



1-1 GENERAL DETAILING

General

Project Plans must be detailed and arranged in such a manner that a contractor can construct the project in accordance with these same plans. Contractors, and especially subcontractors, have a very short time to prepare a bid and cannot be expected to spend hours searching through our plans to find relevant details. When detailing or reviewing plans, the following items should be carefully observed:

1. If details or sections are not shown on the logical sheet to which they pertain, a cross reference should be noted on the plans. If this is necessary, a note should be placed on the appropriate sheet to refer to the location. Normally sections should be referenced only in one direction.
2. Names are preferred to abbreviations. If abbreviations are used, make sure they are the accepted ones. (See Section 1-1.02 of the *Standard Specifications*, Standard Plan A10A, A10B and B0-1 of the *Standard Plans*, and the Appendix A of *Bridge Design Details*.)
3. Dimensioning should generally not appear in more than one place in the contract plans. Dimension duplication may create a problem if a dimension is changed on one detail and not another.

4. Text Style:

For hand-drafted sheets, vertical single stroke Gothic or Reinhardt style text shall be used.

For CADD-drafted sheets, refer to Section 2.6 of the CADD Users Manual for text size and fonts.

The lower-case text should be used for notes and statements on drawings; it is much easier to read than all upper-case text.

Sheet titles in the title blocks should be all upper-case text. Detail titles should be all upper-case text.

To conform with Roadway plans, Structure plans should use upper-case text for callouts, dimensioning and labeling. Use of upper-case text makes it easier to distinguish characters within the callouts, dimensioning and labeling in the contract plans.



5. Text Size:

For hand-drafted sheets, lettering height must be 5/32" minimum. Title blocks and detail title should be 1/4" in height.

Equivalent text height for CADD are 0.14" and 0.24". For CADD-drafted sheets, refer to Section 2.6 of the CADD Users Manual for text sizes and fonts.

6. The logical plan order is:

GENERAL PLAN

INDEX TO PLANS

STRUCTURE PLAN

DECK CONTOURS

FOUNDATION PLAN

ABUTMENTS

BENTS

TYPICAL SECTION

GIRDER LAYOUT

GIRDER REINFORCEMENT

LOG OF TEST BORINGS

7. Additional plan details and insertable Bridge Standard sheets are generally placed after the GIRDER REINFORCEMENT Sheet.

8. If required, Structures Plans and/or Staging Plans are generally placed after the INDEX TO PLANS sheet.

9. INDEX TO PLANS Sheet will include Index to Plans, Standard Plans List, General Notes and Concrete Strength and Pay Limits. Space permitting, tables (Pile Data Table) may be placed on this sheet.

10. Details/notes, such as the Camber Diagram or Prestressing Notes will be placed on the GIRDER LAYOUT sheet. If the detail/note cannot fit on the Girder Layout sheet, try placing the detail/note on the Girder Reinforcement sheet then the Typical Section sheet.

11. Leave a clear space on the General Plan for quantities that will be provided by the Specifications & Estimates Branch. Quantities are typically 4" wide and 1" to 3" tall depending on the complexity of the project. If the quantities cannot fit on the GENERAL



PLAN, they can be placed on the INDEX TO PLANS sheet. A note, giving the location of the quantities should be placed on the General Plan sheet.

12. Overcrowding should be avoided. If all the details that normally appear on a particular sheet will result in overcrowding, use an additional sheet.
13. Not adhering to these rules frequently results in change orders and/or claims against the State.

Advanced Planning Study - See ATTACHMENT 1-22A.1

Mirrored Elevation

An elevation view is usually a projection from the lower side of the plan view. There are occasions however, when the work being done is only on the upper side of the plan view (a widening, barrier rail replacement or retaining wall, for example). In this case a mirrored elevation is used, showing the view as if reflected in a mirror, with the stationing shown left to right. This view should be titled "MIRRORED ELEVATION." See ATTACHMENT 1-22B.1

Developed Elevation

A developed elevation is used when the radius of a structure is such that a projected elevation would not show an accurate view of the structure. The developed elevation shows the true length of the structure as though it were on a straight line. This view should be titled "DEVELOPED ELEVATION." See ATTACHMENT 1-22C.1

Existing Structures

Dimensions (including existing radii) on a structure should include a "±".

Stationing, bearing and curve data, provided by the district, are NOT shown with a ±. Overall final dimension (Station Line to edge of deck, as in a widening) should NOT be ±. See ATTACHMENT 1-22D.1

The note "THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL" should be placed in the lower left corner of the General Plan sheet and in the same location on any other sheet where existing dimensions are shown. When in doubt, show it on every sheet.

Notes And Legend

- NOTES and LEGEND titles should be capitalized.
- DO NOT underline NOTES and LEGEND.
- Use a colon after NOTES and LEGEND.

LEGEND: Symbols or a rectangular with fill, used to describe the item

Example: **LEGEND:**



Concrete Removal



Minimum Vertical Clearance

Do not show symbols that are in the Standard Plans
(A10C & A10D).

NOTES: There are two types of notes:

Notes in general

- Notes which are not associated with a particular detail
- Notes should be numbered such as 1., 2., 3. etc...

Example: **NOTES:**

1. For "PILE DATA TABLE" see "INDEX TO PLANS" sheet
2. For details not shown see "BENT DETAILS NO. 1" sheet

Call-out notes

- Notes which are associated with a particular detail
- Notes have circles/shape and should use A, B, C etc...

Example: **NOTES:**



Paint Bridge Name



Paint "Bridge No. 53-0267"



Detail And Sheet Callouts

Notes referring to a specific detail should show the exact detail title (ALL CAPS) with quotation marks:

“SECTION C-C” “TYPICAL SECTION” “TOP REINFORCEMENT”

Notes calling out detail(s) found on a different sheet should show the exact sheet name (ALL CAPS) with quotation marks:

“GENERAL PLAN” “STRUCTURE PLAN NO. 1” “FOUNDATION PLAN”

Scale Format

Scale should be expressed in the following format:

Architect 3/4" = 1'- 0"

Engineer 1" = 10'

Project Plan Sheet

A very large project, such as a complex interchange, may require the use of a PROJECT PLAN sheet, showing the overall Plan (identifying the various structures), but without Elevations or Typical Sections. The Index To Plans should be included on this sheet, if possible. A GENERAL PLAN and, if necessary, STRUCTURE PLANS are shown for each structure in the project.

Structure Plan Sheet

The GENERAL PLAN sheet typically shows Plan, Elevation and Typical Section views, alignment and Profile Grade. For long structures it may be necessary to show the Plan, Elevation and Profile Grade on STRUCTURE PLAN sheets, using as many sheets (with a detail sheet border) as necessary at a minimum scale of 1" = 20'.

A STRUCTURE PLAN sheet for a retaining wall does not usually have a Plan view. The Elevation view will show the spacing of tiebacks and piles.

When STRUCTURE PLAN sheets are used, the GENERAL PLAN sheet is simplified, with the plan shown at a scale that displays the entire structure. The ELEVATION and PROFILE GRADE are not shown on this sheet. The TYPICAL SECTION may be shown unless there are ramps or the structure width varies substantially enough that they are better displayed on a separate sheet. The STRUCTURE PLAN sheets should immediately follow the GENERAL PLAN or INDEX TO PLANS sheet.



Index To Plans

The INDEX TO PLANS and the Standard Plans should be shown either on the General Plan or, if there is not enough room on this sheet, on a separate sheet titled "INDEX TO PLANS". The INDEX TO PLANS and STANDARD PLANS should show the exact name of each sheet in all caps. A typical INDEX TO PLANS is shown below:

INDEX TO PLANS

<u>No.</u>	<u>Title</u>
1	GENERAL PLAN
2	INDEX TO PLANS*
3	STRUCTURE PLAN NO. 1
4	STRUCTURE PLAN NO. 2
5	PILE DETAILS*
6	DECK CONTOURS
7	FOUNDATION PLAN
8	ABUTMENT DETAILS
9	BENT DETAILS
10	TYPICAL SECTION
11	GIRDER LAYOUT
12	GIRDER REINFORCEMENT
13	STRUCTURE APPROACH TYPE N (30S)**
14	LOG OF TEST BORINGS

STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)***
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)***
A10C	SYMBOLS (SHEET 1 OF 2)***
A10D	SYMBOLS (SHEET 2 OF 2)***
BO-1	BRIDGE DETAILS
****RSP	B6-21 JOINT SEALS (MAXIMUM RATING =2")



- * If needed
- ** XS sheets are insertable bridge standard sheets and ALWAYS follow sheets drawn specifically for the project but precede Log Of Test Boring sheets
- *** These sheets are included in EVERY project
- **** If a Standard Plan sheet has been revised note with Revised Standard Plan (RSP)

Names On Plan Sheets

			BOTH SHOULD ALWAYS BE THE SAME NAME			
DESIGN	BY Name	CHECKED Name	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO.	NO
DETAILS	BY Name	CHECKED Name			06-0038L	
QUANTITIES	BY Name	CHECKED Name			POST MILE 1.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	CU 03240 EA 123456	DISREGARD PRINTS BEAR EARLIER REVISION DATE	
			FILE => 1j-bdd-name.dgn			