

2. Caltrans Data Format

2.1 Drawing Types and Codes

A. Drawing Types

CADD drawings for highway projects are categorized into two types: geographical oriented and non-geographical oriented.

1. Geographical oriented drawings are drawings wherein the graphical elements (lines, points and curves) are located by their on-ground (coordinates) horizontal locations (northings, eastings). Base maps are always geographically oriented. 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. However, at final submittal these plan sheets do not need to maintain the horizontal coordinates.
2. Non-geographical oriented 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. Contract Plans do not need to maintain the horizontal coordinates (northings, eastings) at the time of Plans, Specifications and Estimate (PS&E) submittal. Drawings such as Typical Cross Sections, Construction Details and Summary of Quantities are always 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 defines a drawing as a non-geographical drawing when it appears to meet the definition of a geographical drawing. These exceptions have been made because the drawings are cartographic type drawings rather than precise engineering drawings. Title sheets are examples of this type of drawing.

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

B. Drawing Codes - Highway Construction Project

- Sheet identification
- Print Sequencing Code

All contract plans 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 (formerly known as CADD Alpha Code) within the electronic name of the file. This will facilitate the plotting of 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 highway plan sheets.

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
	Title		ab
	Locations of Construction	LC	ba
	Typical Cross Sections	X	ca
	Key Map & Line Index	K	da
	Aerial Identification	A	db
Layout (<i>With or without profile shown or with or without superelevation diagram shown</i>)		L	ea
	Profile (<i>Without superelevation diagram shown</i>)	P	fa
	Profile and Superelevation Diagram	PS	fb
	Superelevation Diagram	SE	fc
	Construction Details	C	ga
Temporary Water Pollution Control Plan (<i>With or without details or quantities</i>)		WPC	gb
	Temporary Water Pollution Control Details (<i>With or without quantities</i>)	WPCD	gc
	Temporary Water Pollution Control Quantities	WPCQ	gd
Erosion Control Plan (<i>With or without details or quantities</i>)		EC	ge
	Erosion Control Details (<i>With or without quantities</i>)	ECD	gf
	Erosion Control Quantities	ECQ	gh

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Contour Grading		G	ha
Drainage Plan		D	ia
	Drainage Profiles	DP	ib
	Drainage Details	DD	ic
	Drainage Quantities	DQ	id
Edge Drain Plan		ED	ie
Sanitary Sewer Plan		SS	ja
	Sanitary Sewer Profiles	SSP	jb
	Sanitary Sewer Details	SSD	jc
	Sanitary Sewer Quantities	SSQ	jd
Utility Plan <i>(With or without details or quantities)</i>		U	ka
	Utility Details <i>(With or without quantities)</i>	UD	kb
	Utility Quantities	UQ	kc
	Construction Area Signs	CS	la
	Transportation Management Plan <i>(With or without details or quantities)</i>	TM	lb
	Transportation Management Details <i>(With or without quantities)</i>	TMD	lc
	Transportation Management Quantities	TMQ	ld
Stage Construction <i>(With or without Traffic Handling Plan)</i> <i>(With or without Detour Plan)</i> <i>(With or without details or quantities)</i>		SC	ma
	Stage Construction Details <i>(With or without quantities)</i>	SCD	mb
	Stage Construction Quantities	SCQ	mc
Traffic Handling Plan <i>(When not included on SC sheet)</i> <i>(With or without details or quantities)</i>		TH	md
	Traffic Handling Details <i>(With or without quantities)</i>	THD	me
	Traffic Handling Quantities	THQ	mf
Detour Plan <i>(when not included on SC or TH sheet)</i> <i>(With or without quantities)</i>		DE	mg
	Detour Quantities	DEQ	mh

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Pavement Delineation Plan		PD	na
	Pavement Delineation Details	PDD	nb
	Pavement Delineation Quantities	PDQ	nc
Sign Plan		S	oa
	Sign Details	SD	ob
	Sign Quantities	SQ	oc
	Summary of Quantities	Q	pa
For 1 st Retaining Wall Plan, Elevation, Typical Section, Details, Quantities and Log of Test Boring <i>(All information pertaining to the 1st 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)</i>		R	qa
	Retaining Wall Typical Section (1 st wall)	R	qa
	Retaining Wall Details (1 st wall)	R	qa
	Retaining Wall Quantities (1 st wall)	R	qa
	Log of Test Boring (1 st wall)	R	qa
For 2 nd Retaining Wall Plan, Elevation, Typical Section, Details, Quantities and Log of Test Boring <i>(Information which pertains to more than 1 wall, such as details or log of test boring, can be shown with the 1st wall, and a reference made to that 1st wall on subsequent walls)</i>		R	qb
	Retaining Wall Typical Section (2 nd wall)	R	qb
	Retaining Wall Details (2 nd wall)	R	qb
	Retaining Wall Quantities (2 nd wall)	R	qb
	Log of Test Boring (2 nd wall)	R	qb
CADD Alpha Code for all subsequent walls will be "qc" through "qz" (26 walls)			
For more than 26 walls in one project, contact HQ-MicroStation support			

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
For 1 st Sound Wall Plan, Elevation, Typical Section, Details, Quantities and Log of Test Boring <i>(All information pertaining to the 1st 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)</i>		SW	ra
	Sound Wall Typical Section (1 st wall)	SW	ra
	Sound Wall Details (1 st wall)	SW	ra
	Sound Wall Quantities (1 st wall)	SW	ra
	Log of Test Boring (1 st wall)	SW	ra
For 2 nd Sound Wall Plan, Elevation, Typical Section, Details, Quantities and Log of Test Boring <i>(Information which pertains to more than 1 wall, such as details or log of test boring, can be shown with the 1st wall, and a reference made to that 1st wall on subsequent walls)</i>		SW	rb
	Sound Wall Typical Section (2 nd wall)	SW	rb
	Sound Wall Details (2 nd wall)	SW	rb
	Sound Wall Quantities (2 nd wall)	SW	rb
	Log of Test Boring (2 nd wall)	SW	rb
CADD Alpha Code for all subsequent walls will be “qc” through “qz” (26 walls)			
For more than 26 walls in one project, contact HQ-MicroStation support			

GEOGRAPHICAL DRAWINGS		NONGEOGRAPHICAL DRAWINGS	
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Roadside Rest Plan		RSR	sa
	Plant List	PL	te
Plant Removal Plan		PR	tf
Roadside Clearing Plan		RC	tg
Maintain Existing Plants Plan		MA	th
Planting Plan		PP	ti
Irrigation Removal Plan		IR	tk
Irrigation Plan		IP	tl
Planting and Irrigation Plan		PI	tm
	Landscape Details (Use this sheet for planting and irrigation details and the Sprinkler Schedule).	LD	tn
Existing Irrigation Plan		EI	tp
Existing Utilities Plan		EU	tq
Electrical Service (Irrigation) Plan		E	tr
	Booster Pump (Electrical)	EE	tu
	Booster Pump (Mechanical Electrical)	ME	tv
	Booster Pump (Mechanical)	M	tw
	Signal, Lighting and Electrical Systems Plan and Details	E	ua
	Revised Standard Plan		va
	New Standard Plan		vb

Note: 1 A Print Sequence Code should not utilize the same letter twice (example – “aa” or “gg”). If this happens, it may be confused with the CADD Alpha Code within the naming convention for mapping and preliminary drawings (see Section 2.1 D of this CADD Users Manual).

Note: 2 Highway Planting sheets (that are part of a Highway project) will no longer have HP as the Sheet ID. See the previous table for the proper plan sheet ID’s to use.

When landscaping work is part of a Highway project, some sheets will already exist within the Highway portion, making it unnecessary to have those sheets within the Landscape portion as well. Some items of work should appear on the existing Highway sheets and not on the Landscape sheets (examples: utilities and electrical).

Note: 3 Each Retaining Wall or Sound Wall will have a different Print Sequence Code for each wall. The plan sheet(s) for each wall may contain all the information pertaining to that wall (except the Log of Test boring information). Separate sheets are allowed for typical sections, details and quantities when needed for clarity.

The total quantities for all Retaining Walls or Sound Walls must be shown with the Summary of Quantities.

Note: 4 The sheet number following each unique Print Sequence Code will begin with the number “001”.

Example: **“412345ia001”** **“412345ic001”** **“412345id001”**

This will allow the Print Sequence Code sheet number to be identical to the Sheet ID number. The exceptions will be Retaining Wall, Sound Wall and Signal, Lighting and Electrical Systems Plan and Details sheets.

C. Drawing Codes - Highway Planting Project

- Sheet identification
- Print Sequence Code

All contract plans 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 (formerly know as CADD Alpha Code) within the electronic name of the file. This will facilitate the plotting of plan sheets in the correct sequence. The Plan Sheet ID and Print Sequence Code system for Highway Planting Projects (which are not part of a Highway Construction Project) are shown in the following table.

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
	Title Sheet		ta
	Key Map	K	tb
Temporary Water Pollution Control Plan (<i>With or without details or quantities</i>)		WPC	tc
	Temporary Water Pollution Control Details (<i>With or without quantities</i>)	WPCD	tc
	Temporary Water Pollution Control Quantities	WPCQ	tc
Erosion Control Plan (<i>With or without details or quantities</i>)		EC	td
	Erosion Control Details (<i>With or without quantities</i>)	ECD	td
	Erosion Control Quantities	ECQ	td
	Plant List	PL	te
Plant Removal Plan		PR	tf
Roadside Clearing Plan		RC	tg
Maintain Existing Plants Plan		MA	th
Planting Plan		PP	ti
Irrigation Removal Plan		IR	tk
Irrigation Plan		IP	tl

GEOGRAPHICAL DRAWINGS	NONGEOGRAPHICAL DRAWINGS		
DRAWING NAME	DRAWING NAME	PLAN SHEET ID	PRINT SEQ. CODE
Planting & Irrigation Plan		PI	tm
	Landscape Details (Use this sheet for planting and irrigation details and the Sprinkler Schedule).	LD	tn
	Irrigation Quantities	IQ	to
Existing Irrigation Plan		EI	tp
Existing Utilities Plan		EU	tq
Electrical Service (Irrigation) Plan		E	tr
Traffic Handling Plan (<i>With or without details or quantities</i>)		TH	ts
	Traffic Handling details (<i>With or without quantities</i>)	THD	ts
	Traffic Handling Quantities	THQ	ts
	Construction Area Signs	CS	tt
	Booster Pump (Electrical)	EE	tu
	Booster Pump (Mechanical Electrical)	ME	tv
	Booster Pump (Mechanical)	M	tw

D. Drawing Codes - Mapping & Preliminary drawings

Mapping and preliminary CADD prepared drawings require a naming 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.)	ll
	Geometric Approval Drawing	mm
Bridge Site Map		nn