ADDENDUM / ENVIRONMENTAL REEVALUATION

Dist.-Co.-Rte.	P.M. / P.M.	E.A. / Project No.
07-LA-001/ 07-VEN-001	LA PM 37.6/62.86 VEN PM 0.0/0.92	07-31350/ E-FIS 0715000090

State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek | Project Addendum/Environmental Reevaluation to the Previously Approved Mitigated Negative Declaration (MND)/Finding of No Significant Impact (FONSI)

19 November 2022

1. PROJECT PERSONNEL

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2. ABSTRACT

The purpose of this Addendum/Reevaluation is to address design changes to the State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek Project since the MND/FONSI was approved March 19, 2019 (SCH No. 2018111004). This Addendum/Reevaluation will discuss changes in the scope of work of the aforementioned project [addition of a pedestrian undercrossing structure at Project Location No. 10 (Solstice Canyon Creek)] and capture any updates to environmental commitments as a result of related environmental reevaluations.

3. REGULATORY MANDATE

This Environmental Addendum/Reevaluation will identify project changes and reexamine topical categories found in the previous Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI) that are relevant to the addition of a pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek). The relevant/identified topical categories analyzed and discussed in the Addendum/Reevaluation are Biology, Cultural/Archaeological Resources, Hazardous Waste, Geology, Hydraulics, and Noise, and this Environmental Addendum/Reevaluation will ascertain if there are any changes that may affect the environmental setting or any related regulatory changes.

Under NEPA, an Environmental Reevaluation (ER) is a reconsideration of the adequacy or validity of a Categorical Exclusion (CE) determination, a Finding of No Significant Impact (FONSI), or an Environmental Impact Statement (EIS). The purpose is to assess whether any factors would affect the validity of the CE determination or FONSI/EIS environmental document.

An addendum serves a similar purpose under CEQA. In accordance with Section 15164 of the CEQA guidelines, the Lead Agency or Responsible Agency must prepare an addendum to a previously certified Initial Study (IS) if some changes or additions are necessary.

An ER considers such factors as whether pursuant to 23 CFR 771.129:

- There have been changes in the project design or its surroundings and impacts
- Any new right-of-way issues have been identified
- There is new information in laws or regulations that apply to the project

4. EXISTING CONDITIONS

State Route 1 (SR-1), or Pacific Coast Highway (SR-1/PCH), is a major north-south state highway that runs along most of the California-Pacific coastline and originates at Interstate 5 (I-5) near Dana Point in Orange County, with the most northerly terminus at U.S. Highway 101 (US-101) near Leggett in Mendocino County. Through Los Angeles and Ventura Counties, SR-1/PCH serves the City of Long Beach on the south, and traverses the Los Angeles Harbor Region, South Bay Cities, Los Angeles International Airport, Venice/Santa Monica (intermittently as Lincoln Boulevard), and Pacific Palisades/Malibu as it approaches the Ventura County line and Point Mugu/Oxnard at the north.

Within project limits, the SR-1/PCH highway facility lays between the Pacific coastline and the Santa Monica Mountains, which are roughly 45 miles long and form an east-west range of low mountains along the coast from the City of Los Angeles to the Oxnard Plane. They are particularly characterized by long, south-draining canyons on their south flank, and north-draining canyons to U.S. Route 101 on their north flank. State Route 27 (SR-27/Topanga Canyon Boulevard), State Route 23 (SR-23), Malibu Canyon Road, and Kanan Dume Road are the main north-south passes through the Santa Monica Mountains between U.S. 101 and SR-1/PCH within project limits. The SR-1/PCH highway facility provides interregional, recreational, and local commuter service through a semi-urban, partly rural corridor, and consists of four lanes (two in each direction) within the proposed project limits. From Santa Monica, SR-1/PCH curves west through the Pacific Palisades neighborhood of Los Angeles before becoming Malibu's main thoroughfare to the Ventura County Line. The following table captures the scope of work for the proposed project as outlined in a previous Environmental Reevaluation/Revalidation approved August 21, 2021 under the same SCH Number for the reduction in the original scope of work (removal of proposed work at Project Locations No. 7-9 and 11/12).

Table 1. Proposed Project Scope of Work as of August 21, 2021

Project Location No.	Post Mile	Activity
1	LA 37.67	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
2	LA 39.08	Replace existing pipe with 24" RCP
3	LA 40.16	Replace 36" CMP
4	LA 40.18	Install culvert barrel lining (CIP) in upstream section of pipe, replace in-kind 24" RCP middle section of downstream pipe using Cut-and-Cover method, install culvert barrel lining downstream (CIP) section of pipe
5	LA 40.23	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
6	LA 40.24	Replace 36" RCP and 18" CMP sections
10	LA 50.36	Replace bridge/culvert with new bridge with an underlying natural slope creek bottom
13	LA 61.29	Replace 30" RCP
14	LA 61.35	Replace 24" RCP
15	LA 61.68	Replace 24" RCP
16	LA 62.51	Replace 24" RCP on upstream section, joint seal manhole
17	LA 62.55	Install culvert barrel lining (CIP), remove debris and clear manhole, and replace 18" CMP on downstream section
18	VEN 0.67	Install culvert barrel lining (CIP), replace lid/grate for upstream drop inlet
19	VEN 0.92	Install culvert barrel lining (CIP)

Figure 1a Proposed Project Location and Vicinity

Figure 1b Locations of Construction | Western Segment – Locations No. 1-6

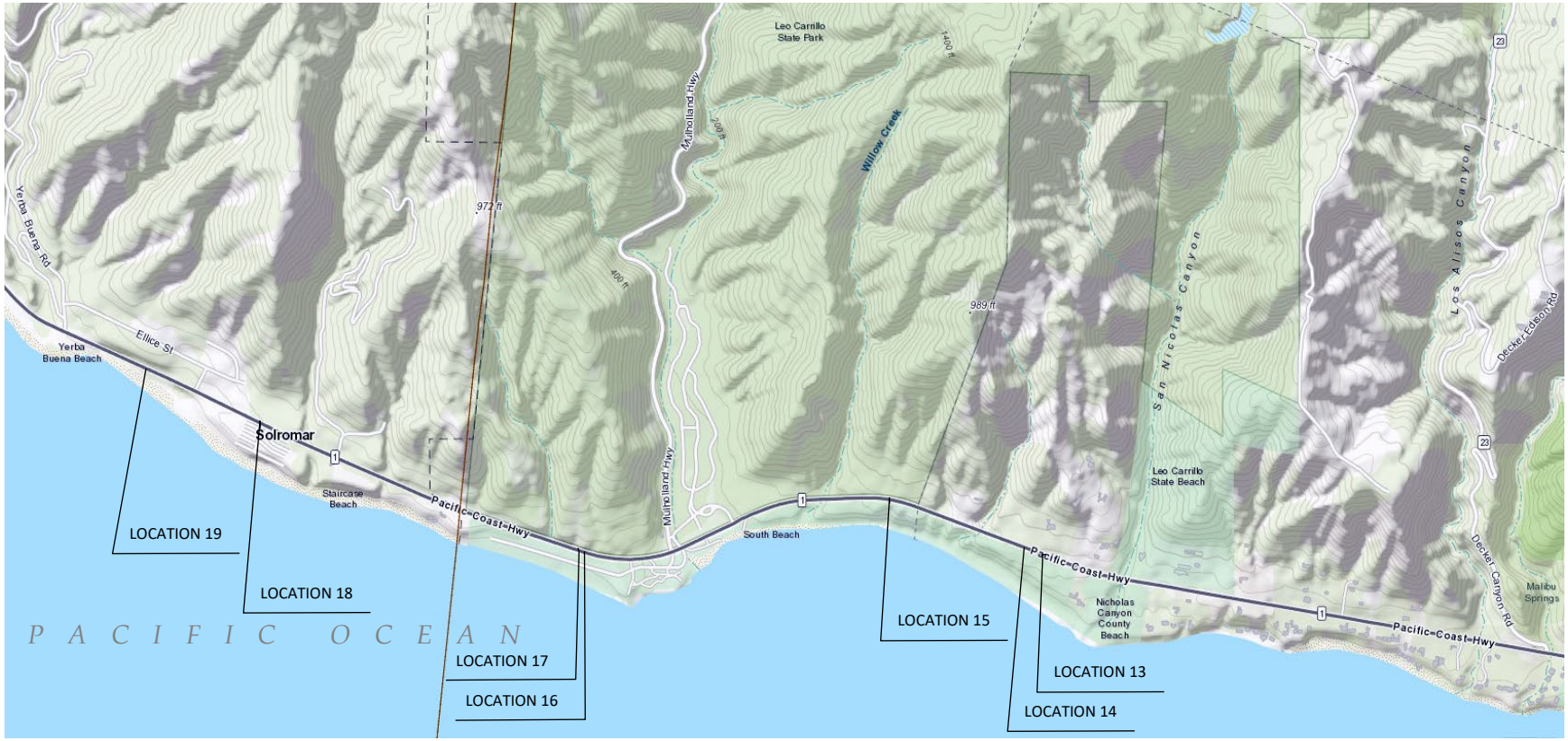
Location No.	Post Mile	Activity
1	LA 37.67	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
2	LA 39.08	Replace existing pipe with 24” RCP
3	LA 40.16	Replace 36” CMP
4	LA 40.18	Install culvert barrel lining (CIP) in upstream section of pipe, replace in-kind 24” RCP middle section of downstream pipe using Cut-and-Cover method, install culvert barrel lining downstream (CIP) section of pipe
5	LA 40.23	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
6	LA 40.24	Replace 36” RCP and 18” CMP sections

CMP = Corrugated Metal Pipe CSP = Corrugated Steel Pipe RCP = Reinforced Concrete Pipe CIP = Cured-In-Place pipe lining

Figure 1c Locations of Construction | Central Segment – Location No. 10

Location No.	Post Mile	Activity
10	LA 50.36	Replace bridge/culvert with new bridge with an underlying natural slope creek bottom

Figure 1d Locations of Construction | Eastern Segment – Locations No. 13-19



Location No.	Post Mile	Activity
13	LA 61.29	Replace 30" RCP
14	LA 61.35	Replace 24" RCP
15	LA 61.68	Replace 24" RCP
16	LA 62.51	Replace 24" RCP on upstream section, joint seal manhole
17	LA 62.55	Install culvert barrel lining (CIP), remove debris and clear manhole, and replace 18" CMP on downstream section
18	VEN 0.67	Install culvert barrel lining (CIP), replace lid/grate for upstream drop inlet
19	VEN 0.92	Install culvert barrel lining (CIP)

CMP = Corrugated Metal Pipe CSP = Corrugated Steel Pipe RCP = Reinforced Concrete Pipe CIP = Cured-In-Place pipe lining

5. PREVIOUS ENVIRONMENTAL DOCUMENTATION

Initial Study/Environmental Assessment (October 6, 2018) with Mitigated Negative Declaration/Finding of No Significant Impact (March 25, 2019). The Initial Study/Environmental Assessment (IS/EA) for the State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek project was approved by Caltrans on October 26, 2018, and the Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI) was approved by Caltrans, as assigned by the Federal Highway Administration (FHWA) on March 25, 1019, SCH No. 2018111004. The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by the State of California Department of Transportation under its assumption of responsibility pursuant to 23 U.S.C. 327.

Revalidation for Planned Relocation of Southern California Edison Utilities (August 24, 2021). Continued development of design at 60% PS&E presented minor changes in design at Project Location No. 10 (Solstice Canyon Creek as they pertain to the MND/FONSI for the State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek project as approved March 25, 2019 (SCH No. 2018111004). Construction of the proposed bridge structure at Project Location No. 10 (Solstice Canyon Creek) was found to require relocation of Southern California Edison utilities, and the changes were captured in a revalidation approved August 24, 2021. Because the proposed utility relocation did not pose any potential impacts to environmentally sensitive areas and the improvements would occur completely within the prism of the roadway and previously studied area, no updates to environmental studies were warranted.

Revalidation for Reduction in Scope of Work (March 29, 2022). An additional revalidation was completed and approved on March 29, 2022, to capture a reduction in the scope of work (removal of improvements at Project Locations Nos. 7-9 and 11/12). Inclement storm events prompted urgent need of drainage rehabilitation at Project Locations Nos. 7-9 and 11/12 that were completed through Director's Order/Emergency response under separate project EAs, which ultimately prompted the removal of improvements at these locations from the proposed project scope of work. The total number of proposed project locations was thus reduced from nineteen (19) locations to fourteen (14), and the project locations removed from the scope of work are highlighted in the following table.

Table 2. Proposed Project Locations Removed from Scope of Work as of March 29, 2022

Location No.	Post Mile	Activity
1	LA 37.67	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
2	LA 39.08	Replace existing pipe with 24" RCP
3	LA 40.16	Replace 36" CMP
4	LA 40.18	Install culvert barrel lining (CIP) in upstream section of pipe, replace in-kind 24" RCP middle section of downstream pipe using Cut-and-Cover method, install culvert barrel lining downstream (CIP) section of pipe
5	LA 40.23	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
6	LA 40.24	Replace 36" RCP and 18" CMP sections
7	**LA 50.05**	**Replace 18" RCP**
8	**LA 50.08**	**Replace 24" CMP**
9	**LA 50.28**	**Install culvert barrel lining (CIP), repair joint seals at headwall and pipe, regrade channel and remove debris and vegetation at outlet**
10	LA 50.36	Replace bridge/culvert with new bridge with an underlying natural slope creek bottom
11	**LA 50.39**	**Remove debris from drainage pipe, replace cured-in place pipe lining**
12	**LA 50.42**	**Install culvert barrel lining (CIP) in upstream section of existing pipe, replace 20" RCP on downstream end**
13	LA 61.29	Replace 30" RCP
14	LA 61.35	Replace 24" RCP
15	LA 61.68	Replace 24" RCP
16	LA 62.51	Replace 24" RCP on upstream section, joint seal manhole
17	LA 62.55	Install culvert barrel lining (CIP), remove debris and clear manhole, and replace 18" CMP on downstream section
18	VEN 0.67	Install culvert barrel lining (CIP), replace lid/grate for upstream drop inlet
19	VEN 0.92	Install culvert barrel lining (CIP)

Project location numbers were not changed to ensure consistency, and the current scope of work and revised list of fourteen (14) project locations is summarized in the following table.

Table 3. Revised Scope of Work/List of Project Locations as of March 29, 2022

Location No.	Post Mile	Activity
1	LA 37.67	Remove debris from corrugated steel drainage pipe, replace cured-in place pipe lining
2	LA 39.08	Replace existing pipe with 24" RCP
3	LA 40.16	Replace 36" CMP
4	LA 40.18	Install culvert barrel lining (CIP) in upstream section of pipe, replace in-kind 24" RCP middle section of downstream pipe using Cut-and-Cover method, install culvert barrel lining downstream (CIP) section of pipe
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6	LA 40.24	Replace 36" RCP and 18" CMP sections
10	LA 50.36	Replace bridge/culvert with new bridge with an underlying natural slope creek bottom
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15	LA 61.68	Replace 24" RCP
16	LA 62.51	Replace 24" RCP on upstream section, joint seal manhole
17	LA 62.55	Install culvert barrel lining (CIP), remove debris and clear manhole, and replace 18" CMP on downstream section
18	VEN 0.67	Install culvert barrel lining (CIP), replace lid/grate for upstream drop inlet
19	VEN 0.92	Install culvert barrel lining (CIP)

The reduction in scope of work and number of project locations presented no change to the environmental impacts of the project, therefore, no updates to environmental studies were warranted at that time. Concurrently, a preliminary proposal for the addition of a pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek) was presented to the Division of Environmental Planning, though design on the proposed structure was not yet available for review/evaluation. The revalidation documented this preliminary proposal nevertheless and outlined the scope of accompanying environmental reevaluation that would be required when design for the proposed pedestrian undercrossing was available.

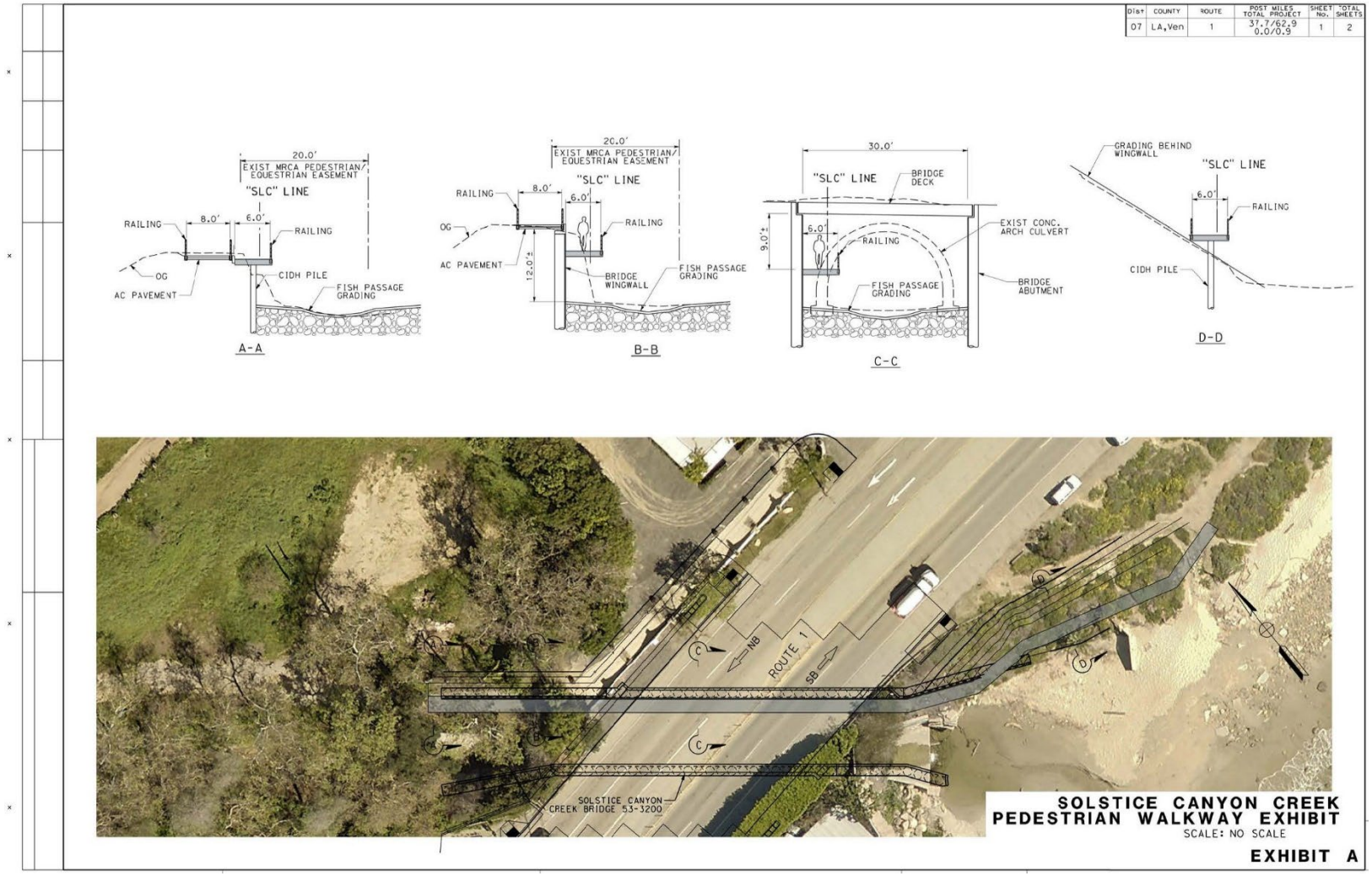
6. CHANGES IN THE PROJECT SETTING

There are no substantial changes in the project environmental setting that would affect the previous analyses prepared for the MND/FONSI approved March 25, 2019, nor the previous environmental revalidations approved on August 24, 2021, and March 29, 2022.

7. PROJECT CHANGES AND EFFECTS

Addition of Pedestrian Undercrossing at Project Location No. 10 (Solstice Canyon Creek). In May of 2021, Caltrans Design began preliminary work on plans for a pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek) in response to a request for public beach access from property owners adjacent to the project area. The property owners of the Calamigos Beach Club Restaurant at 26025 Pacific Coast Highway, Malibu, CA 90265 (which is part of the Calamigos Guest Ranch located at 327 Latigo Canyon Road, Malibu, CA 90265), requested that Caltrans consider providing walkway access underneath the newly proposed bridge structure at Solstice Canyon Creek from the restaurant to the beach as part of the proposed undertaking. While the intention of the request was to provide an undercrossing walkway to allow restaurant patrons access to the beach without having to cross the Pacific Coast Highway (PCH) roadway, its use was expanded to allow general public access (not specific to the adjacent property), which is more consistent with City of Malibu and California Coastal Commission goals of providing greater beach access to the general public. The following Figure 2 presents the general design of the proposed pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek).

Figure 2. Proposed Pedestrian Undercrossing at Project Location No. 10 (Solstice Canyon Creek)



By July 2022, final design, and accompanying hydraulic analysis, and grading plans were achieved and plans/layouts specific to this proposed project location are appended to this addendum/reevaluation as Attachment A. In general, PCH runs north-to-south, but in the area of Project Location No. 10 (Solstice Canyon Creek), the roadway traverses the coastline in an east-to-west direction. The proposed pedestrian undercrossing is designed as a cantilevered concrete walkway so as not to impede hydraulic flow of the creek and would be attached to the eastern wing wall structure, perpendicular and beneath the newly proposed bridge.

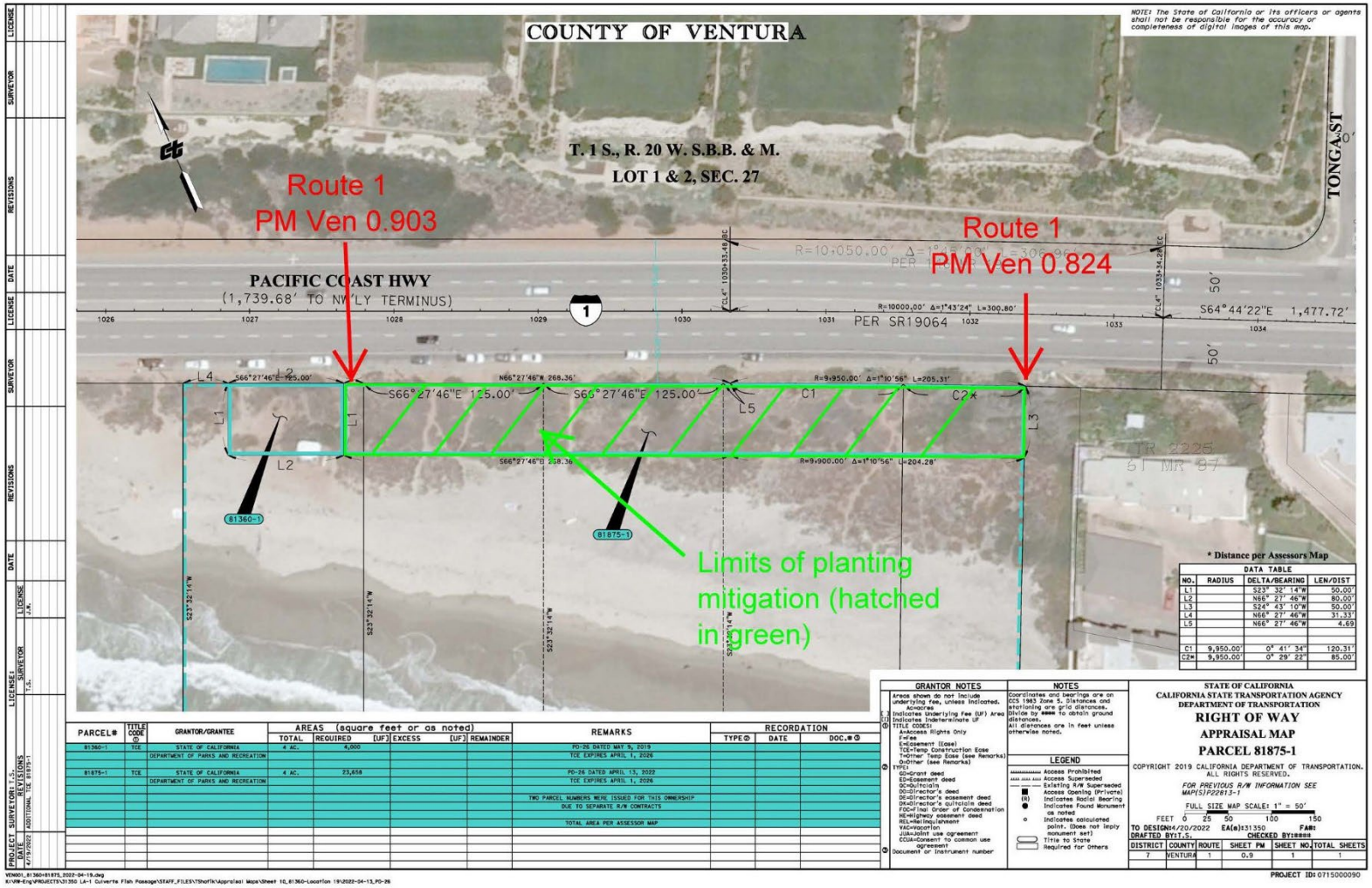
Proposed pedestrian access to the undercrossing on the north side of the proposed bridge structure would originate at the roadway and be located approximately 70 feet north-west of the existing Calamigos Restaurant driveway. Southern access would start at the flat area on the embankment of the roadway just southeast of the proposed bridge structure. The walkway would be constructed parallel to the embankment [supported on evenly spaced Cast-In-Drilled-Hole (CIDH) piles] before connecting with the southern end of the cantilevered pedestrian undercrossing structure. In a review of the proposed pedestrian undercrossing plans/layouts, the following additional elements were implemented:

- To comply with ADA standards, the proposed pedestrian undercrossing structure would have a minimum width of 6 feet and a maximum slope grade of 8.33%.
- The proposed pedestrian undercrossing structure would be constructed above the 50-year flood zone line to ensure flood events do not cause damage to the facility.
- The proposed pedestrian undercrossing structure would be attached via cantilever method to the eastern wingwall and bridge abutments. Along the bridge structure, the walkway would be constructed approximately 10 feet above the channel bottom. Cable railings and lighting would be installed for pedestrian safety.

Final Proposed Creek Grading and Water Diversion Plan at Project Location No. 10 (Solstice Canyon Creek). In addition to the structural excavation work previously evaluated at Project Location No. 10 (Solstice Canyon Creek), grading plans for fish passage within Solstice Canyon Creek were finalized within the footprint of the proposed new bridge structure and the beachside area just south of the project area. Final proposed grading plans include construction of an engineered stream bed along the creek that would be composed of a 6-inch-thick top sand layer and an 8-inch-thick Class II Rock Slope Protection (RSP) bottom layer. The graded limits would extend approximately 50 feet downstream of the southern proposed bridge structure limits, and 125 feet upstream from the northern proposed bridge structure limits. In order to protect upstream embankments against erosion, Class XI RSP would be installed to extend approximately 40 feet upstream of the proposed bridge structure wingwalls. During construction, a water diversion plan would be implemented to temporarily redirect any flow within Solstice Canyon Creek via a pipe bypass method. During redirection of creek flow, the pipe on the southern portion would be placed on top of plywood sheets to minimize disturbance of the sand surface on the beach side and within an Environmentally Sensitive Area (ESA) in terms of Archaeology. Full proposed construction details can be referenced in the plans/layouts specific to this proposed project location as appended to this addendum/reevaluation as Attachment A.

Supplemental/Proposed Revegetation at Project Location No. 19 – Biological Mitigation. As part of biological mitigation for the proposed undertaking, a total of 8 acres of revegetation with native plantings is proposed at Project Location No. 19 (VEN PM 0.92). Adjacent parcels 81360-1 and 81875-1 will be granted for these purposes by the State of California – Department of Parks and Recreation, located along PCH/SR-1 between VEN PM 0.903 and 0.824. Planting will be implemented south of the PCH roadway on the beach side and will consist of brush removal (by hand) and the manual excavation of several holes (12-inches-deep) to accommodate 1-gallon size native plantings. The general extent of these parcels is delineated in the following figure.

Figure 3. Proposed Revegetation Area at Project Location No. 19 – Biological Mitigation



8. ENVIRONMENTAL REEVALUATION

Relevant environmental analyses were conducted to evaluation the proposed changes to the project. Environmental reevaluation was limited to the following topics deemed relevant in consideration of the aforementioned scope of work:

- Biology
- Cultural/Archaeological Resources
- Geology
- Hazardous Waste
- Hydrology
- Noise

Technical studies were conducted to determine the type and degree of impacts associated with the aforementioned project changes. These studies are list as follows and are available for review at the Caltrans District 7 Offices, Division of Environmental Planning, located at 100 S. Main Street, Los Angeles, California 90012:

- NES Amendment for the SR-1 Solstice Creek Culvert Retrofit and Bridge Replacement Project, February 23, 2022
- Supplemental Finding of No Adverse Effect without Standard Conditions for the State Route 1 Solstice Creek Fish Passage and Bridge Replacement Project [Focused Studies at Locations 10-12 (LA-001 PM 50.36 to 50.42], August 1, 2022
- Foundation Report for Solstice Canyon Creek Bridge and Pedestrian Walkway, July 18, 2022
- Hazardous Waste Assessment for PS&E Package, September 1, 2022
- Structures Final Hydraulic Report for Solstice Canyon Creek Bridge, February 20, 2021
- Technical Addendum to the Structures Final Hydraulic Report for the Solstice Creek Bridge Replacement Project, March 11, 2021
- Technical Construction Nosie Memorandum for the Pacific Coast Highway Drainage Restoration Project, March 2022

8.1 Biological/Natural Environment

Reference NES Amendment for the SR-1 Solstice Creek Culvert Retrofit and Bridge Replacement Project, February 23, 2022

Wildlife. Reevaluation of impacts to the biological/natural environment showed that only minimal impacts to wildlife species are anticipated, so long as all avoidance and minimization measures are implemented. Potential impacts include disturbance of foraging, roosting, and nesting due to construction activity, temporary loss of habitat, and potential relocation of individuals that are within the construction footprint. Additionally, there will be disturbance from noise, dust, and other construction activity, including de-watering a small amount of Solstice Creek. Many of these locations already have substantial human presence, primarily including typical beach activity and car/truck traffic on SR-1. The sites with the most potential for impacts to wildlife species are Project Location Nos. 10, 13, 14, and 15. These sites have the most potential habitat and/or the least amount of human disturbance. Biological monitors shall be on-site at all times during construction work at these locations and any work that is adjacent to a beach environment.

Updates to Presence of Regional Species and Habitats of Concern. Updated species lists were obtained from the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) system, as well as an updated search of the California Natural Diversity Database (CNDDB). Five new listed species were identified in the updated IPaC/CNDDB lists and are presented in the following table.

Table 4. New Listed Species – Post IPaC/CNDDB Update

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent within Project Site	Rationale
Southern California legless lizard	***Anniella stebbinsi***	SSC	Variety of habitats with moist, sandy, loose soil and sparse vegetation.	Present	General habitat ispresent, however roadway fill or other heavily modified areas are likely to be unappealing to this species as it requires loose soil that it can burrow through and heavy compaction of soil precludes their presence. Pre-construction surveys will be conducted prior to the start of construction activities.
Crotch bumble bee	***Bombus crotchii***	CSE	Generalist foragers in grassland and scrub habitat.	Present	Coastal scrub habitat is present at several project locations.
Quino checkerspot butterfly	***Euphydryas editha quino***	FE	Sunny openings within chaparral and coastal sage shrublands in Riverside and San Diego Counties	Absent	Substantially outside of the species range. Pre-construction surveys will be conducted prior to the start of construction activities.
Nuttall's scrub oak	***Quercus dumosa***	1B.1	Closed cone coniferous forest, chaparral, coastal scrub.	Present	Coastal Scrub habitat is present within the project site. However, no scrub oaks are present within the project footprint or will be affected by the project.
Chaparral ragwort	***Senecio aphanactis***	2B.2	Dry alkaline flats in Chaparral, cismontane woodland, and coastal scrub.	Absent	Alkaline soils not present within the project footprint.

Discussion of Impacts to Biological Resources. Reevaluation of impacts to the biological/natural environment showed that the addition of Rock Slope Protection (RSP) at Project Location No. 10 (Solstice Canyon Creek) present approximately 0.04 acres of impacts to riparian woodlands, to be converted from temporary impacts to permanent impacts. This will require additional off-site mitigation. Proposed mitigation ratios are being increased to 3:1 for impacts to riparian woodlands, and 1.5:1 for all other long-term temporary impacts to native habitats. This is consistent with the Local Coastal Programs (LCPs) and the California Coastal Commission's mitigation requirements for impacts within Environmentally Sensitive Habitat Areas (ESHAs).

With installation of the RSP and the addition of a pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek), it is anticipated that two additional native trees, a heritage coast live oak (*Quercus agrifolia*), and a mature western sycamore tree (*Platanus recemosa*) will require removal. An additional 0.11 acres of impacts to disturbed ruderal vegetation along the roadway support slope (beachside of SR-1) is also anticipated. The following tables summarize revised impacts to Native Trees and Habitat and corresponding mitigation ratios.

Table 5. Revised Native Tree Impacts and Mitigation Ratios

Native Tree Species Impacts	Original Impacts	Revised Impacts	Mitigation Ratio:	Total to be Mitigated
Platanus racemosa (Western sycamore)	2 Total; 1 Heritage, 1 Mature	3 Total; 1 Heritage, 2 Mature, root impacts to a third mature.	10:1	30 Trees.
***Quercus agrifolia* (Coast Live Oak)**	1 Juvenile	2 Total; 1 Heritage and 1 Juvenile	10:1 and 5:1	15
***Populus fremontii* (Cottonwood)**	1 Mature in an ornamental setting.	1 Mature	5:1	5

Table 6. Revised Habitat Impacts and Mitigation Ratios

Habitat Type	Amount of Habitat Present	Proposed Mitigation Ratios
Sycamore Riparian Woodland	Approx. Total: 0.08 Acres Approx. Temp. Impacts: 0.03 Acres Approx. Perm. Impacts: 0.05 Acres	Mitigation Ratio 3:1 Total: 0.30 Acres On-site Restoration: 0.03 Acres Off-site Restoration: 0.27 Acres with MRCA
Unvegetated Estuary Lagoon	Approx. Temp. Impacts: 0.06 Acres. Approx. On-site Creation: 0.02 Acres	Mitigation Ratio: 1.5:1 Total: 0.09 Acres On-site Creation: 0.02 Acres On-site Restoration: 0.06 Acres Off-Site Restoration: 0.01 Acres.
Coastal Scrub Ephemeral Stream Channel	Approx. Temp. 0.13 Acres (WOUS) Approx. Temp. 0.08 Acres CDFW Only Total: Approx. Temp. 0.21 Acres	Mitigation Ratio: 1.5:1 Total: Approx. 0.32 Acres. Approx. 0.21 Acres On-site Approx. 0.11 Acres Off-Site
Coastal Scrub Uplands	Approx. Temp. 0.39 Acres	Mitigation Ratio 1.5:1 Total 0.58 Acres Approx. 0.39 Acres On-Site Approx. 0.19 Acres Off-Site

Creation of Unvegetated Estuary Habitat as a Result of Improvements at Project Location No. 10 (Solstice Canyon Creek). One additional impact that was not documented in the original Natural Environment Study (NES) is the on-site creation of unvegetated estuary habitat as a result of removal of the existing concrete culvert bottom at Project Location No. 10 (Solstice Canyon Creek). This activity will generate excess debris piles at the culvert outlet (to be retained on site) and will create approximately 0.02 acres of unvegetated estuary habitat at the mouth of Solstice Canyon Creek. The following figure presents the extent of this new estuary habitat creation.

Figure 4. Proposed Estuary Creation Footprint at Project Location No. 10 (Solstice Canyon Creek)

Updates to Avoidance, Minimization, and/or Mitigation Measures

- Rock Slope Protection (RSP) within Solstice Canyon Creek shall be vegetated with willow cuttings (*Salix ssp*.) in order to provide some habitat benefits within the armored portion of the creek.
- All re-vegetation shall be done with native species mixes appropriate for the location and known to occur within the project vicinity and local seeds shall be used if feasible to help maintain the genetic integrity of the area.
- All native trees will be mitigated at a 10:1 ratio. If there is not enough space on-site to mitigate the trees, additional off-site mitigation will have to be purchased in order to plant the required trees.

Conclusions and Regulatory Determination. Due to the changes in project scope within Waters of the United States, the following permits will require updating:

- Army Corps Nationwide Permit 404 (Pre-Construction notification)
- Regional Water Quality Control Board 401 Water Quality Certification
- California Department of Fish and Wildlife 1600 Streambed Alteration Agreement

Any additional avoidance, minimization, and or mitigation measures as a result of updates to the aforementioned permits shall be adopted when issued and incorporated into the project's Environmental Commitments Record (ECR) and PS&E package accordingly.

Federal Endangered Species Act Consultation Summary. Under provision of Section 7(a)(2) of the ESA, a federal agency (e.g. FHWA) that permits, licenses, funds, and otherwise authorizes a project activity must consult with the USFWS to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. Caltrans originally initiated Section 7 consultation with USFWS Ventura Office on October 22, 2018 requesting concurrence with Caltrans' determination of **May Affect, Not Likely to Adversely Affect**: California Red-legged Frog (*Rana Draytonii*). The USFWS Concurred in a letter dated November 20, 2018.

Caltrans has determined that the proposed change to the project scope will have no effect on southern Steelhead trout (*Onchorhyncus mykiss*).

Conclusion. In conclusion, the new scope of work will not change the project's overall construction impacts. However, dur to the increased permanent footprint and permanent loss of additional trees, including a heritage coast live oak (*Quercus agrifolia*) and an additional western sycamore (*Platanus racemosa*), additional off-site mitigation is proposed.

As this project currently stands, there is no further need for biological review and this project may proceed. If there should be any additional changes in scope of work, further reevaluation will be required, and the Division of Environmental Planning shall be notified accordingly.

8.2. Cultural Resources

Reference Supplemental Finding of No Adverse Effect without Standard Conditions for the State Route 1 Solstice Creek Fish Passage and Bridge Replacement Project [Focused Studies at Locations 10-12 (LA-001 PM 50.36 to 50.42], August 1, 2022

Revisions to Area of Direct Impact (ADI)/Area of Potential Effects (APE). Based on the changes made to the scope of work and in accordance with Section 106 Programmatic Agreement Stipulation VII.A, the ADI/APE for the proposed project was modified to include the proposed walkway at Project Location No. 10 (Solstice Canyon Creek), which would add 0.072 acres to the originally proposed Area of Direct Impacts (ADI). No changes were made to the ADI/APE for Project Location No. 19 that was originally included as Attachment A of the 2018 HPSR. Changes in scope of work at Project Location No. 10 (Solstice Canyon Creek) and the associated changes in the ADI/APE for Project Locations no. 10, 11, and 12 in the vicinity of Solstice Canyon Creek are reflected in the following figure.

Figure 5. Revised Project ADI/APE Map for Project Locations No. 10, 11, and 12 in the Vicinity of Solstice Canyon Creek

Public Participation and Requirements of Assembly Bill 52 (AB52). The previous Native American consultation parties (listed below) that had previously shown interest in the project were contacted to inform them of the project changes on July 13, 2022.

- Patrick Tumamait -Barbareño/Ventureño Band of Mission Indians
- Mia Lopez, Chairperson - Coastal Band of the Chumash Nation
- Jairo Avila, Tribal Historic and Cultural Preservation Officer - Fernandeño Tataviam Band of Mission Indians
- Beverly Salazar Folkes, Elders Council - Fernandeño Tataviam Band of Mission Indians
- Robert Dorame, Chairperson - Gabrielino Tongva Indians of California Tribal Council

Acknowledgements of the receipt of project changes were received from the following parties on July 14, 2022:

- Mr. Patrick Tumamait
- Ms. Beverly Salazar Folkes
- Ms. Christina Conley-Haddock on behalf of Mr. Robert Dorame

Supplemental Finding of No Adverse Effect (FNAE) for Project Changes in Scope of Work. A supplemental Finding of No Adverse Effect (FNAE) was prepared for changes to the project scope of work and was concurred with/approved by the State Historic Preservation Officer (SHPO) on October 15, 2022. In addition to the previously proposed 2018 construction activities included in the initial/original 2018 FNAE, the Supplemental FNAE included the construction of a pedestrian undercrossing and walkway to allow access to the beach front; and final grading and activities associated with the construction of the fish passage and temporary diversion of the creek via a pipeline, which will be placed on plywood to protect the archaeological site of concern.

Assessment of Effects to Archaeological Site CA-LAN-210. Sixty-five percent (65%) of the proposed walkway for the pedestrian undercrossing would be located within the previously defined ADI for the bridge structure at Solstice Canyon Creek and would be built as part of the proposed undertaking. The ADI was extended to cover the land needed for the walkway exit to the southwest of the bridge structure and ending at a flat area on the embankment of the PCH roadway where users will be able to access the beach.

The required maximum excavation depth for the portion of the walkway path on the north side of the bridge structure at Corral Canyon Road is specified at 9-feet (maximum). The southern portion of the elevated walkway will be placed on top of Cast-In-Drilled-Hole (CIDH) piles with a diameter of 2-feet. The required excavation depth for the CIDH piles will be to bedrock, circa between 40-and-50-feet (maximum).

Additionally, the grading of Solstice Canyon Creek on the south side of the culvert/new bridge will extend roughly 50-feet downstream and 125-feet upstream from the proposed bridge limits and will follow the structure excavation within the proposed bridge improvements. The temporary redirection of the creek will be achieved via pipeline and will have no effect on the immediate surface as it will be placed on top of plywood to be placed on the ground surface to protect disturbances to positive Shovel Test Pit (STP) locations of archaeological site CA-LAN-210.

The impact of construction of the walkway to connect to the pedestrian undercrossing and the grading of the creek would, at a minimum, affect only a combined total of 0.5 acres of additional land for both the northside and southside of the walkway. Overall, the diversion of the creek for construction purposes would have a minimal impact as Environmentally Sensitive Area (ESA) fencing would be installed to minimize pedestrian traffic, as well as a plywood bed to protect the creek bed where the positive STPs were located.

As previously stated in the 2018 Caltrans FNAE, prehistoric site CA-LAN-210 is assumed eligible under Criterion D for the purposes of this undertaking only. The previously recorded site boundary encompasses a total of 11 acres and the total acreage of the site that may be affected by the work proposed at Project Location No. 10 (Solstice Canyon Creek), including the newly proposed walkway construction and the grading of the creek on both upstream/downstream areas is approximately 1.26 acres. Project Location No. 10 (Solstice Canyon Creek) is located on the southeastern portion of the site and the majority of the proposed project ground disturbance will occur in previously disturbed areas – where the existing culvert location is located. Construction work will occur nearly/entirely within the previous footprint of the previous feature. An additional 125 feet upstream and 50-feet downstream as well as along the fill in a southwest direction, and 4-feet on either side of the previous culvert construction footprint will be added to the current project and this work will occur within the 10-feet of documented fill. While the proposed project excavations will have a maximum depth of 15-feet, it is likely that the soils below the 10-feet of

fill are also disturbed. Therefore, a minimal percentage of potentially native soils may be disturbed in comparison to the total site acreage.

Based on the above, there is limited-to-no potential to affect CA-LAN-210, which is assumed NRHP-eligible under Criterion D for the purposes of this project only; however, a requirement for archaeological and Native American monitoring is proposed as a condition of the Undertaking to further avoid any potential adverse effects. The previously prepared 2018 Post-Review Discovery and Monitoring Plan (PRDMP) is still valid and shall be utilized during construction as stated in the 2018 FNAE. Additionally, the 2018 Environmentally Sensitive Area (ESA) Action Plan will still be used to ensure avoidance and protection.

Assessment of Supplemental Proposed Revegetation at Project Location No. 19 (Post Mile VEN 0.92). In addition to the previously proposed 2018 construction activities at Solstice Canyon Creek, as well as the new proposed walkway and temporary creek diversion efforts during construction; supplemental revegetation has also been proposed at Project Location No. 19 to consist of native plants for a total of 8-acres as part of biological mitigation associated with the project. Parcels 81360-1 and 81875-1 will be granted by the State of California – Department of Parks of Recreation for these purposes along PCH/SR-1 between VEN Post Mile 0.90 and 0.82. During the identification efforts in support of the proposed undertaking, no previously recorded cultural resources were found at this location. Nonetheless, due to the sensitivity of the route, both archaeological and Native American monitoring will occur during all ground disturbing activities in the area as per procedures as outlined in the 2018 PRDMP.

Project Conditions and Post-Review Discovery and Monitoring Plan. Through background research and Native American consultation, the portion of the APE located at Project Location No. 10 (Solstice Canyon Creek) has been identified as the previously recorded location of archaeological site CA-LAN-210. Because of this, and the fact that undisturbed sediments may occur at depths below 10 feet at this location and Project Locations 11, 12, and 19, archaeological and Native American monitoring is recommended. The previously submitted and approved ESA, PRDMP, and PCRIP are still valid, and the newly expanded Supplemental APE map will be utilized during construction to determine ESA locations as well as PRDMP areas.

Conclusions. The results of the identification efforts in support of the proposed Undertaking found one previously recorded prehistoric archaeological site within the APE: CA-LAN-210. CSO approved the assumption of eligibility for the site on November 14, 2018, and it is still deemed valid for the proposed changes and expansion of the ADI. CA-LAN-210 will be protected from inadvertent project effects through the establishment of an ESA and implementation of the procedures outlined in the 2018 ESA Action Plan and 2018 PRDMP.

No previously recorded archaeological sites were found at Location 19 (located between VEN-001 PM 0.903 and PM 0.824), where the proposed biological mitigation efforts will occur. Nonetheless due to the sensitivity of the area and the possibility of inadvertent archaeological discoveries, the implementation of the 2018 PRDMP will also take place at this location.

In 2018 Caltrans District 7 applied the Criteria of Adverse Effect per 36 CFR 800.5(a)(1) for CA-LAN-210 and determined that the Finding of No Adverse Effect (FNAE) is appropriate for this undertaking per Stipulation X.B.2 of the Section 106 Programmatic Agreement, which are deemed valid for the proposed changes to the scope of work. Should intact portions of the site be encountered during construction of the undertaking, the information potential of the site will be captured by the imposed construction monitoring, as described in the approved 2018 PRDMP.

8.3 Geology

Reference Foundation Report for Solstice Canyon Creek Bridge and Pedestrian Walkway, July 18, 2022

Pursuant to a request by the Office of Bridge Design South (OBDS), the Division of Engineering Services – Geotechnical Services, prepared a Foundation Report for the proposed replacement of the Solstice Canyon Creek bridge (Caltrans Bridge No. 53-0030) at Project Location No. 10 and the addition of a pedestrian undercrossing and walkway to the project scope of work. In April 2020, 10 geotechnical boring samples were tested for uniaxial compression of rock and four rock samples were submitted for point load testing.

Surface Conditions. Solstice Canyon is a steep sided coastal canyon that runs northwest from the Pacific Ocean. The west side of the canyon is labeled as Solstice Hill, which is a moderately flat area, at approximately 500 feet elevation. The east side of the canyon is a ridge that forms a drainage divide between Corral Canyon to the east, and trends north, at approximately 600 feet elevation. There are existing ripraps protections and concrete waste slabs in the existing embankments adjacent to bridge wingwalls.

Subsurface Conditions. Based on a 2004 Log of Test Borings (LOTB), the site consists of loose to medium dense artificial fill to approximate elevation 18-to-13 feet underlain by very loose to very dense alluvium, all underlain by igneous rock (andesitic breccia) on the east side and sedimentary rock (shale/siltstone) on the west side. Bedrock surface varies from approximate elevation 4-feet at Abutment 1 and elevation 0.0 at Abutment 2 of the existing bridge/culvert structure. The shale/siltstone is described as medium gray, intensely weathered, and soft to moderately soft. The andesitic breccia is medium dark gray, slightly to moderately weathered, moderately hard to hard, and slightly to moderately fractured.

Groundwater. Groundwater data includes a measurement from a 2004 geotechnical investigation and former environmental monitoring wells at the Union 76 Gas Station and former Chevron site adjacent to Project Location No. 10.A summary of groundwater data is summarized in the following table:

Table 7. Summary of Groundwater Data

Boring/Well No.	Distance/Direction from Center of Bridge	Ground Surface Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
Boring No. 04-1 (2004 LOTB)	7 ft / West (S 80° W)	33.90	23.00	10.90
Well No. MW-2 (former Chevron site)	6 ft / North (N 2° W)	35.15	24.65	10.50
Well No. MW-8 (Union 76 gas station)	186 ft / Northwest (N 68° W)	31.56	15.81	15.75

The design groundwater elevation used for analysis was 10.9 feet.

As-Built and Scour Data. The existing bridge is a single span, cast-in-place (CIP), reinforced concrete (RC) arch culvert, originally built in 1947. The bridge is 21-feet-long with a 41° skew. The width of the bridge is approximately 162 feet. The headwalls transition to cantilevered retaining walls that angle away from the inlet and outlet of the culvert. The bottom of footing elevation varies along the culvert and wingwalls from approximately 11.0-ft to 8.75-ft. Scour data for the existing bridge structure is summarized in the following table.

Table 8. Scour Data for Existing Solstice Canyon Creek Bridge

Support Location	Long Term (Degradation and Contraction) Scour Elevation (feet)	Short Term Local Scour Depth (feet)
Abutment 1R	24.2	0.0
Abutment 2R	24.2	0.0
Bridge Abutment 1	8.0	7.4
Bridge Abutment 2	10.0	7.4
Abutment 1L	12.2	0.0
Abutment 2L	13.3	3.0

Soil Corrosion Evaluation. Corrosion test results show the project site is corrosive. The following table presents a summary of the corrosion test results.

Table 9. Soil Corrosion Test Summary

Borehole	Elevation (feet)	pH	Resistivity	Sulfate (PPM)	Chloride (PPM)	Corrosive?
04-1	17.4 to 8.9	8.39	970	260	21	No
04-1	8.9 to 3.9	7.61	740	676	20	No
04-2	27.6 to 23.6	7.95	330	1,116	477	No
04-2	23.6 to 18.6	7.37	470	853	163	No
04-2	18.6 to 8.6	8.20	470	624	568	Yes
04-3	35.2 to 18.7	7.75	390	5,073	215g	Yes
04-3	18.7 to 15.2	8.07	730	685	77	No
04-3	15.2 to 10.2	7.95	950	163	26	No

SEISMIC INFORMATION

Ground Motion Hazard. The peak ground acceleration (PGA) for the site is 0.58g. The design magnitude (M) is 6.64 and the site-to-fault distance is 10.75 miles (17.3 km). The site is underlain by approximately 30 feet of soil that is classified as Type S2, according to the Seismic Design Criteria, Version 2.0, dated April 2019.

Surface Fault Rupture. Based on data, there is no calculated potential rupture at the bridge site although the site is located within the AP zone. The bridge can be designed with a calculated potential surface rupture hazard of 0.

Liquefaction. According to the map of the Earthquake Fault Zones and Seismic Hazard Zones of Malibu Beach 7.5 Minute Quadrangles, dated August 16, 2007, the bridge is within a liquefaction zone. Liquefaction analysis was performed for the site utilizing borings 04-1, 04-2, and 04-4 (2004 LOTB) with design groundwater table elevation of 10.9 feet. for borings 04-3 and 04-5, SPT blow counts are higher than 30 below design groundwater table, therefore, there is no potential for liquefaction in these borings. Downdrag load was conservatively calculated considering full embedment for the CIDH piles in the top 34 feet depth (abutment wall section). Potential liquefaction is summarized in the following table.

Table 10. Liquefaction Potential at Solstice Canyon Creek Bridge

Support	Liquefaction Elevation (feet)	Estimated Seismic Induced Settlement (inches)	Downdrag Zone Bottom Elevation (feet)	Estimated Downdrag Load (kips/pile)
Abutment 1	Boring 04-2	10.9 to 5.4 (3.31m to 1.64m)	7.0	200
Abutment 2	Boring 04-1	10.9 to 7.8 (3.31m to 2m)		
	Boring 04-4	10.9 to 7.8 (3.31m to 2.38m)		
Pedestrian Walkway	Boring 04-2	10.9 to 5.4 (3.31m to 1.64m)		100

Lateral spreading is limited by foundations for the bridge replacement, which are shafts that will be excavated into bedrock. However, the post liquefaction load against the abutment walls should be checked by OBDS utilizing a friction angle of ϕ=3 degrees (ka=0.9 and kp=1.11) conservatively estimated for the liquefiable soil layer for the post liquefaction load case.

Tsunami Risk. According to the Tsunami Inundation Map for Emergency Planning, Malibu Beach Quadrangle, the project is not located within a Tsunami inundation area.

8.4 Hazardous Waste/Materials

Reference Hazardous Waste Assessment for PS&E Package, September 1, 2022

A Hazardous Waste Assessment (HWA) was prepared and approved on September 1, 2022, in response to a request to update the HWA dated January 26, 2022. The HWA accounts for the reduction in scope of work as captured in the March 2022 environmental revalidation and permanent easements, property acquisition, and temporary construction easements and property acquisition in-fee as required for the proposed undertaking.

Caltrans conducted five Site Investigations (SIs) in support of the HWA which have sampled various media and the Solstice Canyon Creek Bridge (e.g., groundwater, soils, surface water) at required parcels.

SITE INVESTIGATION (SI) RESULTS

Soils. A total of 82 soil samples were collected from 24 borings along the project corridor. A summary of findings follows:

- Total lead (TTLC) was detected in 81 of 82 samples analyzed at concentrations ranging from 0.87 to 1000 mg/kg.
    - 14 samples had TTLC concentrations greater than or equal to 80mg/kg which is the threshold for regulated material under the Caltrans Department of Toxic Substances Control (DTSC) Aerially Deposited Lead (ADL) Agreement.

- Soluble Lead was detected in 55 of 70 samples analyzed at concentrations ranging from 0.15 to 55 mg/l.
    - 7 samples had Soluble lead concentrations greater than or equal to 5 mg/kg which is the threshold for classification as non-RCRA California Hazardous Waste
- Soluble Lead by the TCLP method was detected in 8 out of 20 samples analyzed at concentrations ranging from 0.051 NJ to 2.1 mg/l.
- Petroleum hydrocarbons were detected in 65 out of 74 samples analyzed.
    - Petroleum hydrocarbons as Gasoline range organics was not detected above laboratory reporting limits.
    - Petroleum hydrocarbons as Diesel Range Organics was detected in 59 samples analyzed at concentrations ranging from 1.1 to 190 mg/kg
    - Petroleum hydrocarbons as Oil Range Organics was detect in 65 samples analyzed at concentrations ranging from 1.1 to 1700 mg/kg.

A total of 51 soil samples were analyzed for Title-22 Metals. Metals were below environmental screening levels except for arsenic. Arsenic was detected in 51 samples at concentrations ranging from 0.71 NJ to 9.8 mg/kg. Arsenic concentrations were above EPA Regional Screening Levels for Arsenic (3 mg/kg) but are within the background concentration for Los Angeles (12 mg/kg) as established by DTSC (DTSC 2008).

A total of 74 soil samples were analyzed for VOCs and SVOCs. VOCs and/or SVOCs were detected in 58 samples analyzed at concentrations below environmental screening levels:

- 4-Chlorotoluene was detected in 1 sample at a concentration of 0.59 µg/kg.
- 4-Isopropyltoluene was detected in 2 samples at concentrations ranging from 0.97 to 1.3 µg/kg.
- Benzene was detected in 39 samples at concentrations ranging from 0.55 to 53 µg/kg.
- Carbon disulfide was detected in 21 samples at concentrations ranging from 0.95 to 42 µg/kg.
- Ethylbenzene was detected in 7 samples at concentrations ranging from 0.57 to 2.7 µg/kg.
- Toluene was detected in 41 samples at concentrations ranging from 0.42 NJ to 19 µg/kg.
- Trans-1,2-Dichloroethene was detected in 1 sample at a concentration of 1.4 µg/kg.
- Bis(2-ethylhexyl)phthalate was detected in 3 samples at concentrations ranging from 63 to 470 µg/kg.

A total of 4 samples were analyzed for organochlorine pesticides. Organochlorine pesticides were detected in two samples at concentrations below environmental screening levels. The following organochlorine pesticides were detected.

- 4,4´-DDD was detected in 2 samples analyzed at concentrations ranging from 2.0 to 5.2 µg/kg.
- 4,4´-DDT was detected in 2 samples analyzed at concentrations ranging from 6.5 to 31 µg/kg.
- Apha-BHC was detected in 2 samples analyzed at concentrations ranging from 1.2 to 2.9 µg/kg.
- Beta-BHC was detected in 1 sample analyzed at a concentration of 4.6 µg/kg

Water and Groundwater Samples. A total of 12 water samples, 9 groundwater, and 3 surface water samples were collected for the project. The groundwater grab samples, which included a duplicate sample, were collected from 8 borings along Solstice Canyon Creek between 2006 and 2020, which 3 surface water samples, including a duplicate, were collected from the creek from 2006 to 2007.

Surface water and Groundwater contained detectable concentrations of Metals, petroleum hydrocarbons, VOCs, organochlorine pesticides, and other NPDES permit constituents. Various Metals, Petroleum Hydrocarbons, and sulfates have exceeded NPDES Construction Dewatering General Permit Screening Levels.

SOIL MANAGEMENT

Soils along the project corridor have Aerially Deposited Lead (ADL) and petroleum hydrocarbon impacts requiring special management, handling, and disposal. The Office of Environmental Engineering (OEE) has drafted the Non- Standard Special (NSSP) 14-11.11 “Department Generated Contaminated Material” for the PS&E package and will submit the NSSP to HQ-DEA for approval.

Structure excavation for bridge removal at Solstice Canyon Creek (Project Location No. 10) is not considered to be impacted by petroleum hydrocarbons as the material being removed was placed during construction of the bridge and culvert and is above

the historic high-water table. Bridge removal should not be impacted by petroleum hydrocarbon releases in groundwater associated with adjacent and closed Leaking Underground Storage Tank (LUST) hazardous waste sites.

OEE has defined the contamination and classified soils into categories for management:

Contaminated soil: Material containing petroleum hydrocarbons, lead, volatile organic compounds, semi-volatile organic compounds.

Petroleum Contaminated Soil (PC): Material containing total petroleum hydrocarbons (TPH) with diesel range organics and/or oil range organics above the maximum soil screening level for soils less than 20 feet above groundwater according to Calif. Regional Water Quality Control Board Interim Site Assessment & Cleanup Guidebook, Los Angeles and Ventura Counties, Region 4, May 1996 OR above United States Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for Residential soil, November 2021.

Petroleum Impacted Soil (PI): Material containing TPH with diesel range organics and/or oil range organics below the maximum soil screening level for soils less than 20 feet above groundwater according to Calif. Regional Water Quality Control Board Interim Site Assessment & Cleanup Guidebook, Los Angeles and Ventura Counties, Region 4, May 1996 and below United States Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for Residential soil, November 2021.

Type PC-1: Petroleum contaminated soil containing lead concentrations greater than or equal to 1,000 mg/kg total lead or 5.0 mg/L soluble lead as tested using the CA-WET. Material is California hazardous waste that must be disposed of at an appropriately permitted California Class I disposal facility. Type PC-1 material exists at the locations listed in the following table:

Table 11. Existence of Type PC-1 Material within Project Study Area

Project Location	Elements of Work	Depth Below Ground Surface (BGS)
14	Roadway Excavation (Type PC-1)	Surface-1 feet BGS

Type PI-1: Petroleum impacted soil containing lead concentrations greater than or equal to 1,000 mg/kg total lead or 5.0 mg/L soluble lead as tested using the CA-WET. Material is California hazardous waste that must be disposed of at an appropriately permitted California Class I disposal facility.

Table 12. Existence of Type PI-1 Material within Project Study Area

Project Location	Elements of Work	Depth Below Ground Surface (BGS)
10 (Solstice Canyon Creek)	Roadway Excavation (Type PI-1)	O-to-5 BGS
14	Roadway Excavation (Type PI-1)	1-3 feet BGS

Type PI-2: Petroleum impacted soil containing lead concentrations below 320 mg/kg total lead and below 5 mg/L soluble. Must be disposed of at an appropriately permitted California Class III or Class II facility, or an appropriately permitted California Soil treatment/recycling facility.

Table 13. Existence of Type PI-2 Material within Project Study Area

Project Location	Elements of Work	Depth Below Ground Surface (BGS)
10 (Solstice Canyon Creek)	Roadway Excavation (Type PI-2)	O-to-14 BGS
13	Roadway Excavation (Type PI-2)	Surface to total depth
14	Roadway Excavation (Type PI-2)	3 feet BGS to total depth

Unregulated Backfill: Backfill material exposed to aerially deposited lead deposition at concentrations below regulatory screening levels. Material contains average lead concentrations less than 80 mg/kg total lead and below 5 mg/L soluble lead and is not regulated by DTSC as a hazardous substance or a hazardous waste. This material does not require disposal at a permitted landfill or solid waste disposal facility. The RWQCB has jurisdiction over reuse of this material at locations outside the job site limits.

Table 14. Existence of Unregulated Backfill Material within Project Study Area

Project Location	Elements of Work	Depth Below Ground Surface (BGS)
10 (Solstice Canyon Creek)	Bridge Removal	As shown on plans

CAST-IN-DRILLED HOLE (CIDH) PILES

Cast-In-Drilled-Hole (CIDH) piles for the proposed bridge structure at Project Location No. 10 (Solstice Canyon Creek) are 48-inch diameter borings, which are anticipated to extend to 40-feet below average sea level. Based on discussion and input from the Project Development Team (PDT), it is not feasible to separate impacted materials during boring. The mass of a single pile was examined, and using the highest concentration of total lead, Total Petroleum Hydrocarbons-Diesel Range (TPH-D), and Total Petroleum Hydrocarbons-Oil Range (TPH-O) for each target depth of contamination were calculated, and the concentrations are presented in the following table.

Table 15. Total Lead/TPH-D/TPH-O Contaminant Concentrations at Project Location No. 10 (Solstice Canyon Creek)

Contaminant	Concentration (mg/kg)
Total Lead (mg/kg)	34.64
TPH-D	4.86
TPH-O	26.63

Taken as a whole, the resulting cuttings from the CIDH piles are considered non-hazardous waste for disposal. CIDH piles can be managed under structures procedures for non-hazardous contaminated soil waste for disposal.

MINIMIAL DISTURBANCE OF CONTAMINATED SOILS

The following construction activities which will disturb contaminated soils are considered minimal disturbance activities:

1. Temporary construction area signposts
2. Planting
3. Removal of Hot Mix Asphalt (HMA) Dike
4. Installation of HMA Dike Type D
5. Concrete Rock Slope Protection (RSP)
6. Conduit installation
7. Roadway excavation waste, concrete slabs

These activities will disturb soils only in the immediate area of the activity. Contaminated material subject to minimal disturbance must remain in the immediate area of disturbance and shall not be transported elsewhere or disposed of outside of the highway. The requirements for soil with minimal disturbance are contained in NSSP 14-11.11. If excess soils are generated, they must be disposed of in a Class II landfill.

HEALTH AND SAFETY PLAN FOR MANAGEMENT OF CONTAMINATED AND IMPACTED SOILS

The contractor will be required to prepare a project-specific Health and Safety Plan (HASP) to protect workers from exposure to contaminated and impacted soils. The HASP must be signed and sealed by a Certified Industrial Hygienist (CIH), and the funds shall be allocated accordingly.

GROUNDWATER MANAGEMENT

Construction dewatering will be required for the construction activities at Project Location No. 10 (Solstice Canyon Creek). Groundwater beneath the project site is contaminated with metals and sulfates above the discharge limits of a NPDES permit. Unfiltered groundwater samples collected in June 2020 detected arsenic, cadmium, copper, lead, mercury, nickel, silver, zinc,

and sulfates at concentrations above NPDES permit limits. Treatment options for groundwater may be limited as the filtered groundwater samples collected in June 2020 detected lead and nickel at concentrations above NPDES permit limits.

Groundwater samples from June 2020 detected volatile organic compounds and organochlorine pesticides at concentrations below NPDES permit limits. Previous groundwater samples detected additional metals constituents above NPDES permit limits and VOCs and petroleum hydrocarbons at concentrations below NPDES permit limits.

OEE has crafted NSSP 14-11.17 "DEWATERING AND MANAGEMENT OF CONTAMINATED LIQUID" for management of contaminated groundwater on the project and has submitted the specification to HQ Division of Environmental Analysis for approval.

Dewatering, Collecting, Containerizing and Disposing Plan. The Contractor will be required to prepare a project specific Dewatering, Collecting, Containerizing and Disposing Plan to document how the contractor will manage construction dewatering. This cost must be incorporated into in BEES either as a separate item or included in construction dewatering costs.

Health and Safety Plan for management of Construction Dewatering. The Contractor will be required to prepare a project specific Health and Safety Plan (HASP) to protect workers from exposure to contaminated groundwater. The HASP must be signed and sealed by a Certified Industrial Hygienist (CIH) and the appropriate funds shall be allocated appropriately.

NEARBY HAZARDOUS WASTE SITES

A review of environmental databases, California Water Quality Control Board's Geotracker database, and the Department of Toxic Substances Control's Envirostor database identified hazardous waste sites along the project corridor. Given the construction activities, OEE has reviewed these sites within for potential impacts to the project which are presented in the following table.

Table 16. Hazardous Waste Sites Identified within 1000 feet of the Project Corridor

Project Location No.	Hazardous Waste Site within 1000 feet	Status	Risk Analysis
1	POTRERO CANYON PARK (T10000013337) 15101 PACIFIC COAST HWY PACIFIC PALISADES, CA 90272	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	No Risk - TPH Release. Site Investigations related to Caltrans Permit (07-18-N-RD-0716) and Site remediation covered work area and no impacts to work area are present from release
2	SURFSIDE CLEANERS (SL0603738960) 17340 SUNSET BLVD. PACIFIC PALISADES, CA 90272	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	Low Risk - PCE release associated with Dry Cleaning Operations. Given Construction activities, distance from construction area to the release, contaminate transport is away from construction area, the site is not anticipated to pose a risk to the project.
10 & 11	FORMER CHEVRON / BEAU RIVAGE/ FORMER RESTAURANT (T0603770976) 26025 PACIFIC COAST HWY MALIBU, CA 90265-4519	CLOSED - LUST CLEANUP SITE	Low Risk - Construction area in exposed soils investigated thoroughly with Site Investigations. Low risk remains for areas Northwest of the bridge under paved right. Given impacts identified the HW Site is considered a low risk.
10 & 11	GAS S/S (T0603700047) 26201 PACIFIC COAST HWY MALIBU, CA 90265	CLOSED - LUST CLEANUP SITE	Low Risk - Construction area in exposed soils investigated thoroughly with Site Investigations. Low risk remains for areas Northwest of the bridge under paved right. Given impacts identified the HW Site is considered a low risk.
10 & 11	76 PRODUCTS STATION #5331 (T0603703141) 26101 PACIFIC COAST HWY MALIBU, CA 90265	CLOSED - LUST CLEANUP SITE	Low Risk - Construction area in exposed soils investigated thoroughly with Site Investigations. Low risk remains for areas Northwest of the bridge under paved right. Given impacts identified the HW Site is considered a low risk.
10 & 11	TOSCO/UNOCAL #30856 (T10000000536) 26101 PACIFIC COAST HWY. MALIBU, CA 90265	CLOSED - LUST CLEANUP SITE	Low Risk - Construction area in exposed soils investigated thoroughly with Site Investigations. Low risk remains for areas Northwest of the bridge under paved right. Given impacts identified the HW Site is considered a low risk.
18	ZUMA BEACH SERVICE YARD (T0603704865) 30100 PACIFIC COAST HWY MALIBU, CA 90265	CLOSED - LUST CLEANUP SITE	Low Risk - Diesel Release documented in 1996, no cleanup documents exist. Given distance from construction area and construction activities no risk is anticipated.
19	ZUMA BEACH SERVICE YARD (T0603704865) 30100 PACIFIC COAST HWY MALIBU, CA 90265	CLOSED - LUST CLEANUP SITE	Low Risk - Diesel Release documented in 1996, no cleanup documents exist. Given distance from construction area and construction activities no risk is anticipated.

ASBESTOS CONTAINING MATERIAL (ACM)

Bridges are considered regulated structures by the United State Environmental Protection Agency (USEPA) and require compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) including notification to the delegated air district. The delegated air district for Los Angeles County is the South Coast Air Quality Management District (SCAQMD). SCAQMD requires an asbestos survey to accompany the required notification of proposed work on structures.

No ACM was identified in the bridge materials sampled; however, ACM may still be present in internal components that were inaccessible during sampling. Should unanticipated ACM, or potential ACM be discovered during construction, OEE shall be contacted, and protocols shall be followed according to Standard Provision 14-11.02, "Discovery of Unanticipated Asbestos and Hazardous Substances."

NESHAP NOTIFICATION

Bridge structures are subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations. The regulations require notification to the delegated air district prior to renovation regardless of whether asbestos was detected. The delegated air district is the South Coast Air Quality Management District (SCAQMD). The asbestos survey must accompany the notification. The contractor is required to submit notification to the SCAQMD at least 15 days prior to work on the bridge structure.

TREATED WOOD WASTE

Removal of the wood posts from the roadway signs and MBGRs will generate Treated Wood Waste (TWW) which requires disposal as a hazardous waste. The wood posts used in the guardrails and roadways signs have been treated with chemical preservatives that are hazardous (e.g., arsenic, chromium, copper, creosote, and pentachlorophenol). TWW is a non-RCRCA (California) hazardous waste, and the handling and the handling, storage, transportation, and disposal is subject to California hazardous waste regulations. SSP 14-11.14 "Treated Wood Waste" shall be utilized in the project PS&E package.

THERMOPLASTIC AND PAINTED STRIPES AND PAVEMENT MARKING

The project scope includes removal of pavement delineation, currently the method of removal is unspecified.

Yellow traffic stripes contain lead and chromium at concentrations that exceed hazardous waste threshold levels established by the California Health and Safety Code and Title 22 of the California Code of regulations. The waste generated by the removal of yellow thermoplastic and yellow paint traffic stripes by-itself require disposal at a Class I facility. The contractor is required to prepare an LCP to protect workers from exposure to the hazards from lead per Cal-OSHA Title 8 California Code of Regulations and a Work Plan for management, testing, transport, and disposal of the hazardous waste. The SSP 14-11.12 "Remove Yellow Traffic Stripe with Hazardous Waste Residue" shall be utilized in the project PS&E package.

White, non-yellow, thermoplastic, paint stripes, and pavement markings contain lead at a concentration that is not hazardous. Yellow thermoplastic traffic stripe and pavement markings installed after 2006 and yellow traffic paint used after 1997, contain low concentrations of lead and are classified as non-hazardous waste. Removal of white traffic stripes and pavement markings will be performed during construction. Residue from removing white traffic stripes by-itself will not contain hazardous levels of lead. The contractor is required to prepare an LCP to protect workers from exposure to the hazards from lead per Cal-OSHA Title 8 California Code of Regulations. The SSP 84-9.03C "Remove Traffic Stripes and Pavement Markings Containing Lead" shall be utilized in the project PS&E package.

All thermoplastic, paint stripes, and pavement markings contain lead and an LCP will be required to protect workers, as management of these materials exposes workers to health hazards.

8.5 Hydrology

Reference Structures Final Hydraulic Report for Solstice Canyon Creek Bridge, February 20, 2021; Technical Addendum to the Structures Final Hydraulic Report for the Solstice Creek Bridge Replacement Project, March 11, 2021

A Structures Hydraulic Report was prepared for the proposed bridge replacement project at Project Location No. 10 (Solstice Canyon Creek) and a Technical Addendum to that report was prepared for the addition of a pedestrian undercrossing and walkway to the project scope of work.

Project Watershed. The Solstice Canyon Creek watershed upstream of the existing culvert under SR-1 drains approximately 4.7 square miles. Solstice Canyon Creek is a small perennial, spring-fed creek that drains directly into the Pacific Ocean approximately 2.3 miles east from the City of Malibu. Solstice Canyon Creek is a rural watershed with very little development except for a small housing development (approximately 10% of the watershed) in the lower easterly side of the watershed. The watershed is covered by 31% forest. Solstice Canyon Creek begins in its headwaters as a small spring at an approximate elevation of 2,100-feet. The watershed lays completely within the Santa Monica Mountains National Recreation Area, part of the larger coastal mountain range of the Transverse Ranges. Solstice Canyon Creek flows in a southeasterly direction; flowing approximately 5 miles before reaching the Pacific Ocean at the Dan Blocker State Beach. The watershed has a mean basin elevation of 1,331-feet with a maximum basin elevation of 2,785-feet. Solstice Canyon Creek is a high gradient mountain stream that has an averaged slope of approximately 3% at the project location. The average annual precipitation is approximately 19.9 inches.

Streambed. The existing culvert has no hydraulic skew. Field observations and photographic logs find the channel bed has some channel armoring such as heavy grained soils or larger material such as river gravel, cobbles, etc., which could potentially help protect the channel from scouring, but those will be deemed negligible for this analysis. Overall, the channel and side slopes within the project area appear to be both vertically and horizontally stable.

Project Design Flood Discharges. The current FEMA Flood Insurance Study (FIS) used for this report is 06079CV001C, effective May 2018. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded). The bridge replacement and culvert modification proposed is not located within a 100-year base floodplain and exists within a FEMA Zone X (unshaded) area, which is considered to be of minimal flood hazard.

Solstice Canyon Creek is an ungaged/unregulated watershed that makes predicting peak flood magnitudes problematic. However, three nearby watersheds with stream gaging stations were used to predict flood magnitudes at Solstice Canyon Creek. There are two U.S. Geological Survey (USGS) stream gages and one stream gage operated by the Los Angeles County Flood Control District (LACFCD). There is the USGS stream gage on Malibu Creek (USGS gage station 11105500) approximately 3.9-miles away, the USGS stream gage on the Topanga Creek watershed (USGS gage station 11104000) approximately 9.2-miles away, and the LACFCD stream gage at Zuma Canyon Creek (Station F53-R) approximately 4.4 miles away. Using the annual peak streamflows, (following the Bulletin 17-B guidelines for a log-Pearson Type III distribution) was calculated at each of the aforementioned gages. The results from this analysis were then compared to the peak flood flow analysis of the regional regression flood-frequency equations for rural ungagged streams developed by the USGS in their publication Methods for Determining Magnitude and Frequency of Flood in California 2006. According to the FEMA flood insurance study, and proved through in the above analysis, a comparison of the results obtained from the log-Pearson Type III analysis of the three stream gages produced higher peak flow rates as compared to the results from the regional regression equations from the USGS publication.

Reviewing the hydrological (watershed) characteristics for each of the stream-gaged watersheds, Zuma Canyon Creek and Solstice Canyon Creek shared many approximate hydrological results such as the mean annual precipitation, drainage area, and mean basing elevation. Therefore, it was determined that the peak flood flows from Zuma Canyon Creek would be basin transferred to the Solstice Canyon Creek watershed using the analyses from the log-Pearson Type III distribution were used for the determination of flood flows at Solstice Canyon Creek.

A comparison was made using the National Streamflow Statistics program (NSS) using the WMS software and the Q100 for this watershed to verify the basin transfer method. Based on NSS, the 100-year peak discharge (Q100) value was approximately 3300 cfs. The design flood discharge (cubic feet/second) is expressed in the following table. The results of the flow analysis are shown in the following table.

Table 17. Solstice Canyon Creek Watershed Discharge Values

Flood Frequency	Design Flood Discharge (cfs)
Q^{200}	4180
Q^{100}	3360
Q^{50}	2650
Q^{10}	1225
Q^{2}	217

There are no reports of recent flooding in this area from the BIRIS database. At this site, the channel appears to be very stable with no erosion on the banks and exposed substructure visible.

DESIGN OBJECTIVES

The hydraulic report addresses the scour and hydraulic impacts of the proposed work on the Solstice Canyon Creek Bridge and the impacts on the floodplain. Hydraulic analyses were calculated using the Two-Dimensional (SHR-2D) hydraulic modeling software (v. 13.0.12) developed by the U.S. Bureau of Reclamation/Aquaveo. To determine if the proposed project would have any adverse effects on the floodplain of Solstice Canyon Creek, the design flood discharges were modeled through the existing and proposed structures utilizing the SRH-2D hydraulic model. One model was made for the existing conditions and other models for the proposed conditions, tides, sea-level rise, and other impacts utilizing the new structure.

SURFACE WATER MODELING SYSTEM (SMS) SRH-2D MODELING APPROACH AND METHODOLOGY

Information used for modeling includes topographical land surveys collected by aerial LiDAR, in-stream surveys collected by bathymetric methods by Caltrans' Structure Maintenance and Investigations' Hydraulic Inspection Branch, Microstation drawing from Preliminary Investigations, and the latest Federal Emergency Management Agency's (FEMA) Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRM) for Los Angeles County.

Tidal Impacts on the Cordilleras Creek Floodplain. The nearest station with the required amount of data available for tidal observations and predictions was Datums for 9410840, Santa Monica Marina CA from the NOAA Tides and Currents. The tidal impacts and their effect on this project are presented in the following table.

Table 18. Tidal Effects at Project Location No. 10 (Solstice Canyon Creek)

Datum	Elevation (feet)	Description
HAT	7.08	Highest Astronomical Tide
MHHW	5.24	Mean Higher-High Water
MLLW	-0.19	Mean Lower-Low Water
NAVD88	0.00	North American Vertical Datum of 1988

The Highest Astronomical Tide is an extreme event that would happen once or twice a year. For the Maximum tide observed for this station the depth of flow in the bridge would be below the soffit. For the average daily high tide, the Mean Higher High Water flow is below the Q100 elevations and will not add any additional conditions to alter the Q100 parameters.

Sea Level Rise (SLR) Considerations at Project Location No. 10 (Solstice Canyon Creek). The following table presents the SLR projections for the Solstice Canyon Creek Bridge replacement project and revised per the 2018 Sea Level Guidance.

Table 19. Sea Level Rise Projections at Project Location No. 10 (Solstice Canyon Creek)

		Probabilistic Projections (in feet)				
		MEDIAN	LIKELY RANGE	1 IN 20 CHANCE	1 IN 200 CHANCE	H++ Scenario
High Emissions	2030	0.4	0.3 – 0.5	0.6	0.8	1
	2040	0.6	0.4 – 0.8	0.9	1.2	1.7
	2050	0.8	0.6 – 1.1	1.3	1.9	2.6
Low Emissions	2060	0.9	0.6 – 1.2	1.5	2.3	3.8
High Emissions	2060	1.1	0.8 – 1.4	1.8	2.6	
Low Emissions	2070	1.0	0.7 – 1.4	1.9	3.0	5.1
High Emissions	2070	1.3	1.0 – 1.8	2.3	3.4	
Low Emissions	2080	1.2	0.8 – 1.7	2.3	3.8	6.5
High Emissions	2080	1.7	1.1 – 2.3	2.9	4.4	
Low Emissions	2090	1.3	0.8 – 2.0	2.7	4.6	8.1
High Emissions	2090	2.0	1.3 – 2.8	3.5	5.5	
Low Emissions	2100	1.5	0.9 – 2.3	3.1	5.5	10.0
High Emissions	2100	2.3	1.5 – 3.3	4.3	6.8	

Even higher values could occur with one or more combinations of strong storms, high tide events, wind waves, and high flow events on the rivers.

Tsunami Effects at Project Location No. 10 (Solstice Canyon Creek). Caltrans requires that the design of all new bridges within five miles of the coast (and in bays) must include an evaluation for tsunami loads. Caltrans evaluates bridges for the tsunami hazard consistent with a 5% probability of being exceeded in 50 years. A tsunami can damage a bridge if the waves are high enough to strike the deck. However, the design tsunami at most locations along California's coast should be below the superstructure. Therefore, wherever possible, new bridges should be designed so the tsunami flows below the soffit (or bottom girder flange). The maximum wave height elevation is 8.85 ft Mean Sea Level (11.47 ft). Maximum velocity is 2.62 ft/s adding 3.5 ft for sea-level rise the estimated tsunami wave height is 14.97 ft.

Fish Passage Requirements at Project Location No. 10 (Solstice Canyon Creek). The proposed design of a single-span bridge structure spanning 30-feet is sufficient to meet analysis requirements set forth by the California Department of Fish and Wildlife (CDFW) culvert/bridge criteria for the design method – Stream Simulation Option. According to the CDFW, the Stream Simulation Option is a design process that is intended to mimic the natural stream processes within a culvert/bridge. Determination of the high and low fish passage design flows, water velocity, and water depth is not required for this option since the stream hydraulic characteristics within the bridge are designed to mimic the stream conditions upstream and downstream of the bridge crossing. CDFW design requirements for the Stream Simulation Option are 1) expand the bridge crossing to be as wide, or wider than, the bankfull channel and 2) grade/slope the channel bed inside the bridge at a gradient similar to that of the adjacent stream reach. With the design of the proposed bridge, Caltrans has met the design requirements for the Stream Simulation Option. The proposed 30-foot bridge opening is as wide as the bankfull channel. Modeling and analyses show that all flood flows will be contained within the natural upstream creek channel and flows through the proposed bridge structure are not anticipated to raise the floodwater elevations above the bankfull channel elevation. Finally, the channel bed slope will be regraded to match the upstream and downstream natural slope after removal of the existing culvert and its concrete apron.

Ocean Waves and Total Water Levels. To calculate oceanic effects the Preliminary Hydraulic Report (PHR) that was completed for this project used the Total Water Level (TWL) from the 2016 FEMA FIS Study for this county. The TWL is the sum of the Stillwater Elevation (SWEL), the wave setup, and wave runup. The current FEMA FIS Study does not show the TWL but does indicate the wave runup as shown in Graphic 3. Table 5 from FEMA will be used instead of the TWL for the calculation of oceanic effects for this project. The following table summarizes coastal transect mapping considerations.

Table 20. Summary of Coastal Transect Mapping Considerations

Flooding Source and Location	Wave Runup Elevation1 (feet)			Wave Setup Elevation1 (feet)		
	10% Annual Chance	1% Annual Chance	0.2% Annual Chance	10% Annual Chance	1% Annual Chance	0.2% Annual Chance
At Escondido Beach, at Escondido Canyon Mouth	10.7	12.9	15.5	*	*	*
At Escondido Beach, approximately 200 feet East of the Intersection of Latigo Shore Place and Latigo Shore Drive	11.5	14.3	16.9	*	*	*

Zone VE on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) is subdivided into elevation zones and Base Flood Elevations (BFEs). The limit of Zone VE shown on the FIRM is defined as the farthest inland extent of any of these criteria (determined for the 1% annual chance flood condition):

- The primary frontal dune zone is defined in 44 CFR Section 59.1 of the NFIP regulations. The primary frontal dune represents a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes that occur immediately landward and adjacent to the beach. The primary frontal dune zone is subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune zone occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- The wave runup zone occurs where the (eroded) ground profile is 3.0 feet or more below the 1-percent annual chance TWL.
- The wave overtopping splash zone is the area landward of the crest of an overtopped barrier, in cases where the potential 1-percent annual chance TWL.
- The breaking wave height zone occurs where 3-foot or greater wave heights could occur (this is the area where the wave crest profile is 2.1 feet or more above the total Stillwater elevation).
- The high-velocity flow zone is landward of the overtopping splash zone (or area on a sloping beach or other shore type), where the product of depth of flow times the flow velocity squared (hv2) is greater than or equal to 200 ft3/sec2. This zone may only be used on the Pacific Coast.

HYDRAULIC MODELING RESULTS

Analyzing the Solstice Canyon Creek Bridge at existing conditions, all floodwaters from the design flood discharges are not contained within the main channel throughout the hydraulic study area of the project site. Overflow from the creek spread out to the shallow depression at the north-west corner of the existing entrance headwall. The proposed structure contains all flows in the main channel.

Stage, Velocity, and Freeboard at Project Location No. 10 (Solstice Canyon Creek). Tables 21 through 24 summarize the hydraulic results at the water surface elevations at the lowest chord of the existing and proposed structures. Using the existing culvert headwall/bridge soffit elevation and the calculated water surface elevations, the available freeboard at the culvert and the proposed bridge was calculated. Note that the modeling indicates that all the channel flows at the entrance do not go directly into the channel. Calculations indicate a maximum flow of 2500 cfs. For study purposes, the existing culvert shall be analyzed as if all flow goes to the culvert. Also, the results shown in Tables 21 and 22 are at the beginning and end of the existing culvert which is not at the same locations as the deck edges of the proposed bridge.

Table 21. Hydraulic Results under Existing Conditions upstream at Project Location No. 10 (Solstice Canyon Creek)

Design Flood Discharge (cfs)	Soffit Elevation (feet)	Water Surface Elevation (feet)	Maximum Channel Velocity (fps)	Available Freeboard (feet)
Q^{100} 3360	29.7	36	13.4	0
Q^{50} 2650	29.7	27.6	13.2	0

Table 22. Hydraulic Results under Existing Conditions downstream at Project Location No. 10 (Solstice Canyon Creek)

Design Flood Discharge (cfs)	Soffit Elevation (feet)	Water Surface Elevation (feet)	Maximum Channel Velocity (fps)	Available Freeboard (feet)
Q^{100} 3360	29.7	18.7	25	0
Q^{50} 2650	29.7	17.3	23.7	0

Table 23. Hydraulic Results under Proposed Conditions at Project Location No. 10 (Solstice Canyon Creek), Upstream Edge of Bridge Deck

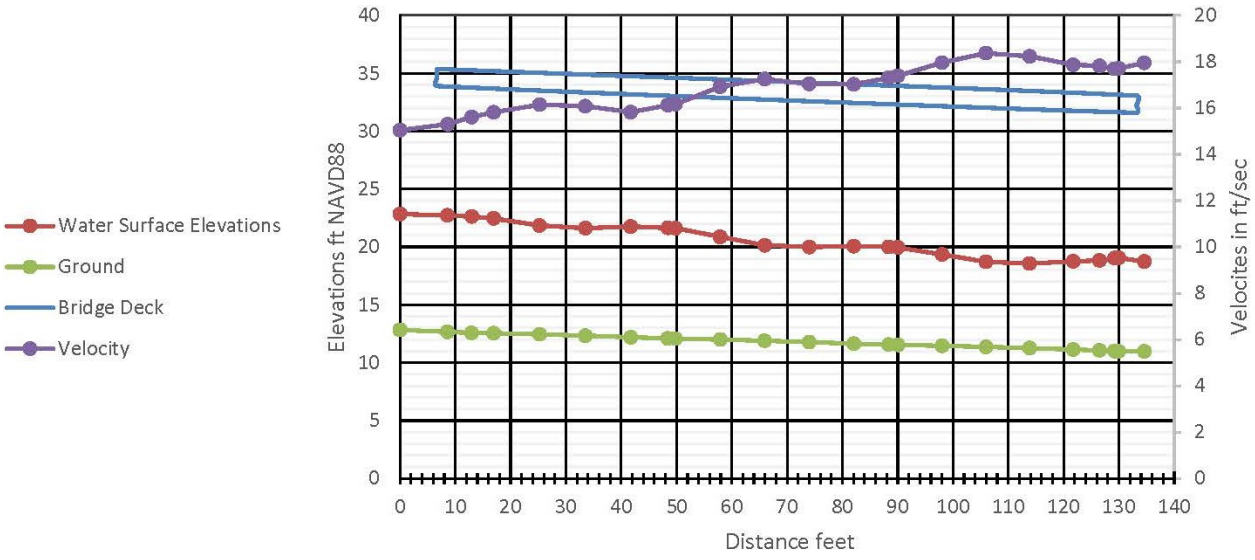
Design Flood Discharge (cfs)	Soffit Elevation (feet)	Water Surface Elevation (feet)	Maximum Channel Velocity (fps)	Available Freeboard (feet)
Q^{100} 3360	33.2	22.7	15.2	10.5
Q^{50} 2650	33.2	22.3	15.2	10.9

Table 24. Hydraulic Results under Proposed Conditions at Project Location No. 10 (Solstice Canyon Creek), Downstream Edge of Deck

Design Flood Discharge (cfs)	Soffit Elevation (feet)	Water Surface Elevation (feet)	Maximum Channel Velocity (fps)	Available Freeboard (feet)
Q^{100} 3360	30.9	19.2	18.8	11.7
Q^{50} 2650	30.9	18.5	15.7	12.4

Waterway Impacts/Coastal Assessment at Project Location No. 10 (Solstice Canyon Creek)/Floodplain. A profile of the proposed water surface elevations at the new structure is shown in the following figure for a cross section located along the centerline of the stream. The water surface elevations for the existing and proposed conditions are within 2 tenths of a foot. The proposed structures have minor changes in the characteristics of the floodplain. There is a very slight increase in the lateral extents of the floodplain, but those extents are within the FEMA established Boundaries.

Figure 6. Profile of Proposed Water Surface Elevations at Bride Deck, Project Location No. 10 (Solstice Canyon Creek)



With the proximity of the Solstice Canyon Creek culvert to the coast of the Pacific Ocean, the proposed replacement bridge must take into account the impacts of Sea-Level Rise (SLR). Using the guidance of SLR projections from the National Research Council's 2018 report titled "State of California Sea-Level Rise Guidance" and adopted by the California Coastal Commission, the preliminary hydraulic analysis for the proposed Solstice Canyon Creek Bridge will account for the SLR projections for the

projected year of 2100. Table 19 provides the SLR projections (depth above existing ocean sea levels) for the Pacific Ocean near Los Angeles, California for the projected year of 2100.

In addition to the effects of SLR on the project location, the effects of coastal flooding from the Pacific Ocean for various ocean storm frequencies will be analyzed and inserted into the hydraulic model as downstream boundary conditions. Water Elevations for the 1% annual chance 500 feet west of the mouth of Solstice Canyon Creek shall be used for calculation purposes. All calculations are based on the Q100 flow of 3360 cfs.

Table 24. Coastal Assessment Impacts Matrix

Tidal			Water surface elevations at downstream edge of the proposed deck	Freeboard
Datum	Description	Elevation (ft)		
HAT	Highest Astronomical Tide	7.08	19.2	13.9
MLLW	Mean Lower-Low Water	-0.19	19.2	13.9
Sea Level rise				
Projected Year	**Scenario**	**Sea Level Rise Projection (feet)**		
	Likely Range	3.3	19.2	13.9
2100	1 in 200 Chance	6.8	19.2	13.9
	H+++	10	19.2	13.9
Tsunami Effects				
Maximum Wave Height Elevation	8.85 ft Mean sea level 11.47 ft NAVD88			
Tsunami Effects requirements	Add 3.5 feet for sea-level rise	14.97 feet	19.2	13.9
Wave Runup Elevation				
1% Annual Chance		18.3 feet	19.3	13.8

The probability of maximum wave tsunami event coinciding with a 1% annual exceedance storm event and 2100 SLR is relatively small, the tsunami wave height is excluded as part of coastal hazard assessment in this report. Table 24 indicates that none of the oceanic effects will cause any flooding of the proposed structure.

Through hydraulic modeling of the Solstice Canyon Creek Bridges/Floodplain, it was determined that the proposed work will have minor changes in the floodplain. The proposed structure will lower the water surface elevations, decrease the flow velocities, and slightly increase the wetted area of the channel that was previously covered in a culvert. The proposed structure will not impede flows that pass the design-year flood events.

The proposed pedestrian walkway may have flooding due to the wave runup conditions. Wave runup may cause shallow flooding due to small indeterminate water surface elevation increases that are greater than the 100-year water surface

elevations. The depth from the proposed walkway to the proposed bridge invert is approximately 10 feet. Periodic inspections or maintenance may be required for the invert of the bridge to keep any reductions of the waterway depth from occurring.

STREAMBED AND CHANNEL SLOPES

For the natural proposed channel bottom, there is a geologic report and Log of Test Borings dated February 3, and 4, 2005. Based on the geologic report the bed is composed of:

- Artificial fill material is found to overlay most of the natural site. The fill material generally consists of medium dense to loose silty gravel with sand, clayey gravel with sand, cobbles, rootlets, and concrete debris. Cobbles encountered during the drilling ranged in size from 0.3 ft to 0.6 ft and are hard, moderately weathered, and subrounded. Multiple cobbles and boulders are visible within the slopes of the wash (from the slopes to the bottom of the wash). They are also observed scattered at the bottom of the wash. The boulders were hard, moderately weathered, subrounded to round, and ranged from approximately 10 ft to 3 ft in size. The fill material extends to a minimum elevation of approximately 18.7 ft in all borings except boring 04-2, where the fill material extends to a minimum elevation of 23.6 ft.
- Marine Deposits are found throughout the site and consist of loose organic-rich black fine-grained silty sand with an abundance of shell fragments. The marine deposits are found to be generally consistent in thickness in all of the borings except boring 04-2. Across the site, the general thickness of this layer is approximately 3.3 ft and in boring 04-2, the thickness of this layer is approximately 7.5 ft. The marine deposits extend to a minimum elevation of 16.1 ft
- Alluvial Deposits are encountered across the site and consist primarily of medium dense to very dense silty sand with gravel, silty gravel with sand, clayey gravel with sand, and sandy lean clay with gravel. Also incorporated with the alluvial/fan deposits are cobbles and boulders. Cobbles encountered during the drilling ranged in size from 0.3 ft to 1.0 ft and are hard, moderately weathered, subangular to subrounded, and consist primarily of andesite and sandstone. Boulders encountered during the drilling range in size from approximately 1.0 ft to 1.5 ft are hard, moderately to slightly weathered, subangular to subrounded, and consist primarily of andesite. The alluvial deposits extend to a minimum elevation of 0.9 ft.
- Bedrock encountered during the drilling operation consists of volcanic rock, andesitic breccia, and sedimentary rock, shale/siltstone. The andesitic breccia is encountered in all borings, except 04-1. The minimum elevation encountered is 1.3 ft. The andesitic breccia is interpreted as belonging to the Zuma Volcanics that includes basaltic and andesitic flows, breccias, pillow lavas, mudflow breccias, and local interlayers of siltstone and mudstone. The shale/siltstone is encountered in borings 04-1 and 04-4. The minimum elevation encountered is -40.0 feet, the maximum depth explored during the subsurface investigation. The shale/siltstone is interpreted as belonging to either the Trancas or the Monterey Formation.

It is estimated the bed is composed of sand, sandy silt, gravel, and cobbles similar to that of the 2007 structure at Corral Canyon, located 800 feet upstream. It is assumed that this combination of materials would provide some armoring for scour protection. Overall, the channel and side slopes within the project area appear to be both vertically and horizontally stable.

DRIFT/FLOATING DEBRIS

Caltrans's Bridge Inspection Reports did not indicate occasional large drift accumulations. In general, historical and current site-specific documents tend to indicate that floating drift/debris should not be expected to be a significant issue at this bridge during typical high flood conditions. Therefore, a floating drift/debris load will not be added as a component of the local pier and abutment scour analysis.

SCOUR AND CHANNEL DEGRADATION

A scour analysis was calculated following the guidelines set forth by the FHWA's Hydraulic Engineering Circular Number 18 (HEC-18) - Evaluating Scour at Bridges, 5th Edition, and the National Cooperative Highway Research Program's NCHRP Report 24- 20 - Estimation of Scour at Bridge Abutments. HEC-18 defines total scour as a summation of three components: 1) long-term degradation of the riverbed, 2) contraction scour at the bridge, and 3) local scour at the piers and abutments.

Long-Term Degradation Changes. The long-term streambed elevation changes at the existing bridge were calculated using a 75-year (assumed serviceable life of the structure) and projected degradation trends using historical channel cross sections

collected at the upstream face of the bridge. At the project location, there is no long-term streambed elevation history so no calculations for this parameter of scour are available. However, 800 feet upstream at the Coral Canyon structure constructed in 2007, there has been approximately 0.5 feet of aggradation based on survey and construction records.

Contraction Scour. Contraction scour is a lowering of the streambed across the stream or waterway bed at the bridge caused when the flow area of a stream at the flood stage is reduced, either by a natural constriction of the stream channel or by a bridge structure. Contraction scour can occur through the constriction of the channel caused by the bridge in either the horizontal or vertical direction (pressure-flow contraction scour). At the project location, contraction scour will be accounted for in the NCHRP Report 24-20 -Estimation of Scour at Bridge Abutments.

Local Pier and Abutment Scour. Local scour involves the removal of bed material around piers, abutments, and embankments. It is caused by an acceleration of flow and resulting vortices induced by obstructions to the flow. For the local scour conditions for the structure, both local pier and local abutment scour were analyzed. There is local scour along the toe of the entrance embankments and along the abutments due to the velocity of the flows.

CONCLUSIONS AND RECCOMENDATIONS

- The proposed replacement work was determined not to cause any significant or immediate hydraulic or scour-related issues provided recommendations for scour depth in this report are used.
- There will be ample freeboard as designed at the entrance and exit of the structure during the peak of the Q^{100} event.
- The entrance headwall should resemble something like the following graphic: the scour will be much less than with the planned headwall that has the 90-degree" lip" on the ends of the wingwalls. The maximum scours on the 45 degree opening wing walls are 11.8 ft. The maximum scour depending on grading, is approximately 20 ft.

8.6 Noise

Reference Technical Construction Nosie Memorandum for the Pacific Coast Highway Drainage Restoration Project, March 2022

The Caltrans District 7 Office of Environmental Engineering, Noise and Vibration Branch, prepared a Technical Construction Noise Memorandum in March 2022 to evaluate potential noise impacts and any corresponding construction noise abatement measures that may result from proposed night construction work at 5 of 14 project locations. The analyses were completed under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772.19) "Construction Noise," which requires the identification of sensitive land uses and measures to minimize construction noise impacts.

The proposed drainage restoration project, as a whole, does not meet the criteria to be classified as either Type I or Type II project categories. Therefore, it falls under the Type III category. Accordingly, since the project will not increase traffic volume capacity, speed, roadway alignment, or alter existing traffic noise shielding features within the project limits; preparation of a detailed Noise Study Report (NSR) was not required to evaluate potential traffic noise impacts and abatement in accordance with Caltrans Traffic Noise Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects. The following five project locations evaluated where night construction work is proposed are presented in the following table.

Table 25. Project Locations Analyzed where Night Construction Work is Proposed

Project Location No.	Post Mile	Description of Work
2	39.08	Replace existing pipe with 24-inch Reinforced Concrete Pipe (RCP)
3	40.16	Replace in-kind 36-inch Corrugated Metal Pipe (CMP)
4	40.18	Install culvert barrel lining (CIP) in upstream section of pipe, replace in-kind 24" RCP middle section of downstream pipe using Cut-and-Cover method, install culvert barrel lining downstream (CIP) section of pipe
6	40.24	Replace 36" RCP and 18" CMP sections
16	62.51	Replace 24" RCP on upstream section, joint seal manhole

The project site is located on SR-1/Pacific Coast Highway, from 0.4 miles south of Temescal Canyon Road to 0.1 miles north of Tonga Street. Only the drainage restoration sites where sensitive land uses have been identified and which could have potential construction noise impacts have been included in the construction noise impact analysis. The locations that could be

subject to construction noise impacts are mainly comprised of residential land uses, however, the northernmost site (Project Location No. 16) near Leo Carillo Beach is an outdoor recreational facility.

Ambient Sound Levels. Sound emitted by vehicular traffic traveling on PCH is the predominant and highest noise source in the project area. Vehicles traveling on PCH generally include automobiles, trucks, buses, and motorcycles. In the evening and early morning hours as traffic volumes decrease, ocean wave action can become the main source of noise. Existing sound levels were measured at noise-sensitive receptors closest to the proposed drainage restoration sites. Measurement site locations are shown in the images and in Figure 3 following this section. The measurements consisted of short-term readings of approximately 30-minute duration. The six site measurement locations were chosen to be representative of the existing land uses in the vicinity of the project. Long-term 24-hour measurements were not possible due to unavailability of appropriate locations for setting up a sound level meter (SLM). Due to the Covid-19 epidemic conditions, contacting residents for permission to enter private property areas for SLM placement was not possible. However, recent noise long-term measurements conducted in July 2021 for another project at 19812 Pacific Coast Hwy, a location that is acoustically representative of the southern portion of this project's limits can be used to estimate existing worst-hour traffic noise conditions for the analysis locations for this project. The adjustment for the measured noise levels derived from that location's noisiest hour is +1 dBA, with worst-hour noise conditions occurring from 3:23 to 4:23 PM. Therefore, a +1 dBA adjustment will be used to approximate noisiest hour for the analysis locations for this project. The measured sound levels are presented in the following table.

Table 26. Existing Ambient Sound Levels

Receiver/ Measurement Site	Post mile	Project Location No.	Land Use	Existing Measure Noise Level Leq_{avg}	Adjusted to Noisiest Hour Level Leq_{avg}	Measurement Time/Date	Duration
R1	39.08	2	Residential, Outdoors	76.0	77	11:01AM 1/5/2022	30 minutes
R2	-	18034 W. Coastline Dr.	Residential, Outdoors	61.4	63	1:07PM 1/5/2022	15 minutes
R3	40.16	3	Residential, Outdoors	73.5	75	11:57AM 1/5/2022	30 minutes
R4	40.18 40.24	4/6	Recreational/Residential, Outdoors	69.8	71	1:45PM 1/5/2022	30 minutes/
R5	62.51	16	Recreational, Outdoors	70.6	72	11:15AM 1/5/2022	11 minutes
R6	62.51	16	Recreational, Outdoors	54.2	55	11:11AM 1/5/2022	35 minutes

Construction Noise. 23 CFR 772 requires that construction noise impacts be identified but does not specify specific methods or abatement criteria for evaluating construction noise. However, the FHWA Roadway Construction Noise Model (Federal Highway Administration 2006) can be used to determine if construction would result in adverse construction noise impacts on land uses or activities in the project area. Construction noise is regulated by Caltrans Standard Specifications, Section 14-8, Noise and Vibration which sets forth requirements that noise levels generated during construction shall comply with applicable local, state, and federal regulations.

Construction noise may also be governed by the City of Malibu Municipal Code Chapter 8-24 Noise, specifically Section 8.24.050(G), which prohibits the use of construction tools, equipment, impact devices, derricks or hoists on weekdays between the hours of 7:00 PM and 7:00 AM, before 8:00 AM or after 5:00 PM on Saturday, or at any time on Sundays or holidays, unless the City Manager grants expressed written permission pursuant to Section 8.24.060(D).

Construction work for the proposed project will most likely not include any stationary sources, construction equipment or activities that could produce ground-borne vibration levels that would exceed those which are considered to cause damage to buildings. Construction equipment may produce temporary and infrequent ground-borne vibration, however if it is expected that heavy duty impact-type construction equipment will be used, provisions should be put in place for minimizing disturbances to the nearby residential areas. Typically, equipment used for trenching or hand-held jackhammers do not generate levels of vibration that could cause any sort of architectural or structural damage to standard residential structures. For purposes of evaluating the significance of the vibration impacts, the following numeric thresholds can be used:

- Vibration levels that exceed approximately 85 VdB or 0.075 in/sec at sensitive land uses, which is the vibration level that is considered by the Federal Transit Administration (FTA) to be the threshold for human annoyance for infrequent ground-borne vibration; or
- Vibration levels that exceed approximately 102 VdB or 0.5 in/sec for new residential structures and approximately 97 VdB or 0.3 in/sec for older residential structures.

The construction noise impacts were assessed by Caltrans using the FHWA's Roadway Construction Noise Model version 1.00 (RCNM) and the FHWA Construction Noise Handbook. The RCNM was used for calculating construction equipment noise level emissions from the jobsites. In order to develop the analytical model, all relevant parameters, including construction equipment, receiver locations, existing shielding and existing terrain in the area of potential impact, were used in order to predict expected construction noise levels. It is important to note that at the time this report was prepared, the exact inventory of equipment to be used during construction was not known and assumptions were made in order to calculate predicted construction noise emissions. Predicted construction airborne noise emissions are presented in the following table.

Table 27. Estimated Maximum Construction Noise Levels and Impacts

Receiver/ Measurement Site	Project Location No.	Distance from Site Boundary (feet)	Daytime Existing Worst Hour Noise Level Leq_{avg}	Nighttime Existing Worst Hour Noise Level Leq_{avg}	Predicted Construction Noise Level Leq_{max}	Daytime Existing Maximum Noise Level Leq_{max}	Nighttime Existing Maximum Noise Level Leq_{max}	Predicted Construction Maximum Noise Level Leq_{max}	Potential Caltrans Noise Exceedance without Mitigation?
R1	2	25	76 dBA	72 dBA	87 dBA	92 dBA	90 dBA	90 dBA	**Yes**
R2	18034 W. Coastline Drive	200	61 dBA	57 dBA	74 dBA	77 dBA	73 dBA	70 dBA	**No**
R3	3	25	74 dBA	72 dBA	86 dBA	90 dBA	88 dBA	90 dBA	**Yes**
R4	4/6	25	70 dBA	65 dBA	86 dBA	86 dBA	84 dBA	90 dBA	**Yes**
R5	16	25	71 dBA	67 dBA	87 dBA	87 dBA	86 dBA	90 dBA	**Yes**
R6	16	185	55 dBA	50 dBA	70 dBA	68 dBA	68 dBA	73 dBA	**No**

The FHWA has compiled data on the noise-generating characteristics of specific types of construction equipment. Noise levels generated by heavy equipment can range from approximately 70 dBA to noise levels of up to 101 dBA when measured at a distance of 50-feet from the noise source. The noise levels diminish rapidly with distance at a rate of approximately 6 to up to 9 dBA per doubling of distance for acoustically hard and soft sites, respectively. An example of an acoustically hard site would be a parking lot while an acoustically soft site would be a park or any area with lawn or grassy surface. Assuming an acoustically hard site, a noise level of 75 dBA measured at 50 feet from the noise source would be reduced to 69 dBA at 100 feet and to 63 dBA at 200 feet. Construction noise levels at receptors would tend to vary based on the location of construction activity and the amount of equipment in operation. The project would involve the use of multiple pieces of construction equipment. However, the equipment would not all be in use at the same location because of physical space and safety considerations. For the purposes of this analysis, the maximum and average construction noise levels were estimated and used for determining the expected ambient noise levels during construction.

Short-Term Construction Impacts. Construction of the project would require site preparation, trenching, breaking and removal of existing roadway sections, compaction and roadway paving, material loading, unloading and hauling. These activities typically involve the use of heavy equipment, such as dump trucks, excavators, backhoes and loaders as well as smaller but noisy gear such as concrete saws and jackhammers. While construction would be temporary, the use of these types of equipment could generate noise that would be heard in the nearby residential areas adjacent to the project locations close to residential areas. Once the project is complete, ambient noise levels will return to existing conditions since the project does not include any capacity or speed increasing design features.

Construction noise levels at receptors would tend to vary based on the location of construction activity and the number of equipment being simultaneously used. The construction process requires the simultaneous use of several pieces of equipment, many of which move around the site and change their operating conditions on a day-by-day and hour-by-hour basis. The typical site-wide sound levels for the construction phases are difficult to estimate since they depend on factors such as number and type of equipment being used and construction phase being performed.

As shown in Table 27, the loudest construction activities are predicted to generate noise levels of up to 86 dBA Leq_{avg} and 90 dBA L_{max} at the sensitive land uses. In order to estimate construction related noise levels at the sensitive receptors located in the vicinity of the various proposed drainage restoration locations, FHWA's RCNM was used to perform the calculations. As previously stated, noise levels diminish rapidly with distance at a rate of approximately 6 to up to 9 dBA per doubling of distance for acoustically hard and soft sites, respectively. This attenuation is taken into account by the RCNM software. For the purposes of determining the maximum construction noise levels, the distance is based on the locations of the noise-sensitive receptors and the nearest estimated location where heavy equipment will be operating.

As shown in Table 27, construction would have a potentially temporary adverse construction noise impact at nearby noise sensitive receptors. Noise control measures are recommended to require the use of a feasible sound control plan and to schedule construction activities consistent with Section 8.24.050 of the City of Malibu Municipal Code. Compliance and implementation of the recommended noise control measures discussed later would reduce short-term construction noise levels.

Long-Term Operational Impacts. There are no expected operational noise impacts from the proposed project. As previously stated, the project will not add traffic volume capacity, increase speed, or remove any existing shielding from the roadway. However, since is expected that traffic noise will decrease due to reduced speeds for the construction zone, residents within the construction zone area may perceive that noise has increased after project completion when traffic volume and speed return to before-project conditions.

Predicted Construction Noise. As estimated for this project, equipment involved in construction is expected to generate noise levels ranging from 86 to 90 dBA at a distance of 50 feet, for each single piece of equipment. Noise emissions from multiple construction equipment would increase by approximately 3 dBA for each additional piece of equipment that generates the same noise. The increase would be 2 dBA if the sources differ by 2 or 3 dBA, and 1 dBA increase would result when the equipment producing noise differs by 4 to 9 dBA. The construction equipment noise would decrease a rate of about 6 dBA per doubling of distance. The predicted construction activity noise levels have been calculated using assumptions in regards to type, quantity and location of equipment. Actual noise levels could differ from predictions. Normally, construction noise levels should not exceed 86 dBA (L_{max}) at a distance of 50 feet and vibration levels should remain below 0.2 in/sec at 25 feet. Implementing the following measures would minimize temporary construction noise impacts:

1. Provide public outreach and project schedule information:

    a. Prior to construction, all residences within 1,000 feet of the site shall be individually notified of the project's construction schedule.
    b. Prior to construction, a sign should be posted on the site that is legible from at least 50 feet off-site. The sign should include a telephone number that residents can call to inquire about the construction process and to register complaints. The contractor or Caltrans Resident Engineer in charge should designate a "noise control coordinator" who will reply to all construction noise-related questions and complaints.

2. Equipment noise control is needed to reduce the noise emissions from construction sites by mandating a specified noise level for design of new equipment, and updating old equipment with new noise control devices and techniques presented below:

    a. Mufflers are very effective devices which reduce the noise emanating from the intake or exhaust of an engine, compressor, or pump. The fitting of effective mufflers on all new equipment and retrofitting of mufflers on existing equipment is necessary to yield an immediate noise reduction at all types of road construction sites.
    b. Sealed and lubricated tracks for crawler mounted equipment will lessen the sound radiated from the track assembly resulting from metal to soil and metal to metal contact. Contractors, site engineers, and inspectors should ensure that the tracks are kept in excellent condition by periodic maintenance and lubrication.
    c. Lowering exhaust pipe exit height closer to the ground can result in an off-site noise reduction. Barriers are more effective in attenuating noise when the noise source is closer to ground level.
    d. General noise control technology can have substantially quieter construction equipment when manufacturers apply state-of-the-art technology to new equipment or repair old equipment to maintain original equipment noise levels.

3. In–use site noise control is necessary to prevent existing equipment from producing noise levels in excess of specified limits. Any equipment that produces noise levels less than the specified limits would not be affected. However, those exceeding the limit would be required to meet compliance by repair, retrofit, or replacement. New equipment with the latest noise sensitive components and noise control devices are generally quieter than older equipment, if properly maintained and inspected regularly. They should be repaired or replaced if necessary, to maintain the in-use noise limit. All equipment applying the in-use noise limit would achieve an immediate noise reduction if properly enforced.

4. Site restrictions should be applied to achieve noise reduction through different methods, resulting in an immediate reduction of noise emitted to the community without requiring any modification to the source noise emissions. The methods include shielding with barriers for equipment and site, truck rerouting and traffic control, time scheduling, and equipment relocation. The effectiveness of each method depends on the type of construction involved and the site characteristics.

    a. Shielding with temporary barriers or noise blankets should be implemented at an early stage of a project to reduce construction equipment noise. The placement of barriers must be carefully considered to reduce limitation of site access. Barriers may be natural or man-made, such as excess land fill used as a temporary berm strategically placed to act as a barrier or any of the commercially available temporary construction barriers or noise blankets.
    b. Efficient rerouting of trucks and control of traffic activity on construction site will reduce noise due to vehicle idling, gear shifting and accelerating under load. Planning proper traffic control will result in efficient workflow and reduce noise levels. In addition, rerouting trucks does not reduce noise levels but transfers noise to other areas that are less sensitive to noise.
    c. Time scheduling of activities should be implemented to minimize noise impact on exposed areas. Local activity patterns and surrounding land uses must be considered in establishing site curfews. However, limiting working hours can decrease productivity. Sequencing the use of equipment with relatively low noise levels versus equipment with relatively high noise levels during noise sensitive periods is an effective noise control measure.
    d. Equipment location should be as far from noise sensitive land use areas as possible. The contractor should substitute quieter equipment or use quieter construction processes at or near noise sensitive areas.

5. Educating contractors and their employees to be sensitive to noise impact problems and noise control methods. The contractor and all subcontractors shall be knowledgeable about the details of Chapter 8.24 'Noise" of the Malibu Municipal Code and the noise control requirements included in the project's Standard Specifications and Special Provisions, and shall conform to its requirements at all times. This may be one of the most cost-effective ways to help operators and supervisors become more aware of the construction site noise problem and to implement the various methods of improving the conditions. A training program for equipment operators is recommended to instruct them in methods of operating their equipment to minimize environmental noise. Many training programs are presently given on the subject of job safety. This can be extended to include the impact due to noise and methods of abatement.

Summary and Conclusion. Construction noise and vibration impact analysis for the sensitive land uses in the vicinity of the project has determined that construction activities for the proposed drainage restoration project will cause noticeable ambient noise level increases at the sensitive land uses adjacent to the various site locations. Construction noise may also sporadically and frequently exceed established local jurisdiction noise policy criteria and Caltrans construction noise thresholds.

9. ENVIRONMENTAL DETERMINATION

Analysis of the proposed project's relationship to the surrounding environment, the final approved environmental document and its impacts, and the ensuing environmental reevaluation provide the basis for the following determinations:

a. The circumstances surrounding the project remain essentially the same as they were when the final IS/EA was considered and approved.
b. The area's social, economic, and environmental setting remains essentially the same as when the IS/EA for the State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek Project was written.

In addition, the environmental review, consultation, and any other action required in accordance with applicable Federal Laws for this project is being, or has been, carried out by the State of California Department of Transportation under its assumption of responsibility pursuant to 23 U.S.C. 327.

This Addendum/Environmental Reevaluation to the Mitigated Negative Declaration is hereby approved pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15164 which limits its use to minor technical changes or additions in the project scope, impacts, and mitigation measures identified in the preceding pages.

E Aguilar 11/30/2022

EDUARDO AGUILAR **Date**
Senior Environmental Planner/Branch Chief
Caltrans District 7 Division of Environmental Planning

NEPA/CEQA RE-VALIDATION FORM

DIST-CO-RTE: 07-LA-001/07-VEN-001
PM/PM: LA PM 37.6/62.86 / VEN PM 0.0/0.92
EA or Fed-Aid Project No.: EA 07-31350
Other Project No. (specify): E-FIS 0715000090
Project Title: State Route 1 (Pacific Coast Highway) Drainage Rehabilitation and Bridge Replacement at Solstice Canyon Creek
Environmental Approval Type: IS/EA w/MND/FONSI
Date Approved: 3/29/2019
Reason for Consultation (23 CFR 771.129), check one: ☒ Project proceeding to next major federal approval ☒ Change in scope, setting, effects, mitigation measures, requirements ☐ 3-year timeline (EIS only) ☐ **N/A** (Re-Validation for CEQA only)
Description of Changed Conditions: *Revalidation for change in scope of work (addition of pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek) and for Environmental Certification of 100% PS&E review.*

NEPA CONCLUSION - VALIDITY

Based on an examination of the changed conditions and supporting information: (*Check ONE of the three statements below, regarding the validity of the original document/determination (23 CFR 771.129). If document is no longer valid, indicate whether additional public review is warranted and whether the type of environmental document will be elevated.*)

☐ The original environmental document or CE remains valid. No further documentation will be prepared.

☒ The original environmental document or CE is in need of updating; further documentation has been prepared and ☐ is included on the continuation sheet(s) or ☒ is attached. With this additional documentation, the original ED or CE remains valid.

Additional public review is warranted (23 CFR 771.111(h)(3)) ☐ Yes ☒ No

☐ The original document or CE is no longer valid.

Additional public review is warranted (23 CFR 771.111(h)(3)) ☐ Yes ☐ No

Supplemental environmental document is needed. ☐ Yes ☐ No

New environmental document is needed. ☐ Yes ☐ No (If "Yes," specify type:)

CONCURRENCE WITH NEPA CONCLUSION

I concur with the NEPA conclusion above.

E Aguilar — 11/30/2022

Signature: Eduardo Aguilar, Environmental Branch Chief — Date

Calvin Liu — 11/30/2022

Signature: Calvin Liu, Project Manager — Date

CEQA CONCLUSION (Only mandated for projects on the State Highway System.)
Based on an examination of the changed conditions and supporting information, the following conclusion has been reached regarding appropriate CEQA documentation: (*Check ONE of the five statements below, indicating whether any additional documentation will be prepared, and if so, what kind. If additional documentation is prepared, attach a copy of this signed form and any continuation sheets.*)

☐ **Original document remains valid. No further documentation is necessary.**

☒ **Only minor technical changes or additions to the previous document are necessary. ☒ An addendum has been or will be prepared and is ☐ included on the continuation sheets or ☒ will be attached. It need not be circulated for public review. (CEQA Guidelines, §15164)**

☐ **Changes are substantial, but only minor additions or changes are necessary to make the previous document adequate. A Supplemental environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15163)**

☐ **Changes are substantial, and major revisions to the current document are necessary. A Subsequent environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15162)**
(Specify type of subsequent document, e.g., Subsequent FEIR):

☐ **The CE is no longer valid. New CE is needed. ☐ Yes ☐ No**

CONCURRENCE WITH CEQA CONCLUSION
I concur with the CEQA conclusion above.

E Aguilar — 11/30/2022

Signature: Eduardo Aguilar, Environmental Branch Chief — Date

Calvin Liu — 11/30/2022

Signature: Calvin Liu, Project Manager — Date

CONTINUATION SHEET(S)

Changes in project design, e.g., scope change; a new alternative; change in project alignment.

In May of 2021, Caltrans Design began preliminary work on plans for a pedestrian undercrossing at Project Location No. 10 (Solstice Canyon Creek) in response to a request for public beach access from property owners adjacent to the project area. The property owners of the Calamigos Beach Club Restaurant at 26025 Pacific Coast Highway, Malibu, CA 90265 (which is part of the Calamigos Guest Ranch located at 327 Latigo Canyon Road, Malibu, CA 90265), requested that Caltrans consider providing walkway access underneath the newly proposed bridge structure at Solstice Canyon Creek from the restaurant to the beach as part of the proposed undertaking. While the intention of the request was to provide an undercrossing walkway to allow restaurant patrons access to the beach without having to cross the Pacific Coast Highway (PCH) roadway, its use was expanded to allow general public access (not specific to the adjacent property), which is more consistent with City of Malibu and California Coastal Commission goals of providing greater beach access to the general public.

By July 2022, final design, and accompanying hydraulic analysis, and grading plans were achieved and plans/layouts specific to this proposed project location are appended to this addendum/reevaluation as Attachment A. In general, PCH runs north-to-south, but in the area of Project Location No. 10 (Solstice Canyon Creek), the roadway traverses the coastline in an east-to-west direction. The proposed pedestrian undercrossing is designed as a cantilevered concrete walkway so as not to impede hydraulic flow of the creek and would be attached to the eastern wing wall structure, perpendicular and beneath the newly proposed bridge.

Proposed pedestrian access to the undercrossing on the north side of the proposed bridge structure would originate at the roadway and be located approximately 70 feet north-west of the existing Calamigos Restaurant driveway. Southern access would start at the flat area on the embankment of the roadway just southeast of the proposed bridge structure. The walkway would be constructed parallel to the embankment [supported on evenly spaced Cast-In-Drilled-Hole (CIDH) piles] before connecting with the southern end of the cantilevered pedestrian undercrossing structure. In a review of the proposed pedestrian undercrossing plans/layouts, the following additional elements were implemented:

- To comply with ADA standards, the proposed pedestrian undercrossing structure would have a minimum width of 6 feet and a maximum slope grade of 8.33%.
- The proposed pedestrian undercrossing structure would be constructed above the 50-year flood zone line to ensure flood events do not cause damage to the facility.
- The proposed pedestrian undercrossing structure would be attached via cantilever method to the eastern wingwall and bridge abutments. Along the bridge structure, the walkway would be constructed approximately 10 feet above the channel bottom. Cable railings and lighting would be installed for pedestrian safety.

Changes in environmental setting, e.g., new development affecting traffic or air quality.
N/A

Changes in environmental circumstances, e.g., a new law or regulation; change in the status of a listed species.
N/A

Changes to environmental impacts of the project, e.g., a new type of impact, or a change in the magnitude of an existing impact.

In addition to the structural excavation work previously evaluated at Project Location No. 10 (Solstice Canyon Creek), grading plans for fish passage within Solstice Canyon Creek were finalized within the footprint of the proposed new bridge structure and the beachside area just south of the project area. Final proposed grading plans

include construction of an engineered stream bed along the creek that would be composed of a 6-inch-thick top sand layer and an 8-inch-thick Class II Rock Slope Protection (RSP) bottom layer. The graded limits would extend approximately 50 feet downstream of the southern proposed bridge structure limits, and 125 feet upstream from the northern proposed bridge structure limits. In order to protect upstream embankments against erosion, Class XI RSP would be installed to extend approximately 40 feet upstream of the proposed bridge structure wingwalls. During construction, a water diversion plan would be implemented to temporarily redirect any flow within Solstice Canyon Creek via a pipe bypass method. During redirection of creek flow, the pipe on the southern portion would be placed on top of plywood sheets to minimize disturbance of the sand surface on the beach side and within an Environmentally Sensitive Area (ESA) in terms of Archaeology. Full proposed construction details can be referenced in the plans/layouts specific to this proposed project location as appended to this addendum/reevaluation as Attachment A.

Changes to avoidance, minimization, and/or mitigation measures since the environmental document was approved.

As part of biological mitigation for the proposed undertaking, a total of 8 acres of revegetation with native plantings is proposed at Project Location No. 19 (VEN PM 0.92). Adjacent parcels 81360-1 and 81875-1 will be granted for these purposes by the State of California – Department of Parks and Recreation, located along PCH/SR-1 between VEN PM 0.903 and 0.824. Planting will be implemented south of the PCH roadway on the beach side and will consist of brush removal (by hand) and the manual excavation of several holes (12-inches-deep) to accommodate 1-gallon size native plantings.

Changes to environmental commitments since the environmental document was approved, e.g., the addition of new conditions in permits or approvals. When this applies, append a revised Environmental Commitments Record (ECR) as one of the Continuation Sheets.

Minor changes in environmental commitments as they pertain to Biology, Cultural/Archaeological Resources, Hazardous Waste, Geology, Hydraulics, and Noise. Reference Environmental Commitments Record (ECR) in Attachment B for details.

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven		37.7/62.9, 0.0/0.9	1	124

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4	KEY MAP LINE INDEX
5	PROJECT CONTROL
6	LAYOUTS
7	PROFILE
8-14	CONSTRUCTION DETAILS
15-29	UTILITY PLANS
30-44	DRAINAGE PLANS, PROFILES, DETAILS AND QUANTITIES
45	CONSTRUCTION AREA SIGNS
46-65	STAGE CONSTRUCTION PLANS, DETAILS, QUANTITIES
66-68	PAVEMENT DELINEATION AND SIGN PLAN, QUANTITIES
69-70	SUMMARY OF QUANTITIES
71-73	EROSION CONTROL PLANS, QUANTITIES
74-79	ELECTRICAL PLANS AND QUANTITIES
REVISED STANDARD PLANS	
STRUCTURE PLANS	
80-124	SOLSTICE CREEK BRIDGE PLANS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK

STATE OF CALIFORNIA

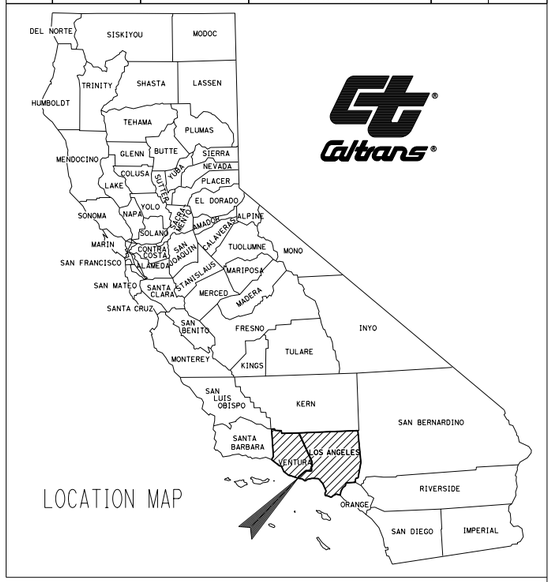
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR BUILDING CONSTRUCTION

STATE HIGHWAY

IN LOS ANGELES COUNTY AT SOLSTICE CREEK BRIDGE

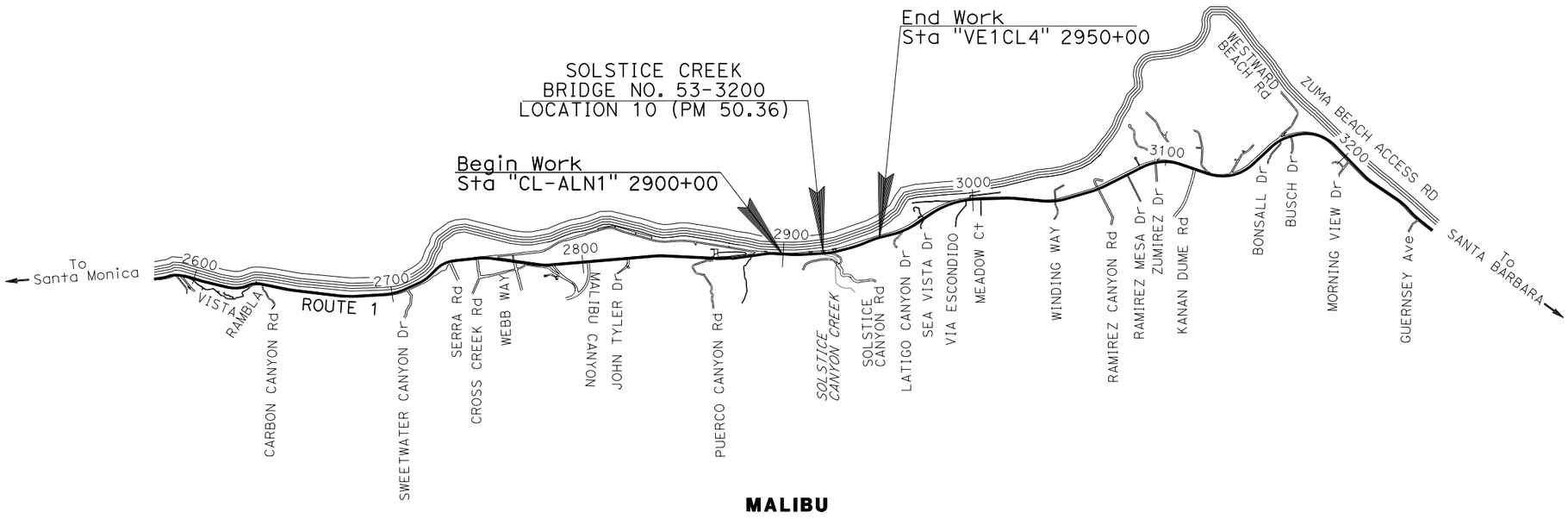
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018



LOCATION MAP

P A C I F I C O C E A N

ATTACHMENT A - PLANS/LAYOUTS FOR PROJECT LOCATION NO. 10 (SOLSTICE CANYON CREEK)



PROJECT MANAGER	BART GUNTER
DESIGN MANAGER	MANSOOR A. KHAN

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

Nathan Oum 05-28-21

PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — NATHAN OUM — No. C71418 — Exp. 12-31-21 — CIVIL — STATE OF CALIFORNIA

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.	07-313504
PROJECT ID	0715000090

LAST REVISION 00-00-00 DATE PLOTTED => 28-JUL-2022 TIME PLOTTED => 15:52

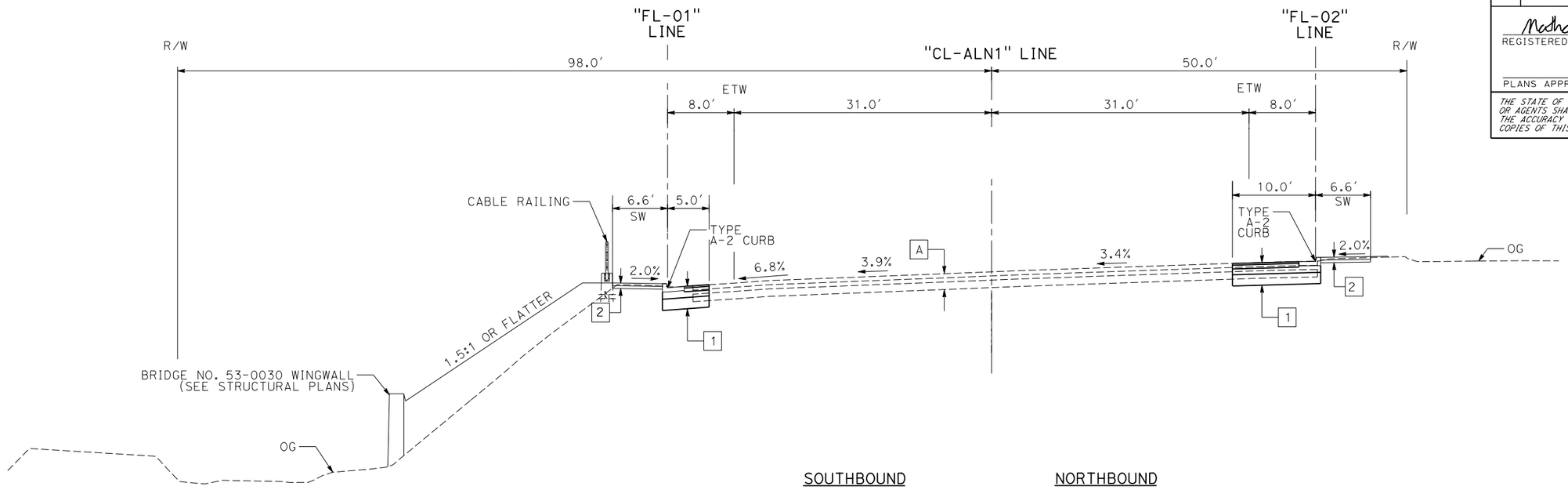
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	2	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

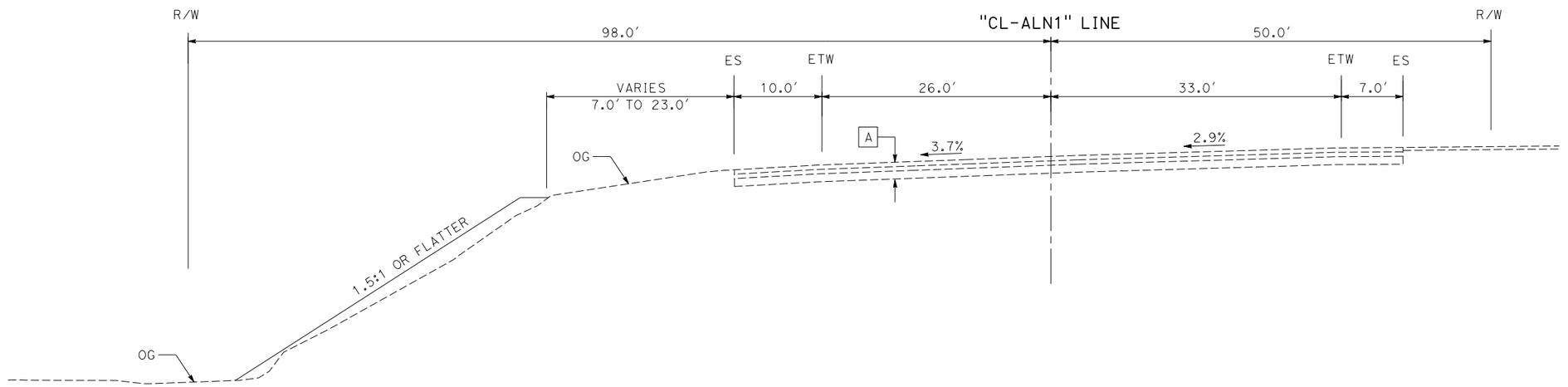
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



SOUTHBOUND NORTHBOUND

"CL-ALN1" STA 2920+92 TO "CL-ALN1" STA 2921+18

ROUTE 1



SOUTHBOUND NORTHBOUND

"CL-ALN1" STA 2920+40 TO "CL-ALN1" STA 2920+92

ROUTE 1

TYPICAL CROSS SECTIONS

NO SCALE

X-1

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
TIN PHAN	NATHAN OUM		

FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:52

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ca001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

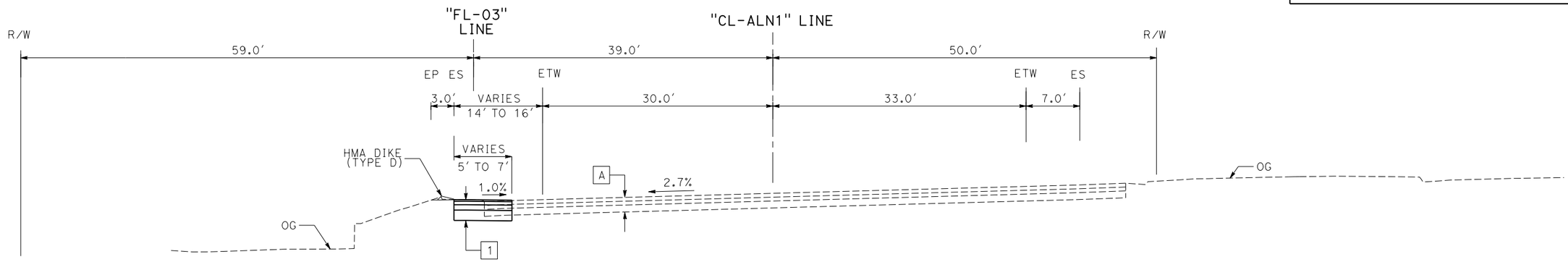
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	3	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

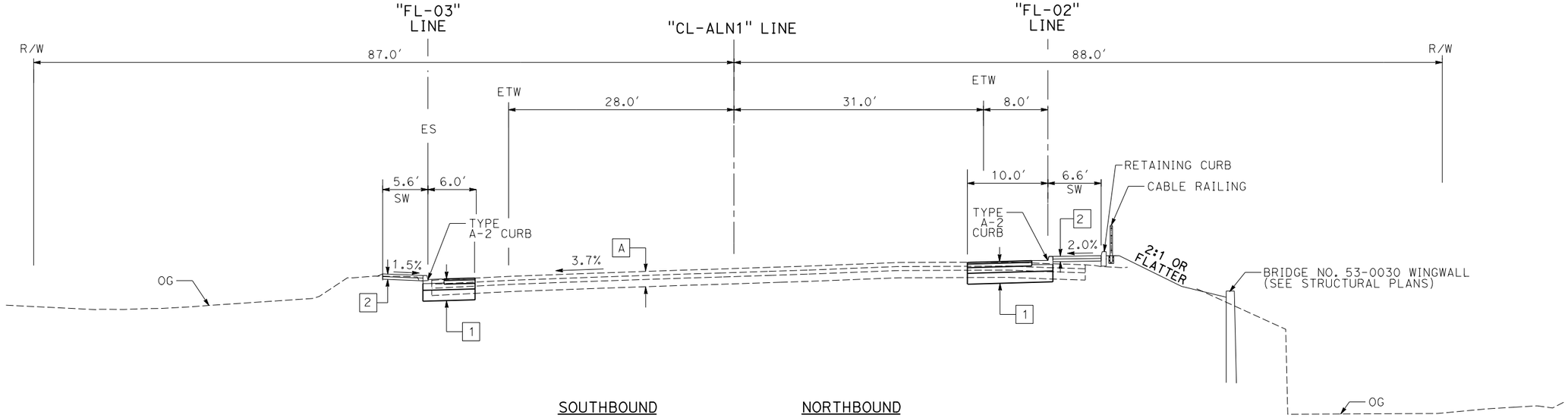
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



SOUTHBOUND NORTHBOUND

"CL-ALN1" STA 2923+34 TO "CL-ALN1" STA 2924+40

ROUTE 1



SOUTHBOUND NORTHBOUND

"CL-ALN1" STA 2922+53 TO "CL-ALN1" STA 2923+34

ROUTE 1

TYPICAL CROSS SECTIONS

NO SCALE

X-2

CALCULATED-DESIGNED BY
CHECKED BY
FUNCTIONAL SUPERVISOR
MANSOOR A. KHAN
REVISED BY
TIN PHAN
DATE REVISED
NATHAN OUM
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:52

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350ca002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	4	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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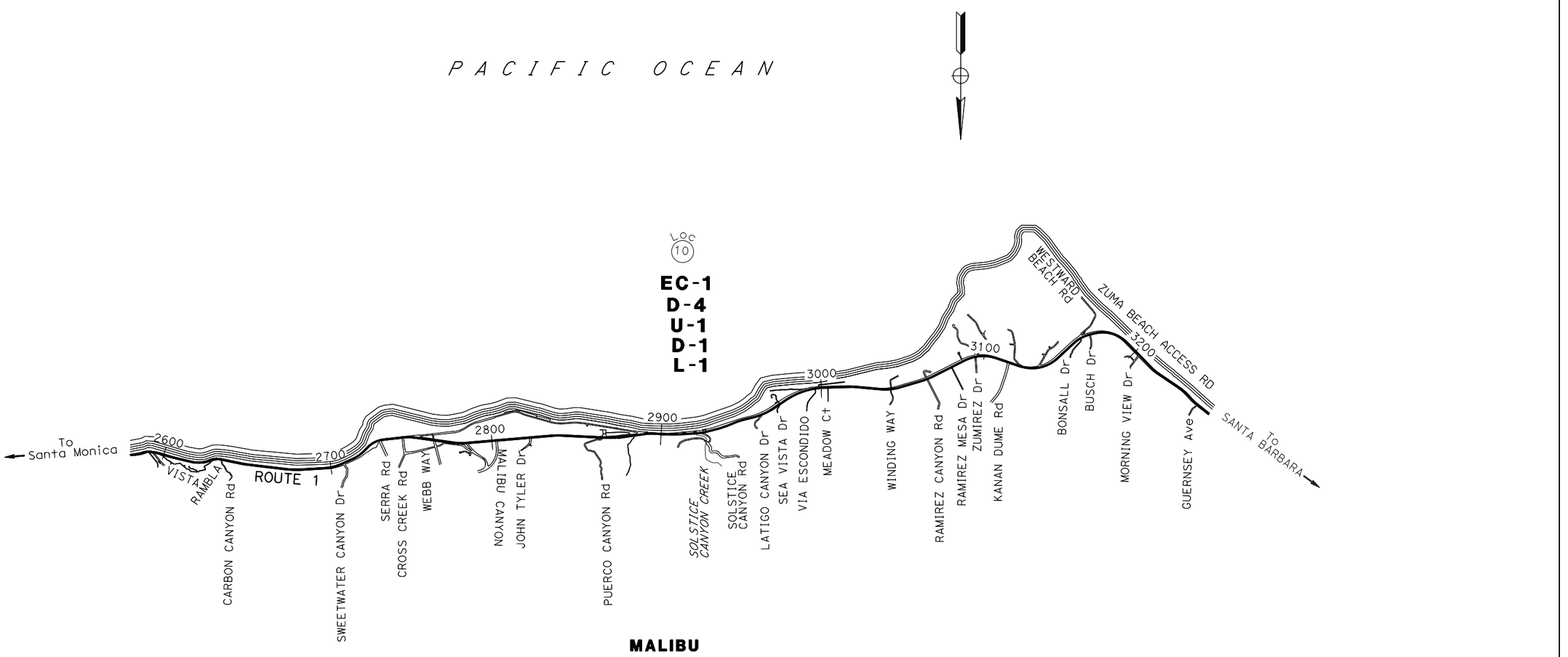
LEGEND:

LOC (X) LOCATION NUMBER



KEY MAP AND LINE INDEX

NO SCALE

K-1

CALCULATED-DESIGNED BY	TIN PHAN	REVISED BY	
CHECKED BY	NATHAN OUM	DATE REVISED	
FUNCTIONAL SUPERVISOR	MANSOOR A. KHAN		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN		

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:53

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350da001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

NOTES:

1. FOR COMPLETE PROJECT CONTROL DATA, SEE THE SURVEY RECORDS (SR18-142, SR18-143, AND SR18-144) ON THE FILE IN THE SURVEYS DEPARTMENT AT THE DISTRICT OFFICE.
2. **BASIS OF BEARINGS AND COORDINATES:**
   BEARINGS AND COORDINATES FOR THIS PROJECT ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, HPGN EPOCH ADJUSTMENT [CCS 83 (1991.35)], ZONE 5, U.S. SURVEY FOOT.
3. **BASIS OF ELEVATIONS:**
   ELEVATION FOR THIS PROJECT ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
4. 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 GPS SITE CALIBRATION IN COMPLIANCE WITH THIRD-ORDER SURVEY SPECIFICATION AS DEFINED IN CHAPTER 6, TABLES 6B-1 AND 6B-2 OF THE CALTRANS SURVEY MANUAL.

ABBREVIATIONS:

PK	PARKER-KALON SURVEY NAIL
AC Shld	ASPHALT CONCRETE SHOULDER
TC	TOP OF CURB
FD	FOUND

LEGEND:

△	STATION IN THE NATIONAL SPATIAL REFERENCE SYSTEM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	5	124

REGISTERED CIVIL ENGINEER — DATE

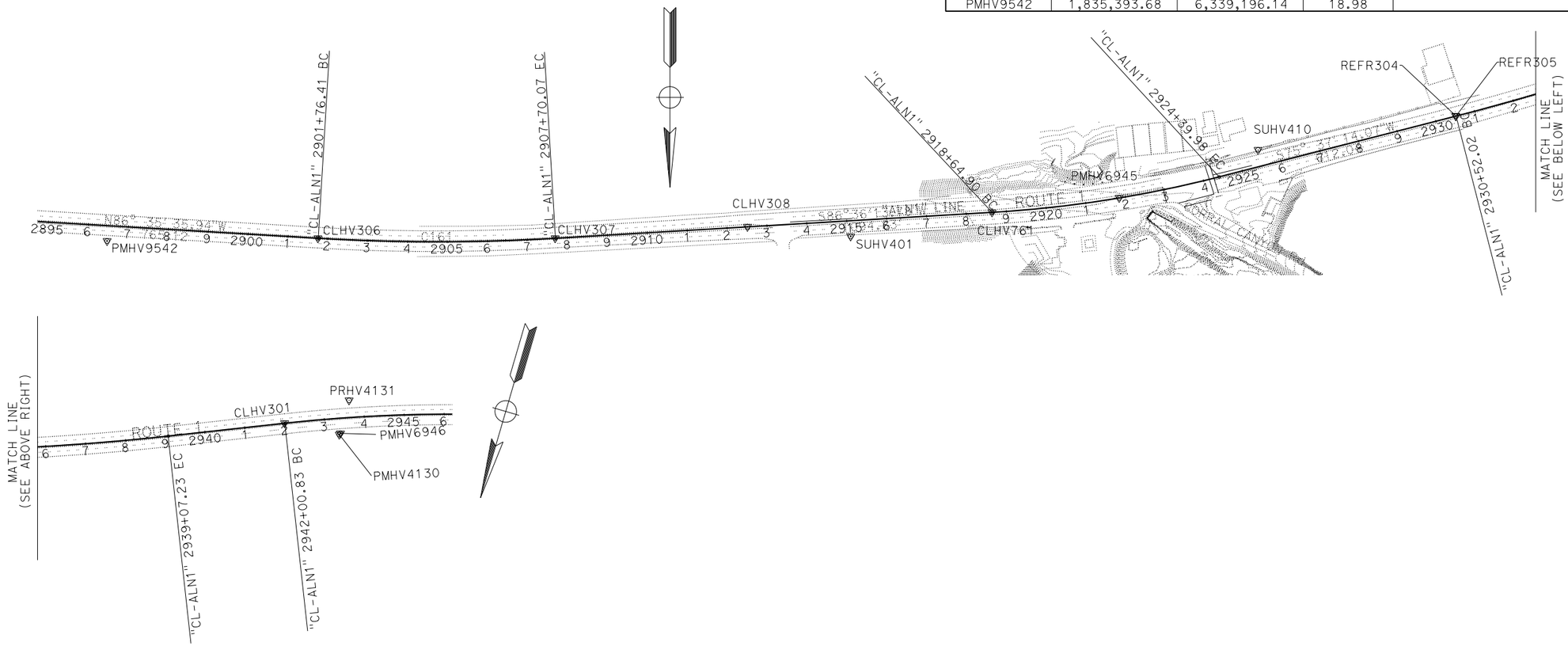
XX/XX/XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — 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.

CONTROL FOR DESIGN AND CONSTRUCTION

STATION DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
PMHV4130	1,834,687.14	6,334,600.92	46.72	
PRHV4131	1,834,597.92	6,334,601.51	48.79	
PMHV6946	1,834,683.40	6,334,598.98	46.28	
CLHV301	1,834,697.89	6,334,740.47	45.06	
REFR305	1,835,081.62	6,335,822.02	34.59	
REFR304	1,835,080.69	6,335,822.24	34.64	
SUHV410	1,835,165.75	6,336,316.74	31.45	
PMHV6945	1,835,285.76	6,336,664.12	33.03	
CLHV761	1,835,321.85	6,336,982.27	37.26	
SUHV401	1,835,382.11	6,337,335.94	40.50	
CLHV308	1,835,358.10	6,337,594.12	42.32	
CLHV307	1,835,386.71	6,338,075.17	36.61	
CLHV306	1,835,386.85	6,338,668.71	21.02	
PMHV9542	1,835,393.68	6,339,196.14	18.98	



PROJECT CONTROL

NO SCALE

PC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		FUNCTIONAL SUPERVISOR	JEFFREY WRIGHT	CALCULATED-DESIGNED BY	TIN PHAN
Caltrans® OFFICE OF LAND SURVEYS				CHECKED BY	NATHAN OUM
REVISED BY	DATE REVISED				

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JUL-2022 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350dc001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	11	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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NOTES:

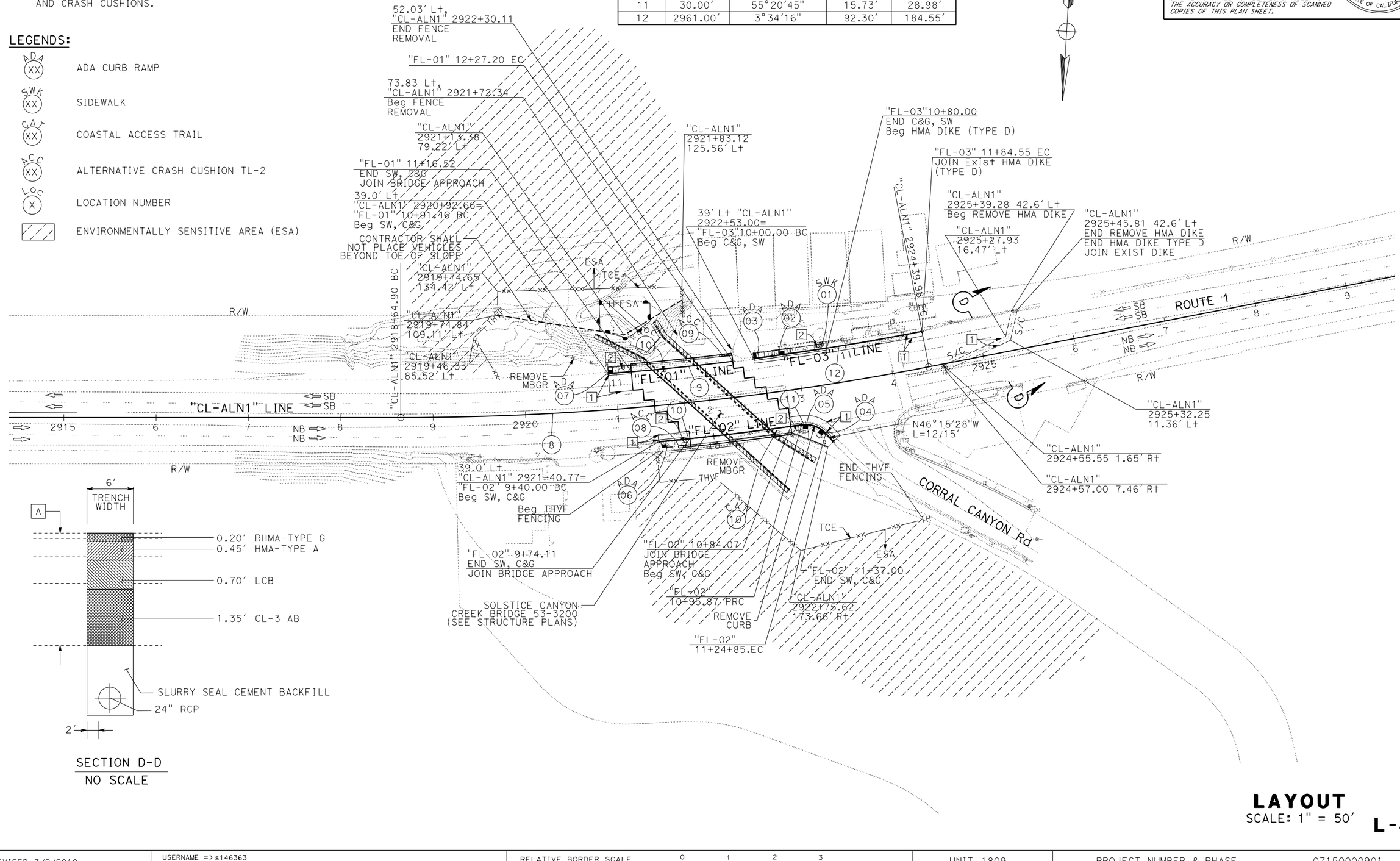
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR AREAS OF EXCAVATION AN ARCHAEOLOGICAL AND NATIVE AMERICAN MONITOR MUST BE PRESENT.
3. SEE CONSTRUCTION DETAILS FOR SIDEWALK, ADA CURB RAMPS AND CRASH CUSHIONS.

LEGENDS:

- (AD XX) ADA CURB RAMP
- (SWK XX) SIDEWALK
- (CA XX) COASTAL ACCESS TRAIL
- (ACC XX) ALTERNATIVE CRASH CUSHION TL-2
- (LOC X) LOCATION NUMBER
- ENVIRONMENTALLY SENSITIVE AREA (ESA)

CURVE DATA

No. ⑧	R	Δ	T	L
8	3000.00′	10°59′00"	288.42′	575.08′
9	2961.00′	2°37′35"	67.88′	135.74′
10	3039.00′	2°56′20"	77.95′	155.87
11	30.00′	55°20′45"	15.73′	28.98′
12	2961.00′	3°34′16"	92.30′	184.55′



SECTION D-D
NO SCALE

LAYOUT
SCALE: 1" = 50′

L-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
CALCULATED-DESIGNED BY: DANE CORTES
CHECKED BY: NATHAN OUM
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:12

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 DGN FILE => 0731350ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	7	124

Nathan Oum — 05-28-21
REGISTERED CIVIL ENGINEER — DATE

XX/XX/XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — NATHAN OUM No. C71418 Exp. 12-31-21 CIVIL — STATE OF CALIFORNIA

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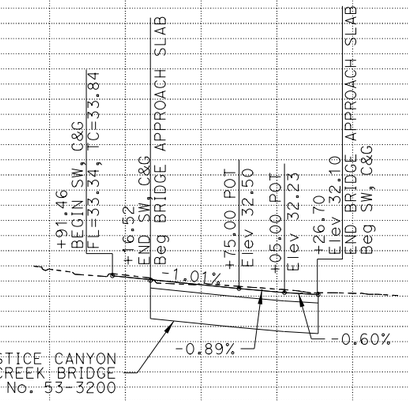
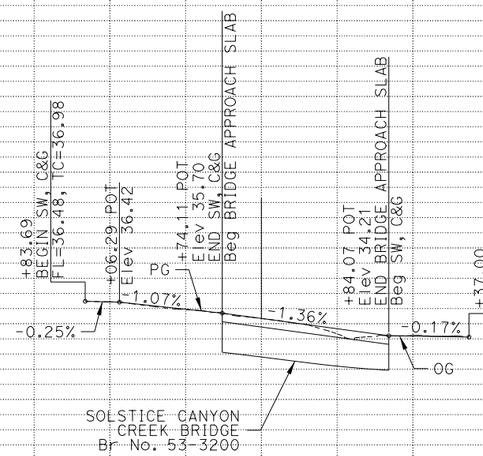
REVISED BY | DATE REVISED
DANE CORTES | NATHAN OUM
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: SAM ALAMEDDINE

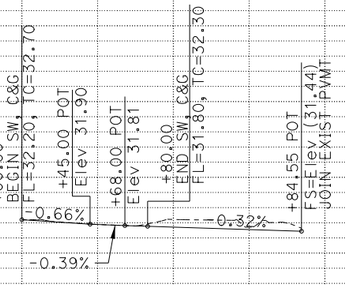
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN



ROUTE 1
"FL-01" LINE
LOCATION 10



ROUTE 1
"FL-02" LINE
LOCATION 10



ROUTE 1
"FL-03" LINE
LOCATION 10

PROFILE
SCALE: Horiz 1" = 50'
Vert 1" = 5'

P-1

STATION	10	1	2	3	4	9	10	1	TOTAL
CY Exc									
CY Emb									

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350fa001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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ABBREVIATIONS:

CF	CURB FACE
DWS	DETECTABLE WARNING SURFACE
EP	EDGE OF PAVEMENT
ESW	EDGE OF SIDEWALK
FL	FLOWLINE
FS	FINISH SURFACE
Lip	LIP OF GUTTER
TC	TOP OF CURB
TR	TOP OF RAMP
TRC	TOP OF RETAINING CURB

LEGENDS:

X.X′	GUTTER COUNTER SLOPE TRANSITION LENGTH
18" CMP	Exist STORM DRAIN LINE
- ——w——	Exist WATER LINE
___S/C___	SAWCUT LINE

CURVE DATA

No. ⊕	R	Δ	T	L
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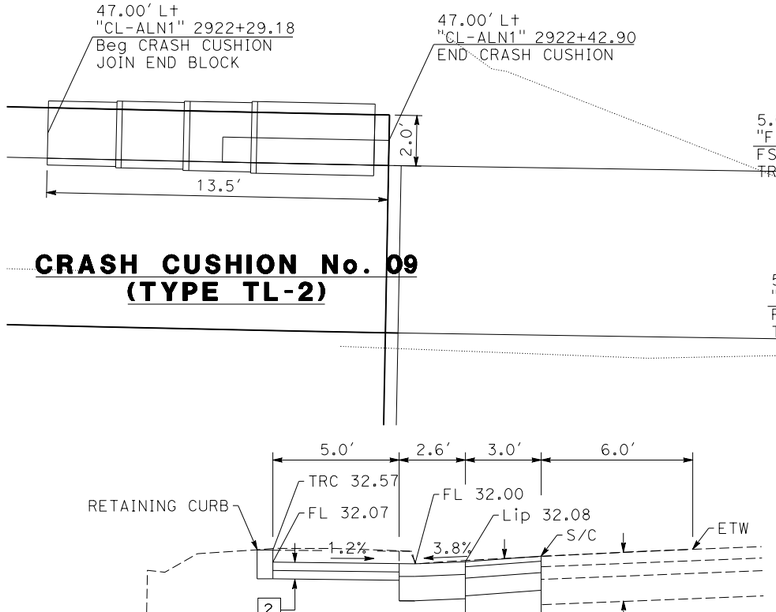
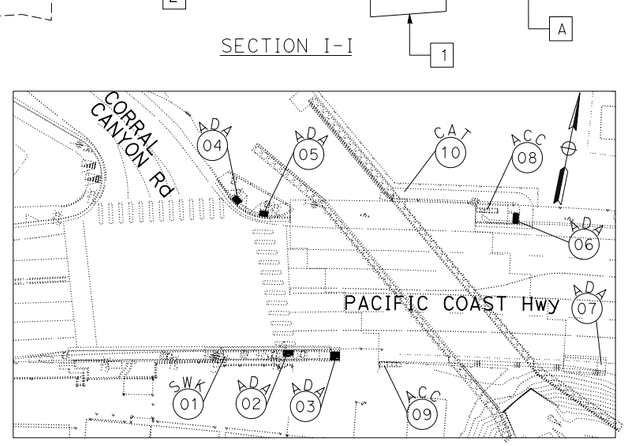
12	2961.00′	3°34′16"	92.30′	184.55′

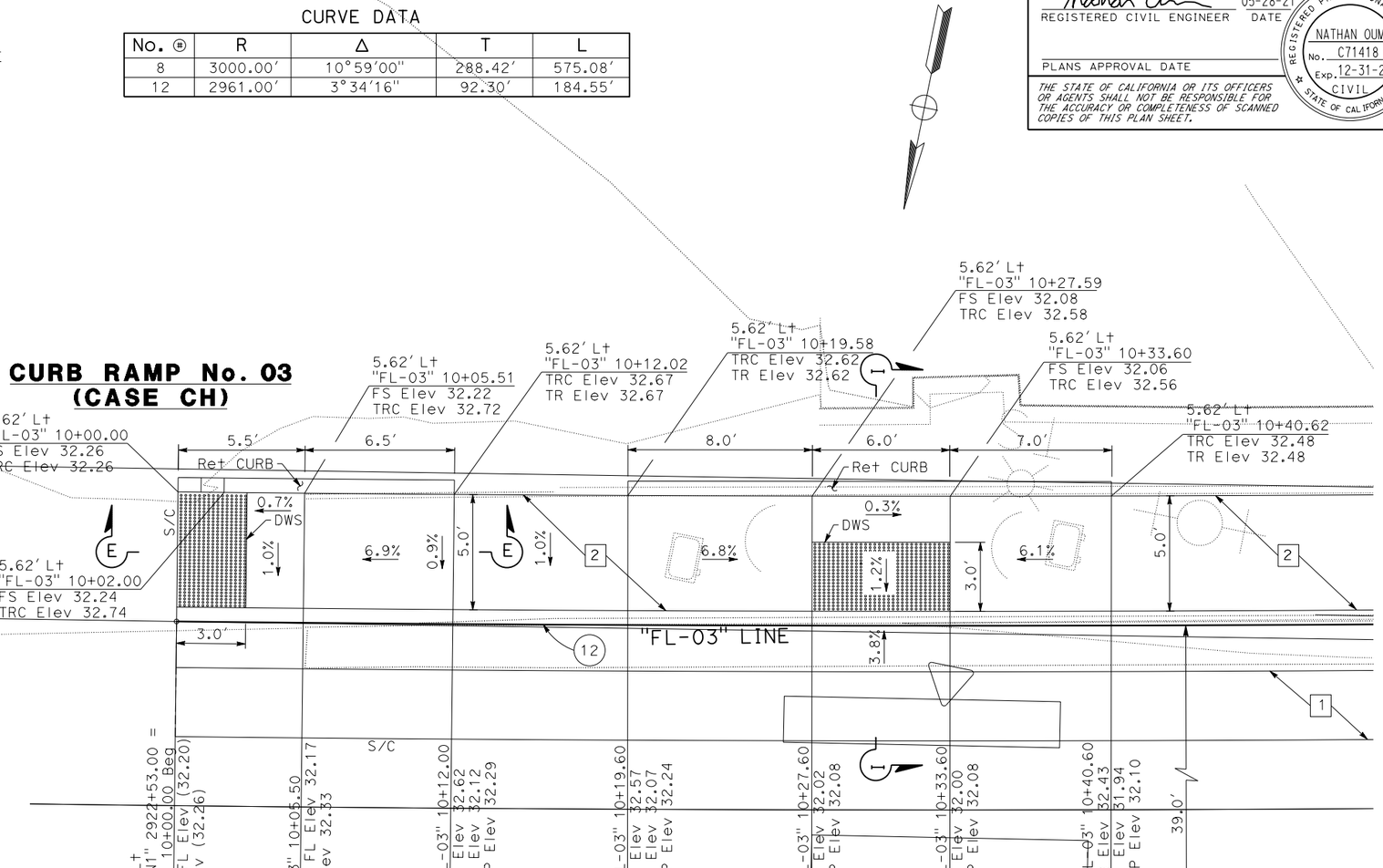


CRASH CUSHION No. 09
(TYPE TL-2)

SECTION I-I

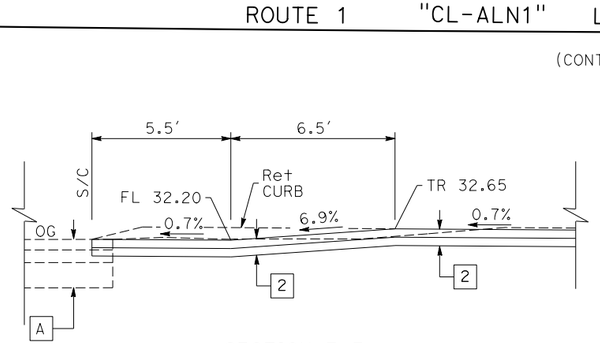


LOCATION MAP

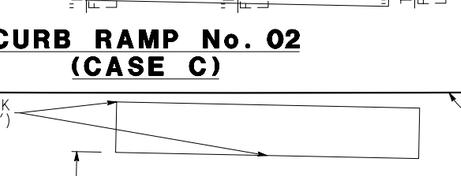


CURB RAMP No. 03
(CASE CH)

CURB RAMP No. 02
(CASE C)



SECTION E-E



CONSTRUCTION DETAILS

NO SCALE

C-1

LAST REVISION	DATE PLOTTED => 28-JUL-2022
00-00-00	TIME PLOTTED => 15:54

REVISED BY | DATE REVISED
TIN PHAN | NATHAN OUM
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ga001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum — 05-28-21
REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — NATHAN OUM — No. C71418 — Exp. 12-31-21 — CIVIL — STATE OF CALIFORNIA

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CURVE DATA

No. ⑧	R	Δ	T	L
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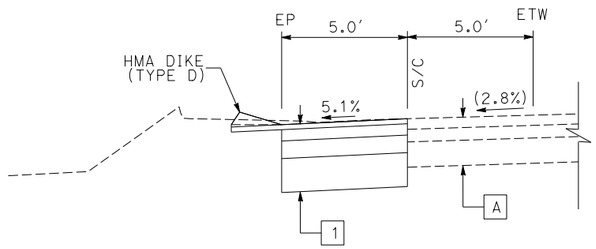
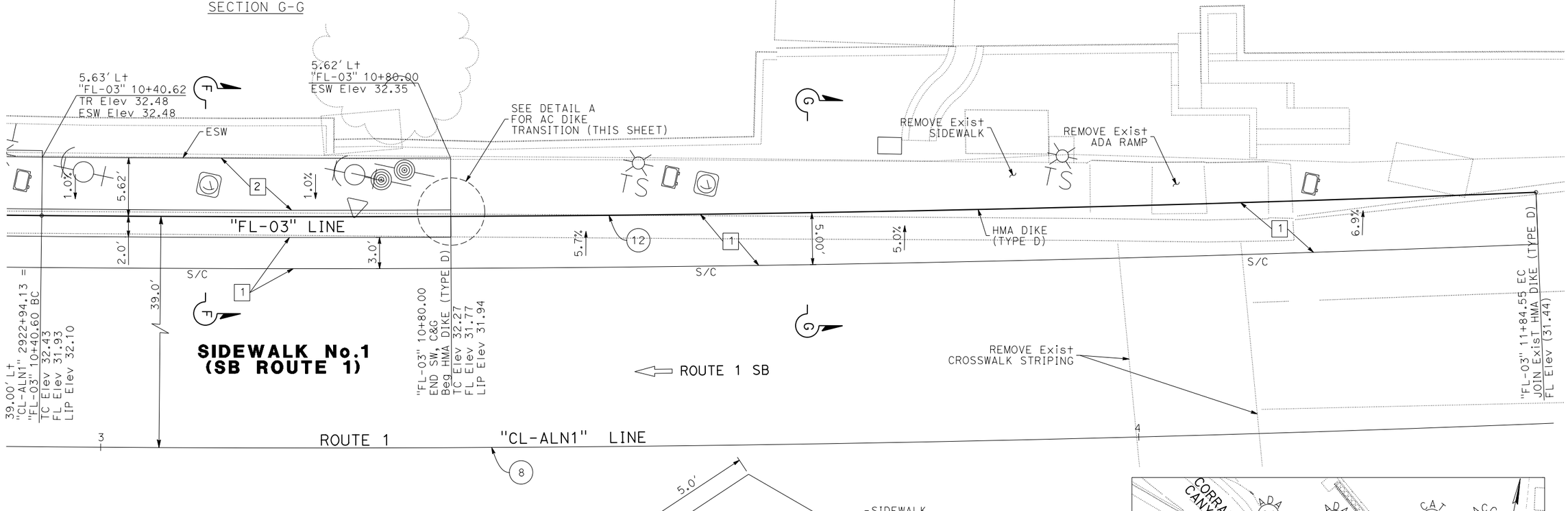
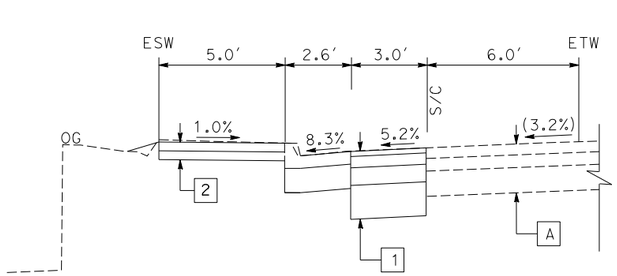
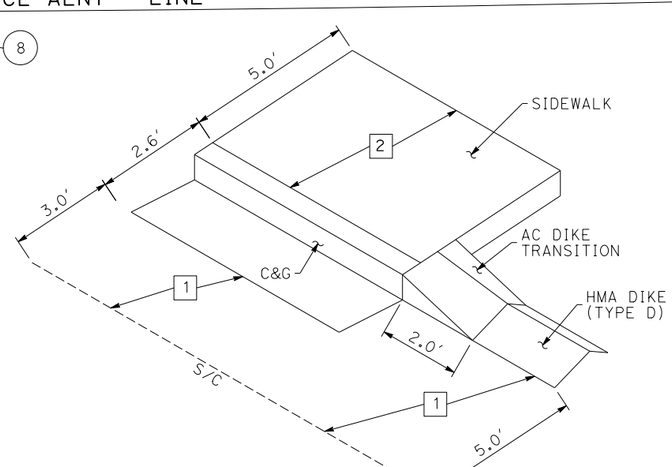


SECTION G-G

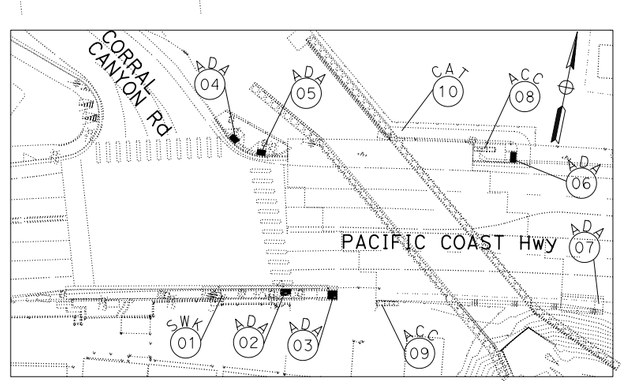




SECTION F-F



DETAIL A



LOCATION MAP

CONSTRUCTION DETAILS

NO SCALE

C-2

REVISED BY	DATE REVISED
TIN PHAN	NATHAN OUM
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ga002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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CURVE DATA

No. ⓡ	R	Δ	T	L
8	3000.00′	10°59′00"	288.42′	575.08′
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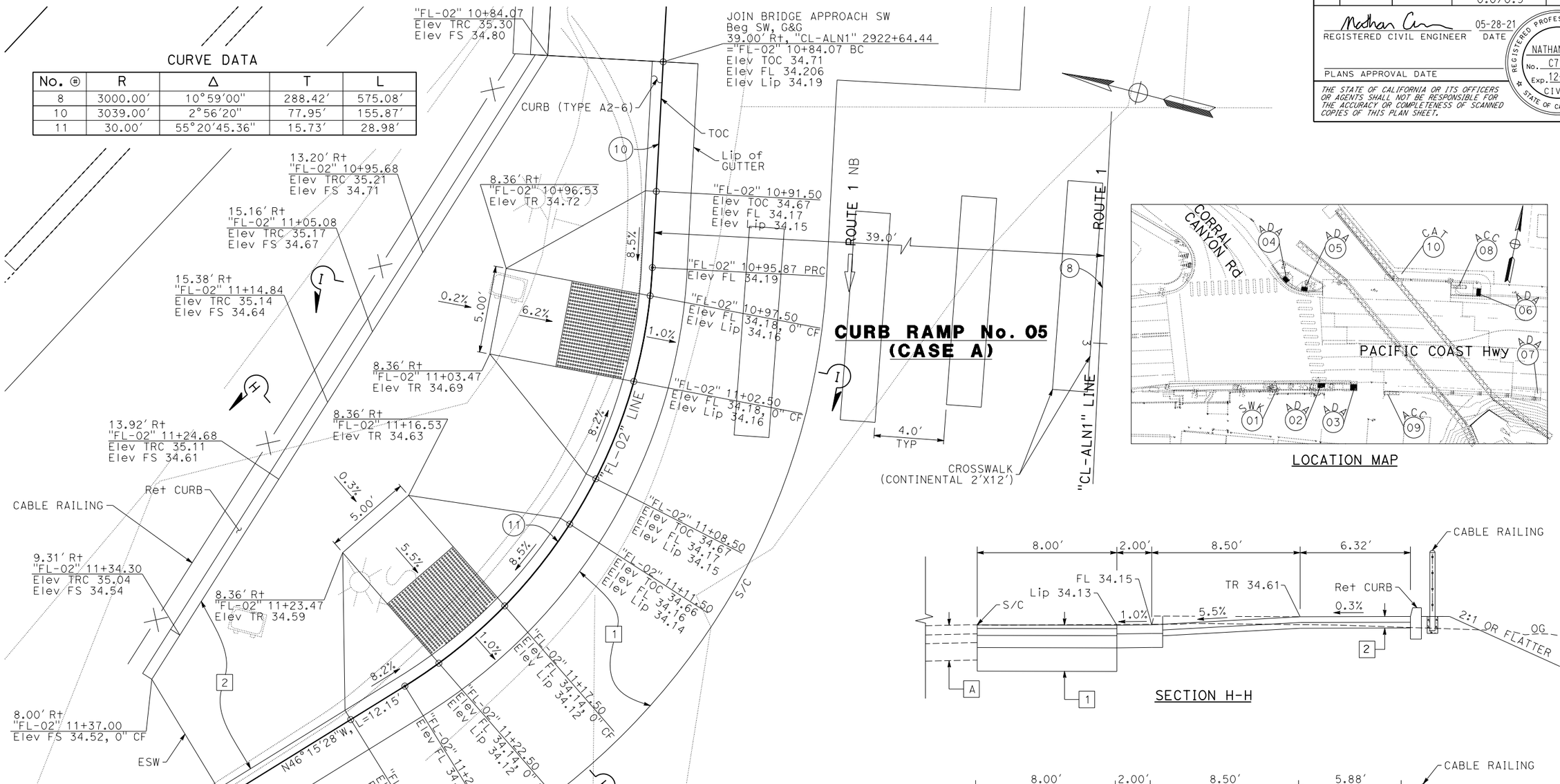
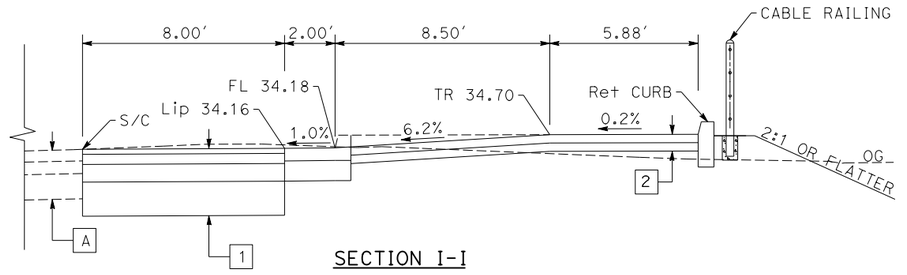
11	30.00′	55°20′45.36"	15.73′	28.98′



LOCATION MAP

SECTION H-H



SECTION I-I

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350ga003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CURVE DATA

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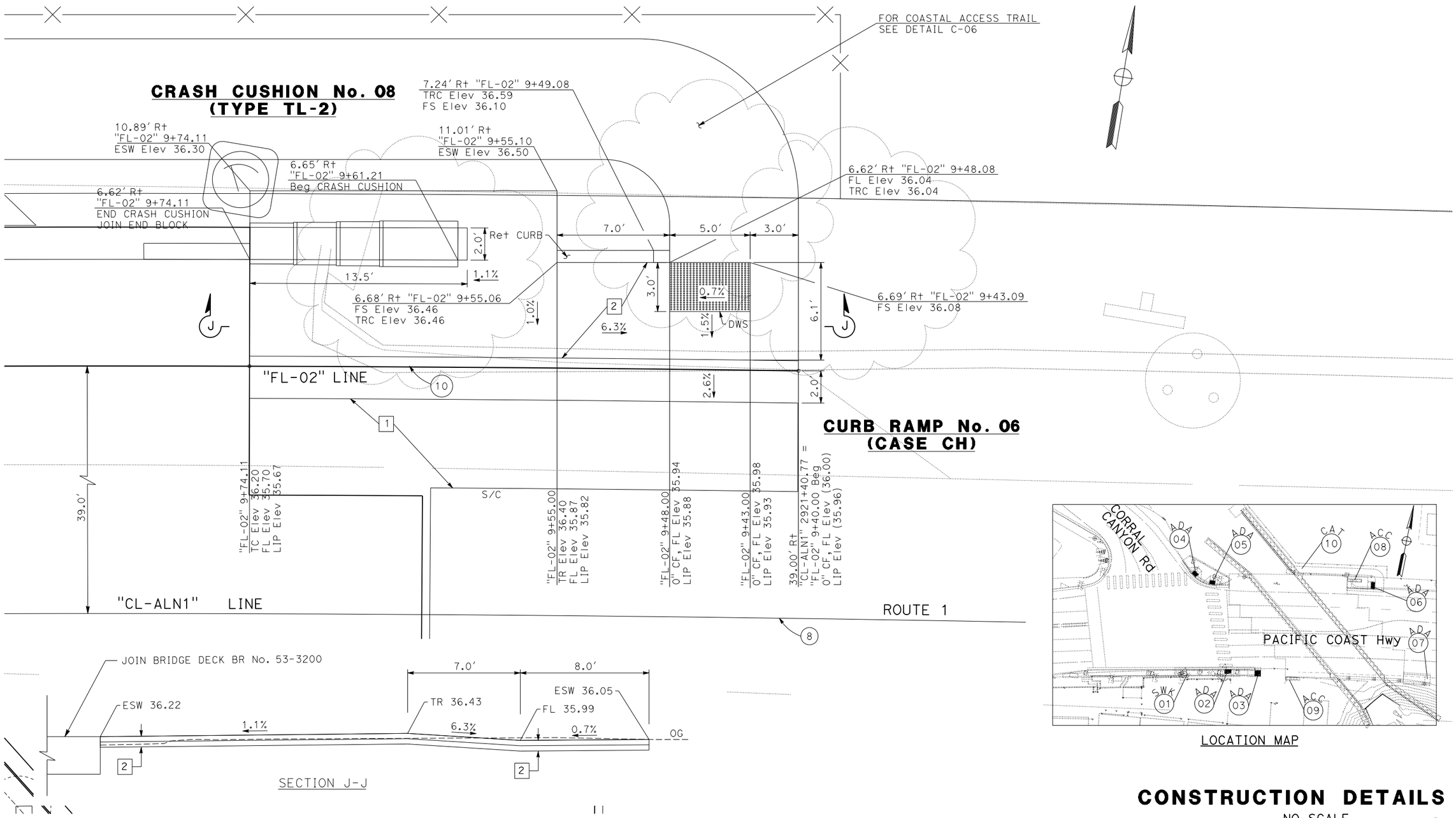

CONSTRUCTION DETAILS

NO SCALE

C-4

REVISED BY	DATE REVISED
TIN PHAN	NATHAN OUM

CALCULATED-DESIGNED BY	CHECKED BY

FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ga004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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CURVE DATA

No. ⊕	R	Δ	T	L
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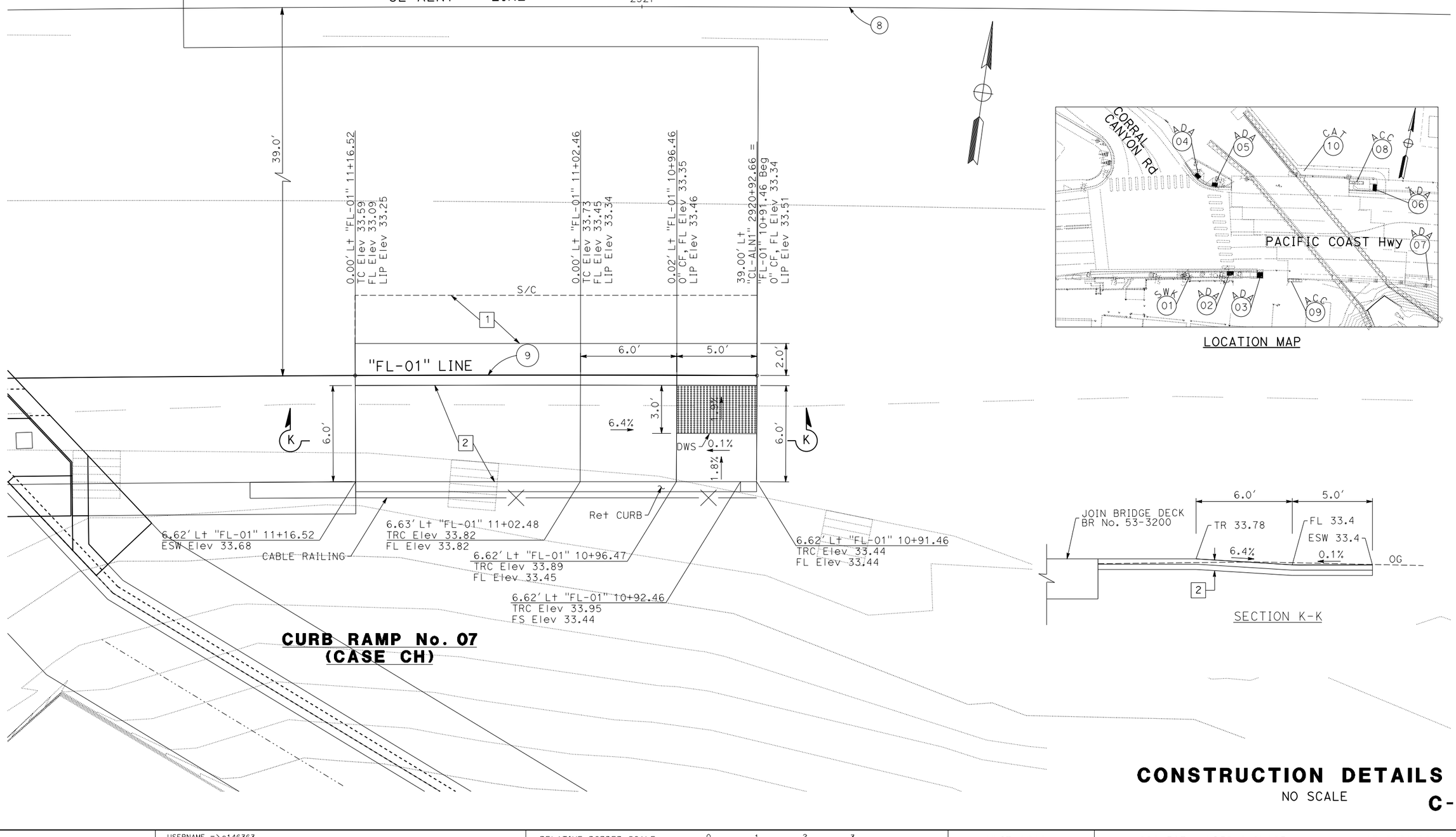
9	2961.00′	2°37′35"	67.88′	135.74′



CURB RAMP No. 07
(CASE CH)

LOCATION MAP

SECTION K-K

CONSTRUCTION DETAILS

NO SCALE

C-5

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	1814

Nathan Oum — 05-28-21
REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

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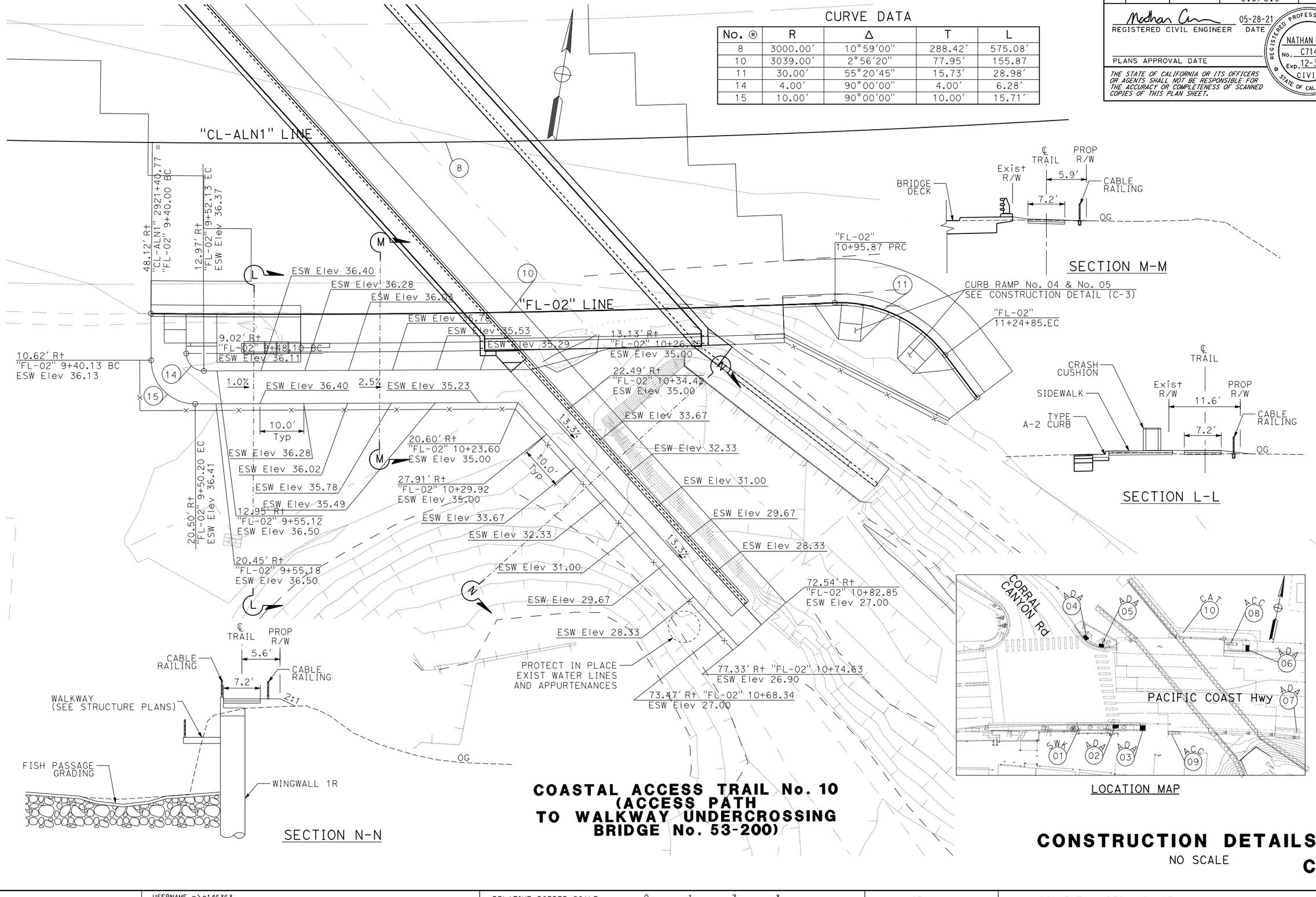
CURVE DATA

No. ⑧	R	Δ	T	L
8	3000.00′	10°59′00"	288.42′	575.08′
10	3039.00′	2°56′20"	77.95′	155.87
11	30.00′	55°20′45"	15.73′	28.98′
14	4.00′	90°00′00"	4.00′	6.28′
15	10.00′	90°00′00"	10.00′	15.71′



SECTION M-M

SECTION L-L

SECTION N-N

LOCATION MAP

COASTAL ACCESS TRAIL No. 10 (ACCESS PATH TO WALKWAY UNDERCROSSING BRIDGE No. 53-200)

CONSTRUCTION DETAILS

NO SCALE

C-6

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07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
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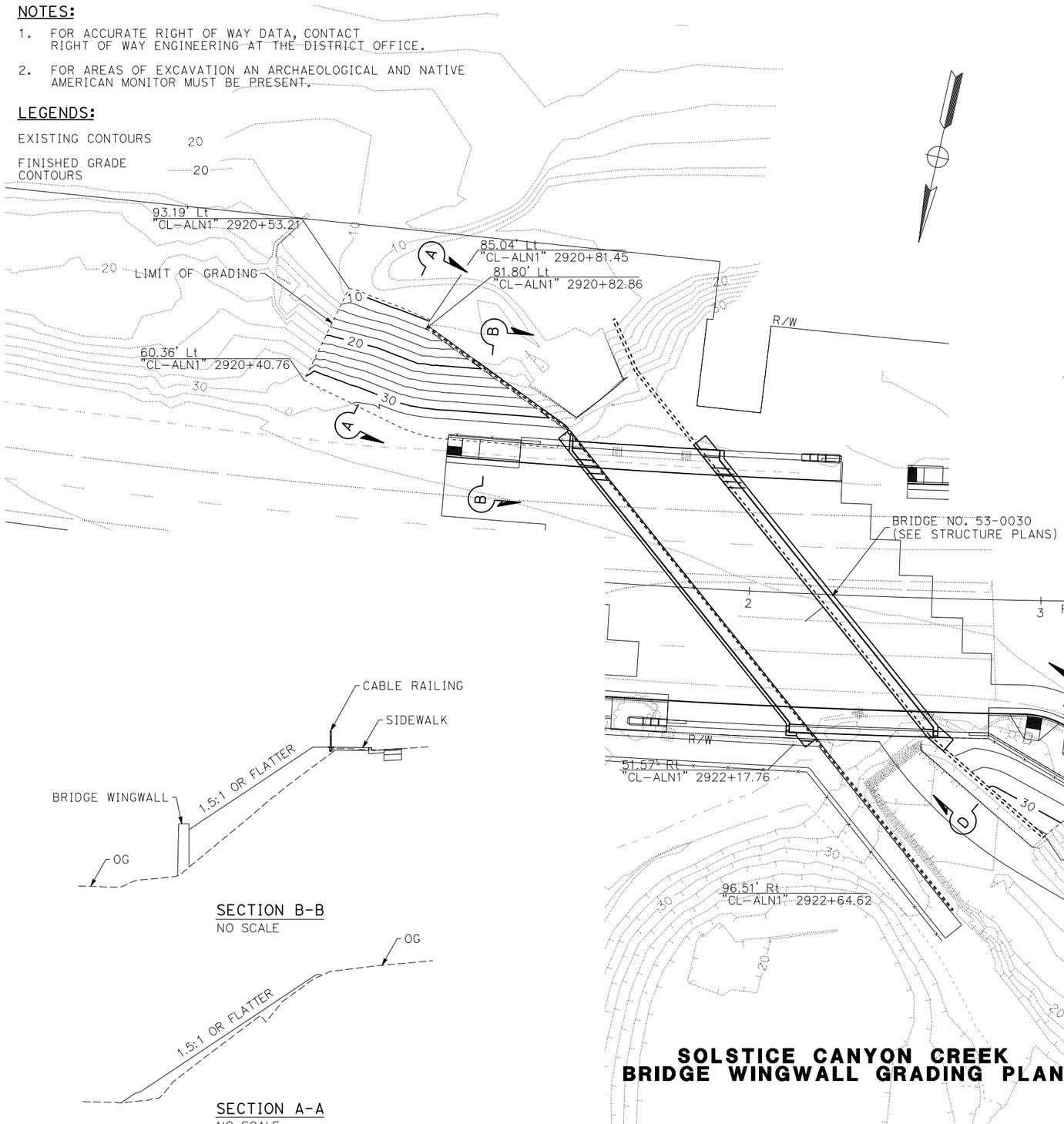
NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR AREAS OF EXCAVATION AN ARCHAEOLOGICAL AND NATIVE AMERICAN MONITOR MUST BE PRESENT.

LEGENDS:

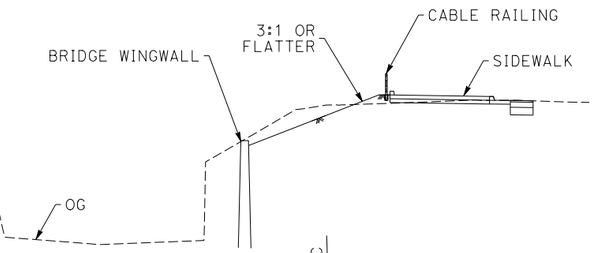
EXISTING CONTOURS 20

FINISHED GRADE CONTOURS 20



SECTION B-B
NO SCALE

SECTION A-A
NO SCALE



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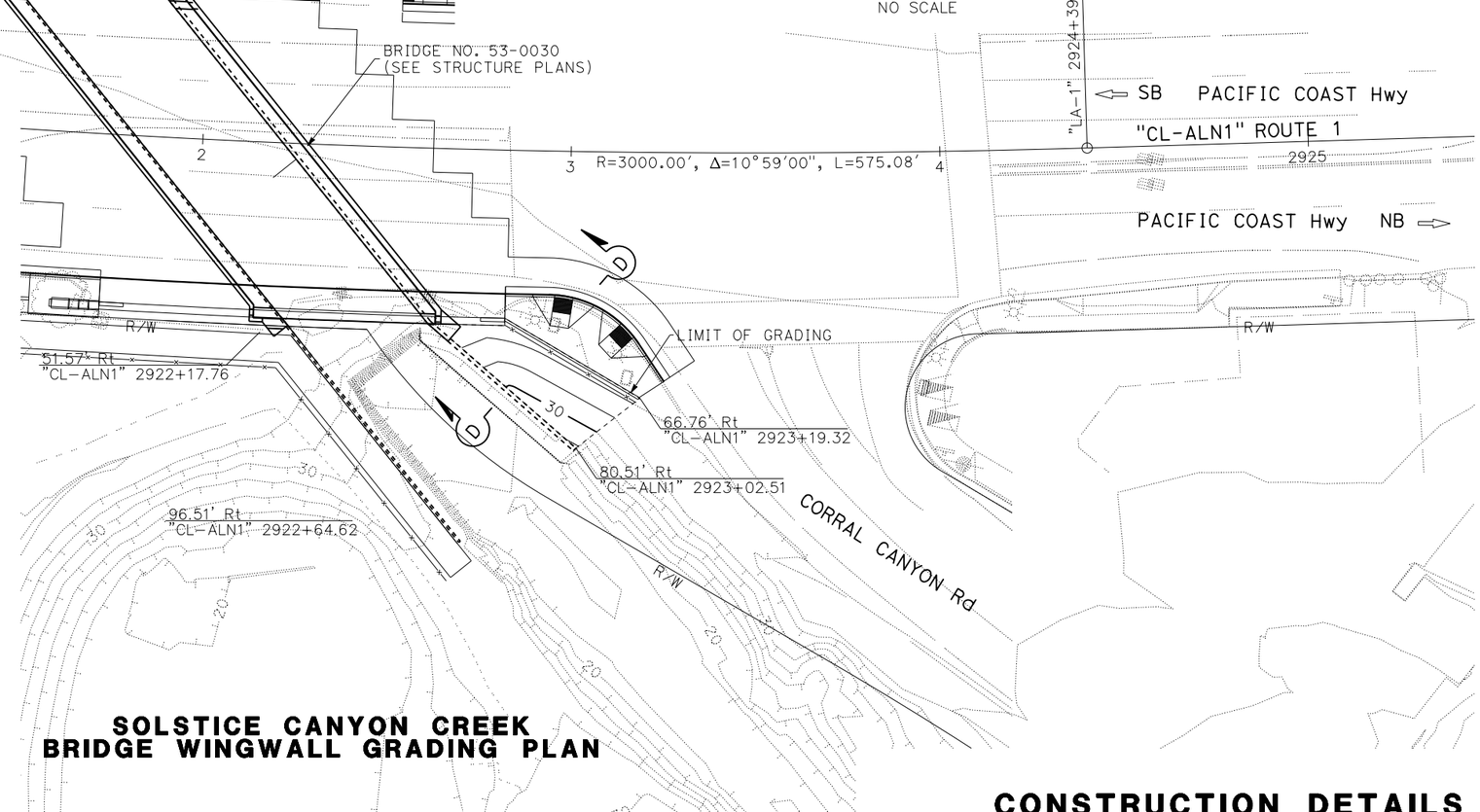
NO SCALE



SOLSTICE CANYON CREEK BRIDGE WINGWALL GRADING PLAN

CONSTRUCTION DETAILS

SCALE: 1" = 20'

C-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LOS ANGELES, CA 90071

CALTRANS D7
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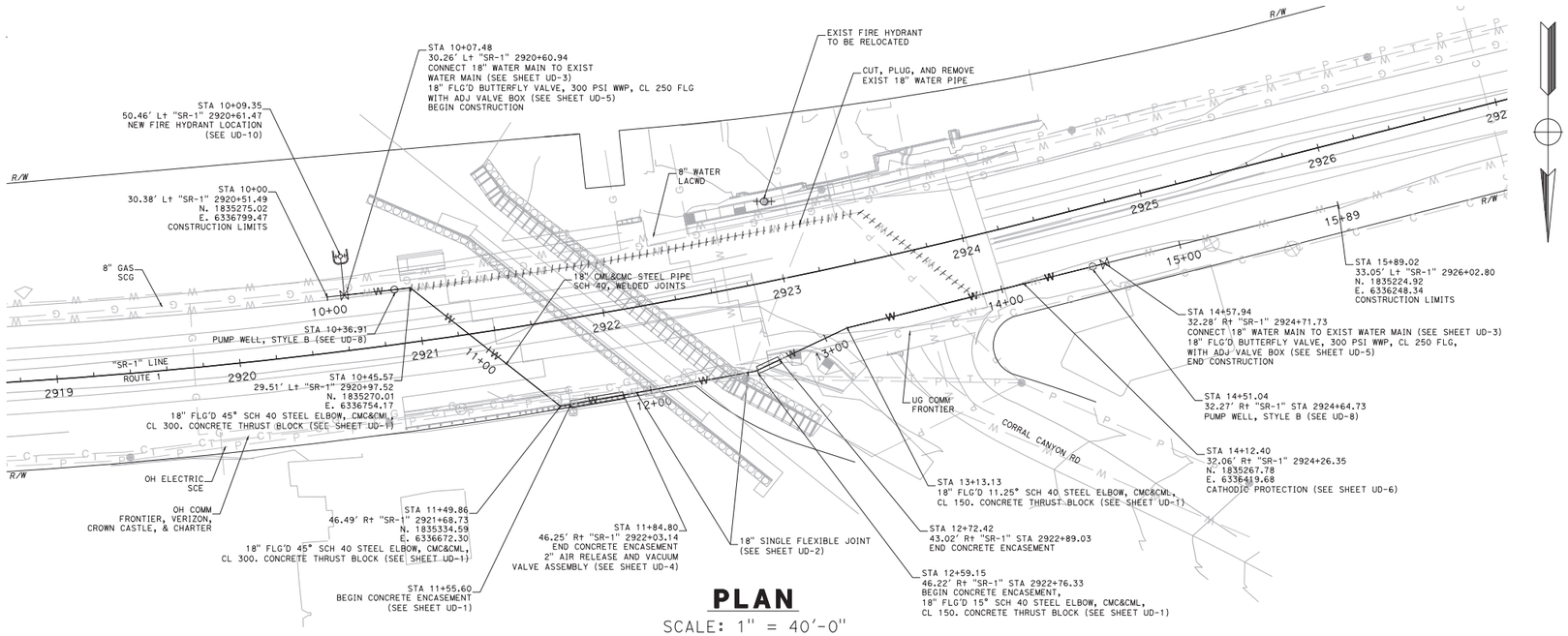
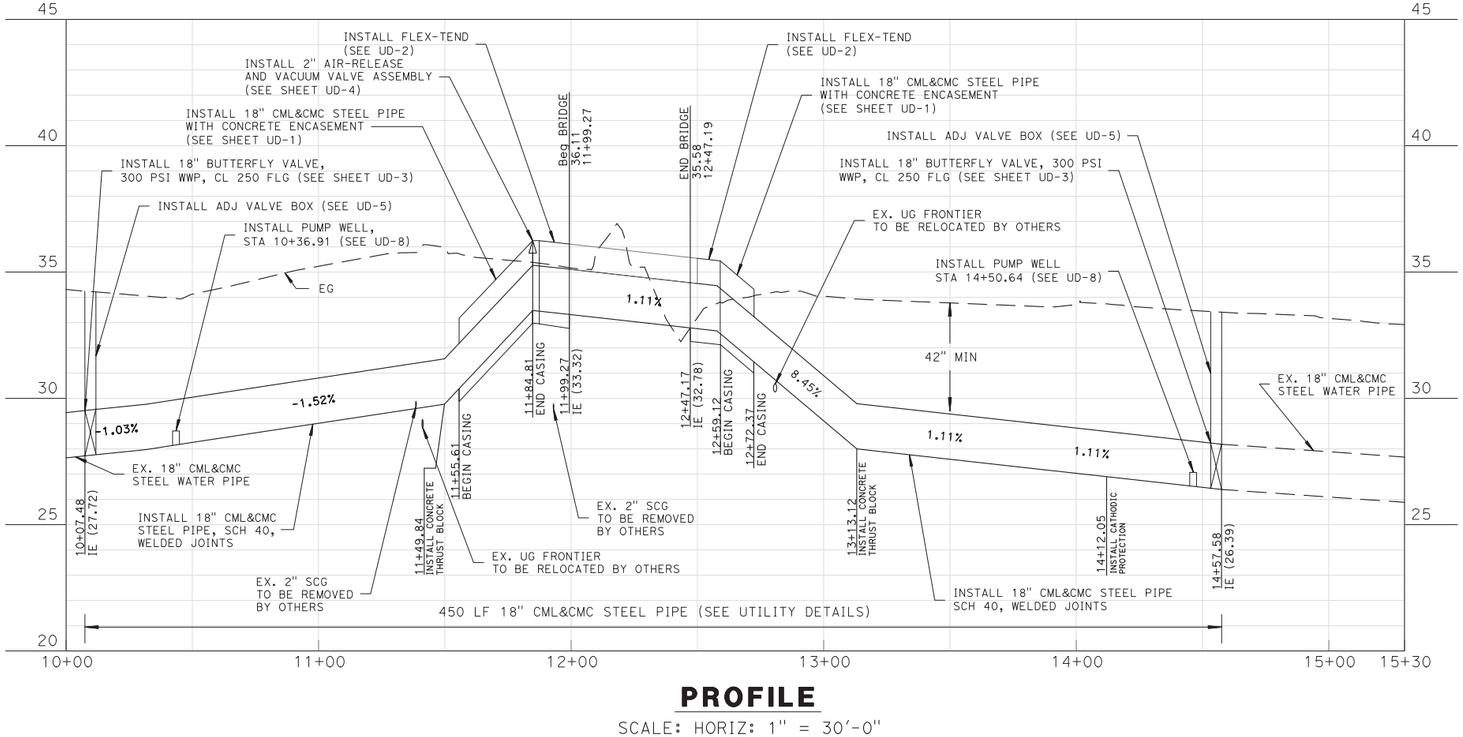
LOS ANGELES, CA 90012



PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ: 1" = 30'-0"
VERT: 1" = 1'-0"

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. LOCATION OF UTILITY LINES SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR IS TO FIELD VERIFY OR POTHOLE IN ORDER TO DETERMINE EXACT LOCATION.
3. REFER TO BRIDGE PLANS FOR UTILITY HANGER DETAILS.
4. MAXIMUM HANGER SPACING SHALL BE 15'. HANGERS SHALL BE A MINIMUM OF 2' AWAY FROM PIPE JOINTS.

LACWW 18" WATER RELOCATION

NOT FOR CONSTRUCTION

SOLSTICE CANYON BRIDGE

UTILITY PLAN

SCALE AS SHOWN

U-8

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07	LA	01	37.7/62.9		

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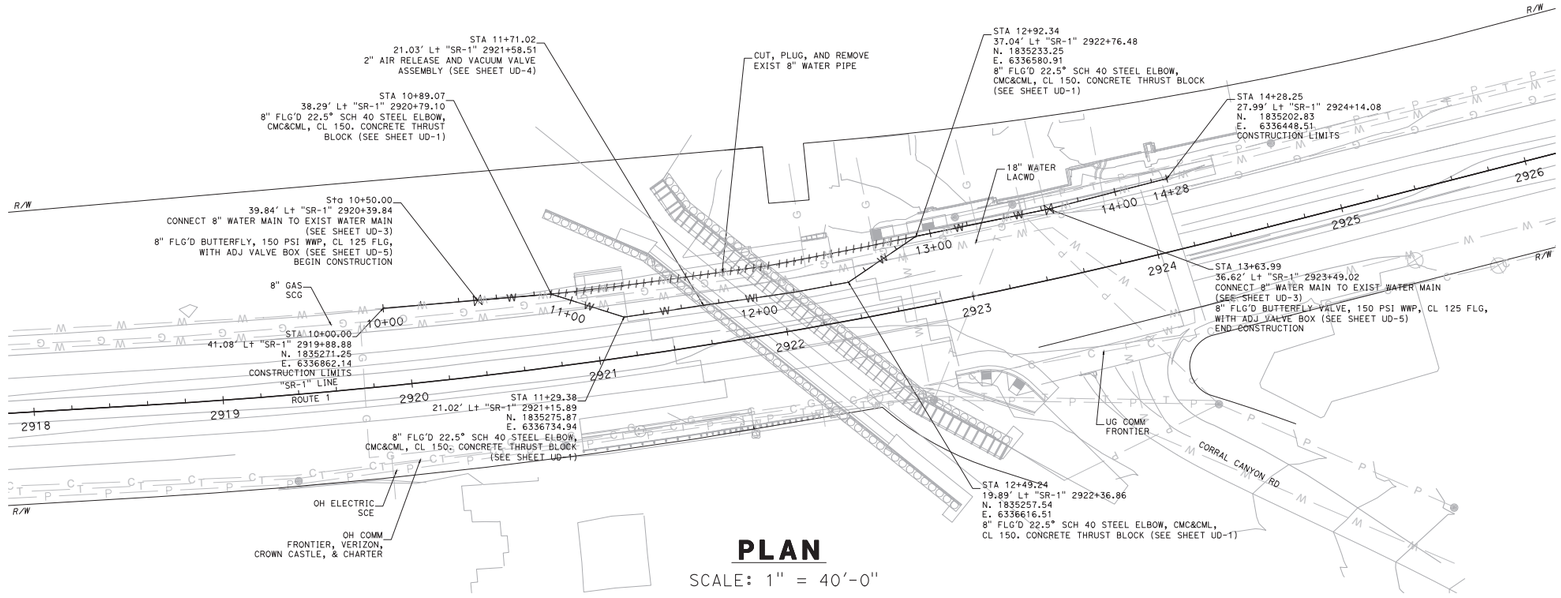
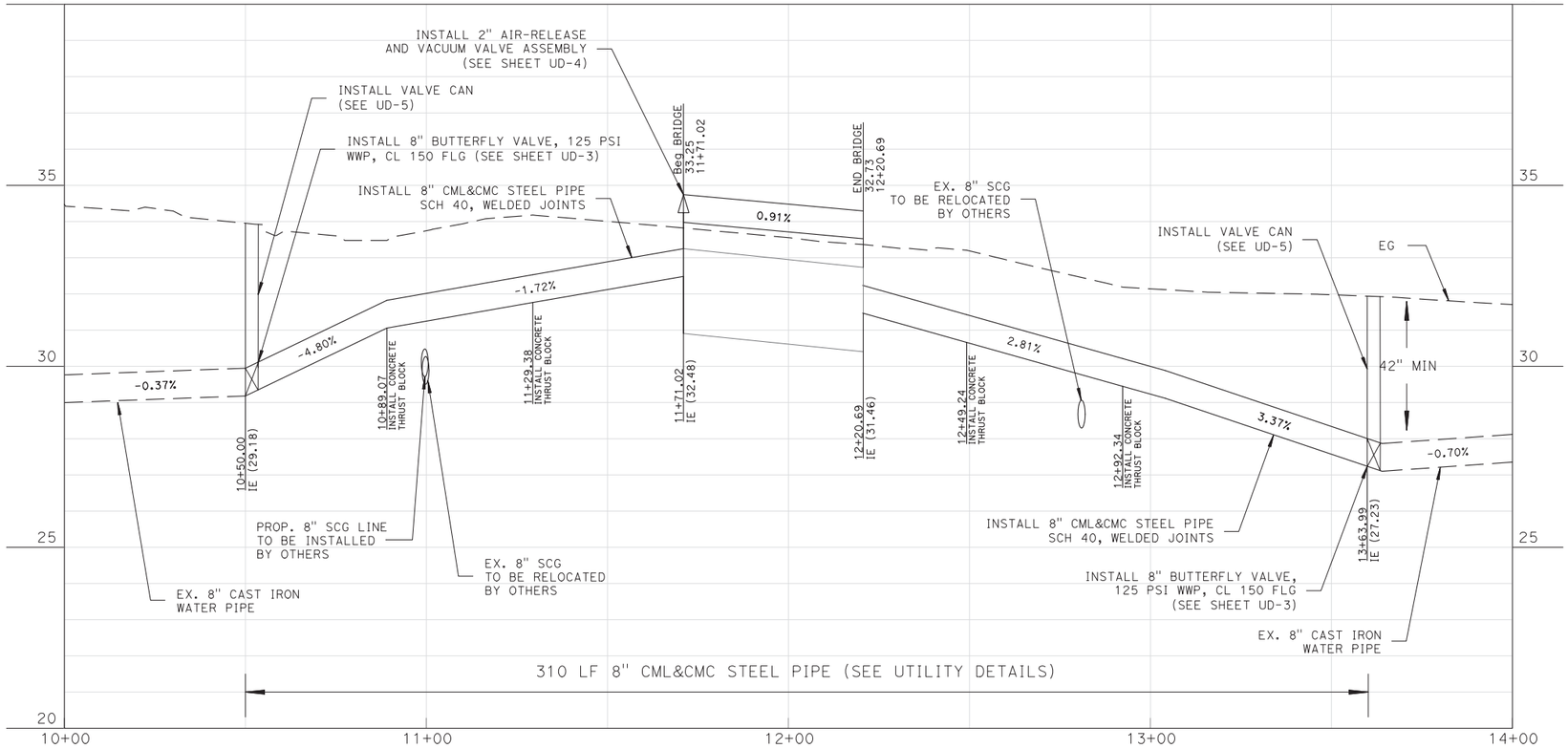


PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ: 1" = 20'-0"
VERT: 1" = 1'-0"

LACWW 8" TEMPORARY WATER RELOCATION

NOT FOR CONSTRUCTION

SOLSTICE CANYON BRIDGE

UTILITY PLAN

SCALE AS SHOWN

U-9

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	01	37.7/62.9		

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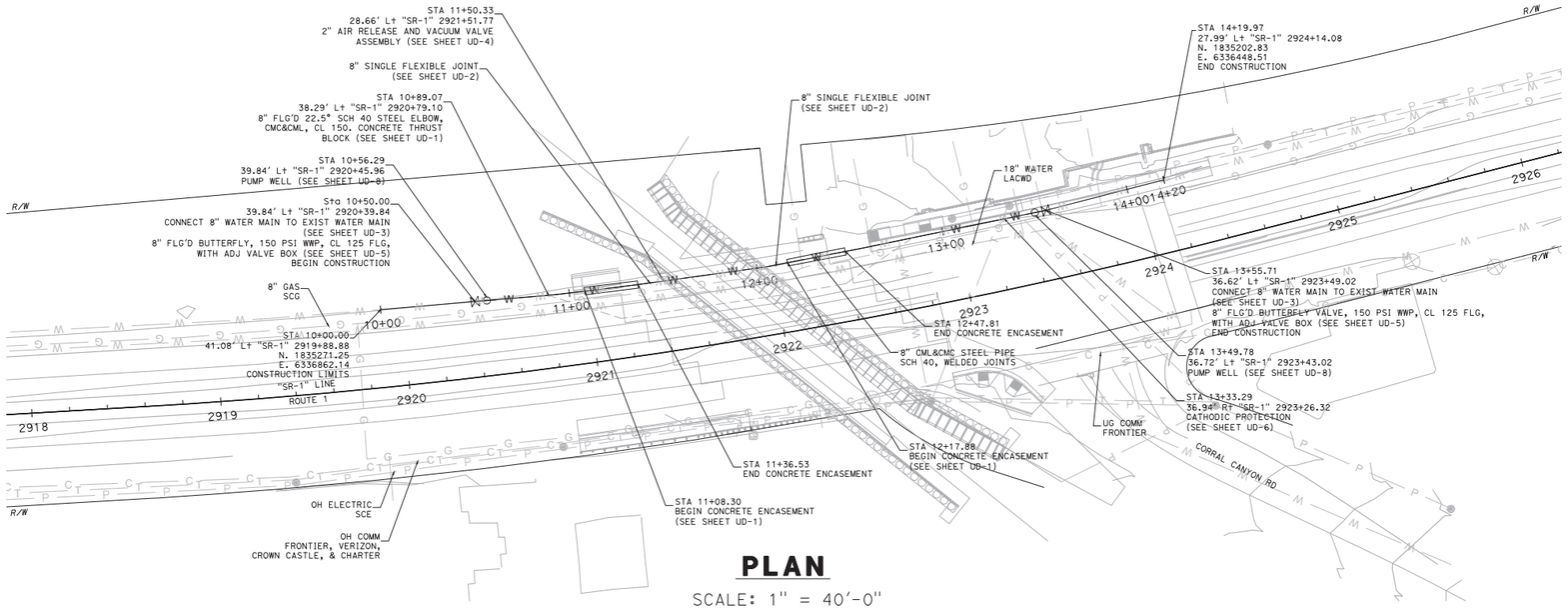
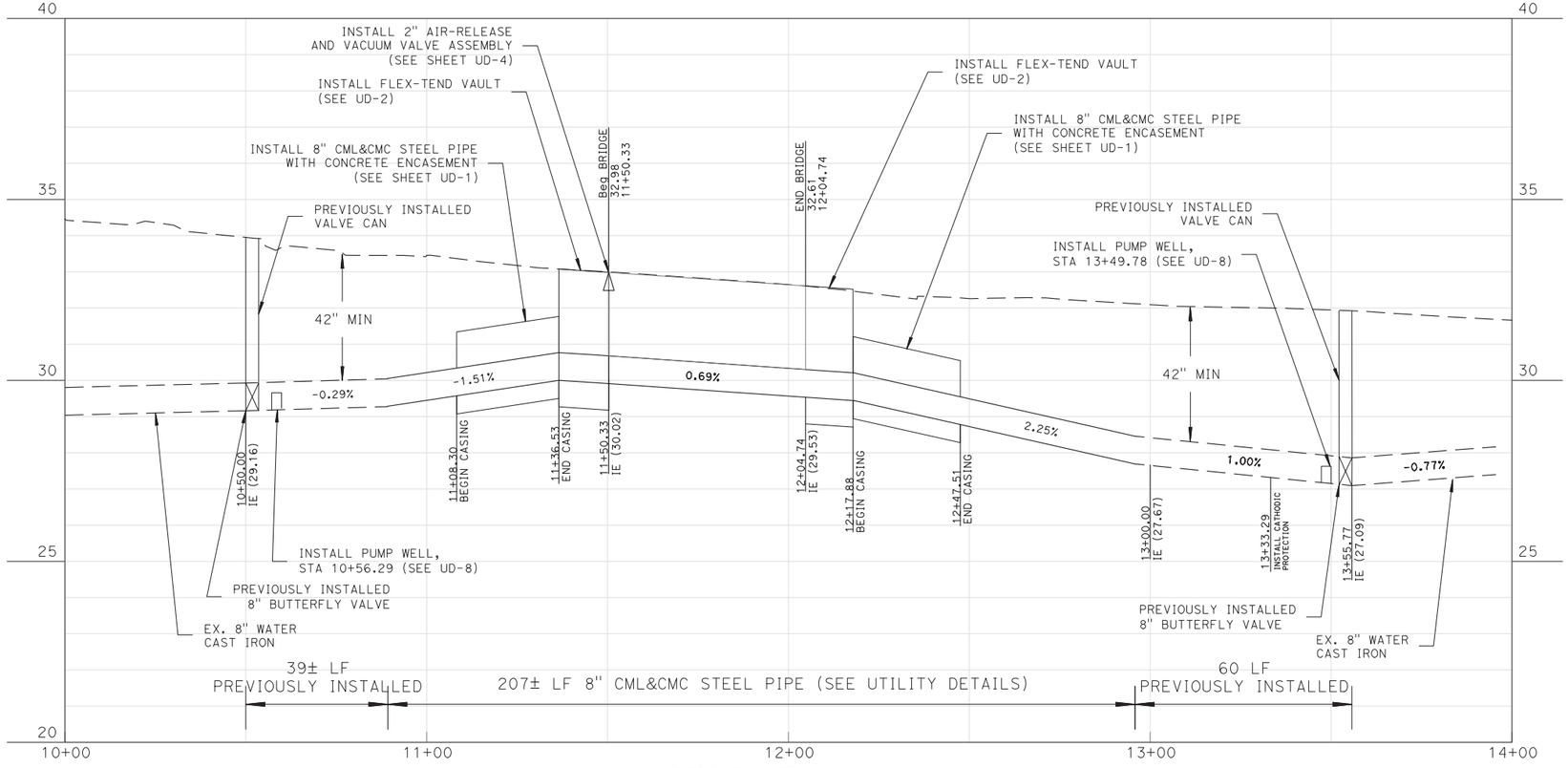


PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ: 1" = 20'-0"
VERT: 1" = 1'-0"

LACWW 8" WATER RELOCATION

NOT FOR CONSTRUCTION

SOLSTICE CANYON BRIDGE

UTILITY PLAN

SCALE AS SHOWN

U-10

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	01	37.7/62.9		

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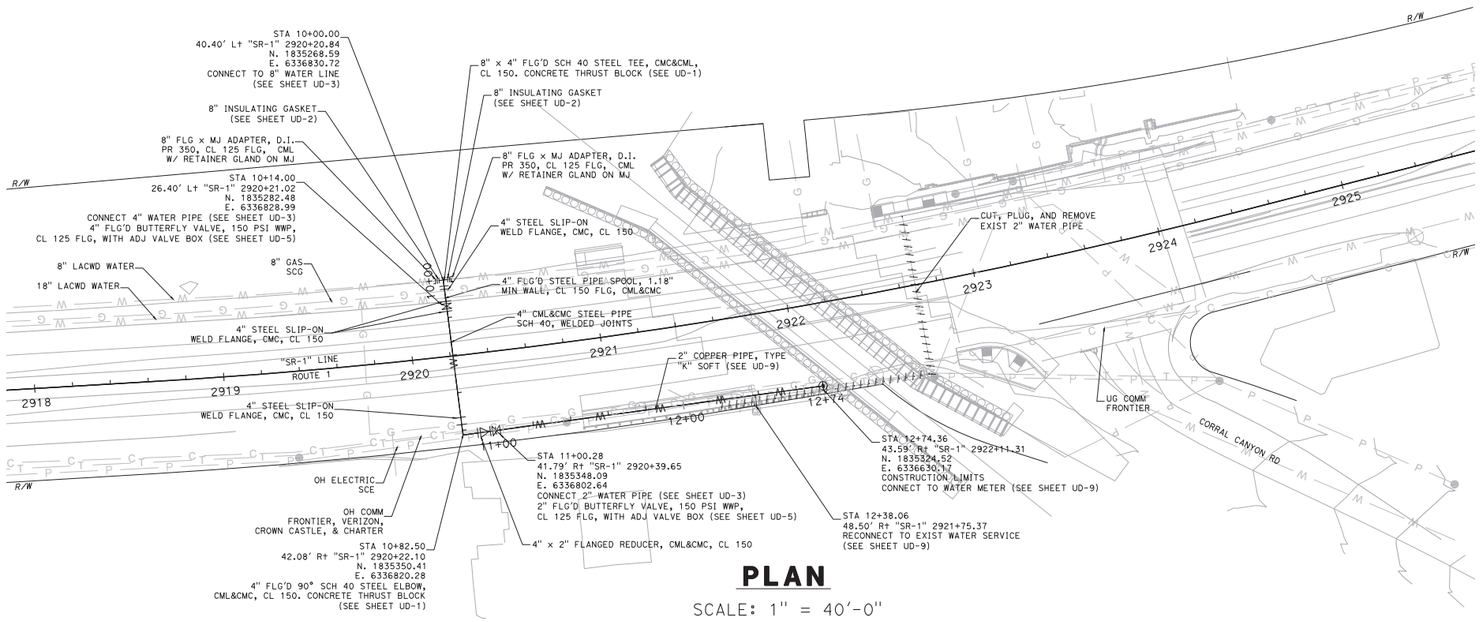
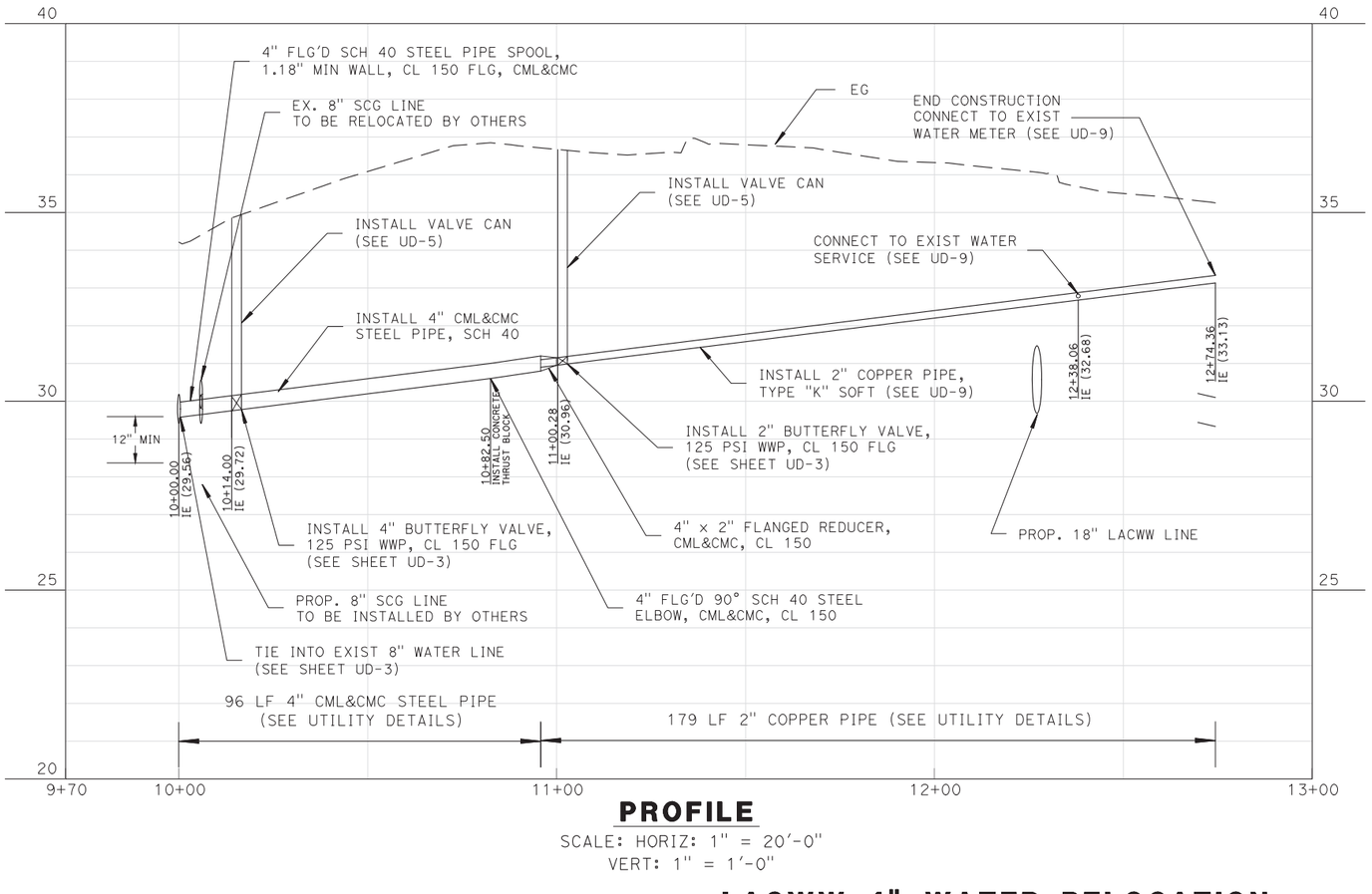
LOS ANGELES, CA 90012



PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ: 1" = 20'-0"
VERT: 1" = 1'-0"

LACWW 4" WATER RELOCATION

NOT FOR CONSTRUCTION

SOLSTICE CANYON BRIDGE

UTILITY PLAN

SCALE AS SHOWN

U-11

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	01	37.7/62.9		

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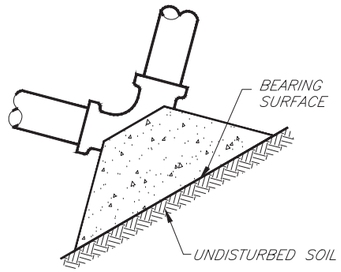
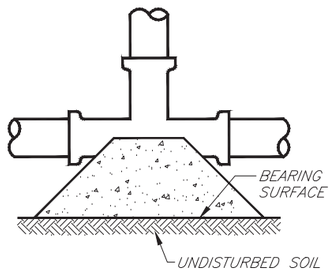
GENERAL NOTES

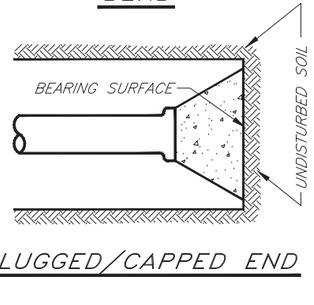
1. ALL ANCHOR AND THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL.
2. MINIMUM ALLOWABLE WATER PRESSURE FOR DESIGN OF THRUST BLOCKS IS 150 PSI. BEARING AREA INCREASES DIRECTLY WITH INCREASE IN PRESSURE.
3. ALL CONCRETE USED IN THRUST BLOCKS SHALL ATTAIN 2000 PSI STRENGTH.
4. ALL ANCHOR RODS SHALL BE REINFORCING STEEL AND A MINIMUM OF $\frac{1}{2}$ INCH IN DIAMETER.
5. USE ANCHOR BLOCKS AT VERTICAL BENDS WHEN PIPE IS ABOVE OR BELOW GROUND. SIZE OF BLOCK AND ROD SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE DISTRICT.
6. USE 30 POUND FELT TO INSURE COLD JOINT.
7. CONCRETE SHALL NOT COME INTO DIRECT CONTACT WITH ASBESTOS-CEMENT PIPE.
8. FOR PIPE GREATER THAN 12" IN DIAMETER, ENGINEER IS TO SUBMIT CALCULATIONS FOR APPROVAL.



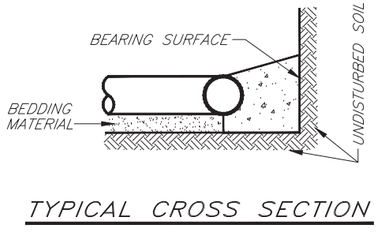
BEND



TEE OR CLAMP



PLUGGED/CAPPED END



TYPICAL CROSS SECTION

TABLE I

MINIMUM BEARING AREAS IN SQ FT*				
MAIN SIZE	TEE**	90° BEND	45° BEND	22 $\frac{1}{2}$° BEND
6"	4	4	4	3
8"	5	7	4	3
10"	9	12	6	4
12"	12	16	9	6
18"	19	27	15	8

* BASED ON 150 PSI WWP PRESSURE & SOIL BEARING LOADS OF 2000 PSF. THE RATIO OF WIDTH TO HEIGHT SHALL NOT EXCEED 1 $\frac{1}{2}$ TO 1

** TEES, PLUGS, CAPS, AND HYDRANTS

TABLE II

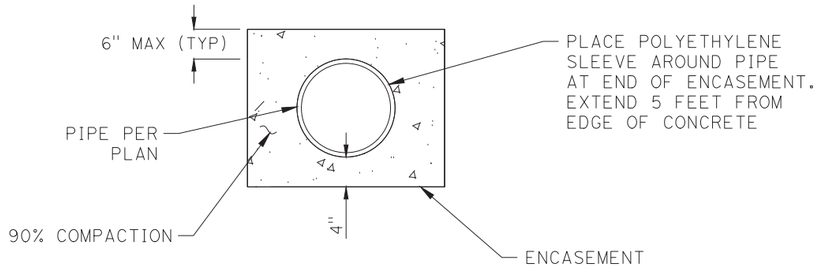
***SOIL TYPE	**** MAX ALLOWABLE SOIL BEARING VALUES	FACTORS FOR INCREASING AREAS IN TABLE 1
LOOSE SAND	500 PSF	4
SOFT SANDY CLAY	1000 PSF	2
ADOBE	1000 PSF	2
COMPACT FINE SAND	2000 PSF	1
COMPACT COARSE SAND	2000 PSF	1
MEDIUM STIFF CLAY	2000 PSF	1

***THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SAFE SOIL BEARING VALUES AND THE POSITION AND SIZE OF BEARING AREAS

**** BASED ON 2 FEET MINIMUM DEPTH OF COVER OVER THE PIPE

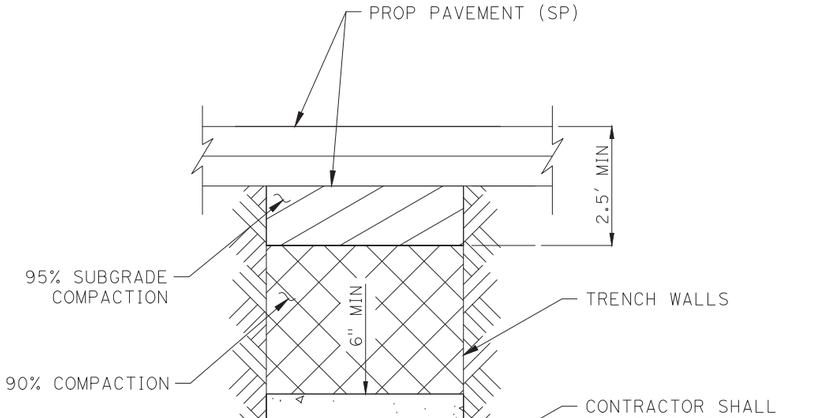
CONCRETE THRUST BLOCK

NOT TO SCALE



FLEX-TEND ENCASEMENT DETAIL

NOT TO SCALE



PIPE ENCASEMENT DETAIL

NOT TO SCALE

18" PIPE: STA 11+55.61 TO STA 11+84.80
AND STA 12+59.14 TO STA 12+71.94

8" PIPE: STA 11+18.85 TO STA 11+50.88
AND STA 12+24.36 TO STA 12+66.15

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

SCALE AS SHOWN

UD-1

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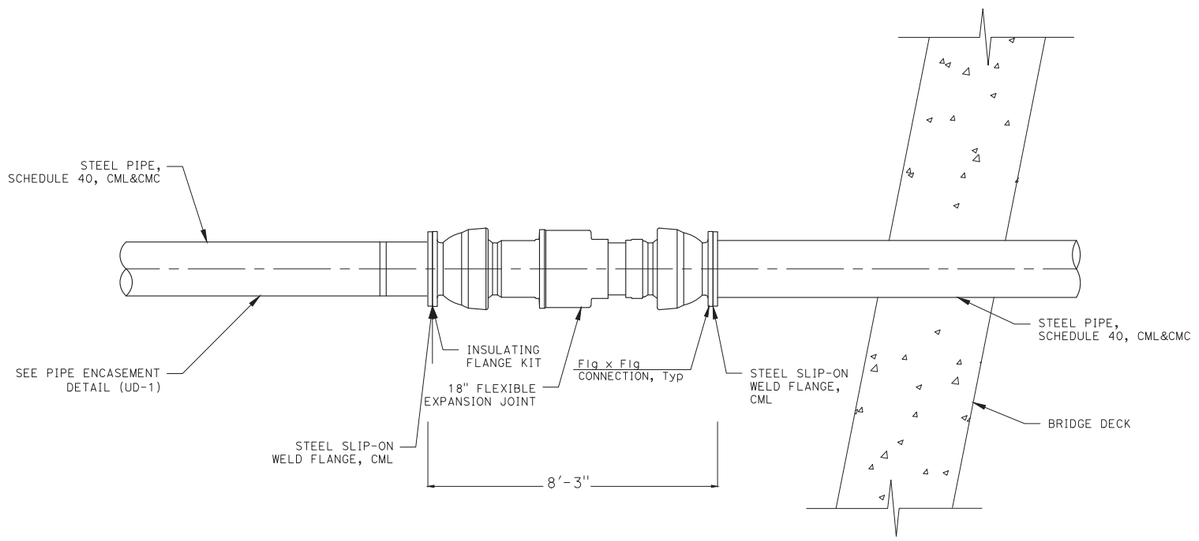
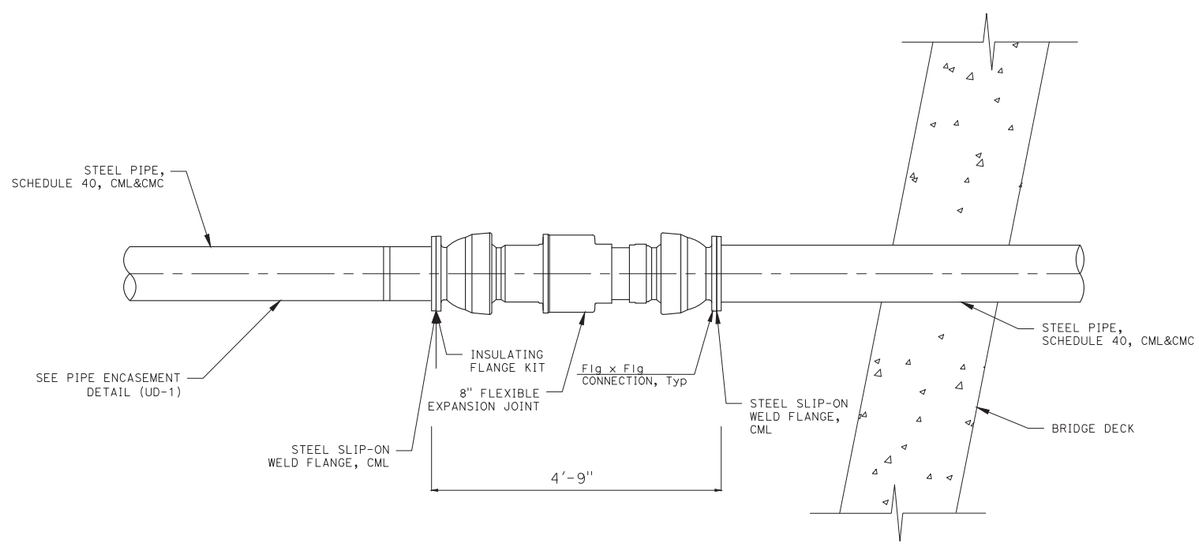


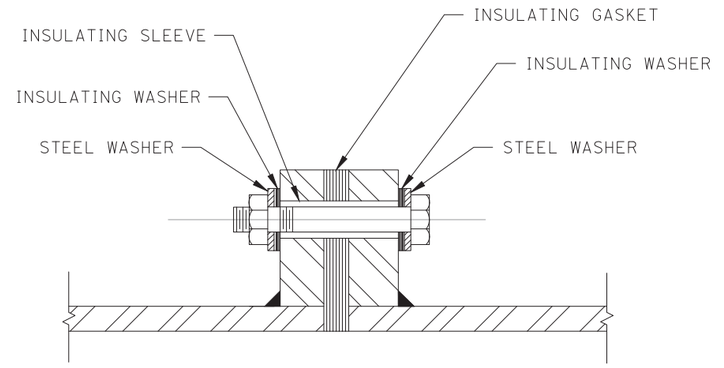
18" SINGLE FLEXIBLE JOINT

NOT TO SCALE



8" SINGLE FLEXIBLE JOINT

NOT TO SCALE



1. DO NOT APPLY METALLIC OR OTHER NON-INSULATING PAINTS TO INSULATING PARTS OR OTHER EDGES OF FLANGES.
2. INSULATING KIT TO BE PSI TYPE E OR APPROVED EQUAL.
3. INSULATING SLEEVE TO BE 1/64" SHORTER THAN DISTANCE BETWEEN STEEL WASHERS WHEN BOLT IS FULLY TIGHTENED.

INSULATED FLANGE

NOT TO SCALE

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

SCALE AS SHOWN

UD-2

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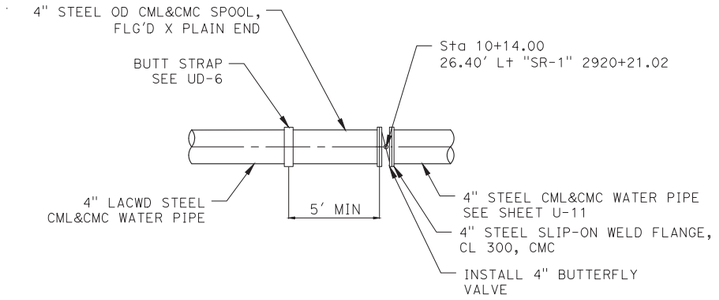
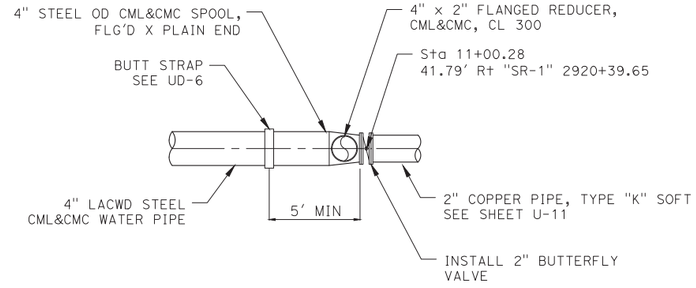


4" PIPE CONNECTION DETAIL

NOT TO SCALE

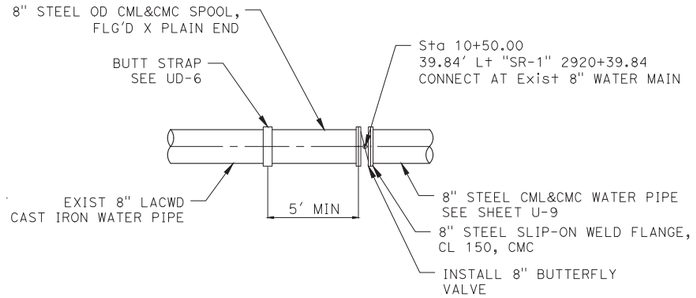
STA 10+14.00



4" PIPE CONNECTION DETAIL

NOT TO SCALE

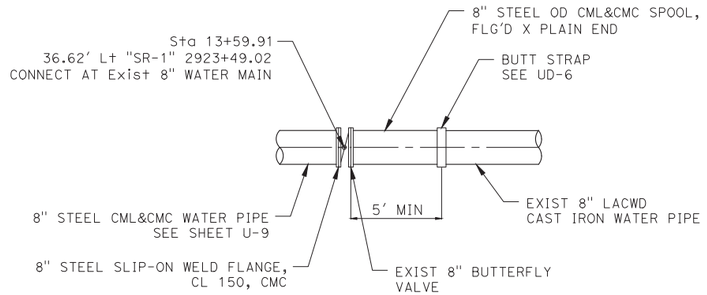
STA 11+00.28



8" PIPE CONNECTION DETAIL

NOT TO SCALE

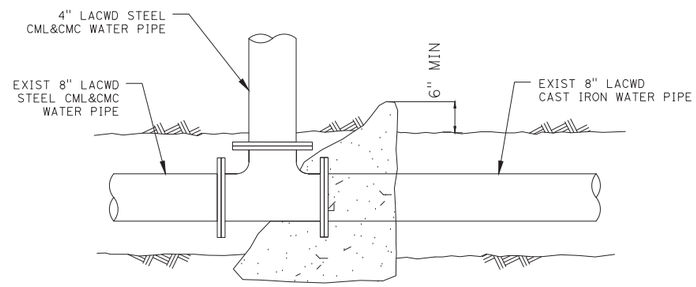
STA 10+50.00



8" PIPE CONNECTION DETAIL

NOT TO SCALE

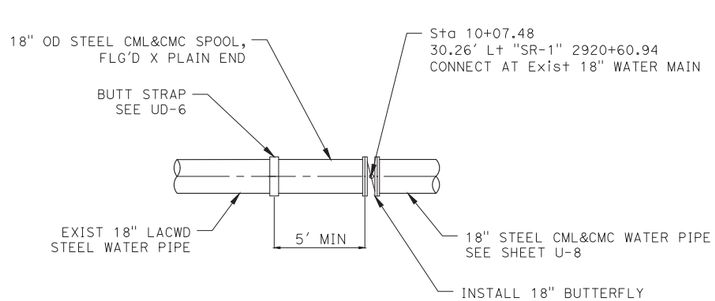
STA 13+59.91



4" PIPE CONNECTION DETAIL

NOT TO SCALE

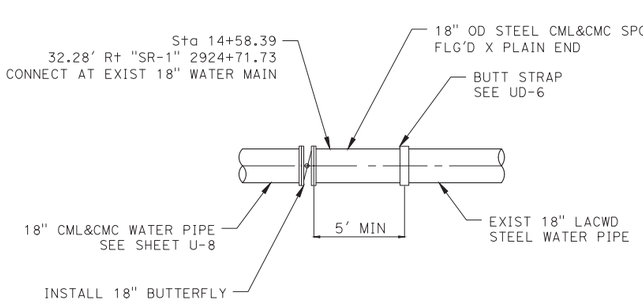
STA 10+00.00



18" PIPE CONNECTION DETAIL

NOT TO SCALE

STA 10+07.48



18" PIPE CONNECTION DETAIL

NOT TO SCALE

STA 14+58.39

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

SCALE AS SHOWN

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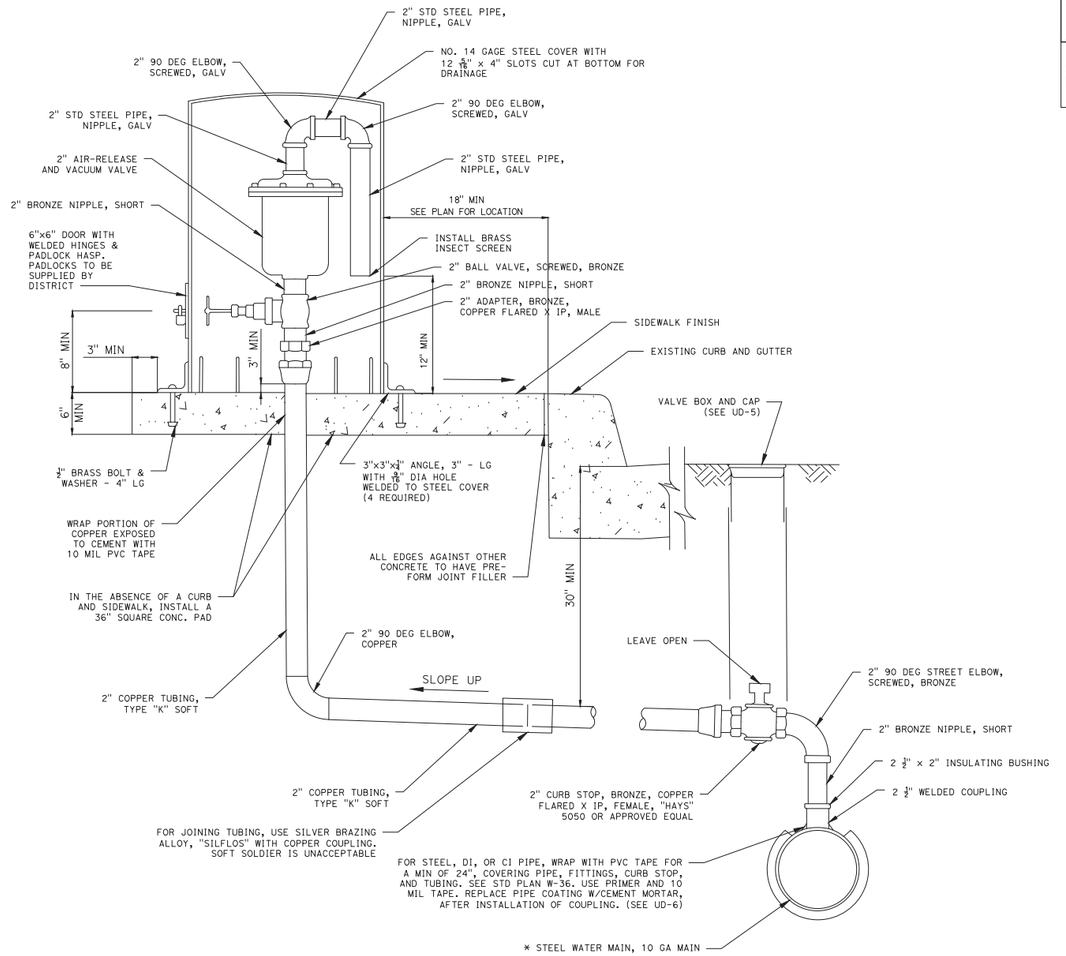
GENERAL NOTES

1. THE HEIGHT AND DIAMETER OF THE STEEL COVER SHALL PROVIDE A 2" MINIMUM CLEARANCE AROUND THE VALVE ASSEMBLY.
2. IN AREAS SUBJECT TO FREEZING, ALL VALVES AND PIPING ABOVE GROUND SHALL BE INSULATED.
3. PAINT VALVE ASSEMBLY ABOVE GROUND, AND STEEL COVER, WITH TWO COATS OF DISTRICT APPROVED RED PRIMER AND TWO COATS OF DISTRICT APPROVED FOREST GREEN OR DUNES TAN.
4. USE PROPER CLASS FITTINGS FOR WORKING WATER PRESSURE. (CLASS 150 MIN).
5. IF BRONZE NIPPLE (ITEM NO. 3) IS OVER 12" LONG, ADD CORPORATION STOP NEXT TO MAIN. (LEAVE OPEN).
6. SEE PLANS FOR VALVE SIZES AND USE SAME SIZE FITTINGS, AND NIPPLE LENGTHS TO SUIT. (NO CLOSE NIPPLES).



* FOR CONNECTION TO ACP, DI, CI OR STEEL (LESS THAN 10 GA) PIPE, SEE LACWW STD PLAN W-5, NOTE 3 FOR DOUBLE-STRAP CLAMP TO BE USED FOR ITEM 12. CLAMP OUTLET SHALL BE SET VERTICALLY FACING UPWARD

AIR-RELEASE AND VACUUM VALVE ASSEMBLY

NOT TO SCALE

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

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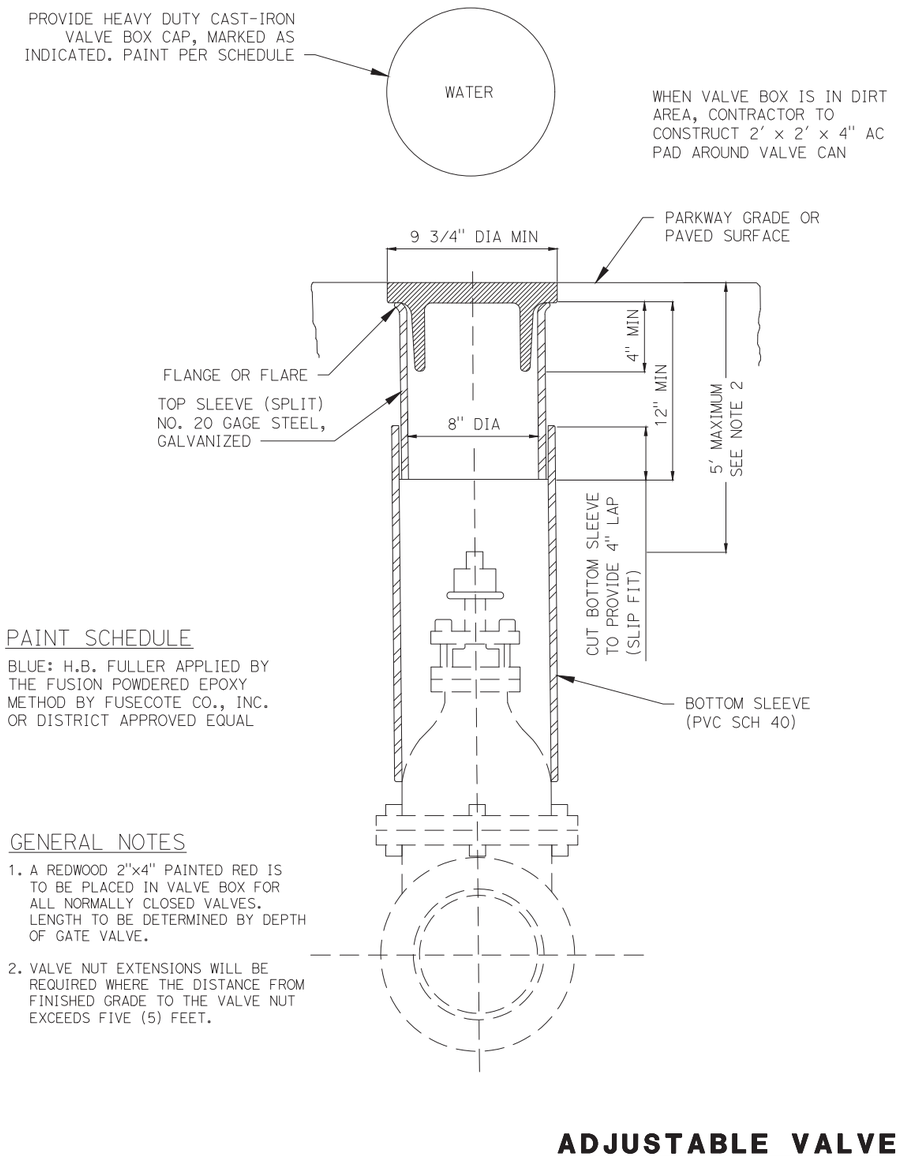
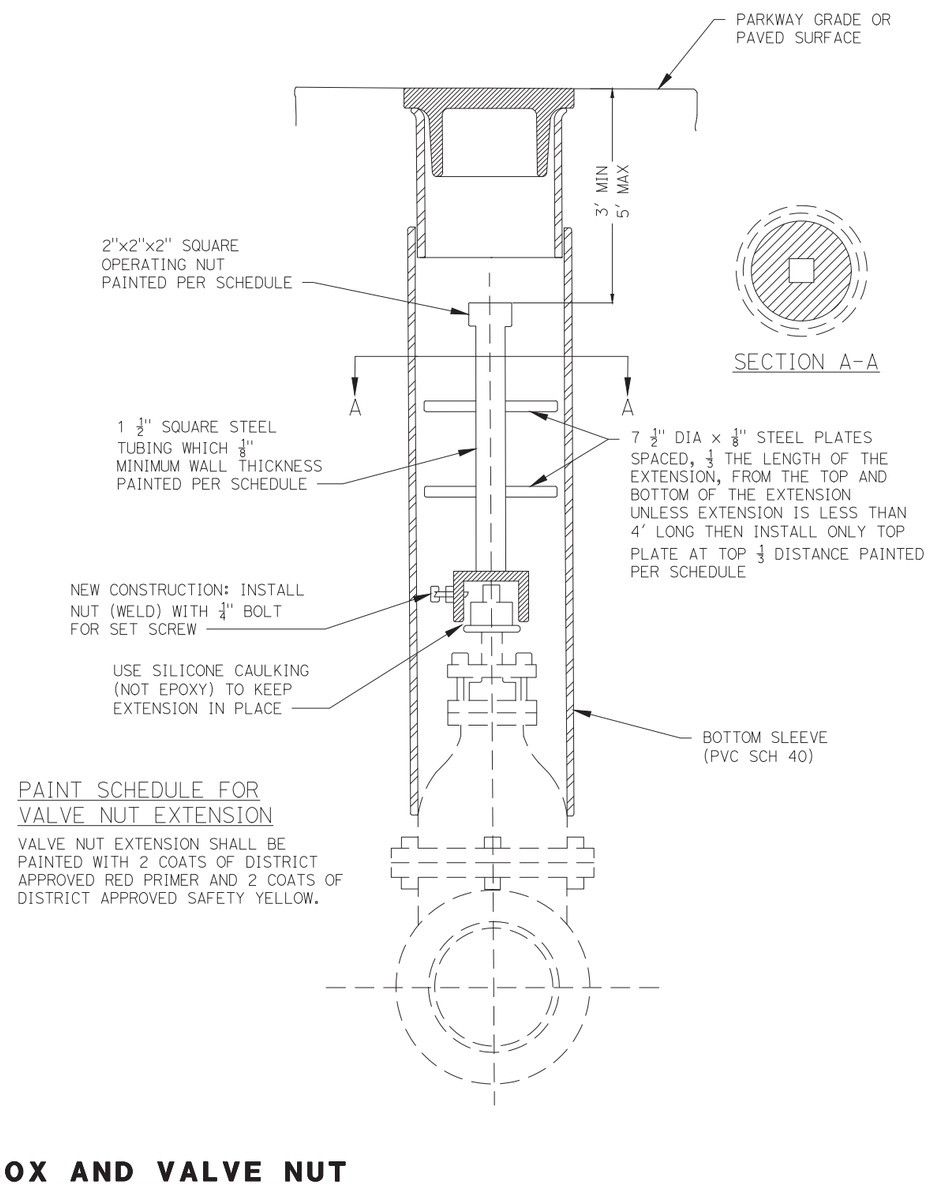


PAINT SCHEDULE

BLUE: H.B. FULLER APPLIED BY THE FUSION POWDERED EPOXY METHOD BY FUSECOTE CO., INC. OR DISTRICT APPROVED EQUAL

GENERAL NOTES

1. A REDWOOD 2"x4" PAINTED RED IS TO BE PLACED IN VALVE BOX FOR ALL NORMALLY CLOSED VALVES. LENGTH TO BE DETERMINED BY DEPTH OF GATE VALVE.
2. VALVE NUT EXTENSIONS WILL BE REQUIRED WHERE THE DISTANCE FROM FINISHED GRADE TO THE VALVE NUT EXCEEDS FIVE (5) FEET.



PAINT SCHEDULE FOR VALVE NUT EXTENSION

VALVE NUT EXTENSION SHALL BE PAINTED WITH 2 COATS OF DISTRICT APPROVED RED PRIMER AND 2 COATS OF DISTRICT APPROVED SAFETY YELLOW.

ADJUSTABLE VALVE BOX AND VALVE NUT

NOT TO SCALE

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UTILITY DESIGN

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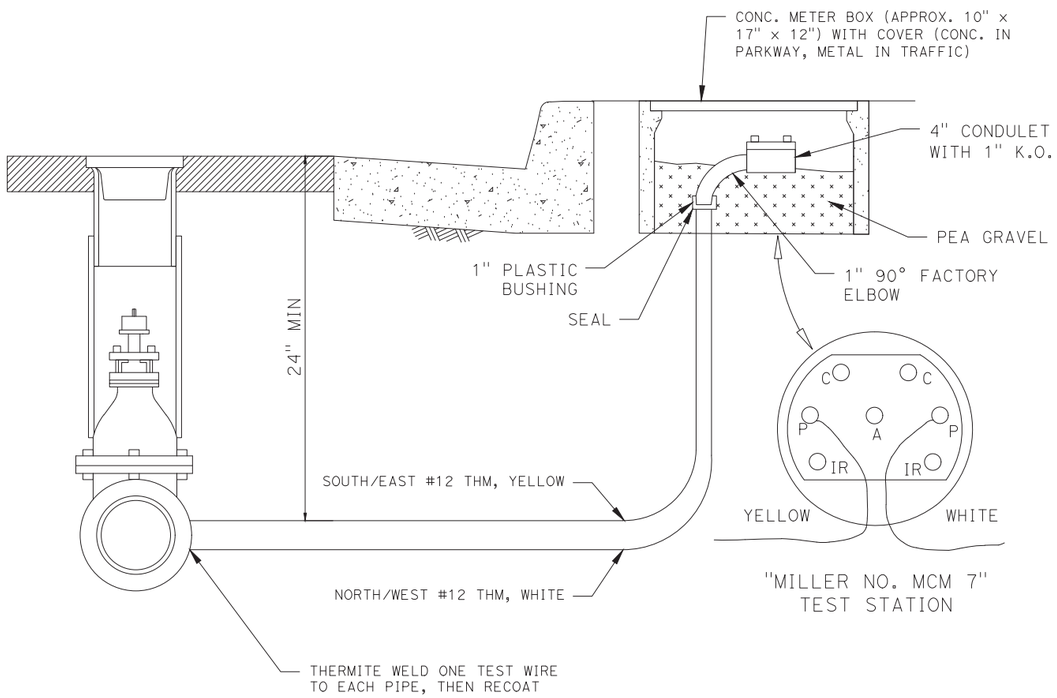


"MILLER NO. MCM 7" TEST STATION

CORROSION CONTROL, WIRE TEST PROCEDURE

THE CONTRACTOR SHALL MAKE THE FOLLOWING ELECTRICAL TESTS BEFORE AND AFTER BACKFILL AND PAVING OPERATIONS:

1. EACH WIRE SHALL READ AT LEAST 100 MILLIVOLTS (100 MV) FROM THE WIRE TERMINAL TO GROUND (COPPER SULFATE 1/2 CELL).
2. EACH WIRE OF THE PAIR OF WIRES FROM DIELECTRIC COUPLING SHALL PASS ABOVE THE TESTS PLUS HAVE A DIFFERENTIAL OF 25MV BETWEEN READINGS. IF 25MV CANNOT BE REACHED, CALL INSPECTOR FOR FURTHER TEST PROCEDURES.

ALL OF THE ABOVE TESTS CAN BE MADE WITH A "MILLER PIPE TO SOIL 1-A-04107", OR A "TINKER-RASOR PIPE TO SOIL CPV-2", OR EQUIVALENT INSTRUMENT.

COAT INSULATING FLANGE INCLUDING NUTS AND BLOTS WITH COAL-TAR PRIMER AND MINIMUM 3/16" THICK HOT COAL TAR FOLLOWED BY MINIMUM 1" THICK COATING OF CEMENT MORTAR. FLANGE MORTAR COATING TO OVERLAP PIPE COATING 1 1/2" MINIMUM.

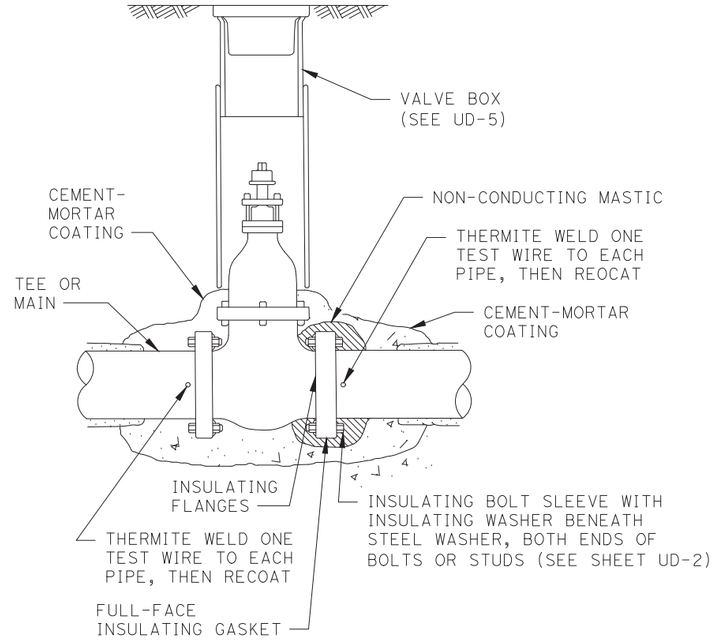
CEMENT MORTAR SHALL BE 1 PART CEMENT, 3 PARTS SAND, AND 1 PART LIME.

BACKFILL FOR 6" ALL AROUND ENTIRE VALVE ASSEMBLY IN CONSTRUCTION SAND.

REQUIREMENTS HEREON SHALL APPLY IF INSULATING FLANGE IS INSTALLED ON A FITTING OR PAIR OF FLANGES.

CATHODIC PROTECTION - INSULATED JOINT TEST STATION

NOT TO SCALE



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UTILITY DESIGN

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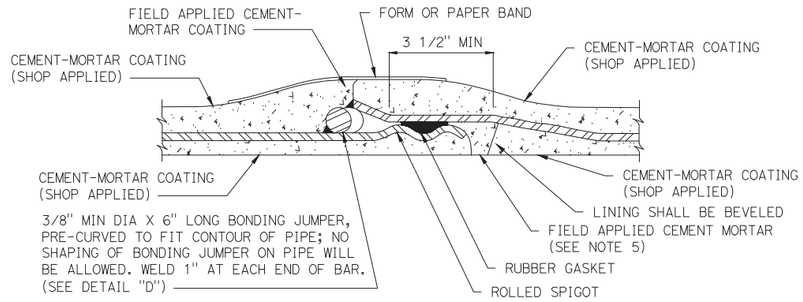
GENERAL NOTES

1. CEMENT MORTAR SHALL BE APPLIED TO WELDED JOINTS ONLY AFTER THE HEAT OF WELDING HAS DISSIPATED. JOINT WELDS SHALL NOT BE COOLED BY QUENCHING.
2. THE INTERIOR SURFACE OF JOINTS TO BE LINED WITH CEMENT MORTAR SHALL BE CLEANED, AND BRUSHED WITH APPROVED CEMENT ADHESIVE, IMMEDIATELY BEFORE THE MORTAR IS APPLIED.
3. CEMENT MORTAR FOR THE INTERIOR OF JOINTS SHALL CONSIST OF ONE PART CEMENT, ONE PART SAND, WATER, AND AN APPROVED CEMENT ADHESIVE ADDED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. CEMENT MORTAR FOR THE EXTERIOR OF JOINTS SHALL CONSIST OF ONE PART CEMENT, ONE PART SAND, AND WATER, AND SHALL BE POURED INTO ONE SIDE OF FORM ONLY.
5. THE INTERIOR OF ALL JOINTS SHALL BE SWABBED BY MEANS OF A BALL AND ROD.
6. THE POINTING HANDHOLE SHALL BE INSTALLED ADJACENT TO A RUBBER GASKET JOINT, OR CENTERED OVER A BUTT-STRAP JOINT, AND SHALL BE USED AS NOTED ON PLANS OR WHERE A BALL AND ROD SWAB CANNOT BE USED.
7. FOR POINTING HANDHOLE, THE MINIMUM LENGTH OF THE BUTT STRAP SHALL BE 9 INCHES FOR ALL PIPE SIZES LISTED IN THE TABLE BELOW. WITHOUT HAND HOLE, THE MINIMUM LENGTH OF STRAP SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

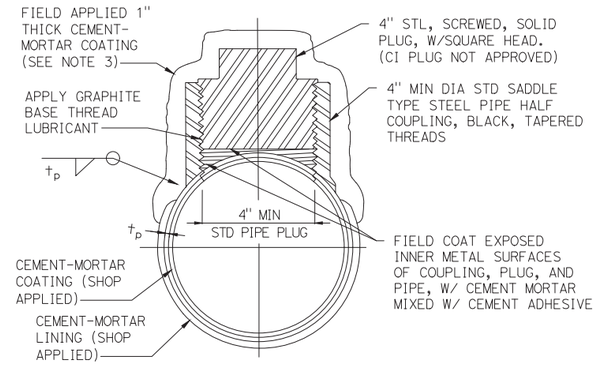
PIPE SIZES IN INCHES	MIN LENGTH OF BUTT STRAP REQ'D IN INCHES
6 THRU 18	4
20 THRU 36	6

8. A BOLTED FLANGED JOINT MAY BE USED AS AN ACCEPTABLE ALTERNATE TO THE RUBBER GASKET OR THE BUTT-STRAP JOINT



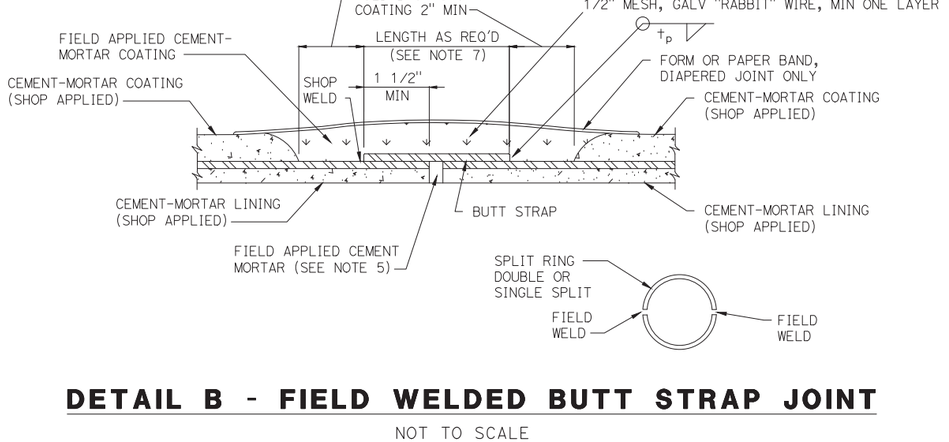
STEEL PIPE JOINT - RUBBER GASKET JOINT

NOT TO SCALE



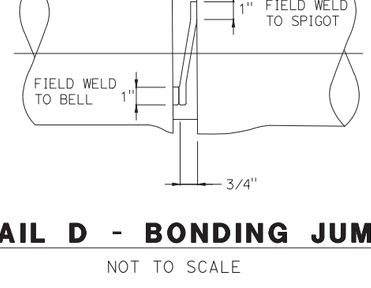
DETAIL C - POINTING HANDHOLE

NOT TO SCALE



DETAIL B - FIELD WELDED BUTT STRAP JOINT

NOT TO SCALE



DETAIL D - BONDING JUMPER

NOT TO SCALE

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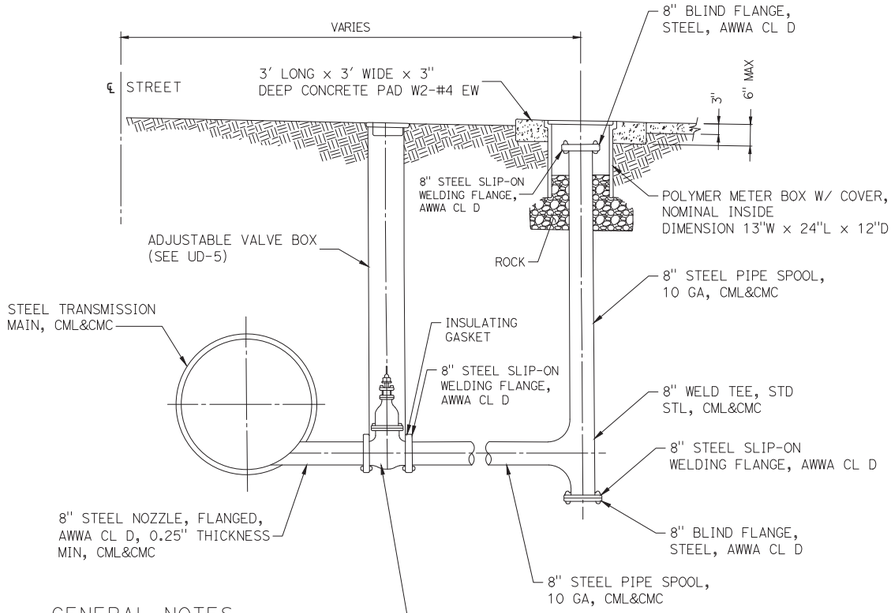
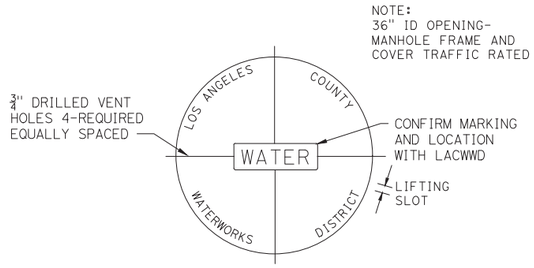


GENERAL NOTES

1. ALL NON-BURIED BOLTS SHALL BE COATED "BLUE" BOLTS

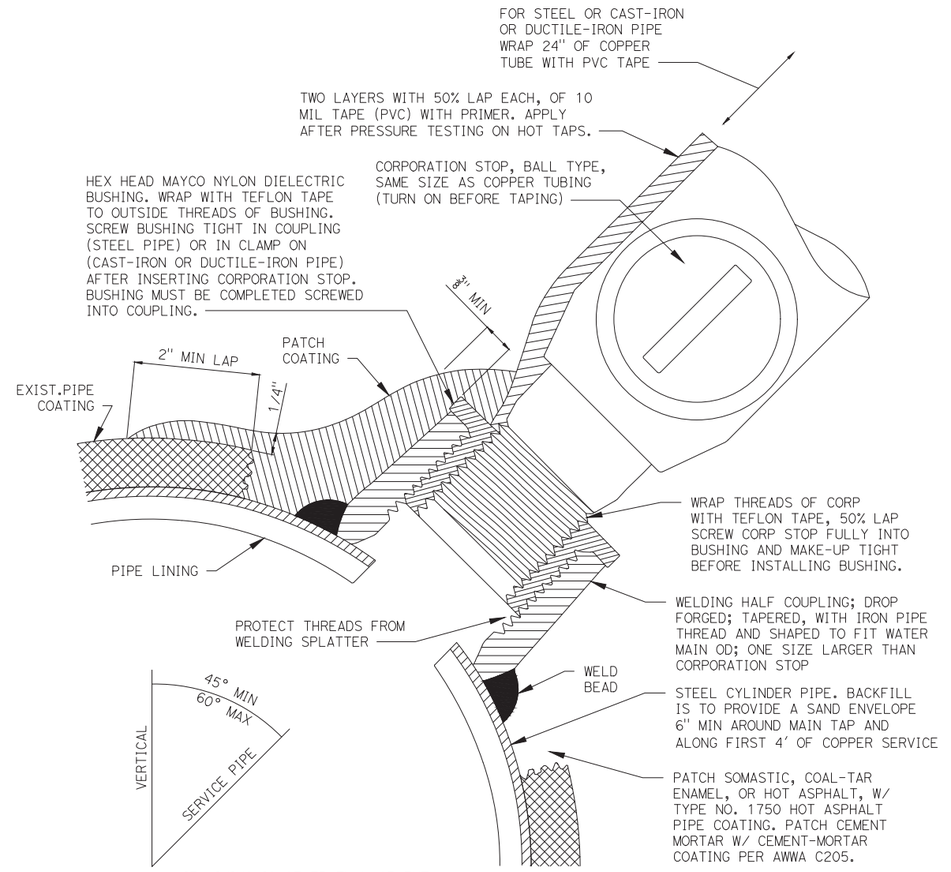
PUMP WELL - STYLE B

NOT TO SCALE



PUMP WELL - STYLE B MANHOLE COVER DETAIL

NOT TO SCALE



IF LINING IS OTHER THAN CEMENT MORTAR OR PIPE IS 12 GAGE OR THINNER, USE MALLEABLE-IRON SERVICE CLAMP AND STRAPS AND DIELECTRIC BUSHING AS SHOWN.

FOR BARE PIPE (OTHER THAN ASBESTOS CEMENT PIPE) COAT SURFACE OF PIPE IN AREA OF TAP (ALL AROUND) WITH CEMENT-MORTAR COATING PER AWWA C205

SERVICE TAP

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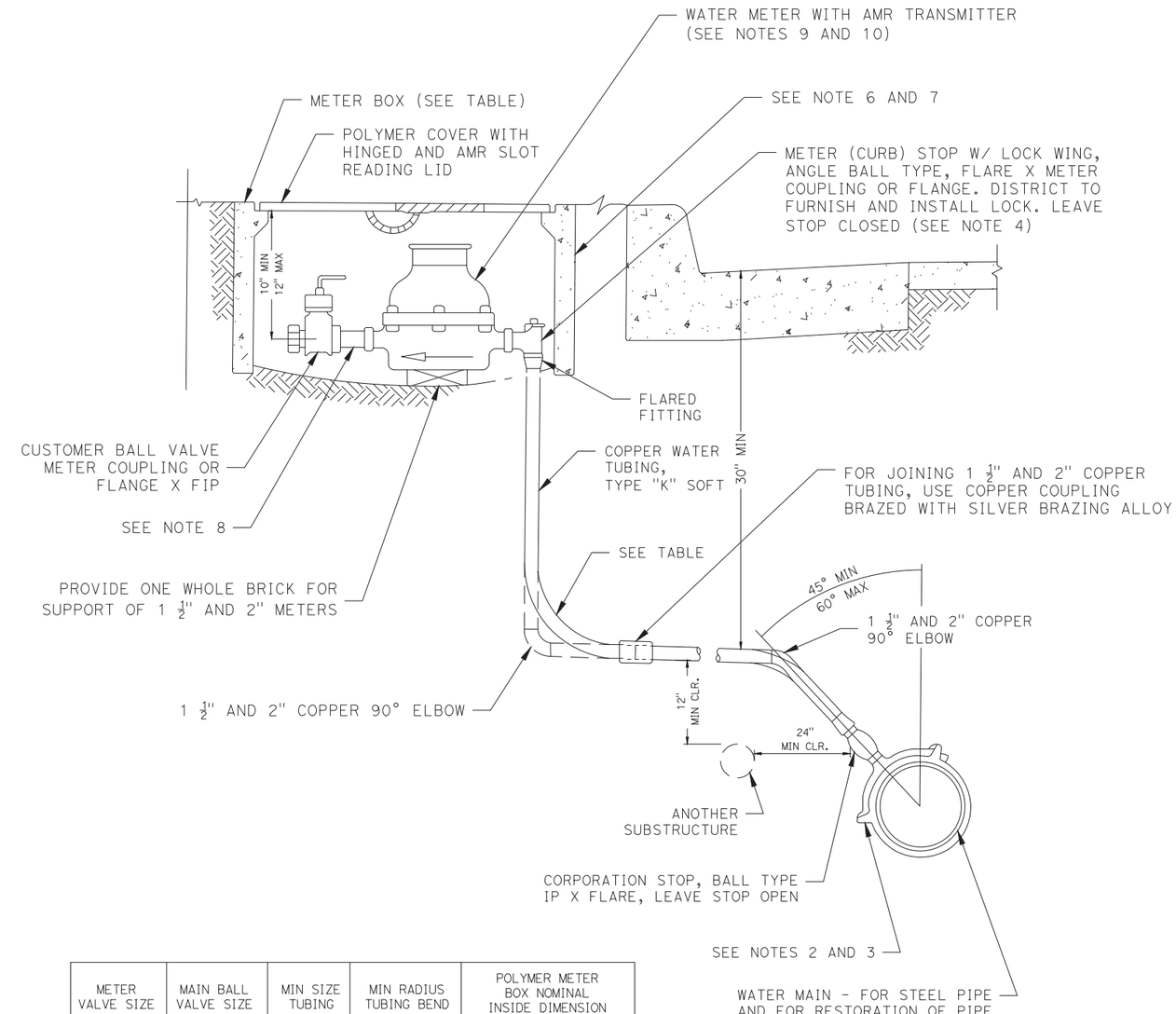

METER VALVE SIZE	MAIN BALL VALVE SIZE	MIN SIZE TUBING	MIN RADIUS TUBING BEND	POLYMER METER BOX NOMINAL INSIDE DIMENSION
3/4" X 1"	1"	1"	18"	13"W X 24"L X 12"D
1"	1"	1"	18"	13"W X 24"L X 12"D
1 1/2"	1 1/2"	1 1/2"	COPPER ELBOW	17"W X 30"L X 12"D
2"	2"	2"	COPPER ELBOW	17"W X 30"L X 12"D

WATER SERVICE AND CONNECTION

NOT TO SCALE

GENERAL NOTES

1. NO METER BOX SHALL BE INSTALLED CLOSER THAN TEN (10) FEET FROM EDGE OF DRIVEWAY APRON (TOP OF X), OR TEN (10) FEET FROM THE PROJECTION OF THE EDGE OF THE GARAGE OPENING, WHICHEVER PROVIDES THE LARGEST SEPARATION BETWEEN THE METER BOX AND THE DRIVEWAY.

   NO METER BOX SHALL BE INSTALLED IN A LOCATION WHERE VEHICLE LOADING MAY DAMAGE THE METER BOX AND/OR METER

   NO METER BOX SHALL BE INSTALLED ADJACENT TO SIDEWALK TRANSITIONS WHERE WALKWAY IS NOT PARALLEL TO STREET.
2. MINIMUM DISTANCE BETWEEN SERVICE TAPS ON MAIN TO A BELL, COUPLING, JOINT, OR FITTING IS 36".
3. USE MALLEABLE-IRON OR DUCTILE-IRON DOUBLE STRAP CLAMPS ON CAST IRON, DUCTILE-IRON, AND STEEL PIPE (LESS THAN 10 GA WALL THICKNESS). USE BRONZE DOUBLE STRAP CLAMPS ON ACP. USE A WELDED THREADED OUTLET ON STEEL PIPE (WALL THICKNESS 10 GA AND GREATER). ON ALL METALLIC MAINS, INSTALL AN INSULATING BUSHING BETWEEN CLAMP OR WELDED THREADED OUTLET AND STOP. CLAMP OR WELDED OUTLET SHALL HAVE OUTLET ONE SIZE LARGER THAN STOP TO ALLOW FOR BUSHING. (SEE UD-2).
4. TEST AT SYSTEM PRESSURE AND FLUSH SERVICE LINE BEFORE LOCKING.
5. ONLY EXCAVATED SOIL OR BACKFILL MATERIAL APPROVED BY DISTRICT IS TO BE USED TO BACKFILL TRENCH. NO TRASH IS TO BE LEFT IN TRENCH.
6. FRONT EDGE OF METER BOX TO BE PLACED AGAINST REAR OF CURB EXCEPT WHEN THERE IS A SIDEWALK ADJACENT TO REAR OF CURB. THEN, FRONT EDGE OF METER BOX TO BE PLACED AGAINST REAR OF SIDEWALK.
7. ALL SERVICE CONNECTIONS SHALL BE INSTALLED FROM THE MAIN IN THE STREET FROM WHICH THE SERVICE IS ADDRESSED, AT RIGHT ANGLES TO THE WATER MAIN, LOCATED AS SHOWN ON PLANS OR DIRECTED BY THE DISTRICT, AND NOT CLOSER THAN TEN (10) FEET TO ANY DRIVEWAY (TOP OF X), WALKWAY, CURB RETURN, OR OTHER UTILITY UNLESS OTHERWISE NOTED ON PLAN.
8. ALL 1 1/2-INCH AND 2-INCH METERS SHALL HAVE FLANGE CONNECTIONS ON THE MAIN CASE, AND ALL NECESSARY BOLTS, NUTS, AND RUBBER GASKETS.
9. METERED WATER SERVICE CONNECTIONS MAY ONLY BE INSTALLED UNDER DISTRICT SUPERVISION. AFTER RECEIPT AND PROCESSING OF WATER SERVICE APPLICATION BY THE DISTRICT AND PAYMENT OF ALL APPLICABLE CHARGES.
10. THE WATER METER MUST BE COMPATIBLE WITH THE DISTRICT'S AUTOMATED METER READING (AMR) SYSTEM. FOR DETAILS, SEE METER SPECIFICATIONS ISSUED AT THE TIME OF APPLICATION FOR WATER SERVICE.

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

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REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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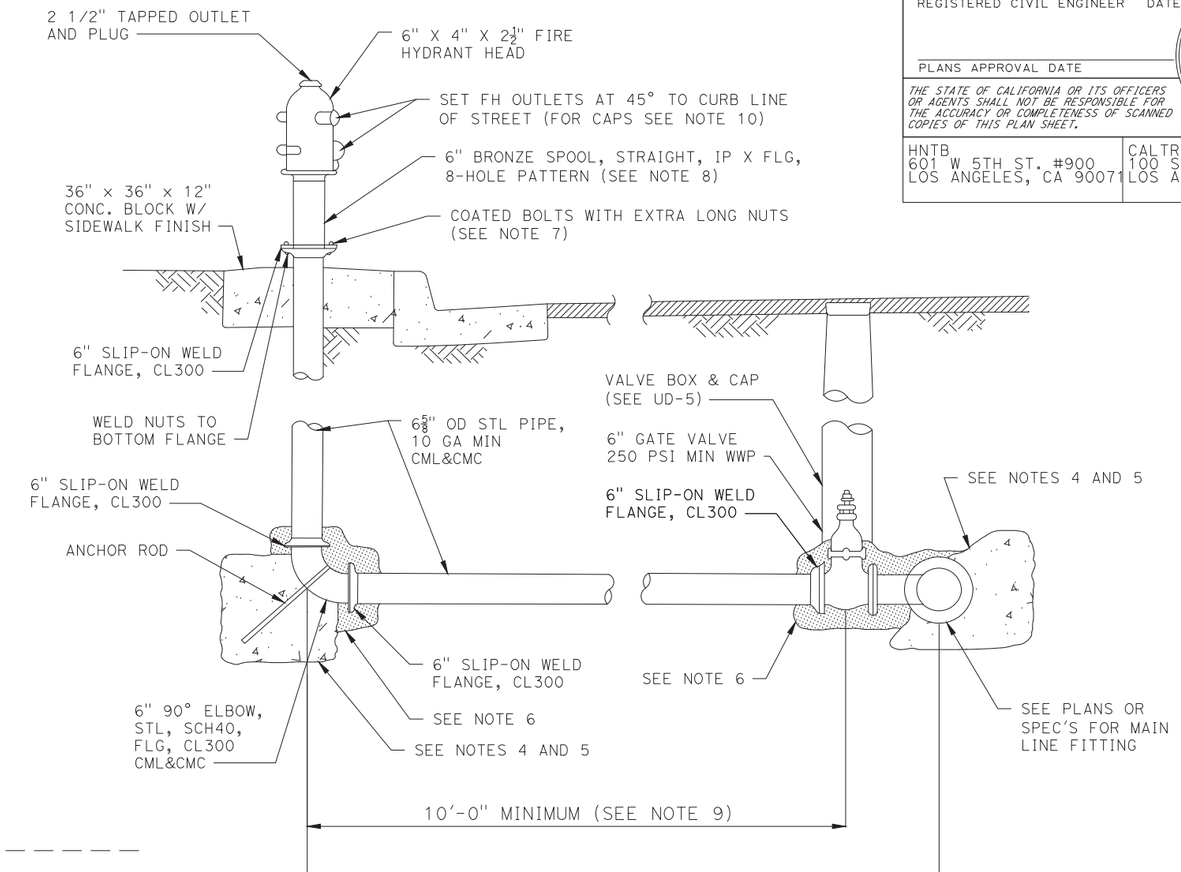
GENERAL NOTES

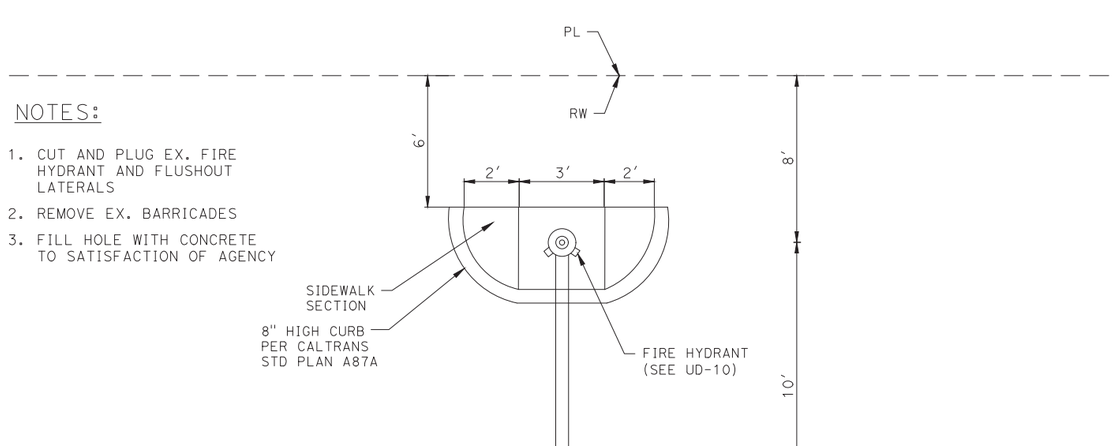
1. IN THE ABSENCE OF A CURB, SET BOTTOM OUTLET 24-INCHES ABOVE CROWN OF ROAD AND PROVIDE STEEL PIPE BARRICADES, HIGH CURB, OR GUARDRAIL AS DIRECTED BY DISTRICT.
2. CENTERLINE OF RISER SHALL BE TWO (2) FEET BEHIND CURB FACE EXCEPT WHERE SIDEWALK IS ADJACENT TO CURB, IN WHICH CASE THE RISER SHALL BE AS SHOWN ON THE PLANS NOT TO EXCEED A DISTANCE OF SEVEN (7) FEET FROM CURB FACE. (REFER TO STREET ENCROACHMENT PERMIT).
3. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN TEN (10) FEET FROM EDGE OF ANY DRIVEWAY APRON (TOP OF X), CURB RETURN, OR FIVE (5) FEET FROM OTHER UTILITY.
4. USE 2000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND HYDRANT PAD. PLACE CONCRETE ON UNDISTRIBUTED OR COMPACTED SOIL.
5. SEE UD-1 FOR THRUST BLOCK REQUIREMENTS.
6. ALL UNCOATED METAL SURFACES INCLUDING BOLTS INSTALLED UNDERGROUND ARE TO BE "DIAPERED" AND GROUTED WITH 900 - 1000 PSI CEMENT MORTAR (1 CEMENT: 3 SAND: 1 LIME) TO PROVIDE A 2-INCH THICK COATING.
7. THE BOLTS AND NUTS CALLED FOR AT THE TOP FLANGE CONNECTION ON THE RISER SHALL BE 3/4" COATED "BLUE" BOLTS.
8. THE EXTERIOR OF THE ABOVE GROUND PORTION OF THE HYDRANT, EXCEPT FOR THE THREADS, SHALL BE PAINTED WITH 2 COATS OF DISTRICT APPROVED RED PRIMER AND 2 COATS OF DISTRICT APPROVED SAFETY YELLOW.
9. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE EITHER LAP OR BELL, WELDED OR FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER. AN ADDITIONAL VALVE MAY BE REQUIRED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE DISTRICT.
10. OUTLETS SHALL BE CAPPED WITH DISTRICT APPROVED PLASTIC CAPS.



FIRE HYDRANT - COMPLETE

(250 PSI MAX WWP LATERAL AT RIGHT ANGLE TO MAIN)

NOT TO SCALE



FIRE HYDRANT / FLUSHOUT

NOT TO SCALE

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

SCALE AS SHOWN

UD-10

NOT FOR CONSTRUCTION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	01	37.7/62.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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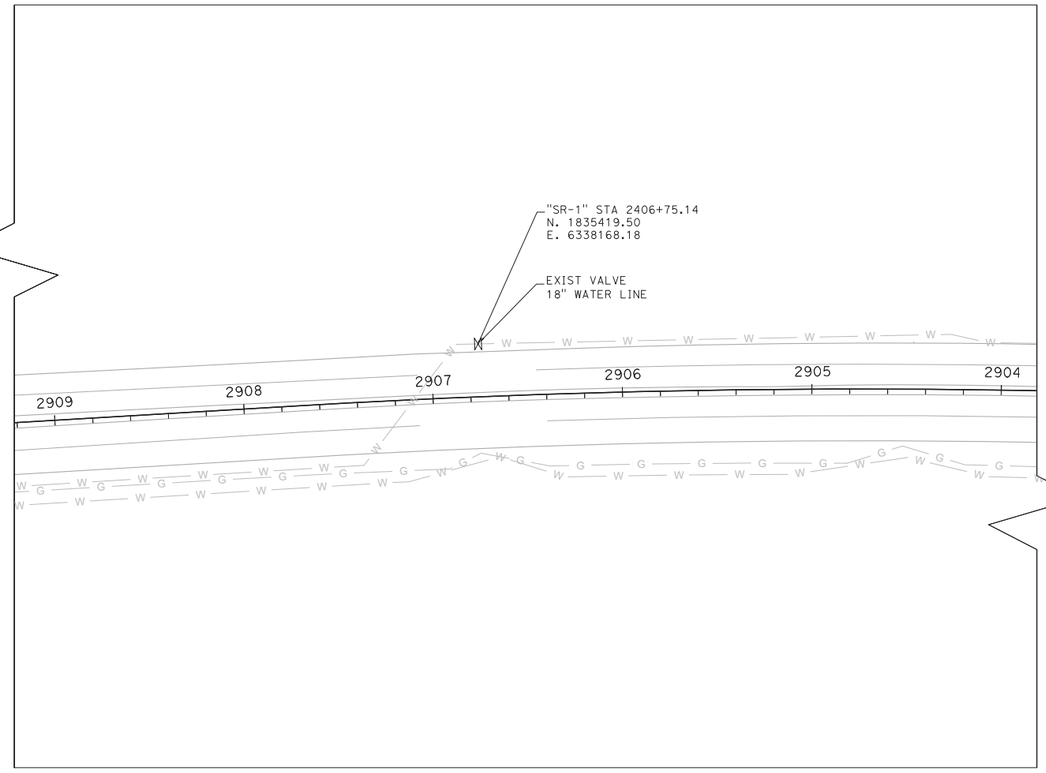
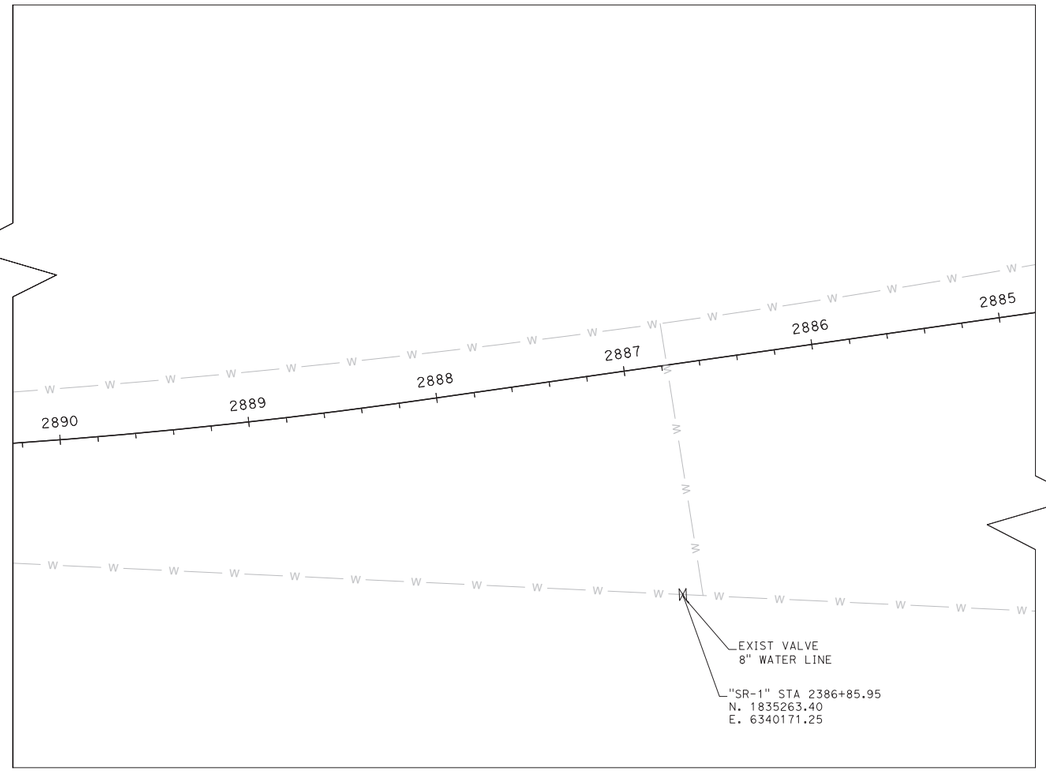


18" WATERLINE INTERCONNECTION DETAIL

SCALE: 1" = 40'



8" WATERLINE INTERCONNECTION DETAIL

SCALE: 1" = 40'

SOLSTICE CANYON BRIDGE

UTILITY DESIGN

SCALE AS SHOWN

UD-11

NOT FOR CONSTRUCTION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — WING-YAN LEE — No. 61452 — Exp. 6-30-21 — CIVIL — STATE OF CALIFORNIA

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No. #	R	Δ	T	L
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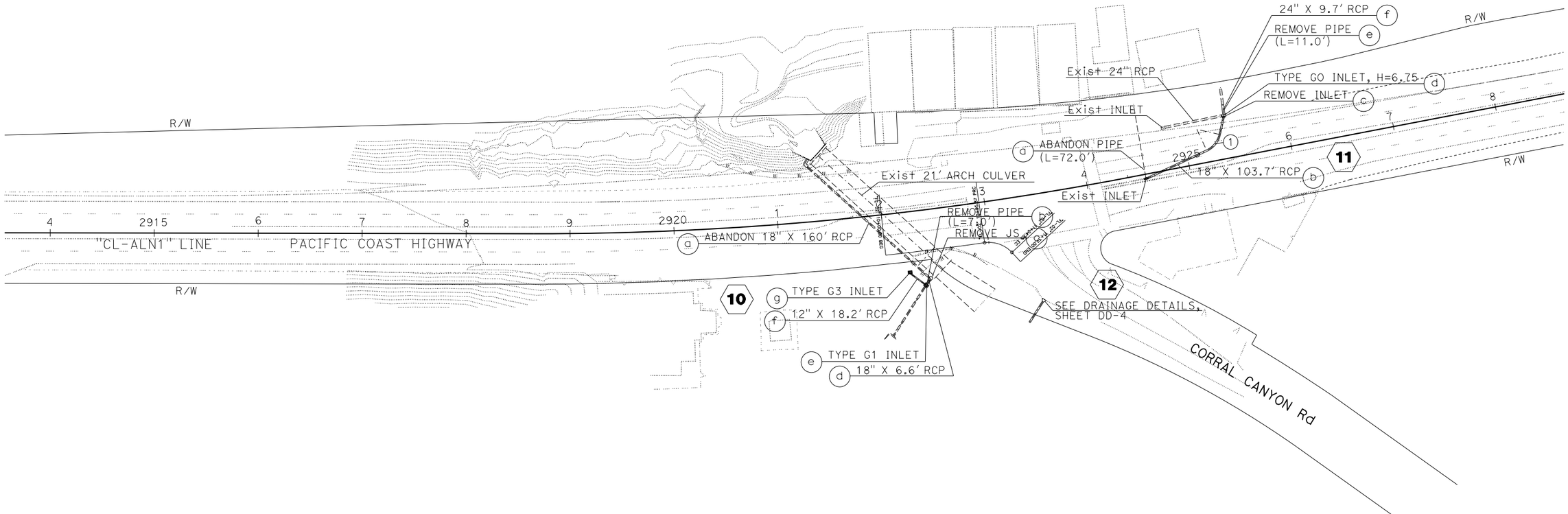

DRAINAGE PLAN

SCALE: 1" = 50'

D-4

APPROVED FOR DRAINAGE WORK ONLY

DARREN TRINH — CHRIS NGUYEN — CALCULATED-DESIGNED BY — CHECKED BY

REVISED BY — DATE REVISED

FUNCTIONAL SUPERVISOR: WING Y. LEE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — HYDRAULICS

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	XX	XX

Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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LOS ANGELES, CA 90012

"SC" Sta. 0+00.00=
160.89 Lt "CL-ALN1" Sta. 2920+47.87
Elev 8.26

SOLSTICE CREEK "SC" LINE

LIMITS OF CONSTRUCTION

PEDESTRIAN WALKWAY

WW 1L

WW 2L

N51°19'03"W
L=298.78'

SOLSTICE CANYON CREEK BRIDGE

Abut 2

Abut 1

"CL-ALN1" LINE

PACIFIC COAST HIGHWAY

2920 2921 2922 2923 2924 2925

"SC" Sta. 2+95.78
Elev 12.37

WW 2R

"SC" Sta. 3+47.67
Elev 15.04

REFER TO DD-11 FOR RSP DETAILS

SOLSTICE CREEK

WW 1R

"SC" Sta. 3+84.57
Elev 15.64

"SC" Sta. 4+07.96
Elev 16.38

N44°16'18"
L=17.75

"SC" Sta. 4+25.71
Elev 16.49

"SC" Sta. 4+41.26
Elev 16.44

N54°49'29"
L=19.66'

CORRAL CANYON RD

N45°21'12"W
L=23.39'

N67°24'49"
L=15.55'

LIMITS OF CONSTRUCTION

"SC" Sta. 4+60.92
Elev 15.56

"SC" Sta. 4+73.18
Elev 15.72

N57°46'26"
L=9.68'

N57°41'04"
L=12.26'

NOTES:

1. FOR CROSS SECTIONS, SEE SHEETS DD-4 TO DD-7
2. FOR PROPOSED GRADING, SEE SHEET D-9

DRAINAGE PLAN

SCALE: 1" = 20'

D-8

APPROVED FOR DRAINAGE WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR

CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	xx	xx

Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MIGUEL A. GALVAN — No. 63534 — Exp. 9/30/22 — CIVIL — STATE OF CALIFORNIA

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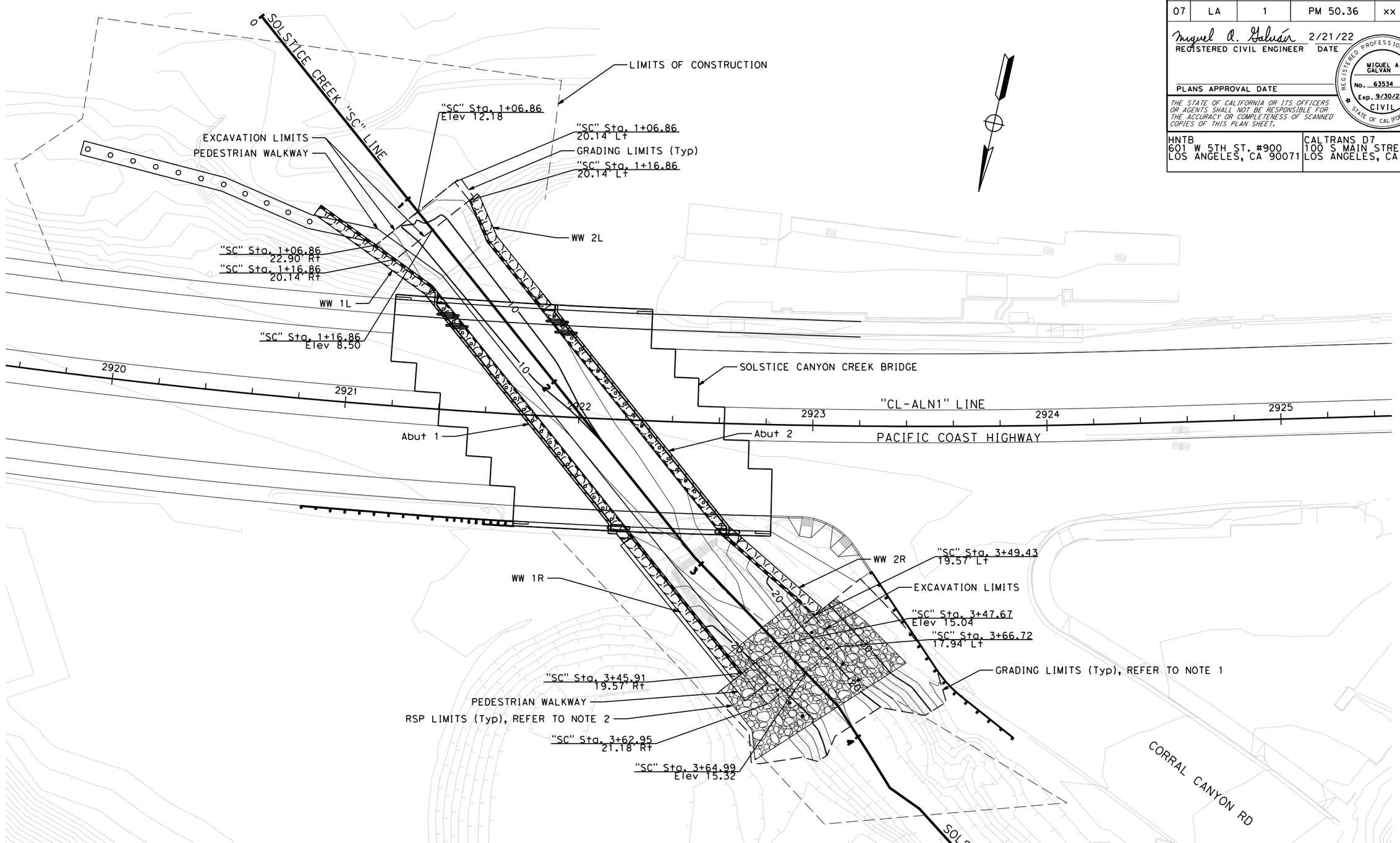

NOTES:

1. FOR GRADING LIMITS, SEE SHEETS DD-8 AND DD-9
2. FOR RSP LIMITS, SEE SHEET DD-11

HYDROLOGY CHANNEL FINISHED GRADING PLAN FOR FISH PASSAGE

DRAINAGE PLAN

SCALE: 1" = 20'

D-9

APPROVED FOR CONTOUR GRADING WORK ONLY

REVISED BY	DATE REVISED

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CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
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PROJECT NUMBER & PHASE 07000313501

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Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
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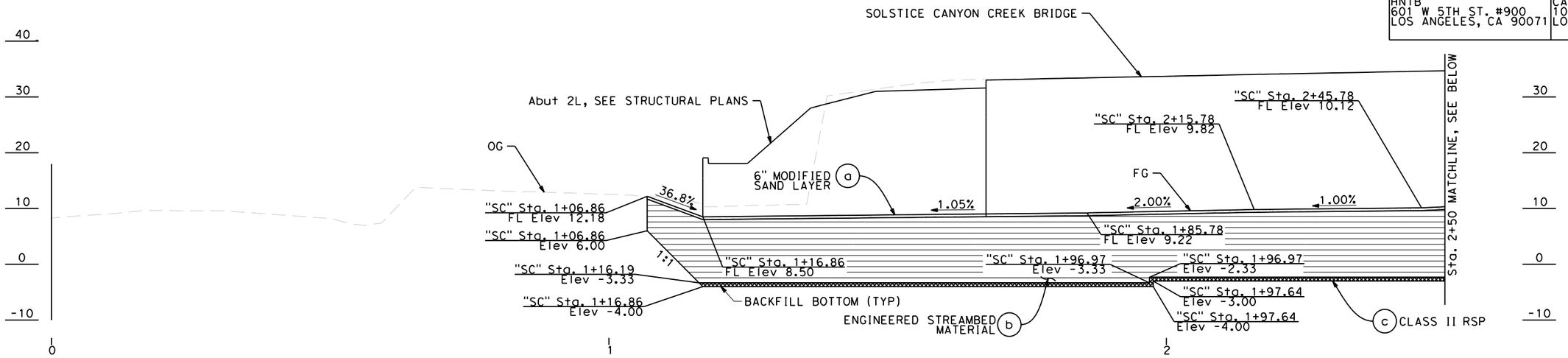
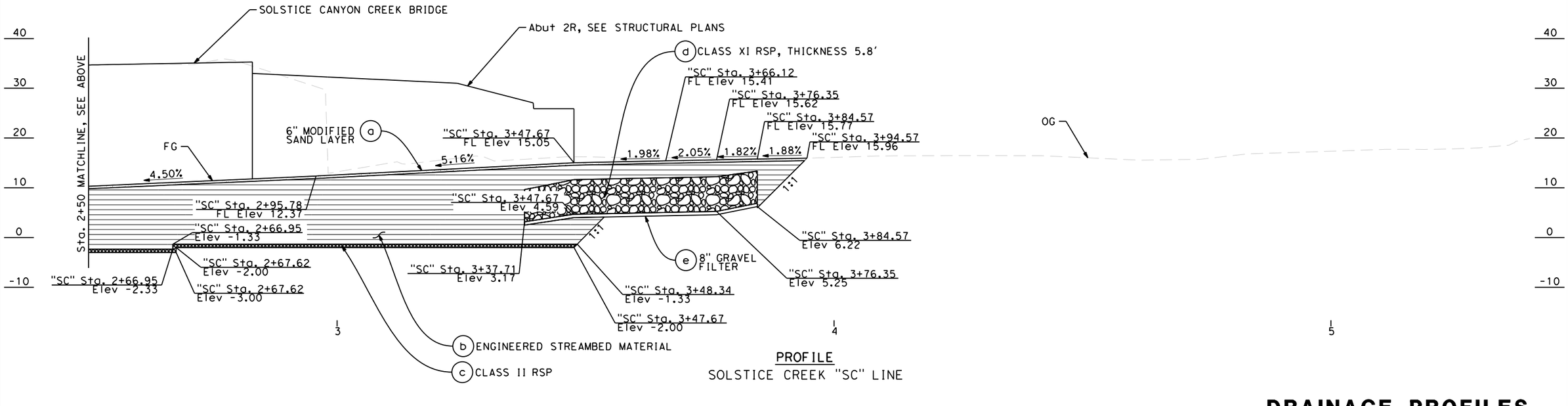


PROFILE
SOLSTICE CREEK "SC" LINE



PROFILE
SOLSTICE CREEK "SC" LINE

DRAINAGE PROFILES

SCALE: Horiz 1"=10'
Vert 1'=10'

DP-6

REVISED BY	DATE REVISED
MIGUEL A. GALVAN	
CARLOS MELGAR	

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YOGA CHANDRAN

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Dist	COUNTY	ROUTE	POST MILES TOT-L PROJECT	SHEET No.	TOT-L SHEETS
07	L-	1	PM 50.36	xx	xx

Miguel A. Galván 2/21/22
REGISTERED CIVIL ENGINEER D-TE

PL-NS -PPROV-L D-TE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL --
C-LV-N
No. 63534
Exp. 9/30/22
CIVIL
STATE OF C-LIFORNIA

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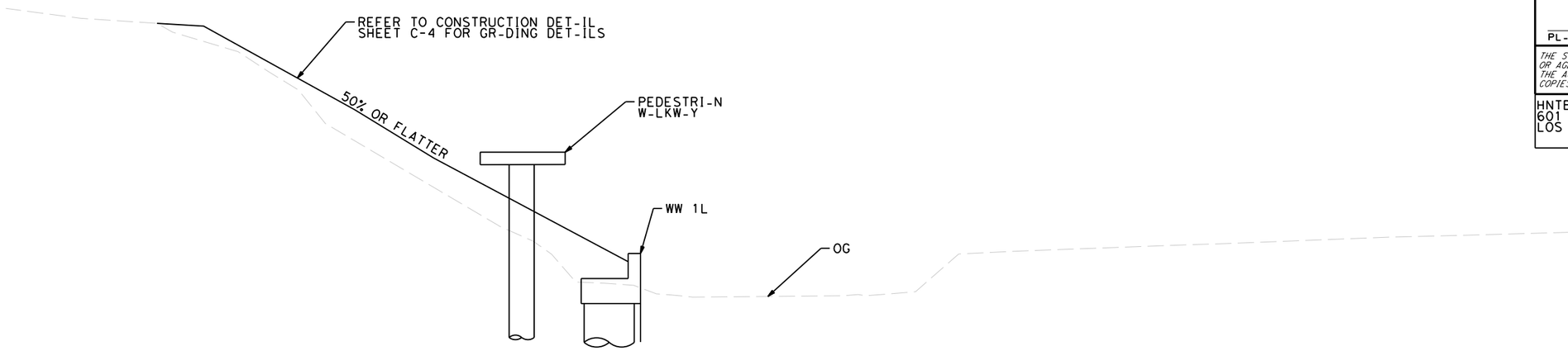
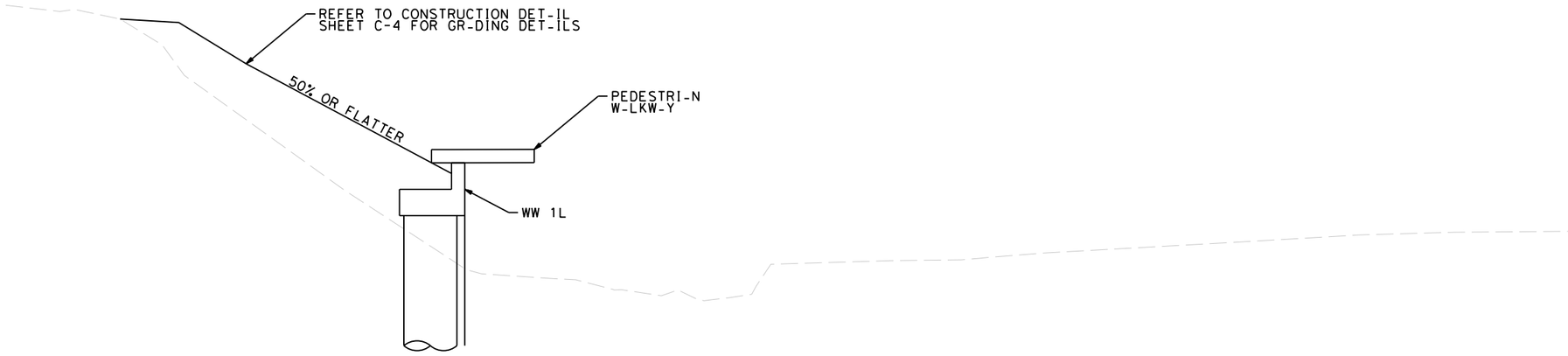
C-LTR-NS D7
100 S M-IN STREET
LOS -NGELES, C- 90012



SECTION A-A
"SC" Sta 0+78.89



SECTION B-B
"SC" Sta 1+00.00

DRAINAGE DETAILS

SCALE: 1"=5'

DD-4

REVISED BY	DATE REVISED
MIGUEL -- G-LV-N	
C-RLOS MELG-R	

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07	LA	1	PM 50.36	xx	xx

Miguel A. Galvan 2/21/22
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REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
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Exp. 9/30/22
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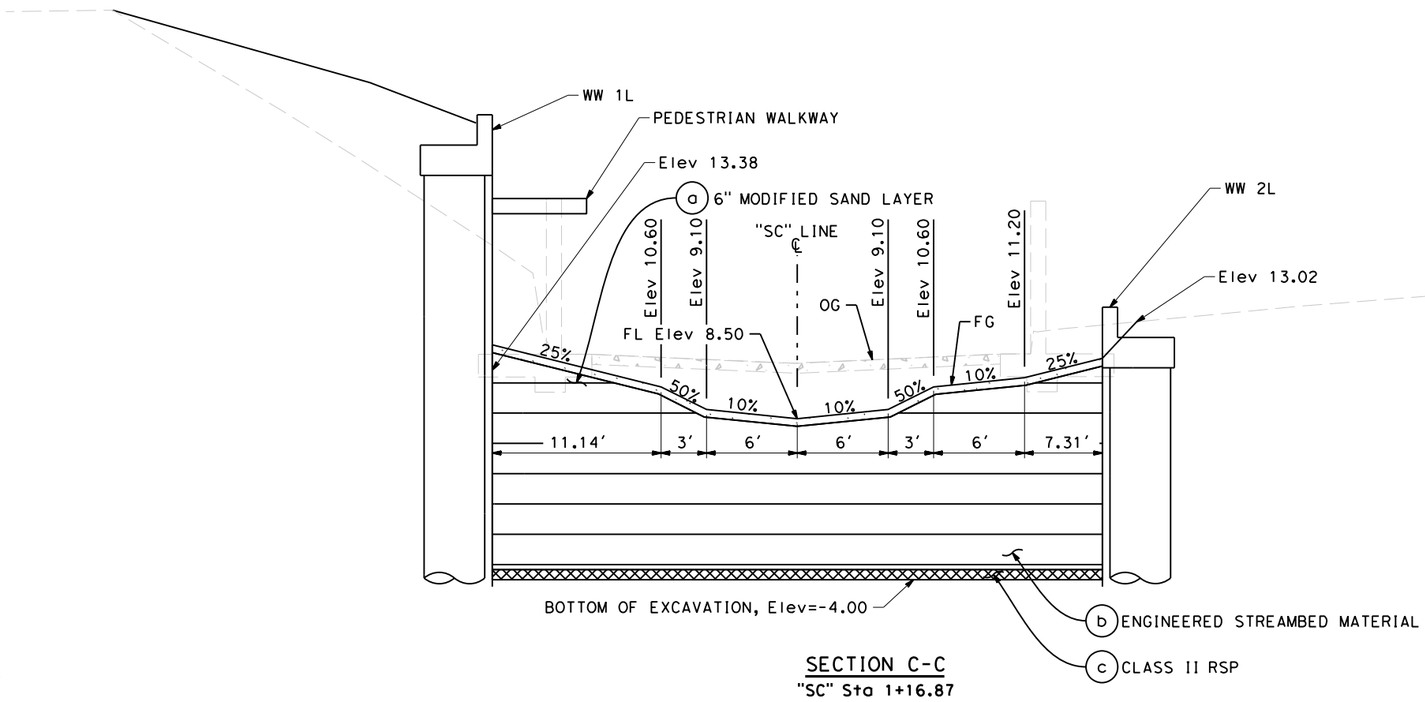

SECTION C-C
"SC" Sta 1+16.87

SECTION D-D
"SC" Sta 1+35.47

DRAINAGE DETAILS

SCALE: 1" = 5'

DD-5

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Miguel A. Galvan 2/21/22
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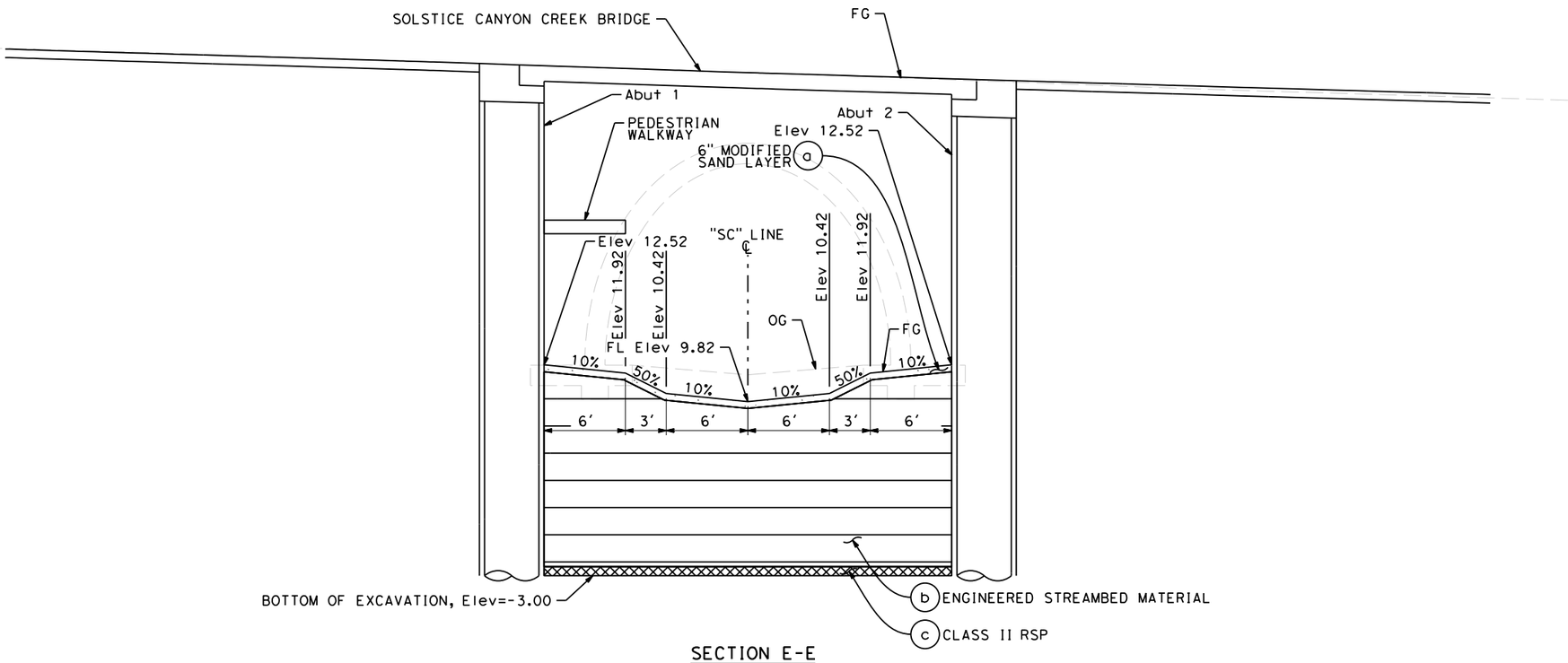
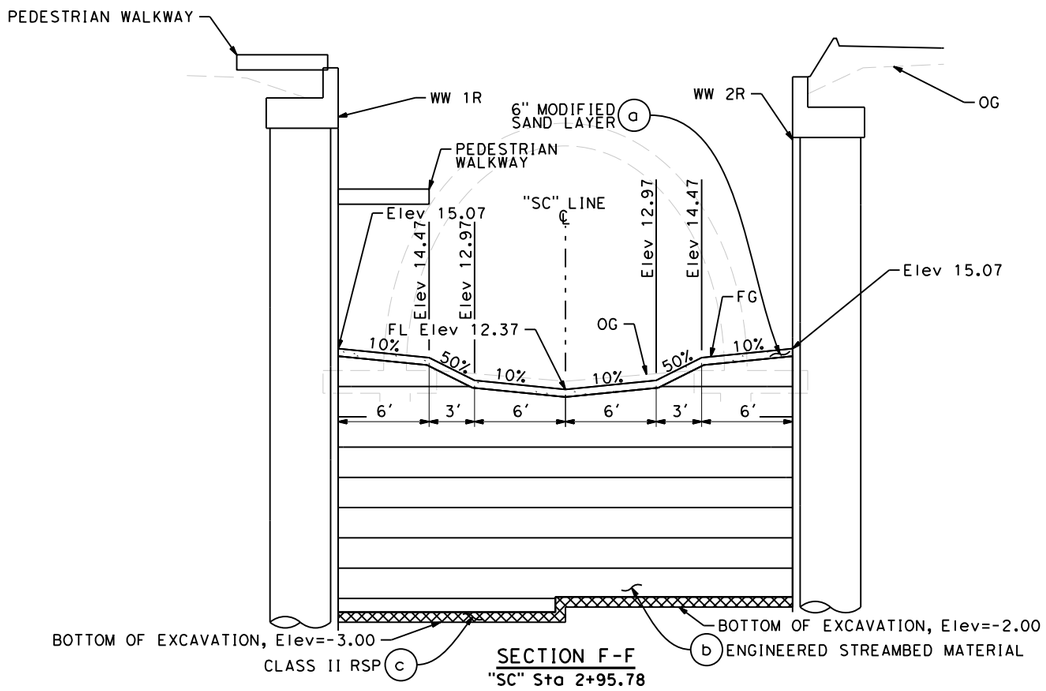


SECTION E-E
"SC" Sta 2+15.78



SECTION F-F
"SC" Sta 2+95.78

DRAINAGE DETAILS

SCALE: 1" = 5'

DD-6

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CARLOS MELGAR
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DATE REVISED

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Miguel A. Galvan 2/21/22
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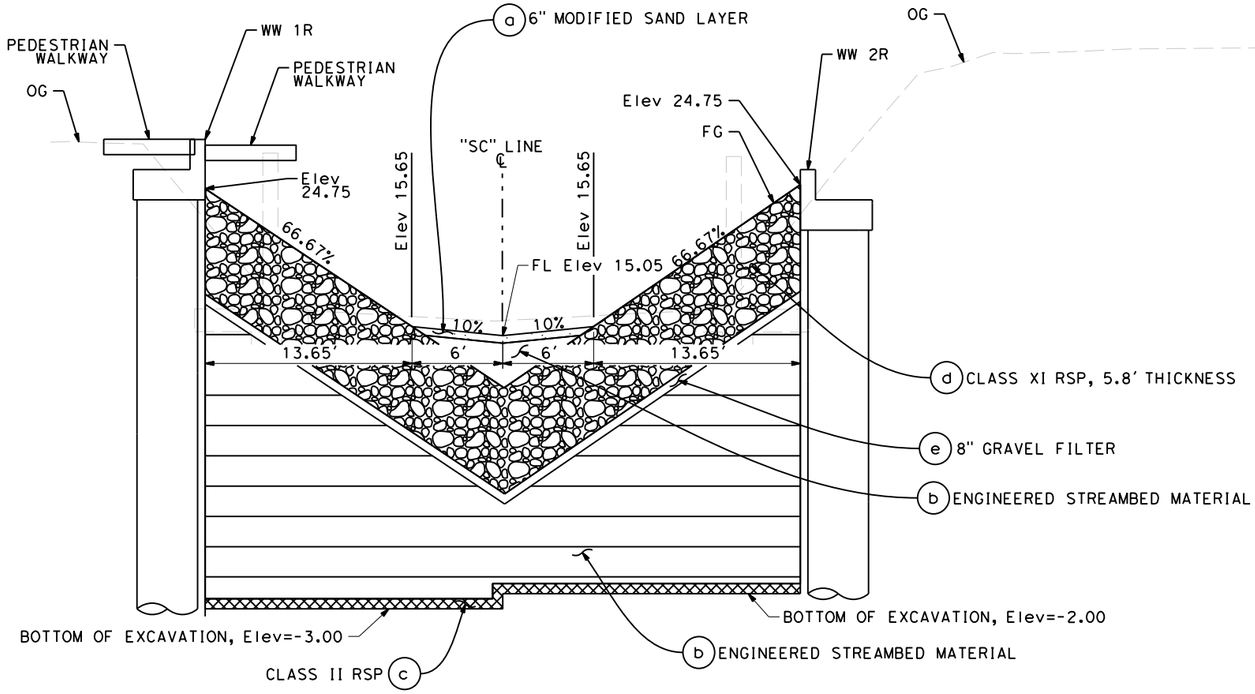
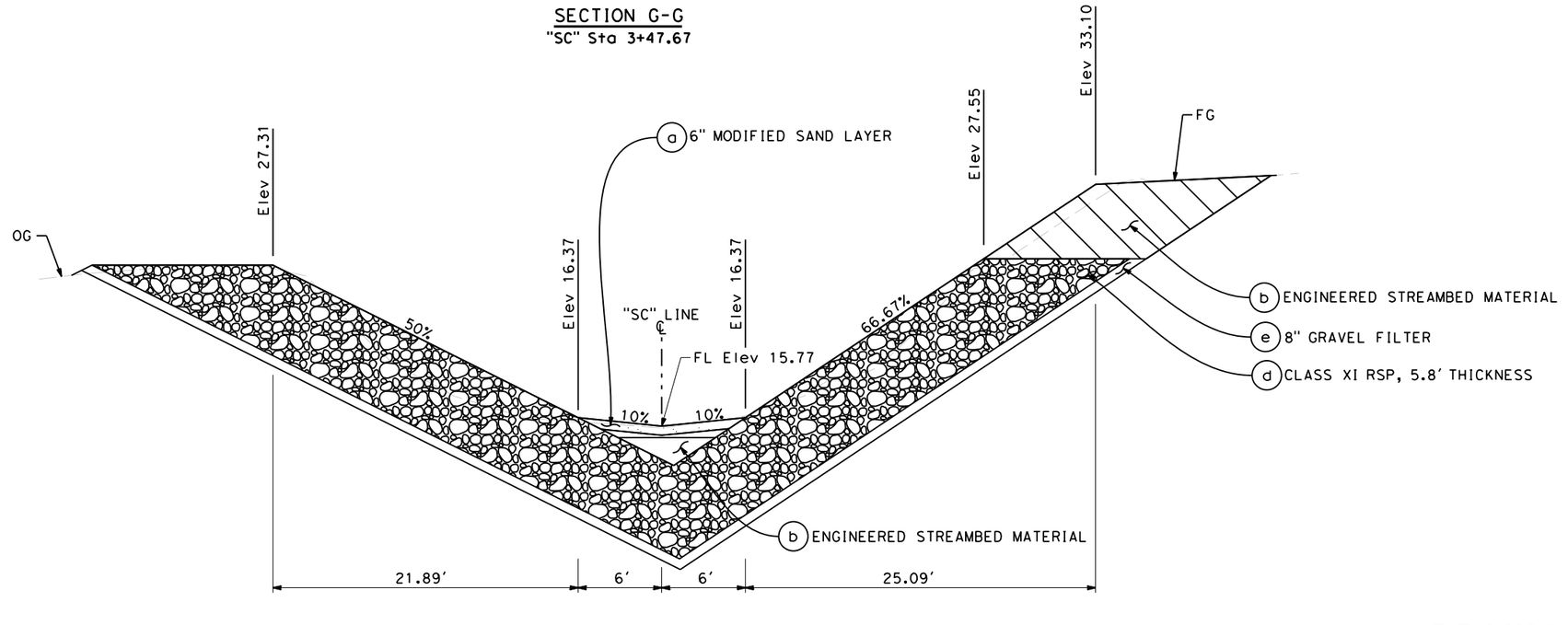


SECTION G-G
"SC" Sta 3+47.67



SECTION H-H
"SC" Sta 3+84.57

DRAINAGE DETAILS

SCALE: 1" = 5'

DD-7

REVISED BY	DATE REVISED
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CARLOS MELGAR	
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YOGA CHANDRAN	

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Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
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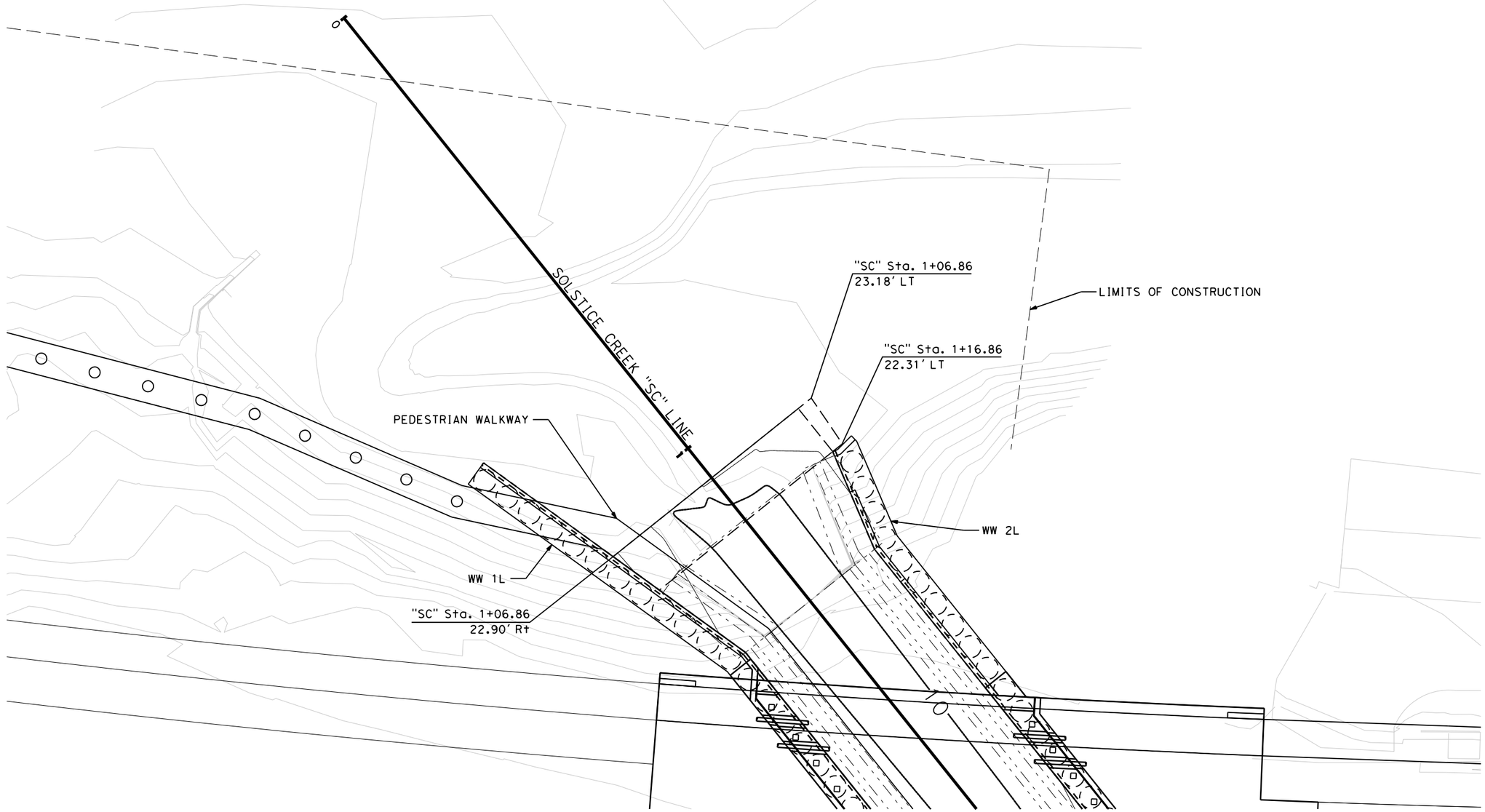

GRADING LIMITS - SOLSTICE CREEK DOWNSTREAM

DRAINAGE DETAILS

SCALE: 1" = 10'

DD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR

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UNIT 0000

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Miguel A. Galvan 2/21/22
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MIGUEL A. GALVAN
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Exp. 9/30/22
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STATE OF CALIFORNIA

PLANS APPROVAL DATE

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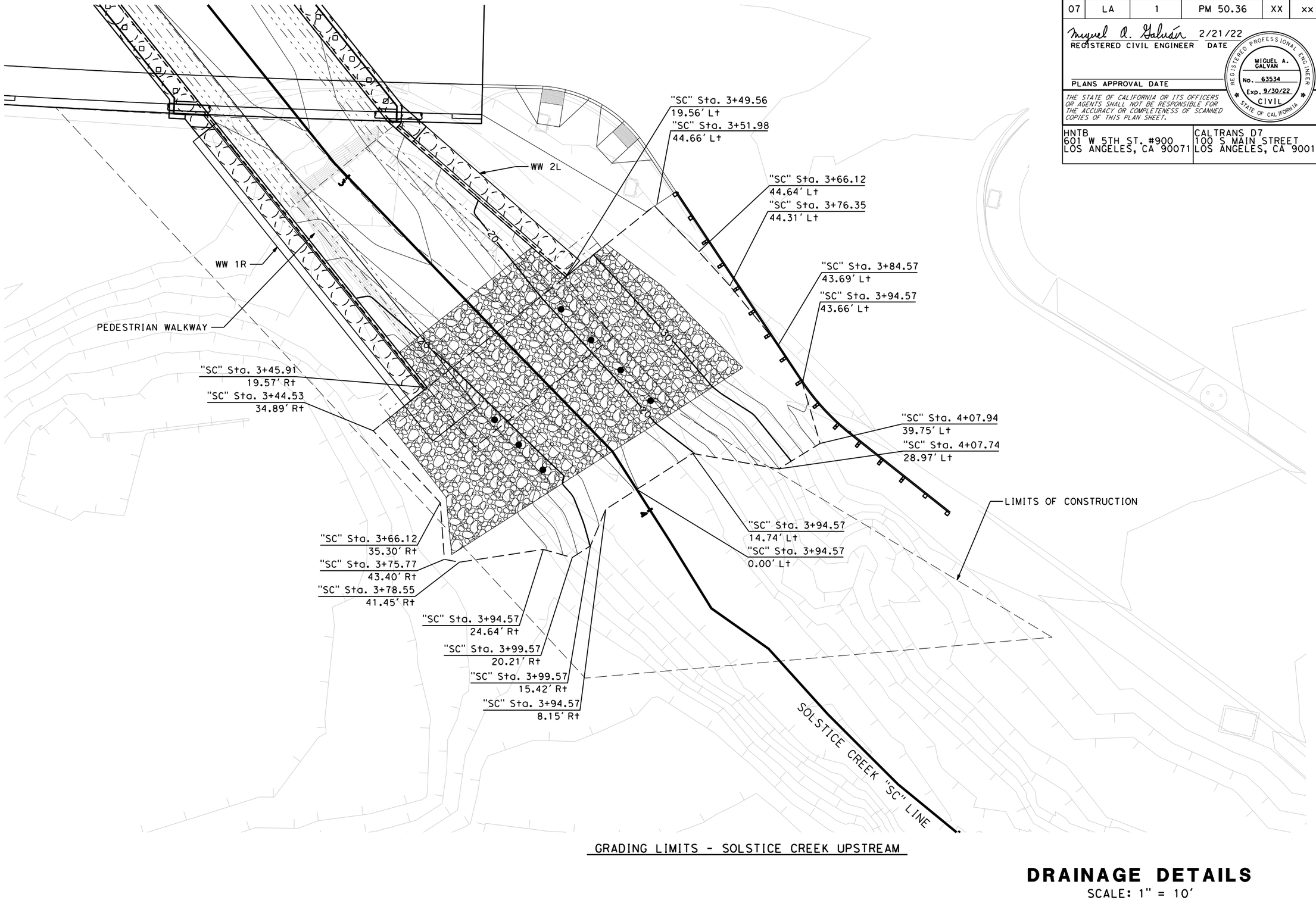
HNTB
601 W 5TH ST. #900
LOS ANGELES, CA 90071

CALTRANS D7
100 S MAIN STREET
LOS ANGELES, CA 90012



GRADING LIMITS - SOLSTICE CREEK UPSTREAM

DRAINAGE DETAILS

SCALE: 1" = 10'

DD-9

REVISED BY | DATE REVISED
MIGUEL A. GALVAN | CARLOS MELGAR
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	XX	xx

Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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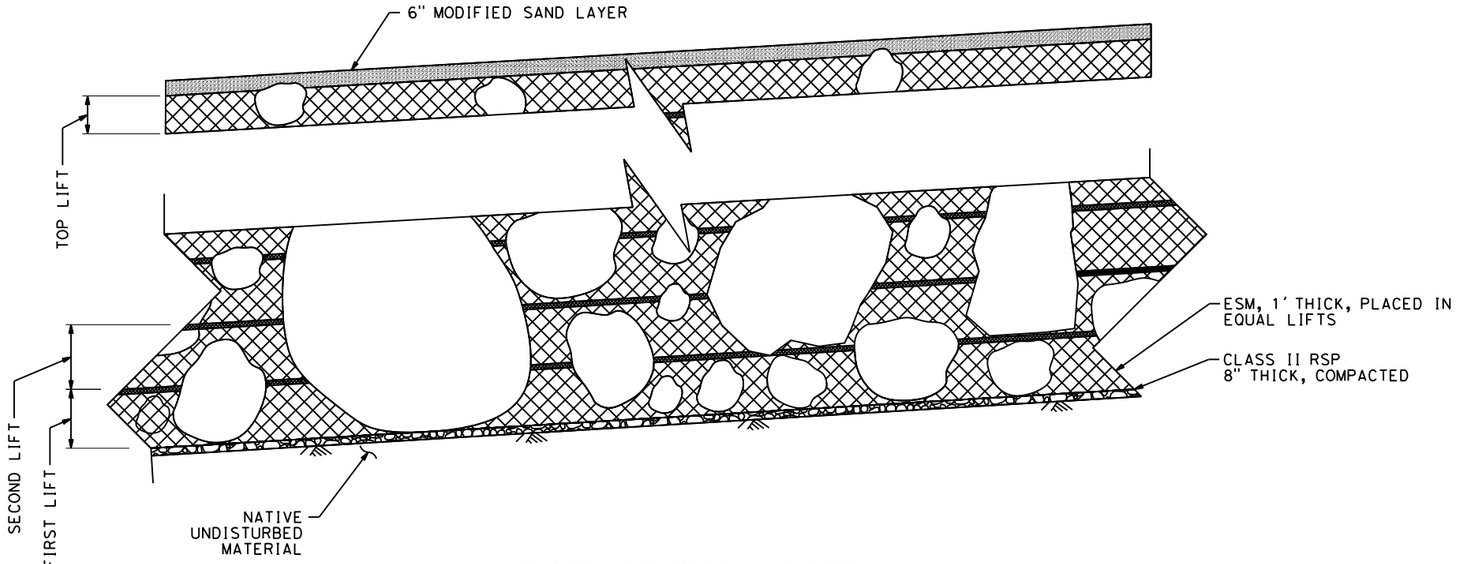
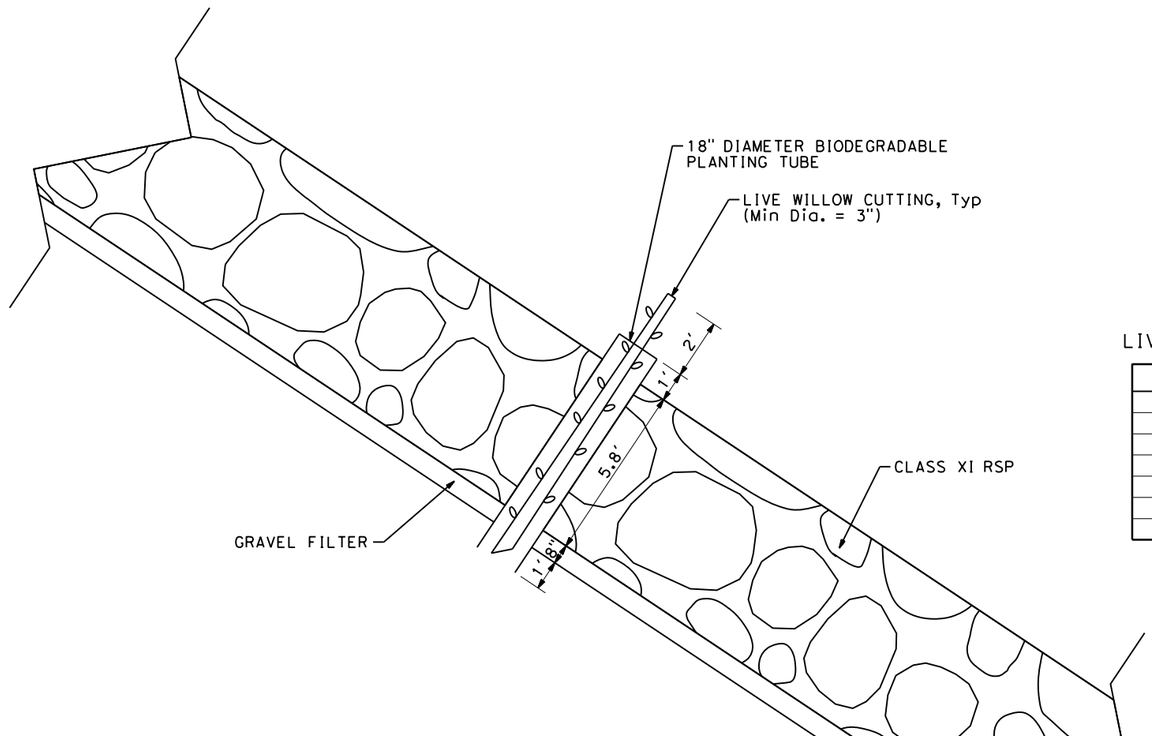


TYPICAL ESM PLACEMENT DETAIL



LIVE WILLOW CUTTING DETAIL

LIVE WILLOW CUTTINGS LOCATIONS

No.	STATION	OFFSET
1	"SC" 3+61.32	13.85' Rt
2	"SC" 3+69.03	13.88' Rt
3	"SC" 3+76.74	13.91' Rt
4	"SC" 3+54.00	13.81' Lt
5	"SC" 3+63.50	13.85' Lt
6	"SC" 3+72.90	13.89' Lt
7	"SC" 3+82.40	13.93' LT

DRAINAGE DETAILS

NO SCALE

DD-10

REVISED BY	DATE REVISED

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	XX	XX

Miguel A. Galvan 2/21/22
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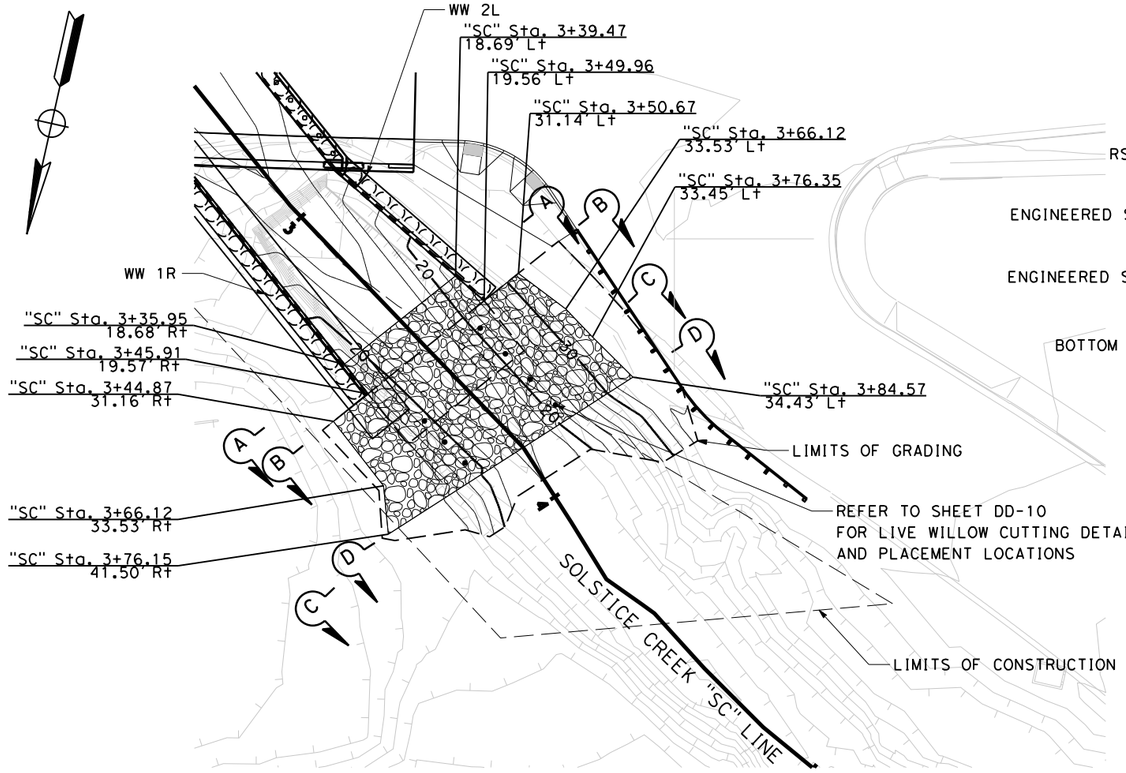
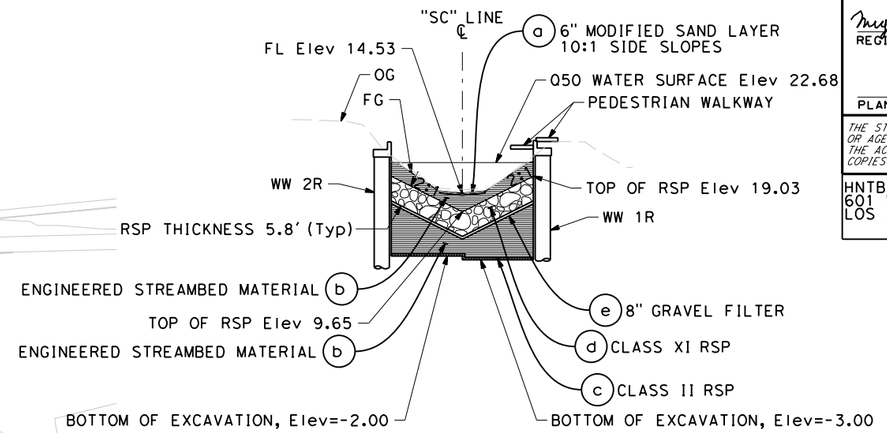
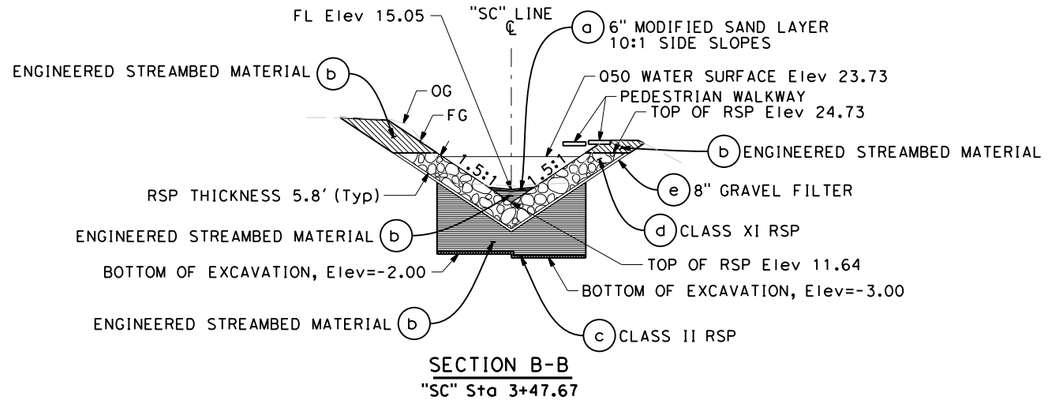


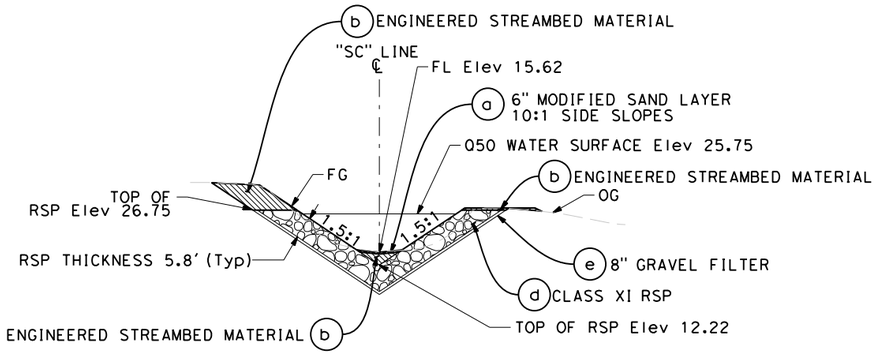
RSP LIMITS - SOLSTICE CREEK UPSTREAM



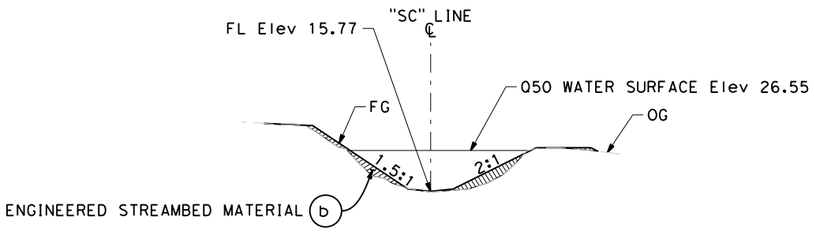
SECTION A-A
"SC" Sta 3+37.71



SECTION B-B
"SC" Sta 3+47.67



SECTION C-C
"SC" Sta 3+76.35



SECTION D-D
"SC" Sta 3+84.57

DRAINAGE DETAILS

SCALE: 1" = 20'

DD-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
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CHECKED BY
REVISED BY: MIGUEL A. GALVAN
DATE REVISED: CARLOS MELGAR

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TIME PLOTTED => $TIME

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USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	XX	XX

Miguel A. Galvan 2/21/22
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

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601 W 5TH ST. #900
LOS ANGELES, CA 90071

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LOS ANGELES, CA 90012

DRAINAGE PLAN SHEET No.	DRAINAGE UNIT No.	MODIFIED SAND	ESM	CLASS II RSP	CLASS XI RSP	8" GRAVEL FILTER	18" PERFORATED PLANTING TUBE	WILLOW CUTTINGS	DESCRIPTION	STATION
		CY	CY	CY	CY	SQFT	EA	EA		
D-8	a	140.8							6" MODIFIED SAND LAYER	"SC" Sta 1+06.86 TO 3+94.57
	b		4359.9						ENGINEERED STREAMBED MATERIAL (ESM)	"SC" Sta 1+06.86 TO 3+94.57
	c			181.6					CLASS II RSP	"SC" Sta 1+06.86 TO 3+94.57
	d				601.0		7	7	CLASS XI RSP WITH WILLOW CUTTINGS	"SC" Sta 1+06.86 TO 3+94.57
	e					3265.5			8" GRAVEL FILTER	"SC" Sta 1+06.86 TO 3+94.57

DRAINAGE QUANTITIES
DQ-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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CHECKED BY: CARLOS MELGAR
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

BORDER LAST REVISED 7/2/2010
USERNAME => $USER
DGN FILE => $REQUEST
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

NOTES: PIPE JOINTS ARE STANDARD
OR AS NOTED ON PLANS

(N) NOT A SEPARATE BID ITEM,
FOR INFORMATION ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	13	81

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

WING-YAN LEE No. 61452 Exp. 6-30-21 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.

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET NO	DRAINAGE SYSTEM No	DRAINAGE UNIT NO	(N) H OR V	STRUCTURAL CONCRETE, DRAINAGE INLET	MISCELLANEOUS IRON AND STEEL	STRUCTURAL CONCRETE (HEADWALL)	BAR REINFORCING STEEL	REMOVE INLET	REMOVE PIPE	ABANDON CULVERT (LF)	SAND BACKFILL	REMOVE DRAINAGE FACILITY (EA)	48" CORRUGATED STEEL PIPE (.138" THICK)	DEBRIS RACK CAGE (H=6.0')	RSP (150 LB, CLASS III, METHOD B)	CONCRETED RSP (1 TON, METHOD B)	RSP FABRIC (CLASS 8)	18" CORRUGATED STEEL PIPE (.109" THICK)	24" REINFORCED CONCRETE PIPE	24" REINFORCED CONCRETE PIPE (JACKED)	36" REINFORCED CONCRETE PIPE	CLEANING, INSPECTING AND PREPARING CULVERT	18" CURED-IN-PLACE PIPELINER	24" CURED-IN-PLACE PIPELINER	48" CURED-IN-PLACE PIPELINER	(N) TYPE 24-12 FRAME AND GRATE	(N) MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	LB	CY	LB	EA	LF	LF	CY	EA	LF	EA	CY	CY	SQYD	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	FT		
D-4	10	a							156																				REMOVE EXIST 18" CSP	
		b																20.0									20.0	18" CSP	
		c	10.0	6.16	326																					1		TYPE G2 INLET; H=10.0'	69.8' R+ 2922+22.00 "CL-ALN1" LINE
		d							15																			REMOVE EXIST 18" RCP	
		e										1																REMOVE EXIST JUNCTION STRUCTURE	
SHEET TOTAL				6.16	326				171			1						20.0								1			

CALCULATED-DESIGNED BY: DARREN TRINH
CHECKED BY: CHRIS NGUYEN
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: WING Y. LEE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DRAINAGE QUANTITIES
DQ-1

LAST REVISION 06-05-20
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:56

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350id001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1837
PROJECT NUMBER & PHASE 07150000901

NOTES: PIPE JOINTS ARE STANDARD
OR AS NOTED ON PLANS

(N) NOT A SEPARATE BID ITEM,
FOR INFORMATION ONLY.

(*) QUANTITIES LISTED FOR INFORMATION ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	14	81

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — WING-YAN LEE — No. 61452 — Exp. 6-30-21 — CIVIL — STATE OF CALIFORNIA

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TEMPORARY DRAINAGE QUANTITIES (SEE SHEET SC-11 & SC-12)

TEMPORARY DRAINAGE PLAN SHEET No.	TEMPORARY DRAINAGE SYSTEM No.	TEMPORARY DRAINAGE UNIT No.	RSP (300 LB, CLASS IV METHOD B) CY	RSP FABRIC (CLASS 8) SQYD	TEMPORARY GRAVEL BAG EA	TEMPORARY CREEK DIVERSION SYSTEM LS	78" CORRUGATED STEEL PIPE (.138" THICK) LF	DESCRIPTION
SC-11	1	a					29.5 (*)	78" CMP
		b					18.9 (*)	78" CMP
		c					162.3 (*)	78" CMP
		d					23.2 (*)	78" CMP
		e					27.4 (*)	78" CMP
		f					1.4 (*)	78" CMP
		g					59.6 (*)	78" CMP
		h			27,648 (*)			GRAVEL BAG
		i	7.41 (*)	40.0 (*)				RSP
SC-12	2	a					55.5	78" CMP
		b					18.8	78" CMP
		c					162.4	78" CMP
		d					22.2	78" CMP
		e					19.4	78" CMP
		f					7.3	78" CMP
		g					1.4	78" CMP
		h					59.6	78" CMP
		i			27,648	1		GRAVEL BAG
		j	7.41	40.0				RSP
TEMPORARY DRAINAGE SHEET TOTAL			7.41	40.0	27,648	1	346.6	

REVISED BY | DATE REVISED

DARREN TRINH | CHRIS NGUYEN

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: WING Y. LEE

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DRAINAGE QUANTITIES
DQ-2

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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NOTES:

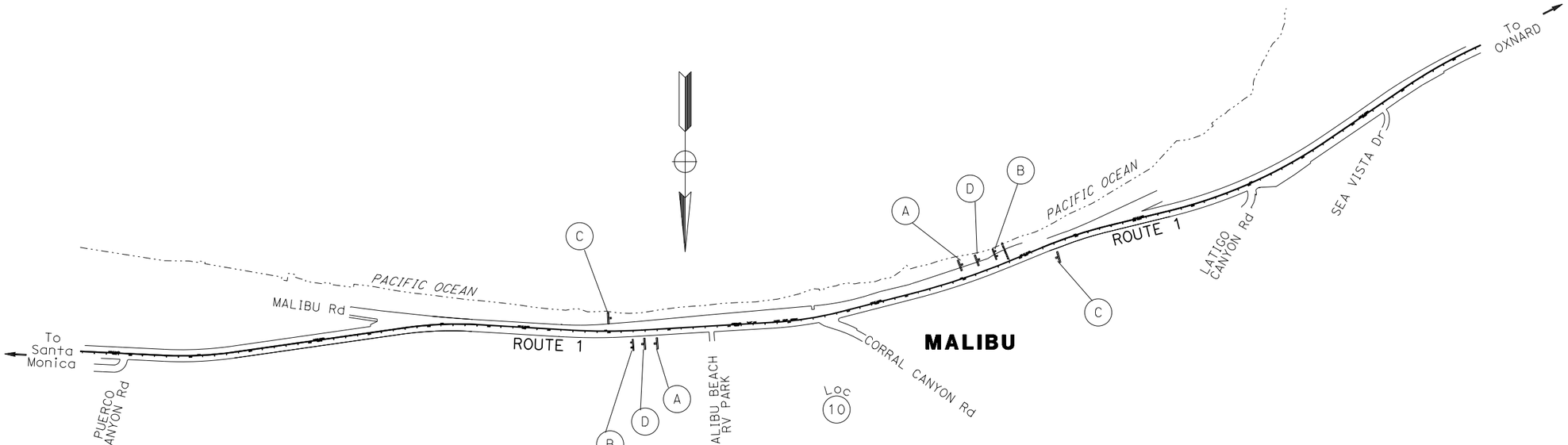
1. SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. SIGN POST LENGTH ARE APPROXIMATELY EXACT SIZE AND LENGTH WILL BE DETERMINED BY THE ENGINEER.
3. SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING SHEETS FOR ADDITIONAL STATIONARY MOUNTED AREA SIGNS.

LEGEND:

LOC (X) LOCATION NUMBER

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.⊗	SIGN DESIGNATION	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
A	W20-1	48" X 48"	ROAD WORK AHEAD	1 - 6" X 6"	2
B	C40(CA)	144" X 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 - 6" X 6"	2
C	G20-2	48" x 24"	END ROAD WORK	1 - 4" X 6"	2
D	C30A(CA)-2	48" x 24"	SHOULDER CLOSED	1 - 4" X 6"	2



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
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DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:56

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USERNAME => s146363
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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

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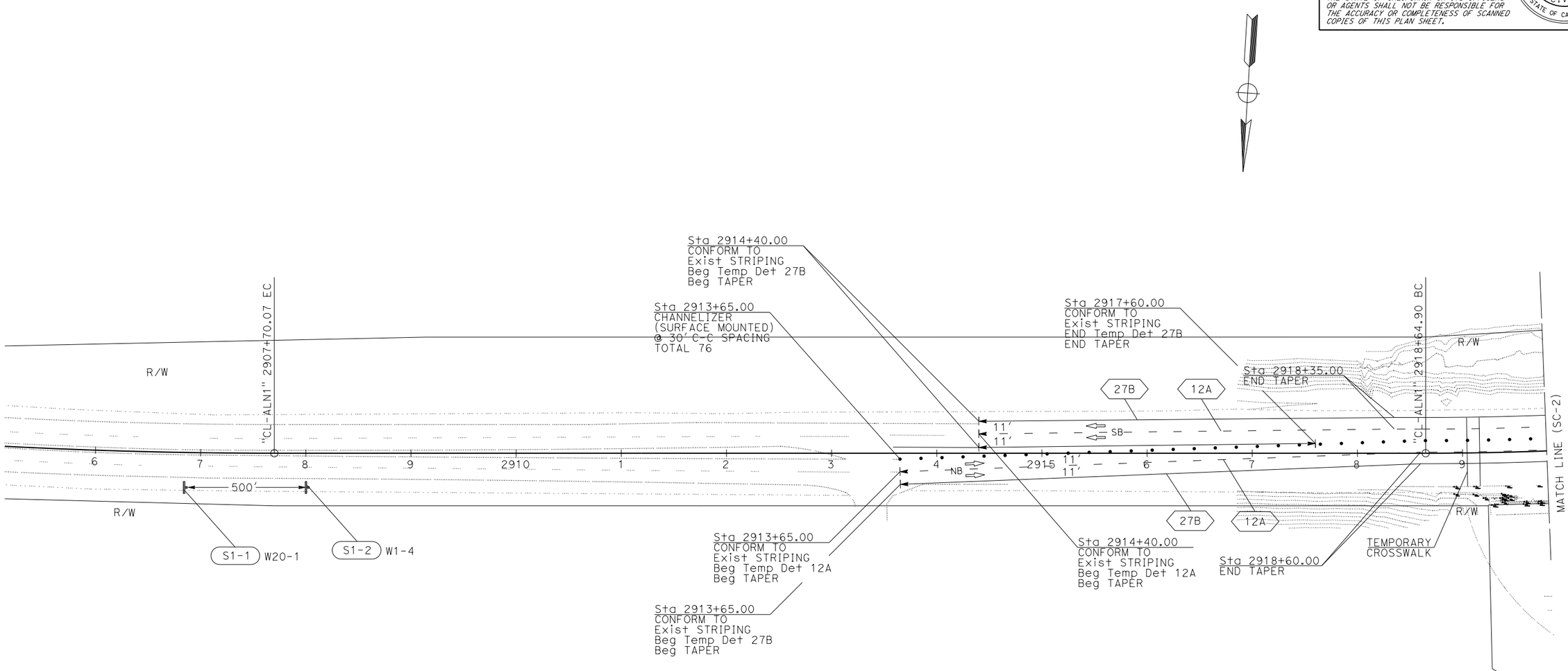

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 STAGE 1)

SCALE: 1" = 50'

SC-1

CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

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DGN FILE => 0731350ma001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
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PLANS APPROVAL DATE

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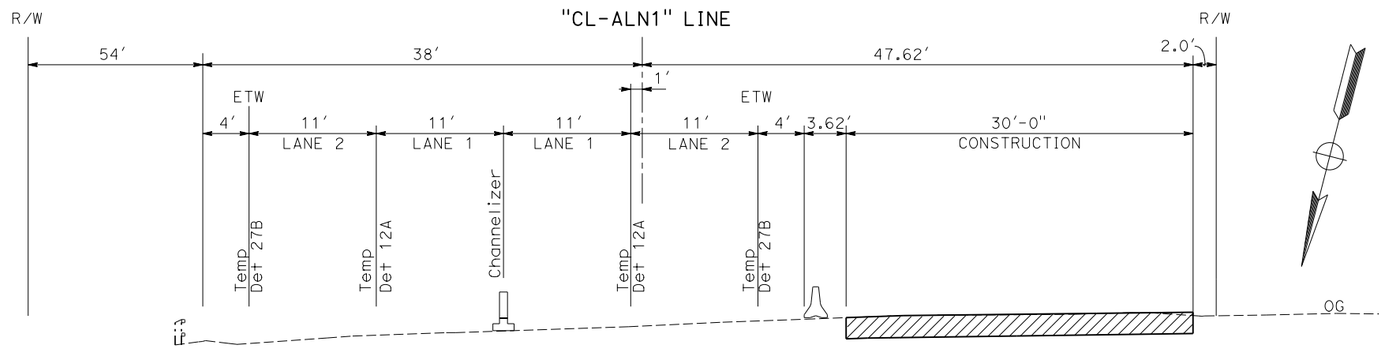
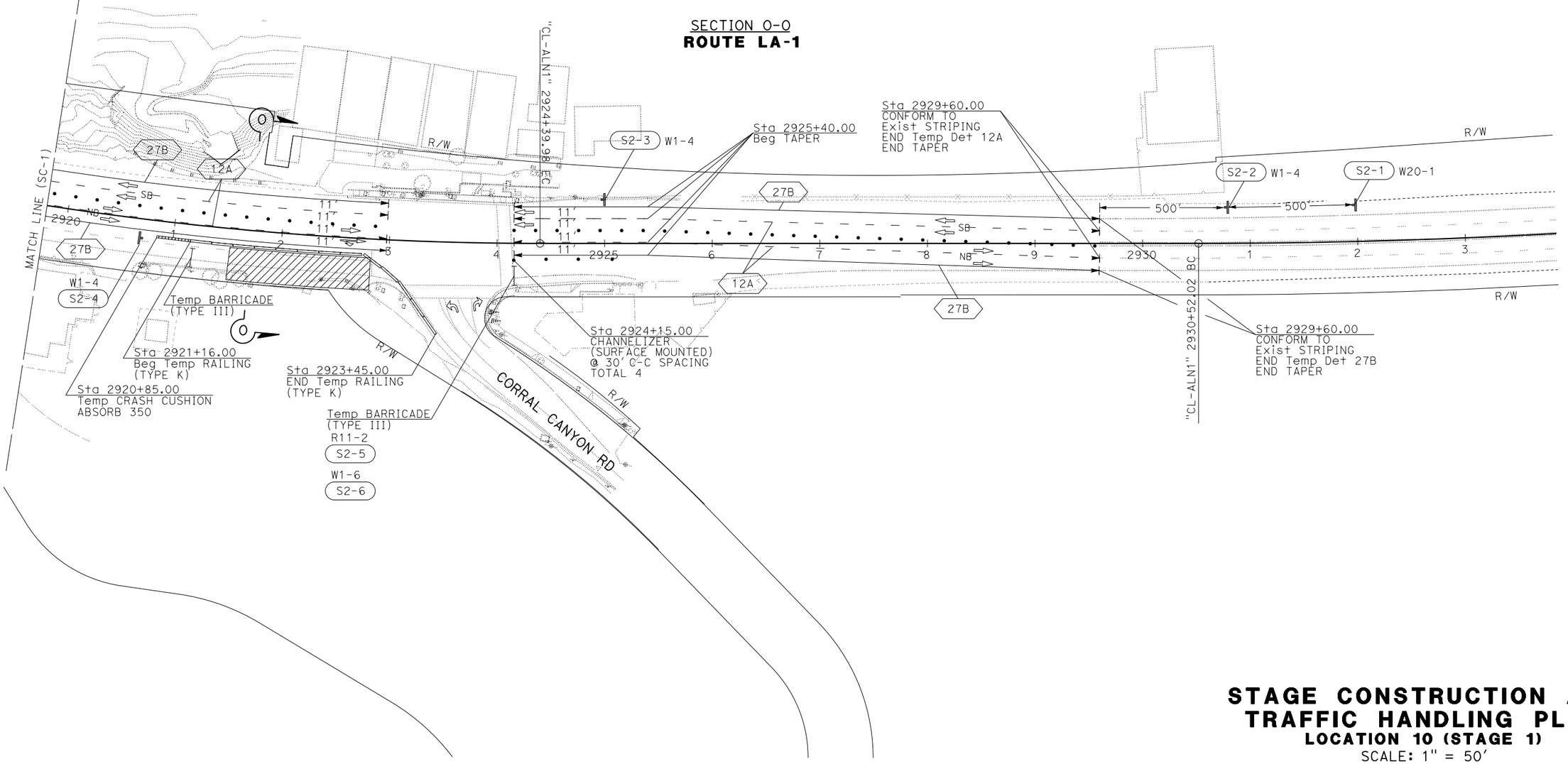


SECTION O-O
ROUTE LA-1



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
LOCATION 10 (STAGE 1)
SCALE: 1" = 50′

SC-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

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CALCULATED-DESIGNED BY: TIN PHAN
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DATE PLOTTED => 28-JUL-2022
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DGN FILE => 0731350ma002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NATHAN OUM
No. C71418
Exp. 12-31-21
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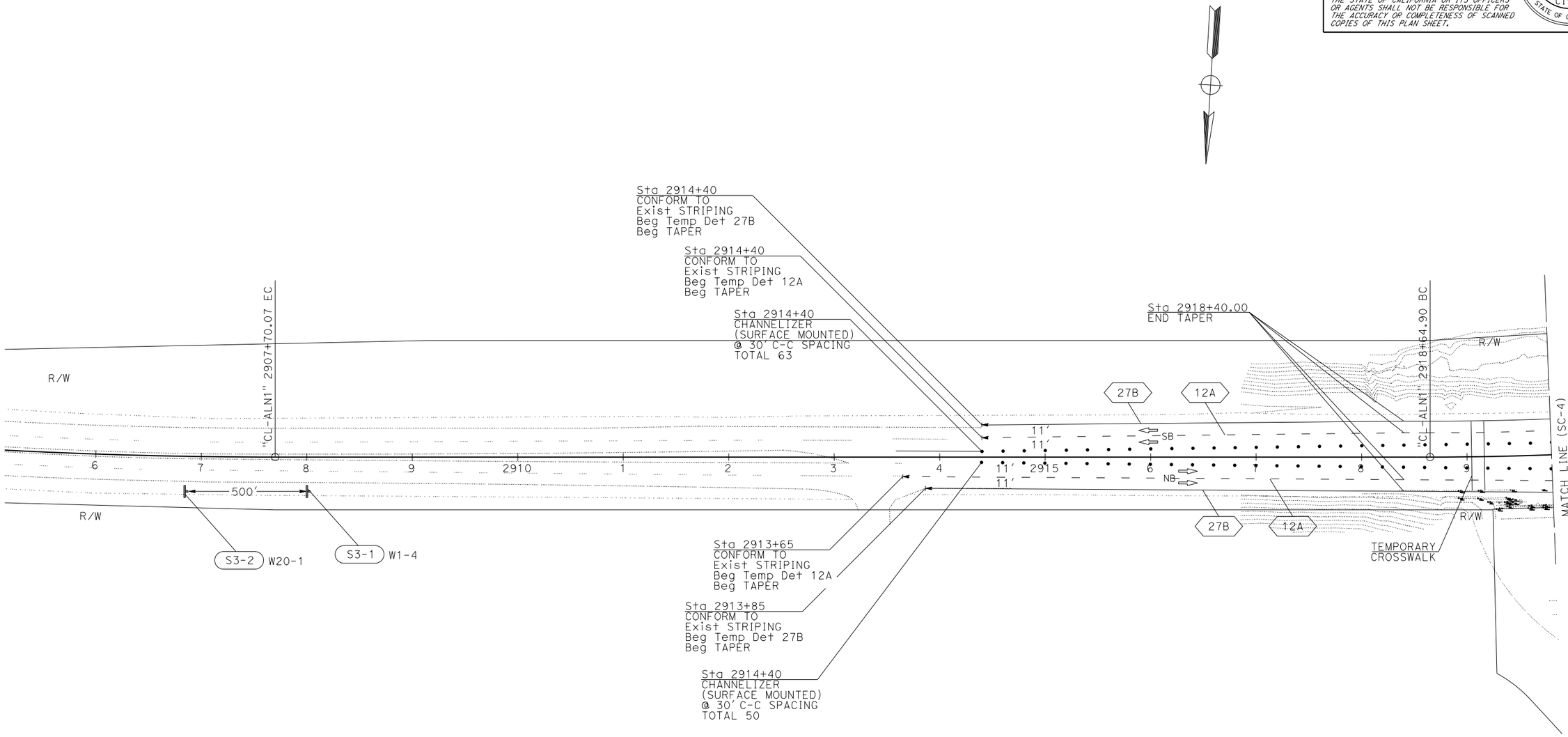

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 STAGE 2)

SCALE: 1" = 50'

SC-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

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CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
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DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:58

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USERNAME => s146363
DGN FILE => 0731350ma003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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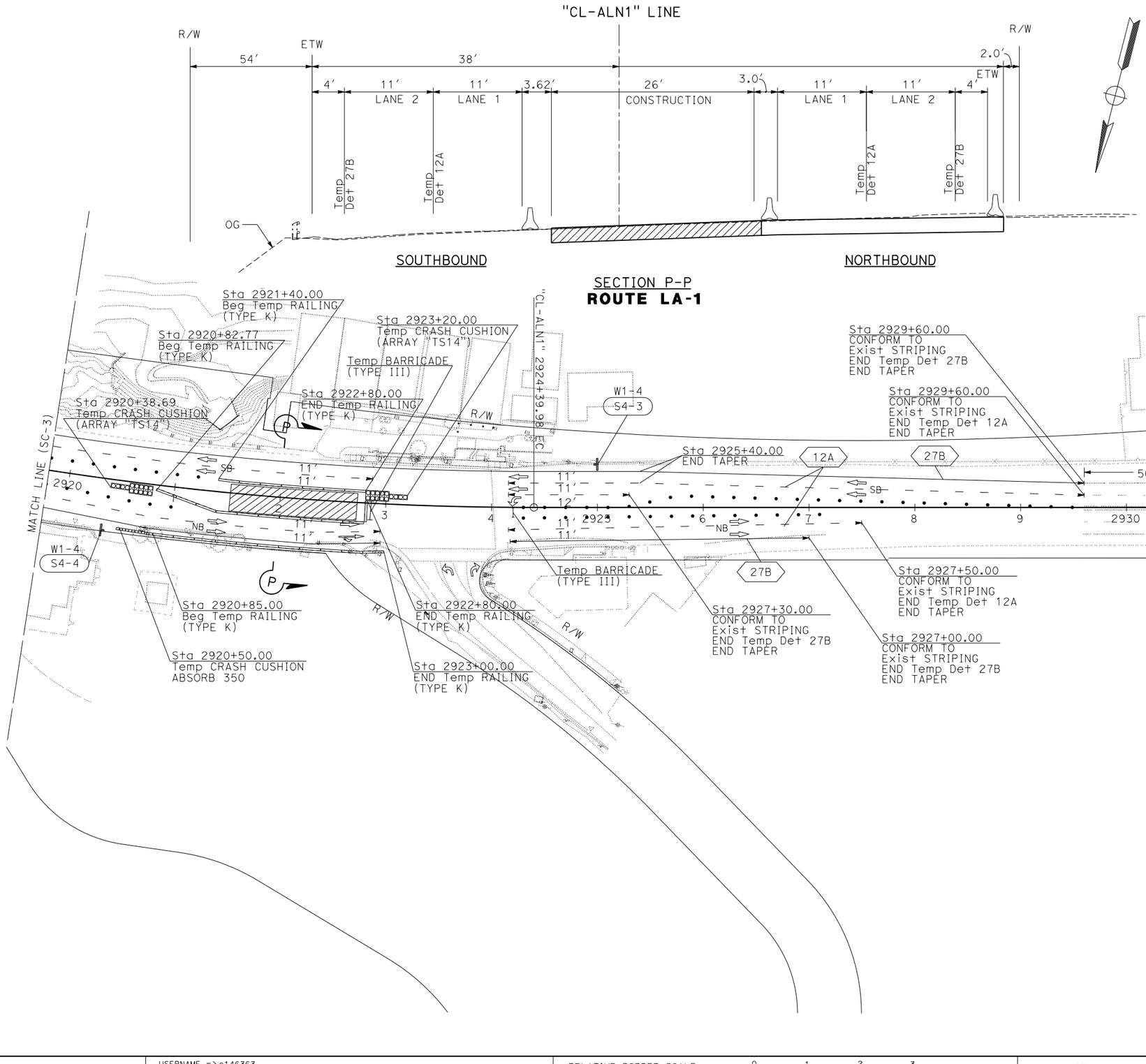

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 2)

SCALE: 1" = 50'

SC-4

REVISED BY	DATE REVISED
TIN PHAN	NATHAN OUM

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:58

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350ma004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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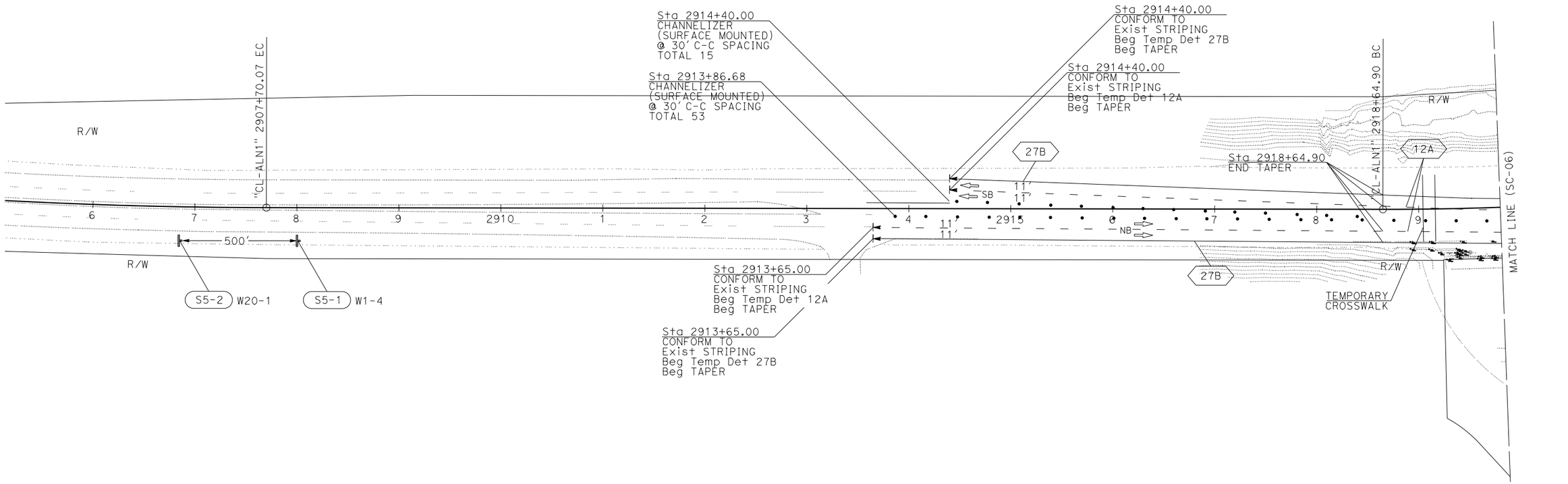

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 3)

SCALE: 1" = 50'

SC-05

CALCULATED-DESIGNED BY	TIN PHAN
CHECKED BY	NATHAN OUM
FUNCTIONAL SUPERVISOR	MANSOOR A. KHAN
REVISED BY	
DATE REVISED	

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NATHAN OUM
No. C71418
Exp. 12-31-21
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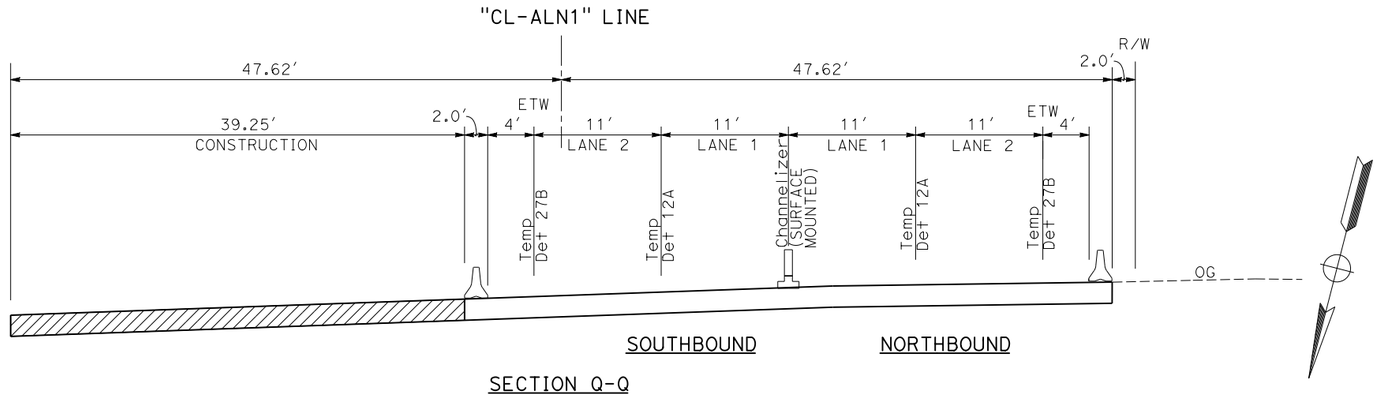
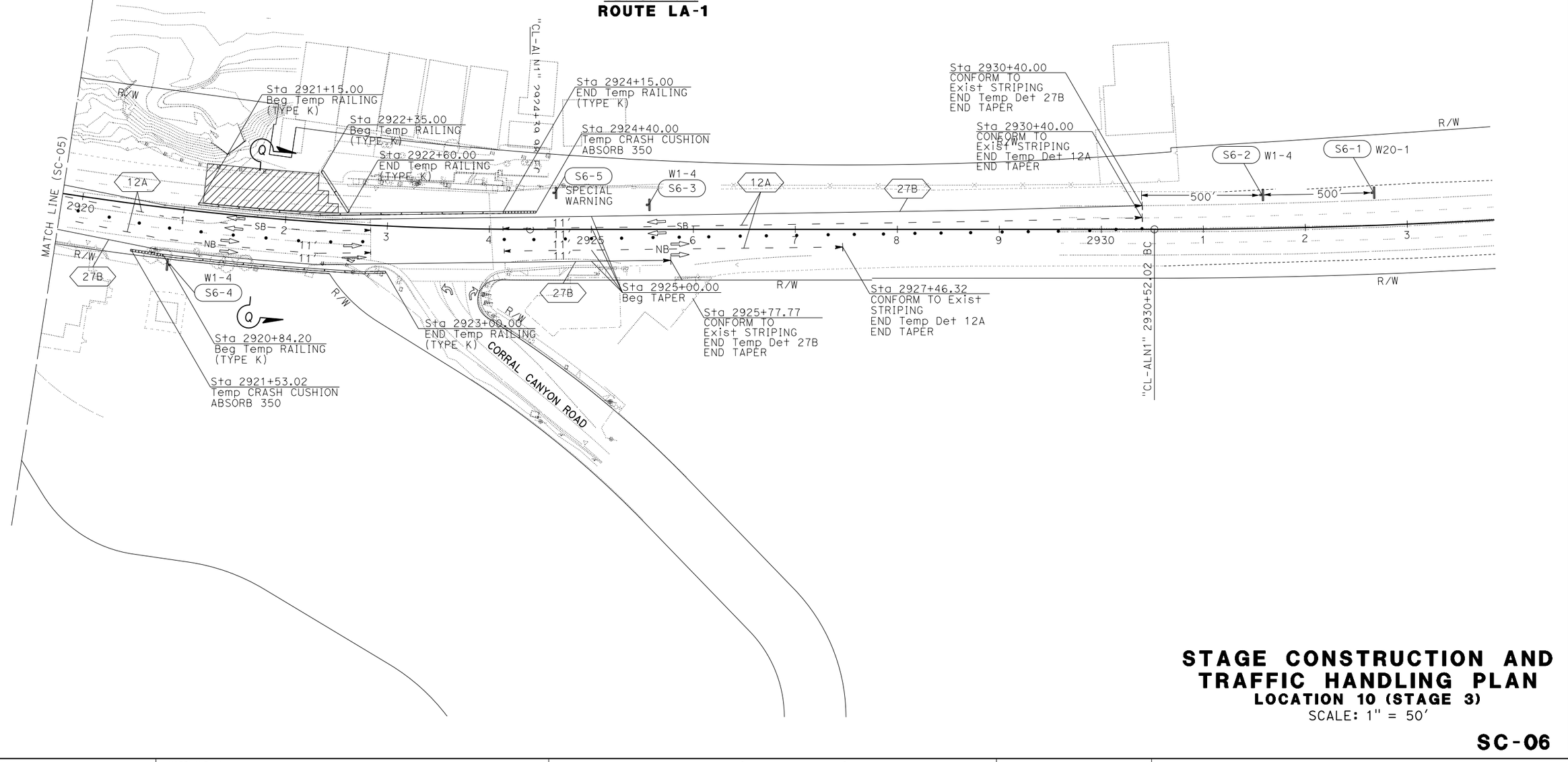


SECTION Q-Q
ROUTE LA-1



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
LOCATION 10 (STAGE 3)
SCALE: 1" = 50′

SC-06

REVISED BY	TIN PHAN
DATE REVISED	
CALCULATED-DESIGNED BY	NATHAN OUM
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FUNCTIONAL SUPERVISOR	MANSOOR A. KHAN
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USERNAME => s146363
DGN FILE => 0731350ma006.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum — 05-28-21
REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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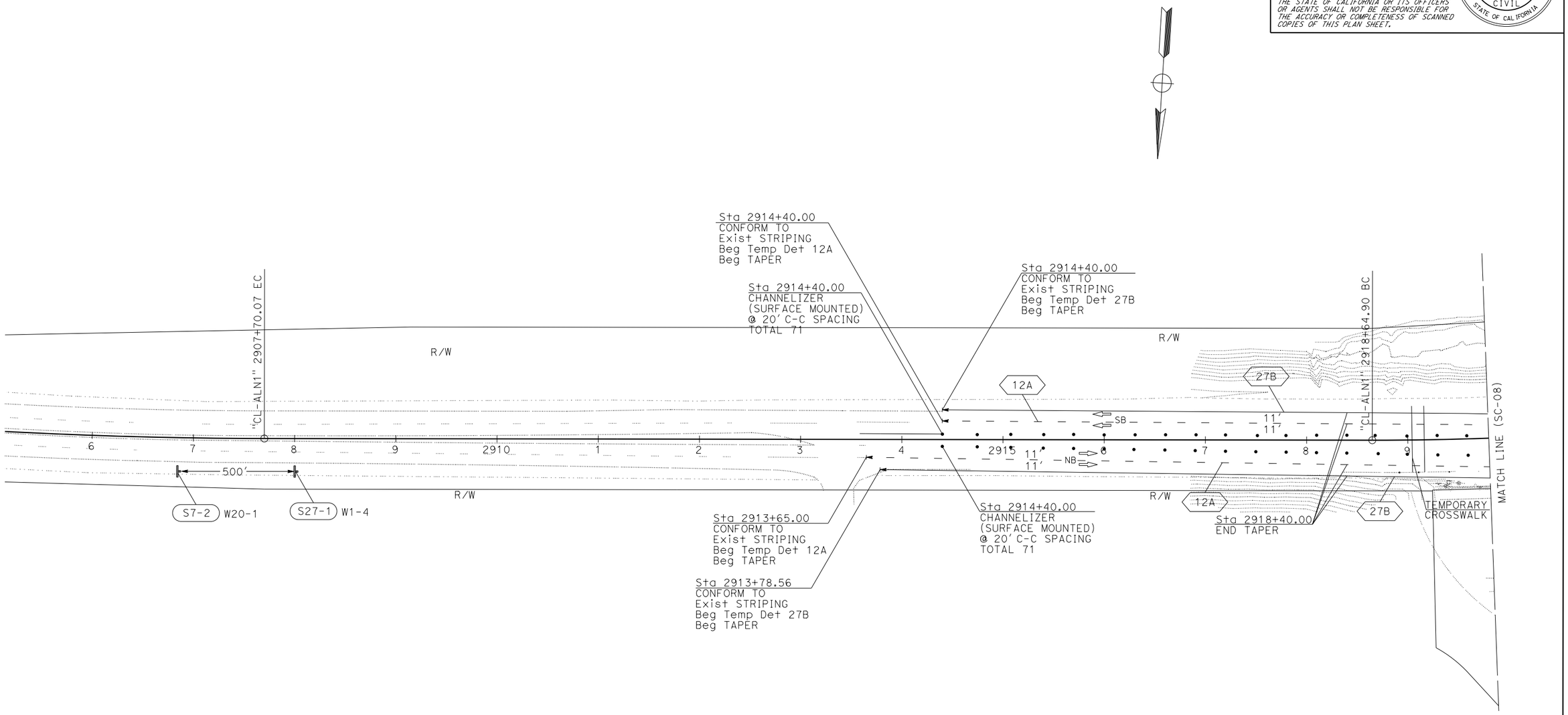

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 50'

SC-07

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FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

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USERNAME => s146363
DGN FILE => 0731350ma007.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
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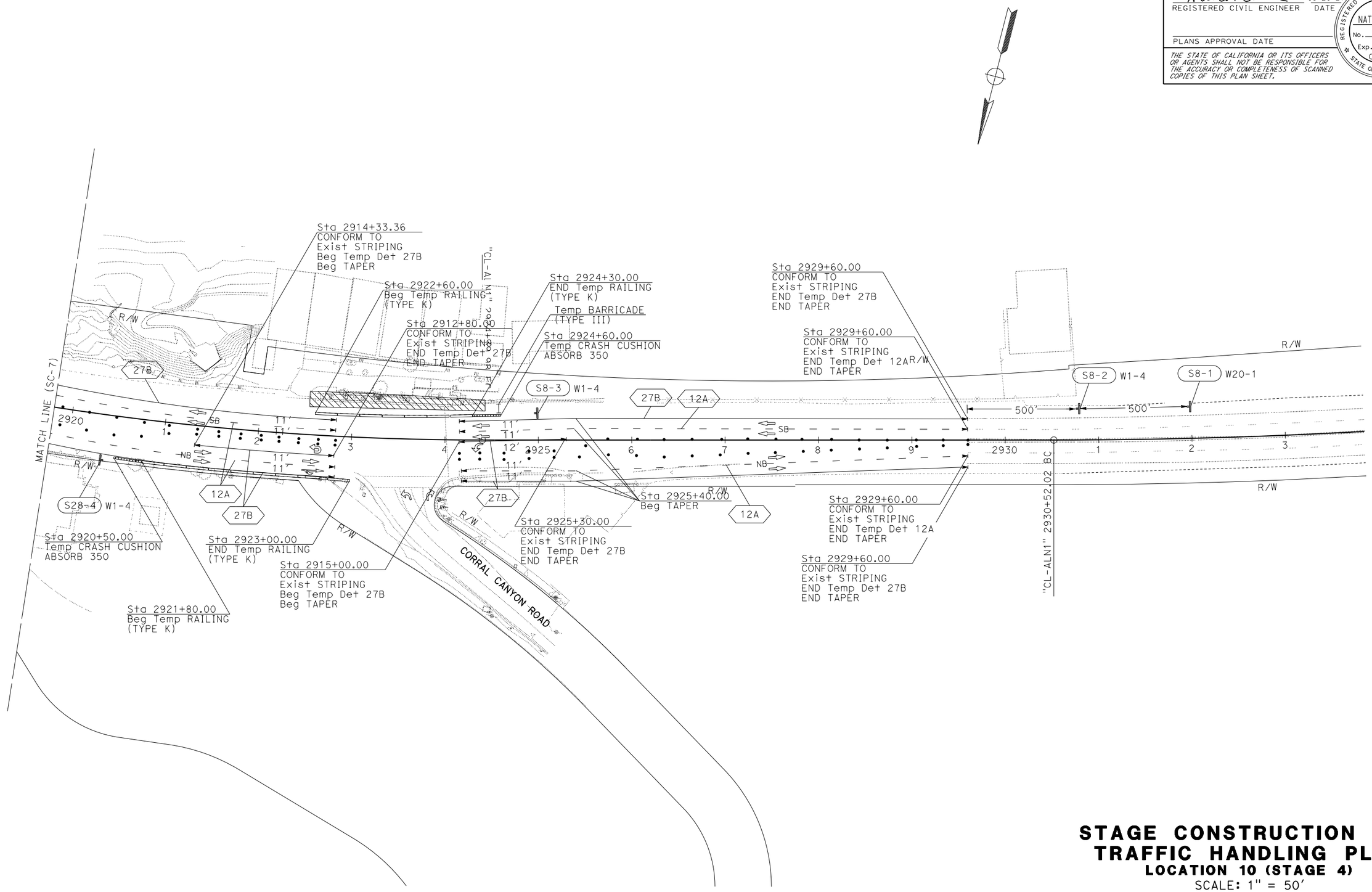

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 50'

SC-08

REVISED BY	DATE REVISED

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CHECKED BY: NATHAN OUM
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
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DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:58

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USERNAME => s146363
DGN FILE => 0731350ma008.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NATHAN OUM
No. C71418
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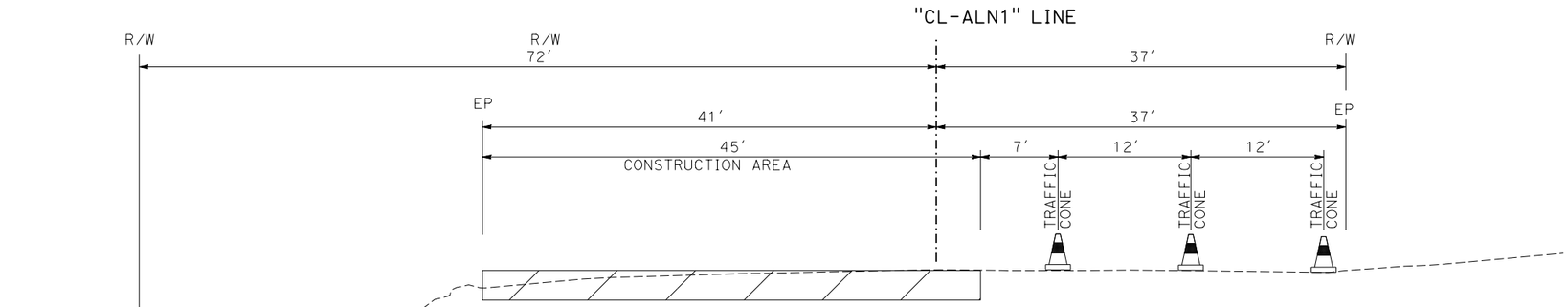
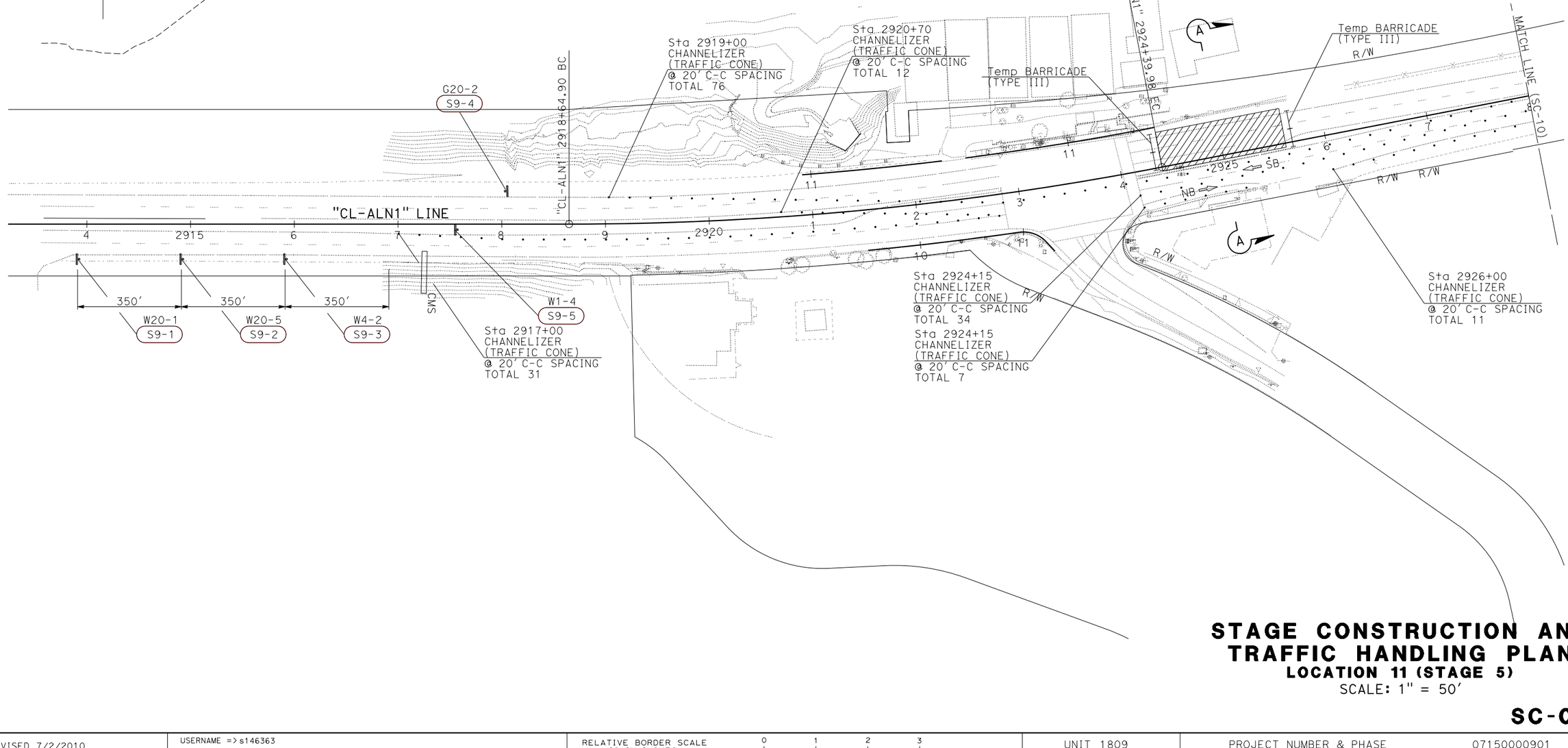


SECTION A-A
ROUTE LA-1
LOCATION 11
NO SCALE



STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
LOCATION 11 (STAGE 5)
SCALE: 1" = 50'

SC-09

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FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
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UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
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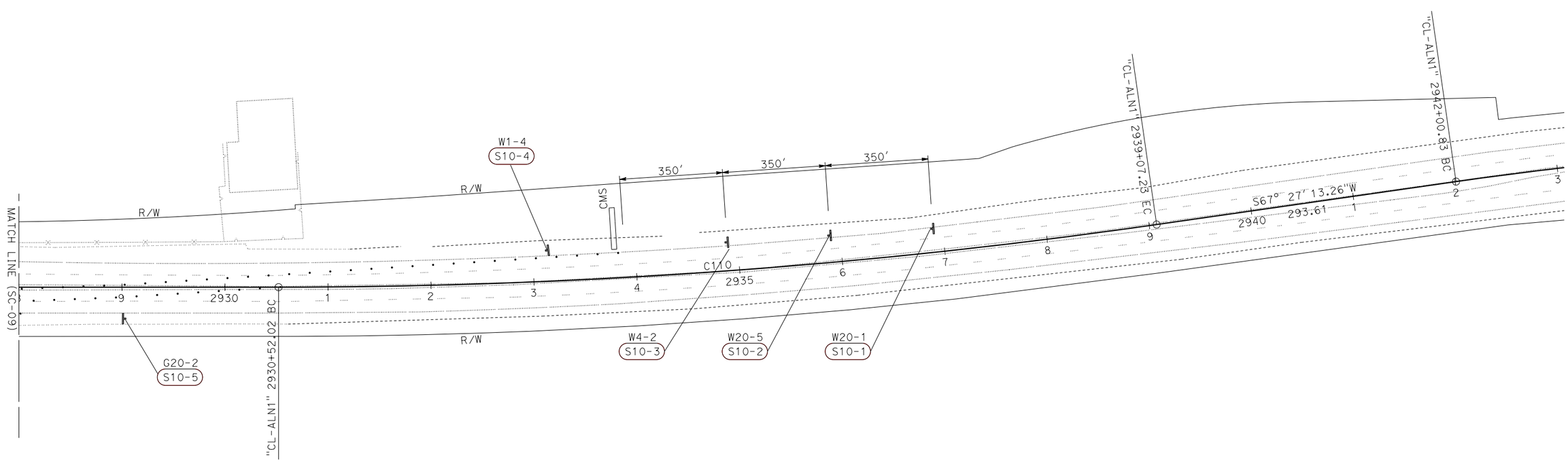

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 11 (STAGE 5)

SCALE: 1" = 50'

SC-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
REVISED BY
DATE REVISED
LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:59

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350ma010.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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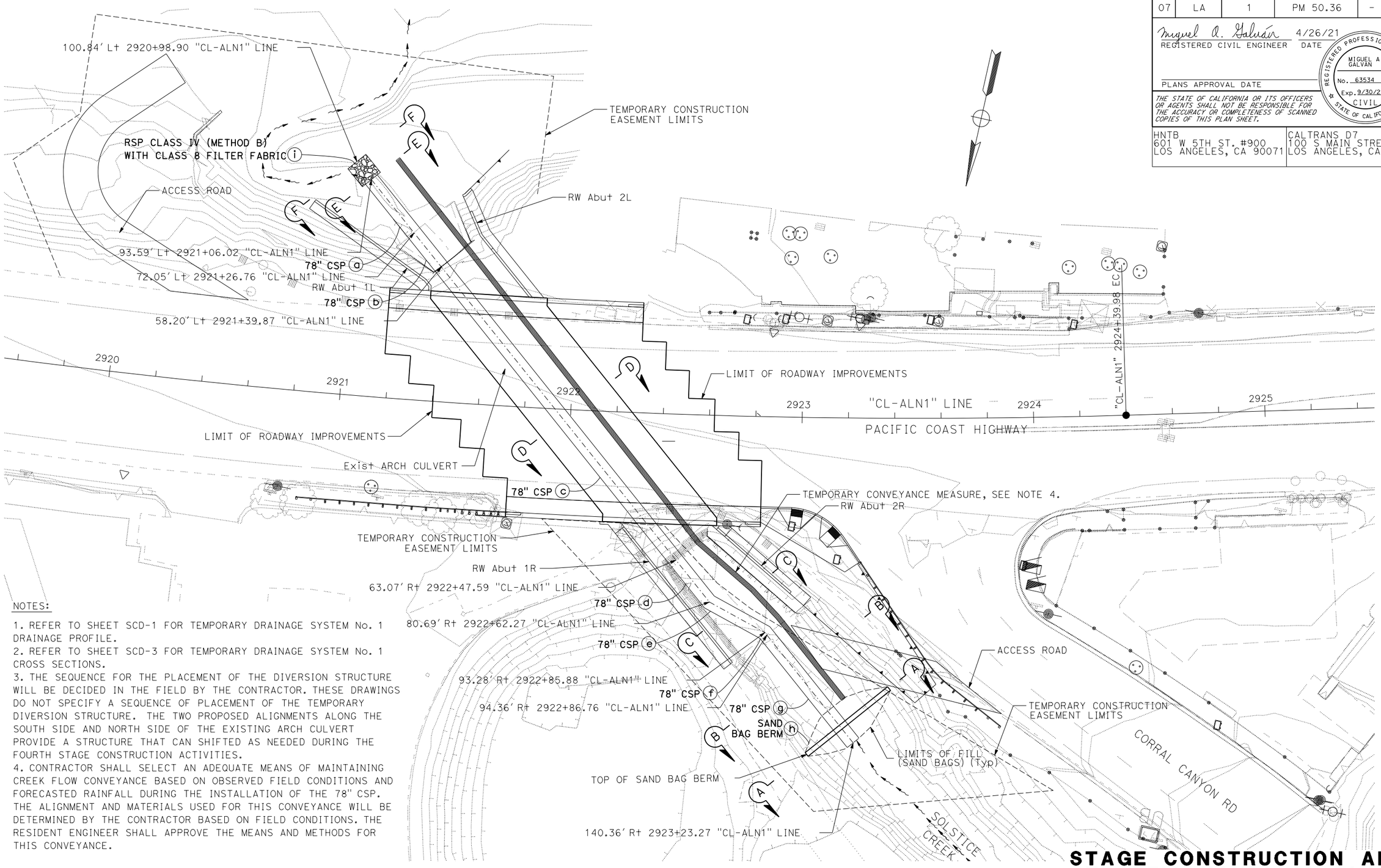

NOTES:

1. REFER TO SHEET SCD-1 FOR TEMPORARY DRAINAGE SYSTEM No. 1 DRAINAGE PROFILE.
2. REFER TO SHEET SCD-3 FOR TEMPORARY DRAINAGE SYSTEM No. 1 CROSS SECTIONS.
3. THE SEQUENCE FOR THE PLACEMENT OF THE DIVERSION STRUCTURE WILL BE DECIDED IN THE FIELD BY THE CONTRACTOR. THESE DRAWINGS DO NOT SPECIFY A SEQUENCE OF PLACEMENT OF THE TEMPORARY DIVERSION STRUCTURE. THE TWO PROPOSED ALIGNMENTS ALONG THE SOUTH SIDE AND NORTH SIDE OF THE EXISTING ARCH CULVERT PROVIDE A STRUCTURE THAT CAN SHIFTED AS NEEDED DURING THE FOURTH STAGE CONSTRUCTION ACTIVITIES.
4. CONTRACTOR SHALL SELECT AN ADEQUATE MEANS OF MAINTAINING CREEK FLOW CONVEYANCE BASED ON OBSERVED FIELD CONDITIONS AND FORECASTED RAINFALL DURING THE INSTALLATION OF THE 78" CSP. THE ALIGNMENT AND MATERIALS USED FOR THIS CONVEYANCE WILL BE DETERMINED BY THE CONTRACTOR BASED ON FIELD CONDITIONS. THE RESIDENT ENGINEER SHALL APPROVE THE MEANS AND METHODS FOR THIS CONVEYANCE.

LEGEND:

FLOW LINE ⇝

TEMPORARY DRAINAGE SYSTEM No. 1

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 20'

SC-11

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR
CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
DOT: STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION: DATE PLOTTED => 28-JUL-2022
00-00-00 TIME PLOTTED => 15:59

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ma011.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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HNTB
601 W 5TH ST. #900
LOS ANGELES, CA 90071

CALTRANS D7
100 S MAIN STREET
LOS ANGELES, CA 90012

128.16' Lt 2920+89.72 "CL-ALN1" LINE
RSP CLASS IV (METHOD B) WITH CLASS 8 FILTER FABRIC (j)
120.94' Lt 2920+96.93 "CL-ALN1" LINE
TEMPORARY CONSTRUCTION EASEMENT LIMITS
(a) 78" CSP
80.59' Lt 2921+36.24 "CL-ALN1" LINE
(b) 78" CSP
RW Abut 2L
66.78' Lt 2921+49.34 "CL-ALN1" LINE
ACCESS ROAD
RW Abut 1L
TEMPORARY CONVEYANCE MEASURE, SEE NOTE 4.
(c) 78" CSP
2920
LIMIT OF ROADWAY IMPROVEMENTS
2921
2922
2923
"CL-ALN1" LINE
2924
2925
PACIFIC COAST HIGHWAY
"CL-ALN1" 2924+39.98 EC
LIMIT OF ROADWAY IMPROVEMENTS
Exist ARCH CULVERT
54.62' Lt 2922+57.44 "CL-ALN1" LINE
(d) 78" CSP
RW Abut 2R
71.47' Lt 2922+71.51 "CL-ALN1" LINE
TEMPORARY CONSTRUCTION EASEMENT LIMITS
RW Abut 1R
(e) 78" CSP
86.29' Lt 2922+83.73 "CL-ALN1" LINE
(f) 78" CSP
93.28' Lt 2922+85.88 "CL-ALN1" LINE
(g) 78" CSP
94.36' Lt 2922+86.76 "CL-ALN1" LINE
(h) 78" CSP
ACCESS ROAD
SAND BAG BERM (i)
TEMPORARY CONSTRUCTION EASEMENT LIMITS
LIMITS OF FILL (SAND BAGS) (Typ)
TOP OF SAND BAG BERM
CORRAL CANYON RD
140.36' Rt 2923+23.27 "CL-ALN1" LINE
SOLSTICE CREEK

NOTES:

1. REFER TO SHEET SCD-1 FOR TEMPORARY DRAINAGE SYSTEM No. 1 DRAINAGE PROFILE.
2. REFER TO SHEET SCD-3 FOR TEMPORARY DRAINAGE SYSTEM No. 1 CROSS SECTIONS.
3. THE SEQUENCE FOR THE PLACEMENT OF THE DIVERSION STRUCTURE WILL BE DECIDED IN THE FIELD BY THE CONTRACTOR. THESE DRAWINGS DO NOT SPECIFY A SEQUENCE OF PLACEMENT OF THE TEMPORARY DIVERSION STRUCTURE. THE TWO PROPOSED ALIGNMENTS ALONG THE SOUTH SIDE AND NORTH SIDE OF THE EXISTING ARCH CULVERT PROVIDE A STRUCTURE THAT CAN SHIFTED AS NEEDED DURING THE FOURTH STAGE CONSTRUCTION ACTIVITIES.
4. CONTRACTOR SHALL SELECT AN ADEQUATE MEANS OF MAINTAINING CREEK FLOW CONVEYANCE BASED ON OBSERVED FIELD CONDITIONS AND FORECASTED RAINFALL DURING THE INSTALLATION OF THE 78" CSP. THE ALIGNMENT AND MATERIALS USED FOR THIS CONVEYANCE WILL BE DETERMINED BY THE CONTRACTOR BASED ON FIELD CONDITIONS. THE RESIDENT ENGINEER SHALL APPROVE THE MEANS AND METHODS FOR THIS CONVEYANCE.

LEGEND:

FLOW LINE ⇝

TEMPORARY DRAINAGE SYSTEM No. 2

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 20'

SC-12

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED
MIGUEL A. GALVAN	
CARLOS MELGAR	

CALCULATED-DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 15:59

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350ma012.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36		

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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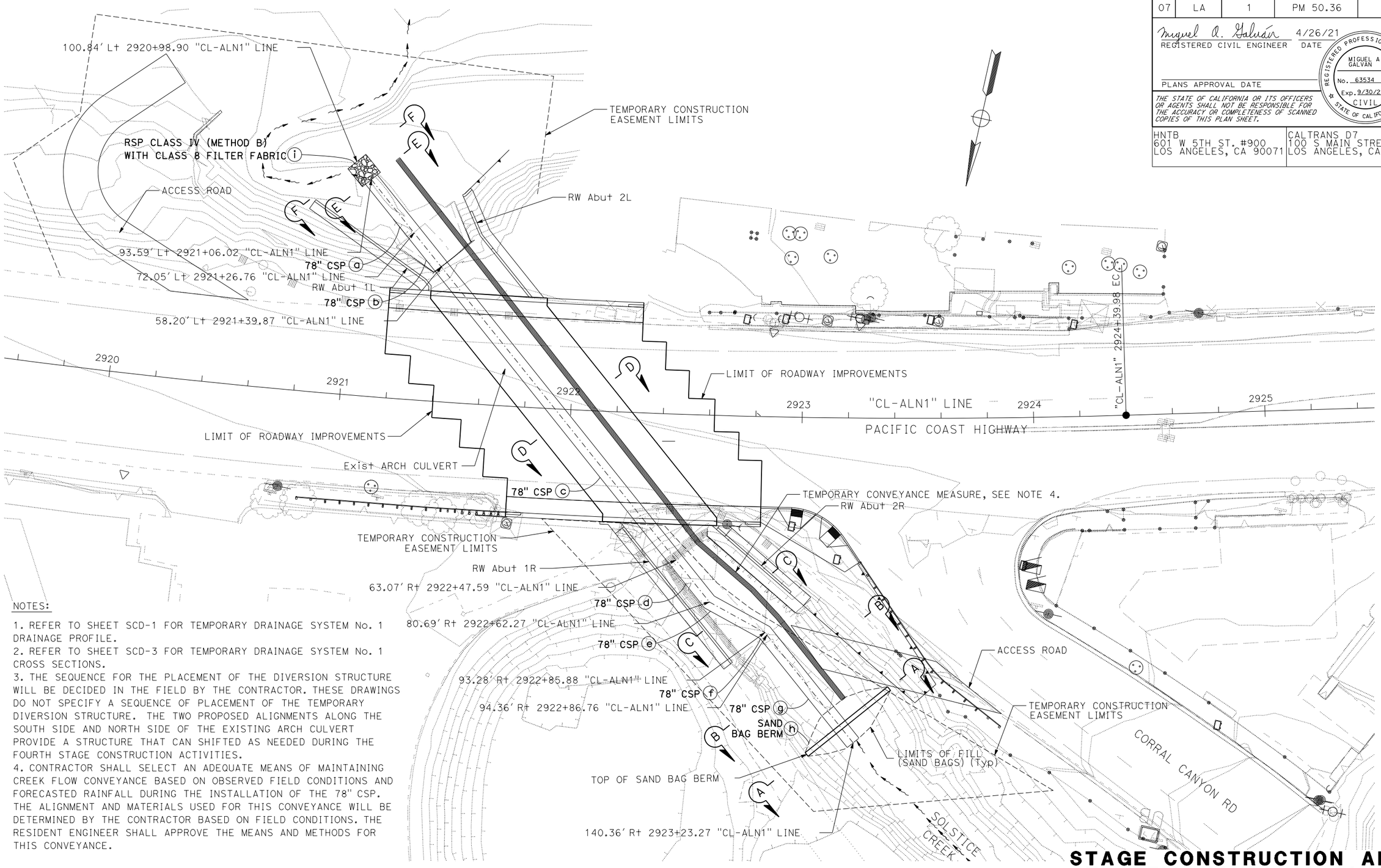

NOTES:

1. REFER TO SHEET SCD-1 FOR TEMPORARY DRAINAGE SYSTEM No. 1 DRAINAGE PROFILE.
2. REFER TO SHEET SCD-3 FOR TEMPORARY DRAINAGE SYSTEM No. 1 CROSS SECTIONS.
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LEGEND:

FLOW LINE ⇝

TEMPORARY DRAINAGE SYSTEM No. 1

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 20'

SC-30

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR
CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36		

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

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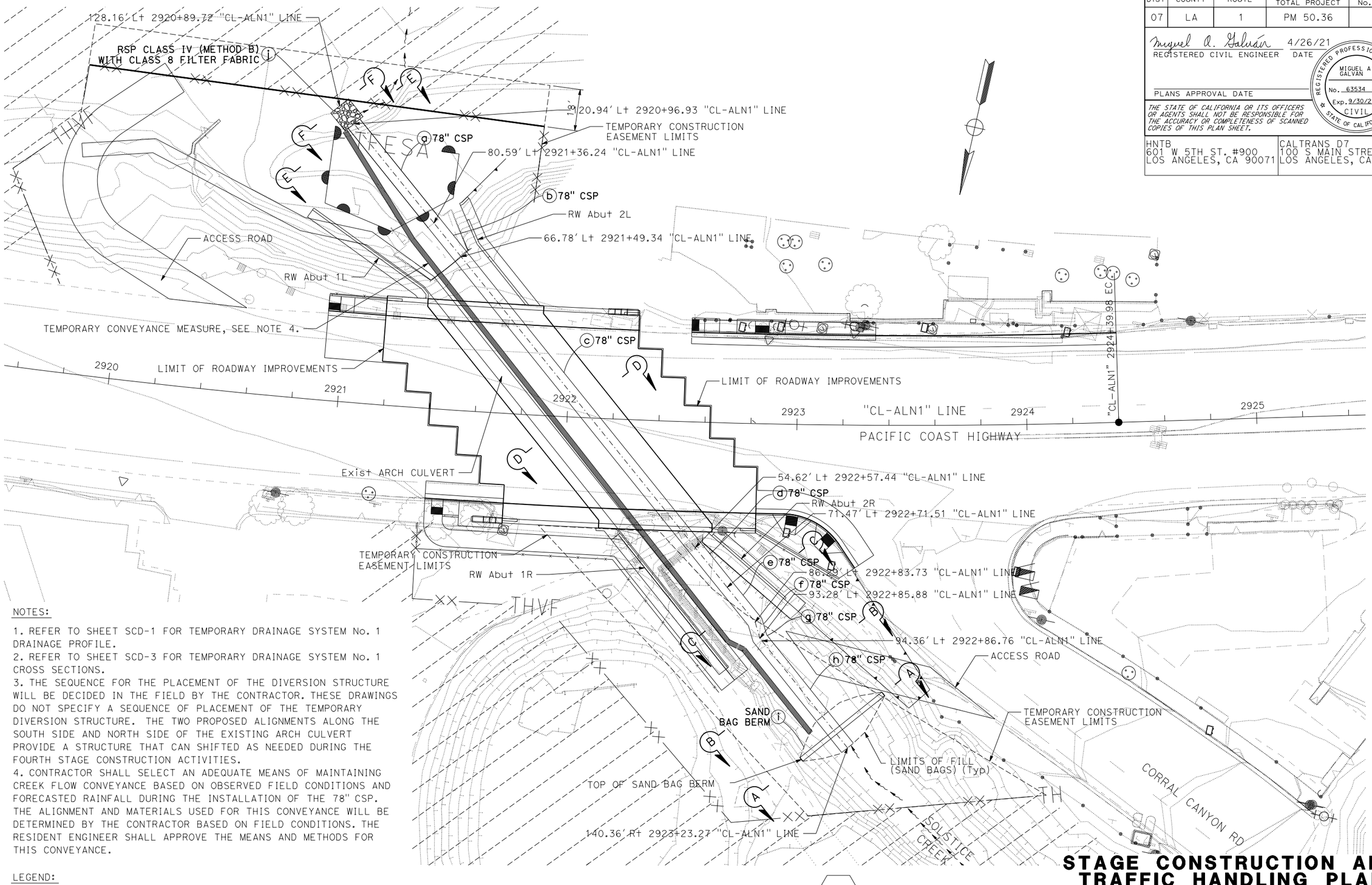

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1. REFER TO SHEET SCD-1 FOR TEMPORARY DRAINAGE SYSTEM No. 1 DRAINAGE PROFILE.
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LEGEND:

FLOW LINE ⇝

TEMPORARY DRAINAGE SYSTEM No. 2

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN

LOCATION 10 (STAGE 4)

SCALE: 1" = 20'

SC-31

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

REVISED BY	DATE REVISED
MIGUEL A. GALVAN	
CARLOS MELGAR	
CALCULATED-DESIGNED BY	
CHECKED BY	
CONSULTANT FUNCTIONAL SUPERVISOR	YOGA CHANDRAN

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
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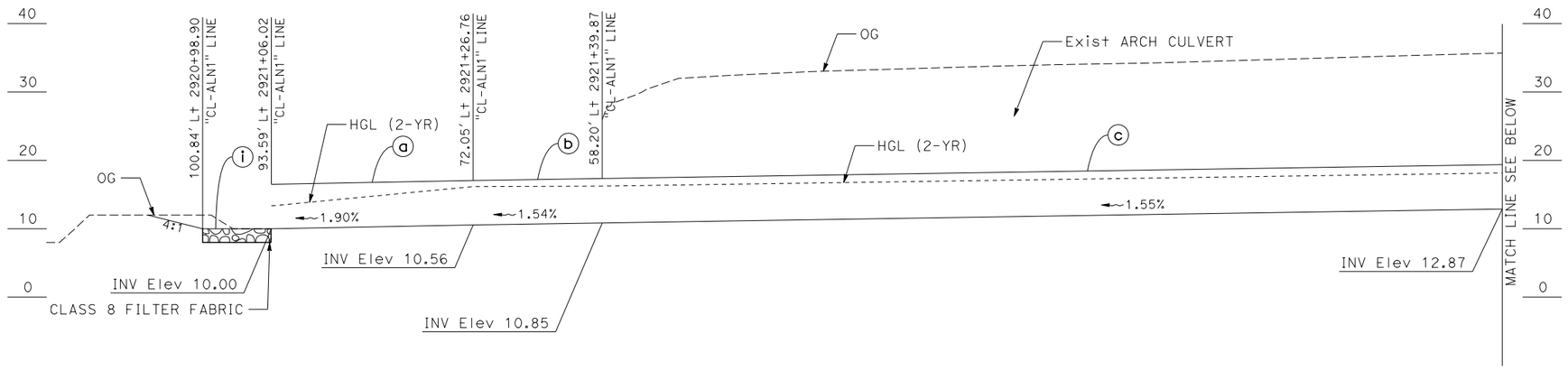
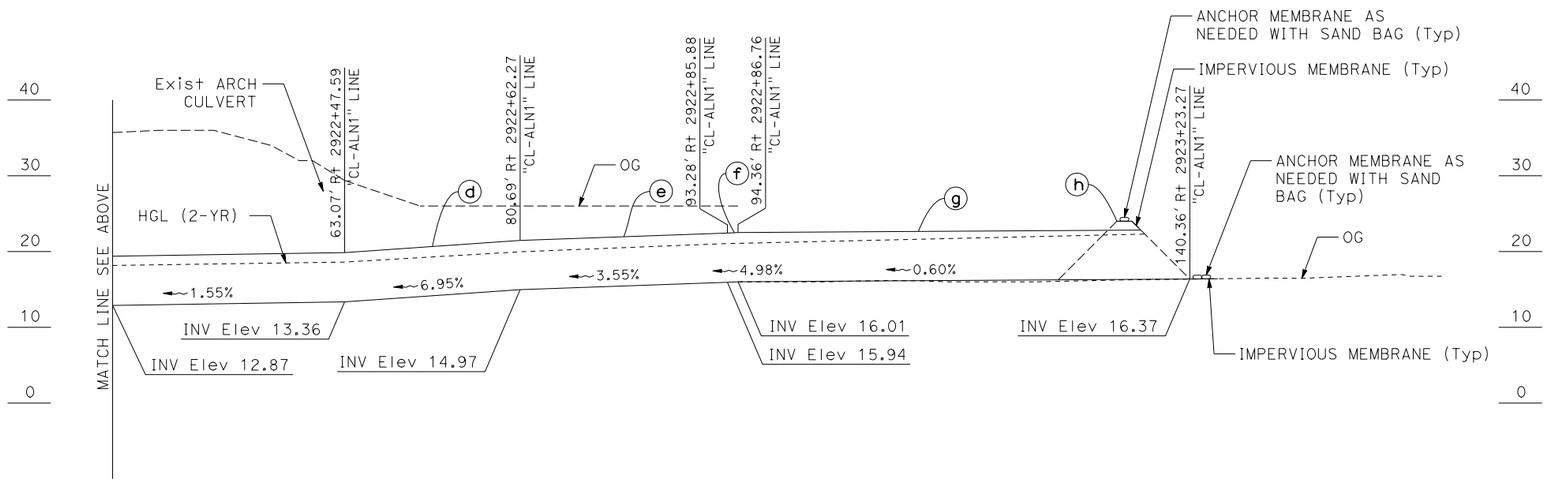
100 S MAIN STREET
LOS ANGELES, CA 90012





ⓐ 78" x 29.5' CSP
ⓑ 78" x 18.9' CSP
ⓒ 78" x 162.3' CSP
ⓓ 78" x 23.2' CSP
ⓔ 78" x 27.4' CSP
ⓕ 78" x 1.4' CSP
ⓖ 78" x 59.6' CSP
ⓗ SAND BAG BERM
ⓘ RSP CLASS IV (METHOD B) WITH CLASS 8 FILTER FABRIC

TEMPORARY DRAINAGE SYSTEM No. 1

STAGE CONSTRUCTION AND TRAFFIC HANDLING DETAILS
LOCATION 10 (STAGE 4)

SCALE: Horiz 1" = 10'
Vert 1" = 10'

SCD-1

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350mb001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 4/26/21
REGISTERED CIVIL ENGINEER DATE

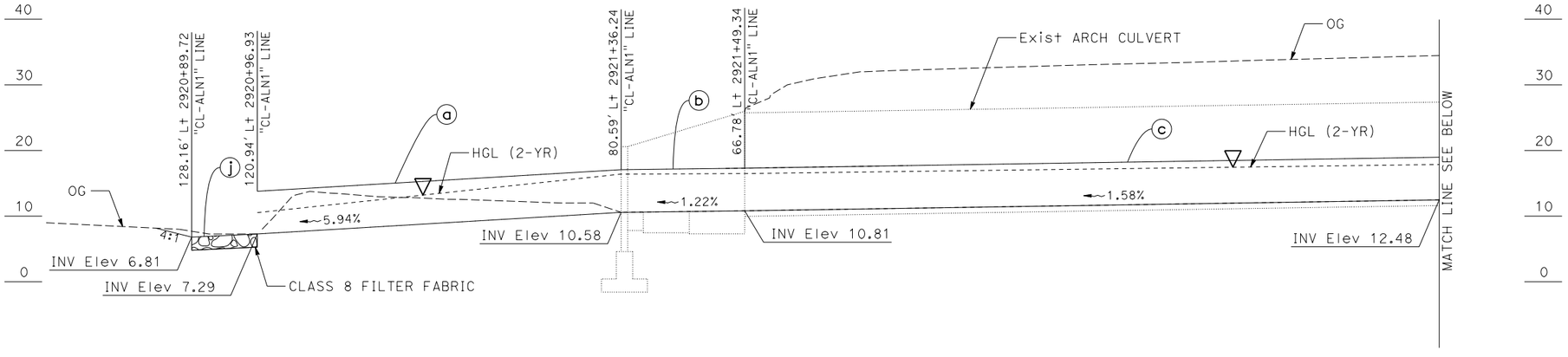
REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

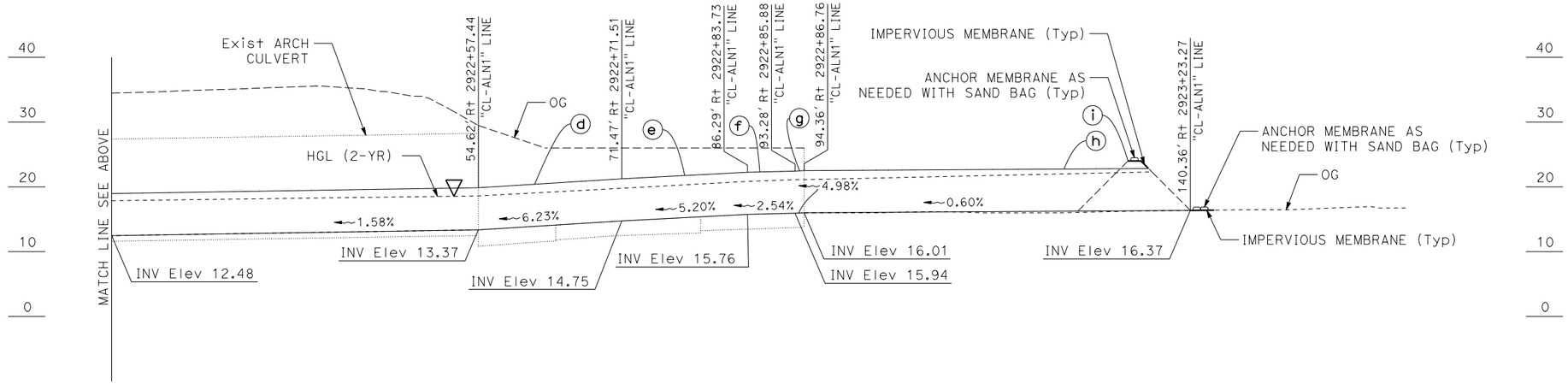
PLANS APPROVAL DATE

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.

HNTB
601 W 5TH ST. #900
LOS ANGELES, CA 90071

CALTRANS D7
100 S MAIN STREET
LOS ANGELES, CA 90012





ⓐ 78" x 55.5' CSP
ⓑ 78" x 18.8' CSP
ⓒ 78" x 162.4' CSP
ⓓ 78" x 22.2' CSP
ⓔ 78" x 19.4' CSP
ⓕ 78" x 7.3' CSP
ⓖ 78" x 1.4' CSP
ⓗ 78" x 59.6' CSP
ⓘ SAND BAG BERM
ⓙ RSP CLASS IV (METHOD B) WITH CLASS 8 FILTER FABRIC

TEMPORARY DRAINAGE SYSTEM No. 2

STAGE CONSTRUCTION AND TRAFFIC HANDLING DETAILS
LOCATION 10 (STAGE 4)

SCALE: Horiz 1" = 10'
Vert 1" = 10'

SCD-2

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350mb002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 3/18/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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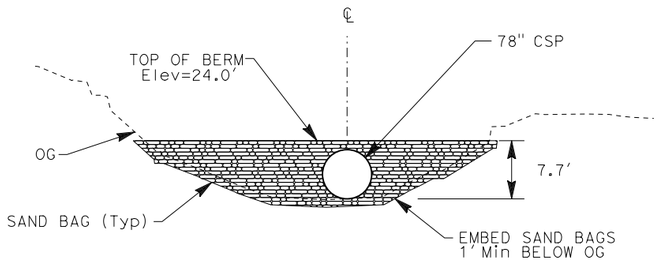
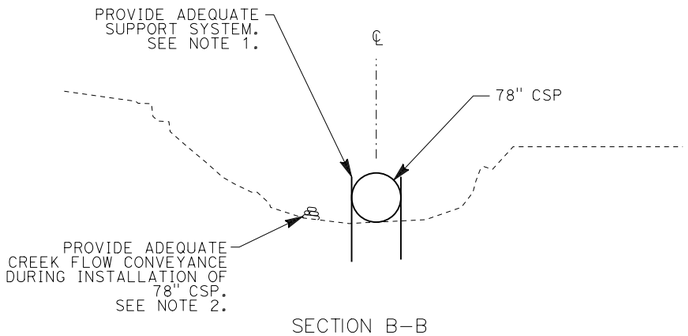
HNTB
601 W 5TH ST. #900
LOS ANGELES, CA 90071

CALTRANS D7
100 S MAIN STREET
LOS ANGELES, CA 90012



SECTION A–A



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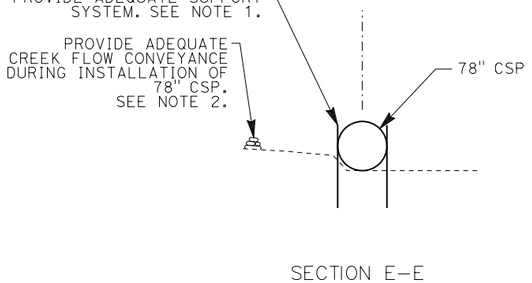

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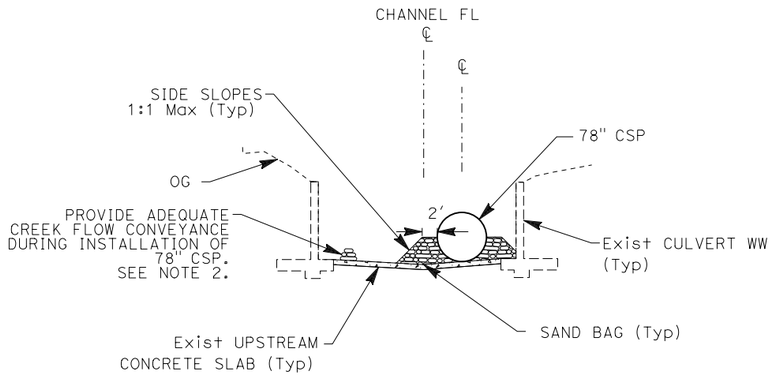
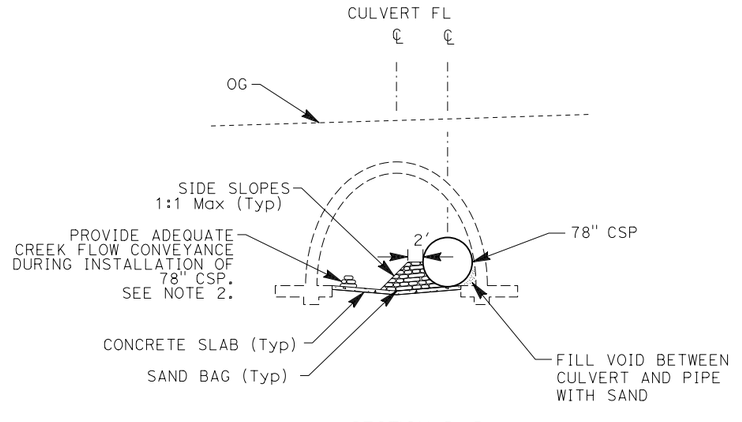
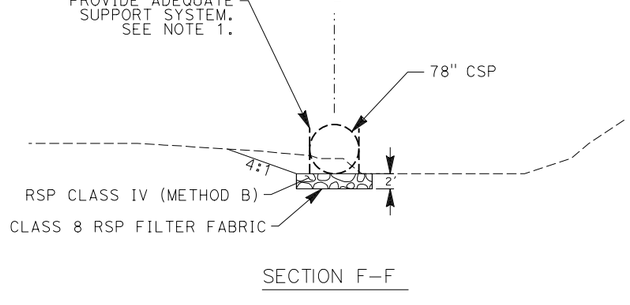


SECTION C–C



SECTION D–D



SECTION F–F

NOTES:

1. CONTRACTOR SHALL SELECT AN ADEQUATE PIPE SUPPORT SYSTEM WHICH SAFELY ANCHORS THE 78" CSP DURING THE 2-YEAR FREQUENCY STORM THROUGHOUT THE DURATION OF STAGE 4 CONSTRUCTION ACTIVITIES.

2. CONTRACTOR SHALL SELECT AN ADEQUATE MEANS OF MAINTAINING CREEK FLOW CONVEYANCE BASED ON OBSERVED FIELD CONDITIONS AND FORECASTED RAINFALL DURING THE INSTALLATION OF THE 78" CSP. THE ALIGNMENT AND MATERIALS USED FOR THIS CONVEYANCE WILL BE DETERMINED BY THE CONTRACTOR BASED ON FIELD CONDITIONS. THE RESIDENT ENGINEER SHALL APPROVE THE MEANS AND METHODS FOR THIS CONVEYANCE.

TEMPORARY DRAINAGE SYSTEM No. 1

STAGE CONSTRUCTION AND TRAFFIC HANDLING DETAILS
LOCATION 10 (STAGE 4)

NO SCALE

SCD-3

REVISED BY	DATE REVISED
MIGUEL A. GALVAN	CARLOS MELGAR
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	YOGA CHANDRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350mb003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	1	PM 50.36	-	124

Miguel A. Galvan 3/18/21
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MIGUEL A. GALVAN
No. 63534
Exp. 9/30/22
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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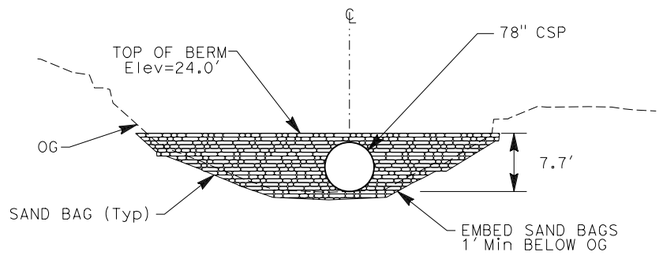
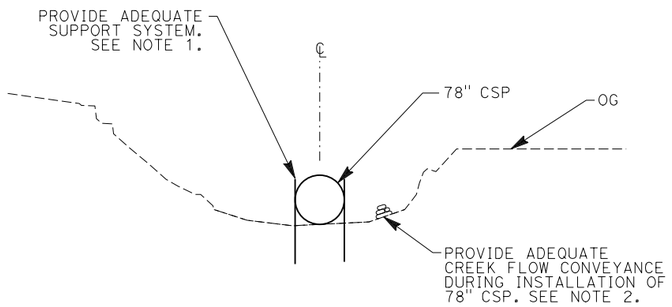
HNTB
601 W 5TH ST. #900
LOS ANGELES, CA 90071

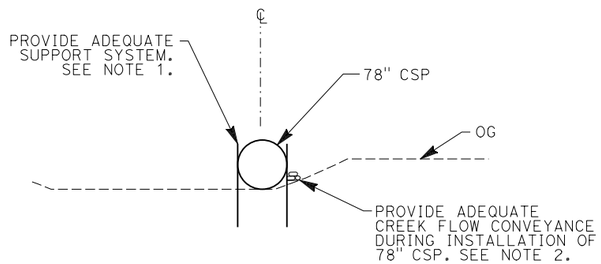
CALTRANS D7
100 S MAIN STREET
LOS ANGELES, CA 90012



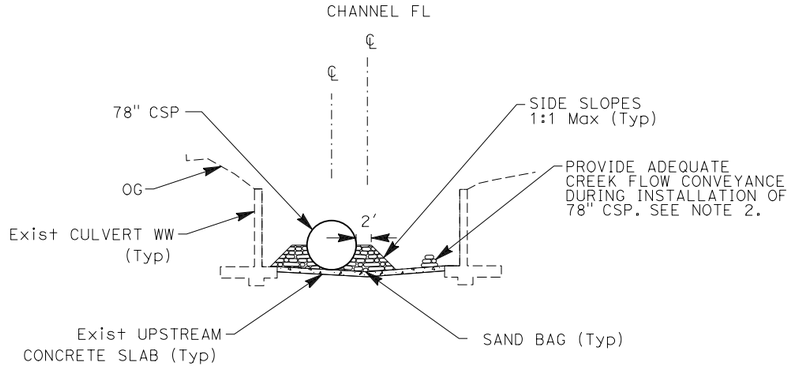
SECTION A–A



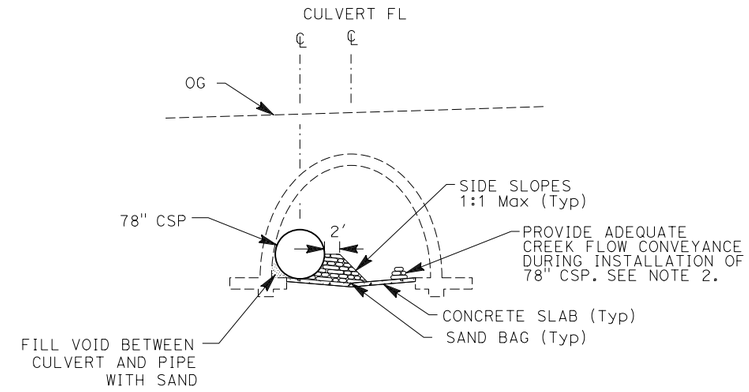
SECTION B–B



SECTION E–E



SECTION C–C



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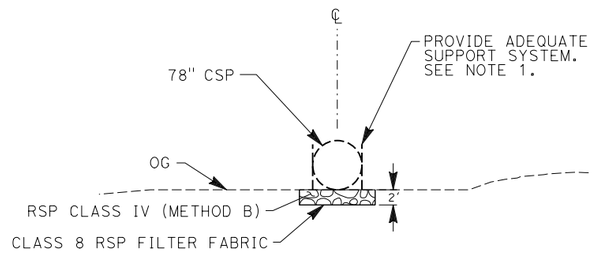

SECTION F–F

NOTES:

1. CONTRACTOR SHALL SELECT AN ADEQUATE PIPE SUPPORT SYSTEM WHICH SAFELY ANCHORS THE 78" CSP DURING THE 2-YEAR FREQUENCY STORM THROUGHOUT THE DURATION OF STAGE 4 CONSTRUCTION ACTIVITIES.

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TEMPORARY DRAINAGE SYSTEM No. 2

STAGE CONSTRUCTION AND TRAFFIC HANDLING DETAILS

LOCATION 10 (STAGE 4)

NO SCALE

SCD-4

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: MIGUEL A. GALVAN
CHECKED BY: CARLOS MELGAR
CONSULTANT FUNCTIONAL SUPERVISOR: YOGA CHANDRAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350mb004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0000
PROJECT NUMBER & PHASE 07000313501

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
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.

STAGE CONSTRUCTION QUANTITIES

SHEET No.	LOCATION/STATION	DIRECTION	TEMPORARY TRAFFIC STRIPE (TAPE) 6" WHITE DETAIL 12A	TEMPORARY TRAFFIC STRIPE (TAPE) 6" WHITE DETAIL 27B	TRAFFIC CONE	CHANNELIZER (SURFACE MOUNTED)	TYPE III BARRICADE	TEMPORARY RAILING (TYPE K)	TEMPORARY CRASH CUSHION MODULE (ABSORB 350)	TEMPORARY CRASH CUSHION MODULE	CHANGEABLE MESSAGE SIGN	TEMPORARY RADAR SPEED FEEDBACK SIGN SYSTEM	DESCRIPTION/ COMMENTS
			LF	LF	EA	EA	EA	LF	EA	EA	EA	EA	
STAGE 1													
SC-1 TO SC-12	"CL-ALN1" 2913+65 TO 2929+60	NB	1,480	1,480		80	2	260	10		1		
SC-1 TO SC-12	"CL-ALN1" 2914+40 TO 2929+60	SB	1,400	1,720							1		
STAGE 2													
SC-3 TO SC-4	"CL-ALN1" 2913+65 TO 2927+50	NB	1,275	1,205		50		440	10	14	1		
SC-3 TO SC-4	"CL-ALN1" 2914+40 TO 2929+60	SB	1,505	1,515		63	2	140		14	1		
STAGE 3													
SC-5 TO SC-6	"CL-ALN1" 2913+65 TO 2930+40	NB	1,265	1,230		53		220	10		1		
SC-5 TO SC-6	"CL-ALN1" 2914+40 TO 2930+40	SB	1,480	1,605		15		340	10		1		
STAGE 4													
SC-7 TO SC-8	"CL-ALN1" 2913+65 TO 2929+60	NB	1,475	1,610		71		220	10		1		
SC-7 TO SC-8	"CL-ALN1" 2914+40 TO 2929+60	SB	1,390	1,505		71	1	160	10		1		
STAGE 5													
SC-9 TO SC-10	"CL-ALN1" 2917+00 TO 2928+00	NB			83		4				1		
SC-9 TO SC-10	"CL-ALN1" 2919+00 TO 2934+00	SB			88						1		
	SUB TOTAL		11,270	11,870									
	GRAND TOTAL		23,140		171	403	9	1,780	60	28	10	12	

CALCULATED-DESIGNED BY TIN PHAN
CHECKED BY NATHAN OUM
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MANSOOR A. KHAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

SUMMARY OF QUANTITIES

SCQ-1

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SHEET NUMBER	SIGN NUMBER	DIRECTION	SIGN DESIGNATION	SIGN MESSAGE	SIGN PANEL SIZE (INCHES)	"C" Dim	POST SIZE AND LENGTH			ROADSIGN SIGN		(N) ROADSIDE SIGN MOUNTED ON TYPE III BARRICADE	REMARKS
							4"X4"	4"X6"	6"X6"	ONE POST	TWO POST		
						LF	LF	LF	LF	EA	EA	EA	
STAGE 1													
SC-1	S1-1	NB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-1	S1-2	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-2	S2-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-2	S2-2	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-2	S2-3	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-2	S2-4	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
STAGE 2													
SC-3	S3-1	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-3	S3-2	NB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-4	S4-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-4	S4-2	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-4	S4-3	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-4	S4-4	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
STAGE 3													
SC-5	S5-1	NB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-5	S5-2	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-6	S6-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-6	S6-2	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-6	S6-3	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-6	S4-4	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
STAGE 4													
SC-7	S7-1	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-7	S7-2	NB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-8	S8-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-8	S8-2	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-8	S8-3	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-8	S8-4	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
STAGE 5													
SC-9	S9-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-9	S9-2	SB	W20-5	RIGHT LANE CLOSED	48 x 48	7		14		1			
SC-9	S9-3	SB	W4-2	LANE ENDS	48 x 48	7		14		1			
SC-9	S9-4	NB	G20-2	END ROAD WORK	48 x 24	7		14		1			
SC-9	S9-5	SB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-10	S10-1	SB	W20-1	ROADWORK AHEAD	48 x 48	7		14		1			
SC-10	S10-2	SB	W20-5	RIGHT LANE CLOSED	48 x 48	7		14		1			
SC-10	S10-3	SB	W4-2	LANE ENDS	48 x 48	7		14		1			
SC-10	S10-4	NB	W1-4	REVERSE CURVE	48 x 48	7		14		1			
SC-10	S10-5	SB	G20-2	END ROAD WORK	48 x 24	7		14		1			
									TOTAL	71			

SUMMARY OF QUANTITIES

SCQ-2

REVISED BY | DATE REVISED
TIN PHAN | NATHAN OUM
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JUL-2022 | TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350mc002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1809 | PROJECT NUMBER & PHASE 07150000900

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

XX/XX/XX
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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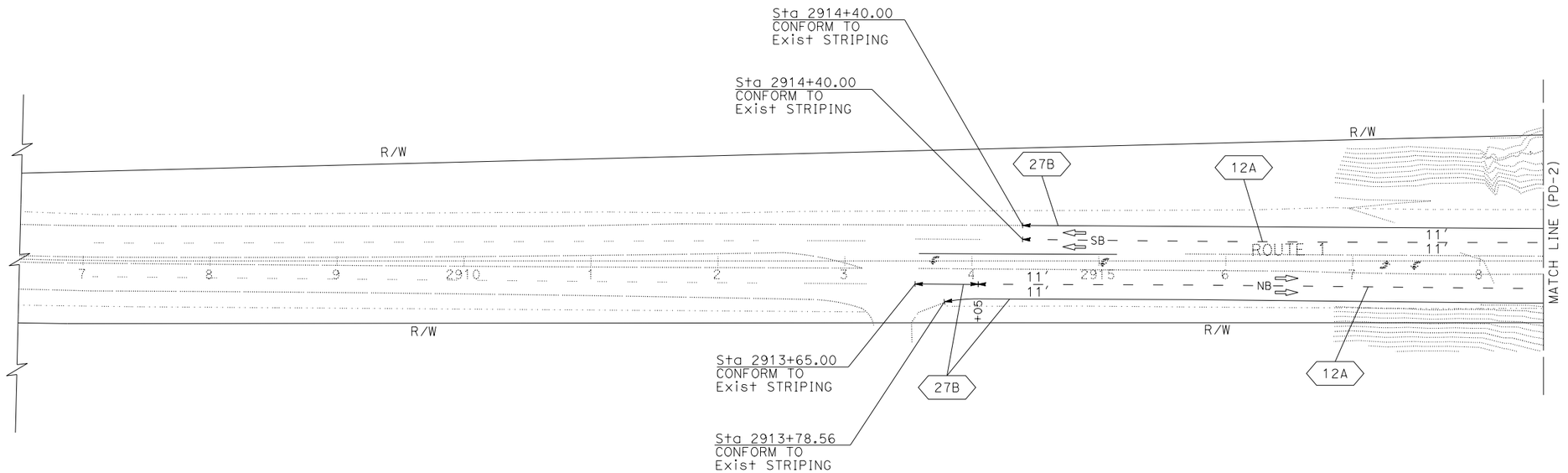
NOTE:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE STANDARD PLAN A24A, A24F, AND A73C FOR MORE DETAILS.

LEGEND:

- BEGIN/END TRAFFIC STRIPE DETAIL
- CHANGE OF TRAFFIC STRIPE DETAIL
- (No.) TRAFFIC STRIPE DETAIL NUMBER
- (RS XX) RESET RAODSIDE SIGN
- • • • DELINEATOR (CLASS 2)



APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1" = 50'

PD-1

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
DANE CORTES	NATHAN OUM

FUNCTIONAL SUPERVISOR	
MANSOOR KHAN	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION	DATE PLOTTED => 28-JUL-2022
00-00-00	TIME PLOTTED => 16:00

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No. C71418
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CIVIL
STATE OF CALIFORNIA

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NOTES:

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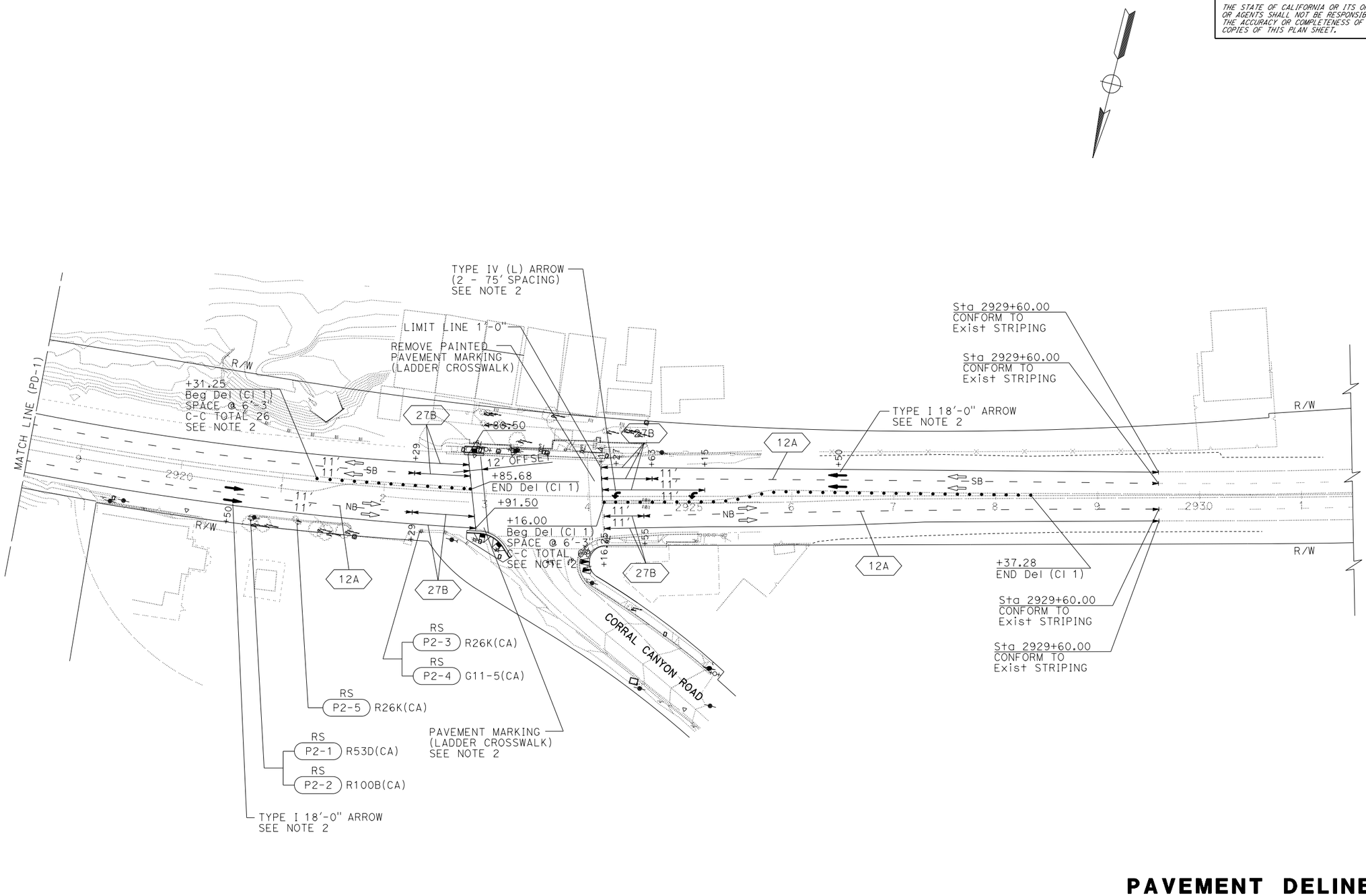

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

PAVEMENT DELINEATION AND SIGN PLAN

SCALE: 1" = 50'

PD-2

LAST REVISION	DATE PLOTTED => 28-JUL-2022
00-00-00	TIME PLOTTED => 16:00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

CALCULATED-DESIGNED BY	DANE CORTES
CHECKED BY	NATHAN OUM
FUNCTIONAL SUPERVISOR	MANSOOR KHAN
REVISED BY	
DATE REVISED	

BORDER LAST REVISED 7/2/2010	USERNAME => s146363 DGN FILE => 0731350na002.dgn	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3	UNIT 1809	PROJECT NUMBER & PHASE	07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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PAVEMENT DELINEATION QUANTITIES

SHEET No.	LOCATION/STATION	DIRECTION	STRIPE DETAIL	DELINEATOR (CLASS 1)	6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 18-12)	6" THERMOPLASTIC TRAFFIC STRIPE	REMOVE THERMOPLASTIC PAVEMENT MARKING	THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING	PAVMENT MARKER (RETROFLECTIVE)			COMMENTS
									TYPE C	TYPE D	TYPE RY	
				EA	LF	LF	SQFT	SQFT	EA	EA	EA	
PD-1 - PD-2	"CL-ALN1" 2914+40.00 TO 2929+60.00	SB	27B			1,595						SEE Std PLAN A20B.
PD-2	"CL-ALN1" 2926+50.00	SB						50				TYPE I 18'-0" ARROW. SEE Std PLAN A24A.
PD-1 - PD-2	"CL-ALN1" 2914+40.00 TO 2929+60.00	SB	12A		1,300				28			SEE Std PLAN A20A.
PD-2	"CL-ALN1" 2924+27.00 TO 2925+15.00	SB						30				TYPE IV (L) ARROW. SEE Std PLAN A24A.
PD-1 - PD-2	"CL-ALN1" 2913+65.00 TO 2929+60.00	NB	27B			1,622						SEE Std PLAN A20B.
PD-2	"CL-ALN1" 2920+50.00	NB						50				TYPE I 18'-0" ARROW. SEE Std PLAN A24A.
PD-1 - PD-2	"CL-ALN1" 2914+05.00 TO 2929+60.00	NB	12A		1,330				29			SEE Std PLAN A20A.
PD-2	"CL-ALN1" 2912+77.50 TO 2914+14.00	NB/SB					844	844				PEDESTRIAN CROSSING (LADDER CROSSWALK). SEE Std PLAN A24F.
PD-2	"CL-ALN1" 2921+31.25 TO 2922+85.68	NB/SB		26								
PD-2	"CL-ALN1" 2924+16.00 TO 2928+37.28	NB/SB		69								
	TOTAL			95	2,630	3,217	844	974	57			

ROADSIDE SIGN QUANTITIES

SHEET NUMBER	SIGN NUMBER (SIGN-No.)	DIRECTION	SIGN DESIGNATION	SIGN MESSAGE	SIGN PANEL SIZE (INCHES)	"C" Dim	POST SIZE AND LENGTH			ROADSIDE SIGN		(N) ROADSIDE SIGN MOUNTED ON TYPE III BARRICADE	REMARKS
							4"x4"	4"X6"	6"X6"	ONE POST	TWO POST		
						LF	LF	LF	LF	EA	EA	EA	
PD-2	P2-3	NB	SG28(L+)(CA)	COASTAL ACCESS	48 x 48	7		14		1			
PD-2	P2-4	NB	SG28(L+)(CA)	COASTAL ACCESS	48 x 48	7		14		1			
PD-2	P2-5	SB	SG28(R+)(CA)	COASTAL ACCESS	48 x 48	7		14		1			
PD-2	P2-6	SB	SG28(R+)(CA)	COASTAL ACCESS	48 x 48	7		14		1			
									TOTAL	4			

PAVEMENT DELINEATION QUANTITIES

PDQ-1

CALCULATED-DESIGNED BY: TIN PHAN
CHECKED BY: NATHAN OUM
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:00

BORDER LAST REVISED 7/2/2010
USERNAME => s146363
DGN FILE => 0731350nc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1809
PROJECT NUMBER & PHASE 07150000900

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

Nathan Oum 05-28-21
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
NATHAN OUM
No. C71418
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

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ROADWAY QUANTITES

SHEET No.	LOCATION/STATION	DIRECTION	REMOVE GUARDRAIL	MIDWEST GUARDRAIL SYSTEM (WOOD POST)	TREATED WOOD WASTE	ALTERNATIVE IN-LINE TERMINAL SYSTEM	TRANSITION RAILING (TYBE WB-31)	VEGETATION CONTROL MAT (RUBBER)	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	HOT MIX ASPHALT (TYPE A)	LEAN CONCRETE BASE	CLASS 3 AGGREGATE BASE	MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)	ROADWAY EXCAVATION	TACK COAT	ALTERNATIVE CRASH CUSHION TL-2	CABLE RAILING	STRUCTURE BACKFILL
			LF	LF	LB	EA	EA	SQYD	TON	TON	CY	CY	CY	CY	TON	EA	LF	CY
L-1	"CL-ALN1" 2920+92.66 TO 2921+18.75	SB	112.5		1,425				1.1	2.5	1.9	5.6	3.4	27.0	0.01	1.0	26.0	320
L-1	"CL-ALN1" 2920+85.18 TO 2921+75.00	NB		15.6		1	1	58.0	13.2	29.8	22.8	51.0	12.4	102.1	0.14			150
L-1	"CL-ALN1" 2922+83.00 TO 2923+37.00	NB	118.8		1,500				8.7	19.5	14.9	35.8	8.0	71.6	0.09			
L-1	"CL-ALN1" 2922+53.44 TO 2924+39.98	SB							13.9	31.2	23.9	51.9	4.8	126.4	0.13			
	SHEET TOTAL		231.3	15.6	2,925	1	1	58.0	36.9	83.0	63.5	144.3	28.6	327.1	0.37	1.0	26.0	470

ADA CURB RAMP QUANTITIES

LAYOUT SHEET No.	CONSTRUCTION DETAIL SHEET No.	CURB RAMP No.	MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)	DETECTABLE WARNING SURFACE	PRE/POST CONSTRUCTION SURVEYS
			CY	SQFT	EA
L-1	C-1	1	7.0	58.0	1
L-1	C-2	2&3	8.6	40.0	2
		TOTAL	15.6	98.0	3

SUMMARY OF QUANTITES

Q-1

REVISED BY | DATE REVISED
TIN PHAN | NATHAN OUM
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

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UNIT 1809
PROJECT NUMBER & PHASE 07150000900

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED CIVIL ENGINEER — 05-28-21 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — NATHAN OUM No. C71418 Exp. 12-31-21 CIVIL — STATE OF CALIFORNIA

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TEMPORARY WATER POLLUTION CONTROL QUANTITIES

ROUTE	SHEET NO.	LOCATION /STATION	DIRECTION	TEMPORARY COVER	TEMPORARY SILT FENCE	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY CONSTRUCTION ENTRANCE
				SQYD	LF	EA	EA
1	L-1	"LA1" 2920+00 TO 2924+00	NB	500	480	1	1
	L-1	"LA1" 2919+00 TO 2925+00	SB	600	570	1	
	L-1	"CORCNYN" 8+40	WB			1	
SHEET TOTAL				1,100	1,050	3	1

ENVIRONMENTALLY SENSITIVE AREA (ESA) QUANTITY

LOCATION		Temp HIGH-VISIBILITY FENCE
SHEET No.	ROUTE	LF
L-1	LA/VEN 1	661
	TOTAL	661

REVISED BY | DATE REVISED

TIN PHAN | NATHAN OUM

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: MANSOOR A. KHAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® **DESIGN**

SUMMARY OF QUANTITIES

Q-2

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

George Olguin
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

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LICENSED LANDSCAPE ARCHITECT
GEORGE OLGUIN
NO. 4333
George Olguin
Signature
08-31-21
Renewal Date
04-23-21
Date
STATE OF CALIFORNIA

EROSION CONTROL

EROSION CONTROL

SEQUENCE	ITEM	MATERIAL	MATERIAL TYPE	APPLICATION RATE
STEP 1	HYDROSEED	SEED	MIX	15 LB/ACRE
		FIBER	WOOD	500 LB/ACRE
STEP 2	HYDROMULCH	FIBER	WOOD	1,500 LB/ACRE
		TACKIFIER	GUAR	125 LB/ACRE

SEED MIX

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
BROMUS CARINATUS (CALIFORNIA BROME)	80	8.0
ERIOGONUM FASCICULATUM (CALIFORNIA BUCKWHEAT)	5	2.0
ERIOPHYLLUM CONFERTIFLORUM (GOLDEN YARROW)	30	1.0
FESTUCA MICROSTACHYS (SMALL FESCUE)	70	4.0

PLANT LEGEND

PLANT GROUP (SIZE)	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	HOLE SIZE DIAMETER	HOLE SIZE DEPTH	BASIN TYPE	PLANT AREA GROUP F/H/M	WOOD MULCH ② BASIN	APPLICATION RATES SOIL AMENDMENT	IRON SULFATE	SLOW-RELEASE FERTILIZER PLT	SLOW-RELEASE FERTILIZER PLT ESTB	ORGANIC FERTILIZER PLT	ORGANIC FERTILIZER PLT ESTB	PACKET FERTILIZER	ON CENTER SPACING	MINIMUM PLANTING DISTANCE FROM: ETW	EP	FENCE	WALL	PAVED DITCH	EARTH DITCH	REMARKS
					INCH	INCH		SQFT	CY	CY	oz	oz	oz	oz	oz	EA	ft	ft	ft	ft	ft	ft	ft	
B (No. 5)	1	○	PLATANUS RACEMOS	CALIFORNIA SYCAMORE	2x	--	I	--	0.03	0.04	4	--	--	--	--	3	①	-	15	15	15	15	15	TREE
	2	⊕	SALIX LASPIOLEPIS	ARROYO WILLOW	2x	--	I	--	0.03	0.04	4	--	--	--	--	3	①	-	10	8	8	8	10	SHRUB

EROSION CONTROL LEGEND

ECL-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT
GEORGE OLGUIN
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
RYOHEI OTA
JULEE PARK

LAST REVISION 04-23-21
DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:01

BORDER LAST REVISED 11/07/2019
USERNAME =>
DGN FILE => 0731350tc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1850
PROJECT NUMBER & PHASE 07160001201

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

George Olguin
LICENSED LANDSCAPE ARCHITECT

LICENSED LANDSCAPE ARCHITECT
GEORGE OLGUIN
NO. 4333
George Olguin
Signature
08-31-21
Renewal Date
04-23-21
Date
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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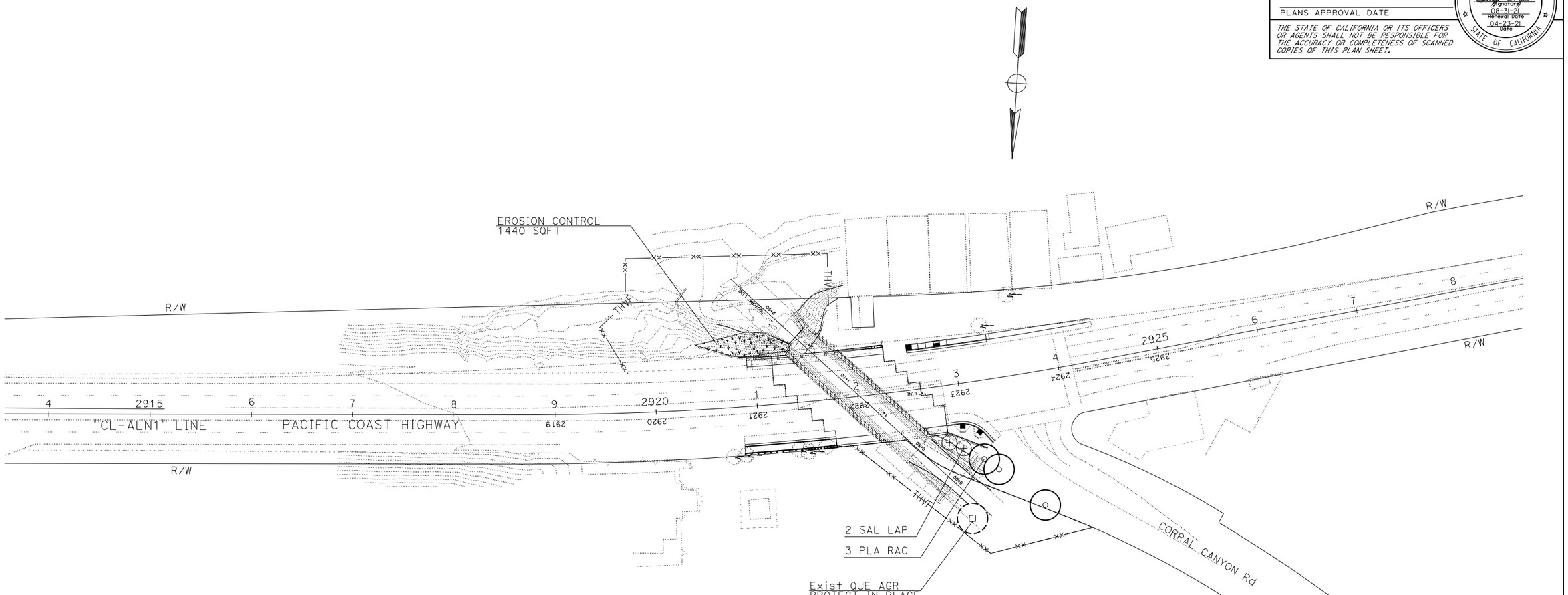

EROSION CONTROL PLAN

SCALE: 1" = 50'

EC-1

APPROVED FOR EROSION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT
GEORGE OLGUIN

CALCULATED-DESIGNED BY
RYOHEI OTA

CHECKED BY
JULEE PARK

REVISED BY

DATE REVISED

LAST REVISION 04-23-21
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UNIT 1850

PROJECT NUMBER & PHASE 07160001201

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George Olguin
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
GEORGE OLGUIN
NO. 4333
George Olguin
Signature
08-31-21
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STATE OF CALIFORNIA

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EROSION CONTROL QUANTITIES

EC SHEET	DESCRIPTION	HYDROSEED	HYDROMULCH	ITEM MATERIALS (N)		ITEM MATERIALS (N)	
				SEED	FIBER	FIBER	TACKIFIER
		SQFT	SQFT	LB	LB	LB	LB
1	EROSION CONTROL	1440	1440	0.5	17	50	4
	TOTAL	92,550	92,550	32	1064	3188	268

(N) - NOT A SEPARATE BID ITEM

PLANT QUANTITIES

BOTANICAL NAME	COMMON NAME	PLANT GROUP	PACKET FERTILIZER	PLANT BASIN		
		B		WOOD MULCH	SOIL AMENDMENT	IRON SULFATE
		EA	EA	CY	CY	LB
PLATANUS RACEMOS	CALIFORNIA SYCAMORE	2	6	0.06	0.08	0.5
SALIX LASPIOLEPIS	ARROYO WILLOW	2	6	0.06	0.08	0.5
	SUBTOTAL	4	12	0.12	0.16	1
	TOTAL	4	4	0.12	0.16	1

REVISED BY | DATE REVISED
RYOHEI OTA | JULEE PARK
CALCULATED-DESIGNED BY | CHECKED BY
SENIOR LANDSCAPE ARCHITECT | GEORGE OLGUIN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

EROSION CONTROL QUANTITIES

ECQ-1

LAST REVISION 04-23-21
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — VUONG HONG — No. E16613 — Exp. 6-30-20 — ELECTRICAL — STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

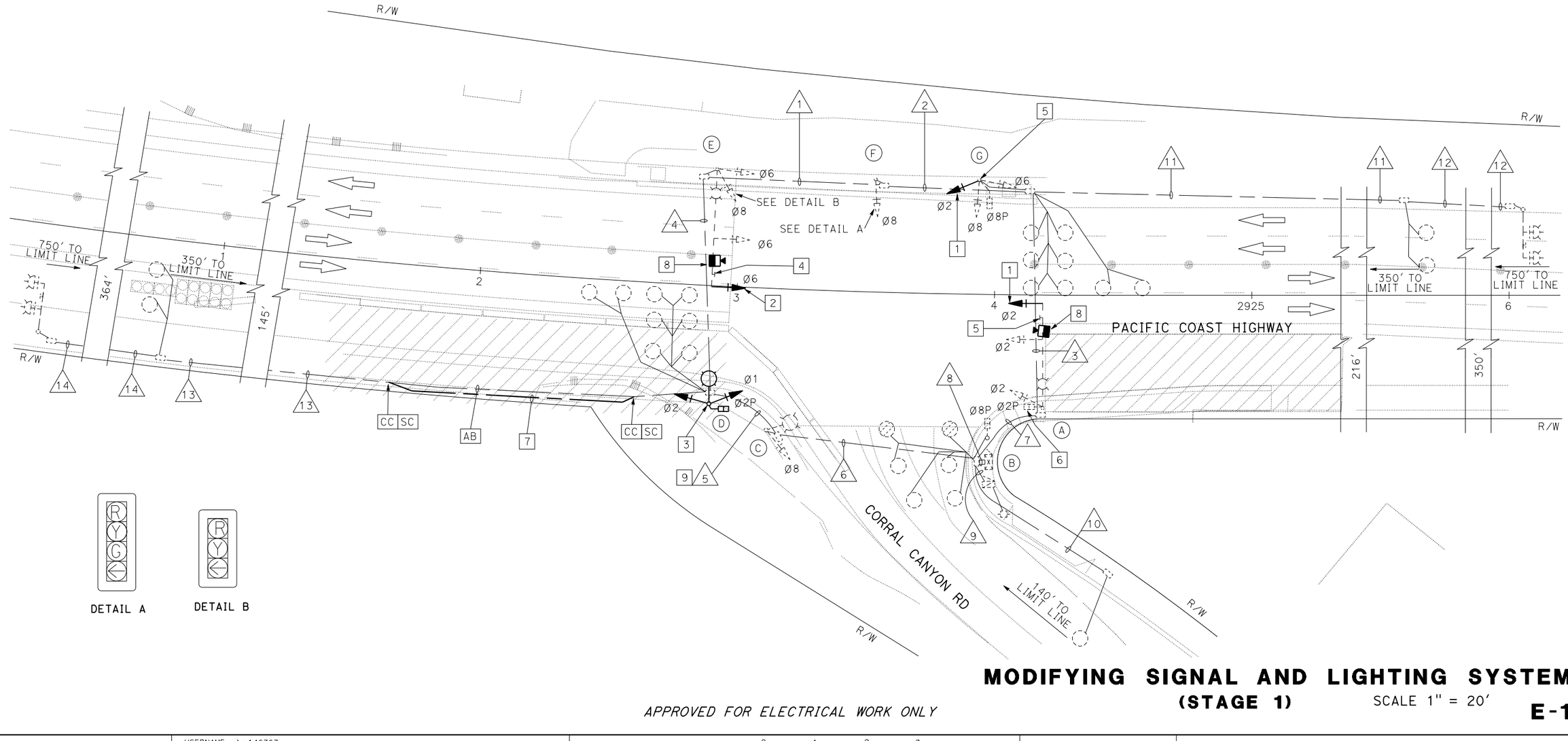
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR CONDUCTOR AND CONDUIT SCHEDULE AND STANDARD AND EQUIPMENT SCHEDULE SEE SHEET E-6.

PHASE DIAGRAM

Ø1 NOT USED	Ø2 →	Ø3 NOT USED	Ø4 NOT USED
Ø5 NOT USED	Ø6 ←	Ø7 NOT USED	Ø8 ↰ ↑ ↓

LEGEND: (THIS SHEET ONLY)

1. REMOVE EXISTING Ø5 SIGNAL HEAD AND REPLACE WITH Ø2 SIGNAL HEAD. WIRE TO Ø2.
2. REMOVE EXISTING Ø1 SIGNAL HEAD AND REPLACE WITH Ø6 SIGNAL HEAD. WIRE TO Ø6.
3. RC EXISTING TYPE 1A STANDARD. INSTALL TYPE 15TS IN SAME LOCATION. DISCONNECT TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL FROM SYSTEM. COVER SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS.
4. REPLACE R73-2(CA) SIGN WITH R3-4 SIGN.
5. REPLACE U-TURN ONLY SIGN WITH R3-4 SIGN.
6. DISCONNECT Ø2P AND COVER PEDESTRIAN SIGNAL HEAD.
7. INSTALL 2" CONDUIT IN BRIDGE. INSTALL 2#6 FOR FLASHING BEACON.
8. INSTALL VIDEO IMAGE VEHICLE DETECTION SYSTEM. INSTALL CABLES TO CONTROLLER CABINET.
9. INSTALL 2#10 FOR LUMINARIES.



DETAIL A

DETAIL B

MODIFYING SIGNAL AND LIGHTING SYSTEMS (STAGE 1)

SCALE 1" = 20'

E-1

APPROVED FOR ELECTRICAL WORK ONLY

CALCULATED-DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® TRAFFIC DESIGN

REVISED BY	DATE REVISED
PARESH PATEL	
VUONG HONG	

LAST REVISION

DATE PLOTTED => 28-JUL-2022

TIME PLOTTED => 16:01

BORDER LAST REVISED 7/2/2010

USERNAME => s146363

DGN FILE => 0731350ua001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1878

PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — VUONG HONG — No. E16613 — Exp. 6-30-20 — ELECTRICAL — STATE OF CALIFORNIA

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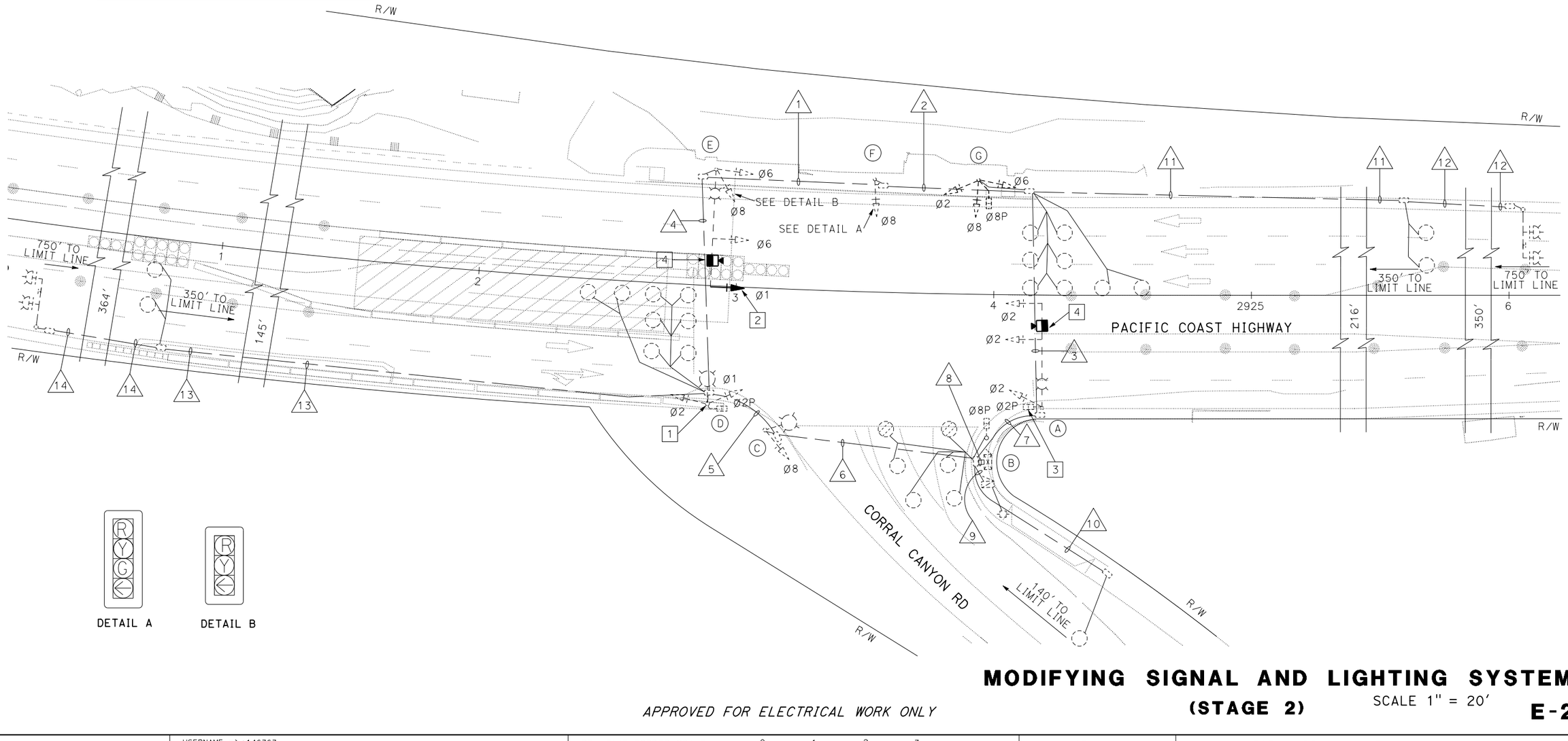
LEGEND: (THIS SHEET ONLY)

1. CONNECT TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL TO SYSTEM. UNCOVER SIGNAL HEADS.
2. REMOVE EXISTING Ø6 SIGNAL HEAD AND REPLACE WITH Ø1 SIGNAL HEAD. WIRE TO Ø1.
3. UNCOVER Ø2P SIGNAL HEAD AND CONNECT TO SYSTEM
4. ADJUST VIDEO IMAGE VEHICLE DETECTION FOR NEW ZONE.

PHASE DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4 NOT USED
Ø5 NOT USED	Ø6	Ø7 NOT USED	Ø8



DETAIL A

DETAIL B

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING SIGNAL AND LIGHTING SYSTEMS

(STAGE 2) SCALE 1" = 20'

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION **TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: PARESH PATEL

CHECKED BY: VUONG HONG

REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JUL-2022 | TIME PLOTTED => 16:01

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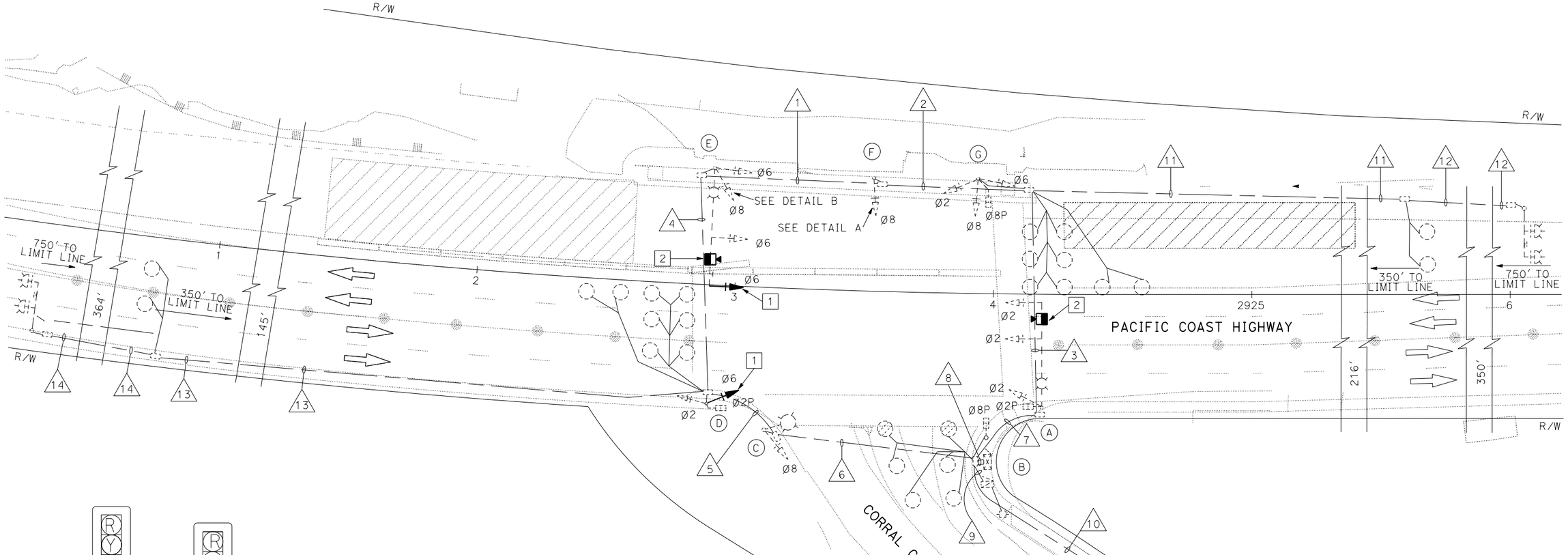
LEGEND: (THIS SHEET ONLY)

[1] REMOVE EXISTING Ø1 SIGNAL HEAD AND REPLACE WITH Ø6 SIGNAL HEAD. WIRE TO Ø6.

[2] ADJUST VIDEO IMAGE VEHICLE DETECTION FOR NEW ZONE.

PHASE DIAGRAM

Ø1 NOT USED	Ø2	Ø3 NOT USED	Ø4 NOT USED
Ø5 NOT USED	Ø6	Ø7 NOT USED	Ø8



DETAIL A

DETAIL B

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING SIGNAL AND LIGHTING SYSTEMS

(STAGE 3) SCALE 1" = 20'

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — **TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: PARESH PATEL

CHECKED BY: VUONG HONG

REVISED BY / DATE REVISED

LAST REVISION 00-00-00 — DATE PLOTTED => 28-JUL-2022 — TIME PLOTTED => 16:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ua003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1878 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — VUONG HONG — No. E16613 — Exp. 6-30-20 — ELECTRICAL — 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.

NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR CONDUCTOR AND CONDUIT SCHEDULE AND STANDARD AND EQUIPMENT SCHEDULE SEE SHEET E-6.

LEGEND: (THIS SHEET ONLY)

[1] REMOVE EXISTING Ø6 SIGNAL HEAD AND REPLACE WITH Ø1 SIGNAL HEAD. WIRE TO Ø1.

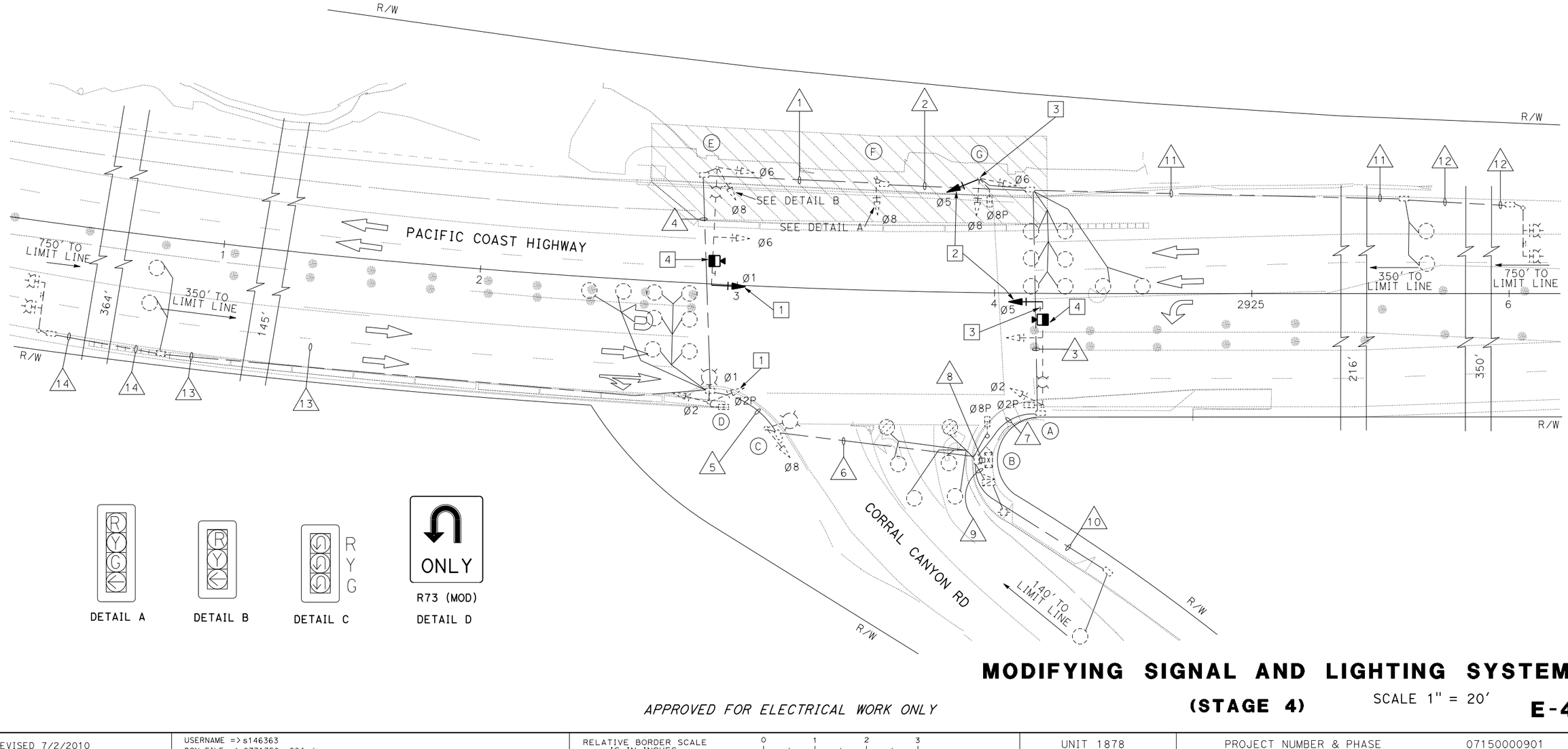
[2] REMOVE EXISTING Ø2 SIGNAL HEAD AND REPLACE WITH Ø5 SIGNAL HEAD. WIRE TO Ø5. SEE DETAIL C.

[3] REPLACE R3-4 SIGN WITH R73 (MOD) SIGN. SEE DETAIL D.

[4] ADJUST VIDEO IMAGE VEHICLE DETECTION FOR NEW ZONE.
REMOVE VIDEO IMAGE VEHICLE DETECTION SYSTEM AFTER STAGE 4.

PHASE DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4 NOT USED
Ø5	Ø6	Ø7 NOT USED	Ø8



MODIFYING SIGNAL AND LIGHTING SYSTEMS

(STAGE 4) SCALE 1" = 20'

E-4

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: PARESH PATEL

CHECKED BY: VUONG HONG

REVISED BY	DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 28-JUL-2022 | TIME PLOTTED => 16:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ua004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1878 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — VUONG HONG — No. E16613 — Exp. 6-30-20 — ELECTRICAL — STATE OF CALIFORNIA

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NOTES: (THIS SHEET ONLY)

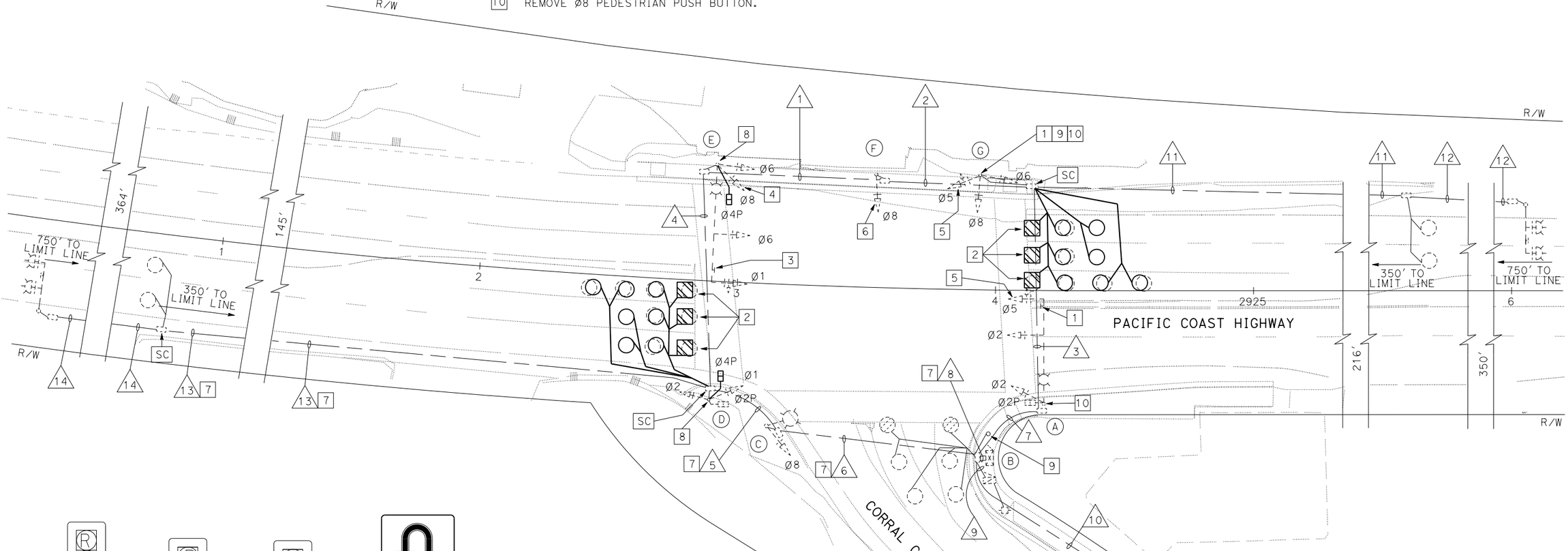
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR CONDUCTOR AND CONDUIT SCHEDULE AND STANDARD AND EQUIPMENT SCHEDULE SEE SHEET E-6.
3. REPLACE EXISTING PEDESTRIAN PUSH BUTTON WITH ACCESSIBLE PEDESTRIAN PUSH BUTTON ASSEMBLY.
4. REPLACE EXISTING PEDESTRIAN SIGNAL HEAD WITH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD.

LEGEND: (THIS SHEET ONLY)

1. SEE DETAIL D
2. [AB] EXISTING EIGHT LOOPS. INSTALL SEVEN TYPE E LOOPS AND THREE TYPE D LOOPS.
3. REPLACE R3-4 SIGN WITH R73-2(CA) SIGN.
4. SEE DETAIL B
5. SEE DETAIL C
6. SEE DETAIL A
7. [RC] TWO EXISTING DLC. INSTALL NEW TWO DLC.
8. INSTALL Ø4 ACCESSIBLE PEDESTRIAN PUSH BUTTON AND LED COUNTDOWN PEDESTRIAN SIGNAL HEAD.
9. REMOVE Ø8 PEDESTRIAN SIGNAL HEAD.
10. REMOVE Ø8 PEDESTRIAN PUSH BUTTON.

PHASE DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4
Ø5	Ø6	Ø7 NOT USED	Ø8



DETAIL A — DETAIL B — DETAIL C — DETAIL D (R73 (MOD) ONLY)

MODIFYING SIGNAL AND LIGHTING SYSTEMS

SCALE 1" = 20'

E-5

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — **TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: PARESH PATEL

CHECKED BY: VUONG HONG

REVISED BY / DATE REVISED

LAST REVISION 00-00-00 — DATE PLOTTED => 28-JUL-2022 — TIME PLOTTED => 16:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s146363 | DGN FILE => 0731350ua005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1878 | PROJECT NUMBER & PHASE 07150000901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA Ven	1	37.7/62.9 0.0/0.9	-	124

REGISTERED ELECTRICAL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — VUONG HONG — No. E16613 — Exp. 6-30-20 — ELECTRICAL — 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.

STANDARD AND EQUIPMENT SCHEDULE

No.	STANDARD				Veh Sig Mtg		Ped SIGNAL		APS		LED LUMINAIRE	REFLECTIVE SNS
	TYPE	SMA	LMA	HEIGHT	MAST ARM	POLE	Ø	Mtg	Ø	ARROW		
(A)	29A-5-100	40'	15'	35'	2'MAS	SV-1-T	2	SP-1-T			ROADWAY 2	CORRAL CANYON Rd
(B)	1-A			7'					2	→		
(C)	15TS		12'	30'		SV-1-T			2	←	ROADWAY 1	
(D)	15TS		12'	30'		SV-2-T	2,4	SP-2-T	4	→		
(E)	29A-5-100	45'	15'	35'	2'MAS	SV-2-T	4	SP-1-T	4	←	ROADWAY 2	CORRAL CANYON Rd
(F)	1-A			15'		TV-1-T						
(G)	1-A			7'		TV-3-T						

CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR DESIGNATION		RUN NUMBER / NUMBER OF CONDUCTORS													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
28 CSC (C1)	SIGNAL		1	1		1	1	1	1						
28 CSC (C2)	SIGNAL	1	1	1			1	1	1						
#10 AWG	LUMINARIES	2	2	2		2	2	2							
#6 AWG	SERVICE									2					
#6 AWG	FLASHING BEACON			2		2	2	2	4			2	2	2	2
EVP CABLE	EMERGENCY VEHICLE PREEMPTION	1	1					1	1						
DLC	Ø1			1				1	1						
	Ø2					4	4		4					2	
	Ø5					1	1		1						
	Ø6			4				4	4			2			
	Ø8								4		1				
CONDUIT SIZE		2"	3"	3"	3"	2"	3"	3"	2-3"	2"	2"	2"	1½"	2"	1½"

APPROVED FOR ELECTRICAL WORK ONLY

MODIFYING SIGNAL AND LIGHTING SYSTEMS

NO SCALE

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: OSWALD ELIZONDO

CALCULATED-DESIGNED BY: PARESH PATEL

CHECKED BY: VUONG HONG

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 28-JUL-2022
TIME PLOTTED => 16:02

BORDER LAST REVISED 7/2/2010

USERNAME => s146363
DGN FILE => 0731350ua006.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1878

PROJECT NUMBER & PHASE 07150000901

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

FINAL SPS&E

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — 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.

AECOM
999 W. TOWN & COUNTRY RD.
ORANGE, CA. 92868

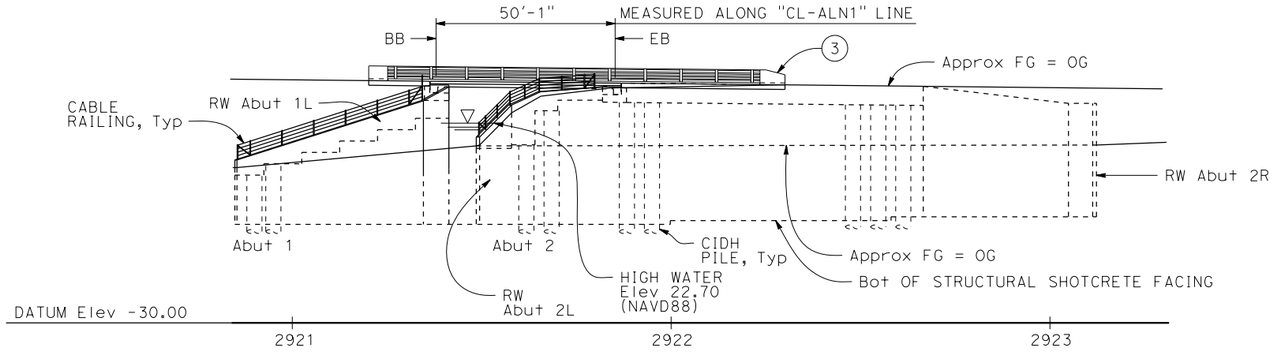
LEGEND:

- Bridge Removal
- Existing Structure
- Direction of traffic
- Water
- [#] Utility - See "UTILITY TABLE" on "TYPICAL SECTION" sheet

-0.97%±

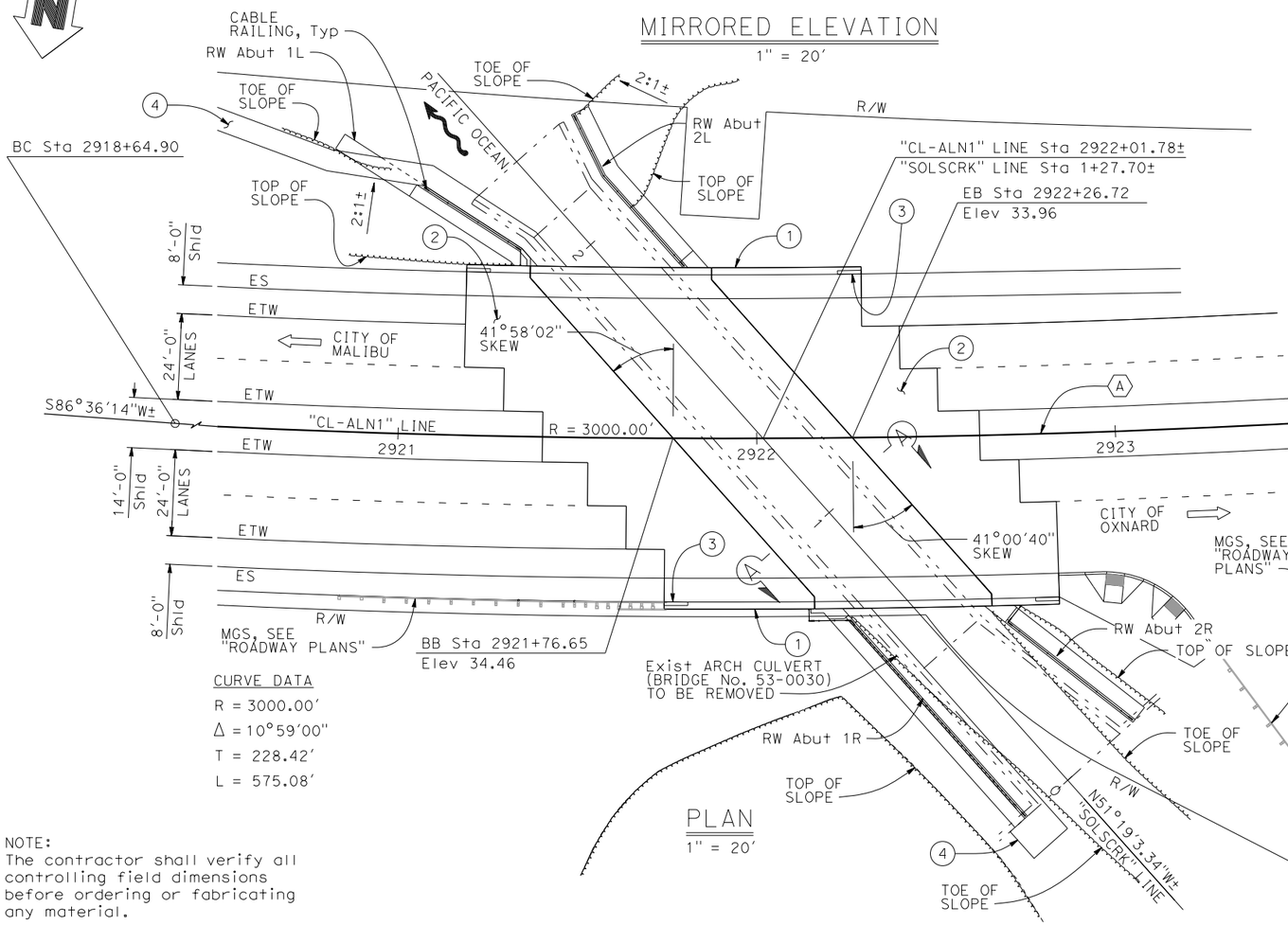
PROFILE GRADE

NO SCALE



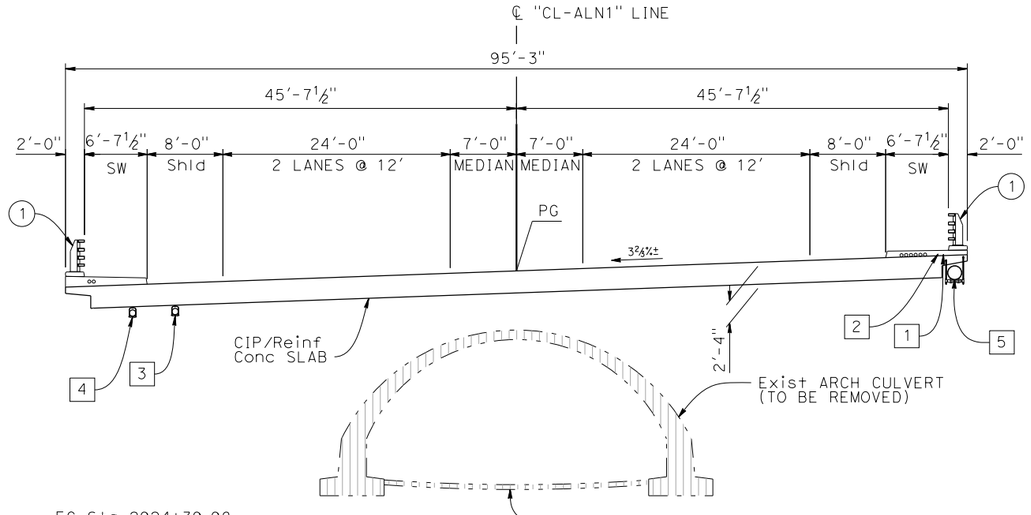
MIRRORED ELEVATION

1" = 20'



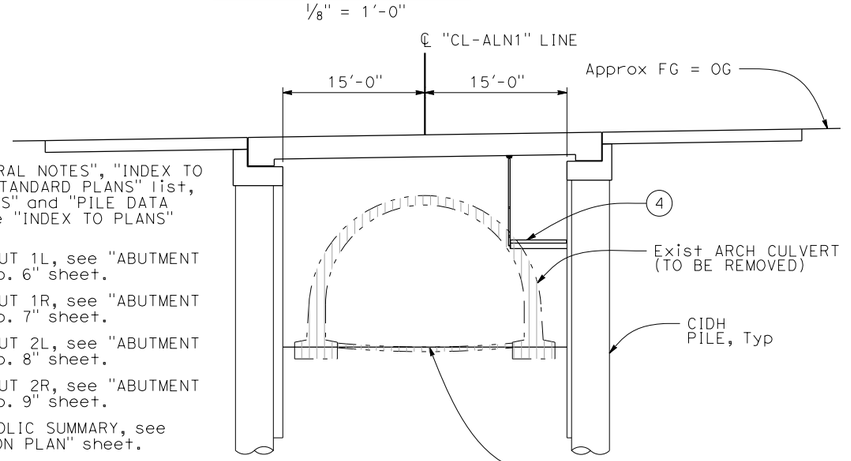
PLAN

1" = 20'



TYPICAL SECTION

⅛" = 1'-0"



SECTION A-A

⅛" = 1'-0"

NOTES:

1. For "GENERAL NOTES", "INDEX TO PLANS", "STANDARD PLANS" list, "QUANTITIES" and "PILE DATA TABLE" see "INDEX TO PLANS" sheet.
2. For RW ABUT 1L, see "ABUTMENT DETAILS No. 6" sheet.
3. For RW ABUT 1R, see "ABUTMENT DETAILS No. 7" sheet.
4. For RW ABUT 2L, see "ABUTMENT DETAILS No. 8" sheet.
5. For RW ABUT 2R, see "ABUTMENT DETAILS No. 9" sheet.
6. For "HYDROLIC SUMMARY, see "FOUNDATION PLAN" sheet.

(1) CALIFORNIA ST-75SW (Mod) BRIDGE RAIL

(2) Structure Approach Slab Type N (30)

(3) Paint "SOLSTICE CANYON CREEK BRIDGE No. 53-3200" YEAR CONSTRUCTED

(4) PEDESTRIAN WALKWAY, SEE "ROADWAY PLANS" AND "PEDESTRIAN WALKWAY PLAN" SHEET

CURVE DATA
R = 3000.00'
Δ = 10°59'00"
T = 228.42'
L = 575.08'

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

		BY	CHECKED				
DESIGN OVERSIGHT	DESIGN	R. INGRAM	M. KANAAN				
-/-/-	DETAILS	D. CUMMARO	M. KANAAN	LAYOUT	D. CUMMARO	M. KANAAN	
SIGN OFF DATE	QUANTITIES	D. CUMMARO	M. KANAAN	SPECIFICATIONS	A. TISSERA	PLANS AND SPECS COMPARED: L. YANG	

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No.	53-3200
POST MILE	50.36

SOLSTICE CANYON CREEK BRIDGE

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:11 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:3621
PROJECT NUMBER & PHASE:0715000090 1 CONTRACT No.:07-313504

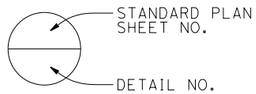
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11/05/20	12/14/20	04/07/21	05/24/21	1	45

INDEX TO PLANS

STANDARD PLANS DATED 2018

	A3A	ABBREVIATIONS (SHEET 1 OF 3)
	A3B	ABBREVIATIONS (SHEET 2 OF 3)
	A3C	ABBREVIATIONS (SHEET 3 OF 3)
	A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
	A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
	A10C	LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
	A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
	A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
	A10F	LEGEND - SOIL (SHEET 1 OF 2)
	A10G	LEGEND - SOIL (SHEET 2 OF 2)
	B0-3	BRIDGE DETAILS
	B0-5	BRIDGE DETAILS
	B0-13	BRIDGE DETAILS
	B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
RSP	B7-10	UTILITY OPENING BOX GIRDER
	B9-1	STRUCTURE APPROACH - TYPE N (30)
	B9-5	STRUCTURE APPROACH - SLAB DETAILS
	B9-6	STRUCTURE APPROACH - DRAINAGE DETAILS
RSP	B11-47	CABLE RAILING
	B14-3	COMMUNICATION AND SPRINKLER CONTROL CONDUITS (CONDUITS LESS THAN 4")



NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 8th edition with California Amendments, preface dated April 2019.

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), Version 2.0 Dated April 2019.

LIVE LOAD: HL93 and permit design load.

LIVE LOAD SURCHARGE: Varied surcharge on level ground surface.

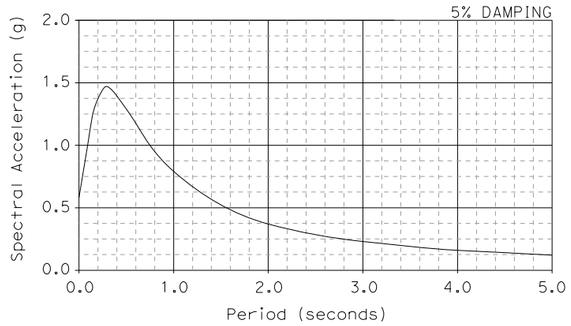
DEAD LOAD: Includes 35 psf for future wearing surface.

SEISMIC LOAD: Shear wave velocity, Vs30 = 970.1 ft/sec for the top 100 ft of soil
Moment Magnitude: 6.64
Peak Rock Acceleration = 0.58g
Fault Rupture; Vertical = 12.6 in, Horizontal = 4.6 in

SOIL: $\phi = 29°$
$\gamma = 114$ pcf

REINFORCED CONCRETE: fy = 60 ksi
f'c = 4.0 ksi, except as shown in "CONCRETE STRENGTH AND TYPE LIMITS" diagram
n = 8.0

SHOTCRETE: fy = 60 ksi
f'c = 4.0 ksi
n = 8.0



MODIFIED ARS CURVE

QUANTITIES

STRUCTURE BACKFILL (BRIDGE)	224	CY
48" CAST-IN-DRILLED-HOLE CONCRETE PILING	5,742	LF
STRUCTURAL CONCRETE, BRIDGE	252	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	483	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	293	CY
DRILL AND BOND DOWEL	3,604	LF
JOINT SEAL (MR 1/2")	254	LF
BAR REINFORCING STEEL (BRIDGE)	733,609	LB
STRUCTURAL SHOTCRETE	519	CY
BRIDGE REMOVAL	LUMP	SUM
GEOCOMPOSITE DRAIN	1,037	SQFT
MISCELLANEOUS METAL (BRIDGE)	176	LB
CABLE RAILING	254	LF
CALIFORNIA ST-75SW BRIDGE RAIL (MODIFIED)	220	LF
4" CONDUIT (BRIDGE)	LUMP	SUM

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — 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.

AECOM
999 W. TOWN & COUNTRY RD.
ORANGE, CA. 92868

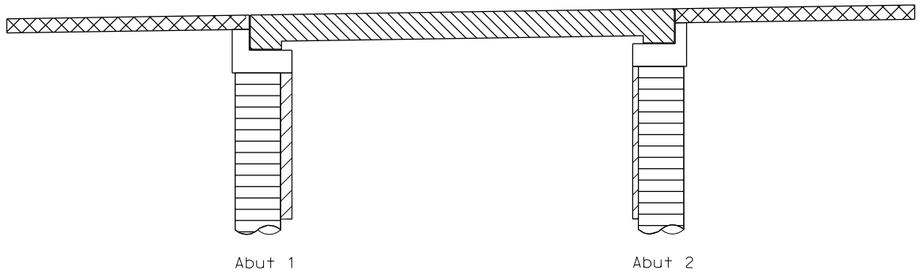
PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)
		Compression	Tension		
Abut 1	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
Abut 2	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
RW 1L	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
RW 1L SECANT	18" CIDH	N/A	N/A	N/A	-31.0
RW 1R	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
RW 2L	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
RW 2R	48" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0
Ped WALKWAY	24" CIDH	160	0	(a) -8.0 (c) -31.0	-31.0

NOTES: 1) Design tip elevations are controlled by the following demands : (a) Compression, (b) Tension, (c) Lateral Load
2) The specified tip elevations shall not be raised above the design tip elevations.

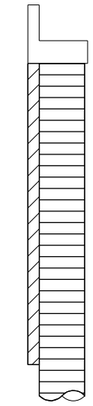
LEGEND:

- Structural Concrete, Bridge
- Structural Concrete, Bridge (Polymer Fiber) (f'c = 5.0 ksi)
- Structural Concrete, Approach Slab (f'c = 3.6 ksi)
- Structural Shotcrete
- Cast-In-Drilled-Hole Piling



CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE



FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
INDEX TO PLANS

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:12 PM
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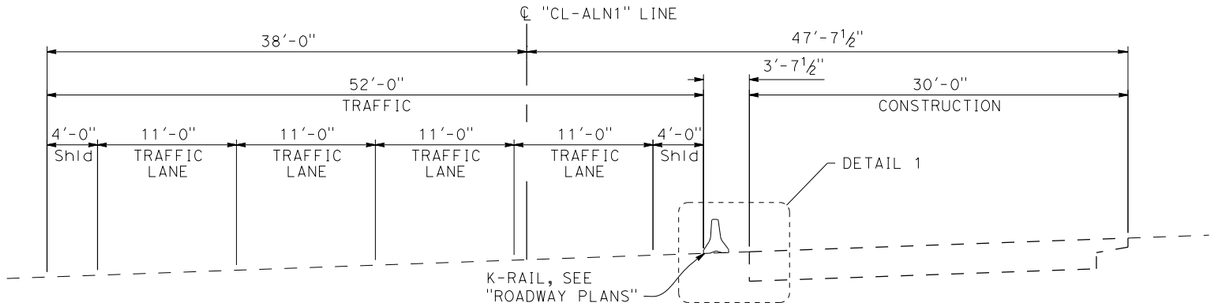
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

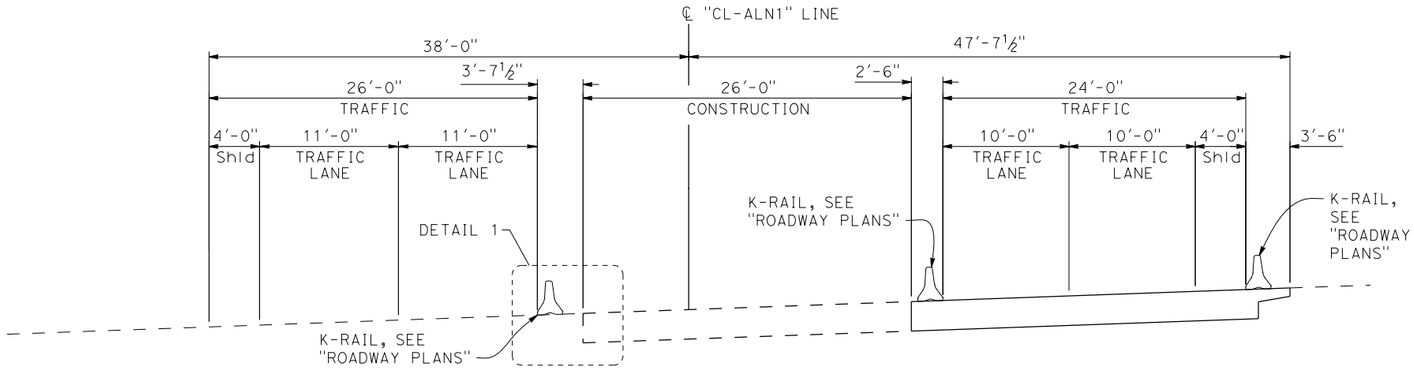
REVISION DATES			
09/21/20	11/05/20	12/14/20	4/5/21

SHEET 2 OF 45



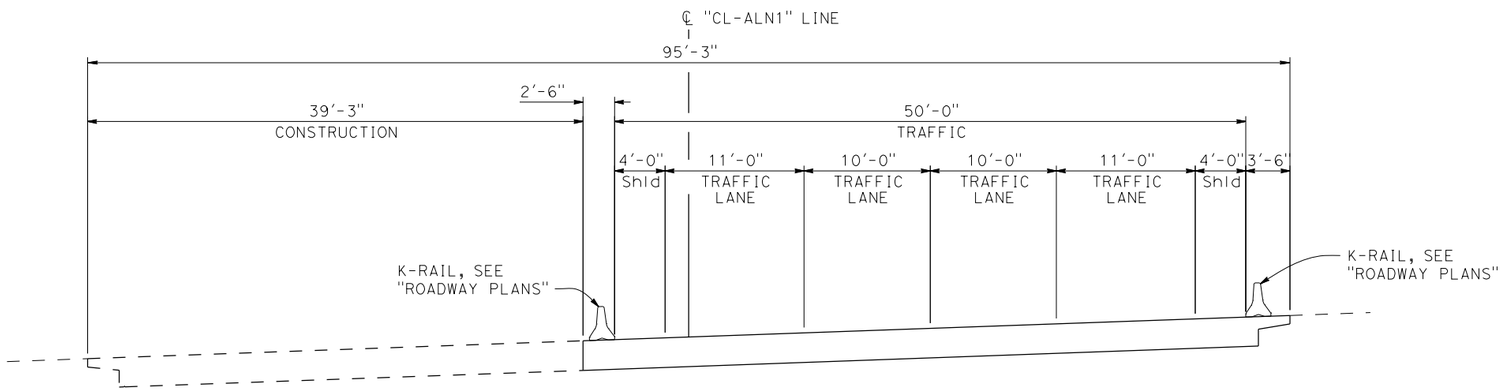
STAGE 1 CONSTRUCTION

NO SCALE



STAGE 2 CONSTRUCTION

NO SCALE



STAGE 3 CONSTRUCTION

NO SCALE

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

CONSTRUCTION SEQUENCE STEPS (STAGE 1):

1. Construct CIDH piles, see note 2.
2. Remove pavement and base, and excavate for structure and pilecap/abutment construction.
3. Construct abutment pile caps to superstructure seat level. Do not construct abutment backwalls. Construct wing walls 1R & 2R pile caps, walkway and walls.
4. Construct falsework and cast superstructure. Do not construct sidewalk or barrier. Falsework to remain in place during construction.
5. Construct backwall, and portion of structure approaches.

CONSTRUCTION SEQUENCE STEPS (STAGE 2):

1. Construct CIDH piles, see note 2.
2. Remove pavement and base, and excavate for structure and pilecap/abutment construction.
3. Construct abutment pile caps to superstructure seat level. Do not construct abutment backwalls. Construct wing wall 1R pile cap and wall.
4. Construct falsework and cast superstructure. Falsework to remain in place during construction.
5. Construct backwall, and portion of structure approaches.

CONSTRUCTION SEQUENCE STEPS (STAGE 3):

1. Construct CIDH piles, see note 2.
2. Remove pavement and base, and excavate for structure and pilecap/abutment construction.
3. Construct abutment pile caps to superstructure seat level. Do not construct abutment backwalls. Construct wing walls 1L and 2L pile caps, walkway, and walls.
4. Construct falsework and cast superstructure. Do not construct sidewalk or barrier. Falsework to remain in place during construction.
5. Construct backwall, and portion of structure approaches.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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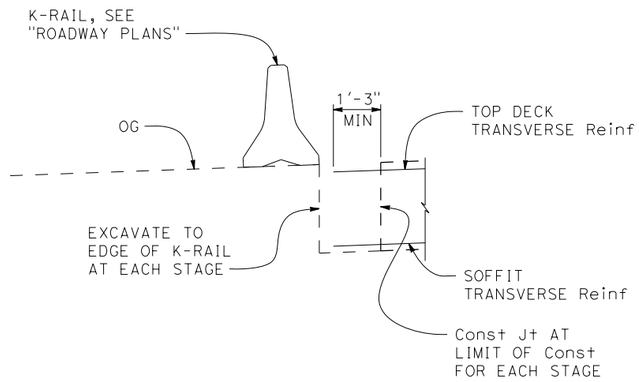
NOTES:

1. "K-RAIL" must be pinned in place.
2. For abutment pile and pile cap staging and construction details, see "ABUTMENT 1 LAYOUT" and "ABUTMENT 2 LAYOUT" sheet.
3. For wing wall pile and pile cap staging and construction details, see "ABUTMENT DETAILS No. 6" thru "ABUTMENT DETAILS No. 9" sheets.
4. For limits of approach construction, see "STAGED CONSTRUCTION No. 2" sheets.



DETAIL 1

½" = 1'-0"

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
STAGED CONSTRUCTION No.1

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

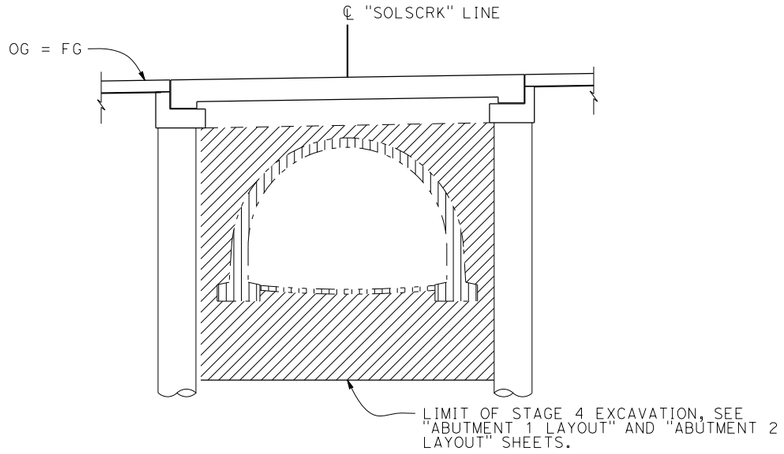
DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:15 PM
FILE => ...\910_CAD\53-0030-b-cs01.dgn USERNAME => rob.ingram

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

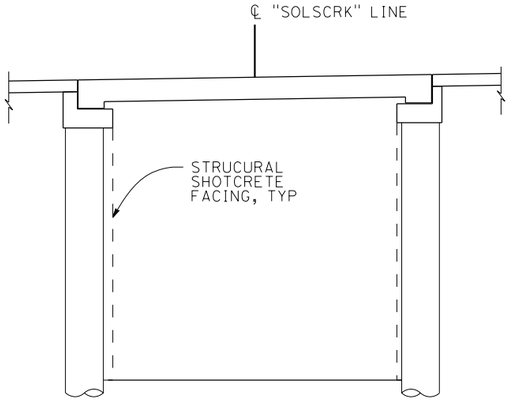
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
09/17/20	11/05/20	12/04/20	05/24/21	3	45



STAGE 4 - STEP 1

NO SCALE



STAGE 4 - STEP 2

NO SCALE

LEGEND:

- Roadway Excavation, see "ROADWAY PLANS"
- Existing Structure
- Bridge removal
- Roadway Backfill, see "ROADWAY PLANS"

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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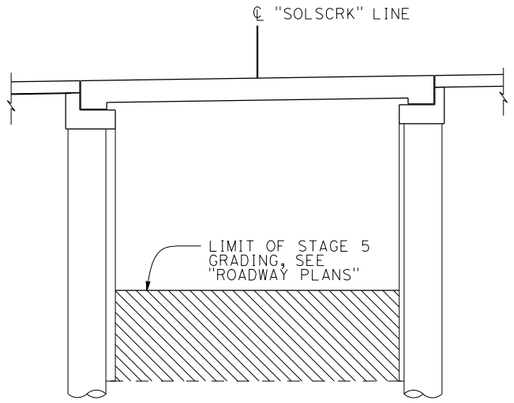
CONSTRUCTION SEQUENCE STEPS (STAGE 4):

1. Remove existing arch culvert, wing walls, concrete apron, and falsework.
2. Excavate to required depths for shotcrete facing and retaining wall construction.
3. Construct structural shotcrete facing at abutment and retaining walls.

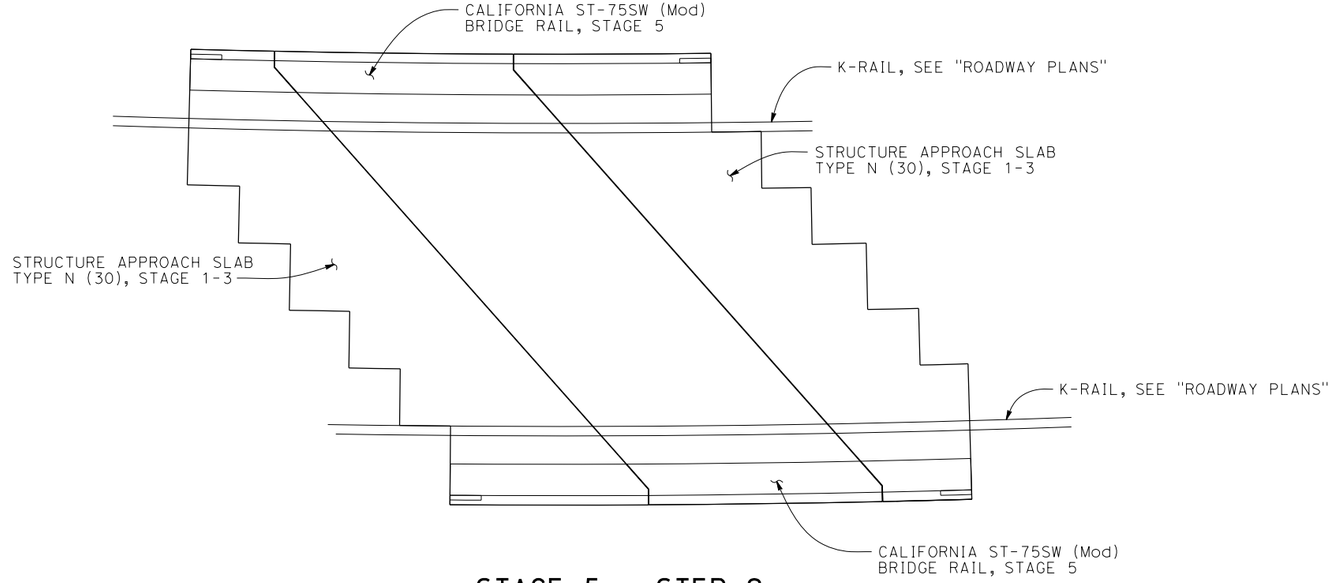
CONSTRUCTION SEQUENCE STEPS (STAGE 5):

1. Grade creek bed to original grade.
2. Construct sidewalk and bridge barriers.
3. Construct pedestrian walkway and railing.



STAGE 5 - STEP 1

NO SCALE



STAGE 5 - STEP 2

NO SCALE

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
STAGED CONSTRUCTION No. 2

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
09/17/20	11/05/20	12/04/20	4/5/21	4	45

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

REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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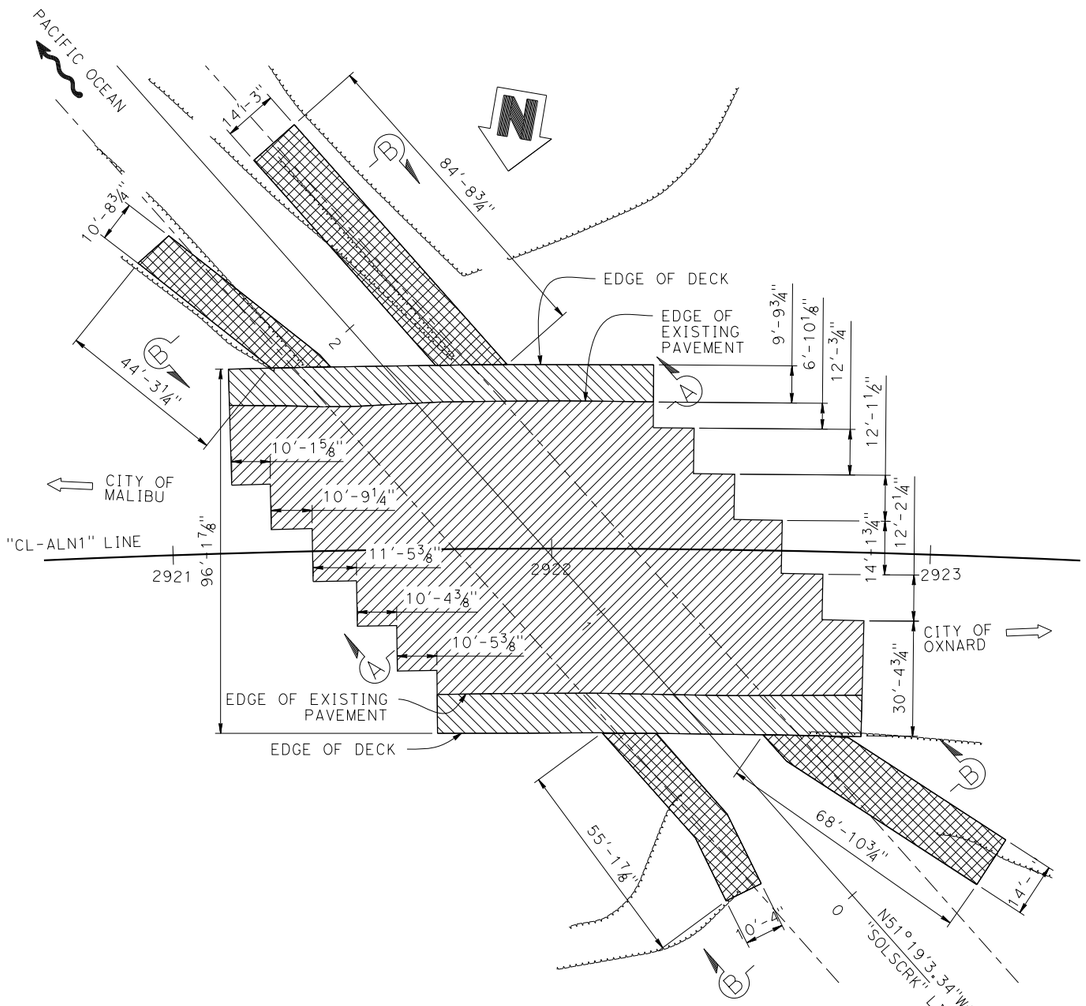
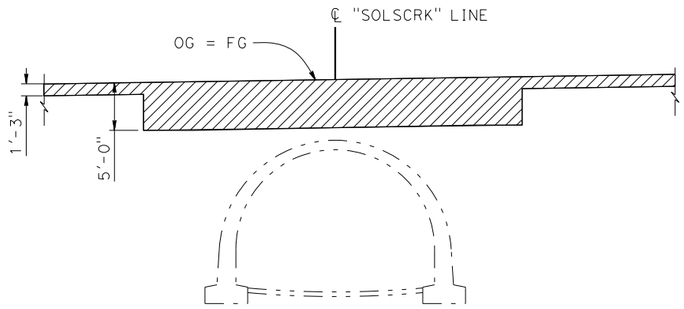
LEGEND:

Roadway Excavation (TPH), see "ROADWAY PLANS"

Roadway Excavation (Type Z-2 - ADL and TPH), see "ROADWAY PLANS"



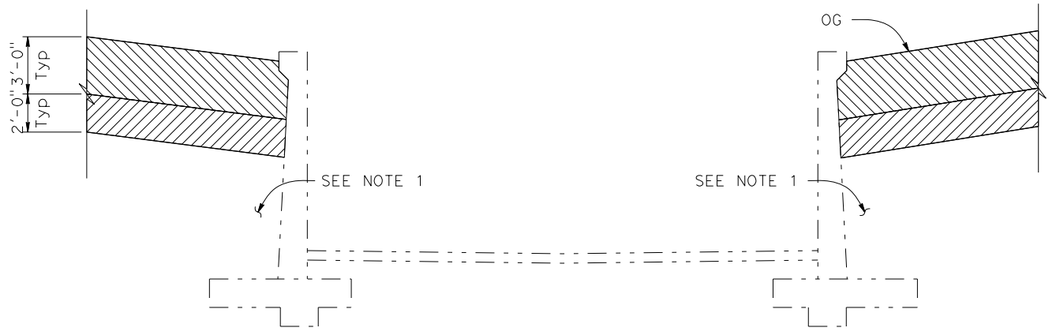
PLAN
1" = 10'



SECTION A-A
1" = 10'

NOTES:

1. Remaining excavation for Existing Wing Wall removal to be classified under "ROADWAY EXCAVATION", see "EXCAVATION LIMITS No.2" sheet.



SECTION B-B
¼" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT SIGN OFF DATE		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MELAD HANNA PROJECT ENGINEER	BRIDGE No. 53-3200 POST MILE 50.36	SOLSTICE CANYON CREEK BRIDGE EXCAVATION LIMITS No.1
		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN				
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN				

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4/5/21				5	45

NOTES:

1. Stage 4 excavation limit is the bottom of shotcrete elevation. See "ABUTMENT 1 LAYOUT", "ABUTMENT 2 LAYOUT", "ABUTMENT DETAILS No. 6", "ABUTMENT DETAILS No. 7", "ABUTMENT DETAILS No. 8", and "ABUTMENT DETAILS No. 9" sheets for bottom of shotcrete elevations.

LEGEND:

Roadway Excavation, see "ROADWAY PLANS"

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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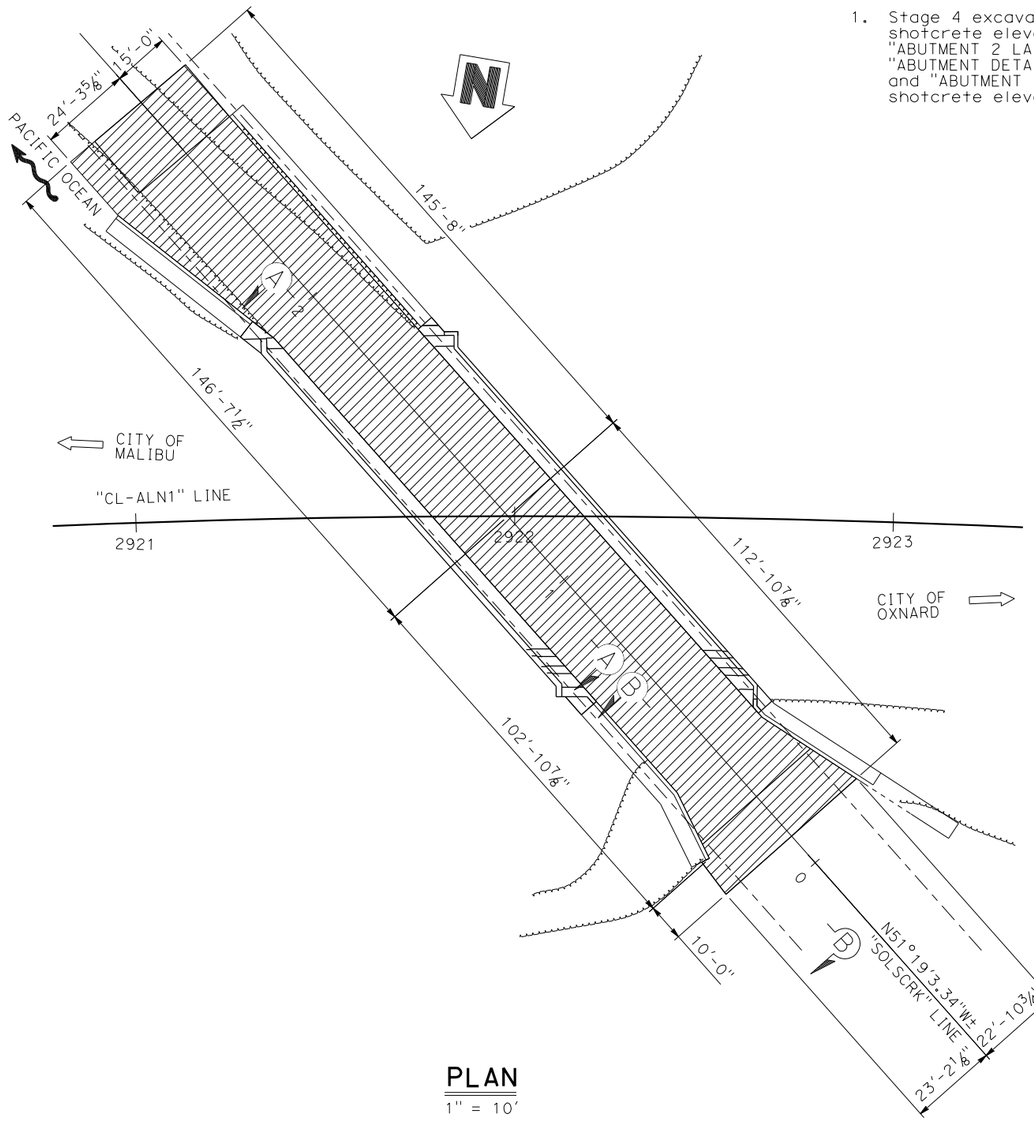
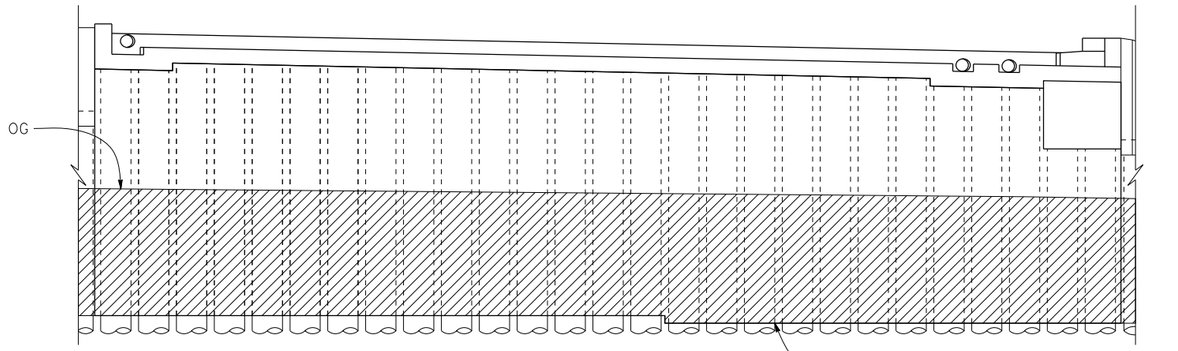
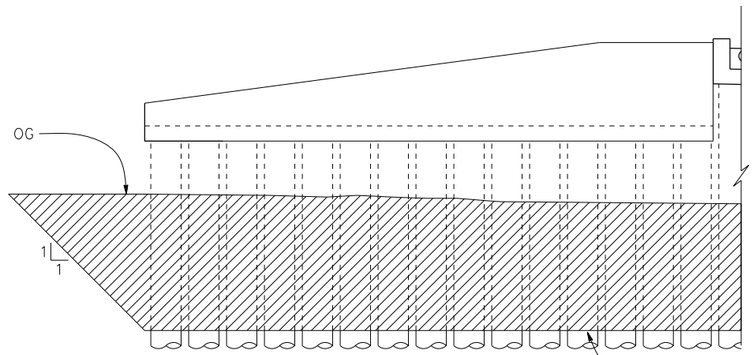


PLAN
1" = 10'



NOTE: ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

ELEVATION A-A
1" = 10'



NOTE: RETAINING WALL 1R SHOWN, OTHERS SIMILAR

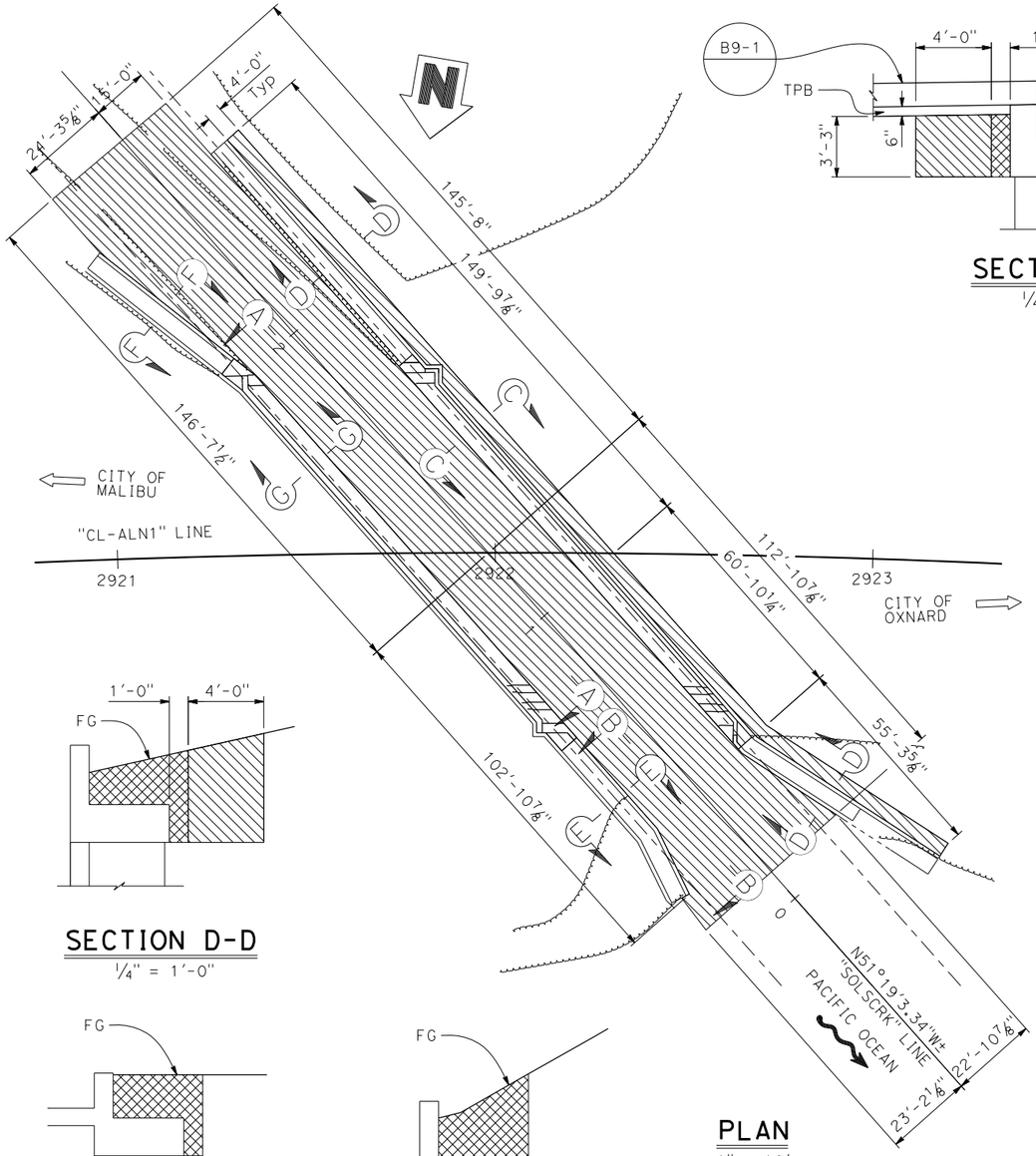
ELEVATION B-B
1" = 10'

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 — DESIGN OVERSIGHT	DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MELAD HANNA — PROJECT ENGINEER
SIGN OFF DATE	DETAILS	BY D. CUMMARO	CHECKED M. KANAAN		BRIDGE No. 53-3200
	QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN		POST MILE 50.36

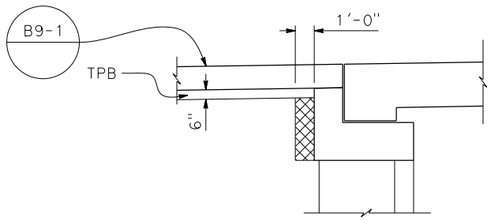
SOLSTICE CANYON CREEK BRIDGE
EXCAVATION LIMITS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)
DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:21 PM
FILE => ...\910_CAD\53-0030-b-eb02.dgn USERNAME => rob.ingram
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3
UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504
DISREGARD PRINTS BEARING EARLIER REVISION DATES →
REVISION DATES: 4/5/21
SHEET 6 OF 45



PLAN
1" = 10'

SECTION C-C
1/4" = 1'-0"



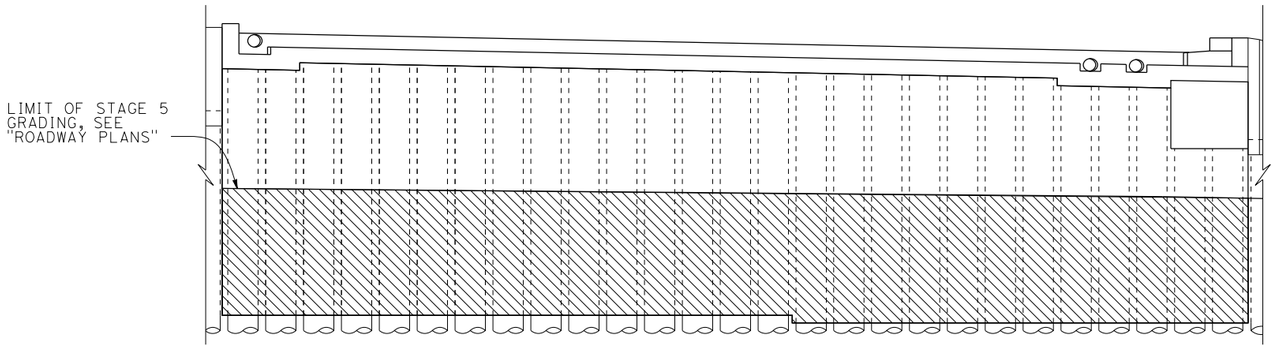
SECTION G-G
1/4" = 1'-0"

SECTION D-D
1/4" = 1'-0"

SECTION E-E
1/4" = 1'-0"

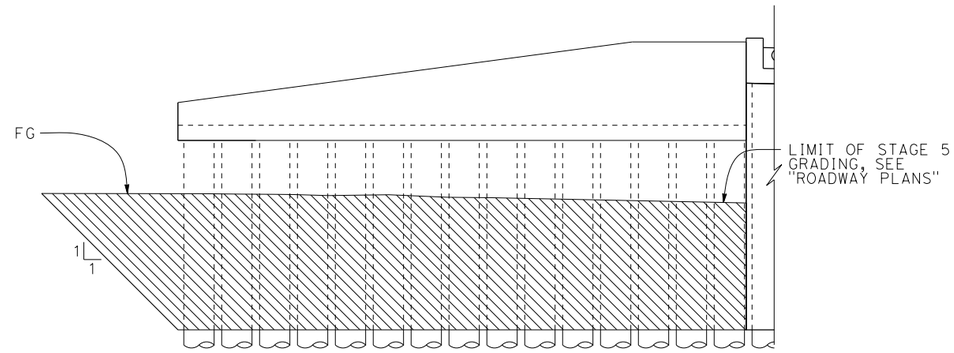
SECTION F-F
1/4" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



NOTE: ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

ELEVATION A-A
1" = 10'



NOTE: RETAINING WALL 1R SHOWN, OTHERS SIMILAR

ELEVATION B-B
1" = 10'

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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LEGEND:

Roadway Backfill, see "ROADWAY PLANS"
Structure Backfill

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

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MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
BACKFILL LIMITS

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:24 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 4/5/21

SHEET 7 OF 45

NOTES:

1. For "SECTION C-C", see "BRIDGE REMOVAL No. 2" sheet
2. For "SECTION D-D", see "BRIDGE REMOVAL No. 2" sheet
2. For "SECTION E-E", see "BRIDGE REMOVAL No. 2" sheet

LEGEND:

- Bridge Removal
- Existing Structure
- Direction of traffic
- Water Flow

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

REGISTERED CIVIL ENGINEER _____ DATE _____

MM/DD/YYYY
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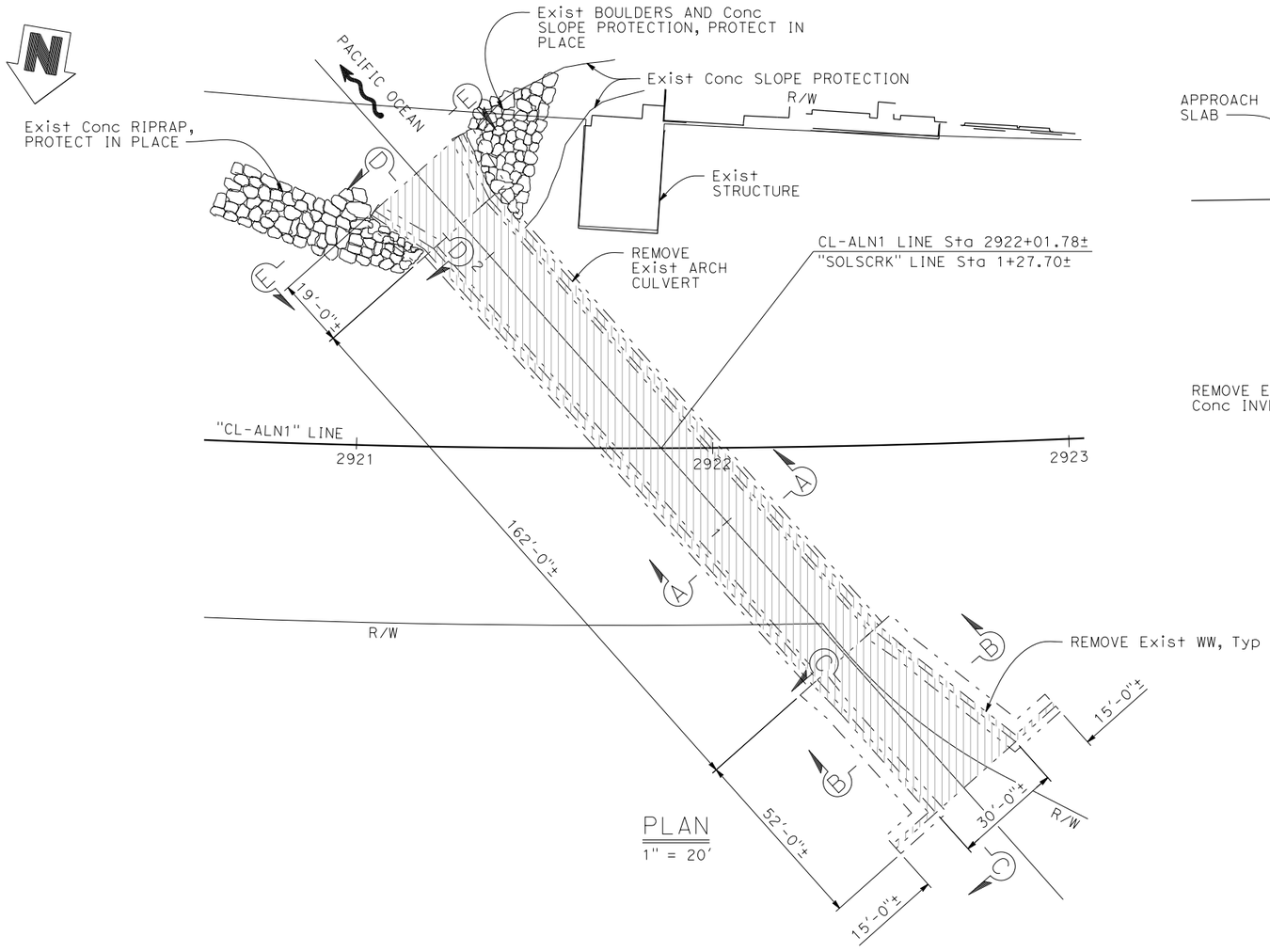
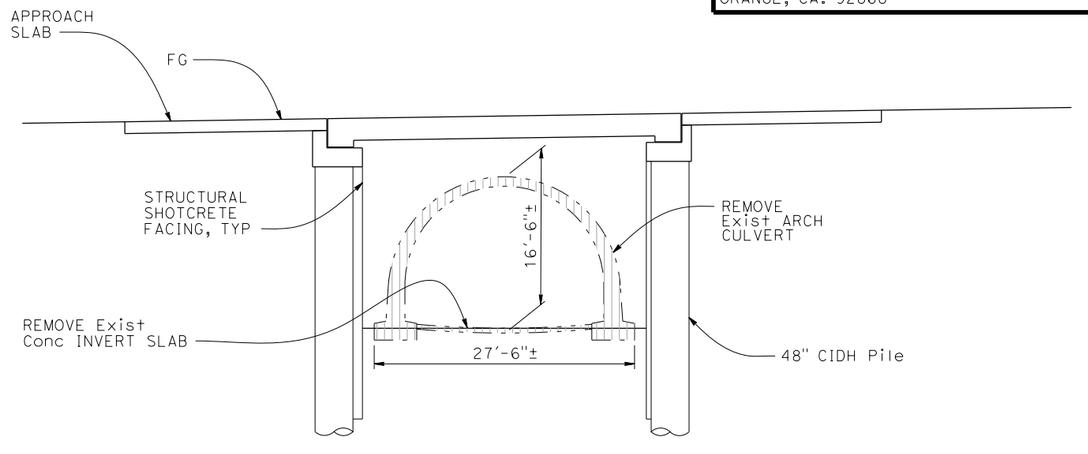
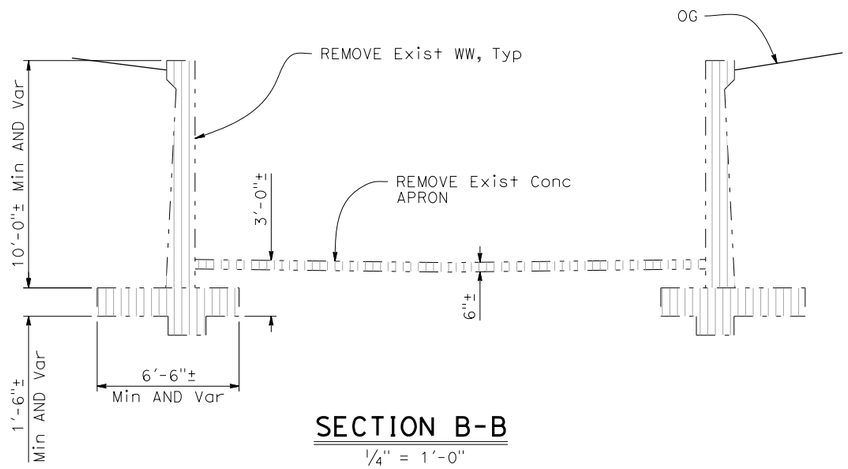


PLAN
1" = 20'



SECTION A-A
1/8" = 1'-0"



SECTION B-B
1/4" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

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MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
BRIDGE REMOVAL No.1

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
09/11/20	11/09/20	3/8/21	5/24/21	8	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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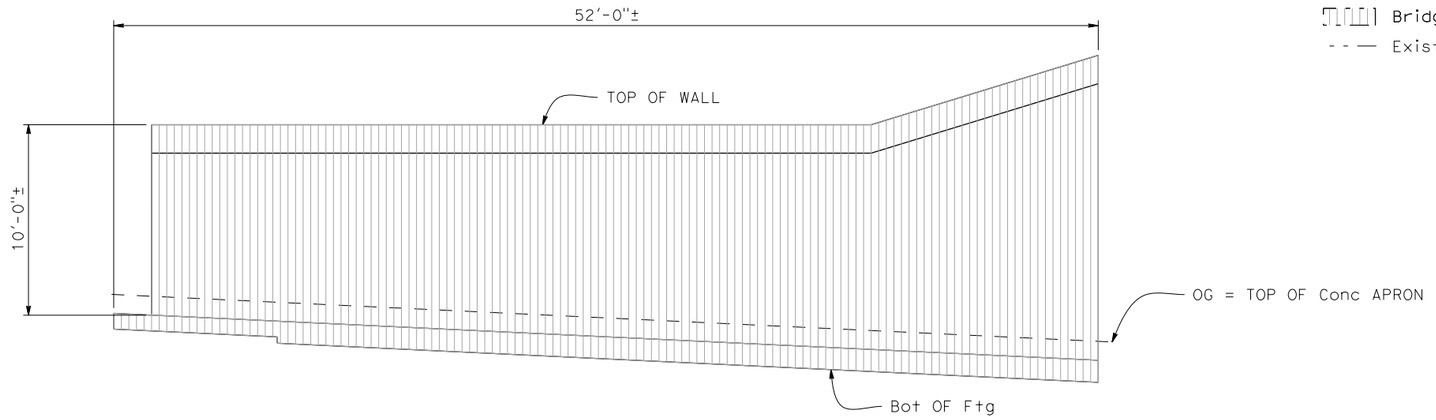
LEGEND:

Bridge Removal

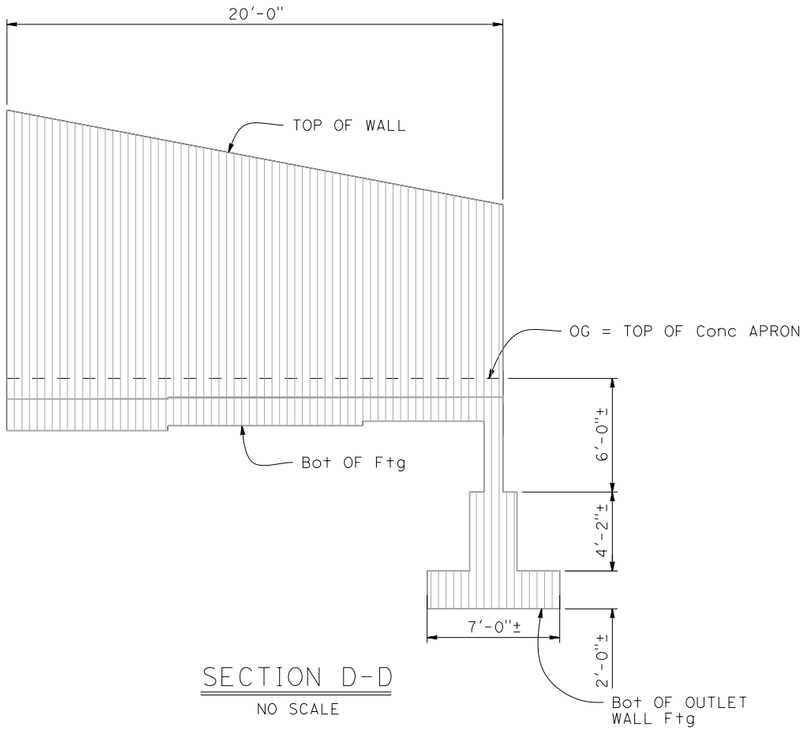
Existing Structure



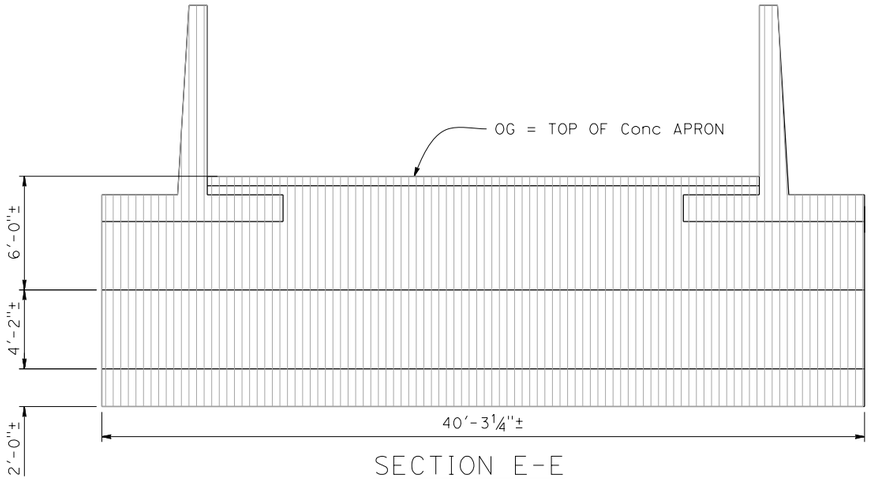
SECTION C-C
NO SCALE

NOTES:

1. For location of "SECTION C-C", see "BRIDGE REMOVAL No. 1" sheet
2. For location of "SECTION D-D", see "BRIDGE REMOVAL No. 1" sheet
2. For location of "SECTION E-E", see "BRIDGE REMOVAL No. 1" sheet



SECTION D-D
NO SCALE



SECTION E-E
NO SCALE

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT SIGN OFF DATE		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	**PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION**
		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
BRIDGE REMOVAL No.2

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
~~01/20/20~~	~~09/11/20~~	11/05/20		9	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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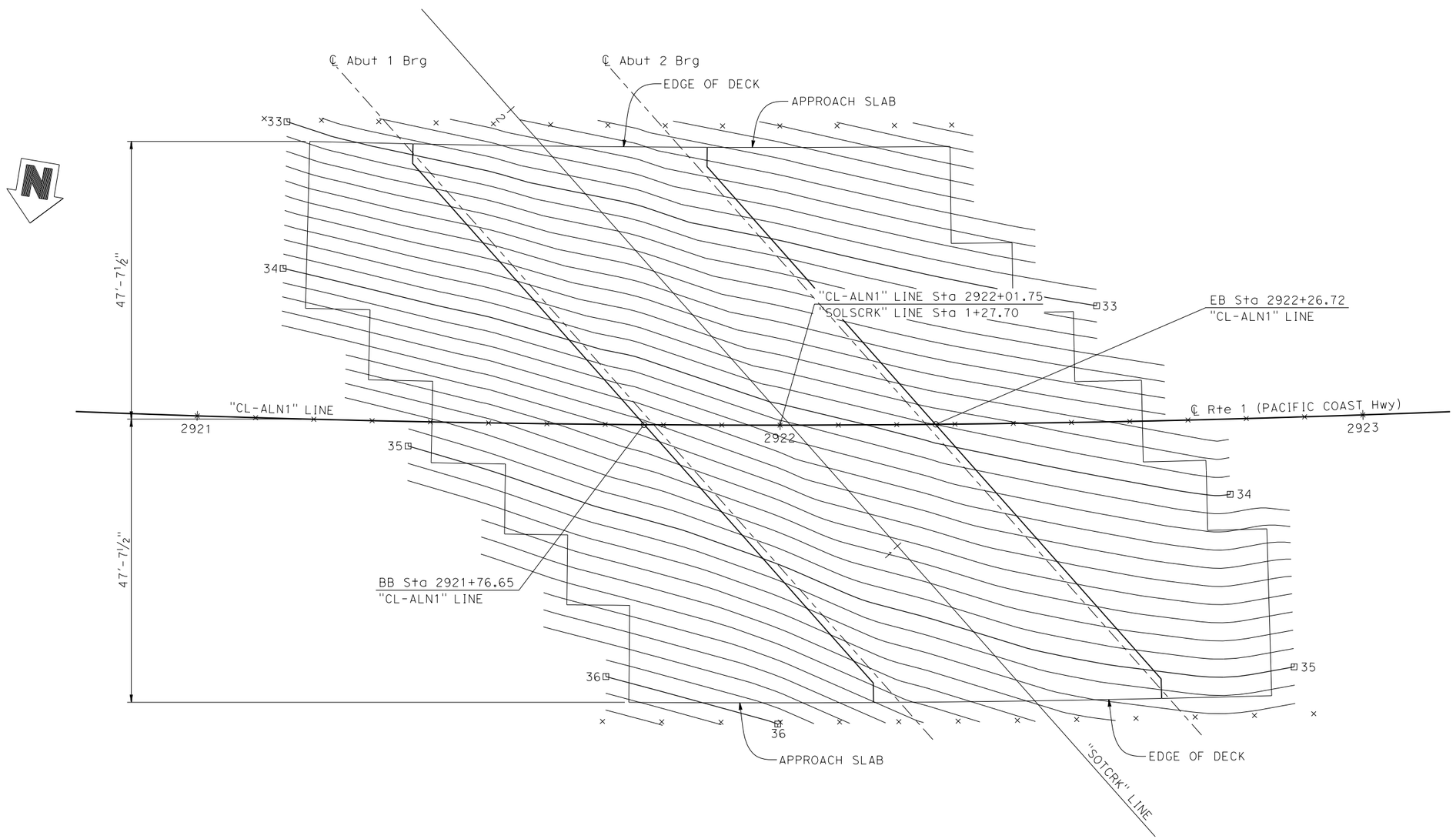

PLAN
1" = 10'

LEGEND:

X Indicates 10' interval measured along "CL-ALN1" Line.

☐ Indicates even foot contours.

NOTES:

1. Contour interval = 0.10'
2. Contours do not include camber.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
DECK CONTOURS

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01/20/20	09/14/20	11/05/20		10	45

SCOUR DATA TABLE

Support Location	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
Abut 1	13.5	0.0
Abut 2	13.5	0.0
WINGWALL ENTRANCE	16.6	11.1

HYDROLOGIC SUMMARY

SOLSTICE CANYON CREEK DRAINAGE AREA: 4.7 MI^2

	DESIGN FLOOD	BASE FLOOD	OVERTOPPING FLOOD
FLOOD FREQUENCY	50-YEAR	100-YEAR	>> 500-YEAR
DISCHARGE	2650 cfs	3360 cfs	--
WATER SURFACE ELEVATION AT BRIDGE	22.3 ft	22.7 ft	--

NOTES: 1) Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
DDD	CCCC	RRRR	PPPP	????	#####

REGISTERED CIVIL ENGINEER _____ DATE _____

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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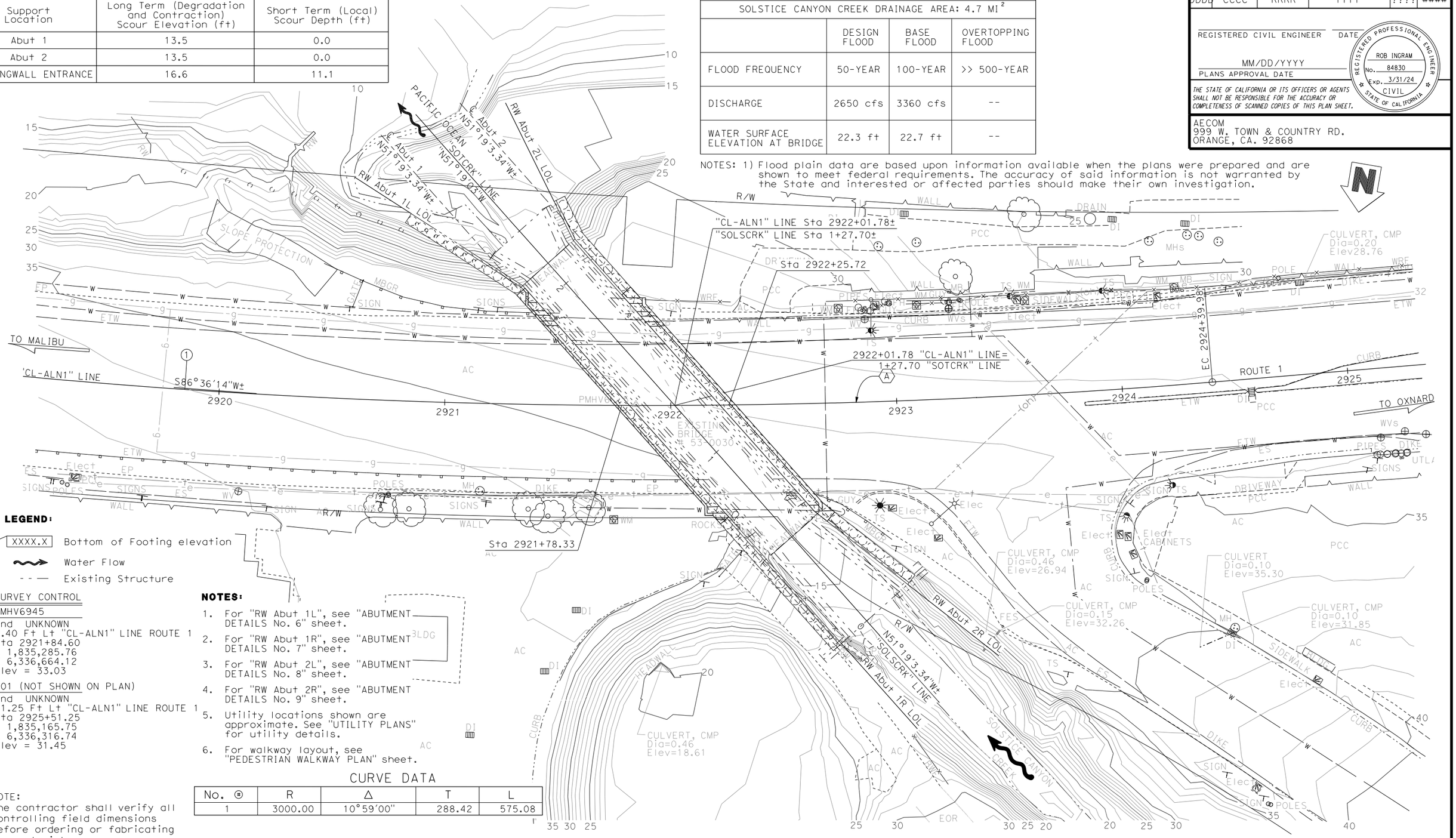


LEGEND:

XXXX.X — Bottom of Footing elevation

Water Flow

Existing Structure

SURVEY CONTROL

PMHV6945
Fnd UNKNOWN
0.40 Ft Lt "CL-ALN1" LINE ROUTE 1
Sta 2921+84.60
N 1,835,285.76
E 6,336,664.12
Elev = 33.03

401 (NOT SHOWN ON PLAN)
Fnd UNKNOWN
41.25 Ft Lt "CL-ALN1" LINE ROUTE 1
Sta 2925+51.25
N 1,835,165.75
E 6,336,316.74
Elev = 31.45

NOTES:

1. For "RW Abut 1L", see "ABUTMENT DETAILS No. 6" sheet.
2. For "RW Abut 1R", see "ABUTMENT DETAILS No. 7" sheet.
3. For "RW Abut 2L", see "ABUTMENT DETAILS No. 8" sheet.
4. For "RW Abut 2R", see "ABUTMENT DETAILS No. 9" sheet.
5. Utility locations shown are approximate. See "UTILITY PLANS" for utility details.
6. For walkway layout, see "PEDESTRIAN WALKWAY PLAN" sheet.

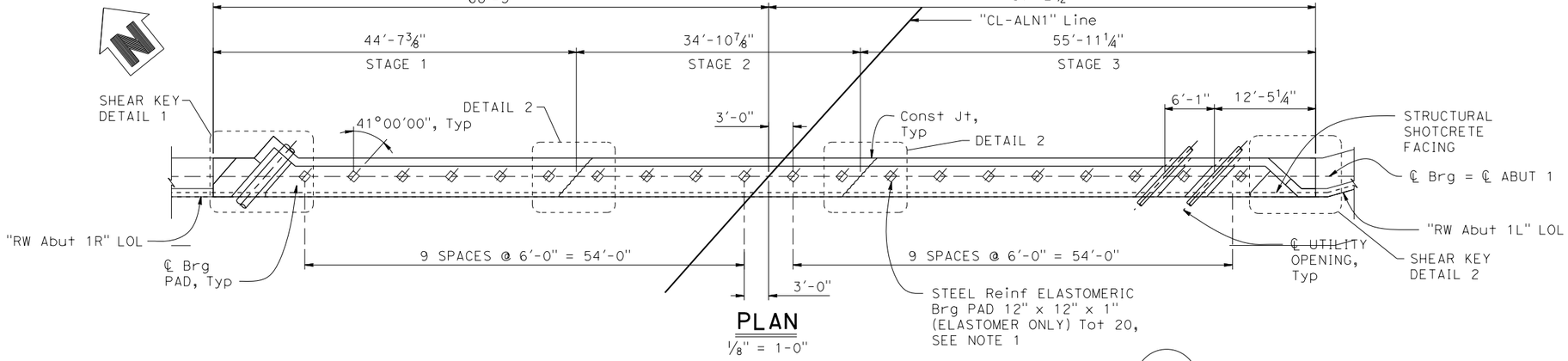
CURVE DATA

No. ⑪	R	Δ	T	L
1	3000.00	10°59'00"	288.42	575.08

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

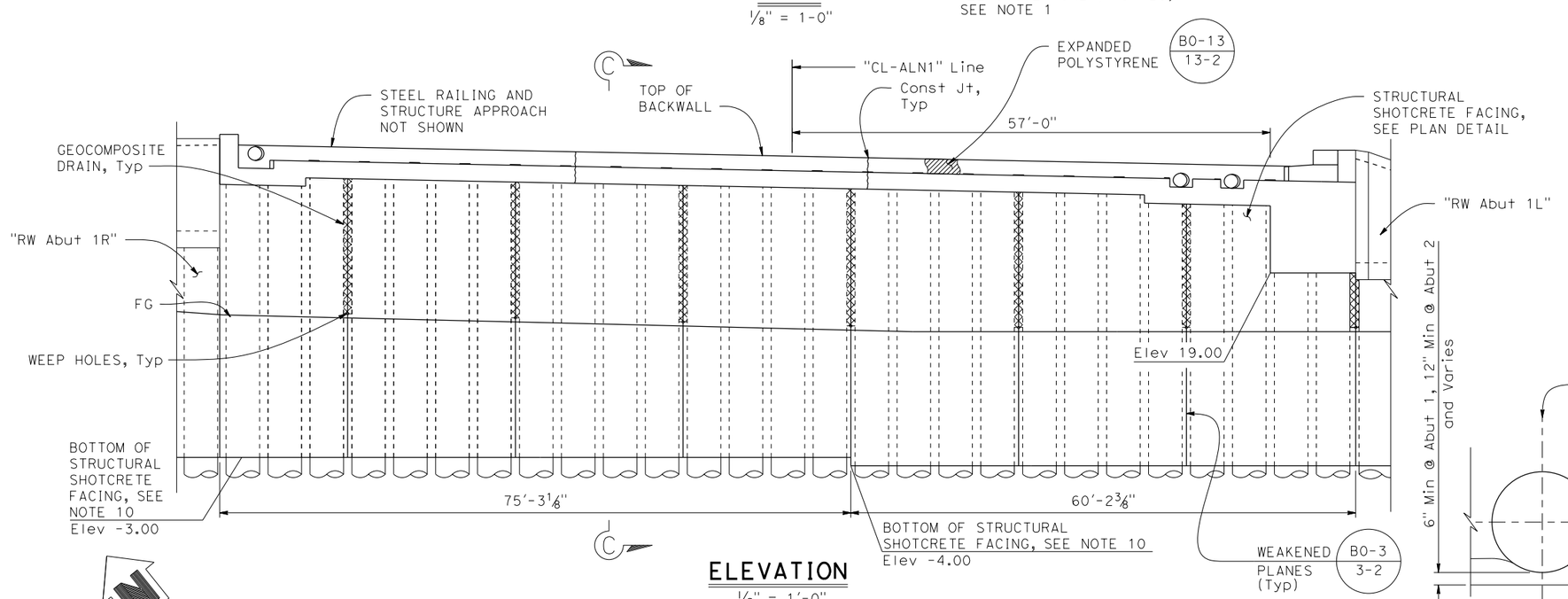
X DESIGN OVERSIGHT X SIGN OFF DATE	SCALE: 1" = 20'	VERT.DATUM NAVD88	HORZ.DATUM NAD83 (1991.35)	DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	X MELAD HANNA PROJECT ENGINEER	BRIDGE No. 53-3200	SOLSTICE CANYON CREEK BRIDGE
	PHOTOGRAMMETRY AS OF: X	ALIGNMENT TIES: X		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN			POST MILE 50.36	FOUNDATION PLAN
	SURVEYED	BY DISTRICT	DRAFTED	BY T. ZOLNIKOV	QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN			
	FIELD CHECKED	BY E. GONZALES/H. PEREZ	CHECKED	BY C. FASSETT						

FOUNDATION PLAN SHEET (ENGLISH) (REVISION 4/19/2018)	X GEOTECHNICAL PROFESSIONAL	X APPROVAL DATE	DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:29 PM FILE => ...\910_CAD\53-0030-d-fpb.dgn\SERNAME => rob.ingram	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3646 PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-31350	DISREGARD PRINTS BEARING EARLIER REVISION DATES → REVISION DATES 11/05/20 12/11/20 4/6/21 5/24/21	SHEET 11	OF 45



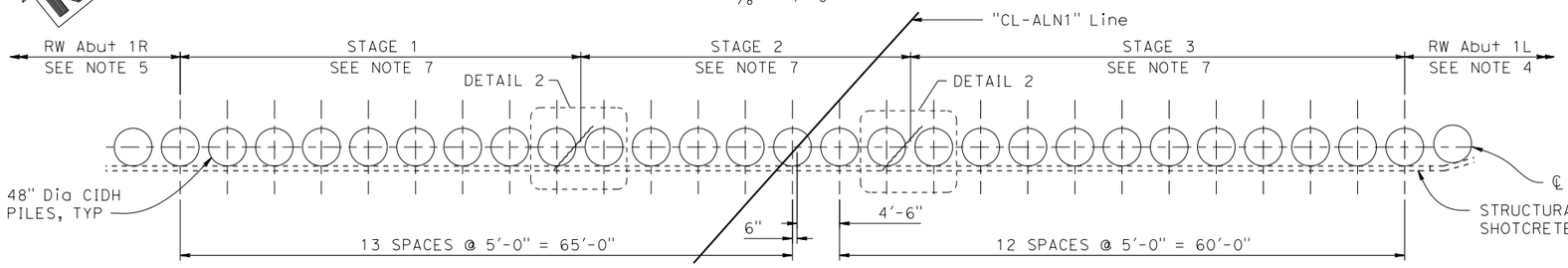
PLAN

⅛" = 1'-0"



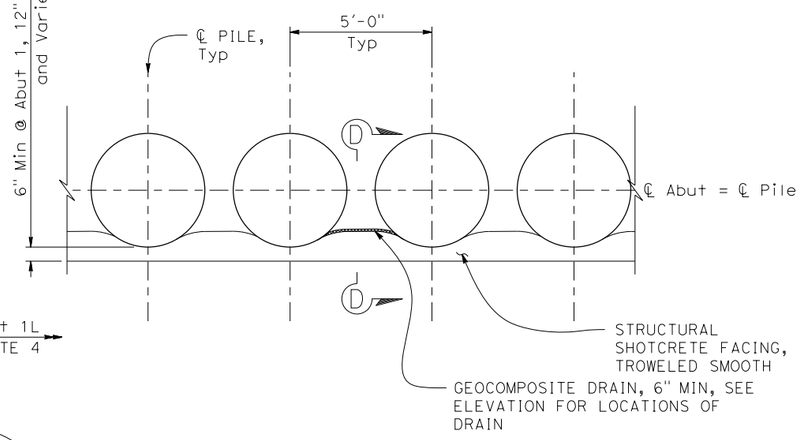
ELEVATION

⅛" = 1'-0"



ABUTMENT 1 CIDH PILE LAYOUT

⅛" = 1'-0"



PLAN DETAIL

½" = 1'-0"

NOTES:

1. For "SECTION C-C" AND "BEARING PAD DETAIL", see "ABUTMENT DETAILS No. 1" sheet.
2. For "SHEAR KEY DETAIL 1", see "ABUTMENT DETAILS No. 2" sheet.
3. For "SHEAR KEY DETAIL 2", see "ABUTMENT DETAILS No. 3" sheet.
4. For "RW Abut 1L" details, see "ABUTMENT DETAILS No. 6" sheet.
5. For "RW Abut 1R" details, see "ABUTMENT DETAILS No. 7" sheet.
6. For "DETAIL 2" details, see "ABUTMENT 2 LAYOUT" sheet.
7. Piles must be installed in the indicated stage.
8. For staged construction information not shown, see "STAGED CONSTRUCTION No. 1" sheet.
9. For "SECTION D-D", see "ABUTMENT DETAILS No. 2" sheet.
10. Bottom of structural shotcrete facing is the limit of stage 4 excavation.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT 1 LAYOUT

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES			
07/20/20	09/17/20	11/05/20	4/5/21

SHEET 12 OF 45

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

REGISTERED CIVIL ENGINEER — DATE

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REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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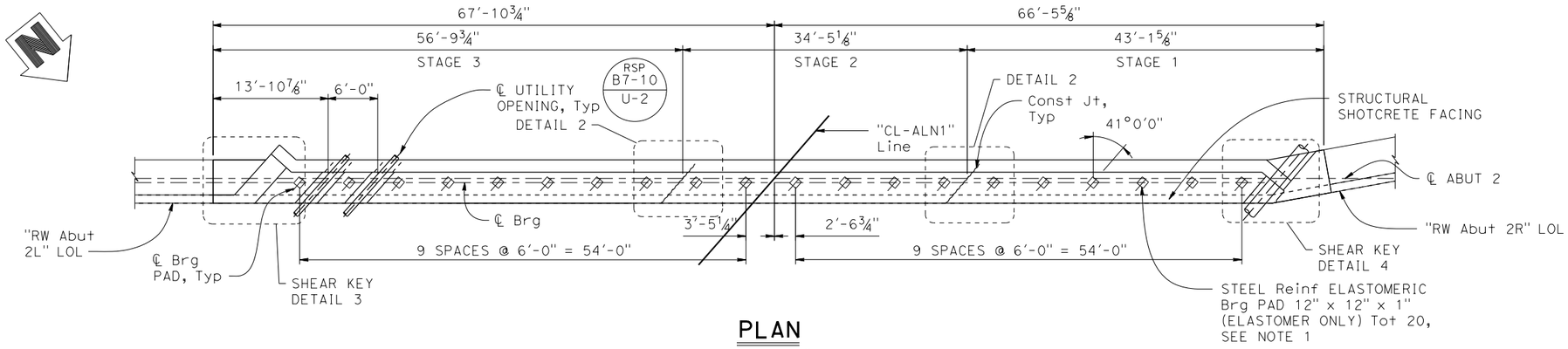
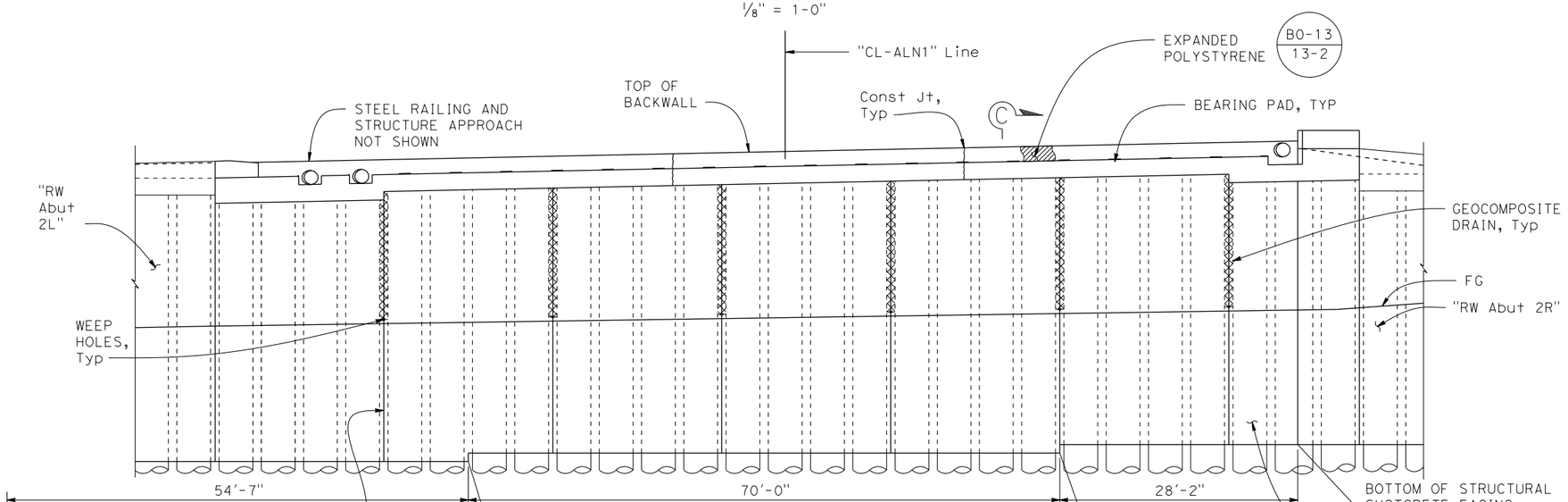
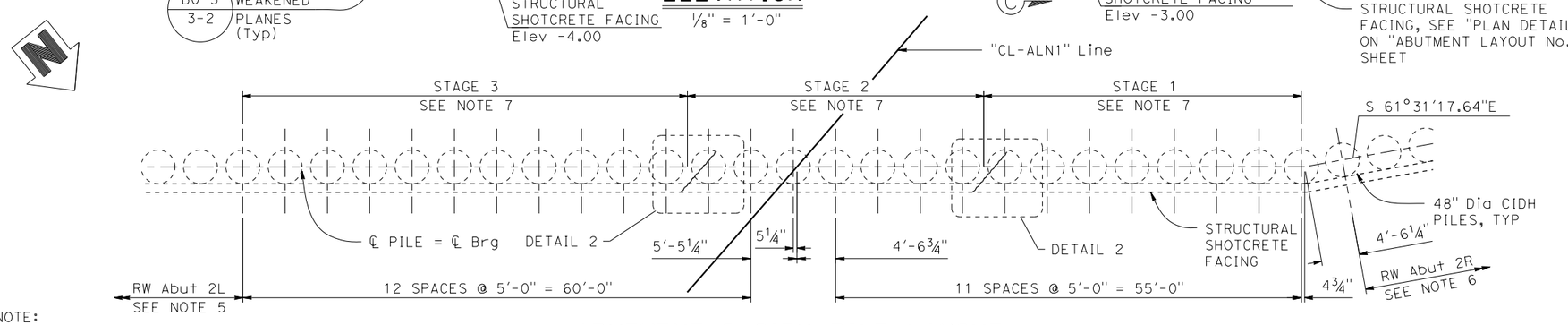


PLAN
⅛" = 1'-0"



ELEVATION
⅛" = 1'-0"

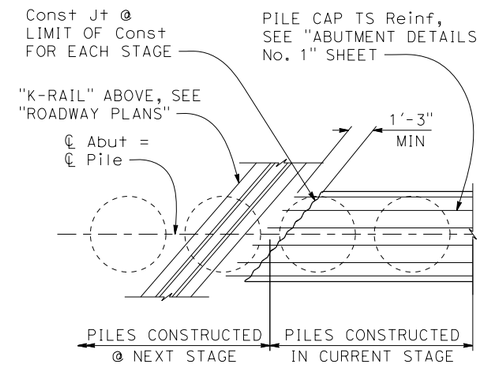


NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

ABUTMENT 2 CIDH PILE LAYOUT
⅛" = 1'-0"

NOTES:

1. For "BEARING PAD DETAIL", see "ABUTMENT DETAILS No. 1" sheet.
2. For "SHEAR KEY DETAIL 3", see "ABUTMENT DETAILS No. 4" sheet.
3. For "SHEAR KEY DETAIL 4", see "ABUTMENT DETAILS No. 5" sheet.
4. For shotcrete "PLAN DETAIL", see "ABUTMENT LAYOUT No.1"
5. For "RW Abut 2L" details, see "ABUTMENT DETAILS No. 8" sheet.
6. For "RW Abut 2R" details, see "ABUTMENT DETAILS No. 8" sheet.
7. Piles must be installed in the indicated stage.
8. For staging information not shown, see "STAGED CONSTRUCTION No. 1" sheet.
9. Bottom of structural shotcrete facing is the limit of stage 4 excavation.



DETAIL 2
¼" = 1'-0"

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT		DESIGN	R. INGRAM	M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	D. CUMMARO	M. KANAAN	
		QUANTITIES	D. CUMMARO	M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT 2 LAYOUT

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
09/21/20	11/05/20	12/04/20	4/5/21	13	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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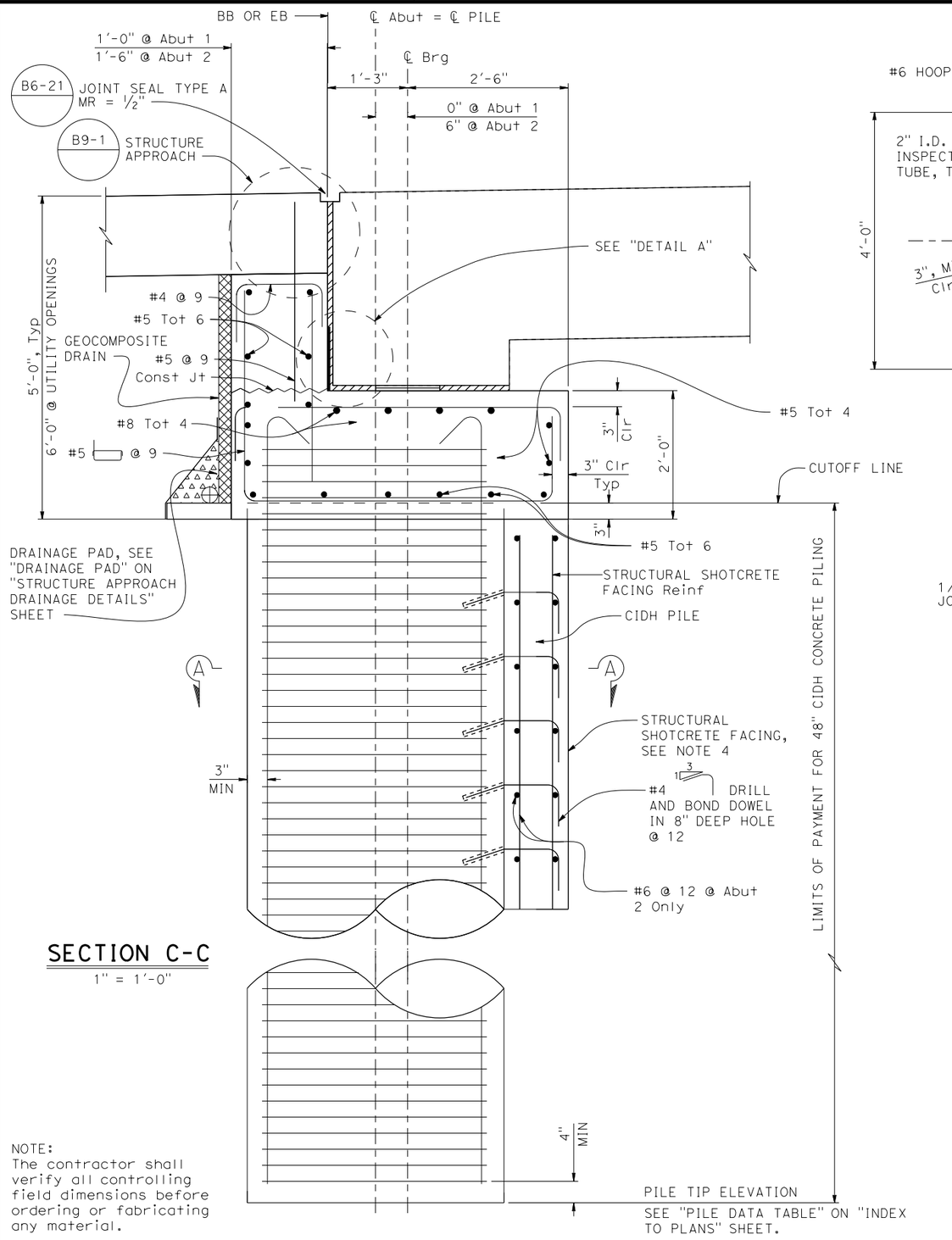
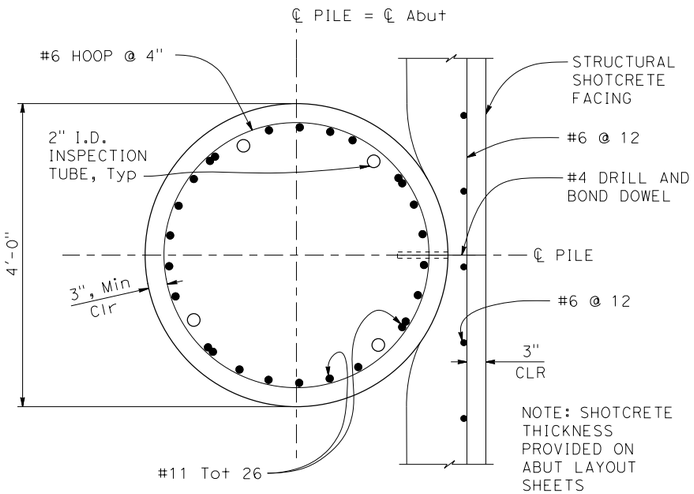
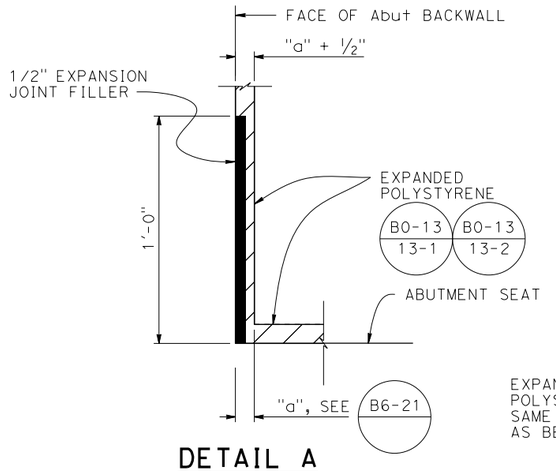


SECTION C-C
1" = 1'-0"

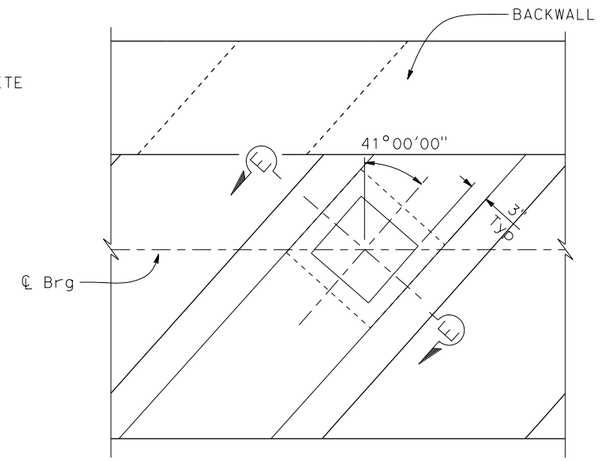
NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



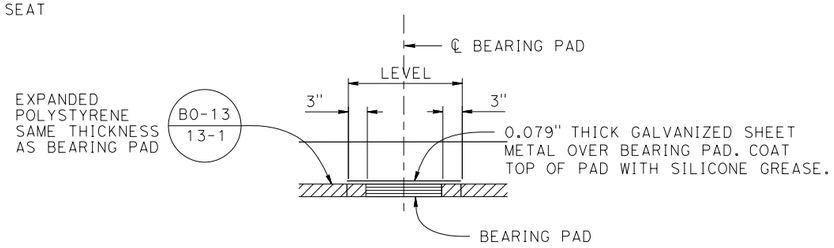
SECTION A-A
1" = 1'-0"



DETAIL A
NO SCALE



BEARING PAD DETAIL
½" = 1'-0"



SECTION E-E
1" = 1'-0"

NOTES:

1. For location of "Section C-C", see "ABUTMENT 1 LAYOUT" AND "ABUTMENT 2 LAYOUT" sheets.
2. For "CIDH PILE LAYOUT", see "ABUTMENT 1 LAYOUT" AND "ABUTMENT 2 LAYOUT" sheets.
3. For "END DIAPHRAGM DETAIL", see "ABUTMENT DETAILS No. 2" sheet.
4. For limits of structural shotcrete facing, see "ABUTMENT LAYOUT No.1" and "ABUTMENT LAYOUT No. 2" sheets.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 1

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
09/11/20	11/05/20	12/04/20	4/5/21	14	45

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

REGISTERED CIVIL ENGINEER — DATE

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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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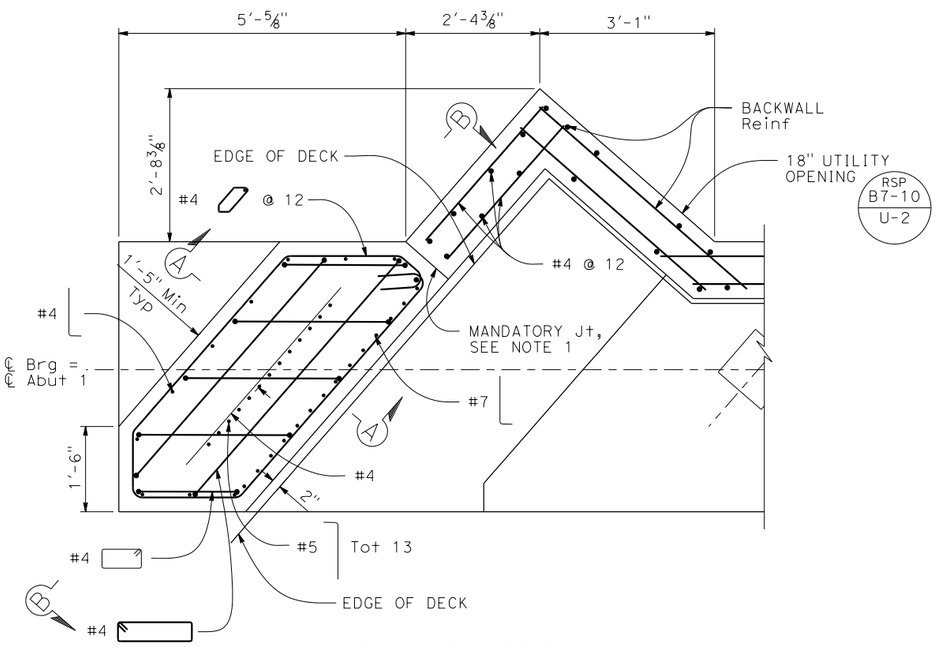
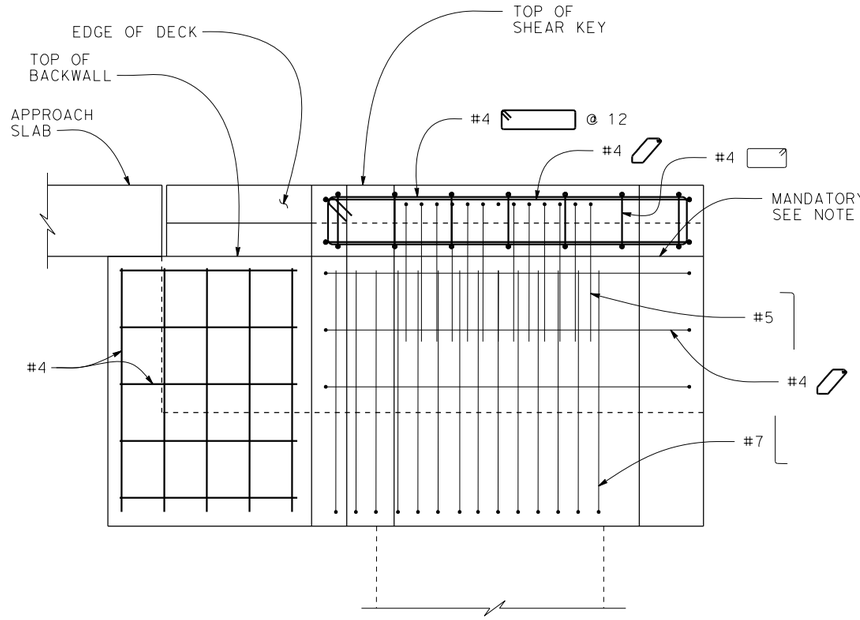


SHEAR KEY DETAIL 1

3/4" = 1'-0"

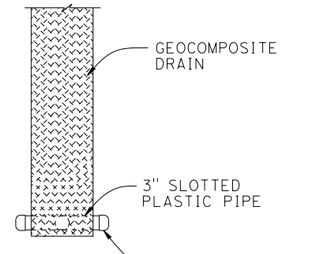


SECTION B-B

3/4" = 1'-0"

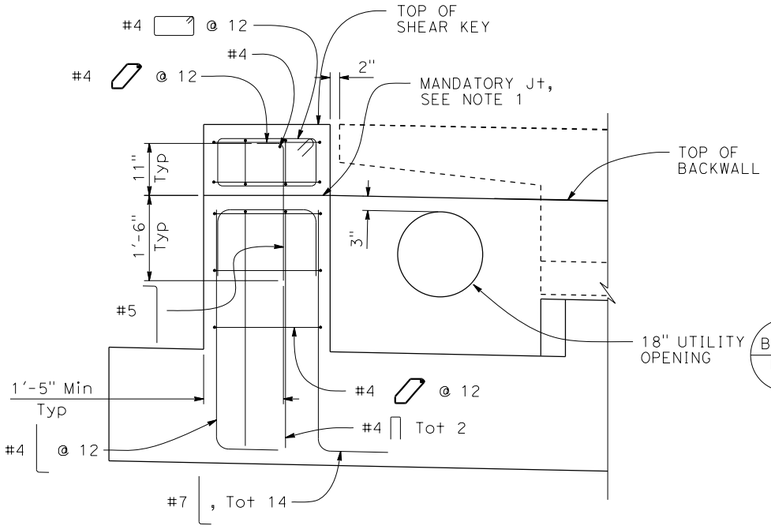
NOTES:

1. Mandatory joint surface with stem wall and backwall shall be trowel-finished smooth and lined with 15 pound Construction Paper.
2. For location of "SECTION D-D", see "ABUTMENT 1 LAYOUT" sheet.



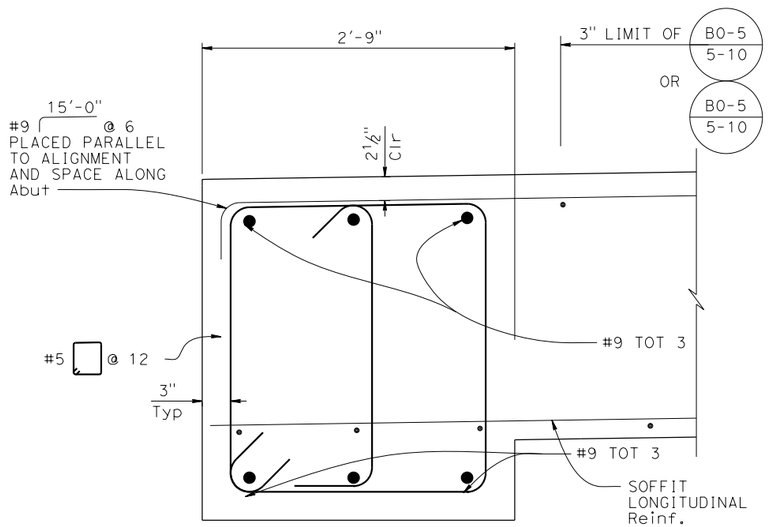
SECTION E-E

3/4" = 1'-0"



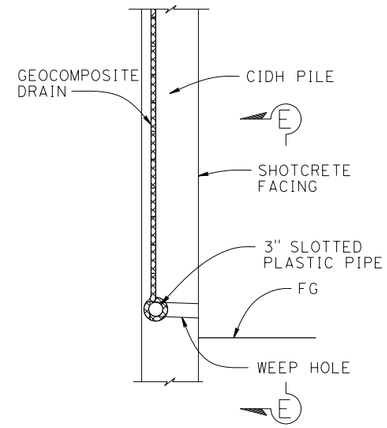
SECTION A-A

3/4" = 1'-0"



END DIAPHRAGM DETAIL

1 1/2" = 1'-0"



SECTION D-D

3/4" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No.	53-3200
POST MILE	50.36

SOLSTICE CANYON CREEK BRIDGE

ABUTMENT DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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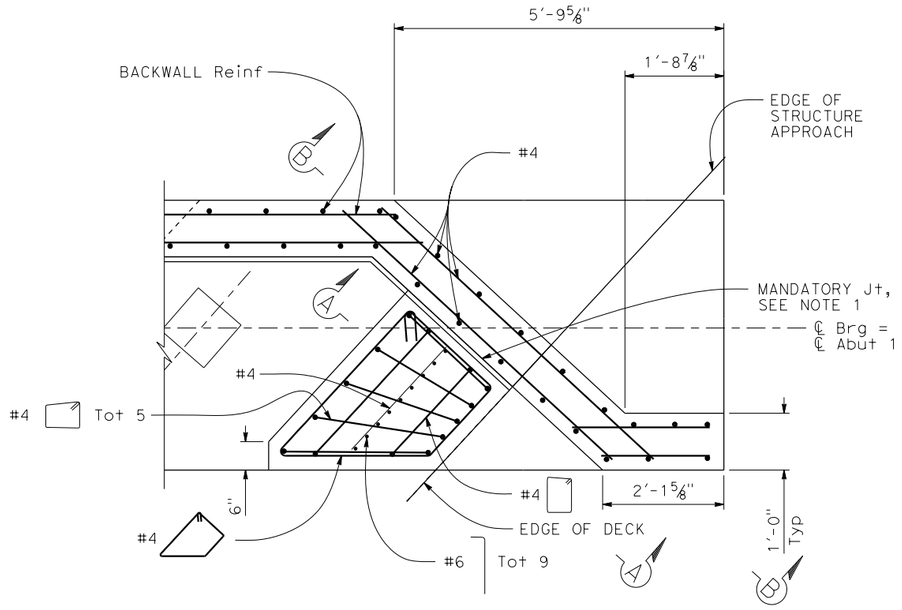
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

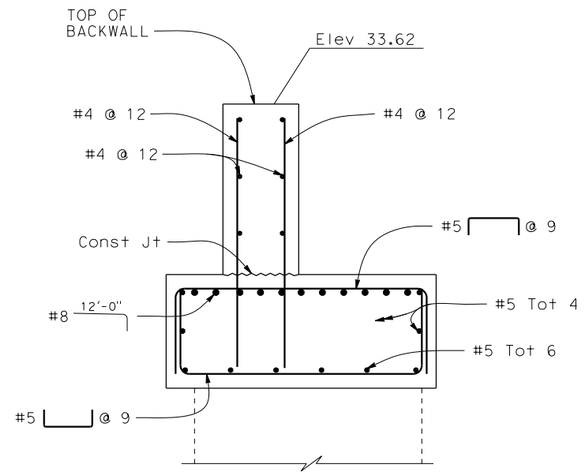
REVISION DATES				
01/20/20	09/17/20	11/05/20	4/5/21	

SHEET	OF
15	45



SHEAR KEY DETAIL 2

¾" = 1'-0"

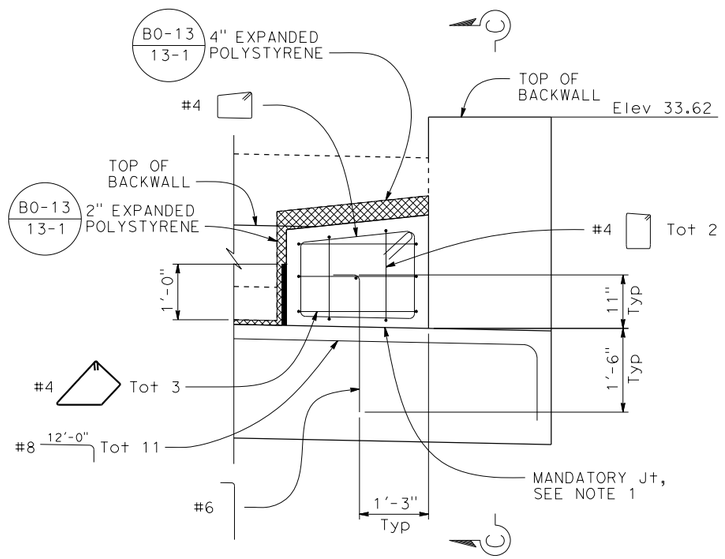


SECTION C-C

¾" = 1'-0"

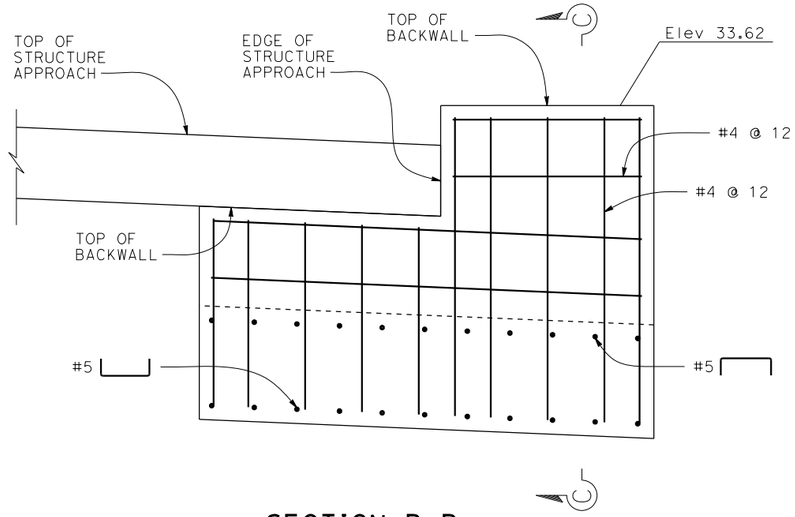
NOTES:

1. Mandatory joint surface with stem wall and backwall shall be trowel-finished smooth and lined with 15 pound Construction Paper.



SECTION A-A

¾" = 1'-0"



SECTION B-B

¾" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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ORANGE, CA. 92868

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:39 PM
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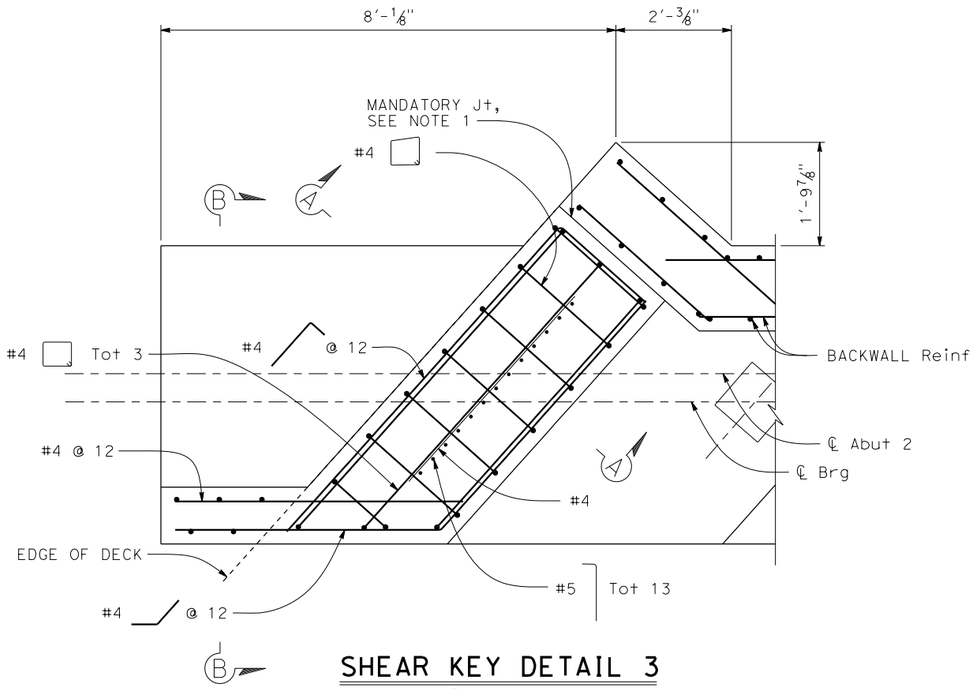
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

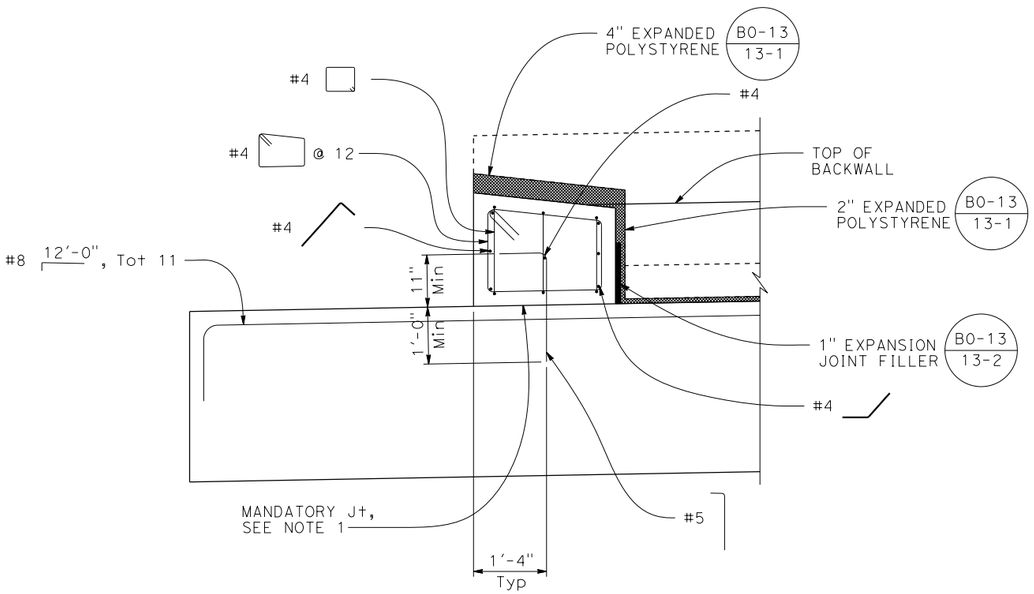
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
07/20/20	09/17/20	11/05/20	4/5/21	16	45



SHEAR KEY DETAIL 3

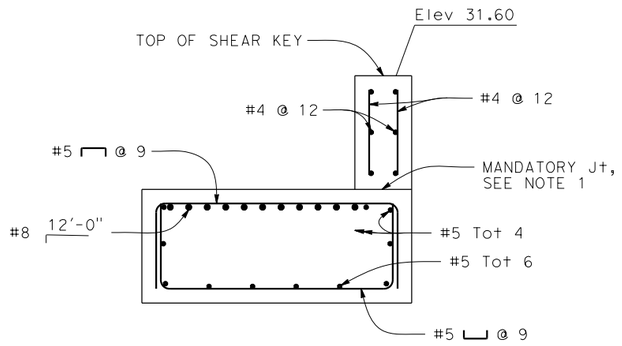
¾" = 1'-0"



SECTION A-A

¾" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.



SECTION B-B

¾" = 1'-0"

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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ORANGE, CA. 92868

NOTES:

1. Mandatory joint surface with stem wall and backwall shall be trowel-finished smooth and lined with 15 pound Construction Paper.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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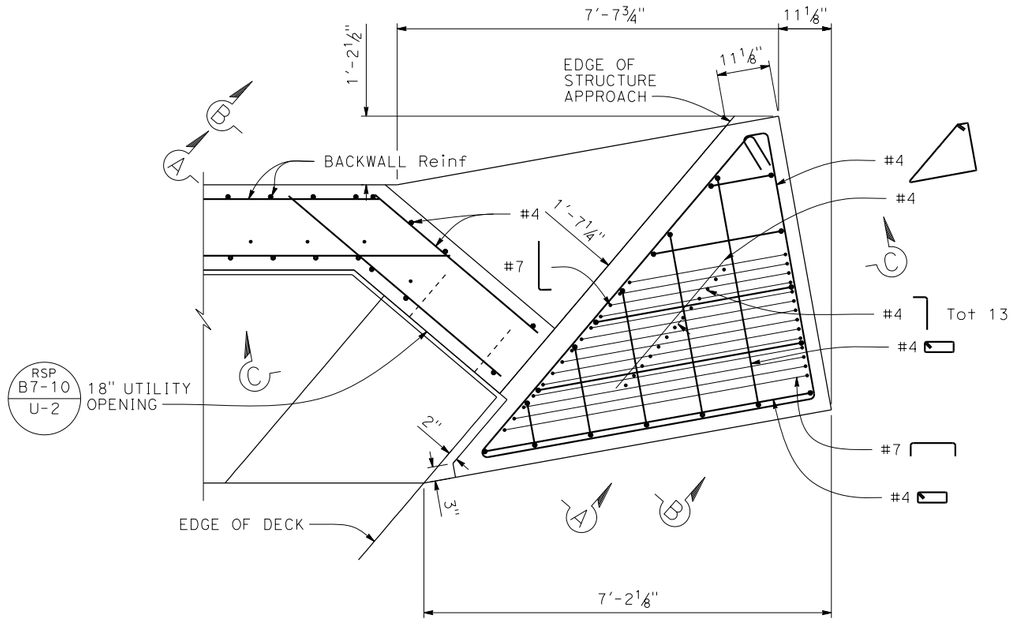
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

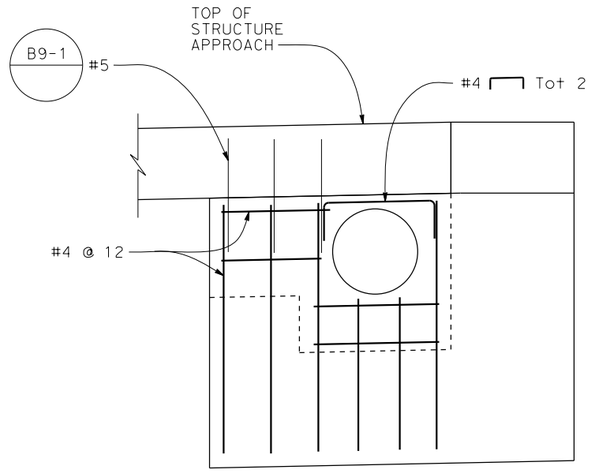
REVISION DATES: 07/20/20 | 09/17/20 | 11/05/20 | 4/5/21

SHEET 17 OF 45



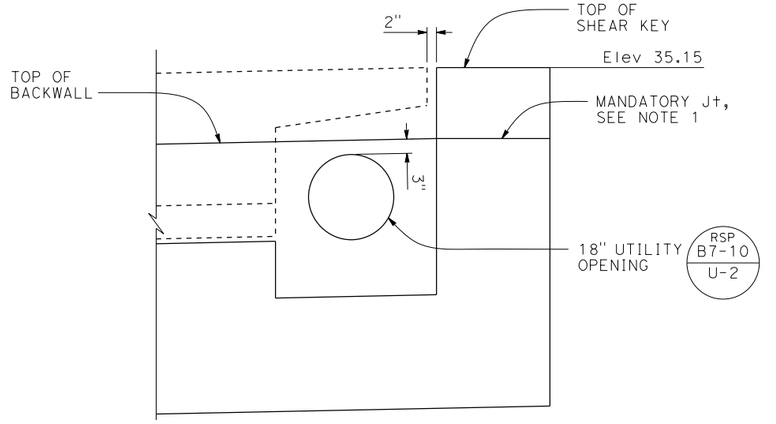
SHEAR KEY DETAIL 4

¾" = 1'-0"



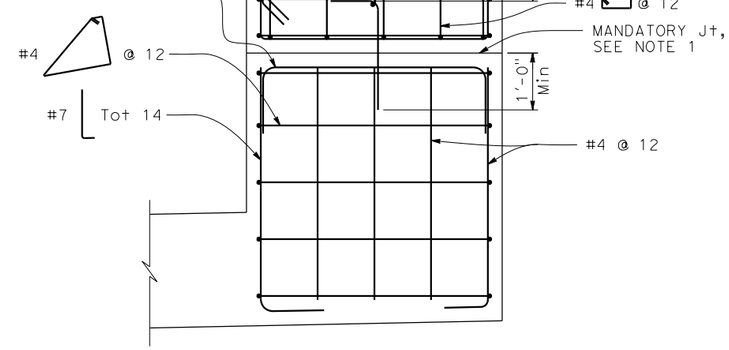
SECTION B-B

¾" = 1'-0"



SECTION A-A

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

NOTES:

1. Mandatory joint surface with stem wall and backwall shall be trowel-finished smooth and lined with 15 pound Construction Paper.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01/20/20	09/17/20	11/05/20	4/5/21	18	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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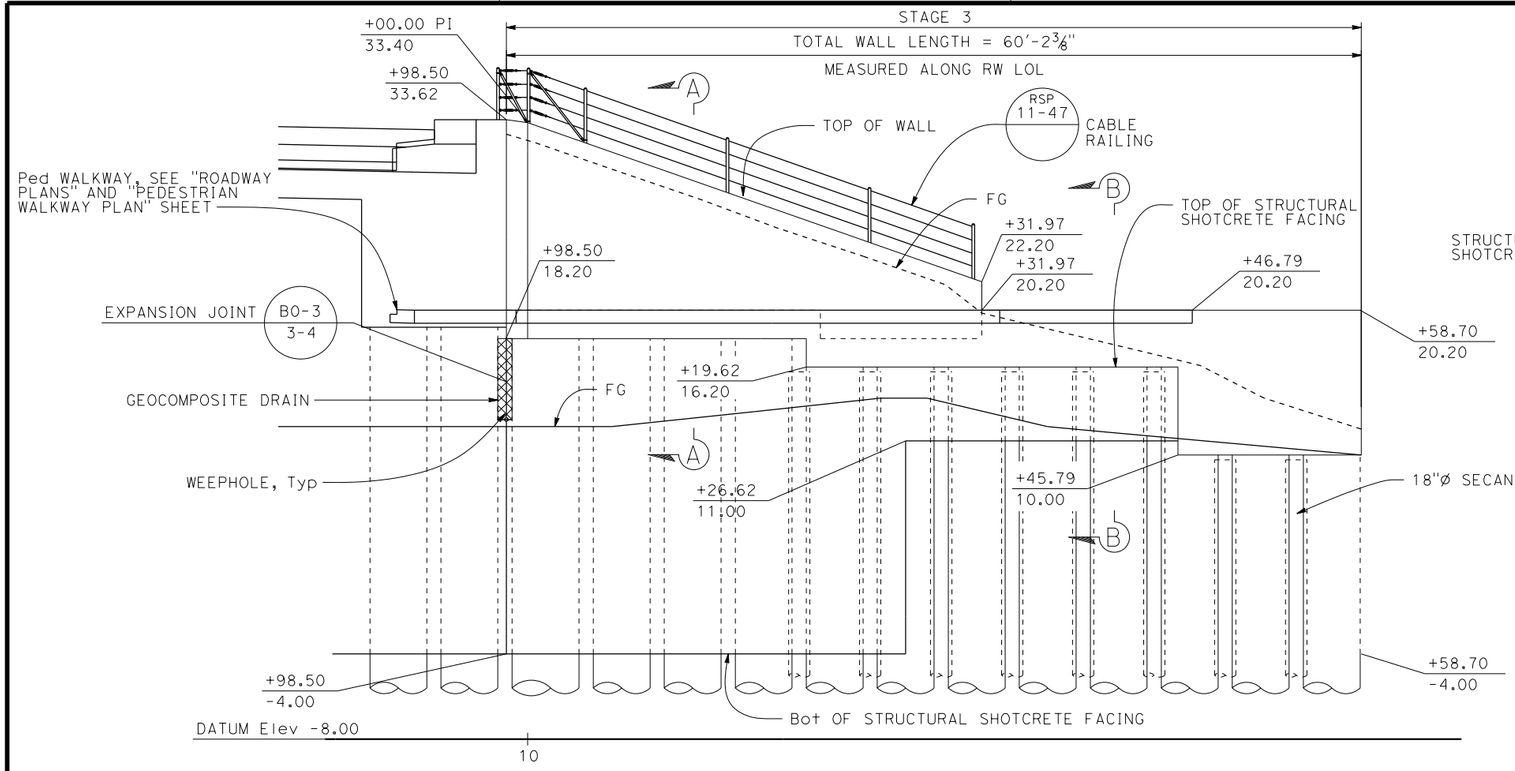
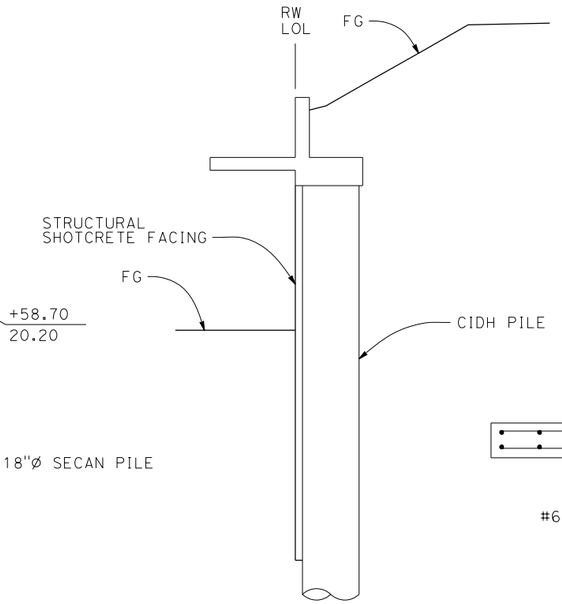
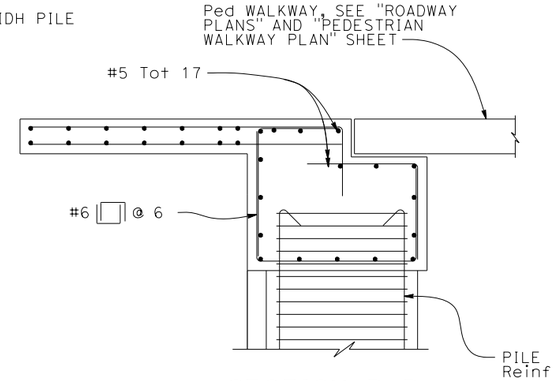




TYPICAL SECTION

NO SCALE



SECTION B-B

1/2" = 1'-0"

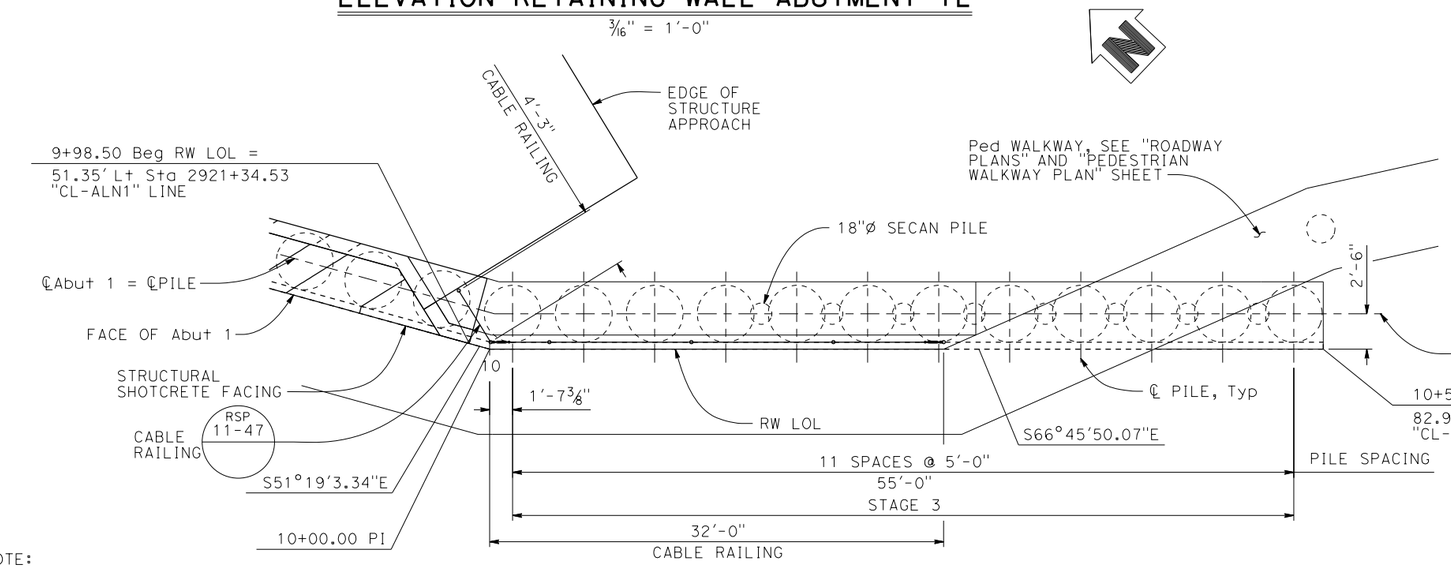
NOTE: FOR Reinf NOT SHOWN, SEE "SECTION A-A"

NOTES:

1. For CIDH PILE reinforcement details, see "SECTION D-D" on "ABUTMENT DETAILS No. 1" sheet.
2. For GEOCOMPOSITE DRAIN details, see "STRUCTURE APPROACH DRAIINAGE DETAILS" sheet, and "PLAN DETAIL" on "ABUTMENT 1 LAYOUT" sheet.
3. For STRUCTURAL SHOTCRETE FACING details, see "SECTION C-C" on "ABUTMENT DETAILS No. 1" sheet.
4. Piles must be installed, and the cap constructed, in the stage indicated.

ELEVATION RETAINING WALL ABUTMENT 1L

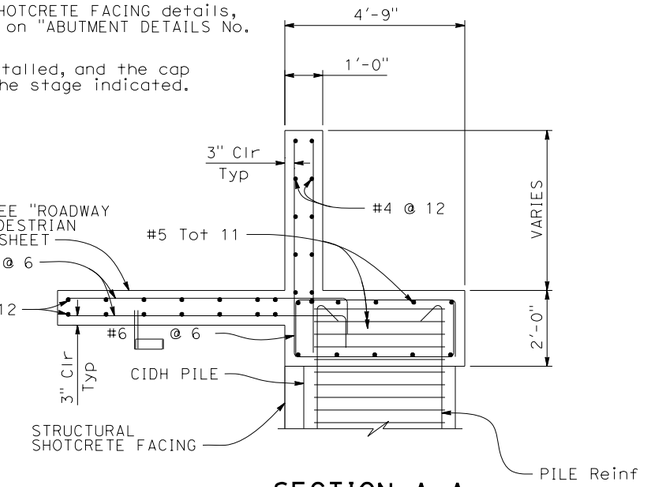
3/16" = 1'-0"



NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

PLAN RETAINING WALL ABUTMENT 1L

3/16" = 1'-0"



SECTION A-A

1/2" = 1'-0"

NOTE: CABLE RAILING NOT SHOWN FOR CLARITY

DESIGN	BY R. INGRAM	CHECKED M. KANAAN	
DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

ABUTMENT DETAILS No. 6

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 09/11/20 | 11/05/20 | 12/14/20 | 4/5/21

SHEET 19 OF 45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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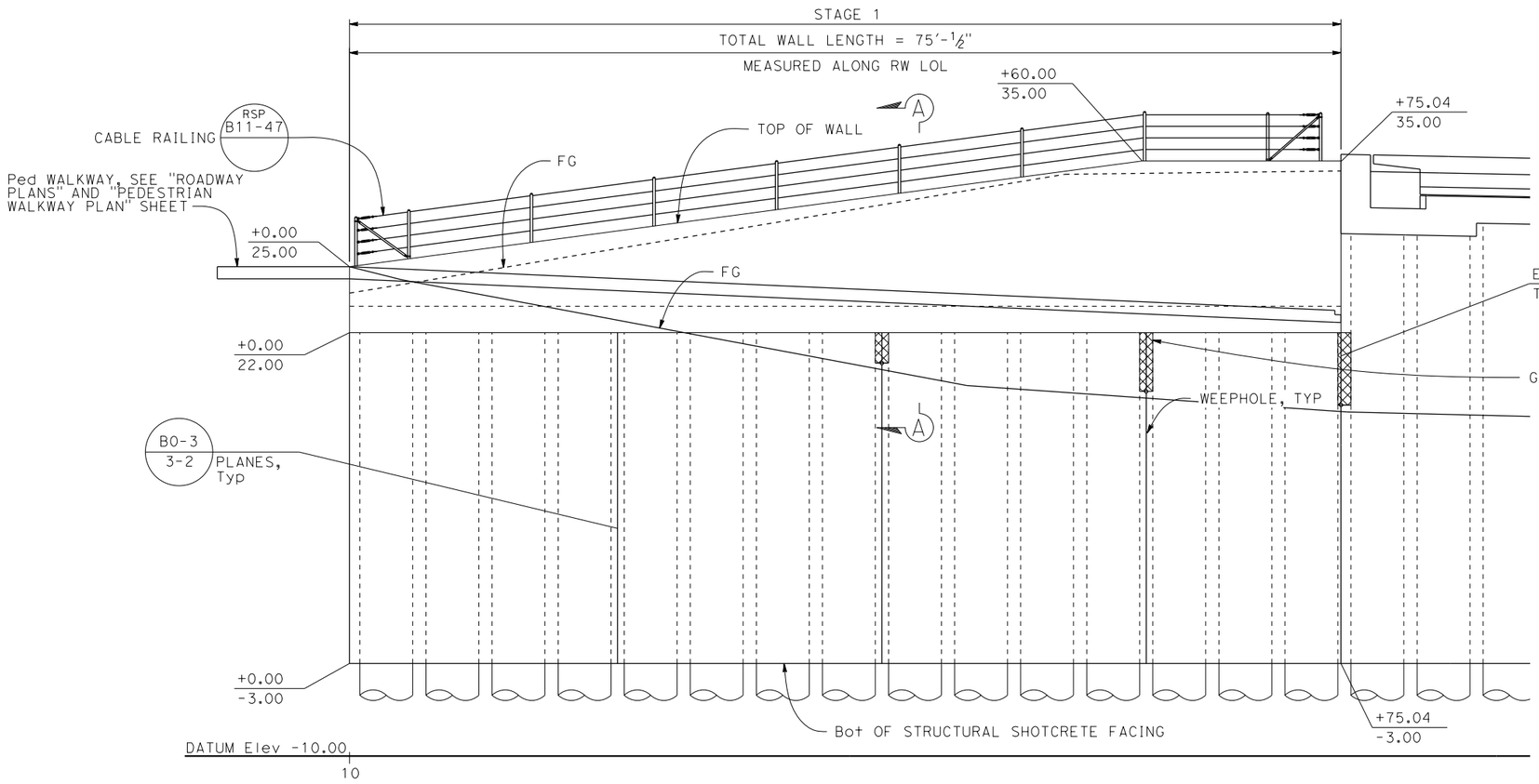
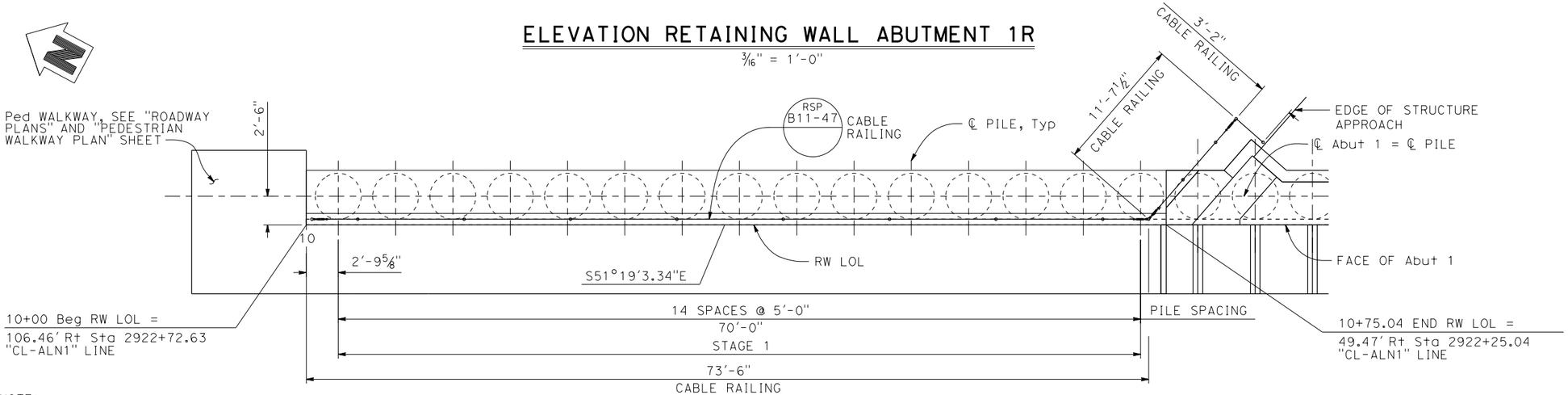


ELEVATION RETAINING WALL ABUTMENT 1R

3/16" = 1'-0"



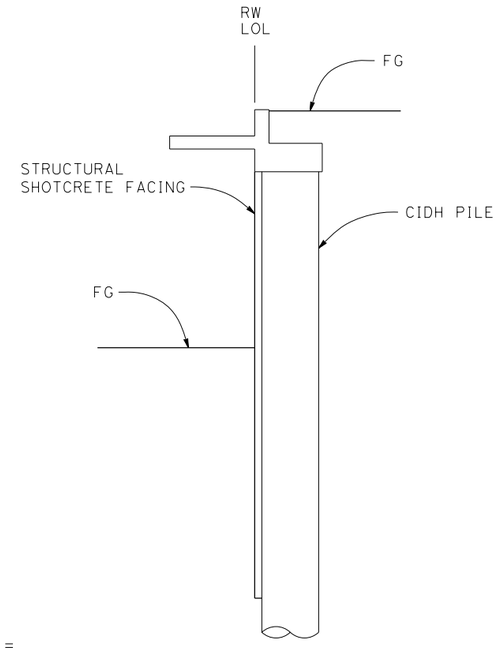
PLAN RETAINING WALL ABUTMENT 1R

3/16" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

NOTES:

1. For CIDH PILE reinforcement details, see "SECTION D-D" on "ABUTMENT DETAILS No. 1" sheet.
2. For GEOCOMPOSITE DRAIN details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet, and "PLAN DETAIL" on "ABUTMENT 1 LAYOUT" sheet.
3. For "SECTION A-A", see "ABUTMENT DETAILS No. 6" sheet.
4. For STRUCTURAL SHOTCRETE FACING details, see "SECTION C-C" on "ABUTMENT DETAILS No. 1" sheet.
5. Piles must be installed, and cap constructed, in the stage indicated.



TYPICAL SECTION

NO SCALE

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 7

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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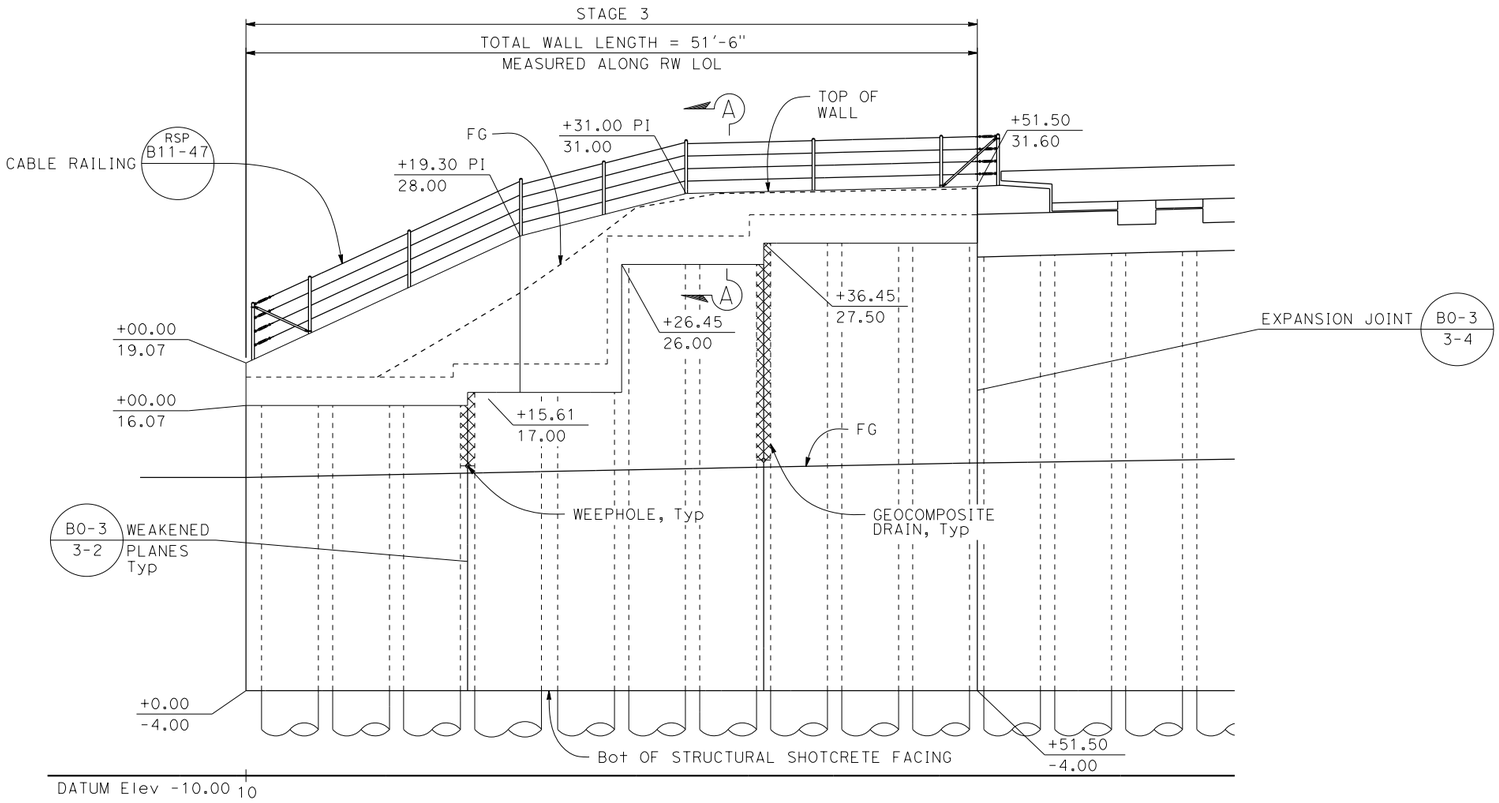
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

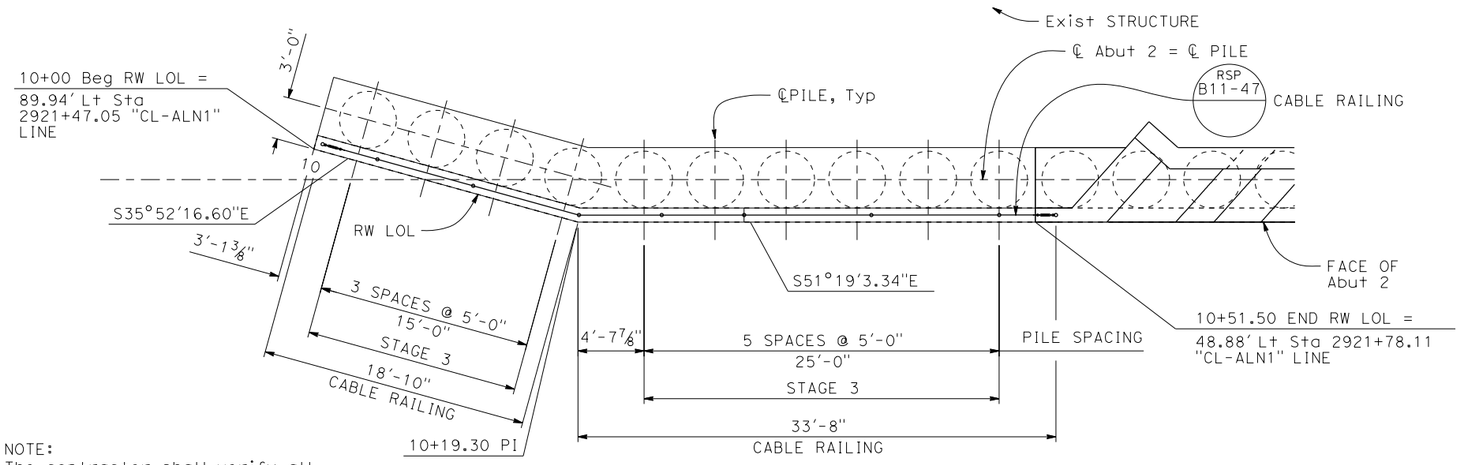
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
09/11/20	11/05/20	12/04/20	4/5/21	20	45



ELEVATION RETAINING WALL ABUTMENT 2L

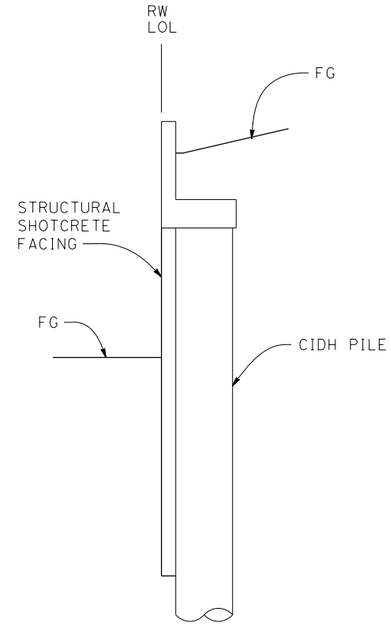
3/16" = 1'-0"



NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

PLAN RETAINING WALL ABUTMENT 2L

3/16" = 1'-0"



TYPICAL SECTION

NO SCALE

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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NOTES:

1. For CIDH PILE reinforcement details, see "SECTION D-D" on "ABUTMENT DETAILS No.1" sheet.
2. For GEOCOMPOSITE DRAIN details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet, and "PLAN DETAIL" on "ABUTMENT 1 LAYOUT" sheet.
3. For "SECTION A-A", see "ABUTMENT DETAILS No. 6" sheet.
4. For STRUCTURAL SHOTCRETE FACING details, see "SECTION C-C" on "ABUTMENT DETAILS No.1" sheet.
5. Piles must be installed, and cap constructed, in the stage indicated.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 8

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11/05/20	12/14/20	4/8/21	5/24/21	21	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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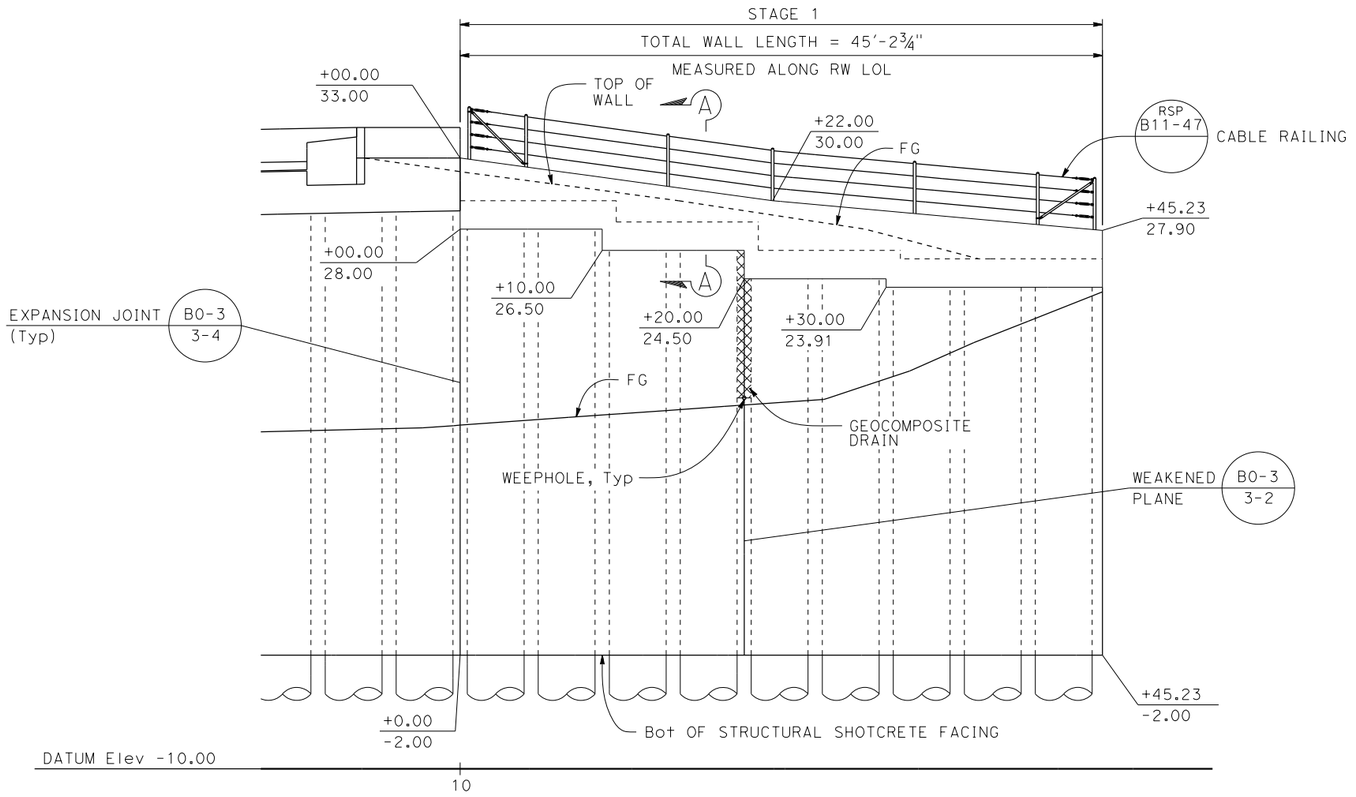
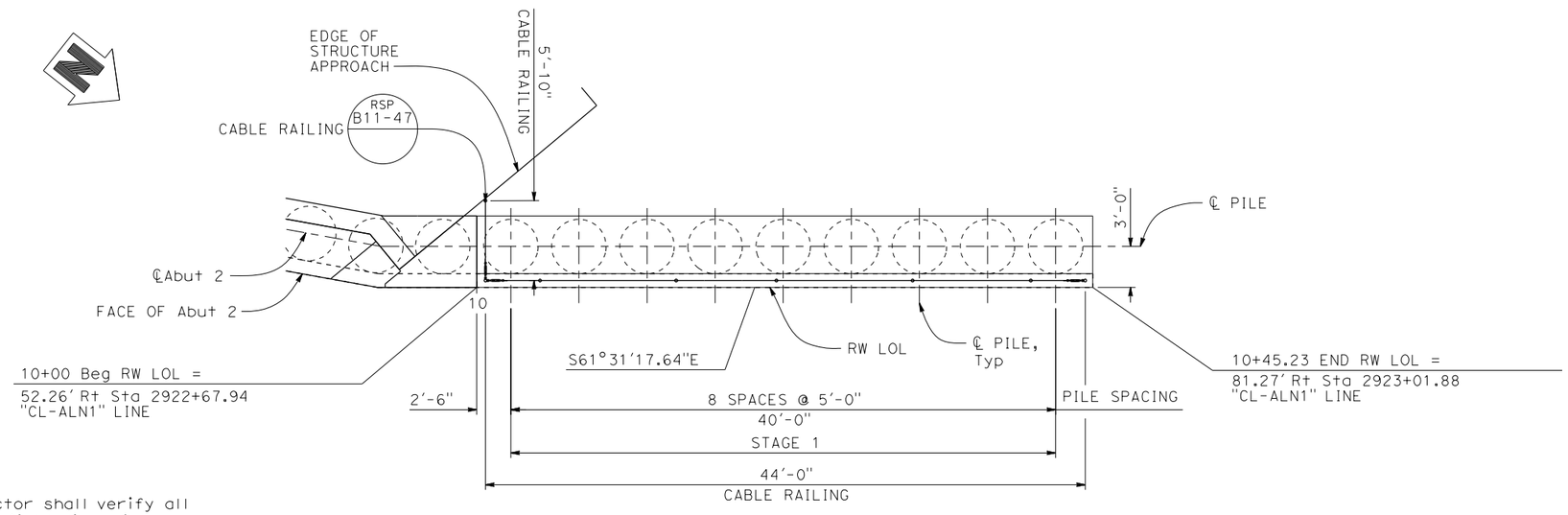


ELEVATION RETAINING WALL ABUTMENT 2R

3/16" = 1'-0"



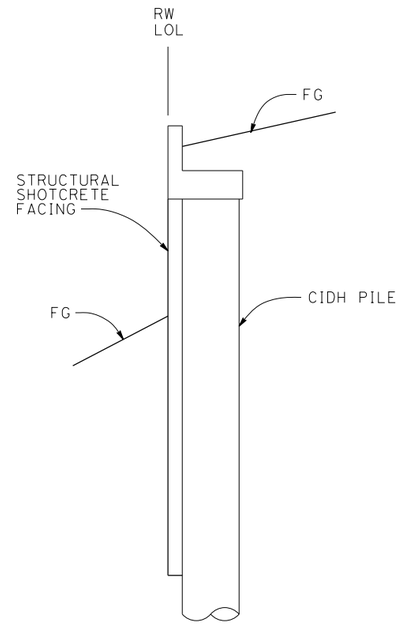
PLAN RETAINING WALL ABUTMENT 2R

3/16" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

NOTES:

1. For CIDH PILE reinforcement details, see "SECTION D-D" on "ABUTMENT DETAILS No.1" sheet.
2. For GEOCOMPOSITE DRAIN details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet, and "PLAN DETAIL" on "ABUTMENT 1 LAYOUT" sheet.
3. For STRUCTURAL SHOTCRETE FACING details, see "SECTION C-C" on "ABUTMENT DETAILS No. 1" sheet.
4. For "SECTION A-A", see "ABUTMENT DETAILS No.6" sheet.
5. Piles must be installed, and cap constructed, in the stage indicated.



TYPICAL SECTION

NO SCALE

FRANK WEI - BRANCH 19 (DESIGN OVERSIGHT)		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
ABUTMENT DETAILS No. 9

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:34:50 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11/05/20	12/04/20	5/5/21	5/21/21	22	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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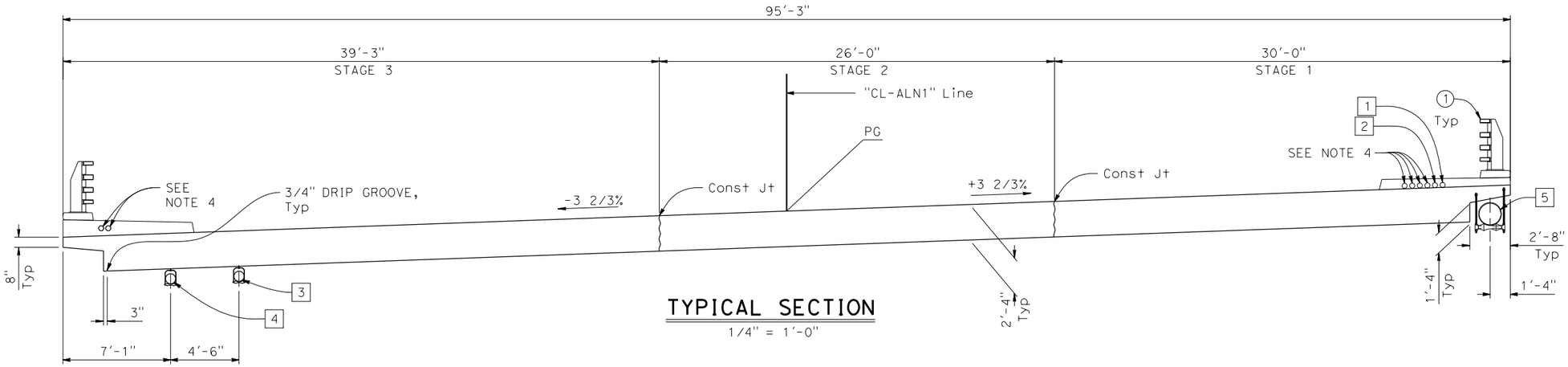
ORANGE, CA. 92868

LEGEND:

[#] Utility call-out, see "ROADWAY PLANS"

UTILITY TABLE

UTILITY	OWNER	DISPOSITION
[1] 4" COMMUNICATION LINE	FRONTIER COMMUNICATIONS	TO BE RELOCATED BY OTHERS
[2] 4" COMMUNICATION LINE	CHARTER COMMUNICATIONS	TO BE RELOCATED BY OTHERS
[3] 8" GAS LINE	SOUTHERN CALIFORNIA GAS	TO BE RELOCATED BY OTHERS
[4] 8" WATER LINE	WATERWORKS DISTRICT 29	TO BE RELOCATED
[5] 18" WATER LINE	WATERWORKS DISTRICT 29	TO BE RELOCATED



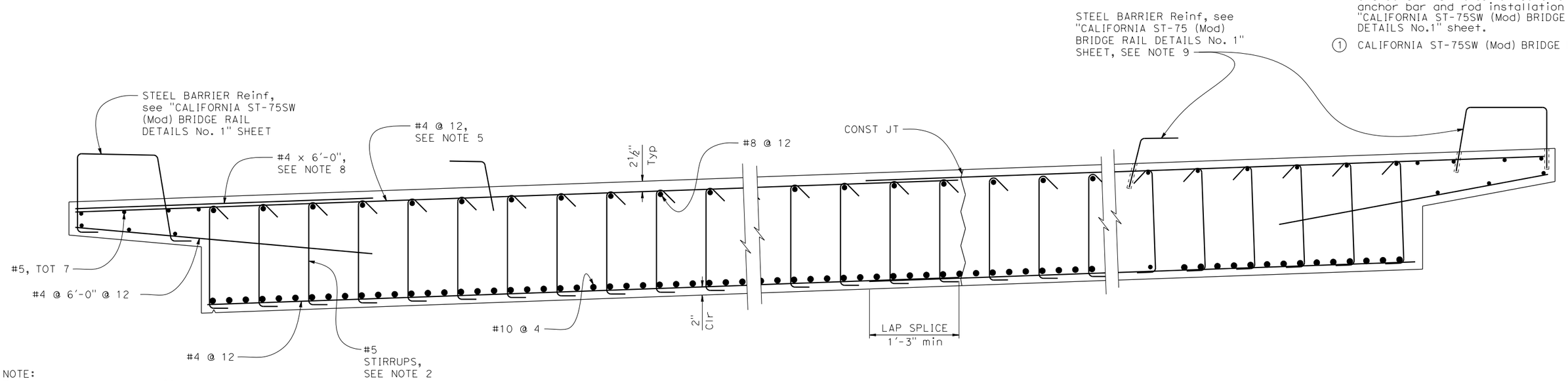
TYPICAL SECTION

1/4" = 1'-0"

NOTES:

1. Barrier dowels and anchor bolts to be in place before slab is poured.
2. Place anchor bars between mats of reinforcement.
3. For stirrup spacing, see "SLAB REINFORCEMENT DETAILS" SHEET.
4. 4" CONDUIT for future utility use.
5. Transverse reinforcement to be placed radial to and spaced along the "CL-ALN1" Line.
6. Longitudinal reinforcement to be parallel to "CL-ALN1" Line and spaced along centerline of abutment 1.
7. For staged construction details not shown, see "STAGED CONSTRUCTION No.1 " sheet.
8. Bundled with each alternating top transverse bar at abutment 1 and abutment 2. For limits, see "DECK CORNER REINFORCEMENT DETAIL" on "SLAB REINFORCEMENT DETAILS" sheet.
9. Barrier reinforcement must be drill and bond in 5" hole. For details on anchor bar and rod installation see "CALIFORNIA ST-75SW (Mod) BRIDGE RAIL DETAILS No.1" sheet.

(1) CALIFORNIA ST-75SW (Mod) BRIDGE RAIL



PARTIAL TYPICAL SECTION

1" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MELAD HANNA PROJECT ENGINEER	BRIDGE NO. 53-3200 / POST MILE 50.36
SIGN OFF DATE		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN			
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN			

SOLSTICE CANYON CREEK BRIDGE
TYPICAL SECTION

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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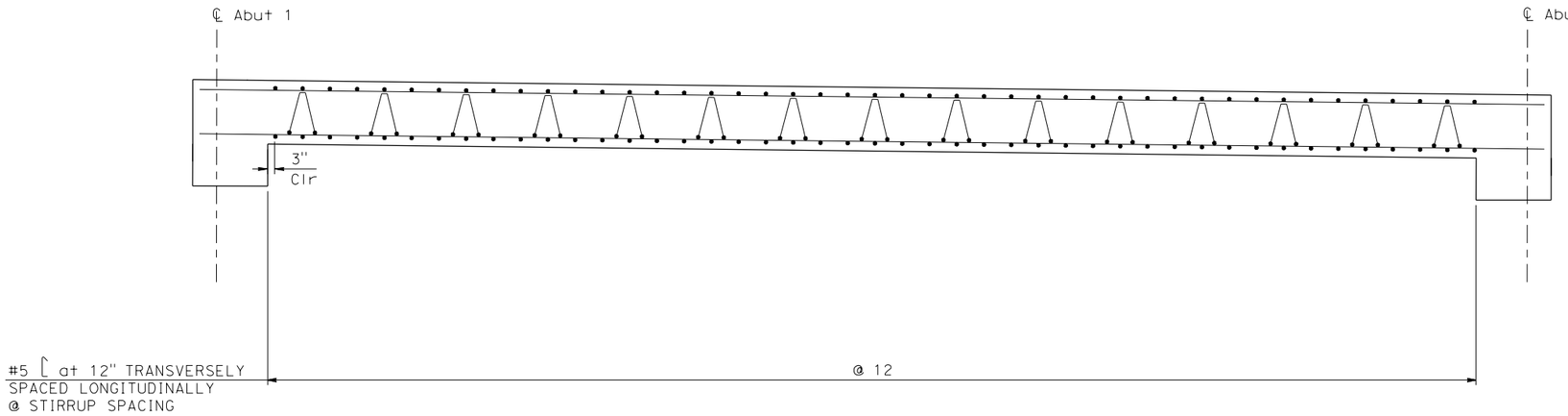
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

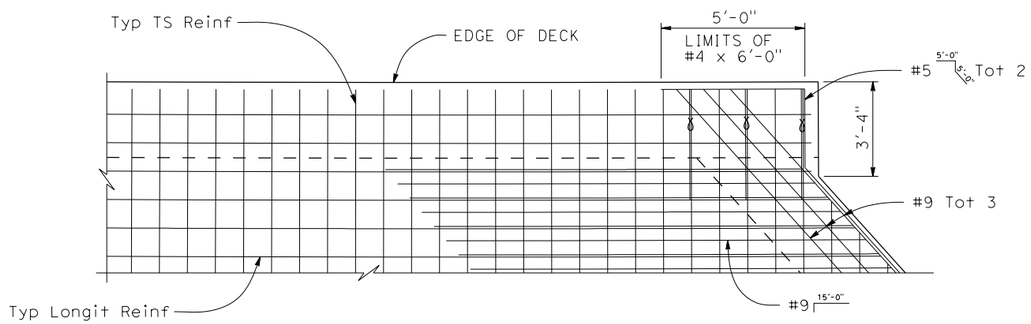
DISREGARD PRINTS BEARING EARLIER REVISION DATES ~~03/17/20~~ 11/05/20 12/14/20 04/05/21 05/24/21

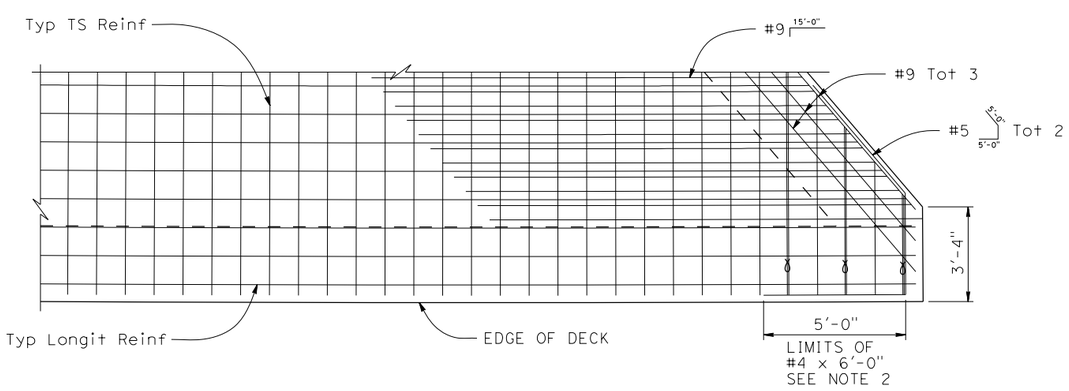
SHEET 23 OF 45



LONGITUDINAL SECTION

3/8" = 1'-0"

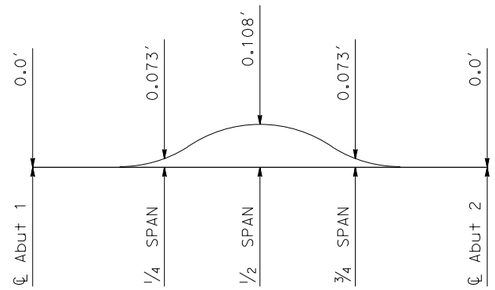




DECK CORNER REINFORCEMENT DETAIL

3/8" = 1'-0"

NOTE: ABUTMENT 2 SHOWN,
ABUTMENT 1 SIMILAR



CAMBER DIAGRAM

NO SCALE
(DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT)

NOTES:

1. For transverse and longitudinal deck reinforcement details, see "TYPICAL SECTION" sheet.
2. Bars at acute corner of deck may not meet 6'-0" length. these bars shall be terminated at 2" clear of joint with 1'-0" long hooked end.
3. For reinforcement not shown, see "END DIAPHRAGM DETAIL", on "ABUTMENT DETAILS No.2" sheet.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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AECOM
999 W. TOWN & COUNTRY RD.
ORANGE, CA. 92868

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
SLAB REINFORCEMENT DETAILS

DESIGN DETAIL SHEET
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
01/20/20	09/17/20	11/05/20		24	45

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

REGISTERED CIVIL ENGINEER _____ DATE _____

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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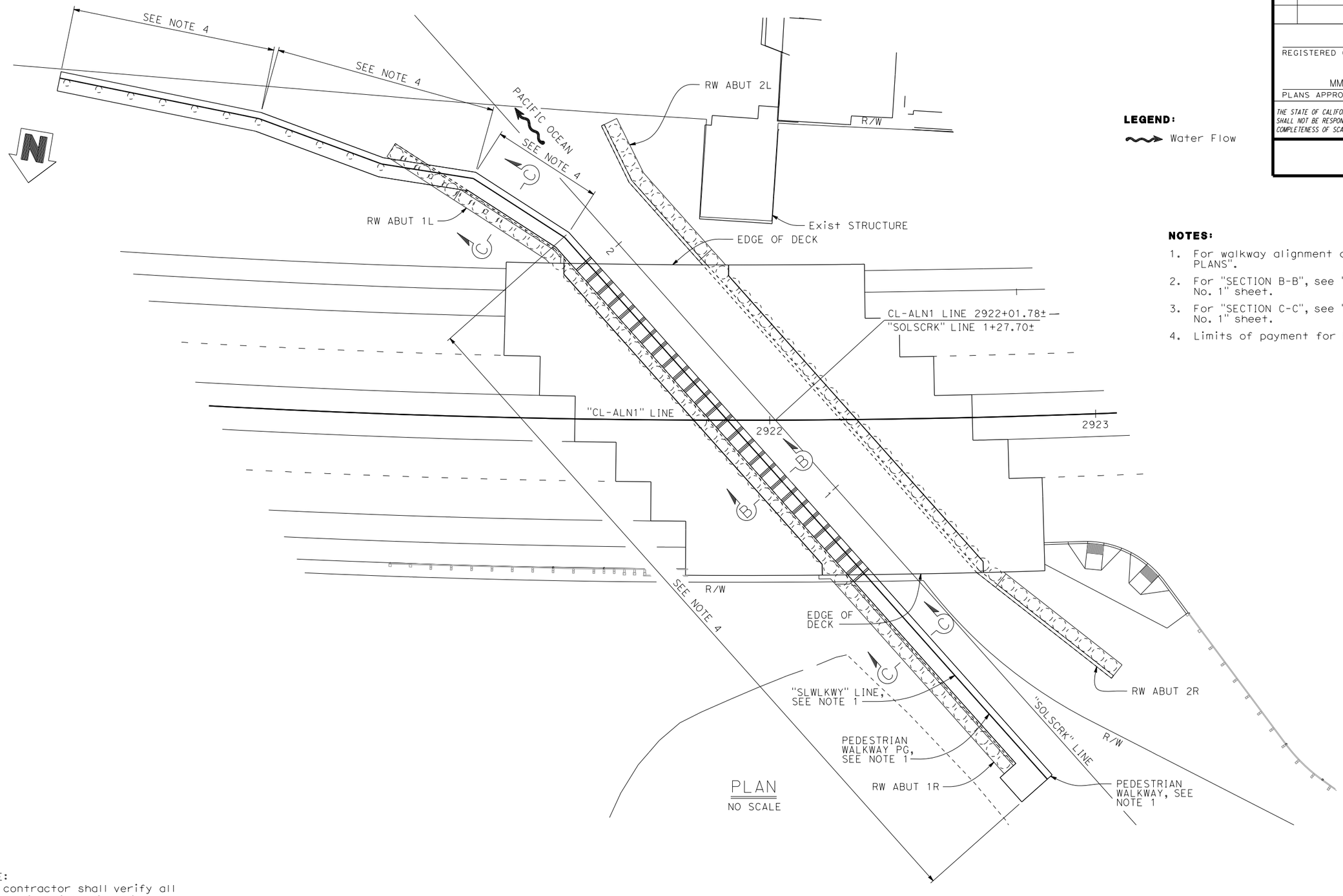

LEGEND:

Water Flow

NOTES:

1. For walkway alignment and profile, see "ROADWAY PLANS".
2. For "SECTION B-B", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. For "SECTION C-C", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
4. Limits of payment for PEDESTRIAN RAILING.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY PLAN

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12/04/20	3/12/21			25	45

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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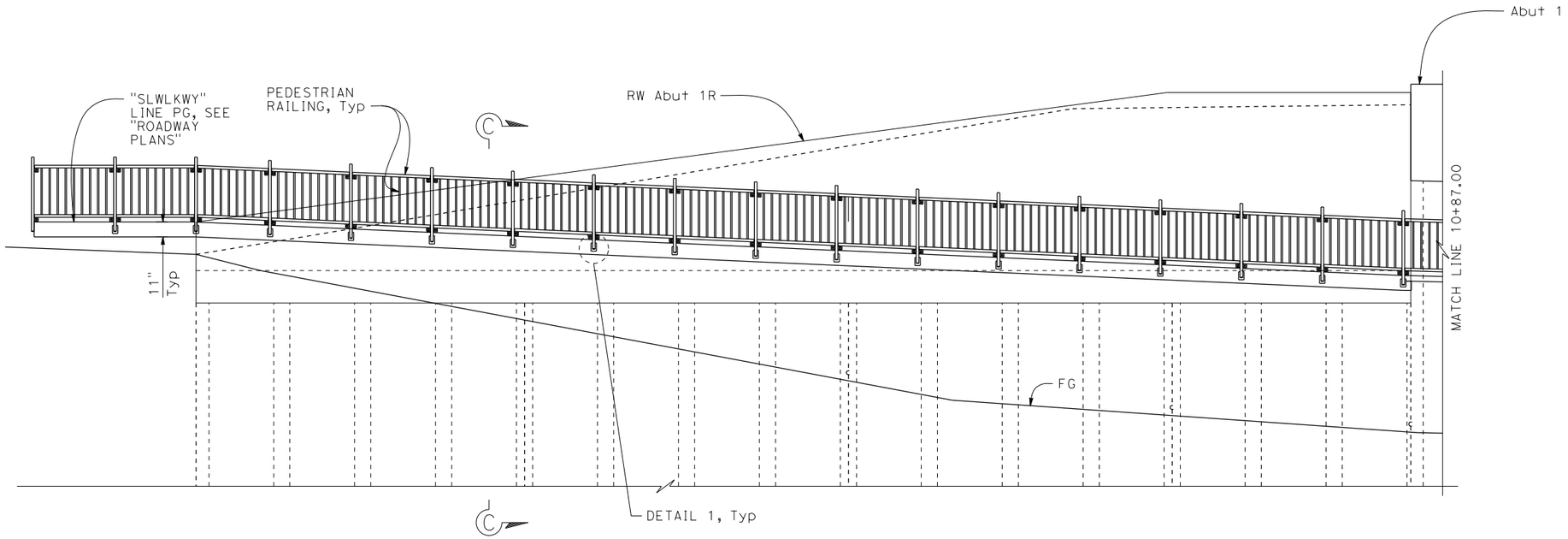
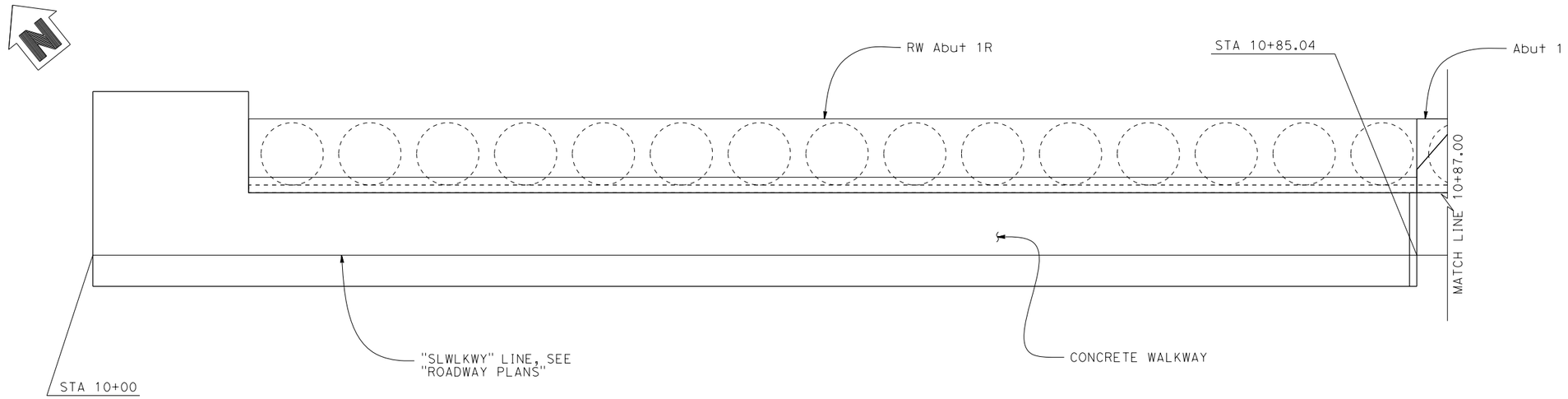


ELEVATION
1/4" = 1'-0"



PLAN
1/4" = 1'-0"

NOTES:

1. For "DETAIL 1", see "PEDESTRIAN WALKWAY DETAILS No. 3" sheet.
2. For "SECTION C-C", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. For "RW Abut 1R" details, see "ABUTMENT DETAILS No. 7" sheet.
4. For "Abut 1" details, see "ABUTMENT 1 LAYOUT" sheet.
5. For "SECTION A-A", see "PEDESTRIAN WALKWAY DETAILS No. 2" sheet.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY LAYOUT No. 1

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/12/21				26	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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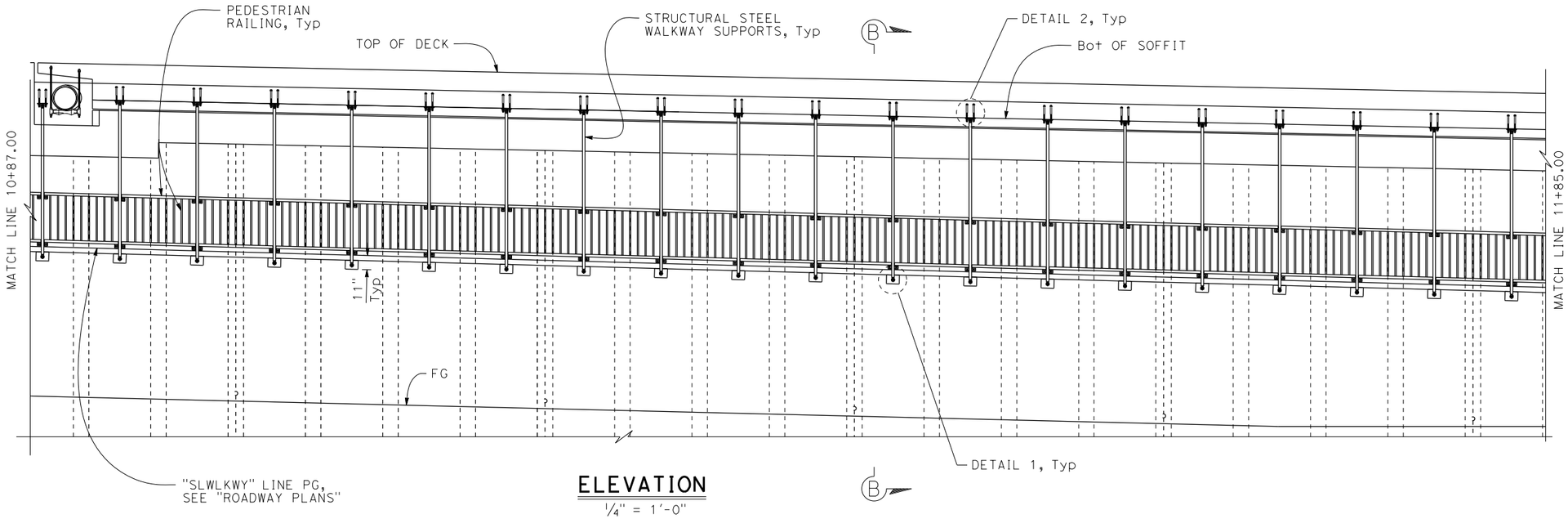
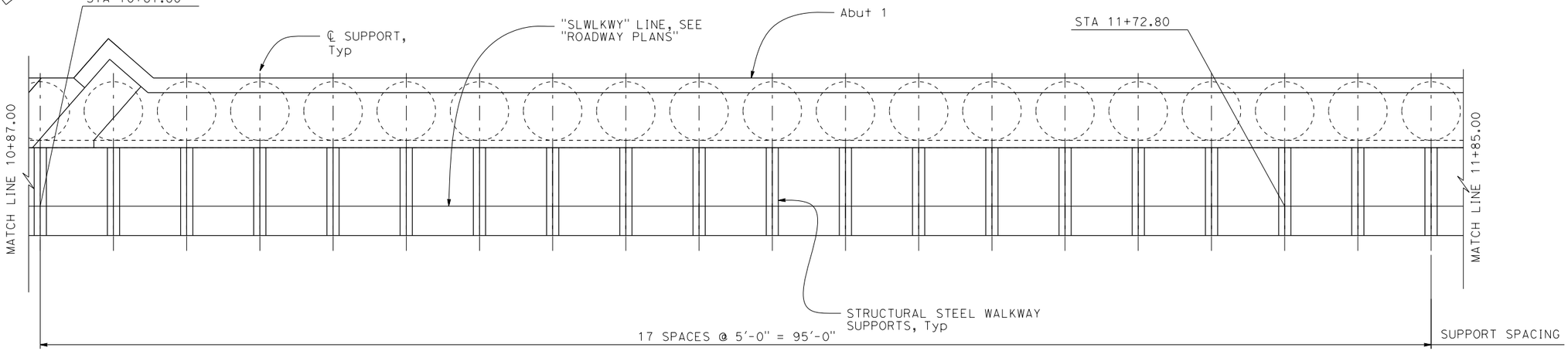


ELEVATION
1/4" = 1'-0"



PLAN
1/4" = 1'-0"

NOTES:

1. For "DETAIL 1", see "PEDESTRIAN WALKWAY DETAILS No. 3" sheet.
2. For "DETAIL 2", see "PEDESTRIAN WALKWAY DETAILS No. 3" sheet.
3. For "SECTION B-B", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
4. For "Abut 2" details, see "ABUTMENT 2 LAYOUT" sheet.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY LAYOUT No. 2

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/12/21				27	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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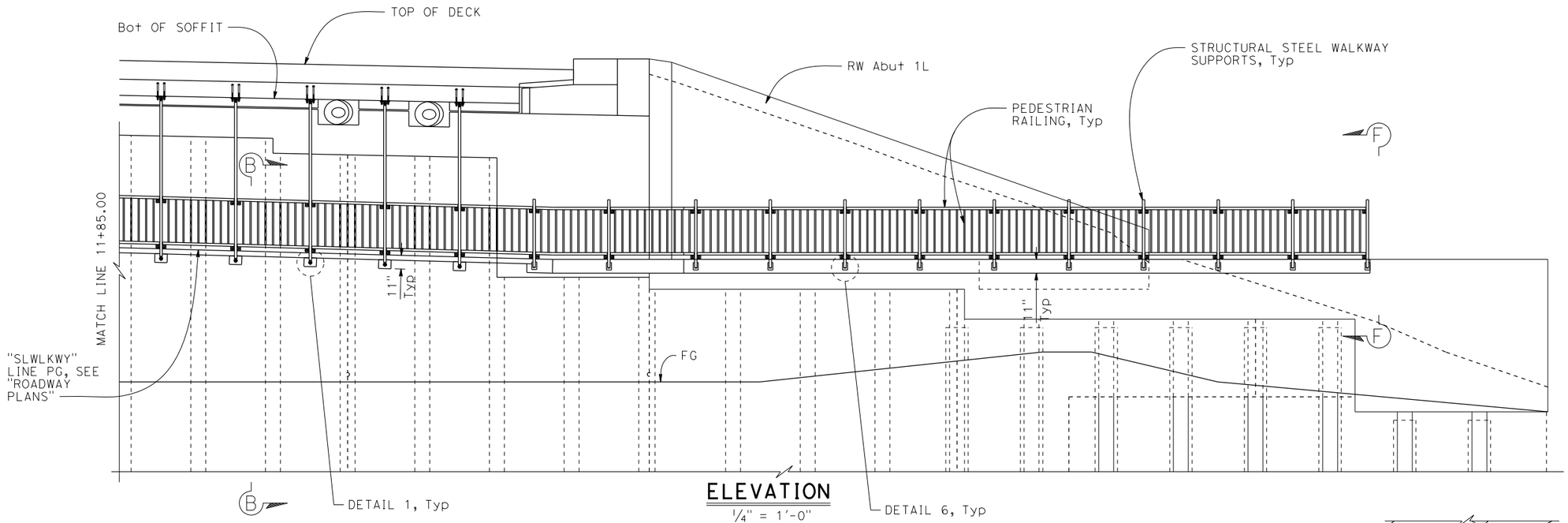
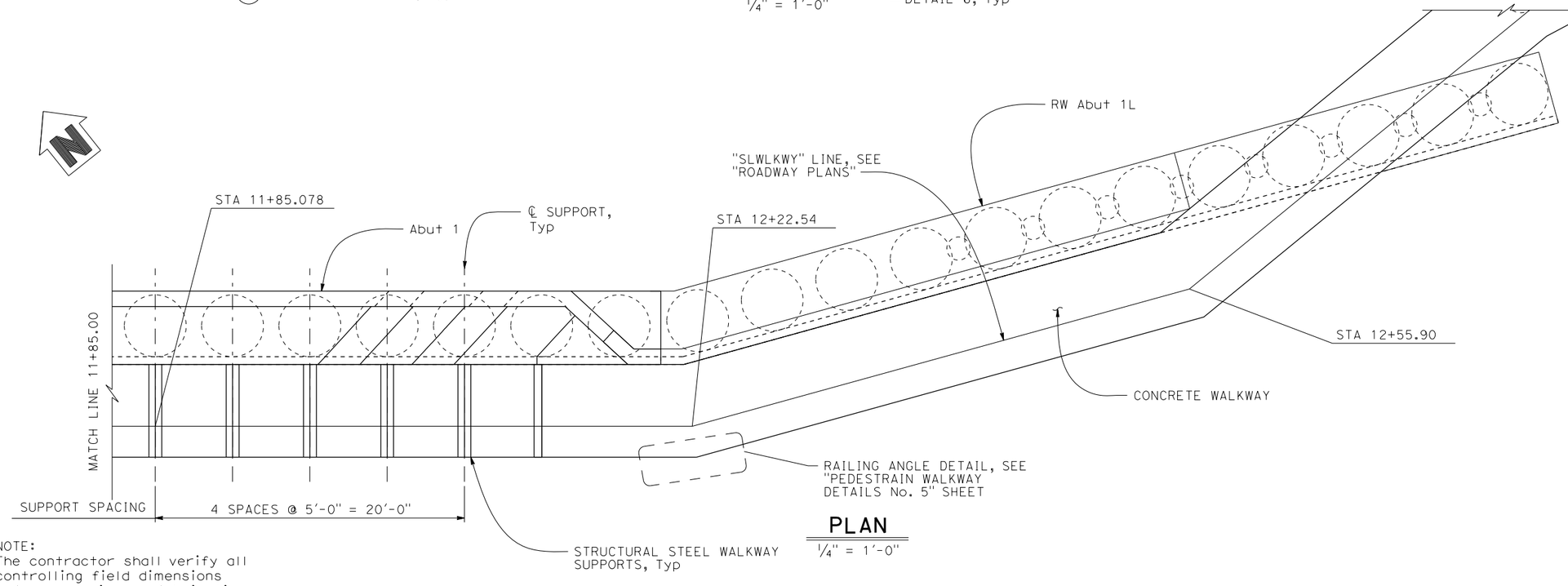


ELEVATION
1/4" = 1'-0"



PLAN
1/4" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

NOTES:

1. For "DETAIL 6", see "PEDESTRIAN WALKWAY DETAILS No. 4" sheet.
2. For "SECTION C-C", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. For "Abut 2" details, see "ABUTMENT 2 LAYOUT" sheet.
4. For "RW Abut 2R" details, see "ABUTMENT DETAILS No. 9" sheet.
5. For "SECTION F-F", see "PEDESTRIAN WALKWAY DETAILS No. 2" sheet.

DESIGN	R. INGRAM	M. KANAAN	
DETAILS	D. CUMMARO	M. KANAAN	
QUANTITIES	D. CUMMARO	M. KANAAN	

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

PEDESTRIAN WALKWAY LAYOUT No. 3

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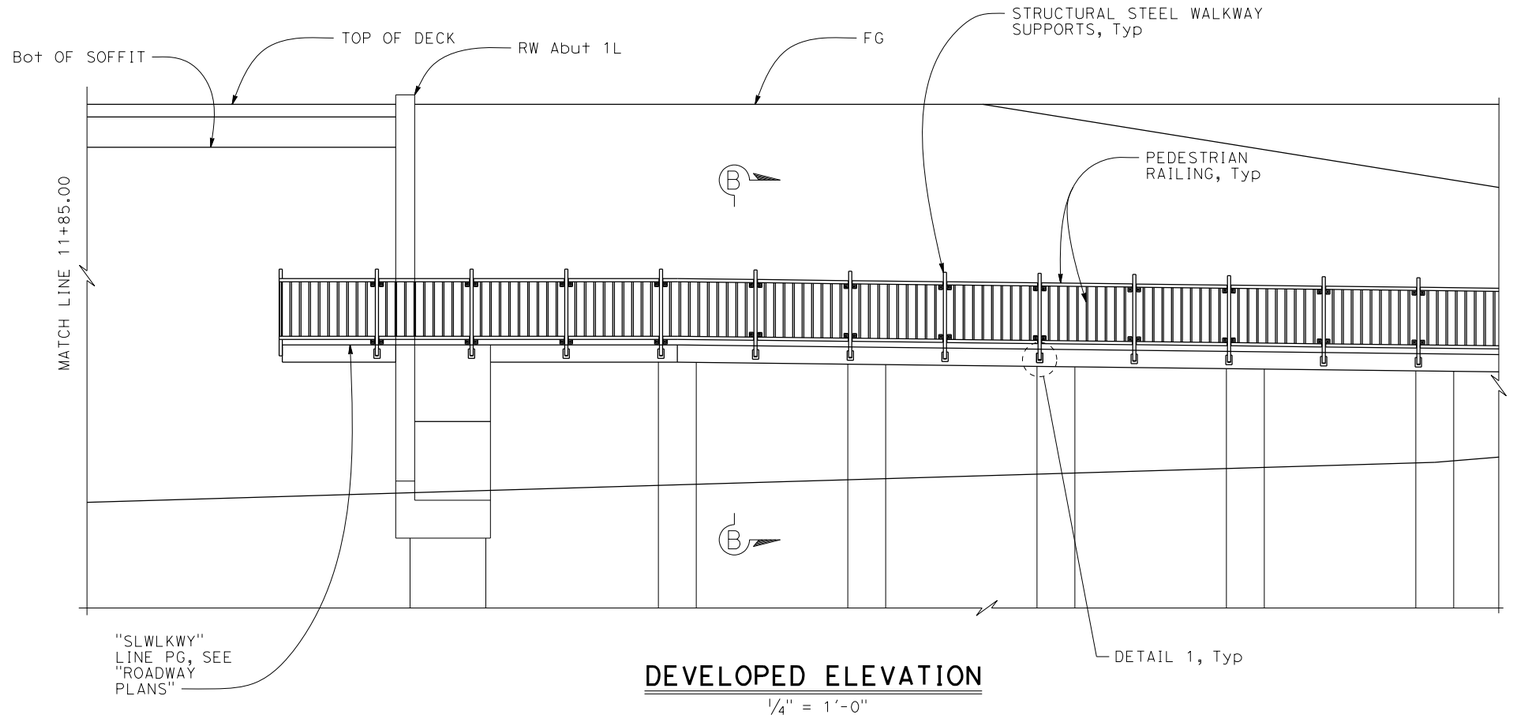
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

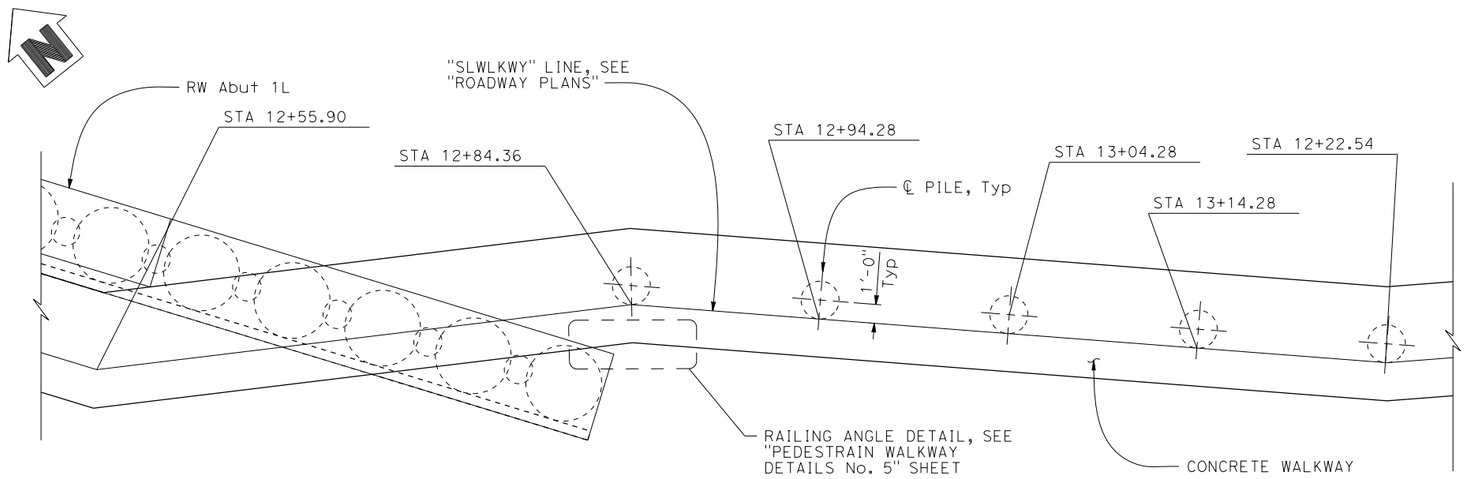
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/12/21				28	45



DEVELOPED ELEVATION

1/4" = 1'-0"



PLAN

1/4" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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NOTES:

1. For "DETAIL 6", see "PEDESTRIAN WALKWAY DETAILS No. 4" sheet.
2. For "SECTION C-C", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. For "Abut 1" details, see "ABUTMENT 1 LAYOUT" sheet.
4. For "RW Abut 1L" details, see "ABUTMENT DETAILS No. 9" sheet.

DESIGN	BY R. INGRAM	CHECKED M. KANAAN	
DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

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MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

PEDESTRIAN WALKWAY LAYOUT No. 4

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/12/21				29	45

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

REGISTERED CIVIL ENGINEER — DATE

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PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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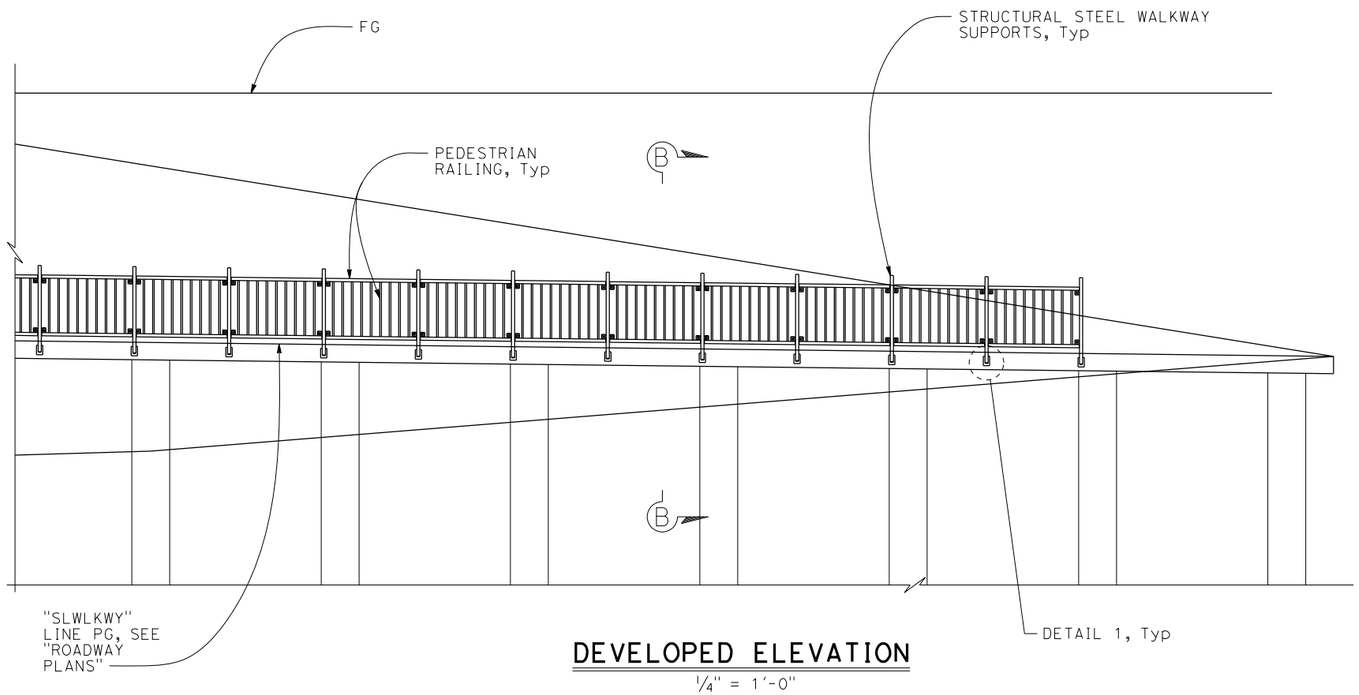
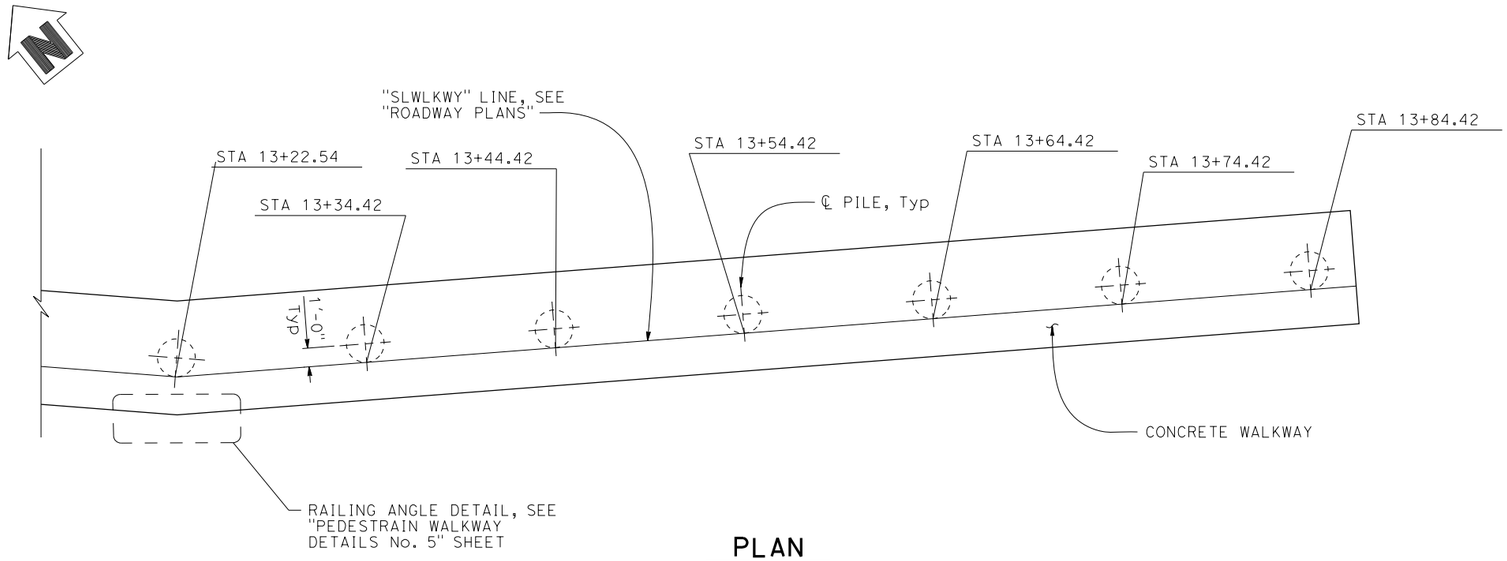


DEVELOPED ELEVATION

1/4" = 1'-0"



PLAN

1/4" = 1'-0"

NOTES:

1. For "DETAIL 6", see "PEDESTRIAN WALKWAY DETAILS No. 4" sheet.
2. For "SECTION C-C", see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. For "Abut 1" details, see "ABUTMENT 1 LAYOUT" sheet.
4. For "RW Abut 1L" details, see "ABUTMENT DETAILS No. 9" sheet.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

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	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

PEDESTRIAN WALKWAY LAYOUT No. 5

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

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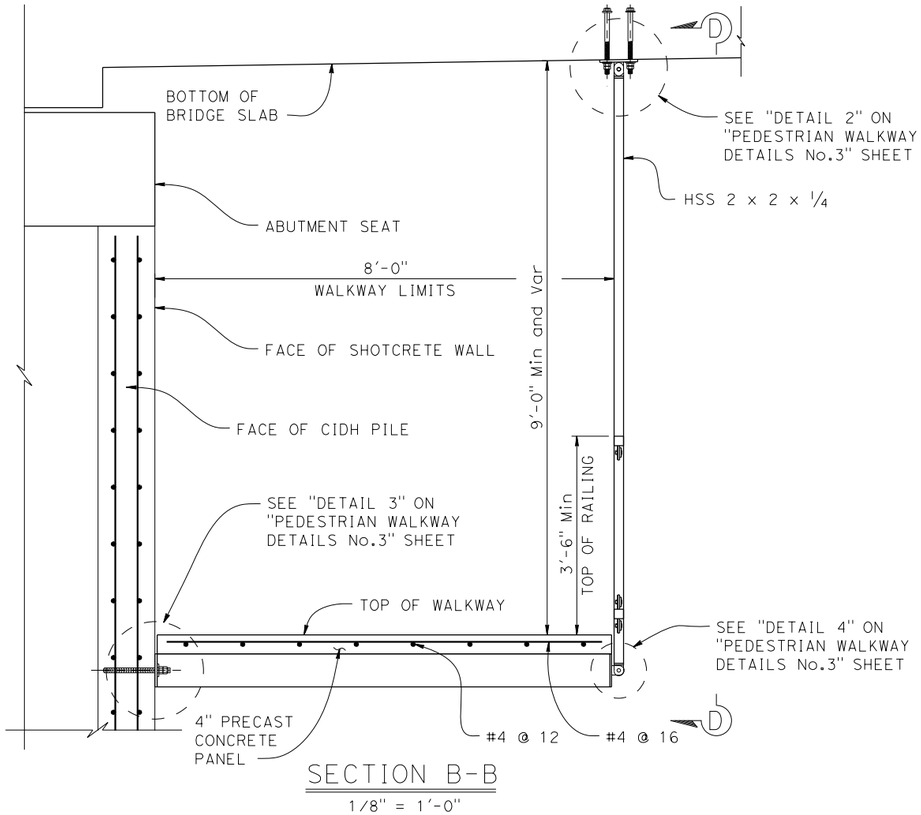
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/12/21				30	45



SECTION B-B

1/8" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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MATERIAL NOTES

ANCHOR BOLTS: fy = 105 ksi
STRUCTURAL STEEL: fy = 36 ksi
BOLTS: fy = 90 ksi
HSS: fy=46 ski
COATING: All steel members shall be hot dip galvanized after fabrication.

NOTES:

1. Precast concrete panel reinforcement must be epoxy coated.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

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DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY DETAILS No. 1

DESIGN DETAIL SHEET
(ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:04 PM
FILE => ...\910_CAD\53-0030-q-sdd101.dgn USERNAME => rob.ingram

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12/04/20				31	45

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

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

MM/DD/YYYY
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:

1. For PEDESTRIAN RAILING details not shown, see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
2. For limits of cable railing, and retaining wall details, see "ROADWAY PLANS".

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

PEDESTRIAN WALKWAY DETAILS No. 2

DESIGN DETAIL SHEET
(ENGLISH) (REVISION 4/19/2018)

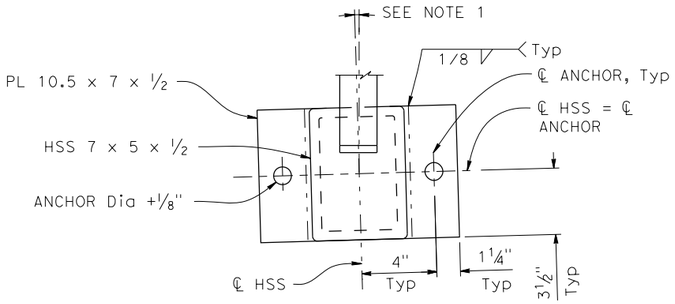
DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:06 PM
FILE => ...\910_CAD\53-0030-q-sdd102.dgn USERNAME => rob.ingram

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

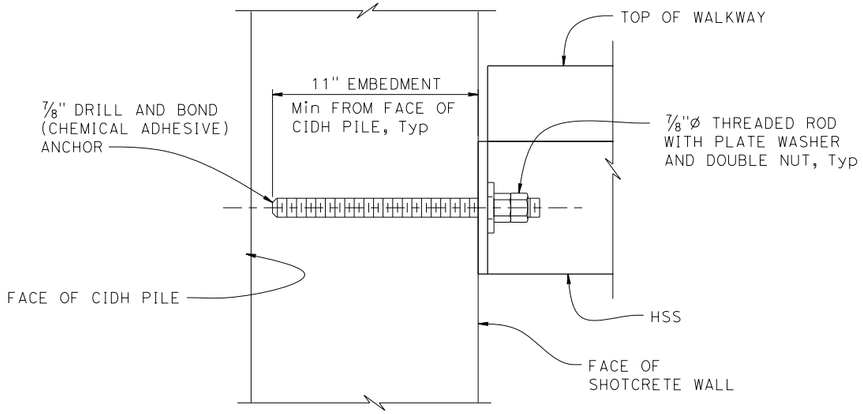
UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

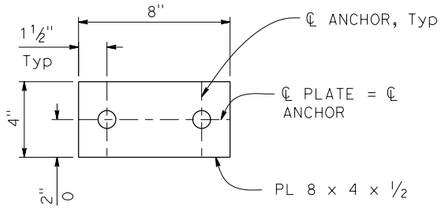
REVISION DATES				SHEET	OF
12/04/20				32	45



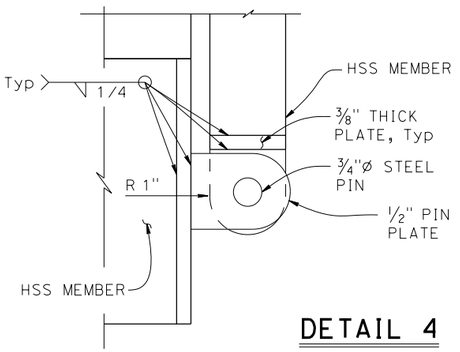
DETAIL 1
3" = 1'-0"



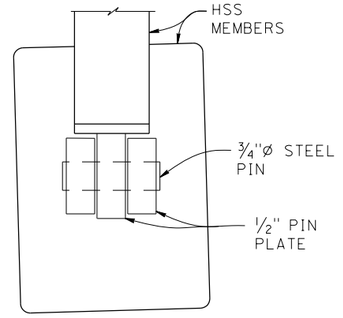
DETAIL 3
3" = 1'-0"



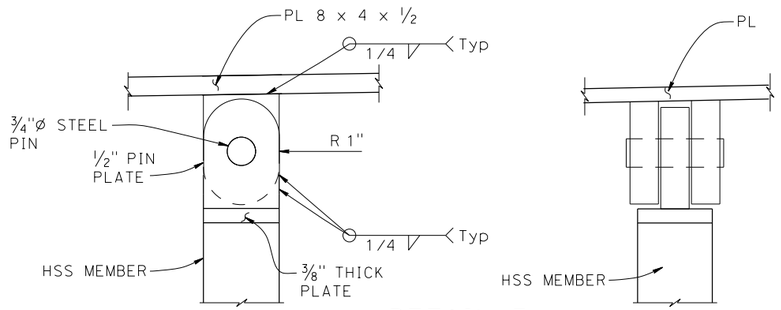
SECTION A-A
¼" = 1'-0"



DETAIL 4
6" = 1'-0"



DETAIL 2
3" = 1'-0"



DETAIL 5
6" = 1'-0"

NOTES:

1. HSS and Plate to be sloped from vertical post to match ramp slope.
2. All nuts and fasteners must be thread lock and tamper proof.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — 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.

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	R. INGRAM	M. KANAAN
DETAILS	D. CUMMARO	M. KANAAN
QUANTITIES	D. CUMMARO	M. KANAAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:48:21 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
12/04/20				33	45

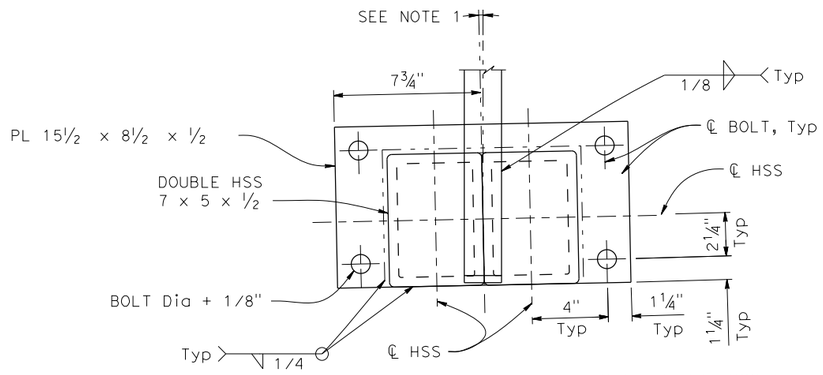
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

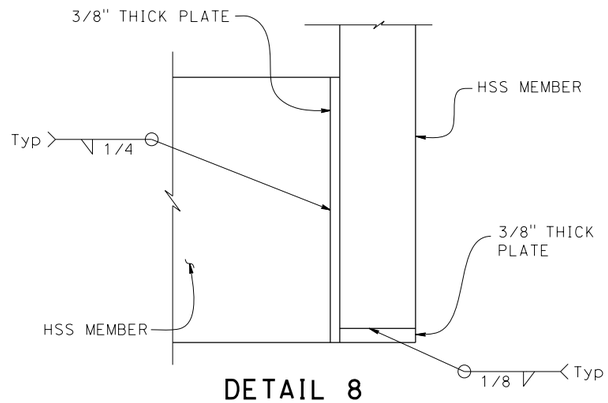
REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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.



Note: Double HSS to be welded flush before installation

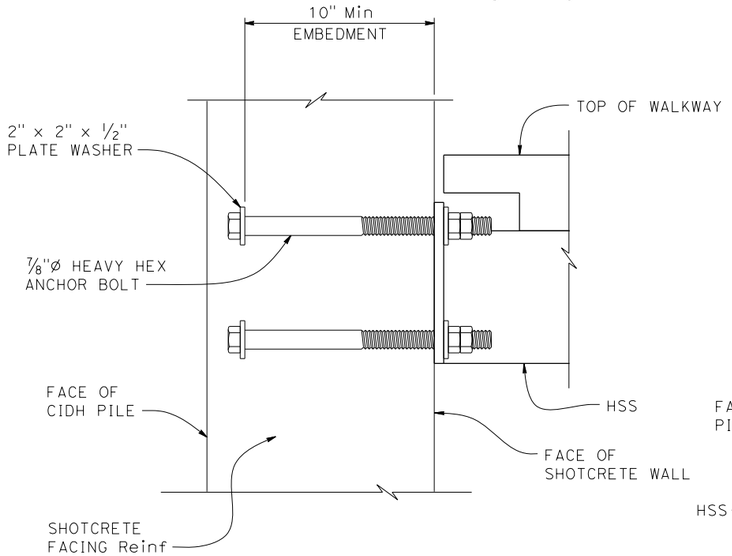
DETAIL 6
3" = 1'-0"



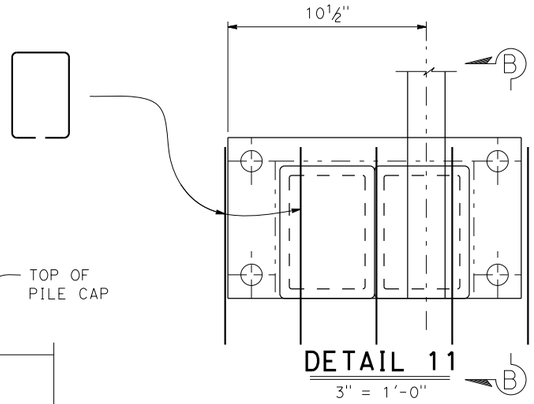
DETAIL 8
6" = 1'-0"

NOTES:

1. HSS and Plate to be sloped from vertical post to match ramp slope.
2. All nuts and fasteners must be thread lock and tamper proof.

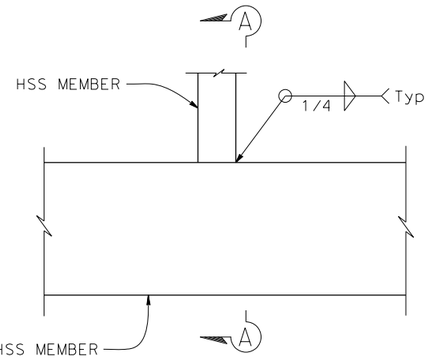


DETAIL 7
3" = 1'-0"

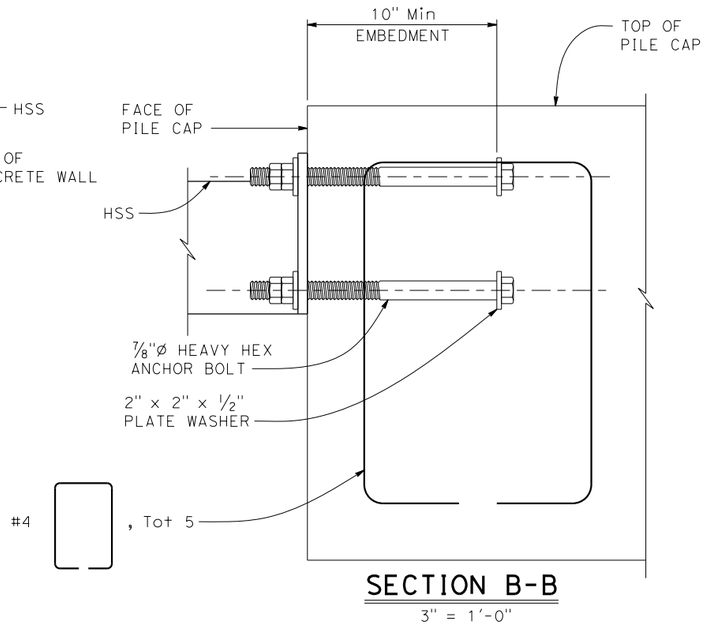


DETAIL 11
3" = 1'-0"

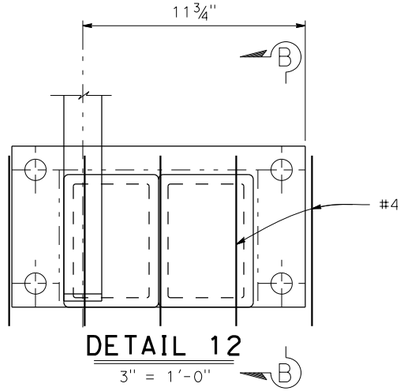
Note: For details not shown, see DETAIL 6.



DETAIL 13
3" = 1'-0"

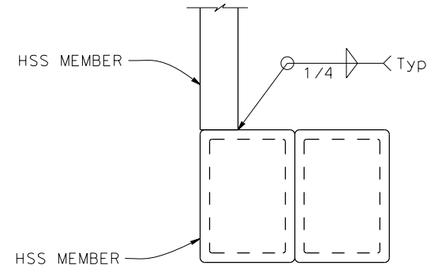


SECTION B-B
3" = 1'-0"



DETAIL 12
3" = 1'-0"

Note: For details not shown, see DETAIL 6.



SECTION A-A
3" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
PEDESTRIAN WALKWAY DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:09 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
12/04/20				34	45

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

REGISTERED CIVIL ENGINEER DATE

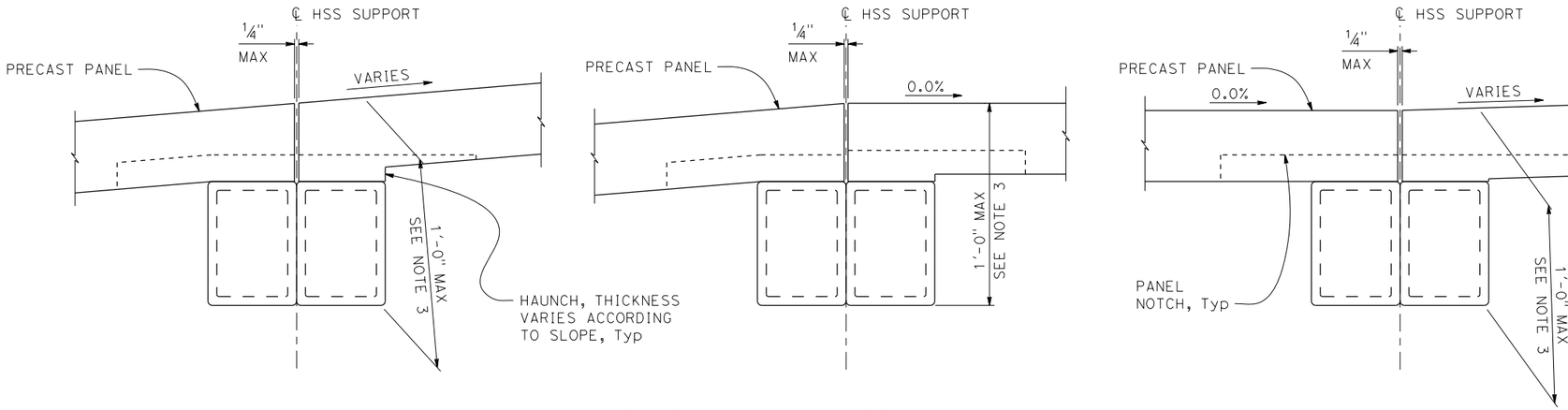
MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
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.

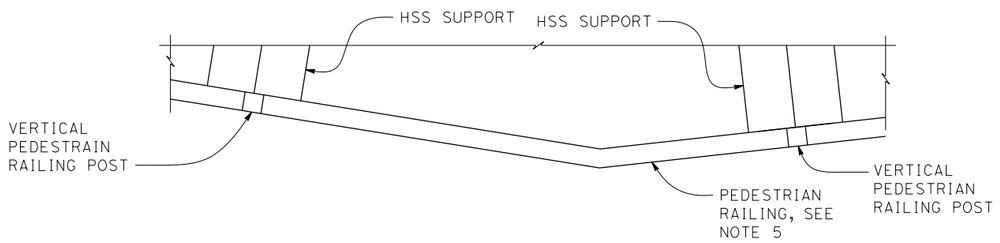
NOTES:

1. HSS support to be placed level.
2. For precast panel details not shown, see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
3. Maximum assembly thickness, measured perpendicular to walkway slope, is 12".
4. For panel notch details, see "NOTCH DETAIL" on "PEDESTRIAN WALKWAY DETAILS No. 6" sheet.
5. PEDESTRIAN RAILING must be shaped to match edge of walkway profile
6. For PEDESTRIAN RAILING details not shown, see "PEDESTRIAN WALKWAY DETAILS No. 1" sheet.
7. All nuts and fasteners must be thread lock and tamper proof.



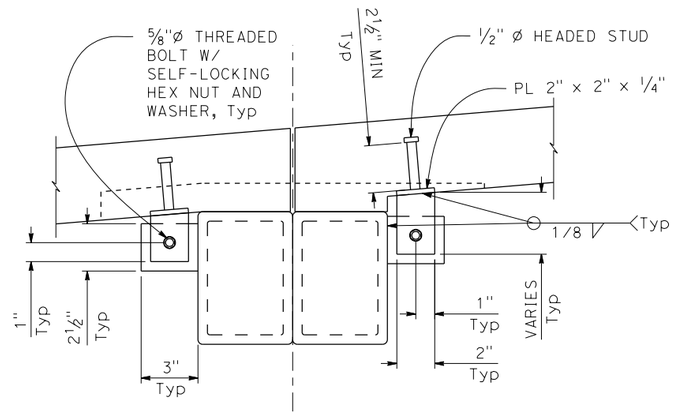
PANEL HAUNCH DETALS

3" = 1'-0"



RAILING ANGLE DETAIL

1-1/2" = 1'-0"



PANEL ATTACHMENT DETAIL

3" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT SIGN OFF DATE		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MELAD HANNA PROJECT ENGINEER	BRIDGE No. 53-3200 POST MILE 50.36	SOLSTICE CANYON CREEK BRIDGE PEDESTRIAN WALKWAY DETAILS No. 5
		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN				
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN				

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3
UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504
DISREGARD PRINTS BEARING EARLIER REVISION DATES
REVISION DATES: 12/04/20
SHEET 35 OF 45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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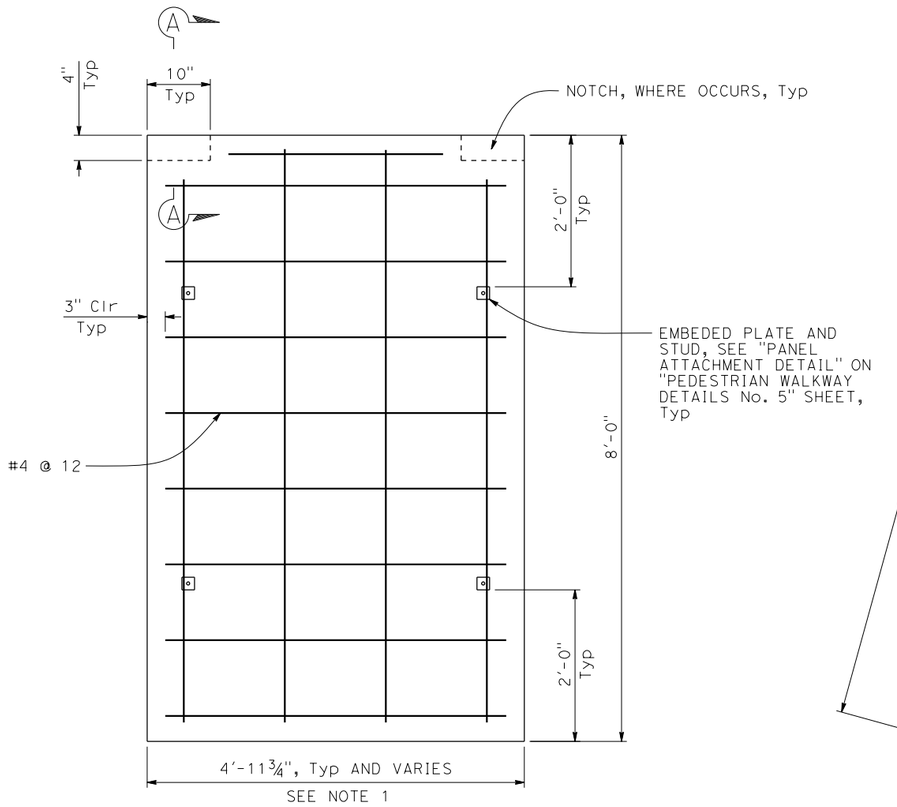
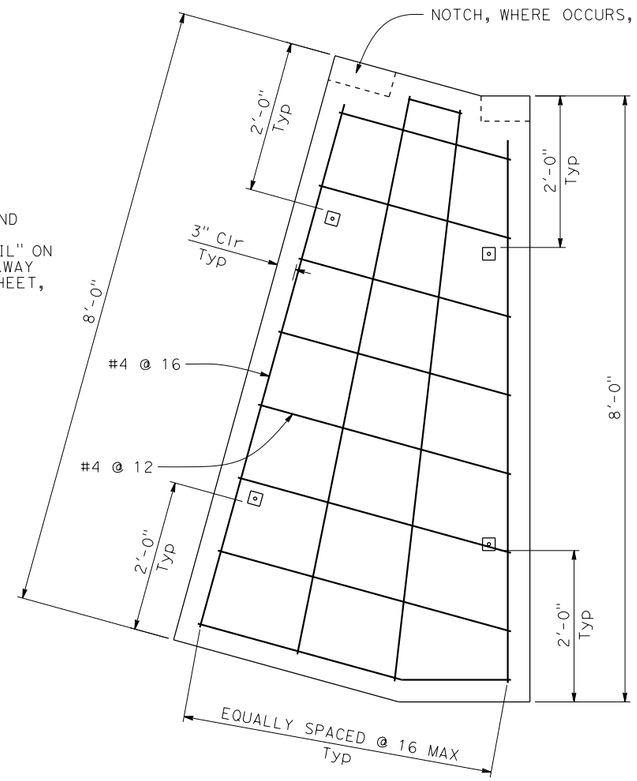
NOTES:

1. Panel width varies with support spacing and must account for the required gap between panels.



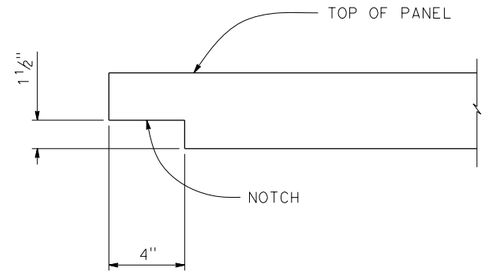
TYPICAL PANEL DETAIL

1" = 1'-0"



ANGLED PANEL DETAIL

1" = 1'-0"



SECTION A-A

¼" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT SIGN OFF DATE		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	MELAD HANNA PROJECT ENGINEER	BRIDGE No. 53-3200 POST MILE 50.36	SOLSTICE CANYON CREEK BRIDGE PEDESTRIAN WALKWAY DETAILS No. 6
		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN				
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN				

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:12 PM
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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
12/04/20				36	45

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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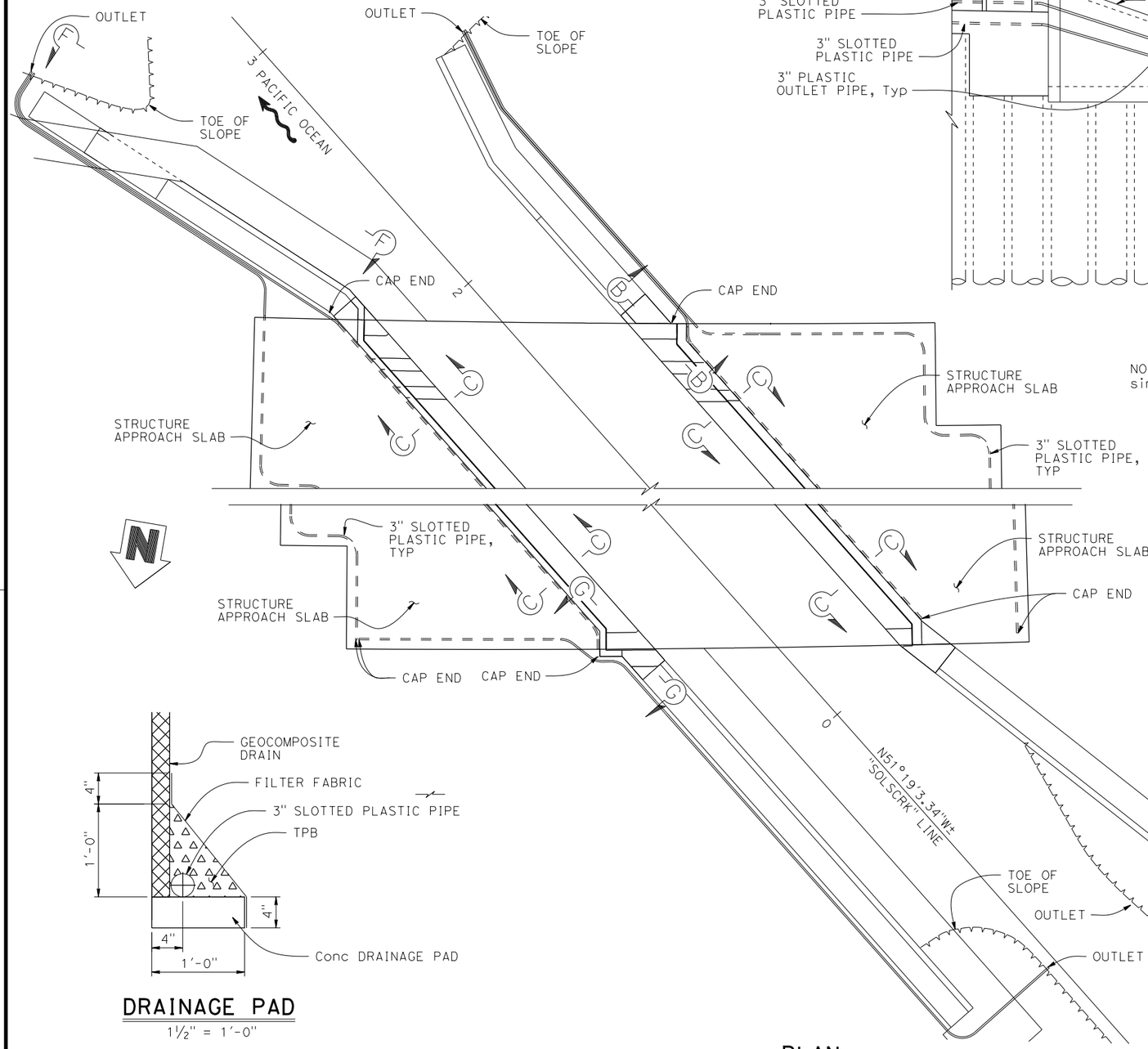
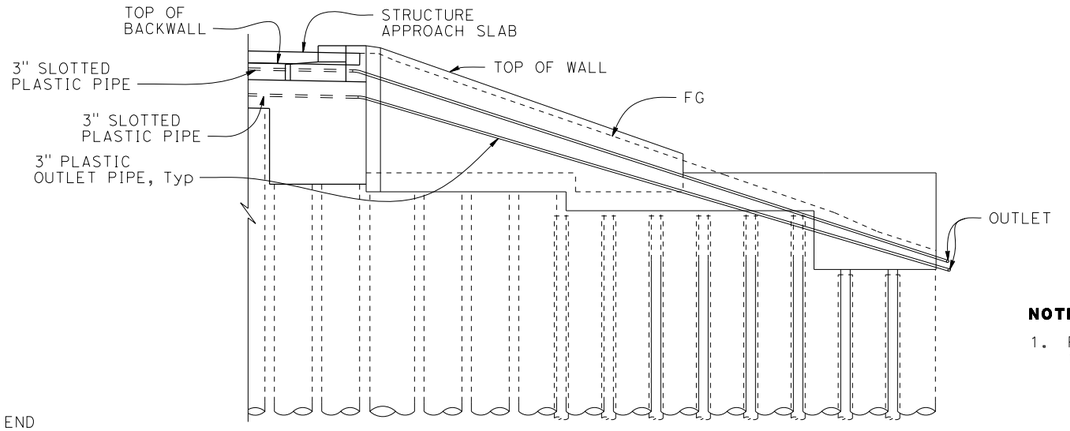
AECOM
999 W. TOWN & COUNTRY RD.
ORANGE, CA. 92868



PLAN
1" = 10'

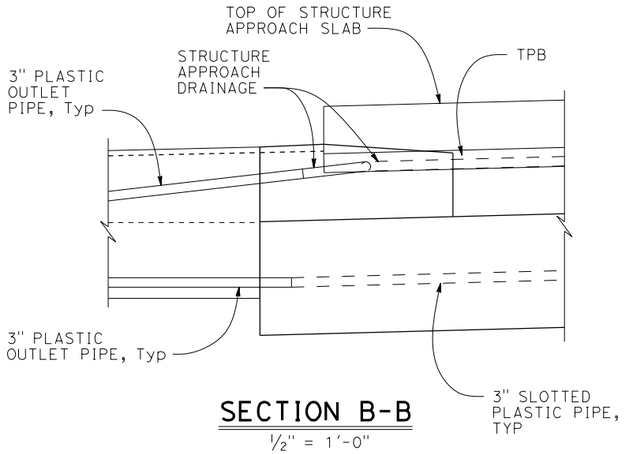


SECTION F-F
1/8" = 1'-0"

NOTE: RW Abut 1L shown, others similar.

NOTES:

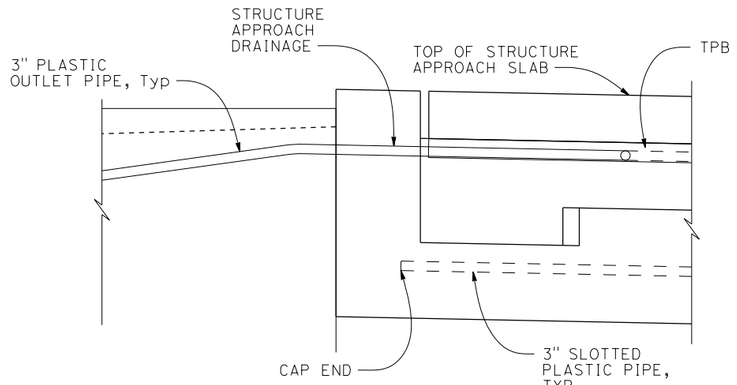
1. For "SECTION C-C", see "ABUTMENT DETAILS No. 1" sheet.



SECTION B-B
1/2" = 1'-0"

NOTE: Drainage pad not shown for clarity.

DRAINAGE PAD
1 1/2" = 1'-0"



SECTION G-G
1/2" = 1'-0"

NOTE: Drainage pad not shown for clarity.

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN	BY R. INGRAM	CHECKED M. KANAAN	
DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

FRANK WEI - BRANCH 19
DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

MELAD HANNA
PROJECT ENGINEER

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

STRUCTURE APPROACH DRAINAGE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:15 PM
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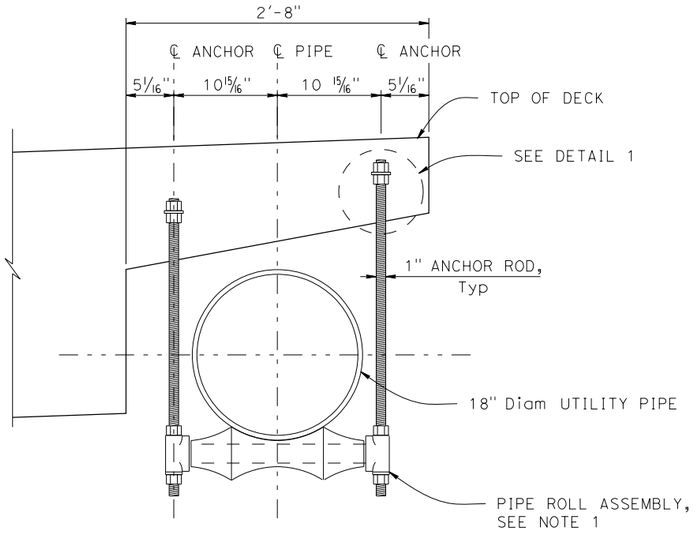
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1
CONTRACT No.: 07-313504

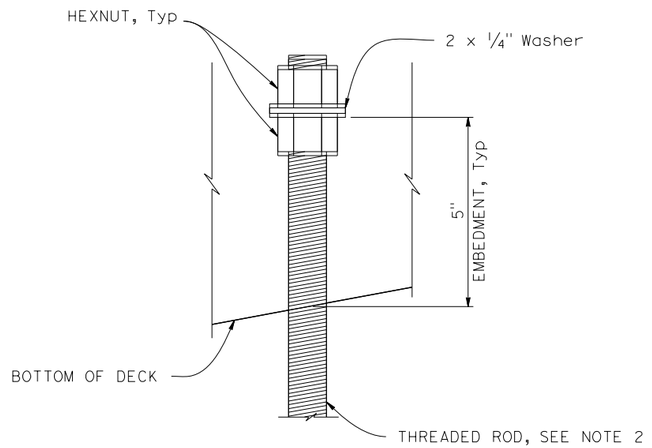
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
07/20/20	09/17/20	11/05/20	4/5/21	37	45



SECTION A-A

1/4" = 1'-0"



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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

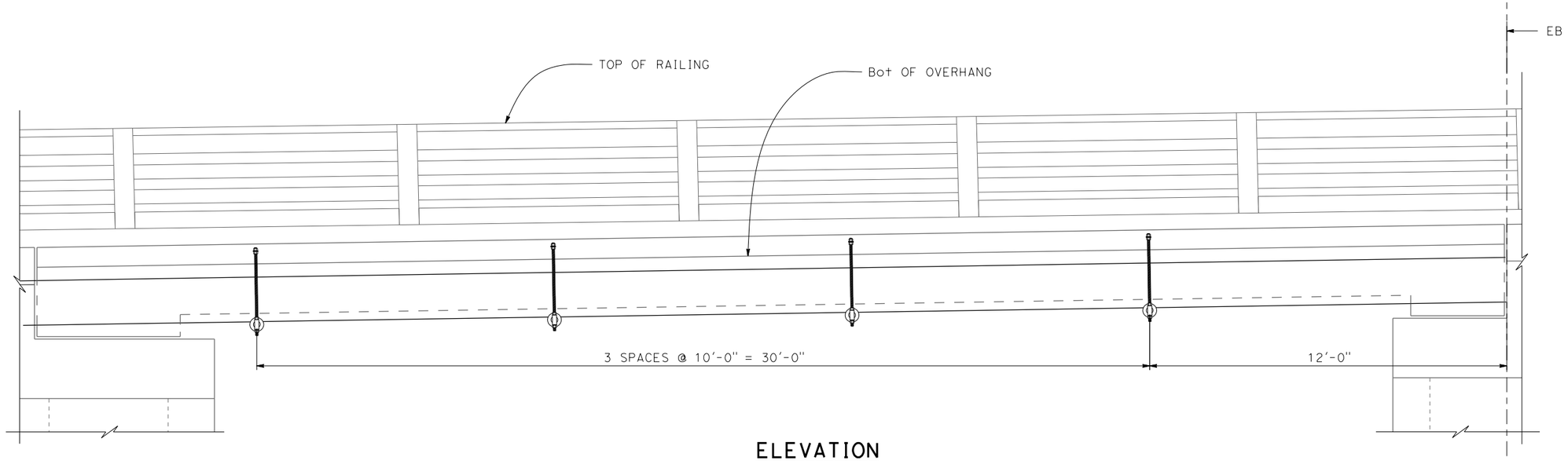
REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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.

AECOM
999 W. TOWN & COUNTRY RD.
ORANGE, CA. 92868

NOTES:

1. Pipe Roll Assembly to be made by manufacturer. Must be fitted for 18" diameter utility pipe with a maximum outside diameter of 19 7/8". Must be load rated for minimum 4,200 lbs.
2. Threaded Rod to be cast in place with concrete.
3. For pipe location, profile, limits of payment including utility pipe support, and details not shown, see "ROADWAY PLANS".



ELEVATION

1/2" = 1'-0"

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

FRANK WEI - BRANCH 19 DESIGN OVERSIGHT		DESIGN	BY R. INGRAM	CHECKED M. KANAAN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE		DETAILS	BY D. CUMMARO	CHECKED M. KANAAN	
		QUANTITIES	BY D. CUMMARO	CHECKED M. KANAAN	

MELAD HANNA
PROJECT ENGINEER

BRIDGE No.	SOLSTICE CANYON CREEK BRIDGE
53-3200	
POST MILE	UTILITY PIPE SUPPORT DETAIL
50.36	

DESIGN DETAIL SHEET (ENGLISH) (REVISION 4/19/2018)

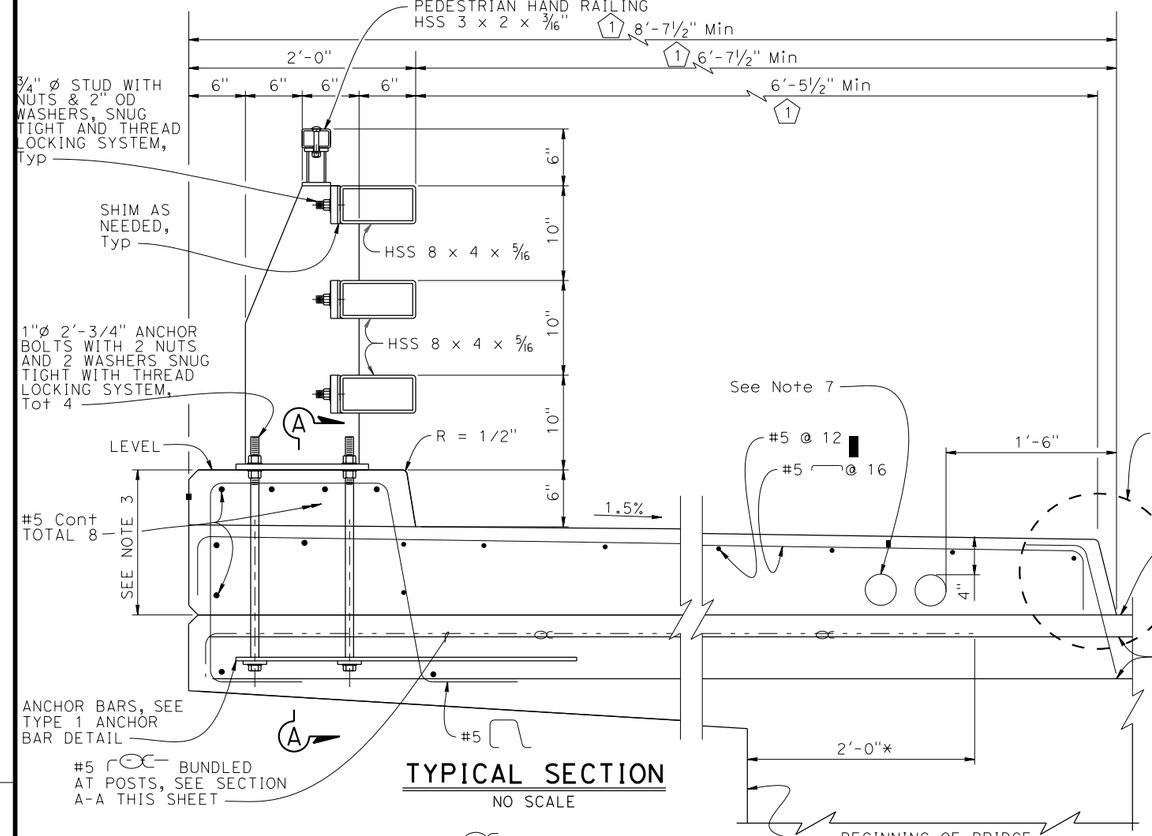
DATE PLOTTED => 3/17/2022 TIME PLOTTED => 7:35:17 PM
FILE => ...\910_CAD\53-0030-r-ddet02.dgn USERNAME => rob.ingram

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

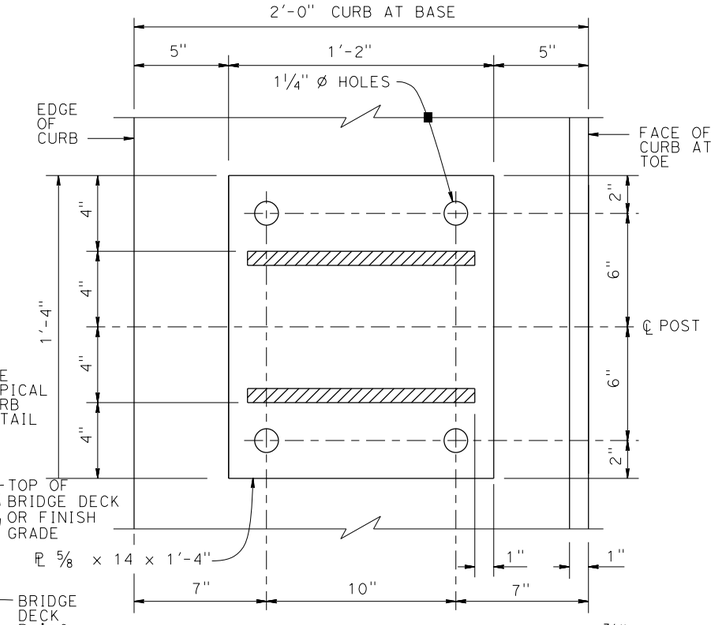
REVISION DATES				SHEET	OF
4/5/21				38	45



TYPICAL SECTION

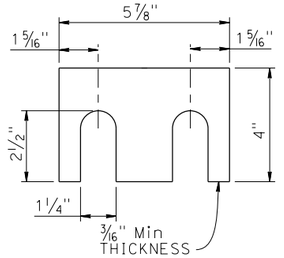
NO SCALE

* #5 Bundled at posts to extend 2'-0" Min beyond beginning of bridge deck overhang.



BASE PLATE

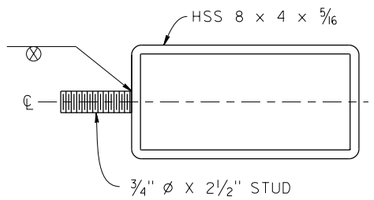
NO SCALE



SHIM DETAILS

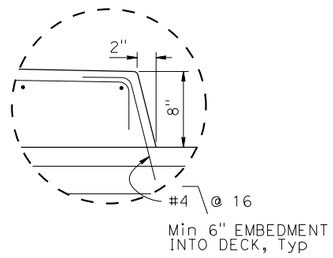
NO SCALE

NOTE:
Shims as needed between posts and HSS rail tubes.



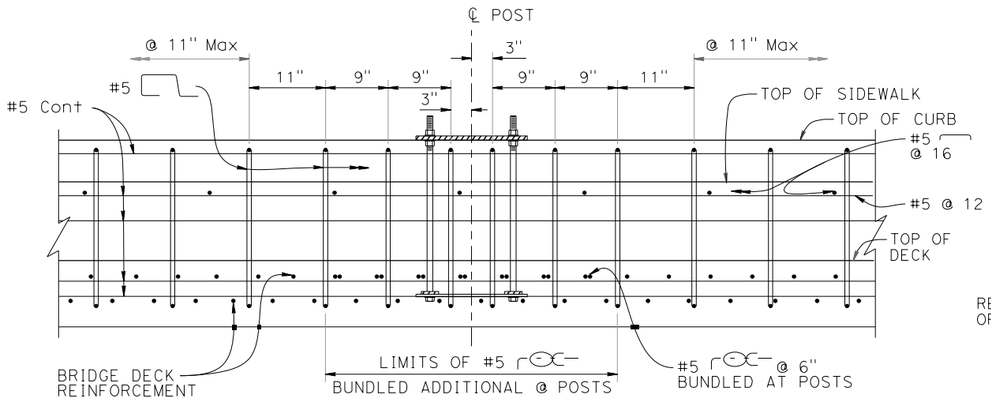
RAIL SECTION AT POST

NO SCALE



TYPICAL CURB DETAIL

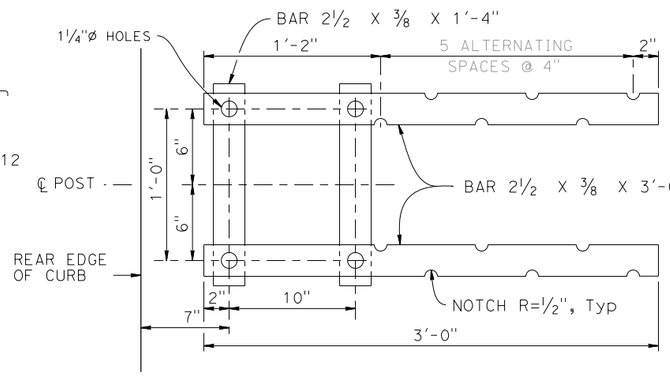
NO SCALE



POST NOT SHOWN FOR CLARITY

SECTION A-A

NO SCALE



TYPE 1 ANCHOR BAR DETAIL

NO SCALE

NOTES:

1. This barrier is to be used only for posted speeds of 45 MPH or less. For speeds greater than 45 MPH, pedestrians must be protected by a separation traffic barrier.
2. Anchor bolts may be welded to anchor bars.
3. Dimensions will vary with cross slope of sidewalk and bridge deck, and sidewalk width, and if overlay is placed on deck.
4. Walls must be backfilled before curb and parapet is placed.
5. Clearance to reinforcing steel in curb and railing is 2" except as noted. Longitudinal reinforcement to stop at all expansion joints.
2 6. For Joint Armor details, see "JOINT ARMOR FOR PEDESTRIAN WALKWAYS" sheet.
2 7. A minimum of four 4" round conduit for future utilities and a maximum of six 4" round conduit. Utility conduit must be a minimum of 6" from face of barrier parapet. Conduits are to be sealed at ends and extended 8" minimum past end of sidewalk if not used. Duct forms are to be tied down. For exact number and placement of utility conduit see "TYPICAL SECTION" sheet. Minimum 2" clear between conduits.
2 8. See "ROADWAY PLANS" for pull box location and type.
3 9. All reinforcement must be prefabricated epoxy coated.

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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BRIDGE STANDARD DETAILS

xs16-119-1 (FILE NO.) | January 2021 (APPROVAL DATE)

The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California

MODIFICATIONS SHOWN
1 DIMENSION CHANGED
2 NOTE REVISED
3 NOTE ADDED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE
SPECIAL DETAILS
CALIFORNIA ST-75SW BRIDGE RAIL
DETAILS No. 1

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

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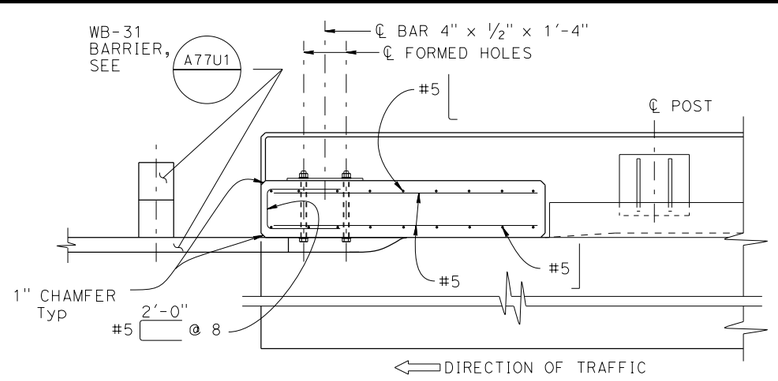
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:3621
PROJECT NUMBER & PHASE:0715000090 1 CONTRACT No.:07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

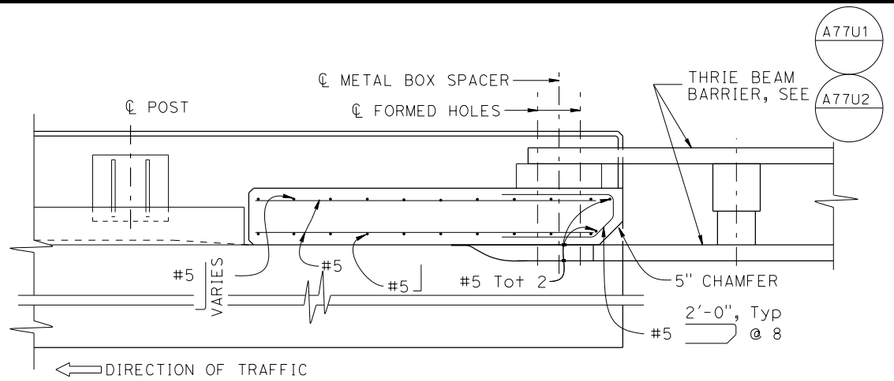
REVISION DATES				SHEET	OF
06-17-20		02-04-21	10-12-20	39	45



PLAN

DEPARTURE END BLOCK DETAIL

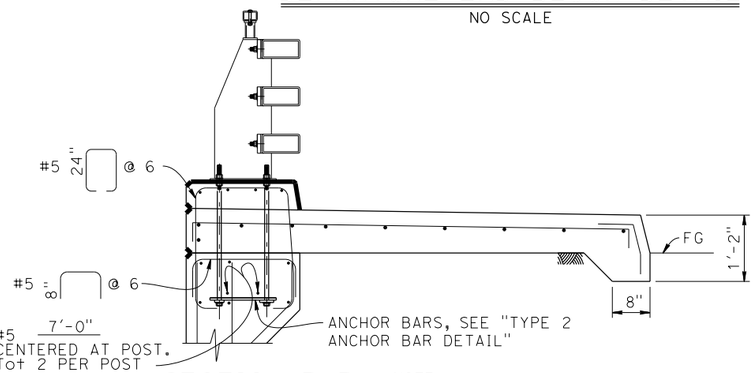
NO SCALE



PLAN

APPROACH TRANSITION BLOCK DETAIL

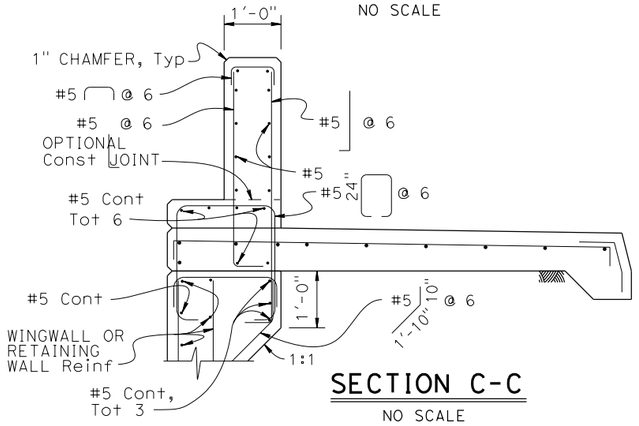
NO SCALE



SECTION B-B

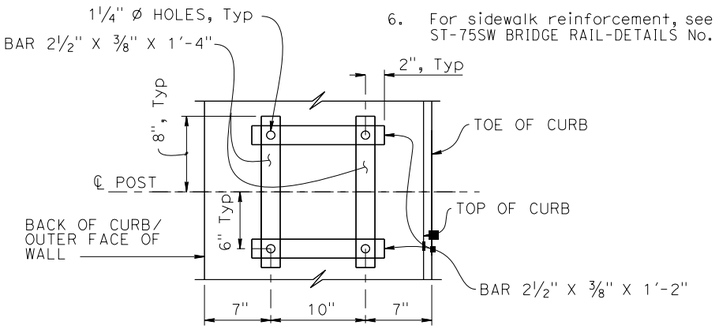
NO SCALE

NOTE:
For details not shown see "Section C-C"



SECTION C-C

NO SCALE

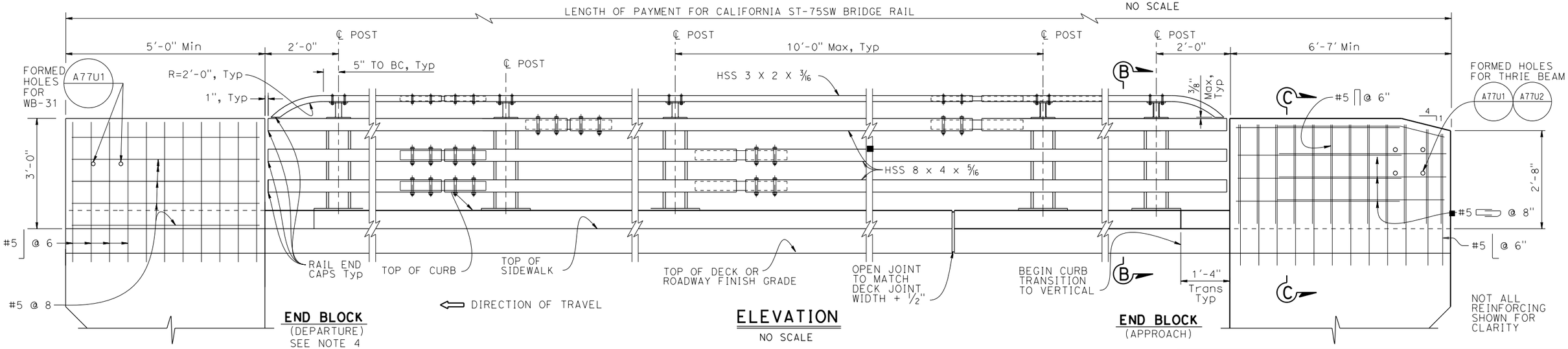


TYPE 2 ANCHOR BAR DETAIL

NO SCALE

NOTES:

1. All horizontal members are parallel to longitudinal profile grade.
2. Posts are normal to profile grade of structure.
3. Posts are vertical to the transverse cross section.
4. If departure end block is within the Clear Recovery Zone (CRZ, 30 feet for expressways and freeways and 20 feet for conventional highways) of opposing traffic, then use the approach end block at the departure end.
5. Anchor bolts may be tack welded to anchorage.
6. For sidewalk reinforcement, see CALIFORNINIA ST-75SW BRIDGE RAIL-DETAILS No. 1 sheet,



END BLOCK
(DEPARTURE)
SEE NOTE 4

ELEVATION

NO SCALE

END BLOCK
(APPROACH)

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

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
STATE OF CALIFORNIA

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SOLSTICE CANYON CREEK BRIDGE

CALIFORNIA ST-75SW BRIDGE RAIL

DETAILS No. 2

BRIDGE STANDARD DETAILS

xs16-119-2	January 2021	*The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California*
FILE NO.	APPROVAL DATE	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE No. 53-3200
POST MILE 50.36

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1
CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
9/18/20		02-04-21	1-26-21	40	45

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

ROB INGRAM
No. 84830
Exp. 3/31/24
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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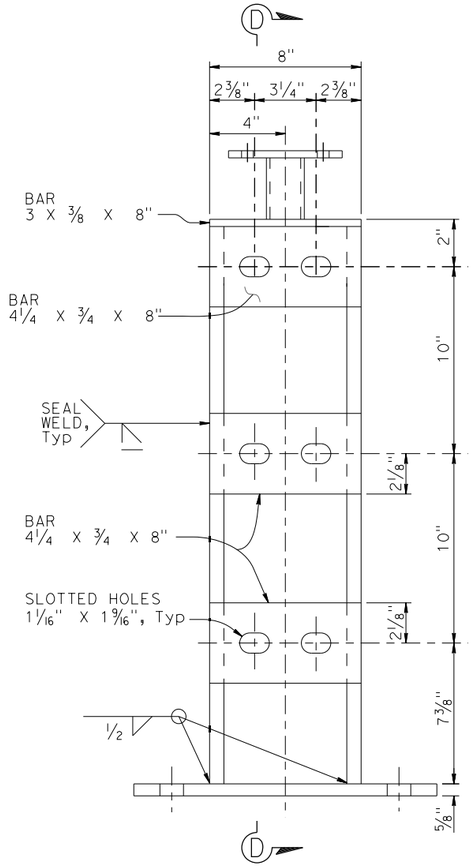
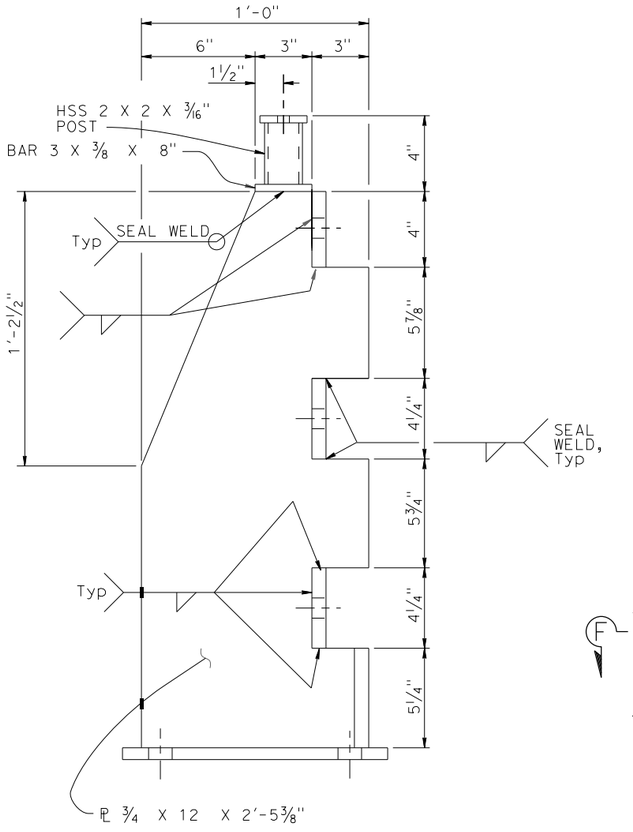


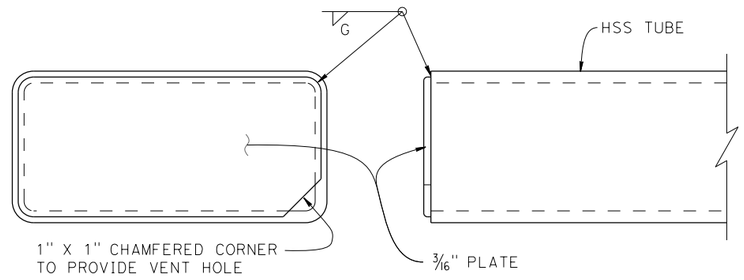
POST DETAIL

NO SCALE



SECTION D-D

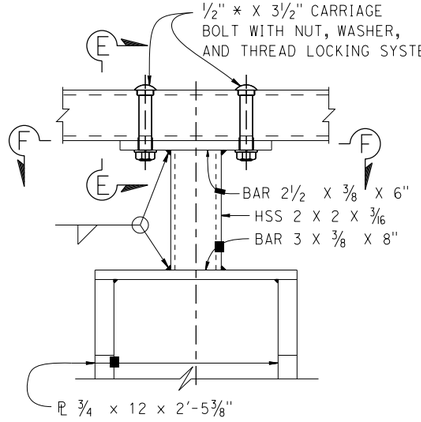
NO SCALE



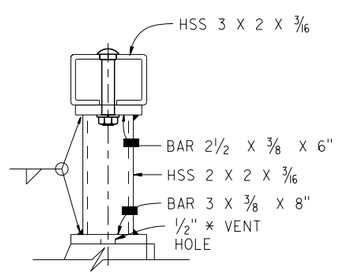
RAIL END CAP

NO SCALE

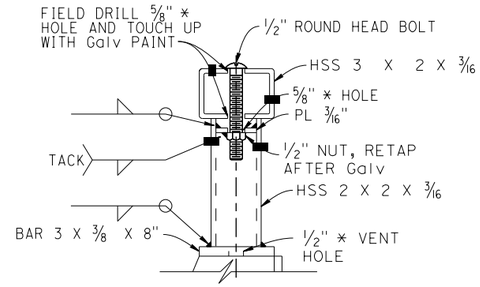
FOR VEHICULAR RAIL TUBES
AND PEDESTRIAN HAND RAILING TUBES



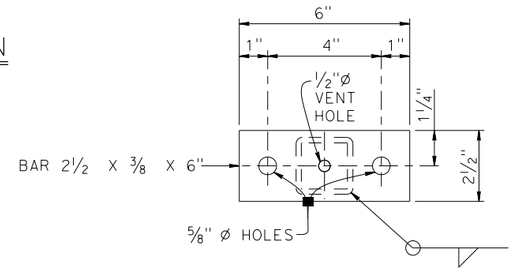
ELEVATION



SECTION E-E



SECTION E-E ALTERNATIVE



SECTION F-F

PEDESTRIAN HAND RAILING CONNECTION DETAILS

NO SCALE

BRIDGE STANDARD DETAILS		
xs16-119-3	January 2021	*The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California*
FILE NO.	APPROVAL DATE	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE No. 53-3200
POST MILE 50.36

SOLSTICE CANYON CREEK BRIDGE

CALIFORNIA ST-75SW BRIDGE RAIL

DETAILS No.3

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3621
PROJECT NUMBER & PHASE: 0715000090 1 CONTRACT No.: 07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
03/18/20		02-04-21	10-14-20	41	45

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

ROB INGRAM No. 84830 Exp. 3/31/24 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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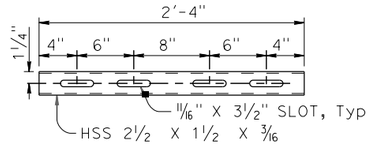
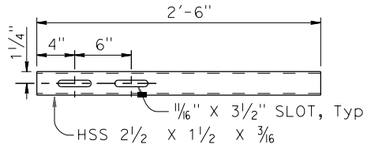
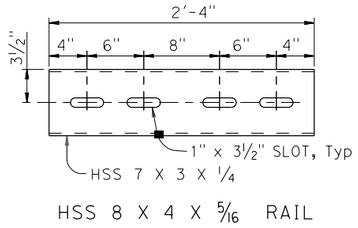


HSS 3 X 2 X 3/16 RAIL



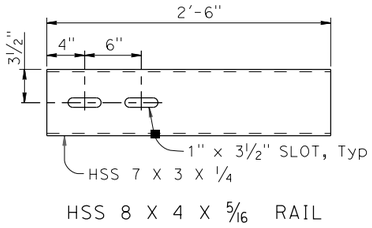
HSS 3 X 2 X 3/16 RAIL



HSS 8 X 4 X 5/16 RAIL

STANDARD SLEEVES DETAILS

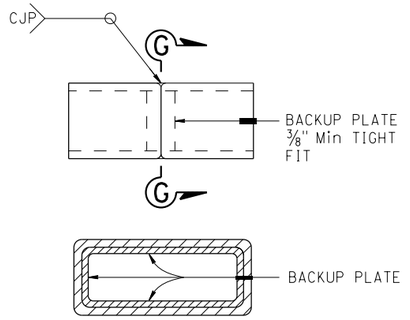
NO SCALE



HSS 8 X 4 X 5/16 RAIL

EXPANSION SLEEVES DETAILS

NO SCALE



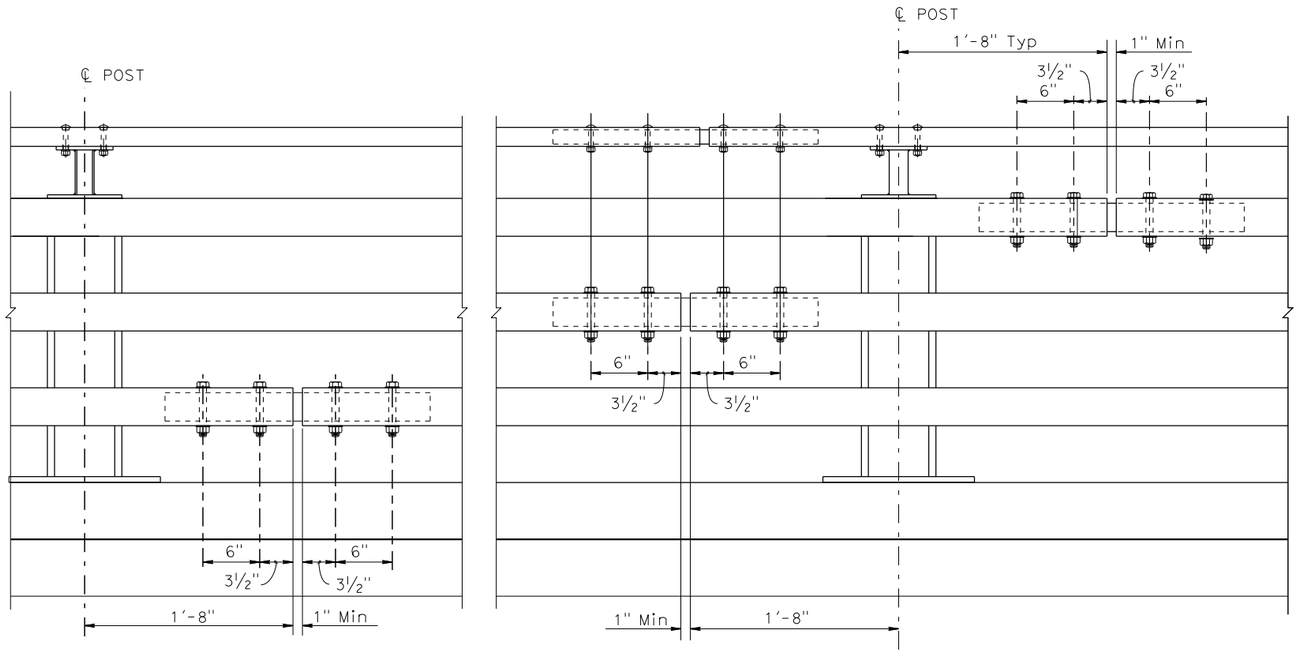
SECTION G-G

ALTERNATE TUBE WELDED STANDARD SPLICE

NO SCALE

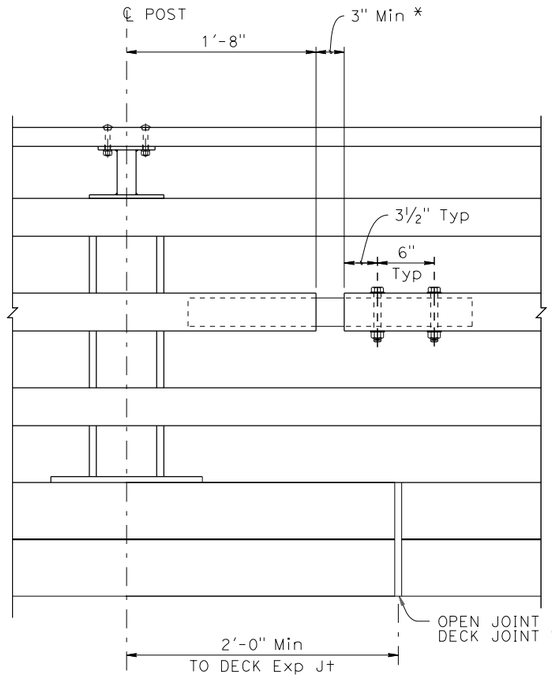
NOTES:

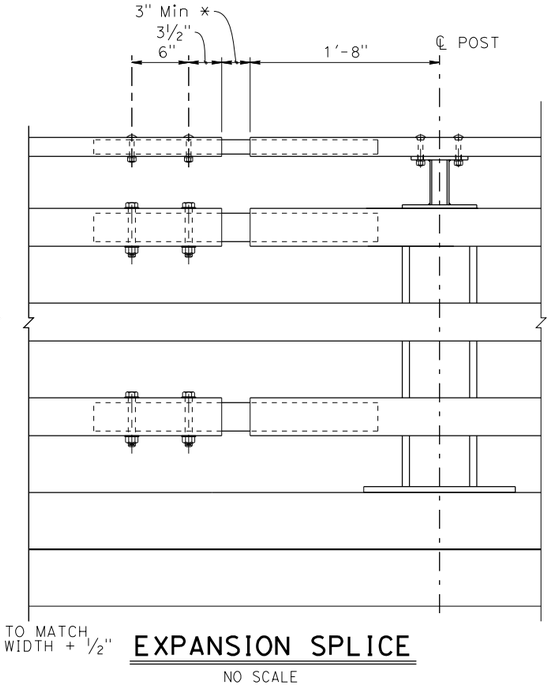
1. HS bolts with nut and washers, snug tightened, and thread locking system.
2. Use ½"* X 3 5/16 BOLTS (HSS 3 X 2 X 3/16)
   Use ¾"* X 5 5/16 BOLTS (HSS 8 X 4 X 5/16)
3. Each rail length must be continuous over a minimum of two posts.
4. The fabricator must check that the tubular sleeve splices conform to the dimensions indicated to assure proper clearance.
5. Except for expansion splices, not more than one splice permitted per same side of post.



STANDARD SPLICE

NO SCALE





EXPANSION SPLICE

NO SCALE

* MATCH DECK OR WALL JOINT

SOLSTICE CANYON CREEK BRIDGE

BRIDGE STANDARD DETAILS

xs16-119-4	January 2021	The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California
FILE NO.	APPROVAL DATE	

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE No.	53-3200
POST MILE	50.36

CALIFORNIA ST-75SW BRIDGE RAIL

DETAILS No.4

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:3621
PROJECT NUMBER & PHASE:0715000090 1 CONTRACT No.:07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES			
09/15/20		02-04-21	10-8-20

SHEET	OF
42	45

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

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROB INGRAM — No. 84830 — Exp. 3/31/24 — CIVIL — STATE OF CALIFORNIA

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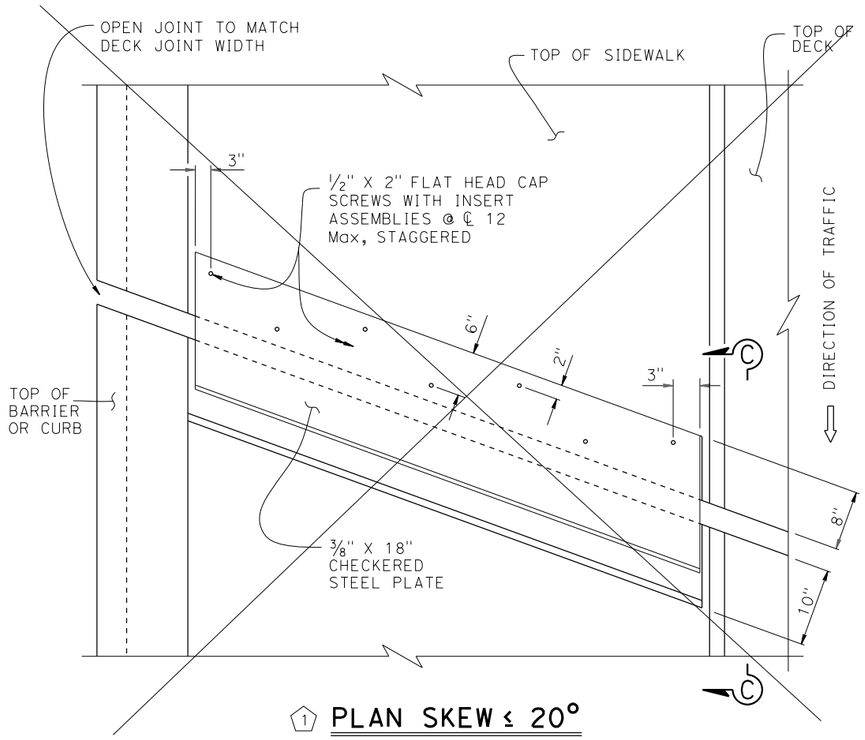
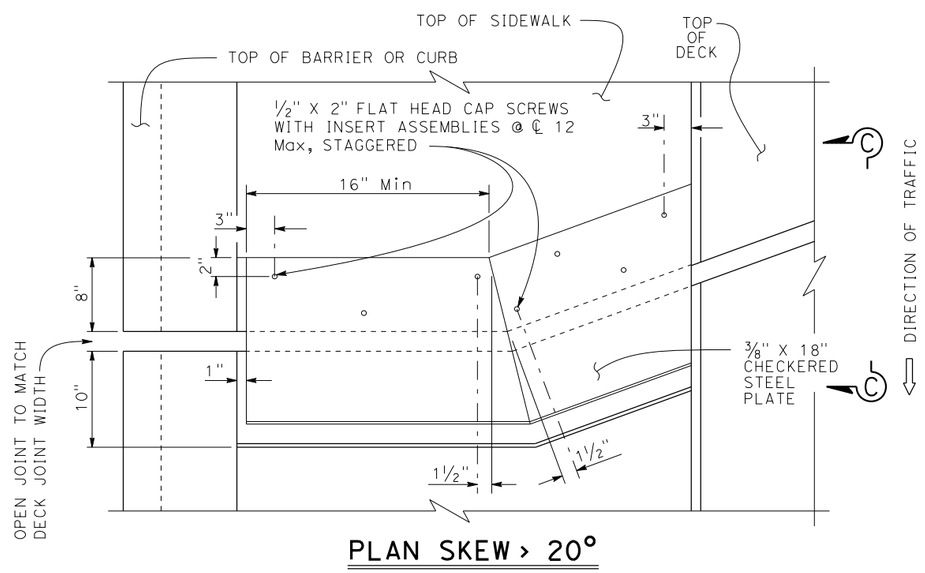
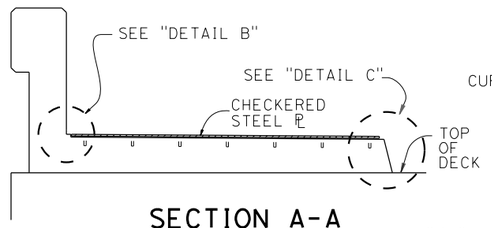
The Registered Civil Engineer for the project, is responsible for the selection and proper application of the component design and any modifications shown.



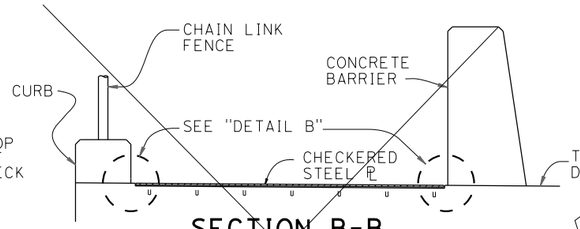
① PLAN SKEW ≤ 20°



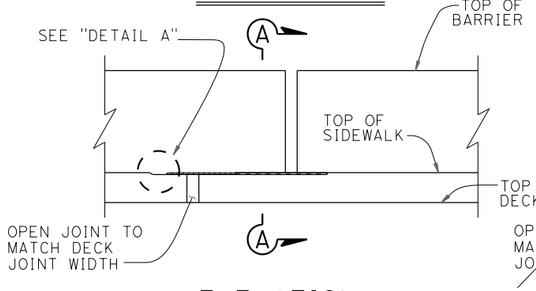
PLAN SKEW > 20°



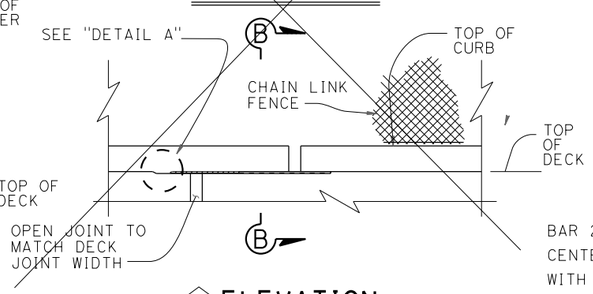
SECTION A-A



SECTION B-B

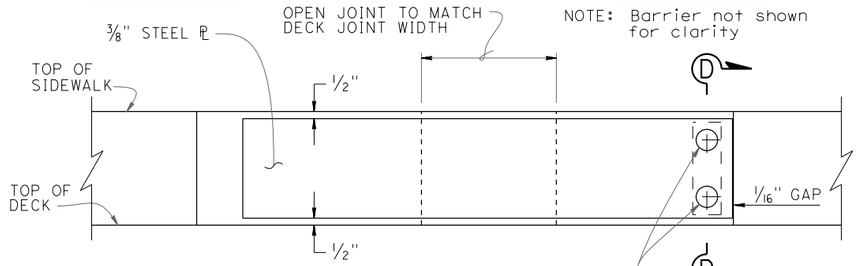


ELEVATION



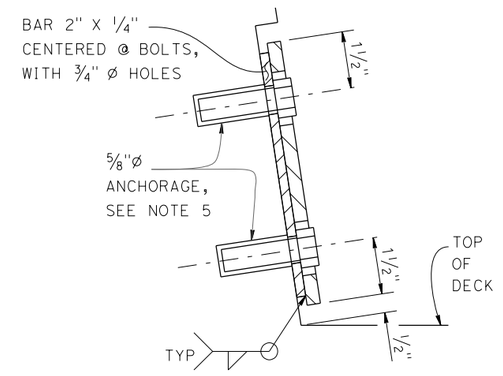
② ELEVATION

NOTES:
1. Utility openings and expansion joints not shown for clarity
2. Recess concrete ½" for plates
3. Plates to be galvanized
2 4. ~~Architectural treatment not shown~~
5. Insert assembly or expansion anchorage for ⅝" x 1¾" bolts. Use installation bolts extended ½" minimum past nut and coat with bond breaker. After concrete has cured, remove installation bolts, install HS bolts



VIEW C-C

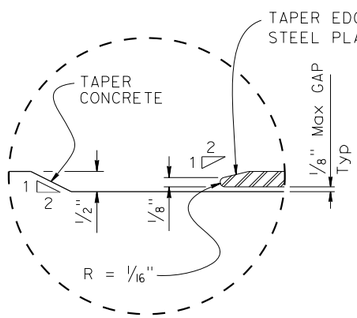
NOTE: Barrier not shown for clarity



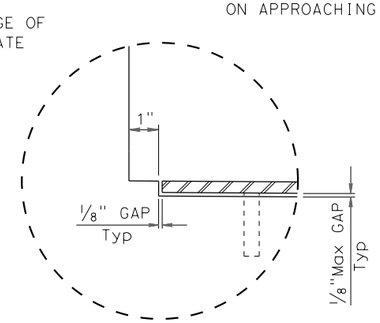
SECTION D-D

1½"Ø HOLE FOR COUNTERSUNK ⅝"Ø ANCHORAGE. PLACE ANCHOR BOLTS ON APPROACHING TRAFFIC END

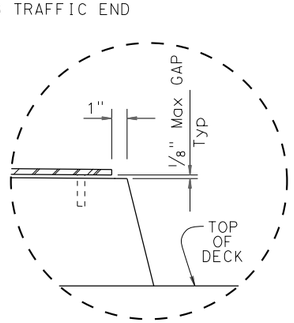
DIRECTION OF TRAFFIC



DETAIL A



DETAIL B



DETAIL C

NO SCALE

SPECIAL DETAILS

BRIDGE STANDARD DETAILS			MODIFICATIONS SHOWN:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	SOLSTICE CANYON CREEK BRIDGE
xs8-050 FILE NO.	October 2018 APPROVAL DATE	*The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California*	① DETAIL REMOVED ② NOTE REMOVED			53-3200 POST MILE 50.36	JOINT ARMOR FOR PEDESTRIAN WALKWAYS

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

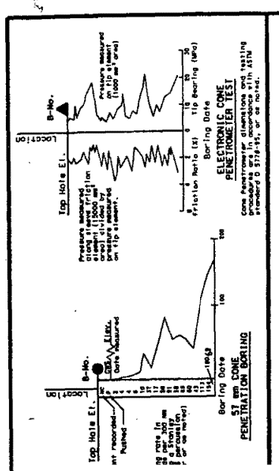
FILE => ...\910_CAD\201810-xs8-050.dgn
USERNAME => rob.ingram TIME PLOTTED => 7:35:31 PM DATE PLOTTED => 3/17/2022

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:3621
PROJECT NUMBER & PHASE:0715000090 1 CONTRACT NO.:07-313504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-24-14	9-14-18	10-2-18	8-23-18	43	45



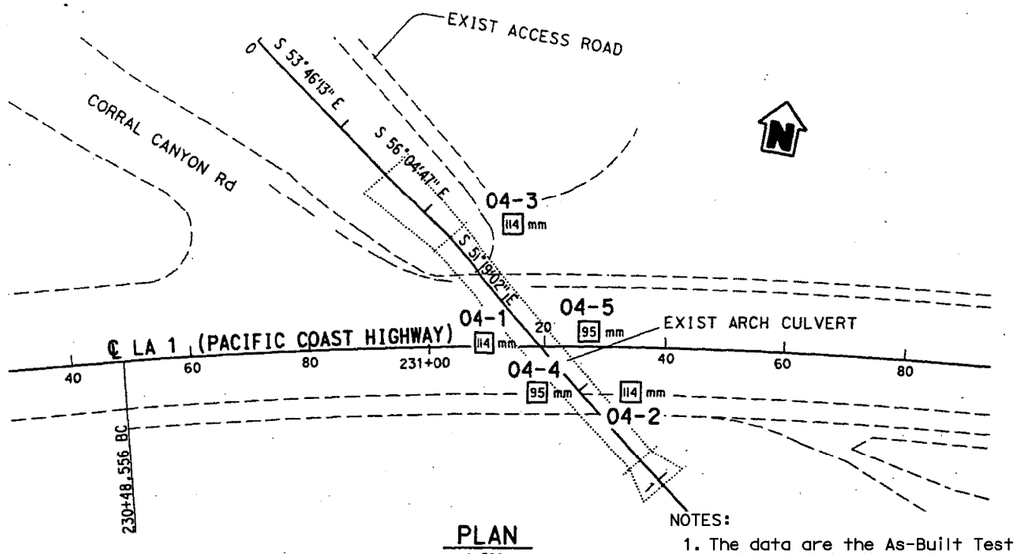
BENCH MARK

"BM Y5415" AKA "GPS 6945"
Elev. 10.073 m
Found brass disk stamped "Solstice Canyon G-9 Reset 1958," sub 0.40 meters in a well.

N 559396.171
E 1931419.058

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES					
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.					
DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
07	LA	001			
CERTIFIED ENGINEERING GEOLOGIST			3-29-21 DATE		
SOLSTICE CANYON CREEK CULVERT					
LOG OF TEST BORINGS 1 OF 2					
UNIT: 3650		CONTRACT No.		BRIDGE No.	
PROJ. No. & PHASE: 07150000901		07-313504		53-3200	
AS-BUILT VERT DATUM: NGVD29	CONVERSION:NAVD88=NGVD29+2.507'			Sheet	of
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA				44	45

PROFESSIONAL GEOLOGIST — Michael A. Saltsgaver — No. 2462 — Exp. 2-28-23 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA



PLAN
1:500

Revisions made to this Log of Test Borings from the original As-Built Log of Test Borings are the addition of the following table and note:

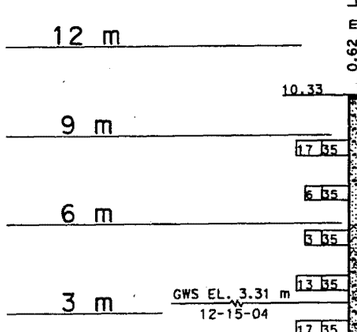
BORING	"CL ALN1" LINE		
	STATION	OFFSET	Rt/Lt
04-1	2922 + 33.77	1.99	Rt
04-3	2921 + 51.74	24.34	Lt
04-4	2922 + 16.98	67.78	Rt
04-5	2922 + 03.97	25.50	Lt
04-2	2921 + 74.86	8.43	Rt

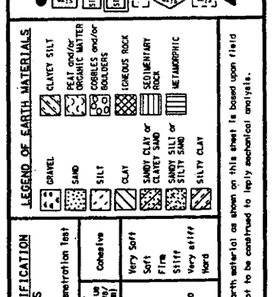
NOTES:

1. The data are the As-Built Test Borings referenced to the proposed new structure location. This table is presented on the As-Built Log of Test Boring sheet for the convenience of any bidder, contractor or other interested party.
2. See the General Plan or Foundation Plan for new english alignment.
3. Boring locations were scaled from As-Built LOTB plan and plotted on project layout to obtain station and offset.

NOTES:

1. All test borings were advanced using a self-casing 94 mm wireline drill system.
2. The descriptions and classifications of soil, including consistency and relative density descriptors, used by the field personnel for the exploration boreholes shown on these sheets are based on the "Soil and Rock Logging Classification Manual (Field Guide)," Engineer Service Center, Office of Structural Foundations, August 1996.
3. Soil colors were determined using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using the Geological Society of America rock color charts (1995, revised text).
4. Test borings 04-1, 04-2, and 04-3 utilized a Diedrich automatic hammer to advance the sampler using a 63.5 kg hammer with a 762 mm drop. Test borings 04-4 and 04-5 utilized a safety hammer to advance the sampler using a 63.5 kg hammer with a 762 mm drop. Penetration index values shown on the Log of Test Boring (LOTB) sheets were the actual values recorded in the field. Soil consistency shown on the LOTB sheets is based on the actual penetration index values recorded in the field.
5. E = Blow count for 0.3 m penetration extrapolated from blow count for less than 0.3 m (due to change in material or hard driving).
6. Ground water measurements presented on the test borings was based on the field condition at the time of drilling. Ground water was measured during the field investigation in boring 04-1.





NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

PROFILE
HOR. 1:20
VER. 1:100

231+20

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	1			

REGISTERED GEOLOGIST 2-4-05

PLANS APPROVAL DATE

REGISTERED GEOLOGIST — Muhammad Gabr Ali Lugman — No. 7297 — Exp. 5-31-06 — REGISTERED GEOLOGIST — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	FIELD INVESTIGATION BY:	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF STRUCTURES STRUCTURE DESIGN	BRIDGE NO. 53-0030	SOLSTICE CANYON CREEK CULVERT
DRAWN BY I. G-Remmen 02/05		J. Martin			KILOMETER POST 81.0	LOG OF TEST BORINGS 1 OF 3
CHECKED BY J. Martin				CU 07 EA 4H9801	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) 02-04-05

SHEET OF

DGS GEOLOGIST LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

FILE => solstice-ck1of3.dgn

USERNAME => lgamarra DATE PLOTTED => 04-FEB-2005 TIME PLOTTED => 11:20

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES					
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DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
07	LA	001			

CERTIFIED ENGINEERING GEOLOGIST — 3-29-21 DATE

SOLSTICE CANYON CREEK CULVERT

LOG OF TEST BORINGS 2 OF 2

UNIT: 3650		CONTRACT No.	BRIDGE No.
PROJ. No. & PHASE: 07150000901		07-313504	53-3200
AS-BUILT VERT DATUM: NGVD29	CONVERSION: NAVD88=NGVD29+2.507'	Sheet	of
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA		45	45

PROFESSIONAL GEOLOGIST — Michael A. Saltsgiver — No. 2462 — Exp. 2-28-23 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 3

Caltrans Metric

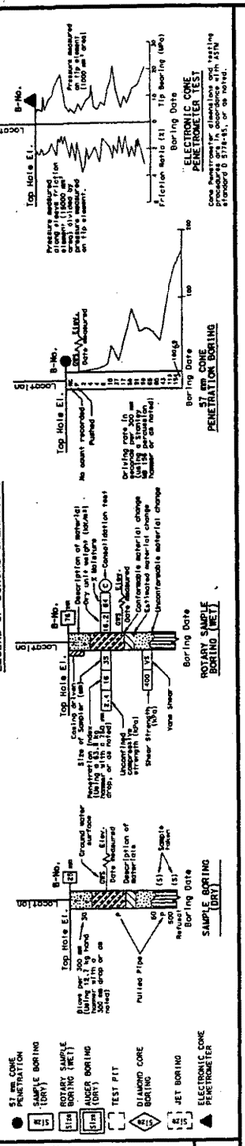
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	1			

REGISTERED GEOLOGIST — 2-4-05

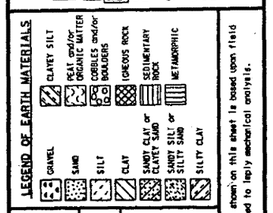
PLANS APPROVAL DATE

REGISTERED GEOLOGIST — Muhammad Gabr Ali Lugman — No. 7297 — Exp. 5-31-06 — REGISTERED GEOLOGIST — STATE OF CALIFORNIA

LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS

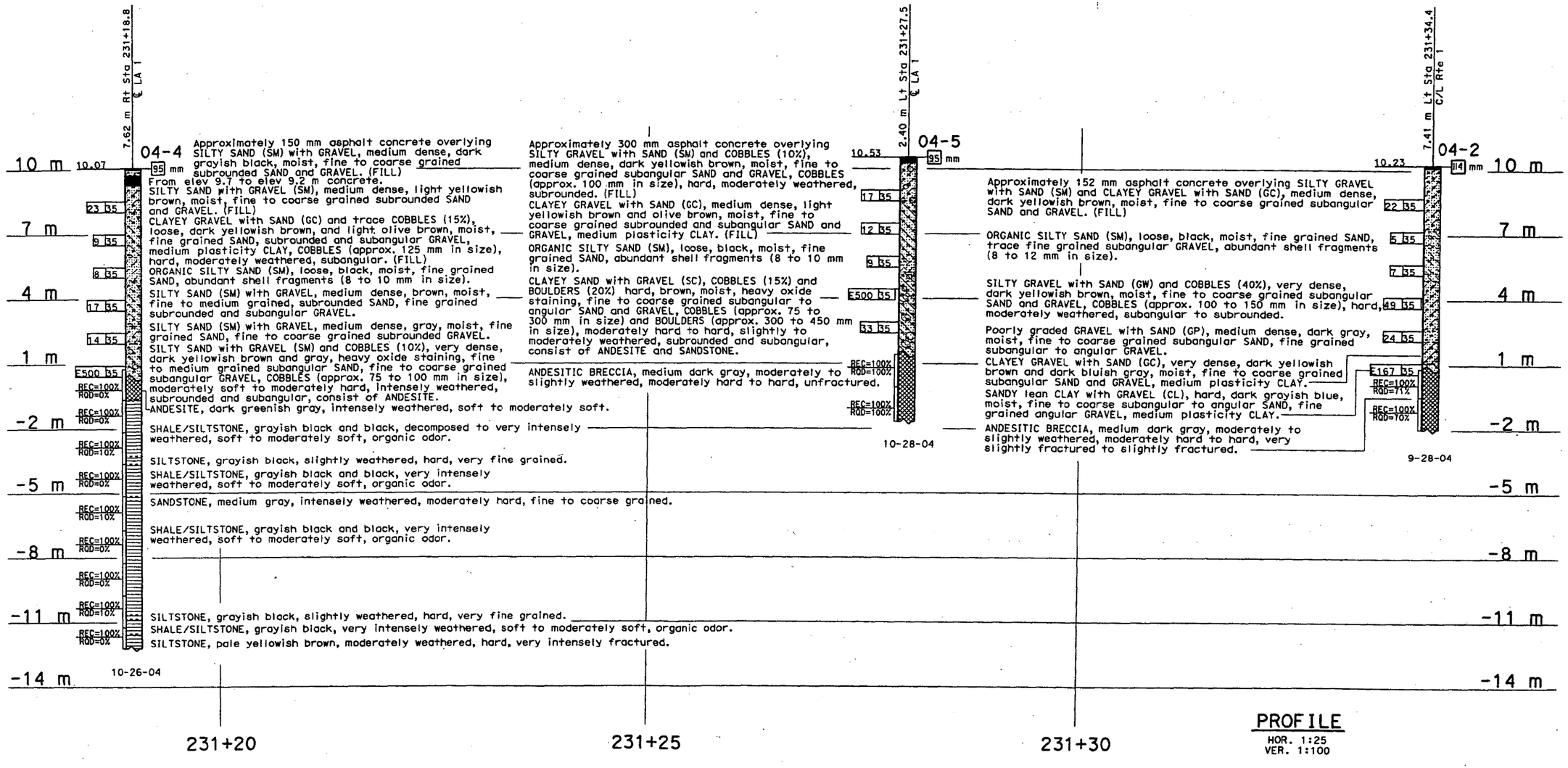


CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>30	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



PROFILE
HOR. 1:25
VER. 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I. G-Remmen/F. Nguyen 02/05
CHECKED BY	J. Martin

FIELD INVESTIGATION BY: J. Martin

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES
STRUCTURE DESIGN

BRIDGE NO.	53-0030
KILOMETER POST	81.0

SOLSTICE CANYON CREEK CULVERT

LOG OF TEST BORINGS 2 OF 3

CU 07
EA 4H9801

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 02-04-15

SHEET | OF

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

FILE => solstice-ck2of3.dgn

OGS GEOLOGIST LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

USERNAME => jgamarra DATE PLOTTED => 04-FEB-2005 TIME PLOTTED => 13:40