State of California
Department of Fish and Wildlife

Memorandum

Date: July 15, 2020

To: Ms. Michele Lukkarila
California Department of Transportation
District 3
1703 B Street
Marysville, CA 95901
michele.lukkarila@dot.ca.gov

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

From: Mr. Gregg Erickson, Regional Manager
California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534

Subject: Incidental Take Permit for 2081-2017-068-03 Caltrans Bridge Seismic Retrofit Mokelumne (03-SAC-05-3F090) Project, San Joaquin and Sacramento County, Amendment No. 1

Enclosed is the Incidental Take Permit Amendment for the above referenced project, which has been signed by the California Department of Fish and Wildlife (CDFW). Please read the permit carefully and sign the acknowledgement on the permit no later than 30 days from CDFW signature and prior to continuation of ground-disturbing activities. Alternatively, a signed hardcopy can be mailed to:

Habitat Conservation Planning Branch
California Department of Fish and Wildlife
Attention: CESA Permitting Program
Post Office Box 944209
Sacramento, CA 94244-2090

You are advised to keep a copy of the signed permit in a secure location and distribute copies to appropriate project staff responsible for ensuring compliance with the conditions of the permit. Note that you are required to comply with certain conditions of approval prior to continuation of ground-disturbing activities. Additionally, a copy of the permit must be maintained at the project work site and made available for inspection by CDFW staff when requested.

The permit will not take effect until the signed acknowledgment is received by CDFW. If you wish to discuss these instructions or have questions regarding the permit, please contact Mr. Robert Stanley, Senior Environmental Scientist (Specialist), at (707) 428-2093 or Robert.Stanley@wildlife.ca.gov; or Mr. Craig Weightman, Environmental Program Manager at (707) 944-5577 or Craig.Weightman@wildlife.ca.gov.

Enclosures

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
BAY DELTA REGION
2825 CORDELIA ROAD, SUITE 100
FAIRFIELD, CA 94534

AMENDMENT NO. 1
(A Minor Amendment)
California Endangered Species Act
Incidental Take Permit No. 2081-2017-068-03
California Department of Transportation, District 3
Caltrans Bridge Seismic Retrofit Mokelumne (03-SAC-05-3F090) Project,
San Joaquin/Sacramento County

INTRODUCTION

On April 4, 2019, the California Department of Fish and Wildlife (CDFW) issued Incidental Take Permit No. 2081-2017-068-03 (ITP) to the California Department of Transportation (Permittee) for take of Chinook salmon – Central Valley spring-run (*Oncorhynchus tshawytscha*), Chinook salmon – Sacramento River winter-run (*Oncorhynchus tshawytscha*), Delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*) and giant garter snake (*Thamnophis gigas*), collectively the Covered Species associated with the Caltrans Bridge Seismic Retrofit Mokelumne (03-SAC-05-3F090) Project in San Joaquin and Sacramento County, California. In issuing the ITP, CDFW found, among other things, that Permittee's compliance with the Conditions of Approval of the ITP would fully mitigate impacts to the Covered Species and would not jeopardize the continued existence of the Covered Species.

This Minor Amendment No. 1 (Amendment) makes the following changes to the existing ITP:

First, to change the Project Description as it pertains to the design of the temporary work platform. Second, to change the Project Description as it pertains to the construction schedule from one season of in-water work to two seasons of in-water work. Third, to update Condition of Approval 8.4 to include reference to Figure 9. Fourth, to update Condition of Approval 8.7 to represent an increase in the number of pile strikes that does not represent an increase in injurious sound output impacts. Fifth, to include new figures and references to the new figures within the ITP.

AMENDMENT

The ITP is amended as follows (amended language in ***bold italics***; deleted language in ~~strikethrough~~):

1. ITP Page 2, Paragraph 4, Line 5, temporary work platform section of the ITP shall be changed to read:

~~Construction equipment access and operation at Bents 4 and 5 is proposed to be facilitated with the use of a temporary rock causeway (work-pad) comprised of clean gravel and/or cobble. At the completion of construction activities below the top of the Mokelumne River levee, the temporary work pad materials will be completely removed including and the entire work-pad footprint will be regraded to the original contours and elevations.~~

Mokelumne River Access Plan

Construction equipment access and operation at Bents 4 and 5 will construct three temporary trestles. One on the east side, one down the middle and one on the west side of the bridge (See Figure 11). A total of sixty 24-inch pipe piles will be installed by vibratory means, with the exception of two piles which will be impact driven in order to verify bearing capacity. The two trestle piles that will be impact driven will take a total of 76 total strikes and will receive a sound attenuation system and hydro-acoustic monitoring (See Figures 9 and 10). The installation of the trestles will begin on July 15. The in-water temporary impacts from installation of the 60 piles is 0.004 acres. The trestle will be left in place for two seasons and all 24-inch piles will be completely removed by vibratory means with the use of crane and vibratory hammer upon completion of the Project.

2. ITP Page 4, Paragraph 2, The Project Constraints and Schedule section shall be changed to read:

   Project Constraints and Schedule
   The Caltrans Structural Engineer has determined that in-water pile driving activities at the Mokelumne River ESL (~~for temporary work-pad fill installation and removal~~ ***installation of sixty 24-inch piles via vibratory pile driving, two of which are to be installed using impact pile driving***, removal of 20 exiting existing columns/piles, and installation of eight (8) 48-inch diameter CISS piles) will require ~~approximately 60 working days spread over approximately 3 months to accomplish~~. ~~Although the entire Mokelumne River Bridges retrofit is expected to be constructed over the course of two construction seasons, the in-water work component is expected to be accomplished within one of the two expected construction seasons~~. The in-water work window for the Mokelumne River Bridges retrofit is therefore proposed to be July 15 to October 15, and in-stream work will be constructed in ~~one~~ ***two*** construction season***s***, to limit potential impacts to fish.

3. ITP Page 13, Condition of Approval 8.4 shall be changed to read:

   Pile Driving Hydro-Acoustic Limits. Sound pressure levels generated by impact pile driving within the river, or within a reasonable distance of the water (on dry land) where sound levels may reach the water that are injurious to Covered Species shall

be kept below the interim thresholds, 206 decibels (dB) peak Sound Pressure Level (SPL) and 187 dB cumulative Sound Exposure Level (SEL). The Project has specified a 0.5-acre peak injury zone for the 206 dB SPL and a 5.5-acre area for the cumulative SEL injury zone as specified in Figure 7 ***and 9***. If the 206 dB SPL or 187 cumulative SEL threshold injury zones are exceeded for impact pile driving the Permittee shall stop all impact pile driving activities and not continue until CDFW has been consulted. Any exceedance in the threshold distances (Figure 7 ***and 9***) shall require an Amendment to this ITP. The Permittee shall monitor sound levels as specified in Condition of Approval 8.6, during impact pile driving activities occurring within the river channel, as well as for piles within a reasonable distance of the water on dry land (within 200 feet of the edge of water in the active channel) where sound levels may be injurious to Covered Species.

4. ITP Page 14, Condition of Approval 8.7 shall be changed to read:

   Pile Driving. Impact pile driving shall not exceed the prescribed number of strikes per pile, each 48-inch CISS pile will require approximately 15,600 blows. The installation of the eight (8) 48-inch CISS piles will require an estimated 124,800 total strikes. ***The installation of two 24-inch piles by impact pile driving will require an estimated 76 total strikes.*** Any increase in the number of pile strikes shall require an Amendment to this ITP.

5. ITP Page 5, Paragraph 3, Line 4 shall be changed to read:

   The Project is also expected to cause 0.5 acres of impact in a peak injury zone for injurious sound levels and 5.5 acres of injury for a cumulative sound exposure level zone (See Figure 7***, 9 and 10***).

   ITP Page 33, Attachments Section, Figures Section shall be changed to read:

FIGURE 9	***Mokelumne River Trestle Impacts Map***
FIGURE 10	***Mokelumne River Trestle Hydroacoustic Assessment***
FIGURE 11	***Mokelumne River Trestle Plan Design Set***

FINDINGS

Issuance of this Amendment will not increase the amount of take of the Covered Species compared to the Project as originally approved, nor will this Amendment increase other Project impacts on the Covered Species (i.e., "impacts of taking" as used in Fish and Game Code Section 2081, subd. (b)(2)).

Discussion: This Amendment makes a specific change in the number of seasons it will take to complete the Project from one season to two seasons and a change in the way in which the Project will be accessed via a temporary elevated trestle in place of a rock

platform. The resulting impacts to the Covered Species, however, including the acres of impact to Covered Species habitat as a result of the Project, will not increase.

CDFW has determined that the changes to the Project Description will not increase the amount of take or the severity of other impacts of the taking on the Covered Species. Given the circumstances of this Project, CDFW believes that the changes to the Project or Conditions of the ITP described in this Amendment, including increasing the number of seasons in which it will take to complete the Project from one season to two seasons and changing the access to a temporary elevated trestle will not increase impacts to the Covered Species.

Issuance of this Amendment does not affect CDFW's previous determination that issuance of the ITP meets and is otherwise consistent with the permitting criteria set forth in Fish and Game Code section 2081, subdivisions (b) and (c).

Discussion: CDFW determined in April 2019 that the Project, as approved, met the standards for issuance of an ITP under CESA. This determination included findings that, among other things, the impacts of the taking would be minimized and fully mitigated and that the Project would not jeopardize the continued existence of the Covered Species. Those findings are unchanged with respect to this Amendment because the Project and ITP as amended is not increasing the area of impact to Covered Species habitat, only the length of time in which it will take to complete the Project from one season to two seasons. Permittee's continued adherence to and implementation of the avoidance and minimization measures set forth in the ITP's Conditions of Approval and MMRP will minimize and fully mitigate impacts of the taking on the Covered Species.

None of the factors that would trigger the need for subsequent or supplemental environmental analysis of the Project under Public Resources Code section 21166 or California Code of Regulations, title 14, sections 15162 and 15163, exist as a result of this Amendment.

Discussion: CDFW issued the ITP in April 2019 as a responsible agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) after, among other things, considering the Mitigated Negative Declaration adopted by Caltrans as the lead agency for the Project. As explained in the findings below, CDFW finds for purposes of CESA that this Amendment is a minor change to the original ITP. CDFW finds for the same reasons under CEQA that approval of the Amendment will not result in and does not have the potential to create any new significant or substantially more severe environmental effects than previously analyzed and disclosed by Caltrans during its lead agency review of the Project, particularly with respect to the impacts authorized by CDFW pursuant to the ITP as amended. As a result, CDFW finds that no additional subsequent or supplemental environmental review is required by CEQA as part of CDFW's approval of this Amendment.

CDFW finds that this Amendment is a Minor Amendment, as defined in California Code of Regulations, title 14, section 783.6, subdivision (c)(4).

Discussion: This Amendment changes the Project Description to increase the number of seasons from one to two seasons in which the Project will occur and change in the access to a temporary elevated trestle but does not change any conditions of approval authorized in the ITP, other than to reference new figures that reflect the changes to the Project Description. These changes to the ITP will not: (1) increase the level of take or other Project impacts on Covered Species previously analyzed and authorized by the ITP, (2) affect Permittee's substantive mitigation obligations under the ITP, (3) require further environmental review under CEQA, or (4) increase temporal impacts on the Covered Species. Therefore, this Amendment will not significantly modify the scope or nature of the permitted Project or activity, or the minimization, mitigation, or monitoring measures in the ITP. CDFW has determined that the change to the ITP constitutes a Minor Amendment as defined in California Code of Regulations, title 14, section 783.6, subdivision (c)(4).

The authorization provided by this Amendment is not valid until Permittee signs and dates the acknowledgement below, and returns this document electronically via DocuSign.

APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

on 7/16/2020**.**

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

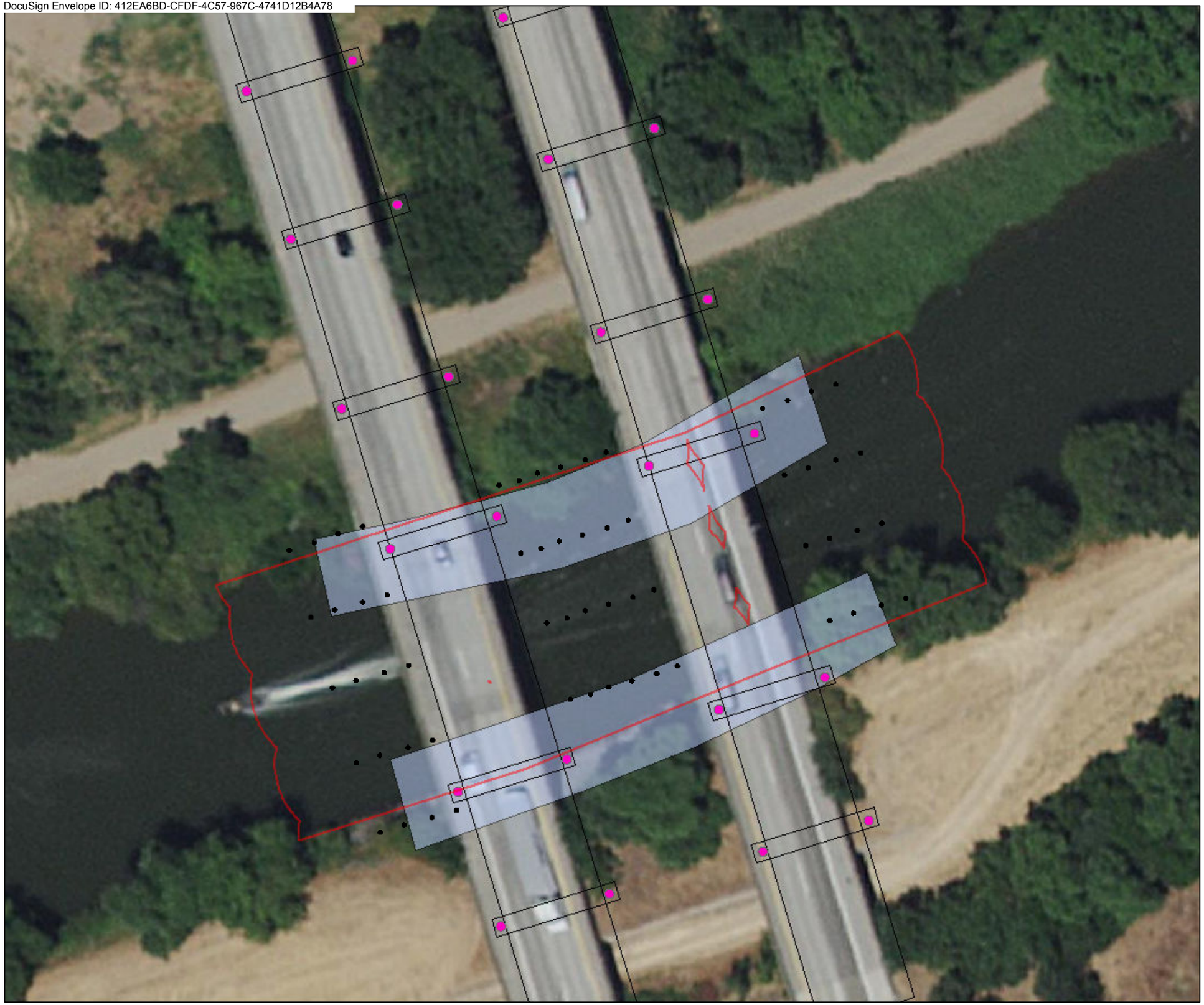
Gregg Erickson, Regional Manager
Bay Delta Region

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of the original ITP and this Amendment, and (3) agrees on behalf of the Permittee to comply with all terms and conditions.

By: DocuSigned by: Michele Lukkarila 121F7C87896341D... Date: 7/16/2020

Printed Name: Michele Lukkarila Title: Project Biologist



Estimated Impacts to
Mokelumne River from Trestle Piles
Caltrans Bridge Retrofit Project 03-3F090
Mokelumne River Bridge I-5
at the Sacramento/San Joaquin County Line

Legend

- Trestle piles (24") - 0.004 acre temporary impact (proposed plan)
- Hydroacoustic impact - 10 m buffer - 0.752 acres
- Proposed CISS Piles
- Mokelumne River Bridges
- Temporary Pad - 0.36 acre temporary impact (previous plan)

Datum: North American Datum 1983
Projection: California State Plane, Zone 2
Impact Map Prepared on July 10, 2020
California Department of Transportation, District 3
Aerial Photography:
California Giza Service

N
W E
S

1 inch = 39 feet

0 15 30 60
Feet

M e m o r a n d u m

Making Conservation
a California Way of Life.

To: Michele Lukkarila
Project Biologist
California Department of Transportation

Date: July 9, 2020

File: 03-SAC-5
PM: 49.78
EA: 03-3F090

From: Ryan Pommerenck
Office of Environmental Engineering South
District 3, Marysville

Subject: **Mokelumne River Bridge Temporary Work Trestle Hydroacoustic Assessment**

Introduction

This study is an assessment of potential underwater noise impacts from the proposed temporary work trestles at the Mokelumne River Bridge Project. The purpose of this assessment is to aid Caltrans biologists in assessing potential underwater noise impacts to fisheries and is focused on providing information on underwater noise from construction activity.

Underwater Thresholds

On June 12, 2008, the National Marine Fisheries Service (NMFS); U.S. Fish and Wildlife Service; the California, Oregon, and Washington Departments of Transportation; the California Department of Fish and Wildlife; and the U.S. Federal Highway Administration generally agreed in principal to interim criteria to protect fish from pile driving activities. Table 1 summarizes these criteria.

Table 1. Adopted Impact Pile Driving Acoustic Criteria for Fish

Interim Criteria for Injury	Agreement in Principle
Peak	206 dB for all size of fish
Cumulative SEL	187 dB for fish size of two grams or greater 183 dB for fish size of less than two grams

Source: Fisheries Hydroacoustic Working Group. 2008

NMFS assumes that pile strikes with single strike SELs of less than 150 dB do not accumulate to cause injury to fish. The distance that the single strike SEL drops below 150 dB is referred to as the distance to the effective quiet. In addition to the interim criteria for injury, NMFS has identified that 150 dB_{RMS} should be used to determine whether pile driving operations would have a behavioral effect on fish.

The adopted criteria listed in Table 1 are for pulse-type sounds (e.g., impact pile driving). These criteria do not address sound from vibratory pile driving. Currently, there are no acoustic thresholds for fish that apply to the lower amplitude noise produced by vibratory pile driving (Caltrans 2015).

Potential Underwater Noise Levels from Construction

Three temporary work trestles are proposed to facilitate construction equipment access and operation at Bents 4 and 5, rather than a temporary rock causeway (work-pad). One on the East side, one down the middle and one on the West side of the bridge. The temporary trestle will require sixty 24-inch steel pipe piles. All piles will be installed with a vibratory hammer; however, the contractor will need to verify the bearing capacity of the piles to ensure the trestle can safely support the constructions operation. The bearing capacity will be tested on two piles by installing the final two feet of the pile with an impact hammer. The total estimated number of blows is 76 for both test piles. All impact driving is expected to occur in one day. A sound attenuation device will be deployed prior to the start of impact driving and hydroacoustic monitoring would be conducted during impact pile driving.

Installation of the trestles will begin on July 15th. It is proposed for the trestle to remain in place until the following season to avoid additional impacts of installing and removing the trestle twice. Trestle pile removal will be by vibratory means with the use of crane and vibratory hammer.

The current interim injury thresholds for fish only address impulsive noise sources. Vibrating, oscillating and drilling operations in water or on land near the edge of water are considered non-impulsive or continuous noise sources. There are no acoustic thresholds for fish that restrict non-impulsive or continuous noise sources.

Since the temporary trestle piles are smaller than the permanent piles and only require minimal impact pile driving, the acoustic impact zones are much smaller than predicted for installation of the permanent piles. Attenuated peak sound pressure levels are expected to be less than 206 dB at 10 meters from the pile. With an attenuation device, the 187 dB cumulative SEL threshold is expected to be exceeded out to 15 meters and the 183 dB cumulative SEL threshold is expected to be exceeded out to 28 meters. See Table 1 in the attachment for additional details.

This assessment assumes an attenuation device would reduce sound levels by 5 dB. If the attenuation device produces greater reductions, the impact zones would be reduced and the cumulative SEL may remain below 187 dB at 10 meters from the pile.

References

Caltrans 2015. Technical Guidance for Assessment of the Hydroacoustic Effects of Pile Driving on Fish. Prepared by ICF International and Illingworth and Rodkin, Inc. November 2015. http://www.dot.ca.gov/hq/env/bio/files/bio_tech_guidance_hydroacoustic_effects_110215.pdf

Fisheries Hydroacoustic Working Group (FHWG). 2008. Memorandum: Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving Activities.
http://www.dot.ca.gov/hq/env/bio/files/fhwgcriteria_agree.pdf

Table 2. Reference Data and Impact Zones for Impact Pile Driving 24-inch Steel Shell Piles

Pile Location	Hammer Type	Piles Per Day	Estimated Strikes per Day	Data Source	Reference Distance for Source Data (m)[1]	Source Data at Reference Distance (dB)			Reduction from Attenuation Device	Source Data at Reference Distance with Attenuation (dB)			Cumulative SEL at Reference Distance (dB)	Transmission Loss Coefficient	Distance to Threshold (m)			
															Onset of Physical Injury			Behavior
															Peak	Cumulative SEL		RMS
																Fish≥ 2 g	Fish< 2 g	
						Peak	RMS	SEL		Peak	RMS	SEL			206 dB	187 dB	183 dB	150 dB
In water Unattenuated	Impact	2	76	5th Street Bridge, Sutter County and Prichard Lake Pumping Station Trestles (22 inch piles	10	208[2]	185	176	0	N/A	N/A	N/A	194	15	10	33	60	2,154[3]
In water Attenuated	Impact	2	76		10	208[2]	185	171	-5 dB	203	180	170	189	15	<10	15	28	1,000[3]

[1]The reference distance is the distance between the reference pile and the monitoring location.
[2] Illingworth and Rodkin, Inc. 2018. *5th Street Bridge Replacement Project June 29, 2018 Hydroacoustic Measurements,* Prepared for Brian Algren, MCM Construction and Mehrdad Varzandeh, Hanna Group.
[3] Distance to 150 dB RMS behavioral threshold would not extend beyond bends in the river

MOKELUMNE RIVER BRIDGE TRESTLE

DESIGN NOTES

1. DESIGN AND FABRICATION PER AISC 9TH EDITION, ASD.

2. WELDING SHALL BE PER LATEST AWS D1.1. BOLTS SHALL BE A325 UNLESS OTHERWISE NOTED. WELD ALL EDGES WITH $\frac{5}{16}$" FILLET UNLESS NOTED. ALL FULL PENETRATED GROOVE WELDS SHALL BE ULTRASONIC TESTED FOR FALSEWORK ERECTED FOR THREE YEARS OR MORE. 50% OF FULLY PENETRATED GROOVE WELDS SHALL BE ULTRASONIC TESTED FOR FALSEWORK ERECTED FOR ONE YEAR OR LESS.

3. STRINGERS AND CAP BEAMS SHALL BE GR. A36 (36 KSI) STEEL. ALL OTHER SHAPES AND PLATES SHALL BE A36 EXCEPT AS NOTED. THE MAX ALLOWABLE STRESS FOR STRUCTURAL STEEL SHALL BE 22000 PSI.
4. MATERIAL SPECIFICATIONS:
   A) 12X12 DF NO.2 AND BETTER, FULL DIMENSION, ROUGH SAWN.
   B) ROLLED STRUCTURAL SECTIONS: A36 STEEL.
   C) ALL MATERIAL NEW OR USED IN GOOD CONDITION.
   D) THE MAX ALLOWABLE STRESS FOR 12X12 TIMBER OR LARGER SHALL BE 1800 PSI.

TRESTLE WORK DESIGN NOTES:

1. LL ON EDGE OF DECK 75 PLF
2. CONSTRUCTION LL ON DECK 20 PSF
3. EQUIPMENT CRANE LOAD 559,408 LBS
4. RELEASE FALSEWORK PRIOR TO BARRIER PLACEMENT.
5. DESIGN HORIZONTAL LOAD BASED ON 80 MPH CONSTRUCTION WIND.
6. CRANE LATERAL LOAD 5% CRANE DL AND LIFTING MATERIAL.
7. AXIAL DESIGN LOAD 150 KIPS/PILE.
8. LATERAL DESIGN LOAD 2.4 KIPS/PILE.
9. PILE OUT OF PLUMB TOLERANCE ½".

SOIL PARAMETERS:

1. ESTIMATED DESIGN VALUES: (SEE OGDN REPORT DATED JUNE 14, 2018)
3. PILE SOIL FRICTION: (SEE OGDN REPORT DATED JUNE 14, 2018)
4. SETTLEMENT: (SEE OGDN REPORT DATED JUNE 14, 2018)

GENERAL NOTES

DESIGN

THE DESIGN OF THIS TEMPORARY SHORING SYSTEM (FALSEWORK) IS PRODUCED IN ACCORDANCE WITH CALTRANS FALSEWORK MANUAL, REVISION 32 AND PROJECT PLANS AND SPECIAL PROVISIONS; AND IN ACCORDANCE WITH APPROVED MYERS & SONS, INC. STANDARD FALSEWORK DETAILS.

SURVEYING, GROUND ELEVATION INFORMATION AND POST HEIGHTS

EXISTING GROUND ELEVATIONS AND RIGHT, MIDDLE AND LEFT TRESTLE BENT HEIGHTS HAVE BEEN DETERMINED BASED ON TOPOGRAPHIC INFORMATION PROVIDED IN THE PROJECT PLANS AND/OR ACTUAL FIELD DATA. TRESTLE BENT CONFIGURATION, POST TYPES AND QUANTITY ARE DEPENDENT ON ACTUAL GROUND OR EXISTING "GRADED" ELEVATIONS. POST HEIGHTS USED FOR THE ACCOMPANYING DESIGN ARE APPROXIMATE. THE SUPERINTENDENT SHALL DETERMINE ACTUAL POST LENGTHS BASED ON MEASURED SITE GROUND ELEVATIONS.

CONTROLLING FIELD DIMENSIONS

THE SUPERINTENDENT WILL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING, FABRICATING, OR PLACING FALSEWORK MATERIAL. AS WELL, DIMENSIONS OF FALSEWORK WILL BE ADJUSTED TO FIT EXISTING CONDITIONS.

INSPECTIONS

- TRESTLE DESIGNER WILL INSPECT THE TRESTLE TO ENSURE THAT IT CONFORMS TO THE APPROVED DESIGN
- THE TRESTLE WILL BE MONITORED FOR ANY UNANTICIPATED SETTLEMENT, DEFLECTION OR MOVEMENT. IF EXCESSIVE SETTLEMENT, DEFLECTION OR MOVEMENT IN EXCESS OF ⅜" FROM WHAT IS ANTICIPATED IS WITNESSED THE OPERATION WIL BE HALTED AND THE TRESTLE DESIGNER WILL NOTIFIED OF THE PROBLEM.

ERECTION SEQUENCE AND METHOD

1. DRIVE TRESTLE BENT PILES SPAN BY SPAN.
2. INSTALL CAPS.
3. INSTALL STRINGERS ABOUT THE CENTERLINE. ALWAYS BALANCE THE INSTALLATION OF THE STRINGERS TO INSURE ONE SIDE OF THE BENT IS NEVER OUT OF BALANCE BY MORE THAN ONE STRINGER.
4. POSITION CRANE 4100W ON TRESTLE AS SHOWN ON PLANS.
5. REVIEW RIGHT, MIDDLE & LEFT TRESTLE BENTS FOR CONFORMANCE WITH THE APPROVED TRESTLE PLANS.

FIELD ACCEPTANCE CRITERIA

1. THE DESIGN PILE TIP HAS TO BE REACHED TO ENSURE BEARING CAPACITY.

INDEX TO BRIDGE PLANS:

APPROVED BY _____ DATE _____

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

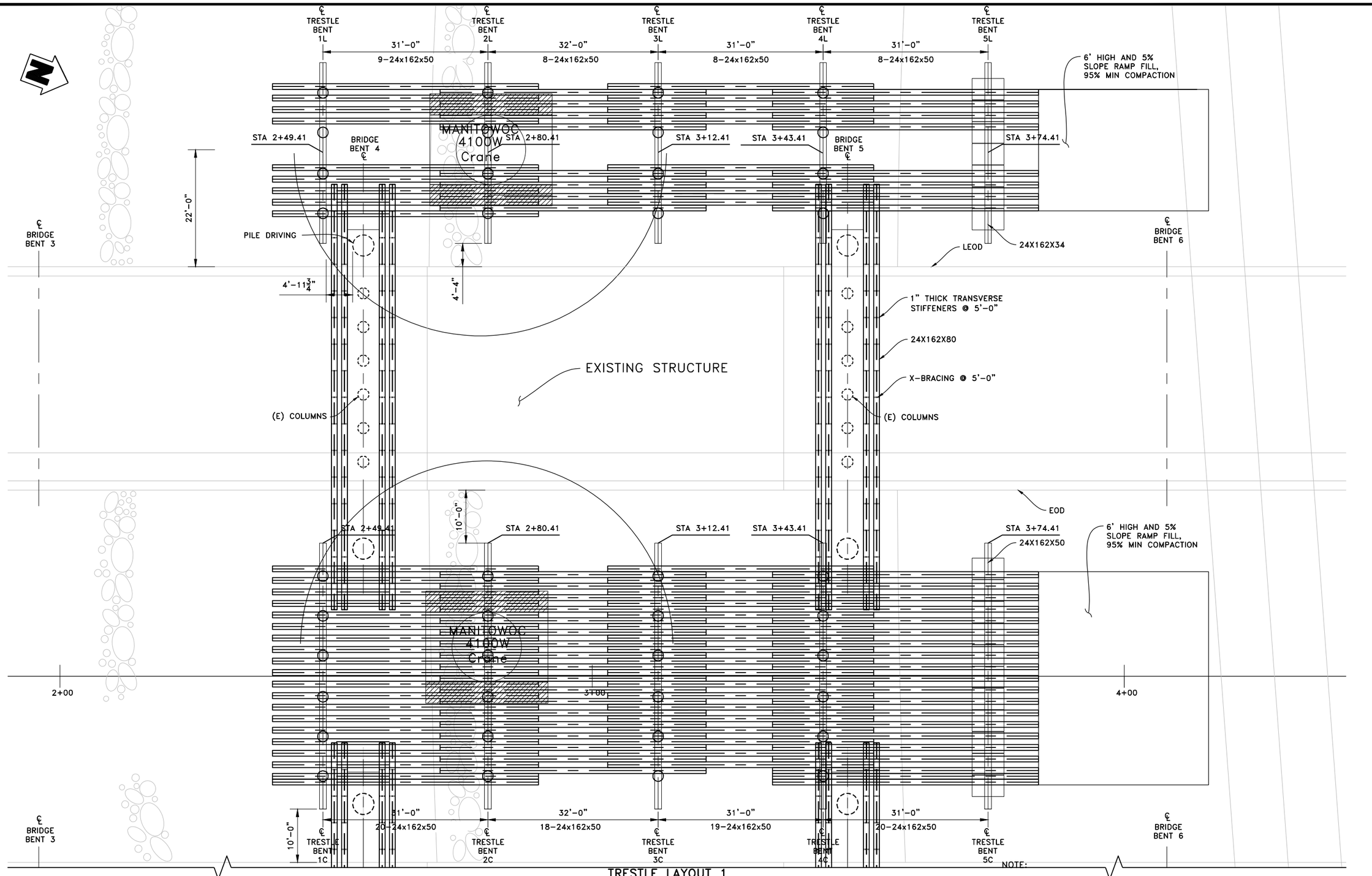
REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan — No. 50139 — EXP. 6-30-21 — CIVIL — STATE OF CALIFORNIA

ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
(916) 788-0100
(916) 788-0195 (FAX)

MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE
INDEX TO PLANS

DRAWING — OF — SHEET 1 OF TOTAL 22
REVISION



TRESTLE LAYOUT 1

SCALE: 1/8"=1'-0"

NOTE:

1. STRINGER CANTILEVER TAILS HAVE EQUAL DISTANCES OVER ADJACENT BENTS.

NO.	DATE	REVISION	BY

APPROVED BY _____ DATE _____

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan — No. 50738 — EXP. 6-30-21 — CIVIL — STATE OF CALIFORNIA

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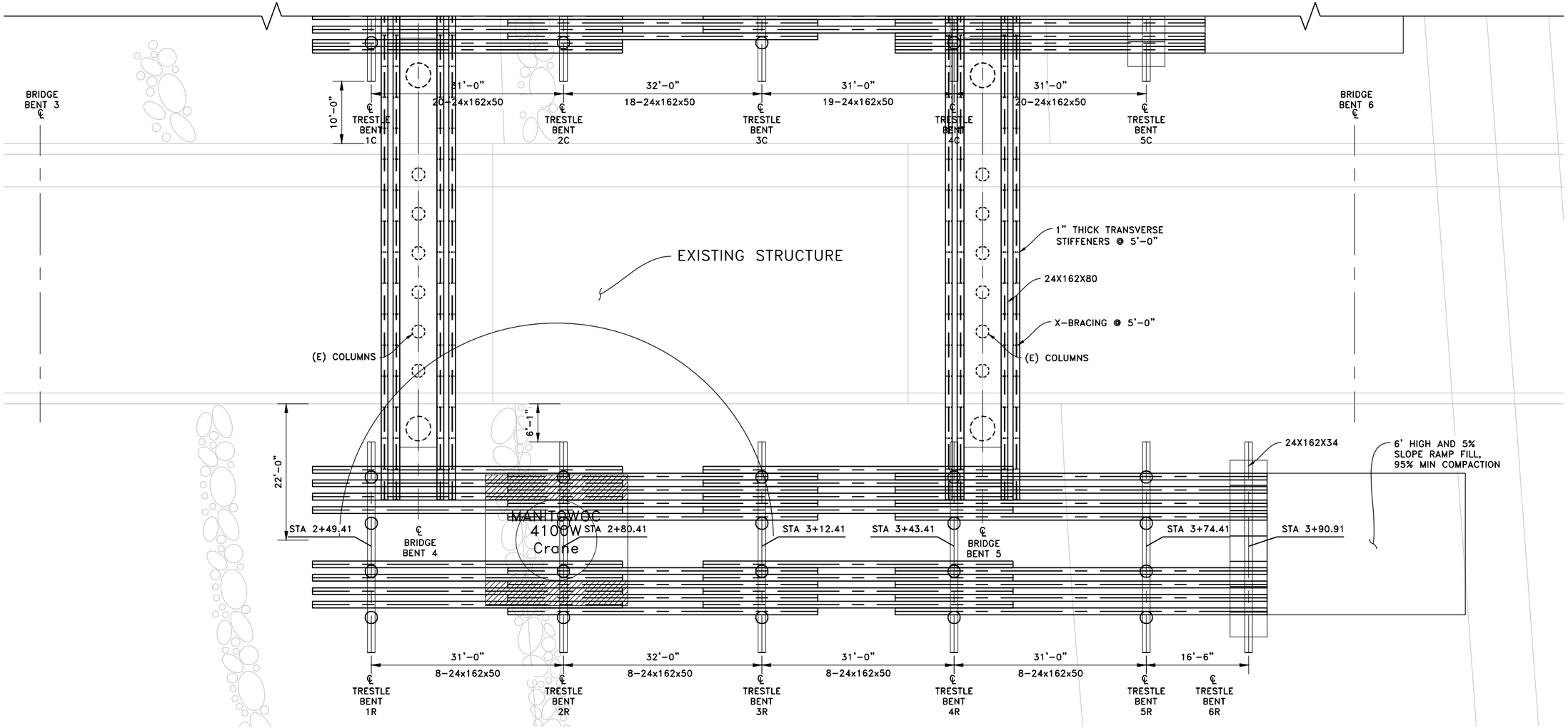
MOKELUMNE RIVER BRIDGE TRESTLE

TRESTLE LAYOUT 1

DRAWING — OF — SHEET 2 OF TOTAL 22

REVISION



TRESTLE LAYOUT 2

SCALE: 1/8"=1'-0"

NOTE:

1. STRINGER CANTILEVER TAILS HAVE EQUAL DISTANCES OVER ADJACENT BENTS.
2. FOR X-BRACING SEE FD-20.

APPROVED BY _____ DATE _____

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

REGISTERED PROFESSIONAL ENGINEER — Majdi Kanaan No. 50238 EXP. 6-30-21 CIVIL — STATE OF CALIFORNIA

ADKO Engineering
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MYERS & SONS CONSTRUCTION
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MOKELUMNE RIVER BRIDGE TRESTLE

TRESTLE LAYOUT 2

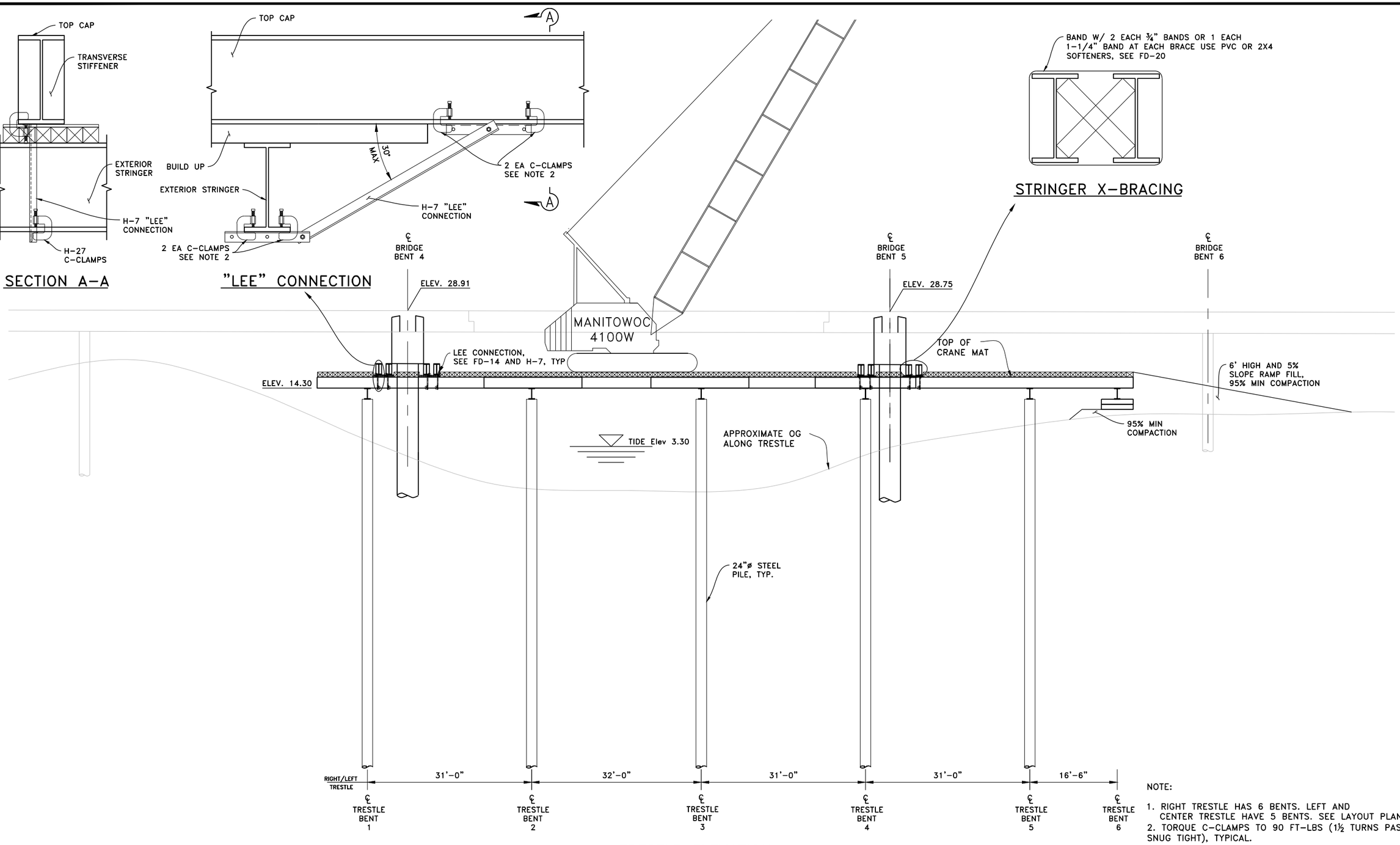
DRAWING	SHEET
— OF —	3 OF TOTAL 22

REVISION

SECTION A-A

"LEE" CONNECTION

STRINGER X-BRACING



TRESTLE ELEVATION

SCALE: 1/8"=1'-0"

NOTE:

1. RIGHT TRESTLE HAS 6 BENTS. LEFT AND CENTER TRESTLE HAVE 5 BENTS. SEE LAYOUT PLANS.
2. TORQUE C-CLAMPS TO 90 FT-LBS (1½ TURNS PAST SNUG TIGHT), TYPICAL.

APPROVED BY _____ DATE _____

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan No. 50238 EXP. 6-30-21 CIVIL STATE OF CALIFORNIA

ADKO Engineering

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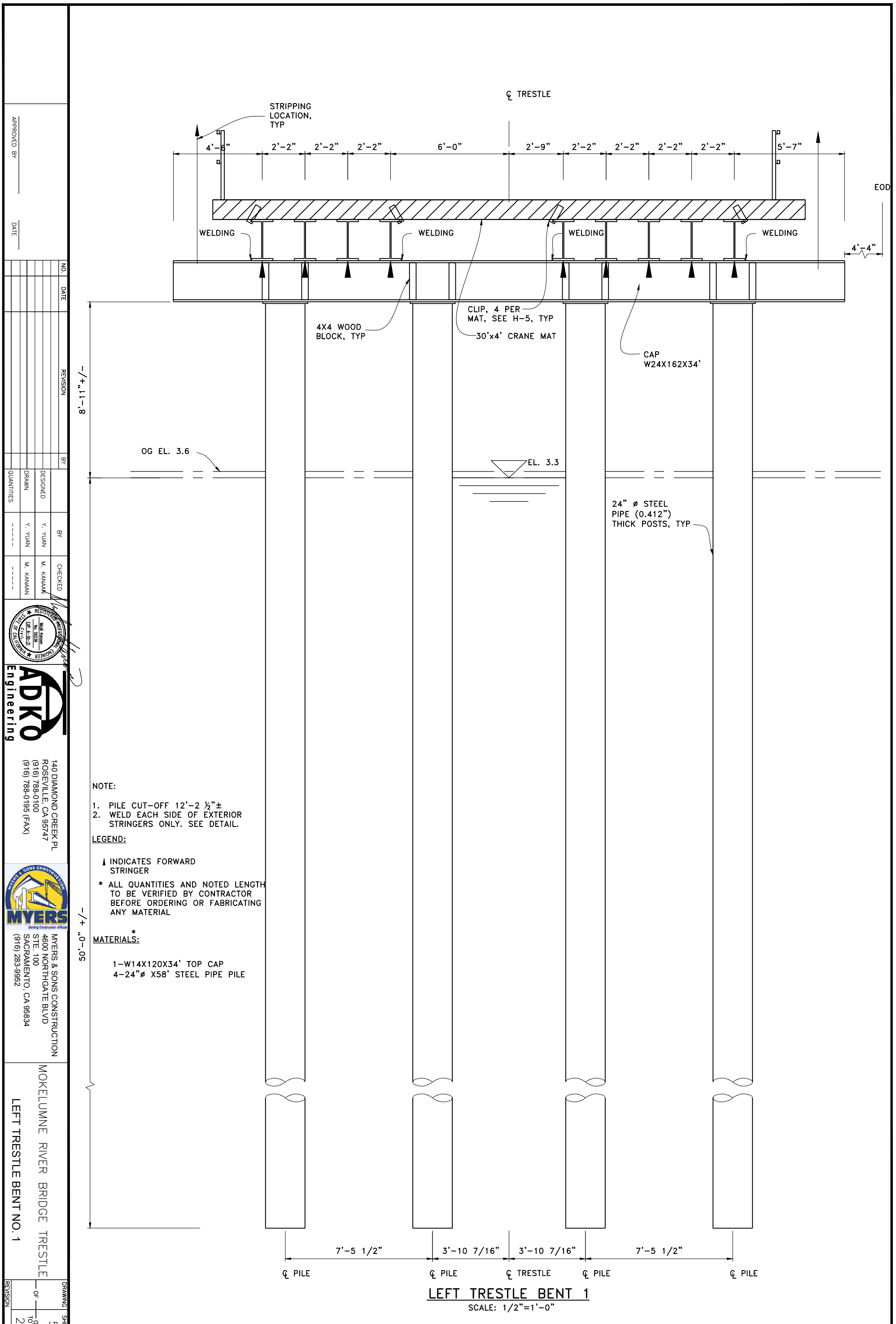
MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

TRESTLE ELEVATION

DRAWING	SHEET
OF	4 OF TOTAL 22

REVISION



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

LEFT TRESTLE BENT 1

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	-----	-----	
DRAWN	Y. YUAN	Y. YUAN	
DESIGNED	M. KANAAN	M. KANAAN	

BY | CHECKED

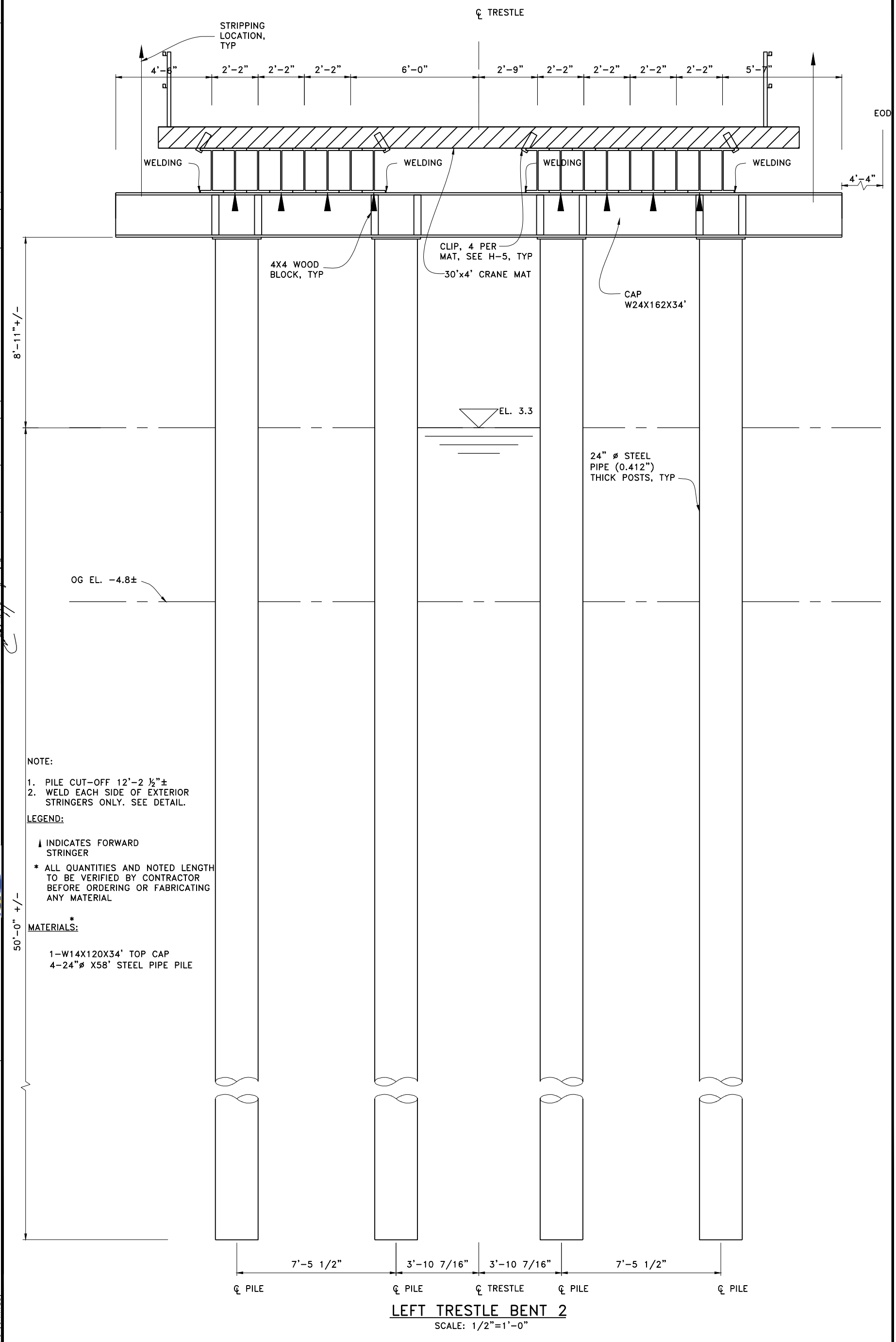
ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
(916) 788-0100
(916) 788-0195 (FAX)

MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

LEFT TRESTLE BENT NO. 1

DRAWING SHEET 5 OF TOTAL 22



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▮ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

LEFT TRESTLE BENT 2

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY
-----	Y. YUAN	Y. YUAN	M. KANAAN
-----	M. KANAAN	M. KANAAN	CHECKED

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL — Majid Koroon — No. 50238 — EXP. 6-30-21

ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
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MYERS & SONS CONSTRUCTION
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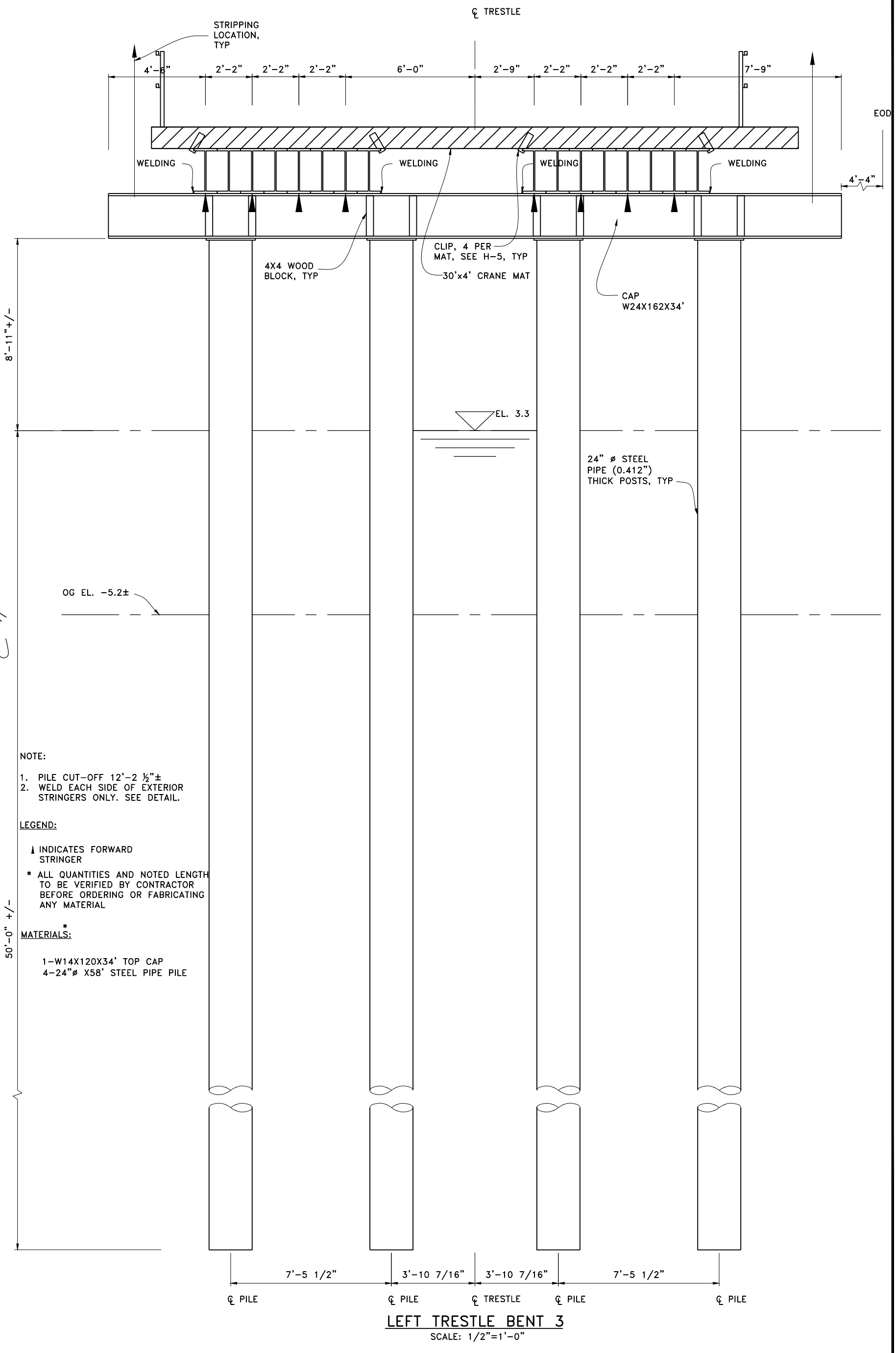
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

LEFT TRESTLE BENT NO. 2

REVISION	DRAWING SHEET
	6 OF 22 OF TOTAL



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

LEFT TRESTLE BENT 3

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	M. KANAAN	M. KANAAN

ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
(916) 788-0100
(916) 788-0195 (FAX)

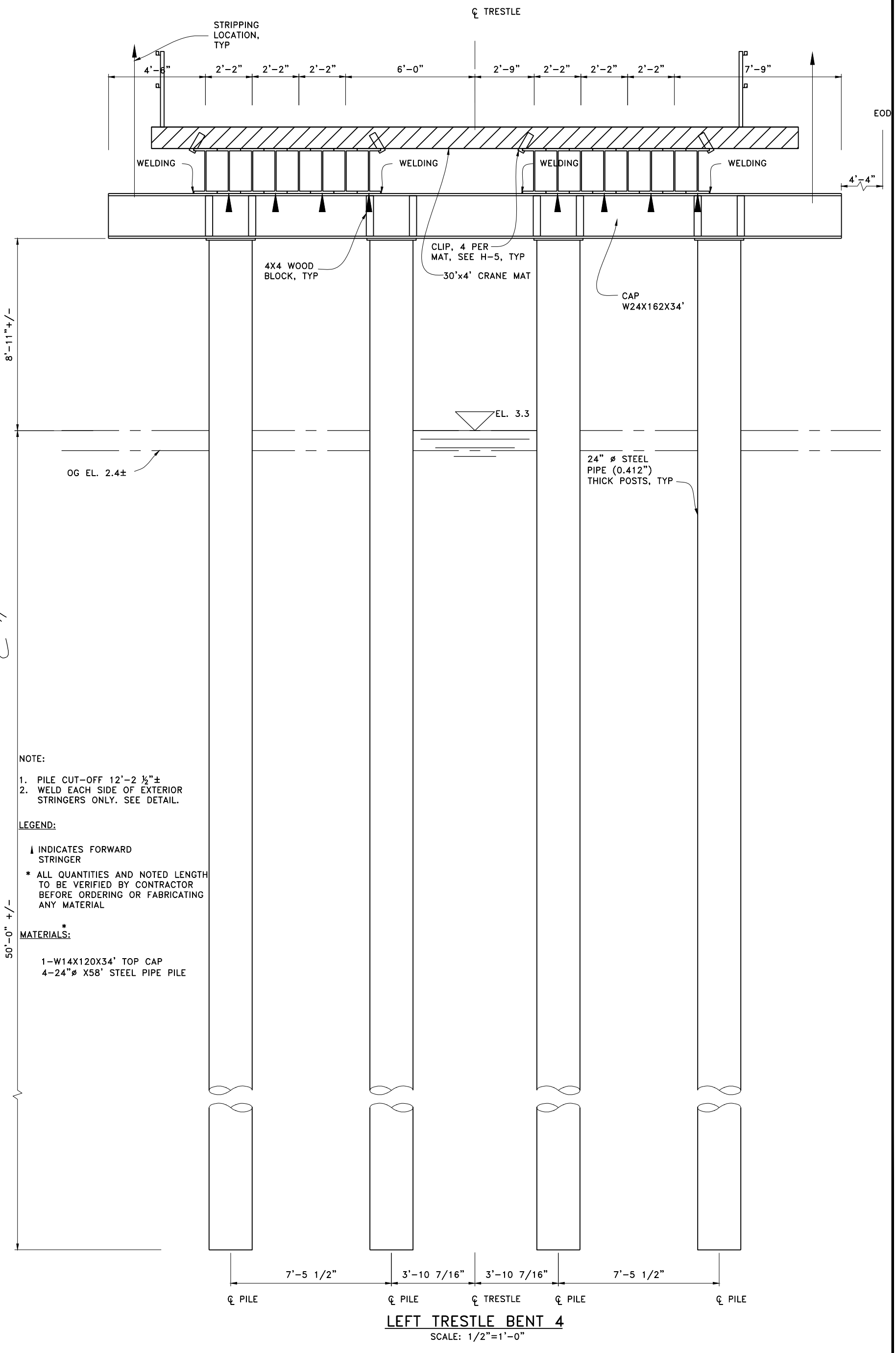
MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

LEFT TRESTLE BENT NO. 3

REVISION

DRAWING SHEET 7 OF TOTAL 22



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

LEFT TRESTLE BENT 4

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	M. KANAAN	M. KANAAN

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Majid Kanaan — No. 50238 — EXP. 6-30-21 — CIVIL

ADKO Engineering
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MYERS & SONS CONSTRUCTION
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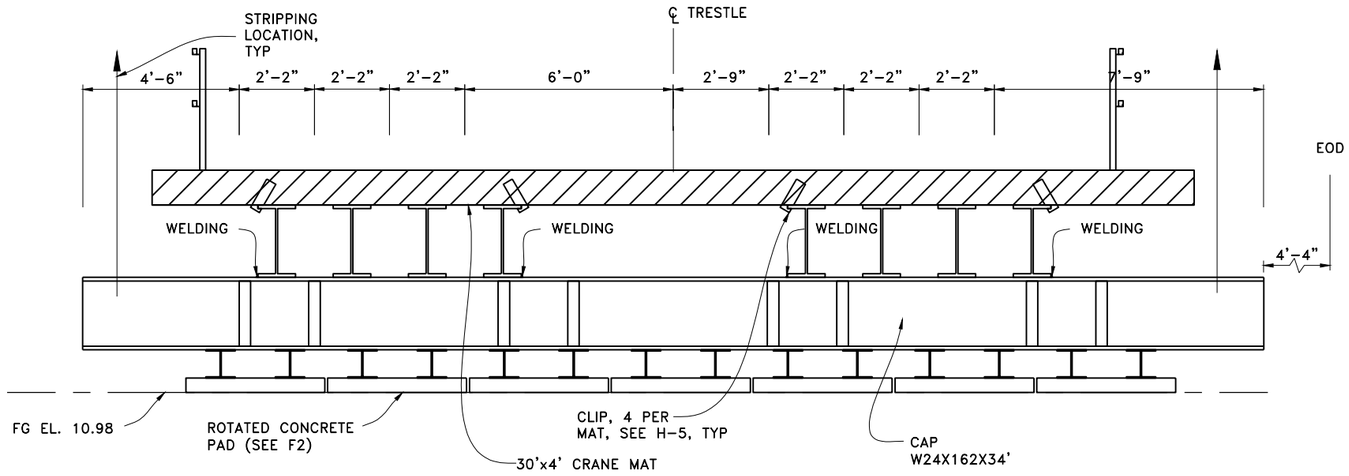
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

LEFT TRESTLE BENT NO. 4

REVISION	DRAWING SHEET
	8 OF 22 OF TOTAL



LEFT TRESTLE BENT 5

SCALE: 1/2"=1'-0"

NOTE:

1. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

ℹ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W14X120X34' TOP CAP

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY _____ DATE _____

Mojdi Kanaan No. 50738 EXP. 6-30-21 CIVIL REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
(916) 788-0100
(916) 788-0195 (FAX)

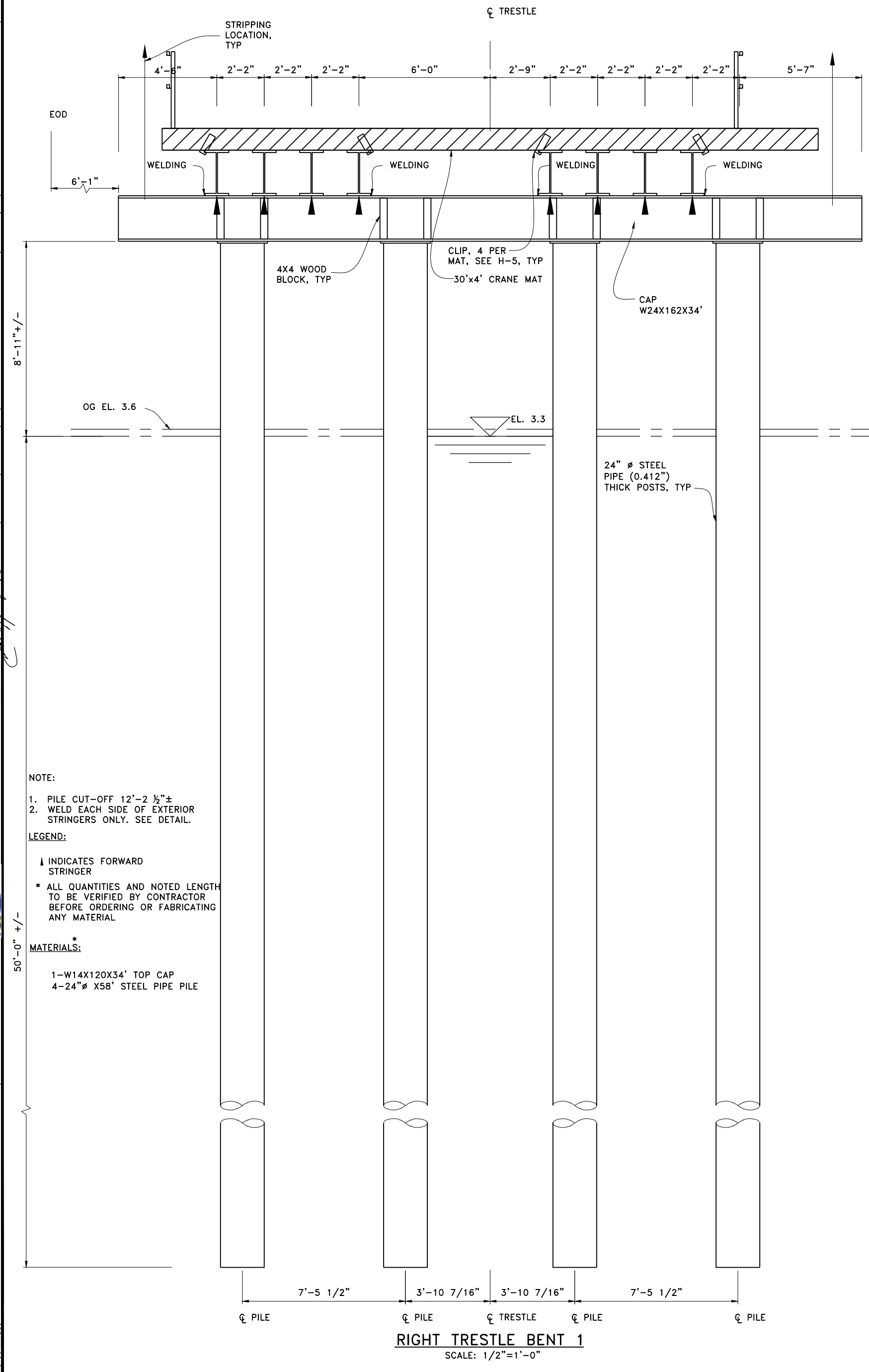
MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

LEFT TRESTLE BENT NO. 5

DRAWING — OF — SHEET 9 OF TOTAL 22

REVISION



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

*
MATERIALS:

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

RIGHT TRESTLE BENT 1

SCALE: 1/2"=1'-0"

APPROVED BY

NO.	DATE	REVISION

QUANTITIES	DRAWN	DESIGNED		CHECKED
-----	Y. YUAN	Y. YUAN	BY	M. KANAAN
-----	M. KANAAN	M. KANAAN		

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Majid Koroon — No. 50238 — EXP. 6-30-21 — CIVIL

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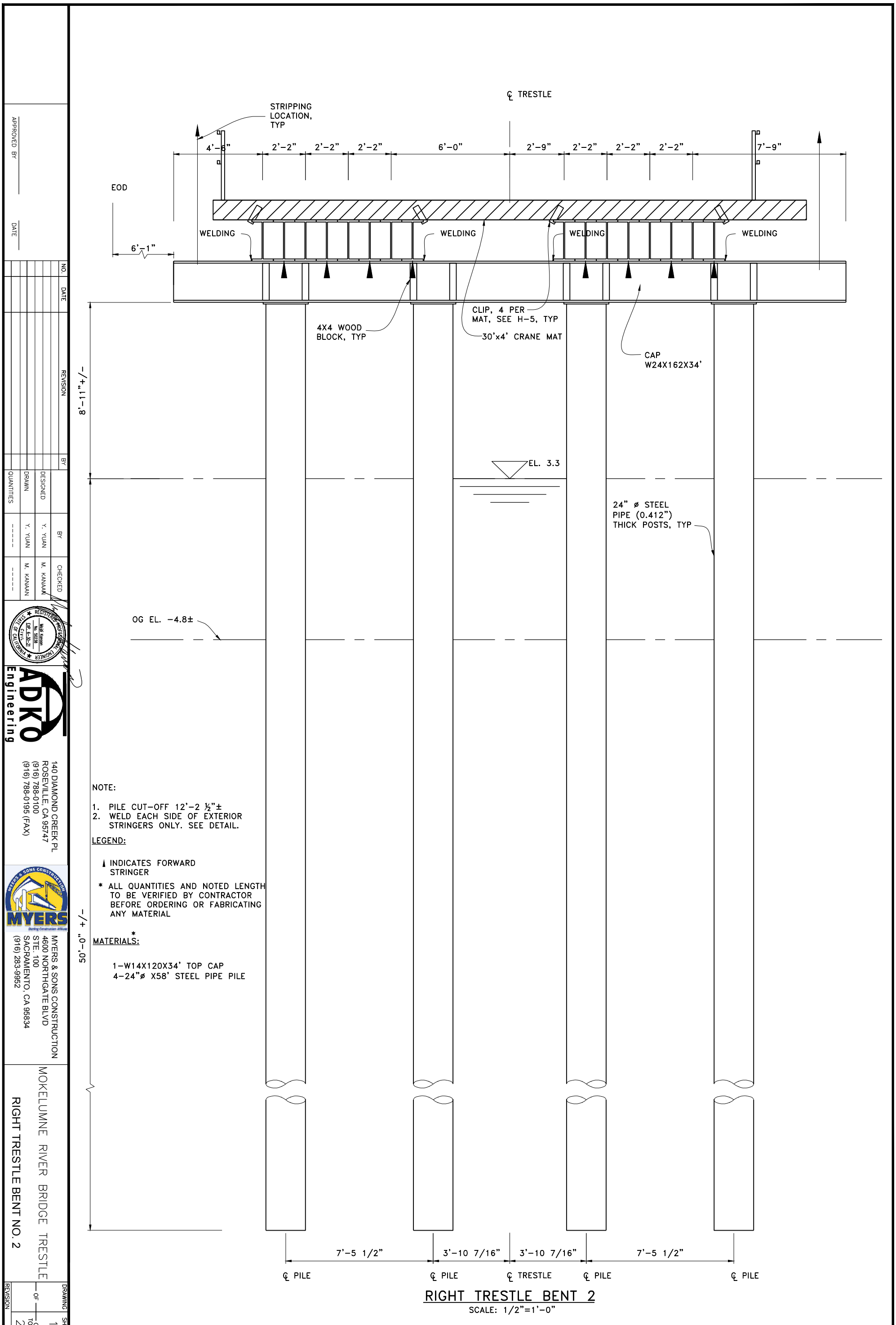
MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 1

DRAWING SHEET 10 OF TOTAL 22



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

RIGHT TRESTLE BENT 2

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	M. KANAAN	M. KANAAN

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL — Majid Kanaan — No. 50238 — EXP. 6-30-21

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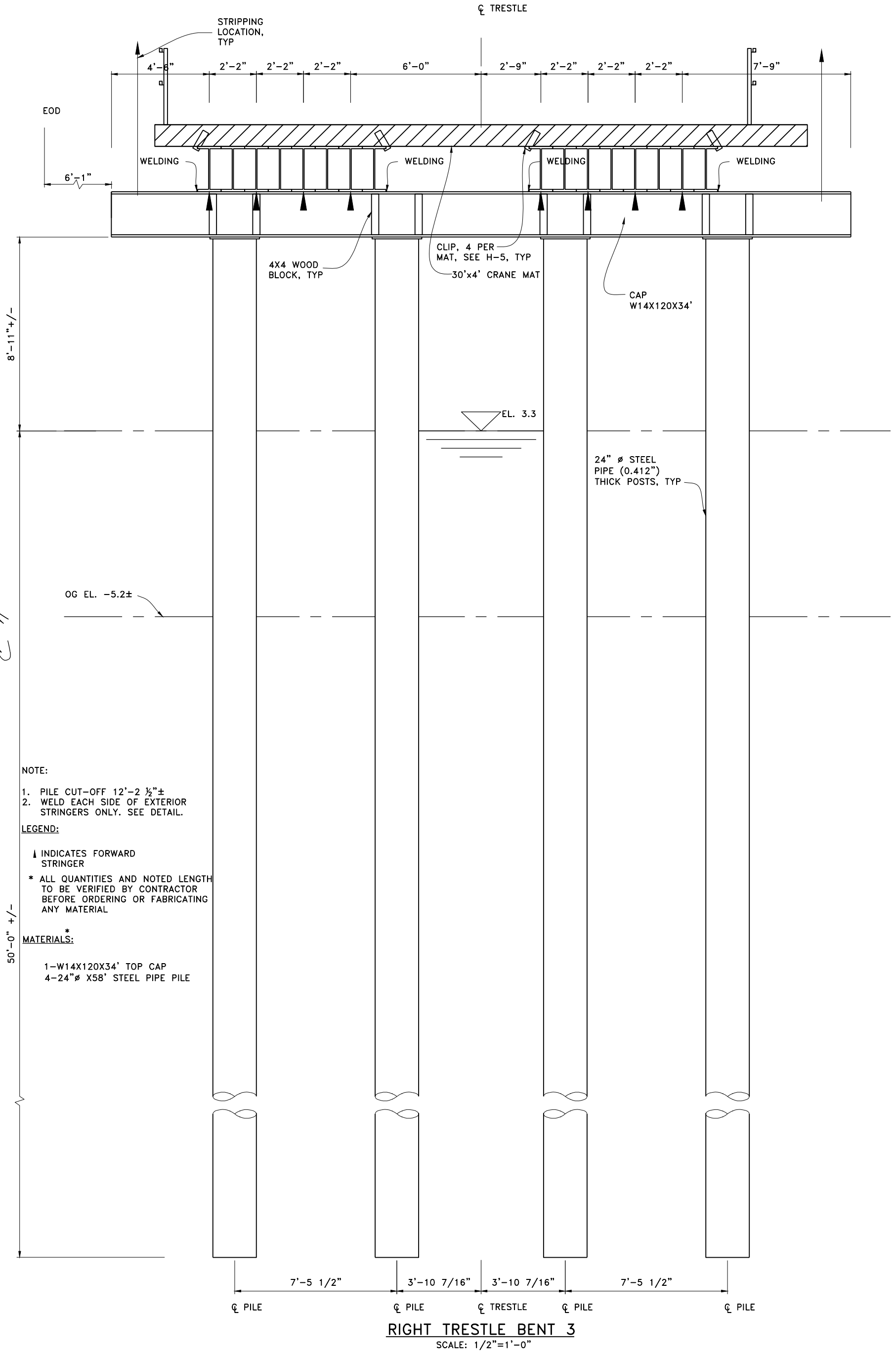
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 2

REVISION	DRAWING	SHEET
	OF	11
	OF TOTAL	22



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▌ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

RIGHT TRESTLE BENT 3

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	M. KANAAN	M. KANAAN

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Majid Koroon — No. 50238 — EXP. 6-30-21 — CIVIL

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STE. 100
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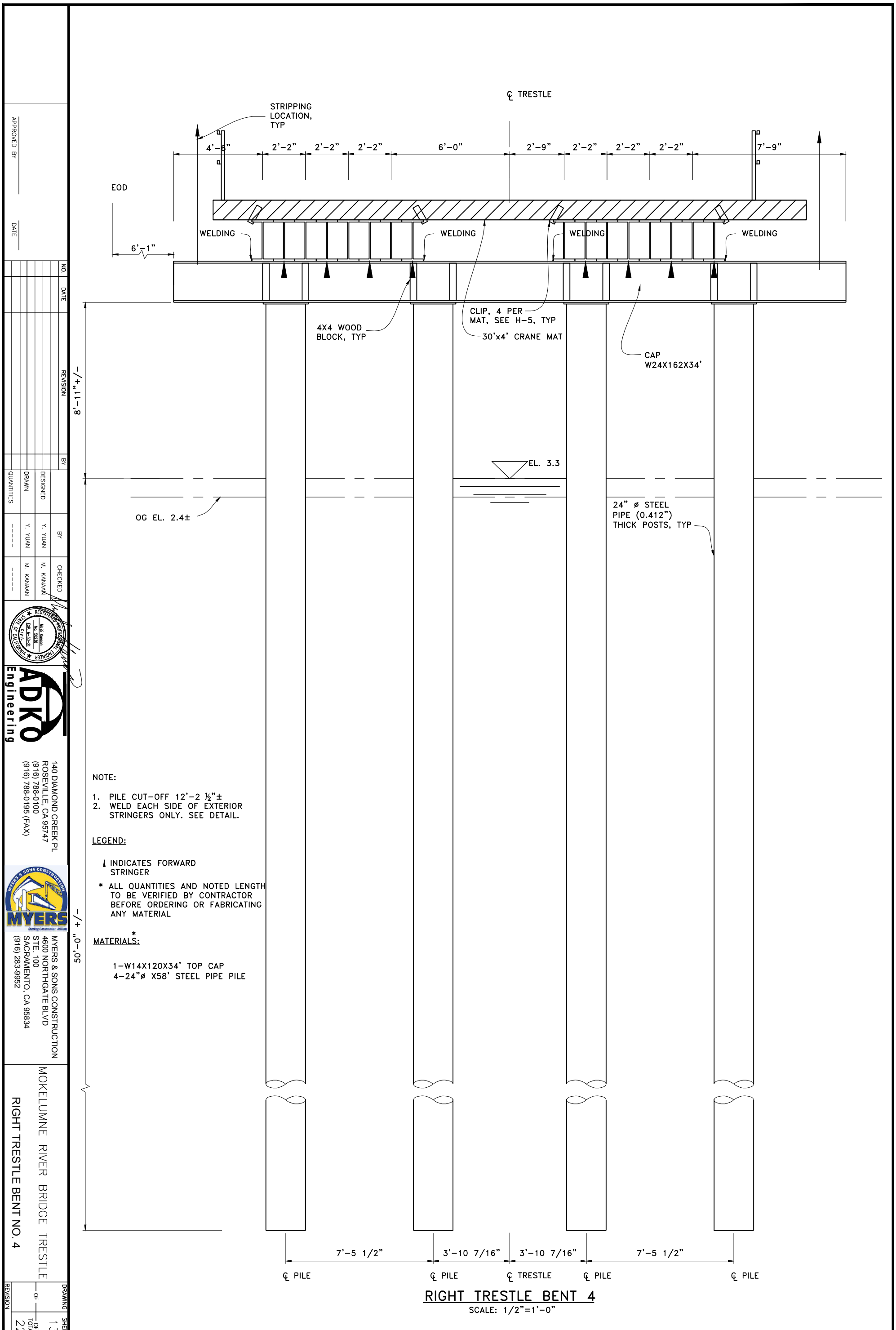
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 3

REVISION	DRAWING SHEET
	12 OF 22 OF TOTAL



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

RIGHT TRESTLE BENT 4

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	M. KANAAN	M. KANAAN

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Majid Kanaan — No. 50238 — EXP. 6-30-21 — CIVIL

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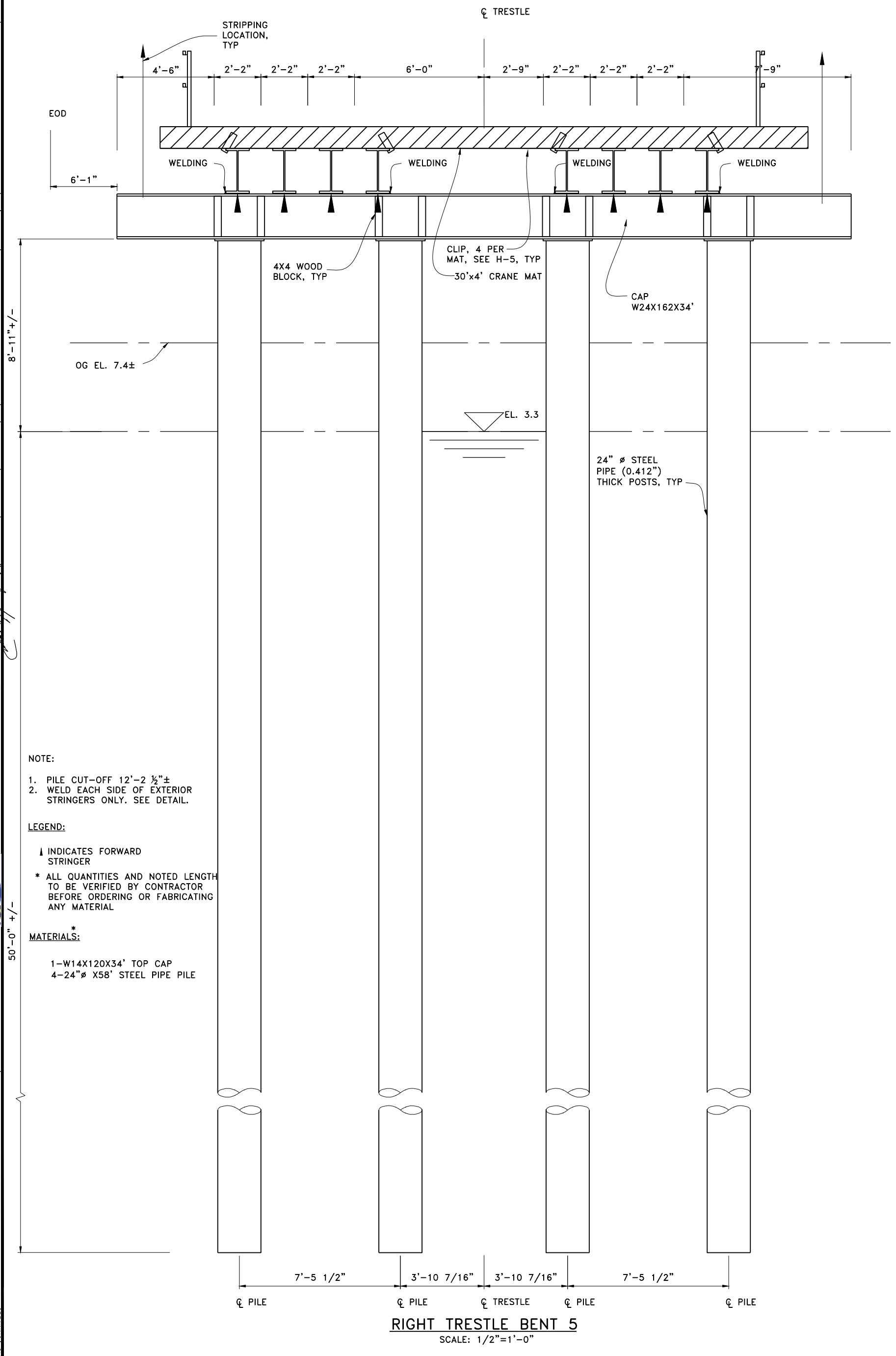
(916) 788-0195 (FAX)

MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 4

REVISION	DRAWING SHEET
	13 OF 22 TOTAL



NOTE:

1. PILE CUT-OFF 12'-2 ½"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W14X120X34' TOP CAP
4-24"ø X58' STEEL PIPE PILE

RIGHT TRESTLE BENT 5

SCALE: 1/2"=1'-0"

APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DRAWN	DESIGNED	BY	CHECKED
-----	Y. YUAN	Y. YUAN	Y. YUAN	M. KANAAN
-----	M. KANAAN	M. KANAAN		

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Majid Kanaan — No. 50238 — EXP. 6-30-21 — CIVIL

ADKO Engineering
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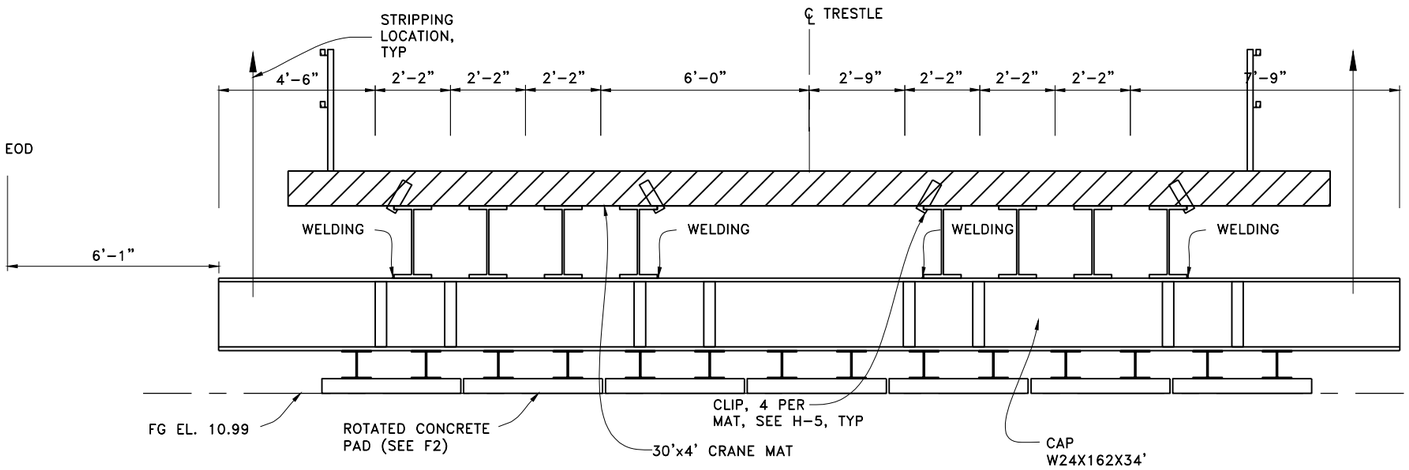
(916) 788-0195 (FAX)

MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 5

REVISION	DRAWING SHEET
	14 OF 22 OF TOTAL



RIGHT TRESTLE BENT 6

SCALE: 1/2"=1'-0"

NOTE:

1. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

ℓ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W14X120X34' TOP CAP

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY

DATE

REGISTERED PROFESSIONAL ENGINEER
Majdi Kanaan
No. 50238
EXP. 6-30-21
CIVIL
STATE OF CALIFORNIA

ADKO Engineering
140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
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MYERS & SONS CONSTRUCTION
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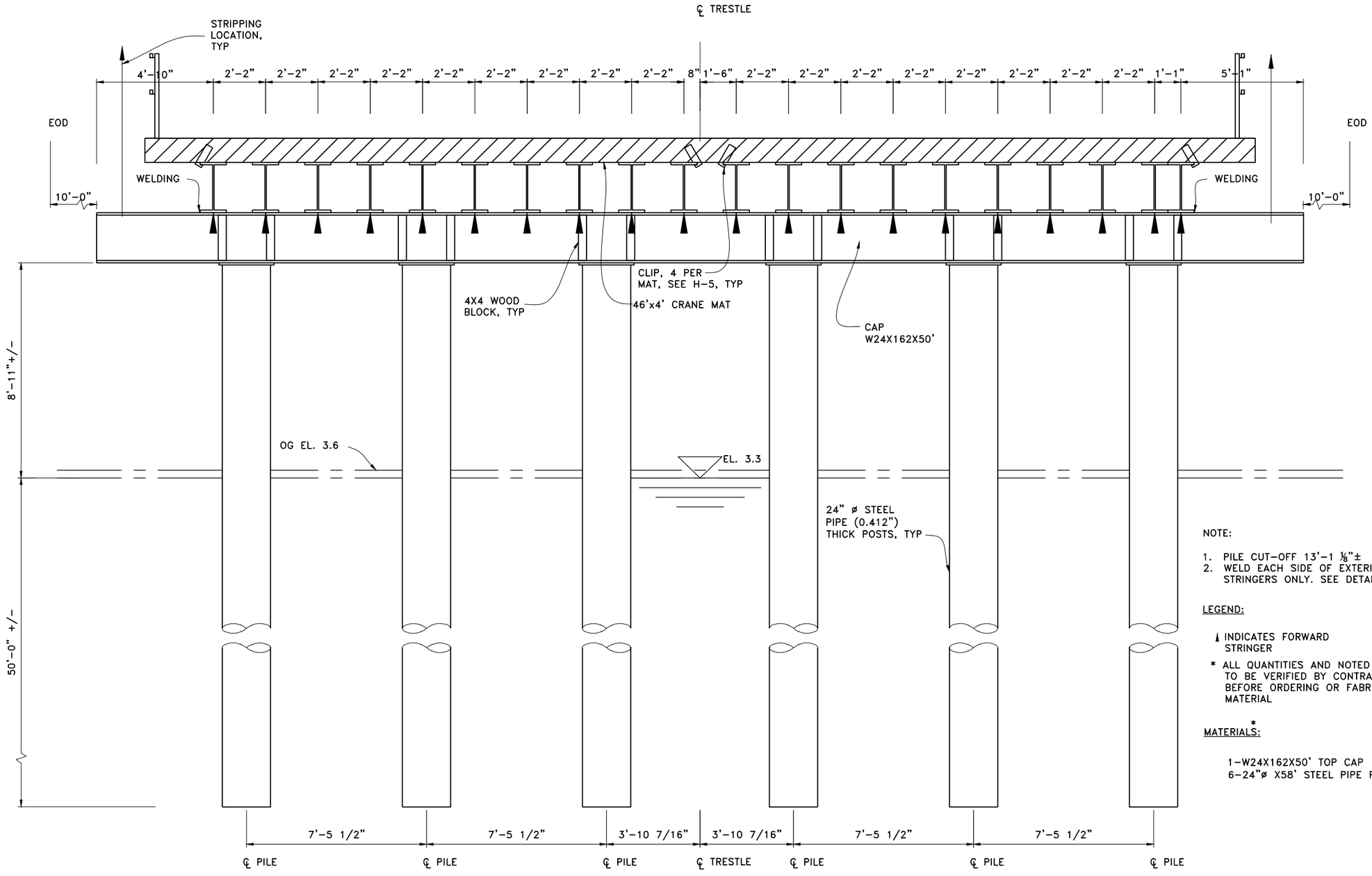
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

RIGHT TRESTLE BENT NO. 6

DRAWING — OF — SHEET 15 OF TOTAL 22

REVISION



CENTER TRESTLE BENT 1

SCALE: 1/2"=1'-0"

NOTE:

1. PILE CUT-OFF 13'-1 ⅛"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▌ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W24X162X50' TOP CAP
6-24"ø X58' STEEL PIPE PILE

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY

DATE

REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan No. 50238 EXP. 6-30-21 CIVIL STATE OF CALIFORNIA

ADKO Engineering

140 DIAMOND CREEK PL
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STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

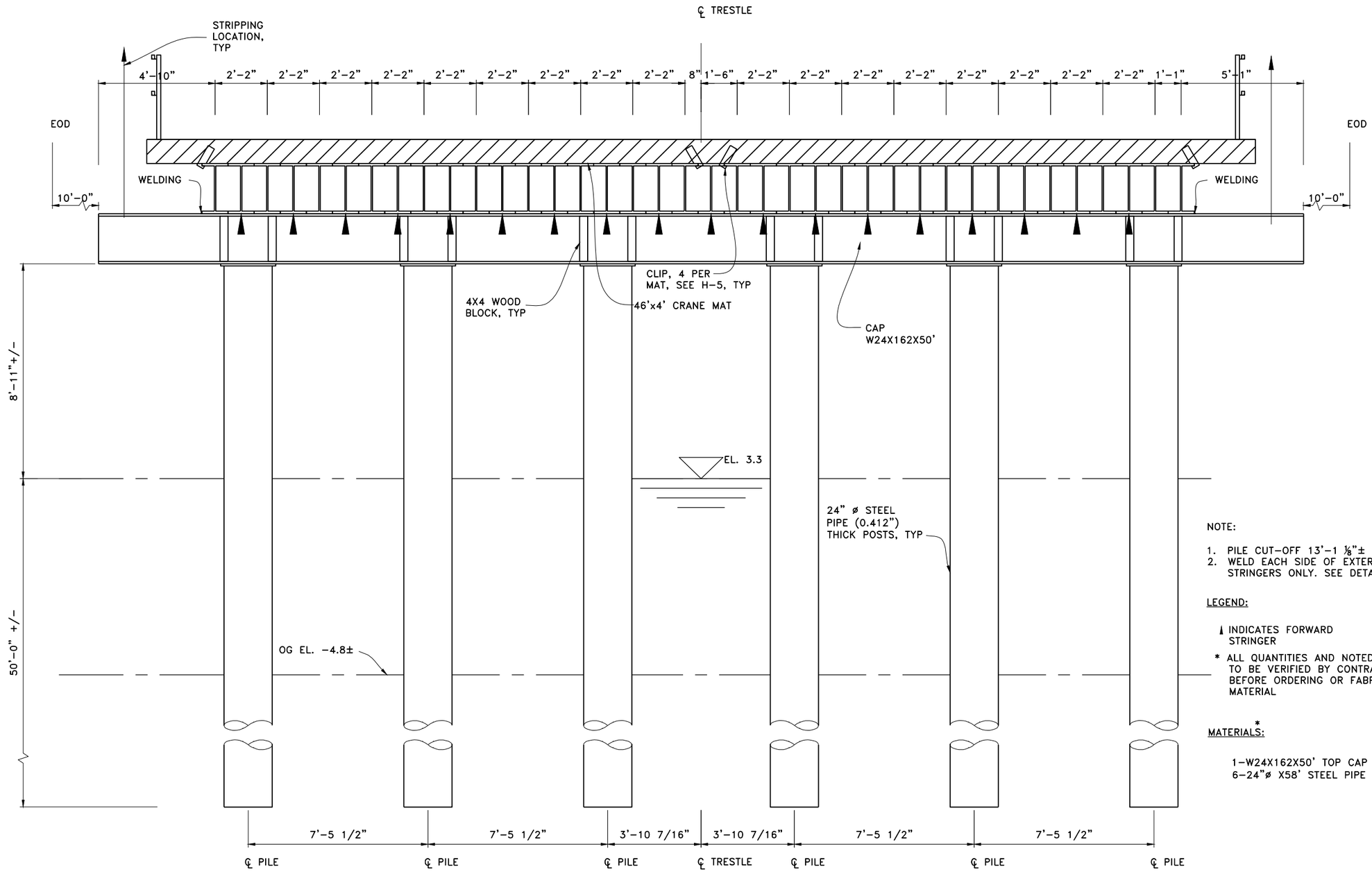
CENTER TRESTLE BENT NO. 1

DRAWING — OF —

SHEET 16 OF TOTAL 22

REVISION

C:\Users\adam\Dropbox (ADKO)\ADKO Team Folder\Projects\Myers & Sons Construction\Mokelumne River Bridge\CADS-16-CENTER TRESTLE BENT NO. 1 - 31'.dwg May 28, 2020 04:35 pm



NOTE:

1. PILE CUT-OFF 13'-1 ⅛"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

*
MATERIALS:

1-W24X162X50' TOP CAP
6-24"ø X58' STEEL PIPE PILE

CENTER TRESTLE BENT 2

SCALE: 1/2"=1'-0"

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY

DATE

REGISTERED PROFESSIONAL ENGINEER
Majd Kanaan
No. 50238
EXP. 6-30-21
CIVIL
STATE OF CALIFORNIA

ADKO Engineering

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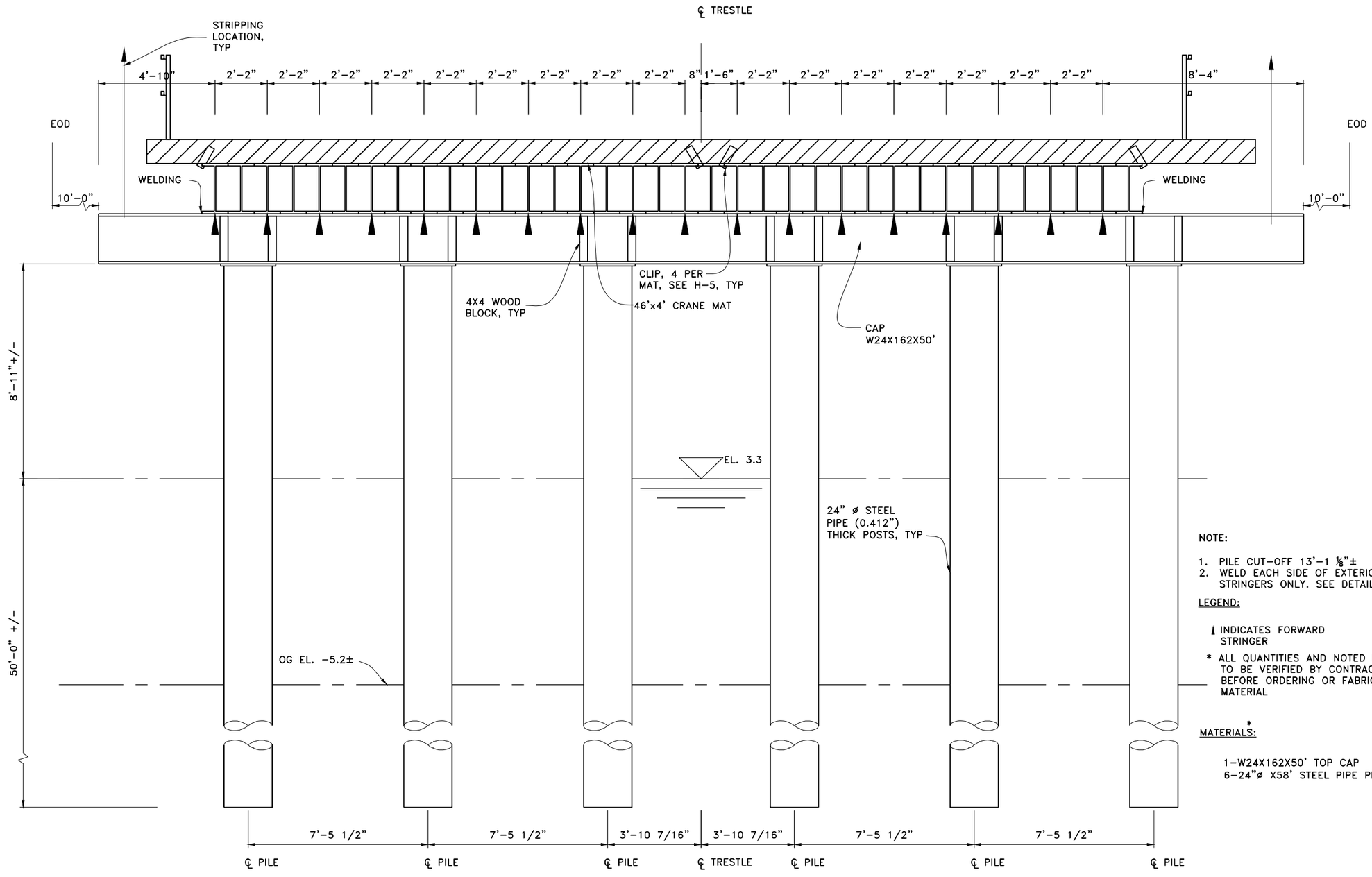
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

MOKELUMNE RIVER BRIDGE TRESTLE

CENTER TRESTLE BENT NO. 2

DRAWING	SHEET
OF	17 OF TOTAL 22

REVISION



NOTE:

1. PILE CUT-OFF 13'-1 ⅛"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:*

1-W24X162X50' TOP CAP
6-24"ø X58' STEEL PIPE PILE

CENTER TRESTLE BENT 3

SCALE: 1/2"=1'-0"

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY

DATE

REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan No. 50238 EXP. 6-30-21 CIVIL — STATE OF CALIFORNIA

ADKO Engineering

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STE. 100
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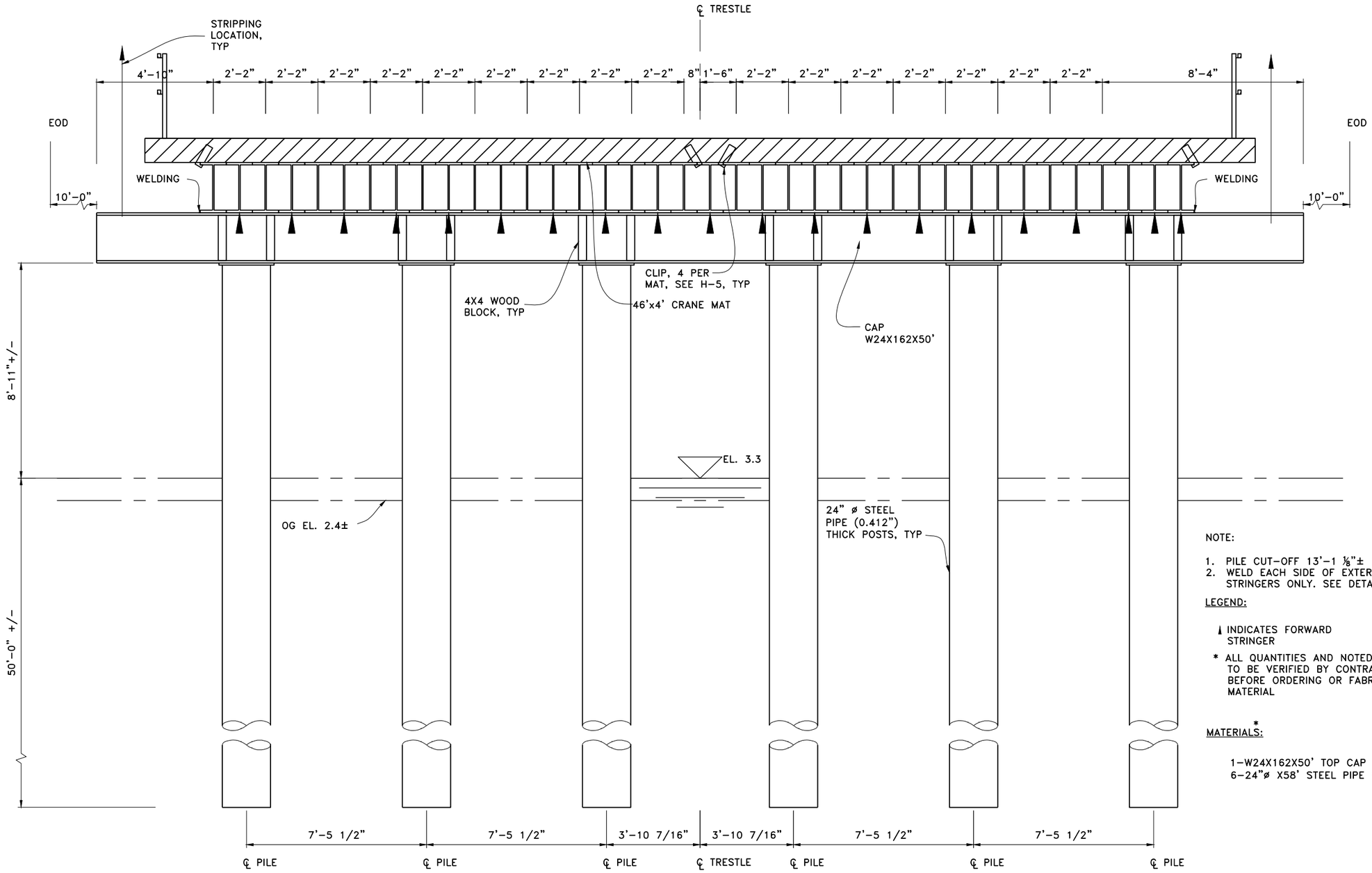
MOKELUMNE RIVER BRIDGE TRESTLE

CENTER TRESTLE BENT NO. 3

DRAWING	SHEET
OF	18 OF TOTAL 22

REVISION



NOTE:

1. PILE CUT-OFF 13'-1 ⅛"±
2. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

▲ INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W24X162X50' TOP CAP
6-24"ø X58' STEEL PIPE PILE

CENTER TRESTLE BENT 4

SCALE: 1/2"=1'-0"

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY _____ DATE _____

REGISTERED PROFESSIONAL ENGINEER Majid Kanaan No. 50238 EXP. 6-30-21 CIVIL STATE OF CALIFORNIA

ADKO Engineering
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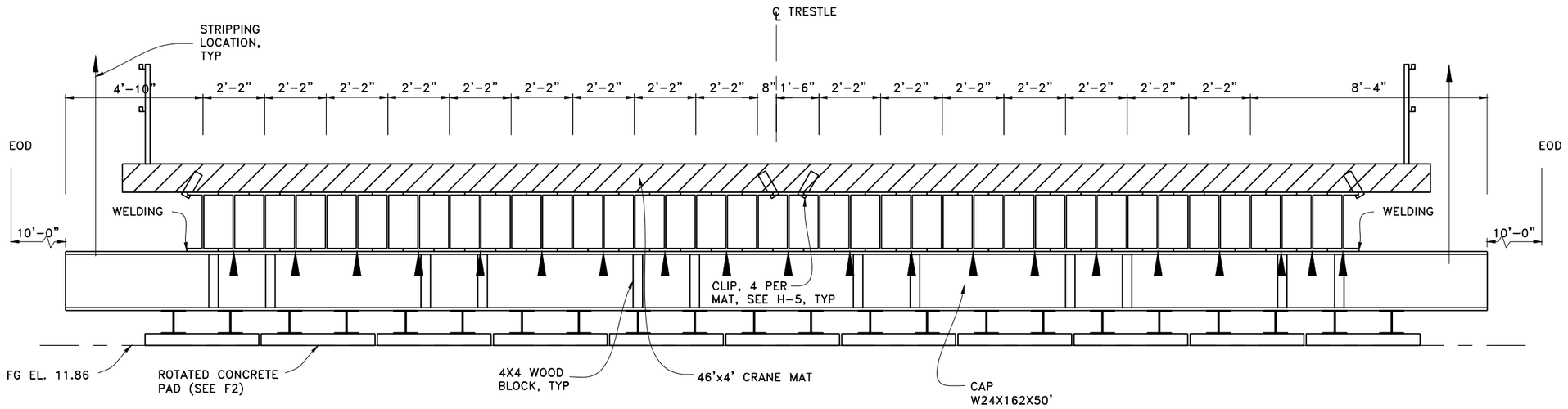
MOKELUMNE RIVER BRIDGE TRESTLE

CENTER TRESTLE BENT NO. 4

DRAWING — OF — REVISION

SHEET 19 OF TOTAL 22



CENTER TRESTLE BENT 5

SCALE: 1/2"=1'-0"

NOTE:

1. WELD EACH SIDE OF EXTERIOR STRINGERS ONLY. SEE DETAIL.

LEGEND:

INDICATES FORWARD STRINGER

* ALL QUANTITIES AND NOTED LENGTH TO BE VERIFIED BY CONTRACTOR BEFORE ORDERING OR FABRICATING ANY MATERIAL

MATERIALS:

1-W24X162X50' TOP CAP

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

APPROVED BY _____ DATE _____

REGISTERED PROFESSIONAL ENGINEER Majd Kanaan No. 50238 EXP. 6-30-21 CIVIL STATE OF CALIFORNIA

ADKO Engineering

140 DIAMOND CREEK PL
ROSEVILLE, CA 95747
(916) 788-0100
(916) 788-0195 (FAX)

MYERS & SONS CONSTRUCTION
4600 NORTHGATE BLVD
STE. 100
SACRAMENTO, CA 95834
(916) 283-9952

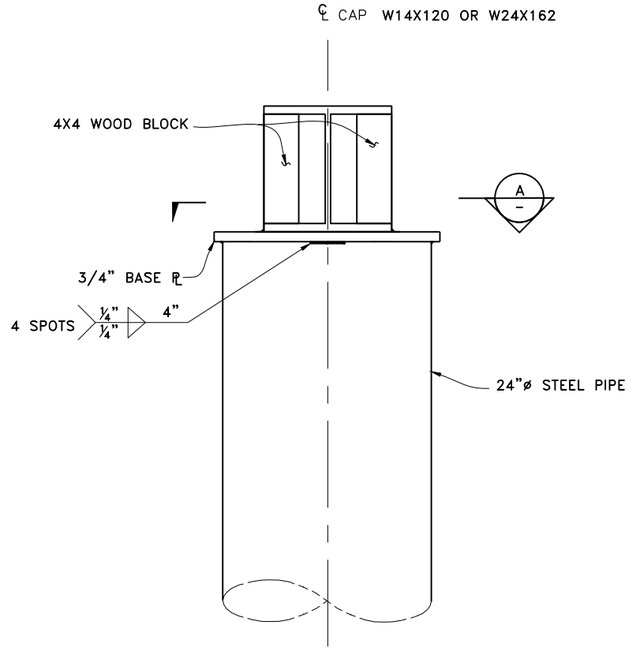
MOKELUMNE RIVER BRIDGE TRESTLE

CENTER TRESTLE BENT NO. 5

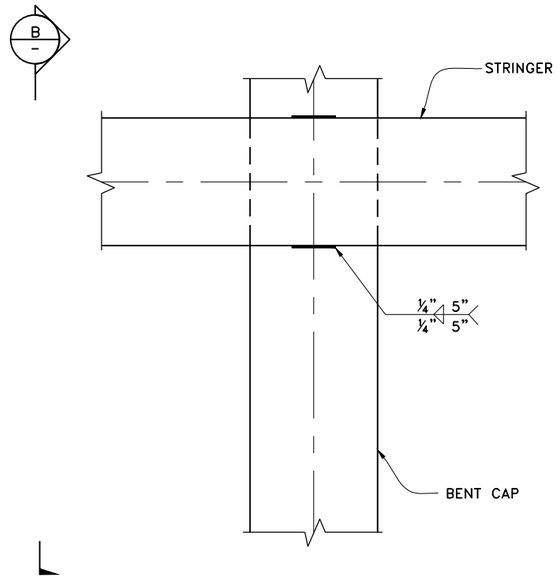
DRAWING — OF — SHEET 20 OF TOTAL 22

REVISION

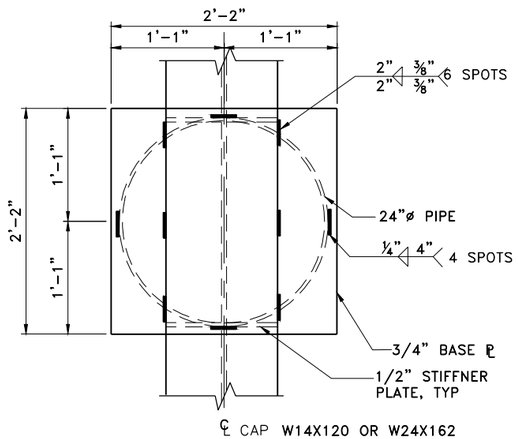
C:\Users\adam\Dropbox (ADKO)\ADKO Team Folder\Projects\Myers & Sons Construction\Mokelumne River Bridge\CADS-2D-CENTER TRESTLE BENT NO. 5 - 31'.dwg May 28, 2020 04:53 pm



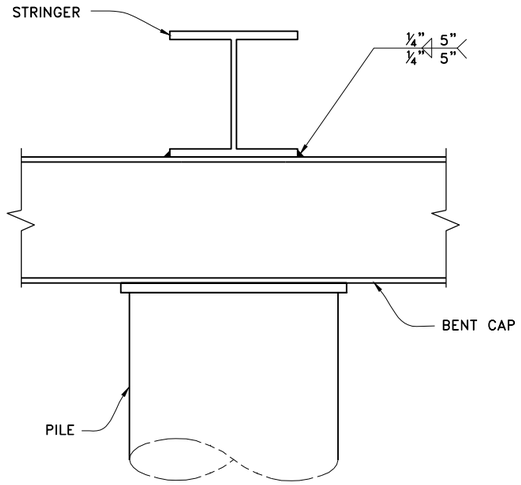
PIPE & W14X120/W24X162 PIPE CAP CONNECTION DETAIL A
SCALE: 1-1/2"=1'-0"



BENT CAP TO STRINGER CONNECTION
SCALE: 1-1/2"=1'-0"



SECTION A-A
SCALE: 1-1/2"=1'-0"



SECTION B-B
SCALE: 1-1/2"=1'-0"

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APPROVED BY _____ DATE _____

NO.	DATE	REVISION	BY

	BY	CHECKED
DESIGNED	Y. YUAN	M. KANAAN
DRAWN	Y. YUAN	M. KANAAN
QUANTITIES	-----	-----

REGISTERED PROFESSIONAL ENGINEER — Majid Kanaan — No. 50238 — EXP. 6-30-21 — CIVIL — STATE OF CALIFORNIA

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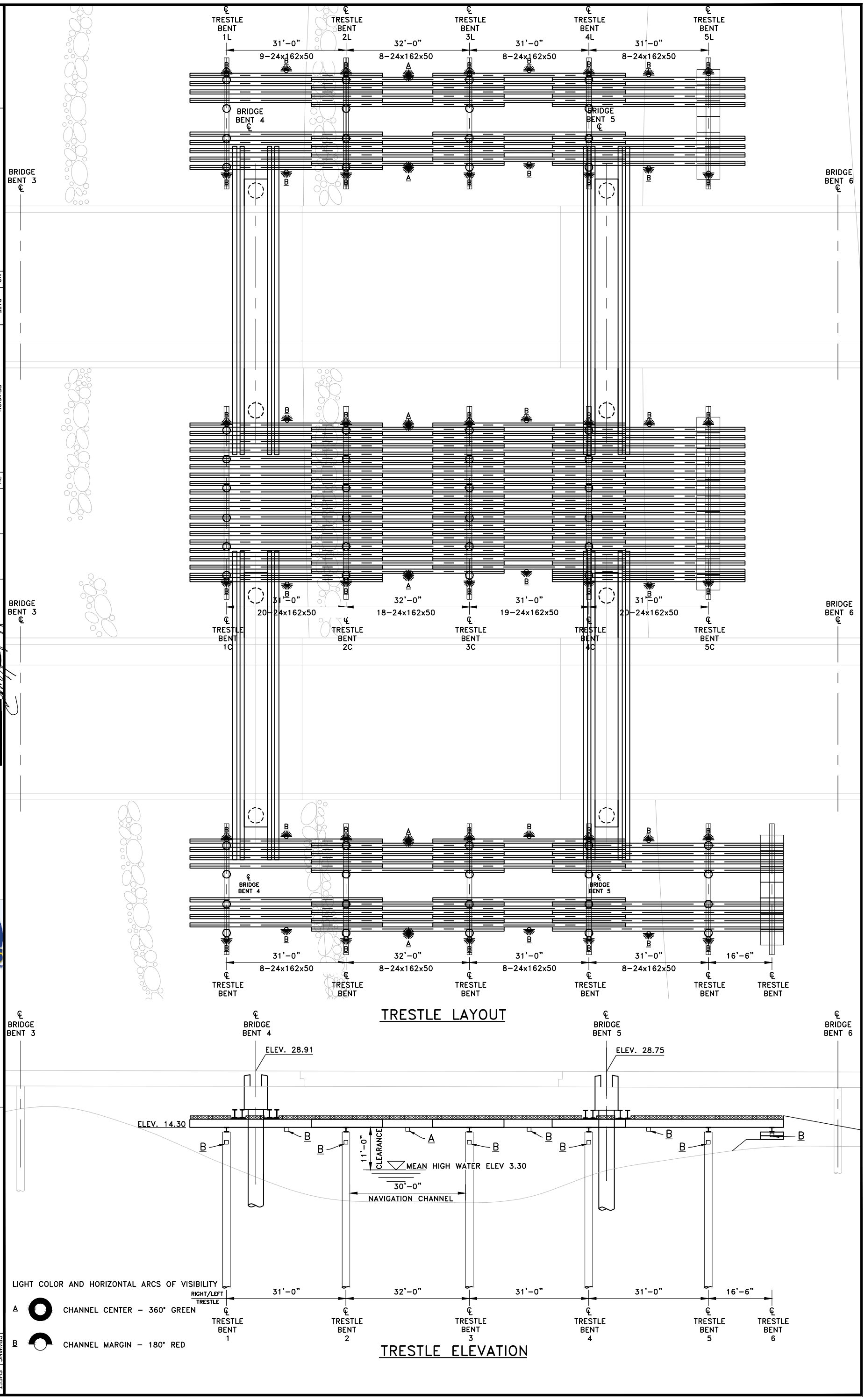
MOKELUMNE RIVER BRIDGE TRESTLE
DETAILS

DRAWING — OF — SHEET 21 OF TOTAL 22
REVISION



APPROVED BY

DATE

NO.	DATE	REVISION	BY

QUANTITIES	DESIGNED		
-----	DRAWN	Y. YUAN	BY
-----	M. KANAAN	M. KANAAN	CHECKED

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
Majid Kanaan
No. 50238
EXP. 6-30-21
CIVIL

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MOKELUMNE RIVER BRIDGE TRESTLE

BRIDGE LIGHTING PLAN

DRAWING SHEET 22

OF TOTAL 22