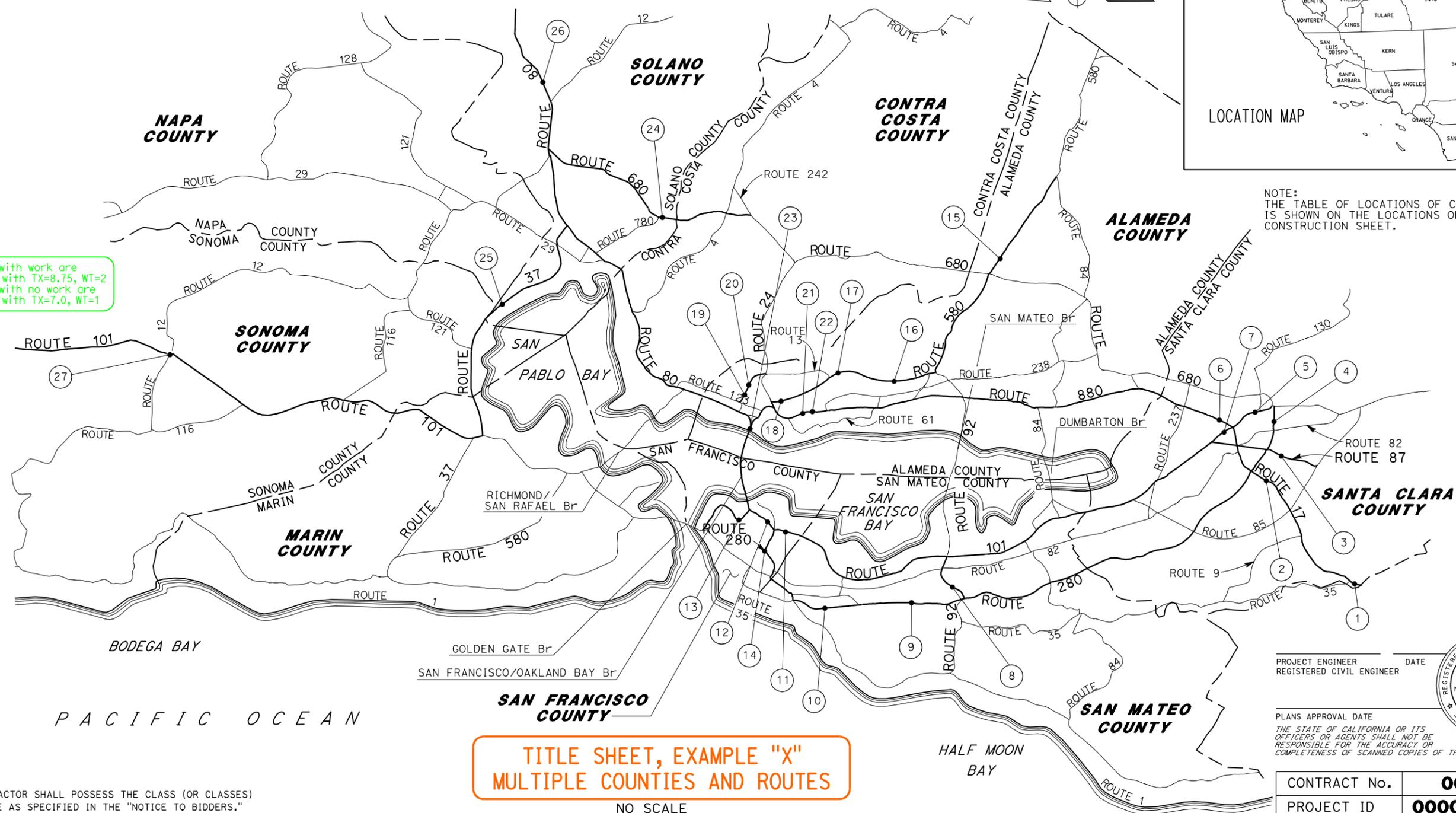
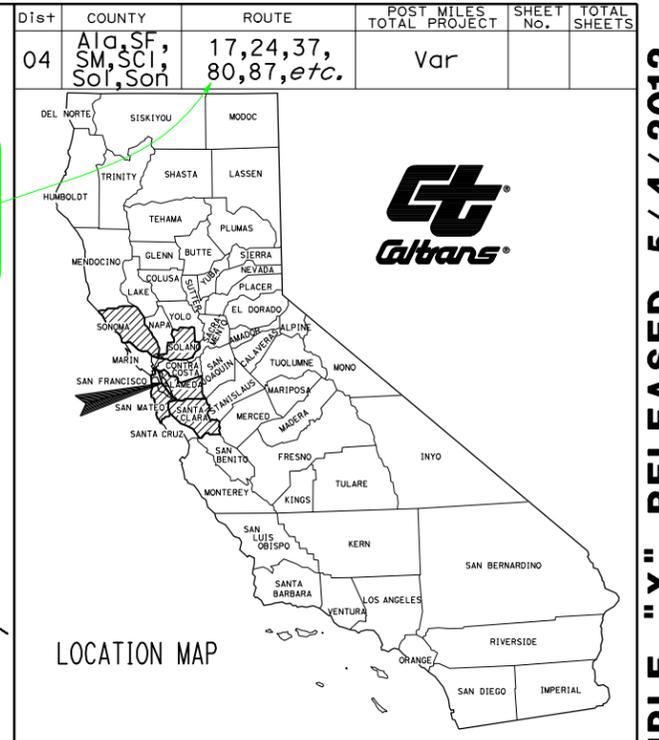


STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 PROJECT PLANS FOR CONSTRUCTION ON
 STATE HIGHWAY
 IN ALAMEDA, SAN FRANCISCO, SAN MATEO,
 SANTA CLARA, SOLANO, AND SONOMA COUNTIES
 AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

When a project is on more than six routes, the first five are listed in numerical order with "etc." at the end. The special provisions for the project must list all routes.

Routes with work are labeled with TX=8.75, WT=2
 Routes with no work are labeled with TX=7.0, WT=1



NOTE: THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOWN ON THE LOCATIONS OF CONSTRUCTION SHEET.

TITLE SHEET, EXAMPLE "X"
 MULTIPLE COUNTIES AND ROUTES

NO SCALE

PROJECT ENGINEER _____ DATE _____
 REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE _____
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CONTRACT No. **00-000004**
 PROJECT ID **000000000**

TITLE SHEET, EXAMPLE "X" RELEASED 5 / 4 / 2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR
 CALCULATED-DESIGNED BY
 CHECKED BY
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,SF,SM,SCI,Sol,Son	17,24,37,80,87,etc.	Var		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



Note:
 This table includes an additional column for CMS numbers. Different districts may have different numbering schemes for their Changeable Message Signs.

LOCATIONS OF CONSTRUCTION

Loc No. ⊕	CMS No.	COUNTY	ROUTE	PM	DIRECTION	CMS LOCATION
1	CM036	SCI	17	6.1	SB	SANTA CRUZ Ave ON-RAMP
2	CM035	SCI	17	11.5	SB	S OF CAMPBELL Ave OC
3	CM081	SCI	87	2.5	NB	200 Ft S OF CAROL Dr
4	CM033	SCI	280	R0.76	NB	N OF MCLAUGHLIN Ave UC
5	CM075	SCI	880	3.0	NB	N OF COLEMAN Ave OC
6	CM074	SCI	880	5.4	SB	N OF BROKAW Rd
7	CM082	SCI	101	43.4	SB	S OF LAWRENCE Exp
8	CM072	SM	92	R8.67	WB	100 Ft W OF DE ANZA Blvd IC
9	CM135	SM	280	R15.0	SB	N OF BLACK MOUNTAIN Rd
10	CM137	SM	280	22.2	SB	S OF HICKEY Blvd
11	CM079	SF	101	0.19	NB	N OF CANDLESTICK Dr
12	CM028	SF	101	3.0	SB	N OF ARMY St
13	CM043	SF	101	R5.14	SB	S VAN NESS Ave ON-RAMP
14	CM080	SF	280	R3.1	NB	MISSION St OC
15	CM111	Ala	580	18.4	WB	HACIENDA Rd OFF-RAMP
16	CM109	Ala	580	R33.6	EB	E OF GRAND Ave
17	CM108	Ala	580	R37.0	WB	E OF FONTAINE St OC
18	CM097	Ala	580	44.0	WB	CHETWOOD St OC
19	CM096	Ala	24	R2.9	WB	SHATTUCK Ave/55TH St
20	CM025	Ala	24	R3.5	EB	W OF BROADWAY OFF-RAMP
21	CM098	Ala	880	31.0	NB	S OF OAK St OFF-RAMP
22	CM068	Ala	880	R32.6	NB	7TH St ON-RAMP TO N880
23	CM078	Ala	80	6.2	EB	E OF UNIVERSITY Ave
24	CM054	Sol	680	R0.8	SB	S OF BAYSHORE Rd
25	CM107	Sol	37	9.0	WB	W OF Jct Rte 29
26	CM029	Sol	80	14.0	WB	CORDELIA WEIGH STATION
27	CM113	Son	101	21.6	SB	90 MILES S OF STEELE LANE

LOCATIONS OF CONSTRUCTION SHEET, FOR TITLE SHEET EXAMPLE "X"

LOCATIONS OF CONSTRUCTION
LC-1

RELEASED 5 / 4 / 2012
 LAST REVISION: DATE PLOTTED => 27-APR-2012 TIME PLOTTED => 13:11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	76	7.3/13.1		

PROFESSIONAL LAND SURVEYOR	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

- FOR COMPLETE PROJECT CONTROL DATA, SEE THE SURVEY RECORDS ON FILE IN THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE.
- BASIS OF BEARINGS AND COORDINATES:**

THIS PROJECT IS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, HPGN EPOCH ADJUSTMENT [CCS 83 (1991.35)], ZONE 6, U.S. SURVEY FOOT. 1ST ORDER PROJECT CONTROL STATIONS WERE ESTABLISHED IN NOVEMBER 2001 ACCORDING TO CRITERIA SET FORTH IN THE FEDERAL GEODETIC CONTROL COMMITTEE'S "GEOMETRIC GEODETIC ACCURACY STANDARDS AND SPECIFICATIONS FOR USING GPS RELATIVE POSITIONING TECHNIQUES" REPRINTED AUGUST 1, 1989.

THIS GPS STATIC SURVEY WAS CONSTRAINED TO "B" ORDER STATIONS: SDGPS 2 (PID DX5296), SDGPS 3 (PID DX5297) AND HPGN CA 11 07 (PID DX5291) PER NGS REFERENCE SYSTEM AND RESULTED IN RESIDUAL ERRORS RANGING FROM 0.01' TO 0.04' HORIZONTALLY AT THE 95% CONFIDENCE LEVEL. THE VALUES REPRESENTED IN THIS SURVEY MEET THE ABOVE-REFERENCED STANDARDS FOR 1ST ORDER HORIZONTAL REQUIREMENTS.

SUBSEQUENT GPS AND CONVENTIONAL SURVEYS ESTABLISHED THE LISTED 2ND ORDER STATIONS.

- BASIS OF ELEVATIONS:**

THIS PROJECT IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). STATIONS AND RESPECTIVE ELEVATIONS CONSTRAINED TO ARE:
 SDGPS 3 (PID DX5297, ELEVATION 308.26')
 SD 6 41 (PID DX5544, ELEVATION 201.32')

- IN THE EVENT GPS MACHINE CONTROL/GUIDANCE IS USED FOR THIS PROJECT, THE CONTRACTOR SHALL CONTACT AND MEET WITH THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE TO OBTAIN THE CONTROL NECESSARY TO ESTABLISH A PROJECT CALIBRATION COMPATIBLE FOR ALL USERS.

ABBREVIATIONS:

- CADT - CALIFORNIA DEPARTMENT OF TRANSPORTATION
- CDH - CALIFORNIA DIVISION OF HIGHWAYS
- PID - NATIONAL GEODETIC SURVEY PERMANENT IDENTIFIER

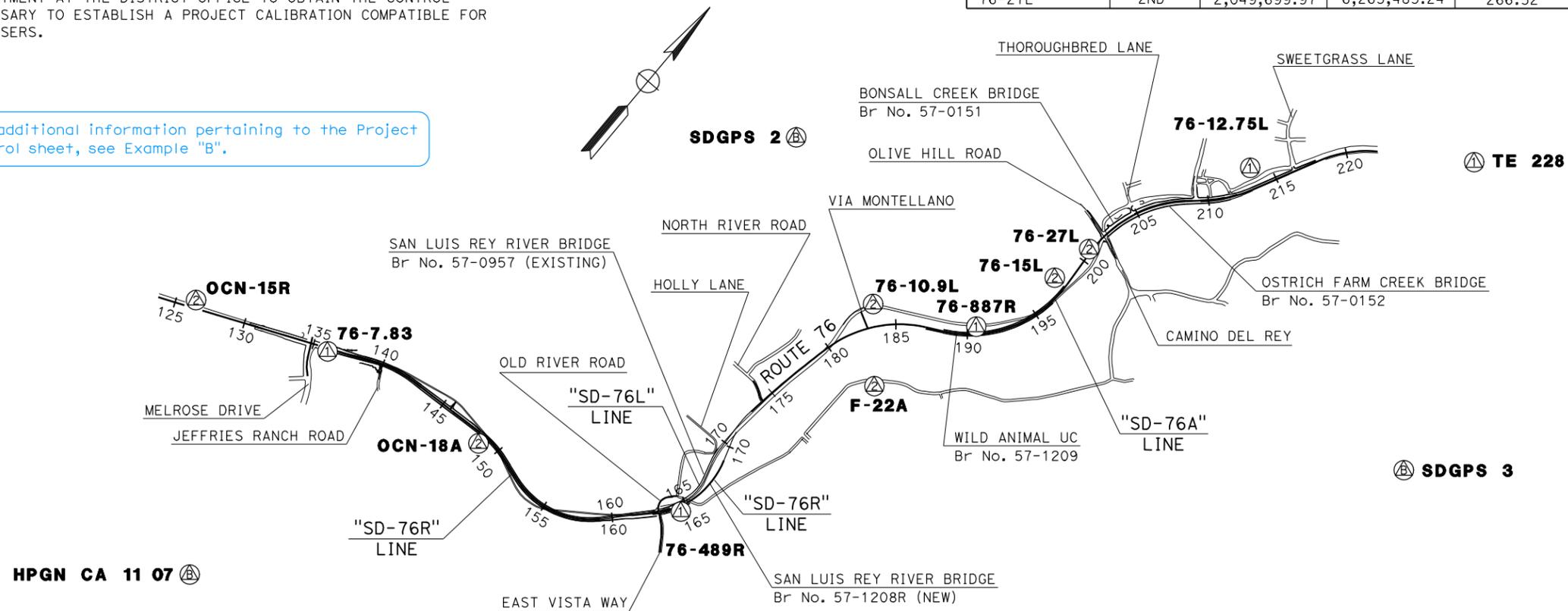
LEGEND:

- B ORDER STATION IN THE NATIONAL SPATIAL REFERENCE SYSTEM
- 1ST ORDER STATION
- 2ND ORDER STATION

CONTROL FOR DESIGN AND CONSTRUCTION

STATION DESIGNATION	ORDER	NORTHING	EASTING	ELEVATION	DESCRIPTION
HPGN CA 11 07	B	1,992,291.23	6,247,272.61	311.28	2 1/2" CADT ALUMINUM DISK
SDGPS 2	B	2,074,411.29	6,256,591.35	717.18	SD COUNTY 2 1/2" ALUMINUM DISK
SDGPS 3	B	2,065,546.37	6,284,088.94	308.26	2 1/4" CADT DISK
76-7.83	1ST	2,036,828.56	6,251,747.58	154.12	2 1/4" CADT DISK
76-489R	1ST	2,039,198.53	6,260,213.17	226.37	2 1/4" CADT DISK
76-887R	1ST	2,046,708.89	6,262,652.81	178.55	2 1/4" CADT DISK
76-12.75L	1ST	2,053,455.05	6,265,098.82	273.92	2 1/4" CADT DISK
TE 228	1ST	2,056,816.66	6,268,905.80	197.79	SD COUNTY BM DISK
OCN-15R	2ND	2,035,799.81	6,248,716.53	NONE	2 1/4" CDH DISK
OCN-18A	2ND	2,037,432.14	6,255,706.99	197.72	2 1/4" CDH DISK
F-22A	2ND	2,044,193.37	6,261,747.73	243.58	2 1/4" CDH DISK
76-10.9L	2ND	2,045,598.64	6,260,531.01	165.08	2 1/4" CADT DISK
76-15L	2ND	2,048,700.76	6,263,302.45	284.01	2 1/4" CADT DISK
76-27L	2ND	2,049,699.97	6,263,485.24	266.52	2 1/4" CADT DISK

For additional information pertaining to the Project Control sheet, see Example "B".



PROJECT CONTROL SHEET, EXAMPLE "A"
 (CALTRANS PREFERRED)

PROJECT CONTROL

NO SCALE

PC-1

APPROVED FOR PROJECT CONTROL INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - OFFICE OF LAND SURVEYS
 Caltrans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	76	7.3/13.1		

PROFESSIONAL LAND SURVEYOR	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PROJECT CONTROL, EXAMPLE "B" RELEASED 5/4/2012

NOTES:

- FOR COMPLETE PROJECT CONTROL DATA, SEE THE SURVEY RECORDS ON FILE IN THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE.
- BEARINGS AND COORDINATES FOR THIS PROJECT ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, HPGN EPOCH ADJUSTMENT [CCS 83 (1991.35)], ZONE 6, U.S. SURVEY FOOT.
- ELEVATIONS FOR THIS PROJECT ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- IN THE EVENT GPS MACHINE CONTROL/GUIDANCE IS USED FOR THIS PROJECT, THE CONTRACTOR SHALL CONTACT AND MEET WITH THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE TO OBTAIN THE CONTROL NECESSARY TO ESTABLISH A PROJECT CALIBRATION COMPATIBLE FOR ALL USERS.

This cell (AC=NOTE33) in the Caltrans Cell Library (CTCELLIB.cel) is to be used when the sheet name is "PROJECT CONTROL."

ABBREVIATIONS:

- CADT - CALIFORNIA DEPARTMENT OF TRANSPORTATION
 CDH - CALIFORNIA DIVISION OF HIGHWAYS

LEGEND:

- B ORDER STATION IN THE NATIONAL SPATIAL REFERENCE SYSTEM
- 1ST ORDER STATION
- 2ND ORDER STATION

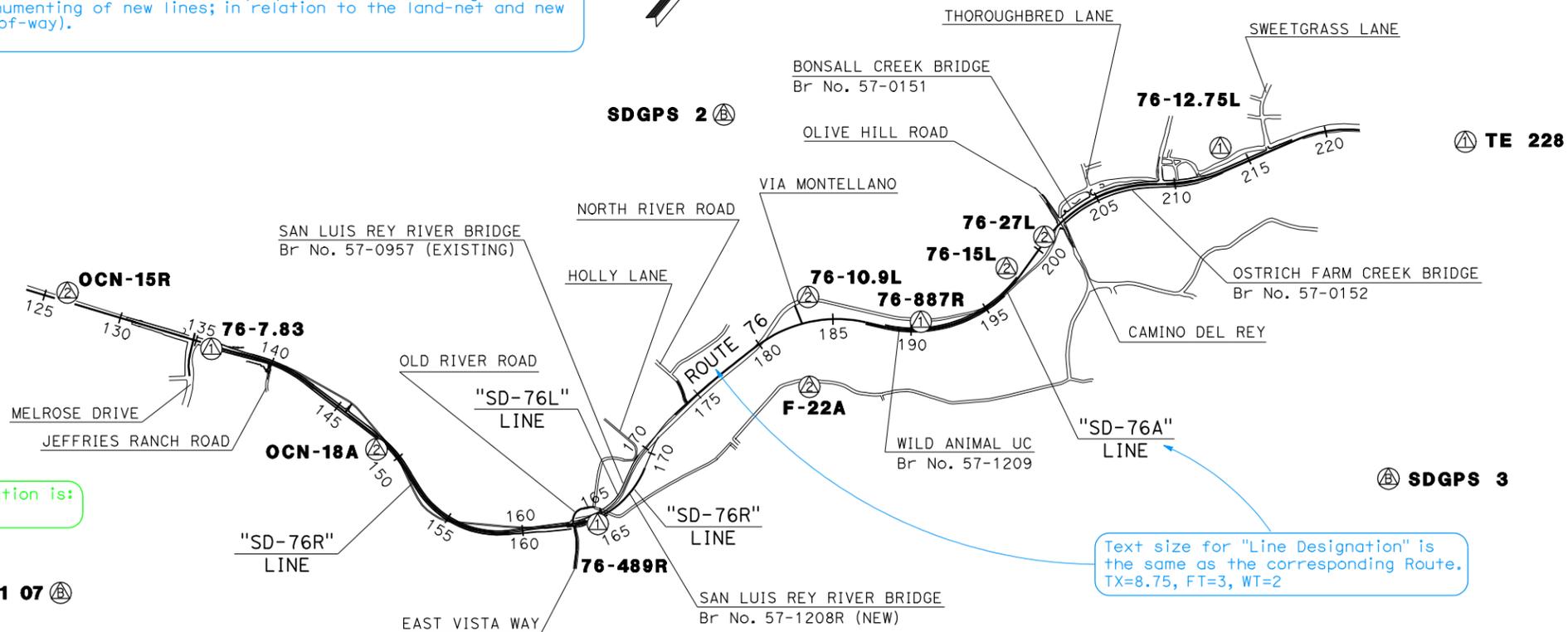
CONTROL FOR DESIGN AND CONSTRUCTION

STATION DESIGNATION	ORDER	DESCRIPTION
HPGN CA 11 07	B	2 1/2" CADT ALUMINUM DISK
SDGPS 2	B	SD COUNTY 2 1/2" ALUMINUM DISK
SDGPS 3	B	2 1/4" CADT DISK
76-7.83	1ST	2 1/4" CADT DISK
76-489R	1ST	2 1/4" CADT DISK
76-887R	1ST	2 1/4" CADT DISK
76-12.75L	1ST	2 1/4" CADT DISK
TE 228	1ST	SD COUNTY BM DISK
OCN-15R	2ND	2 1/4" CDH DISK
OCN-18A	2ND	2 1/4" CDH DISK
F-22A	2ND	2 1/4" CDH DISK
76-10.9L	2ND	2 1/4" CADT DISK
76-15L	2ND	2 1/4" CADT DISK
76-27L	2ND	2 1/4" CADT DISK

PROJECT CONTROL/MONUMENTATION

- A Project Control station is the physical location or site at which, from which, or to which survey observations have been made. A point on the ground whose horizontal or vertical location is used as a basis for obtaining or setting locations of other points. A survey station's coordinates are accepted as being sufficiently accurate so that the coordinates of other survey stations can be determined by reference to it.
- Monumentation is the overall process required to meet professional ethics and requirements of the Land Surveyors' Act when land is acquired for rights of way. Monumentation includes the perpetuation of existing corners and lines, and monumenting of new lines; in relation to the land-net and new land-lines (right-of-way).

ORDER is the standard of accuracy of a control monument or a survey network.



Text size for Station Designation is: TX=8.75, FT=43, WT=0

Text size for "Line Designation" is the same as the corresponding Route. TX=8.75, FT=3, WT=2

Use this statement (AC=NOTE36) on the project control sheet. Place statement as shown, center bottom of the sheet.
 TEXT: FT=3, TX=8.75, WT=2, LV=10, SLANT 20° Upper Case

PROJECT CONTROL SHEET, EXAMPLE "B" (MINIMUM REQUIRED)

APPROVED FOR PROJECT CONTROL INFORMATION ONLY

PROJECT CONTROL

NO SCALE

PC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



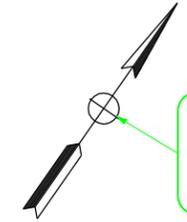
INFORMATION ON THIS EXAMPLE APPLIES TO ALL PLAN VIEW SHEETS

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Where right of way is shown on a plan view sheet (layout, drainage, electrical), include this note. Typically, the right of way note is placed in the upper left corner of the sheet.
CTCELLIB.cel: AC=NOTE2,
TEXT: FT=3, TX=7, WT=1, LV=23, Upper Case

Right of way shown on a plan view sheet must be depicted with a solid line.

See "Generic Project Border Sheet" for basic border sheet information not shown on this sheet.



Use standard North Arrow for orientation. The preferred location of the North Arrow is the upper right portion of the sheet within the maximum clip frame.
AC=NARR, WT=1, LV=10, CO=0, AS=1

NOTES, LEGENDS, SYMBOLS, ACRONYMS AND ABBREVIATIONS:

- Notes, legends, symbols, acronyms and abbreviations applicable to each specific project are to be shown on the first sheet of the grouping of the plan sheet type (layouts, drainage, sign, pavement delineation, etc.). Do not duplicate standard plans acronyms, symbols or abbreviations in these listings.
- If a note(s) is specific to only one sheet of a single plan sheet type, use the heading; **NOTE(S) (THIS SHEET ONLY):** If the specific note is to appear only on the first sheet of a certain plan sheet type, DO NOT include it with the other notes that apply to all sheets of that plan type.

SCALES:

- For plan view sheets, a horizontal scale of 1" = 50' (base scale) should typically be used. For projects in rural areas, a horizontal scale of 1" = 100' may be used.
- A horizontal scale of 1" = 20" should be used where greater detail and clarity is required. These sheets would typically be used for road intersections, signal and lighting plans, etc.

STATIONING:

- For plan view sheets, stationing must be based on 100 feet per station with full annotation at 500 foot stations (multiple of 5). Annotation at 100 foot stations is a single digit number (the ones column). Station tick marks are centered on the alignment line. No minor tick marks. Annotation is placed below the alignment line. Annotation and length of station tick mark (in a MicroStation design file) is 2.8' at 1" = 20' scale, 7.0' at 1" = 50' scale and 14.0' at 1" = 100' scale.
- Do not include "+00" at full stations on any sheets (Layouts, Profiles, Superelevation Diagrams, Drainage, etc.).

ORIENTATION OF SHEETS:

- Plan view sheets are to be oriented to show mainline stationing progressing from left to right with increasing station values.
- Mainline stationing must not overlap from one sheet to another. Match lines must be shown with the callout of "MATCH LINE" on each sheet.
- Match Lines should occur at a +50 station and must be perpendicular to the alignment line where the work is occurring. If a match line occurs at a station other than +50, the station should be identified with the match line callout (i.e. "MATCH LINE +65").
- References to adjoining sheets at the match lines, identified such as "MATCH LINE (L-5)" is optional, but is advisable where many match lines are shown on a sheet (such as multiple sheets to show interchange areas or intersections of roads).
- If arrangement of the mainline alignment is such that "stacking" is necessary (mainline alignment stacked one above the other on the same plan view sheet), the sheet shall be arranged so that the stationing progresses from the top half of the sheet to the bottom half of the sheet using match lines. If stacking of alignment is used on any plan sheet, this configuration applies. Where profiles are "stacked" on full profile plan sheets, they shall be arranged so that the stationing progresses from the top half of the sheet to the bottom half of the sheet. If a plan view and profile or plan view, profile and superelevation diagram are shown on a single sheet, they shall be arranged on the sheet as shown in Figure 2-2J of Section 2-1.5 of the PPM.

COORDINATE VALUES:

- Coordinate values are to be maintained within the plan view sheets. This will allow retrieval of information by other functional units that do not have the base map and for reuse of this information to develop future projects. Sharing files with retained coordinate values allows for a quick positioning of information back to the reference file, base map or aerial photo mapping.

CURVE NUMBERING:

- Curve data numbers must be consecutive for each station line.
- Do not start curve data numbers over when going to the next layout sheet (or plan view sheet).
- Curve data numbers for different station lines should have gaps in the numbering from other station lines, thus allowing for possible last minute changes without having to renumber curve data from any other station line than the one changed.
- With the exception of curve data numbers assigned to curb returns at intersections that are shown on construction detail sheets, curve numbers are not to be duplicated within a project. This includes alignments for walls, temporary alignments for staging, and roadway alignment lines shown on Structures plan sheets.

Use DRAINAGE, SIGN, PAVEMENT DELINEATION, etc., in place of the words "CONTOUR GRADING" as appropriate for the work shown on each sheet.
AC=NOTE4 through AC=NOTE37 in the CTCELLIB.cel are available for use to specify the different types of work in the statement "APPROVED FOR..."
TEXT: FT=3, TX=8.75, WT=1, LV=10, Slant=20° Upper Case
Place statement as shown, center bottom of the sheet. This statement is not to be used on layout sheets (L-1, L-2, etc.). Layout sheets typically contain several types of work.

The word "APPROVED" in this statement clarifies the type of work (identified as bid items on the sheet) for which the Engineer is taking responsibility.

GENERIC PROJECT PLAN VIEW SHEET, BASIC REQUIRED INFORMATION

APPROVED FOR CONTOUR GRADING WORK ONLY

If subtitle or modifier is used, it must be placed beneath the main sheet title.
Example:
STAGE CONSTRUCTION
STAGE 3
For subtitle or modifier use the following:
FT=43, TX=10, WT=0, LV=10, Upper Case

Use appropriate SHEET NAME AND ID CODE for the work shown. See CADD Users Manual Section 2.1.:
FT=43, TX=14.5, WT=0, LV=10, Upper Case
Use "Center Center" justification
Text may be reduced to a minimum of TX=12 for the long sheet names, e.g., STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN or space constraints.
For text sizes see CADD Users Manual Section 2.6.1.

Use appropriate scale for the work involved, see "SCALES" in section 2-1.3 of the PPM.
Use a colon after the word "SCALE"
FT=3, TX=8.75, WT=2, LV=10, Upper Case
Use "Center Center" justification

CONTOUR GRADING

SCALE: 1" = 50'

G-XX

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CALTRANS

GENERIC PROJECT PLAN VIEW SHEET RELEASED 5 / 4 / 2012
DATE PLOTTED => 27-APR-2012
TIME PLOTTED => 13:17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PROJECT DRAINAGE SHEETS, SHEET 1 OF 2 RELEASED 5 / 4 / 2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



NOTE: ← TEXT: FT=3, TX=8.75, WT=2, LV=23, UPPER CASE, UNDERLINED

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

USE "NOTE" IF ONLY ONE NOTE USED. USE "NOTES" IF TWO OR MORE NOTES USED.

UNDERLINE HEADINGS SUCH AS "ABBREVIATIONS" AND "LEGEND"

See "Generic Project Border Sheet" for basic border sheet information not shown on this sheet.

Where right of way is shown on a drainage plan sheet, include this note. Typically, the right of way note is placed in the upper left corner of the sheet. See subsection titled "Right of Way" in Section 2-1.1 of this manual for instructions regarding indeterminate right of way.

Use a solid line to depict right of way shown on a plan view sheet.

The cell for this note in the Caltrans Cell Library (CTCELLIB.cel) is: AC=NOTE2

TEXT: FT=3, TX=7, WT=1, LV=23, Upper Case

DRAINAGE PLANS:

- Drainage plans provide a visual representation in plan view aspect of the drainage facilities.
 - Those elements that are in the Master Topo and Design files and pertinent to all drainage plan view sheets are typically used as background information.
 - Drainage plans are not to repeat the roadwork bid items shown on the project plan layouts.
 - Existing drainage is shown dropped out with background topography. However, if the existing drainage is being abandoned, removed, or modified, or if new drainage work is tying into the existing, non-dropout may be used.
 - If no drainage work is to be performed within the corresponding limits of a project plan layout sheet (road work items), do not include a drainage plan sheet for that area. The number of drainage plan sheets may not be the same as the number of project plan layout sheets. Inclusion of drainage plan sheets with no drainage work in the contract plans is not an acceptable method of developing a district's inventory of drainage facilities.
 - For identification purposes, drainage work is to be separated into groupings of interconnected drainage items. Each grouping becomes a drainage system.
 - Assign a drainage system number to each drainage system where work is to be performed. Consecutively number the drainage systems throughout the project. This provides ease of locating and identifying drainage systems for the bidder, contractor and construction inspector. System numbering does not start and stop for each individual drainage plan sheet. See Section 2-2.10 of the PPM for additional information concerning system numbering.
 - Identify each drainage system by a number and each unit of the system by a letter representing the drainage unit designation. There are cells in the Caltrans cell library (CTCELLIB.cel) of the symbols used for identifying systems and units.
- There are two sets of cells for identifying systems and units, one set is without masking and the other set is with masking. Either set can be used, it depends on how cluttered the plan view sheet is with topo or background information. Labeling drainage features is more important than showing background topography. Keep labeling of the drainage system number and units designations as close as possible to the display of the system. Use minimum clips as defined in Section 3.8 of the CADD Users Manual to allow for open areas for labeling.
 - Cells with masking:
 - DSN - system number
 - DCIR - unit designation
 - Cells without masking:
 - DRNSYS - system number
 - DRNUNT - unit designation
 - Labeling of the types of drainage units on the drainage plans may be generic or can be a complete item call out, but the units must be labeled. If generic labeling is used, use terms such as: Culv, DD, DI, FES, Jct Str, OD, RSP, etc. Use a leader line with the labeling of each unit designation.
 - Full details and complete item call outs of each drainage system (type, size, length, etc.) must be shown on the drainage profiles, details and quantities.
 - If contours are added to the drainage sheets, they are not more important than the drainage items. Final contours are to stop at the edge of the paved surface, which then allows the drainage items to be seen more clearly. Final contour grading is not to be shown on paved surfaces. Eliminate unnecessary spot elevations. Contours or spot elevations should only be shown slightly beyond the right of way line unless it directly affects the drainage items shown on the plan view sheets.
 - See "Generic Project Plan View Sheet" for additional information required on plan view sheets.

AC=NOTE4 through AC=NOTE31 and AC=NOTE35 through AC=NOTE37 in the Caltrans Cell Library (CTCELLIB.cel) are available for use to specify the different types of work in the statement "APPROVED FOR....."

One of the following statements is available for use depending on what is shown on the sheet:

NOTE23 - APPROVED FOR DRAINAGE AND UTILITY WORK ONLY
SHEET NAME: DRAINAGE AND UTILITY PLAN
SHEET ID CODE: D-XX

NOTE24 - APPROVED FOR DRAINAGE AND CONTOUR GRADING WORK ONLY
SHEET NAME: DRAINAGE AND CONTOUR GRADING PLAN
SHEET ID CODE: D-XX

NOTE26 - APPROVED FOR DRAINAGE WORK AND UTILITY INFORMATION ONLY
SHEET NAME: DRAINAGE AND UTILITY PLAN
SHEET ID CODE: D-XX

Use this statement (AC=NOTE4) on the drainage plan view sheets when no work other than drainage is shown on the sheet. Place statement as shown, center bottom of the sheet.

TEXT: FT=3, TX=8.75, Slant=20°, WT=2, LV=10, Upper Case

**PROJECT DRAINAGE SHEETS,
BASIC REQUIRED INFORMATION
(SHEET 1 OF 2)**

APPROVED FOR DRAINAGE WORK ONLY

Place Sheet Name and Scale centered in the lower right corner of sheet within the area available between the sheet border and the clip frame. Use "CENTER CENTER" justification for each line.

Use appropriate plotting scale for the plan view sheets, see "SCALES" in Section 2-1.3 of the PPM.

Use a colon after the word "SCALE" and insert a space on either side of the "="

FT=3, TX=8.75, WT=2, LV=10, Upper Case

Place Sheet ID Code and Sheet Number in the extreme lower right corner of sheet

Use appropriate SHEET NAME AND ID CODE for the work shown. See CADD Users Manual Section 2.1

FT=43, TX=14.5, WT=0, LV=10, Upper Case

Text may be reduced to a minimum of TX=12 where space constraints are involved.

For all text sizes see CADD Users Manual Section 2.6

DRAINAGE PLAN

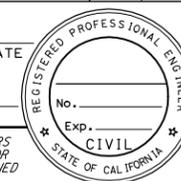
SCALE: 1" = 50'

D-XX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



See "Generic Project Border Sheet" for basic border sheet information not shown on this sheet.

DRAINAGE PROFILES:

- Drainage profiles provide a visual representation of the drainage facilities in an elevation view (side view).
- Drainage profiles must show all the information needed (i.e., elevations, slope, type and size of pipe, etc.) to construct the drainage system.
- Place the labeling of each drainage system number under their individual profile.
- Show existing ground line and finished grade on drainage profiles so that the quantities of excavation and backfill needed to install, construct or remove a drainage facility may be determined. Structure excavation and structure backfill is included in the bid item(s) to install, construct or remove a drainage facility.
- Profiles of crossdrains that are perpendicular or at a skewed angle to the alignment line are to be displayed left to right as if the viewer were standing on the alignment line looking up station (direction of increasing stations, similar to the display of typical cross sections). The station reference for these drainage systems is to be the point at which the crossdrain culvert alignment intersects the roadway alignment line or profile grade.
- Display profiles of drains, that are in a longitudinal position in relation to the alignment line, from left to right, as if the viewer were standing on the right of way line on the right side of the route or road alignment. Reference the begin and end points of these culverts and any intervening angle points in the culvert's horizontal alignment to the nearest roadway station line by station offset distances and station pluses.
- A system profile should be shown entirely on one profile sheet. If a profile is long enough to have a match line, stack the profile with the beginning station on top and the next section below that.
- The offset distance and station reference for the location of drainage structures, shown on the drainage profiles, are to be shown to the nearest hundredth of a foot. Show offset distance first, then the station reference.
- Culvert crossdrains are typically constructed on slopes between zero and 5 percent. The slope is based on the gradient of the stream or waterway they are to convey. Crossdrain profiles typically are drawn at a horizontal to vertical scale ratio (H/V) of one. Commonly used scales for drainage profiles are 1"= 5' for both horizontal and vertical or 1"=10' for both horizontal and vertical. The scale ratio of 1:1 produces greater details. There may be some instances where physical conditions of culvert installation will dictate the use of a scale ratio (H/V) other than one. When a horizontal scale of 1"= 20' or more is used, an exaggerated vertical scale typically (1"= 5') will be required to clearly depict the information on the profile. The scale ratio of 1:1 should be used for drainage work to extend existing culverts.
- Storm drains collect highway drainage and are constructed longitudinally to the highway alignment. These storm drains are typically constructed on slopes between zero and 5 percent. Profiles of storm drains may require a scale ratio (H/V) other than one. Due to the typically longer length of storm drains, a horizontal scale of 1"= 20' may be more appropriate with a vertical scale of 1"= 5' or 1"= 1'.

- In steeper terrain, downdrains typically are used to convey highway runoff and require a steeper gradient. The highway side slope dictates the slope of the downdrain. Profiles of downdrains may require a scale ratio (H/V) other than one.
- The slope of a culvert (S=) is most commonly shown by decimal but may also be shown by percentage. Show pipe slopes to 4 decimal places for ft/ft values or 2 decimal places for percent values. The method of identifying slope is to be consistent throughout the profiles.
- The length of a culvert is the slope length, not the horizontal length. The estimated slope length of pipe is the centerline length of the culvert expressed in decimal feet, to the nearest tenth of a foot. Where greater accuracy is dictated by site condition, the slope length of the culvert may need to be shown to the nearest hundredth of a foot.
- The estimated slope length of a pipe culvert that is shown on a drainage profile is to be the same length that is entered in the drainage quantities for that specific pipe culvert.
- Where a pipe is placed between successive drainage structures (inlets, junction boxes, etc.), the slope length of the pipe shown is to be the centerline length between the inside face of each structure (inside face to inside face). Where an end of a pipe is placed in a drainage structure, the pipe length is to be measured from the inside face of the structure along the centerline of the pipe to the other end of the pipe regardless whether it ends within another drainage structure, highway side slope, or other terminus.
- The pay length for each culvert installed during construction will be determined in the field in accordance with the Standard Specifications and the instructions in the Construction manual. This includes determination of the actual length of pipe necessary before cutting when a pipe is to be cut to fit an outlet structure, entrance structure, inlet or highway side slope.
- The quantity for each pipe culvert should not be increased to include the length required to reach the next 2-foot increment of pipe. Construction Surveys will stake the pipe alignment based on the profile of the pipe shown on the drainage profiles and make any field adjustments to fit site conditions. This is why we are not to arbitrarily increase the calculated length for each pipe culvert in Design. Quantities on plans are to be calculated quantities, never rounded quantities.
- Pipe culverts are to be labeled in the following order: diameter of pipe, length of pipe, and type of pipe material. Example of labeling: 24" x 78.5' CSP
- Caution should be exercised for the effect of skewed pipe alignment intersecting the interior wall of a standard drainage inlet. The standard plan inlet may require modification of the interior dimensions to accommodate the pipe opening due to the type, size, and skew of the pipe culvert.
- If a ladder is to be constructed on an inlet wall, it needs to be located under the short end of the grate to have the 2 1/2-foot of clearance from the face of the steps to the nearest obstruction on the climbing side of the ladder. Manholes that require ladders should have a 3-foot opening for the manhole cover to allow access inside the manhole.

DRAINAGE DETAILS:

- Drainage details included in the contract plans are those that are unique to the specific project and those for which there are no standard plans, or they are a detail from a standard plan which must be modified to fit project site conditions.
- Drainage details are drawn proportionally and adjusted to fit within the plan sheet border. Sufficient dimensioning must be shown on the details so the facilities are buildable and the quantities are calculable. Labeling and dimensioning take precedence over the graphics shown. The bidder and contractor are never expected to scale from the hard copy print of any contract plan sheet. Label the sheet "NO SCALE" in the lower right corner below the title of the sheet.
- If a detail is applicable to several systems, draw the detail one time and then list, below the detail, all system numbers for which the detail applies.
- Clearly show by offset and stationing the location of the flow line for each specific system within each project (where necessary). Standard Plans may only show the flow line for general situations. Example: Flow line for an inlet up against median barrier is the face of the barrier not the center of the inlet grate.

DRAINAGE QUANTITIES:

- The table of drainage quantities summarizes those drainage facilities and appurtenances (headwalls, wingwalls, drainage inlets, flared end sections, inlet and outlet structures, etc.), which are to be constructed, installed, removed, reset, remodeled, adjusted, modified, abandoned, reconstructed, or salvaged as shown on the drainage plans, profiles and details or in some instances where shown on the project plan layouts. See Section 2-2.10 of the PPM for more detailed information necessary to be included in the summary of drainage quantities.
- Where all of the drainage quantities can be shown in a table on one quantity sheet, quantity totals for each bid item must appear at the bottom of the table.
- Where more than one sheet is necessary to show drainage quantities, the individual sheet totals for each bid item are to appear at the bottom of the table on each sheet. The row of the table in which the bid item totals appear on each individual sheet, is to be identified as "SHEET TOTAL." Sheet totals for each bid item must appear on the last sheet of the drainage summary of quantities. Sheet totals must be totaled and shown as "GRAND TOTAL" or "TOTAL."
- Where there is not sufficient space on a single border sheet to accommodate the number of columns necessary to list all of the project's drainage bid items, see Section 2-2.10 of the PPM for the Caltrans preferred method to be used to display the listing of bid items.

Use appropriate SHEET NAME AND ID CODE for the work shown. See CADD Users Manual section 2.1

FT=43, TX=14.5, WT=0, LV=10, Upper Case
Use "Center Center" justification

Text may be reduced to a minimum of TX=12 where space constraints are involved.

For text sizes see CADD Users Manual section 2.6

PROJECT DRAINAGE SHEETS,
BASIC REQUIRED INFORMATION
(SHEET 2 OF 2)

DRAINAGE XXX
D-XX

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

PROJECT DRAINAGE SHEETS, SHEET 2 OF 2 RELEASED 5 / 4 / 2012

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PROJECT SIGN SHEETS, RELEASED 5 / 4 / 2012

NOTE: ← TEXT: FT=3, TX=8.75, WT=2, LV=23, Upper Case, Underlined

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Where right of way is shown on a sign plan sheet, include the above note. The right of way note has been slightly reworded. Use this new wording on all plan view sheets where right of way is shown. Do not use the words "AND ACCESS" any longer within the right of way note.

Typically, the right of way note is placed in the upper left corner of the sheet. See subsection titled "Right of Way" in section 2-1.1 of this manual for instructions regarding indeterminate right of way.

The cell for the right of way note is in the Caltrans Cell Library (CTCELLIB.cel) AC=NOTE2

Text size for the right of way note is:
FT=3, TX=7, WT=1, LV=23, Upper Case
(TX=7 is based on the Caltrans scale of 1" = 50')

Use a solid line to depict right of way shown on a plan view sheet.

The cells for roadside signs available in the Caltrans Cell Library (CTCELLIB.cel) are:

- SGN1P ↓ New one or two post signs
- SGN2P ↓
- SGN3P ↓ Hollow filled--used for work on existing signs (usually a new panel or adding to a panel)
- SGN4P ↓
- SGNATT ↓ Sign attached to electroliner, signal standard, or sign structure post using strap and saddle bracket method

AC=NOTE4 through AC=NOTE31 and AC=NOTE35 through AC=NOTE37 in the Caltrans Cell Library (CTCELLIB.cel) are available for use to specify the different types of work in the statement "APPROVED FOR....."

When roadside signs or overhead signs are shown on pavement delineation plan sheets or sign plan sheets use one of the following statements:

NOTE11 - APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY
SHEET NAME: PAVEMENT DELINEATION AND SIGN PLAN
SHEET ID CODE: PD-XX

NOTE12 - APPROVED FOR SIGN WORK ONLY
SHEET NAME: SIGN PLAN
SHEET ID CODE: S-XX

Use this statement (AC=NOTE12) on the sign plan view sheets when only proposed signing work is shown on the sheet. Place statement as shown, center bottom of the sheet. Do not place a period at the end of this statement. Do not include it under NOTES:

TEXT: FT=3, TX=8.75, WT=2, LV=10, SLANT=20°, Upper Case

GENERAL:

- Sign panels for permanent signs (whether roadside or overhead), installed or constructed as part of project construction work, are in most instances, contractor furnished. In the past, sign panels for permanent signs installed or constructed as part of project construction work, were state furnished.
- Furnishing each sign panel is paid for by square foot area of panel. Installation of the sign panel is a separate cost.
- More information needs to be provided to the winning contractor (than in the past) so that the sign panels are manufactured to the quality and standards expected by Caltrans. The bidders also need enough information about the panel in order to get an accurate cost of sign panels from the manufacturer.
- The individual project sign number must be shown on the sign plan sheets. Schematics of standardized sign panels on plan view sheets are not to be shown. Schematics of special designed sign panels (usually guide signs) can be a benefit to the bidders and contractors when shown on the sign plan sheets.

See "Generic Project Border Sheet" for basic border sheet information not shown on this sheet.

SIGN PLANS:

- Sign plans provide a visual representation in plan view aspect of the final project roadside signs and overhead signs.
- The roadbed must be shown on the sign plan sheets. Only topographic information that is pertinent to the sign plan sheet should be shown. The right of way may be shown when placement of signs are near the right of way line.
- If no signing work is to be performed within the corresponding limits of a project plan layout sheet (road work items), do not include a sign plan sheet for that area. The number of sign plan sheets may not be the same as the number of project plan layout sheets.
- Each roadside sign or overhead sign structure must be assigned an individual project sign number (alpha/numeric designation) enclosed in a distinct geometric shape, typically an oblong for a roadside sign. The Caltrans preferred way of identifying a roadside sign is to use the letter "S" (which stands for sign) and the plan sheet number as a prefix before a hyphen and a number that represents each sign shown on that specific sheet.

ROADSIDE SIGNS: (S3-15)

Example: The sign number(s) for roadside signs on the first plan view sheet showing proposed sign work would be S1-1, S1-2, S1-3, etc. The sign numbers for roadside signs that are displayed on the second plan view sheet would be S2-1, S2-2, S2-3, etc. This preferred method of identifying roadside signs is to be used on all plan view sheets showing proposed sign work and must be consistent with the sign identification shown on the sign detail and quantity sheets.

There are 3 cells in the Caltrans Cell Library (CTCELLIB.cel) for use with roadside signs. There are 3 different size oblongs, with masking, that can accommodate roadside sign numbers for lengths of 4 to 6 characters. The 3 cells are: SIGN4S, SIGN5S and SIGN6S.

OVERHEAD SIGNS: (DS-244)

A different sign number (alpha/numeric designation) enclosed in a distinct geometric shape (typically an oval) is to be used to represent overhead sign structures so they can easily be distinguished from roadside signs. The cell in the Caltrans Cell Library (CTCELLIB.cel) to label overhead signs is AC=OHSIGN. Each district may number overhead sign structures by two basic methods, either inventory number (based on electrical service provided) or by the plan sheet number/sign number. Check with each district's traffic sign unit.

If inventory numbering or electrical service point numbering is not used to identify overhead sign structures, the overhead sign numbering is to follow the same logic used for roadside sign numbering.

Example 1: The method for designating overhead sign structure numbers (based on the plan sheet number/sign number) is OS1-1, OS1-2, OS1-3, etc. on the first plan view sheet. On the second plan view sheet it would be OS2-1, OS2-2, OS2-3, etc. The "OS" stands for overhead sign structure, while the number to the left of the hyphen represents the plan sheet number. The number to the right of the hyphen represents the sign number on that specific sheet.

Example 2: A method for designating overhead sign structure numbers for inventory purposes (based on electrical service provided per county) is AS-191, AS-192, AS-193, etc. The "AS" represents a county, while the number is a specific service point connection. The sign designation can either contain a hyphen or not.

SIGN DETAILS:

- The same information (sign/installation order) previously furnished to a sign manufacturer for "state furnished signs" must now be included in the project plans for "contractor furnished signs." The details sent to a sign manufacturer for sign panels are to be dimensioned in inches only. See Section 2-2.18 of the PPM for more detailed information necessary to be included for contractor furnished signs.
- The winning contractor will need all the controlling dimensions (letter sizes, spacing, type of font, etc.) in order to construct the panels. This information is in addition to the overall size of the panels that bidders need to determine their bids.
- Dimensions that show how an overhead sign is mounted to a pole are to be in feet. Panel dimensions should not be duplicated. Identify the detail with the sign number and stationing.

SIGN QUANTITIES:

- The table for sign quantities summarizes sign facilities which are to be constructed, installed, removed, reset, modified, reconstructed, or salvaged as shown on the sign plans. See Section 2-2.18 of the PPM for more detailed information necessary to be included in the summary of sign quantities.
 - There should be separate quantity tables for roadway signs, overhead sign structures and sign panels. If a particular sign number appears in more than one quantity table, avoid duplicating information except for identifying the plan sheet and sign number.
- Sign panel information may, as an option, be included with roadside signs quantities or overhead sign quantities if all the information can clearly be shown on one table.
- Where all of the sign quantities can be shown in a table on one quantity sheet, quantity totals for each bid item must appear at the bottom of the table.
 - Where more than one sheet is necessary to show sign quantities, the total for each bid item is to appear at the bottom of the table on each individual sheet. The totals for the bid items must be identified as "SHEET TOTAL." Sheet totals for each bid item must appear on the last sheet of the sign summary of quantities and must be totaled and shown as "GRAND TOTAL" or "TOTAL."

Use appropriate SHEET NAME AND ID CODE for the work shown. See CADD Users Manual Section 2.1

FT=43, TX=14.5, WT=0, LV=10, Upper Case
Use "Center Center" justification

Text may be reduced to a minimum of TX=12 where space constraints are involved.

For text sizes see CADD Users Manual Section 2.6

Use appropriate plotting scale for the plan view sheets, see "SCALES" in Section 2-1.3 of the PPM.

Use a colon after the word "SCALE"

FT=3, TX=8.75, WT=2, LV=10, Upper Case
Use "Center Center" justification

SIGN PLAN

SCALE: 1" = 50'

S-XX

PROJECT SIGN SHEETS, BASIC REQUIRED INFORMATION

APPROVED FOR SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

