6352	1
40A	Lassen	6911000	2100000	6696251.6352	1885251.6352	1
41	Siskiyou W	6145000	2412000	5930251.6352	2197251.6352	1
41A	Siskiyou	6303000	2412000	6088251.6352	2197251.6352	1
42	Siskiyou E	6555000	2422000	6340251.6352	2207251.6352	1
42A	Siskiyou/Modoc	6662000	2414000	6447251.6352	2199251.6352	1
43R	Modoc	6911000	2422000	6696251.6352	2207251.6352	1

## DESIGN PLANES - Metric

#### COORDINATES FOR DESIGN PLANE CENTER AND GLOBAL ORIGIN California Coordinate System

## NAD '83

PLANE	NAME	GLOBAL CE	NTER	GLOBAL ORIG	IN	ZONE
NO.		x	Y	<u>X GO</u>	Y GO	
<b>z1</b>	Zone 1	1994000	695000	1779251.6352	480251.6352	1
Z2	Zone 2	2016000	650000	1801251.6352	435251.6352	2
z3w	Zone 3 West	1907000	609000	1692251.6352	394251.6352	3w
Z3E	Zone 3 East	2056000	640000	1841251.6352	425251.6352	3e
Z4W	Zone 4 West	1877000	610000	1662251.6352	395251.6352	4w
Z4E	Zone 4 East	2208000	679000	1993251.6352	464251.6352	4e
z5w	Zone 5 West	1824000	625000	1609251.6352	410251.6352	5w
Z5E	Zone 5 East	2163000	652000	1948251.6352	437251.6352	5e
Z6	Zone 6	1957000	552000	1742251.6352	337251.6352	6

## DESIGN PLANES - U.S. Survey Foot

#### COORDINATES FOR DESIGN PLANE CENTER AND GLOBAL ORIGIN California Coordinate System

## NAD '27

PLANE	NAME	GLOBAL CENTER		GLOBAL ORIGIN		ZONE
NO.		x	Y	X GO	Y GO	
1	San Diego	1819000	347000	1604251.6352	132251.6352	6
2	Imperial	2237000	343000	2022251.6352	128251.6352	6
3	Arizona	2651000	413000	2436251.6352	198251.6352	6
4	Orange	1507000	515000	1292251.6352	300251.6352	6
5	Riverside W	1932000	575000	1717251.6352	360251.6352	6
6	Riverside E	2361000	514000	2146251.6352	299251.6352	6
7	Los Angeles	4202000	4222000	3987251.6352	4007251.6352	7
8	Santa Barbara	1389000	381000	1174251.6352	166251.6352	5
9	Ventura	1666000	403000	1451251.6352	188251.6352	5
10	San Bernardino SW	2270000	332000	2055251.6352	117251.6352	5
11	San Bernardino S	2623000	377000	2408251.6352	162251.6352	5
12	San Bernardino SE	2947000	413000	2732251.6352	198251.6352	5
13	San Luis Obispo	1201000	709000	986251.6352	494251.6352	5
14	Kern	1571000	686000	1356251.6352	471251.6352	5
15	Kern East	1921000	664000	1706251.6352	449251.6352	5
16	San Bernardino NW	2283000	699000	2068251.6352	484251.6352	5
17	San Bernardino NE	2733000	686000	2518251.6352	471251.6352	5
18	Monterey	1330000	396000	1115251.6352	181251.6352	4
19	Kings	1737000	370000	1522251.6352	155251.6352	4
20	Tulare	2079000	376000	1864251.6352	161251.6352	4
21	Inyo Southwest	2384000	381000	2169251.6352	166251.6352	4
22	Inyo Southeast	2770000	369000	2555251.6352	154251.6352	4
23	Fresno	1880000	607000	1665251.6352	392251.6352	4
24	Inyo North	2312000	628000	2097251.6352	413251.6352	4
25	Santa Clara	1601000	266000	1386251.6352	51251.6352	3
26	Merced	1930000	274000	1715251.6352	59251.6352	3
27	Madera	2195000	294000	1980251.6352	79251.6352	3
28	Mono South	2556000	513000	2341251.6352	298251.6352	3
29	S. F. Bay Area	1499000	456000	1284251.6352	241251.6352	3
30	Stanislaus	1903000	510000	1688251.6352	295251.6352	3
31	Mono North	2344000	628000	2129251.6352	413251.6352	3
32	Sonoma	1730000	333000	1515251.6352	118251.6352	2
33	Yolo	2086000	341000	1871251.6352	126251.6352	2
34	El Dorado	2490000	391000	2275251.6352	176251.6352	2
35	Mendocino	1609000	662000	1394251.6352	447251.6352	2
36	Butte	2028000	713000	1813251.6352	498251.6352	2
37	Sierra	2360000	714000	2145251.6352	499251.6352	2
38	Humboldt	1552000	377000	1337251.6352	162251.6352	1
39	Tehama	1992000	382000	1777251.6352	167251.6352	1
40	Plumas	2350000	324000	2135251.6352	109251.6352	1
41	Siskiyou West	1583000	771000	1368251.6352	556251.6352	1
42	Siskiyou East	1993000	781000	1778251.6352	566251.6352	1
43	Modoc	2335000	758000	2120251.6352	543251.6352	1

# **Caltrans Fonts**

The <u>seven</u> fonts shown in this Appendix are the only fonts currently used by Caltrans! Out dated fonts are still in the Caltrans Font resource file (<u>ctfont.rsc</u>) in order to allow old archived files to be plotted/printed with the fonts that were originally used.

Font 3 (<u>ctfont1</u>) is the new standard Caltrans font used by all functional units. Font 3 was developed to improve the printing quality and clarity for half-size plotting/printing (11" X 17"). The space for each character (kerning) has been improved in Font 3 over the kerning used in Font 2 (<u>Leroy</u>). Font 2 is still used and needed for mapping purposes.

Font 3 contains additional characters and has enhanced several existing characters for clarity when reading the plans. Because of these additional characters, enhancements and kerning, Font 3 has replaced the need for using Font 23 when labeling waterways and As-built changes. Use Font 3 with a slant angle of 25 degrees for waterways and a slant angle of 15 degrees for As-built changes.

Years ago Font 1 was created to reduce the spacing between characters. With the improved kerning in Font 3 along with the improved enhancements for print quality and clarity, it is now unnecessary and obsolete to use Font 1.

Font 43 (Bold) is used in the preparation of the Final Contract plans. Fonts 4, 7, 55, & 56 are used by Right of Way Engineering for their specific needs.

In this Appendix, every character for each of the seven fonts is shown with its character ID value. To access any character by its ID value, type a back-slash followed by the ID value of the character. Since special characters may not be linked to a particular key on the keyboard, the back-slash is the best way to insert them while using the standard MicroStation "Dialog" Text Editor Style.

Example: (\197) will allow the user to place a cubic symbol when using Font 3.

All font characters can be displayed and selected by using the "<u>WYSIWYG</u>" Text Editor Style available in MicroStation.
Font 2 (LEROY)

2 - L	ERO	Y													
<u>F</u> ile	Disp	olay													
32	33	34	35	36		_ 38 _	39	40	41	42	43	44	_45	46	47
		11	#	\$	%	&			)	×	+	9	_		1
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0	1	2	3	4	5	6	7	8	9	8	0 9	<	=		?
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
0	A	B	C	D	E	F	G	H	I	J	K		M	N	0
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
P	Q	R	S	T	U	V	W	X	Y	Z		$\left  \right\rangle$		0	
96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
N I		Ь	C	d	e	f	a	h	Ī	1	K	1	m	n	0
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
p		r	s	+	u	V	W	X	Y	z	[]		}	~-	¢.
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Tr	1/2	1/4	3/4	1/8	3/8	5/8	$\frac{7}{8}$	1/16	3/16	5/16	76	$\frac{9}{16}$	11/16	13/6	15/ <sub>IR</sub>
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
1/22	3/30	5/30	1/20	9/32	1/32	13/32	15/30	17/32	19/32	21/32	23/	25/32	27/32	29/	31/32
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
1/64	3/60	5/60	7/64	%4	1/60	13/64	15/ <sub>64</sub>	17/54	19/64	21/54	23/	25/	27/ <sub>64</sub>	29/ /64	31/54
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
0	35/ /64	37/	39/	41/64	43/ (64	45/ (64	47/ <sub>64</sub>	49/ /64	51/64	53/	55/ /64	57/ 154	59/ /64	61/ (64	6¥ (64
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
$\Delta$	Ø	P	u	2	3	A		$\pm$							
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Font 3 (CTFONT1)

# 3 - CTFONT1

Eile	Dis	play													- 1999-11
32	33	- 34	35	36	37	- 38	- 39	40	41	42	43	44	45	46	47
	L,	- 19	#	\$	%	&	1	(	)	×	Ŧ	9	222		1
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
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64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
O	A	B	C	D	E	F	G	H	I	J	K	Ľ	Μ	Ν	0
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
P	Q	R	S	T	Ų	V	W	Х	Y	Z	E	$\mathbf{X}$		Ċ	
96	97	98	99	100	101	102,	103	104	105	106	107	108	109	110	111
X	a	b	¢	d	ę	f	q	h	Ī	Í	K	I.	m	n	0
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
p	q	r	S	+	Ш	V	W	X	Υ	Z	1		}		Œ
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
TT	$\frac{1}{2}$	1/4	3/4	1/8	3/8	5/8	7/8	1/16	3/16	5/16	7/16	$\frac{9}{16}$	1/6	13/16	15/16
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
1/32	$\frac{3}{32}$	5/32	7/32	$\frac{9}{32}$	$ \psi_{32} $	13/32	15/32	17/32	19/32	21/32	23/32	25/ 732	27/32	29/ 732	31/32
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
1/64	3/64	5/64	7/64	%4	11/64	13/64	15/64	17/64	19/64	21/64	23/4	25/ %4	27/64	29/ 764	31/64
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
D	35/ 764	37/ /64	39/ 764	4/64	43/ 764	45/ %4	47/ /64	43/4	51/ /64	53/ /64	55/ 764	57/ /64	59/ 764	61/ /64	63/ %4
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Δ	Ø	P	$\mu$	2	3	4		±	θ	$\gamma$	Σ	$\Phi$	Ω	Ι	Y
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
X	L					0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -				2 - 4 - 17 - 17 - 18 - 19 - 19 - 19 - 19 - 19 - 19 - 19				0.0220.021	
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255
1/3	2/3	1/5			1/6		1/25								

<b>4</b> - C	:TFO	NT-F	łW												
<u>F</u> ile	Disp	olay													
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	1	17	#	\$	%	&			$ \rangle $	$ \star $	$\left  + \right $	g		a	1
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0	1	2	3	4	5	6	7	8	9	P	e q			>	2
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Q	A	B	C	D	E	F	G	H	I	J	K	L	M	N	0
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
P	Q	R	S	T	U	V	W	X	Υ	Z	E		] ]	0	
96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
E.	a	Ь	C	d	e	f	$\left  q \right $	h	i	i	k	1	$\overline{m}$	$\square$	0
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
p	$\left  q \right $	r	5	+	u	V	W	X	У	Z	{		}	~	¢
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Tr	1/2	1/4	3/4	1/8	3/8	5/8	7/8	1/16	3/16	5/16	7/16	9/6	11/16	13/6	15/6
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
1/20	$\frac{3}{6}$	5/2	7/20	$\frac{9}{2}$	11/20	13/22	15/20	17/20	19/22	2/22	23/20	24	27/22	29/20	3/22
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
1/50	3/6.8	5/68	7/6.8	9/6.8	11/6.8	13/64	8/64	17/54	19/54	2/54	23/	E/	27/	29/	3/64
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
0	35/	37/ 164	31/	4/64	43/	45/ 164	47/64	4%	51/64	53/	55% 164	57/	59/ 164	61/ /64	67/
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
$ \Delta $	ø	$ \mathcal{P} $	4	2	3	4		E.	θ	Y					
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

## Font 4 (CTFONT-RW)

7 - A	DLI	IE.													
<u>F</u> ile	Disp	olay													
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	1			5		æ	•	•	3			36	8.7	-	
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0	1	9	3	्रतः	5	6	7	8	9						1
64	65	66	67	68	69	70	_71	72	73	74	75	76	77	78	79
	A	В	С	D	B	F	G	H	Ι	J	K	L	М	N	0
80	81	82	83	84	85	86	87	88	89	90		92	93	94	95
P	Q	R	8	Т	U	v	W	x	Y	Z					
96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
•	<u> </u>	<u> </u>	a		a	f		L	i	i	k	1			•
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
D	<b>E</b>	<b>P</b>		t		<b>v</b>	W	I	3	5					
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
-	- 40	1.40	1.17	140	140	150		150	150	454		150	457	100	150
144	140	140	147	140	143	100			105	104		100		1:00	
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
		102												114	
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
													$\square$		
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
				1.0000000					00000000				04-00000-0	1.000000	
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255
		-		-	-					-				-	

Font 43 (BULD)	Font	43	(BOLD)
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43 -	HUL	D													
<u>F</u> ile	Disp	olay													
32	33	34	35	36	37	38	39	40		42	43	44	45	46	47
	1	•	#	\$	7	å		(		*	+		<b>E</b>		1
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0	1	2	3	4	5	6	7	8	9		5	4	=		7
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
D	A	B	С	D	E	l.F.	G	H		J	K		M	Ν	0
80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
P	Q	R	8	T	U	V	W	X	Y	Ζ			]	•	1000
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#### TEXT SIZE for accepted plotting scales other than the Caltrans base scale For Highway/Landscape Projects and Photogrammetry

DESCRIPTION	SIZE at 1"=20'	SIZE at 1"=100'	FONT	WEIGHT
Title Project Description	TX = 5.8 *	TX = 29.0 *	43	0
Name and ID Code of Individual Plan Sheets, (does not apply to the Title Sheet.	TX = 5.8 *	TX = 29.0 *	43	0
Titles for Quantity Tables and Detail Drawings. Begin and End Construction on Title Sheet	TX = 4.8	TX = 24.0	43	0
For Pacific Ocean	TX = 4.8	TX = 24.0	3	2
Country and State boundary	TX = 4.4	TX = 22.0	43	0
City Names on the Title Sheet Strip Map	TX = 4.0	TX = 20.0 **	43	0
County Names on the Title Sheet Strip Map	TX = 4.0	TX = 20.0	43	0
Begin and End Work on Title Sheet. Titles for Informational Tables	TX = 4.0	TX = 20.0	3	2
Subtitles for Tables and Detail Drawings. Route and Route No. *** Headings inside a Quantity Table	TH = 3.5 TW = 3.5 ****	TH = 17.5 TW = 17.5 ****	3	2
Bays	TX = 3.5	TX = 17.5	3	2
As-built Changes	TX = 3.5	TX = 17.5	3	1
River Names (waterways)	TX = 2.8	TX = 14.0	3 *****	1
Majority of Text, (including text with drawings, tables and dimensioning). County Lines and City Limit Lines	TX = 2.8	TX = 14.0	3	1
Restricted Space for Placement of Text	TH = 2.8 TW = 2.4	TH = 14.0 TW = 12.0	3	0
Name, Date, License Number Inside Seal and Date of Signature	TH = 2.8 TW = 2.0	TH = 14.0 TW = 10.0	3	1
Printed Names in Margin of Border Sheet	TX = 2.4	TX = 12.0	3	1
Photogrammetric Mapping and Survey Topographic Mapping Text	TX = 2.4	TX = 12.0	2	1

- \* Adjustable if necessary; TX = 4.8 minimum at 1" = 20' or TX = 24 minimum at 1" = 100'
- \*\* For projects spanning multiple counties that are identified on the Title Sheet, the text size and font for <u>cities</u> may be reduced to;

So the <u>counties</u> can be shown more prominently than cities.

\*\*\* If a Layout Sheet has <u>multiple routes</u> and is a busy and cluttered sheet, making it difficult to see the route labeling, then the Route and Route No. may be placed using;

TX = 4, Font = 43, WT = 0 for routes <u>with work</u> at 1" = 20' or TX = 20, Font = 43, WT = 0 at 1" = 100' TX = 2.8, Font = 3, WT = 1 for routes <u>without work</u> at 1" = 20' or TX = 14, Font 3, WT = 1 at 1" = 100'

For Title Sheets having a strip map that covers a large area (multiple counties), the route identification may be placed using;

TX = 2.8, Font = 3, WT = 1 for routes <u>without work</u> at 1" = 20' or TX = 14, Font = 3, WT = 1 at 1" = 100'

\*\*\*\* Reduce text width;

TW = 2.8 at 1" = 20' or

TW = 14 at 1" = 100' minimum)

If needed for restricted space when placing a heading inside a quantity table.

\*\*\*\*\* <u>Do not use Font 23.</u> It is obsolete and does not have the appropriate spacing for characters or the desired appearance for certain letters. Use the Caltrans standard Font 3 (ctfont1) and place at a slant angle of 25 degrees.

## Appendix A7

The information in the following tables apply to Design and Survey Topo and R/W data on projects using the Named Level convention.

#### **DESIGN DATA**

The following table identifies the featureline, alignment, point, profile, profile view and section view styles in the Ct\_2016\_Design.dwt template.

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Feature Line Styles	_No Display	No Display	N/a
Feature Line Styles	c3d_Corridor All-Views	Displayed in All Views - No vertex markers in Profile Uses the c3d-CORRIDOR Layer Properties	Continuous 0 0.012
Feature Line Styles	c3d_Corridor Model-View	Displayed only in Model View Uses the c3d-CORRIDOR Layer Properties	Continuous 0 0.012
Feature Line Styles	c3d_GRADING All-Views	Displayed in All Views - No vertex markers in Profile Uses the c3d-GRADING Layer Properties	Continuous 0 0.012

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Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Feature Line Styles	df_BASIN	Displayes Line in Plan Model and Profile - No vertex markers in Profile. Marker visible in Section. Uses the Layer Properties of df_BASIN	Continuous 9 0.012
Feature Line Styles	df_FLOW-LINE	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of df_FLOW- LINE	rd-flowline_c3d 1 0.012
Feature Line Styles	mc_CURB	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of mc_CURB	Continuous 8 0.012
Feature Line Styles	rd_DITCH-TOP	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_DITCH-TOP	Continuous 15 0.012
Feature Line Styles	rd_HMA-DIKE	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_HMA- DIKE	Continuous 13 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Feature Line Styles	rd_MATCHLIN E	Displayes Line in Plan and Model Uses the Layer Properties of rd_MATCHLINE	LC6- dash_dot_dot_c3d 5 0.005
Feature Line Styles	rd_RIGHT-OF- WAY	Displayes Line in Plan and Model Uses the Layer Properties of rd_RIGHT-OF-WAY	Continuous 6 0.012
Feature Line Styles	rd_ROCK- SLOPE- PROTECTION	Rock Slope Protection	Continuous 0 0.012
Feature Line Styles	rd_SAW-CUT- LINE	Displayes Line in Plan and Model Uses the Layer Properties of rd_SAW- CUT-LINE	Continuous 5 0.005
Feature Line Styles	rd_SLOPE- BENCH	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_SLOPE-BENCH	Continuous 15 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Feature Line Styles	rd_SLOPE- CATCH	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_SLOPE-CATCH	Continuous 15 0.012
Feature Line Styles	rd_SLOPE- CATCH-CUT	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_SLOPE-CATCH-CUT	Continuous 3 0.012
Feature Line Styles	rd_SLOPE- CATCH-FILL	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_SLOPE-CATCH-FILL	Continuous 5 0.012
Feature Line Styles	rd_SLOPE-HP	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_SLOPE-HP	Continuous 3 0.012
Feature Line Styles	rd_STRING- LINE	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of rd_STRING-LINE	Continuous 0 0.005

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Feature Line Styles	tcd_BARRIER- CONC	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of tcd_BARRIER-CONC	rd-barrier_c3d 0 0.012
Feature Line Styles	tcd_TRAFFIC- STRIPE	Displayes Line in Plan and Model Uses the Layer Properties of tcd_TRAFFIC-STRIPE	Continuous 3 0.012
Feature Line Styles	wall	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of wall_	Continuous 13 0.012
Feature Line Styles	wpc_TEMP- EARTH-BERM	Displayes Line in Plan Model and Profile - No vertex markers in Profile Uses the Layer Properties of wpc_TEMP-EARTH-BERM	sw-TEB_c3d 15 0.012
Point Styles	X High Points	Design - High Points	Marker, Label rd_SURFACE- POINT Continuous 2 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Point Styles	X Low Points	Design - Low Points	Marker, Label rd_SURFACE- POINT Continuous 3 0.012
Alignment Styles	_Analysis	Non-standard style used to display warnings and the direction of the alignment entities. If the entities aren't all pointing in the same direction then the alignment report and station labels will be incorrect.	Line align_ Continuous 0 0.012
Alignment Styles	Align-Drainage Culvert	Drainage alignment Culverts	Line align_CULVERT Continuous 9 0.020
Alignment Styles	Align-Drainage Culvert [Analysis]	Drainage alignment Culverts Analysis	Line align_CULVERT Continuous 2 0.020

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Align-Drainage Ditch	Drainage alignment Ditches	Line align_DITCH Continuous 9 0.020
Alignment Styles	Align-Drainage Ditch [Analysis]	Drainage alignment Ditches	Line align_DITCH Continuous 2 0.020
Alignment Styles	Align-Frontage Rd	Alignment for Frontage Roads	Line align_DITCH Continuous 14 0.020
Alignment Styles	Align-Frontage Rd [Analysis]	For the Analysis of Alignments for Frontage Roads	Line align_DITCH Continuous 14 0.020

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Align-Local ST	Alignment for the Local Streets	Line align_FRONTAGE Continuous 10 0.020
Alignment Styles	Align-Mainline	Alignment for the Mainline Road	Line align_MAIN Continuous 0 0.024
Alignment Styles	Align-Mainline [Analysis]	For the Analysis of the Alignment for the Mainline Roads	Line align_MAIN Continuous 0 0.024
Alignment Styles	Align-Ramp	Alignment for On and Off Ramps	Line align_RAMP Continuous 13 0.020

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Align-Ramp [Analysis]	For the Analysis of Alignments for On and Off Ramps	Line align_RAMP Continuous 13 0.020
Alignment Styles	Align- Roundabout	Alignment for a Roundabout	Line align_ROUNDABO UT Continuous 14 0.024
Alignment Styles	Align- Secondary HWY	Alignment for a Secondary Highway	Line align_SECONDAR Y-HWY Continuous 8 0.024
Alignment Styles	Align- Temporary	Alignment for Temporary Roads	Line align_TEMP Continuous 12 0.020

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Align- Temporary [Analysis]	For the Analysis of Alignments for Temporary Roads	Line align_TEMP Continuous 12 0.020
Alignment Styles	Align-Wall- Retaining	Retaining Wall Alignment	Line align_WALL_RW Continuous 7 0.020
Alignment Styles	Align-Wall- Sound	Sound Wall Alignment	Line align_WALL_SW Continuous 14 0.020
Alignment Styles	Barrier- Concrete	Concrete Barriers	Line tcd_BARRIER- CONC rd-BARRIER_c3d 8 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Barrier-Rail	Guard Rail	Line tcd_RAILING rd-mbgr-p_c3d 14 0.012
Alignment Styles	Ditch-Bottom	Bottom of Ditches	Line rd_DITCH- BOTTOM Continuous 15 0.012
Alignment Styles	Ditch-Top	Top of Ditches	Line rd_DITCH-TOP Continuous 15 0.012
Alignment Styles	Edge of Pavement	Edge of Pavement	Line rd_EP Continuous 0 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Edge of Shoulder	Edge of Shoulder	Line rd_ES Continuous 0 0.012
Alignment Styles	Edge of Traveled Way	Edge of Traveled Way	Line rd_ETW Continuous 0 0.012
Alignment Styles	Flow Line	Flow Lines	Line rd_FLOW-LINE rd-flowIn_c3d 1 0.012
Alignment Styles	Matchline	Matchline between adjacent corridors for volumes and slopestakes	Line rd_MATCHLINE LC6- dash_dot_dot_c3d 5 0.005

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	RW	New Right of Way Requierments	Line rd_RIGHT-OF- WAY Continuous 6 0.012
Alignment Styles	RW Easement	New Right of Way Easement Requierments	Line rd_RIGHT-OF- WAY-TCE Continuous 0 0.012
Alignment Styles	Saw Cut Line		Line rd_SAW-CUT-LINE Continuous 5 0.005
Alignment Styles	Slope-Catch	Grading Catch at existing ground surface for both cut and fill.	Line rd_SLOPE-CATCH Continuous 15 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Alignment Styles	Slope-Catch- Cut	Grading Catch in Cut conditions	Line rd_SLOPE- CATCH-CUT Continuous 3 0.012
Alignment Styles	Slope-Catch- Fill	Grading Catch in Fill conditions	Line rd_SLOPE- CATCH-FILL Continuous 5 0.012
Alignment Styles	Slope-Hinge	Grading Hinge Point	Line rd_SLOPE-HP Continuous 3 0.012
Profile Styles	Existing Ground	Original ground profile	rd_PROFILE-OG LC2- medium_dash_c3d 12 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Profile Styles	Existing Ground and Display in Model View	Original ground profile	rd_PROFILE-OG LC2- medium_dash_c3d 12 0.012
Profile Styles	Finish Grade	Finish Profile	rd_PROFILE- FINISH Continuous 4 0.012
Profile Styles	Finish Grade and Display in Model View	Finish Profile	rd_PROFILE- FINISH Continuous 4 0.012
Profile View Styles	Profile [H50]	Vertical scale of 1"=5' intended for use in a base file with a horizontal scale of 1"=50' This style will accomodate a profile view 1400' long at 50 scale. When placed manually (a layout tab in paperspace), be sure to modify the station range to include 1400'. This will accomodate a profile view 45' high at 1"=5'	border_DATUM- LINE Continuous 0 0.012

Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Profile View Styles	Profile [H50] [Analysis]	Displays the View title, Grid Horizontal Major lines and Grid Vertical Major lines. Vertical scale of 1"=5'. Horizontal scale of 1"=50'. This style will accomodate a profile view 1400' long at 50 scale. When placed manually (a layout tab in paperspace), be sure to modify the station range to include 1400'. This will accomodate a profile view 45' high at 1"=5'	border_DATUM- LINE Continuous 0 0.012
Section View Styles	1X Exaggeration	View axes turned off. 1x Exaggeration	border_SHEET Continuous 0 0.024
Section View Styles	1X Exaggeration [20 Scale]	View axes turned off. 1x Exaggeration	border_SHEET Continuous 0 0.024
Section View Styles	2X Exaggeration	View axes turned off. 2x Exaggeration	border_SHEET Continuous 0 0.024

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Feature Group	Civil 3D Style (Survey Figure or Point)	Feature Description	Feature Attributes Layer Linetype or Block Color Weight
Section View Styles	DR 1X Exaggeration	View axiis turned off. 1x Exaggeration	border_SHEET Continuous 0 0.024

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#### **R/W MAPPING DATA FILES**

#### TEMPLATE - CT\_2016\_RW\_MAPPING.DWT

*Ct\_2016\_RW\_Mapping.dwt*, contains layers, styles, and page setups required to create drawings for R/W and Survey mapping products.

When creating map sheets, the appropriate border is imported from one of the map sheet border templates described later in this section.

#### Features & Object Styles

#### Feature Groups

The following table identifies the of R/W feature groups.

Feature Group	Description
General	General features are used for calculations and general display including open and closed found point symbols.
ControlControl related features include project control, found monuments & R/W, and directional information.	
<b>Existing</b> <b>Elements</b> Existing elements include existing, superceded & relinquished R/W, and existing roadway alignments, easements & title encumberances.	
Landnet Elements	Landnet elements include city, county, state, & federal boundaries, federal participation areas, subdivision boundaries, townships & ranges, section lines & ranchos, quarter section lines & government tracts, government lots & subsections, parcel & ownership lines, and interior lot lines.
Miscellaneous Elements	Miscellaneous elements include Consent to Common Use Agreements (CCUA), Joint Use Agreements (JUA), freeway lease areas, unassigned supplemental reference areas, abandonment & vacation areas, and Surveyor's retracement data.
Parcel Coloring & Hatching	Parcel coloring & hatching features include styles to color parcel easements, underlying fee areas, parcel take & remainder areas, Director's Deed areas, and relinquishments.
Proposed Elements	Proposed elements include proposed R/W, roadway alignments, and permanent & temporary easements.

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#### R/W Feature Listing

The following table lists the R/W features and the associated Civil 3D Style or Layer and Feature Group.

Description	Civil 3D Style/Layer	Element	Group
Abandonment Area	rw_MISC_Abandonment	Polyline	Miscellaneous
Calculated general non-plotting point data	calc_no_plot	COGO Point	General
Calculated general point data	calc	COGO Point	General
Calculated non- plotting R/W point data	calc_RW_no_plot	COGO Point	General
Calculated R/W point data	calc_RW	COGO Point	General
Calculated search point	calc_SEARCH	COGO Point	General
City, County, State & Federal Boundaries	rw_LANDNET_Public_Boundary	Polyline	Landnet
Consent to Common Use Agreement (CCUA) (Centerline)	rw_MISC_CCUA_align	Polyline	Miscellaneous
Consent to Common Use Agreement (CCUA) (Sideline)	rw_MISC_CCUA	Polyline	Miscellaneous
Director's Deed [Stipling]	Director's Deed [Stipling]	Parcel	Parcel
Easement & underlying fee coloring	Easement & UF [various colors]	Parcel	Parcel
Existing access control alignments The ticks are defined by a linetype	Existing Access Control LT (ticks by linetype)	Alignment	Existing

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Description	Civil 3D Style/Layer	Element	Group
Existing access control alignments The ticks are defined by the Alignment Label Set	Existing Access Control LT (ticks by style)	Alignment	Existing
Existing access control point locations	calc_RW_EXIST_Access	COGO Point	Existing
Existing alignment point data	calc_ALIGN_EXIST	COGO Point	Existing
Existing Conventional RW (Fee or Easement)	Existing Conventional RW	Alignment	Existing
Existing Easement [Centerline]	Existing Easement [Centerline]	Alignment	Existing
Existing Easement [Sideline]	Existing Easement [Sideline]	Alignment	Existing
Existing easement point data	calc_EASE_EXIST	COGO Point	Existing
Existing Frontage Road Alignment	Existing Frontage Road Alignment	Alignment	Existing
Existing Mainline Alignment	Existing Mainline Alignment	Alignment	Existing
Existing Previous RW	rw_RW_EXIST_Previous	Polyline	Existing
Existing Public Roadway Alignment	Existing Public Roadway Alignment	Alignment	Existing
Existing Public Utility Easement [Centerline]	rw_EASE_EXIST_Public_Utility_align	Polyline	Existing
Existing Public Utility Easement [Sideline]	rw_EASE_EXIST_Public_Utility	Polyline	Existing
Existing R/W point data	calc_RW_EXIST	COGO Point	Existing
Existing Ramp Alignment	Existing Ramp Alignment	Alignment	Existing
Existing Title Encumbrance	rw_EASE_EXIST_Title_Encumbrance	Polyline	Existing

Description	Civil 3D Style/Layer	Element	Group
Federal Participation	rw_LANDNET_Fed_Part	Polyline	Landnet
Found point	su_ctrl_FD	COGO Point	Control
Found point - C/L monument	su_ctrl_FD_CL	COGO Point	Control
Found point - no record	su_ctrl_FD_no_record	COGO Point	Control
Found point - not plotted	su_ctrl_FD_no_plot	COGO Point	Control
Found point - offset line monument	su_ctrl_FD_Offset_Line	COGO Point	Control
Found point - R/W monument	su_ctrl_FD_RW	COGO Point	Control
Found Point - section corner	su_ctrl_FD_Section	COGO Point	Control
Found point - station line monument	su_ctrl_FD_Station_Line	COGO Point	Control
Freeway Lease Area	rw_MISC_FLA	Polyline	Miscellaneous
General point data with filled circle	_General [closed circle]	COGO Point	General
General point data with open circle	_General [open circle]	COGO Point	General
Interior Lot Lines	rw_LANDNET_Interior_Lot	Polyline	Landnet
Joint Use Agreement (JUA) (Centerline)	rw_MISC_JUA_align	Polyline	Miscellaneous
Joint Use Agreement (JUA) (Sideline)	rw_MISC_JUA	Polyline	Miscellaneous
Landnet point data	calc_LANDNET	COGO Point	Landnet
Landnet section corner point data	calc_LANDNET_Section	COGO Point	Landnet
Miscellaneous point data	calc_MISC	COGO Point	Miscellaneous

Description	Civil 3D Style/Layer	Element	Group
Parcels & Ownership Lines	rw_LANDNET_Parcels_Ownership	Polyline	Landnet
Photo Control Monument - horizontal	su_ctrl_Photo_H	COGO Point	Control
Photo Control Monument - horizontal & vertical	su_ctrl_Photo_HV	COGO Point	Control
Photo Control Monument - vertical	su_ctrl_Photo_V	COGO Point	Control
Primary Control Monument - horizontal	su_ctrl_Primary_H	COGO Point	Control
Primary Control Monument - horizontal & vertical	su_ctrl_Primary_HV	COGO Point	Control
Primary Control Monument - vertical	su_ctrl_Primary_V	COGO Point	Control
Project Control Monument - horizontal	su_ctrl_Project_H	COGO Point	Control
Project Control Monument - horizontal & vertical	su_ctrl_Project_HV	COGO Point	Control
Project Control Monument - vertical	su_ctrl_Project_V	COGO Point	Control
Proposed access control alignments The ticks are defined by a linetype	Proposed Access Control LT (ticks by linetype)	Alignment	Proposed
Proposed access control alignments The ticks are defined by the Alignment Label Set	Proposed Access Control LT (ticks by style)	Alignment	Proposed
Proposed access control point locations	calc_RW_PROPOSED_Access	COGO Point	Proposed

Description	Civil 3D Style/Layer	Element	Group
Proposed alignment point data	calc_ALIGN_PROPOSED	COGO Point	Proposed
Proposed Conventional RW (Fee or Easement)	Proposed Conventional RW	Alignment	Proposed
Proposed Drainage Easement	Proposed Drainage Easement	Alignment	Proposed
Proposed Easement [Centerline]	Proposed Easement [Centerline]	Alignment	Proposed
Proposed Easement [Sideline]	Proposed Easement [Sideline]	Alignment	Proposed
Proposed easement point data	calc_EASE_PROPOSED	COGO Point	Proposed
Proposed Frontage Road Alignment	Proposed Frontage Road Alignment	Alignment	Proposed
Proposed Mainline Alignment	Proposed Mainline Alignment	Alignment	Proposed
Proposed R/W point data	calc_RW_PROPOSED	COGO Point	Proposed
Proposed Ramp Alignment	Proposed Ramp Alignment	Alignment	Proposed
Proposed Slope Easement	Proposed Slope Easement	Alignment	Proposed
Proposed Temporary Construction Easement	Proposed Temporary Construction Easement	Alignment	Proposed
Proposed Temporary Drainage Easement	Proposed Temporary Drainage Easement	Alignment	Proposed
Proposed Temporary General Easement	Proposed Temporary General Easement	Alignment	Proposed
Proposed Temporary Slope Easement	Proposed Temporary Slope Easement	Alignment	Proposed

Description	Civil 3D Style/Layer	Element	Group
Quarter Section & USPLS Government Tracts	rw_LANDNET_Qtr_Section_Tract	Polyline	Landnet
Relinquished R/W (Conventional - Fee or Easement)	rw_RW_EXIST_Relinquished_Conventional	Polyline	Existing
Relinquished R/W Access Control (Left)	rw_RW_EXIST_Relinquished_Access_Left	Polyline	Existing
Relinquished R/W Access Control (Right)	rw_RW_EXIST_Relinquished_Access_Right	Polyline	Existing
Relinquishments hatching, NE or NW angled	_Relinquishments [Hatching - NE angled]	Parcel	Parcel
Remainder coloring	Remainder [various colors]	Parcel	Parcel
Section Lines & Ranchos	rw_LANDNET_Section_Rancho	Polyline	Landnet
Subdivision Boundaries	rw_LANDNET_Subdiv_Boundary	Polyline	Landnet
Superceded R/W (Conventional - Fee or Easement)	rw_RW_EXIST_Superceded_Conventional	Polyline	Existing
Superceded R/W Access Control (Left)	rw_RW_EXIST_Superceded_Access_Left	Polyline	Existing
Superceded R/W Access Control (Right)	rw_RW_EXIST_Superceded_Access_Right	Polyline	Existing
Supplemental Control Monument - horizontal	su_ctrl_Supp_H	COGO Point	Control
Supplemental Control Monument - horizontal & vertical	su_ctrl_Supp_HV	COGO Point	Control
Supplemental Control Monument - vertical	su_ctrl_Supp_V	COGO Point	Control

Description	Civil 3D Style/Layer	Element	Group
Surveyor's Retracement Data	rw_retracement	Polyline	Miscellaneous
Take coloring	Take [various colors]	Parcel	Parcel
Township & Range Lines	rw_LANDNET_Town_Range	Polyline	Landnet
Unassigned Supplemental Reference Area	rw_MISC_Supplemental_Reference	Polyline	Miscellaneous
USPLS Government Lots & Subsections	rw_LANDNET_Govt_Lot_Sub_Section	Polyline	Landnet
Vacation Area	rw_MISC_Vacation	Polyline	Miscellaneous

### Point Description Key Sets

When points are inserted into a drawing, the raw description of each point is evaluated by the Description Key Sets. When a raw description matches a Description Key, the properties defined in the key are assigned to the COGO Point or Survey Point.

### Caltrans Field Surveys Description Key Set

Used with survey and MTLS topo data.

Code	Style	Point Label Style	Format	Point Object Layer
BLC	su_ctrl_FD	Name Description	Block Corner	topo_su_ctrl_point_FD
CLH	su_ctrl_FD_CL	Name Description	Ctr Line Monument Horizontal	topo_su_ctrl_point_FD
CLHV	su_ctrl_FD_CL	Name Description	Ctr Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
CLNR	su_ctrl_FD_CL	Name Description	St CL, fd, no record	topo_su_ctrl_point_FD
CLPC	su_ctrl_FD_CL	Name Description	St CL, PC	topo_su_ctrl_point_FD
CLPT	su_ctrl_FD_CL	Name Description	St CL, PT	topo_su_ctrl_point_FD
CPCC	su_ctrl_FD_CL	Name Description	St CL, PCC	topo_su_ctrl_point_FD
СРІ	su_ctrl_FD_CL	Name Description	St CL, PI	topo_su_ctrl_point_FD
CPOC	su_ctrl_FD_CL	Name Description	St CL, POC	topo_su_ctrl_point_FD
СРОТ	su_ctrl_FD_CL	Name Description	St CL, POT	topo_su_ctrl_point_FD
CPRC	su_ctrl_FD_CL	Name Description	St CL, PRC	topo_su_ctrl_point_FD
CTRL	SU CTRL	SU Points Label CTRL	Generic Point - Control monumentati on	topo_su_ctrl_point_MON
FDLIN E	SU Figure Points [CTRL]	SU Points Label CTRL	Generic Line - Ownership Lines	topo_su_ctrl_LINE_PTS_info _only
FDLN	SU Figure Points [CTRL]	SU Points Label CTRL	Generic Line - Ownership Lines	topo_su_ctrl_LINE_PTS_info _only

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Code	Style	Point Label Style	Format	Point Object Layer
FDNR	su_ctrl_FD_no_recor d	Name Description	Fd Pt, no record	topo_su_ctrl_point_FD
FDPT	su_ctrl_FD	Name Description	Generic Point - Ownership	topo_su_ctrl_point_FD
FDR	su_ctrl_FD	Name Description	Fd Pt, record	topo_su_ctrl_point_FD
FRLC	su_ctrl_FD	Name Description	Frac Lot Corner	topo_su_ctrl_point_FD
LTC	su_ctrl_FD	Name Description	Lot Corner	topo_su_ctrl_point_FD
мс	su_ctrl_FD	Name Description	Meander Corner	topo_su_ctrl_point_FD
оѕн	su_ctrl_FD_Offset_L ine	Name Description	O/S Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
оѕну	su_ctrl_FD_Offset_L ine	Name Description	O/S Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
РНН	su_ctrl_Photo_H	SU Points Label CTRL	Photo Control Monument Horizontal	topo_su_ctrl_point_MON
рнну	su_ctrl_Photo_HV	SU Points Label CTRL	Photo Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
РНV	su_ctrl_Photo_V	SU Points Label CTRL	Photo Control Monument Vertical	topo_su_ctrl_point_MON
PLSO	su_ctrl_FD	Name Description	PLS Corner, other	topo_su_ctrl_point_FD
РМС	su_ctrl_FD	Name Description	Parcel Corner	topo_su_ctrl_point_FD

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Code	Style	Point Label Style	Format	Point Object Layer
РМН	su_ctrl_Primary_H	SU Points Label CTRL	Primary Control Monument Horizontal	topo_su_ctrl_point_MON
PMHV	su_ctrl_Primary_HV	SU Points Label CTRL	Primary Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
PMV	su_ctrl_Primary_V	_ctrl_Primary_V		topo_su_ctrl_point_MON
PRH	I su_ctrl_Project_H SU Points Label CTRL		Project Control Monument Horizontal	topo_su_ctrl_point_MON
PRHV	PRHV su_ctrl_Project_HV SU Poin CTRL		Project Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
PRV	su_ctrl_Project_V SU Points Label CTRL		Project Control Monument Vertical	topo_su_ctrl_point_MON
QC	su_ctrl_FD_Section	Name Description	Quarter Corner	topo_su_ctrl_point_FD
RC	su_ctrl_FD	Name Description	Rancho Corner	topo_su_ctrl_point_FD
RO	su_ctrl_FD	Name Description	Rancho, other	topo_su_ctrl_point_FD
RW	■ su_ctrl_FD_RW Name Description		R/W Monument	topo_su_ctrl_point_FD
sc	su_ctrl_FD_Section	Name Description	Section Corner found monument	topo_su_ctrl_point_FD

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Code	ode Style Point Label Style		Format	Point Object Layer	
SLH	su_ctrl_FD_Station_ Line	Name Description	Station Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD	
SLHV	LHV su_ctrl_FD_Station_ Line Name Description		Station Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD	
SRCH	CH calc_SEARCH SU Points Label CTRL		Search Coordinate	rw_topo_point	
SUH	UH su_ctrl_Supp_H SU Points L CTRL		Supp. Control Monument Horizontal	topo_su_ctrl_point_MON	
SUHV	su_ctrl_Supp_HV	SU Points Label CTRL	Supp. Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON	
suv	UV su_ctrl_Supp_V SU Points Lat CTRL		Supp. Control Monument Vertical	topo_su_ctrl_point_MON	
тс	c su_ctrl_FD_Section Name Description		Township Corner	topo_su_ctrl_point_FD	
TRC	TRC su_ctrl_FD Name Description		Tract Corner	topo_su_ctrl_point_FD	
wc	su_ctrl_FD	Name Description	Witness Corner	topo_su_ctrl_point_FD	

# Caltrans Right of Way Description Key Set

Used with calculated R/W data.

Code	Style	Point Label Style	Format	Point Object Layer
ABAN D	calc_MISC	Name Descrip tion	Abandonm ent	rw_MISC_point
CALC P	calc	Name Descrip tion	Plotted Calculated Point	rw_topo_point
CCUA	calc_MISC	Name Descrip tion	Consent to Common Use Agreement (Sideline)	rw_MISC_point
CCUA A	calc_MISC	Name Descrip tion	Consent to Common Use Agreement (Centerline )	rw_MISC_point
DD	calc_MISC	Name Descrip tion	Director's Deed, Easement, Quitclaim	rw_MISC_point
DE	calc_EASE_PROPOSED	Name Descrip tion	New Drainage Easement	rw_EASE_PROPOSED_ point
FLA	calc_MISC	Name Descrip tion	Freeway Lease Area	rw_MISC_point
FP	su_ctrl_FD_no_plot	Name Descrip tion	Non- plotted Found Point	topo_su_ctrl_point_FD_n o_plot
FPP	su_ctrl_FD	Name Descrip tion	Plotted Found Point	topo_su_ctrl_point_FD
JUA	calc_MISC	Name Descrip tion	Joint Use Agreement (Sideline)	rw_MISC_point

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Code	Style	Point Label Style	Format	Point Object Layer
JUAA	calc_MISC	Name Descrip tion	Joint Use Agreement (Centerline )	rw_MISC_point
LF	calc_LANDNET	Name Descrip tion	Landnet Federal Participatio n	rw_LANDNET_point
LI	calc_LANDNET	Name Descrip tion	Landnet Interior Lot Lines	rw_LANDNET_point
LL	calc_LANDNET	Name Descrip tion	Landnet USPLS Governme nt Lots & Subsection s	rw_LANDNET_point
LP	calc_LANDNET	Name Descrip tion	Landnet Parcel & Ownership lines	rw_LANDNET_point
LPB	calc_LANDNET	Name Descrip tion	Landnet City, County, State, & Federal Boundarie s	rw_LANDNET_point
LQ	calc_LANDNET_Section	Name Descrip tion	Landnet Quarter Section and USPLS Governme nt Tract	rw_LANDNET_point
LS	calc_LANDNET_Section	Name Descrip tion	Landnet Section Lines & Ranchos	rw_LANDNET_point

Code	Style	Point Label Style	Format	Point Object Layer
LSB	calc_LANDNET	Name Descrip tion	Landnet Subdivisio n Boundarie s	rw_LANDNET_point
LT	calc_LANDNET_Section	Name Descrip tion	Landnet Township & Range	rw_LANDNET_point
NA	calc_ALIGN_PROPOSE D	Name Descrip tion	New Mainline Alignment Centerline	align_point_PROPOSED
NAC	calc_RW_PROPOSED_ Access	Name Descrip tion	Access Control Opening	rw_RW_PROPOSED_po int
NCL	calc_RW_PROPOSED	Name Descrip tion	New R/W Access Control (Left)	rw_RW_PROPOSED_po int
NCR	calc_RW_PROPOSED	Name Descrip tion	New R/W Access Control (Right)	rw_RW_PROPOSED_po int
NE	calc_EASE_PROPOSED	Name Descrip tion	New Easement (Sideline)	rw_EASE_PROPOSED_ point
NEA	calc_EASE_PROPOSED	Name Descrip tion	New Easement (Centerline )	rw_EASE_PROPOSED_ point
NFA	calc_ALIGN_PROPOSE D	Name Descrip tion	New Frontage Road Alignment Centerline	align_point_PROPOSED
NR	calc_RW_PROPOSED	Name Descrip tion	New Conventio nal R/W (Fee or Easement)	rw_RW_PROPOSED_po int

Code	Style	Point Label Style	Format Point Object La	
NRA	calc_ALIGN_PROPOSE D	Name Descrip tion	New Ramp Alignment Centerline	align_point_PROPOSED
REF	calc_MISC	Name Descrip tion	Unassigne d Suppleme ntal Reference Area	rw_MISC_point
REL	calc_RW_EXIST	Name Descrip tion	Relinquish ed Conventio nal R/W (Fee or Easement)	rw_RW_EXIST_point
RELL	calc_RW_EXIST	Name Descrip tion	Relinquish ed R/W Access Control (Left)	rw_RW_EXIST_point
RELR	calc_RW_EXIST	Name Descrip tion	Relinquish ed R/W Access Control (Right)	rw_RW_EXIST_point
RET	calc	Name Descrip tion	Surveyor's Retraceme nt Data	rw_topo_point
RWP	calc_RW_no_plot	Name Descrip tion	Non- plotted R/W Data	rw_RW_EXIST_point_no _plot
RWPP	calc_RW	Name Descrip tion	Plotted R/W Data	rw_RW_EXIST_point
SC	calc_no_plot	Name Descrip tion	Non- plotted Survey Calculated data	rw_topo_Calcs_no_plot

Code	Style	Point Label Style	Format	Point Object Layer	
SCP	calc	Name Descrip tion	Plotted Survey Calculated data	rw_topo_point	
SE	calc_EASE_PROPOSED	Name Descrip tion	New Slope Easement	rw_EASE_PROPOSED_ point	
TCE	calc_EASE_PROPOSED	Name Descrip tion	Temporary Constructi on Easement	rw_EASE_PROPOSED_ point	
TDE	calc_EASE_PROPOSED	Name Descrip tion	Temporary Drainage Easement	rw_EASE_PROPOSED_ point	
TE	calc_EASE_PROPOSED	Name Descrip tion	Temporary General Easement	rw_EASE_PROPOSED_ point	
ТМР	calc_no_plot	Name Descrip tion	Temporary Calculated Data	rw_topo_Calcs_no_plot	
TSE	calc_EASE_PROPOSED	Name Descrip tion	Temporary Slope Easement	rw_EASE_PROPOSED_ point	
VAC	calc_MISC	Name Descrip tion	Vacation	rw_MISC_point	
ХА	calc_ALIGN_EXIST	Name Descrip tion	Existing Mainline Alignment Centerline	align_point_EXIST	
ХАС	calc_RW_EXIST_Access	Name Descrip tion	Existing Access Control Opening	rw_RW_EXIST_point	
XCL	calc_RW_EXIST	Name Descrip tion	Existing R/W Access Control (Left)	rw_RW_EXIST_point	

Code	Style	Point Label Style	Format	Point Object Layer
XCR	calc_RW_EXIST	Name Descrip tion	Existing R/W Access Control (Right)	rw_RW_EXIST_point
XE	calc_EASE_EXIST	Name Descrip tion	Existing Easement (Sideline)	rw_EASE_EXIST_point
XEA	calc_EASE_EXIST	Name Descrip tion	Existing Easement (Centerline )	rw_EASE_EXIST_point
XFA	calc_ALIGN_EXIST	Name Descrip tion	Existing Frontage Road Alignment Centerline	align_point_EXIST
ХРА	calc_ALIGN_EXIST	Name Descrip tion	Existing Public Roadway Alignment Centerline	align_point_EXIST
XPR	calc_RW_EXIST	Name Descrip tion	Existing Previous R/W	rw_RW_EXIST_point
XR	calc_ALIGN_EXIST	Name Descrip tion	Existing Ramp Alignment	align_point_EXIST
XRA	calc_RW_EXIST	Name Descrip tion	Existing Conventio nal R/W (Fee or Easement)	rw_RW_EXIST_point
xs	calc_RW_EXIST	Name Descrip tion	Supercede d Conventio nal R/W (Fee or Easement)	rw_RW_EXIST_point

Code	Style	Point Label Style	Format	Point Object Layer
XSL	calc_RW_EXIST	Name Descrip tion	Supercede d R/W Access Control (Left)	rw_RW_EXIST_point
XSR	calc_RW_EXIST	Name Descrip tion	Supercede d R/W Access Control (Right)	rw_RW_EXIST_point
хте	calc_EASE_EXIST	Name Descrip tion	Existing Title Encumbra nce	rw_EASE_EXIST_point
xu	calc_EASE_EXIST	Name Descrip tion	Existing Public Utility Easement (Sideline)	rw_EASE_EXIST_point
XUA	calc_EASE_EXIST	Name Descrip tion	Existing Public Utility Easement (Centerline )	rw_EASE_EXIST_point

# **Extended Point Properties**

Two extended point properties are available for R/W mapping data when working with points, user-defined properties and point groups.

# User-Defined Property Classifications

The following User-Defined Properties are in drawings created with the *Ct\_2016\_RW\_Mapping.dwt* template.

- **CgPoint.DTMAttribute** options for *ground* or *feature*. Used to indicate whether the point should be included in a surface (*ground*) or not (*feature*).
- Description (TSS or CAiCE) TSS or CAiCE's Description created during TSS or Caltrans CAiCE XML import
- Comment (CAiCE) CAiCE's Comment created during Caltrans CAiCE XML import

## Point Groups

The following Point Groups are in drawings created with the *Ct\_2016\_RW\_Mapping.dwt* template.

- \_All Points
  - All COGO and Survey Points in the drawing are automatically included in the group.
- CSAC Control Points
  - All CSAC Points with Feature set as *Control monument* are added to this group when the Points are imported from Shape files.
- CSAC Found Points
  - All CSAC Points with Feature set as *Found point* are added to this group when the Points are imported from Shape files.
- \_Hide All Points
  - Includes all Points in the \_All Points, Point Group. Used to temporarily set all Point and Point Label Styles to no display.

# **Extended Parcel Properties**

### User-Defined Property Classifications

The User-defined Property Classifications (UDP) for Parcels are used to uniquely identify the Parcels and sub-parcels, including the parcel number, sub-parcel number, title code, grantor, remarks, area type (e.g. Total, Required, Underlying Fee, Excess, or Remainder) and recording information. The UDP's are important in the preparation of the vestee block, they must be filled in correctly.

Note, a comma delimited CSV file is used compile the UDP's during the preparation of the vestee block. Since commas separate information in a CSV file, commas **must not** be used in any of the Parcel UDP's. If a comma is required in the any of the fields of the vestee block, then it can be added in the Excel spreadsheet after the CSV file is loaded and formatted.

The following UDP's for Parcels are in drawings created with the *Ct\_2016\_RW\_Mapping.dwt* template.

- **APN** (optional): Assessor's Parcel Number this can be labeled in the drawing, but it is not be included in the Vestee Block.
- **Area Type**: Indicates the type of area that the parcel represents. Use one of the following options, *Do not use*, *Total*, *Required*, *Required UF*, *Excess*, *Excess UF*, or *Remainder*.

(Use *Do not use* if the Parcel is extraneous)

- **General Notes** (optional): General information about the Parcel this can be labeled in the drawing, but it is not be included in the Vestee Block.
- *Grantor:* Indicates the Grantor information. Only the first 27 characters will be used in the Vestee Block.
- **Indeterminate Area**: Indicates whether the entire area of ownership will be calculated. Use **Yes** if the Parcel is only partially calculated and the area should not be used for the overall area. The area will be labeled as *LARGE* in the vestee block.
- **Parcel Tax ID**: Represents the parent Caltrans Parcel number (Use **999999** if the Parcel is extraneous)
- Recording Date: Indicates the recording date.
- **Recording Document #:** Indicates the recording document number.
- **Recording Type:** Indicates the recording type. Use one of the following options, GD – Grant deed, ED – Easement deed, QC – Quitclaim, DD – Director's deed,

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*DE* – *Director's easement deed, DK* – *Director's quitclaim deed, FOC* – *Final order of condemnation, HE* – *Highway easement deed, REL* – *Relinquishment, VAC* – *Vacation, JUA* – *Joint use agreement, CCUA* – *Consent to common use agreement, or No Code.* 

- *Remarks* (optional): Only the first 32 characters will be used in the Vestee Block.
- **Sub Parcel #**: Represents the Caltrans sub-Parcel number. All parcels that should be placed on the same row of the vestee block must have the same sub parcel #.
- *Title Code*: Indicates the use of the area. Use one of the following options, *F*-*Fee*, *E* - *Easement*, *TCE* – *Temporary Construction Easement*, *T* – *Other Temporary Easement*, *O* - *Other*, or *A* – *Access Rights Only*.

Will underlying fee be acquired?: Indicates whether underlying fee will be acquired.

# CSAC Import SHP Survey Data Settings

The Shape file data is imported and stored in the drawing based on the settings defined in the **Import SHP Survey Data Settings**. The settings contain instructions to interpret the Shape file attributes and control how the COGO Points, AutoCAD Points, Feature Lines, Polylines, and 3D Polylines will be configured during the import process.

The **CSAC FCL files from TBC** settings option is pre-defined for the CSAC Shape files and is stored in the Civil 3D 2016 template, **Ct\_2016\_RW\_Mapping.dwt**. The Caltrans SSHPI Line and Point settings files, *Ct-Survey\_Data-Feature\_Lines.XML* and *Ct-Survey\_Data-Points.XML*, determine how the Lines and Points in the CSAC Shape files will be stored when they are imported into a Civil 3D drawing. Additional configuration of the settings is <u>NOT</u> required when the Caltrans CSAC FCL is used.

🔥 Import SHP Survey Data	×
SHP settings:	Spatial filter
CSAC FCL files from TBC 🛛 👻 🌄 👻	<ul> <li>All</li> </ul>
	O Display
Import Event Name:	O Rectangle
Nmport Event	and the second s

Figure 1 - Import SHP Survey Data

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#### Caltrans

Import SHP setting s Ct_2016_RW_Mappi	tored in ng.dwt SHP settings: CSAC FCL files from TBC	Y DY	All     Display	
Import SHP Survey Data Settings  Name: CSAC FCL files from TBC Settings files (optional) SSHPI feature line settings: C:/Caltrans\HQ\C3D_2016\Survey\SHP_Import\ SSHPI point settings: C:/Caltrans\HQ\C3D_2016\Survey\SHP_Import\ Property sets:	Ct-Survey_Data-Feature_Lines.XML	<	Rectangle       Buffer from alignment       Vignment       Vignment       Image: station:       Image: station: <th></th>	
Default feature line settings Style: _Non-Standard Layer: c3d_FEATURE_LINE Site:	Default point settings Style: VNon-Standard V Label style: VNon-Standard V Layer:			HP setting stored in _RW_Mapping.dwt
<none> Import SHP setting Ct_2016_RW_Map</none>	rw_topo_point_NON_STANDARD     Point group: <pre></pre>	]	Shir File Varie Format Lines.shp Points.shp	(Name IS NULL.) (Layer LIKE "SLine Points")

Figure 2 – Import SHP Survey Data

#### Non-standard objects

The **CSAC FCL files from TBC** settings includes options for Feature Lines and COGO Points that do not match any of the instructions provided in the Caltrans settings files.

For example, if a CSAC Attribute field is *Required*, such as **DTM\_Type**, and the field is blank then the data will be imported with a non-standard style.

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IES	Elevation	72.99			\ \	Raw Description	*PROPERTY NOT SET*
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						4 . V I O;	

Figure 3 – Non standard style

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#### Caltrans

Another situation where the data may not match the instructions provided in the Caltrans settings files is when a user creates their own Feature Code and an unexpected Shape file is imported.



Figure 4 – Non standard featureline style

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#### Filter by query

The **Filter by query** is used to include or exclude features from specific Shape files based on queries during import.



Figure 5 – Filtering features by query

TBC creates two separate project Shape files (Lines.shp & Points.shp) that would create duplicate features if imported into Civil 3D without queries. Queries are used to exclude some of these duplicate objects during import. One query is used to exclude all features in the *Lines.shp* file, to avoid duplications with the other linear Shape files. Another query is included to only import the Points used to create linework in TBC, *Line Points*, in the *Points.shp* file. These queries are pre-defined in the *CSAC FCL files from TBC* settings.

SHP File Name Format     Query       Lines.shp     (Name IS NULL )       Points.shp     (Laver = 'Feature Line Points')		
Lines.shp (Name IS NULL) Points.shp (Laver = 'Feature Line Points')	SHP File Name Format	Query
Points.shp (Layer = 'Feature Line Points')	Lines.shp	( Name IS NULL )
	Points.shp	( Layer = 'Feature Line Points' )

Figure 6 – Predefined query

# **CSAC Property Set Definitions**

The drawing template contains Property Sets for every CSAC Feature Attribute.

Property Set Definition	Property Set
Associated Files	File_1 - File_2
Associated Images	Photo_1 - Photo_3
Attributes	Aspect
Attributes	Asset_ID
Attributes	Color
Attributes	Count
Attributes	Location
Attributes	Marker
Attributes	Material
Attributes	Post_Type
Attributes	Service
Attributes	Shape
Control Information	Accuracy
Control Information	County
Control Information	ID_Name
Control Information	Mon_Ties
Control Information	Post mile
Control Information	Record
Control Information	Route
Dimensions	Depth
Dimensions	Diameter
Dimensions	Height
Dimensions	Length
Dimensions	Lip_Width
Dimensions	Width
Feature	Category
Feature	Desc_1 - Desc_3
Feature	DTM_Type
Feature	Feature
Feature	Туре
Line Points	FeatureCod

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Property Set Definition	Property Set
	Name
Point Information	Easting
Point Information	Elevation
Point Information	IgnoreElev
Point Information	Northing
Point Information	PointID
ShapeFileInformation	VersionFXL
Surface Status	InSurface

# **CSAC SHP Palette Queries**

The **SHP Palette** contains a tool, **SSHPI Drawing Query**, to define queries using COGO Point Properties, Feature Line Properties, Point UDP's, and/or Property Sets. The queries filter all objects in the active drawing or in an XREF, creating a list of the objects meeting the criteria in the SHP Palette.

The Civil 3D 2016 template, *Ct\_2016\_RW\_Mapping.dwt*, contains pre-defined queries to filter objects based on the value assigned to DTM\_Type to assist with surface creation and to filter objects that have images and/or documents attached.

Â				?									
×	Drawing1				A	SSHPI Drawi	ng Quer	у					×
	→ SHP Import Events ↓ <sup>†</sup> Feature Lines ◆ Points			÷	Que	ry nam	e: Images Atta	iched - Lines					
	V Images Attache	d - Lines			S	et Operator	(	Туре	Property	Operator	Value	)	$\overline{\mathbf{v}}$
	T Images Attache	d - Points		_			(	Property Set	(PS) Associated Images: Photo_1	IS NOT NULL		)	
	Documents Atta     Documents Atta	ached - Lines		_	0	r	(	Property Set	(PS) Associated Images: Photo_2	IS NOT NULL		)	T
	Found Points	ched - Points		_	0	r	(	Property 5 ~	(PS) Associated Images: Photo_3	IS NOT NULL		)	宁
	🗑 Control Points				Object type filter		Point	nt				一人	
	Query Name	Feature line count	Point count		0	Point object	only	Feature Line	objects only 🔿 All objects				$\times$
Ш	Images Attached - Lines	0	0		( (PS) Associated Image Property Set , OT NULL. ) Or. ( (PS) Associated Images: Photo 2 IS NOT N			LIOr	- 1				
ALET	Images Attached - Points	0	0		((PS) Associated Images: Photo_3 IS NoT NULL ) ((PS) Associated Images: Photo_3 IS NoT NULL )								
HPP	Documents Attached - Lines	0	0										
RTS	Documents Attached - Points	0	0						OK	Canc	el	Help	1
MPG	Found Points	0	0										
	Control Points	0	0										

Figure 7 – SSHPI Drawing Query

The pre-defined queries include:

- Control Points
- Documents Attached Lines
- Documents Attached Points
- Found Points
- Images Attached Lines
- Images Attached Points

# Label Styles

The following label styles are typically used in R/W and survey mapping products.

Point Label Styles

Name	Description
_No Display	Used to hide the label
Description	Labels the Point Description. The label can be dragged to the right or left but the line under the description is removed.
Name	Labels the Point Name
Name Description	Labels the Point Name & Description. The label can be dragged to the right or left but the line under the description is removed.
Number & Name Northing Easting Elevation Raw Description	Labels the Point Number, Name, Northing, Easting, Elevation & Raw Description. Use when labelling points for field search or stakeout. Points are exported using Point File Format NumberNameNED (pipe delimited)
Standard	Labels the Point Name, Elevation and the Raw Description
SU Points Label CTRL	Labels the name of Control points that are not included in Survey Figures.
Topo Points [Name]	Labels the name of topo points. The Point Style controls the layer of the label.

### Parcel Area Label Styles

Name	Description
_All Parcel Data	Labels all of the Parcel UDP data
_None	Used to hide the label
Easement_Parcels Name	
(placed on non-plotting layer) (includes options for area in acres or sq ft)	Labels the Parcel name on the Easement_Parcels Site layer
Existing_Parcels Name (placed on non-plotting layer) (includes options for area in acres or sq ft)	Labels the Parcel name on the Existing_Parcels Site layer

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Name	Description
Parcel_Annotation Name	Labels the Deveel news on the Deveel Annetation
(placed on non-plotting layer) (includes options for area in acres or sq ft)	Site layer
Proposed_Parcels Name	
(placed on non-plotting layer) (includes options for area in acres or sq ft)	Labels the Parcel name on the Proposed_Parcels Site layer
Standard	Labels the Parcel name and area

## Annotation Label Styles

Annotation Labels are associated to Civil 3D objects as well as Lines, Arcs, and Polylines. They are typically placed after an object is created and are independent objects.

The Line and Curve Label styles for the relevant Civil 3D and AutoCAD objects are grouped within a parent style containing the possible object components that will be displayed. The child styles are based on the parent and only display the components specified in the label name. The child styles should be selected when placing a label.

Many of the styles are dynamic, changing the label based upon the length of the line or curve. For example, the label will change from bearing & distance along the line to bearing over distance if the length of the line is too short. When the length is too short for either label, a warning symbol will be displayed that can be dragged out to display a stacked label or can be changed to a different label style.

The styles also include optional styles to place the labels at different offsets and to force the label to display specific components of the line or curve.

Label style names indicate the type of object they should be used to label because they may exhibit undesired text heights when used with the wrong object.

- \_2\_POINTS\* should only be used to annotate the bearing &/or distance between two points
- \_PLINE\* should only be used to annotate Polylines, Lines and Curves
- \_ALIGN\* should only be used to annotate Alignments
- \_PARCEL\* should only be used to annotate Parcels.

The names also indicate the type of label and information about the placement of the label. For example,

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- \_PLINE [.05 offset] Bearing labels the bearing at an offset ½ the text height above the line
- \_PLINE [.20 offset] Distance labels the distance at an offset 2 times the text height above the line

# General Label Styles

# General Line Label Styles

Name	Description
_2_POINTS - Bearing & Distance (only for use with the Label type Line between 2 points)	Labels Bearing & Distance between 2 points. This type of label is NOT capable of changing the display based on the distance between the 2 points.
_2_POINTS - Bearing & Distance with crows feet (only for use with the Label type Line between 2 points)	Labels Bearing, Distance & the crows feet between 2 points. This type of label is NOT capable of changing the display based on the distance between the 2 points.
_BLOCK - Bearing & Distance (do not use with the Add Labels tool, only for use by block Label - Bearing_Distance between Points)	Labels Bearing, Distance & the crows feet along an undisplayed line with the block, Label - Bearing_Distance between Points
_PLINE - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Bearing & Distance with crows feet	Labels Bearing, Distance & the crows feet along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_PLINE - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of a line or polylline

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Name	Description
_PLINE - Symbol	Places the ANGLPT symbol at the start or end of the segment.
_PLINE - Table TAG	Labels the line with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PLINE [.35 offset] Bearing & Distance options	Labels Bearing, Distance with an option for the crows feet along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PLINE - Bearing & Distance [dual units]	Labels Bearing & dual units Distance along the line.
PLINE - Bearing & Distance with crows feet [dual units]	Labels Bearing, dual units Distance & the crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

# General Curve Label Styles

Name	Description
_PLINE - Crows Foot	Places the Crows Foot symbol at the beginning & ending of the segment.
_PLINE - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the curve of an arc or polyline
_PLINE - Radial Bearing	Radial bearing from the Radius Point to the BC or EC
_PLINE - Radius Delta Length	Radius, Delta and Length on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Radius Delta Length with crows feet	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Symbol	Places the ANGLPT symbol at the end of the segment.

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Name	Description
_PLINE - Table TAG	Labels the curve with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PLINE [.35 offset] - Radius Delta Length options	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PLINE - Radius Delta - - Length [dual units]	Radius, Delta and Length on one side of the curve with dual units.
PLINE - Radius Delta - - Length with crows feet [dual units]	Radius, Delta, Length & crows feet on one side of the curve.
Standard	Radius, Delta and Length on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

# General Note Label Styles

General Note labels are versatile, non-object-specific labels that can be placed anywhere in the drawing. These should be used when a specific location needs to be labelled, e.g. the station & offset relative to an alignment. AutoCAD annotation is typically used when the label is for descriptive text.

Name	Description
Northing & Easting (includes options for the dragging label to the	Labels the coordinates of the label location. The label can be dragged to the right or left but the line under the Northing disappears.
left or right)	Labela all of the Dereel information and LIDD's
Parcel Data - all data	Ladels all of the Parcel information and UDP's
Parcel Data - Notes Grantor APN	Labels the General Notes, Grantor & APN of the Parcel
Parcel Data - Vestee Block data	Labels the vestee block fields of the Parcel
Slanted Text	Used for notes or text with the slanted R/W font. The label can be dragged to the right or left and no line is drawn under the text.
Standard	Used for notes or text with the standard font. The label can be dragged to the right or left and no line is drawn under the text.
Standard Text	Used for notes or text with the standard font. The label can be dragged to the right or left and no line is drawn under the text.
Station & Alignment (includes options for the dragging label to the left or right)	Labels the station & alignment name of the label location after the user selects an alignment. The alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station disappears.
Station & Alignment - 2 Alignments (includes options for the dragging label to the left or right)	Labels the station & alignment name of the label location after the user selects 2 alignments. The alignments can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the stations disappear.

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Name	Description
Station & Offset	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The
(includes options for the dragging label to the left or right)	alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station & offset disappears.
Station only (includes options for the dragging label to the left or right)	Labels the station of the label location after the user selects an alignment. The alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station disappears.
XREF Point Name Description (includes options for the dragging label to the left or right)	To be used when labeling points that reside in an XREF

# Alignment Label Styles

# Alignment Line Label Styles

Name	Description
_ALIGN - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Bearing & Distance with crows feet	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_ALIGN - Labels	Includes options to label the alignment Name or text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of an alignment.
_ALIGN - Table TAG	Labels the alignment with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_ALIGN [.35 offset] - Bearing & Distance options	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
ALIGN - Bearing & Distance [dual units]	Labels Bearing & Distance along the line.
ALIGN - Bearing & Distance with crows feet [dual units]	Labels Bearing, Distance & crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

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# Alignment Curve Label Styles

Name	Description
_ALIGN - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Bearing & Distance with crows feet	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_ALIGN - Labels	Includes options to label the alignment Name or text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of an alignment.
_ALIGN - Table TAG	Labels the alignment with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_ALIGN [.35 offset] - Bearing & Distance options	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
ALIGN - Bearing & Distance [dual units]	Labels Bearing & Distance along the line.
ALIGN - Bearing & Distance with crows feet [dual units]	Labels Bearing, Distance & crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

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#### Alignment Station Offset Label Styles

Name	Description
Standard	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The alignment cannot be changed after the label is in place. The label can be dragged to the right or left but the line under the station & offset disappears.
Station & Offset	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The
(includes options for	alignment cannot be changed after the label is in place. The
the dragging label to the left or right)	label can be dragged to the right or left but the line under the station & offset disappears.

# Alignment Label Sets

Alignment Label Sets contain a set of label styles to display alignment stationing, ticks, and the markers placed at the alignment vertices.

Name	Description
_Geometry Point Stations Only	Non-standard style used for analysis when the major & minor stations and ticks get in the way. The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.
_Non-plotting Stationing	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno_no_plot.
_None	Used to hide the labels
Access Control ticks by style - Existing LT	Used along with alignments using Existing Access Control LT (ticks by style). Places a tick to the left at regular intervals along an alignment to depict access control on layer rw_RW_EXIST_Access_Left_Ticks. The Interval must be changed by the user when the map scale is changed. The default interval is set for 1"=50'.
Access Control ticks by style - Existing RT	Used along with alignments using Existing Access Control RT (ticks by style). Places a tick to the right at regular intervals along an alignment to depict access control on layer rw_RW_EXIST_Access_Right_Ticks. The Interval must be changed by the user when the map scale is changed. The default interval is set for 1"=50'.
Access Control ticks by style - Proposed LT	Used along with alignments using Proposed Access Control LT (ticks by style). Places a tick to the left at regular intervals along an alignment to depict access control on layer rw_RW_PROPOSED_Access_Left_Ticks. The Interval must be changed by the user when the map scale is changed. The default interval is set for 1"=50'.
Access Control ticks by style - Proposed RT	Used along with alignments using Proposed Access Control RT (ticks by style). Places a tick to the right at regular intervals along an alignment to depict access control on layer rw_RW_PROPOSED_Access_Right_Ticks. The Interval must be changed by the user when the map scale is changed. The default interval is set for 1"=50'.

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Name	Description
Angle Point - Existing Easement	Places the cell, ANGLPT, at all the major geometry locations along an existing easement alignment on layer rw_EASE_EXIST_anno.
Angle Point - Existing RW	Places the cell, ANGLPT, at all the major geometry locations along an existing R/W alignment on layer rw_RW_EXIST_anno.
Angle Point - Proposed Easement	Places the cell, ANGLPT, at all of the major geometry locations along a new easement alignment on layer rw_EASE_PROPOSED_anno.
Angle Point - Proposed RW	Places the cell, ANGLPT, at all of the major geometry locations along a new R/W alignment on layer rw_RW_PROPOSED_anno.
Angle Point - Proposed Temporary Easement	Places the cell, ANGLPT, at all of the major geometry locations along a new temporary easement alignment on layer rw_EASE_PROPOSED_TEMP_anno.
Standard	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.
Stationing - Alignment [color]	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.
Stationing - Existing Frontage	The color of the Alignment Labels is 215 placed on layer align_anno_EXIST.
Stationing - Existing Mainline	The color of the Alignment Labels is 217 placed on layer align_anno_EXIST.
Stationing - Existing Public Roadway	The color of the Alignment Labels is 215 placed on layer align_anno_EXIST.
Stationing - Existing Ramp	The color of the Alignment Labels is 216 placed on layer align_anno_EXIST.
Stationing - Proposed Frontage	The color of the Alignment Labels is 220 placed on layer align_anno_PROPOSED.
Stationing - Proposed Mainline	The color of the Alignment Labels is 218 placed on layer align_anno_PROPOSED.
Stationing - Proposed Ramp	The color of the Alignment Labels is 219 placed on layer align_anno_PROPOSED.

#### Alignment Major Station

The Alignment Label Sets reference most of the Alignment Station labels except for the following access control tick Major Station labels. These labels are intended for use when an alignment using one of the access control ticks by style alignment styles i.e., Access Control ticks by style - Existing LT, are displayed in details or map sheets that use different scales.

When a Viewport is created for details where the access control ticks are displayed and the Alignment is using one of the access control (ticks by style) styles, the access control tick style for the associated detail scale must also be displayed in the Model space of the drawing containing the Alignment and the associated detail layers must be VP frozen and thawed in the Viewports of the mapsheet Layouts. The layers can be VP frozen and thawed manually while in the Model space of the detail's Viewport using the Layer Manager.

Abgement La	N 9 0 ° 0 0 ′ 0 0 Alignment dis	''E 5C played in M	oO。OO′ lodel Space			L.L.L.	NB0*00*00*E 500.00* **00*00*E 500.00* 1**0*00*E 500.00*	HILL HILL HILL HILL HILL
Type:	Major Station Labe	l Style:					layers VP frozen an	d in multiple details with d thawed in each detail
Major Stations	<ul> <li>Existing Ramp</li> </ul>	Major Stations Tick	~ <b>5</b> 7	Add>> 🗙	Reset		,	
Type Major Stations Major Stations Major Stations Major Stations Major Stations Major Stations Major Stations Geometry Points	Style Sisting RW Access Control LT Trick (Detail 10 Sasting RW Access Control LT Trick (Detail 20 Sasting RW Access Control LT Trick (Detail 3) Sasting RW Access Control LT Trick (Detail 4) Sasting RW Access Control LT Trick (Detail 4) Sasting RW Access Control LT Trick (Detail 4) Sasting RW Access Control LT Trick Easting RW Access Control LT Trick	Increment 2.00' 4.00' 4.00' 1.00' 5.00' 2.00' 2.00' 2.00' 2.00' 2.00' 2.00' 2.00' 2.00' 3.	Start sta           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'           ♥         0+00.00'	End station Geometr V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00' V 5+00.00'	Profile	RANDOR NOTES and denoting the series of the series underrying Fac UP area Underrying Fac UP area USs and the series as Représent to Content and the series as Représent to Content and the series as Représent to Content and the series to content and the series to content and the	NOTES Cordinates and bacings are an Cost and Zone seas. Distances and Distances and the cost of promotes distances. LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND LECEND	STATE OF CALIFORNA           CALIFORNA STATE TRANSPORTATION AGENCY DEPARTMENT OF TRANSPORTATION RIGHT OF WAY           ####################################
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Figure 8 Right of way Alignment style and display information

The table on the following page lists label styles that should be used along with Access Control ticks by style - Existing LT. Similar label styles are available for Access Control ticks by style - Existing RT, Access Control ticks by style - Proposed LT, and Access Control ticks by style - Proposed RT.

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Name	Description
Access Control ticks by style - Existing LT [Detail 5' - Interval 1']	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail. Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-5. The Interval must be set to 1'.
Access Control ticks by style - Existing LT [Detail 10' - Interval 2']	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail. Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-10. The Interval must be set to 2'.
Access Control ticks by style - Existing LT [Detail 20' - Interval 4']	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail. Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-20. The Interval must be set to 4'.
Access Control ticks by style - Existing LT [Detail 25' - Interval 5']	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail. Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-25. The Interval must be set to 5'.
Access Control ticks by style - Existing LT [Detail 30' - Interval 6']	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail. Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-30. The Interval must be set to 6'.

Name	Description
Access Control ticks by style - Existing LT [Detail	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail.
40' - Interval 8']	Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Detail-40. The Interval must be set to 8'.
Access Control ticks by	The Label Set Access Control ticks by style - Existing LT is used on alignments that are displayed in the basemap. This style is added when the alignment is displayed in a 1" = 5' map scale detail.
style - Existing LT [Other]	Places additional ticks to the left at different intervals on layer rw_RW_EXIST_Access_Left_Ticks_Other. The Interval must be changed by the user when based on the detail the map scale.

#### Parcel Label Styles

Parcel Line Label Styles

Name	Description
_PARCEL - Bearing & Distance	Labels Bearing & Distance along the parcel segment, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PARCEL - Bearing & Distance with crows feet	Labels Bearing, Distance & crows feet along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PARCEL - Crows Foot	Places the Crows Foot symbol at the beginning & ending of the segment.
_PARCEL - Table TAG	Labels the line with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PARCEL [.35 offset] - Bearing & Distance options	Labels Bearing, Distance & crows feet along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PARCEL - Bearing & Distance [dual units]	Labels Bearing & Distance along the parcel segment.
PARCEL - Bearing & Distance with crows feet [dual units]	Labels Bearing, Distance & crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance when in LABEL mode. The Table tag is displayed when in TAG mode.

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# Parcel Curve Label Styles

Name	Description
_PARCEL - Crows Foot	Places the Crows Foot symbol at the beginning & ending of the segment.
_PARCEL - Radius Delta Length	Radius, Delta & Length on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PARCEL - Radius Delta Length with crows feet	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PARCEL - Table TAG	Labels the curve with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PARCEL [.35 offset] - Radius Delta Length options	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PARCEL - Radius Delta Length [dual units]	Radius, Delta & Length on one side of the curve.
PARCEL - Radius Delta Length with crows feet [dual units]	Radius, Delta, Length & crows feet on one side of the curve.
Standard	Radius, Delta, and Length on one side of the curve when in LABEL mode and Table tag when in TAG mode.

# <u>Page Setups</u>

A page setup defines the default printing configuration including the printer, paper size, page layout, plot style, etc. of the selected Model or Sheet layout. A default plot style table is referenced in each page setup, but it can be changed at any time.

- **PDF 17 x 11** creates a landscape 11" x 17" sheet in a PDF file with the *BW.STB* attached.
- **PDF 11 x 17** creates a protrait 11" x 17" sheet in a PDF file with the *BW.STB* attached.
- **PDF 11 x 8.5** creates a landscape 8.5" x 11" sheet in a PDF file with the *BW.STB* attached.
- **PDF 8.5 x 11** creates a protrait 8.5" x 11" sheet in a PDF file with the *BW.STB* attached.
- **PDF 17 x 11 half size RW\_All-Color.STB** creates a landscape 11" x 17" sheet in a PDF file with the *RW\_All-Color.STB* attached.
- **PDF 17 x 11 half size RW\_Parcels-Color\_Lines-BW.STB** creates a landscape 11" x 17" sheet in a PDF file with the *RW\_Parcels-Color\_Lines-BW.STB* attached.
- **PDF 17 x 11 half size RW\_Parcels-GreyScale\_Lines-BW.STB** creates a landscape 11" x 17" sheet in a PDF file with the *RW\_Parcels-GreyScale\_Lines-BW.STB* attached
- *PDF 18 x 26 full size BW.STB* creates a protrait 18" x 26" sheet in a PDF file with the *BW.STB* attached.
- **PDF 26 x 18 full size BW.STB** creates a landscape 18" x 26" sheet in a PDF file with the *BW.STB* attached.
- *PDF 34 x 22 full size RW\_All-Color.STB* creates a landscape 22" x 34" sheet in a PDF file with the *RW\_All-Color.STB* attached.
- **PDF 34 x 22 full size RW\_Parcels-Color\_Lines-BW.STB** creates a landscape 22" x 34" sheet in a PDF file with the *RW\_Parcels-Color\_Lines-BW.STB* attached.
- **PDF 34 x 22 full size RW\_Parcels-GreyScale\_Lines-BW.STB** creates a landscape 22" x 34" sheet in a PDF file with the *RW\_Parcels-GreyScale\_Lines-BW.STB* attached.
- *PDF 36 x 22 Highway Map Book RW\_Parcels-Color\_Lines-BW.STB* creates a landscape 22" x 36" sheet in a PDF file with the *RW\_Parcels-Color\_Lines-BW.STB* attached.

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#### **R/W FIGURE PREFIX DATABASE**

The R/W Figure Prefix Database assigns the object style and object layer to survey figures and determines whether figures are created as breakline. As a point file or XML file is imported into the database, the system monitors the incoming data and when it encounters automatic linework with a known prefix, the correct style is applied to the figure.

R/W map features are only imported into a Survey Database when transferring data from a CAiCE project to Civil 3D. A Figure Prefix Database is available to remap the CAiCE feature coded linework to the appropriate layer. The resulting Survey Figures must be exploded and stored as one of the elements specified in the Features & Object Styles table.

The *Caltrans RW Mapping XML - 2016* Figure Prefix Database is only used when transferring R/W map data from a CAiCE project into a Civil 3D 2016 Survey Database. (Note, The *Caltrans Topo TSS* Figure Prefix Database should only be used when importing data into a Civil 3D 2012 Survey Database.)

Name	Layer	Style
ABAND	rw_MISC	RW ABAND
CCUA	rw_MISC_CCUA	RW CCUA
CCUAA	rw_MISC_CCUA_align	RW CCUAA
FDLINE- F	topo_su_ctrl_LNWK	SU FDLINE
FDLINE- G	topo_su_ctrl_LNWK	SU FDLINE
FDLN-F	topo_su_ctrl_LNWK	SU FDLINE
FDLN-G	topo_su_ctrl_LNWK	SU FDLINE
FLA	rw_MISC_FLA	RW FLA
JUA	rw_MISC_JUA	RW JUA
JUAA	rw_MISC_JUA_align	RW JUAA
LF	rw_LANDNET_Fed_Part	RW LF
LI	rw_LANDNET_Interior_Lot	RW LI
LL	rw_LANDNET_Govt_Lot_Sub_Section	RW LL
LP	rw_LANDNET_Parcels_Ownership	RW LP
LPB	rw_LANDNET_Public_Boundary	RW LPB
LQ	rw_LANDNET_Qtr_Section_Tract	RW LQ

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Name	Layer Style	
LS	rw_LANDNET_Section_Rancho	RW LS
LSB	rw_LANDNET_Subdiv_Boundary	RW LSB
LT	rw_LANDNET_Town_Range	RW LT
NA	align_MAIN_PROPOSED	RW NA
NCL	rw_RW_PROPOSED	RW NCL
NCR	rw_RW_PROPOSED	RW NCR
NE	rw_EASE_PROPOSED	RW NE
NEA	rw_EASE_PROPOSED_align	RW NEA
NFA	align_FRONTAGE_PROPOSED	RW NFA
NR	rw_RW_PROPOSED	RW NR
NRA	align_RAMP_PROPOSED	RW NRA
REF	rw_MISC	RW REF
REL	rw_RW_EXIST_Relinquished	RW REL
RELL	rw_RW_EXIST_Relinquished	RW RELL
RELR	rw_RW_EXIST_Relinquished	RW RELR
RET	rw_retracement	RW RET
TCE	rw_EASE_PROPOSED_TEMP	RW TCE
TDE	rw_EASE_PROPOSED_TEMP	RW TDE
TE	rw_EASE_PROPOSED_TEMP	RW TE
TSE	rw_EASE_PROPOSED_TEMP	RW TSE
VAC	rw_MISC	RW VAC
ХА	align_MAIN_EXIST	RW XA
XCL	rw_RW_EXIST	RW XCL
XCR	rw_RW_EXIST	RW XCR
XE	rw_EASE_EXIST	RW XE
XEA	rw_EASE_EXIST_align	RW XEA
XFA	align_FRONTAGE_EXIST	RW XFA
ХРА	align_LOCAL-ST_EXIST	RW XPA
XPR	rw_RW_EXIST	RW XPR
XR	rw_RW_EXIST	RW XR
XRA	align_RAMP_EXIST	RW XRA
XS	rw_RW_EXIST_Superceded	RW XS
XSL	rw_RW_EXIST_Superceded	RW XSL

Name	Layer	Style
XSR	rw_RW_EXIST_Superceded	RW XSR
XTE	rw_EASE_EXIST	RW XTE
XU	rw_EASE_EXIST	RW XU
XUA	rw_EASE_EXIST_align	RW XUA

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## R/W MAP SHEET BORDERS

Nine templates are available to create the different R/W & Surveys map sheet borders within a layout. The map sheet layouts can be created one at a time from within a drawing layout, with View Frames or with the Sheet Set Manager.

All the borders contain Attributes and blocks to label the map type, map scale, and project related information. The Attributes can be modified using a Sheet Set or manually.

Layers are used to separate elements typically plotted on different maps. For example, Appraisal Map specific data is on layer *rw\_map\_anno\_Appraisal\_Map* while Record Map specific data is on layer *rw\_map\_anno\_Record\_Map*, and the cut lines for 22" x 34" maps are on layer *border\_rw\_22x34\_Cut\_Lines* while the cut lines for 22" x 36" maps are on layer *border rw 22x36 Cut Lines*.

Unless noted otherwise, the templates contain borders with the following pre-defined map annotation scales;

- 1" x 5'
- 1" x 10'
- 1" x 20'
- 1" x 25'
- 1" x 30'
- 1" x 40'

1" x 60'
1" x 100'

1" x 50'

- 1" x 200'
- 1" x 300'
- 1" x 400'

The border templates also contain pre-defined detail masks, making it easier to work with details in the Layout. The pre-defined masks are small pockets in the main Viewport of the R/W map borders that can be used to hide data behind a detail's viewport. The pre-defined masks are on a non-plotting layer and their linework will not appear on the final plot.

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- 1" x 500'
- 1" x 600'

**CADD** Users Manual

- 1" x 1000'
- 1" x 2000'

#### CADD Users Manual





Figure 9 - Right of Way Map sheet border templates - mask information

The following map sheet border templates are available;

- 8.5x11-Horizontal\_and\_Vertical\_Map.dwt this template is used to create 8 ½" x 11" map sheet borders with options for either portrait or landscape display.
  - A single map annotation scale is provided. After the border is created, the scale bar and the Viewport's Annotation scale must be set to the desired scale. An option for "No Scale" is provided on the scale bar.
  - Map Types using this border include;
    - Deed Map
    - Director's Deed Map
    - Exhibit Map
    - Freeway Lease Area
    - Hardship Map

- Joint Use Agreement Map
- Lease Area Map
- Protection Map
- Resolution of Necessity Map
- Transfer of Jurisdiction Map
- Appraisal\_Record\_Map.dwt this template is used to create landscape 34" x 22" Appraisal and Record map sheet borders. The template contains an AutoCAD table configured for the vestee block data.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.

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- *Appraisal\_Record\_Map\_Index.dwt* this template is used to create landscape 34" x 22" Appraisal and Record Index map sheet borders.
  - A single map annotation scale is provided. After the border is created, the scale bar and the Viewport's Annotation scale must be set to the desired scale. An option for "No Scale" is provided on the scale bar.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.
- *Federal\_Application\_Map.dwt* this template is used to create landscape 34" x 22" Federal Application map sheet borders.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.
- *Federal\_Application\_Map\_Index.dwt* this template is used to create landscape 34" x 22" Federal Application Index map sheet borders.
  - A single map annotation scale is provided. After the border is created, the scale bar and the Viewport's Annotation scale must be set to the desired scale. An option for "No Scale" is provided on the scale bar.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.
- **Record\_of\_Survey-Horizontal.dwt** this template is used to create landscape 18" x 26" Record of Survey map sheet borders.
- **Record\_of\_Survey-Vertical.dwt** this template is used to create portrait 18" x 26" Record of Survey map sheet borders.
- **Relinquishment\_Vacation\_Map.dwt** this template is used to create landscape 34" x 22" Relinquishment or Vacation map sheet borders.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.
- **State\_Application\_Map.dwt** this template is used to create landscape 34" x 22" State Application map sheet borders.
  - A Page Setup option is included to plot the map sheet to 36" x 22" for the Highway Map Book.

## R/W BLOCK LIBRARY

The R/W Block library, *RW\_SU\_BlockLibrary.dwg*, contains the following types of Blocks;

- Parcel bubbles
- R/W & ROS map sheet symbols including; highway symbols, line break and line extension symbols, dart pointers, parcel hook, etc.
- R/W & ROS map sheet labels including; CITY OF labels, SECTION labels, etc.
- ROS statements including; Surveyor's Statement, Basis of Bearings, etc.
- Tables for manually entering line & curve data

#### Block Attribute Definitions and Action Parameters

Many of the blocks for the R/W & Survey mapping process contain attribute definitions and action parameters to assist with the map delineation.

- Attribute Definition identified by the BLUE text that is modified with the Attribute Editor.
  - Blocks containing text defined as Attribute Definitions can be modified after they are placed in a drawing.

For example, the parcel bubble Blocks contain an Attribute Definition for the parcel number. After placing the Block, the parcel number can be entered into the Attribute Definition.

Note, Attribute Definitions in the R/W Blocks display BLUE in the drawing but the text plots BLACK.

#### • Action Parameters

Blocks containing Action Parameters can be manipulated after they are placed in a drawing. When a Block is selected, different grips identify the Action Parameters depending upon the action to be performed.

- Visibility Parameters Identified with an upside-down triangle grip ▼ used to display or hide different features of the Block. For example, the fill color of a parcel bubble can be changed to the appropriate parcel color.
- Linear Parameters Identified with a triangle grip pointing to the right ► used to lengthen or shorten the Block.
- **Rotation Parameters** Identified with a circle grip used to rotate the Block.
- **Move Grip** Identified with a square grip  $\blacksquare$  used to move the Block.

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Figure 10 – Action Parameters

## **R/W SHEET SET TEMPLATE**

A sheet set template, *CT\_RW\_Master.dst*, can be used to create a sheet set to organize all the R/W & Survey map drawings and sheets for a project. The sheet set contains fields matching the attribute definitions included in the border sheets for the Appraisal and Record Map Sheets, Director's Deed Map Sheets, Relinquishment map Sheets, etc.

The following fields are in sheet sets created with the CT\_RW\_Master.dst template;

- Checked by
- County
- County (2<sup>nd</sup>)
- District
- District (2<sup>nd</sup>)
- Drafted by
- EA
- Exhibit Number
- FA#
- Grid Conversion
- ID
- Map Number
- Map Type
- Previous R/W Maps
- Project Datum CCS
- Project PM Limits
- Project PM Limits (2<sup>nd</sup>)
- Project Surveyor
- Project Zone
- Route
- Route (2<sup>nd</sup>)
- Sheet PM

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- Sheet PM (2<sup>nd</sup>)
- To Design Date
- Total Number of Sheets

## **TOPOGRAPHIC DATA FILES**

Two templates contain all the layers, styles, and page setups required to create drawings for processing and delivering different types of topo data,

*Ct\_2016\_Topo\_Surveys\_MTLS.dwt* and *Ct\_2016\_Topo\_Aerial\_Photo.dwt*. Either template can be used to create the final *EG\_Surface* and *EG\_Linework\_Points* drawings.

- **Ct\_2016\_Topo\_Surveys\_MTLS.dwt** used to create drawings with Caltrans Data Collection (CTDC) and Caltrans Survey Asset Collection (CSAC) Survey data and Mobile Terrestrial Laser Scanning (MTLS) data.
- **Ct\_2016\_Topo\_Aerial\_Photo.dwt** used to create drawings with aerial Light Detection and Ranging (LiDAR) scanned data and photogrammetric (photo) data.

# TEMPLATE - CT\_2016\_TOPO\_SURVEYS\_MTLS.DWT

#### Features & Object Styles

#### Feature Groups

The following table identifies the CSAC and MTLS feature groups.

Feature Group [Abbreviation]	Description				
General	General features include miscellaneous breaklines and spot elevation points.				
Control [ctrl]	ControlControl related features include project control, found monument & R/W, and directional information.				
Hydrographic [hydro]	Hydrographic features include natural and manmade open & closed drainage facilities including banks, canals, catch basins, cleanouts, culverts, ditches, drainage inlets, headwalls, lakes, pools, rivers, streams, lakes, drainage vents, and weirs.				
Roadbed [rdbed]	Roadbed features include the portion of the roadway extending from curb line to curb line or shoulder line to shoulder line. Note, divided highways are considered to have two roadbeds. Roadbed features include cattle guards, curbs & dikes along the road, roadbed breaks & edges, and valley gutters. Many of these features can be coded for ground surface or bridge deck surface areas.				
Roadside [rdside]	Roadside features lie in the area adjoining the outer edge of the roadbed extending outside of the right of way line when				

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Feature Group [Abbreviation]	Description
	necessary. Extensive areas between the roadbeds of a divided highway may also be considered roadside. Roadside features include bollards, driveways, flag poles, fences & gates, mailboxes, breaks & edges in original ground and paved areas, parking lots, railroad features, sidewalks both on ground surface and bridge deck surface areas, tanks, trails, etc.
Structures [str]	<ul> <li>The Structures grouping is subdivided into three groups to assist with 3D surface creation: ground, bridge deck, and bridge underside.</li> <li>Ground features include bridge abutments &amp; wingwalls, bridge bents, footings of columns &amp; piers, buildings, carports, decks, patios, and walls.</li> <li>Bridge deck features include bridge rails, paving notches, and other features on the bridge deck. Many of the roadbed features can be coded for bridge deck surface areas including asphalt, concrete and curb features.</li> <li>Bridge underside features include faces of columns &amp; piers, girders, soffits, and other features on the underside of the bridge structure.</li> </ul>
Traffic Control [tcd]	Traffic control devices include barriers, crash cushions, guide post & pavement markers, signs, and pavement marking.
Utilities [ut]	Utility features include call boxes, fire hydrants, hosebibs, lighting, manholes, overhead & underground facilities, poles, pull boxes, pumps, sprinklers, standpipes, RR & traffic signals, transmission towers, valves, vaults, gas & sewer vents, and wells.
Vegetation [veg]	Vegetation features includes brush, orchards, trees, and vineyards.

## CSAC Feature Listing

The following table lists the CSAC features and the associated Civil 3D Styles and Feature Group.

Name	Description	Civil 3D Style/Layer	Line	Point	Group
ABUT	Bridge abutment	su_ABUT	√		Structures
AC	Asphalt roadbed edges - ground	su_rdbed_AC_EDGE	√		Roadbed
AC	Asphalt roadbed edges - bridge deck	su_rdbed_AC_EDGE_ deck	~		Roadbed
AC	Asphalt roadside edges - ground	su_rdside_AC_EDGE	√		Roadside
AC	Asphalt roadside edges - bridge deck	su_rdside_AC_EDGE_ deck	~		Roadside
AGUTL	Aboveground utility facility - markout or positive location - unknown or other - single location or line	su_UG	~	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - electric - single location or line	su_UG_ELEC	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - fiber optics - single location or line	su_UG_FIBER	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - gasoline - single location or line	su_UG_GAS	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - irrigation - single location or line	su_UG_IRRIG	~	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - joint - single location or line	su_UG_JOINT	~	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - natural gas - single location or line	su_UG_NAT_GAS	~	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - oil - single location or line	su_UG_OIL	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - reclaimed water - single location or line	su_UG_RCW	~	~	Utilities

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Name	Description	Civil 3D Style/Layer	Line	Point	Group
AGUTL	Aboveground utility facility - markout or positive location - sewer - single location or line	su_UG_SEWER	√	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - steam - single location or line	su_UG_STEAM	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - storm - single location or line	su_UG_STORM	$\checkmark$	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - telecomm - single location or line	su_UG_TELEC	✓	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - television - single location or line	su_UG_TV	~	~	Utilities
AGUTL	Aboveground utility facility - markout or positive location - water - single location or line	su_UG_WATER	~	~	Utilities
АСВК	Asphalt roadbed grade breaks - ground	su_rdbed_AC_BRK	$\checkmark$		Roadbed
ACBK	Asphalt roadbed grade breaks - bridge deck	su_rdbed_AC_BRK_de ck	$\checkmark$		Roadbed
ACBK	Asphalt roadside grade breaks - ground	su_rdside_AC_BRK	$\checkmark$		Roadside
ACBK	Asphalt roadside edges - bridge deck	su_rdside_AC_BRK_d eck	$\checkmark$		Roadside
ASTK	As-staked point	su_ctrl_AS_STAKED		✓	Control
BBAR	Barrier - bottom - concrete - ground	su_BARR_BOT_CONC	$\checkmark$		Traffic Control
BBAR	Barrier - bottom - all barrier types - bridge deck	su_BARR_BOT_deck	√		Traffic Control
BIKE	Bike rack	su_BIKE	$\checkmark$	✓	Roadside
BLDGF	Building faces including residential, commercial, bus stops, carports, decks, patios, etc ground	su_BLDG_FACE	✓		Structures
BLDGF	Building faces including residential, commercial, bus stops, carports, decks, patios, etc bridge deck	su_BLDG_FACE_deck	$\checkmark$		Structures

Name	Description	Civil 3D Style/Layer	Line	Point	Group
BLDGO H	Building overhangs including residential, commercial, bus stops, carports, decks, patios, etc.	su_BLDG_OH	√		Structures
	Bridge rail – bottom - ground	su_BRDG_RAIL_BOT	$\checkmark$		Structures
BRB	Bridge rail - bottom - bridge deck	su_BRDG_RAIL_BOT_ deck	$\checkmark$		Structures
	Bridge rail - top - ground	su_BRDG_RAIL_TOP	$\checkmark$		Structures
BRT	Bridge rail - top - bridge deck	su_BRDG_RAIL_TOP_ deck	~		Structures
BRK	Miscellaneous roadbed grade breaks - except asphalt, concrete, dirt, & rock - ground	su_rdbed_MISC_BRK	~		Roadbed
BRK	Miscellaneous roadbed grade breaks - except asphalt, concrete, dirt, & rock - bridge deck	su_rdbed_MISC_BRK_ deck	~		Roadbed
BRK	Miscellaneous roadside grade breaks - except asphalt, concrete, dirt & rock - ground	su_rdside_MISC_BRK	~		Roadside
BRK	Miscellaneous roadside grade breaks - bridge deck	su_rdside_MISC_BRK _deck	~		Roadside
BWW	Bridge wingwall	su_BRDG_WW	√		Structures
CAB	Cabinet - center or outline - unknown or other	su_CAB	~	~	Utilities
CAB	Cabinet - center or outline - electric	su_CAB_ELEC	✓	✓	Utilities
CAB	Cabinet - center or outline - fiber optic	su_CAB_FIBER	~	~	Utilities
CAB	Cabinet - center or outline - telecomm (voice & data)	su_CAB_TELEC	~	~	Utilities
CAB	Cabinet - center or outline - television	su_CAB_TV	~	~	Utilities
CALL	Call box	su_CALL		✓	Utilities
СВОТ	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	~		Hydrograp hic
сс	Crash cushion - single location or multiple in a line or outline - ground	su_CC	$\checkmark$	~	Traffic Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
сс	Crash cushion - single location or multiple in a line or outline - bridge deck	su_CC_deck	~	~	Traffic Control
CEDGE	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	$\checkmark$		Hydrograp hic
CLO	Cleanout - drain, sewer, storm, pool, etc.	su_CLO		$\checkmark$	Hydrograp hic
COL	Column, bent or pier - corner or face or outline	su_COL	$\checkmark$	~	Structures
	Column, bent or pier - center	su_COL_CTR		$\checkmark$	Structures
COND	Conduit - unknown or other - single location or line	su_COND	$\checkmark$	~	Utilities
COND	Conduit - electric	su_COND_ELEC	✓		Utilities
COND	Conduit - fiber optic	su_COND_FIBER	$\checkmark$		Utilities
COND	Conduit - telecomm (voice & data)	su_COND_TELEC	$\checkmark$		Utilities
COND	Conduit - television	su_COND_TV	$\checkmark$		Utilities
CTLG	Cattle guard	su_CTLG	$\checkmark$		Roadbed
СТОР	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	√		Hydrograp hic
CULV	Culvert - top & bottom - single location or line	su_CULV	~	~	Hydrograp hic
CWWB	Culvert wingwall - bottom	su_CULV_WW	$\checkmark$		Hydrograp hic
CWWT	Culvert wingwall - top	su_CULV_WW	$\checkmark$		Hydrograp hic
DBOT	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	~		Hydrograp hic
DEDGE	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	~		Hydrograp hic

Name	Description	Civil 3D Style/Layer	Line	Point	Group
DFOPE N	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	$\checkmark$		Hydrograp hic
DI	Drainage inlet - center - rectangular - ground	su_DI_RECT		~	Hydrograp hic
DI	Drainage inlet - center - rectangular - bridge deck	su_DI_RECT_deck		~	Hydrograp hic
DI	Drainage inlet - center - round - ground	su_DI_RND		~	Hydrograp hic
DI	Drainage inlet - center - round - bridge deck	su_DI_RND_deck		~	Hydrograp hic
DI	Drainage inlet - center - overside, side inlet, etc ground	su_DI		~	Hydrograp hic
DI	Drainage inlet - center - overside, side inlet, etc bridge deck	su_DI_deck		~	Hydrograp hic
DI	Drainage inlet - outline - ground	su_DI	$\checkmark$		Hydrograp hic
DI	Drainage inlet - outline - bridge deck	su_DI_deck	$\checkmark$		Hydrograp hic
DIKB	Dike along roadbed - bottom - ground	su_DIKE_BOT	$\checkmark$		Roadbed
DIKB	Dike along roadbed - bottom - bridge deck	su_DIKE_BOT_deck	$\checkmark$		Roadbed
DIKB	Dike, miscellaneous - bottom - ground	su_misc_DIKE_BOT	$\checkmark$		Roadside
DIKB	Dike, miscellaneous - bottom - bridge deck	su_misc_DIKE_BOT_d eck	$\checkmark$		Roadside
DIKT	Dike along roadbed - top - ground	su_DIKE_TOP	$\checkmark$		Roadbed
DIKT	Dike along roadbed - top - bridge deck	su_DIKE_TOP_deck	$\checkmark$		Roadbed
DIKT	Dike, miscellaneous - top - ground	su_misc_DIKE_TOP	$\checkmark$		Roadside
DIKT	Dike, miscellaneous - top - bridge deck	su_misc_DIKE_TOP_d eck	$\checkmark$		Roadside
DIRT	Dirt roadbed edges - ground	su_rdbed_DIRT_EDGE	$\checkmark$		Roadbed
DIRT	Dirt roadbed edges - bridge deck	su_rdbed_DIRT_EDGE _deck	$\checkmark$		Roadbed

Name	Description	Civil 3D Style/Layer	Line	Point	Group
DIRT	Dirt roadside edges - ground	su_rdside_DIRT_EDG E	✓		Roadside
DIRT	Dirt roadside edges - bridge deck	su_rdside_DIRT_EDG E_Deck	✓		Roadside
DIRTBK	Dirt roadbed grade breaks - ground	su_rdbed_DIRT_BRK	$\checkmark$		Roadbed
DIRTBK	Dirt roadbed grade breaks - bridge deck	su_rdbed_DIRT_BRK_ deck	$\checkmark$		Roadbed
DIRTBK	Dirt roadside grade breaks - ground	su_rdside_DIRT_BRK	$\checkmark$		Roadside
DIRTBK	Dirt roadside grade breaks - bridge deck	su_rdside_DIRT_BRK_ deck	$\checkmark$		Roadside
DTOP	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	su_DF_OPEN	√		Hydrograp hic
DWS	ADA detectable warning surface - ground	su_DWS	$\checkmark$		Roadside
EDGE	Miscellaneous roadbed edges - except asphalt, concrete, dirt, & rock - ground	su_rdbed_MISC_EDG E	$\checkmark$		Roadbed
EDGE	Miscellaneous roadbed edges - except asphalt, concrete, dirt, & rock - bridge deck	su_rdbed_MISC_EDG E_deck	✓		Roadbed
EDGE	Miscellaneous roadside edges - except asphalt, concrete, dirt & rock - ground	su_rdside_MISC_EDG E	$\checkmark$		Roadside
EDGE	Miscellaneous roadside edges - bridge deck	su_rdside_MISC_EDG E_deck	$\checkmark$		Roadside
ELEC	Electrolier - post location	su_EL		✓	Utilities
ESA	Environmentally sensitive area	su_ESA	$\checkmark$	$\checkmark$	Roadside
ETW	Striping - fog stripes along ETW - ground	su_STRIPE_Fog_ETW	$\checkmark$		Traffic Control
ETW	Striping - fog stripes along ETW - bridge deck	su_STRIPE_Fog_ETW _deck	$\checkmark$		Traffic Control
EW	Open water features including lakes, ponds, pools, rivers, streams - edges	su_WATER	$\checkmark$		Hydrograp hic
EXPJT	Bridge expansion joint	su_BRDG_EXP_JT	$\checkmark$		Structures
FD	Found point	su_ctrl_FD		$\checkmark$	Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
FDCL	Found point - C/L monument	su_ctrl_FD_CL		$\checkmark$	Control
FDNR	Found point - no record	su_ctrl_FD_no_record		✓	Control
FDRW	Found point - R/W monument	su_ctrl_FD_RW		✓	Control
FDSC	Found point - section corner	su_ctrl_FD_section		✓	Control
	Fence - ground	su_FENCE	✓		Roadside
FENCE	Fence - bridge deck	su_FENCE_deck	$\checkmark$		Roadside
FES	Flared end section - lip end	su_FES		~	Hydrograp hic
FH	Fire hydrant	su_FH		✓	Utilities
FL	Culvert - flowline - single location or line	su_CULV_FL	$\checkmark$	~	Hydrograp hic
FL	Curb along roadbed - flowline - ground	su_CURB_FL	$\checkmark$		Roadbed
FL	Curb along roadbed - flowline - bridge deck	su_CURB_FL_deck	$\checkmark$		Roadbed
FL	Flowlines of all water & drainage facilities except culverts	su_hydro_FL	$\checkmark$		Hydrograp hic
FL	Curb, miscellaneous - flowline - ground	su_misc_CURB_FL	$\checkmark$		Roadside
FL	Curb, miscellaneous - flowline - bridge deck	su_misc_CURB_FL_de ck	$\checkmark$		Roadside
FL	Flowlines, roadbed - except curb flowlines - ground	su_rdbed_FL	$\checkmark$		Roadbed
FL	Flowlines, roadbed - except curb flowlines - bridge deck	su_rdbed_FL_deck	$\checkmark$		Roadbed
FL	Flowlines - roadside - ground	su_rdside_FL	$\checkmark$		Roadside
FL	Flowlines - roadside - bridge deck	su_rdside_FL_deck	$\checkmark$		Roadside
FP	Flag pole	su_FP		$\checkmark$	Roadside
FRAIL	Face of barrier – at grade - thrie- beam, cable, other railing – ground	su_BARR_FACE_RAIL	$\checkmark$		Traffic Control
GATE	Gate post - ground	su_GATE_POST		✓	Roadside
GATE	Gate post - bridge deck	su_GATE_POST		$\checkmark$	Roadside
GATE	Gate - ground	su_GATE	$\checkmark$		Roadside
GATE	Gate - bridge deck	su_GATE_deck	$\checkmark$		Roadside

Name	Description	Civil 3D Style/Layer	Line	Point	Group
GMKR	Marker - guide post - ground	su_MARKER_GUIDE		~	Traffic Control
GMKR	Marker - guide post - bridge deck	su_MARKER_GUIDE_ deck		~	Traffic Control
GRDR	Bridge girder - bottom	su_GIRDER	√		Structures
GUY	Guy anchor or Guy wire - line from anchor to post or line from post to post	su_GUY	$\checkmark$	~	Utilities
НВ	Hose bib	su_HB		$\checkmark$	Utilities
HDWL	Headwall - top & bottom	su_HDWL	~		Hydrograp hic
HP	Dirt roadside grade breaks - ground	su_rdside_DIRT_BRK	√		Roadside
HP	Miscellaneous roadside grade breaks - except asphalt, concrete, dirt & rock - ground	su_rdside_MISC_BRK	~		Roadside
HP	Rock roadside grade breaks	su_rdside_ROCK_BRK	√		Roadside
нмм	High water mark	su_HWAT		~	Hydrograp hic
HWM	Open water features including lakes, ponds, pools, rivers, streams - high water marks	su_WATER	~		Hydrograp hic
HYDRO	Miscellaneous hydrographic point features or linear features including catch basins, etc.	su_hydro_MISC	~	~	Hydrograp hic
ITS	Intelligent Transportation System Node – census station, CCTV camera, drone dock, vehicle charging station, etc.	su_ITS		~	Utilities
KRAIL	Barrier - bottom - K-rail - ground	su_BARR_BOT_K- RAIL	~		Traffic Control
	Curb along roadbed - lip	su_CURB_LIP	√		Roadbed
	Curb, miscellaneous - lip	su_misc_CURB_LIP	$\checkmark$		Roadside
	Striping – lane line stripes - ground	su_STRIPE_LL	$\checkmark$		Traffic Control
	Striping – lane line stripes - bridge deck	su_STRIPE_LL_deck	1		Traffic Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
LTG	Lighting - decorative lamp post, electrolier, landscape lighting, light fixtures, recessed lights, etc.	su_LTG		~	Utilities
MAIL	Mailbox - single location or multiple in a line	su_MAIL	$\checkmark$	~	Roadside
ΜΗ	Manhole - center - unknown or other	su_MH		✓	Utilities
ΜΗ	Manhole - center - electric	su_MH_ELEC		$\checkmark$	Utilities
ΜΗ	Manhole - center - fiber optic	su_MH_FIBER		✓	Utilities
ΜΗ	Manhole - center - joint	su_MH_JOINT		✓	Utilities
ΜΗ	Manhole - center - sewer	su_MH_SEWER		✓	Utilities
ΜΗ	Manhole - center - storm	su_MH_STORM		✓	Utilities
MH	Manhole - center - telecomm (voice & data)	su_MH_TELEC		~	Utilities
ΜΗ	Manhole - center - television	su_MH_TV		$\checkmark$	Utilities
MKR	Marker - miscellaneous - ground	su_MARKER_MISC		~	Traffic Control
MKR	Marker - miscellaneous - bridge deck	su_MARKER_MISC_d eck		~	Traffic Control
MTR	Meter - center - unknown or other	su_METER		✓	Utilities
MTR	Meter - center - electric	su_METER_ELEC		✓	Utilities
MTR	Meter - center - gasoline	su_METER_GAS		$\checkmark$	Utilities
MTR	Meter - center - water	su_METER_WATER		$\checkmark$	Utilities
MWALL B	Wall - bottom - masonry including sound walls & other non-retaining walls - ground	su_WALL_BOT_MASO N	$\checkmark$		Structures
MWALL B	Wall - bottom - masonry including sound walls & other non-retaining walls - bridge deck	su_WALL_BOT_MASO N_deck	$\checkmark$		Structures
n/a	Linework indicating the direction to or from a feature	topo_su_ctrl_DIRECTI ON_info_only	$\checkmark$		Control
n/a	Spot elevations & mass points in bridge deck DTM areas	topo_su_dtm_brk_spot _deck_info_only		~	varies
n/a	Spot elevations & mass points in ground DTM areas	topo_su_dtm_brk_spot _info_only		~	varies
n/a	Spot elevations & mass points in bridge underside DTM areas	topo_su_dtm_brk_spot _underside_info_only		~	Structures

Name	Description	Civil 3D Style/Layer	Line	Point	Group
n/a	Random breaklines in bridge deck DTM areas	topo_su_dtm_brk_spot _deck_info_only	$\checkmark$		varies
n/a	Random breaklines in ground DTM areas	topo_su_dtm_brk_spot _info_only	$\checkmark$		varies
n/a	Random breaklines in subterranean DTM areas	topo_su_dtm_brk_spot _subterranean_info_onl y	$\checkmark$		Roadside
n/a	Random breaklines in bridge underside DTM areas	topo_su_dtm_brk_spot _underside_info_only	$\checkmark$		Structures
OHUTL	Overhead facility - traffic control, unknown or other	su_OH	$\checkmark$		Utilities
OHUTL	Overhead facility - electric	su_OH_ELEC	$\checkmark$		Utilities
OHUTL	Overhead facility - fiber optic	su_OH_FIBER	$\checkmark$		Utilities
OHUTL	Overhead facility - joint	su_OH_JOINT	$\checkmark$		Utilities
OHUTL	Overhead facility - telecomm (voice & data)	su_OH_TELEC	$\checkmark$		Utilities
OHUTL	Overhead facility - television	su_OH_TV	$\checkmark$		Utilities
ORCH	Orchard - outline	su_ORCH	$\checkmark$		Vegetation
OSD	Overside drain	su_DRAIN_SIDE	$\checkmark$		Hydrograp hic
PB	Pullbox - center - rectangular - unknown or other	su_PB_RECT		~	Utilities
PB	Pullbox - center - rectangular - electric	su_PB_RECT_ELEC		~	Utilities
PB	Pullbox - center - rectangular - fiber optic	su_PB_RECT_FIBER		~	Utilities
PB	Pullbox - center - rectangular - joint	su_PB_RECT_JOINT		✓	Utilities
PB	Pullbox - center - rectangular - telecomm (voice & data)	su_PB_RECT_TELEC		~	Utilities
PB	Pullbox - center - rectangular - television	su_PB_RECT_TV		~	Utilities
PB	Pullbox - center - rectangular - water	su_PB_RECT_WATER		✓	Utilities
PB	Pullbox - center - round - unknown or other	su_PB_RND		~	Utilities
PB	Pullbox - center - round - electric	su_PB_RND_ELEC		$\checkmark$	Utilities
PB	Pullbox - center - round - fiber optic	su_PB_RND_FIBER		$\checkmark$	Utilities

Name	Description	Civil 3D Style/Layer	Line	Point	Group
PB	Pullbox - center - round - joint	su_PB_RND_JOINT		✓	Utilities
PB	Pullbox - center - round - telecomm (voice & data)	su_PB_RND_TELEC		~	Utilities
PB	Pullbox - center - round - television	su_PB_RND_TV		$\checkmark$	Utilities
PB	Pullbox - center - round - water	su_PB_RND_WATER		$\checkmark$	Utilities
PB	Pull box - outline - unknown or other	su_PB	$\checkmark$		Utilities
PB	Pull box - outline - electric	su_PB_ELEC	$\checkmark$		Utilities
PB	Pull box - outline - fiber optic	su_PB_FIBER	$\checkmark$		Utilities
PB	Pull box - outline - joint	su_PB_JOINT	$\checkmark$		Utilities
PB	Pull box - outline - telecomm (voice & data)	su_PB_TELEC	$\checkmark$		Utilities
PB	Pull box - outline - television	su_PB_TV	$\checkmark$		Utilities
PB	Pull box - outline - water	su_PB_WATER	√		Utilities
PCC	Concrete roadbed edges - ground	su_rdbed_CONC_EDG E	✓		Roadbed
PCC	Concrete roadbed edges - bridge deck	su_rdbed_CONC_EDG E_deck	✓		Roadbed
PCC	Concrete roadside edges - ground	su_rdside_CONC_ED GE	$\checkmark$		Roadside
PCC	Concrete roadside edges - bridge deck	su_rdside_CONC_ED GE_deck	$\checkmark$		Roadside
РССВК	Concrete roadbed grade breaks - ground	su_rdbed_CONC_BRK	$\checkmark$		Roadbed
РССВК	Concrete roadbed grade breaks - bridge deck	su_rdbed_CONC_BRK _deck	$\checkmark$		Roadbed
РССВК	Concrete roadside grade breaks - ground	su_rdside_CONC_BRK	$\checkmark$		Roadside
РССВК	Concrete roadside grade breaks - bridge deck	su_rdside_CONC_BRK _deck	$\checkmark$		Roadside
PEDBTN	Pedestrian button	su_Pedestrian_BTN		✓	Utilities
PEDP	Pedestrian button pole	su_Pedestrian_BTN_P OLE		~	Utilities
PEDSIG	Pedestrian signal	su_Pedestrian_SIG		$\checkmark$	Utilities
PIPR	Bollards, protective pipes, etc.	su_BOLLARD		$\checkmark$	Roadside
РМН	Primary Control Monument - horizontal	su_ctrl_Primary_H		~	Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
PMHV	Primary Control Monument - horizontal & vertical	su_ctrl_Primary_HV		~	Control
PMV	Primary Control Monument - vertical	su_ctrl_Primary_V		✓	Control
PMKR	Marker - pavement - reflective & non- reflective - single location or multiple in a line - ground	su_MARKER_PAVE	$\checkmark$	~	Traffic Control
PMKR	Marker - pavement - reflective & non- reflective - single location or multiple in a line - bridge deck	su_MARKER_PAVE_d eck	$\checkmark$	~	Traffic Control
PN	Bridge paving notch	su_PN	$\checkmark$		Structures
POLE	Pole - center - unknown or other	su_POLE		$\checkmark$	Utilities
POLE	Pole - center - electric	su_POLE_ELEC		✓	Utilities
POLE	Pole - center - fiber optic	su_POLE_FIBER		$\checkmark$	Utilities
POLE	Pole - center - joint	su_POLE_JOINT		✓	Utilities
POLE	Pole - center - telecomm (voice & data)	su_POLE_TELEC		~	Utilities
POLE	Pole - center - television	su_POLE_TV		✓	Utilities
PRH	Project Control Monument - horizontal	su_ctrl_Project_H		~	Control
PRHV	Project Control Monument - horizontal & vertical	su_ctrl_Project_HV		~	Control
PRV	Project Control Monument - vertical	su_ctrl_Project_V		✓	Control
PRKMT R	Parking meter	su_Parking_Meter		~	Traffic Control
PTEL	Public telephone	su_TELE		✓	Utilities
PUMP	Pump - center or pump & pump house outline	su_PUMP	$\checkmark$	~	Utilities
RDBED	Miscellaneous roadbed point features - ground	su_rdbed_MISC		~	Roadbed
RDBED	Miscellaneous roadbed point features - bridge deck	su_rdbed_MISC_deck		~	Roadbed
PDPIDE	Miscellaneous roadside point or line features - ground	su_rdside_MISC	$\checkmark$	~	Roadside
RUSIDE	Miscellaneous roadside point or line features - bridge deck	su_rdside_MISC_deck	1	~	Roadside

Name	Description	Civil 3D Style/Layer	Line	Point	Group
RIPARIA N	Open water features including lakes, ponds, pools, rivers, streams - threads	su_WATER	✓		Hydrograp hic
ROCK	Rock roadbed edges	su_rdbed_ROCK_EDG E	$\checkmark$		Roadbed
ROCK	Rock roadside edges	su_rdside_ROCK_EDG E	$\checkmark$		Roadside
ROCKB	Rock roadbed grade breaks	su_rdbed_ROCK_BRK	$\checkmark$		Roadbed
К	Rock roadside grade breaks	su_rdside_ROCK_BRK	$\checkmark$		Roadside
RP	Reference point - bore hole, bridge pin, monument tie, settlement pin, etc.	su_ctrl_Reference		~	Control
RRA	Railroad Appurtenances including control box, switch, etc.	su_RR_APPR		~	Roadside
RRBB	Railroad ballast - bottom - ground	su_RR_BALL	$\checkmark$		Roadside
RRBB	Railroad ballast - bottom - bridge deck	su_RR_BALL_deck	$\checkmark$		Roadside
рорт	Railroad ballast - top - ground	su_RR_BALL	$\checkmark$		Roadside
RRDI	Railroad ballast - top - bridge deck	su_RR_BALL_deck	$\checkmark$		Roadside
RRPOS T	Railroad gate post	su_RR_POST		~	Roadside
RRRAIL	Railroad rail - individual rail for vertical & horizontal clearance requirements - ground	su_RR_RAIL	$\checkmark$		Roadside
RRRAIL	Railroad rail - individual rail for vertical & horizontal clearance requirements - bridge deck	su_RR_RAIL_deck	$\checkmark$		Roadside
RRSIG	Railroad signal	su_RR_SIG		$\checkmark$	Utilities
RRTRK	Railroad track - displays both rails where the right rail is the true location and the left rail is an approximate location - ground	su_RR_TRACK	$\checkmark$		Roadside
RRTRK	Railroad track - displays both rails where the right rail is the true location and the left rail is an approximate location - bridge deck	su_RR_TRACK_deck	~		Roadside
RWALLB	Wall - bottom - retaining	su_WALL_BOT_RETAI N	$\checkmark$		Structures

Name	Description	Civil 3D Style/Layer	Line	Point	Group
SIGN	Sign - hanging or other type - single location or line from end to end of sign	su_SIGN	~	~	Traffic Control
SIGN	Sign - cantilever - post location or line from post to end of sign	su_SIGN_CANT	~	~	Traffic Control
SIGN	Sign - overhead bridge - single post location or line from post to post	su_SIGN_OH	~	~	Traffic Control
SIGN	Sign - single post - post location	su_SIGN_SINGLE		~	Traffic Control
SIGN	Sign - multi-post - line from post to post	su_SIGN_MULTI	~		Traffic Control
SLD	Slide - monitoring point or edges	su_SLIDE	$\checkmark$	$\checkmark$	Roadside
SLP	Bridge abutment slope	su_ABUT_SLP	√		Structures
SLP	Open drainage facilities including banks, canals, catch basins, ditches, slope protection, spillways - all aspects except flowlines	su_DF_OPEN	~		Hydrograp hic
SOFF	Bridge soffit	su_SOFFIT	✓		Structures
SP	Standpipe	su_SP		✓	Utilities
SPR	Sprinkler	su_SPR		✓	Utilities
STR	Miscellaneous structures point or linear features not on the bridge	su_str_MISC	~	~	Structures
STR	Miscellaneous bridge deck point or linear features	su_str_MISC_deck	~	~	Structures
STR	Miscellaneous bridge underside point or linear features	su_str_MISC_undersid e	~	~	Structures
	Striping - dashed & solid except for lane line and fog stripes - ground	su_STRIPE	~		Traffic Control
STRP	Striping - dashed & solid except for lane line and fog stripes - bridge deck	su_STRIPE_deck	~		Traffic Control
SUBTER R	Subterranean features	su_SUBTERR	~		Roadside
SUH	Supplemental Control Monument - horizontal	su_ctrl_Supp_H		~	Control
SUHV	Supplemental Control Monument - horizontal & vertical	su_ctrl_Supp_HV		~	Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
SUV	Supplemental Control Monument - vertical	su_ctrl_Supp_V		~	Control
SW	Sidewalk - ground	su_SW	✓		Roadside
SW	Sidewalk - bridge deck	su_SW_deck	$\checkmark$		Roadside
TANK	Tank - center or outline	su_TANK	✓	✓	Utilities
TBAR	Barrier - top - all barrier types - ground	su_BARR_TOP	$\checkmark$		Traffic Control
TBAR	Barrier - top - all barrier types - bridge deck	su_BARR_TOP_deck	$\checkmark$		Traffic Control
Feature Code (Point ID)	Control - Line points	su_ctrl_Line_Points		~	Control
Feature Code (Point ID)	Hydrographic - Line points	su_hydro_Line_Points		~	Hydrograp hic
Feature Code (Point ID)	Roadbed - Line points	su_rdbed_Line_Points		~	Roadbed
Feature Code (Point ID)	Roadside - Line points	su_rdside_Line_Points		~	Roadside
Feature Code (Point ID)	Structures - Line points	su_str_Line_Points		~	Structures
Feature Code (Point ID)	Traffic Control - Line points	su_tcd_Line_Points		~	Traffic Control
Feature Code (Point ID)	Utilities - Line points	su_ut_Line_Points		~	Utilities

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Name	Description	Civil 3D Style/Layer	Line	Point	Group
Feature Code (Point ID)	Vegetation - Line points	su_veg_Line_Points		~	Vegetation
THR	Open water features including lakes, ponds, pools, rivers, streams - threads	su_WATER	$\checkmark$		Hydrograp hic
тос	Curb along roadbed - top - ground	su_CURB_TOP	$\checkmark$		Roadbed
тос	Curb along roadbed - top - bridge deck	su_CURB_TOP_deck	$\checkmark$		Roadbed
тос	Curb, miscellaneous - top - ground	su_misc_CURB_TOP	$\checkmark$		Roadside
тос	Curb, miscellaneous - top - bridge deck	su_misc_CURB_TOP_ deck	$\checkmark$		Roadside
TOE	Dirt roadside grade breaks - ground	su_rdside_DIRT_BRK	✓		Roadside
TOE	Miscellaneous roadside grade breaks - except asphalt, concrete, dirt & rock - ground	su_rdside_MISC_BRK	√		Roadside
TOE	Rock roadside grade breaks	su_rdside_ROCK_BRK	$\checkmark$		Roadside
TOP	Dirt roadside grade breaks - ground	su_rdside_DIRT_BRK	$\checkmark$		Roadside
TOP	Miscellaneous roadside grade breaks - except asphalt, concrete, dirt & rock - ground	su_rdside_MISC_BRK	✓		Roadside
ТОР	Rock roadside grade breaks	su_rdside_ROCK_BRK	✓		Roadside
TREE	Tree	su_TREE		✓	Vegetation
TS	Traffic signal - pole location	su_TRAF_SIG		✓	Utilities
TTOW	Transmission tower - outline	su_TTOW	$\checkmark$		Utilities
UGUTL	Underground utility facility - markout or positive location - unknown or other - single location or line	su_UG	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - electric - single location or line	su_UG_ELEC	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - fiber optics - single location or line	su_UG_FIBER	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - gasoline - single location or line	su_UG_GAS	√	~	Utilities

Name	Description	Civil 3D Style/Layer	Line	Point	Group
UGUTL	Underground utility facility - markout or positive location - irrigation - single location or line	su_UG_IRRIG	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - joint - single location or line	su_UG_JOINT	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - natural gas - single location or line	su_UG_NAT_GAS	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - oil - single location or line	su_UG_OIL	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - reclaimed water - single location or line	su_UG_RCW	$\checkmark$	~	Utilities
UGUTL	Underground utility facility - markout or positive location - sewer - single location or line	su_UG_SEWER	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - steam - single location or line	su_UG_STEAM	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - storm - single location or line	su_UG_STORM	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - telecomm - single location or line	su_UG_TELEC	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - television - single location or line	su_UG_TV	~	~	Utilities
UGUTL	Underground utility facility - markout or positive location - water - single location or line	su_UG_WATER	~	~	Utilities
UTL	Miscellaneous utilities point or linear features	su_ut_MISC	~	~	Utilities
UTLA	Utility appurtenances	su_ut_APPR		$\checkmark$	Utilities
UTLPED	Pedestal - center - unknown or other	su_PED		$\checkmark$	Utilities
UTLPED	Pedestal - center - electric	su_PED_ELEC		✓	Utilities
UTLPED	Pedestal - center - fiber optic	su_PED_FIBER		$\checkmark$	Utilities

Name	Description	Civil 3D Style/Layer	Line	Point	Group
UTLPED	Pedestal - center - joint	su_PED_JOINT		✓	Utilities
UTLPED	Pedestal - center - telecomm (voice & data)	su_PED_TELEC		~	Utilities
UTLPED	Pedestal - center - television	su_PED_TV		✓	Utilities
V	Valve - unknown or other	su_VALVE		$\checkmark$	Utilities
V	Valve - gasoline	su_VALVE_GAS		$\checkmark$	Utilities
V	Valve - irrigation	su_VALVE_IRRIG		✓	Utilities
V	Valve - water	su_VALVE_WATER		✓	Utilities
VEG	Miscellaneous vegetation point or linear features	su_veg_MISC	~	~	Vegetation
VENT	Vent - center - unknown or other	su_VENT	$\checkmark$	$\checkmark$	Utilities
VENT	Vent - center - drainage facility	su_VENT_DF	~	~	Hydrograp hic
VENT	Vent - center - gasoline	su_VENT_GAS	$\checkmark$	✓	Utilities
VENT	Vent - center - natural gas	su_VENT_NAT-GAS	$\checkmark$	$\checkmark$	Utilities
VENT	Vent - center - sewer	su_VENT_SEWER	$\checkmark$	$\checkmark$	Utilities
VENT	Vent - center - steam	su_VENT_STEAM	$\checkmark$	✓	Utilities
VENT	Vent - center – storm drain	su_VENT_STORM	√	✓	Utilities
VINE	Vineyard - rows & outline	su_VINE	√		Vegetation
VLT	Vault - center or outline - unknown or other	su_VAULT	~	~	Utilities
VLT	Vault - center or outline - electric	su_VAULT_ELEC	$\checkmark$	$\checkmark$	Utilities
VLT	Vault - center or outline - joint	su_VAULT_JOINT	$\checkmark$	$\checkmark$	Utilities
WALLT	Wall - top - masonry & retaining - ground	su_WALL_TOP	~		Structures
WALLT	Wall - top - masonry & retaining - bridge deck	su_WALL_TOP_deck	~		Structures
WEIR	Weir	su_WEIR	~		Hydrograp hic
WELL	Well	su_WELL		$\checkmark$	Utilities
WPH	Work point - horizontal	su_ctrl_Workpoint_H		$\checkmark$	Control
WPHV	Work point - horizontal & vertical	su_ctrl_Workpoint_HV		$\checkmark$	Control
WPV	Work point - vertical	su_ctrl_Workpoint_V		$\checkmark$	Control

## MTLS Feature Listing

The following table lists the MTLS features and the associated Civil 3D Styles and Feature Group.

Name	Description	Civil 3D Style/Layer	Line	Point	Group
ABUT	Bridge abutment	ml_ABUT	$\checkmark$		Structures
AC	Asphalt roadbed edges - ground	ml_rdbed_AC_EDGE	$\checkmark$		Roadbed
AC	Asphalt roadbed edges - bridge deck	ml_rdbed_AC_EDGE_ deck	~		Roadbed
AC	Asphalt roadside edges - ground	ml_rdside_AC_EDGE	$\checkmark$		Roadside
АСВК	Asphalt roadbed grade breaks - ground	ml_rdbed_AC_BRK	$\checkmark$		Roadbed
АСВК	Asphalt roadbed grade breaks - bridge deck	ml_rdbed_AC_BRK_d eck	$\checkmark$		Roadbed
АСВК	Asphalt roadside grade breaks - ground	ml_rdside_AC_BRK	$\checkmark$		Roadside
BBAR	Barrier - bottom - concrete - ground	ml_BARR_BOT_CON C	~		Traffic Control
BBAR	Barrier - bottom - all barrier types - bridge deck	ml_BARR_BOT_deck	$\checkmark$		Traffic Control
BLDGF	Building faces including residential, commercial, bus stops, carports, decks, patios, etc ground	ml_BLDG_FACE	✓		Structures
BLDGO H	Building overhangs including residential, commercial, bus stops, carports, decks, patios, etc.	ml_BLDG_OH	~		Structures
BRB	Bridge rail - bottom	ml_BRDG_RAIL_BOT	$\checkmark$		Structures
BRK	Miscellaneous roadbed grade breaks - except asphalt, concrete, dirt, & rock - ground	ml_rdbed_MISC_BRK	~		Roadbed
BRK	Miscellaneous roadbed grade breaks - except asphalt, concrete, dirt, & rock - bridge deck	ml_rdbed_MISC_BRK _deck	$\checkmark$		Roadbed
BRK	Miscellaneous roadside grade breaks - except asphalt, concrete, dirt & rock - ground	ml_rdside_MISC_BRK	✓		Roadside
BWW	Bridge wingwall	ml_BRDG_WW	$\checkmark$		Structures
CAB	Cabinet - center or outline - unknown or other	ml_CAB	✓	~	Utilities

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Name	Description	Civil 3D Style/Layer	Line	Point	Group
CALL	Call box	ml_CALL		✓	Utilities
сс	Crash cushion - single location or multiple in a line or outline - ground	ml_CC	$\checkmark$	~	Traffic Control
CLO	Cleanout - drain, sewer, storm, pool, etc.	ml_CLO		~	Hydrograp hic
COL	Column, bent or pier - centerline, corner or face or outline	ml_COL	$\checkmark$		Structures
COND	Conduit - unknown or other - single location or line	ml_COND	$\checkmark$		Utilities
CTLG	Cattle guard	ml_CTLG	$\checkmark$		Roadbed
CULV	Culvert - top & bottom - single location or line	ml_CULV	$\checkmark$	✓	Hydrograp hic
CWW	Culvert wingwall - top & bottom	ml_CULV_WW	$\checkmark$		Hydrograp hic
DFOPE N	Open drainage facilities including banks, canals, catch basins, ditches, spillways - all aspects except flowlines	ml_DF_OPEN	✓		Hydrograp hic
DI	Drainage inlet - center - rectangular - ground	ml_DI_RECT		~	Hydrograp hic
DI	Drainage inlet - center - rectangular - bridge deck	ml_DI_RECT_deck		~	Hydrograp hic
DI	Drainage inlet - center - round - ground	ml_DI_RND		~	Hydrograp hic
DI	Drainage inlet - center - round - bridge deck	ml_DI_RND_deck		~	Hydrograp hic
DI	Drainage inlet - outline - ground	ml_DI	$\checkmark$		Hydrograp hic
DI	Drainage inlet - outline - bridge deck	ml_DI_deck	√		Hydrograp hic
DIKB	Dike along roadbed - bottom - ground	ml_DIKE_BOT	$\checkmark$		Roadbed
	Dike, miscellaneous - bottom - ground	ml_misc_DIKE_BOT	$\checkmark$		Roadside
DIKT	Dike along roadbed - top - ground	ml_DIKE_TOP	✓		Roadbed
	Dike, miscellaneous - top - ground	ml_misc_DIKE_TOP	$\checkmark$		Roadside
DIRT	Dirt roadbed edges - ground	ml_rdbed_DIRT_EDG E	$\checkmark$		Roadbed
DIRT	Dirt roadside edges - ground	ml_rdside_DIRT_EDG E	$\checkmark$		Roadside

Name	Description	Civil 3D Style/Layer	Line	Point	Group
עסדסוס	Dirt roadbed grade breaks - ground	ml_rdbed_DIRT_BRK	$\checkmark$		Roadbed
DIRTBK	Dirt roadside grade breaks - ground	ml_rdside_DIRT_BRK	$\checkmark$		Roadside
DWS	ADA detectable warning surface - ground	ml_DWS	√		Roadside
ECCTV	Closed circuit TV camera	MI_ECCTV		✓	Utilities
EDGE	Miscellaneous roadbed edges - except asphalt, concrete, dirt, & rock - ground	ml_rdbed_MISC_EDG E	$\checkmark$		Roadbed
EDGE	Miscellaneous roadbed edges - except asphalt, concrete, dirt, & rock - bridge deck	ml_rdbed_MISC_EDG E_deck	$\checkmark$		Roadbed
EDGE	Miscellaneous roadside edges - except asphalt, concrete, dirt & rock - ground	ml_rdside_MISC_EDG E	√		Roadside
ELEC	Electrolier - post location	ml_EL	✓	✓	Utilities
ETW	Striping - fog stripes along ETW - ground	ml_STRIPE_Fog_ET W	√		Traffic Control
ETW	Striping - fog stripes along ETW - bridge deck	ml_STRIPE_Fog_ET W_deck	$\checkmark$		Traffic Control
EW	Open water features including lakes, ponds, pools, rivers, streams - edges	ml_WATER	$\checkmark$		Hydrograp hic
EW- study	Edges of water bodies from unregistered point cloud data in study ground DTM areas	ml_WATER_study	√		Hydrograp hic
FENCE	Fence - ground	mI_FENCE	$\checkmark$		Roadside
FES	Flared end section - lip end	ml_FES		~	Hydrograp hic
FH	Fire hydrant	ml_FH		✓	Utilities
FL	Culvert - flowline - single location or line	ml_CULV_FL	$\checkmark$	~	Hydrograp hic
FL	Curb along roadbed - flowline - ground	ml_CURB_FL	$\checkmark$		Roadbed
FL	Curb along roadbed - flowline - bridge deck	ml_CURB_FL_deck	$\checkmark$		Roadbed
FL	Flowlines of all water & drainage facilities except culverts	ml_hydro_FL	$\checkmark$		Hydrograp hic
FL	Curb, miscellaneous - flowline - ground	ml_misc_CURB_FL	$\checkmark$		Roadside

Name	Description	Civil 3D Style/Layer	Line	Point	Group
FL	Flowlines, roadbed - except curb flowlines - ground	ml_rdbed_FL	$\checkmark$		Roadbed
FL	Flowlines, roadbed - except curb flowlines - bridge deck	ml_rdbed_FL_deck	~		Roadbed
FL	Flowlines - roadside - ground	ml_rdside_FL	$\checkmark$		Roadside
FL	Flowlines from unregistered point cloud data in study ground DTM areas	ml_hydro_FL_study	1		Hydrograp hic
FP	Flag pole	ml_FP		$\checkmark$	Roadside
FRAIL	Face of barrier – at grade - thrie-beam, cable, other railing – ground	ml_BARR_FACE_RAI L	√		Traffic Control
CATE	Gate post - ground	ml_GATE_POST		$\checkmark$	Roadside
GATE	Gate - ground	ml_GATE	$\checkmark$		Roadside
GMKR	Marker - guide post - ground	ml_MARKER_GUIDE		~	Traffic Control
GRDR	Bridge girder - bottom	ml_GIRDER	✓		Structures
GUY	Guy anchor or Guy wire - line from anchor to post or line from post to post	ml_GUY	√	~	Utilities
HB	Hose bib	ml_HB		$\checkmark$	Utilities
HDWL	Headwall - top & bottom	ml_HDWL	√		Hydrograp hic
HWM	High water mark	ml_HWAT		~	Hydrograp hic
HYDRO	Miscellaneous hydrographic point features or linear features including catch basins, etc.	ml_hydro_MISC	~	~	Hydrograp hic
KRAIL	Barrier - bottom - K-rail - ground	ml_BARR_BOT_K- RAIL	√		Traffic Control
	Curb along roadbed - lip	ml_CURB_LIP	$\checkmark$		Roadbed
LIP	Curb, miscellaneous - lip	ml_misc_CURB_LIP	$\checkmark$		Roadside
LL	Striping – lane line stripes - ground	ml_STRIPE_LL	√		Traffic Control
	Striping – lane line stripes - bridge deck	ml_STRIPE_LL_deck	√		Traffic Control
LOOP	Loop detector	ml_LoopDetector	$\checkmark$		
LTG	Lighting - decorative lamp post, electrolier, landscape lighting, light fixtures, recessed lights, etc.	ml_LTG		~	Utilities

Name	Description	Civil 3D Style/Layer	Line	Point	Group
MAIL	Mailbox - single location or multiple in a line	ml_MAIL	√	~	Roadside
МН	Manhole - center - unknown or other	ml_MH		✓	Utilities
MKR	Marker - miscellaneous - ground	ml_MARKER_MISC		~	Traffic Control
MTR	Meter - center - unknown or other	ml_METER		✓	Utilities
MVP	Motor vehicle pullout	MI_MVP		✓	Roadbed
MWALL B	Wall - bottom - masonry including sound walls & other non-retaining walls - ground	ml_WALL_BOT_MAS ON	$\checkmark$		Structures
n/a	Boundary outlining ground not visible areas (GNV)	topo_ml_bndy_gnv_inf o_only	$\checkmark$		General
n/a	Linework indicating the direction to or from a feature	topo_ml_ctrl_DIRECTI ON_info_only	$\checkmark$		Control
n/a	Random breaklines in bridge deck DTM areas	topo_ml_dtm_brk_spo t_deck_info_only	$\checkmark$		General
n/a	Spot elevations & mass points in bridge deck DTM areas	topo_ml_dtm_brk_spo t_deck_info_only		~	General
n/a	Random breaklines in ground DTM areas	topo_ml_dtm_brk_spo t_info_only	$\checkmark$		General
n/a	Spot elevations & mass points in ground DTM areas	topo_ml_dtm_brk_spo t_info_only		✓	General
n/a	Random breaklines in bridge underside DTM areas	topo_ml_dtm_brk_spo t_underside_info_only	$\checkmark$		General
n/a	Spot elevations & mass points in bridge underside DTM areas	topo_ml_dtm_brk_spo t_underside_info_only		✓	General
n/a	Breaklines from unregistered point cloud data in study bridge deck DTM areas	topo_ml_study_brk_sp ot_deck_info_only	$\checkmark$		General
n/a	Spot elevations & mass points from unregistered point cloud data in study bridge deck DTM areas	topo_ml_study_brk_sp ot_deck_info_only		~	General
n/a	Breaklines from unregistered point cloud data in study ground DTM areas	topo_ml_study_brk_sp ot_info_only	$\checkmark$		General
n/a	Spot elevations & mass points from unregistered point cloud data in study ground DTM areas	topo_ml_study_brk_sp ot_info_only		~	General
Name	Description	Civil 3D Style/Layer	Line	Point	Group
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n/a	Breaklines from unregistered point cloud data in study bridge underside DTM areas	topo_ml_study_brk_sp ot_underside _info_only	$\checkmark$		General
n/a	Spot elevations & mass points from unregistered point cloud data in study bridge underside DTM areas	topo_ml_study_brk_sp ot_underside _info_only		~	General
OHUTL	Overhead facility - traffic control, unknown or other	ml_OH	$\checkmark$		Utilities
ORCH	Orchard - outline	ml_ORCH	$\checkmark$		Vegetation
OSD	Overside drain	ml_DRAIN_SIDE	$\checkmark$		Hydrograp hic
РВ	Pullbox - center - rectangular - unknown or other	ml_PB_RECT		~	Utilities
PCC	Concrete roadbed edges - ground	ml_rdbed_CONC_ED GE	$\checkmark$		Roadbed
PCC	Concrete roadbed edges - bridge deck	ml_rdbed_CONC_ED GE_deck	$\checkmark$		Roadbed
PCC	Concrete roadside edges - ground	ml_rdside_CONC_ED GE	$\checkmark$		Roadside
РССВК	Concrete roadbed grade breaks - ground	ml_rdbed_CONC_BR K	$\checkmark$		Roadbed
РССВК	Concrete roadbed grade breaks - bridge deck	ml_rdbed_CONC_BR K_deck	$\checkmark$		Roadbed
РССВК	Concrete roadside grade breaks - ground	ml_rdside_CONC_BR K	$\checkmark$		Roadside
PEDBTN	Pedestrian button	ml_Pedestrian_BTN		✓	Utilities
PEDP	Pedestrian button pole	ml_Pedestrian_BTN_ POLE		~	Utilities
PEDSIG	Pedestrian signal	ml_Pedestrian_SIG		✓	Utilities
PIPR	Bollards, protective pipes, etc.	ml_BOLLARD		✓	Roadside
PMKR	Marker - pavement - reflective & non- reflective - single location or multiple in a line - ground	ml_MARKER_PAVE	$\checkmark$	~	Traffic Control
PN	Bridge paving notch	ml_PN	$\checkmark$		Structures
POLE	Pole - center - unknown or other	ml_POLE		✓	Utilities
PRKMT R	Parking meter	ml_Parking_Meter		✓	Traffic Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
PTEL	Public telephone	mI_TELE		✓	Utilities
PUMP	Pump - center or pump & pump house outline	ml_PUMP	$\checkmark$	~	Utilities
RDBED	Miscellaneous roadbed point features - ground	ml_rdbed_MISC		~	Roadbed
RDSIDE	Miscellaneous roadside point or line features - ground	ml_rdside_MISC	$\checkmark$	~	Roadside
ROCK	Rock roadbed edges	ml_rdbed_ROCK_ED GE	$\checkmark$		Roadbed
ROCK	Rock roadside edges	ml_rdside_ROCK_ED GE	$\checkmark$		Roadside
ROCKB K	Rock roadbed grade breaks	ml_rdbed_ROCK_BR K	~		Roadbed
ROCKB K	Rock roadside grade breaks	ml_rdside_ROCK_BR K	~		Roadside
RRA	Railroad Appurtenances including control box, switch, etc.	ml_RR_APPR		~	Roadside
RRB	Railroad ballast – top & bottom - ground	ml_RR_BALL	$\checkmark$		Roadside
RRPOS T	Railroad gate post	ml_RR_POST		✓	Roadside
RRRAIL	Railroad rail - individual rail for vertical & horizontal clearance requirements - ground	ml_RR_RAIL	~		Roadside
RRSIG	Railroad signal	ml_RR_SIG		$\checkmark$	Utilities
RRTRK	Railroad track - displays both rails where the right rail is the true location and the left rail is an approximate location - ground	ml_RR_TRACK	$\checkmark$		Roadside
RWALLB	Wall - bottom - retaining	ml_WALL_BOT_RET AIN	$\checkmark$		Structures
SIGN	Sign - cantilever - post location or line from post to end of sign	ml_SIGN_CANT	✓	~	Traffic Control
SIGN	Sign - multi-post - line from post to post	ml_SIGN_MULTI	~	✓	Traffic Control
SIGN	Sign - overhead bridge - single post location or line from post to post	ml_SIGN_OH	$\checkmark$	✓	Traffic Control

Name	Description	Civil 3D Style/Layer	Line	Point	Group
SIGN	Sign - single post - post location	ml_SIGN_SINGLE		~	Traffic Control
SLD	Slide - monitoring point or edges	ml_SLIDE	~	✓	Roadside
SOFF	Bridge soffit	ml_SOFFIT	✓		Structures
SP	Standpipe	ml_SP		✓	Utilities
SPR	Sprinkler	ml_SPR		✓	Utilities
STR	Miscellaneous structures point or linear features not on the bridge	ml_str_MISC	1	~	Structures
STR	Miscellaneous bridge deck point or linear features	ml_str_MISC_deck	√	~	Structures
STR	Miscellaneous bridge underside point or linear features	ml_str_MISC_undersi de	√	~	Structures
STRP	Striping - dashed & solid except for lane line and fog stripes - ground	ml_STRIPE	1		Traffic Control
STRP	Striping - dashed & solid except for lane line and fog stripes - bridge deck	ml_STRIPE_deck	√		Traffic Control
S/M	Sidewalk - ground	ml_SW	~		Roadside
300	Sidewalk - bridge deck	ml_SW_deck	$\checkmark$		Roadside
TANK	Tank - center or outline	ml_TANK	$\checkmark$	✓	Utilities
TBAR	Barrier - top - all barrier types - ground	ml_BARR_TOP	$\checkmark$		Traffic Control
TBAR	Barrier - top - all barrier types - bridge deck	ml_BARR_TOP_deck	$\checkmark$		Traffic Control
TERMLT	Barrier - guardrail terminator - left	ml_BARR_TERM_Lt		~	Traffic Control
TERMR T	Barrier - guardrail terminator - right	ml_BARR_TERM_Rt		~	Traffic Control
тос	Curb along roadbed - top - ground	ml_CURB_TOP	$\checkmark$		Roadbed
тос	Curb along roadbed - top - bridge deck	ml_CURB_TOP_deck	~		Roadbed
тос	Curb, miscellaneous - top - ground	ml_misc_CURB_TOP	~		Roadside
TREE	Tree	ml_TREE		✓	Vegetation
TS	Traffic signal - pole location	ml_TRAF_SIG		✓	Utilities
TTOW	Transmission tower - outline	ml_TTOW	$\checkmark$	✓	Utilities
UGUTL	Underground utility facility - markout or positive location - unknown or other - single location or line	ml_UG	$\checkmark$	~	Utilities

Name	Description	Civil 3D Style/Layer	Line	Point	Group
UTL	Miscellaneous utilities point or linear features	ml_ut_MISC	~	~	Utilities
UTLA	Utility appurtenances	ml_ut_APPR		✓	Utilities
UTLMKR	Marker - utility	ml_MARKER_UTIL	$\checkmark$	✓	Utilities
UTLPED	Pedestal - center - unknown or other	ml_PED		✓	Utilities
V	Valve - unknown or other	ml_VALVE		✓	Utilities
VEG	Miscellaneous vegetation point or linear features	ml_veg_MISC	~	~	Vegetation
VENT	Vent - center - unknown or other	ml_VENT		✓	Utilities
VINE	Vineyard - rows & outline	ml_VINE	$\checkmark$		Vegetation
VLT	Vault - center or outline - unknown or other	mI_VAULT	~	~	Utilities
WALLT	Wall - top - masonry & retaining - ground	mI_WALL_TOP	~		Structures
WEIR	Weir	ml_WEIR	✓		Hydrograp hic
WELL	Well	ml WELL		$\checkmark$	Utilities

## Point Description Key Sets

When points are inserted into a drawing, the raw description of each point is evaluated by the Description Key Sets. When a raw description matches a Description Key, the properties defined in the key are assigned to that Point.

# Caltrans Field Surveys Description Key Set:

Civil 3D Point Label Style = Topo Points [Name|Elevation|Description]

Code	Style	Point Label Style	Format	Point Object Layer
ABUT	SU Figure Points [STR]	Topo Points *	Bridge, abutment	topo_su_str_LINE_PTS_inf o_only
AC	SU Figure Points [RDBED]	Topo Points *	AC, misc, edge	topo_su_rdbed_LINE_PTS_ info_only
АСВК	SU Figure Points [RDBED]	Topo Points *	AC, misc, breakline	topo_su_rdbed_LINE_PTS_ info_only
ACFL	SU Figure Points [RDBED-FL]	Topo Points *	AC, misc, FL	topo_su_rdbed_LINE_PTS_ info_only
АСМ	SU Figure Points [RDSIDE]	Topo Points *	AC edge, misc	topo_su_rdside_LINE_PTS _info_only
ASTK	su_ctrl_AS_STAKED	Name	As-staked point	topo_su_ctrl_point_AS_STA KED
вв	SU Figure Points [RDSIDE]	Topo Points *	Back of bench	topo_su_rdside_LINE_PTS _info_only
ввwк	SU Figure Points [STR_DECK]	Topo Points *	Bridge, back of walk/curb	topo_su_str_LINE_PTS_de ck_info_only
ВСАВ	SU Figure Points [UTIL-4]	Topo Points *	Buried cable	topo_su_ut_LINE_PTS_info _only
BCON	SU Figure Points [TC]	Topo Points *	Barrier, concrete	topo_su_tcd_LINE_PTS_inf o_only
BDRN	su_DI_RND_deck	Topo Points *	Bridge, deck drain	topo_su_hydro_df_STR_de ck_drop
BEP	SU Figure Points [STR_DECK]	Topo Points *	Bridge, edge of pavement	topo_su_str_LINE_PTS_de ck_info_only
BETW	SU Figure Points [STR_DECK]	Topo Points *	Bridge, edge of traveledway	topo_su_str_LINE_PTS_de ck_info_only
BLC	su_ctrl_FD	Name	Block Corner	topo_su_ctrl_point_FD

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Code	Style	Point Label Style	Format	Point Object Layer
BLDG	SU Figure Points [STR]	Topo Points *	Building, face	topo_su_str_LINE_PTS_inf o_only
BLDR	SU Figure Points [STR]	Topo Points *	Building, roof overhang	topo_su_str_LINE_PTS_inf o_only
BRB	SU Figure Points [STR_DECK]	Topo Points *	Bridge barrier rail, bottom	topo_su_str_LINE_PTS_de ck_info_only
BRF	SU Figure Points [RDSIDE]	Topo Points *	Fence, board	topo_su_rdside_LINE_PTS _info_only
BRT	SU Figure Points [STR_DECK]	Topo Points *	Bridge barrier rail, top	topo_su_str_LINE_PTS_de ck_info_only
BSOF	SU Figure Points [STR_UNDERSIDE]	Topo Points *	Bridge, soffit	topo_su_str_LINE_PTS_un derside_info_only
BSTP	SU Figure Points [STR_DECK]	Topo Points *	Bridge, pavement stripe	topo_su_str_LINE_PTS_de ck_info_only
BSWB	SU Figure Points [STR_DECK]	Topo Points *	Bridge curb, edge, bottom	topo_su_str_LINE_PTS_de ck_info_only
BSWT	SU Figure Points [STR_DECK]	Topo Points *	Bridge curb, edge, top	topo_su_str_LINE_PTS_de ck_info_only
BTHR	SU Figure Points [TC]	Topo Points *	Barrier, thrie	topo_su_tcd_LINE_PTS_inf o_only
BUAO	SU BUAO	Topo Points *	Bridge, utility access opening	topo_su_str_MISC_undersi de_drop
BUS	SU BUS	Topo Points *	Bus Stop	topo_su_str_BLDG_drop
BWF	SU Figure Points [RDSIDE]	Topo Points *	Fence, barbed wire	topo_su_rdside_LINE_PTS _info_only
BWW	SU Figure Points [STR]	Topo Points *	Bridge, Wingwall	topo_su_str_LINE_PTS_inf o_only
САВ	su_CAB	Topo Points *	Cabinet, utililty	topo_su_ut_CAB
CABEL	su_CAB_ELEC	Topo Points *	Cabinet, utililty electic	topo_su_ut_CAB
CABFIBER	su_CAB_FIBER	Topo Points *	Cabinet, utililty fiber optic	topo_su_ut_CAB
CABTL	su_CAB_TELEC	Topo Points *	Cabinet, utililty telecomm	topo_su_ut_CAB

Code	Style	Point Label Style	Format	Point Object Layer
CABTV	su_CAB_TV	Topo Points *	Cabinet, utililty tv	topo_su_ut_CAB
CALL	su_CALL	Topo Points *	Call box	topo_su_ut_MISC
CARL	SU Figure Points [STR]	Topo Points *	Carport, edge covered	topo_su_str_LINE_PTS_inf o_only
CBSN	SU Figure Points [HYDRO]	Topo Points *	Catch basin	topo_su_hydro_LINE_PTS_ info_only
сс	su_CC	Topo Points *	Crash Cushion, ground	topo_su_tcd_MISC_drop
CCDECK	su_CC_deck	Topo Points *	Crash Cushion, bridge deck	topo_su_tcd_MISC_deck_d rop
CFL	SU Figure Points [HYDRO]	Topo Points *	Canal, FL	topo_su_hydro_LINE_PTS_ info_only
CLF	SU Figure Points [RDSIDE]	Topo Points *	Fence, chain link	topo_su_rdside_LINE_PTS _info_only
CLH	su_ctrl_FD_CL	Name	Ctr Line Monument Horizontal	topo_su_ctrl_point_FD
CLHV	su_ctrl_FD_CL	Name	Ctr Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
CLNR	su_ctrl_FD_CL	Name	St CL, fd, no record	topo_su_ctrl_point_FD
CLO	su_CLO	Topo Points *	Cleanout	topo_su_hydro_df_MISC_dr op
CLPC	su_ctrl_FD_CL	Name	St CL, PC	topo_su_ctrl_point_FD
CLPT	su_ctrl_FD_CL	Name	St CL, PT	topo_su_ctrl_point_FD
COL	su_COL_CTR	Topo Points *	Bent/Column/Pi er	topo_su_str_COL_drop
COLCTR	su_COL_CTR	Topo Points *	Bent/Column/Pi er, circular center	topo_su_str_COL_drop
COLM	SU Figure Points [STR]	Topo Points *	Bent/Column/Pi er, linear ends	topo_su_str_LINE_PTS_inf o_only

Code	Style	Point Label Style	Format	Point Object Layer
COLPT	su_COL	Topo Points *	Bent/Column/Pi er, centerline, corner or face	topo_su_str_COL_drop
COND	SU Figure Points [UTIL-4]	Topo Points *	Conduit	topo_su_ut_LINE_PTS_info _only
CONDP	su_COND	Topo Points *	Conduit, single location	topo_su_ut_COND
CPCC	su_ctrl_FD_CL	Name	St CL, PCC	topo_su_ctrl_point_FD
CPI	su_ctrl_FD_CL	Name	St CL, PI	topo_su_ctrl_point_FD
СРОС	su_ctrl_FD_CL	Name	St CL, POC	topo_su_ctrl_point_FD
СРОТ	su_ctrl_FD_CL	Name	St CL, POT	topo_su_ctrl_point_FD
CPRC	su_ctrl_FD_CL	Name	St CL, PRC	topo_su_ctrl_point_FD
CROP	SU Figure Points [VEG]	Topo Points *	Crop, edge	topo_su_veg_LINE_PTS_in fo_only
CTLG	SU Figure Points [RDBED]	Topo Points *	Cattle guard	topo_su_rdbed_LINE_PTS_ info_only
СТОР	SU Figure Points [HYDRO]	Topo Points *	Canal, top	topo_su_hydro_LINE_PTS_ info_only
CTRL	SU CTRL	Name	Generic Point - Control monumentation	topo_su_ctrl_point_FD
CULT	SU Figure Points [HYDRO]	Topo Points *	Culvert, top	topo_su_hydro_LINE_PTS_ info_only
CULV	SU Figure Points [HYDRO]	Topo Points *	Culvert, pipe, FL	topo_su_hydro_LINE_PTS_ info_only
CULVFL	su_CULV_FL	Topo Points *	Culvert flowline, point	topo_su_hydro_df_CULV_d rop
CULVP	su_CULV	Topo Points *	Culvert, point	topo_su_hydro_df_CULV_d rop
сиут	SU CUVT	Topo Points *	Culvert, top elevation	topo_su_hydro_df_CULV_d rop
cww	SU Figure Points [HYDRO]	Topo Points *	Culvert, wingwall	topo_su_hydro_LINE_PTS_ info_only
DECK	SU Figure Points [STR]	Topo Points *	Deck, wood, edge	topo_su_str_LINE_PTS_inf o_only

Code	Style	Point Label Style	Format	Point Object Layer
DECKMISC	su_str_MISC_deck	Topo Points *	Miscellaneous bridge deck point feature	topo_su_str_MISC_deck_dr op
DFL	SU Figure Points [HYDRO]	Topo Points *	Ditch, FL	topo_su_hydro_LINE_PTS_ info_only
DI	su_DI_RECT	Topo Points *	DI, rectangle	topo_su_hydro_df_STR_dro p
DICO	SU DICO	Topo Points *	DI, curb open/no grate	topo_su_hydro_df_STR_dro p
ЫКВ	SU Figure Points [RDBED]	Topo Points *	Dike, bottom	topo_su_rdbed_LINE_PTS_ info_only
ЫКТ	SU Figure Points [RDBED]	Topo Points *	Dike, top	topo_su_rdbed_LINE_PTS_ info_only
DIMISC	su_DI	Topo Points *	DI, miscellaneous	topo_su_hydro_df_STR_dro p
DIMISCDECK	su_DI_deck	Topo Points *	DI, miscellaneous, bridge deck	topo_su_hydro_df_STR_de ck_drop
DIRECT	su_DI_RECT	Topo Points *	DI, rectangle	topo_su_hydro_df_STR_dro p
DIRECTDEC K	su_DI_RECT_deck	Topo Points *	DI, rectangle, bridge deck	topo_su_hydro_df_STR_de ck_drop
DIRND	su_DI_RND	Topo Points *	DI, round	topo_su_hydro_df_STR_dro p
DIRNDDECK	su_DI_RND_deck	Topo Points *	DI, round, bridge deck	topo_su_hydro_df_STR_de ck_drop
DIRO	su_DI_RND	Topo Points *	DI, round	topo_su_hydro_df_STR_dro p
DISD	SU DISD	Topo Points *	DI, side inlet, FL	topo_su_hydro_df_STR_dro p
DRWY	SU Figure Points [RDSIDE]	Topo Points *	Driveway, edge	topo_su_rdside_LINE_PTS _info_only
DTOP	SU Figure Points [HYDRO]	Topo Points *	Ditch, top	topo_su_hydro_LINE_PTS_ info_only
EDC	su_CLO	Topo Points *	Drain edge, cleanout	topo_su_hydro_df_MISC_dr op

Code	Style	Point Label Style	Format	Point Object Layer
EDO	SU EDO	Topo Points *	Drain edge, outlet	topo_su_hydro_df_STR_dro p
EDV	su_VENT_DF	Topo Points *	Drain edge, vent	topo_su_hydro_df_MISC_dr op
EL	su_EL	Topo Points *	Electrolier	topo_su_ut_LTG
ELC	SU Figure Points [UTIL-3]	Topo Points *	Cable, electrical	topo_su_ut_LINE_PTS_info _only
ELMH	su_MH_ELEC	Topo Points *	Manhole, electrical	topo_su_ut_MH
ЕМ	su_METER_ELEC	Topo Points *	Electric meter	topo_su_ut_METER
ENT	SU Figure Points [HYDRO]	Topo Points *	Taper entrance	topo_su_hydro_LINE_PTS_ info_only
EOD	SU Figure Points [STR_DECK]	Topo Points *	Bridge, edge deck	topo_su_str_LINE_PTS_de ck_info_only
EOR	SU Figure Points [RDBED]	Topo Points *	Road, edge, unsurfaced	topo_su_rdbed_LINE_PTS_ info_only
EP	SU Figure Points [RDBED]	Topo Points *	Pavement edge	topo_su_rdbed_LINE_PTS_ info_only
ES	SU Figure Points [RDBED]	Topo Points *	Shoulder edge, surfaced	topo_su_rdbed_LINE_PTS_ info_only
ETW	SU Figure Points [TC]	Topo Points *	Traveledway edge	topo_su_tcd_LINE_PTS_inf o_only
EW	SU Figure Points [HYDRO]	Topo Points *	Lake, pond, swamp, water edge	topo_su_hydro_LINE_PTS_ info_only
FB	SU Figure Points [RDSIDE]	Topo Points *	Front of bench	topo_su_rdside_LINE_PTS _info_only
FDCL	su_ctrl_FD_CL	Name	Found Point - centerline	topo_su_ctrl_point_FD
FDLINE	SU Figure Points [CTRL]	Name Des cription	Generic Line - Ownership Lines	topo_su_ctrl_LINE_PTS_inf o_only

Code	Style	Point Label Style	Format	Point Object Layer
FDLN	SU Figure Points [CTRL]	Name Des cription	Generic Line - Ownership Lines	topo_su_ctrl_LINE_PTS_inf o_only
FDNR	su_ctrl_FD_no_record	Name	Fd Pt, no record	topo_su_ctrl_point_FD
FDPT	su_ctrl_FD	Name	Found Point	topo_su_ctrl_point_FD
FDPTSECT	su_ctrl_FD_Section	Name	Found Point - section corner	topo_su_ctrl_point_FD
FDR	su_ctrl_FD	Name	Fd Pt, record	topo_su_ctrl_point_FD
FES	su_FES	Topo Points *	Flared end section	topo_su_hydro_df_STR_dro p
FH	su_FH	Topo Points *	Fire hydrant	topo_su_ut_MISC
FIBO	SU Figure Points [UTIL-5]	Topo Points *	Cable, fiber optic	topo_su_ut_LINE_PTS_info _only
FLC	SU Figure Points [RDBED-FL]	Topo Points *	Curb FL	topo_su_rdbed_LINE_PTS_ info_only
FP	su_FP	Topo Points *	Flag pole	topo_su_rdside_MISC_drop
FRLC	su_ctrl_FD	Name	Frac Lot Corner	topo_su_ctrl_point_FD
GATEP	su_GATE_POST	Topo Points *	Gate post, free & hinged ends	topo_su_rdside_FENCE_dr op
GATEPDECK	su_GATE_POST_dec k	Topo Points *	Gate post, free & hinged ends, bridge deck	topo_su_rdside_FENCE_de ck_drop
GF	SU GF	Topo Points *	Gate post, free end	topo_su_rdside_FENCE_dr op
GH	SU GH	Topo Points *	Gate post, hinged end	topo_su_rdside_FENCE_dr op
GLN	SU Figure Points [UTIL-2]	Topo Points *	Gas, natural	topo_su_ut_LINE_PTS_info _only
GLP	SU Figure Points [UTIL-7]	Topo Points *	Gas, petroleum	topo_su_ut_LINE_PTS_info _only
GM	su_METER_GAS	Topo Points *	Gas meter	topo_su_ut_METER
GSLD	SU Figure Points [RDSIDE]	Topo Points *	Gate, sliding	topo_su_rdside_LINE_PTS _info_only

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Code	Style	Point Label Style	Format	Point Object Layer
GUY	su_GUY	Topo Points *	Guy anchor	topo_su_ut_POLE
GV	su_VALVE_GAS	Topo Points *	Gas valve	topo_su_ut_VALVE
НВ	su_HB	Topo Points *	Hose bib	topo_su_ut_APPR
HDWB	SU Figure Points [HYDRO]	Topo Points *	Headwall, bottom	topo_su_hydro_LINE_PTS_ info_only
HEAD	SU Figure Points [HYDRO]	Topo Points *	Headwall, top	topo_su_hydro_LINE_PTS_ info_only
HORZ	SU HORZ	Topo Points *	Horizontal Drain	topo_su_hydro_df_STR_dro p
HP	SU Figure Points [RDSIDE]	Topo Points *	Hinge point	topo_su_rdside_LINE_PTS _info_only
HWAT	su_HWAT	Topo Points *	High Water	topo_su_hydro_WATER_dr op
HYDRL	SU Figure Points [HYDRO]	Topo Points *	Generic Line - Hydro, Drainage, & Irrigation	topo_su_hydro_LINE_PTS_ info_only
HYDRMISC	su_hydro_MISC	Topo Points *	Miscellaneous Hydro, Drainage, & Irrigation	topo_su_hydro_MISC_drop
HYDRP	su_hydro_MISC	Topo Points *	Generic Point - Hydro, Drainage, & Irrigation	topo_su_hydro_MISC_drop
INTT	SU INTT	Topo Points *	Orchard, tree (interior)	topo_su_veg_MISC_drop
IRRV	su_VALVE_IRRIG	Topo Points *	Valve irrigation	topo_su_ut_APPR
ITS	su_ITS	Topo Points *	Intelligent Transportation System Node	topo_su_ut_MISC
LINEPTS	su_Line_Points	Topo Points *	TBC Line Points	topo_su_LINE_PTS_info_o nly

Code	Style	Point Label Style	Format	Point Object Layer
LINEPTSCTR L	su_ctrl_Line_Points	Topo Points *	TBC Line Points	topo_su_ctrl_LINE_PTS_inf o_only
LINEPTSDEC K	su_str_Line_Points_d eck	Topo Points *	TBC Line Points	topo_su_str_LINE_PTS_de ck_info_only
LINEPTSHYD RO	su_hydro_Line_Points	Topo Points *	TBC Line Points	topo_su_hydro_LINE_PTS_ info_only
LINEPTSRDB ED	su_rdbed_Line_Point s	Topo Points *	TBC Line Points	topo_su_rdbed_LINE_PTS_ info_only
LINEPTSRDS IDE	su_rdside_Line_Point s	Topo Points *	TBC Line Points	topo_su_rdside_LINE_PTS _info_only
LINEPTSSTR	su_str_Line_Points	Topo Points *	TBC Line Points	topo_su_str_LINE_PTS_inf o_only
LINEPTSTCD	su_tcd_Line_Points	Topo Points *	TBC Line Points	topo_su_tcd_LINE_PTS_inf o_only
LINEPTSUND ER	su_str_Line_Points_u nderside	Topo Points *	TBC Line Points	topo_su_str_LINE_PTS_un derside_info_only
LINEPTSUTI L	su_ut_Line_Points	Topo Points *	TBC Line Points	topo_su_ut_LINE_PTS_info _only
LINEPTSVEG	su_veg_Line_Points	Topo Points *	TBC Line Points	topo_su_veg_LINE_PTS_in fo_only
LIP	SU Figure Points [RDBED]	Topo Points *	Curb lip	topo_su_rdbed_LINE_PTS_ info_only
LL	SU Figure Points [TC]	Topo Points *	Lane line	topo_su_tcd_LINE_PTS_inf o_only
LOCT	su_SLIDE	Topo Points *	Slide (monitoring)	topo_su_rdside_SLIDE_dro p
LP	su_LTG	Topo Points *	Lamp post, decorative	topo_su_ut_LTG
LR	SU Figure Points [RDSIDE]	Topo Points *	Railroad Track, left rail	topo_su_rdside_LINE_PTS _info_only
LTC	su_ctrl_FD	Name	Lot Corner	topo_su_ctrl_point_FD
LTG	su_LTG	Topo Points *	Lighting	topo_su_ut_LTG
MANL	SU Figure Points [RDSIDE]	Topo Points *	Generic Line - Man-made General Feature	topo_su_rdside_LINE_PTS _info_only

Code	Style	Point Label Style	Format	Point Object Layer
MANP	su_rdside_MISC	Topo Points *	Generic Point - Man-made General Feature	topo_su_rdside_MISC_drop
MARK	su_MARKER_GUIDE	Topo Points *	Guide post/marker	topo_su_tcd_MARKER_dro p
MARKGD	su_MARKER_GUIDE	Topo Points *	Guide post/marker - ground	topo_su_tcd_MARKER_dro p
MARKGDDE CK	su_MARKER_GUIDE _deck	Topo Points *	Guide post/marker - bridge deck	topo_su_tcd_MARKER_dec k_drop
MARKMISC	su_MARKER_MISC	Topo Points *	Miscellaneous post/marker - ground	topo_su_tcd_MARKER_dro p
MARKMISCD ECK	su_MARKER_MISC_ deck	Topo Points *	Miscellaneous post/marker - bridge deck	topo_su_tcd_MARKER_dec k_drop
MARKPAVE	su_MARKER_PAVE	Topo Points *	Pavement marker - ground	topo_su_tcd_MARKER_dro p
MARKPAVE DECK	su_MARKER_PAVE_ deck	Topo Points *	Pavement marker - bridge deck	topo_su_tcd_MARKER_dec k_drop
MARKUTIL	su_MARKER_UTIL	Topo Points *	Utility marker	topo_su_ut_MARKER
МВ	su_MAIL	Topo Points *	Mail box	topo_su_rdside_MISC_drop
MBGR	SU Figure Points [TC]	Topo Points *	Guard rail, face, metal	topo_su_tcd_LINE_PTS_inf o_only
MBS	SU Figure Points [RDSIDE]	Topo Points *	Mail boxes	topo_su_rdside_LINE_PTS _info_only
МС	su_ctrl_FD	Name	Meander Corner	topo_su_ctrl_point_FD
МН	su_MH [True size]	Topo Points *	\$1' diameter manhole, unknown or other	topo_su_ut_MH

Code	Style	Point Label Style	Format	Point Object Layer
MHEL	su_MH_ELEC [True size]	Topo Points *	\$1' diameter manhole, electric	topo_su_ut_MH
MHFIBER	su_MH_FIBER [True size]	Topo Points *	\$1' diameter manhole, fiber optic	topo_su_ut_MH
МНЈТ	su_MH_JOINT [True size]	Topo Points *	\$1' diameter manhole, joint	topo_su_ut_MH
MHSD	su_MH_STORM [True size]	Topo Points *	\$1' diameter manhole, storm	topo_su_ut_MH
MHSS	su_MH_SEWER [True size]	Topo Points *	\$1' diameter manhole, sewer	topo_su_ut_MH
MHTL	su_MH_TELEC [True size]	Topo Points *	\$1' diameter manhole, telecomm	topo_su_ut_MH
мнт∨	su_MH_TV [True size]	Topo Points *	\$1' diameter manhole, TV	topo_su_ut_MH
MTR	su_METER	Topo Points *	Meter, unknown or other	topo_su_ut_METER
MTREL	su_METER_ELEC	Topo Points *	Meter, electric	topo_su_ut_METER
MTRGAS	su_METER_GAS	Topo Points *	Meter, gas	topo_su_ut_METER
MTRWAT	su_METER_WATER	Topo Points *	Meter, water	topo_su_ut_METER
MWB	SU Figure Points [STR]	Topo Points *	Wall, misc, bottom	topo_su_str_LINE_PTS_inf o_only
мwт	SU Figure Points [STR]	Topo Points *	Wall, misc, top	topo_su_str_LINE_PTS_inf o_only
ОСАВ	SU Figure Points [UTIL-4]	Topo Points *	Overhead cable	topo_su_ut_LINE_PTS_info _only
ODRN	SU Figure Points [HYDRO]	Topo Points *	Drain, overside	topo_su_hydro_LINE_PTS_ info_only
OG	SU Figure Points [RDSIDE]	Topo Points *	Original ground	topo_su_rdside_LINE_PTS _info_only

Code	Style	Point Label Style	Format	Point Object Layer
OGFL	SU Figure Points [RDSIDE-FL]	Topo Points *	Original Ground, flowline	topo_su_rdside_LINE_PTS _info_only
ORCH	SU Figure Points [VEG]	Topo Points *	Orchard, edge	topo_su_veg_LINE_PTS_in fo_only
оѕн	su_ctrl_FD_CL	Name	O/S Line Monument Horizontal	topo_su_ctrl_point_FD
OSHV	su_ctrl_FD_CL	Name	O/S Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
ΡΑΤ	SU Figure Points [STR]	Topo Points *	Patio, edge	topo_su_str_LINE_PTS_inf o_only
РВ	su_PB_RECT	Topo Points *	Pull/Utility box, unknown or other	topo_su_ut_PB
PBEL	su_PB_RECT_ELEC	Topo Points *	Pull/Utility box, electric	topo_su_ut_PB
PBFTTV	su_PB_RECT_TV	Topo Points *	Pull/Utility box, TV	topo_su_ut_PB
PBJT	su_PB_RECT_JOINT	Topo Points *	Pull/Utility box, joint	topo_su_ut_PB
PBRECT	su_PB_RECT	Topo Points *	Pull/Utility box, rectangular, unknown or other	topo_su_ut_PB
PBRECTEL	su_PB_RECT_ELEC	Topo Points *	Pull/Utility box, rectangular, electric	topo_su_ut_PB
PBRECTFIBE R	su_PB_RECT_FIBER	Topo Points *	Pull/Utility box, rectangular, fiber optic	topo_su_ut_PB
PBRECTJT	su_PB_RECT_JOINT	Topo Points *	Pull/Utility box, rectangular, joint	topo_su_ut_PB

Code	Style	Point Label Style	Format	Point Object Layer
PBRECTTL	su_PB_RECT_TELE C	Topo Points *	Pull/Utility box, rectangular, telecomm	topo_su_ut_PB
PBRECTTV	su_PB_RECT_TV	Topo Points *	Pull/Utility box, rectangular, TV	topo_su_ut_PB
PBRECTWAT	su_PB_RECT_WATE R	Topo Points *	Pull/Utility box, rectangular, rectangular, water	topo_su_ut_PB
PBRND	su_PB_RND	Topo Points *	Pull/Utility box, round, unknown or other	topo_su_ut_PB
PBRNDEL	su_PB_RND_ELEC	Topo Points *	Pull/Utility box, round, electric	topo_su_ut_PB
PBRNDFIBE R	su_PB_RND_FIBER	Topo Points *	Pull/Utility box, round, fiber optic	topo_su_ut_PB
PBRNDJT	su_PB_RND_JOINT	Topo Points *	Pull/Utility box, round, joint	topo_su_ut_PB
PBRNDTL	su_PB_RND_TELEC	Topo Points *	Pull/Utility box, round, telecomm	topo_su_ut_PB
PBRNDTV	su_PB_RND_TV	Topo Points *	Pull/Utility box, round, TV	topo_su_ut_PB
PBRNDWAT	su_PB_RND_WATER	Topo Points *	Pull/Utility box, round, water	topo_su_ut_PB
PBWAT	su_PB_RECT_WATE R	Topo Points *	Pull/Utility box, water	topo_su_ut_PB
РСВК	SU Figure Points [RDBED]	Topo Points *	Concrete, misc, breakline	topo_su_rdbed_LINE_PTS_ info_only
PCC	SU Figure Points [RDBED]	Topo Points *	Concrete, misc, edge	topo_su_rdbed_LINE_PTS_ info_only
РССМ	SU Figure Points [RDSIDE]	Topo Points *	Concrete edge, misc	topo_su_rdside_LINE_PTS _info_only
PCFL	SU Figure Points [RDBED-FL]	Topo Points *	Concrete, misc, FL	topo_su_rdbed_LINE_PTS_ info_only

Code	Style	Point Label Style	Format	Point Object Layer
PED	su_PED_TV	Topo Points *	Pedestal, telephone	topo_su_ut_MISC
PEDBTN	su_Pedestrian_BTN	Topo Points *	Pedestrian button	topo_su_ut_LTG
PEDEL	su_PED_ELEC	Topo Points *	Pedestal, electric	topo_su_ut_MISC
PEDFIBER	su_PED_FIBER	Topo Points *	Pedestal, fiber optic	topo_su_ut_MISC
PEDJT	su_PED_JOINT	Topo Points *	Pedestal, joint	topo_su_ut_MISC
PEDPOLE	su_Pedestrian_BTN_ POLE	Topo Points *	Pedestrian button pole	topo_su_ut_LTG
PEDSIG	su_Pedestrian_SIG	Topo Points *	Pedestrian signal	topo_su_ut_LTG
PEDTL	su_PED_TELEC	Topo Points *	Pedestal, telecomm	topo_su_ut_MISC
PEDTV	su_PED_TV	Topo Points *	Pedestal, TV	topo_su_ut_MISC
PEDUNKN	su_PED	Topo Points *	Pedestal, unknown or other	topo_su_ut_MISC
РНН	SU PHH	SU Points Label CTRL	Photo Control Monument Horizontal	topo_su_ctrl_point_MON
РННУ	SU PHHV	SU Points Label CTRL	Photo Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
РНV	SU PHV	SU Points Label CTRL	Photo Control Monument Vertical	topo_su_ctrl_point_MON
PIPR	su_BOLLARD	Topo Points *	Protective pipe	topo_su_rdside_MISC_drop
PLSO	su_ctrl_FD	Name	PLS Corner, other	topo_su_ctrl_point_FD
PMC	su_ctrl_FD	Name	Parcel Corner	topo_su_ctrl_point_FD

Code	Style	Point Label Style	Format	Point Object Layer
РМН	su_ctrl_Primary_H	SU Points Label CTRL	Primary Control Monument Horizontal	topo_su_ctrl_point_MON
РМНV	su_ctrl_Primary_HV	SU Points Label CTRL	Primary Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
PMRK	SU Figure Points [TC]	Topo Points *	Markers, pavement, non- reflective	topo_su_tcd_LINE_PTS_inf o_only
PMV	su_ctrl_Primary_V	SU Points Label CTRL	Primary Control Monument Vertical	topo_su_ctrl_point_MON
PN	SU Figure Points [STR_DECK]	Topo Points *	Bridge, paving notch	topo_su_str_LINE_PTS_de ck_info_only
POLE	su_POLE	Topo Points *	Pole, unknown or other	topo_su_ut_POLE
POLEEL	su_POLE_ELEC	Topo Points *	Pole, electric	topo_su_ut_POLE
POLEFIBER	su_POLE_FIBER	Topo Points *	Pole, fiber optic	topo_su_ut_POLE
POLEJT	su_POLE_JOINT	Topo Points *	Pole, joint	topo_su_ut_POLE
POLETL	su_POLE_TELEC	Topo Points *	Pole, telecomm	topo_su_ut_POLE
POLETV	su_POLE_TV	Topo Points *	Pole, TV	topo_su_ut_POLE
POLL	su_POLE	Topo Points *	Pole line	topo_su_ut_POLE
POOL	SU Figure Points [HYDRO]	Topo Points *	Pool, edge	topo_su_hydro_LINE_PTS_ info_only_
PRF	SU Figure Points [RDSIDE]	Topo Points *	Fence, pipe rail	topo_su_rdside_LINE_PTS _info_only
PRH	su_ctrl_Project_H	SU Points Label CTRL	Project Control Monument Horizontal	topo_su_ctrl_point_MON

Code	Style	Point Label Style	Format	Point Object Layer
PRHV	su_ctrl_Project_HV	SU Points Label CTRL	Project Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
PRKM	su_Parking_Meter	Topo Points *	Parking meter	topo_su_tcd_MISC_drop
PRV	su_ctrl_Project_V	SU Points Label CTRL	Project Control Monument Vertical	topo_su_ctrl_point_MON
PTEL	su_TELE	Topo Points *	Public telephone	topo_su_ut_MISC
РИМН	SU Figure Points [UTIL-1]	Topo Points *	Pump House	topo_su_ut_LINE_PTS_info _only
PUMP	su_PUMP	Topo Points *	Pump	topo_su_ut_APPR
QC	su_ctrl_FD_Section	Name	Quarter Corner	topo_su_ctrl_point_FD
RBRK	SU Figure Points [RDBED]	Topo Points *	Breakline, pavement	topo_su_rdbed_LINE_PTS_ info_only
RC	su_ctrl_FD	Name	Rancho Corner	topo_su_ctrl_point_FD
RCA	SU Figure Points [HYDRO]	Topo Points *	Culvert, reinforced concrete arch	topo_su_hydro_LINE_PTS_ info_only
RCB	SU Figure Points [HYDRO]	Topo Points *	Culvert, reinforced concrete box	topo_su_hydro_LINE_PTS_ info_only
RDSDMISC	su_rdside_MISC	Topo Points *	Miscellaneous roadside on ground	topo_su_rdside_MISC_drop
RDSDMISCD ECK	su_rdside_MISC_dec k	Topo Points *	Miscellaneous roadside on bridge deck	topo_su_rdside_MISC_deck _drop
RDWYL	SU Figure Points [RDBED]	Topo Points *	Generic Line - Roadway Delineation	topo_su_rdbed_LINE_PTS_ info_only
RDWYMISC	su_rdbed_MISC	Topo Points *	Miscellaneous roadbed on ground	topo_su_rdbed_MISC_drop

Code	Style	Point Label Style	Format	Point Object Layer
RDWYMISCD ECK	su_rdbed_MISC_deck	Topo Points *	Miscellaneous roadbed on bridge deck	topo_su_rdbed_MISC_deck _drop
RDWYP	su_rdbed_MISC	Topo Points *	Generic Point - Roadbed delineation	topo_su_rdbed_MISC_drop
REFR	su_ctrl_Reference	Topo Points *	Reference point	topo_su_ctrl_point_MON
RIV	SU Figure Points [HYDRO]	Topo Points *	River or stream, edge	topo_su_hydro_LINE_PTS_ info_only
RMRK	su_MARKER_PAVE	Topo Points *	Markers, pavement, reflective	topo_su_tcd_MARKER_dro p
RO	su_ctrl_FD	Name	Rancho, other	topo_su_ctrl_point_FD
ROCK	SU Figure Points [RDSIDE]	Topo Points *	Rock area	topo_su_rdside_LINE_PTS _info_only
RR	SU Figure Points [RDSIDE]	Topo Points *	Railroad track, right rail	topo_su_rdside_LINE_PTS _info_only
RRA	su_RR_APPR	Topo Points *	Railroad, appurtenances	topo_su_rdside_RR_drop
RRGA	su_RR_POST	Topo Points *	Railroad, gate post	topo_su_rdside_RR_drop
RRSG	su_RR_SIG	Topo Points *	Railroad, signal	topo_su_ut_LTG
RRSW	su_RR_APPR	Topo Points *	Railroad, switch	topo_su_rdside_RR_drop
RW	su_ctrl_FD_RW	Name	R/W Monument	topo_su_ctrl_point_FD
RWB	SU Figure Points [STR]	Topo Points *	Wall, retaining, bottom	topo_su_str_LINE_PTS_inf o_only
RWT	SU Figure Points [STR]	Topo Points *	Wall, retaining, top	topo_su_str_LINE_PTS_inf o_only
SC	su_ctrl_FD_Section	Name	Section Corner found monument	topo_su_ctrl_point_FD
SDMH	su_MH_STORM	Topo Points *	Manhole, storm	topo_su_ut_MH

Code	Style	Point Label Style	Format	Point Object Layer
SDR	SU Figure Points [HYDRO]	Topo Points *	Storm drain	topo_su_hydro_LINE_PTS_ info_only
SDRN	SU Figure Points [HYDRO]	Topo Points *	Drain, slotted	topo_su_hydro_LINE_PTS_ info_only
SIGN	su_SIGN	Topo Points *	Sign, hanging or other type	topo_su_tcd_SIGN_drop
SINB	su_SIGN_OH	Topo Points *	Sign, overhead, bridge	topo_su_tcd_SIGN_drop
SINC	su_SIGN_CANT	Topo Points *	Sign, overhead, cantilever	topo_su_tcd_SIGN_drop
SINM	SU SINM	Topo Points *	Sign, multi-post	topo_su_tcd_SIGN_drop
SINS	su_SIGN_SINGLE	Topo Points *	Sign, single post	topo_su_tcd_SIGN_drop
SLD	SU Figure Points [RDSIDE]	Topo Points *	Slide, edge	topo_su_rdside_LINE_PTS _info_only
SLDP	su_SLIDE	Topo Points *	Slide (monitoring)	topo_su_rdside_SLIDE_dro p
SLH	su_ctrl_FD_CL	Name	Station Line Monument Horizontal	topo_su_ctrl_point_FD
SLHV	su_ctrl_FD_CL	Name	Station Line Monument Horizontal & Vertical	topo_su_ctrl_point_FD
SLP	SU Figure Points [HYDRO]	Topo Points *	Slope protection	topo_su_hydro_LINE_PTS_ info_only
SP	su_SP	Topo Points *	Standpipe	topo_su_ut_APPR
SPLY	SU Figure Points [HYDRO]	Topo Points *	Spillway, edge	topo_su_hydro_LINE_PTS_ info_only
SPR	su_SPR	Topo Points *	Sprinkler	topo_su_ut_APPR
SRCH	point_SEARCH	Name Des cription	Search Coordinate	rw_topo_point

Code	Style	Point Label Style	Format	Point Object Layer
SS	SU Figure Points [UTIL-6]	Topo Points *	Sewer	topo_su_ut_LINE_PTS_info _only
SSMH	su_MH_SEWER	Topo Points *	Manhole, sewer	topo_su_ut_MH
SSP	su_UG_SEWER	Topo Points *	Sanitary sewer, point	topo_su_ut_UG
STHR	SU Figure Points [HYDRO]	Topo Points *	Stream, thread	topo_su_hydro_LINE_PTS_ info_only
STRMISC	su_str_MISC	Topo Points *	Miscellaneous structures point feature	topo_su_str_MISC_drop
STRP	SU Figure Points [TC]	Topo Points *	Stripes, Pavement	topo_su_tcd_LINE_PTS_inf o_only
SUH	su_ctrl_Supp_H	SU Points Label CTRL	Supp. Control Monument Horizontal	topo_su_ctrl_point_MON
SUHV	su_ctrl_Supp_HV	SU Points Label CTRL	Supp. Control Monument Horizontal & Vertical	topo_su_ctrl_point_MON
SUV	su_ctrl_Supp_V	SU Points Label CTRL	Supp. Control Monument Vertical	topo_su_ctrl_point_MON
sw	SU Figure Points [RDSIDE]	Topo Points *	Sidewalk, edge, front/back	topo_su_rdside_LINE_PTS _info_only
SWB	SU Figure Points [STR]	Topo Points *	Wall, sound wall, bottom	topo_su_str_LINE_PTS_inf o_only
SWT	SU Figure Points [STR]	Topo Points *	Wall, sound wall, top	topo_su_str_LINE_PTS_inf o_only
TANK	su_TANK	Topo Points *	Tank, center	topo_su_rdside_MISC_drop
TANP	SU Figure Points [RDSIDE]	Topo Points *	Tank, propane, ends	topo_su_rdside_LINE_PTS _info_only
тс	su_ctrl_FD_Section	Name	Township Corner	topo_su_ctrl_point_FD
TELC	SU Figure Points [UTIL-5]	Topo Points *	Cable, telephone	topo_su_ut_LINE_PTS_info _only

Code	Style	Point Label Style	Format	Point Object Layer
тімн	su_MH_TELEC	Topo Points *	Manhole, telecomm	topo_su_ut_MH
тов	SU Figure Points [HYDRO]	Topo Points *	Bank, top	topo_su_hydro_LINE_PTS_ info_only
тос	SU Figure Points [RDBED]	Topo Points *	Curb top, front/back	topo_su_rdbed_LINE_PTS_ info_only
ТОЕ	SU Figure Points [RDSIDE]	Topo Points *	Toe of slope	topo_su_rdside_LINE_PTS _info_only
ТОР	SU Figure Points [RDSIDE]	Topo Points *	Top of slope	topo_su_rdside_LINE_PTS _info_only
TOWL	SU Figure Points [UTIL-4]	Topo Points *	Transmission tower, edge	topo_su_ut_LINE_PTS_info _only
ТОШР	SU TOWP	Topo Points *	Transmission tower, center	topo_su_ut_MISC
TRC	su_ctrl_FD	Name	Tract Corner	topo_su_ctrl_point_FD
TREE	su_TREE	Topo Points *	Tree	topo_su_veg_TREE_drop
TRFSG	su_TRAF_SIG	Topo Points *	Traffic signal	topo_su_ut_LTG
TRL	SU Figure Points [RDSIDE]	Topo Points *	Trail, center	topo_su_rdside_LINE_PTS _info_only
тѕ	su_TRAF_SIG	Topo Points *	Traffic signal	topo_su_ut_LTG
тис	SU Figure Points [UTIL-5]	Topo Points *	Cable, television	topo_su_ut_LINE_PTS_info _only
UG	su_UG	Topo Points *	Underground utility, unknown or other	topo_su_ut_UG
UGEL	su_UG_ELEC	Topo Points *	Underground utility, electric	topo_su_ut_UG
UGFIBER	su_UG_FIBER	Topo Points *	Underground utility, fiber optic	topo_su_ut_UG
UGGAS	su_UG_GAS	Topo Points *	Underground utility, gasoline	topo_su_ut_UG
UGIRRIG	su_UG_IRRIG	Topo Points *	Underground utility, irrigation	topo_su_ut_UG

Code	Style	Point Label Style	Format	Point Object Layer
UGJT	su_UG_JOINT	Topo Points *	Underground utility, joint	topo_su_ut_UG
UGNGAS	su_UG_NAT_GAS	Topo Points *	Underground utility, natural gas	topo_su_ut_UG
UGOIL	su_UG_OIL	Topo Points *	Underground utility, oil	topo_su_ut_UG
UGRCW	su_UG_RCW	Topo Points *	Underground utility, reclaimed water	topo_su_ut_UG
UGSD	su_UG_STORM	Topo Points *	Underground utility, storm drain	topo_su_ut_UG
UGSS	su_UG_SEWER	Topo Points *	Underground utility, sanitary sewer	topo_su_ut_UG
UGSTM	su_UG_STEAM	Topo Points *	Underground utility, steam	topo_su_ut_UG
UGTELE	su_UG_TELEC	Topo Points *	Underground utility, telecomm	topo_su_ut_UG
UGTV	su_UG_TV	Topo Points *	Underground utility, television	topo_su_ut_UG
UGWAT	su_UG_WATER	Topo Points *	Underground utility, water	topo_su_ut_UG
UNDERSIDE MISC	su_str_MISC_undersi de	Topo Points *	Miscellaneous bridge underside point feature	topo_su_str_MISC_undersi de_drop
UTLA	su_ut_APPR	Topo Points *	Utility Appurtenance	topo_su_ut_APPR
UTLL	SU Figure Points [UTIL-4]	Topo Points *	Generic Line - Utilities	topo_su_ut_LINE_PTS_info _only
UTLM	su_MARKER_UTIL	Topo Points *	Utility marker	topo_su_ut_MARKER
UTLMISC	su_ut_MISC	Topo Points *	Miscellaneous utilities point	topo_su_ut_MISC

Code	Style	Point Label Style	Format	Point Object Layer
UTLP	su_ut_MISC	Topo Points *	Generic Point - Utilities	topo_su_ut_MISC
VEGE	SU Figure Points [VEG]	Topo Points *	Vegetation, edge	topo_su_veg_LINE_PTS_in fo_only
VEGL	SU Figure Points [VEG]	Topo Points *	Generic Line - Natural & Vegetation Feature	topo_su_veg_LINE_PTS_in fo_only
VEGMISC	su_veg_MISC	Topo Points *	Miscellaneous vegetation point	topo_su_veg_MISC_drop
VEGP	su_veg_MISC	Topo Points *	Generic Point - Natural & Vegetation Feature	topo_su_veg_MISC_drop
VENT	su_VENT	Topo Points *	Vent, utility, unknown or other	topo_su_ut_MISC
VENTGAS	su_VENT_GAS	Topo Points *	Vent, utility, gasoline	topo_su_ut_MISC
VENTNGAS	su_VENT_NAT-GAS	Topo Points *	Vent, utility, natural gas	topo_su_ut_MISC
VENTSD	su_VENT_DF	Topo Points *	Vent, utility, storm drain	topo_su_ut_MISC
VENTSS	su_VENT_SEWER	Topo Points *	Vent, utility, sanitary sewer	topo_su_ut_MISC
VENTSTM	su_VENT_STEAM	Topo Points *	Vent, utility, steam	topo_su_ut_MISC
VGUT	SU Figure Points [RDBED-FL]	Topo Points *	Valley gutter	topo_su_rdbed_LINE_PTS_ info_only
VLT	su_VAULT	Topo Points *	Vault, utility, unknown or other	topo_su_ut_VAULT
VLTEL	su_VAULT_ELEC	Topo Points *	Vault, utility, electric	topo_su_ut_VAULT
VLTJT	su_VAULT_JOINT	Topo Points *	Vault, utility, joint	topo_su_ut_VAULT

Code	Style	Point Label Style	Format	Point Object Layer
VLV	su_VALVE	Topo Points *	Valve, unknown	topo_su_ut_VALVE
VLVGAS	su_VALVE_GAS	Topo Points *	Valve, gasoline	topo_su_ut_VALVE
VLVIRRG	su_VALVE_IRRIG	Topo Points *	Valve, irrigation	topo_su_ut_VALVE
VLVWAT	su_VALVE_WATER	Topo Points *	Valve, water	topo_su_ut_VALVE
VY	SU Figure Points [VEG]	Topo Points *	Vineyard, edge	topo_su_veg_LINE_PTS_in fo_only
WBOX	SU Figure Points [HYDRO]	Topo Points *	Weir box	topo_su_hydro_LINE_PTS_ info_only
WC	su_ctrl_FD	Name	Witness Corner	topo_su_ctrl_point_FD
WDGR	SU Figure Points [TC]	Topo Points *	Guard rail, face, wood	topo_su_tcd_LINE_PTS_inf o_only
WEIR	SU Figure Points [HYDRO]	Topo Points *	Weir	topo_su_hydro_LINE_PTS_ info_only
WELL	su_WELL	Topo Points *	Well	topo_su_ut_APPR
WL	SU Figure Points [UTIL-1]	Topo Points *	Water line	topo_su_ut_LINE_PTS_info _only
wм	su_METER_WATER	Topo Points *	Water meter	topo_su_ut_METER
WMF	SU Figure Points [RDSIDE]	Topo Points *	Fence, wire mesh	topo_su_rdside_LINE_PTS _info_only
WPH	su_ctrl_Workpoint_H	SU Points Label CTRL	Work Point Horizontal	topo_su_ctrl_point_MON
WPHV	su_ctrl_Workpoint_H V	SU Points Label CTRL	Work Point Horizontal & Vertical	topo_su_ctrl_point_MON
WPV	su_ctrl_Workpoint_V	SU Points Label CTRL	Work Point Vertical	topo_su_ctrl_point_MON
WRF	SU Figure Points [RDSIDE]	Topo Points *	Fence, wood rail	topo_su_rdside_LINE_PTS _info_only

Code	Style	Point Label Style	Format	Point Object Layer
wv	su_VALVE_WATER	Topo Points *	Water valve	topo_su_ut_VALVE

## MTLS Description Key Set

Point Label Style = Topo Points [Name|Elevation|Description]

Code	Style	Point Label Style	Format	Point Object Layer
CAB_mI	ml_CAB	Topo Points	Cabinet, utililty	topo_ml_POINT_DTM_ None
CALL_ml	ml_CALL	Topo Points *	Call box	topo_ml_POINT_DTM_ None
CC_ml	ml_CC	Topo Points *	Crash Cushion	topo_ml_POINT_DTM_ None
CLO_ml	ml_CLO	Topo Points *	Cleanout	topo_ml_POINT_DTM_ None
CULVFL_ml	ml_CULV_FL	Topo Points *	Culvert flowline, point	topo_ml_POINT_DTM_ Ground
CULVP_mI	ml_CULV	Topo Points *	Culvert, point	topo_ml_POINT_DTM_ None
DECKDIREC T_ml	ml_DI_RECT_deck	Topo Points *	DI, rectangle, bridge deck	topo_ml_POINT_DTM_ None
DECKDIRND _ml	ml_DI_RND_deck	Topo Points *	DI, round, bridge deck	topo_ml_POINT_DTM_ None
DECKMISC_ ml	ml_str_MISC_deck	Topo Points *	Miscellaneous bridge deck point features	topo_ml_POINT_DTM_ None
DIRECT_mI	ml_DI_RECT	Topo Points *	DI, rectangle	topo_ml_POINT_DTM_ None
DIRND_ml	ml_DI_RND	Topo Points *	DI, round	topo_ml_POINT_DTM_ None
ECCTV_mI	ml_ECCTV	Topo Points *	Closed circuit TV camera	topo_ml_POINT_DTM_ None
EL_ml	ml_EL	Topo Points *	Electrolier	topo_ml_POINT_DTM_ None
FES_ml	ml_FES	Topo Points *	Flared end section	topo_ml_POINT_DTM_ None
FH_ml	ml_FH	Topo Points *	Fire hydrant	topo_ml_POINT_DTM_ None
FP_ml	ml_FP	Topo Points *	Flag pole	topo_ml_POINT_DTM_ None
GATEP_mI	ml_GATE_POST	Topo Points *	Gate post, free & hinged ends	topo_ml_POINT_DTM_ None
GUY_mI	ml_GUY	Topo Points	Guy anchor	topo_ml_POINT_DTM_ None
HB_ml	ml_HB	Topo Points	Hose bib	topo_mI_POINT_DTM_ None

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Code	Style	Point Label Style	Format	Point Object Layer
HWAT_ml	ml_HWAT	Topo Points *	High Water	topo_ml_POINT_DTM_ None
HYDRMISC_ ml	ml_hydro_MISC	Topo Points *	Generic Point - Hydro, Drainage, & Irrigation	topo_ml_POINT_DTM_ None
LOOP_ml	ml_LoopDetector	Topo Points *	Loop detector	topo_ml_POINT_DTM_ None
LTG_ml	ml_LTG	Topo Points *	Lighting	topo_ml_POINT_DTM_ None
MARKGD_ml	ml_MARKER_GUID E	Topo Points *	Guide post/marker	topo_ml_POINT_DTM_ None
MARKMISC_ ml	ml_MARKER_MISC	Topo Points *	Guide post/marker	topo_mI_POINT_DTM_ None
MARKPAVE_ ml	ml_MARKER_PAVE	Topo Points *	Guide post/marker	topo_ml_POINT_DTM_ None
MARKUTIL_ ml	ml_MARKER_UTIL	Topo Points *	Utility marker	topo_ml_POINT_DTM_ None
MB_ml	ml_MAIL	Topo Points *	Mail box	topo_mI_POINT_DTM_ None
MH_ml	ml_MH	Topo Points *	Manhole, unknown	topo_mI_POINT_DTM_ None
MTR_mI	ml_METER	Topo Points *	Electric meter	topo_mI_POINT_DTM_ None
MVP_ml	MI_MVP	Topo Points *	Motor vehicle pullout	topo_ml_POINT_DTM_ None
PBRECT_ml	ml_PB_RECT	Topo Points *	Pull/Utility box, unknown, rectangular	topo_ml_POINT_DTM_ None
PBRND_ml	ml_PB_RND	Topo Points *	Pull/Utility box, unknown, round	topo_ml_POINT_DTM_ None
PED_ml	ml_PED	Topo Points *	Pedestal	topo_mI_POINT_DTM_ None
PEDBTN_mI	ml_Pedestrian_BTN	Topo Points *	Pedestrian button	topo_mI_POINT_DTM_ None
PEDPOLE_m I	ml_Pedestrian_BTN _POLE	Topo Points *	Pedestrian button pole	topo_mI_POINT_DTM_ None
PEDSIG_mI	ml_Pedestrian_SIG	Topo Points	Pedestrian signal	topo_ml_POINT_DTM_ None
PIPR_mI	ml_BOLLARD	Topo Points *	Protective pipe	topo_ml_POINT_DTM_ None
POLE_ml	ml_POLE	Topo Points	Pole	topo_ml_POINT_DTM_ None

Code	Style	Point Label Style	Format	Point Object Layer
PRKM_ml	ml_Parking_Meter	Topo Points	Parking meter	topo_ml_POINT_DTM_ None
PTEL_ml	ml_TELE	Topo Points *	Public telephone	topo_mI_POINT_DTM_ None
PUMP_mI	ml_PUMP	Topo Points *	Pump	topo_ml_POINT_DTM_ None
RDSDMISC_ ml	ml_rdside_MISC	Topo Points *	Generic Point - Man-made General Feature	topo_ml_POINT_DTM_ None
RDWYMISC_ ml	ml_rdbed_MISC	Topo Points *	Generic Point - Roadway Delineation	topo_ml_POINT_DTM_ Ground
RRGA_ml	ml_RR_POST	Topo Points *	Railroad, gate post	topo_ml_POINT_DTM_ None
RRSG_ml	ml_RR_SIG	Topo Points *	Railroad, signal	topo_ml_POINT_DTM_ None
RRSW_ml	ml_RR_APPR	Topo Points *	Railroad, switch	topo_mI_POINT_DTM_ None
SINB_ml	ml_SIGN_OH	Topo Points *	Sign, overhead, bridge	topo_ml_POINT_DTM_ None
SINCANT_mI	ml_SIGN_CANT	Topo Points *	Sign, cantilever	topo_ml_POINT_DTM_ None
SINM_mI	ml_SIGN_MULTI	Topo Points *	Sign, multi-post	topo_ml_POINT_DTM_ None
SINS_mI	ml_SIGN_SINGLE	Topo Points *	Sign, single post	topo_mI_POINT_DTM_ None
SLDP_ml	ml_SLIDE	Topo Points *	Slide (monitoring)	topo_mI_POINT_DTM_ None
SP_ml	ml_SP	Topo Points *	Standpipe	topo_ml_POINT_DTM_ None
SPR_ml	ml_SPR	Topo Points *	Sprinkler	topo_mI_POINT_DTM_ None
STRMISC_ml	ml_str_MISC	Topo Points *	Miscellaneous structures point feature	topo_ml_POINT_DTM_ None
TANK_mI	ml_TANK	Topo Points	Tank, center	topo_ml_POINT_DTM_ None
TERML_mI	ml_BARR_TERM_Lt	Topo Points	Barrier - guardrail terminator - left	topo_ml_POINT_DTM_ None
TERMR_mI	ml_BARR_TERM_R t	Topo Points *	Barrier - guardrail terminator - right	topo_ml_POINT_DTM_ None

Code	Style	Point Label Style	Format	Point Object Layer
TOWP_ml	ml_TTOW	Topo Points	Transmission tower, center	topo_ml_POINT_DTM_ None
TREE_ml	ml_TREE	Topo Points *	Tree	topo_ml_POINT_DTM_ None
TRFSG_mI	ml_TRAF_SIG	Topo Points *	Traffic signal	topo_ml_POINT_DTM_ None
UG_ml	ml_UG	Topo Points *	Sanitary sewer, point	topo_ml_POINT_DTM_ None
UNDERSIDE MISC_mI	ml_str_MISC_under side	Topo Points *	Miscellaneous bridge underside point features	topo_ml_POINT_DTM_ None
UTLA_ml	ml_ut_APPR	Topo Points *	Utility Appurtenance	topo_mI_POINT_DTM_ None
UTLMISC_mI	ml_ut_MISC	Topo Points *	Miscellaneous utilities point	topo_ml_POINT_DTM_ None
VEGMISC_mI	ml_veg_MISC	Topo Points *	Miscellaneous vegetation point	topo_mI_POINT_DTM_ None
VENT_ml	ml_VENT	Topo Points *	Vent, utility	topo_ml_POINT_DTM_ None
VLT_ml	ml_VAULT	Topo Points *	Vault, utility	topo_ml_POINT_DTM_ None
VLV_ml	ml_VALVE	Topo Points *	Valve, unknown	topo_ml_POINT_DTM_ None
WELL_ml	ml_WELL	Topo Points *	Well	topo_ml_POINT_DTM_ None

## Extended Point Properties

Two extended point properties are available for survey topo data when working with points and surfaces, user-defined properties and point groups.

## User-Defined Property Classifications

- **CgPoint.DTMAttribute** options for ground or feature. Used to indicate whether the point should be included in a surface or not.
- Description (TSS or CAiCE) TSS or CAiCE's Description created during TSS or Caltrans CAiCE XML import
- Comment (CAiCE) CAiCE's Comment created during Caltrans CAiCE XML import

### Point Groups

The following Point Groups are in drawings created with the *Ct\_2016\_Topo\_Surveys\_MTLS.dwt* template.

## • \_All Points

- All COGO and Survey Points in the drawing are automatically included in the group.
- CSAC Line Points *display* OFF
  - Used to quickly select or turn off the display of Points used to create lines in Trimble Business Center (TBC). All CSAC Points on TBC layers with "Line Points" in the name are added to this group when the Points are imported from Shape files.

### • CSAC Control Points

• All CSAC Points with Feature set as *Control monument* are added to this group when the Points are imported from Shape files.

### • CSAC Found Points

• All CSAC Points with Feature set as *Found point* are added to this group when the Points are imported from Shape files.

### • CSAC Feature Points

- All CSAC Points with DTM\_Type = None are added to this group when the Points are imported from Shape files. These Points are not intended for use in any surface.
- CSAC Ground Points
  - All CSAC Points with DTM\_Type = Ground are added to this group when the Points are imported from Shape files. These Points are intended for use in a ground surface.
- CSAC Bridge Deck Points

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- All CSAC Points with DTM\_Type = Bridge deck are added to this group when the Points are imported from Shape files. These Points are intended for use in a bridge deck surface.
- CSAC Bridge Underside Points
  - All CSAC Points with DTM\_Type = Bridge underside are added to this group when the Points are imported from Shape files. These Points are intended for use in a surface representing the underside of a bridge.
- Feature Points
  - Automatically queries CTDC Points with DTMAttribute = feature. These Points are not intended for any surfaces.
- Ground Points
  - Automatically queries CTDC Points with DTMAttribute = ground. These Points are used in ground surfaces.

### • \_Hide All Points

Includes all Points in the \_All Points, Point Group. Used to temporarily set all Point and Point Label Styles to no display.

### CSAC Import SHP Survey Data Settings

The Shape file data is imported and stored in the drawing based on the settings defined in the **Import SHP Survey Data Settings**. The settings contain instructions to interpret the Shape file attributes and control how the COGO Points, AutoCAD Points, Feature Lines, Polylines, and 3D Polylines will be configured during the import process.

The **CSAC FCL files from TBC** settings option is pre-defined for the CSAC Shape files and is stored in the Civil 3D 2016 template: *Ct\_2016\_Topo\_Surveys\_MTLS.dwt*. The Caltrans SSHPI Line and Point settings files, *Ct-Survey\_Data-Feature\_Lines.XML* and *Ct-Survey\_Data-Points.XML*, determine how the Lines and Points in the CSAC Shape files will be stored when they are imported into a Civil 3D drawing. Additional configuration of the settings is <u>NOT</u> required when the Caltrans CSAC FCL is used.

Import SHP settings stored in Ct_2016_Topo_Surveys_MTLS.dw       Spatial filter         Stell settings:       Spatial filter         Stell settings:       Stell settings:         Stell settings:       Stell settings:         Stell settings:       Stell settings:         Stell settings:       Stell settings:         C/Caltrant/HCI(SD_2016/Survey/SHP_Import(Ct-Survey_Data-Feature_Lines.XML       Stell settings:         C/Caltrant/HCI(SD_2016/Survey/SHP_Import(Ct-Survey_Data-Feature_Lines.XML       Stell settings:         C/Caltrant/HCI(SD_2016/Survey/SHP_Import(Ct-Survey_Data-Points.XML       Stell settings:         C/Caltrant/HCI(SD_2016/Survey/SHP_Import(Ct-Survey_Data-Points.XML       Stell settings:         C/Caltrant/HCI(SD_2016/Survey/SHP_Import(Ct-Survey_Data-Points.XML       Stell settings:         Default feature line settings       Default point settings       Stell settings:         Style:       Non-Standard       Stell setting:       Stell setting:         View:       Non-Standard       View:       Stell setting:       Stell setting:         Stell setting:       View:       View:       Stell setting:       Stell setting:         View:       Non-Standard       View:       View:       View:       View:         Stell setting:       View:       View:       View:       View: </th <th></th> <th>Minport SHP Survey Data SHP settings: CSAC FCL files from TBC V V Import Event Name: Vimport Event Ame: Figure 11 – In</th> <th>Spat</th> <th>ial filter All Display Rectangle IP from TBC</th> <th>×</th> <th></th>		Minport SHP Survey Data SHP settings: CSAC FCL files from TBC V V Import Event Name: Vimport Event Ame: Figure 11 – In	Spat	ial filter All Display Rectangle IP from TBC	×	
Import SHP Survey Data Settings         Name:       CSAC FCL files from TBC         Settings files (optional)       Buffer from alignment         SSHPI feature line settings:       Import SHP settings files (optional)         CACatrans/HQ/C3D_2016/Survey/SHP_Import/Ct-Survey_Data-Feature_Lines.XML       Import SHP settings         SSHPI point settings:       Import SHP_Survey_Data-Feature_Lines.XML         CACatrans/HQ/C3D_2016/Survey/SHP_Import/Ct-Survey_Data-Points.XML       Import SHP settings stored in Cf_2016/Survey/SHP_Import/Ct-Survey_Data-Points.XML         Default feature line settings       Default point settings       Style:         Non-Standard       Import SHP settings stored in Cf_2016_Topo_Surveys_MTLS.dwf         Syle:       Non-Standard       Import SHP legical Query         Site:       Non-Standard       Import SHP legical Query         Inves       Print group:       Import SHP Retings stored in Cf_2016_Topo_Surveys_MTLS.dwf         Site:       Non-Standard       Import SHP legical Query         Inves       Print group:       Import SHP Retings for Charles and Cha	Import SHP settings stored in Ct_2016_Topo_Surveys_MTLS.	SHP settings: CSAC FCL files from TBC	× <b>,</b> ×	Spatial filter	×	
Default feature line settings   Style:   _Non-Standard   Layer:   c3d_FEATURE_LINE   _Non-Standard   Label style:   _Non-Standard   Label style:   _Non-Standard   Layer:   c3d_FEATURE_LINE   _Non-Standard   _Non-Standard  _	Import SHP Survey Data Settings  Settings files (optional) SSHPI feature line settings:  C:\Caltrans\HQ\C3D_2016\Survey\SHP_Import\Ct-Surv SSHPI point settings:  C:\Caltrans\HQ\C3D_2016\Survey\SHP_Import\Ct-Surv Property sets:	ey_Data-Feature_Lines.XML 🔮 💽	순 <b>X</b>	Corpusy     Rectangle     Buffer from alignment     Start station:     0     End station:     0     Buffer from alignment:	nt	
Import SHP settings stored in	Default feature line settings Style: Non-Standard v Layer: C3d_FEATURE_LINE v Site: <none> v Import SHP settings store-</none>	Default point settings Style: Non-Standard v Label style: Non-Standard v Layer: rw_topo_point_NON_STANDARD v Point group: <none> v OK Cancel Help</none>		0 ✓ Filter by query Query data Save queries into SH OK Can	SHPI Logical Query SHP File Name Format Lines.shp Points.shp	HP settings stored in po_Surveys_MTLS.dwt Query (Name IS NULL ) (Layer LIKE "%Line Points")

Figure 12 – Import SHP from TBC settings

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#### Non-standard objects

The **CSAC FCL files from TBC** settings includes options for Feature Lines and COGO Points that do not match any of the instructions provided in the Caltrans settings files.

For example, if a CSAC Attribute field is *Required*, such as **DTM\_Type**, and the field is blank then the data will be imported with a non-standard style.



Figure 13 – Import SHP from TBC – Non standard Object

Another situation where the data may not match the instructions provided in the Caltrans settings files is when a user creates their own Feature Code and an unexpected Shape file is imported.



Figure 14 – Import SHP from TBC – Non standard feature line

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#### Filter by query

The **Filter by query** is used to include or exclude features from specific Shape files based on queries during import.



Figure 15 – Import SHP from TBC – Filter by query

TBC creates two separate project Shape files (Lines.shp & Points.shp) that would create duplicate features if imported into Civil 3D without queries. Queries are used to exclude some of these duplicate objects during import. One query is used to exclude all features in the *Lines.shp* file, to avoid duplications with the other linear Shape files. Another query is included to only import the Points used to create linework in TBC, *Line Points*, in the *Points.shp* file. These queries are pre-defined in the *CSAC FCL files from TBC* settings.

SS	HPI Logical Query	
	SHP File Name Format	Query
	Lines.shp	(Name IS NULL)
	Points.shp	( Layer = 'Feature Line Points' )
Ł	and the second	and the second sec

Figure 16 – Import SHP from TBC – Queries

## **CSAC** Property Set Definitions

The drawing template contains Property Sets for every CSAC Feature Attribute.

Property Set Definition	Property Set
Associated Files	File_1 - File_2
Associated Images	Photo_1 - Photo_3
Attributes	Aspect
Attributes	Asset_ID
Attributes	Color
Attributes	Count
Attributes	Location
Attributes	Marker
Attributes	Material
Attributes	Post_Type
Attributes	Service
Attributes	Shape
Control Information	Accuracy
Control Information	County
Control Information	ID_Name
Control Information	Mon_Ties
Control Information	Post mile
Control Information	Record
Control Information	Route
Dimensions	Depth
Dimensions	Diameter
Dimensions	Height
Dimensions	Length
Dimensions	Lip_Width
Dimensions	Width
Feature	Category
Feature	Desc_1 - Desc_3
Feature	DTM_Type
Feature	Feature
Feature	Туре
Line Points	FeatureCod

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Property Set Definition	Property Set
Line Points	Name
Point Information	Easting
Point Information	Elevation
Point Information	IgnoreElev
Point Information	Northing
Point Information	PointID
ShapeFileInformation	VersionFXL
Surface Status	InSurface

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#### **CSAC SHP Palette Queries**

The **SHP Palette** contains a tool, **SSHPI Drawing Query**, to define queries using COGO Point Properties, Feature Line Properties, Point UDP's, and/or Property Sets. The queries filter all objects in the active drawing or in an XREF, creating a list of the objects meeting the criteria in the SHP Palette.

The Civil 3D 2016 template, *Ct\_2016\_Topo\_Surveys\_MTLS.dwt*, contains pre-defined queries to filter objects based on the value assigned to DTM\_Type to assist with surface creation and to filter objects that have images and/or documents attached.

<ul> <li>HQ-20190321</li> <li>SHP Import Events J Feature Lines ♥ Points ♥ Coucries ♥ Coucries ♥ Sourface - Lines ♥ Sourface - Lines ♥ Roidge Underside Surface - Spot Points ♥ Ridge Underside Surface - Points ♥ Ridge Underside Surface - Points ♥ Roint Name ♥ Point Name ♥ Point Name ♥ Point Name ♥ Roint Line Name ♥ Roint Name ♥ Roint</li></ul>	<ul> <li>Hq-20190321</li> <li>SHP Import Events J Feature Lines</li> <li>Points</li> <li>Bridge Deck Surface - Lines</li> <li>Bridge Deck Surface - Lines</li> <li>Bridge Underside Surface - Lines</li> <li>Bridge Underside Surface - Lines</li> <li>Bridge Underside Surface - Spot Points</li> <li>Bridge Underside - Lines</li> <li>Cobject type filter</li> <li>Objects only</li> <li>Property Set</li> <li>Property Set</li> <li>Inly All objects</li> <li>((PS) Feature: DTM_Type = 'Ground')</li> <li>OK Cancel Help</li> </ul>				?						
→ Feature Lines         ◆ Points         ● Youries         ● Youries         ● Youries         ● Stature Lines         ● Point Statede - Lines         ● Thages Attached - Points         ● Thages Attached - Points         ● Point Amme         ● Point Line Nume         ● Point Name         ● Stature Line Line Nume         ● Point Line Nume         ● Stature Line Nume         ● Point Amme         ● Stature Line Nume	J       Feature Lines         ♦       Points         ♥       Oueries         ♥       ¶         ♥       Points         ♥       Property         ●       Property         ●       Property         ●       Property         ●       Property         ●       Property         ●       Property Set         ●       Property Set         ●       Property Set         ●       Property Set         ●       Property	HQ-20190321									
▼ Queries         ▼ Ground Surface - Lines         ▼ Sidge Deck Surface - Lines         ▼ Bridge Duderside Surface - Lines         ▼ Bridge Duderside Surface - Lines         ▼ Bridge Duderside Surface - Spot Points         ▼ Bridge Statched - Lines         ▼ Timages Attached - Lines         ▼ Point Name         ▼ Point Name         ▼ Stature Line Name         ▼ Stature Line Name	▼ Query cond       Ground Surface - Lines         ▼ To Surface - Lines       Formation         ▼ To Surface - Spot Points       Formation         ▼ To Bridge Underside Surface - Spot Points       Point         ▼ To Images Attached - Lines       Point         ▼ Point Name       Point Name         ▼ Point Name       Point objects only         ▼ Point Name       Point objects only         ▼ Documents Attached - Lines       Point Name         ▼ Documents Attached - Lines       OK         ▼ Documents Attached - Lines       OK	↓ Feature Lines				SSHPI Drawing Qu	ery				
Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Attached - Points       Point Name       Object type filter       UDP         Image: Attached - Points       Point Name       Point Name       (Image: Settion Points)         Image: Attached - Points       Point Name       (Image: Settion Points)       Image: Settion Points)	Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Type       Property       Operator Value )         Image: Set Operator (       Property Set (PS) Feature: DTM_Type = 'Ground')       Image: Property Set (PS) Feature: DTM_Type = 'Ground')         Image: Attached - Lines       Image: Attached - Points       Image: Point Name       Image: Point Name         Image: Subterranean Ground Underside - Lines       Image: Subterranean Ground Underside - Lines       Image: Opcuments Attached - Lines       Image: Opcuments Attached - Points         Image: Image: Reture Subterranean Ground Underside - Lines       Image: Opcuments Attached - Points       Image: Opcuments Attached - Lines       Image: Opcuments Attached - Points         Image: Image: Reture Subterranean Ground Underside - Lines       Image: Opcuments Attached - Points       Image: Opcuments Attached - Points       Image: Opcuments Attached - Points         Image: Reture Subterranean Ground Underside - Lines       Image: Opcuments Attached - Points       Image: Opcuments Attached - Points       Image: Opcuments Attached - Points         Image: Reture Subterranean Ground Subterran	Queries     Ground Surface - Lines     Surface - Lines			-	🕂 🗶 Query na	me: Ground Surface -	Lines			
	Image: Subtransman Ground Underside - Lines         Image: Documents Attached - Lines         Image: Documents Attached - Points         OK         Cancel	<ul> <li>In Sunace - Lines</li> <li>Bridge Deck Surface - Lines</li> <li>Bridge Underside Surface</li> <li>Ground Surface - Spot Pc</li> <li>Bridge Underside Surface - Spot</li> <li>Bridge Underside Surface - Lines</li> <li>Grages Attached - Lines</li> <li>Grages Attached - Points</li> <li>Grage Stached - Points</li> </ul>	ies - Lines oints ot Points - Spot Points ;			Set Operator ( C Object type filter Point objects only (PS) Feature: DTM	Type Property Set Point Feature Line UDP Property Set Vice = "Ground"	Property (PS) Feature: DTM_Type nly () All objects	Operator =	Value 'Ground'	)
Ground Surface - Lines 70 0 ^		No Surface - Lines	27	0							
Query Name     Peature line count     Point count       Ground Surface - Lines     70     0       No Surface - Lines     27     0	No Surface - Lines 27 0	Bridge Deck Surface - Lines	0	0	$\sim$						

Figure 17 – SSHPI Drawing Query

The pre-defined queries include:

- Bridge Deck Surface Lines
- Bridge Underside Surface Lines
- Bridge Deck Surface Spot Points
- Bridge Underside Surface Spot Points
- Control Points
- Documents Attached Lines
- Documents Attached Points
- Feature Line Name
- Found Points
- Ground Surface Lines
- Ground Surface Spot Points
- Images Attached Lines
- Images Attached Points
- InSurface = Yes

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Caltrans

- InSurface = No
- No Surface Lines
- Point Name
- Subterranean Ground Underside Lines

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## Alignment Styles

Name	Description			
Analysis	Non-standard style used to display warnings and the direction of the alignment entities. If the entities aren't all pointing in the same direction, then the alignment report and station labels will be incorrect. The color of the Alignment can be changed with the True Color setting in the Properties dialog box The Alignment is placed on the layer created when the Alignment is created.			
_No Display	Used to hide the Alignment.			
_Non-plotting Alignment	The color of the Alignment can be changed with the True Color setting in the Properties dialog box. The Alignment is placed on the layer align_no_plot.			
Alignment [color]	The color of the Alignment can be changed with the True Color setting in the Properties dialog box. The Alignment is placed on the layer created when the Alignment is created.			
Standard	The color of the Alignment can be changed with the True Color setting in the Properties dialog box. The Alignment is placed on the layer align.			

The color of the Alignment is orginally controlled by the Style assigned to the Alignment. The color can be changed with the True Color setting in the Properties dialog box.

#### Caltrans

#### **CADD** Users Manual



Figure 18 – Alignment styles – Color change

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# Surface Styles

Name	Description
_Border Only	
_Flat Slope Areas	Displays a red solid for slopes that fall within a user defined range. The range is set under the Surface Properties > Analysis tab for Slopes.
_No Display	Used to hide the surface
Accuracy - Aerial LiDAR	Uses Elevation Analysis to display a 2D Solid Light red indicates Aerial LiDAR grade accuracy
Accuracy - MTLS	Uses Elevation Analysis to display a 2D Solid Dark blue indicates MTLS grade accuracy
Accuracy - Photogrammetry	Uses Elevation Analysis to display a 2D Solid Dark red indicates photogrammetry grade accuracy
Accuracy - Survey	Uses Elevation Analysis to display a 2D Solid Light blue indicates survey grade accuracy
Banding - Elevation	
Banding - Slope	
Contours - 0.2' and 1' - Exist	Contours for existing ground at 0.2' and 1' intervals, typically used for bridge sites
Contours - 0.2' and 1' - Exist [Bridge deck]	Contours for existing bridge deck at 0.2' and 1' intervals
Contours - 0.2' and 1' - Finish	Contours for finished grade at 0.2' and 1' intervals, typically used for bridge sites
Contours - 1' and 5' - Exist	Contours for existing ground at 1' and 5' intervals
Contours - 1' and 5' - Finish	Contours for finished grade at 1' and 5' intervals
Contours - 2' and 10' - Exist	Contours for existing ground at 2' and 10' intervals
Contours - 2' and 10' - Finish	Contours for finished grade at 2' and 10' intervals
Contours & Triangles [5 scale vertical exaggeration]	Contours at 2' and 10' intervals & vertical exaggeration of 5 scale. For surface analysis & editing
Contours & Triangles [analysis & editing]	Contours at 2' and 10' intervals For surface analysis & editing
Slope Arrows	
Standard	
Triangles - Exist [Blue]	Existing ground triangles colored Blue
Triangles - Exist [Brown]	Existing ground triangles colored Brown
Triangles - Exist [Green]	Existing ground triangles colored Blue

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Name	Description
Triangles - Exist [Grey]	Existing ground triangles colored Grey
Triangles - Exist [Orange]	Existing ground triangles colored Orange
Triangles - Exist [Purple]	Existing ground triangles colored Purple
Triangles - Exist [Red]	Existing ground triangles colored Red
Triangles - Exist [Tan]	Existing ground triangles colored Tan
Triangles - Exist [Yellow]	Existing ground triangles colored Yellow
Triangles - Finish	Finished ground triangles
Watersheds	Watersheds & contours for existing ground at 1' and 5' intervals

## **Cross Section Styles**

#### Section View Styles

The Section View controls the display of the border, grid, alignment name, station and offset.



Figure 19 – Section View Style

Name	Description
Analysis 1x Exaggeration	The view axis is turned on. Horizontal scale is 1" = 10'.
Analysis 2x Exaggeration	The view axis is turned on. Horizontal scale is $1$ " = $10$ ' and the vertical scale is $2x$ .
Production 1x Exaggeration	The view axis is turned off. Use Group Plot Style to display the grid. Horizontal scale is 1" = 10'.
Production 1x Exaggeration [20 Scale]	The view axis is turned off. Use Group Plot Style to display the grid. Horizontal scale is 1" = 20'.
Production 2x Exaggeration	The view axis is turned off. Use Group Plot Style to display the grid. Horizontal scale is 1" = 10' and the vertical scale is 2x.
Standard	The view axis is turned on. Horizontal scale is 1" = 10'.

## Section Styles

The section is the surface representation within the display.

	Section		-	×	400 LQ1 400 LQ3	8	6	ň	76	-P-SIL DJ
8			Lui	=	ראיז איז איז איז	Ð	7.	11	17	7500-
	Style	Existing					Υ	T	E.	
	Name	Alignment - (1) 2+/3.:	58					-02	<u> </u>	iii aaaa aa
	Description				<ul> <li>4&lt;</li> <li>4</li> <li>4</li></ul>	4	AK	AK	ΥK	XXXXX
	Layer	topo_section				L L	RE	ΥE	Ę,	
		ແມ່ 🖬 👘	Lithul				B	Ω.	BF	
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Name	Description
Existing	Displays the surface in the section view with color 231
Proposed	Displays the surface in the section view with color 9
Standard	Displays the surface in the section view with color 231

## Section Label Sets

Section Label Sets contain a set of label styles typically used by surveyors when a section view object is created. The individual label styles can be changed after the section view is created.

A Create Section View - Sec	tion Display Options	in the	-	Sec. 1		-	
General	Clip grid option will be option.	ignored if	f the selected	l section view style is set	"clip to high	nest section"	
Offset Range	Select sections to draw:						
Elevation Range	Name	Draw	Clip Grid	Label Set	Style	Override St	
Section Display Options	🟦 Existing_Ground	✓	0	Existing Cross Slope	Existing	<not ov<="" td=""><td></td></not>	
Data Bands				~			
Section View Tables							
بالحلي الإسلامي بالمسلو	and the second second		-	and the second second			-

Figure 21 – Section Label Set

Name	Description
_No Display	Used to hide the labels
Existing Cross Slope	Labels only the cross slope with color 231
Existing Grade Break Offset Elevation	Labels the offset and elevation at the grade breaks with color 231
Existing Grade Break Offset Elevation & Cross Slope	Labels the offset and elevation at the grade breaks and the cross slope with color 231
Proposed Cross Slope	Labels only the cross slope with color 9
Proposed Grade Break Offset Elevation	Labels the offset and elevation at the grade breaks with color 231
Proposed Grade Break Offset Elevation & Cross Slope	Labels the offset and elevation at the grade breaks and the cross slope with color 231
Standard	Labels only the cross slope with color 231

#### Section Segment Label Styles

An expression is used to determine the rotation angle of the cross slope based on whether the text fits along the segment. If the text doesn't fit it rotates 45° LT or RT based on the offset. Other expressions are used to set the text height.

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Figure 22 – Section Segment Label Set

Name	Description
Existing Cross Slope [along segment]	Displays the cross slope with color 231
Proposed Cross Slope [along segment]	Displays the cross slope with color 9
Standard	Displays the cross slope with color 231

Section Grade Break Label Styles



Figure 23 – Section Grade Break Label style

Name	Description
Existing Offset & Elevation [horizontal]	Displays the offset & elevation rotated horizontally with color 231.
Existing Offset & Elevation [vertical]	Displays the offset & elevation rotated vertically with color 231.
Proposed Offset & Elevation [horizontal]	Displays the offset & elevation rotated horizontally with color 9.

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Proposed Offset & Elevation [vertical]	Displays the offset & elevation rotated vertically with color 9.
Standard	Displays the offset & elevation rotated vertically with color 231.

## Section View Projection Label Styles

Name	Description
Name	Labels the Object Name
Name Offset Elevation & cross- referenced object [horizontal]	Labels the Object Name, Offset and Elevation horizontally along with the station & offset to a different alignment that is selected after the label is in place.
Name Offset Elevation & cross- referenced object [vertical]	Labels the Object Name, Offset and Elevation vertically along with the station & offset to a different alignment that is selected after the label is in place.
Name Offset Elevation [45º above 0.25]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.25" above the location on the cross section.
Name Offset Elevation [45º above 0.50]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.5" above the location on the cross section.
Name Offset Elevation [45º above 0.75]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.75" above the location on the cross section.
Name Offset Elevation [45º below 0.25]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.25" below the location on the cross section.
Name Offset Elevation [45º below 0.50]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.5" below the location on the cross section.
Name Offset Elevation [45º below 0.75]	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.75" below the location on the cross section.

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Name	Description
Name Offset Elevation [horizontal above]	Labels the Object Name, Offset and Elevation horizontally.
Name Offset Elevation [horizontal below]	Labels the Object Name, Offset and Elevation horizontally.
Name Offset Elevation [vertical above]	Labels the Object Name, Offset and Elevation vertically.
Name Offset Elevation [vertical below]	Labels the Object Name, Offset and Elevation vertically.
Point Code Offset Elevation [horizontal above]	Labels the Raw Description, Offset and Elevation horizontally.
Point Code Offset Elevation [horizontal below]	Labels the Raw Description, Offset and Elevation horizontally.
Point Code Offset Elevation [vertical above]	Labels the Point Code (Raw Desc.), Offset and Elevation relative to the sample line.
Point Code Offset Elevation [vertical below]	Labels the Point Code (Raw Desc.), Offset and Elevation relative to the sample line.
Standard	Labels the Object Name, Offset and Elevation. The labels automatically rotate depending on the object's offset from centerline. The label is positioned 0.5" below the location on the cross section.

# Label Styles

Point Label Styles

Name	Description
_No Display	Used to hide the label
Description	Labels the Point Description. The label can be dragged to the right or left but the line under the description is removed.
Name	Labels the Point Name
Name Description	Labels the Point Name & Description. The label can be dragged to the right or left but the line under the description is removed.
Number & Name Northing Easting Eleva tion Raw Description	Labels the Point Number, Name, Northing, Easting, Elevation & Raw Description. Use when labelling points for field search or stakeout. Points are exported using Point File Format NumberNameNED (pipe delimited)
Standard	Labels the Point Name, Elevation and the Raw Description
SU Points Label CTRL	This labels the name of Control points that are not included in Survey Figures.
Topo Points [Name]	This labels the name of topo points. The Point Style controls the layer of the label.

## Annotation Label Styles

Annotation Labels are associated to Civil 3D objects as well as Lines, Arcs, and Polylines. They are typically placed after an object is created and are independent objects.

The Line and Curve Label styles for the relevant Civil 3D and AutoCAD objects are grouped within a parent style containing the possible object components that will be displayed. The *child* styles are based on the parent and only display the components specified in the label name. The *child* styles should be selected when placing a label.

Many of the styles are dynamic, changing the label based upon the length of the line or curve. For example, the label will change from bearing & distance along the line to bearing over distance if the length of the line is too short. When the length is too short for either label a warning symbol will be displayed that can be dragged out to display a stacked label or can be changed to a different label style.

The style also includes optional styles to place the labels at different offsets and to force the label to display specific components of the line or curve.

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Label style names indicate the type of object they should be used to label because they may exhibit undesired text heights when used with the wrong object.

- **\_2\_POINTS\*** should only be used to annotate the bearing &/or distance between two points
- \_PLINE\* should only be used to annotate Polylines, Lines and Curves
- \_ALIGN\* should only be used to annotate Alignments
- **\_PARCEL\*** should only be used to annotate Parcels.

The names also indicate the type of label and information about the placement of the label. For example,

- \_PLINE [.05 offset] Bearing labels the bearing at an offset ½ the text height above the line
- \_PLINE [.20 offset] Distance labels the distance at an offset 2 times the text height above the line

General Label Styles

#### General Line Label Styles

Name	Description
<b>_2_POINTS - Bearing &amp;</b> <b>Distance</b> (only for use with the Label type <i>Line between 2 points</i> )	Labels Bearing & Distance between 2 points. This type of label is NOT capable of changing the display based on the distance between the 2 points.
<b>_2_POINTS - Bearing &amp;</b> <b>Distance with crows feet</b> (only for use with the Label type <i>Line between 2 points</i> )	Labels Bearing, Distance & the crows feet between 2 points. This type of label is NOT capable of changing the display based on the distance between the 2 points.
_BLOCK - Bearing & Distance (do not use with the Add Labels tool, only for use by block Label - Bearing_Distance between Points)	Labels Bearing, Distance & the crows feet along an undisplayed line with the block, Label - Bearing_Distance between Points

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Name	Description
_PLINE - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Bearing & Distance with crows feet	Labels Bearing, Distance & the crows feet along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_PLINE - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of a line or polylline
_PLINE - Symbol	Places the ANGLPT symbol at the start or end of the segment.
_PLINE - Table TAG	Labels the line with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PLINE [.35 offset] Bearing & Distance options	Labels Bearing, Distance with an option for the crows feet along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PLINE - Bearing & Distance [dual units]	Labels Bearing & dual units Distance along the line.
PLINE - Bearing & Distance with crows feet [dual units]	Labels Bearing, dual units Distance & the crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labeled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

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# General Curve Label Styles

Name	Description
_PLINE - Crows Foot	Places the Crows Foot symbol at the beginning & ending of the segment.
_PLINE - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the curve of an arc or polyline
_PLINE - Radial Bearing	Radial bearing from the Radius Point to the BC or EC
_PLINE - Radius Delta Length	Radius, Delta and Length on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Radius Delta Length with crows feet	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_PLINE - Symbol	Places the ANGLPT symbol at the end of the segment.
_PLINE - Table TAG	Labels the curve with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_PLINE [.35 offset] - Radius Delta Length options	Radius, Delta, Length & crows feet on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
PLINE - Radius Delta Length [dual units]	Radius, Delta and Length on one side of the curve with dual units.
PLINE - Radius Delta Length with crows feet [dual units]	Radius, Delta, Length & crows feet on one side of the curve.
Standard	Radius, Delta and Length on one side of the curve. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

## General Note Label Styles

General Note labels are versatile, non-object-specific labels that can be placed anywhere in the drawing. These should be used when a specific location needs to be labelled, e.g. the station & offset relative to an alignment. AutoCAD annotation is typically used when the label is for descriptive text.

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Name	Description
Northing & Easting (includes options for the dragging label to the left or right)	Labels the coordinates of the label location. The label can be dragged to the right or left but the line under the Northing disappears.
Slanted Text	Used for notes or text with the slanted R/W font. The label can be dragged to the right or left and no line is drawn under the text.
Standard	Used for notes or text with the standard font. The label can be dragged to the right or left and no line is drawn under the text.
Standard Text	Used for notes or text with the standard font. The label can be dragged to the right or left and no line is drawn under the text.
Station & Alignment (includes options for the dragging label to the left or right)	Labels the station & alignment name of the label location after the user selects an alignment. The alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station disappears.
Station & Alignment - 2 Alignments (includes options for the dragging label to the left or right)	Labels the station & alignment name of the label location after the user selects 2 alignments. The alignments can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the stations disappear.
<b>Station &amp; Offset</b> (includes options for the dragging label to the left or right)	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station & offset disappears.
Station only (includes options for the dragging label to the left or right)	Labels the station of the label location after the user selects an alignment. The alignment can be changed at any time after the label is in place. The label can be dragged to the right or left but the line under the station disappears.
XREF Point Name Description (includes options for the dragging label to the left or right)	To be used when labeling points that reside in an XREF

# Alignment Label Styles

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## Alignment Line Label Styles

Name	Description
_ALIGN - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Bearing & Distance with crows feet	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_ALIGN - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of an alignment
_ALIGN - Table TAG	Labels the alignment with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_ALIGN [.35 offset] - Bearing & Distance options	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
ALIGN - Bearing & Distance [dual units]	Labels Bearing & Distance along the line.
ALIGN - Bearing & Distance with crows feet [dual units]	Labels Bearing, Distance & crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

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## Alignment Curve Label Styles

Name	Description
_ALIGN - Bearing & Distance	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Bearing & Distance with crows feet	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
_ALIGN - Crows Foot	Places the Crows Foot symbol at the beginning & the end of the segment.
_ALIGN - Labels	Labels text that can be edited, "EXISTING R/W" OR "Proposed R/W" along the tangent of an alignment
_ALIGN - Table TAG	Labels the alignment with a Table Tag. The Table Style controls what is labeled when the TAG is selected.
_ALIGN [.35 offset] - Bearing & Distance options	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.
ALIGN - Bearing & Distance [dual units]	Labels Bearing & Distance along the line.
ALIGN - Bearing & Distance with crows feet [dual units]	Labels Bearing, Distance & crows feet along the line.
Standard	Labels Bearing & Distance along the line, if the line is too short the bearing is labelled over the distance. When the length is too short for any label a warning symbol will be displayed that can be dragged out for a stacked label or changed to a different label style.

# Alignment Station Offset Label Styles

Name	Description
Standard	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The alignment cannot be changed after the label is in place. The label can be dragged to the right or left but the line under the station & offset disappears.

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Name	Description
Station & Offset	Labels the station, offset (LT/RT), & alignment name of the label location after the user selects an alignment. The
(includes options for the dragging label to the left or right)	alignment cannot be changed after the label is in place. The label can be dragged to the right or left but the line under the station & offset disappears.

## Alignment Label Sets

Name	Description
_Geometry Point Stations Only	Non-standard style used for analysis when the major & minor stations and ticks get in the way. The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.
_Non-plotting Stationing	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno_no_plot.
_None	Used to hide the labels
Alignment Stationing [color]	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.
Standard	The color of the Alignment Labels can be changed with the True Color setting in the Properties dialog box. Labels placed on layer align_anno.

# Page Setups

A page setup defines the default printing configuration including the printer, paper size, page layout, plot style, etc. of the selected Model or Sheet layout. A default plot style table is referenced in each page setup but it can be changed at any time.

- **PDF 17 x 11** creates a landscape 11" x 17" sheet in a PDF file with the *BW.STB* attached.
- **PDF 11 x 17** creates a protrait 11" x 17" sheet in a PDF file with the *BW.STB* attached.
- **PDF 11 x 8.5** creates a landscape 8.5" x 11" sheet in a PDF file with the *BW.STB* attached.
- **PDF 8.5 x 11** creates a protrait 8.5" x 11" sheet in a PDF file with the *BW.STB* attached.

# TEMPLATE - CT\_2016\_TOPO\_AERIAL\_PHOTO.DWT

## Features & Object Styles

#### Feature Groups

Many of the features extracted from aerial and photo data are included in the DGN file for display purposes only, they are not imported into Civil 3D 2016.

The following table identifies only the topo feature groups that are imported into Civil 3D 2016.

Feature Group [Abbreviation]	Description					
General	General features include miscellaneous breaklines and spot elevation points.					
Hydrographic [hydro]	Hydrographic features include natural and manmade open drainage facilities including banks, canals, catch basins, ditches, lakes, pools, rivers, streams, and lakes.					
Roadbed [rdbed]	Roadbed features include the portion of the roadway extending from curb line to curb line or shoulder line to shoulder line. Note, divided highways are considered to have two roadbeds. Roadbed features include curbs & dikes along the road and roadbed edges.					
Roadside [rdside]	Roadside features lie in the area adjoining the outer edge of the roadbed extending outside of the right of way line when necessary. Extensive areas between the roadbeds of a divided highway may also be considered roadside. Roadside features include driveways, edges in original ground and paved areas, parking lots, sidewalks, trails, etc.					
Structures [str]	The bridge deck feature in the Structures grouping includes paving notches.					
Traffic Control [tcd]	Traffic control devices include pavement markings.					

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## Aerial LiDAR Feature Listing

The following table lists the aerial LiDAR features and the associated Civil 3D Styles and Feature Group.

Name	Description	Civil 3D Style/Layer	Line	Point	Group
AC	Asphalt roadbed edges - ground	al_rdbed_AC_EDGE	✓		Roadbed
AC	Asphalt roadbed edges - bridge deck	al_rdbed_AC_EDGE_deck	✓		Roadbed
AC	Asphalt roadside edges - ground	al_rdside_AC_EDGE	~		Roadside
DIKT	Dike along roadbed - top - ground	al_DIKE_TOP	~		Roadbed
DIKT	Dike, miscellaneous - top - ground	al_misc_DIKE_TOP	~		Roadside
DIRT	Dirt roadbed edges - ground	al_rdbed_DIRT_EDGE	✓		Roadbed
DIRT	Dirt roadside edges - ground	al_rdside_DIRT_EDGE	~		Roadside
ETW	Striping - fog stripes along ETW - ground	al_STRIPE_Fog_ETW	~		Traffic Control
ETW	Striping - fog stripes along ETW - bridge deck	al_STRIPE_Fog_ETW_deck	$\checkmark$		Traffic Control
EW	Edges & high water marks of water features through natural or manmade structures	al_WATER_EDGE	1		Hydrograp hic
EW- study	Edges of water bodies for +- 2.5 ft surface	al_WATER_EDGE_study	~		Hydrograp hic
FL	Flowlines of water features through natural or manmade structures	al_FL	~		Hydrograp hic
FL- study	Flowlines for +- 2.5 ft surface	al_FL_study	$\checkmark$		Hydrograp hic
n/a	GNV breaklines in ground DTM areas	topo_al_dtm_brk_gnv_info_ only	√		General
n/a	Random breaklines in bridge deck DTM areas	topo_al_dtm_brk_spot_deck _info_only	~		General
n/a	Spot elevations & mass points in bridge deck DTM areas	topo_al_dtm_brk_spot_deck _info_only		~	General
n/a	Random breaklines in ground DTM areas	topo_al_dtm_brk_spot_info_ only	~		General
n/a	Spot elevations & mass points in ground DTM areas	topo_al_dtm_brk_spot_info_ only		~	General
n/a	GNV breaklines for +- 2.5 ft surface in ground DTM areas	topo_al_study_brk_gnv_info _only	~		General

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Name	Description	Civil 3D Style/Layer	Line	Point	Group
n/a	Breaklines for +- 2.5 ft surface in bridge deck DTM areas	topo_al_study_brk_spot_de ck_info_only	√		General
n/a	Mass points for +- 2.5 ft surface in bridge deck DTM areas	topo_al_study_brk_spot_de ck_info_only		~	General
n/a	Breaklines for +- 2.5 ft surface in ground DTM areas	topo_al_study_brk_spot_inf o_only	$\checkmark$		General
n/a	Mass points for +- 2.5 ft surface in ground DTM areas	topo_al_study_brk_spot_inf o_only		~	General
PCC	Concrete roadbed edges - ground	al_rdbed_CONC_EDGE	~		Roadbed
PCC	Concrete roadbed edges - bridge deck	al_rdbed_CONC_EDGE_de ck	~		Roadbed
PCC	Concrete roadside edges - ground	al_rdside_CONC_EDGE	✓		Roadside
PN	Bridge paving notch	al_PN	~		Structures
ROCK	Rock roadbed edges	al_rdbed_ROCK_EDGE	✓		Roadbed
ROCK	Rock roadside edges	al_rdside_ROCK_EDGE	~		Roadside
STRP	Striping - dashed & solid except for fog stripes - ground	al_STRIPE	~		Traffic Control
STRP	Striping - dashed & solid except for fog stripes - bridge deck	al_STRIPE_deck	$\checkmark$		Traffic Control
тос	Curb along roadbed - top - ground	al_CURB_TOP	~		Roadbed
тос	Curb along roadbed - top - bridge deck	al_CURB_TOP_deck	~		Roadbed
тос	Curb, miscellaneous - top - ground	al_misc_CURB_TOP	✓		Roadside
тос	Curb, miscellaneous - top - bridge deck	al_misc_CURB_TOP_deck	1		Roadside

## Photo Feature Listing

The following table lists the photo features and the associated Civil 3D Styles and Feature Group.

Name	Description	Civil 3D Style/Layer	Line	Point	Group
	Asphalt roadbed edges - ground	ph_rdbed_AC_EDGE	✓		Roadbed
AC	Asphalt roadbed edges - bridge deck	ph_rdbed_AC_EDGE_deck	✓		Roadbed
	Asphalt roadside edges - ground	ph_rdside_AC_EDGE	✓		Roadside
	Dike along roadbed - top - ground	ph_DIKE_TOP	$\checkmark$		Roadbed
	Dike, miscellaneous - top - ground	ph_misc_DIKE_TOP	✓		Roadside
пот	Dirt roadbed edges - ground	ph_rdbed_DIRT_EDGE	✓		Roadbed
DIRT	Dirt roadside edges - ground	ph_rdside_DIRT_EDGE	✓		Roadside
	Striping - fog stripes along ETW - ground	ph_STRIPE_Fog_ETW	~		Traffic Control
	Striping - fog stripes along ETW - bridge deck	ph_STRIPE_Fog_ETW_dec k	~		Traffic Control
EW	Edges & high water marks of water features through natural or manmade structures	ph_WATER_EDGE	~		Hydrograp hic
EW- study	Edges of water bodies for +- 2.5 ft surface	ph_WATER_EDGE_study	~		Hydrograp hic
FL	Flowlines of water features through natural or manmade structures	ph_FL	~		Hydrograp hic
FL- study	Flowlines for +- 2.5 ft surface	ph_FL_study	~		Hydrograp hic
n/a	GNV breaklines in ground DTM areas	topo_ph_dtm_brk_gnv_info_ only	~		General
n/a	Random breaklines in bridge deck DTM areas	topo_ph_dtm_brk_spot_dec k_info_only	~		General
n/a	Spot elevations & mass points in bridge deck DTM areas	topo_ph_dtm_brk_spot_dec k_info_only		~	General
n/a	Random breaklines in ground DTM areas	topo_ph_dtm_brk_spot_info _only	~		General
n/a	Spot elevations & mass points in ground DTM areas	topo_ph_dtm_brk_spot_info _only		~	General
n/a	GNV breaklines for +- 2.5 ft surface in ground DTM areas	topo_ph_study_brk_gnv_inf o_only	~		General

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Name	Description	Civil 3D Style/Layer	Line	Point	Group
n/a	Breaklines for +- 2.5 ft surface in bridge deck DTM areas	topo_ph_study_brk_spot_de ck_info_only	~		General
n/a	Mass points for +- 2.5 ft surface in bridge deck DTM areas	topo_ph_study_brk_spot_de ck_info_only		~	General
n/a	Breaklines for +- 2.5 ft surface in ground DTM areas	topo_ph_study_brk_spot_inf o_only	~		General
n/a	Mass points for +- 2.5 ft surface in ground DTM areas	topo_ph_study_brk_spot_inf o_only		~	General
PCC	Concrete roadbed edges - ground	ph_rdbed_CONC_EDGE	✓		Roadbed
PCC	Concrete roadbed edges - bridge deck	ph_rdbed_CONC_EDGE_d eck	~		Roadbed
PCC	Concrete roadside edges - ground	ph_rdside_CONC_EDGE	✓		Roadside
PN	Bridge paving notch	ph_PN	✓		Structures
ROCK	Rock roadbed edges	ph_rdbed_ROCK_EDGE	✓		Roadbed
ROCK	Rock roadside edges	ph_rdside_ROCK_EDGE	✓		Roadside
STRP	Striping - dashed & solid except for fog stripes - ground	ph_STRIPE	~		Traffic Control
STRP	Striping - dashed & solid except for fog stripes - bridge deck	ph_STRIPE_deck	~		Traffic Control
тос	Curb along roadbed - top - ground	ph_CURB_TOP	✓		Roadbed
тос	Curb along roadbed - top - bridge deck	ph_CURB_TOP_deck	~		Roadbed
тос	Curb, miscellaneous - top - ground	ph_misc_CURB_TOP	$\checkmark$		Roadside
тос	Curb, miscellaneous - top - bridge deck	ph_misc_CURB_TOP_deck	~		Roadside

# Alignment Styles

Same as noted above for Ct\_2016\_Topo\_Surveys\_MTLS.dwt

## Surface Styles

Same as noted above for Ct\_2016\_Topo\_Surveys\_MTLS.dwt

#### **Cross Section Styles**

Same as noted above for Ct\_2016\_Topo\_Surveys\_MTLS.dwt

## Label Styles

Same as noted above for Ct\_2016\_Topo\_Surveys\_MTLS.dwt

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## Page Setups

Same as noted above for Ct\_2016\_Topo\_Surveys\_MTLS.dwt

#### CSAC SSHPI LINE AND POINT SETTINGS

The SSHPI Line and Point settings files, *Ct-Survey\_Data-Feature\_Lines.XML* and *Ct-Survey\_Data-Points.XML*, contain queries to parse the attributes of the data in the TBC Shape files. Based on the query results, the data is assigned a Civil 3D or AutoCAD object type (COGO Point, Feature Line, AutoCAD Point, Polyline, or 3D Polyline) with the specified Name, Style, Object Layer, and Point Group, if applicable.

#### Different Features created from the same Shape (.SHP) file

In many cases, different features can be created based on the attributes in the Shape file that were assigned in the field. For example, when **Asphalt\_Breakline\_\*.shp** files are imported, 6 different features can be created as shown in the table below:

Civil 3D Object	DTM_Type	Aspect	Description
Feature Line	Ground or None	Grade break	Asphalt roadbed grade breaks – ground
Feature Line	Bridge deck	Grade break	Asphalt roadbed grade breaks - bridge deck
Feature Line	Ground or None	Flowline	Flowlines, roadbed - except curb flowlines - ground
Feature Line	Bridge deck	Flowline	Flowlines, roadbed - except curb flowlines - bridge deck
3D Polyline	Ground or None	Random breakline	Random breaklines in ground DTM areas
3D Polyline	Bridge deck	Random breakline	Random breaklines in bridge deck DTM areas

A SSHPI Feature Line Settings - File C:\Caltrans\HQ\C3D\_2016\Survey\SHP\_Import\Ct-Survey\_Data-Feature\_Lines.XML

· · · · · · · · · · · · · · · · · · ·								
	Feature Line Setting Name	SHP File Name	Feature Line Name Format	Style	Layer Name	Create Polyline	ls 3d Polyline	Query
	Asphalt breaklines - roadbed	Asphalt_Breakline	ACBK<[Next	✓ su_rdbed_AC_BRK	✓ topo_su_rdbed_AC_drop			((DTM_Type = 'Ground') Or (DTM_Type = 'None'))
	Random breaklines in Bridge deck DTM areas	Asphalt_Breakline			topo_su_dtm_brk_spot_deck_info_only	✓	✓	(Aspect = 'Random breakline') And (DTM_Type = 'B
	Flowline - roadbed	Asphalt_Breakline	✓ FL<[Next C	✓ su_rdbed_FL	✓ topo_su_rdbed_FL_drop			✓ (Aspect = 'Flowline') And ((DTM_Type = 'Ground') (
	Random breaklines in Ground DTM areas	Asphalt_Breakline			✓ topo_su_dtm_brk_spot_info_only	~	~	✓ (Aspect = 'Random breakline' ) And (( DTM_Type = '(
	Flowline - roadbed deck	Asphalt_Breakline	✓ FL<[Next C	✓ su_rdbed_FL_deck	✓ topo_su_rdbed_FL_deck_drop			(Aspect = 'Flowline') And (DTM_Type = 'Bridge deck
N	Asphalt breaklines - roadbed deck	Asphalt_Breakline	ACBK<[Ne:	✓ su_rdbed_AC_BRK_deck	✓ topo_su_rdbed_AC_deck_drop			(DTM_Type = 'Bridge deck') And (Aspect = 'Gradec
l								
								OK Cancel

Figure 24 – SSHPI Feature Line Settings

When **Gen\_Roadbed\_Point.shp** files are imported, 4 different features can be created as shown in the table below:

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Civil 3D Object	DTM_Type	Туре	Point Group	Description
COGO Point	Ground or None	Other	CSAC Ground Points	Miscellaneous roadbed point features - ground
COGO Point	Bridge deck	Other	CSAC Bridge Deck Points	Miscellaneous roadbed point features - bridge deck
AutoCAD Point	Ground or None	Spot	n/a	Spot elevations & mass points in ground DTM areas
AutoCAD Point	Bridge deck	Spot	n/a	Spot elevations & mass points in bridge deck DTM areas

	SSHPI Point Settings - File C:\Caltrans\HQ\C3D_2016\Survey\SHP_Import\Ct-Survey_Data-Points.XML										
	🕒 😂 🖥 🛃 🛃 SHP File 🛛 Current SHP formatting file source: Select SHP file for source										
	Point Setting Name	SHP File Name	Description Key	Point Name Format	Raw Description	Is 2D Point	Create AutoCAD Point	Laver Name	Ouerv		
	Miscellaneous roadbed point features on ground	Gen_Roadbed_Point.shp	RDWYMISC	RDBED(PointID)	{DK:DescriptionKey}	✓ IgnoreElev			(Type = 'Other' ) And ((DM_T)		
1	Miscellaneous roadbed point featuress on bridge deck	Gen_Roadbed_Point.shp	RDWYMISCI	RDBED{PointID}	{DK:DescriptionKey}	✓ IgnoreElev			✓ (Type = 'Other') And (DTM_y		
l	Spot points in Bridge deck DTM areas	Gen_Roadbed_Point.shp				✓ IgnoreElev		✓ topo_su_dtm	(Type = 'Spot') And (DTM_Type		
	Spot points in Ground DTM areas	Gen_Roadbed_Point.shp				✓ IgnoreElev	$\checkmark$	✓ topo_su_dtm	✓ (Type = 'Spot') And (DTM_Type		

Figure 25 – SSHPI Point Settings

#### 2D Points are created when "IgnoreElev" is set to Yes

Points with the attribute **IgnoreElev** set to **Yes** are stored as 2D COGO Points where the elevation of the Point is not set.

×	Cogo Point		- 🖻 + +	<b>1</b>			Cogo Point		•	ž
*	DOCUMEN	ΓΑΤΙΟΝ					Raw Description	MARKMISC		=
	PROPERTY	SETS					Style	su_MARKER_MISC		
	Associated	Files					Point Label Style	Topo Points [Name Elev	ation D	
	Associated	Images					Show Tooltips	Yes		
	Feature						Layer	topo_su_tcd_MA	RKE	
	Point Infor	nation					Primary point g	_All Points		
	Easting	6447629.009511					Easting	6447629.01'		
	Elevation	96.16 <mark>3</mark> 906		ded			Northing	1936855.77'		
	IgnoreElev	Yes		tten		_	Point Elevation	*PROPERTY NOT SET*		
	Northing	1936855.769528					CgPoint.DTMAt			
TIES	PointID	1349					Description (TS			
PER	ShapeFileIn	formation								
T PRO	<b>4</b> n			Obje						

Figure 26 – COGO Points stored using IgnoreElev set to Yes

#### COGO Points are added to Point Groups

COGO Points are added to Point Groups based on the attribute **DTM\_Type**.

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🔥 SSHPI Point Groups	×
	New Point Group
Point Group	Query
CSAC Ground Points	( DTM_Type = 'Ground' )
CSAC Feature Points	( DTM_Type = 'None' )
CSAC Bridge Deck Points	( DTM_Type = 'Bridge deck' )
CSAC Bridge Underside Points	(( DTM_Type = 'Bridge surface' ) Or ( DTM_Type = 'Bridge underside' ))
CSAC Line Points - display OFF	( Layer LIKE 'Line Points' )
	OK Cancel Help

Figure 27 – SSHPI Point Groups

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## CTDC FIGURE PREFIX DATABASE

The CTDC Figure Prefix Database assigns the object style and object layer to survey figures and determines whether the figures are tagged as breakline. Figure prefixes with "-*G*" in the name are tagged as breaklines. As a point file or XML file is imported into the Survey Database, the system monitors the incoming data and when it encounters automatic linework with a known prefix, the correct style and settings are applied to the figure.

The Figure Prefix Database is only used with CTDC data that is collected in the TSS file format. Note: The TSS file format is being phased out with the CSAC Shape file format.

Two CTDC Figure Prefix Databases are available for use when importing data in TSS files. The table below lists the *Caltrans Topo TSS - 2016* Figure Prefix Database that should be used when TSS files are imported into a Civil 3D 2016 Survey Database. (Note, The *Caltrans Topo TSS* Figure Prefix Database should only be used when importing data into a Civil 3D 2012 Survey Database.)

Name	Layer	Style
ABUT-F	topo_su_str_ABUTWW_drop	SU ABUT
ABUT-G	topo_su_str_ABUTWW_drop	SU ABUT
AC-F	topo_su_rdbed_AC_drop	SU AC
AC-G	topo_su_rdbed_AC_drop	SU AC
ACBK-F	topo_su_rdbed_AC_drop	SU ACBK
ACBK-G	topo_su_rdbed_AC_drop	SU ACBK
ACFL-F	topo_su_rdbed_FL_drop	SU ACFL
ACFL-G	topo_su_rdbed_FL_drop	SU ACFL
ACM-F	topo_su_rdside_AC_drop	SU ACM
ACM-G	topo_su_rdside_AC_drop	SU ACM
BB-F	topo_su_rdside_MISC_drop	SU BB
BB-G	topo_su_rdside_MISC_drop	SU BB
BBWK-F	topo_su_rdbed_CONC_deck_drop	SU BBWK
BBWK-G	topo_su_rdbed_CONC_deck_drop	SU BBWK
BCAB-F	topo_su_ut_UG	SU BCAB
BCAB-G	topo_su_ut_UG	SU BCAB
BCON-F	topo_su_tcd_BARRIER_drop	SU BCON
BCON-G	topo_su_tcd_BARRIER_drop	SU BCON
BEP-F	topo_su_str_MISC_deck_drop	SU BEP
BEP-G	topo_su_str_MISC_deck_drop	SU BEP

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BETW-F	topo_su_tcd_MARKING_deck_drop	SU BETW
BETW-G	topo_su_tcd_MARKING_deck_drop	SU BETW
BLDG-F	topo_su_str_BLDG_drop	SU BLDG
BLDG-G	topo_su_str_BLDG_drop	SU BLDG
BLDR-F	topo_su_str_BLDG_drop	SU BLDR
BLDR-G	topo_su_str_BLDG_drop	SU BLDR
BRB-F	topo_su_str_BRDG_RAIL_deck_dro p	SU BRB
BRB-G	topo_su_str_BRDG_RAIL_deck_dro p	SU BRB
BRF-F	topo_su_rdside_FENCE_drop	SU BRF
BRF-G	topo_su_rdside_FENCE_drop	SU BRF
BRT-F	topo_su_tcd_BARRIER_deck_drop	SU BRT
BRT-G	topo_su_tcd_BARRIER_deck_drop	SU BRT
BSOF-F	topo_su_str_MISC_surface_drop	SU BSOF
BSOF-G	topo_su_str_MISC_surface_drop	SU BSOF
BSTP-F	topo_su_tcd_MARKING_deck_drop	SU BSTP
BSTP-G	topo_su_tcd_MARKING_deck_drop	SU BSTP
BSWB-F	topo_su_rdbed_CURB_deck_drop	SU BSWB
BSWB-G	topo_su_rdbed_CURB_deck_drop	SU BSWB
BSWT-F	topo_su_rdbed_CURB_deck_drop	SU BSWT
BSWT-G	topo_su_rdbed_CURB_deck_drop	SU BSWT
BTHR-F	topo_su_tcd_BARRIER_drop	SU BTHR
BTHR-G	topo_su_tcd_BARRIER_drop	SU BTHR
BWF-F	topo_su_rdside_FENCE_drop	SU BWF
BWF-G	topo_su_rdside_FENCE_drop	SU BWF
BWW-F	topo_su_str_ABUTWW_drop	SU BWW
BWW-G	topo_su_str_ABUTWW_drop	SU BWW
CARL-F	topo_su_str_BLDG_drop	SU CARL
CARL-G	topo_su_str_BLDG_drop	SU CARL
CBSN-F	topo_su_hydro_df_OPEN_drop	SU CBSN
CBSN-G	topo_su_hydro_df_OPEN_drop	SU CBSN
CFL-F	topo_su_hydro_FL_drop	SU CFL
CFL-G	topo_su_hydro_FL_drop	SU CFL

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CLF-F	topo_su_rdside_FENCE_drop	SU CLF
CLF-G	topo_su_rdside_FENCE_drop	SU CLF
COLM-F	topo_su_str_COL_drop	SU COLM
COLM-G	topo_su_str_COL_drop	SU COLM
COND-F	topo_su_ut_COND	SU COND
COND-G	topo_su_ut_COND	SU COND
CROP-F	topo_su_veg_MISC_drop	SU CROP
CROP-G	topo_su_veg_MISC_drop	SU CROP
CTLG-F	topo_su_rdbed_MISC_drop	SU CTLG
CTLG-G	topo_su_rdbed_MISC_drop	SU CTLG
CTOP-F	topo_su_hydro_df_OPEN_drop	SU CTOP
CTOP-G	topo_su_hydro_df_OPEN_drop	SU CTOP
CULT-F	topo_su_hydro_df_CULV_drop	SU CULT
CULT-G	topo_su_hydro_df_CULV_drop	SU CULT
CULV-F	topo_su_hydro_df_CULV_drop	SU CULV
CULV-G	topo_su_hydro_df_CULV_drop	SU CULV
CWW-F	topo_su_hydro_df_STR_drop	SU CWW
CWW-G	topo_su_hydro_df_STR_drop	SU CWW
DECK-F	topo_su_str_BLDG_drop	SU DECK
DECK-G	topo_su_str_BLDG_drop	SU DECK
DFL-F	topo_su_hydro_FL_drop	SU DFL
DFL-G	topo_su_hydro_FL_drop	SU DFL
DIKB-F	topo_su_rdbed_DIKE_drop	SU DIKB
DIKB-G	topo_su_rdbed_DIKE_drop	SU DIKB
DIKT-F	topo_su_rdbed_DIKE_drop	SU DIKT
DIKT-G	topo_su_rdbed_DIKE_drop	SU DIKT
DRWY-F	topo_su_rdside_MISC_drop	SU DRWY
DRWY-G	topo_su_rdside_MISC_drop	SU DRWY
DTOP-F	topo_su_hydro_df_OPEN_drop	SU DTOP
DTOP-G	topo_su_hydro_df_OPEN_drop	SU DTOP
ELC-F	topo_su_ut_CABLE	SU ELC
ELC-G	topo_su_ut_CABLE	SU ELC
ENT-F	topo_su_hydro_df_OPEN_drop	SU ENT
ENT-G	topo_su_hydro_df_OPEN_drop	SU ENT

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EOD-F	topo_su_str_BRDG_RAIL_deck_dro p	SU EOD
EOD-G	topo_su_str_BRDG_RAIL_deck_dro p	SU EOD
EOR-F	topo_su_rdbed_MISC_drop	SU EOR
EOR-G	topo_su_rdbed_MISC_drop	SU EOR
EP-F	topo_su_rdbed_MISC_drop	SU EP
EP-G	topo_su_rdbed_MISC_drop	SU EP
ES-F	topo_su_rdbed_MISC_drop	SU ES
ES-G	topo_su_rdbed_MISC_drop	SU ES
ETW-F	topo_su_tcd_MARKING_drop	SU ETW
ETW-G	topo_su_tcd_MARKING_drop	SU ETW
EW-F	topo_su_hydro_WATER_drop	SU EW
EW-G	topo_su_hydro_WATER_drop	SU EW
FB-F	topo_su_rdside_MISC_drop	SU FB
FB-G	topo_su_rdside_MISC_drop	SU FB
FDLINE-F	topo_su_ctrl_LNWK	SU FDLINE
FDLINE-G	topo_su_ctrl_LNWK	SU FDLINE
FDLN-F	topo_su_ctrl_LNWK	SU FDLINE
FDLN-G	topo_su_ctrl_LNWK	SU FDLINE
FIBO-F	topo_su_ut_CABLE	SU FIBO
FIBO-G	topo_su_ut_CABLE	SU FIBO
FLC-F	topo_su_rdbed_CURB_drop	SU FLC
FLC-G	topo_su_rdbed_CURB_drop	SU FLC
GLN-F	topo_su_ut_UG	SU GLN
GLN-G	topo_su_ut_UG	SU GLN
GLP-F	topo_su_ut_UG	SU GLP
GLP-G	topo_su_ut_UG	SU GLP
GSLD-F	topo_su_rdside_FENCE_drop	SU GSLD
GSLD-G	topo_su_rdside_FENCE_drop	SU GSLD
HDWB-F	topo_su_hydro_df_STR_drop	SU HDWB
HDWB-G	topo_su_hydro_df_STR_drop	SU HDWB
HEAD-F	topo_su_hydro_df_STR_drop	SU HEAD
HEAD-G	topo_su_hydro_df_STR_drop	SU HEAD

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HP-F	topo_su_rdside_MISC_drop SU HP		
HP-G	topo_su_rdside_MISC_drop	SU HP	
HYDRL-F	topo_su_rdbed_MISC_drop	SU HYDRL	
HYDRL-G	topo_su_hydro_MISC_drop	SU HYDRL	
LIP-F	topo_su_rdbed_CURB_drop	SU LIP	
LIP-G	topo_su_rdbed_CURB_drop	SU LIP	
LL-F	topo_su_tcd_MARKING_drop	SU LL	
LL-G	topo_su_tcd_MARKING_drop	SU LL	
LR-F topo_su_rdside_RR_drop		SU LR	
LR-G topo_su_rdside_RR_drop SU		SU LR	
MANL-F	topo_su_rdside_MISC_drop	SU MANL	
MANL-G	topo_su_rdside_MISC_drop	SU MANL	
MBGR-F	topo_su_tcd_BARRIER_drop	SU MBGR	
MBGR-G	topo_su_tcd_BARRIER_drop	SU MBGR	
MBS-F	topo_su_rdside_MISC_drop	SU MBS	
MBS-G	topo_su_rdside_MISC_drop	SU MBS	
MWB-F	topo_su_str_WALL_drop	SU MWB	
MWB-G	topo_su_str_WALL_drop	SU MWB	
MWT-F	topo_su_str_WALL_drop	SU MWT	
MWT-G	topo_su_str_WALL_drop	SU MWT	
OCAB-F	topo_su_ut_OH	SU OCAB	
OCAB-G	topo_su_ut_OH	SU OCAB	
ODRN-F	topo_su_hydro_df_STR_drop	SU ODRN	
ODRN-G	topo_su_hydro_df_STR_drop	SU ODRN	
OG-F	topo_su_rdside_MISC_drop	SU OG	
OG-G	topo_su_rdside_MISC_drop	SU OG	
OGFL-F topo_su_rdside_FL_drop SU OG		SU OGFL	
OGFL-G topo_su_rdside_FL_drop SU OG		SU OGFL	
ORCH-F topo_su_veg_TREE_drop SU C		SU ORCH	
ORCH-G topo_su_veg_TREE_drop		SU ORCH	
PAT-F	topo_su_str_BLDG_drop	SU PAT	
PAT-G	topo_su_str_BLDG_drop	SU PAT	
PCBK-F	topo_su_rdbed_CONC_drop	SU PCBK	
PCBK-G	topo_su_rdbed_CONC_drop	SU PCBK	

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PCC-F	topo_su_rdbed_CONC_drop SU PCC			
PCC-G	topo_su_rdbed_CONC_drop	SU PCC		
PCCM-F	topo_su_rdside_CONC_drop	SU PCCM		
PCCM-G	topo_su_rdside_CONC_drop	SU PCCM		
PCFL-F	topo_su_rdbed_FL_drop	SU PCFL		
PCFL-G	topo_su_rdbed_FL_drop	SU PCFL		
PMRK-F	topo_su_tcd_MARKER_drop	SU PMRK		
PMRK-G	topo_su_tcd_MARKER_drop	SU PMRK		
PN-F	topo_su_str_PN_deck_drop	SU PN		
PN-G	topo_su_str_PN_deck_drop	SU PN		
POLL-F	topo_su_ut_POLE	SU POLL		
POLL-G	topo_su_ut_POLE	SU POLL		
POOL-F	topo_su_hydro_WATER_drop	SU POOL		
POOL-G	topo_su_hydro_WATER_drop	SU POOL		
PRF-F	F-F topo_su_rdside_FENCE_drop SU PR			
PRF-G	topo_su_rdside_FENCE_drop	SU PRF		
PUMH-F	topo_su_ut_APPR	SU PUMH		
PUMH-G	topo_su_ut_APPR	SU PUMH		
RBRK-F	topo_su_rdbed_MISC_drop	SU RBRK		
RBRK-G	topo_su_rdbed_MISC_drop	SU RBRK		
RCA-F	topo_su_hydro_df_CULV_drop	SU RCA		
RCA-G	topo_su_hydro_df_CULV_drop	SU RCA		
RCB-F	topo_su_hydro_df_CULV_drop	SU RCB		
RCB-G	topo_su_hydro_df_CULV_drop	SU RCB		
RDWYL-F	topo_su_rdbed_MISC_drop	SU RDWYL		
RDWYL-G	topo_su_rdbed_MISC_drop	SU RDWYL		
RIV-F	topo_su_hydro_WATER_drop	SU RIV		
<b>RIV-G</b> topo_su_hydro_WATER_drop SU RIV		SU RIV		
ROCK-F	<b>ROCK-F</b> topo_su_rdside_ROCK_drop SU RO			
ROCK-G topo_su_rdside_ROCK_drop SU R		SU ROCK		
RR-F	RR-F topo_su_rdside_RR_drop SU RI			
RR-G	topo_su_rdside_RR_drop	SU RR		
RWB-F	topo_su_str_WALL_drop	SU RWB		
RWB-G topo_su_str_WALL_drop SU RW				

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RWT-F topo_su_str_WALL_drop SU RWT		SU RWT	
RWT-G       topo_su_str_WALL_drop       SU RV		SU RWT	
SDR-F	topo_su_hydro_df_STR_drop	SU SDR	
SDR-G	<b>DR-G</b> topo_su_hydro_df_STR_drop SU SDF		
SDRN-F	topo_su_hydro_df_STR_drop	SU SDRN	
SDRN-G	topo_su_hydro_df_STR_drop	SU SDRN	
SINB-F	topo_su_tcd_SIGN_drop	SU SINB	
SINB-G	topo_su_tcd_SIGN_drop	SU SINB	
SINM-F topo_su_tcd_SIGN_drop SU SI		SU SINM	
SINM-G	topo_su_tcd_SIGN_drop	SU SINM	
SLD-F	topo_su_rdside_SLIDE_drop	SU SLD	
SLD-G	topo_su_rdside_SLIDE_drop	SU SLD	
SLP-F	topo_su_hydro_df_OPEN_drop	SU SLP	
SLP-G	topo_su_hydro_df_OPEN_drop	SU SLP	
SPLY-F	topo_su_hydro_df_OPEN_drop	SU SPLY	
SPLY-G	topo_su_hydro_df_OPEN_drop	SU SPLY	
SS-F	topo_su_ut_UG	SU SS	
SS-G	topo_su_ut_UG	SU SS	
STHR-F	topo_su_hydro_WATER_drop	SU STHR	
STHR-G	topo_su_hydro_WATER_drop	SU STHR	
STRP-F	topo_su_tcd_MARKING_drop	SU STRP	
STRP-G	topo_su_tcd_MARKING_drop	SU STRP	
SW-F	topo_su_rdside_SW_drop	SU SW	
SW-G	topo_su_rdside_SW_drop	SU SW	
SWB-F	topo_su_str_WALL_drop	SU SWB	
SWB-G	topo_su_str_WALL_drop	SU SWB	
SWT-F topo_su_str_WALL_drop SU SW		SU SWT	
SWT-G topo_su_str_WALL_drop SU SW		SU SWT	
TANP-F topo_su_rdside_MISC_drop SU TA		SU TANP	
TANP-G topo_su_rdside_MISC_drop SU T		SU TANP	
TELC-F	topo_su_ut_CABLE	SU TELC	
TELC-G	topo_su_ut_CABLE	SU TELC	
TOB-F	topo_su_hydro_df_OPEN_drop	SU TOB	
TOB-G topo_su_hydro_df_OPEN_drop SU TOE			

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TOC-F	topo_su_rdbed_CURB_drop SU TOC			
TOC-G	topo_su_rdbed_CURB_drop	SU TOC		
TOE-F	topo_su_rdside_MISC_drop	SU TOE		
TOE-G	topo_su_rdside_MISC_drop	SU TOE		
TOP-F	-F topo_su_rdside_MISC_drop SU			
TOP-G	OP-G topo_su_rdside_MISC_drop SU 1			
TOWL-F	FOWL-F topo_su_ut_MISC SI			
TOWL-G	topo_su_ut_MISC	SU TOWL		
TRL-F	topo_su_rdside_MISC_drop	SU TRL		
TRL-G	topo_su_rdside_MISC_drop	SU TRL		
TVC-F	topo_su_ut_CABLE	SU TVC		
TVC-G	topo_su_ut_CABLE SU TVC			
UTLL-F	topo_su_ut_CABLE SU UTLL			
UTLL-G	topo_su_ut_CABLE SU_UTLL			
VEGE-F	topo_su_veg_MISC_drop SU VEGE			
VEGE-G	topo_su_veg_MISC_drop	SU VEGE		
VEGL-F	topo_su_veg_MISC_drop	SU VEGL		
VEGL-G	topo_su_veg_MISC_drop	SU VEGL		
VGUT-F	topo_su_rdbed_FL_drop	SU VGUT		
VGUT-G	topo_su_rdbed_FL_drop	SU VGUT		
VY-F	topo_su_veg_MISC_drop SU VY			
VY-G	topo_su_veg_MISC_drop SU VY			
WBOX-F	topo_su_hydro_df_STR_drop	SU WBOX		
WBOX-G	topo_su_hydro_df_STR_drop	SU WBOX		
WDGR-F	topo_su_tcd_BARRIER_drop	SU WDGR		
WDGR-G	topo_su_tcd_BARRIER_drop SU WDGF			
WEIR-F	EIR-F topo_su_hydro_df_STR_drop SU WEIF			
WEIR-G	EIR-G topo_su_hydro_df_STR_drop SU WEIF			
WL-F topo_su_ut_UG SU WL		SU WL		
WL-G topo_su_ut_UG SU		SU WL		
WMF-F	WMF-F topo_su_rdside_FENCE_drop SU W			
WMF-G	<b>//F-G</b> topo_su_rdside_FENCE_drop SU WMF			
WRF-F topo_su_rdside_FENCE_drop SU WR				
WRF-G topo_su_rdside_FENCE_drop SU WRF				

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#### 2.4 Drawing Data Levels

#### A. <u>Standardization of a Level Convention for Design Information</u>

The use and application of the leveling convention defined in this section should be uniformly observed for the following reasons:

1. Work Transfer

To efficiently transfer work between functional units, CADD drawings must conform to a uniform leveling convention. If the same leveling convention is used, considerable time and effort is saved in obtaining only the desired information.

2. Multi-Operators

It is not uncommon for more than one person to work on the same drawing file. For the drawing file to be effectively and efficiently used by all, each operator must conform to the same uniform leveling convention.

3. Drawing Life

At Caltrans, drawings are active for several years or more. Base maps stored as MicroStation dgn files can be quickly used to start a new project or preliminary study. How the data is entered today (i.e., what levels are used for different data) must be readily apparent for a long period, often after the original operators are no longer available. Confusion is minimized with a uniform leveling convention.

4. Expanding the Caltrans Leveling Convention

The leveling convention for a pre-version 8 (V8) MicroStation design file (63 levels) will remain the same in order to support the legacy plans that are maintain by Caltrans. This accommodates any pre-V8 files that may be submitted for future PS&E submittals.

The Caltrans DGNLIB was released in 2008 under <u>Phase 2</u> (full V8) of the Caltrans implementation of MicroStation V8. It utilizes the first 1000 levels to transition the various departments within Caltrans (who had their own pre-V8 leveling convention) to one standard leveling convention for all of Caltrans. <u>Full V8</u> still respects the level number in addition to the level name. Caltrans will implement expanded levels for full V8, where necessary, which will be more dependent on the specific name of the level. This will occur after Caltrans selects and implements new roadway software.

The Default Level (Level 0) is <u>never to be used</u> to place elements in a Caltrans MicroStation design file. In previous versions of MicroStation, Level 0 has been reserved for header information. Now with MicroStation V8, elements can be placed on Level 0 on purpose or by accident, but elements on Level 0 may not be handled or behave the same than if those elements were on a different level.

- B. <u>Highway/Landscape Leveling Convention</u>
  - 1. General Content of Highway/Landscape levels is as follows:

	Ρ	re-	<b>V8</b>
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Level(s)	Content
Level 1	Control Data
Levels 2-8, 11 & 12	Basic topographic map data
Levels 9 & 10	Sheet formats & Seal Information
Levels 13 – 28, 30	Alignments and Construction Details
Levels 31 - 33	Right of Way data
Levels 29, 34 - 59	Data for specific type of plan sheet
Level 60	Non-geographical drawing data
Levels 61 & 62	HQ & As-Built changes
Level 63	Engineer's Signature

Expanded levels to be used in roadway projects is as follows: Full V8

Level(s)	Content
Levels 64 - 69	No_Plot
Level 70	Plot Shape for IPlot (does not plot)
Levels 71 - 74	Survey Information
Levels 75 - 100	Undefined (non-dropout)
Levels 128 - 137	Right of Way data
Levels 812 - 849	Utilities (line styles) (non-dropout)
Levels 871 - 890	Staging Dropout
Levels 891 - 895	Striping Dropout
Levels 896 - 900	Miscellaneous Dropout
Levels 966 - 999	Additional Staging (non-dropout)

- Note 1: The Caltrans DGNLIB has various preset level filters. When selecting the Roadway filter, the above full V8 expanded levels will be displayed in Level Manager or Level Display.
- Note 2: For projects that have a lot of stages for Stage Construction (or sequencing) levels 966 through 999 supplement the pre-V8 levels of 51 through 56 (for a total of 20 stages).

Work left in place (line work only, not labels, annotation or callouts) from a previous stage is to be dropped out for the next stage(s). Levels 871 through 890 (which will dropout information) were created to facilitate dropping out the completed line work from a previous stage.

For Example:

Level 871 for dropping out Stage 1 Level 872 for dropping out Stage 2 Level 879 for dropping out Stage 9 Level 880 for dropping out Stage 10 Level 881 for dropping out Stage 11 Level 890 for dropping out Stage 20

2. Summary of Highway/Landscape levels is as follows:

<u> Pre-V8</u>

Level	Content	
1	Control (Includes Survey Monuments)	
2	Existing Manmade Features	
3	Existing Roadway Features	
4	Existing Vegetation and Natural Features	
5	Existing Utilities and Utility Facilities	
6	Existing Hydrographic Features	
7	Relief Features - Contours	
8	Spot Elevations and Contour Annotations	
9	Profile Grid	
10	Border Sheets & Seal Information	
11	Break Line, Terrain Features for 3D & Profile Grid	
12	Coordinate Grid Ticks and Labels and Construction	
	Staking Survey Control Data	
13	Ramp, Over and Under Crossing Alignment Data	
14	Ramp, Over and Under Crossing Annotation	
15	Mainline Alignment Date	
16	Mainline Alignment Annotation	
17	Frontage Road Alignment Data	
18	Frontage Road Alignment Annotation	
19	Undefined	
20	Pavement Edges	
21	Curbs, Gutters, Dikes, Overside & Edge drains	
22	Miscellaneous Construction Features	
23	Layout Notes	
24	Obliteration, AC Resurfacing & Cold Planing	
25	Temporary Road Connections and Alignments, also for	
	Railroad, Bike & Pedestrian Paths & Creek Alignments	

Level	Content
26	Undefined
27	Undefined
28	Undefined
29	Existing Irrigation - Includes Annotation
30	Cut and Fill Data
31	Existing Right of Way Boundaries
32	New Right of Way, Fences & ESA's
33	Right of Way Text & Annotation
34	Temporary Water Pollution Control
35	Permanent Erosion Control
36	Drainage
37	Drainage Annotation
38	Sanitary Sewer
39	Sanitary Sewer Annotation
40	New Utilities - Includes Annotation
41	Contour Grading
42	Pavement Elevations
43	Pavement Markers and Striping
44	Pavement Markers and Striping Annotation
45	Signing
46	Construction Area Signing
47	Electrical
48	Electrical Annotation
49	Planting and Landscaping
50	New Irrigation - Includes Annotation
51	Stage 1 Construction and Temporary Traffic Facilities
52	Stage 1 Construction and Temporary Traffic Facilities
	Annotation
53	Stage 2 Construction and Temporary Traffic Facilities
54	Stage 2 Construction and Temporary Traffic Facilities
	Annotation
55	Stage 3 Construction and Temporary Traffic Facilities
56	Stage 3 Construction and Temporary Traffic Facilities
	Annotation
57	Undefined
58	Sound Walls & Retaining Walls
59	Sound Walls & Retaining Walls Annotation
60*	Non-geographical Drawing Data*
61	Headquarters Changes
62	As-Built Changes
63	Engineer's Signature

(\*) Key Map; Title Sheet; Profiles; Typical Cross Sections; Superelevation Diagrams, Construction Details and Quantity of Summaries should reside on Level 60 in a pre-V8 MicroStation design file. Using Level 60 for multiple purposes works because each type of sheet is a separate DGN file. In a full V8 MicroStation design file the various information may be separated, if desired, and placed on any of the undefined levels between 75 and 100 when working with only one model. Undefined levels may be used for information that has not been assigned to a specific level.

Undefined (miscellaneous) dropout levels have also been set aside for roadway projects. Those levels are 896 through 900.

When creating additional base maps (e.g., for Stage Construction) in a pre-V8 MicroStation design file, level 11 (which is a drop out level) can be used to move or copy the proposed line work from the previous stage to. This would facilitate showing already constructed design information as dropped out for a later stage within the constructing or sequencing of a project. In a full V8 MicroStation design file, levels have been set aside to facilitate the dropping out of the line work from previous stages when working with only one model. Those levels are 871 to 890.

Additional levels for Highway projects are as follows:

<u>Full V8</u>

Level(s)	Content	
64 - 69	Information on these levels will not plot	
70	Plot shape for Iplot – will not plot	
71-74	Additional Survey information for Roadway Design	
75-100	Undefined Roadway levels when using one Model	
128	Existing Easement line work	
129	Existing Easement annotation	
130	Existing R/W annotation	
131	Existing R/W line work	
132	New R/W line work	
133	New R/W annotation	
134	New Easement line work	
135	New Easement annotation	
136	Temporary Easement line work	
137	Temporary Easement annotation	
812-849	Utilities - each level is a unique Caltrans custom line style	
871-890	For dropping out line work from previous stage	
891-895	For dropping out design info on striping sheets	
896-900	Miscellaneous dropout	
966-999	For Stage Construction – stages 4 through 20	

3. The following table identifies each level, it's associated color and the specific information belonging on each level for Highway/Landscape Construction projects.

LEVEL	COLOR/	TITLE	DESCRIPTION/CONTENT
NO.			
1	Violet/5	Control	All photo control data, and topographic map survey
1	violet/0	Control	information Also includes district-added control
			information
2	Yellow/4	Existing Manmade	All existing man-made features not otherwise included in
	-	Features	any other level, includes all buildings.
3	Yellow/4	Existing Roadway Features	Edges of existing surfaced areas accessible to vehicles, bicycles or pedestrians within the Existing Roadway limits. Examples of Roadway Features are traveled way, edge of pavement lane striping and dikes. The limits of the Existing Roadway are the outside edges of the existing surfaced shoulders, curbs or dikes. Roadway includes all public highways, streets, surfaced and unsurfaced roads, and railroads if the railroads are being improved as part of the project. Roadway does NOT include private roads such as driveways, ranch roads, parking lot streets and roads and streets within large commercial establishments. Railroads (not to be improved), private roads, guard railing, median barriers, right of way fences, existing sidewalks continuous to the
			nghi of way rences, existing sidewarks contiguous to the
4	Green/2	Existing Vegetation and Natural Features	All natural vegetation, existing highway plantings, orchards, vineyards, marshes, and miscellaneous natural features such as rock outcrops, slides, etc.
5	Orange/6 (Note 1)	Existing Utilities and Utility Features	All existing underground and aboveground utility-type facilities (including signals, power and telephone poles and transmission poles for utility, railroad, highway, street, and private improvements.) All existing drainage structures including culverts and headwalls, excluding substantial structures such as buildings. Also, includes district-added underground utilities.
6	Blue/1	Existing Hydro- graphic Features	All lakes, rivers, streams, natural channels, swamps, and standing water.
7	Brown/7	Relief Features Contour Lines Only	Contours (lines only) of the original terrain.
8	Brown/7	Spot Elevations and Contour Elevation Annotation	Spot elevations and contour elevation annotation.
9	Red/3	Profile Grid	Dropout grid for full profile and combination plan and profile standard sheets (red grid lines).
10	White/0	Border Sheets	Standard Border Sheets, Project Engineer's seal information, printed names of engineers, District-County- Route-Post Mile block, plan sheet name, match lines & north arrow (information associated with the border).

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
11	White/0 & Green/2	Terrain features for dtm, profile grid and dropout level for base maps	Terrain features that define the ground surface for a 3D digital terrain model. Green grid lines for profile sheets. Can be used for dropping out information on non-dropout levels for possible additional base maps.
12	Violet/5	Coordinate Grid	Coordinate grid ticks and labels. Construction Staking Survey Control Data.
13	White/0	Ramp, Over & Under Crossing Alignment	Ramp, Over Crossing & Under Crossing alignment(s), includes station line and tick marks.
14	White/0	Ramp, Over & Under Crossing Annotation	Ramp, Over & Under Crossing annotation, includes Route designation, alignment bearing and station number.
15	White/0	Mainline Alignment	Mainline Alignment(s) for the main roadways, includes station line and tick marks.
16	White/0	Mainline Alignment Annotation	Mainline Alignment Annotation, includes Route designation, alignment bearing and station number.
17	White/0	Frontage Road Alignment	Frontage Road Alignment(s), includes station line and tick marks.
18	White/0	Frontage Road Alignment Annotation	Frontage Road Annotation, includes Route designation, alignment bearing and station number.
19	White/0	Undefined	
20	White/0	Pavement Edges	All lines necessary to depict the edges of pavement to be constructed, including traveled way, shoulders, road approaches and driveways.
21	White/0	Curbs, Gutters, Dikes and Drains	All drawing information required to depict curbs, gutters, dikes, overside & edge drains, includes annotation.
22	White/0	Miscellaneous Construction Features	All drawing information required to depict the construction shown on the layout plan, not specifically on other levels; e.g., new railings & barriers, crash cushions, sidewalks, bridge structures, miscellaneous paved areas.
23	White/0	Layout Notes	All notes, dimensions, and labeling required to describe the construction shown on the layout plan sheets, (except annotation specifically included on other levels) includes related lines and symbols such as leader lines, arrows, arrowheads, curve table, and legend.
24	Red/3	Obliteration and AC Resurfacing	All drawing information required to depict planing, grinding, obliterating and resurfacing of roadways.
25	Red/3	Temporary Road Connections and Alignments	All drawing information required to describe temporary road connections alignments, includes station line, tick marks and annotation. Also alignments for Railroad, Bike Paths, Creeks & Pedestrian Paths.
26	White/0	Undefined	
27	White/0	Undefined	
28	White/0	Undefined	
29	Brown/7	Existing Irrigation	All drawing information required to describe existing irrigation facilities, includes annotation.
30	Red/3	Cut & Fill Data	All drawing data required to describe the top of cut or toe of slope, includes annotation.

LEVEL	COLOR/	TITLE	DESCRIPTION/CONTENT
NO.	NAME & NUMBER		
31	Orange/6	Existing Right of Way Boundaries	All drawing information required to describe property lines, township lines, section lines, existing Right of Way lines, existing easement lines.
32	Orange/6	New Right of Way Lines and Fences	All drawing information required to describe proposed Right of Way lines, easement lines, rights of entry, controlled access, fences and ESA boundaries and fences – (if too cluttered, then put on undefined level).
33	Orange/6	Right of Way Text	All Text and Annotation that describes new and existing Right of Way on levels 31 and 32.
34	Orange/6	Temporary Water Pollution Control	All drawing information required to describe Temporary Water Pollution Control, includes annotation.
35	Orange/6	Permanent Erosion Control	All drawing information required to describe Permanent Erosion Control, includes annotation.
36	Blue/1	Drainage	All drawing information required to describe drainage facilities to be constructed, including pipes, box culverts, headwalls, manholes, surfaced & unsurfaced ditches, ABM gutters and drains. Also includes irrigation facilities, except those included on Levels 29 or 50.
37	Blue/1	Drainage Annotation	All Annotation that describes drainage facilities.
38	Violet/5	Sanitary Sewer	All drawing information required to describe sanitary sewer facilities to be constructed, including manholes and sewer lines.
39	Violet/5	Sanitary Sewer Annotation	All Annotation that describes sanitary sewer facilities.
40	Yellow/4 (Note 1)	New Utilities	All drawing information required to describe utility relocation work above and below ground, includes annotation. (See Note 1 for chosen Caltrans colors associated with a particular utility).
41	Violet/5	Contour Grading	Proposed grading contours, slope lines, bench lines, includes annotation.
42	White/0	Pavement Elevations	Elevation of pavement, shoulders, curbs, and gutters.
43	Red/3	Pavement Markers and Striping	All drawing information required to describe pavement markers, striping and markings.
44	Red/3	Pavement Markers and Striping Annotation	All annotation that describes pavement markers, striping and markings.
45	Red/3	Signing	All drawing information required to describe sign installations, guide markers, etc., includes annotation.
46	Red/3	Construction Area Signing	All drawing information required to describe Construction Area signing, including tables, details and annotation.
47	White/0 (Note 2)	Electrical	All drawing information required to describe signal and lighting installations.
48	Yellow/4	Electrical Annotation	All annotation that describes signal and lighting installations.

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
49	Green/2	Planting and Landscaping	All drawing information required to describe highway planting, landscaping, erosion control, etc., includes annotation.
50	Blue/1	New Irrigation	All drawing information required to describe new irrigation facilities for highway planting and landscaping (shown on Level 49), includes annotation. (The construction of other irrigation facilities is to be included on Level 36.)
51	Red/3	Stage 1 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 4, Stage 7, etc., if necessary.
52	Red/3	Stage 1 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 4, Stage 7, etc., if necessary.
53	Red/3	Stage 2 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 5, Stage 8, etc., if necessary.
54	Red/3	Stage 2 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 5, Stage 8, etc., if necessary.
55	Red/3	Stage 3 Construction and Temporary Traffic Facilities	All drawing information required to describe detours, sequences of construction, temporary barriers, temporary drainage requirements, etc. This level also accommodates Stage 6, Stage 9, etc., if necessary.
56	Red/3	Stage 3 Construction and Temporary Traffic Facilities Annotation	All annotation that describes detours and sequences of construction. This level also accommodates annotation for Stage 6, Stage 9, etc., if necessary.
57	White/0	Undefined	
58	White/0	Sound Wall and Retaining Wall	All drawing information required to depict the construction of Sound Walls and Retaining Walls, includes the plan and elevation views.
59	White/0	Sound Wall and Retaining Wall Annotation	All annotation that describes sound walls and retaining walls, includes curve table for layout lines of walls.
60	White/0	Non-geographical Drawing Data	All drawing information that is non-geographical, such as, details, sectional views, cross sections, profiles, quantities and strip maps. Plan sheets that typically place elements on this level include: Title sheet, Typical Cross Sections, Key Map, Profiles, Superelevation Diagrams, Construction Details and Summary of Quantities.

LEVEL NO.	COLOR/ NAME & NUMBER	TITLE	DESCRIPTION/CONTENT
61	Yellow/4	Headquarter Changes	All final plan revisions performed by HQ Office Engineer after PS&E Submittal and before Advertising and Award.
62	Red/3	As-Built Changes	Changes made during construction that need to be shown on the signed original plans. Revisions are depicted by lining out the original information (do not obscure) and placing the new information.
63	White/0 & Red/3 (Note 3)	Engineer's Signature	Project Engineer's signature. Identification stamps for electronic As-Awarded plans and electronic As-Built plans.

### C. Exceptions or flexibility from the Caltrans Standard Leveling Convention

The Caltrans Standard Leveling Convention for pre-V8 MicroStation files should not be changed. However, there are times when an exception (or some flexibility) may expedite the handling of a project to achieve the desired intent. Utilizing the undefined levels will handle most of the situations not defined by the standard leveling convention. When using undefined levels, communicate to others what was done in order to eliminate the loss of efficiency and productivity.

Example: For pre-V8 MicroStation design files existing utilities belong on level 5, color orange/6. Level 5 is a dropout level, which changes the weight of the lines representing the utilities to a zero weight and changes the solid line to a dotted line. In the past, some Contractors and Resident Engineers could not clearly see the utility line depicted on the Contract Plans, thus creating confusion and a possible source of conflict.

> One way to handle the situation is to move the utility information to an undefined level (which does not dropout). Thus the lines representing the utilities will be more visible on the Contract Plans. If the existing utilities are placed on a non-dropout level, 2 features/attributes have been added to help distinguish existing from proposed. The symbology for existing utilities will have a lowercase letter while proposed utilities will have an uppercase letter. Existing utilities will be shown as a thinner line while proposed utilities will be shown as a thicker line. The difference in width is the important point in distinguishing between existing and proposed. The suggested difference in line weight (wt) is wt = 1 for existing and wt = 3 for proposed. On a crowded or cluttered plan sheet, another suggestion would be to use line weight wt = 0for existing and wt = 2 for proposed.

In a full V8 MicroStation design file, Levels 812 through 849 has been set aside for all utilities (existing and new) shown in a Caltrans project. The only information on each of these levels is a specific Caltrans custom line style (see Appendix A9 of this manual for the specific line style assigned to each level). The existing utilities are not dropped out, so the symbology that distinguishes the existing from new utilities (as stated in the previous paragraph) is very important to adhere to.

- Note 1: Colors have been assigned to various utilities for 2 reasons:
  - 1. To easily distinguish between the various utilities when viewing the design files in the monitor.
  - 2. To assist in the future ability to plot utility verification maps in color. The color yellow is not used because it is difficult to see when plotted.

(See cell "<u>AAUTIL</u>" in the Caltrans English Cell Library for the assigned colors. Caltrans custom line styles depicting utilities have been defaulted to these assigned colors).

Note 2: Traffic Electrical has only 1 level (level 47) to place design information. To assist the CADD operator in distinguishing between the various electrical components, cells have been created in various colors, grouped by type of electrical components or symbols. The color scheme is listed below.

White =	Notes and Symbols
Yellow =	Lighting
Green =	Signals
Red =	Conduit and Riser
Violet =	Other Electrical Components

Note 3: Level 63 is now reserved for the Engineer's Signature. The color white/0 is for the Engineer's signature. The color red/3 is for the "As-Awarded" cell (asawrd) created to be used "in lieu" of the Engineer's Signature when the design file (dgn) is set to the Resident Engineer to assist with potential CCOs during the construction phase of the project.

### D. <u>Structures Design Leveling Convention</u>

1. General Content of Structures Design Levels is as follows:

#### <u> Pre-V8</u>

Level(s)	Content	
Level 1	Control Data	
Levels 2 - 8	Pen table drop out code to be used for	
	elements of existing features	
Levels 10	Sheet Formats & Seal Information	
Level 12	Dimensions	
Levels 13, 16 - 19	Bar Reinforcement	
Levels 14 & 15	Notes	
Levels 20 - 25	Elements made of structural steel	
Levels 30 - 35	Elements made of wood	
Levels 36 & 37	Contours	
Levels 40 - 50	Elements made of concrete	
Level 51	Elements made of concrete masonry	
Levels 52 & 53	Bridge Data	
Levels 54 – 58	Topo, Original Ground & Survey Control	
Level 59	Hydrology Data	
Level 60	UBC Code	
Level 61	Headquarter Changes	
Level 62	As-Built Changes	
Level 63	Engineer's Signature	

Reassigned and expanded levels to be used in Structures Design projects are as follows:

#### <u>Full V8</u>

Level(s)	Content	
Level 201	Control Data	
Levels 202 - 208	Pen table drop out code to be used for	
	elements of existing features	
Levels 210	Sheet Formats & Seal Information	
Level 212	Dimensions	
Levels 213, 216 - 219	Bar Reinforcement	
Levels 214 & 215	Notes	
Levels 220 - 225	Elements made of structural steel	
Levels 230 - 235	Elements made of wood	
Levels 236 & 237	Contours	

Level(s)	Content
Levels 240 - 250	Elements made of concrete
Level 251	Elements made of concrete masonry
Levels 252 & 253	Bridge Data
Levels 254 – 258	Topo, Original Ground & Survey Control
Level 259	Hydrology Data
Level 260	UBC Code
Level 261	Headquarter Changes
Level 262	As-Built Changes
Level 263	Engineer's Signature
Levels 264 - 269	No_Plot
Level 270	Plot Shape for Iplot (does not plot)
Levels 271 - 300	Undefined

- Note 1: There were a few levels that were named "<u>### Not Assigned</u>" in the Caltrans DGNLIB that actually were assigned (defined) per the Standards Chart in the Structures seed files. Those levels are as follows:
  - Levels 246 though 250 are for Concrete Level 253 is for Bridge Level 254 is for Topo Data Level 255 is for Topo Level 256 is for Topo Data for Coutours Level 258 is for Survey Control Data Level 259 is for Hydrology Data Level 260 is for UBC Code

Use the "<u>### Not Assigned</u>" levels as they are defined above or in the Structures seed files, even though the actual name of the level does not reflect the purpose of the level.

Note 2: The "<u>Undefined</u>" levels 271 though 300 were created as place markers so they would not be available for MicroStation to randomly place information on a level slot number within the range of the Caltrans defined levels. Caltrans Structures Design does not use the undefined levels at this time. Anyone, Caltrans or Consultants, desiring to use the Structures Design undefined levels should first contact the editor of this manual and explain the reason so that need might be accommodated in the future by all users.

### 2. Summary of Structures Levels is as follows: <u>Pre-V8 and Full V8</u>

Levels	Content
1 or 201	Control (Includes Center Line, Station
	Line)
2 or 202	Existing Features for structural steel
	elements
3 or 203	Existing Features for wood elements
4 or 204	Existing Features for concrete elements
5 or 205	Existing Features for concrete masonry
	elements
6 or 206	Existing Features
7 or 207	Existing Features
8 or 208	Existing Features
9 or 209	Reserved for District use
10 or 210	Sheet Formats & Seal Information
11 or 211	Undefined
12 or 212	Dimensioning (Includes dimension lines,
	witness lines, dimension text, arrow
	heads & reinforcement leaders)
13 or 213	Bar Reinforcement
14 or 214	Detailing Information (Includes text,
	detail notes & titles)
15 or 215	Design Notes
16 or 216	Bar Reinforcement
17 or 217	Bar Reinforcement
18 or 218	Bar Reinforcement
19 or 219	Bar Reinforcement
20 or 220	Structural Steel
21 or 221	Structural Steel
22 or 222	Structural Steel
23 or 223	Structural Steel
24 or 224	Structural Steel
25 or 225	Structural Steel
26 or 226	Undefined
27 or 227	Undefined
28 or 228	Undefined
29 or 229	Undefined
30 or 230	Wood
31 or 231	Wood
32 or 232	Wood
33 or 233	Wood
34 or 234	Wood

Levels	Content
35 or 235	Wood
36 or 236	Minor Contours
37 or 237	Major Contours
38 or 238	Undefined
39 or 239	Undefined
40 or 240	Concrete
41 or 241	Concrete
42 or 242	Concrete
43 or 243	Concrete
44 or 244	Concrete
45 or 245	Concrete
46 or 246	Concrete
47 or 247	Concrete
48 or 248	Concrete
49 or 249	Concrete
50 or 250	Concrete
51 or 251	Concrete (Masonry)
52 or 252	Bridge Data
53 or 253	Bridge
54 or 254	Topo Data
55 or 255	Торо
56 or 256	Topo Data for Contours
57 or 257	Original Ground, batch plotting points
58 or 258	Survey Control Data
59 or 259	Hydrology Data
60 or 260	UBC Code
61 or 261	Headquarter Changes
62 or 262	As-Built Changes
63 or 263	Engineer's Signature

Summary of additional Levels for Structures Design is as follows: <u>Full V8</u>

Level(s)	Content
264 – 269	No_Plot
270	Plot Shape for Iplot (does not plot)
271 - 300	Undefined

3. The following table identifies each level, its associated color and the specific information belonging on each level for a Structures Design project.

### Pre-V8 and Full V8

The Level Number is shown twice, once for pre-V8 and a second time for full V8. The color numbers remain the same as it was for pre-V8 whether using level numbers for pre-V8 or full V8.

LEVEL	COLOR NAME	TITLE	DESCRIPTION/CONTENT
NO.	AND NUMBER		
1/201	Blue/1	Control	Control information (e.g. center line, station line)
2/202	Purple/2	Existing	Drop out, existing structural steel elements
3/203	Green/3	Existing	Drop out, existing wood elements
4/204	Orange/4	Existing	Drop out, existing concrete elements
5/205	Light Slate Blue/5	Existing	Drop out, existing concrete masonry elements
6/206	Med Spring Green/6	Existing	Drop out, existing features
7/207	Pink/7	Existing	Drop out, existing features
8/208	Cyan/8	Existing	Drop out, existing features
9/209	Undefined		Drop out, reserved for District Use
10/210	White/10	Sheet Formats	Standard Sheet with border, trim lines, registration
			seal, signature blocks, District-County-Kilometer
			Post, etc.
11/211	Undefined		
12/212	Green/12	Dimensioning	Dimension lines, witness lines, dimension text,
			arrow heads & reinforcement leaders
13/213	Red/13	Bar	Bar Reinforcement Symbols (excluding
		Reinforcement	reinforcing text)
14/214	Yellow/14	Detailing	Text, detail notes and titles
		Information	
15/215	Thistle/15	Design Notes	Design Notes
16/216	Hot Pink/16	Bar	Bar Reinforcement Symbols
		Reinforcement	
17/217	Cyan/17	Bar	Bar Reinforcement Symbols
		Reinforcement	
18/218	Honeydew/18	Bar	Bar Reinforcement Symbols
		Reinforcement	
19/219	Light Blue/19	Bar	Bar Reinforcement Symbols
		Reinforcement	

LEVEL	COLOR NAME	TITLE	DESCRIPTION/CONTENT
NO.	AND NUMBER		
20/220	Aquamarine/20	Structural Steel	Structural Steel (plates, beams & misc. steel)
21/221	Cornflower Blue/21	Structural Steel	Structural Steel (plates, beams & misc. steel)
22/222	Orange/22	Structural Steel	Structural Steel (plates, beams & misc. steel)
23/223	Yellow/23	Structural Steel	Structural Steel (plates, beams & misc. steel)
24/224	Tan/24	Structural Steel	Structural Steel (plates, beams & misc. steel)
25225	Light Gray/25	Structural Steel	Structural Steel (plates, beams & misc. steel)
26/226	Undefined		
27/227	Undefined		
28/228	Undefined		
29/229	Undefined		
30230	Burleywood/30	Wood	Wood
31/231	Peru/31	Wood	Wood
32/232	Saddle Brown/32	Wood	Wood
33/233	Brown/33	Wood	Wood
34/234	Dark Goldenrod/34	Wood	Wood
35/235	Chocolate/35	Wood	Wood
36/236	Coral/36	Contours	Minor Contours
37/237	Magenta/37	Contours	Major Contours
38/238	Undefined		
39/239	Undefined		
40/240	White/40	Concrete	Concrete
41/241	Steel Blue/41	Concrete	Concrete
42/242	Cadet Blue/42	Concrete	Concrete
43/243	Med Violet Red/43	Concrete	Concrete
44/244	Lt. Pink/44	Concrete	Concrete
45/245	Dark Orange/45	Concrete	Concrete
46/246	Azure/46	Concrete	Concrete
47/247	Pale Green/47	Concrete	Concrete
48/248	Dark Sea Green/48	Concrete	Concrete
49/249	Khaki/49	Concrete	Concrete
50/250	Light Coral/50	Concrete	Concrete
51/251	Deep Sky Blue/51	Concrete Masonry	Concrete (Masonry)
52/252	Salmon/52	Bridge	Bridge Data
53/253	Dark Khaki/53	Bridge	Bridge
54/254	Peach Puff/54	Торо	Topo Data
55/255	Med Sea Green/55	Торо	Торо
56/256	Firebrick/56	Торо	Topo Data for Contours
57/257	Dodger Blue/57	Original Ground	Original Ground, Batch Plotting Points (circles)
58/258	Dark Orange/58	Survey Control	Survey Control Data
59/259	Pale Turquoise/59	Hydrology	Hydrology Data
60/260	White/60	UBC Code	UBC code information or level map.
61/261	Yellow/61	Headquarters	Final plan revisions performed by ESC- OE
		Changes	Drafting Services prior to reproduction.
62/262	Red/62	As-Built Changes	Changes made during construction. Revisions
			are shown by lining out the original information
			and then placing the as-built information.
63/263	White/63	Engineer's	Project Engineer's signature.
	(Red for Cells)	Signature	

#### E. Right of Way (R/W) Mapping Products Leveling Convention

The R/W Mapping leveling conventions are to be used for R/W Mapping Products only. These are <u>not intended</u> for Final Design contract plans. If R/W boundaries & annotation are delivered to Design in a pre-V8 MicroStation design file, the contract plans leveling convention for pre-V8 MicroStation design files must be adhered to (e.g., Existing R/W, Easement, and Property Boundaries reside on Level 31; New R/W and Easement Boundaries reside on Level 32; and the Text & Annotation describing data on Levels 31 & 32 reside on Level 33).

If R/W boundaries & annotation are delivered to Design in a full V8 MicroStation design file, the leveling convention for full V8 MicroStation design files must be adhered to (e.g., Levels 128 through 137).

Pre-V8

Level(s)	Content
Level 1	Control Data
Levels 2 - 8	Basic topographic map data
Levels 9 - 11	Sheet formats
Levels 13 – 18	Alignments
Levels 19 - 27	Parcel Coloring
Levels 28 – 37, 43 – 46 *	R/W Data
Levels 38 – 42 *	Landnet Data
Levels 47 – 49 *	Point data
Levels 50 – 52 *	Project Surveyor Data
Levels 53 & 54 *	Clipping & Plotting Boundaries
Levels 12, 55 – 63 **	Undefined

# 1. General Content of R/W Mapping Levels is as follows:

\* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)

\*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)

Reassigned and expanded levels to be used in R/W Mapping Products are as follows:

#### <u>Full V8</u>

Level(s)	Content
Levels 101 - 108	Unassigned, still using pre-V8 levels (1 through 8) for control and topographic map data
Levels 109 - 111	Sheet formats
Level 112 **	Undefined

Level(s)	Content
Levels 113 – 118	Unassigned, still using pre-V8 levels
	(13 through 18) for alignments
Levels 119 - 127	Parcel Coloring
Levels 128 – 137 *	R/W Data
Levels 138 – 142 *	Landnet Data
Levels 143 – 146 *	R/W Data
Levels 147 – 149 *	Point data
Levels 150 – 152 *	Project Surveyor Data
Levels 153 & 154 *	Clipping & Plotting Boundaries
Levels 155 – 163 **	Undefined
Levels 164 – 169	No_Plot
Level 170	Plot Shape for Iplot (does not plot)
Levels 171 – 200 **	Undefined

2. Summary of R/W Mapping Levels is as follows:

## Pre-V8 and Full V8

Level(s)	Content
1	Photogrammetric Mapping Control
2	Existing Man-Made Features
3	Existing Roadway Features
4	Existing Vegetation and Natural Features
5	Existing Utilities and Utility Facilities
6	Existing Hydrographic Features
7	Relief Features - Contours
8	Spot Elevations and Contour Annotations
9 & 109	Appraisal Map Sheet Information
10 &110	General Sheet Formats
11 & 111	Record Map Sheet Information
12 & 112	Undefined **
13	Ramp, Over and Under Crossing Alignment Data
14	Ramp, Over and Under Crossing Annotation
15	Mainline Alignment Data
16	Mainline Alignment Annotation
17	Frontage Road Alignment Data
18	Frontage Road Alignment Annotation
19 & 119	Parcel Coloring
20 & 120	Parcel Coloring
21 & 121	Parcel Coloring
22 & 122	Parcel Coloring
23 & 123	Parcel Coloring
24 & 124	Parcel Coloring

Level(s)	Content
25 & 125	Parcel Coloring
26 & 126	Parcel Coloring
27 & 127	Parcel Coloring
28 & 128	Existing Easement Boundaries *
29 & 129	Existing Easement Annotation *
30 & 130	Existing R/W Annotation *
31 & 131	Existing R/W Boundaries *
32 & 132	New R/W Boundaries *
33 & 133	New R/W Annotation *
34 & 134	New Easement Boundaries *
35 & 135	New Easement Annotation *
36 & 136	Temporary Easement Boundaries *
37 & 137	Temporary Easement Annotation *
38 & 138	Minor Landnet Boundaries *
39 & 139	Minor Landnet Annotation *
40 & 140	Major Landnet Boundaries *
41 & 141	Major Landnet Annotation *
42 & 142	Political & Municipal Boundaries *
43 & 143	JUA/CCUA/Freeway Lease Boundaries & Annotation *
44 & 144	Relinquishment *
45 & 145	Directors Deed *
46 & 146	Vacation/Abandonment *
47 & 147	Landnet Point Data *
48 & 148	R/W Point Data *
49 & 149	Landnet & R/W Plotted Point Data *
50 & 150	Retracement Data *
51 & 151	Retracement Annotation *
52 & 152	Retracement Comments *
53 & 153	Clip Boundaries *
54 & 154	Plot Boundaries *
55 & 155	Undefined **
56 & 156	Undefined **
57 & 157	Undefined **
58 & 158	Undefined **
59 & 159	Undefined **
60 & 160	Undefined **
61 & 161	Undefined **
62 & 162	Undefined **
63 & 163	Undefined **

\* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)

\*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)

Expanded levels to be used in R/W Mapping Products are as follows:

## <u>Full V8</u>

Level(s)	Content	
164 - 169	No_Plot	
170	Plot Shape for Iplot (does not plot)	
171 – 200 **		Undefined

3. The following table identifies each level, the associated level name, and the specific information belonging on each level for R/W Mapping projects for both pre-V8 and full V8 projects. Levels with only one number are for both pre-V8 and full V8 projects and the levels <u>were not</u> reassigned. Level names are exactly as identified in MicroStation for pre-V8 (including the level number). Level names for full V8 will now reflect the new level number instead of the pre-V8 level number (see Appendix A9). Note: level naming has a character length restriction.

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
1	1 Control	Control	All photo control data, and topographic map survey information. Also includes district-added control information.
2	2 Exist Man Made	Existing Man- Made Features	All existing man-made features not otherwise included in any other level, includes all buildings.
3	3 Exist Roadway	Existing Roadway Features	Edges of existing surfaced areas accessible to vehicles, bicycles or pedestrians within the Existing Roadway limits. See section 2.4_B_3 (page 2.4-4) for a complete description of this level.
4	4 Exist Veg_Nat	Existing Vegetation and Natural Features	All natural vegetation, existing highway plantings, orchards, vineyards, marshes, and miscellaneous natural features such as rock outcrops, slides, etc.
5	5 Exist Utilitie	Existing Utilities and Utility Features	All existing underground and aboveground utility-type facilities (including signals, power and telephone poles and transmission poles for utility, railroad, highway, street, and private improvements.) All existing drainage structures including culverts and headwalls, excluding substantial structures such as buildings. Also, includes district-added underground utilities.
6	6 Exist Hydro	Existing Hydro- graphic Features	All lakes, rivers, streams, natural channels, swamps, and standing water.
7	7 Contours	Relief Features Contour Lines Only	Contours (lines only) of the original terrain.
8	8 Spot Elev	Spot Elevations and Contour Elevation Annotation	Spot elevations and contour elevation annotation.
9/109	9 Appraisal Map	Appraisal Map	Data specific to Appraisal Map sheets.
10/110	10 Sheet Format	Sheet Format	Standard Border Sheets, (22" x 34" when plotted) with trim lines, District-County-Route-Post Mile block, plan sheet name, vestee block, geometry tables, North arrow, details, match lines & joining sheet data. (Information associated with the border).
11/111	11 Record Map	Kecora Map	Data specific to Record Map sheets.

### Pre-V8 and Full V8

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
12/112	12 Undefined	Undefined	** (See Note 2)
13	13 Ramp Align	Ramp, Over & Under Crossing Alignment	Ramp, Over Crossing & Under Crossing Alignment(s), includes station line and tick marks.
14	14 Ramp Anno	Ramp, Over & Under Crossing Annotation	Ramp, Over & Under Crossing Annotation, includes Route designation, alignment bearing and station number.
15	15 Main Align	Mainline Alignment	Mainline Alignment(s) for the main roadways, includes station line and tick marks.
16	16 Main Anno	Mainline Alignment Annotation	Mainline Alignment Annotation, includes Route designation, alignment bearing and station number.
17	17 Front Align	Frontage Road Alignment	Frontage Road Alignment(s), includes station line and tick marks.
18	18 Front Anno	Frontage Road Alignment Annotation	Frontage Road Annotation, includes Route designation, alignment bearing and station number.
19/119	19 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
20/120	20 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
21/121	21 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
22/122	22 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
23/123	23 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
24/124	24 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
25/125	25 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
26/126	26 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
27/127	27 Parcel Color	Parcel Coloring	Parcel Coloring line work and fill for Fee, Easement, and Remainder areas. Specific colors associated with parcel coloring (See Note 3) Optional reference file usage (See Note 4)
28/128 *	28 Exist Ease L	Existing Easement Boundaries	Existing Easement line work including easements, public roadway alignments, public utilities, and other title encumbrances.
29/129 *	29 Exist Ease A	Existing Easement Annotation	All Annotation that describes Existing Easements.
30/130 *	30 Exist RW A	Existing R/W Annotation	All Annotation that describes Existing & previously existing Rights of Way.
31/131 *	31 Exist RW L	Existing R/W Boundaries	Existing & previously existing R/W line work.
32/132 *	32 New RW L	New R/W Boundaries	New R/W line work.
33/133 *	33 New RW A	New R/W Annotation	All Annotation that describes New Rights of Way.
34/134 *	34 New Ease L	New Easement Boundaries	New Easement line work – excluding temporary easements.
35/135 *	35 New Ease A	New Easement Annotation	All Annotation that describes New Easement Annotation.
36/136 *	36 Temp Ease L	Temporary Easement Boundaries	New Temporary Easements Line work – Construction, Drainage, General, & Slope.
37/137 *	37 Temp Ease A	Temporary Easement Annotation	All Annotation that describes New Temporary Easements.
38/138 *	38 Minor Land L	Minor Landnet Boundaries	Minor Landnet Line work – Parcel ownership, Lots, Subsection Lines (1/16 & below), USPLS Gov't Lots.
39/139 *	39 Minor Land A	Minor Landnet Annotation	All Annotation that describes Minor Landnet.
40/140 *	40 Major Land L	Major Landnet Boundaries	Major Landnet Line work – Township & Range Lines, Ranchos, Section & ¼ Section Lines, USPLS Gov't Tracts, Subdivision Boundaries.
41/141 *	41 Major Land A	Major Landnet Annotation	All Annotation that describes Major Landnet.
42/142 *	42 PBndy FedPart	Political & Municipal Boundaries	All drawing information required to describe Political Boundaries, City & County limits, Municipal boundaries, Federal Boundaries, and Federal Participation, includes annotation.
43/143 *	43 JUA_CCUA	JUA/CCUA & Freeway Lease Areas	All drawing information required to describe JUA & CCUA, Freeway Lease Area, and Supplemental Reference Areas, includes annotation.

LEVEL NO.	LEVEL NAME	TITLE	DESCRIPTION/CONTENT
44/144 *	44 Relinquishmt	Relinquishment	All drawing information required to identify areas of Relinquishment, includes annotation.
45/145 *	45 DirectorsDeed	Directors Deed	All drawing information required to identify areas in Directors Deeds, includes annotation.
46/146 *	46 Vac_Abandon	Vacation / Abandonment	All drawing information required to identify areas of Vacation/Abandonment, includes annotation.
47/147 *	47 LandnetPts- NP	Landnet Point Data	Non-plotted Point data – Landnet Point data that will not be shown on R/W maps including name, description, coordinates, leaders, and cells.
48/148 *	48 RW Pts - NP	R/W Point Data	Non-plotted Point data – R/W Point data that will not be shown on R/W maps including name, description, coordinates, leaders, and cells.
49/149 *	49 Points-Plot	Plotted Point Data	Plotted Point data - Landnet & R/W Point data to be displayed on R/W maps including name, description, coordinates, leaders, and cells.
50/150 *	50 Retracement L	Retracement Data	Project Surveyors Retracement Line work.
51/151 *	51 Retracement A	Retracement Annotation	Project Surveyors Retracement Annotation.
52/152 *	52 Retracement C	Retracement Comments	Project Surveyors Retracement Comments.
53/153 *	53 Clip Boundary	Clip Boundaries	Reference file clip boundaries and clip masks.
54/154 *	54 Plot Boundary	Plot Boundaries	Boundary along sheet border used for fenceless IPLOT.
55/155	55 Undefined	Undefined	** (See Note 2)
56/156	56 Undefined	Undefined	** (See Note 2)
57/157	57 Undefined	Undefined	** (See Note 2)
58/158	58 Undefined	Undefined	** (See Note 2)
59/159	59 Undefined	Undefined	** (See Note 2)
60/160	60 Undefined	Undefined	** (See Note 2)
61/161	61 Undefined	Undefined	** (See Note 2)
62/162	62 Undefined	Undefined	** (See Note 2)
63/163	63 Undefined	Undefined	** (See Note 2)

\* Flexibility from the R/W Mapping Leveling Convention. (See Note 1)

\*\* Undefined levels may be used for information that has not been assigned to a specific level. (See Note 2)

- 4. Exceptions or flexibility from the R/W Mapping Leveling Convention
  - Note 1: The R/W Mapping Standard Leveling Conventions were developed to provide users with a means of grouping similar data types while also separating line work from text. Many of the levels were assigned as a convenience for those users who desire to work across more levels. Not all of the data needs to be separated on all of the defined levels. However, some of the R/W Mapping Standard Leveling Conventions should not be deviated from.

The following table identifies those R/W Mapping Level Conventions that **must** be adhered to in both pre-V8 and full V8 MicroStation design files:

Level 1	Control Data as described in Sections E 2 & 3
Levels 2 - 8	Basic topographic map data as described in Sections E
	2 & 3
Levels 9–11/109-111	Sheet formats as described in Sections E 2 & 3
Levels 13 – 18	Alignments as described in Sections E 2 & 3
Levels 19–27/119-127	Parcel Coloring as described in Sections E 2 & 3
Level 31 or 131	Existing R/W, Easement, and Property Line Boundaries
Level 32 or 132	New R/W and Easement Boundaries
Level 33 or 133	All Text & Annotation describing data on Levels 31 & 32
	or Levels 131 & 132
Level 38 or 138	All Landnet Boundaries
Level 39 or 139	Text & Annotation describing all Landnet
Level 47 or 147	All non-plotted Point Data
Level 49 or 149	All plotted Point Data

- Note 2: There are times when an exception (or some flexibility) may expedite the handling of a project to achieve the desired intent. Utilizing the undefined levels will handle most of the situations not defined by the standard leveling convention. When using undefined levels, communicate to others what was done in order to eliminate the loss of efficiency and productivity.
- Note 3: Specific colors in the Caltrans color table (ctcolor.tbl), 224, 226 231 & 233 239, have been designed and **must** be used for the parcel coloring. These colors were chosen because the Easement & Remainder colored lines are clearly visible while the filled Fee areas do not obscure the overlying topography and data. These colors should also provide enough variation to allow colorblind users of the maps to be able to distinguish between adjoining parcels.

Note 4: The user may work with a separate referenced pre-V8 DGN file for the parcel coloring. If this is the case, every level (1 - 63)may be used in this "Parcel Coloring" DGN file and the coloring for each parcel can reside on a separate level.

In a full version 8 (V8) MicroStation design file, if the coloring for each parcel is to reside on a separate level within one DGN file (model), then one option is for the parcel coloring to be placed on one of the new "Undefined" levels (171 through 200).

## **Roadway Levels**

<u>Name</u>	Number	Description
1 Control	1	(Includes Survey Monuments)
2 Exist Man Made	2	Exist Man-Made Features
3 Exist Rdwy	3	Exist Roadway Features
4 Exist Veg_Nat	4	Exist Veg & Natural Features
5 Exist Utils	5	Exist Utility Features
6 Exist Hydro	6	Exist Hydrographic Features
7 Contours	7	Relief Features / Contours
8 Spot Elev	8	Spot Elev / Contour Annotation
9 Profile Grid	9	Profile Grid
10 Sheet Format	10	(Includes North Arrow)
11 Undefined	11	
12 Coord Grid	12	Coordinate Grid
13 Ramp Align	13	Ramp Over & Undercrossing Align
14 Ramp Anno	14	Ramp Over & Undercrossing Anno
15 Main Align	15	Mainline Alignment Data
16 Main Anno	16	Mainline Annotation Data
17 Front Align	17	Frontage Rd Alignment Data
18 Front Anno	18	Frontage Rd Alignment Annotation
19 Undefined	19	
20 Pave Edges	20	Pavement Edges
21 Curb Gutter	21	Curbs Gutters & Dikes
22 Misc Cnst Det	22	Misc Construction Details
23 Layout Notes	23	Layout Notes
24 Oblit_ACRsurf	24	Obliteration & AC Resurfacing
25 Temp Rdwys	25	Temp Road Conection & Alignment
26 Undefined	26	
27 Undefined	27	
28 Undefined	28	
29 Irrigation-Ex	29	Irrigation (Existing)
30 Cut and Fill	30	Cut & Fill
31 RW (exist)	31	ROW_Easement & Ownership Lines
32 RW Line_Fence	32	Right of Way Lines & Fences
33 RW Text	33	ROW Annotation
34 WPC Temp	34	Temp WPC & BMP
35 Erosion Cntrl	35	Permanent Erosion Control
36 Drainage	36	Drainage
37 Drain Anno	37	Drainage Annotation
38 San Sewer	38	Sanitary Sewer
39 SanSewer Anno	39	Sanitary Sewer Anotation
40 New Utility	40	(Includes Annotation)
41 ContourGrade	41	Contour Grading
42 Pave Elev	42	Pavement Elevations
43 Pave Marker	43	Pavement Markers & Striping
44 PaveMark Anno	44	Pavement Markers & Striping Anno
45 Signing	45	Signing

<u>Name</u>	<u>Number</u>	<u>Description</u>
46 Const Signing	46	Construction Area Signing
47 Electrical	47	Electrical
48 Elect Anno	48	Electrical Annotation
49 Planting	49	Planting & Lanscaping
50 IrrigationNew	50	Irrigation (New)
51 Stage 1	51	Stage 1 Const & Temp Traffic
52 Stage 1 Anno	52	Stage 1 Const & Temp Traffic Anno
53 Stage 2	53	Stage 2 Const & Temp Traffic
54 Stage 2 Anno	54	Stage 2 Const & Temp Traffic Anno
55 Stage 3	55	Stage 3 Const &Temp Traffic
56 Stage 3 Anno	56	Stage 3 Const & Temp Traffic Anno
57 Undefined	57	
58 Soundwalls	58	Soundwalls
59 Sndwall Anno	59	Soundwall Annotation
60 Nongeo Data	60	Nongeographical Drawing Data
61 HQ Changes	61	Headquarters Changes
62 AsBuilt Chng	62	As-Built Changes
63 Seal and Sig	63	Engr Seal & Signature
Default	0	
64 No_Plot	64	Data does not plot
65 No_Plot	65	Data does not plot
66 No_Plot	66	Data does not plot
67 No_Plot	67	Data does not plot
68 No_Plot	68	Data does not plot
69 No_Plot	69	Data does not plot
70 Plot_Shape	70	Plot shape for IPlot - DOES NOT PLOT
71 Survey Misc Breaklines	71	Survey misc breaklines
72 Survey Lines Point Data	72	Survey lines point data
73 Survey Point Data	73	Survey point data
74 Survey Boundary	74	Survey boundary
75 Undefined	75	
76 Undefined	76	
	//	
78 Undefined	78	
79 Undefined	79	
	08	
	81	
82 Undefined	82	
	83	
	84 05	
	85	
	80	
	87	
	88	
	89	
90 Undefined	90	

<u>Name</u>	Number	<b>Description</b>
91 Undefined	91	
92 Undefined	92	
93 Undefined	93	
94 Undefined	94	
95 Undefined	95	
96 Undefined	96	
97 Undefined	97	
98 Undefined	98	
99 Undefined	99	
100 Undefined	100	

### **Right of Way Engineering Levels**

Name	<u>Number</u>	<u>Description</u>
101 Unassigned	101	
102 Unassigned	102	
103 Unassigned	103	
104 Unassigned	104	
105 Unassigned	105	
106 Unassigned	106	
107 Unassigned	107	
108 Unassigned	108	
109 Appraisal Map	109	Appraisal Map Sheet Data
110 Sheet Format	110	(Includes North Arrow)
111 Record Map	111	Record Map Sheet Data
112 Undefined	112	
113 Unassigned	113	
114 Unassigned	114	
115 Unassigned	115	
116 Unassigned	116	
117 Unassigned	117	
118 Unassigned	118	
119 Parcel Color	119	Parcel Color 19
120 Parcel Color	120	Parcel Color 20
121 Parcel Color	121	Parcel Color 21
122 Parcel Color	122	Parcel Color 22
123 Parcel Color	123	Parcel Color 23
124 Parcel Color	124	Parcel Color 24
125 Parcel Color	125	Parcel Color 25
126 Parcel Color	126	Parcel Color 26
127 Parcel Color	127	Parcel Color 27
128 Exist Ease L	128	Exist Easement Linework
129 Exist Ease A	129	Exist Easement Annotation
130 Exist RW A	130	Existing RW Annotation
131 Exist RW L	131	Existing RW Linework
132 New RW L	132	New RW Linework
133 New RW A	133	New RW Annotation
134 New Ease L	134	New Easement Linework
135 New Ease A	135	New Easement Annotation
136 Temp Ease L	136	Temporary Easement Linework
137 Temp Ease A	137	Temporary Easement Annotation
138 Minor Land L	138	Minor Landnet Linework
139 Minor Land A	139	Minor Landnet Annotation
140 Major Land L	140	Major Landnet Linework
141 Major Land A	141	Major Landnet Annotation
142 PBndy FedPart	142	Political Bndy Fed Participation
143 JUA_CCUA	143	JUA_CCUA Linework & Annotation
144 Relinquishmt	144	Relinquishment Linework & Anno
145 DirectorsDeed	145	Directors Deed Linework & Anno

<u>Name</u>	<u>Number</u>	Description
146 Vac_Abandon	146	Vacation_Abandonment Lines_Anno
147 LandnetPts-NP	147	Non-plotted Landnet Point Data
148 RW Pts - NP	148	Non-plotted RW Point Data
149 Points-Plot	149	Plotted Landnet & RW Point Data
150 Retracement L	150	Surveyors Retracement Linework
151 Retracement A	151	Surveyors Retracement Annotation
152 Retracement C	152	Surveyors Retracement Comments
153 Clip Boundary	153	Reference File Clip Boundaries
154 Plot Boundary	154	Sheet Border Plot Boundaries
155 Undefined	155	
156 Undefined	156	
157 Undefined	157	
158 Undefined	158	
159 Undefined	159	
160 Undefined	160	
161 Undefined	161	
162 Undefined	162	
163 Undefined	163	
164 No_Plot	164	Data does not plot
165 No_Plot	165	Data does not plot
166 No_Plot	166	Data does not plot
167 No_Plot	167	Data does not plot
168 No_Plot	168	Data does not plot
169 No_Plot	169	Data does not plot
170 Plot_Shape	170	Plot shape for IPlot - DOES NOT PLOT
171 Undefined	171	
172 Undefined	172	
173 Undefined	173	
174 Undefined	174	
175 Undefined	175	
176 Undefined	176	
177 Undefined	177	
178 Undefined	178	
179 Undefined	179	
180 Undefined	180	
181 Undefined	181	
182 Undefined	182	
183 Undefined	183	
184 Undefined	184	
185 Undefined	185	
186 Undefined	186	
187 Undefined	187	
188 Undefined	188	
189 Undefined	189	
190 Undefined	190	
191 Undefined	191	
<u>Name</u>	Number	<b>Description</b>
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192 Undefined	192	
193 Undefined	193	
194 Undefined	194	
195 Undefined	195	
196 Undefined	196	
197 Undefined	197	
198 Undefined	198	
199 Undefined	199	
200 Undefined	200	

#### **Structures Design Levels**

201 Center and Station Line201Center/Station Line202 Dropout202Drop Out203 Dropout204Drop Out204 Dropout205Drop Out205 Dropout206Drop Out206 Dropout207Drop Out207 Dropout208Drop Out208 Dropout209Reserved for Dist209 Reserved for Dist209Reserved for Dist.210 Border211Not Assigned211 Not Assigned211Not Assigned213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar218Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Not Assigned226Not Assigned226 Not Assigned227Not Assigned227 Not Assigned228Not Assigned230 Wood231Wood231 Wood233Existing Wood232 Wood234Existing Wood233 Existing Wood235Existing Wood234 Existing Wood236Minor Contours237 Major Contours236Minor Contours238 Not Assigned238Not Assi	<u>Name</u>	<u>Number</u>	<b>Description</b>
202 Dropout202Drop Out203 Dropout203Drop Out204 Dropout204Drop Out205 Dropout206Drop Out206 Dropout207Drop Out207 Dropout208Drop Out208 Dropout208Drop Out209 Reserved for Dist209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines213Rebar213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Structural Steel220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel225Existing Steel224 Existing Steel226Not Assigned225 Existing Steel226Not Assigned226 Not Assigned228Not Assigned229 Not Assigned230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood234Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours2	201 Center and Station Line	201	Center/Station Line
203 Dropout203Drop Out204 Dropout204Drop Out205 Dropout205Drop Out206 Dropout207Drop Out207 Dropout208Drop Out208 Dropout208Drop Out209 Reserved for Dist209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar218Rebar217 Rebar219Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel223Existing Steel223 Existing Steel226Not Assigned224 Existing Steel227Not Assigned229 Not Assigned228Not Assigned229 Not Assigned229Not Assigned231 Wood231Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239 </td <td>202 Dropout</td> <td>202</td> <td>Drop Out</td>	202 Dropout	202	Drop Out
204 Dropout204Drop Out205 Dropout205Drop Out206 Dropout206Drop Out207 Dropout208Drop Out208 Dropout208Drop Out209 Reserved for Dist209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar218Rebar217 Rebar219Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel226Not Assigned226 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned234 Existing Concrete244Existing Concrete244 Existing Concrete <td< td=""><td>203 Dropout</td><td>203</td><td>Drop Out</td></td<>	203 Dropout	203	Drop Out
205 Dropout205Drop Out206 Dropout207Drop Out207 Dropout208Drop Out208 Dropout209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Structural Steel220 Structural Steel220Structural Steel221 Structural Steel223Existing Steel222 Structural Steel224Existing Steel223 Existing Steel225Existing Steel224 Existing Steel226Not Assigned225 Not Assigned228Not Assigned226 Not Assigned228Not Assigned227 Not Assigned229Not Assigned228 Not Assigned230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Mior Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned23	204 Dropout	204	Drop Out
206Drop Out207Drop Out208Drop Out208Drop Out209Reserved for Dist.210Border211Not Assigned211Not Assigned212Leaders and Dim Lines213Rebar214Text and Titles214Text and Titles215Design Notes216Rebar217Rebar218Rebar217Rebar218Rebar219Rebar219Rebar219Rebar220Structural Steel221Structural Steel222Structural Steel223Existing Steel224Existing Steel225Existing Steel226Not Assigned227Not Assigned228Not Assigned229Not Assigned229Not Assigned231Wood231Wood232Wood233Existing Wood234Existing Wood235Existing Wood236Minor Contours237Major Contours238Not Assigned239Not Assigned234Existing Wood235Existing Wood236Minor Contours237Major Contours238Not Assigned239Not Assigned239Not Assigned239Not Assigned	205 Dropout	205	Drop Out
207 Dropout207Drop Out208 Dropout208Drop Out209 Reserved for Dist209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar210 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel223Existing Steel223 Existing Steel224Existing Steel224 Existing Steel225Existing Steel225 Existing Steel226Not Assigned229 Not Assigned229Not Assigned230 Wood231Wood231 Wood232Wood232 Existing Wood234233 Existing Wood234234 Existing Wood235235 Existing Wood236236 Minor Contours236237 Major Contours237238 Not Assigned239239 Not Assigned239234 Existing Wood234235 Existing Wood235236 Minor Contours237237 Major Contours236238 Not Assigned239239 Not A	206 Dropout	206	Drop Out
208 Dropout208Drop Out209 Reserved for Dist209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar210 Structural Steel220Structural Steel221 Structural Steel223Existing Steel222 Structural Steel224Existing Steel223 Existing Steel225Existing Steel225 Existing Steel226Not Assigned226 Not Assigned227Not Assigned227 Not Assigned228Not Assigned238 Not Assigned230Wood234 Existing Wood231Wood235 Existing Wood232Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned<	207 Dropout	207	Drop Out
209 Reserved for Dist.209Reserved for Dist.210 Border210Border211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel226Not Assigned226 Not Assigned226Not Assigned227 Not Assigned228Not Assigned228 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood234Existing Wood234 Existing Wood235Existing Wood235 Mot Assigned236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not A	208 Dropout	208	Drop Out
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211 Not Assigned211Not Assigned212 Leaders and Dim Lines212Leaders and Dim Lines213 Rebar213Rebar214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar210 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned227Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Existing Wood233Existing Wood233 Existing Wood234Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned234 Existing Concrete244Concrete244 Existing Concrete244Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	210 Border	210	Border
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214 Text and Titles214Text and Titles215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel225Existing Steel225 Existing Steel226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned230 Wood230Wood231 Wood231Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete244Existing Concret	213 Rebar	213	Rebar
215 Design Notes215Design Notes216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel225Existing Steel225 Existing Steel226Not Assigned226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned230 Wood230Wood231 Wood231Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours237Major Contours237 Major Contours238Not Assigned238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	214 Text and Titles	214	Text and Titles
216 Rebar216Rebar217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel226Not Assigned226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned229 Not Assigned228Not Assigned231 Wood231Wood233 Existing Wood232Wood234 Existing Wood233Existing Wood235 Existing Wood234Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours237Major Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete<	215 Design Notes	215	Design Notes
217 Rebar217Rebar218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned228Not Assigned229 Not Assigned229Not Assigned231 Wood231Wood233 Existing Wood232Wood234 Existing Wood233Existing Wood235 Existing Wood234Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours237Major Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete <td< td=""><td>216 Rebar</td><td>216</td><td>Rebar</td></td<>	216 Rebar	216	Rebar
218 Rebar218Rebar219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	217 Rebar	217	Rebar
219 Rebar219Rebar220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned244 Existing Concrete241Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	218 Rebar	218	Rebar
220 Structural Steel220Structural Steel221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood234 Existing Wood233Existing Wood235 Existing Wood234Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	219 Rebar	219	Rebar
221 Structural Steel221Structural Steel222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	220 Structural Steel	220	Structural Steel
222 Structural Steel222Structural Steel223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood234Existing Wood234 Existing Wood235Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	221 Structural Steel	221	Structural Steel
223 Existing Steel223Existing Steel224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	222 Structural Steel	222	Structural Steel
224 Existing Steel224Existing Steel225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	223 Existing Steel	223	Existing Steel
225 Existing Steel225Existing Steel226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete242Concrete243 Existing Concrete244Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	224 Existing Steel	224	Existing Steel
226 Not Assigned226Not Assigned227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	225 Existing Steel	225	Existing Steel
227 Not Assigned227Not Assigned228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	226 Not Assigned	226	Not Assigned
228 Not Assigned228Not Assigned229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	227 Not Assigned	227	Not Assigned
229 Not Assigned229Not Assigned230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	228 Not Assigned	228	Not Assigned
230 Wood230Wood231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned239Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	229 Not Assigned	229	Not Assigned
231 Wood231Wood232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	230 Wood	230	Wood
232 Wood232Wood233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	231 Wood	231	Wood
233 Existing Wood233Existing Wood234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	232 Wood	232	Wood
234 Existing Wood234Existing Wood235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	233 Existing Wood	233	Existing Wood
235 Existing Wood235Existing Wood236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	234 Existing Wood	234	Existing Wood
236 Minor Contours236Minor Contours237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	235 Existing Wood	235	Existing Wood
237 Major Contours237Major Contours238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	236 Minor Contours	236	Minor Contours
238 Not Assigned238Not Assigned239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	237 Major Contours	237	Major Contours
239 Not Assigned239Not Assigned240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	238 Not Assigned	238	Not Assigned
240 Concrete240Concrete241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	239 Not Assigned	239	Not Assigned
241 Concrete241Concrete242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	240 Concrete	240	Concrete
242 Concrete242Concrete243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	241 Concrete	241	Concrete
243 Existing Concrete243Existing Concrete244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	242 Concrete	242	Concrete
244 Existing Concrete244Existing Concrete245 Existing Concrete245Existing Concrete	243 Existing Concrete	243	Existing Concrete
245 Existing Concrete 245 Existing Concrete	244 Existing Concrete	244	Existing Concrete
-	245 Existing Concrete	245	Existing Concrete

Name	<u>Number</u>	Description
246 Not Assigned	246	Not Assigned
247 Not Assigned	247	Not Assigned
248 Not Assigned	248	Not Assigned
249 Not Assigned	249	Not Assigned
250 Not Assigned	250	Not Assigned
251 Masonry	251	Masonry
252 Bridge Data	252	Bridge Data
253 Not Assigned	253	Not Assigned
254 Not Assigned	254	Not Assigned
255 Not Assigned	255	Not Assigned
256 Not Assigned	256	Not Assigned
257 Ground Line	257	Ground Line
258 Not Assigned	258	Not Assigned
259 Not Assigned	259	Not Assigned
260 Not Assigned	260	Not Assigned
261 Reservered for OE	261	Reservered for OE
262 AS-BUILT CHANGES	262	AS-BUILT CHANGES
263 Engineers Seal Signature	263	Engineers Seal Signature
264 No_Plot	264	Data does not plot
265 No_Plot	265	Data does not plot
266 No_Plot	266	Data does not plot
267 No_Plot	267	Data does not plot
268 No_Plot	268	Data does not plot
269 No_Plot	269	Data does not plot
270 Plot_Shape	270	Plot shape for IPlot - DOES NOT PLOT
271 Undefined	271	
272 Undefined	272	
273 Undefined	273	
274 Undefined	274	
275 Undefined	275	
276 Undefined	276	
277 Undefined	277	
278 Undefined	278	
279 Undefined	279	
280 Undefined	280	
281 Undefined	281	
282 Undefined	282	
283 Undefined	283	
284 Undefined	284	
285 Undefined	285	
286 Undefined	286	
287 Undefined	287	
288 Undefined	288	
289 Undefined	289	
290 Undefined	290	
291 Undefined	291	

<u>Name</u>	Number Description
292 Undefined	292
293 Undefined	293
294 Undefined	294
295 Undefined	295
296 Undefined	296
297 Undefined	297
298 Undefined	298
299 Undefined	299
300 Undefined	300

#### **Structures - Architectural Levels**

<u>Name</u>	Number	<u>Description</u>
301 Roadway	301	Roadway and Stationing
302 Dropout	302	Dropout Level
303 Dropout	303	Dropout Level
304 Dropout	304	Dropout Level
305 Dropout	305	Dropout Level
306 Dropout	306	Dropout Level
307 Dropout	307	Dropout Level
308 Dropout	308	Dropout Level
309 Dropout	309	Dropout Level
310 Sheet Border	310	Sheet Border information
311 Dropout	311	Dropout Level
312 Dimensions	312	Dimensioning
313 Text Misc	313	Miscellaneous Text
314 Text Std	314	Standard Text
315 Text Title	315	Title Block Text
316 Text No-Plot	316	Non-plotting Text
317 Ground 1	317	Ground
318 Ground 2	318	Ground
319 Concrete 1	319	Concrete
320 Concrete 2	320	Concrete
321 Concrete 3	321	Concrete
322 CMU 1	322	СМИ
323 CMU 2	323	СМИ
324 CMU 3	324	СМИ
325 Steel 1	325	Structural Steel
326 Steel 2	326	Steel
327 Steel 3	327	Steel
328 Metal Panels	328	Metal Panels
329 Metal Studs	329	Metal Studs
330 Metal Misc	330	Metal Miscellaneous
331 Wood 1	331	Wood
332 Wood 2	332	Wood
333 Wood 3	333	Wood
334 Gypsum Board	334	Gypsum Board
335 Plywood	335	Plywood
336 Wall Finish 1	336	Wall Finish Material
337 Wall Finish 2	337	Wall Finish Material
338 Tile 1	338	Tile
339 Tile 2	339	Tile
340 Flooring 1	340	Flooring Material
341 Flooring 2	341	Flooring Material
342 Insulation	342	Insulation
343 Ceiling Grid	343	Reflected Ceiling Grid
344 Lighing Fixtures	344	Lighting Fixtures electrical
345 HVAC	345	Mechanical Equipment and Registers

<u>Name</u>	<u>Number</u>	Description
346 Doors	346	Doors
347 Windows	347	Windows
348 Plumbing	348	Plumbing fixtures
349 Furniture	349	Furniture
350 Cabinets	350	Cabinetry
351 Hidden Line	351	Hidden Line
352 Line Above	352	Dashed Line
353 Center Line	353	Center Line
354 Misc Line Wt 0	354	Misc Line Wt=0
355 Misc Line	355	Misc Line Wt=1
356 Misc Line	356	Misc Line Wt=0
357 Misc Line	357	Misc Line Wt=0
358 Misc Line	358	Misc Line Wt=1
359 Misc Line	359	Misc Line Wt=2
360 Misc Line	360	Misc Line Wt=4
361 HQ Changes	361	Headquarters Changes
362 AsBuilts	362	As-Built Changes
363 OE Use Only	363	OE Use
364 No_Plot	364	Data does not plot
365 No_Plot	365	Data does not plot
366 No_Plot	366	Data does not plot
367 No_Plot	367	Data does not plot
368 No_Plot	368	Data does not plot
369 No_Plot	369	Data does not plot
370 Plot_Shape	370	Plot shape for IPlot - DOES NOT PLOT
371 Undefined	371	
372 Undefined	372	
373 Undefined	373	
374 Undefined	374	
375 Undefined	375	
376 Undefined	376	
3// Undefined	377	
3/8 Undefined	378	
379 Undefined	379	
380 Undefined	380	
381 Undefined	381	
382 Undefined	382	
	383	
384 Undefined	384	
385 Undefined	385	
386 Undefined	386	
38/ Undefined	387	
388 Undefined	388	
389 Undefined	389	
390 Undefined	390	
391 Undefined	391	

<u>Name</u>	<u>Number</u>	<b>Description</b>
392 Undefined	392	
393 Undefined	393	
394 Undefined	394	
395 Undefined	395	
396 Undefined	396	
397 Undefined	397	
398 Undefined	398	
399 Undefined	399	
400 Undefined	400	

#### **Structures - Structural Levels**

<u>Name</u>	<u>Number</u>	<u>Description</u>
401 Sta Lines	401	Roadway and Stationing
402 Dropout	402	Dropout Level
403 Dropout	403	Dropout Level
404 Dropout	404	Dropout Level
405 Dropout	405	Dropout Level
406 Dropout	406	Dropout Level
407 Dropout	407	Dropout Level
408 Dropout	408	Dropout Level
409 Dropout	409	Dropout Level
410 Sheet Border	410	Sheet Border information
411 Dropout	411	Border Dropout Information
412 Dimensions	412	Dimensioning
413 Reinforcement Steel	413	Reinforcement Steel
414 Text Std	414	Text and Detail Notes
415 Design Notes	415	Design Notes
416 Misc Steel	416	Misc Steel (plates, studs, etc)
417 HSS	417	Hollow Structural Steel
418 Angle Iron	418	Angle Iron
419 Channel Beam	419	Steel Channels
420 Wide Flange	420	Steel Wide Flange
421 Misc Steel	421	Misc Steel (plates, studs, etc)
422 Cold Form Stl	422	Metal Wall Studs and Joists
423 Steel Grates	423	Steel Grates
424 Steel Decking	424	Structural Steel Decking
425 Conduit and Piping	425	Conduit and Piping
426 Elec Mech	426	Electrical and Mechanical Equipment
427 Plumb Elec	427	Plumbing Diagramas Electric Schematics
428 Exist Elec Mech	428	Existing Electric Mechanical Equip
429 Elec Mech	429	Electrical and Mechanical
430 Wood 1	430	Wood Floor Framing or Loft
431 Wood 2	431	Wood Wall Framing
432 Wood 3	432	Wood Framing Ceiling
433 Wood 4	433	Wood Laminated Beams
434 Sheathing	434	Sheathing
435 Blocking 1	435	Blocking
436 Blocking 2	436	Blocking
437 Not Used	437	Not Used
438 Not Used	438	Not Used
439 Not Used	439	Not Used
440 Conc Slab Wall	440	Concete Slab or Walls
441 Conc Footing	441	Concete Footings
442 Conc Pile	442	Concete Piles
443 Conc Col	443	Concrete Columns
444 Conc Masonrv	444	Concrete Masonry
445 Conc Pattern	445	Concrete Pattern
	· -	

Name	Number	Description
446 Original Ground	446	Original Ground
447 Sand	447	Sand Pattern
448 Aggregate	448	Free Draining Granular Material
449 Not Used	449	Not Used
450 Not Used	450	Not Used
451 Not Used	451	Not Used
452 Not Used	452	Not Used
453 Not Used	453	Not Used
454 Not Used	454	Not Used
455 Not Used	455	Not Used
456 Not Used	456	Not Used
457 Not Used	457	Not Used
458 Not Used	458	Not Used
459 Plot	459	Reserved For Special Plot
460 UBC Code	460	Non Plotting Text
461 HQ Changes	461	Headquarters Changes
462 AsBuilts	462	As-Built Changes
463 OE Use Only	463	OE Use
464 No_Plot	464	Data does not plot
465 No_Plot	465	Data does not plot
466 No_Plot	466	Data does not plot
467 No_Plot	467	Data does not plot
468 No_Plot	468	Data does not plot
469 No_Plot	469	Data does not plot
470 Plot_Shape	470	Plot shape for IPlot - DOES NOT PLOT
471 Undefined	471	
472 Undefined	472	
473 Undefined	473	
474 Undefined	474	
475 Undefined	475	
476 Undefined	476	
477 Undefined	477	
478 Undefined	478	
479 Undefined	479	
480 Undefined	480	
481 Undefined	481	
482 Undefined	482	
483 Undefined	483	
484 Undefined	484	
485 Undefined	485	
486 Undefined	486	
487 Undefined	487	
488 Undefined	488	
489 Undefined	489	
490 Undefined	490	
491 Undefined	491	

<u>Name</u>	<u>Number</u>	<b>Description</b>
492 Undefined	492	
493 Undefined	493	
494 Undefined	494	
495 Undefined	495	
496 Undefined	496	
497 Undefined	497	
498 Undefined	498	
499 Undefined	499	
500 Undefined	500	

#### **Structures - Mechanical Levels**

Name	Number	Description
501 Sta Lines	501	Roadway and Stationing
502 (E) Building Outline	502	Existing Building Outline
503 (E) Fixtures and Equipment	t 503	(E) Fixt./Equipment
504 Dropout	504	Dropout Level
505 Dropout	505	Dropout Level
506 Dropout	506	Dropout Level
507 Dropout	507	Dropout Level
508 Dropout	508	Dropout Level
509 Dropout	509	Dropout Level
510 Sheet Border	510	Sheet Border information
511 Dropout	511	Border Dropout Information
512 Dimensions	512	Dimensioning
513 Reinforcement Steel	513	Reinforcement Steel
514 Text Std	514	Text and Detail Notes
515 Design Notes	515	Design Notes
516 Misc Steel	516	Misc Steel (plates, studs, etc)
517 HSS	517	Hollow Structural Steel
518 Angle Iron	518	Angle Iron
519 Channel Beam	519	Steel Channels
520 Wide Flange	520	Steel Wide Flange
521 Misc Steel	521	Misc Steel (plates, studs, etc)
522 Cold Form Steel	522	Metal Wall Studs and Joists
523 Steel Grates	523	Steel Grates
524 Steel Decking	524	Structural Steel Decking
525 Conduit and Piping	525	Conduit and Piping
526 Elec Mech	526	Electrical and Mechanical Equipment
527 Plumb Elec	527	Plumbing Diagramas Electric Schematics
528 Exist Elec Mech	528	Existing Electric Mechanical Equip
529 Plumb Mech	529	Plumbing Diagramas Mech Schematics
530 Wood 1	530	Wood Floor Framing or Loft
531 Wood 2	531	Wood Wall Framing
532 Wood 3	532	Wood Framing Ceiling
533 Wood 4	533	Wood Laminated Beams
534 Sheathing	534	Sheathing
535 Blocking 1	535	Blocking
536 Blocking 2	536	Blocking
537 Supply Air	537	Supply Air Duct HVAC
538 Return Air	538	Return Air Duct HVAC
539 Exhaust Air	539	Exhaust Air Duct HVAC
540 Conc Slab	540	Concrete Slab or Walls
541 Conc Footing	541	Concrete Footings
542 Conc Pile	542	Concrete Piles
543 Conc Column	543	Concrete Columns
544 Conc Masonry	544	Concrete Masonry
545 Conc Pattern	545	Concrete Pattern

<u>Name</u>	Number	Description
546 Original Ground	546	Original Ground
547 Sand	547	Sand Pattern
548 Aggregate	548	Free Draining Granular Material
549 Cold Water	549	Cold Water (tees, elbows, unions, & valves)
550 Hot Water	550	Hot Water (tees, elbows, unions, & valves)
551 Sewer Line	551	Sewer Line (ptraps, cleanouts, & floor drains)
552 Fire Service	552	Fire Protection Water Service Line
553 Air Line	553	Compressed Air Line
554 Vent Line	554	Sewer Vent Lines
555 Gas Line	555	Gas Service Line (NG, LPG)
556 Drain Line	556	Drain Line (rood, trench drains, & condensate)
557 Relief Line	557	Relief Line (water heater relief line)
558 Mech Equipment	558	Mechanical Fixtures/Equipment
559 Not Used	559	Not Used
560 UBC Code	560	Non Plotting Text
561 HQ Changes	561	Headquarters Changes
562 AsBuilts	562	As-Built Changes
563 OE Use Only	563	OE Use
564 No_Plot	564	Data does not plot
565 No_Plot	565	Data does not plot
566 No_Plot	566	Data does not plot
567 No_Plot	567	Data does not plot
568 No_Plot	568	Data does not plot
569 No_Plot	569	Data does not plot
570 Plot_Shape	570	Plot shape for IPlot - DOES NOT PLOT
571 Undefined	571	
572 Undefined	572	
573 Undefined	573	
574 Undefined	574	
575 Undefined	575	
576 Undefined	576	
577 Undefined	577	
578 Undefined	578	
579 Undefined	579	
580 Undefined	580	
581 Undefined	581	
582 Undefined	582	
583 Undefined	583	
584 Undefined	584	
585 Undefined	585	
586 Undefined	586	
587 Undefined	587	
588 Undefined	588	
589 Undefined	589	
590 Undefined	590	
591 Undefined	591	

<u>Name</u>	<u>Number</u>	<b>Description</b>
592 Undefined	592	
593 Undefined	593	
594 Undefined	594	
595 Undefined	595	
596 Undefined	596	
597 Undefined	597	
598 Undefined	598	
599 Undefined	599	
600 Undefined	600	

#### **Structures - Electrical Levels**

<u>Name</u>	<u>Number</u>	<u>Description</u>
601 Sta Lines	601	Roadway and Stationing
602 Dropout	602	Dropout Level
603 Dropout	603	Dropout Level
604 Dropout	604	Dropout Level
605 Dropout	605	Dropout Level
606 Dropout	606	Dropout Level
607 Dropout	607	Dropout Level
608 Dropout	608	Dropout Level
609 Dropout	609	Dropout Level
610 Sheet Border	610	Sheet Border information
611 Dropout	611	Border Dropout Information
612 Dimensions	612	Dimensioning
613 Reinforcement Steel	613	Reinforcement Steel
614 Text Std	614	Text and Detail Notes
615 Design Notes	615	Design Notes
616 Misc Steel	616	Misc Steel (plates, studs, etc)
617 HSS	617	Hollow Structural Steel
618 Angle Iron	618	Angle Iron
619 Channel Beam	619	Steel Channels
620 Wide Flange	620	Steel Wide Flange
621 Misc Steel	621	Misc Steel (plates, studs, etc)
622 Cold Form Steel	622	Metal Wall Studs and Joists
623 Steel Grates	623	Steel Grates
624 Steel Decking	624	Structural Steel Decking
625 Conduit and Piping	625	Conduit and Piping
626 Elec Mech	626	Electrical and Mechanical Equipment
627 Plumb Elec	627	Plumbing Diagrams, Electric Schematics
628 Exist Elec Mech	628	Existing Electric Mechanical Equip
629 Elec Mech	629	Electrical and Mechanical Misc Level
630 Wood 1	630	Wood Floor Framing or Loft
631 Wood 2	631	Wood Wall Framing
632 Wood 3	632	Wood Framing Ceiling
633 Wood 4	633	Wood Laminated Beams
634 Sheathing	634	Sheathing
635 Blocking 1	635	Blocking
636 Blocking 2	636	Blocking
637 Not Used	637	Not Used
638 Not Used	638	Not Used
639 Not Used	639	Not Used
640 Conc Slab	640	Concrete Slab or Walls
641 Conc Footing	641	Concrete Footings
642 Conc Pile	642	Concrete Piles
643 Conc Column	643	Concrete Columns
644 Conc Masonry	644	Concrete Masonry
645 Conc Pattern	645	Concrete Pattern

<u>Name</u>	<u>Number</u>	Description
646 Original Ground	646	Original Ground
647 Sand	647	Sand Pattern
648 Aggregate	648	Free Draining Granular Material
649 Sewage Pipe	649	Sewage Pipe
650 Drain + Vent	650	Drain + Vent
651 Potable Water	651	Potable Water
652 Raw Water	652	Raw Water
653 Leach Line	653	Leach Line
654 Pumps and Valves	654	Pumps & Valves
655 Tanks	655	Tanks
656 Equipment Below	656	Equipment Below
657 Equipment Above	657	Equipment Above
658 Wells	658	Wells
659 Plot	659	Reserved For Special Plot
660 UBC Code	660	Non Plotting Text
661 HQ Changes	661	Headquarters Changes
662 AsBuilts	662	As-Built Changes
663 OE Use Only	663	OE Use
664 No Plot	664	Data does not plot
665 No Plot	665	Data does not plot
666 No_Plot	666	Data does not plot
667 No_Plot	667	Data does not plot
668 No_Plot	668	Data does not plot
669 No_Plot	669	Data does not plot
670 Plot_Shape	670	Plot shape for IPlot - DOES NOT PLOT
671 Undefined	671	
672 Undefined	672	
673 Undefined	673	
674 Undefined	674	
675 Undefined	675	
676 Undefined	676	
677 Undefined	677	
678 Undefined	678	
679 Undefined	679	
680 Undefined	680	
681 Undefined	681	
682 Undefined	682	
683 Undefined	683	
684 Undefined	684	
685 Undefined	685	
686 Undefined	686	
687 Undefined	687	
688 Undefined	688	
689 Undefined	689	
690 Undefined	690	
691 Undefined	691	

<u>Name</u>	Number	<b>Description</b>
692 Undefined	692	
693 Undefined	693	
694 Undefined	694	
695 Undefined	695	
696 Undefined	696	
697 Undefined	697	
698 Undefined	698	
699 Undefined	699	
700 Undefined	700	

#### **Structures - Waste Water Levels**

<u>Name</u>	Number	<u>Description</u>
701 Sta Lines	701	Roadway and Stationing
702 Dropout	702	Dropout Level
703 Dropout	703	Dropout Level
704 Dropout	704	Dropout Level
705 Dropout	705	Dropout Level
706 Dropout	706	Dropout Level
707 Dropout	707	Dropout Level
708 Dropout	708	Dropout Level
709 Dropout	709	Dropout Level
710 Sheet Border	710	Sheet Border information
711 Dropout	711	Border Dropout Information
712 Dimensions	712	Dimensioning
713 Reinforcement Steel	713	Reinforcement Steel
714 Text Std	714	Text and Detail Notes
715 Design Notes	715	Design Notes
716 Misc Steel	716	Misc Steel (plates, studs, etc)
717 HSS	717	Hollow Structural Steel
718 Angle Iron	718	Angle Iron
719 Channel Beam	719	Steel Channels
720 Wide Flange	720	Steel Wide Flange
721 Misc Steel	721	Misc Steel (plates, studs, etc)
722 Cold Form Steel	722	Metal Wall Studs and Joists
723 Steel Grates	723	Steel Grates
724 Steel Decking	724	Structural Steel Decking
725 Conduit and Piping	725	Conduit and Piping
726 Elec Mech	726	Electrical and Mechanical Equipment
727 Plumb Elec	727	Plumbing Diagrams, Electric Schematics
728 Exist Elec Mech	728	Existing Electric Mechanical Equip
729 Elec Mech	729	Electrical and Mechanical Misc Level
730 Wood 1	730	Wood Floor Framing or Loft
731 Wood 2	731	Wood Wall Framing
732 Wood 3	732	Wood Framing Ceiling
733 Wood 4	733	Wood Laminated Beams
734 Sheathing	734	Sheathing
735 Blocking 1	735	Blocking
736 Blocking 2	736	Blocking
737 Not Used	737	Not Used
738 Not Used	738	Not Used
739 Not Used	739	Not Used
740 Conc Slab	740	Concrete Slab or Walls
741 Conc Footing	741	Concrete Footings
742 Conc Pile	742	Concrete Piles
743 Conc Column	743	Concrete Columns
744 Conc Masonry	744	Concrete Masonry
745 Conc Pattern	745	Concrete Pattern

<u>Name</u>	<u>Number</u>	Description
746 Original Ground	746	Original Ground
747 Sand	747	Sand Pattern
748 Aggregate	748	Free Draining Granular Material
749 Sewage Pipe	749	Sewage Pipe
750 Drain + Vent	750	Drain + Vent
751 Potable Water	751	Potable Water
752 Raw Water	752	Raw Water
753 Leach Line	753	Leach Line
754 Pumps and Valves	754	Pumps & Valves
755 Tanks	755	Tanks
756 Equipment Below	756	Equipment Below
757 Equipment Above	757	Equipment Above
758 Wells	758	Wells
759 Plot	759	Reserved For Special Plot
760 UBC Code	760	Non Plotting Text
761 HQ Changes	761	Headquarters Changes
762 AsBuilts	762	As-Built Changes
763 OE Use Only	763	OE Use
764 No Plot	764	Data does not plot
765 No Plot	765	Data does not plot
766 No Plot	766	Data does not plot
767 No Plot	767	Data does not plot
768 No Plot	768	Data does not plot
769 No Plot	769	Data does not plot
770 Plot Shape	770	Plot shape for IPlot - DOES NOT PLOT
771 Undefined	771	
772 Undefined	772	
773 Undefined	773	
774 Undefined	774	
775 Undefined	775	
776 Undefined	776	
777 Undefined	777	
778 Undefined	778	
779 Undefined	779	
780 Undefined	780	
781 Undefined	781	
782 Undefined	782	
783 Undefined	783	
784 Undefined	784	
785 Undefined	785	
786 Undefined	786	
787 Undefined	787	
788 Undefined	788	
789 Undefined	789	
790 Undefined	790	
791 Undefined	791	

<u>Name</u>	Number	<b>Description</b>
792 Undefined	792	
793 Undefined	793	
794 Undefined	794	
795 Undefined	795	
796 Undefined	796	
797 Undefined	797	
798 Undefined	798	
799 Undefined	799	
800 Undefined	800	

#### **Utilities Levels**

<u>Name</u>	Number	<b>Description</b>
801 Undefined	801	
802 Dropout	802	Dropout
803 Dropout	803	Dropout
804 Dropout	804	Dropout
805 Dropout	805	Dropout
806 Dropout	806	Dropout
807 Dropout	807	Dropout
808 Dropout	808	Dropout
809 Dropout	809	Dropout
810 Undefined	810	
811 Undefined	811	
812 ut-elec-p	812	ut-elec-p
813 ut-elec-x	813	ut-elec-x
814 ut-gas-p	814	ut-gas-p
815 ut-gas-x	815	ut-gas-x
816 ut-natgas-p	816	ut-natgas-p
817 ut-natgas-x	817	ut-natgas-x
818 ut-oil-p	818	ut-oil-p
819 ut-oil-x	819	ut-oil-x
820 ut-sewer-p	820	ut-sewer-p
821 ut-sewer-x	821	ut-sewer-x
822 ut-steam-p	822	ut-steam-p
823 ut-steam-x	823	ut-steam-x
824 ut-stormD-p	824	ut-stormD-p
825 ut-stormD-x	825	ut-stormD-x
826 ut-telecom-p	826	ut-telecom-p
827 ut-telecom-x	827	ut-telecom-x
828 ut-teleph-p	828	ut-teleph-p
829 ut-teleph-x	829	ut-teleph-x
830 ut-tv-p	830	ut-tv-p
831 ut-tv-x	831	ut-tv-x
832 ut-water-p	832	ut-water-p
833 ut-water-x	833	ut-water-x
834 tr-fiberopt-p	834	tr-fiberopt-p
835 tr-fiberopt-x	835	tr-fiberopt-x
836 ut-elec-oh-p	836	ut-elec-oh-p
837 ut-elec-oh-x	837	ut-elec-oh-x
838 ut-telecom-oh-p	838	ut-telecom-oh-p
839 ut-telecom-oh-x	839	ut-telecom-oh-x
840 ut-telep-oh-p	840	ut-telep-oh-p
841 ut-telep-oh-x	841	ut-telep-oh-x
842 ut-tv-oh-p	842	ut-tv-oh-p
843 ut-tv-oh-x	843	ut-tv-oh-x
844 ut-fiberopt-oh-p	844	ut-fiberopt-oh-p
845 ut-fiberopt-oh-x	845	ut-fiberopt-oh-x

Name	Number	Description
846 ut-joint-trench-p	846	ut-joint-trench-p
847 ut-joint-trench-x	847	ut-joint-trench-x
848 ut-joint-oh-p	848	ut-joint-oh-p
849 ut-joint-oh-x	849	ut-joint-oh-x
850 ut-rcwater-p	850	ut-rcwater-p
851 ut-rcwater-x	851	ut-rcwater-x
852 Undefined (CTLevels_2008)	852	Reserved for future ut use – Don't use at this time
853 Undefined (CTLevels_2008)	853	Reserved for future ut use – Don't use at this time
854 Undefined (CTLevels_2008)	854	Reserved for future ut use – Don't use at this time
855 Undefined (CTLevels_2008)	855	Reserved for future ut use – Don't use at this time
856 Undefined (CTLevels_2008)	856	Reserved for future ut use – Don't use at this time
857 Undefined (CTLevels_2008)	857	Reserved for future ut use – Don't use at this time
858 Undefined (CTLevels_2008)	858	Reserved for future ut use – Don't use at this time
859 Undefined (CTLevels_2008)	859	Reserved for future ut use – Don't use at this time
860 Undefined (CTLevels_2008)	860	Reserved for future ut use – Don't use at this time
861 Undefined (CTLevels_2008)	861	Reserved for future ut use – Don't use at this time
862 Undefined (CTLevels_2008)	862	Reserved for future ut use – Don't use at this time
863 Undefined (CTLevels_2008)	863	Reserved for future ut use – Don't use at this time
864 No_Plot	864	Data does not plot
865 No_Plot	865	Data does not plot
866 No_Plot	866	Data does not plot
867 No_Plot	867	Data does not plot
868 No_Plot	868	Data does not plot
869 No_Plot	869	Data does not plot
870 Plot_Shape	870	Plot shape for IPlot - DOES NOT PLOT

#### Staging/Miscellaneous Dropout Levels

Name	<u>Number</u>	<b>Description</b>
871 Staging Dropout	871	Staging Dropout
872 Staging Dropout	872	Staging Dropout
873 Staging Dropout	873	Staging Dropout
874 Staging Dropout	874	Staging Dropout
875 Staging Dropout	875	Staging Dropout
876 Staging Dropout	876	Staging Dropout
877 Staging Dropout	877	Staging Dropout
878 Staging Dropout	878	Staging Dropout
879 Staging Dropout	879	Staging Dropout
880 Staging Dropout	880	Staging Dropout
881 Staging Dropout	881	Staging Dropout
882 Staging Dropout	882	Staging Dropout
883 Staging Dropout	883	Staging Dropout
884 Staging Dropout	884	Staging Dropout
885 Staging Dropout	885	Staging Dropout
886 Staging Dropout	886	Staging Dropout
887 Staging Dropout	887	Staging Dropout
888 Staging Dropout	888	Staging Dropout
889 Staging Dropout	889	Staging Dropout
890 Staging Dropout	890	Staging Dropout
891 Striping Dropout	891	Striping Dropout
892 Striping Dropout	892	Striping Dropout
893 Striping Dropout	893	Striping Dropout
894 Striping Dropout	894	Striping Dropout
895 Striping Dropout	895	Striping Dropout
896 Miscellaneous Dropout	896	Miscellaneous Dropout
897 Miscellaneous Dropout	897	Miscellaneous Dropout
898 Miscellaneous Dropout	898	Miscellaneous Dropout
899 Miscellaneous Dropout	899	Miscellaneous Dropout
900 Miscellaneous Dropout	900	Miscellaneous Dropout

#### **Utilities Levels**

<u>Name</u>	<u>Number</u>	<u>Description</u>
901 Control A	901	Layout Lines Center Lines
902 Control B	902	Layout Lines Center Lines
903 Bar Chart A	903	Rebar Bar Chart Graphics
904 Bar Chart B	904	Rebar Bar Chart Graphics
905 Bar Chart C	905	Rebar Bar Chart Content
906 Bar Chart D	906	Rebar Bar Chart Content
907 Undefined	907	
908 Undefined	908	
909 Bentley Source	909	Bentley Supplied Content
910 Sheet Format	910	Border Contents (Includes North Arrow)
911 Hatching	911	Various Patterns
912 Dimensions	912	Dim Lines & Arrows
913 Warnings	913	Warning Messages
914 Text	914	Notes Leaders & Arrows
915 Reinf (Default)	915	Reinforcement (Default)
916 Reinf Top A	916	Reinforcement Top Layer
917 Reinf Top B	917	Reinforcement Top Layer
918 Reinf Top C	918	Reinforcement Top Layer
919 Reinf Top D	919	Reinforcement Top Layer
920 Reinf Top E	920	Reinforcement Top Layer
921 Reinf Top F	921	Reinforcement Top Layer
922 Reinf Top G	922	Reinforcement Top Layer
923 Reinf Top H	923	Reinforcement Top Layer
924 Reinf Top I	924	Reinforcement Top Layer
925 Reinf Top J	925	Reinforcement Top Layer
926 Reinf Top K	926	Reinforcement Top Layer
927 Reinf Top L	927	Reinforcement Top Layer
928 Reinf Bot A	928	Reinforcement Bot Layer
929 Reinf Bot B	929	Reinforcement Bot Layer
930 Reinf Bot C	930	Reinforcement Bot Layer
931 Reinf Bot D	931	Reinforcement Bot Layer
932 Reinf Bot E	932	Reinforcement Bot Layer
933 Reinf Bot F	933	Reinforcement Bot Layer
934 Reinf Bot G	934	Reinforcement Bot Layer
935 Reinf Bot H	935	Reinforcement Bot Layer
936 Reinf Bot I	936	Reinforcement Bot Layer
937 Reinf BotJ	937	Reinforcement Bot Layer
938 Reinf Bot K	938	Reinforcement Bot Layer
939 Reinf Bot L	939	Reinforcement Bot Layer
940 Concrete Face A	940	Plans Sections Elevations
941 Concrete Face B	941	Plans Sections Elevations
942 Concrete Face C	942	Plans Sections Elevations
943 Concrete Face D	943	Plans Sections Elevations
944 Concrete Face E	944	Plans Sections Elevations
945 Concrete Face F	945	Plans Sections Elevations

<u>Name</u>	Number	Description
946 Concrete Face G	946	Plans Sections Elevations
947 Concrete Face H	947	Plans Sections Elevations
948 Concrete Face I	948	Plans Sections Elevations
949 Concrete Face J	949	Plans Sections Elevations
950 Concrete Face K	950	Plans Sections Elevations
951 Concrete Face L	951	Plans Sections Elevations
952 Concrete Face M	952	Plans Sections Elevations
953 Concrete Face N	953	Plans Sections Elevations
954 Concrete Face O	954	Plans Sections Elevations
955 Concrete Face P	955	Plans Sections Elevations
956 Tendons A	956	Strands Ducts Anchorages
957 Tendons B	957	Strands Ducts Anchorages
958 Tendons C	958	Strands Ducts Anchorages
959 Structural Steel A	959	Plates Angles Shapes Tubes
960 Structural Steel B	960	Plates Angles Shapes Tubes
961 Structural Steel C	961	Plates Angles Shapes Tubes
962 Devices A	962	Bearings Anchorages Restrainers
963 Devices B	963	Bearings anchorages Restrainers
964 Reserved A	964	
965 Reserved B	965	
966 Stage 4	966	Stage 4 Const &Temp Traffic
967 Stage 4 Anno	967	Stage 4 Const & Temp Traffic Anno
968 Stage 5	968	Stage 5 Const &Temp Traffic
969 Stage 5 Anno	969	Stage 5 Const & Temp Traffic Anno
970 Stage 6	970	Stage 6 Const & Temp Traffic
971 Stage 6 Anno	971	Stage 6 Const & Temp Traffic Anno
972 Stage 7	972	Stage 7 Const & Temp Traffic
973 Stage 7 Anno	973	Stage 7 Const &Temp Traffic Anno
974 Stage 8	974	Stage 8 Const &Temp Traffic
975 Stage 8 Anno	975	Stage 8 Const & Temp Traffic Anno
976 Stage 9	976	Stage 9 Const &Temp Traffic
977 Stage 9 Anno	977	Stage 9 Const & Temp Traffic Anno
978 Stage 10	978	Stage 10 Const & Temp Traffic
979 Stage 10 Anno	979	Stage 10 Const & Temp Traffic Anno
980 Stage 11	980	Stage 11 Const &Temp Traffic
981 Stage 11 Anno	981	Stage 11 Const & Temp Traffic Anno
982 Stage 12	982	Stage 12 Const &Temp Traffic
983 Stage 12 Anno	983	Stage 12 Const & Temp Traffic Anno
984 Stage 13	984	Stage 13 Const & Temp Traffic
985 Stage 13 Anno	985	Stage 13 Const & Temp Traffic Anno
986 Stage 14	986	Stage 14 Const &Temp Traffic
987 Stage 14 Anno	987	Stage 14 Const & Temp Traffic Anno
988 Stage 15	988	Stage 15 Const &Temp Traffic
989 Stage 15 Anno	989	Stage 15 Const & Temp Traffic Anno
990 Stage 16	990	Stage 16 Const &Temp Traffic
991 Stage 16 Anno	991	Stage 16 Const & Temp Traffic Anno

<u>Name</u>	Number	Description
992 Stage 17	992	Stage 17 Const &Temp Traffic
993 Stage 17 Anno	993	Stage 17 Const & Temp Traffic Anno
994 Stage 18	994	Stage 18 Const &Temp Traffic
995 Stage 18 Anno	995	Stage 18 Const & Temp Traffic Anno
996 Stage 19	996	Stage 19 Const &Temp Traffic
997 Stage 19 Anno	997	Stage 19 Const & Temp Traffic Anno
998 Stage 20	998	Stage 20 Const &Temp Traffic
999 Stage 20 Anno	999	Stage 20 Const &Temp Traffic Anno

Appendix A10 lists the Caltrans conventional named levels from each of the Caltrans dgn level library files.

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# Ct\_Alignments

Number	Name	Description	Color
9000	align_20-SCALE-anno	Annotation for 20 scale alignment	10
9001	align_100-SCALE-anno	Annotation for 100 scale alignment	11
9002	align_BARRIER	Alignment for barriers	11
9003	align_BARRIER-anno	Annotation for barrier alignments	11
9004	align_COLLECTOR-RD	Alignment for collector roads	15
9005	align_COLLECTOR-RD-anno	Annotation for collector road alignments	15
9006	align_CULVERT	Alignment for culverts-pipes	9
9007	align_CULVERT-anno	Annotation for culvert-pipe alignments	9
9008	align_CURB-FLOW-LINE	Alignment for flow line of curb	9
9009	align_CURB-FLOW-LINE-anno	Annotation for flow line of curb	9
9010	align_CURVE-DATA	Curve data information in tabular format	0
9011	align_DITCH	Alignment for ditches	9
9012	align_DITCH-anno	Annotation for ditch alignments	9
9013	align_FRONTAGE	Alignment for frontage roads	14
9014	align_FRONTAGE-anno	Annotation for frontage road alignments	14
9015	align_LOCAL-ST	Alignment for local streets	10
9016	align_LOCAL-ST-anno	Annotation for local street alignments	10
9017	align_MAIN	Alignment for Main line	0
9018	align_MAIN-anno	Annotation for Main line alignment	0
9019	align_PM-REFERENCE-LINE	Reference line for post mile	15
9020	align_PM-REFERENCE-LINE-anno	Annotation for post mile reference line	15
9021	align_RAMP	Alignment for ramps	13
9022	align_RAMP-anno	Annotation for ramp alignments	13
9023	align_ROUNDABOUT	Alignment for roundabout	14
9024	align_ROUNDABOUT-anno	Annotation for roundabout alignments	14
9025	align_SECONDARY-HWY	Alignment for any secondary highway	8
9026	align_SECONDARY-HWY-anno	Annotation for any secondary highway alignment	8
9027	align_TEMP	Alignment for temporary roads	12
9028	align_TEMP-anno	Annotation for temporary road alignments	12

# Ct\_Alignments

Number	Name	Description	Color
9029	align_WALL	Alignment for walls	11
9030	align_WALL-anno	Annotation for wall alignments	11
9031	align_NO-PLOT	Elements on this level will not plot!	0
9032	align_MISC	Miscellaneous	0

# Ct\_DrainageFacilities

Number	Name	Description	Color
9226	df_PIPE-APC	Alternate pipe culvert	1
9202	df_CULV-ARCH	Arch culvert all types	1
9203	df_CULV-ARCH-anno	Annotation for arch culvert all types	1
9200	df_BASIN	Retention or detention basin	9
9201	df_BASIN-anno	Annotation for retention or detention basin	9
9227	df_PIPE-BIT-CTD-CSP	Bituminous coating corrugated steel pipe	1
9204	df_CULV-BOX	Box culvert	1
9205	df_CULV-BOX-anno	Annotation for box culvert	1
9228	df_PIPE-CSP	Corrugated steel pipe	1
9223	df_PIPE	Drainage pipe all types	1
9224	df_PIPE-anno	Annotation for drainage pipe all types	1
9225	df_PIPE-anno_drop	Annotation for existing drainage pipe all types	1
9232	df_PIPE_drop	Existing drainage pipe all types	1
9208	df_DETAIL	Drainage details	1
9209	df_DETAIL-anno	Annotation for drainage details	1
9210	df_DRAIN-EDGE	Edge drain	1
9211	df_DRAIN-HORIZONTAL	Horizontal drain	1
9212	df_DRAIN-OVERSIDE	Overside drain	1
9213	df_DRAIN-UNDER	Underdrain	1
9214	df_FES	Flared end section	1
9215	df_FLOW-LINE	Direction of water flow	1
9216	df_HEADWALL	Headwall	1
9217	df_INLET	Drainage inlet	1
9218	df_INLET-anno	Annotation for proposed drainage inlet	1
9219	df_INLET-anno_drop	Annotation for existing drainage inlet	1
9220	df_INLET_drop	Existing drainage inlet	1
9221	df_MISC	Miscellaneous drainage and hydraulic features	9
9222	df_MISC-anno	Annotation for misc drainage features	9
9229	df_PIPE-PP	Plastic pipe	1

# Ct\_DrainageFacilities

Number	Name	Description	Color
9233	df_PROFILE	Drainage profiles	1
9234	df_PROFILE-anno	Annotation for drainage profiles	1
9235	df_QTY-TABLE	Tabular data for drainage quantities	0
9230	df_PIPE-RCP	Reinforced concrete pipe	1
9231	df_PIPE-SCSP	Slotted corrugated steel pipe	1
9236	df_SYSTEM-UNIT-anno	Annotation for drainage system and unit callout	1
9206	df_CULV-TEMP	Temporary culvert	1
9207	df_CULV-TEMP-anno	Annotation for temporary culvert	1
9237	df_WATERSHED	Watershed information	9
9238	df_WATERSHED-anno	Annotation for watershed information	9
9239	df_NO-PLOT	Elements on this level will not plot!	0

Number	Name	Description	Color
10100	es_CCTV	Closed circuit television system	0
10101	es_CCTV-anno	Annotation for closed circuit television system	0
10102	es_CELL-anno	Annotation for all cells	0
10103	es_CELL-CONDUIT-RISER	Cells for conduits and risers	3
10104	es_CELL-LIGHTING	Cells for lighting	4
10105	es_CELL-MISC-COMPONENTS	Cells for other electrical components	5
10106	es_CELL-NOTE-SYMBOL	Cells for notes and symbols	0
10107	es_CELL-SIGNALS	Cells for signals	2
10108	es_CMS	Changeable message sign system	0
10109	es_CMS-anno	Annotation for changeable message sign system	0
10110	es_DETAIL	Electrical systems details	0
10111	es_DETAIL-anno	Annotation for electrical system details	0
10112	es_EMS	Extinguishable message sign system	0
10113	es_EMS-anno	Annotation for extinguishable message sign system	0
10114	es_EVD	Emergency vehicle detection system	0
10115	es_EVD-anno	Annotation for emergency vehicle detection system	0
10116	es_EXIST	Existing electrical system	0
10117	es_EXIST-anno	Annotation for existing electrical system	0
10118	es_FLASHING-BEACON	Flashing beacon system	0
10119	es_FLASHING-BEACON-anno	Annotation for flashing beacon system	0
10120	es_FO	Fiber optic system	0
10121	es_FO-anno	Annotation for fiber optic system	0
10122	es_HAR	Highway advisory radio system	0
10123	es_HAR-anno	Annotaion for highway advisory radio system	0
10124	es_INTERCONNECTION	Interconnection conduit and cable	0
10125	es_INTERCONNECTION-anno	Annotation for interconnection conduit and cable	0
10126	es_LEGEND-anno	Annotation for notes legends and abbreviations	0
10127	es_LIGHTING	Lighting system	0
10128	es_LIGHTING-anno	Annotation for lighting system	0

Number	Name	Description	Color
10129	es_LIGHTING-CITY	Lighting system city street	0
10130	es_LIGHTING-CITY-anno	Annotation for lighting system city street	0
10131	es_LIGHTING-TEMP	Temporary lighting system	0
10132	es_LIGHTING-TEMP-anno	Annotation for temporary lighting system	0
10133	es_MODIFY-CCTV	Modify closed circuit television system	0
10134	es_MODIFY-CCTV-anno	Annotation for modify closed circuit television system	0
10135	es_MODIFY-EMS	Modify extinguishable message sign system	0
10136	es_MODIFY-EMS-anno	Annotaton for modify extinguishable message sign system	0
10137	es_MODIFY-EVD	Modify emergency vehicle detection system	0
10138	es_MODIFY-EVD-anno	Annotation for modify emergency vehicle detection system	0
10139	es_MODIFY-FO	Modify fiber optic system	0
10140	es_MODIFY-FO-anno	Annotation for modify fiber optic system	0
10141	es_MODIFY-HAR-EMS	Modify highway advisory radio system	0
10142	es_MODIFY-HAR-EMS-anno	Annotation for modify highway advisory radio system	0
10143	es_MODIFY-RAMP-METERING	Modify ramp metering system	0
10144	es_MODIFY-RAMP-METERING-anno	Annotation for modify ramp metering system	0
10145	es_MODIFY-RWIS	Modify roadside weather information system	0
10146	es_MODIFY-RWIS-anno	Annotation for modify roadside weather information system	0
10147	es_MODIFY-SIGNAL-LIGHTING	Modify signal and lighting system	0
10148	es_MODIFY-SIGNAL-LIGHTING-anno	Annotation for modify signal and lighting system	0
10149	es_MODIFY-SIGN-ILLUMINATION	Modify sign illumination system	0
10150	es_MODIFY-SIGN-ILLUMINATION-anno	Annotation for sign illumination system	0
10151	es_QTY-TABLE	Tabular data for electrical systems quantities	0
10152	es_RAMP-METERING	Ramp metering system	0
10153	es_RAMP-METERING-anno	Annotation for ramp metering system	0
10154	es_REMOVE	Remove existing electrical system	0
10155	es_REMOVE-anno	Annotation for remove existing electrical system	0
10156	es_RWIS	Roadside weather information system	0
10157	es_RWIS-anno	Annotation for roadside weather information system	0

Number	Name	Description	Color
10158	es_SERVICE-BOOSTER-PUMP	Electrical service for booster pump	0
10159	es_SERVICE-BOOSTER-PUMP-anno	Annotation for electrical service for booster pump	0
10160	es_SERVICE-IRRIGATION	Electrical service for irrigation	0
10161	es_SERVICE-IRRIGATION-anno	Annotation for electrical service for irrigation	0
10162	es_SIGNAL-LIGHTING	Signal and lighting system	0
10163	es_SIGNAL-LIGHTING-anno	Annotation for signal and lighting system	0
10164	es_SIGNAL-LIGHTING-CITY	Signal and lighting system city street	0
10165	es_SIGNAL-LIGHTING-CITY-anno	Annotation for signal and lighting system city street	0
10166	es_SIGN-ILLUMINATION	Sign illumination system	0
10167	es_SIGN-ILLUMINATION-anno	Annotation for sign illumination system	0
10168	es_STAGE-1	Stage 1 electrical construction	0
10169	es_STAGE-1_drop	Dropout of stage 1 electrical construction for stage 2	0
10170	es_STAGE-1-anno	Annotation for stage 1 electrical construction	0
10171	es_STAGE-2	Stage 2 electrical construction	0
10172	es_STAGE-2_drop	Dropout of stage 2 electrical construction for stage 3	0
10173	es_STAGE-2-anno	Annotation for stage 2 electrical construction	0
10174	es_STAGE-3	Stage 3 electrical construction	0
10175	es_STAGE-3_drop	Dropout of stage 3 electrical construction for stage 4	0
10176	es_STAGE-3-anno	Annotation for stage 3 electrical construction	0
10177	es_STAGE-4	Stage 4 electrical construction	0
10178	es_STAGE-4_drop	Dropout of stage 4 electrical construction for stage 5	0
10179	es_STAGE-4-anno	Annotation for stage 4 electrical construction	0
10180	es_STAGE-5	Stage 5 electrical construction	0
10181	es_STAGE-5_drop	Dropout of stage 5 electrical construction for stage 6	0
10182	es_STAGE-5-anno	Annotation for stage 5 electrical construction	0
10183	es_TMS	Traffic monitoring station system	0
10184	es_TMS-anno	Annotation for traffic monitoring station system	0
10185	es_CELL	New cell components	0
10186	es_NO-PLOT	Elements on this level will not plot!	0

Number	Name	Description	Color
10187	es_MVDS	Micro vehicle detection system	0
10188	es_MISC	Miscellaneous	0

# Ct\_EnviromentallySensitiveArea

Number	Name	Description	Color
9650	esa_AREA	Environmentally sensitive area	0
9651	esa_AREA-anno	Annotation for all environmentally sensitive areas	0
9653	esa_CULTURAL	Cultural resources	11
9652	esa_BIOLOGICAL	Biological resources	12
9654	esa_HISTORIC	Historic Structures	13
9655	esa_PALEONTOLOGICAL	Paleontological resources	14
9656	esa_NO-PLOT	Elements on this level will not plot!	0
9657	esa_MISC	Miscellaneuos	0

# Ct\_GIS\_AdvPlanning

Number	Name	Description	Color
10304	gis_SHAPE-FILES	Shape files	15
10303	advplan_ENV-STUDIES	Environmental studies on impacted areas	14
10300	advplan_ALTERNATIVE-1	Alternative number 1	13
10301	advplan_ALTERNATIVE-2	Alternative number 2	12
10302	advplan_ALTERNATIVE-3	Alternative number 3	11
10305	gis_NO-PLOT	Elements on this level will not plot!	0
## Ct\_Landscape

Number	Name	Description	Color
10063	ls_MISC	Miscellaneous	0
10000	Is_AREA	Areas all types	0
10001	Is_AREA-anno	Annotation for areas all types	0
10002	Is_AREA-CULTIVATION	Area for cultivation	0
10003	Is_AREA-EC	Area for erosion control	0
10004	Is_AREA-EC-DRILL-SEED	Area for erosion control drill seed	0
10005	Is_AREA-EC-DRY-SEED	Area for erosion control dry seed	0
10006	Is_AREA-EC-ROLLED-PRODUCT	Area for erosion control rolled product	0
10007	Is_AREA-HARDSCAPE	Area for hardscape	0
10008	Is_AREA-MULCH	Area for mulch all types	0
10009	Is_AREA-ROADSIDE-CLEARING	Area for roadside clearing	0
10010	Is_CONDUCTOR	Conductor all types	1
10011	ls_CONDUCTOR-anno	Annotation for conductor all types	1
10012	Is_CONDUIT	Conduit all types	1
10013	ls_CONDUIT-anno	Annotation for conduits all types	1
10014	Is_CONDUIT-EXIST	Existing conduits all types	7
10015	Is_CONDUIT-EXIST-anno	Annotation for existing conduits all types	7
10016	Is_CONTROLLER	Controller all types	1
10017	ls_CONTROLLER-anno	Annotation for controllers all types	1
10018	Is_CONTROLLER-EXIST	Existing controllers all types	7
10019	ls_CONTROLLER-EXIST-anno	Annotation for existing controllers all types	7
10020	Is_DETAIL	Irrigation-planting-hardscape details	0
10021	Is_DETAIL-anno	Annotation for Irrigation-planting-hardscape details	0
10022	Is_FLOW-SENSOR-CABLE	Cable for flow sensor	1
10023	ls_FLOW-SENSOR-CABLE-anno	Annotation for flow sensor	1
10024	Is_KEY-MAP	Irrigation-planting-hardscape key map	0
10025	Is_KEY-MAP-anno	Annotation for Irrigation-planting-hardscape key map	0
10026	Is_MISC-anno	Annotation for cells, utility notes and information	0
10027	Is_MISC-CELL	Miscellaneous cells and information	0

## Ct\_Landscape

Number	Name	Description	Color
10028	Is_PLANT	Plants all types	2
10029	Is_PLANT-anno	Annotation for plants all types	0
10030	Is_PLANT-AREA	Area for a group of plants	2
10031	Is_PLANT-CUTTING	Cutting type plants	2
10032	Is_PLANT-GROUNDCOVER	Groundcover type plants	2
10033	Is_PLANT-LINER	Liners for plants	2
10034	Is_PLANT-SHRUB	Shrub type plants	2
10035	Is_PLANT-TREE	Tree type plants	2
10036	Is_POINT-FEATURE	Various point features-meter-sensor-gate-etc	1
10037	Is_QTY-TABLE	Tabular data for irrigation-planting-hardscape quantities	0
10038	Is_SCHEDULE-LEGEND	Tabular data for schedules and legends	0
10039	Is_SPRINKLER	Sprinklers all types	1
10040	Is_SPRINKLER-anno	Annotation for sprinklers all types	1
10041	Is_SPRINKLER-EXIST	Existing sprinklers all types	7
10042	Is_SPRINKLER-EXIST-anno	Annotation for existing sprinklers all types	7
10043	Is_SUPPLY-LINE	Supply line all types	1
10044	Is_SUPPLY-LINE-anno	Annotation for supply line all types	3
10045	Is_SUPPLY-LINE-BRIDGE	Bridge supply line	1
10046	Is_SUPPLY-LINE-CLASS315	Plastic pipe class 315 supply line	1
10047	Is_SUPPLY-LINE-COPPER	Copper supply line	1
10048	Is_SUPPLY-LINE-EXIST	Existing supply line	7
10049	Is_SUPPLY-LINE-EXIST-anno	Annotation for existing supply line	7
10050	Is_SUPPLY-LINE-GSP	Galvanized steel pipe supply line	1
10051	Is_SUPPLY-LINE-LATERAL	Lateral supply line	1
10052	Is_SUPPLY-LINE-MAIN	Main supply line	6
10053	Is_SUPPLY-LINE-SCH40	Plastic pipe schedule 40 supply line	1
10054	Is_SUPPLY-LINE-TUBING	Tubing supply line	1
10055	Is_VALVE	Valves all types	1
10056	Is_VALVE-anno	Annotation for valves all types	1

## Ct\_Landscape

Number	Name	Description	Color
10057	Is_VALVE-EXIST	Existing valves all types	7
10058	ls_VALVE-EXIST-anno	Annotation for existing valves all types	7
10061	Is_PLANT-VINE	Vine type plants	2
10059	Is_IRRIGATION	Irrigation	1
10060	Is_IRRIGATION-EXIST	Existing Irrigation	7
10062	Is_NO-PLOT	Elements on this level will not plot!	5

## Ct\_MiscellaneousConstruction

Number	Name	Description	Color
9517	mc_SLOPE-PROTECTION	Slope protection	15
9518	mc_SLOPE-PROTECTION-anno	Annotation for slope protection	15
9500	mc_CURB	Curbs	8
9501	mc_CURB-GUTTER	Curb and gutters	8
9513	mc_PROFILE-FLOW-LINE	Profile of flowline of curb	4
9512	mc_PROFILE-CURB-RAMP	Profiles for designing curb ramps	4
9502	mc_CURB-RAMP	Curb ramps	8
9516	mc_SIDEWALK	Sidewalks	8
9503	mc_DRIVEWAY	Driveways	8
9510	mc_ISLAND	Islands	8
9511	mc_MISC-CONST-anno	Annotation for miscellaneous construction	8
9514	mc_PUMPING-EQUIPMENT	Pumping equipment	9
9515	mc_PUMPING-EQUIPMENT-anno	Annotation for pumping equipment	9
9504	mc_FENCE	Fence all types	11
9505	mc_FENCE-anno	Annotation for fence all types	11
9506	mc_FENCE-BW	Barbed Wire fence	11
9509	mc_FENCE-WM	Wire Mesh fence	11
9507	mc_FENCE-CL	Chain Link fence	11
9508	mc_FENCE-TEMP	Temporary fence	11
9519	mc_NO-PLOT	Elements on this level will not plot!	0

# Ct\_ProjectPlans\_BorderSheetInfo

Number	Name	Description	Color
10207	border_PLOTTING-ELEMENTS	Elements for assisting in plotting	252
10221	pp_CAS-TABLE	Tabular data for construction area signs	0
10236	pp_TITLE-LOC-TABLE	Tabular data for locations of construction	0
10228	pp_MASKING	Masking applied to cells and elements	250
10239	border_NO-PLOT	Elements on this level will not plot!	0
10238	pp_TITLE-SHEET-MAP	Title sheet map	0
10237	pp_TITLE-SHEET-anno	Annotation for title sheet map	0
10219	pp_CAS	Construction area signs map	0
10220	pp_CAS-anno	Annotation for construction area signs map	0
10223	pp_KEY-MAP-LINE-INDEX	Key maps	0
10224	pp_KEY-MAP-LINE-INDEX-anno	Annotation for all key maps	0
10226	pp_LOTB	Log of test borings	0
10227	pp_LOTB-anno	Annotation of log of test borings	0
10214	pp_AERIAL-IDENTIFICATION	Aerial identification sheets	0
10215	pp_AERIAL-IDENTIFICATION-anno	Annotation for aerial identification sheets	0
10234	pp_PROJECT-CONTROL-MAP	Project control sheets	0
10233	pp_PROJECT-CONTROL-anno	Annotation for project control sheets	0
10230	pp_MOTORIST-INFO	Motorist information sheets	0
10231	pp_MOTORIST-INFO-anno	Annotation for motorist information sheets	0
10229	pp_MISC	Miscellaneous cells line-styles and information on plans	0
10232	pp_PRESENTATION	Cells line-styles or other info for design presentation	0
10217	pp_AS-AWARDED	Information added to as-awarded plans	5
10216	pp_ARCHIVE	Information added to archived vector data file	3
10235	pp_RASTER	Raster images	10
10218	pp_AS-BUILT	As-Built changes	3
10222	pp_CO	Change orders	10
10213	pp_ADDENDUM	Addendum changes	6
10225	pp_LEGEND-anno	Annotation for notes legends and abbreviations	0
10210	border_SHEET	Border for any discipline	0

# Ct\_ProjectPlans\_BorderSheetInfo

Number	Name	Description	Color
10208	border_PROJ-ID-BLOCK-anno	Annotation in the project identification block	13
10212	border_WITHIN-BORDER-anno	Annotation within the margin of border	13
10206	border_INSIDE-BORDER-anno	Annotation inside the border	13
10204	border_GRID-MAJOR_drop	Major grid lines	2
10205	border_GRID-MINOR_drop	Minor grid lines	3
10200	border_CLIP-FRAME	Clip frames for various type of plan sheets-50 scale	3
10201	border_CLIP-FRAME-20SCALE	Clip frames for 20 scale	3
10202	border_CLIP-FRAME-100SCALE	Clip frames for 100 scale	3
10209	border_SEAL	Seal information of licensed person	4
10211	border_SIGNATURE	Signature of licensed person	4
10203	border_DATUM-LINE	Datum lines separating datum information	0
10240	pp_NO-PLOT	Elements on this level will not plot!	0

# Ct\_Roadway

Number	Name	Description	Color
9114	rd_ETW	Edge of Traveled Way	0
9113	rd_ES	Edge of Shoulder	0
9112	rd_EP	Edge of Pavement	0
9129	rd_LAYOUT-NOTE-anno	Annotation for construction shown in Master Design	0
9143	rd_RIGHT-OF-WAY	Right of way	6
9145	rd_RIGHT-OF-WAY-TCE	Temporary construction easement	6
9144	rd_RIGHT-OF-WAY-anno	Annotation for right of way and TCE	6
9107	rd_DESIGN-X-SECTION	Design cross sections	0
9108	rd_DESIGN-X-SECTION-anno	Annotation for design cross sections	0
9133	rd_PAVEMENT-STRUCTURE	Pavement-base-subbase material	0
9132	rd_PAVEMENT-anno	Annotation for pavement-base-subbase material	0
9131	rd_PAVEMENT	Pavement material	0
9101	rd_BASE-MATERIAL	Base material	0
9147	rd_SUBBASE-MATERIAL	Subbase material	0
9152	rd_SURFACE-REMOVAL-AC	Area of RACS and cold plane AC	12
9154	rd_SURFACE-REMOVAL-CONC	Area of concrete surface removal	12
9153	rd_SURFACE-REMOVAL-anno	Annotation for areas of AC and CONC surface removal	12
9109	rd_EARTHWORK	Earthwork	15
9110	rd_EARTHWORK-anno	Annotation for all types of earthwork	15
9116	rd_EXCAVATION-ROADWAY	Roadway excavation	15
9111	rd_EMBANKMENT-ROADWAY	Roadway embankment	15
9146	rd_SLOPE	Slopes	15
9115	rd_EXCAVATION-DITCH	Ditch excavation	15
9118	rd_EXCAVATION-STRUCTURE	Structure excavation for walls-etc	15
9100	rd_BACKFILL-STRUCTURE	Structure backfill for walls-etc	15
9122	rd_HMA-DIKE	Hot Mix Asphalt (HMA) dike all types	13
9123	rd_HMA-DIKE-anno	Annotation for Hot Mix Asphalt (HMA) dikes all types	13
9124	rd_HMA-DIKE-TYPE-A	Hot Mix Asphalt (HMA) dike Type A	13
9125	rd_HMA-DIKE-TYPE-C	Hot Mix Asphalt (HMA) dike Type C	13

# Ct\_Roadway

Number	Name	Description	Color
9126	rd_HMA-DIKE-TYPE-D	Hot Mix Asphalt (HMA) dike Type D	13
9127	rd_HMA-DIKE-TYPE-E	Hot Mix Asphalt (HMA) dike Type E	13
9128	rd_HMA-DIKE-TYPE-F	Hot Mix Asphalt (HMA) dike Type F	13
9138	rd_PROFILE-OG	Original ground profile	12
9139	rd_PROFILE-OG-anno	Annotation for original ground profile	12
9136	rd_PROFILE-FINISH	Finish profile	4
9137	rd_PROFILE-FINISH-anno	Annotation for finish profile	4
9148	rd_SUPERELEVATION	Superelevation diagram	11
9149	rd_SUPERELEVATION-anno	Annotation for superelevation diagram	11
9134	rd_PROFILE-BARRIER	Barrier profile top or bottom	5
9135	rd_PROFILE-BARRIER-anno	Annotation for barrier profile	5
9140	rd_PROFILE-WALL	Wall profile	5
9141	rd_PROFILE-WALL-anno	Annotation for wall profile	5
9120	rd_FINISH-GRADE-BREAKLINE	Breaklines for finish grade	10
9121	rd_FINISH-GRADE-POINT	Points for finish grade	10
9119	rd_FINISH-GRADE-anno	Annotation for finish grade lines and points	10
9105	rd_CONTOUR-MAJOR	Final grade major contours	7
9106	rd_CONTOUR-MINOR	Final grade minor contours	15
9104	rd_CONTOUR-anno	Annotation for final grade contours	7
9155	rd_TRIANGLE	Final grade triangles	8
9156	rd_TRIANGLE-anno	Annotation for final grade triangles	8
9150	rd_SURFACE-BOUNDARY	Boundary of finish surface	14
9151	rd_SURFACE-BOUNDARY-anno	Annotation of finish surface boundary	14
9159	rd_NO-PLOT	Elements on this level will not plot!	0
9160	rd_EARTHWORK_CUT	Earthwork Cut Line	3
9161	rd_EARTHWORK_FILL	Earthwork Fill Line	3
9162	rd_MISC	Miscellaneous	0
9117	rd_EXCAVATION-ROCK	Rock excavation	12
9102	rd_CONST-DETAIL	Construction details	0

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Number	Name	Description	Color
9103	rd_CONST-DETAIL-anno	Annotation for construction details	0
9157	rd_TYP-X-SECTION	Typical Cross Sections	0
9158	rd_TYP-X-SECTION-anno	Annotation for Typical Cross Sections	0
9142	rd_QTY-TABLE	Tabular data for summary of quantities	0

Number	Name	Description	Color
1900	align	General alignment	245
1901	align_anno	Annotation for general alignment	245
1902	align_anno_EXIST	Existing alignment - Annotation	216
1903	align_anno_no_plot	Annotation for non-plotting general alignment	245
1700	align_anno_PROPOSED	Proposed alignment - Annotation	219
1701	align_FRONTAGE_EXIST	Existing Frontage Road alignment	215
1702	align_FRONTAGE_PROPOSED	Proposed alignment - Frontage Road	220
1703	align_LOCAL-ST_EXIST	Existing Local Street alignment	215
1704	align_MAIN_EXIST	Existing Mainline alignment	217
1705	align_MAIN_PROPOSED	Proposed Mainline alignment	218
1904	align_no_plot	Non-plotting general alignment	0
1706	align_point_anno_EXIST	Existing alignment - Point annotation	216
1707	align_point_anno_PROPOSED	Proposed alignment - Point annotation	219
1708	align_point_EXIST	Existing alignment - Point data	216
1709	align_point_PROPOSED	Proposed alignment - Point data	219
1710	align_RAMP_EXIST	Existing Ramp alignment	216
1711	align_RAMP_PROPOSED	Proposed Ramp alignment	219
10223	border	Border sheets for any discipline	0
1712	border_rw_22x34	R/W - Border for 22x34 or 11x17 plots	0
1713	border_rw_22x34_Cut_Lines	R/W - Border cut lines for 22x34 or 11x17 plots	0
1714	border_rw_22x36	R/W - Border for 22x36 plots & Title for the Highway Map Book	0
1715	border_rw_22x36_Cut_Lines	R/W - Border cut lines for 22x36 for the Highway Map Book	0
1716	border_rw_anno_filename	R/W - Border annotation - Drawing file path & name	0
1717	border_rw_FRAME_anno_no_plot	R/W - Non-plotting border frame outline annotation including frame numbers	245
1718	border_rw_FRAME_no_plot	R/W - Non-plotting border frame outlines	0
10232	border_SEAL	Seal information of licensed person	245
10225	border_WITHIN-Border_anno	Annotation within the margin of border sheet	245

Number	Name	Description	Color
1719	rw_EASE_EXIST	R/W - Existing easement	217
1720	rw_EASE_EXIST_align	R/W - Existing easement - Centerline	217
1721	rw_EASE_EXIST_anno	R/W - Existing easement - Annotation	217
1722	rw_EASE_EXIST_point	R/W - Existing easement - Point data	217
1723	rw_EASE_EXIST_point_anno	R/W - Existing easement - Point annotation	217
1812	rw_EASE_EXIST_Public_Utility	R/W - Existing easement - Public Utility (Sideline)	216
1813	rw_EASE_EXIST_Public_Utility_align	R/W - Existing easement - Public Utility (Centerline)	216
1814	rw_EASE_EXIST_Title_Encumbrance	R/W - Existing easement - Title Encumbrance	215
1724	rw_EASE_PROPOSED	R/W - Proposed easement	218
1725	rw_EASE_PROPOSED_align	R/W - Proposed easement - Centerline	218
1726	rw_EASE_PROPOSED_anno	R/W - Proposed easement - Annotation	218
1815	rw_EASE_PROPOSED_Drainage	R/W - Proposed easement - Drainage	212
1727	rw_EASE_PROPOSED_point	R/W - Proposed easement - Point data	218
1728	rw_EASE_PROPOSED_point_anno	R/W - Proposed easement - Point annotation	218
1816	rw_EASE_PROPOSED_Slope	R/W - Proposed easement - Slope	213
1729	rw_EASE_PROPOSED_TEMP	R/W - Proposed temporary easement	214
1730	rw_EASE_PROPOSED_TEMP_anno	R/W - Proposed temporary easement - Annotation	214
1817	rw_EASE_PROPOSED_TEMP_Construction	R/W - Proposed temporary easement - Construction	211
1818	rw_EASE_PROPOSED_TEMP_Drainage	R/W - Proposed temporary easement - Drainage	212
1819	rw_EASE_PROPOSED_TEMP_Slope	R/W - Proposed temporary easement - Slope	213
1731	rw_LANDNET_anno	R/W - Landnet (sectionalized land & lines of ownership) - Annotation	209
1732	rw_LANDNET_Fed_Part	R/W - Landnet (sectionalized land & lines of ownership) - Federal Participation	223
1733	rw_LANDNET_Govt_Lot_Sub_Section	R/W - Landnet (sectionalized land & lines of ownership) - USPLS Government Lots & Subsections	210
1734	rw_LANDNET_Interior_Lot	R/W - Landnet (sectionalized land & lines of ownership) - Interior Lot Lines	209

Number	Name	Description	Color
1735	rw_LANDNET_Parcels_Ownership	R/W - Landnet (sectionalized land & lines of ownership) - Parcels and Ownership Lines	208
1736	rw_LANDNET_point	R/W - Landnet (sectionalized land & lines of ownership) - Point data	209
1737	rw_LANDNET_point_anno	R/W - Landnet (sectionalized land & lines of ownership) - Point annotation	209
1738	rw_LANDNET_Public_Boundary	R/W - Landnet (sectionalized land & lines of ownership) - City, County, State, & Federal Boundaries	221
1739	rw_LANDNET_Qtr_Section_Tract	R/W - Landnet (sectionalized land & lines of ownership) - Quarter Section and USPLS Government Tract	210
1740	rw_LANDNET_Section_Rancho	R/W - Landnet (sectionalized land & lines of ownership) - Section Lines and Ranchos	209
1741	rw_LANDNET_Subdiv_Boundary	R/W - Landnet (sectionalized land & lines of ownership) - Subdivision Boundaries	208
1742	rw_LANDNET_Town_Range	R/W - Landnet (sectionalized land & lines of ownership) - Township & Range	208
1743	rw_map_anno	R/W - General map sheet annotation	245
1744	rw_map_anno_Appraisal_Map	R/W - Appraisal map sheet annotation	245
1745	rw_map_anno_Detail	R/W - Annotation for details in map sheets	245
1746	rw_map_anno_even_sheet	R/W - Annotation for edges of even numbered map sheets	234
1747	rw_map_anno_odd_sheet	R/W - Annotation for edges of odd numbered map sheets	235
1748	rw_map_anno_Record_Map	R/W - Record R/W map sheet annotation	245
1749	rw_map_anno_ROS	R/W - Record of Survey (ROS) map sheet annotation	245
1750	rw_map_anno_Vestee_Block	R/W - Appraisal & Record map vestee block including the parcel coloring of the rows	245
1751	rw_map_Appraisal_Map	R/W - Appraisal map miscellaneous data	0
1752	rw_map_Record_Map	R/W - Record R/W map miscellaneous data	0
1753	rw_map_ROS	R/W - Record of Survey (ROS) map miscellaneous data	0

Number	Name	Description	Color
1754	rw_MISC	R/W - Miscellaneous R/W data - Unassigned supplemental reference area, vacated, abandonment, etc.	220
1820	rw_MISC_Abandonment	R/W - Miscellaneous R/W data - Abandonment	220
1755	rw_MISC_anno	R/W - Miscellaneous R/W data - Annotation	220
1756	rw_MISC_CCUA	R/W - Miscellaneous R/W data - Consent to Common Use Agreement (Sideline)	220
1757	rw_MISC_CCUA_align	R/W - Miscellaneous R/W data - Consent to Common Use Agreement (Centerline)	220
1758	rw_MISC_FLA	R/W - Miscellaneous R/W data - Freeway Lease Area	218
1759	rw_MISC_JUA	R/W - Miscellaneous R/W data - Joint Use Agreement (Sideline)	219
1760	rw_MISC_JUA_align	R/W - Miscellaneous R/W data - Joint Use Agreement (Centerline)	219
1761	rw_MISC_point	R/W - Miscellaneous R/W data - Point data	220
1762	rw_MISC_point_anno	R/W - Miscellaneous R/W data - Point annotation	220
1821	rw_MISC_Supplemental_Reference	R/W - Miscellaneous R/W data - Unassigned supplemental reference area	218
1822	rw_MISC_Vacation	R/W - Miscellaneous R/W data - Vacation	220
1763	rw_parcel	R/W - Civil 3D parcels	208
1764	rw_parcel_anno	R/W - Parcel area & name annotation	245
1765	rw_parcel_anno_Annotation_Area_no_plot	R/W - Non-plotting Parcel area & name annotation - Parcels in the Parcel Annotation Site	245
1766	rw_parcel_anno_Easement_Area_no_plot	R/W - Non-plotting Parcel area & name annotation - Parcels in the Easement Parcels Site	218
1767	rw_parcel_anno_Existing_Area_no_plot	R/W - Non-plotting Parcel area & name annotation - Parcels in the Existing Parcels Site	216
1768	rw_parcel_anno_Proposed_Area_no_plot	R/W - Non-plotting Parcel area & name annotation - Parcels in the Proposed Parcels Site	219
1769	rw_parcel_COLOR	R/W - Miscellaneous parcel coloring	226

Number	Name	Description	Color
1770	rw_parcel_COLOR_Aqua	R/W - Parcel coloring - Aqua	234
1830	rw_parcel_COLOR_Aqua_Easement_UF	R/W - Parcel coloring for easement & UF areas - Aqua	234
1843	rw_parcel_COLOR_Aqua_Remainder	R/W - Parcel coloring for remainder areas - Aqua	234
1771	rw_parcel_COLOR_Blue	R/W - Parcel coloring - Blue	235
1831	rw_parcel_COLOR_Blue_Easement_UF	R/W - Parcel coloring for easement & UF areas - Blue	235
1772	rw_parcel_COLOR_Blue_Light	R/W - Parcel coloring - Light blue	229
1832	rw_parcel_COLOR_Blue_Light_Easement_UF	R/W - Parcel coloring for easement & UF areas - Light blue	229
1845	rw_parcel_COLOR_Blue_Light_Remainder	R/W - Parcel coloring for remainder areas - Light blue	229
1844	rw_parcel_COLOR_Blue_Remainder	R/W - Parcel coloring for remainder areas - Blue	235
1773	rw_parcel_COLOR_Brown	R/W - Parcel coloring - Brown	237
1833	rw_parcel_COLOR_Brown_Easement_UF	R/W - Parcel coloring for easement & UF areas - Brown	237
1846	rw_parcel_COLOR_Brown_Remainder	R/W - Parcel coloring for remainder areas - Brown	237
1774	rw_parcel_COLOR_Excess	R/W - Parcel coloring for excess areas only - Yellow	224
1775	rw_parcel_COLOR_Green	R/W - Parcel coloring - Green	233
1834	rw_parcel_COLOR_Green_Easement_UF	R/W - Parcel coloring for easement & UF areas - Green	233
1776	rw_parcel_COLOR_Green_Light	R/W - Parcel coloring - Light green	227
1835	rw_parcel_COLOR_Green_Light_Easement_UF	R/W - Parcel coloring for easement & UF areas - Light green	227
1848	rw_parcel_COLOR_Green_Light_Remainder	R/W - Parcel coloring for remainder areas - Light green	227
1847	rw_parcel_COLOR_Green_Remainder	R/W - Parcel coloring for remainder areas - Green	233
1777	rw_parcel_COLOR_Lavender	R/W - Parcel coloring - Lavender	238
1836	rw_parcel_COLOR_Lavender_Easement_UF	R/W - Parcel coloring for easement & UF areas - Lavender	238
1778	rw_parcel_COLOR_Lavender_Light	R/W - Parcel coloring - Light lavender	228
1837	rw_parcel_COLOR_Lavender_Light_Easement_UF	R/W - Parcel coloring for easement & UF areas - Light lavender	228

Number	Name	Description	Color
1850	rw_parcel_COLOR_Lavender_Light_Remainder	R/W - Parcel coloring for remainder areas - Light lavender	228
1849	rw_parcel_COLOR_Lavender_Remainder	R/W - Parcel coloring for remainder areas - Lavender	238
1779	rw_parcel_COLOR_Orange	R/W - Parcel coloring - Orange	236
1838	rw_parcel_COLOR_Orange_Easement_UF	R/W - Parcel coloring for easement & UF areas - Orange	236
1780	rw_parcel_COLOR_Orange_Light	R/W - Parcel coloring - Light orange	230
1839	rw_parcel_COLOR_Orange_Light_Easement_UF	R/W - Parcel coloring for easement & UF areas - Light orange	230
1852	rw_parcel_COLOR_Orange_Light_Remainder	R/W - Parcel coloring for remainder areas - Light orange	230
1851	rw_parcel_COLOR_Orange_Remainder	R/W - Parcel coloring for remainder areas - Orange	236
1781	rw_parcel_COLOR_Pink	R/W - Parcel coloring - Pink	239
1840	rw_parcel_COLOR_Pink_Easement_UF	R/W - Parcel coloring for easement & UF areas - Pink	239
1782	rw_parcel_COLOR_Pink_Light	R/W - Parcel coloring - Light pink	226
1841	rw_parcel_COLOR_Pink_Light_Easement_UF	R/W - Parcel coloring for easement & UF areas - Light pink	226
1854	rw_parcel_COLOR_Pink_Light_Remainder	R/W - Parcel coloring for remainder areas - Light pink	226
1853	rw_parcel_COLOR_Pink_Remainder	R/W - Parcel coloring for remainder areas - Pink	239
1783	rw_parcel_COLOR_Tan	R/W - Parcel coloring - Tan	231
1842	rw_parcel_COLOR_Tan_Easement_UF	R/W - Parcel coloring for easement & UF areas - Tan	231
1855	rw_parcel_COLOR_Tan_Remainder	R/W - Parcel coloring for remainder areas - Tan	231
1784	rw_parcel_Easement Parcels	R/W - Parcels created in Easement Parcels Site	212
1785	rw_parcel_Existing Parcels	R/W - Parcels created in Existing Parcels Site	216
1786	rw_parcel_Parcel Annotation	R/W - Parcels created in Parcel Annotation Site	245
1787	rw_parcel_PATTERN_Directors_Deed	R/W - Patterning for director's deed parcels	232
1788	rw_parcel_PATTERN_Relinquishment	R/W - Patterning for relinquishment parcels	232
1789	rw_parcel_Proposed Parcels	R/W - Parcels created in Proposed Parcels Site	218
1790	rw_parcel_SEGMENT	R/W - Parcel segment linework	208
1791	rw_parcel_SEGMENT_anno	R/W - Parcel segment annotation	208

Number	Name	Description	Color
1792	rw_parcel_SEGMENT_Easement Parcels	R/W - Parcel segment linework of parcels created in Easement Parcels Site	212
1793	rw_parcel_SEGMENT_Existing Parcels	R/W - Parcel segment linework of parcels created in Existing Parcels Site	216
1794	rw_parcel_SEGMENT_Parcel Annotation	R/W - Parcel segment linework of parcels created in Parcel Annotation Site	245
1795	rw_parcel_SEGMENT_Proposed Parcels	R/W - Parcel segment linework of parcels created in Proposed Parcels Site	218
1796	rw_retracement	R/W - General retracement data	0
1797	rw_retracement_anno	R/W - General retracement annotation	245
1798	rw_RW_EXIST	R/W - Existing R/W - Conventional & access controlled R/W (Fee or Easement)	217
1823	rw_RW_EXIST_Access_Left	R/W - Existing R/W - Access controlled R/W (Fee or Easement) - Left	217
1824	rw_RW_EXIST_Access_Right	R/W - Existing R/W - Access controlled R/W (Fee or Easement) - Right	217
1799	rw_RW_EXIST_anno	R/W - Existing R/W - Annotation	217
1825	rw_RW_EXIST_Conventional	R/W - Existing R/W - Conventional R/W (Fee or Easement)	217
1800	rw_RW_EXIST_point	R/W - Existing R/W - Point	217
1801	rw_RW_EXIST_point_anno	R/W - Existing R/W - Point annotation	217
1802	rw_RW_EXIST_point_anno_no_plot	R/W - Non-plotting Existing R/W - Point annotation	215
1803	rw_RW_EXIST_point_no_plot	R/W - Non-plotting Existing R/W - Point	215
1856	rw_RW_EXIST_Previous	R/W - Existing R/W - Previous R/W (Fee or Easement)	217
1804	rw_RW_EXIST_Relinquished	R/W - Existing R/W - Relinquished conventional & access controlled R/W (Fee or Easement)	215
1826	rw_RW_EXIST_Relinquished_Access_Left	R/W - Existing R/W - Relinquished access controlled R/W (Fee or Easement) - Left	215
1827	rw_RW_EXIST_Relinquished_Access_Right	R/W - Existing R/W - Relinquished access controlled R/W (Fee or Easement) - Right	215

Number	Name	Description	Color
1828	rw_RW_EXIST_Relinquished_Conventional	R/W - Existing R/W - Relinquished conventional R/W (Fee or Easement)	215
1805	rw_RW_EXIST_Superceded	R/W - Existing R/W - Superseded conventional & access controlled R/W (Fee or Easement)	217
1829	rw_RW_EXIST_Superceded_Access_Left	R/W - Existing R/W - Superseded access controlled R/W (Fee or Easement) - Left	217
1857	rw_RW_EXIST_Superceded_Access_Right	R/W - Existing R/W - Superseded access controlled R/W (Fee or Easement) - Right	217
1858	rw_RW_EXIST_Superceded_Conventional	R/W - Existing R/W - Superseded conventional R/W (Fee or Easement)	217
1859	rw_RW_PROPOSED	R/W - Proposed R/W - Conventional & access controlled R/W (Fee or Easement)	218
1860	rw_RW_PROPOSED_Access_Left	R/W - Proposed R/W - Access controlled R/W (Fee or Easement) - Left	218
1861	rw_RW_PROPOSED_Access_Right	R/W - Proposed R/W - Access controlled R/W (Fee or Easement) - Right	218
1807	rw_RW_PROPOSED_anno	R/W - Proposed R/W - Annotation	218
1862	rw_RW_PROPOSED_Conventional	R/W - Proposed R/W - Conventional R/W (Fee or Easement)	218
1808	rw_RW_PROPOSED_point	R/W - Proposed R/W - Point	218
1809	rw_RW_PROPOSED_point_anno	R/W - Proposed R/W - Point annotation	218
1905	rw_topo_anno	General R/W & topo data - General annotation	245
1906	rw_topo_anno_TABLE	General R/W & topo data - Data tables	245
1907	rw_topo_Calcs_anno_no_plot	General R/W & topo data - Non-plotting calculation annotation	245
1908	rw_topo_Calcs_no_plot	General R/W & topo data - Non-plotting calculations	0
1909	rw_topo_Images	General R/W & topo data - Attached image files	0
1910	rw_topo_Notes_no_plot	General R/W & topo data - Non-plotting notes and general information	245

Number	Name	Description	Color
1911	rw_topo_point	General R/W & topo data - General point data	0
1912	rw_topo_point_anno	General R/W & topo data - General point annotation	245
1913	rw_topo_point_NON_STANDARD	General R/W & topo data - Non-standard point data	239
1914	rw_topo_Reference_Files	General R/W & topo data - Attached drawing files	0
1915	rw_topo_Wipeout_Areas	General R/W & topo data - Wipeout/masking shapes	250
1301	topo_su_ctrl_LINE_PTS_info_only	Survey data - Points associated to control linework	43
1302	topo_su_ctrl_LNWK	Survey data - Surveyed found linework for retracement work	43
1303	topo_su_ctrl_point_FD	Survey data - Surveyed found points	43
1304	topo_su_ctrl_point_FD_anno	Survey data - Annotation for all surveyed found points	43
1810	topo_su_ctrl_point_FD_anno_no_plot	Survey data - Non-plotting annotation for all surveyed found points	43
1811	topo_su_ctrl_point_FD_no_plot	Survey data - Non-plotting surveyed found points	43
1305	topo_su_ctrl_point_MON	Survey data - Project control monuments	43
1306	topo_su_ctrl_point_MON_anno	Survey data - Annotation for all project control monuments, including survey baselines	43

## Ct\_StageConstruction

Number	Name	Description	Color
9900	stage_1	Stage 1 construction	3
9901	stage_1-anno	Annotation for stage 1 construction	3
9902	stage_1_drop	Dropout of stage 1 construction for stage 2	3
9903	stage_2	Stage 2 construction	13
9904	stage_2-anno	Annotation for stage 2 construction	13
9905	stage_2_drop	Dropout of stage 2 construction for stage 3	13
9906	stage_3	Stage 3 construction	8
9907	stage_3-anno	Annotation for stage 3 construction	8
9908	stage_3_drop	Dropout of stage3 construction for stage 4	8
9909	stage_4	Stage 4 construction	5
9910	stage_4-anno	Annotation for stage 4 construction	5
9911	stage_4_drop	Dropout of stage 4 construction for stage 5	5
9912	stage_5	Stage 5 construction	14
9913	stage_5-anno	Annotation for stage 5 construction	14
9914	stage_5_drop	Dropout of stage 5 construction for stage 6	14
9915	stage_6	Stage 6 construction	3
9916	stage_6-anno	Annotation for stage 6 construction	3
9917	stage_6_drop	Dropout of stage 6 construction for stage 7	3
9918	stage_7	Stage 7 construction	13
9919	stage_7-anno	Annotation for stage 7 construction	13
9920	stage_7_drop	Dropout of stage 7 construction for stage 8	13
9921	stage_8	Stage 8 construction	8
9922	stage_8-anno	Annotation for stage 8 construction	8
9923	stage_8_drop	Dropout of stage 8 construction for stage 9	8
9924	stage_9	Stage 9 construction	5
9925	stage_9-anno	Annotation for stage 9 construction	5
9926	stage_9_drop	Dropout of stage 9 construction for stage 10	5
9927	stage_10	Stage 10 construction	14
9928	stage_10-anno	Annotation for stage 10 construction	14

## Ct\_StageConstruction

Number	Name	Description	Color
9929	stage_10_drop	Dropout of stage 10 construction for stage 11	14
9930	stage_NO-PLOT	Elements on this level will not plot!	0
9931	stage_MISC	Miscellaneous	0

Number	Name	Description	Color
7123	str_Guideline-NoPlot-A	Guidelines - Does Not Plot	15
7124	str_Guideline-NoPlot-B	Guidelines - Does Not Plot	15
7125	str_Guideline-NoPlot-C	Guidelines - Does Not Plot	15
7126	str_Guideline-NoPlot-D	Guidelines - Does Not Plot	15
7127	str_Guideline-NoPlot-E	Guidelines - Does Not Plot	15
7000	str_Arch-Treatment-A	Architectural Treatment	211
7001	str_Arch-Treatment-B	Architectural Treatment	212
7002	str_Arch-Treatment-C	Architectural Treatment	213
7003	str_Arch-Treatment-D	Architectural Treatment	214
7004	str_Arch-Treatment-E	Architectural Treatment	211
7005	str_As-Built-Changes-A	As-Built Changes	136
7006	str_As-Built-Changes-B	As-Built Changes	136
7007	str_As-Built-Changes-C	As-Built Changes	136
7008	str_Border-A	Alternate Border Elements	0
7009	str_Border-B	Alternate Border Elements	0
7010	str_Border-Plot-Shape-A	Border Plot Shape	252
7011	str_Border-PSE-OE-Rsvrd-A	Reserved for OE Information	0
7012	str_Border-PSE-Seal-A	Engineer's Seal	0
7013	str_Border-PSE-Signature-A	Engineer's Signature and Information	0
7014	str_Border-Text-A	Editable Border Elements	0
7015	str_Border-Title-Block-A	Permanent Border Elements	0
7016	str_CCO-Changes-A	CCO Changes	138
7017	str_CCO-Changes-B	CCO Changes	138
7018	str_CCO-Changes-C	CCO Changes	138
7019	str_CCO-Sign-Seal-A	CCO Seal and Signature	138
7020	str_Center-Line-A	Item Center Lines	152
7021	str_Center-Line-B	Item Center Lines	152
7022	str_Center-Line-C	Item Center Lines	152
7023	str_Center-Line-D	Item Center Lines	152

Number	Name	Description	Color
7024	str_Center-Line-E	Item Center Lines	152
7025	str_Concrete-A	Concrete	0
7026	str_Concrete-B	Concrete	84
7027	str_Concrete-C	Concrete	220
7028	str_Concrete-D	Concrete	225
7029	str_Concrete-E	Concrete	0
7030	str_Concrete-F	Concrete	84
7031	str_Concrete-G	Concrete	220
7032	str_Concrete-H	Concrete	225
7033	str_Concrete-I	Concrete	0
7034	str_Concrete-J	Concrete	84
7035	str_Concrete-K	Concrete	220
7036	str_Concrete-L	Concrete	225
7038	str_Concrete-N	Concrete	84
7037	str_Concrete-M	Concrete	0
7039	str_Concrete-O	Concrete	220
7040	str_Deck-Contours-A	Deck Contours	64
7041	str_Deck-Contours-B	Deck Contours	187
7042	str_Deck-Contours-C	Deck Contours	185
7043	str_Deck-Contours-D	Deck Contours	48
7044	str_Deck-Contours-E	Deck Contours	32
7045	str_Dimensions-A	Dimensions	152
7046	str_Dimensions-B	Dimensions	152
7047	str_Dimensions-C	Dimensions	152
7048	str_Dimensions-D	Dimensions	152
7049	str_Dimensions-E	Dimensions	152
7050	str_Drainage-A	Drainage	59
7051	str_Drainage-B	Drainage	60
7052	str_Drainage-C	Drainage	61

Number	Name	Description	Color
7053	str_Drainage-D	Drainage	62
7054	str_Drainage-E	Drainage	63
7055	str_Dropout-A_dither	Dropout	85
7056	str_Dropout-B_dither	Dropout	86
7057	str_Dropout-C_dither	Dropout	87
7058	str_Dropout-D_dither	Dropout	88
7059	str_Dropout-E_dither	Dropout	89
7060	str_Dropout-F_dither	Dropout	90
7061	str_Dropout-G_dither	Dropout	91
7062	str_Dropout-H_dither	Dropout	92
7063	str_Dropout-I_dither	Dropout	93
7064	str_Dropout-J_dither	Dropout	94
7065	str_Dropout-K_dither	Dropout	95
7066	str_Dropout-L_dither	Dropout	96
7067	str_Engineering-Notes-A	Engineering Notes	239
7068	str_Engineering-Notes-B	Engineering Notes	239
7069	str_Engineering-Notes-C	Engineering Notes	239
7071	str_Existing-Arch-Treatment-A	Existing Architectural Treatment	211
7070	str_Existing-A	Existing	199
7072	str_Existing-Arch-Treatment-B	Existing Architectural Treatment	212
7073	str_Existing-Concrete-A	Existing Concrete	0
7074	str_Existing-Concrete-B	Existing Concrete	84
7075	str_Existing-Concrete-C	Existing Concrete	220
7076	str_Existing-Concrete-D	Existing Concrete	225
7077	str_Existing-Non-Metallic-A	Existing Non-Metallic Components	196
7078	str_Existing-Non-Metallic-B	Existing Non-Metallic Components	196
7079	str_Existing-Railroad-A	Existing Railroad	81
7080	str_Existing-Railroad-B	Existing Railroad	81
7081	str_Existing-Reinforcement-A	Existing Reinforcement	48

Number	Name	Description	Color
7082	str_Existing-Reinforcement-B	Existing Reinforcement	120
7083	str_Existing-Reinforcement-C	Existing Reinforcement	176
7084	str_Existing-Reinforcement-D	Existing Reinforcement	185
7085	str_Existing-Reinforcement-E	Existing Reinforcement	124
7086	str_Existing-Reinforcement-F	Existing Reinforcement	180
7087	str_Existing-Reinforcement-G	Existing Reinforcement	32
7088	str_Existing-Reinforcement-H	Existing Reinforcement	56
7089	str_Existing-Reinforcement-I	Existing Reinforcement	10
7090	str_Existing-Reinforcement-J	Existing Reinforcement	64
7091	str_Existing-Reinforcement-K	Existing Reinforcement	122
7092	str_Existing-Reinforcement-L	Existing Reinforcement	178
7093	str_Existing-Reinforcement-M	Existing Reinforcement	187
7094	str_Existing-Roadway-A	Existing Roadway	195
7095	str_Existing-Roadway-B	Existing Roadway	196
7096	str_Existing-Steel-A	Existing Steel	223
7097	str_Existing-Steel-B	Existing Steel	222
7098	str_Existing-Steel-C	Existing Steel	221
7099	str_Existing-Steel-D	Existing Steel	200
7100	str_Existing-Steel-E	Existing Steel	223
7101	str_Existing-Steel-F	Existing Steel	222
7102	str_Existing-Steel-G	Existing Steel	221
7103	str_Existing-Steel-H	Existing Steel	200
7104	str_Existing-Steel-I	Existing Steel	223
7105	str_Existing-Steel-J	Existing Steel	222
7106	str_Existing-Steel-K	Existing Steel	221
7107	str_Existing-Steel-L	Existing Steel	200
7108	str_Existing-Steel-M	Existing Steel	223
7109	str_Existing-Utilities-A	Existing Utility Items	120
7110	str_Existing-Utilities-B	Existing Utility Items	84

Number	Name	Description	Color
7111	str_Existing-Wood-A	Existing Wood	231
7112	str_Existing-Wood-B	Existing Wood	7
7113	str_Grades-A	Grades	7
7114	str_Grades-Exec-Backfill-A	Excavation and Backfill	200
7115	str_Grades-Exec-Backfill-B	Excavation and Backfill	231
7116	str_Grades-Finish-Grade-A	Finish Grade	7
7117	str_Grades-Major-Grades-A	Major Grade Contours	7
7118	str_Grades-Minor-Grades-A	Minor Grade Contours	200
7119	str_Grades-Origonal-Ground-A	Original Ground	200
7120	str_Grades-Slope-Protection-A	Slope Protection	231
7121	str_Grades-Top-Toe-Slope-A	Top and Toe of Slope	7
7122	str_Grades-Water-A	Water and Flow Items	1
7128	str_Hatching-A	Hatching	213
7129	str_Hatching-B	Hatching	212
7130	str_Hatching-C	Hatching	211
7131	str_Hatching-D	Hatching	212
7132	str_Hatching-E	Hatching	213
7133	str_Layout-A	Layout Lines and Information	1
7134	str_Layout-B	Layout Lines and Information	1
7135	str_Layout-C	Layout Lines and Information	1
7136	str_Layout-D	Layout Lines and Information	1
7137	str_Layout-E	Layout Lines and Information	1
7138	str_Layout-F	Layout Lines and Information	1
7139	str_Layout-G	Layout Lines and Information	1
7140	str_Layout-H	Layout Lines and Information	1
7141	str_Layout-I	Layout Lines and Information	1
7142	str_Layout-J	Layout Lines and Information	1
7143	str_Masking-Shape-A	Masking Shape	250
7144	str_Masking-Shape-B	Masking Shape	250

Number	Name	Description	Color
7145	str_Misc-Steel-A	Miscellaneous Steel	56
7146	str_Misc-Steel-B	Miscellaneous Steel	122
7147	str_Misc-Steel-C	Miscellaneous Steel	126
7148	str_Misc-Steel-D	Miscellaneous Steel	120
7149	str_Misc-Steel-E	Miscellaneous Steel	124
7150	str_Misc-Steel-F	Miscellaneous Steel	56
7151	str_Misc-Steel-G	Miscellaneous Steel	122
7152	str_Misc-Steel-H	Miscellaneous Steel	126
7153	str_Misc-Steel-I	Miscellaneous Steel	120
7154	str_Misc-Steel-J	Miscellaneous Steel	124
7155	str_Non-Metallic-Components-A	Non-Metallic Components	196
7156	str_Non-Metallic-Components-B	Non-Metallic Components	196
7157	str_Non-Metallic-Components-C	Non-Metallic Components	196
7158	str_Non-Metallic-Components-D	Non-Metallic Components	196
7159	str_Non-Metallic-Components-E	Non-Metallic Components	196
7160	str_Prestressed-Components-A	Prestressed Components	6
7161	str_Prestressed-Components-B	Prestressed Components	6
7162	str_Prestressed-Components-C	Prestressed Components	6
7163	str_Prestressed-Components-D	Prestressed Components	6
7164	str_Prestressed-Components-E	Prestressed Components	6
7165	str_Railroad-A	Railroad	81
7166	str_Railroad-B	Railroad	81
7167	str_Railroad-C	Railroad	81
7168	str_Railroad-D	Railroad	81
7169	str_Reinforcement-A	Reinforcement	48
7170	str_Reinforcement-B	Reinforcement	120
7171	str_Reinforcement-C	Reinforcement	176
7172	str_Reinforcement-D	Reinforcement	185
7173	str_Reinforcement-E	Reinforcement	124

Number	Name	Description	Color
7174	str_Reinforcement-F	Reinforcement	180
7175	str_Reinforcement-G	Reinforcement	32
7176	str_Reinforcement-H	Reinforcement	56
7177	str_Reinforcement-I	Reinforcement	10
7178	str_Reinforcement-J	Reinforcement	64
7179	str_Reinforcement-K	Reinforcement	122
7180	str_Reinforcement-L	Reinforcement	178
7181	str_Reinforcement-M	Reinforcement	187
7182	str_Reinforcement-N	Reinforcement	126
7183	str_Reinforcement-O	Reinforcement	182
7184	str_Reinforcement-P	Reinforcement	48
7185	str_Reinforcement-Q	Reinforcement	120
7186	str_Reinforcement-R	Reinforcement	176
7187	str_Reinforcement-S	Reinforcement	185
7188	str_Reinforcement-T	Reinforcement	124
7189	str_Reinforcement-U	Reinforcement	180
7190	str_Reinforcement-V	Reinforcement	32
7191	str_Reinforcement-W	Reinforcement	56
7192	str_Reinforcement-X	Reinforcement	10
7193	str_Reinforcement-Y	Reinforcement	64
7194	str_Structural-Steel-A	Structural Steel	223
7195	str_Structural-Steel-B	Structural Steel	222
7196	str_Structural-Steel-C	Structural Steel	221
7197	str_Structural-Steel-D	Structural Steel	200
7198	str_Structural-Steel-E	Structural Steel	223
7199	str_Structural-Steel-F	Structural Steel	222
7200	str_Structural-Steel-G	Structural Steel	221
7201	str_Structural-Steel-H	Structural Steel	200
7202	str_Structural-Steel-I	Structural Steel	223

Number	Name	Description	Color
7203	str_Structural-Steel-J	Structural Steel	222
7204	str_Structural-Steel-K	Structural Steel	221
7205	str_Structural-Steel-L	Structural Steel	200
7206	str_Structural-Steel-M	Structural Steel	223
7207	str_Structural-Steel-N	Structural Steel	222
7208	str_Structural-Steel-O	Structural Steel	221
7209	str_Text-A	Text	12
7210	str_Text-B	Text	12
7211	str_Text-C	Text	12
7212	str_Text-D	Text	12
7213	str_Text-E	Text	12
7214	str_Utilities-A	Utility Items	120
7215	str_Utilities-B	Utility Items	84
7216	str_Utilities-C	Utility Items	11
7217	str_Utilities-D	Utility Items	13
7218	str_Utilities-E	Utility Items	6
7219	str_Utilities-F	Utility Items	7
7220	str_Wood-A	Wood	231
7221	str_Wood-B	Wood	7
7222	str_Wood-C	Wood	200
7223	str_Wood-D	Wood	7
7224	str_Wood-E	Wood	231

## Ct\_TemporaryItemsOfWork

Number	Name	Description	Color
9820	temp_NO-PLOT	Elements on this level will not plot!	0
9817	temp_TRAFFIC-CONTROL	Temporary traffic control devices	0
9818	temp_TRAFFIC-CONTROL-anno	Annotation for temp traffic control devices all types	0
9816	temp_TRAFFIC-CONES	Temporary Traffic Cones	0
9819	temp_TRAFFIC-DRUMS	Temporary plastic traffic drums	0
9811	temp_PORTABLE-DELINEATORS	Temporary portable delineators	0
9801	temp_CHANNELIZERS	Temporary channelizers	0
9800	temp_BARRICADES	Temporary barricades	0
9813	temp_RAILING-TYPE-K	Type K temporary railing	8
9804	temp_CRASH-CUSHION	Temporary crash cushion modules	0
9812	temp_PVMT-DELINEATION	Temporary pavement delineation all types	3
9806	temp_FLASHING-ARROW-SIGN	Temporary flashing arrow signs	4
9807	temp_FLASHING-BEACON	Temporary and portable flashing beacons	4
9810	temp_PORTABLE-CMS	Portable changeable message sign	4
9814	temp_SIGNAL-SYSTEMS	Temporary signal systems	2
9815	temp_SIGNAL-SYSTEMS-anno	Annotation for temporary signal systems	2
9808	temp_HIGH-VISIBILITY-FENCE	Temporary high visibility fence	6
9809	temp_HIGH-VISIBILITY-FENCE-anno	Annotation for temporary high visibility fence	6
9802	temp_CONSTRUCTION	Temporary construction	12
9803	temp_CONSTRUCTION-anno	Annotation for temporary construction and facilities	12
9805	temp_FACILITIES	Temporary facilities	12

Number	Name	Description	Color
1100	topo_al_bndy_anno_drop	Aerial LiDAR data - Annotation of boundary features	3
1101	topo_al_bndy_gnv_info_only	Aerial LiDAR data - GNV boundary shape	3
1102	topo_al_bndy_map_lmt_info_only	Aerial LiDAR data - Mapping Limits	3
1103	topo_al_bndy_ortho_info_only	Aerial LiDAR data - Ortho imagery tiles	3
1104	topo_al_bndy_void_drop	Aerial LiDAR data - Void boundary shape	31
1105	topo_al_data_info_only	Aerial LiDAR data - General aerial LiDAR data including file layout diagram, title block and north arrow	0
1106	topo_al_dtm_anno_drop	Aerial LiDAR data - Annotation for DTM features - spot elevation text including bridge deck spots (floating)	7
1111	topo_al_dtm_brk_spot_deck_info_only	Aerial LiDAR data - Random breaklines, spots and mass points on bridge deck DTM areas	248
1114	topo_al_dtm_brk_gnv_info_only	Aerial LiDAR data - GNV breaklines in ground DTM areas	3
1107	topo_al_dtm_brk_spot_info_only	Aerial LiDAR data - Random breaklines, spots and mass points in ground DTM areas	3
1108	topo_al_dtm_cont_index_anno_drop	Aerial LiDAR data - Index contour annotation including floating contour annotation	7
1112	topo_al_dtm_cont_index_deck_drop	Aerial LiDAR data - Float index contours - all linestyles	248
1109	topo_al_dtm_cont_index_drop	Aerial LiDAR data - Index, index GNV, index depression, index depression GNV	7
1113	topo_al_dtm_cont_inter_deck_drop	Aerial LiDAR data - Float intermediate contours - all linestyles	248
1110	topo_al_dtm_cont_inter_drop	Aerial LiDAR data - Intermediate contour, intermediate GNV, intermediate depression, intermediate depression GNV	7
1115	topo_al_hydro_anno_drop	Aerial LiDAR data - Annotation for all hydrographic features	1
1116	topo_al_hydro_df_STR_deck_drop	Aerial LiDAR data - Drainage facility structures on bridge decks including drop inlets	248
1117	topo_al_hydro_df_STR_drop	Aerial LiDAR data - Drainage facility structures on ground surfaces including drop inlets, exposed drainage pipes, headwalls, etc.	1

Number	Name	Description	Color
1118	topo_al_hydro_WATER_drop	Aerial LiDAR data - Water Edges (non flowing); Flowlines through natural or manmade structures	1
1119	topo_al_MISC_check_no_plot	Aerial LiDAR data - Miscellaneous lines and text with editing information	0
1120	topo_al_MISC_one_no_plot	Aerial LiDAR data - Data cleaning and processing	0
1121	topo_al_MISC_two_no_plot	Aerial LiDAR data - Data cleaning and processing	0
1122	topo_al_POINT_CLOUD	Aerial LiDAR data - Point clouds and associated features	0
1124	topo_al_rdbed_AC_deck_drop	Aerial LiDAR data - Asphalt features in roadbed areas on bridge decks	248
1125	topo_al_rdbed_AC_drop	Aerial LiDAR data - Asphalt features in roadbed areas on ground surfaces	4
1123	topo_al_rdbed_anno_drop	Aerial LiDAR data - Annotation for roadbed features	4
1126	topo_al_rdbed_CONC_deck_drop	Aerial LiDAR data - Concrete features in roadbed areas on bridge decks	248
1127	topo_al_rdbed_CONC_drop	Aerial LiDAR data - Concrete features in roadbed areas on ground surfaces	4
1128	topo_al_rdbed_CURB_deck_drop	Aerial LiDAR data - Curbs on bridge decks	248
1129	topo_al_rdbed_CURB_drop	Aerial LiDAR data - Curbs in roadbed areas	4
1130	topo_al_rdbed_DIKE_drop	Aerial LiDAR data - Dikes in roadbed areas	4
1131	topo_al_rdbed_DIRT_drop	Aerial LiDAR data - Dirt features in roadbed areas	4
1132	topo_al_rdbed_MISC_drop	Aerial LiDAR data - Miscellaneous roadbed features: cattle guards and other roadbed features not already assigned to a level	4
1133	topo_al_rdbed_ROCK_drop	Aerial LiDAR data - Rock features in roadbed areas	4
1135	topo_al_rdside_AC_drop	Aerial LiDAR data - Asphalt features in roadside areas including driveways, paths, etc.	2
1134	topo_al_rdside_anno_drop	Aerial LiDAR data - Annotation for roadside features	2
1136	topo_al_rdside_CONC_drop	Aerial LiDAR data - Concrete features in roadside areas including driveways, paths, etc.	2

Number	Name	Description	Color
1137	topo_al_rdside_CURB_drop	Aerial LiDAR data - Curbs in roadside areas	2
1138	topo_al_rdside_DIKE_drop	Aerial LiDAR data - Dikes in roadside areas	2
1139	topo_al_rdside_DIRT_drop	Aerial LiDAR data - Dirt features in roadside areas including trails and other dirt areas	2
1140	topo_al_rdside_MISC_drop	Aerial LiDAR data - Miscellaneous roadside features including posts, flag poles, tanks, miscellaneous boundaries for areas under construction and ruins and other roadside features not already assigned to a level	2
1141	topo_al_rdside_ROCK_drop	Aerial LiDAR data - Edges of rock areas & edges of rock slope protection areas, large individual rocks	2
1142	topo_al_rdside_RR_drop	Aerial LiDAR data - Railroad rails	2
1145	topo_al_str_anno_deck_drop	Aerial LiDAR data - Annotation for bridge deck features	248
1143	topo_al_str_anno_drop	Aerial LiDAR data - Annotation for ground surface structures features	247
1144	topo_al_str_BLDG_drop	Aerial LiDAR data - Buildings, decks, covered patios, carports, stairs and ramps etc.	247
1148	topo_al_rdside_Fence_drop	Aerial LiDAR data - Fences, gates & gate posts	247
1146	topo_al_str_MISC_deck_drop	Aerial LiDAR data - Miscellaneous bridge deck features	248
1147	topo_al_str_PN_deck_drop	Aerial LiDAR data - Paving notch (back stem wall of the abutment)	248
1149	topo_al_str_WALL_drop	Aerial LiDAR data - Walls including crib, retaining, masonry & sound walls	247
1150	topo_al_study_anno_drop	Aerial LiDAR data - Annotation of study features	29
1152	topo_al_study_brk_spot_deck_info_only	Aerial LiDAR data - Breaklines and masspoints for +- 2.5 ft surface in bridge deck DTM areas	29
1153	topo_al_study_brk_gnv_info_only	Aerial LiDAR data - GNV breaklines for +- 2.5 ft surface in ground DTM areas	29
1151	topo_al_study_brk_spot_info_only	Aerial LiDAR data - Breaklines and masspoints for +- 2.5 ft surface in ground DTM areas	29

Number	Name	Description	Color
1154	topo_al_study_water_info_only	Aerial LiDAR data - Flowline and edge of water body for +- 2.5 ft surface	9
1155	topo_al_tcd_anno_drop	Aerial LiDAR data - Annotation for sign, markers & marking features	30
1156	topo_al_tcd_BARRIER_deck_drop	Aerial LiDAR data - Barriers & rails on bridge decks	248
1157	topo_al_tcd_BARRIER_drop	Aerial LiDAR data - Barriers & rails on ground surfaces	30
1158	topo_al_tcd_MARKING_deck_drop	Aerial LiDAR data - Pavement marking on bridge decks including ETW, lane lines, stripes, etc.	248
1159	topo_al_tcd_MARKING_drop	Aerial LiDAR data - Pavement marking including lane lines, crosswalks, stripes, etc.	30
1160	topo_al_tcd_MISC_drop	Aerial LiDAR data - Miscellaneous traffic control features including crash cushions, K-rail, etc.	30
1161	topo_al_tcd_SIGN_drop	Aerial LiDAR data - Signs	30
1162	topo_al_ut_anno_drop	Aerial LiDAR data - Annotation for utility features	15
1163	topo_al_ut_APPR_drop	Aerial LiDAR data - Utility appurtenances - standpipes and wells	15
1164	topo_al_ut_LTG_drop	Aerial LiDAR data - Lighting including electroliers, lamp posts, pole-arm- electrolier, traffic signals, railroad signals, etc.	15
1165	topo_al_ut_MISC_drop	Aerial LiDAR data - Miscellaneous utility features including call boxes, fire hydrants, manholes, call boxes, and transmission towers	15
1166	topo_al_ut_POLE_drop	Aerial LiDAR data - Individual power poles, utility poles, guy anchors	15
1167	topo_al_veg_anno_drop	Aerial LiDAR data - Annotation for vegetation features	82
1168	topo_al_veg_drop	Aerial LiDAR data - Trees, brush, marsh, vineyards, orchards	82
1200	topo_ba_dtm_brk_spot_info_only	Bathymetric data - Random breaklines, spots and mass points in ground (bottom) bathymetric DTM areas	7

# Ct\_Topo-MTLS

Number	Name	Description	Color
1500	topo_ml_ctrl_DIRECTION_info_only	MTLS data - Linework indicating the direction to or from a feature	43
1501	topo_ml_dtm_brk_spot_anno_deck_info_only	MTLS data - Annotation for random breaklines, spot elevations and masspoints in bridge deck DTM areas	248
1502	topo_ml_dtm_brk_spot_anno_info_only	MTLS data - Annotation for random breaklines, spot elevations and masspoints in ground DTM areas	3
1503	topo_ml_dtm_brk_spot_anno_underside_info_only	MTLS data - Annotation for random breaklines, spot elevations and masspoints in bridge underside DTM areas	249
1504	topo_ml_dtm_brk_spot_deck_info_only	MTLS data - Random breaklines, spot elevations and masspoints in bridge deck DTM areas	248
1505	topo_ml_dtm_brk_spot_info_only	MTLS data - Random breaklines, spot elevations and masspoints in ground DTM areas	3
1506	topo_ml_dtm_brk_spot_underside_info_only	MTLS data - Random breaklines, spot elevations and masspoints in bridge underside DTM areas	249
1507	topo_ml_hydro_anno_info_only	MTLS data - Annotation for all hydrographic features	1
1508	topo_ml_hydro_df_CULV_drop	MTLS data - Culverts	1
1509	topo_ml_hydro_df_CULV_FL_drop	MTLS data - Culvert - flowline single location - for TopoDOT use only	1
1510	topo_ml_hydro_df_MISC_CLO_drop	MTLS data - Cleanout - drain, sewer, storm, pool, etc for TopoDOT use only	1
1511	topo_ml_hydro_df_MISC_drop	MTLS data - Drainage facility appurtenances including cleanouts, flared end sections, vents, etc.	1
1512	topo_ml_hydro_df_OPEN_drop	MTLS data - Open drainage facilities including basins, canals, catch basins, ditches, spillways, etc all aspects except flowlines & random breaklines	1
1513	topo_ml_hydro_df_STR_deck_drop	MTLS data - Drainage facility structures on bridge decks including inlets	248
1514	topo_ml_hydro_df_STR_drop	MTLS data - Drainage facility structures on ground surfaces including inlets & outlets, headwalls, wingwalls, weirs, gates, etc.	1

## Ct\_Topo-MTLS

Number	Name	Description	Color
1515	topo_ml_hydro_FL_drop	MTLS data - Flowlines of all hydrographic & drainage facilities	1
1516	topo_ml_hydro_MISC_drop	MTLS data - Miscellaneous hydrographic features	1
1517	topo_ml_hydro_WATER_drop	MTLS data - Edges, threads & high water marks of water features including streams, creeks, rivers, ponds, lakes, shorelines, pools, etc.	1
1518	topo_ml_hydro_WATER_HWAT_drop	MTLS data - High water mark - for TopoDOT use only	1
1519	topo_ml_POINT_CLOUD	MTLS data - Point clouds and associated features	0
1520	topo_ml_rdbed_AC_deck_drop	MTLS data - Asphalt features in roadbed areas on bridge decks	248
1521	topo_ml_rdbed_AC_drop	MTLS data - Asphalt features in roadbed areas on ground surfaces	4
1522	topo_ml_rdbed_anno_info_only	MTLS data - Annotation for roadbed features	4
1523	topo_ml_rdbed_CONC_deck_drop	MTLS data - Concrete features in roadbed areas on bridge decks	248
1524	topo_ml_rdbed_CONC_drop	MTLS data - Concrete features in roadbed areas on ground surfaces	4
1525	topo_ml_rdbed_CURB_deck_drop	MTLS data - Curbs in roadbed areas on bridge decks	248
1526	topo_ml_rdbed_CURB_drop	MTLS data - Curbs in roadbed areas on ground surfaces	4
1527	topo_ml_rdbed_DIKE_drop	MTLS data - Dikes in roadbed areas	4
1528	topo_ml_rdbed_DIRT_drop	MTLS data - Dirt features in roadbed areas	4
1529	topo_ml_rdbed_FL_deck_drop	MTLS data - Flowlines in roadbed areas on bridge decks	248
1530	topo_ml_rdbed_FL_drop	MTLS data - Flowlines in roadbed areas on ground surfaces	1
1531	topo_ml_rdbed_MISC_drop	MTLS data - Miscellaneous roadbed features on ground surfaces excluding asphalt, concrete & dirt lines - all aspects except flowlines & random breaklines - including roadbeds & cattle guards	4
1532	topo_ml_rdbed_ROCK_drop	MTLS data - Rock features in roadbed areas	4

# Ct\_Topo-MTLS

Number	Name	Description	Color
1533	topo_ml_rdside_AC_drop	MTLS data - Asphalt features in roadside areas including driveways, parking lots, paths, etc.	2
1534	topo_ml_rdside_anno_info_only	MTLS data - Annotation for roadside features	2
1535	topo_ml_rdside_CONC_drop	MTLS data - Concrete features in roadside areas including driveways, parking lots, paths, etc.	2
1536	topo_ml_rdside_DIRT_drop	MTLS data - Dirt features in roadside areas including driveways, trails and other dirt areas	2
1537	topo_ml_rdside_FL_drop	MTLS data - Flowlines in roadside areas	1
1538	topo_ml_rdside_MISC_BOLLARD_drop	MTLS data - Bollards, protective pipes, etc for TopoDOT use only	2
1539	topo_ml_rdside_MISC_drop	MTLS data - Miscellaneous roadside features excluding asphalt, concrete, dirt & rock lines and all aspects except flowlines & random breaklines - includes bollards, driveways, flag poles, mailboxes, parking lots, tanks, trails, etc.	2
1540	topo_ml_rdside_MISC_FP_drop	MTLS data - Flag pole - for TopoDOT use only	2
1541	topo_ml_rdside_ROCK_drop	MTLS data - Edges of rock areas & rock slope protection areas	2
1542	topo_ml_rdside_RR_APPR_drop	MTLS data - Railroad Appurtenances including control box, switch, etc for TopoDOT use only	2
1543	topo_ml_rdside_RR_drop	MTLS data - Railroad rails, ballast and appurtenances including switches & gate posts	2
1544	topo_ml_rdside_RR_POST_drop	MTLS data - Railroad gate post - for TopoDOT use only	2
1545	topo_ml_rdside_SLIDE_drop	MTLS data - Edges of slide areas	2
1600	topo_ml_str_BRDG_RAIL_deck_drop	MTLS data - Bridge rails	248
1547	topo_ml_rdside_SW_drop	MTLS data - Sidewalks on ground surfaces	2
1548	topo_ml_str_ABUTWW_drop	MTLS data - Abutments & wing walls	247
1549	topo_ml_str_anno_deck_info_only	MTLS data - Annotation for bridge deck features	248
1550	topo_ml_str_anno_info_only	MTLS data - Annotation for ground surface structures features	247
Number	Name	Description	Color
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1551	topo_ml_str_anno_underside_info_only	MTLS data - Annotation for bridge underside features	249
1552	topo_ml_str_BLDG_drop	MTLS data - Buildings, decks, covered patios, carports, etc.	247
1553	topo_ml_str_COL_drop	MTLS data - Bents, columns & piers	247
1601	topo_ml_rdbed_MISC_deck_drop	MTLS data - Miscellaneous roadbed features on bridge decks excluding asphalt, concrete & dirt lines - all aspects except flowlines & random breaklines	248
1594	topo_ml_rdside_FENCE_drop	MTLS data - Fences, gates & gate posts	2
1595	topo_ml_rdside_FENCE_POST_drop	MTLS data - Gate post - for TopoDOT use only	2
1557	topo_ml_str_GIRDER_drop	MTLS data - Bridge girders	249
1559	topo_ml_str_MISC_deck_drop	MTLS data - Miscellaneous bridge deck features	248
1560	topo_ml_str_MISC_drop	MTLS data - Miscellaneous structures features including structures slope protection, etc.	247
1561	topo_ml_str_MISC_underside_drop	MTLS data - Miscellaneous bridge underside features including bridge access openings, soffit, etc.	249
1562	topo_ml_str_PN_deck_drop	MTLS data - Paving notch (back stem wall of the abutment)	248
1563	topo_ml_str_WALL_drop	MTLS data - Walls including crib, masonry, retaining & sound walls	247
1564	topo_ml_tcd_anno_info_only	MTLS data - Annotation for sign, markers & marking features	30
1565	topo_ml_tcd_BARRIER_deck_drop	MTLS data - Barriers on bridge decks	248
1566	topo_ml_tcd_BARRIER_drop	MTLS data - Barriers & rails on ground surfaces	30
1567	topo_ml_tcd_MARKER_drop	MTLS data - Non-utility related markers including guide posts, pavement markers, etc.	30
1568	topo_ml_tcd_MARKER_GUIDE_drop	MTLS data - Marker - guide post - for TopoDOT use only	30
1569	topo_ml_tcd_MARKING_deck_drop	MTLS data - Pavement marking on bridge decks including lane lines, stripes, etc.	248

Number	Name	Description	Color
1570	topo_ml_tcd_MARKING_drop	MTLS data - Pavement marking on ground surfaces including lane lines, crosswalks, stripes, turn arrows, etc.	30
1571	topo_ml_tcd_MISC_CC_drop	MTLS data - Crash cushion - single location - for TopoDOT use only	30
1572	topo_ml_tcd_MISC_drop	MTLS data - Miscellaneous traffic control features including crash cushions, etc.	30
1573	topo_ml_tcd_SIGN_drop	MTLS data - Signs	30
1574	topo_ml_ut_anno_info_only	MTLS data - Annotation for utility features	15
1575	topo_ml_ut_APPR	MTLS data - Utility appurtenances including hose bibs, irrigation valves, sprinklers, standpipes, wells, etc.	15
1576	topo_ml_ut_APPR_SPR	MTLS data - Sprinkler - for TopoDOT use only	1
1577	topo_ml_ut_CAB	MTLS data - Cabinets	15
1602	topo_ml_rdside_MISC_ADA_drop	MTLS data - ADA detectable warning surface - for TopoDOT use only	2
1579	topo_ml_ut_COND	MTLS data - Conduit	15
1580	topo_ml_ut_LTG	MTLS data - Lighting including electroliers, lamp posts, pedestrian crosswalk buttons & signals, traffic signals, railroad signals, etc.	15
1581	topo_ml_ut_MARKER	MTLS data - Utility markers	15
1582	topo_ml_ut_METER	MTLS data - Meters	15
1583	topo_ml_ut_MH	MTLS data - Manholes	15
1584	topo_ml_ut_MISC	MTLS data - Miscellaneous utility features including call boxes, conduit, fire hydrants, laterals, public telephones & telephone pedestals, transmission towers, utility vents	15
1585	topo_ml_ut_OH	MTLS data - Overhead utility facilities	15
1586	topo_ml_ut_PB	MTLS data - Pullboxes	15
1587	topo_ml_ut_POLE	MTLS data - Individual poles & pole lines, guy anchors	15
1588	topo_ml_ut_UG	MTLS data - Underground utility facilities	15
1589	topo ml ut VALVE	MTLS data - Valves	15

Number	Name	Description	Color
1590	topo_ml_ut_VAULT	MTLS data - Vaults	15
1591	topo_ml_veg_anno_info_only	MTLS data - Annotation for vegetation features	82
1592	topo_ml_veg_MISC_drop	MTLS data - Miscellaneous vegetation features	82
1593	topo_ml_veg_TREE_drop	MTLS data - Trees	82
1603	topo_TopoDOT_SurveyPT_info_only	TopoDOT data - Manually placed Survey Point - for TopoDOT use only	0
1597	topo_ml_rdside_CURB_drop	MTLS data - Miscellaneous curbs in roadside areas on ground surfaces	2
1598	topo_ml_rdside_DIKE_drop	MTLS data - Miscellaneous dikes in roadside areas	2
1599	topo_ml_bndy_gnv_info_only	MTLS data - Boundary outlining ground not visible areas (GNV)	3
1604	topo_ml_study_brk_spot_deck_info_only	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in bridge deck DTM areas	0
1607	topo_ml_study_brk_spot_info_only	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in ground DTM areas	0
1608	topo_ml_study_hydro_info_only	MTLS data - Flowlines and edge of water body from unregistered point cloud data in ground DTM areas	0
1606	topo_ml_study_brk_spot_underside_info_only	MTLS data - Breaklines, spot elevations and masspoints from unregistered point cloud data in bridge underside DTM areas	0
1617	topo_TopoDOT_TEMP_info_only	TopoDOT data - Temporary - for TopoDOT use only	0
1616	topo_TopoDOT_Scan_Postions_info_only	TopoDOT data - Scan Postions - for TopoDOT use only	0
1609	topo_TopoDOT_Data_Tiles_info_only	TopoDOT data - Data Tiles - for TopoDOT use only	0
1613	topo_TopoDOT_PT_Red_info_only	TopoDOT data - Red Points - for TopoDOT use only	3
1614	topo_TopoDOT_PT_Teal_info_only	TopoDOT data - Teal Points - for TopoDOT use only	8
1610	topo_TopoDOT_PT_Blue_info_only	TopoDOT data - Blue Points - for TopoDOT use only	1
1615	topo_TopoDOT_PT_Yellow_info_only	TopoDOT data - Yellow Points - for TopoDOT use only	4
1612	topo_TopoDOT_PT_Orange_info_only	TopoDOT data - Orange Points - for TopoDOT use only	6
1611	topo_TopoDOT_PT_Green_info_only	TopoDOT data - Green Points - for TopoDOT use only	2

Number	Name	Description	Color
1619	topo_ml_tcd_MARKING_LL_drop	MTLS data - Lane lines on ground surfaces - for TopoDOT use only	30
1618	topo_ml_tcd_MARKING_LL_deck_drop	MTLS data - Lane lines on bridge decks - for TopoDOT use only	248
1620	topo_anno_Clearances_info_only	General topo data - Dimensioning and clearance annotation	0

Number	Name	Description	Color
1066	border_topo_GridTicks_info_only	Grid ticks with annotation	0
1067	border_topo_ph_ctrl_info_only	Photogrammetric photo centers and ground control	0
1200	topo_ba_dtm_brk_spot_info_only	Random breaklines, spots and mass points in ground (bottom) bathymetric DTM areas	7
1000	topo_ph_bndy_anno_drop	Photo data - Annotation of boundary features	3
1001	topo_ph_bndy_gnv_info_only	Photo data - GNV boundary shape	3
1002	topo_ph_bndy_map_Imt_info_only	Photo data - Mapping Limits	3
1003	topo_ph_bndy_ortho_info_only	Photo data - Ortho imagery tiles	3
1004	topo_ph_bndy_void_drop	Photo data - Void boundary shape	31
1068	topo_ph_data_info_only	Photo data - General photo data including file layout diagram, title block and north arrow	0
1005	topo_ph_dtm_anno_drop	Photo data - Annotation for DTM features - spot elevation text including bridge deck spots (floating)	7
1010	topo_ph_dtm_brk_spot_deck_info_only	Photo data - Random breaklines, spots and mass points on bridge deck DTM areas	248
1013	topo_ph_dtm_brk_gnv_info_only	Photo data - GNV breaklines in ground DTM areas	3
1006	topo_ph_dtm_brk_spot_info_only	Photo data - Random breaklines, spots and mass points in ground DTM areas	3
1007	topo_ph_dtm_cont_index_anno_drop	Photo data - Index contour annotation including floating contour annotation	7
1011	topo_ph_dtm_cont_index_deck_drop	Photo data - Float index contours - all linestyles	248
1008	topo_ph_dtm_cont_index_drop	Photo data - Index, index GNV, index depression, index depression GNV	7
1012	topo_ph_dtm_cont_inter_deck_drop	Photo data - Float intermediate contours - all linestyles	248
1009	topo_ph_dtm_cont_inter_drop	Photo data - Intermediate contour, intermediate GNV, intermediate depression, intermediate depression GNV	7
1014	topo_ph_hydro_anno_drop	Photo data - Annotation for all hydrographic features	1
1069	topo_ph_hydro_df_STR_deck_drop	Photo data - Drainage facility structures on bridge decks including drop inlets	248

Number	Name	Description	Color
1015	topo_ph_hydro_df_STR_drop	Photo data - Drainage facility structures on ground surfaces including drop inlets, exposed drainage pipes, headwalls, etc.	1
1016	topo_ph_hydro_WATER_drop	Photo data - Water Edges (non flowing); Flowlines through natural or manmade structures	1
1017	topo_ph_MISC_check_no_plot	Photo data - Miscellaneous lines and text with editing information	0
1018	topo_ph_MISC_one_no_plot	Photo data - Data cleaning and processing	0
1019	topo_ph_MISC_two_no_plot	Photo data - Data cleaning and processing	0
1042	topo_ph_rdbed_AC_deck_drop	Photo data - Asphalt features in roadbed areas on bridge decks	248
1021	topo_ph_rdbed_AC_drop	Photo data - Asphalt features in roadbed areas on ground surfaces	4
1020	topo_ph_rdbed_anno_drop	Photo data - Annotation for roadbed features	4
1043	topo_ph_rdbed_CONC_deck_drop	Photo data - Concrete features in roadbed areas on bridge decks	248
1022	topo_ph_rdbed_CONC_drop	Photo data - Concrete features in roadbed areas on ground surfaces	4
1044	topo_ph_rdbed_CURB_deck_drop	Photo data - Curbs on bridge decks	248
1023	topo_ph_rdbed_CURB_drop	Photo data - Curbs in roadbed areas	4
1024	topo_ph_rdbed_DIKE_drop	Photo data - Dikes in roadbed areas	4
1025	topo_ph_rdbed_DIRT_drop	Photo data - Dirt features in roadbed areas	4
1026	topo_ph_rdbed_MISC_drop	Photo data - Miscellaneous roadbed features: cattle guards and other roadbed features not already assigned to a level	4
1027	topo_ph_rdbed_ROCK_drop	Photo data - Rock features in roadbed areas	4
1029	topo_ph_rdside_AC_drop	Photo data - Asphalt features in roadside areas including driveways, paths, etc.	2
1028	topo_ph_rdside_anno_drop	Photo data - Annotation for roadside features	2
1030	topo_ph_rdside_CONC_drop	Photo data - Concrete features in roadside areas including driveways, paths, etc.	2
1031	topo_ph_rdside_CURB_drop	Photo data - Curbs in roadside areas	2
1032	topo_ph_rdside_DIKE_drop	Photo data - Dikes in roadside areas	2

Number	Name	Description	Color
1033	topo_ph_rdside_DIRT_drop	Photo data - Dirt features in roadside areas including trails and other dirt areas	2
1035	topo_ph_rdside_MISC_drop	Photo data - Miscellaneous roadside features including posts, flag poles, tanks, miscellaneuos boundaries for areas under construction and ruins and other roadside features not already assigned to a level	2
1036	topo_ph_rdside_ROCK_drop	Photo data - Edges of rock areas & edges of rock slope protection areas, large individual rocks	2
1037	topo_ph_rdside_RR_drop	Photo data - Railroad rails	2
1040	topo_ph_str_anno_deck_drop	Photo data - Annotation for bridge deck features	248
1038	topo_ph_str_anno_drop	Photo data - Annotation for ground surface structures features	247
1039	topo_ph_str_BLDG_drop	Photo data - Buildings, decks, covered patios, carports, stairs and ramps etc.	247
1034	topo_ph_rdside_Fence_drop	Photo data - Fences, gates & gate posts	247
1046	topo_ph_str_MISC_deck_drop	Photo data - Miscellaneous bridge deck features	248
1047	topo_ph_str_PN_deck_drop	Photo data - Paving notch (back stem wall of the abutment)	248
1048	topo_ph_str_WALL_drop	Photo data - Walls including crib, retaining, masonry & sound walls	247
1049	topo_ph_study_anno_drop	Photo data - Annotation of study features	29
1051	topo_ph_study_brk_spot_deck_info_only	Photo data - Breaklines and masspoints for +- 2.5 ft surface in bridge deck DTM areas	29
1052	topo_ph_study_brk_gnv_info_only	Photo data - GNV breaklines for +- 2.5 ft surface in ground DTM areas	29
1050	topo_ph_study_brk_spot_info_only	Photo data - Breaklines and masspoints for +- 2.5 ft surface in ground DTM areas	29
1053	topo_ph_study_water_info_only	Photo data - Flowline and edge of water body for +- 2.5 ft surface	9
1054	topo_ph_tcd_anno_drop	Photo data - Annotation for sign, markers & marking features	30
1041	topo_ph_tcd_BARRIER_deck_drop	Photo data - Barriers & rails on bridge decks	248

Number	Name	Description	Color
1055	topo_ph_tcd_BARRIER_drop	Photo data - Barriers & rails on ground surfaces	30
1045	topo_ph_tcd_MARKING_deck_drop	Photo data - Pavement marking on bridge decks including ETW, lane lines, stripes, etc.	248
1056	topo_ph_tcd_MARKING_drop	Photo data - Pavement marking including lane lines, crosswalks, stripes etc.	30
1057	topo_ph_tcd_MISC_drop	Photo data - Miscellaneous traffic control features including crash cushions, K-rail, etc.	30
1058	topo_ph_tcd_SIGN_drop	Photo data - Signs	30
1059	topo_ph_ut_anno_drop	Photo data - Annotation for utility features	15
1060	topo_ph_ut_APPR_drop	Photo data - Utility appurtenances - standpipes and wells	15
1061	topo_ph_ut_LTG_drop	Photo data - Lighting including electroliers, lamp posts, pole-arm- electrolier, traffic signals, railroad signals, etc.	15
1062	topo_ph_ut_MISC_drop	Photo data - Miscellaneous utility features including call boxes, fire hydrants, manholes, call boxes, and transmission towers	15
1063	topo_ph_ut_POLE_drop	Photo data - Individual power poles, utility poles, guy anchors	15
1064	topo_ph_veg_anno_drop	Photo data - Annotation for vegetation features	82
1065	topo_ph_veg_drop	Photo data - Trees, brush, marsh, vineyards, orchards	82

Number	Name	Description	Color
1900	align	General alignment	0
1901	align_anno	Annotation for general alignment	245
1903	align_anno_no_plot	Annotation for non-plotting general alignment	245
1904	align_no_plot	Non-plotting general alignment	0
10223	border	Border sheets for any discipline	0
10232	border_SEAL	Seal information of licensed person	245
10225	border_WITHIN-Border_anno	Annotation within the margin of border sheet	245
1905	rw_topo_anno	General R/W & topo data - General annotation	245
1906	rw_topo_anno_TABLE	General R/W & topo data - Data tables	245
1907	rw_topo_Calcs_anno_no_plot	General R/W & topo data - Non-plotting calculation annotation	245
1908	rw_topo_Calcs_no_plot	General R/W & topo data - Non-plotting calculations	0
1909	rw_topo_Images	General R/W & topo data - Attached image files	0
1910	rw_topo_Notes_no_plot	General R/W & topo data - Non-plotting notes and general information	245
1911	rw_topo_point	General R/W & topo data - Miscellaneous point data	3
1912	rw_topo_point_anno	General R/W & topo data - General point annotation	3
1913	rw_topo_point_NON_STANDARD	General R/W & topo data - Non-standard point data	239
1914	rw_topo_Reference_Files	General R/W & topo data - Attached drawing files	0
1915	rw_topo_Wipeout_Areas	General R/W & topo data - Wipeout/masking shapes	250
1916	topo_dtm_anno_info_only	General topo data - General surface annotation other than contours	7
1917	topo_dtm_bndy_deck_info_only	General topo data - Surface borders for bridge deck DTMs	3
1918	topo_dtm_bndy_info_only	General topo data - Surface borders for ground DTMs	3
1919	topo_dtm_cont_anno_deck_drop	General topo data - Surface contour annotation for bridge deck DTMs	231
1920	topo_dtm_cont_anno_drop	General topo data - Surface contour annotation for ground DTMs	7

Number	Name	Description	Color
1921	topo_dtm_cont_index_deck_drop	General topo data - Surface index (major) contours for bridge deck DTMs	231
1922	topo_dtm_cont_index_drop	General topo data - Surface index (major) contours for ground DTMs	7
1923	topo_dtm_cont_inter_deck_drop	General topo data - Surface intermediate (minor) contours for bridge deck DTMs	231
1924	topo_dtm_cont_inter_drop	General topo data - Surface intermediate (minor) contours for ground DTMs	231
1925	topo_dtm_info_only	General topo data - General surface miscellaneous features including gridded areas	7
1926	topo_dtm_pt_info_only	General topo data - General surface points	3
1927	topo_dtm_tri_info_only	General topo data - General surface triangles	7
1928	topo_profile	General topo data - Profile linework	231
1929	topo_profile_anno	General topo data - Profile annotation	231
1930	topo_section	General topo data - Cross section data	231
1931	topo_section_anno	General topo data - Cross section data annotation including offsets & grade breaks	231
1300	topo_su_ctrl_DIRECTION_info_only	Survey data - Linework indicating the direction to or from a feature	43
1301	topo_su_ctrl_LINE_PTS_info_only	Survey data - Points associated to control linework	43
1302	topo_su_ctrl_LNWK	Survey data - Surveyed found linework for retracement work	43
1303	topo_su_ctrl_point_FD	Survey data - Surveyed found points	43
1304	topo_su_ctrl_point_FD_anno	Survey data - Annotation for surveyed found points	43
1305	topo_su_ctrl_point_MON	Survey data - Project control monuments	43
1306	topo_su_ctrl_point_MON_anno	Survey data - Annotation for project control monuments, including survey baselines	43
1307	topo_su_dtm_brk_spot_anno_deck_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in bridge deck DTM areas	248

Number	Name	Description	Color
1308	topo_su_dtm_brk_spot_anno_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in ground DTM areas	3
1309	topo_su_dtm_brk_spot_anno_underside_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in bridge underside DTM areas	249
1310	topo_su_dtm_brk_spot_deck_info_only	Survey data - Random breaklines, spot elevations and masspoints in bridge deck DTM areas	248
1311	topo_su_dtm_brk_spot_info_only	Survey data - Random breaklines, spot elevations and masspoints in ground DTM areas	3
1312	topo_su_dtm_brk_spot_underside_info_only	Survey data - Random breaklines, spot elevations and masspoints in bridge underside DTM areas	249
1313	topo_su_hydro_anno_info_only	Survey data - Annotation for all hydrographic features	1
1314	topo_su_hydro_df_CULV_drop	Survey data - Culverts	1
1315	topo_su_hydro_df_MISC_drop	Survey data - Drainage facility appurtenances including cleanouts, flared end sections, vents, etc.	1
1316	topo_su_hydro_df_OPEN_drop	Survey data - Open drainage facilities including basins, canals, catch basins, ditches, spillways, etc all aspects except flowlines & random breaklines	1
1317	topo_su_hydro_df_STR_deck_drop	Survey data - Drainage facility structures on bridge decks including inlets	248
1318	topo_su_hydro_df_STR_drop	Survey data - Drainage facility structures on ground surfaces including inlets & outlets, headwalls, wingwalls, weirs, gates, etc.	1
1319	topo_su_hydro_FL_drop	Survey data - Flowlines of all hydrographic & drainage facilities	1
1320	topo_su_hydro_LINE_PTS_info_only	Survey data - Points associated to hydrographic linework	1
1321	topo_su_hydro_MISC_drop	Survey data - Miscellaneous hydrographic features	1

Number	Name	Description	Color
1322	topo_su_hydro_WATER_drop	Survey data - Edges, threads & high water marks of water features including streams, creeks, rivers, ponds, lakes, shorelines, pools, etc.	1
1323	topo_su_rdbed_AC_deck_drop	Survey data - Asphalt features in roadbed areas on bridge decks	248
1324	topo_su_rdbed_AC_drop	Survey data - Asphalt features in roadbed areas on ground surfaces	4
1325	topo_su_rdbed_anno_info_only	Survey data - Annotation for roadbed features	4
1326	topo_su_rdbed_CONC_deck_drop	Survey data - Concrete features in roadbed areas on bridge decks	248
1327	topo_su_rdbed_CONC_drop	Survey data - Concrete features in roadbed areas on ground surfaces	4
1328	topo_su_rdbed_CURB_deck_drop	Survey data - Curbs in roadbed areas on bridge decks	248
1329	topo_su_rdbed_CURB_drop	Survey data - Curbs in roadbed areas on ground surfaces	4
1330	topo_su_rdbed_DIKE_drop	Survey data - Dikes in roadbed areas on ground surfaces	4
1331	topo_su_rdbed_DIRT_drop	Survey data - Dirt features in roadbed areas on ground surfaces	4
1332	topo_su_rdbed_FL_deck_drop	Survey data - Flowlines in roadbed areas on bridge decks	248
1333	topo_su_rdbed_FL_drop	Survey data - Flowlines in roadbed areas on ground surfaces	1
1334	topo_su_rdbed_LINE_PTS_info_only	Survey data - Points associated to roadbed linework	4
1335	topo_su_rdbed_MISC_drop	Survey data - Miscellaneous roadbed features on ground surfaces excluding asphalt, concrete & dirt lines - all aspects except flowlines & random breaklines - including roadbeds & cattle guards	4
1336	topo su rdbed ROCK drop	Survey data - Rock features in roadbed areas	4

Number	Name	Description	Color
1337	topo_su_rdside_AC_drop	Survey data - Asphalt features in roadside areas on ground surfaces including driveways, parking lots, paths, etc.	2
1338	topo_su_rdside_anno_info_only	Survey data - Annotation for roadside features on ground surfaces	2
1339	topo_su_rdside_CONC_drop	Survey data - Concrete features in roadside areas on ground surfaces including driveways, parking lots, paths, etc.	2
1340	topo_su_rdside_DIRT_drop	Survey data - Dirt features in roadside areas on ground surfaces including driveways, trails and other dirt areas	2
1341	topo_su_rdside_FL_drop	Survey data - Flowlines in roadside areas on ground surfaces	1
1342	topo_su_rdside_LINE_PTS_info_only	Survey data - Points associated to roadside linework	2
1343	topo_su_rdside_MISC_drop	Survey data - Miscellaneous roadside features on ground surfaces excluding asphalt, concrete, dirt & rock lines and all aspects except flowlines & random breaklines - includes bollards, driveways, flag poles, mailboxes, parking lots, tanks, trails, etc.	2
1344	topo_su_rdside_ROCK_drop	Survey data - Edges of rock areas & rock slope protection areas	2
1345	topo_su_rdside_RR_drop	Survey data - Railroad rails, ballast and appurtenances including switches & gate posts on ground surfaces	2
1346	topo_su_rdside_SLIDE_drop	Survey data - Edges of slide areas	2
1378	topo_su_ut_CABLE	Survey data - Cables when underground vs. overhead are unknown	15
1348	topo_su_rdside_SW_drop	Survey data - Sidewalks on ground surfaces	2
1349	topo_su_str_ABUTWW_drop	Survey data - Abutments & wing walls	247
1350	topo_su_str_anno_deck_info_only	Survey data - Annotation for bridge deck features	248
1351	topo_su_str_anno_info_only	Survey data - Annotation for ground surface structures features	247

Number	Name	Description	Color
1352	topo_su_str_anno_underside_info_only	Survey data - Annotation for bridge underside features	249
1353	topo_su_str_BLDG_drop	Survey data - Buildings, decks, covered patios, carports, etc. on ground surfaces	247
1354	topo_su_str_COL_drop	Survey data - Bents, columns & piers	247
1396	topo_su_str_BRDG_RAIL_deck_drop	Survey data - Bridge rails on bridge decks	248
1399	topo_su_rdside_FENCE_drop	Survey data - Fences, gates & gate posts on ground surfaces	2
1357	topo_su_str_GIRDER_drop	Survey data - Bridge girders	249
1358	topo_su_str_LINE_PTS_deck_info_only	Survey data - Points associated to bridge deck linework	248
1359	topo_su_str_LINE_PTS_info_only	Survey data - Points associated to ground surface structures linework	247
1360	topo_su_str_LINE_PTS_underside_info_only	Survey data - Points associated to bridge underside linework	249
1361	topo_su_str_MISC_deck_drop	Survey data - Miscellaneous bridge deck features	248
1362	topo_su_str_MISC_drop	Survey data - Miscellaneous structures features including structures slope protection, etc.	247
1363	topo_su_str_MISC_underside_drop	Survey data - Miscellaneous bridge underside features including bridge access openings, soffit, etc.	249
1364	topo_su_str_PN_deck_drop	Survey data - Paving notch (back stem wall of the abutment)	248
1365	topo_su_str_WALL_drop	Survey data - Walls including crib, masonry, retaining & sound walls on ground surfaces	247
1366	topo_su_tcd_anno_info_only	Survey data - Annotation for sign, markers & marking features on ground surfaces	30
1367	topo_su_tcd_BARRIER_deck_drop	Survey data - Barriers & rails on bridge decks	248
1368	topo_su_tcd_BARRIER_drop	Survey data - Barriers & rails on ground surfaces	30
1369	topo_su_tcd_LINE_PTS_info_only	Survey data - Points associated to sign & striping linework	30

Number	Name	Description	Color
1370	topo_su_tcd_MARKER_drop	Survey data - Non-utility related markers on ground surfaces including guide posts, pavement markers, etc.	30
1371	topo_su_tcd_MARKING_deck_drop	Survey data - Pavement marking on bridge decks including lane lines, stripes, etc.	248
1372	topo_su_tcd_MARKING_drop	Survey data - Pavement marking on ground surfaces including lane lines, crosswalks, stripes, turn arrows, etc.	30
1373	topo_su_tcd_MISC_drop	Survey data - Miscellaneous traffic control features on ground surfaces including crash cushions, etc.	30
1374	topo_su_tcd_SIGN_drop	Survey data - Signs	30
1375	topo_su_ut_anno_info_only	Survey data - Annotation for utility features	15
1376	topo_su_ut_APPR	Survey data - Utility appurtenances including hose bibs, irrigation valves, sprinklers, standpipes, wells, etc.	15
1377	topo_su_ut_CAB	Survey data - Cabinets	15
1397	topo_su_rdside_CURB_drop	Survey data - Miscellaneous curbs in roadside areas on ground surfaces	2
1379	topo_su_ut_COND	Survey data - Conduit	15
1380	topo_su_ut_LINE_PTS_info_only	Survey data - Points associated to utility linework	15
1381	topo_su_ut_LTG	Survey data - Lighting including electroliers, lamp posts, pedestrian crosswalk buttons & signals, traffic signals, railroad signals, etc.	15
1382	topo_su_ut_MARKER	Survey data - Utility markers	15
1383	topo_su_ut_METER	Survey data - Meters	15
1384	topo_su_ut_MH	Survey data - Manholes	15
1385	topo_su_ut_MISC	Survey data - Miscellaneous utility features including call boxes, conduit, fire hydrants, laterals, public telephones & telephone pedestals, transmission towers, utility vents	15
1386	topo_su_ut_OH	Survey data - Overhead utility facilities	15
1387	topo_su_ut_PB	Survey data - Pullboxes	15

Number	Name	Description	Color
1388	topo_su_ut_POLE	Survey data - Individual poles & pole lines, guy anchors	15
1389	topo_su_ut_UG	Survey data - Underground utility facilities	15
1390	topo_su_ut_VALVE	Survey data - Valves	15
1391	topo_su_ut_VAULT	Survey data - Vaults	15
1392	topo_su_veg_anno_info_only	Survey data - Annotation for vegetation features	82
1393	topo_su_veg_LINE_PTS_info_only	Survey data - Points associated to vegetation linework	82
1394	topo_su_veg_MISC_drop	Survey data - Miscellaneous vegetation features	82
1395	topo_su_veg_TREE_drop	Survey data - Trees	82
1398	topo_su_rdside_DIKE_drop	Survey data - Miscellaneous dikes in roadside areas on ground surfaces	2
1400	topo_su_rdbed_MISC_deck_drop	Survey data - Miscellaneous roadbed features on bridge decks excluding asphalt, concrete & dirt lines - all aspects except flowlines & random breaklines	248
1401	topo_su_rdside_FL_deck_drop	Survey data - Flowlines in roadside areas on bridge decks	248
1402	topo_su_rdside_MISC_deck_drop	Survey data - Miscellaneous roadside features on bridge decks excluding flowlines & random breaklines	248
1403	topo_su_LINE_PTS_info_only	Survey data - Points associated to Feature Lines imported through TBC shape files	0
1404	topo_su_rdbed_DIKE_deck_drop	Survey data - Dikes in roadbed areas on bridge decks	248
1405	topo_su_rdbed_DIRT_deck_drop	Survey data - Dirt features in roadbed areas on bridge decks	248
1406	topo_su_rdside_AC_deck_drop	Survey data - Asphalt features in roadside areas on bridge decks	248
1407	topo_su_rdside_CONC_deck_drop	Survey data - Concrete features in roadside areas on bridge decks	248

Number	Name	Description	Color
		including driveways, parking lots, paths, etc.	
1408	topo_su_rdside_CURB_deck_drop	Survey data - Miscellaneous curbs in roadside areas on bridge decks	248
1409	topo_su_rdside_DIKE_deck_drop	Survey data - Miscellaneous dikes in roadside areas on bridge decks	248
1410	topo_su_rdside_DIRT_deck_drop	Survey data - Dirt features in roadside areas on bridge decks including driveways, trails and other dirt areas	248
1411	topo_su_rdside_FENCE_deck_drop	Survey data - Fences, gates & gate posts on bridge decks	248
1412	topo_su_rdside_RR_deck_drop	Survey data - Railroad rails, ballast and appurtenances including switches & gate posts on bridge decks	248
1413	topo_su_rdside_SW_deck_drop	Survey data - Sidewalks on bridge decks	248
1414	topo_su_str_BLDG_deck_drop	Survey data - Buildings, decks, covered patios, carports, etc. on bridge decks	248
1415	topo_su_str_WALL_deck_drop	Survey data - Walls including crib, masonry, retaining & sound walls on bridge decks	248
1416	topo_su_tcd_anno_deck_info_only	Survey data - Annotation for sign, markers & marking features on bridge decks	248
1417	topo_su_tcd_MARKER_deck_drop	Survey data - Non-utility related markers on bridge decks	248

Number	Name	Description	Color
		including guide posts, pavement markers, etc.	
1418	topo_su_dtm_brk_spot_anno_subterranean_info_only	Survey data - Annotation for random breaklines, spot elevations and masspoints in subterranean DTM areas	241
1419	topo_su_dtm_brk_spot_subterranean_info_only	Survey data - Random breaklines, spot elevations and masspoints in subterranean DTM areas	241
1420	topo_su_rdside_anno_deck_info_only	Survey data - Annotation for roadside features on bridge decks	248
1421	topo_su_str_anno_subterranean_info_only	Survey data - Annotation for subterranean features	241
1423	topo_su_str_SUBTERR_drop	Survey data - Subterranean features	241
1424	topo_su_tcd_MISC_deck_drop	Survey data - Miscellaneous traffic control features on bridge decks including crash cushions, etc.	248
1422	topo_su_str_LINE_PTS_subterranean_info_only	Survey data - Points associated to subterranean linework	241
1425	topo_su_ctrl_point_AS_STAKED	Survey data - As-staked points	43
1620	topo_anno_Clearance_info_only	General topo data - Dimensioning and clearance annotation	0
1427	topo_su_str_BRDG_RAIL_drop	Survey data - Bridge rails on ground surfaces	247

# Ct\_Torus

Number	Name	Description	Color
10400	rd_TORUS-anno	Annotation for Torus design information	0
10401	rd_TRDESIGNSYMBOL	Torus design symbols	0
10402	rd_TRFASTESTPATH	Torus fastest path	0
10403	rd_TRGRADING	Torus grading	0
10404	rd_TSTORUS	Torus design information	0
10405	rd_TORUS-NO-PLOT	Elements on this level will not plot!	0

# Ct\_TrafficControlDevices

Number	Name	Description	Color
9400	tcd_BARRIER-CONC	Concrete barrier all types	8
9401	tcd_BARRIER-CONC-anno	Annotation for concrete barrier all types	8
9402	tcd_BARRIER-CONC-TYPE-25	All Type25 concrete barriers	8
9403	tcd_BARRIER-CONC-TYPE-26	All Type 26 concrete barriers	8
9404	tcd_BARRIER-CONC-TYPE-27MOD	All Type 27Mod concrete barriers	8
9405	tcd_BARRIER-CONC-TYPE-50	All Type 50 concrete barriers	8
9406	tcd_BARRIER-CONC-TYPE-60	All Type 60 concrete barriers	8
9407	tcd_BARRIER-CONC-TYPE-60- PORTABLE	Type 60 portable concrete barrier	8
9410	tcd_BARRIER-CONC-TYPE-732	All Type 732 concrete barriers	8
9411	tcd_BARRIER-CONC-TYPE-736	All Type 736 concrete barriers	8
9412	tcd_BARRIER-CONC-TYPE-742	All Type 742 concrete barriers	8
9408	tcd_BARRIER-CONC-TYPE-80	All Type 80 concrete barriers	8
9409	tcd_BARRIER-CONC-TYPE-90	Type 90 concrete barrier	8
9413	tcd_BARRIER-CONC-TYPE-K	Type K concrete barrier-permanent	8
9414	tcd_BARRIER-THRIE-BEAM	Thrie Beam barrier	14
9415	tcd_BARRIER-THRIE-BEAM-anno	Annotation for Thrie Beam barrier	14
9416	tcd_BARRIER-THRIE-BEAM-EXIST	Existing Thrie Beam barrier to be modified	14
9417	tcd_CMS	Changeable message sign-foundation and pole	10
9418	tcd_CRASH-CUSHION	Permanent crash cushions	10
9419	tcd_CRASH-CUSHION-anno	Annotation for crash cushions	10
9420	tcd_DELINEATOR	Delineators all types	10
9421	tcd_DOUBLE-RAIL	Double railing or thrie beam barrier	14
9422	tcd_GSBWFILL	GuideSIGN black and white fill	0
9423	tcd_GSCOLORFILL	GuideSIGN color fill	0
9424	tcd_GSDIMS	GuideSIGN dimensions	0
9425	tcd_GSOUTLINE	GuideSIGN outline	0
9426	tcd_MARKER	Markers all types	10
9427	tcd_MARKER-anno	Annotation for markers and delineators	10

# Ct\_TrafficControlDevices

Number	Name	Description	Color
9428	tcd_PD-QTY-TABLE	Tabular data for pavement delineation quantities	0
9429	tcd_PVMT-MARKER	Pavement markers	3
9430	tcd_PVMT-MARKER-anno	Annotation for pavement markers	3
9431	tcd_PVMT-MARKING	Pavement markings	3
9432	tcd_PVMT-MARKING-anno	Annotation for all type pavement markings	3
9433	tcd_RAILING	Railings all types	14
9434	tcd_RAILING-anno	Annotation for railings all types	14
9435	tcd_RAILING-BR-ST10	California ST10 bridge rail	14
9436	tcd_RAILING-BR-ST20S	California ST20s bridge rail	14
9437	tcd_RAILING-BR-ST30	California ST30 bridge rail	14
9438	tcd_RAILING-BR-ST40	California ST40 bridge rail	14
9439	tcd_RAILING-BR-ST70	California ST70 bridge rail	14
9440	tcd_RAILING-CABLE	Cable railing	14
9441	tcd_RAILING-EXIST	Existing guardrail to be modified	14
9442	tcd_RAILING-MGS	Midwest Guardrail System	14
9443	tcd_RUMBLE-STRIP	Rumble strips	3
9444	tcd_RUMBLE-STRIP-anno	Annotation for rumble strips	3
9445	tcd_SIGN-OVERHEAD	Overhead signs	12
9446	tcd_SIGN-OVERHEAD-anno	Annotation for overhead signs	12
9447	tcd_SIGN-PANEL	Sign panels	12
9448	tcd_SIGN-PANEL-anno	Annotation for sign panels	12
9449	tcd_SIGN-QTY-TABLE	Tabular data for sign quantities	0
9450	tcd_SIGN-ROADSIDE	Roadside signs	12
9451	tcd_SIGN-ROADSIDE-anno	Annotation for roadside signs	12
9452	tcd_TRAFFIC-STRIPE	Traffic strip for all type lane lines	3
9453	tcd_TRAFFIC-STRIPE-anno	Annotation for traffic strip for all type lane lines	3
9454	tcd_NO-PLOT	Elements on this level will not plot!	0
9455	tcd_MISC	Miscellaneous	0

### Ct\_Utilities

Number	Name	Description	Color
9301	ut_ELECT-ABN	Electrical conduit abandoned underground	3
9302	ut_ELECT-OH-P	Electrical new overhead	3
9303	ut_ELECT-OH-X	Electrical existing overhead	3
9304	ut_ELECT-P	Electrical conduit new underground	0
9305	ut_ELECT-X	Electrical conduit existing underground	3
9306	ut_ES-C-ABN	Electrical systems conduit abandoned underground	0
9307	ut_ES-C-X	Electrical systems conduit existing underground	0
9308	ut_FIBEROPT-ABN	Fiber optic abandoned underground	5
9309	ut_FIBEROPT-OH-P	Fiber optic new overhead	5
9310	ut_FIBEROPT-OH-X	Fiber optic existing overhead	5
9311	ut_FIBEROPT-P	Public-Private fiber optic new underground	5
9312	ut_FIBEROPT-X	Public-Private fiber optic existing underground	5
9313	ut_GAS-ABN	Gasoline abandoned underground	7
9314	ut_GAS-P	Gasoline new underground	7
9315	ut_GAS-X	Gasoline existing underground	7
9316	ut_IRR-C-ABN	Irrigation conduit abandoned underground	0
9317	ut_IRR-C-X	Irrigation conduit existing underground	0
9318	ut_JOINT-OH-P	Joint utility new overhead	0
9319	ut_JOINT-OH-X	Joint utility existing overhead	0
9320	ut_JOINT-TRENCH-P	Joint utility trench new underground	0
9321	ut_JOINT-TRENCH-X	Joint utility trench existing underground	0
9322	ut_MISC	Miscellaneous utility cells and information	0
9323	ut_NATGAS-ABN	Natural gas abandoned underground	2
9324	ut_NATGAS-P	Natural gas new underground	2
9325	ut_NATGAS-X	Natural gas existing underground	2
9326	ut_OIL-ABN	Oil abandoned underground	7
9327	ut_OIL-P	Oil new underground	7
9328	ut_OIL-X	Oil existing underground	7
9329	ut_RCWATER-ABN	Recycled water abandoned underground	9

### Ct\_Utilities

Number	Name	Description	Color
9330	ut_RCWATER-P	Recycled water new underground	9
9331	ut_RCWATER-X	Recycled water existing underground	9
9332	ut_SEWER-ABN	Sewer abandoned underground	6
9333	ut_SEWER-P	Sewer new underground	6
9334	ut_SEWER-X	Sewer existing underground	6
9335	ut_STATE-FIBEROPT-P	State fiber optic new underground	5
9336	ut_STATE-FIBEROPT-X	State fiber optic existing underground	5
9337	ut_STEAM-ABN	Steam abandoned underground	8
9338	ut_STEAM-P	Steam new underground	8
9339	ut_STEAM-X	Steam existing underground	8
9340	ut_STORMD-ABN	Storm drain abandoned underground	1
9341	ut_STORMD-P	Storm drain new underground	1
9342	ut_STORMD-X	Storm drain existing underground	1
9343	ut_TELECOM-ABN	Telemeter cable abandoned underground	5
9344	ut_TELECOM-OH-P	Telemeter cable new overhead	5
9345	ut_TELECOM-OH-X	Telemeter cable existing overhead	5
9346	ut_TELECOM-P	Telemeter cable new underground	5
9347	ut_TELECOM-X	Telemeter cable existing underground	5
9348	ut_TELEPH-ABN	Telephone line abandoned underground	5
9349	ut_TELEPH-OH-P	Telephone line new overhead	5
9350	ut_TELEPH-OH-X	Telephone line existing overhead	5
9351	ut_TELEPH-P	Telephone line new underground	5
9352	ut_TELEPH-X	Telephone line existing underground	5
9353	ut_TEST-HOLE	Test hole symbol and label	0
9354	ut_TV-ABN	Television line abandoned underground	5
9355	ut_TV-OH-P	Television line new overhead	5
9356	ut_TV-OH-X	Television line existing overhead	5
9357	ut_TV-P	Television line new underground	5
9358	ut_TV-X	Television line existing underground	5

### Ct\_Utilities

Number	Name	Description	Color
9359	ut_UTILITY-anno	Annotation for cells utility notes and information	0
9360	ut_VARIOUS-POINT-FEATURES	Various point features-cabinet-MH-etc	0
9361	ut_WATER-ABN	Water abandoned underground	1
9362	ut_WATER-P	Water new underground	1
9363	ut_WATER-X	Water existing underground	1
9300	ut_DEFAULT	Default level for point features used by Bentley Map	4
9364	ut_FEATURE-OUTLINE-CABINET	Utility cabinet outline	2
9365	ut_FEATURE-OUTLINE-PULLBOX	Pull Box outline	3
9366	ut_FEATURE-OUTLINE-PUMP	Pump outline	1
9368	ut_FEATURE-OUTLINE-VAULT	Vault outline	6
9369	ut_FEATURE-OUTLINE-OTHER	Outline of a utility - misc	8
9370	ut_TRAFFIC-CONTROL-ABN	Traffic Control conduit abandoned underground	3
9371	ut_TRAFFIC-CONTROL-P	Traffic Control conduit new underground	3
9372	ut_TRAFFIC-CONTROL-X	Traffic Control conduit existing underground	3
9373	ut_POSITIVELOCATION-MISC-X	Positive Location of Misc Utilities	0
9374	ut_ITS-X	Intelligent Transportation Systems	3
9375	ut_NO-PLOT	Elements on this level will not plot!	0

### Ct\_Visualization

Number	Name	Description	Color
10500	vis_BRIDGE	Visualization of bridges	0
10501	vis_BUILDING	Visualization of buildings	0
10502	vis_CAR	Visualization of cars	0
10503	vis_GRASS	Visualization of grassy areas	0
10504	vis_LINEAR-FEATURE	Visualization of various linear features	0
10505	vis_MAN-MADE-OBJ	Visualization of man-made objects	0
10506	vis_MATERIAL	Visualization of various type materials	0
10507	vis_NATURAL-OBJ	Visualization of natural objects	0
10508	vis_PLANT	Visualization of various plants	0
10509	vis_POINT-FEATURE	Visualization of various point features	0
10510	vis_PVMT-MARKING	Visualization of pavement striping and markings	0
10511	vis_SKY	Visualization of clouds and sky	0
10512	vis_SURFACE	Visualization of various surfaces	0
10513	vis_TIME-LAPSE	Visualization showing time lapse	0
10514	vis_TREE	Visualization of various trees	0
10515	vis_NO-PLOT	Elements on this level will not plot!	0

### Ct\_Walls

Number	Name	Description	Color
9715	wall_SW-ELEVATION	Elevation view of sound wall	14
9716	wall_SW-ELEVATION-anno	Annotation for elevation view of sound wall	14
9720	wall_SW-TYPICAL-SECTION	Typical section of sound wall	8
9721	wall_SW-TYPICAL-SECTION-anno	Annotation for typical section of sound wall	8
9711	wall_SW-ARCH-TREATMENT	Architectural treatment of sound wall	13
9712	wall_SW-ARCH-TREATMENT-anno	Annotation for architectural treatment of sound wall	13
9713	wall_SW-DETAIL	Details of sound wall	0
9714	wall_SW-DETAIL-anno	Annotation for details of sound wall	0
9719	wall_SW-QTY	Tabular data for sound wall quantities	0
9717	wall_SW-LOTB	Log of test borings for sound wall	0
9718	wall_SW-LOTB-anno	Annotation for log of test borings for sound wall	0
9704	wall_RW-ELEVATION	Elevation view of retaining wall	7
9705	wall_RW-ELEVATION-anno	Annotation for elevation view of retaining wall	7
9709	wall_RW-TYPICAL-SECTION	Typical section of retaining wall	8
9710	wall_RW-TYPICAL-SECTION-anno	Annotation for typical section of retaining wall	8
9700	wall_RW-ARCH-TREATMENT	Architectural treatment of retaining wall	13
9701	wall_RW-ARCH-TREATMENT-anno	Annotation for archl treatment of retaining wall	13
9702	wall_RW-DETAIL	Details of retaining wall	0
9703	wall_RW-DETAIL-anno	Annotation for details of retaining wall	0
9708	wall_RW-QTY	Tabular data for retaining wall quantities	0
9706	wall_RW-LOTB	Log of test borings for retaining wall	0
9707	wall_RW-LOTB-anno	Annotation for log of test borings retaining wall	0
9722	wall_SYMBOLOGY	Line styles representing wall symbology	13
9723	wall_NO-PLOT	Elements on this level will not plot!	0
9724	wall_RW-TYPE1	Retaining Wall Type 1	13
9725	wall_RW-TYPE1-anno	Annotation for Retaining Wall Type 1	0
9726	wall_RW-TYPE1A	Retaining Wall Type 1A	13
9727	wall_RW-TYPE1A-anno	Annotation for Retaining Wall Type 1A	0
9729	wall_RW-TYPE5-anno	Annotation for Retaining Wall Type 5	0

### Ct\_Walls

Number	Name	Description	Color
9728	wall_RW-TYPE5	Retaining Wall Type 5	13
9731	wall_RW-TYPE6-anno	Annotation for Retaining Wall Type 6	0
9730	wall_RW-TYPE6	Retaining Wall Type 6	13
9732	wall_MISC	Miscellaneous	0

### Ct\_WaterPollutionControl

Number	Name	Description	Color
9600	wpc_COMPOST-BERM	Permanent compost berm	10
9601	wpc_COMPOST-SOCK	Permanent compost sock	10
9602	wpc_FIBER-ROLL	Permanent fiber roll	10
9603	wpc_FIBER-ROLL-anno	Annotation for all permanent wpc items	10
9605	wpc_TEMP-anno	Annotation for all temporary wpc items	15
9606	wpc_TEMP-DITCH-SWALE	Temporary ditch or swale	15
9607	wpc_TEMP-EARTH-BERM	Temporary earth berm	15
9608	wpc_TEMP-FIBER-ROLL	Temporary fiber roll	15
9609	wpc_TEMP-GRAVEL-BAG	Temporary gravel bag	15
9610	wpc_TEMP-SILT-FENCE	Temporary silt fence all types	11
9611	wpc_TEMP-SLOPE-DRAIN	Temporary slope drain flex pipe	15
9612	wpc_TEMP-STRAW-BALE	Temporary straw bale barrier	15
9613	wpc_TREATMENT	Water pollution control treatment permanent facilities-vaults	14
9614	wpc_TREATMENT-anno	Annotation for treatment facilities-vaults	14
9604	wpc_SOIL-STABILIZATION	Temporary soil stabilization	7
9615	wpc_TEMP-POINT-Feature	Temporary point feature	0
9616	wpc_NO-PLOT	Elements on this level will not plot!	0
9617	wpc_MISC	Miscellaneous	0