Bridge Design Details 3.1 October 2025

General Plan

The GENERAL PLAN sheet provides an overall description of the scope of work for a given structure. This sheet is subject to review and approval by others, so it is important to keep it neat and clear. It should be thoroughly checked prior to the Type Selection meeting and again before GENERAL PLAN distribution.

Plan

1. The PLAN view is placed on the lower-left side of the sheet.
2. The preferred scale is 1″ = 20′ (or 1″ = 30′ in some cases); avoid smaller scales as they result in a crowded sheet. For small structures it is acceptable to use 1″ = 10′. For large structures, viaducts, or interchanges, use a GENERAL PLAN sheet with STRUCTURE PLAN sheet(s); for more information regarding Structure Plans refer to 3.4 Structure Plans.
3. There should be a layout or reference line for each structure. The line should preferably be one of the following:
    a. District alignment line
    b. Inside or outside edge of traveled way line
    c. Centerline of roadway, bridge, or construction layout line
4. The bridge should be drawn such that stationing runs left to right. Structures in a group, such as interchanges and retaining walls, should all be oriented in the same direction for uniformity. Consider District or other existing structures when orienting new alignments and structures.
5. Show the traveled way, shoulders, and median widths of the approach roadways.
6. Show the top and toe of approach fill or cuts; designate both lines with (⏜⏜⏜⏜) line pattern.
7. Show perpendicular horizontal distances under the structure from the toe of slopes to all roadways and railroad alignments, including future alignments. Include distances to columns and abutments when adjacent to roadways or railroads.
8. Show the name and direction of creek, stream, or river flows. Designate Ordinary High-Water Mark (OHWM) or typical water edges with (— - - - —) line pattern. Large rivers and oceans may be designated with a double line pattern (⎓) or graduated line weight pattern (▬).
9. Show North arrow.

10. Show all alignment data including bearings, radii, and curve data. Verify the alignment geometry shown matches the district ROADWAY PLANS and FOUNDATION PLAN provided by the Bridge Design Preliminary Investigations Branch (PI).
11. Show the names and directions to nearest towns or cities. Towns or city names should match what is shown on the District Title Plan sheet and Bridge Site Submittal.
12. Show the centerline of all piers or bents. Designate with Line Code 7 (——-——-——). Only label the supports if there is no ELEVATION view, otherwise do not label.
13. Show the skew angle at the center line of all supports.
14. Show all locations of Minimum Vertical Clearance within the traveled way using ( ) symbol.
15. Identify the type and locations of deck drains, manholes, deck drainage, or future access to utilities from the deck.
16. Show the locations where painting of structure name, bridge number, year constructed, and support numbering as required; see 3.30 Structure Identification.
17. Show Beginning of Bridge (BB) and End of Bridge (EB) stations and elevations.
18. Show guard railing at ends of bridge (typically MGS on new structures), approach curbs, and sidewalks.
19. Show bank protection and slope paving.
20. Show structure mounted signs.
21. Show approach slabs.

Elevation

1. The ELEVATION view is a vertical projection from the lower side of the PLAN view.
2. Use the same scale as the PLAN view.
3. For widening projects between two structures, identify the location of the ELEVATION using letters on the PLAN view. When the opposite ELEVATION of a structure is materially different, both can be drawn on the GENERAL PLAN or on a STRUCTURE PLAN sheet(s). In these cases, identify both ELEVATIONS by different letters.
4. Use a DEVELOPED ELEVATION for curved structures. LONGITUDINAL SECTIONS may be used for culvert type structures. A MIRRORED ELEVATION shall be used for work to be done on the upper side of the PLAN view, such as retaining walls, widenings, or barrier rail replacements.
5. Show all supports. Use dashed Line Code 2 (- - - - - - - -) for portion of structure below grade. Label names and numbers (abutments, bents, and piers).
6. Show the Datum line with elevation and stations.

7. Show the original ground line at the bridge centerline, along the LONGITUDINAL SECTION, or as noted. The standard Line Code for showing the original ground line is Line Code 2 (- - - - - - - -); when two original ground lines are shown use Line Code 3 (– – – – – –) for the second line.
8. Show the total length of bridge (BB to EB). For structures and retaining walls on horizontal curves or that have multiple layout lines shown, identify length as:

   Example: 100'-6" MEASURED ALONG "A" LINE
9. Show all span lengths (BB or EB to centerline of piers or bents and between centerline of piers or bents).
10. For retaining walls, label the beginning, end, and top of wall, as well as the original and finished grade at the face of wall or layout line.
11. Show the dimension(s) of all Minimum Vertical Clearance locations, rounded down to nearest 1-inch.
12. Show all the locations where the painting of structure name, bridge number, year constructed, and support numbering are required; see 3.30 Structure Identification.
13. Show the controlling High-Water Elevation using () symbol. Provide a reference note to the location of the “HYDROLOGIC SUMMARY TABLE” and reference the sheet in which it resides.
14. Show the bank protection or slope paving.
15. Show a portion of the retaining wall concrete surface texture and include a description in the notes.
16. Show all nearby structures and obstructions by referencing the structure name and bridge number of the adjoining structure.

Profile Grade

1. Place the PROFILE GRADE above the ELEVATION view.
2. Show the PROFILE GRADE with no scale; scale should be exaggerated both horizontally and vertically.
3. Do not show a PROFILE GRADE for widenings. Grades will conform to the existing structure.
4. Show slopes with direction arrow, elevations, stations, length of vertical curve, and rate of change (% / station) along the PROFILE GRADE.
5. Do not show the SUPERELEVATION DIAGRAM on the GENERAL PLAN sheet. If required, it is preferable to show this diagram on the DECK CONTOUR or INDEX TO PLANS sheet instead.

Typical Section

1. Place the TYPICAL SECTION in the upper right-hand portion of the sheet.
2. The preferred scale is from ¼" = 1'-0" to 1″ = 10'. Try not to exceed 2½ times the PLAN scale.
3. Take the section looking ahead on stationing. Identify with section letters and stationing limits if the section varies or the stationed layout lines are not continuous across the structure.
4. Show the section at a typical bent or pier for multi-span bridges. Do not show abutments. Use solid lines for portions of structures below grade.
5. Dimension the overall structure width, roadbed width, traveled way, shoulders, median, barriers, and sidewalks.
6. For retaining walls, show the original grade, finished grade, top of wall, and concrete texture.
7. Show the barrier, fence, and cable railing types.
8. Show the location of the PROFILE GRADE and layout line.
9. Show the superstructure depth from the top of the deck to the bottom of the girder or soffit. For precast or steel girders, show the typical structure depth at the centerline of bearing at the support.
10. Indicate the type of structure (e.g., Composite Welded Steel Girder, Concrete Slab, PC/PS Concrete Girder (Wide Flange), CIP/PS Concrete Box Girder, Concrete Girder (T-Beam), Retaining Wall (Type 1), etc.).
11. Show the overlay thickness or deck seal. Add a note stating that the structure depth shown does not include the overlay thickness.
12. Show crown or maximum cross slope as well as the cross-slope direction relative to the location of the PROFILE GRADE for a new structure. Show percent slope in fractions (e.g., 1½ %, not 1.50%). For varying cross slopes, show the slope as "MAX SLOPE AND VARIES".
13. For widenings, show cross slope with “± " and add note: “MATCH EXISTING GRADE AND CROSS SLOPE.” Identify the location and limits of closure pour(s).
14. Show and label all existing, proposed, and future utility openings.
15. Show the construction stages and identify the widths of stage construction and traffic during construction. For clarity, staging information can be placed on STAGE CONSTRUCTION sheet, leaving the TYPICAL SECTION on the GENERAL PLAN easier to read.
16. Show Temporary Barrier System and offset from the layout line. Temporary Railings details and cost are normally covered by the District; therefore, add a reference to the ROADWAY PLANS. For barrier transition projects, a summary table of locations is

allowed. At a minimum, a generic PLAN and TYPICAL SECTION detail shall be added to GENERAL PLAN, see Attachment 3A.A.19.

Miscellaneous

1. Avoid using more than one GENERAL PLAN for a project with a single new or widened structure; instead, use STRUCTURE PLAN or STAGE CONSTRUCTION sheet(s) to show additional information at a larger scale. Maintenance or other projects with more than one structure, such as a large corridor retrofit projects, approach slab replacements, joint seal rehabs, or deck overlay work may combine structure details into one plan set. A summary GENERAL PLAN may be created that shows the location of each structure and general work to be done followed by BRIDGE DETAILS and MISCELLANEOUS DETAIL sheets, see Attachment 3A.A.18. Quantity decal(s) for these types of multiple structure plan sets can be added near each PLAN view for each structure, rather than combined into one decal.
2. Show all dimensions in feet and inches. Do not use decimals of a foot or inch.
3. Run spell check and ensure only proper abbreviations are used.
4. Do not use Standard Plan "bubbles" () on the GENERAL PLAN sheet.
5. Show important notations such as line types, symbols indicating electroliers, deck drains, or points of minimum vertical clearance in a LEGEND.
6. Give the location of the GENERAL NOTES, INDEX TO PLANS, and PILE DATA TABLE, if not shown on the GENERAL PLAN. For the GENERAL NOTES format and content, use standard detailing cell.
7. Leave a clear 6" x 6" space to list the QUANTITIES submitted by Structure Office Engineer Cost Estimates Branch. If there is more than one structure in a single plan set, the individual quantity decals for each structure should be placed directly beneath the PLAN view on the GENERAL PLAN and labeled for clarity. If the QUANTITIES are not shown on the GENERAL PLAN sheet, note their location in plan set.
8. Avoid detailed descriptions of all the details shown on the GENERAL PLAN sheet. For retrofits, girder strengthening, joint seal replacement, approach slab, or other projects only reference the location of the work to be done. Place specific details on other sheets.
9. Place the completed “Traffic Notes” on the GENERAL PLAN, which identifies all the traffic handling and falsework opening requirements for the structure. This decal is added prior to the Type Selection and General Plan Distribution milestones, however, should be removed before the P&Q milestone; see Attachment 3A.A.1 and 3.5 Falsework Requirements.
10. Show existing bridges and other structures on the GENERAL PLAN; designate existing structures with Line Code 6 (— · · — · · —) line style in the LEGEND. For existing bridges or structures to be replaced on the same alignment, only show the existing structure in PLAN VIEW; do not show in ELEVATION or TYPICAL SECTION.

11. When removing an entire structure, do not hatch existing bridge removal limits on the GENERAL PLAN sheet. Large areas of cross hatching make details difficult to read. Hatching is acceptable when portions of a structure are being removed, or removal is done in stages; in this case identify limits and area(s) to be removed within LEGEND as "Bridge Removal (Portion)". A separate GENERAL PLAN (removal) is only required when existing bridge removal details cannot be determined from other plan sheets.
12. For widening or retrofit projects, show the dependent dimensions and standard verification note to Contractor; see 1.1.14 General Detailing.
13. For maintenance jobs which are referring to approach slab work on GENERAL PLAN, the abutment type needs to be identified in ELEVATION or in a note. This allows the correct detail to be used from the approach slab standard plans and correct items to be included in the work. Identification of abutment type in plan sets that show abutment details (e.g., bridge replacements or abutment retrofits), do not need to label abutment type on GENERAL PLAN because the details are provided.

Figure 3A.A.1 General Plan Detailing Example 1

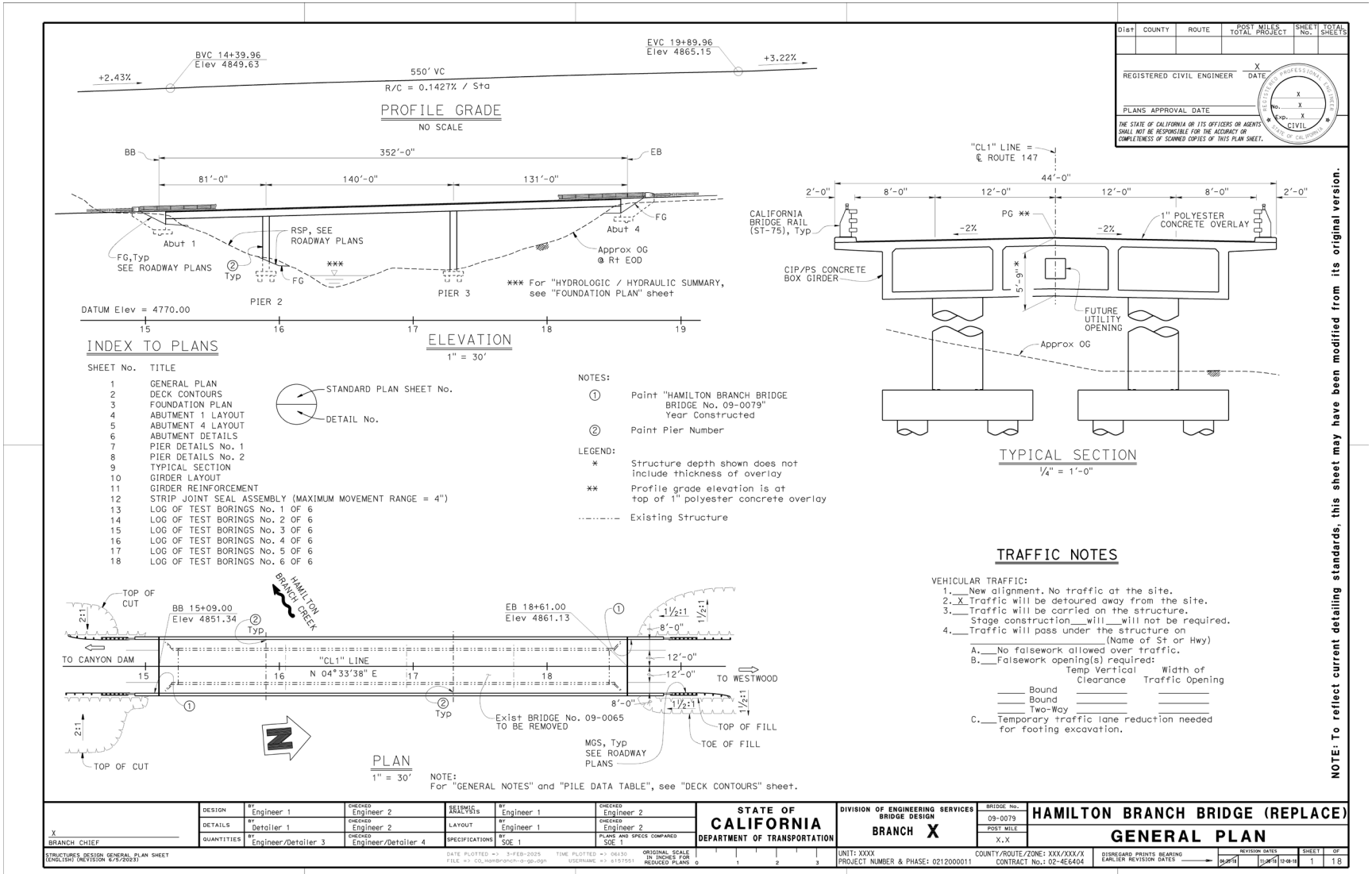


Figure 3A.A.2 General Plan Detailing Example 2

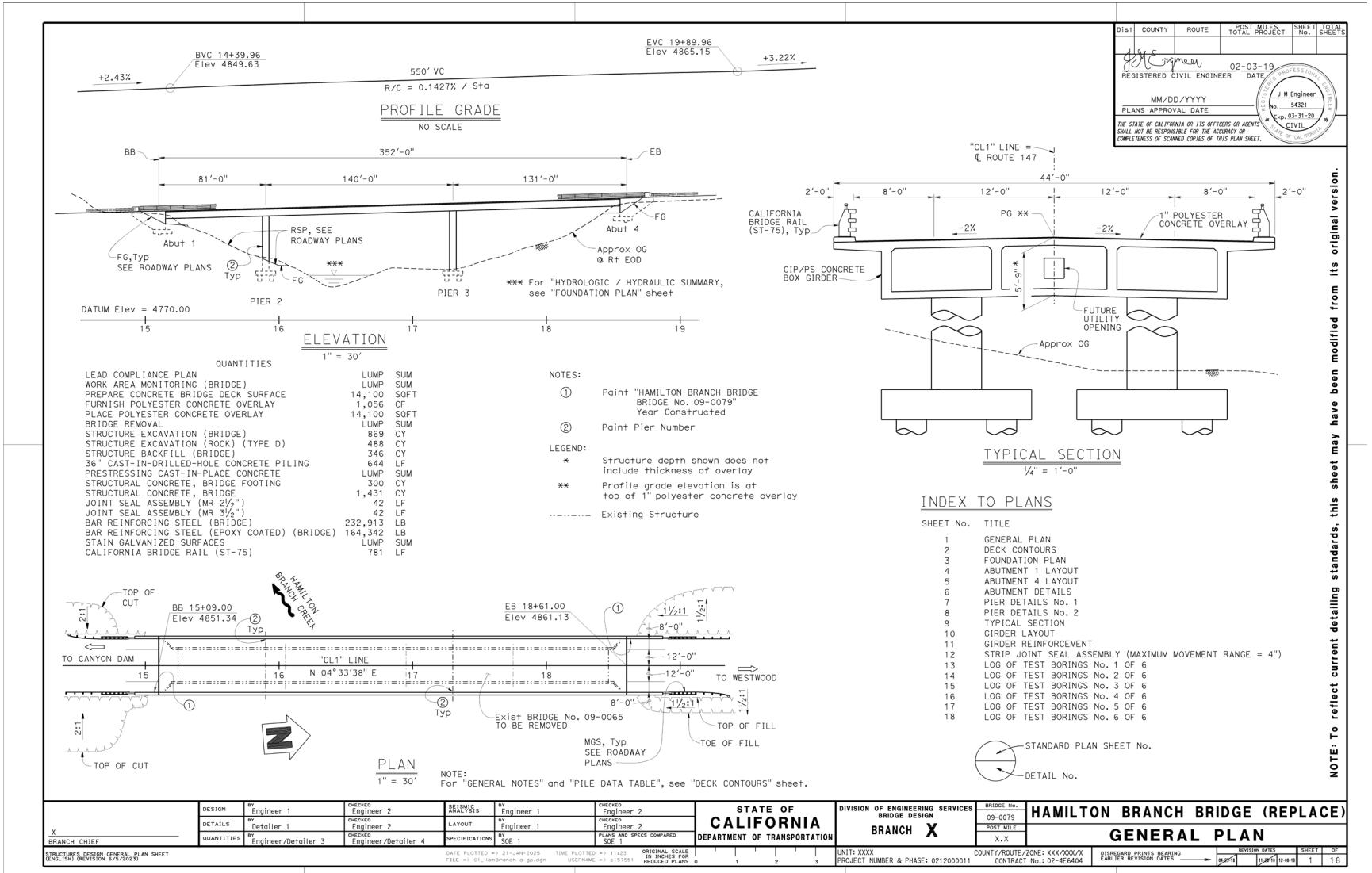


Figure 3A.A.3 General Plan Detailing Example 3

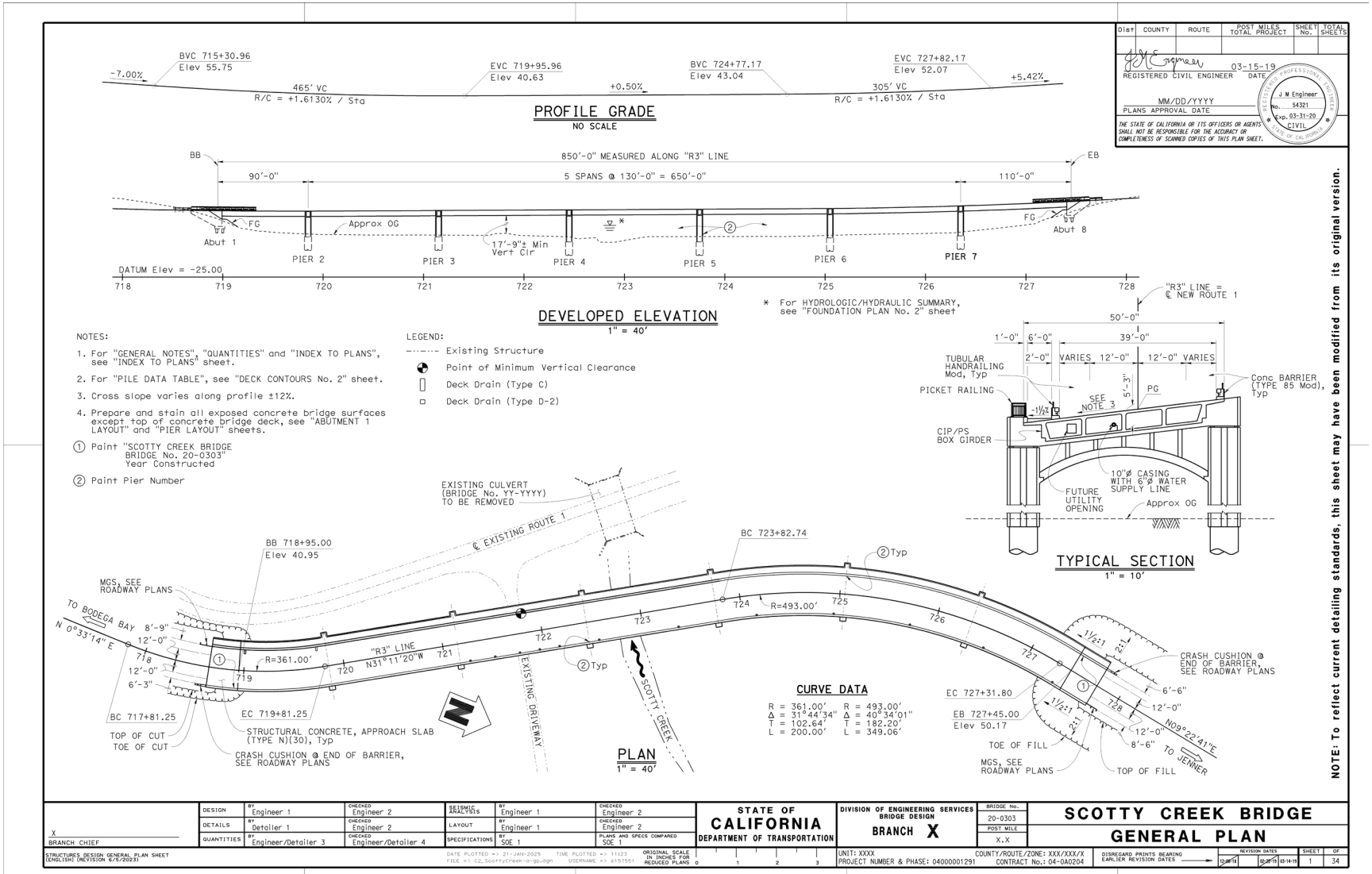


Figure 3A.A.4 General Plan Detailing Example 4

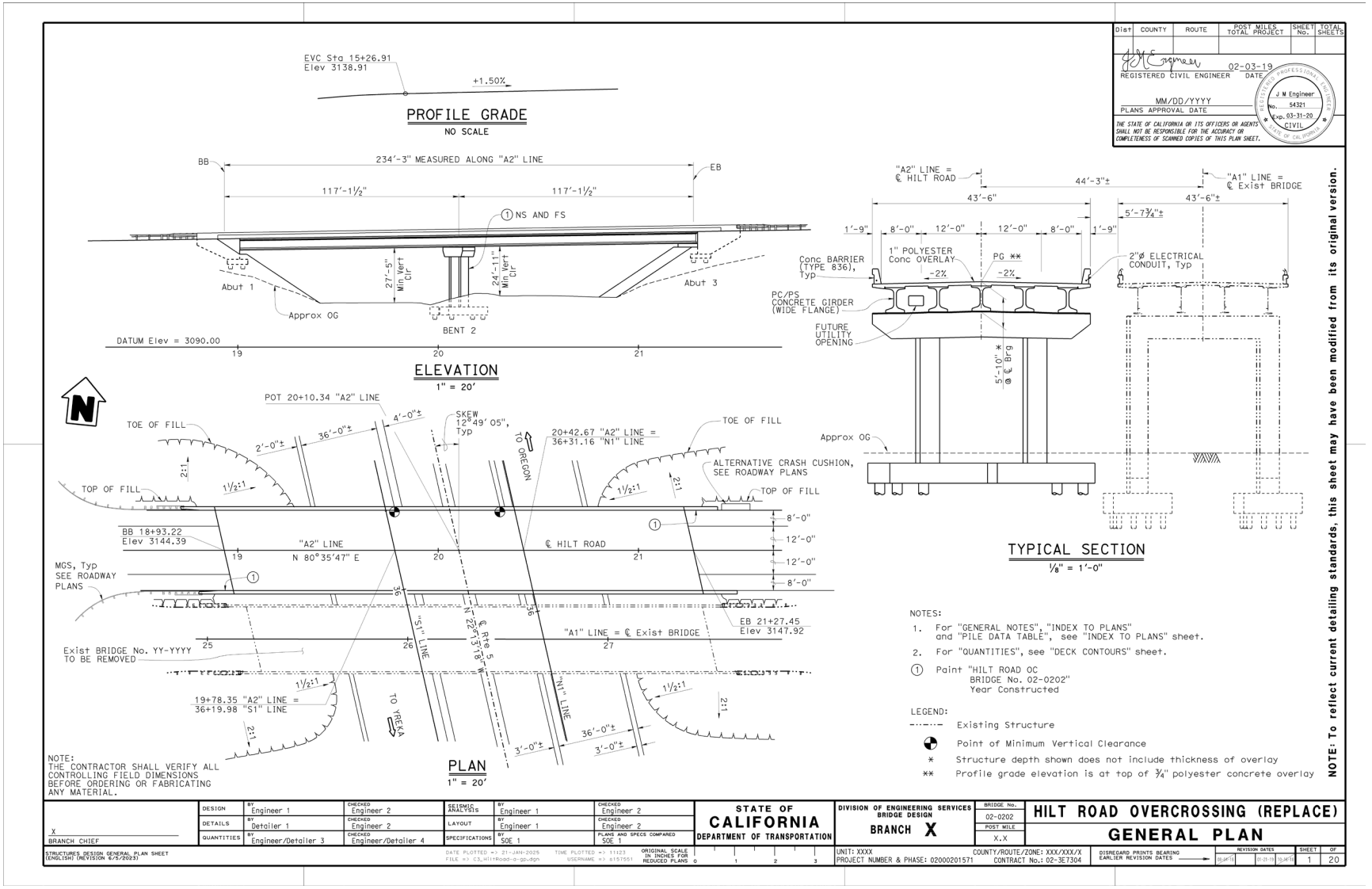


Figure 3A.A.5 General Plan Detailing Example 5

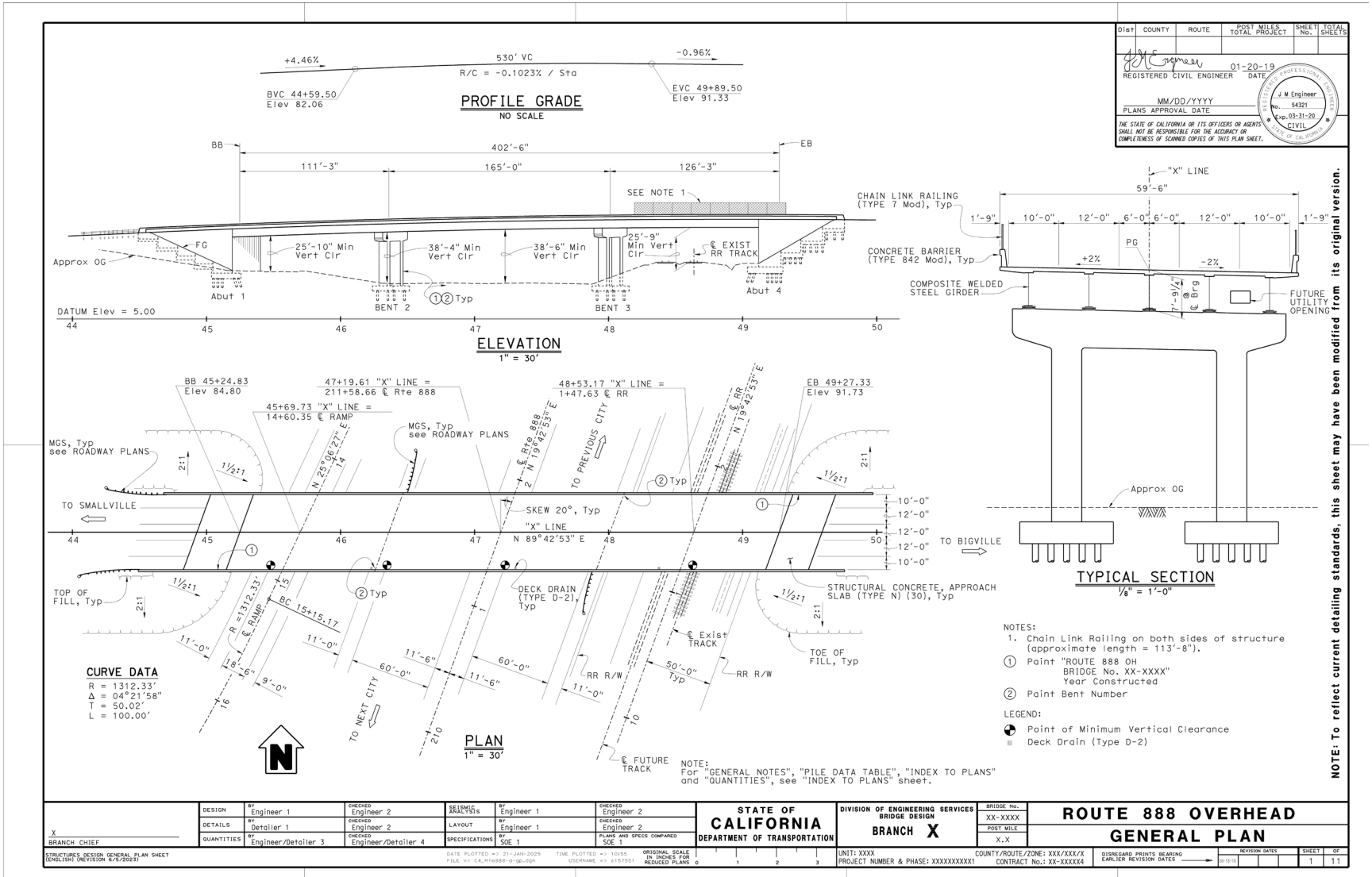


Figure 3A.A.6 General Plan Detailing Example 6

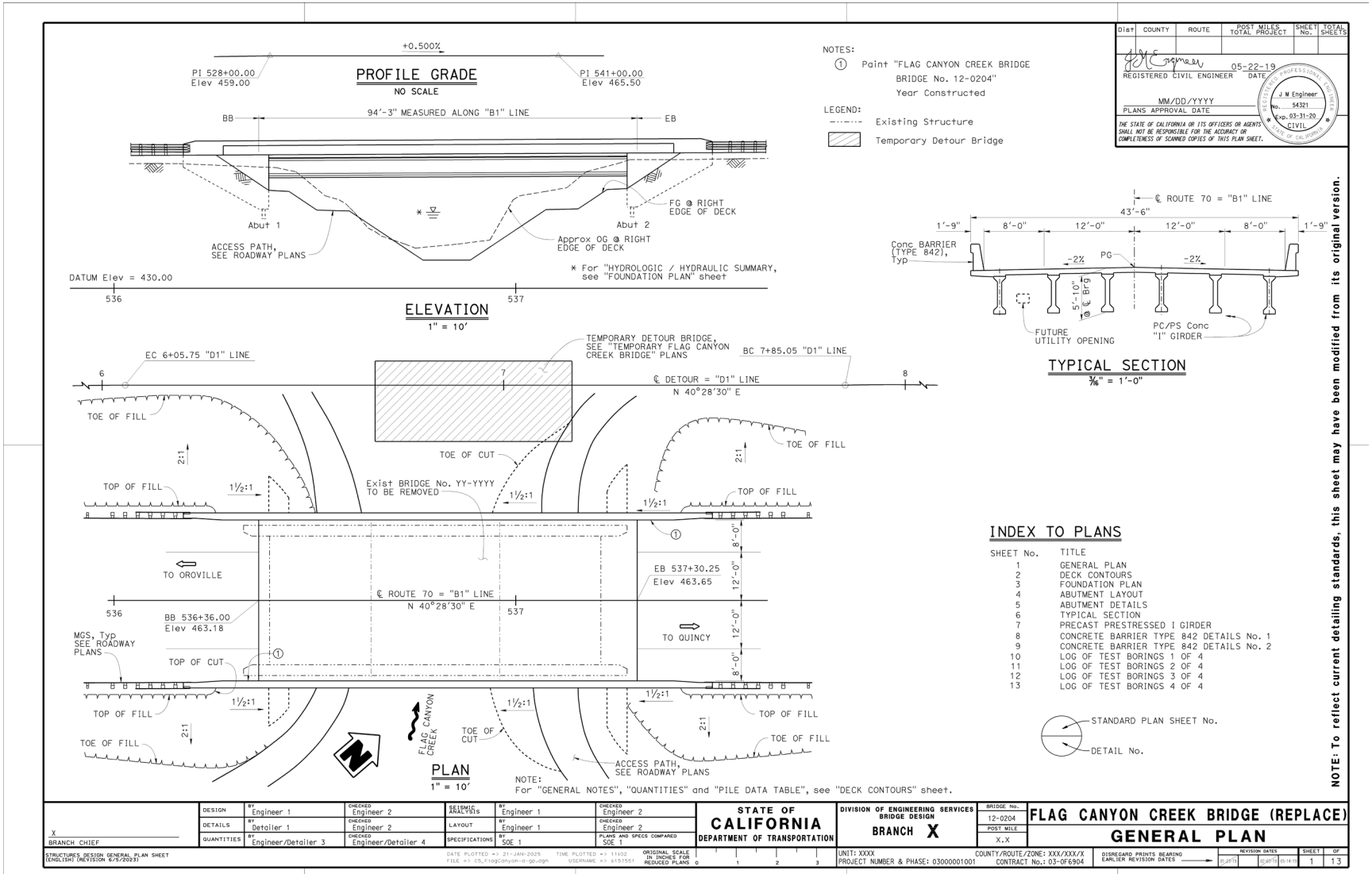


Figure 3A.A.7 General Plan Detailing Example 7

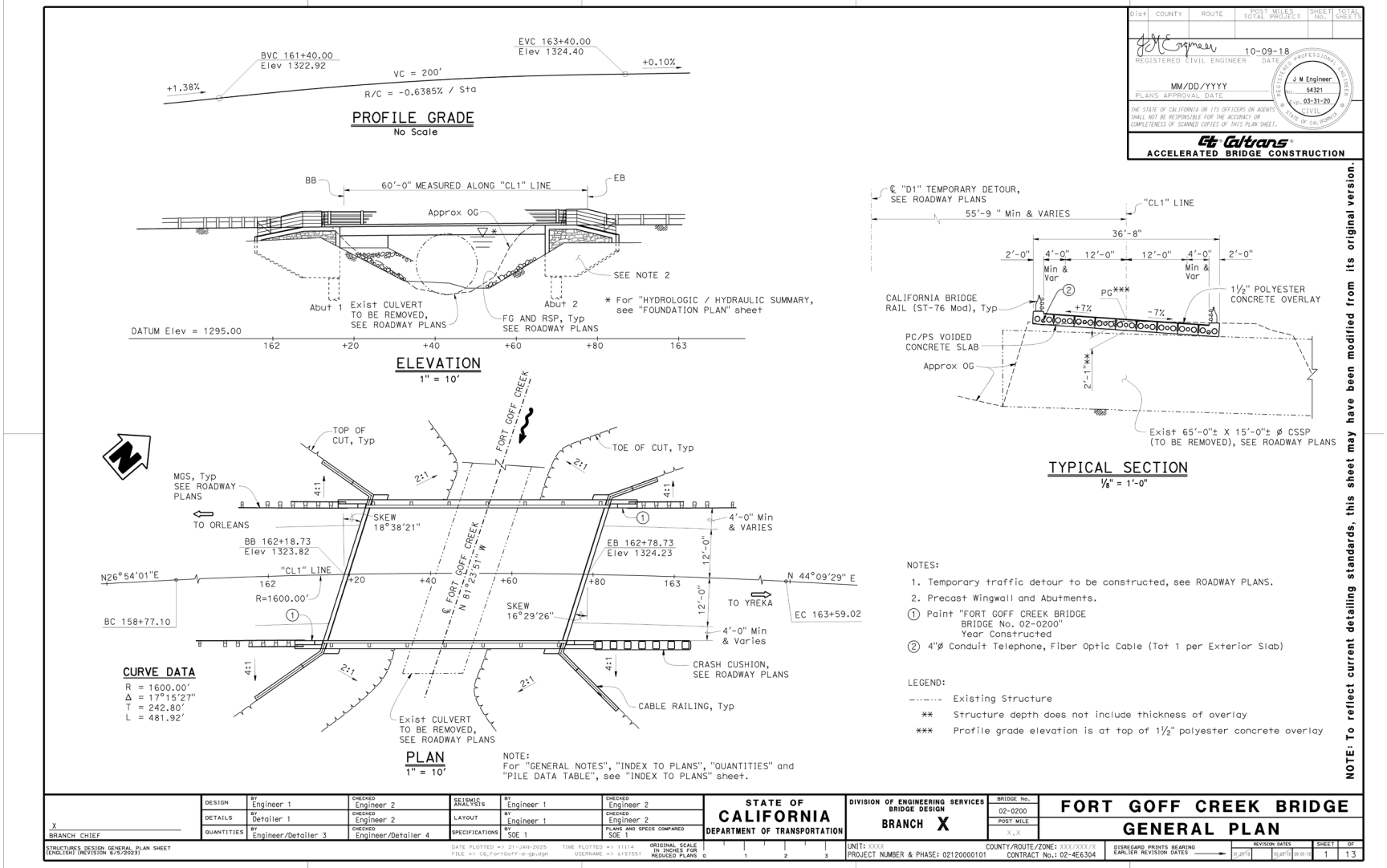


Figure 3A.A.8 General Plan Detailing Example 8

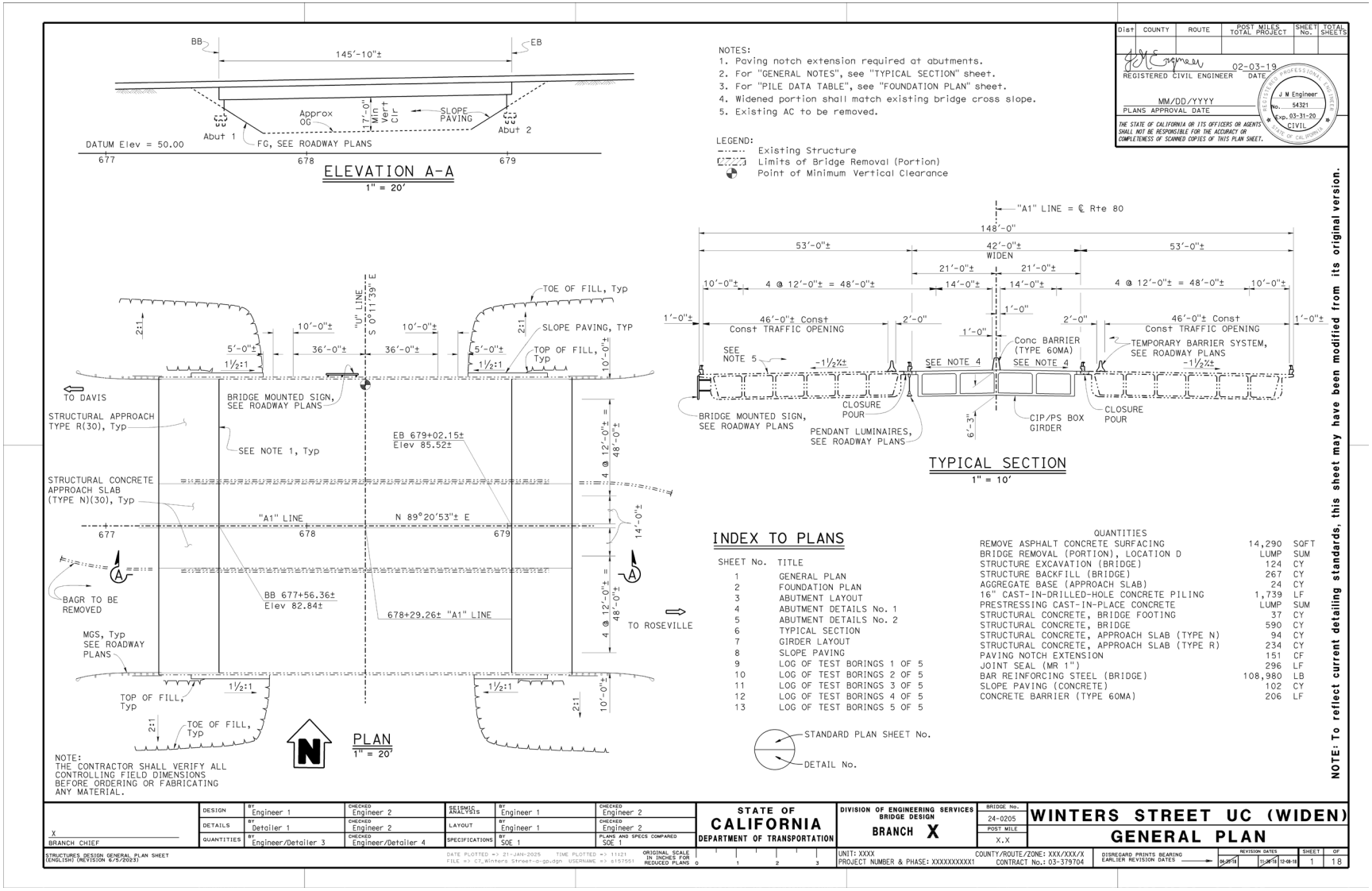


Figure 3A.A.9 General Plan Detailing Example 9

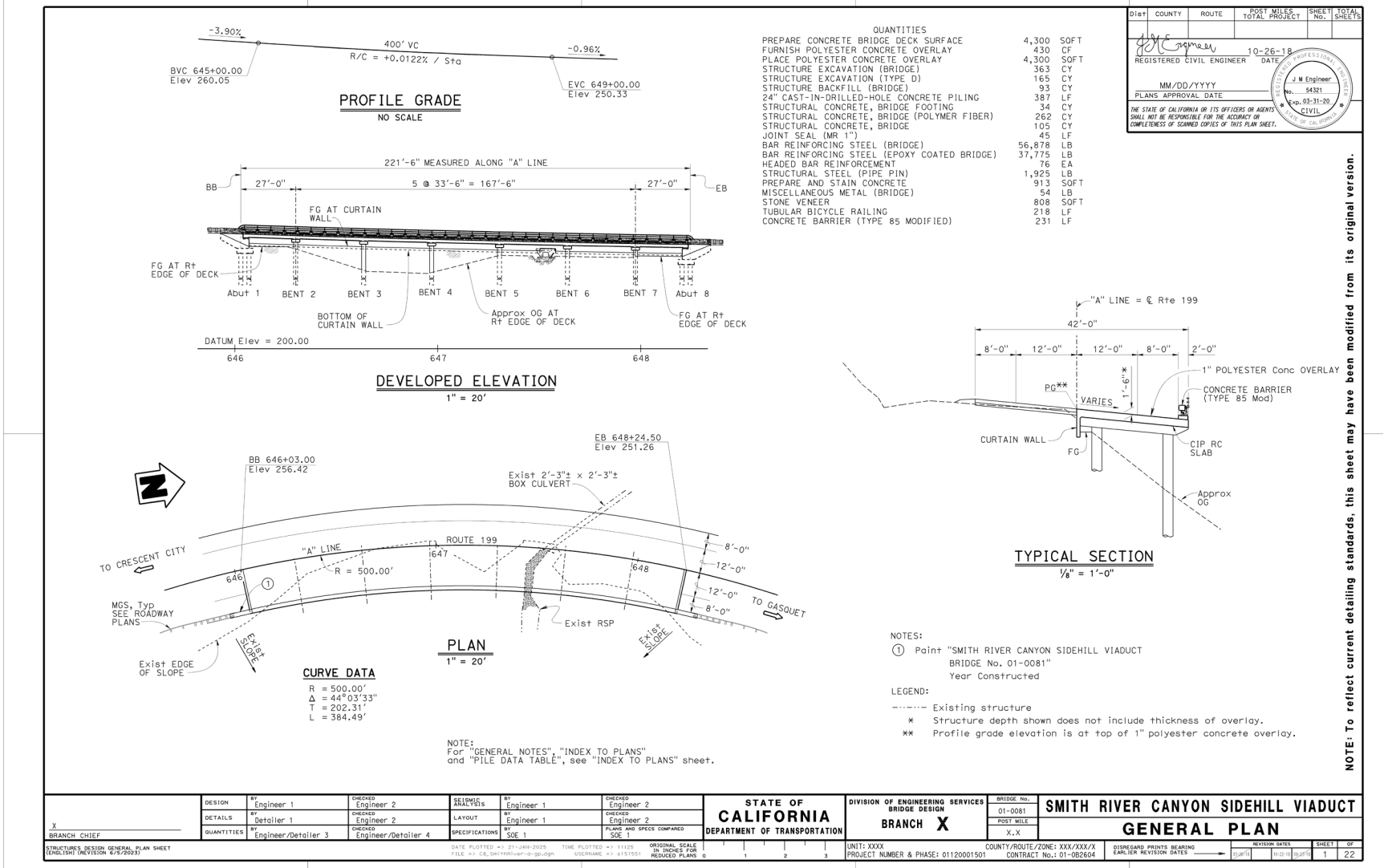


Figure 3A.A.10 General Plan Detailing Example 10

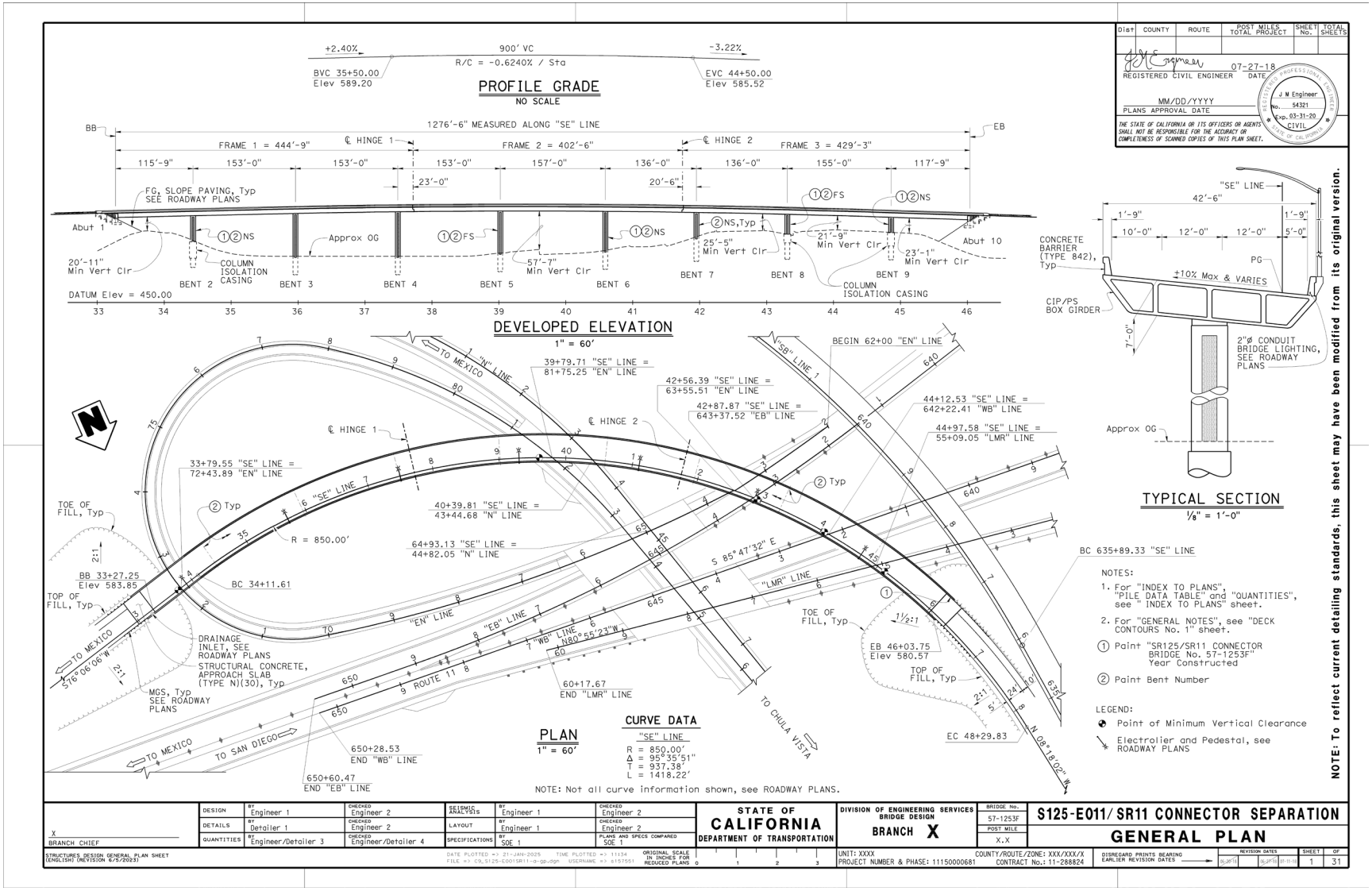


Figure 3A.A.11 General Plan Detailing Example 11

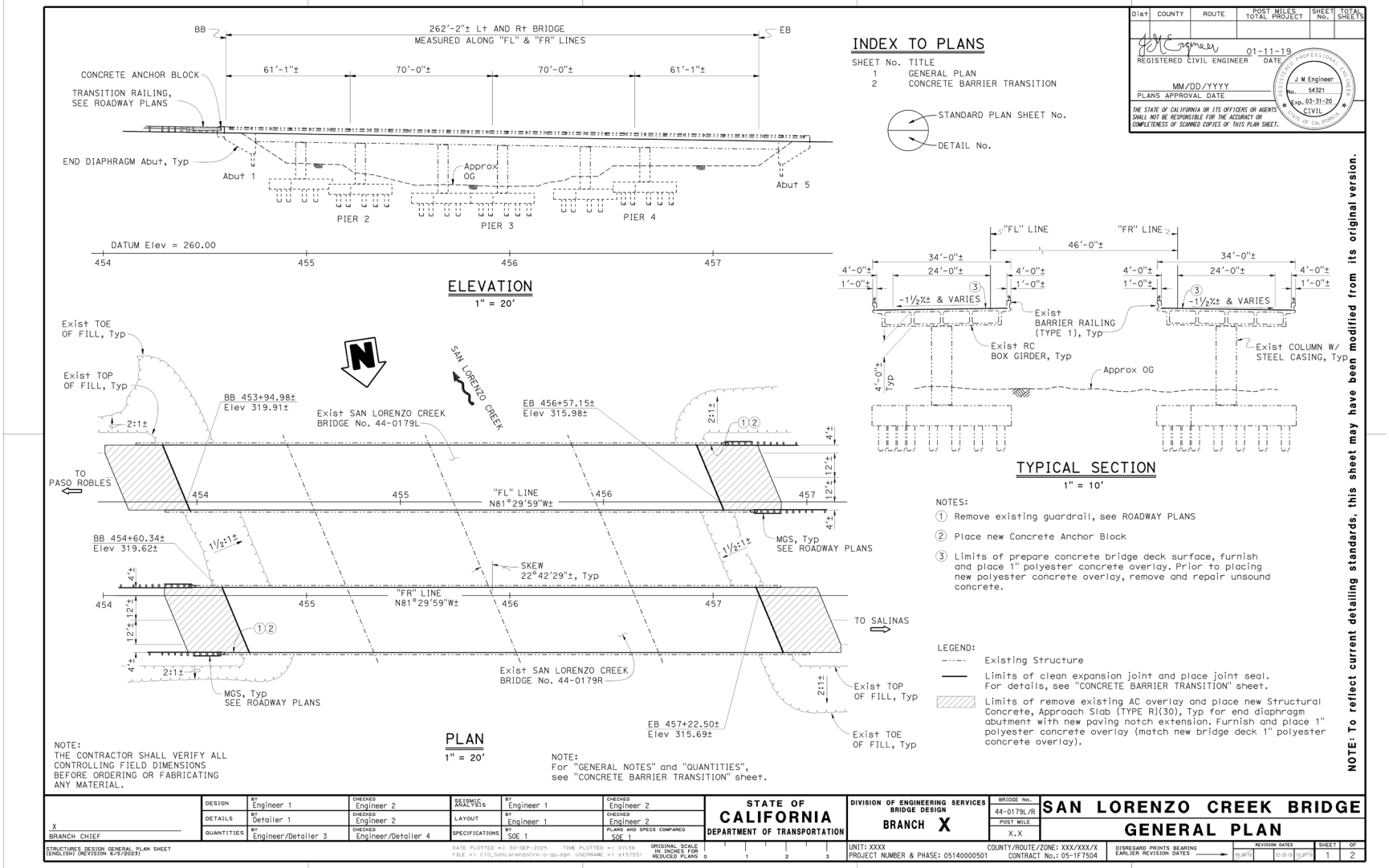


Figure 3A.A.12 General Plan Detailing Example 12

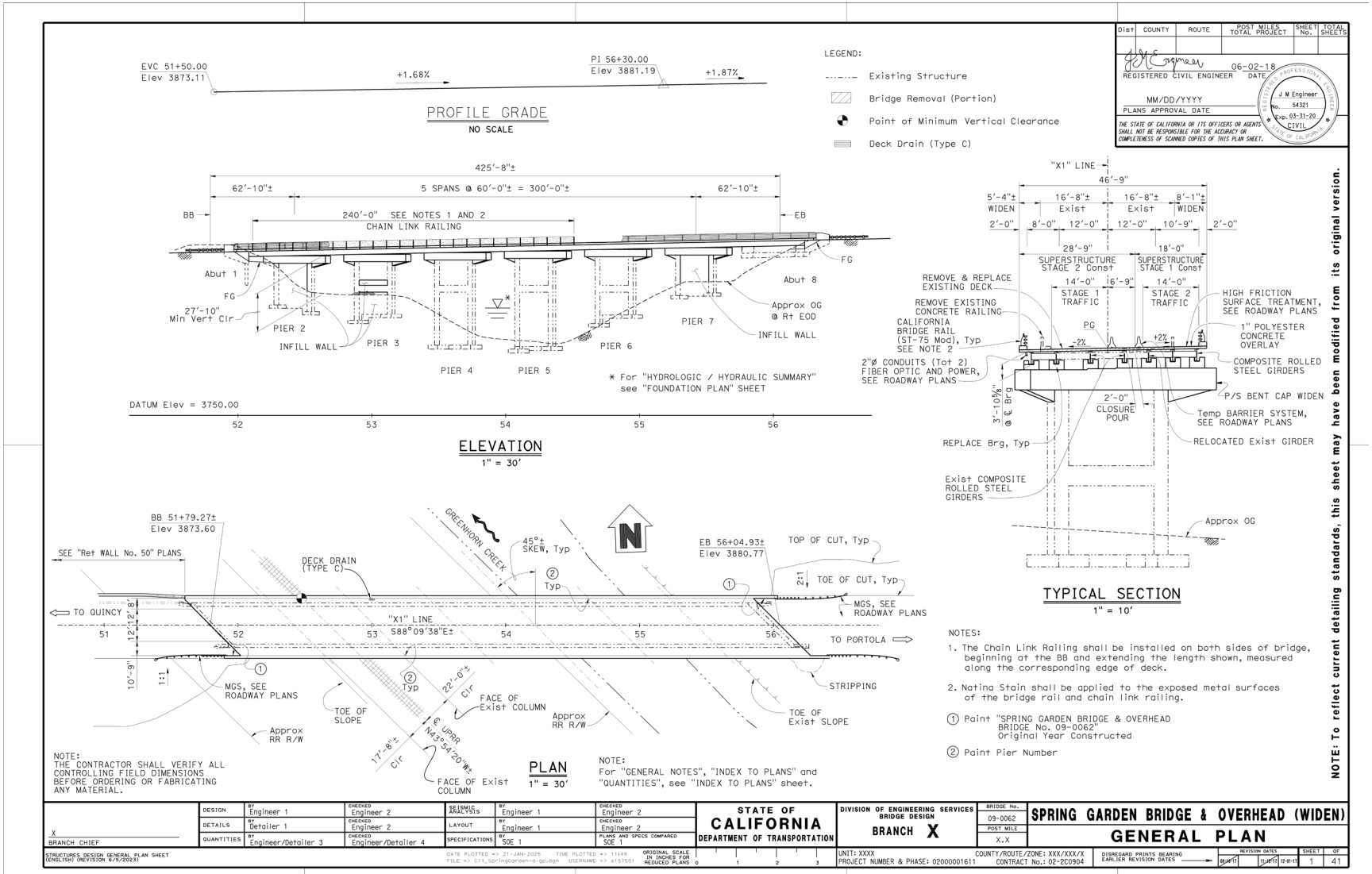


Figure 3A.A.13 General Plan Detailing Example 13

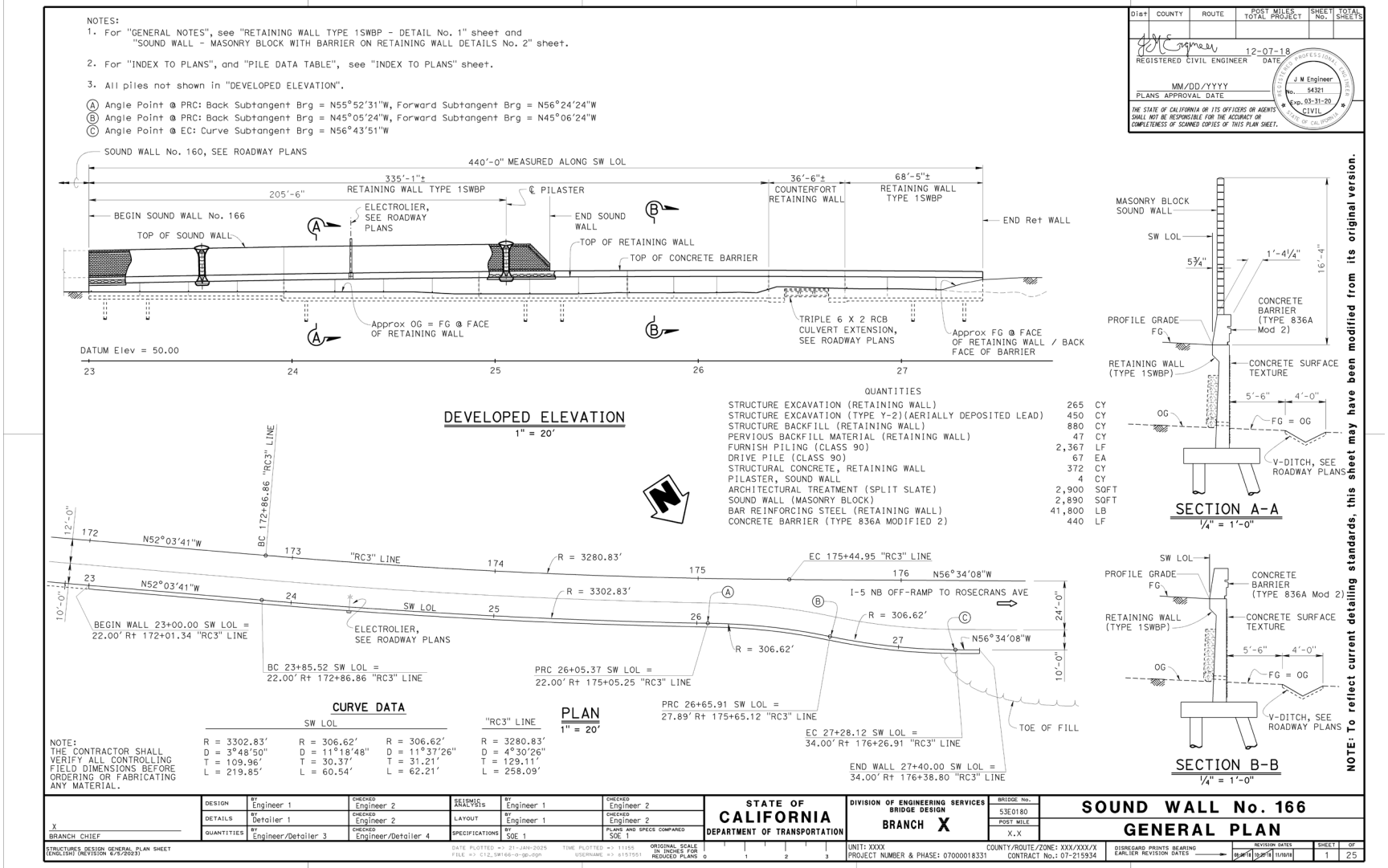


Figure 3A.A.14 General Plan Detailing Example 14

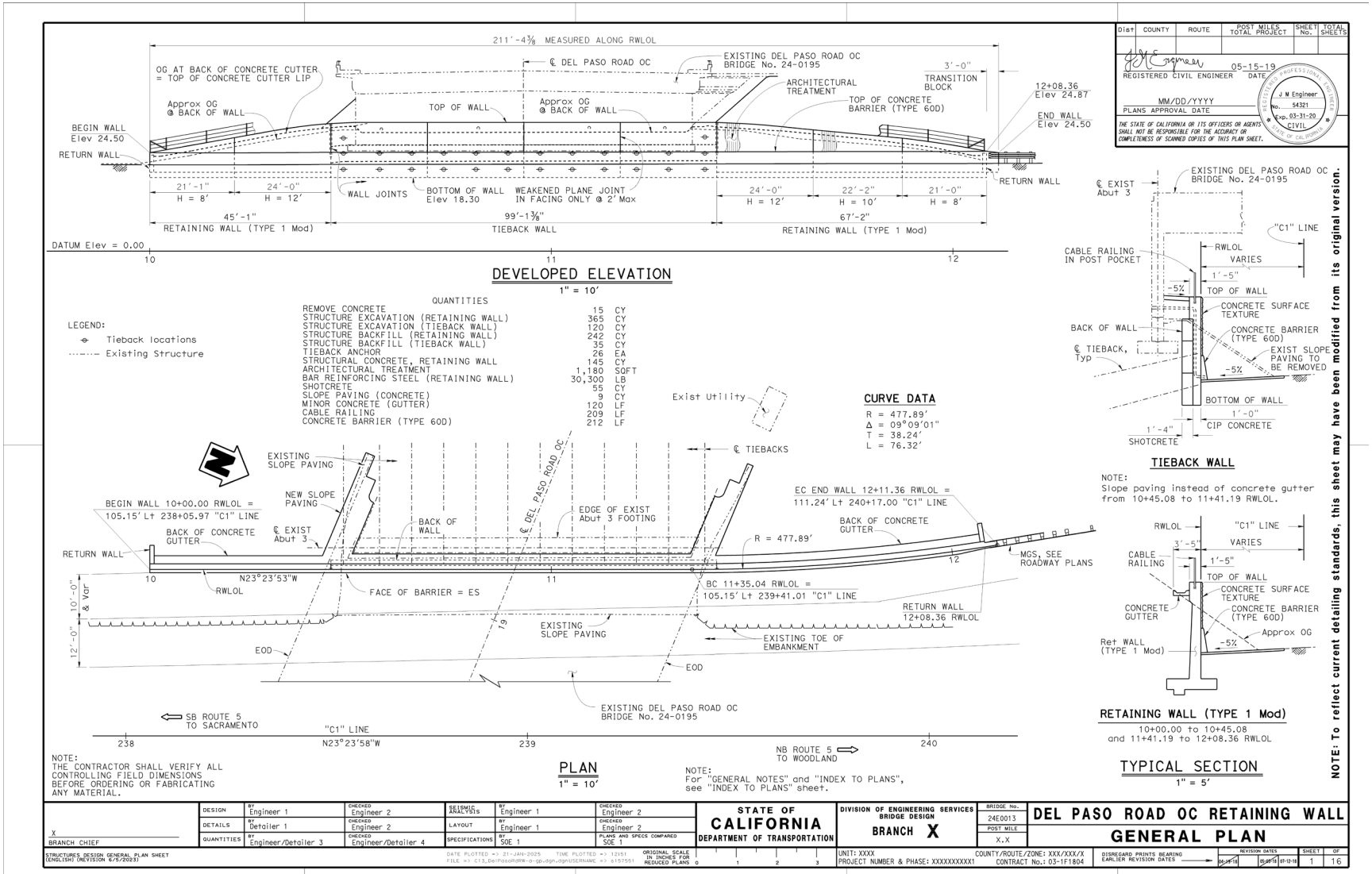


Figure 3A.A.15 General Plan Detailing Example 15

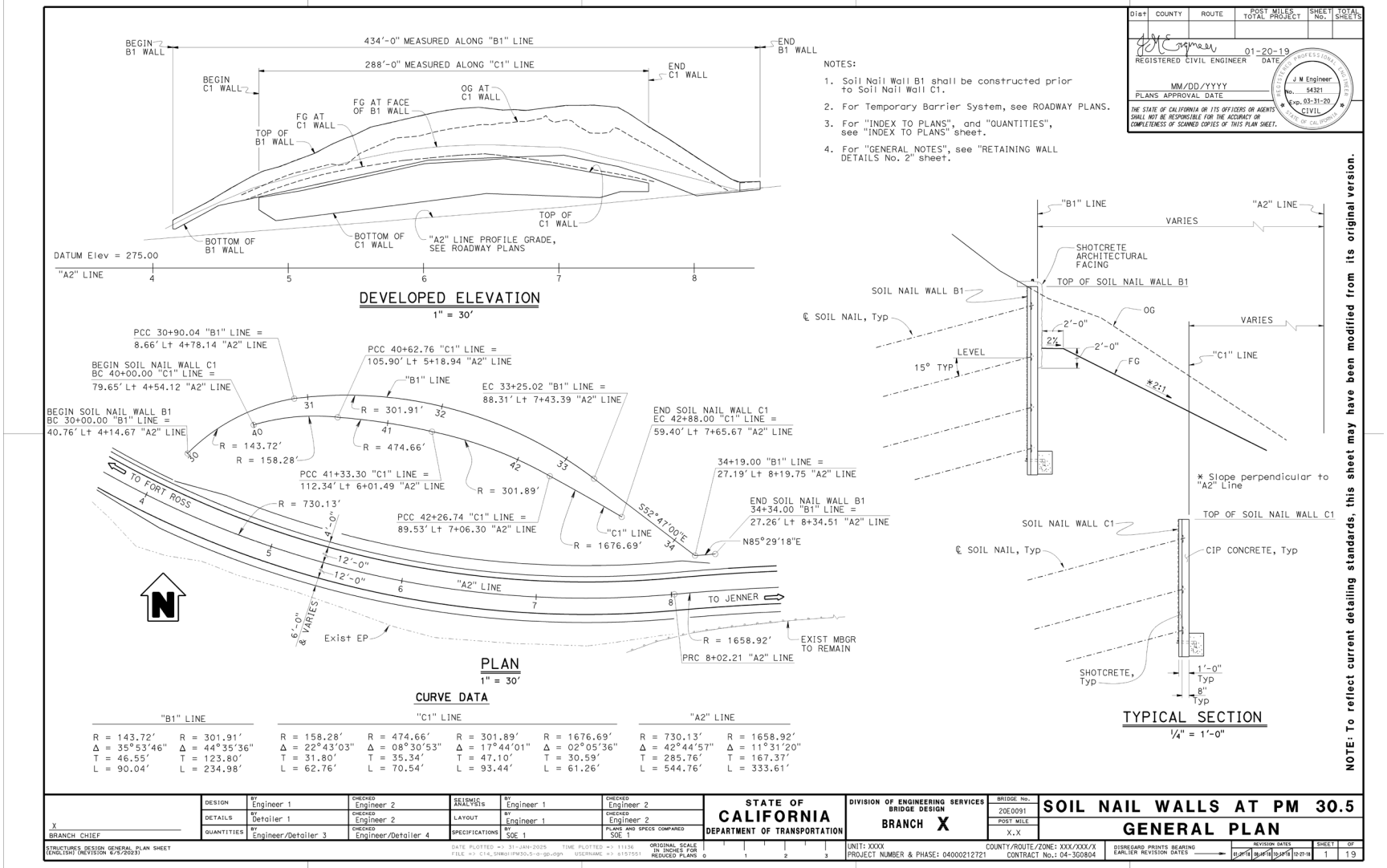


Figure 3A.A.16 General Plan Detailing Example 16

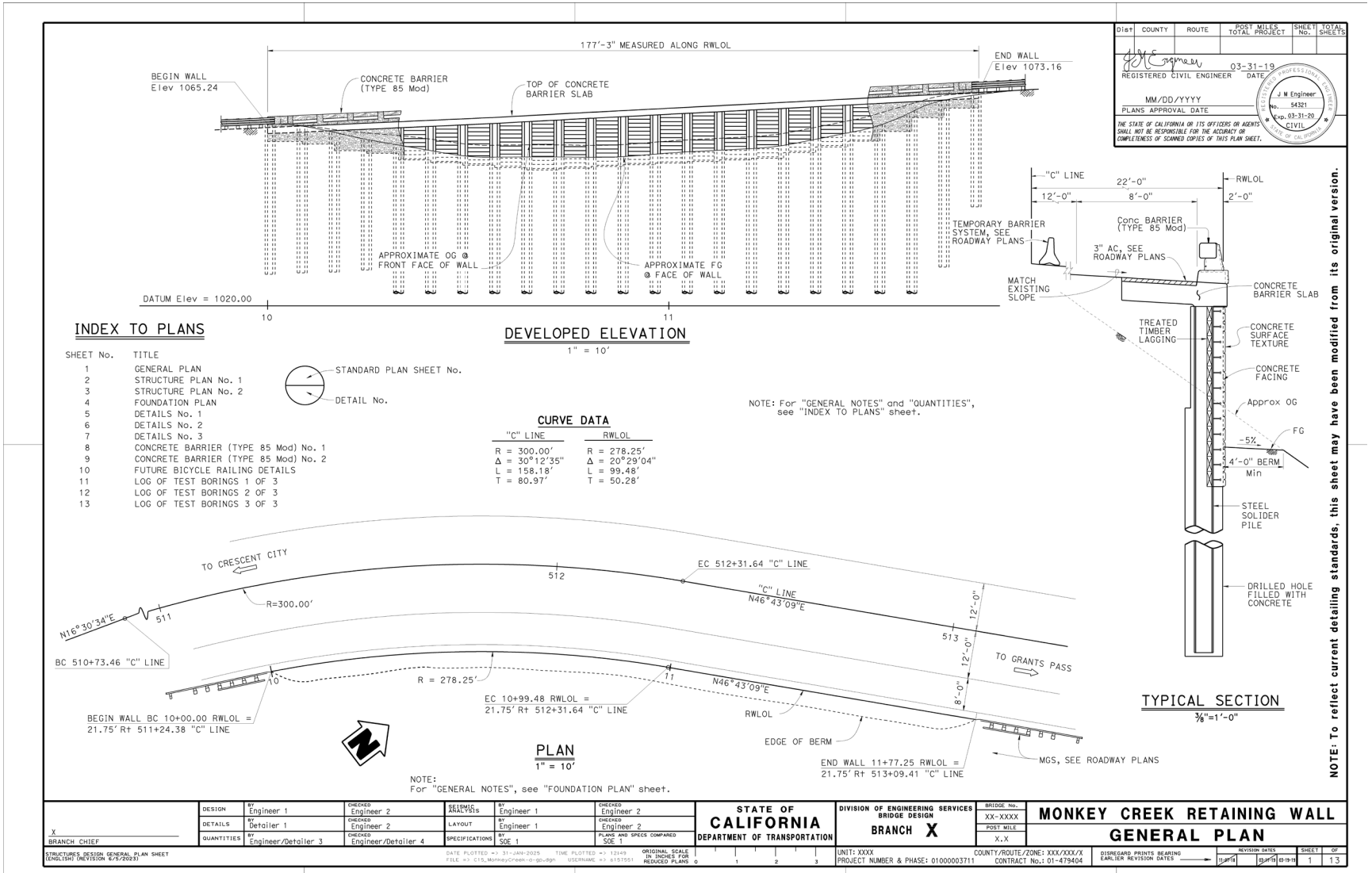


Figure 3A.A.17 General Plan Detailing Example 17

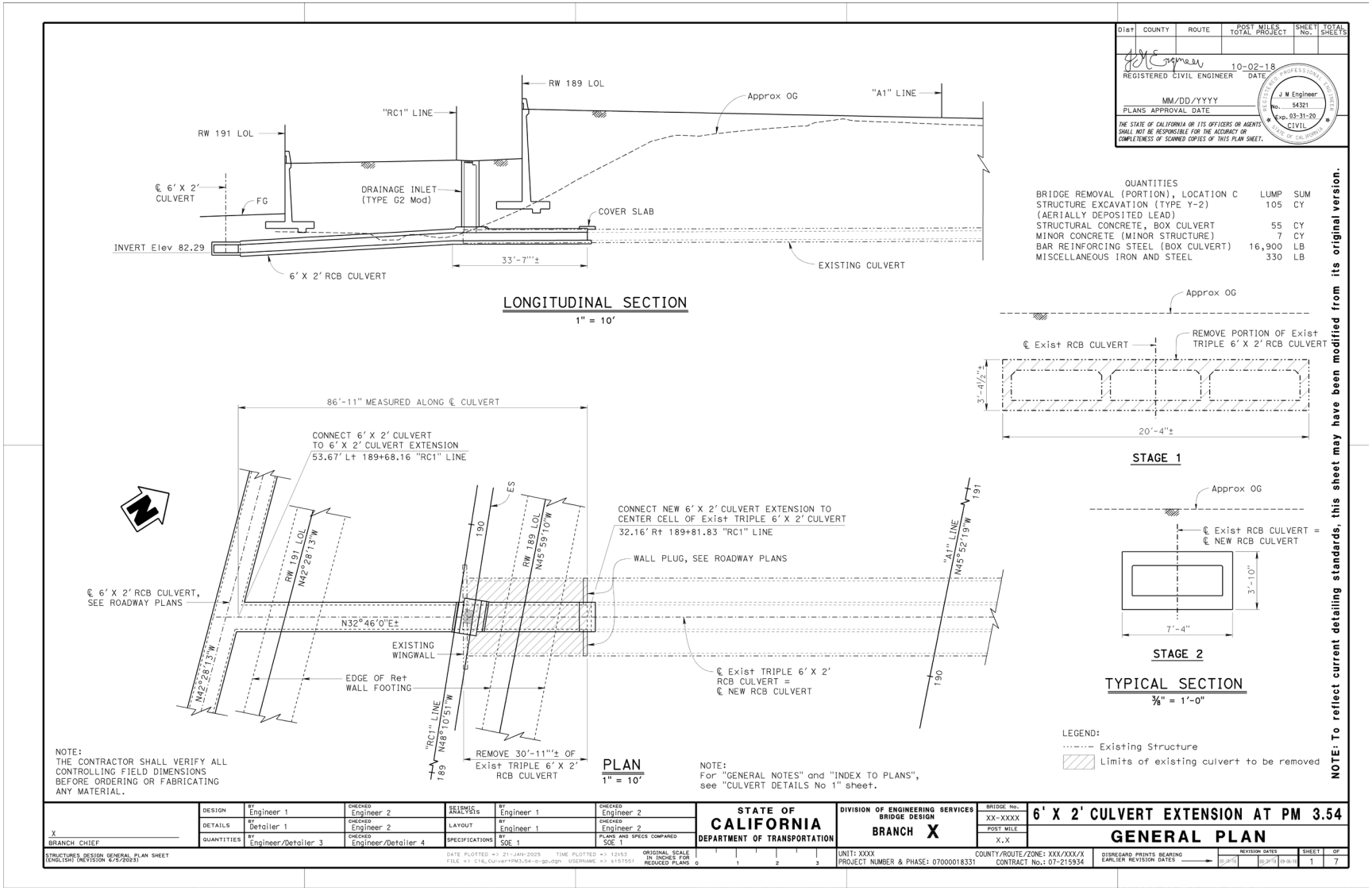


Figure 3A.A.18 General Plan Detailing Example 18

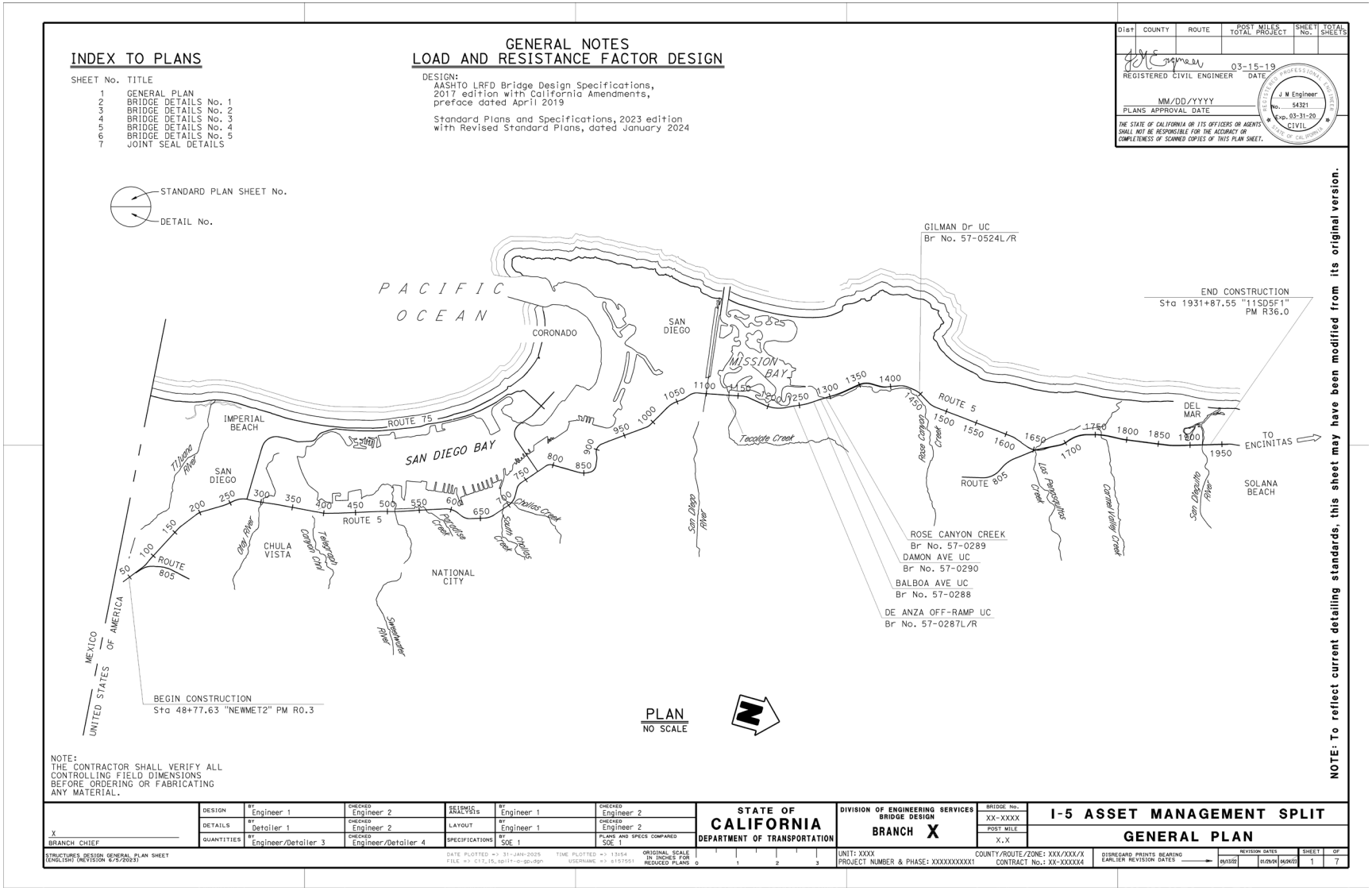


Figure 3A.A.19 General Plan Detailing Example 19

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

REGISTERED CIVIL ENGINEER — DATE 10-01-25

PLANS APPROVAL DATE 11/01/2025

J M Engineer No. 54321 Exp. 07-27-26 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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.

LOCATION TABLE

WORK LOCATION NUMBER	PROJECT EA	WALL TYPE	POST MILE	DIRECTION AND SIDE	APPROACH/ DEPARTURE	CONCRETE BARRIER TRANSITION L_{P_1} (LF)	EXISTING CONCRETE BARRIER REMOVAL (LF)	EXISTING CONCRETE BARRIER TYPE	BARRIER TRANSITION TYPE
1	0S230 & 1W500	Soldier Pile Wall	27.45	SB	DEPARTURE	3.33	3.33	Concrete Barrier (Type 27 Mod) with Barrier Slab	AGT CONNECTION TO (TYPE 27 Mod) - CASE 1
2	0S230 & 1W500	Soldier Pile Wall	27.50	SB	APPROACH	40	1.5	Concrete Barrier (Type 27 Mod) with Barrier Slab	AGT CONNECTION TO (TYPE 27 Mod) - CASE 2
3	49750	Soldier Pile Wall	27.78	SB	DEPARTURE	22.50	6	Concrete Barrier (Type 27 Mod) on Cap Beam	AGT CONNECTION TO (TYPE 27 Mod) - CASE 3
4	49750	Soldier Pile Wall	27.85	SB	APPROACH	22.50	6	Concrete Barrier (Type 27 Mod) on Cap Beam	AGT CONNECTION TO (TYPE 27 Mod) - CASE 3
5	3S470	Soil Nail Wall	29.81	SB	DEPARTURE	40	N/A	Concrete Barrier (Type 736) with Barrier Slab	AGT CONNECTION TO (TYPE 736)
6	3S470	Soil Nail Wall	29.84	SB	APPROACH	40	N/A	Concrete Barrier (Type 736) with Barrier Slab	AGT CONNECTION TO (TYPE 736)
7	1S870	Soil Nail Wall	30.27	NB	DEPARTURE	15	11.83	Concrete Barrier (Type 60D)	AGT CONNECTION TO (TYPE 60D)

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications, 2017 edition with California Amendments updated March 2025

Standard Plans and Specifications, 2025 edition

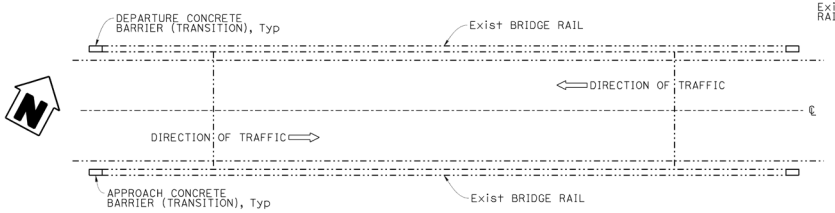
CT:
f_t = 54 kips on Barrier

REINFORCED CONCRETE:
f_y = 60 ksi
f'_c = 3.6 ksi

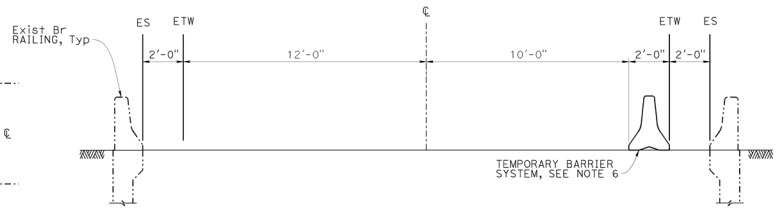
INDEX TO PLANS

NOTES:

1. Align Barrier Transitions with alignment shown on ROADWAY PLANS.
2. Adjust dowels and concrete barrier transition for chamfer.
3. For location details, see "LOCATION TABLE" and ROADWAY PLANS.
4. Concrete cover to reinforcement in Barrier Transition to be 1" above ground and 3" cover below ground except noted. Longitudinal reinforcement shall stop at all expansion joints.
5. Project in place existing conduits if encountered from concrete barrier transition for the conduit diversion to a pull box at back of barrier with one foot minimum bending radius.
6. For Temporary Barrier System details, see ROADWAY PLANS.



PLAN



NOTE: PM 27.45 location shown, others similar.

TYPICAL SECTION

NOTE: To reflect current detailing standards, this sheet may have been modified from its original version.

NO SCALE

X BRANCH CHIEF	DESIGN	BY Engineer 1	CHECKED Engineer 2	SEISMIC ANALYSIS	BY Engineer 1	CHECKED Engineer 2	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES BRIDGE DESIGN BRANCH X	BRIDGE No. XX-XXXX	CONCRETE BARRIER TRANSITION GENERAL PLAN	
	DETAILS	BY Detailer 1	CHECKED Engineer 2	LAYOUT	BY Engineer 1	CHECKED Engineer 2			POST MILE X.X		
	QUANTITIES	BY Engineer/Detailer 3	CHECKED Engineer/Detailer 4	SPECIFICATIONS	BY SOE 1	PLANS AND SPECS COMPARED SOE 1					

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REVISION 6/5/2023)

DATE PLOTTED => 1-OCT-2025 TIME PLOTTED => 07:29
FILE => C18_04-4q800-a-gp.dgn USERNAME => s157551
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: XXXX PROJECT NUMBER & PHASE: 04190004821
COUNTY/ROUTE/ZONE: XXX/XXX/X CONTRACT No.: 04-4q8001

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES			SHEET	OF
5-19-25	5-29-25	6-30-25	1	7

Bridge Design Details 3.2 June 2025

Milestone Notations & Borders

As a project progresses, complete plan sets are distributed for review. Before distribution, milestone notation stamps are added to the GENERAL PLAN to indicate the stage of the project as it goes through the course of its design.

Milestone notations stamps are included on the following distributions:

- GENERAL PLAN
- UNCHECKED DETAILS
- CHECKED DETAILS
- DRAFT STRUCTURE PLANS, SPECIFICATIONS & ESTIMATES (dSPS&E)
- EXPEDITE

A milestone notation stamp is not placed on the plans at the FINAL STRUCTURE PLANS, SPECIFICATIONS & ESTIMATES (SPS&E) milestone.

Border Information

Include "BRIDGE", "UNDERPASS", "OVERCROSSING", etc. in the structure title. Do not use abbreviations in sheet titles unless absolutely necessary. If abbreviations are used, only use standard abbreviations.

When a separate Structure Plan set is prepared for two or more bridges having the same bridge number, the name for each should be stated. The bridge number identification provided by Structure Maintenance & Investigations (SM&I) will also indicate the location of each bridge.

Example:

BROADWAY UNDERCROSSING – LEFT BRIDGE (BRIDGE No. XX-XXXXL) BROADWAY UNDERCROSSING – RIGHT BRIDGE (BRIDGE No. XX-XXXXR)

For further border information and guidance, see 1.3 Titles and Borders.

Bridge Design Details 3.3 June 2025

Index to Plans

See 1.1.15 General Detailing for typical order of sheets.

If the INDEX TO PLANS is not located on the GENERAL PLAN, add a note on the GENERAL PLAN indicating their location. The INDEX TO PLANS may be placed on one of the following sheets:

- GENERAL PLAN: The preferred location for INDEX TO PLANS is the lower right corner of the GENERAL PLAN sheet, otherwise, create an INDEX TO PLAN sheet.
- INDEX TO PLANS: If there is not adequate space on the GENERAL PLAN sheet, a sheet called INDEX TO PLANS may be inserted. If the INDEX TO PLANS sheet is used, this sheet is to immediately follow the GENERAL PLAN sheet.
- DECK CONTOURS: If there is not adequate space on the GENERAL PLAN sheet and an INDEX TO PLANS sheet is not used, then the INDEX TO PLANS may be placed on the DECK CONTOURS sheet.

In some circumstances, other functional units may require sheets to be placed within a set of Structure Plans (e.g., Electrical Plans, Mechanical Plans, etc.). These details include hardware and other details that are attached to a structure. In most cases, these types of plans are designed and detailed by another unit and stamped by a separate licensed Engineer. Such plans should be listed after the Structure Plans, see Attachment 3A.B.1.

Standard Plans List

See 1.5 Use of Standard Plans, for additional details referring to use of Standard Plans.

STANDARD PLANS are pre-engineered, commonly used, details that are used in conjunction with the Standard Specifications and Project Plans. STANDARD PLANS are not inserted or duplicated in the project plans, instead they are called out where details are to be used. When detail modifications are required to a referenced STANDARD PLAN, only the modified details should be shown in the Structure Plans. A reference to the STANDARD PLAN used should be included for additional details not shown. No standard plan bubbles shall be shown on GENERAL PLANS.

Historically, a Standard Plans List was included in Structure Plans. Current practice is to not include the list in the Structure Plans, instead BD-0354 Structure Standard Plan Transmittal is filled out and sent to Structure Office Engineer (SOE) at P&Q and EXPEDITE milestones. This step ensures that SOE includes all the relevant Standard Plans in the Special Provisions for the project when transmitted to District Office Engineer.

Always show the STANDARD PLANS call-out legend:

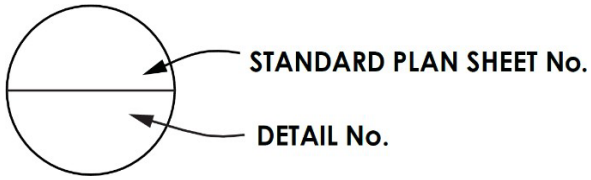


Figure 3.3.1 Standard Plans List Call-out Legend

All current and revised Caltrans STANDARD PLANS are available on the Caltrans DES-OE Internet website in several electronic formats. Care should be taken to ensure that all REVISED STANDARD PLANS associated with a project are included in a set of plans. This includes those listed in the notes of any referenced STANDARD PLAN.

Figure 3A.B.1 Index to Plans Detailing Example

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

J M Chapman 07-07-18
REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

J M Engineer No. 54321 Exp. 03-31-20 CIVIL

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.

INDEX TO PLANS

STRUCTURAL PLANS

STANDARD PLAN SHEET No.

DETAIL No.

ELECTRICAL PLANS

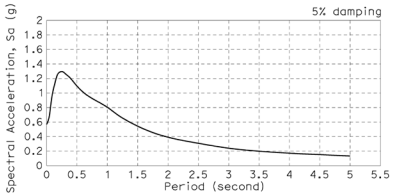
GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications, 2012 edition with California Amendments dated January 2014

DEAD LOAD:
Includes 35 psf for future wearing surface
The deck load between the girders has been increased by a factor of 10% to allow for the use of steel deck forms

LIVE LOADING:
HL93 and permit design load
Catwalk: 40 psf uniform load, 300 lb concentrated load

SEISMIC LOADING:
Soil profile type V_{S30} = 1640 ft/sec
Magnitude group M(max) = 7.4
Peak Ground Acceleration 0.29g



REINFORCED CONCRETE:
fy = 60 ksi
f'c = 3.6 ksi (Unless otherwise specified in CONCRETE STRENGTH AND TYPE LIMITS)

STRUCTURAL STEEL: Girder web, flanges, stiffener plates, connection plates and gusset plates
fy = 50 ksi
Cross frames, catwalk and miscellaneous details
fy = 36 ksi (unless otherwise noted)

HIGH-STRENGTH BOLTS:
All bolts shall be 1"Ø with threads excluded from the shear plate (unless otherwise noted)

STEEL SOLDIER PILE:
Fy = 50 ksi

STRUCTURAL TIMBER:
Treated Douglas Fir No. 2 or better
Timber too be full sawn.

NOTE: To reflect current detailing standards, this sheet may have been modified from its original version.

DESIGN	BY Engineer 1	CHECKED Engineer 2	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES BRIDGE DESIGN BRANCH X	BRIDGE No. 44-0298
DETAILS	BY Detailer 1	CHECKED Engineer 2			POST MILE X.X
QUANTITIES	BY Engineer/Detailer 3	CHECKED Engineer/Detailer 4			PFEIFFER CANYON BRIDGE INDEX TO PLANS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 6/5/2023)
DATE PLOTTED => 21-JAN-2025 TIME PLOTTED => 12:59
FILE => A_PfeifferCanyon-b-1tp.dgn USERNAME => s157551
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3
UNIT: XXXX COUNTY/ROUTE/ZONE: XXX/XXX/X
PROJECT NUMBER & PHASE: 05170000641 CONTRACT No.: 05-1J1304
DISREGARD PRINTS BEARING EARLIER REVISION DATES
REVISION DATES 04-05-18
SHEET 2 OF 41

Bridge Design Details 3.4 June 2025

Structure Plans

Do NOT use more than one GENERAL PLAN.

Large structures, viaducts, retaining walls, and interchanges too long to fit on a single GENERAL PLAN, shall be drawn using STRUCTURE PLAN sheet(s). In this case, the entire structure, bridge, or retaining wall should be shown on one GENERAL PLAN using a small scale (e.g., 1" = 200'). The alignment and other details that are typically shown on the GENERAL PLAN will instead be provided on STRUCTURE PLAN sheet(s) using a 1" = 20' scale. Use as many STRUCTURE PLAN sheet(s) as necessary at this scale.

STRUCTURE PLAN sheet(s) should use a structure detailing border and immediately follow the GENERAL PLAN or INDEX TO PLANS sheet. Refer to Attachments 3A.C.1 and 3A.C.2.

Retaining Walls

STRUCTURE PLAN sheet(s) are typically included in retaining wall plans to show additional information, such as footing layouts, design heights, and other details not shown on the GENERAL PLAN. PLAN views for Soldier Pile Walls and standard retaining walls on spread footings are not required. On STRUCTURE PLAN sheet(s), both the ELEVATION and PLAN views should be included at equal scales; the preferred scale for both is 1" = 10'.

Show standard plan bubble for Structure Excavation and Backfill Limits or a reference note (e.g., NOTE: For excavation and backfill limits, see Standard Plan A62B.)

Refer to Attachments 3A.C.3 through Attachment 3A.C.7 for examples of typical retaining wall STRUCTURE PLAN sheet(s):

- Attachment 3A.C.3 - Modified Standard Retaining Walls (Types 1, 5, 6 or 7)
- Attachment 3A.C.4 - Modified Standard Retaining Walls (Types 1SW, 5SW or 7SW)
- Attachment 3A.C.5 - Soldier Pile, Tangent Pile or Secant Pile Walls
- Attachment 3A.C.6 - Soil Nail Walls
- Attachment 3A.C.7 - Ground Anchor Walls

Figure 3A.C.1 Structure Plan Detailing Example 1

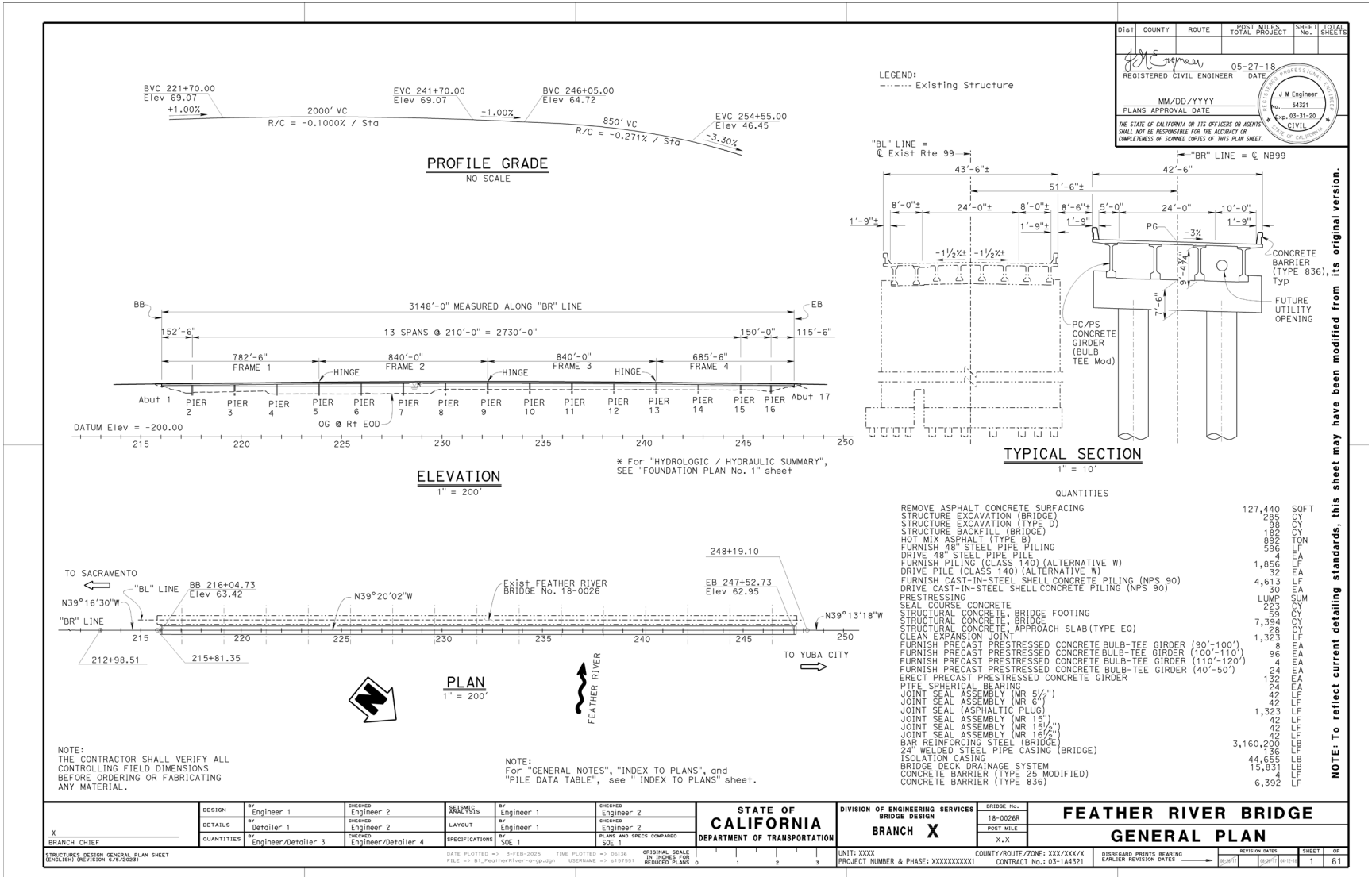


Figure 3A.C.2 Structure Plan Detailing Example 2

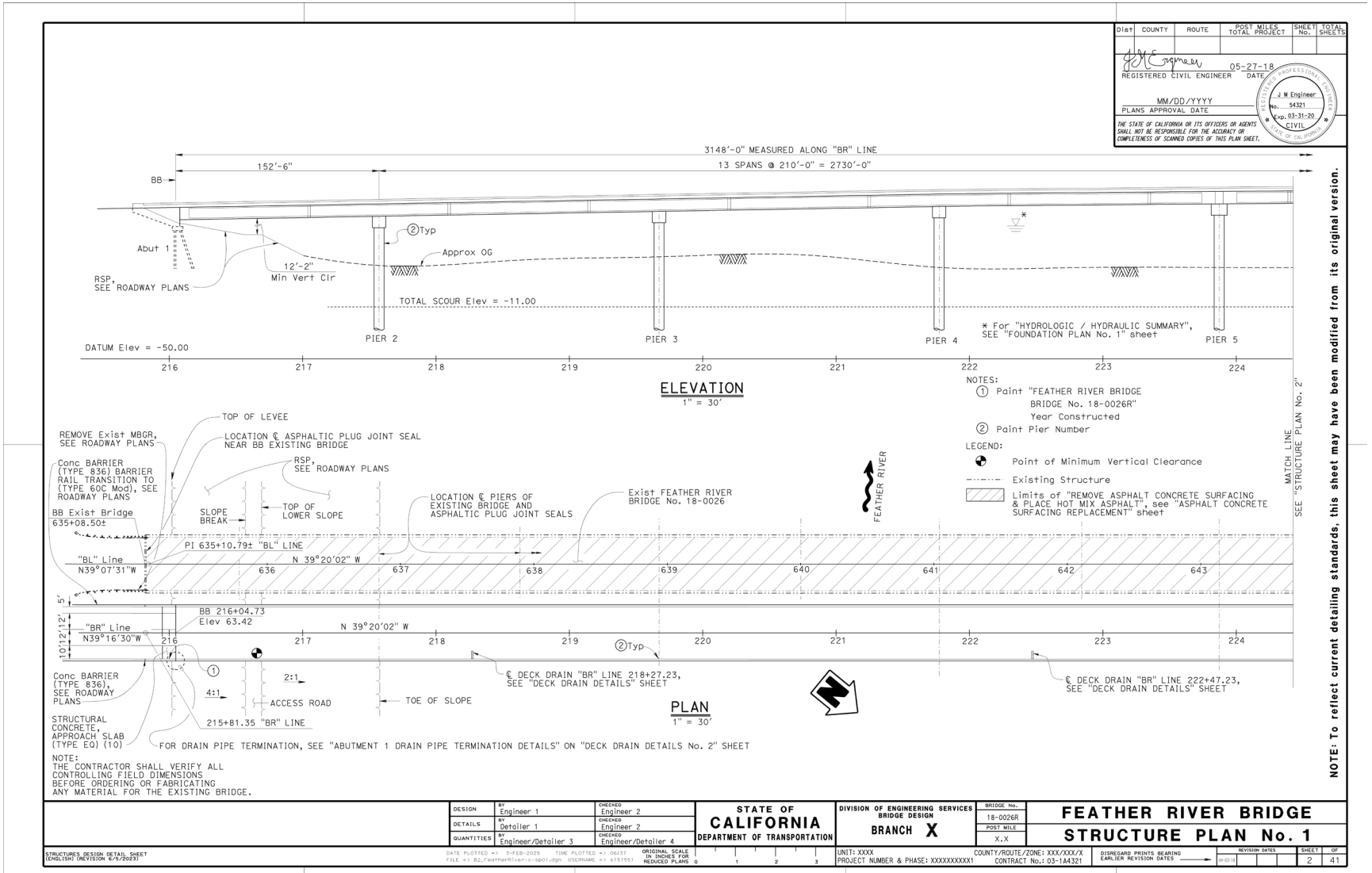


Figure 3A.C.3 Modified Standard Retaining Walls (Types 1, 5, 6 or 7) Detailing Example

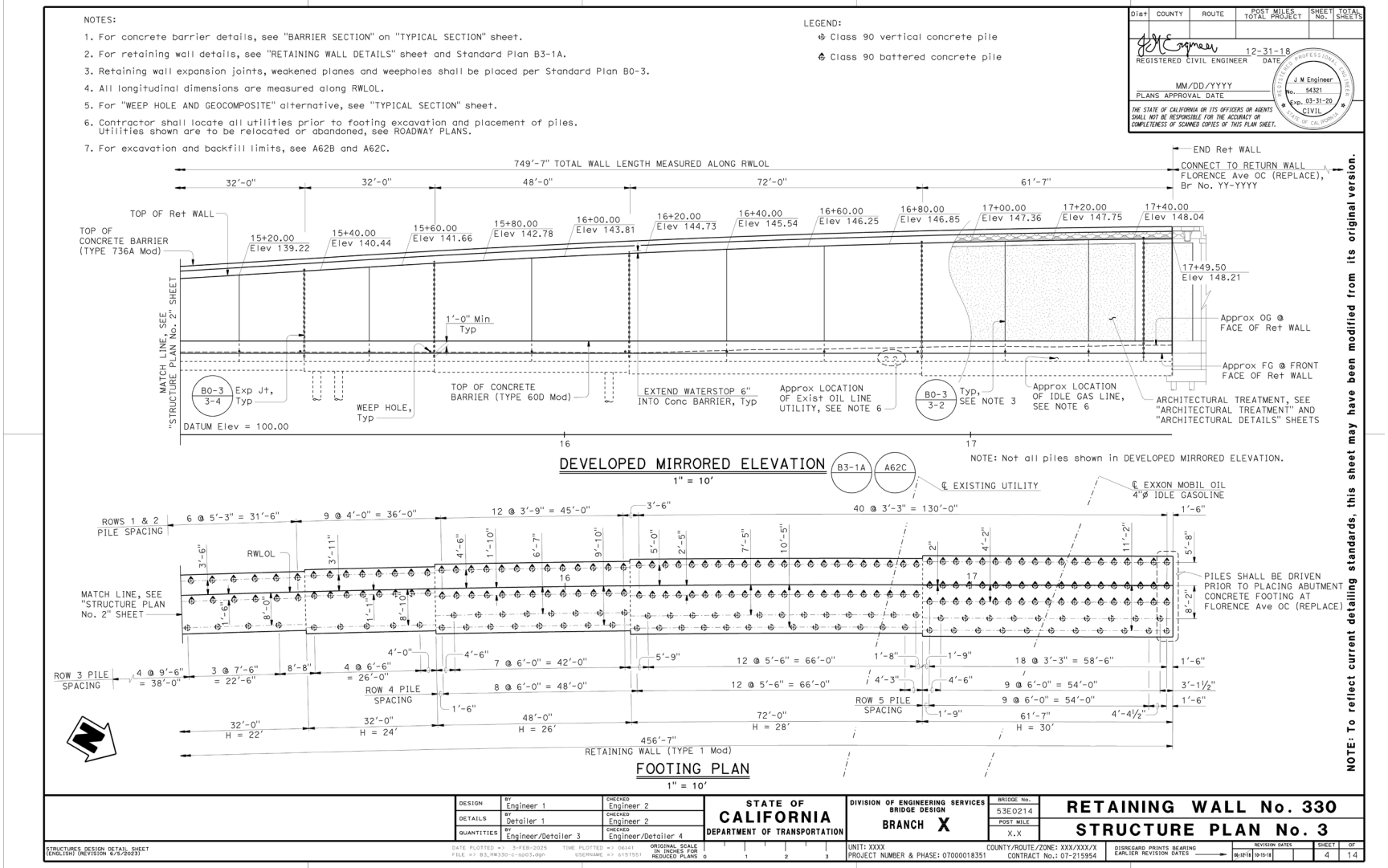


Figure 3A.C.4 Modified Standard Retaining Walls (Types 1SW, 5SW or 7SW) Detailing Example

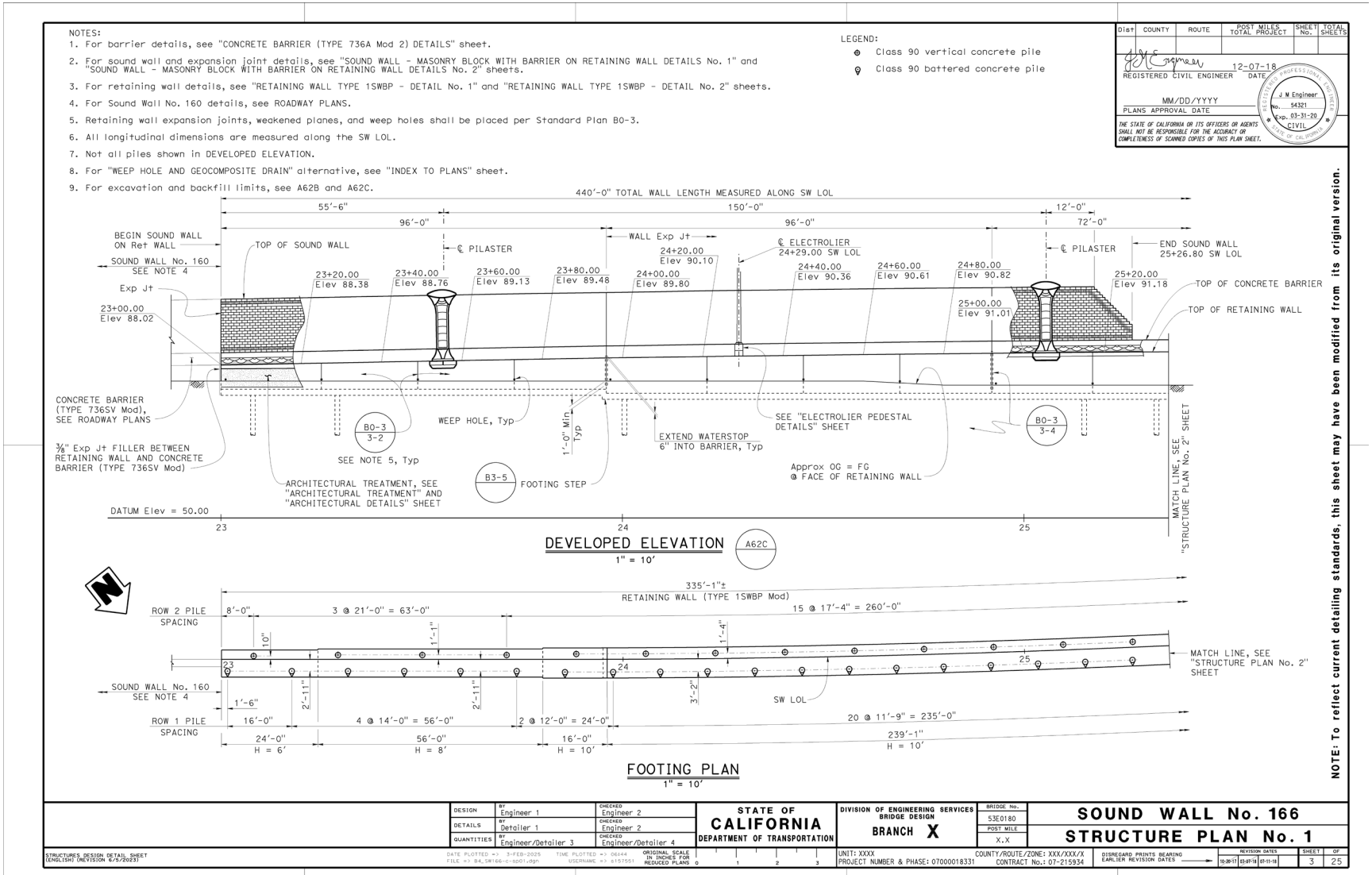


Figure 3A.C.5 Soldier Pile, Tangent Pile or Secant Walls Detailing Example

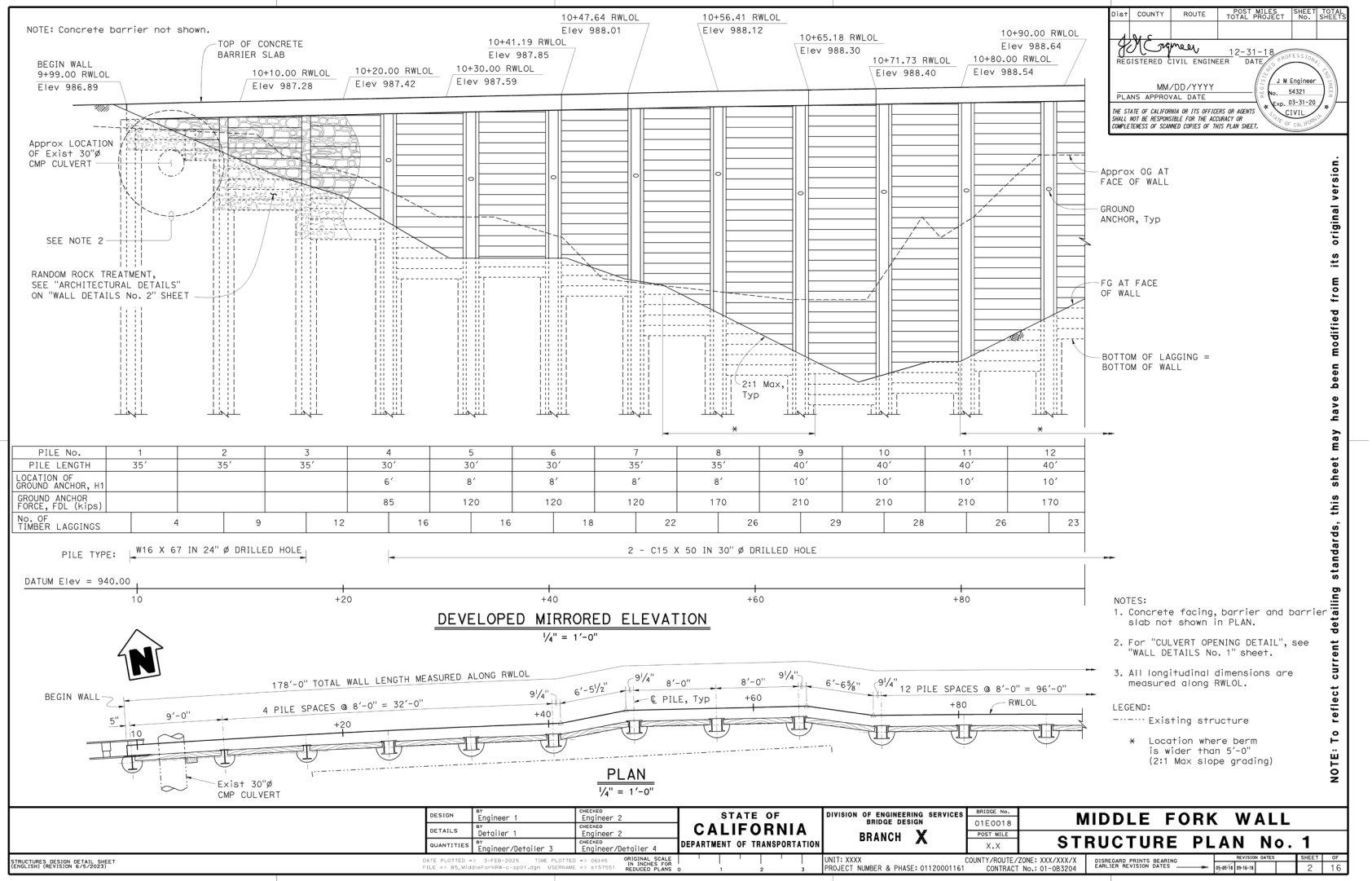


Figure 3A.C.6 Soil Nail Wall Detailing Example

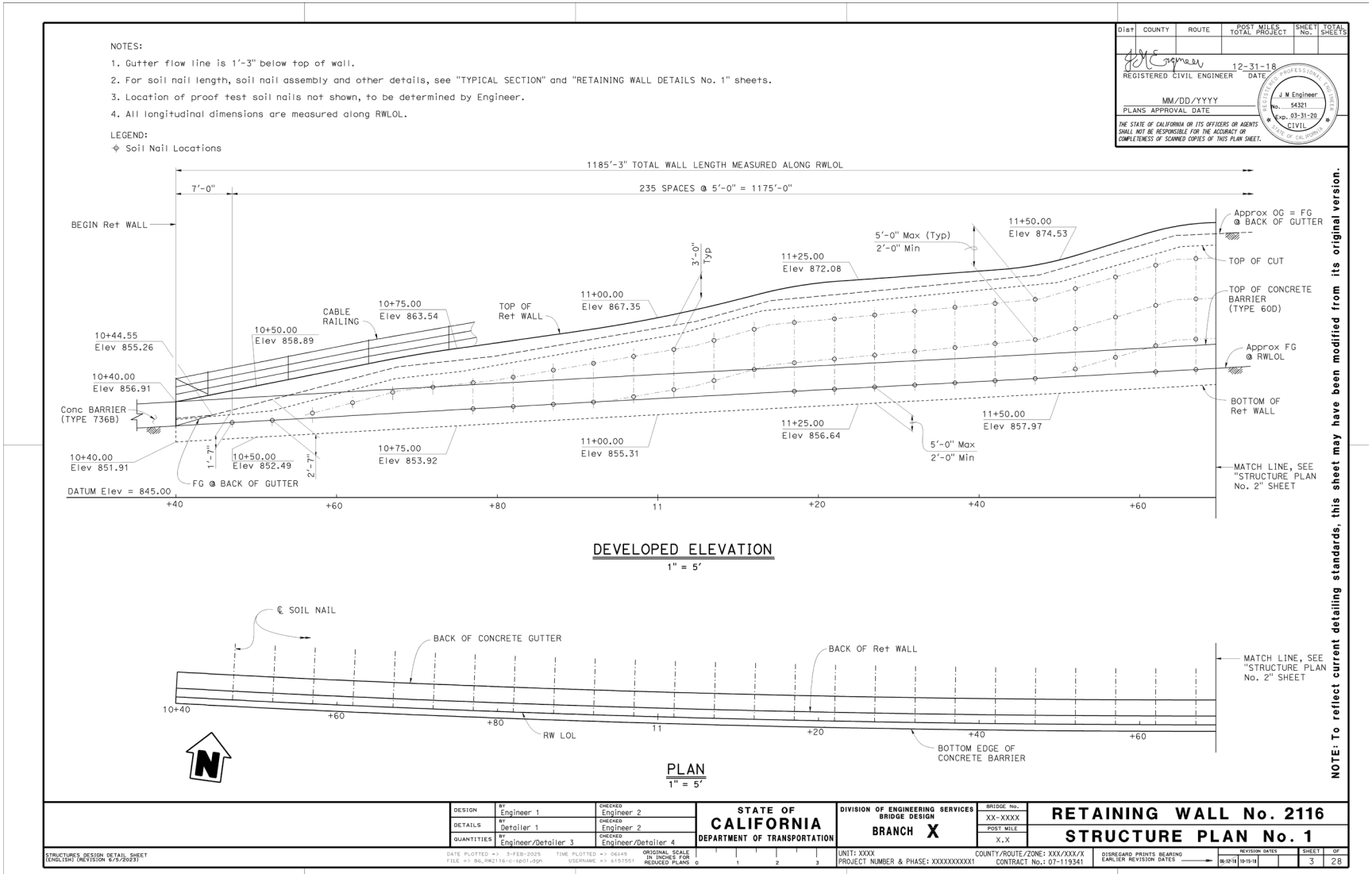
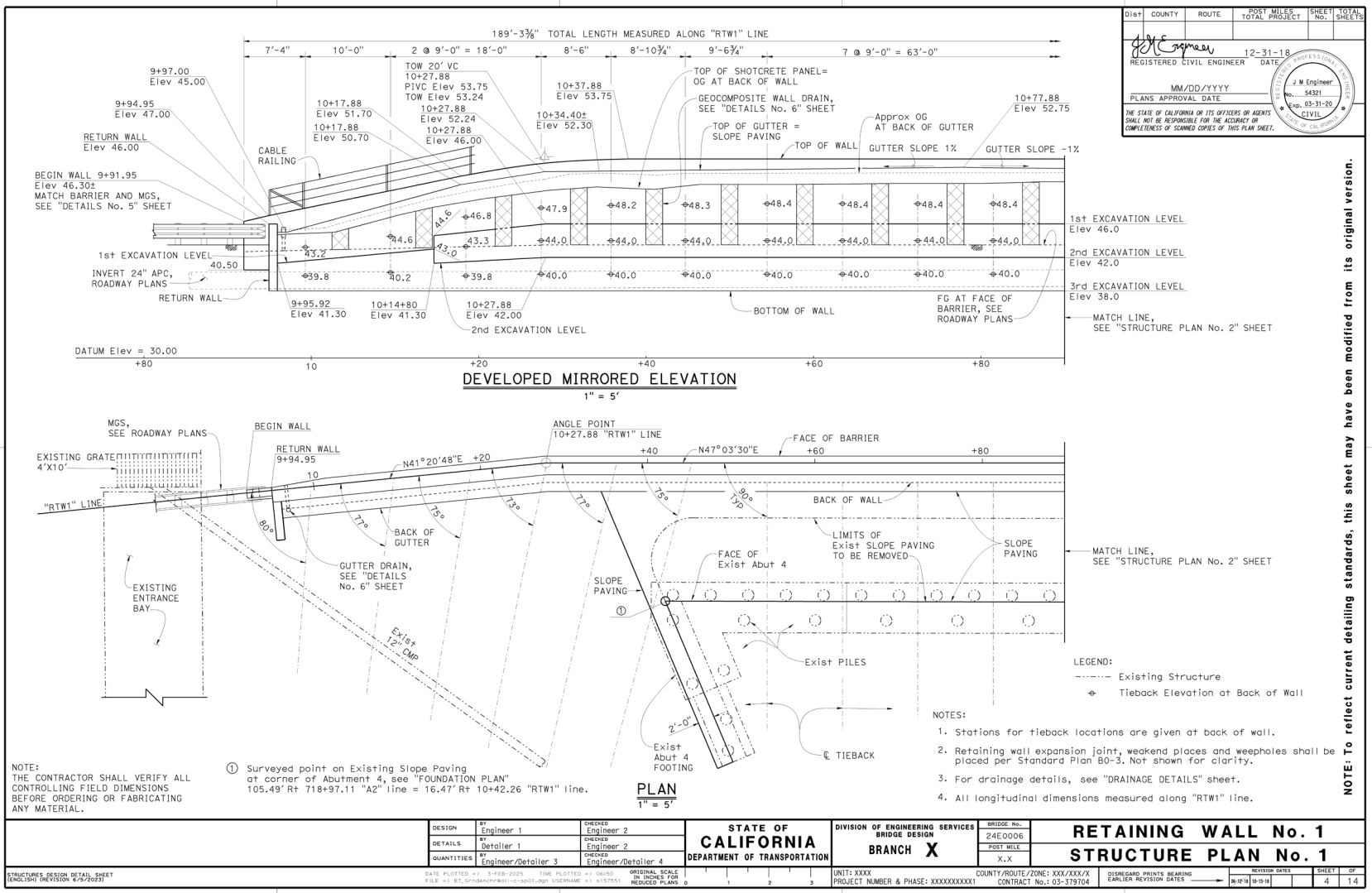


Figure 3A.C.7 Ground Anchor Wall Detailing Example

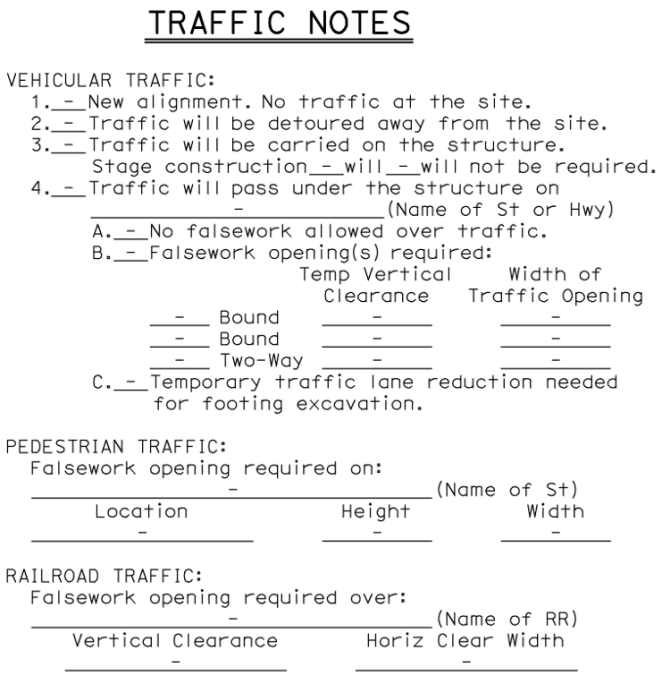


Bridge Design Details 3.5 June 2025

Falsework Requirements

To ensure that traffic handling is given proper consideration in the early design and planning stages, it is necessary to identify traffic handling and falsework assumptions as early as possible.

This information is described by placing the falsework requirements and traffic notes decal (shown below) on the GENERAL PLAN sheet before Type Selection and GENERAL PLAN Distribution milestone. Remove the decal before the UNCHECKED DETAILS milestone. Put an "X" next to all applicable blanks and remove the "-" from all others.


TRAFFIC NOTES

VEHICULAR TRAFFIC:
1. - New alignment. No traffic at the site.
2. - Traffic will be detoured away from the site.
3. - Traffic will be carried on the structure.
Stage construction - will - will not be required.
4. - Traffic will pass under the structure on
_____ - _____ (Name of St or Hwy)
A. - No falsework allowed over traffic.
B. - Falsework opening(s) required:

		Temp Vertical Clearance	Width of Traffic Opening
-	Bound	-	-
-	Bound	-	-
-	Two-Way	-	-

C. - Temporary traffic lane reduction needed for footing excavation.

PEDESTRIAN TRAFFIC:
Falsework opening required on:
_____ - _____ (Name of St)

Location	Height	Width
-	-	-

RAILROAD TRAFFIC:
Falsework opening required over:
_____ - _____ (Name of RR)

Vertical Clearance	Horiz Clear Width
-	-

Figure 3.5.1 Falsework Requirements and Traffic Notes Decal

For more information regarding falsework openings, see *Highway Design Manual* and *Bridge Design Aids*: 10-3 Clearance at Structures.

If traffic requirements are not clearly indicated in the Bridge Site Submittal, the Structure Project Engineer should contact the District Project Engineer to obtain clarification on assumptions before Type Selection.

Bridge Design Details 3.30 June 2025

Structure Identification

Prior to Type Selection, the Bridge Design Branch requests a bridge identification number from the Structures Maintenance and Investigations (SM&I) unit. This number will be used on all Structure Plans, reports, and other identifying information.

The structure name, bridge number, and year constructed shall be painted on all new structures and widenings. This bridge identification information should be in a place visible to traffic from the roadway at both the upper and lower levels of traffic. At the upper level, it shall be painted on the bridge barrier near the paving notch to the right of approaching traffic on both ends of the structure. At the lower level, if required, it shall be painted on a column or wingwall to the right of approaching traffic.

Bridge supports shall be numbered to follow the direction of increasing stations along a route; stationing direction and other information is typically provided by the District.

Exceptions:

- For structures with no columns adjacent to the roadway, the bridge name, number and year constructed shall be painted on the abutment wingwall or on a column in the center of the roadway to the left of traffic.
- On "long" structures over 300 feet long or consisting of five or more spans, each bent, or pier, shall be identified for maintenance personnel, both underneath and on the barrier along the bridge at each support. The support identification numbers should be the same as those used in the contract plans.

  Examples: BENT 2R, PIER 15L, etc.
- It is very common for structures to have a roadway "Mile Post" sign located at the bridge, retaining wall or culvert. These details are typically shown in the Roadway Plans and may include the bridge name, number, and post mile.
- For structures with long adjacent retaining walls or approaches where metal beam bridge railings extend well beyond the structure, the structure identification shall be painted on the barrier's concrete end block. If the retaining wall is long enough, the Roadway Plans may also indicate a roadway “Mile Post” sign near the paving notch of the bridge or structure that also includes the structure identification information.

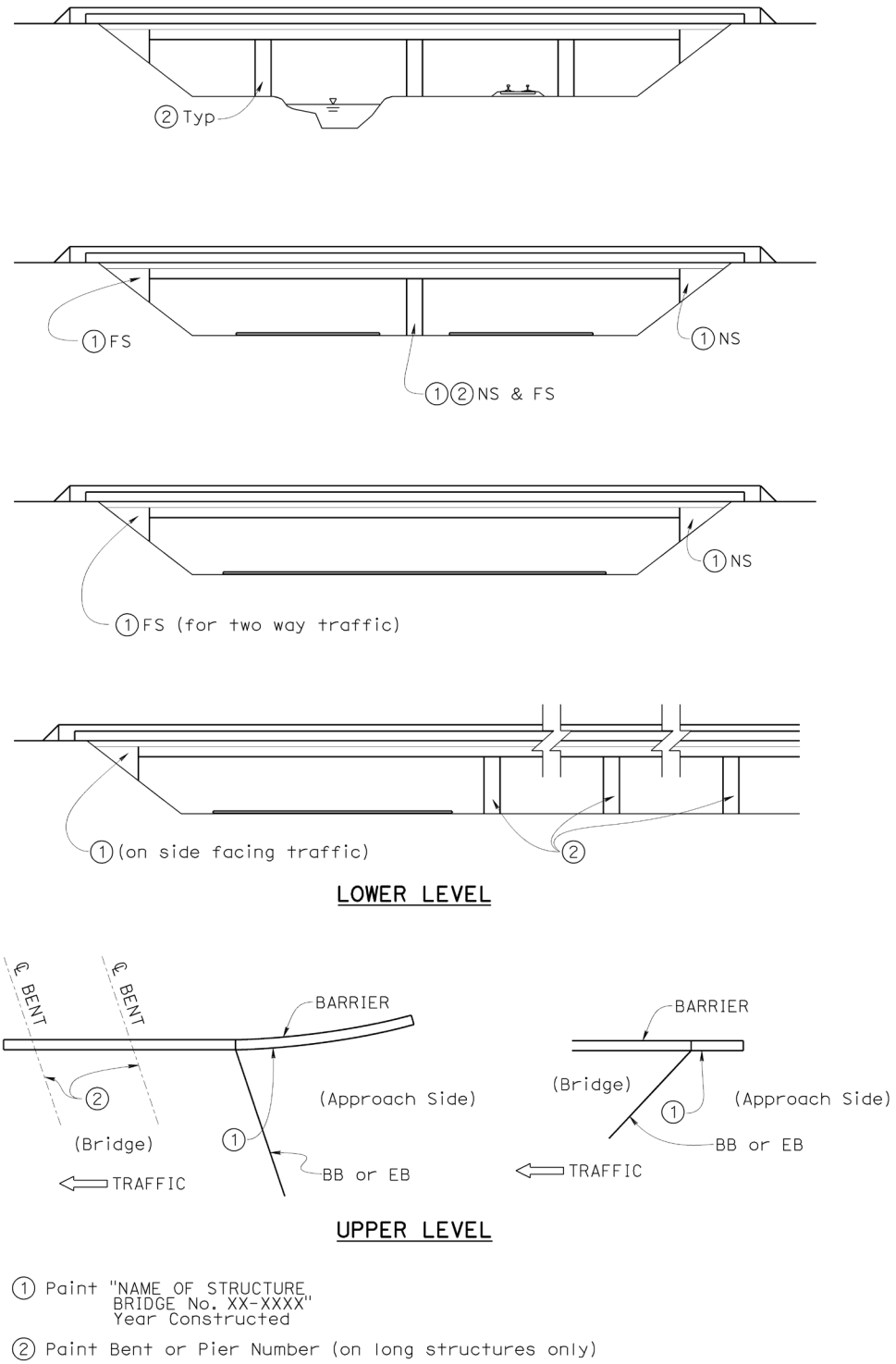


Figure 3.30.1 Structure Identification