

SECTION 2-2

PROJECT PLAN SHEET SPECIFIC DATA AND EXAMPLES

2-2.1 Introduction

The example plan sheets contained in Section 2-2 were obtained from several different sources. The examples were selected from multiple projects to show the designers of a project how to present design information on a final set of project plans. Explanatory notes for the preparation of the various plan sheets are included on the examples, and in most instances are outlined. Final project plans are used by prospective bidders to prepare bids, by successful bidders to construct projects, and by engineers to inspect the work.

Refer to Section 2-1 of this manual for policies and procedures for the preparation of project plans.

2-2.2 Title Sheets

General

The first sheet of the project plan set is the title sheet. The title sheet serves as a cover sheet for the project. The title sheet is not considered an engineering document, as no bid items are to be shown on the title sheet (this also applies to the Locations of Construction sheet(s)). Bid items are to be shown on the other sheets of the plans (layouts, etc.).

The title sheet is to be a neat, clear, and concise presentation of the project. Compared to other sheets of the plans, the title sheet, by itself, is distributed to more people and may be used for press releases, public hearings, updating maps, and locating project work by out-of-state contractors.

For projects developed by Caltrans personnel, the title sheet of the project shall be prepared by the district, except projects consisting entirely of bridge, building, or other transportation related structures work (no road plans). When only structure-related or building-related plans are required for the project plan set, the responsible unit in the Office of Structure Design or TAEMWW shall prepare the title sheet.

Title sheets for city or county sponsored projects that are on the state highway system or that involve federal funding and are advertised through Caltrans are usually prepared by the respective city or county and must conform to the requirements outlined in this section.

The border for the appropriate title sheet is available in the Caltrans English CADD Cell Library and shall be used. See Section 2-1.5 of this manual.

Title sheet is to include such information as the:

- Mapping that best depicts and locates where the project construction is to be performed
- County or counties where the project is located
- Stationing with line designation and/or post mile limits of construction on the route or routes where the project is located
- Station equations in the route alignment within the distance between begin and end points of construction and work
- Post mile equations (with a numerical difference of a 0.1 mile or more) within the begin and end points of construction
- Signature and license seal information of the person assigned responsibility for coordinating the effort to produce a complete set of project plans for construction
- Printed name of the individual providing oversight of the person assigned responsibility for coordinating the effort to produce a complete set of project plans

The "Checklist for Title Sheets" contained elsewhere in this section lists the various elements to be included on the title sheet.

Additional title sheet elements to be included by DES-OE for AAOE projects and District Office Engineer (DOE) for AADD projects after PS&E submittal-consist of:

- Index of plans (all sheets in the project plan set, including applicable revised standard plans); group sheets by type
- Sheet numbers and total sheets
- Project federal funding identification number, if federal funds are involved
- Plans Approval Date

The information on the title sheet shall be limited to that identified in the previous paragraph and the "Checklist for Title Sheets." Features such as typical cross sections, construction details, and drainage details, construction area signs, and quantity summaries shall not be shown on the title sheet. The permanent type of work to be performed on the project (widening, surfacing, etc.) is not to be identified by either labeling or textural symbols, such as patterns or hatching. The type of work is described in the project special provisions. The type of work may be added to the title sheet as part of the As-Built change process.

No more than one sheet shall be used to present necessary title sheet information for any one project, unless a table is needed to identify the project's multiple locations of construction and room is not available on the title sheet for the table. When this condition exists, the listing of locations of construction is to be shown on a separate sheet. Refer to Section 2-1.7 of this manual for additional instructions regarding "Locations of Construction" tables.

Title Sheet Mapping

The mapping for the title sheet is to be in a format that best depicts and locates the project construction limits. As applicable to the project, the map is to be in the form of a strip map similar to that used on Title Sheet Examples "D" through "I," "L" and "M" or other mapping similar to that used on Title Sheet Examples "J," "K," and "N."

Strip Map

The strip map should be a convenient size that best fits within the title sheet border. The strip map does not need to be at a specific scale and should be identified as "No Scale." Layouts, as described elsewhere in this manual, shall not be used as a strip map on the title sheet. The coverage of the strip map should include the area within the right of way of each route where construction is to take place and the area immediately adjacent to the right of way necessary for proper orientation.

Title sheets from prior projects, USGS quadrangle maps, and the Department's road system (county road) maps are good sources for the information required as the base for the strip maps. Do not use AAA maps or Thomas Brothers Guide mapping because of copyright laws. District post mile maps are unsuitable and shall not be used.

In those cases where a transportation corridor is constructed in a number of adjacent projects, consideration should be given to the preparation of an overall strip map of the corridor. A portion of this overall strip map should be used for the appropriate project. Since each project is unique, the size of a strip map should only show slightly more than the limits required for each specific project.

Title sheets shall be oriented so that stationing progresses from left to right. On projects where stationing is in the opposite direction from post miles, the title sheet strip map is to be shown with stationing increasing from left to right to orient the strip map the same as the plan sheets. However, the title sheet project description, begin and end of construction, and begin and end of work shall be in order of post miles.

The strip map is to show, as applicable to the project:

- City limit lines, county lines, state and international boundaries
- Existing streets, public roads and highways
- Canals, rivers, lakes, bridges, parks, and prominent geographic features shown by line work, (these items shown for orientation purposes)
- Special topographical features such as transmission lines and aqueducts
- Major improvements such as courthouses, post offices, hospitals, schools, large industrial sites, and other private facilities only when they have a direct effect on the project and will be referred to in the project special provisions
- Names of roads or other features referred to in the title sheet project description, the project special provisions, and other contract-related documents
- Highways of major importance should show destinations at map edges
- Physical features labeled with their official titles
- Railroads (Refer to "Railroad Involvement" in Section 2-1.1 of this manual for additional information)

If a strip map is used for the title sheet mapping, as shown on Title Sheet Examples "D" through "F" (each length of construction on each route is greater than 0.2 mile), then begin and end points of construction and begin

and end points of work are to be shown on each route where construction is to be performed. A heavy solid line is to be used to designate the length of construction for each roadway, ramp, connector, crossroad, frontage roads, etc. involved in constructing the project.

If a strip map is used for the title sheet mapping, as shown on Title Sheet Example "I" (four locations on one route where each location's length of construction is less than 0.2 mile or 0.2 mile or greater), the beginning of the first location is identified as the begin point of construction and the end of the last location as the end point of construction. A heavy solid line is to be used to designate the length of construction for each location. Begin point of work is shown proceeding the begin point of construction. End point of work is shown following the end point of construction.

Where begin and end points of project construction are identified on the title sheet strip map by stationing and post mile, the strip map must show:

- Alignment of the route or routes where construction is to be performed. Alignment lines stationed at intervals of 50, 20, or 10 stations depending upon the size of the strip map
- Begin and end points of both work and construction identified by alignment line designation and stationing
- Begin and end points of construction also identified by post mile
- Station equations (back and ahead, change in line designation) in the main route alignment line (that occur within the limits of the identified points of begin and end construction)
- Post mile equations within begin and end points of construction if the numerical difference of the post mile equation is 0.1 mile or more

- Station equations at the intersection of the main route alignment with other state route alignments if the route intersections occur within the begin and end points of construction of the main route alignment and there is construction on the intersecting route. Refer to Title Sheet Examples "E" and "F"
- A post mile equation at the intersection of the main route alignment with other state route alignments if the route intersections occur within the begin and end points of construction of the main route alignment and no construction is to be performed on the intersecting route. Refer to Title Sheet Example "D"

Where only post miles are used to identify begin and end points of work and construction on the strip map, show:

- Post mile equations within the begin and end points of work and construction if the numerical difference of the post mile equation is 0.1 mile or more
- A post mile equation at the intersection of the main route alignment with other state route alignments, if the route intersections occur within the begin and end points of construction of the main route alignment

If a strip map is used for the title sheet mapping, as shown on Title Sheet Examples "G" and "H," (each length of construction on an individual route is less than 0.2 mile), then each location of construction is considered to be a spot location and each location is identified as a "Location of Construction" with one post mile value. Begin and end points of construction are not shown, but begin and end points of work are shown. A heavy solid line is to be used to designate each location of construction.

A title sheet strip map similar to Title Sheet Example "M" is to be used to identify the location of building construction that is on or adjacent to a state highway.

For additional instructions regarding identification of begin and end points of construction and begin and end points of work shown on the strip map, see the subsection titled "Begin and End Points of Project Construction and Work" within this Section 2-2.2.

Mapping other than Strip Map

Mapping other than strip maps such as the Department's road system (county road) maps are to be used for title sheet mapping for projects consisting of three or more locations on two or more routes, or projects consisting of three or more locations in two or more counties (Case 3 and 4 projects). Follow the instructions in Section 2-1.7 of this manual to identify construction on Case 3 and Case 4 projects. Refer to Title Sheet Example "J" for a representation of a Case 3C project. Refer to Title Sheet Example "K" for a representation of a Case 3D project.

Title sheet mapping similar to Title Sheet Example "N" is to be used to identify the location of building construction that is off of a state highway.

Identifying Post Miles

Post miles shall be shown in increments of 0.1 mile on the title sheet, except when shown in a table of "Locations of Construction." Post miles may be shown to increments of hundredths of a mile in a table of "Locations of Construction" or on layout sheets where only post miles are used to identify construction on the project. Refer to Section 2-1.7 of this manual for instructions regarding tabulation of locations of construction.

Post mile equations, within the limits of construction, which reflect a change in prefix only, need not be shown (i.e. R32.2 where "R" indicates realignment of a route).

Post mile prefixes and their use are as follows:

- C-commercial lanes
- D-duplicate post mile at meandering county lines
- G-reposting duplicate post mile at the end of a route
- H-realignment of D mileage
- R-first realignment
- M-realignment of R mileage
- N-realignment of M mileage
- L-overlap post mile
- S-spur
- T-temporary connection

The "Highway Sequence Listing" formerly referred to, as the "California State Highway Log" and the "California Log of Bridges on State Highways" should be used to identify post mile of reference points used in a project. The "Highway Sequence Listing" is available at this internal website:

<http://onramp.dot.ca.gov/tsi/ohsip/tasas/seqlisting.html>

The "California Log of Bridges on State Highways" is available at this external website:

<http://www.dot.ca.gov/hq/structur/strmaint/brlog2.htm>

Identifying Various Types of Structures

Structures shall be shown by symbol and identified by name and type. The various types of structures are: overcrossing, undercrossing, separation, viaduct, bridge, underpass, overhead, and a combination of bridge and overhead. See Figure 62.2 of the Highway

Design manual for a depiction of the various types of structures.

The structure number shall only be included with the structure name and type of structure when construction or work is to be performed on the structure as part of the overall project (this includes new bridges or walls that have an assigned bridge number). The actual structure plans shall be prepared or coordinated by the Office of Structure Design. Refer to the Bridge Design Details Manual for information on developing structure plans.

If a project involves the construction of a large number of structures (typically more than 10) and there is not sufficient room on the strip map to display the individual structure names and structure numbers at the location of each structure, then each structure is to be identified graphically with a leader line and specific numeric or alpha designation enclosed in a geometric shape such as a hexagon. Where this occurs, the structures are to be listed together in tabular format (with the table labeled as "IDENTIFICATION OF PROJECT STRUCTURES") on the title sheet with their numerical or alpha designations and their corresponding structure names and structure numbers.

In those rare instances, where a project involves the construction of a large number of structures and there is not sufficient room on the title sheet to display the individual structure names and structure numbers at the location of each structure or to identify each structure graphically with a leader line and specific numeric or alpha designation with the structures listed together in tabular format, then each structure is to be identified graphically with a leader line and specific numeric or alpha designation enclosed in a geometric shape such as a hexagon and a table with a heading of "IDENTIFICATION OF PROJECT STRUCTURES" must be included in the

project plans as a separate plan sheet. The table must list each structure with their numerical or alpha designations and their corresponding structure names and structure numbers. The name of the sheet is to be "IDENTIFICATION OF PROJECT STRUCTURES." The sheet identification code to be used is "IPS-1."

The Identification of Project Structures sheet is to immediately follow the Title Sheet and the "Locations of Construction" sheet if used. When the Identification of Project Structures sheet is used in the project plan set, a note is to be placed on the Title Sheet directing attention to the sheet. Example: "THE TABLE OF IDENTIFICATION OF PROJECT STRUCTURES IS SHOWN ON THE IDENTIFICATION OF PROJECT STRUCTURES SHEET."

State Location Map

The county or counties in which the project is located shall be indicated on the State Location Map as shown on the sheet entitled "Title Sheet Location Map Examples," in this manual. The State Location Map is part of the title sheet border.

Index of Plans

For AAOE projects, DES-OE will add the index of plans (formerly identified as index of sheets) to the title sheet prior to advertisement. For AADD projects, DOE shall complete the index of plans.

In those rare instances, where the project involves a very large number of sheets and there is not sufficient room on the title sheet to list all sheets in the index of plans, the index of plans may be placed on a separate sheet. The name of the sheet is to be "INDEX OF PLANS." The sheet identification code to be used is "IOP-1."

The "Index of Plans" sheet is to immediately follow the Title Sheet and precede the "Locations of Construction" sheet and the "Identification of Project Structures" sheet, if they are used in the project plan set (see Section 2.1 of the CADD Users Manual). When the "Index of Plans" is placed on a separate sheet of the project plan set, a note is to be placed on the Title Sheet directing attention to the sheet. Example: "THE LISTING OF THE INDEX OF PLANS IS SHOWN ON THE INDEX OF PLANS SHEET." See Index of Plans Sheet, Example "65 Index."

Listing of Standard Plans

The list of project applicable standard plans and revised standard plans must be included in the project special provisions.

Signature and Registration Information

The signature and registration information shall be added to the title sheet as provided in Section 2-1.6 of this manual.

Project Identification Block

The project identification information shall be added to the title sheet as provided in Section 2-1.7 of this manual.



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Title Sheet Header

The title sheet header precedes the title sheet project description on the title sheet. The header begins with the phrase "PROJECT PLANS FOR" and continues with a descriptor indicating the type of facility involved and whether construction, building construction, etc. is to be performed.

The most common descriptors are:

- CONSTRUCTION ON STATE HIGHWAY
- CONSTRUCTION ADJACENT TO STATE HIGHWAY
(Adjacent means "**not within**" the Caltrans right of way, such as a Park-N-Ride that is adjacent to the right of way but not within the right of way)
- CONSTRUCTION ON AND ADJACENT TO STATE HIGHWAY
- BUILDING CONSTRUCTION ON STATE HIGHWAY
- BUILDING CONSTRUCTION
(Used where building construction is not on state highway, rural or urban locations)
Example: BUILDING CONSTRUCTION IN YUBA COUNTY IN MARYSVILLE AT THE DISTRICT OFFICE 703 B STREET) See title Sheet Example "N"
- CONSTRUCTION
(Used where construction is not on state highway and the work is not building construction, rural or urban locations)
Example: CONSTRUCTION IN SAN BERNARDINO COUNTY IN SAN BERNARDINO AT SAN BERNARDINO MAINTENANCE FACILITY 175 WEST CLUSTER STREET
- WETLAND CONSTRUCTION NEAR
(See Title Sheet Example "U")
- TRAFFIC MANAGEMENT CENTER
(This would be a rare instance where there is work only with the electrical equipment

that services the Traffic Management Center. It occurs in a building that is not on the state highway system and there is no work to the building).

Note: These descriptors should be added to the Office Engineer database, both for AAOE and AADD projects.

Additional descriptors are:

- CONSTRUCTION ON CITY STREET
- CONSTRUCTION ON COUNTY ROAD
- CONSTRUCTION ON COUNTY HIGHWAY
- CONSTRUCTION ON STATE HIGHWAY AND CITY STREET
(See Title Sheet Example "W")

Division of Design, Office of CADD and Engineering GIS Support should be consulted when a project requires a descriptor not shown.

Title Sheet Project Descriptions

The title sheet project description, as described within this section, must be included on the title sheet before PS&E submittal to DES-OE or District Office Engineer (DOE).

General

The title sheet project description contains the following, as described herein:

- A listing of the county or counties where the project is located (do not abbreviate county names)
- A listing of the city or town where the project is located, except as provided herein
- A description of the limits of construction (begin and end points of construction or the locations of construction), as applicable to the project. Refer to Title Sheet examples, instructions within this subsection, "Title Sheet Project Descriptions," and Section 2-1.7 of this manual
- References to nearest existing identifiable point such as, a road, street, or bridge to describe the project construction limits. State and county lines are also acceptable references since they are posted on the ground. Since city limits may change, a specific tie to a city limit is not to be used. The referenced identifiable point shall be shown and labeled on the title sheet mapping. If the referenced city is more than 10 miles away, make sure it is listed as the "destination city." The "Highway Sequence Listing" formerly referred to as "California State Highway Log" and the "California Log of Bridges on State Highways" should be used to identify post mile references to existing identifiable points used in the title sheet project description. The "Highway Sequence Listing" is available at this internal website:

<http://onramp.dot.ca.gov/tsi/ohsip/tasas/seqlisting.html>

The "California Log of Bridges on State Highways" is available at this external website:

<http://www.dot.ca.gov/hq/structur/strmaint/brlog2.htm>

- Distance references to identifiable points shall be stated in increments of 0.1 mile. If a distance reference tie is 1.0 mile or less, use the term "mile," if a reference tie is 1.1 miles or greater, use the term "miles"
- When referring to an identifiable point, use full name descriptions (example: "SANTA ANA RIVER BRIDGE," "NORMANDIE AVENUE OVERCROSSING," etc.)
- Do not use abbreviations in the title sheet project description, unless it is part of the proper name for a specific name of a place or geographic feature (example: St. LOUIS AVENUE)

- Do not use punctuation marks, except commas, when the listings of three or more counties are in the title sheet project description
- Do not use the word, "Interchange," in the title sheet project description. If a highway crosses over another highway by use of a grade separation structure (no at-grade crossing), they are identified as a route separation (example "ROUTE 710/405 SEPARATION"). Where a state route intersects another state route at an at-grade crossing (no grade separation structure), then a reference tie would be to the intersected route: (examples: FROM 0.2 MILE WEST OF ROUTE 71 TO ROUTE 71, or AT 0.2 MILE EAST OF ROUTE 71, etc.). Do not use the words, "Junction" or "Intersection," to describe highways intersecting each other, except in those rare instances where a break in a route creates two separate intersect points of a highway with another highway. In these instances, the intersect point may be described using the word, "Junction," (example: "NORTH JUNCTION ROUTE 79" or "SOUTH JUNCTION ROUTE 79" depending on which is used as a geographic reference point)
- Do not use freeway names, such as "Golden State Freeway," in the title sheet project description. Do not label routes as either "State Route" or "Interstate Route" and do not use "route shields." If labeled incorrectly, this can lead to (and has in the past) the denying of federal funding
- Use structure numbers only if there may be some confusion as to which structure is referred to (example: bridges crossing the same waterway with the same name but different numbers)

Listing County or Counties Where the Project is Located

- List the county or counties where the project is located as the first part of the title sheet project description (example: "IN SHASTA COUNTY"). If the project is in two or more counties list all counties involved (example: "IN SANTA CLARA AND SANTA CRUZ COUNTIES"). Do not abbreviate county names
- The listing of a county or counties in the title sheet project description is based on the location of "Begin and End points of construction" not the "Begin and End points of work"

Listing City or Town Where the Project is Located

- List the city or town where the project is located as the next part of the title sheet project description, as described herein.

1. If the project is entirely within the city limits of an incorporated city, use the term "in" (example: "IN OAKLAND"). Check in the front of the current THOMAS BROTHERS guide under "CITIES AND COMMUNITIES INDEX" or go to this web address to determine if the city is incorporated:

<http://www.answers.com/topic/list-of-cities-in-california>

or

http://www.dot.ca.gov/hq/structur/strmaint/table_c.htm

2. If the project is both inside and outside the city limits of an incorporated city, use the phrase "in and near" (example: "IN AND NEAR OAKLAND")
3. When the project is at an unincorporated city, town or name place, use the term "at" not "in" (example: "AT KRAMER"). Check in the front of the current THOMAS BROTHERS guide under "CITIES AND COMMUNITIES INDEX" or go to this web address to determine if the city or town is unincorporated:

<http://www.answers.com/topic/list-of-cities-places-and-neighborhoods-in-california>

4. If the project is not within a town or city, make reference to the nearest city or town shown on the current State highway or county road map that is on the route where construction is to take place. The nearest city or town that can be referenced may be in an adjoining county not listed in the title sheet project description, if no other available city or town is within the county where the project construction is to take place. Use the term "near" (example: "NEAR COTTONWOOD")
5. If the project location is more than five miles from a city or town, use the term "about" and a distance (example: "ABOUT 8 MILES WEST OF TURLOCK")
6. When referring to a city, do not use the phrase "the city of" except in the case of "IN THE CITY AND COUNTY OF SAN FRANCISCO" specifically

7. If the Begin Construction limits falls within one city or town and the End Construction limits falls within another city or town, list both cities or towns in the title sheet project description. If there are three or more cities or towns within the Begin and End Construction limits of the project, only the city or town associated with the Begin Construction limits and the city or town associated with the End Construction limits are to be listed in the title sheet project description. See Title Sheet Example "Q"
8. Omit city or town names from the title sheet project description if:
 - a. The project consists of three or more locations on the same route and construction is over a lengthy section of highway (greater than six miles), or
 - b. The project consists of three or more locations spread over two or more routes or two or more counties

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Project Case Designation Numbers

For the purpose of referencing instructions related to the development of each title sheet project description and its associated project identification block, the various types of projects have been assigned case designation numbers. These case identification numbers apply to both this section of the manual and Section 2-1.7, "Project Identification Block and County Abbreviations," of this manual.

Project Construction is on One Route

Where the project is only on one route, the route number is not listed in the title sheet project description and the following applies:

Case 1A Project - One location on one route in one county with a continuous length of construction that is 0.2 mile or greater

Describe begin and end points of construction by using the "From...To..." format.

Example:

**IN LOS ANGELES COUNTY
NEAR NEWHALL FROM 0.1 MILE SOUTH OF
WELDON CANYON OVERCROSSING TO 0.3 MILE NORTH
OF CALGROVE BOULEVARD UNDERCROSSING**

Case 1B Project - One location on one route in more than one county with a continuous length of construction that is 0.2 mile or greater

Describe begin and end points of construction by using the "From...To..." format.

Example:

**IN SAN MATEO COUNTY AND
THE CITY AND COUNTY OF SAN FRANCISCO
FROM 0.2 MILE NORTH OF JOHN DALEY BOULEVARD OVERCROSSING
TO 0.4 MILE NORTH OF BROTHERHOOD WAY UNDERCROSSING**

(Note: This is the rare instance when the phrase, "IN THE CITY," is used in the project description, because the county and city limits of San Francisco are the same.)

Case 1C Project - Two locations on one route in one county with both locations having a length of construction that is 0.2 mile or greater in length

Describe begin and end points of construction for each location using the "From... To..." format. The distance between the end point of construction of the first location and the begin point of construction of the second location is to be equal to or greater than 0.2 mile when using this type of title sheet project description. (If the gap between locations of construction is less than 0.2 mile, use the "From... To..." format to describe the begin point of the first location as the begin point of construction and the end of the last location as the end point of construction).

Example:

**IN LOS ANGELES COUNTY
NEAR NEWHALL FROM 0.1 MILE SOUTH TO 0.3 MILE NORTH OF
WELDON CANYON OVERCROSSING AND FROM 0.4 MILE SOUTH
TO 0.3 MILE NORTH OF CALGROVE BOULEVARD UNDERCROSSING**

Case 1D Project - Two locations on one route in one county with one location 0.2 mile or greater in length and one location less than 0.2 mile (spot location)

Describe begin and end points of construction for the location 0.2 mile or greater in length by using the "From... To..." format, describe the location less than 0.2 mile in length by using a spot location description "At..."

Example:

**IN LOS ANGELES COUNTY
NEAR NEWHALL FROM 0.1 MILE SOUTH TO 0.3 MILE NORTH
OF WELDON CANYON OVERCROSSING AND
AT CALGROVE BOULEVARD UNDERCROSSING**

Case 1E Project - Two locations on one route in one county with individual lengths of construction less than 0.2 mile (spot locations)

Describe the locations by using two spot location descriptions "At... and At..."

Example:

**IN FRESNO COUNTY
IN FRESNO AT BIOLA JUNCTION OVERHEAD
AND AT HERNDON CANAL BRIDGE**



Case 1F Project - One location on one route in one county with an individual length of construction less than 0.2 mile (spot location)

Use spot location description "At..."

Example:

**IN MENDOCINO COUNTY
NEAR MENDOCINO
AT BIG RIVER BRIDGE**

Case 1G Project - One or more locations in one county with all locations within a 0.6-mile radius of the center of a route separation or Interchange. (For example; a landscape project involving work just on freeway entrances and exits would fall under the Case 1G type project)

Use spot location description "At..."

Example:

**IN LOS ANGELES COUNTY
IN LOS ANGELES AT ROUTE 5/118 SEPARATION**

Case 1H Project - Three or more locations on the same route in one county where each location's length of construction is less than 0.2 mile; 0.2 mile or greater; or a combination of these lengths

Describe the begin point of the first location as the begin point of construction and the end of the last location as the end point of construction. The phrase "AT VARIOUS LOCATIONS" shall be used prior to describing the begin and end points of construction.

Example:

**IN LOS ANGELES COUNTY NEAR NEWHALL
AT VARIOUS LOCATIONS FROM 0.1 MILE SOUTH OF
WELDON CANYON OVERCROSSING TO 0.3 MILE NORTH
OF CALGROVE BOULEVARD UNDERCROSSING**

(For additional instructions regarding this case of project, refer to "Case 1H Project" in Section 2-1.7 of this manual.)



Project Construction is on Two Routes

Where the project is on two routes, the route numbers are listed in the title sheet project description and the following applies:

Case 2A Project - Two locations - Each location is on a different route in one county. The length of construction for each location is 0.2 mile or greater.

Indicate the corresponding route number before describing begin and end points of construction for each location using the "From... To..." format.

Example:

**IN SAN DIEGO COUNTY IN EL CAJON
ON ROUTE 8 FROM 0.3 MILE WEST OF MOLLISON
AVENUE UNDERCROSSING TO MOLLISON AVENUE
UNDERCROSSING AND ON ROUTE 67 FROM 0.2 MILE
TO 0.5 MILE NORTH OF ROUTE 67/8 SEPARATION**

Case 2B Project - Two locations - Each location is on a different route in one county. The length of construction on one route is 0.2 mile or greater and the length of construction on the other route is less than 0.2 mile.

Indicate the corresponding route number before describing the begin and end points of construction for the location equal to or greater than 0.2 mile in length by using the "From...To..." format and indicate the corresponding route number before describing the location less than 0.2 mile in length by using a spot location description "At."

Example:

**IN SAN DIEGO COUNTY IN EL CAJON
ON ROUTE 8 FROM 0.3 MILE WEST OF MOLLISON AVENUE
UNDERCROSSING TO MOLLISON AVENUE UNDERCROSSING
AND ON ROUTE 67 AT BROADWAY UNDERCROSSING**

Case 2C Project - Two locations -Each location is on a different route in one county. Each construction location is less than 0.2 mile in length.

Indicate the corresponding route number before describing each location of construction. Use a spot location description "At..." for each spot location.

Example:

**IN SAN DIEGO COUNTY IN EL CAJON
ON ROUTE 8 AT MOLLISON AVENUE UNDERCROSSING
AND ON ROUTE 67 AT BROADWAY UNDERCROSSING**

Case 2D Project - Two locations - Each location is on a different route. Each route is in a different county. The length of construction for each location is 0.2 mile or greater.

List the county that contains the lowest numerical route on the project first, then list the other county. Routes are to be listed in numerical order and are to match their associated county. Indicate the corresponding route number before describing the begin and end points of construction for each location by using the "From...To..." format

Example:

**IN SAN BERNARDINO AND RIVERSIDE COUNTIES
ON ROUTE 18 FROM 0.1 MILE SOUTH OF GRANITE VIADUCT
TO 0.2 MILE SOUTH OF DOGWOOD VIADUCT AND
ON ROUTE 71 FROM SAN BERNARDINO COUNTY LINE
TO 2.0 MILES SOUTH OF SAN BERNARDINO COUNTY LINE**

Case 2E Project - Two locations - Each location is on a different route. Each route is in a different county. The length of construction on one route is 0.2 mile or greater and the length of construction on the other route is less than 0.2 mile.

List the county that contains the lowest numerical route on the project first, then list the other county. Routes are to be listed in numerical order and are to match their associated county. Indicate the corresponding route number before describing the begin and end points of construction for the location greater than 0.2 mile in length by using the "From...To..." format and indicate the corresponding route number before describing the location less than 0.2 mile in length by using a spot location description "At."

Example:

**IN SAN BERNARDINO AND RIVERSIDE COUNTIES
ON ROUTE 18 FROM 0.1 MILE SOUTH OF GRANITE VIADUCT
TO 0.2 MILE SOUTH OF DOGWOOD VIADUCT AND
ON ROUTE 71 AT 1.0 MILE SOUTH OF SAN BERNARDINO COUNTY LINE**

Case 2F Project - Two locations - Each location is on a different route. Each route is in a different county. Each construction location is less than 0.2 mile in length.

List the county that contains the lowest numerical route on the project first, then list the other county. Routes are to be listed in numerical order and are to match their associated county. Indicate the corresponding route number before describing each location less than 0.2 mile in length by using a spot location description "At."

Example:

**IN SAN BERNARDINO AND RIVERSIDE COUNTIES
ON ROUTE 18 AT DOGWOOD VIADUCT AND ON ROUTE 71
AT 1.0 MILE SOUTH OF SAN BERNARDINO COUNTY LINE**

For Case 3 and 4 type projects

Project Construction is:

- **At three or more locations on two or more routes**
- **At three or more locations in two or more counties**

For these projects, the route numbers are not listed in the title sheet project description. Use the phrase "AT VARIOUS LOCATIONS" for the project limits following the reference to the county or counties. If the project is located in two or more counties, list counties in alphabetical order. Omit city or town names from the title sheet project description.

Example of title sheet project description where the project consists of three or more locations in two counties:

**IN SANTA CLARA AND SANTA CRUZ COUNTIES
AT VARIOUS LOCATIONS**

Refer to "Project Construction at Three or More Locations on Two or More Routes and at Three or More Locations in Two or More Counties" in Section 2-1.7 of this manual for additional instructions related to these multiple location projects designated as Case 3A, Case 3B, Case 3C, Case 3D and Case 4 projects.

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Begin and End Points of Project Construction and Work

General

The post miles shown in the Project Identification Block are the post miles for the limits of construction (**not work**).

If the limits of project construction is continuous (each length of construction on each route is equal to or greater than 0.2 mile), as shown on Title Sheet Examples "D" through "F," and "L," then begin and end points of construction and begin and end points of work are to be shown on each route where construction is to be performed. A strip map is used for the title sheet mapping.

If the limits of project construction is on one route and consist of more than one location of construction as shown on Title Sheet Example "I" (four locations on one route where each location's length of construction is less than 0.2 mile or 0.2 mile or greater) and Title Sheet Example "Y," the beginning of the first location is identified as the begin point of construction and the end of the last location as the end point of construction. Begin point of work is shown preceding the first location of construction. End point of work is shown following the last location of construction. When there is one identified begin and end point of work that encompasses multiple locations on one route, routine maintenance is not performed (see later in this section for some points to consider when identifying begin and end points of work on a title sheet). A strip map is used for the title sheet mapping.

If the project construction limits are on one route and consist of more than one spot location of construction, as shown on Title Sheet Example "H," each spot location is identified as a "Location of Construction."

Begin and end points of work are shown for each location of construction. A strip map is used for the title sheet mapping.

If project construction consists of a spot location or more than one spot location on one route, as shown on Title Sheet Examples "G," "H," and "M," then begin and end points of construction are not shown and are replaced with the phrase "Location of Construction" for each spot location of construction. Begin and end points of work are to be shown on each location (unless all work is a building project which does not impact the motoring public as shown on Title Sheet Example "M"). A strip map is used for the title sheet mapping.

If project construction consists of multiple locations of construction, as shown on Title Sheet Examples "J" and "K", then both begin and end points of construction and work are not shown. Refer to Section 2-1.7 of this manual for the methods of identifying project construction on multiple location projects. County route mapping is used for the title sheet mapping.

If project construction consists of building construction in a city or urban location, as shown on Title Sheet Example "N," then both begin and end points of construction and work are not shown and the phrase "Location of Construction" is used to identify the location of construction. Street mapping is used for the title sheet mapping.

The work involved in the installation of construction area signs at intersecting cross roads or on streets adjacent to the route or routes on which construction is to be performed shall not be reflected in the described project limits of construction or work.

Diverting traffic to alternate routes to reduce traffic delays within the limits of project construction, including placement of traffic advisory or other informational signs well beyond the limits of the project, shall not be reflected in the identified limits of project construction or work nor shall these signs be shown on the title sheet. Traffic advisory or other informational signs used on the project for transportation management are to be shown on the motorist information project plan sheets (see Section 2-2.15).

Other sheets of the plans (layouts, drainage plans, etc.) shall not show construction of a permanent nature beyond begin and end points of construction shown on the title sheet.

Where construction on a route is to be performed in adjacent separate projects, the limits of construction and associated title sheet project descriptions for the adjacent projects must not overlap. To minimize description overlaps, construction involved in transitioning from the alignment of new traffic lanes to the existing alignment of traffic lanes (example: transition traffic striping or construction of a temporary route connection) may be included within the identified limits of work instead of the identified limits of construction. Limits of construction on adjacent projects cannot overlap, but limits of work can.

Begin and End Points of Construction

The identified begin and end points of construction shall be the physical limits of the permanent bid items to be performed on the individual project. This construction is that which will remain in place at the completion of the contract. Identification of the permanent bid items does not necessarily include additional minor roadway work, which includes shifting of traffic lanes laterally in advance of begin or end of construction. In these instances, advance temporary lane striping and its replacement

striping would more properly be within the points of begin and end work.

Some examples of what could be the permanent type of construction on a project are:

- New highway alignment
- Widening existing highway (adding new traffic lane(s) or shoulder)
- Reconstruction of the existing pavement structure (structural section)
- New surfacing over existing pavement
- Grinding or grooving of existing pavement
- New median barrier
- Sound walls
- Retaining walls
- Highway planting and irrigation systems
- Electrical systems, etc.

The begin and end points of construction are to be:

- Referenced by post mile and station, where the construction is identified on the project layout sheets by stationing
- Referenced only by post mile, where construction is only identified by post miles on the project layout sheets or plan view sheets
- Referenced only by post mile, where construction is only identified by post miles and the project has no plan view sheets (example: pavement resurfacing)

Begin and End Points of Work

The begin and end points of work shown on the title sheet for the route or routes involved shall include the temporary work to be performed in advance of and beyond the identified points of begin and end construction. This work, such as lane closures and advance construction area signing (i.e. the first "ROAD WORK AHEAD" sign) will not remain in place at the completion of the contract. The temporary shifting of traffic lanes laterally in advance of begin and end of construction properly falls within begin and end work.

Begin and end points of work shall be:

- Referenced by station, where the construction and work is identified on the layout sheets by stationing.
- Referenced only by post mile, where construction is only identified by post miles on the project layout sheets or plan view sheets
- Referenced only by post mile, where construction is only identified by post miles and the project has no plan view sheets (example: pavement resurfacing or seal coat projects)

Do not use wording such as "1000 feet beyond End of Construction" to define work limits.

If the begin or end construction limits coincide with a county line, the begin or end work limits are to be shown in the adjacent county in order to properly identify the necessary distance for the advance construction area signing.

If the begin or end construction limits coincides with a state line (e.g. Oregon, Nevada or Arizona) the begin or end work limits are to be shown in the adjacent state in order to properly identify the necessary distance for the advance construction area signing (see Title Sheet

Example "T"). The neighboring state needs to be informed of the project prior to construction.

In the rare situation where the begin or end construction limits coincides at the border with Mexico, the construction limits will be the same as the work limits.

For each begin and end points of work that is identified on the Title Sheet, advanced warning signs will be placed. When there is more than one location of construction on a single route, consideration of identifying the number of begin and end points of work needs to first be discussed with the district Traffic Management System engineer before labeling begin and end work limits on the Title Sheet. The begin and end work limits can either be shown for each location (see Title Sheet Example "H") or can encompass all locations (see Title Sheet Examples "I" and "Y"). Title Sheet Example "P" also shows that begin and end work limits can be located on routes where there is no construction taking place.

Caltrans maintenance crews will NOT conduct routine maintenance within the advance warning signs (to avoid any interference with the contractor), so careful consideration needs to occur when there are gaps between locations of construction. If advance signing encompass the gaps (regardless of the distance between locations of construction), routine maintenance will NOT be conducted between all identified begin and end work limits.

Identification of Construction and Work by Post Mile

Post miles shall be shown in increments of 0.1 mile on the title sheet, except when shown in a table of "Locations of Construction." Post miles may be shown to increments of hundredths of a mile in a table of "Locations of Construction" or on layout sheets where only post miles are used to identify construction on the project. Refer to Section 2-1.7 of this manual for instructions regarding tabulation of locations of construction.

The post mile values shown in the upper right corner of the title sheet shall be the post mile values of the begin and end points of construction as shown on Title Sheet Examples "D," "E," "I," and "L." If the construction to be performed is at a spot location (less than 0.2 mile), a single post mile value shall be used, as shown on Title Sheet Examples "G" and "M." If the construction to be performed is at two spot locations (each less than 0.2 mile), two individual post mile values shall be used, as shown on Title Sheet Example "H."

Identification of Construction on Intersecting Streets or Roads

If construction is to be performed on cross roads or streets that intersect or are adjacent to the construction on the state route or routes, the begin and end points of construction on these roads or streets shall be identified as "Limits of Work."

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CHECKLIST FOR TITLE SHEET

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- Dist, county and route (upper right corner of sheet) TX=8.75, FT=3, WT=2, LV=10. For building work, use location code in space usually reserved for route number. There is a special border sheet for building work called AC = BTITLE
- Post mile (upper right corner of sheet) TX=8.75, FT=3, WT=2, LV=10
- County or counties in which project is located shown on the small-scale State location map by outlining county borders and filling in the area within the county border with hachure marks if sufficient space is available
- Location arrow on State map (upper right corner of sheet) AC=LOCARR, LV=10
- Standard north arrow AC=NARR, LV=10
- Contract No. 00-000004 (lower right corner of sheet) TX=12, FT=43, WT=0, LV=10. The number "4" represents the "Phase"
- Project Identification Number 0000000000 (lower right corner of sheet) TX=12, FT=43, WT=0, LV=10. The first two digits represent the district, the next eight digits represent the Project Number. Due to a decision by DES-OE the Phase is not listed with the Project Identification Number.
- Unit and Project Number and Phase (lower right corner of sheet) TX=7, FT=3, WT=1, LV=10
- "NO SCALE" TX=8.75, FT=3, WT=2, LV=10
- Signature and date of signature are included on Level 63. Current registration seal information is to be included on Level 10, (lower right corner of sheet). **Drafting**

reviewers will attach signatures when project goes to PS&E. The text size for date and information inside of seal is to be

TH=7, TW=5, but the width can be squeezed to fit the area. If both names are long, the first name can be above the last name. FT=3, WT=1

- Information inserted in project development name block spaces in left margin of sheet. See Figures 2-6 and 2-7 in Section 2-1.6 of this manual for additional instructions.
- Title sheet project description – TX=14.5, FT=43, WT=0, LV=10, UPPER CASE or if space is limited use TX=12, FT=43, WT=0, LV=10, UPPER CASE. No abbreviations allowed
- Strip map of the project or if a project consists of three or more locations on two or more routes or consists of three or more locations in two or more counties, then county road mapping is used to identify routes with construction work.
- Identify routes shown on the strip map where project construction is continuous, as shown on Title Sheet Examples "D." If project construction consists of multiple locations on multiple routes or in multiple counties (county mapping used) or in an urban location (street mapping used) or a rural location, identification of some routes not pertinent to the construction may not need to be shown. Do not use route shields. Do not use the term "state route" or "interstate route," only label it as "route." The following typically applies to route identification where work is being performed: TX=8.75, FT=3, WT=2, LV=60. On routes where no work is being performed, the following should apply: TX=7, FT=3, WT=1, LV=60, see Title Sheet Examples "J" for application of text size

CHECKLIST FOR TITLE SHEET

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- BEGIN AND END CONSTRUCTION (identified by post mile, station and alignment designation where construction is identified on the project layout sheets by stationing, identified only by post mile where construction is identified on the project layout sheets or plan view sheets by post miles, or by post miles where the project has no plan view sheets), TX=12, FT=43, WT=0, LV=60, ALL UPPER CASE. For projects that do not need to show begin and end points of construction, see "Begin and End Points of Project Construction and Work" within this Section 2-2.2
- Station equations shown in the main route alignment line where stationing used on title sheet to identify begin and end of construction and work
- Post mile equations shown within begin and end points of construction if the numerical difference of the post mile equation is 0.1 mile or more.
- Begin and End Work (identified by station and alignment designation where construction is identified on the project layout sheets by stationing, identified only by post mile where construction is identified on the project layout sheets or plan view sheets by post miles or by post miles where the project has no plan view sheets.) TX=10, FT=3, WT=2, LV=60, Upper and Lower Case. For projects that do not need to show begin and end points of work, see "Begin and End Points of Project Construction and Work" within this Section 2-2.2
- Destinations of Route(s) with arrow at strip map edges. Upper and Lower Case lettering. AC=T1ARR Example: To Los Angeles→
- City/county/state/international boundary limits, as well as TERO – Indian reservation land boundary
- Station and/or post mile equation at county lines where construction extends into another county
- Names of incorporated cities (ALL UPPER CASE) TX=10, FT=43, WT=0, LV=60. See instructions under the subheading "Title Sheet Project Descriptions" within this Section 2-2.2 to determine if a city is incorporated.
- Names of unincorporated areas (Upper and Lower Case Lettering) TX=10, FT=43, WT=0, LV=60. See instructions under the subheading "Title Sheet Project Descriptions" within this Section 2-2.2 to determine if a city or town is unincorporated.
- If a state (Nevada, Oregon or Arizona) or country (Mexico) appears on the title sheet, use: TX=11, FT=43, WT=0, LV=60
- Bridge shown by symbol
- Name and type of bridge or other transportation related structure (e.g., Thomas Street Overcrossing or Undercrossing)
- Bridge numbers (if work is to be performed on bridge or other transportation related structure and plans prepared by either the Office of Structure Design or a structural consultant are included)

CHECKLIST FOR TITLE SHEET

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- Street names – TX=7, FT=3, WT=1, LV=60. Make sure street names are shown where streets cross the project or where work is being performed. Identify all geographic features that appear in the title sheet project description such as streets, bridges, etc. Use abbreviations as shown in the Standard Plans, but match the text case of the abbreviation to the name of the geographic feature (example: St. LOUIS AVENUE).
- Label names of waterways and bodies of water. Waterways (rivers, creeks, canals): Upper and Lower Case, TX=7, FT=3 at 25° slant, WT=1, LV=60. Bodies of water: Lakes, Reservoirs, Ponds: Upper and Lower Case, TX=7, FT=3 at 25° slant, WT=1, LV=60. BAYS – ALL UPPER CASE, TX=8.75, FT=3 at 25° slant, WT=2, LV=60. OCEAN – ALL UPPER CASE, TX=12, FT=3 at 25° slant, WT=2, LV=60
- Prominent geographic features shown by line work, do not use symbols for geographic features, such as airports (these items shown for orientation purposes)
- Railroads are shown and labeled for geographic reference. Spell out railways in Upper and Lower Case. TX=7, FT=3, WT=1, LV=60. (Refer to "Railroad Involvement" in Section 2-1.1 of this manual for additional information)
- Mandatory material and disposal sites (Use of mandatory sites is to be avoided where possible.) If the sites are not within project limits, include in Materials Handout and not on the title sheet
- Environmentally sensitive area (ESA) limits shown

After PS&E submittal and review:

- Index of Plans, insertion of RSPs, sheet number and total number of sheets, project federal funding identification number if federal funds are involved and plans approval date.

See Title Sheet Example "C" for placement and text sizes

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