DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Heimbigner	2/20		12/23/2020 2/24/2021

COUNTY OF LASSEN — PROJECT ENGINEER - David John Ernaga

INDEX OF PLANS

Sheet No.	Description
1	Title Sheet
2	Typical Cross Section Sheet
3	Project Control
4	General Site Overall Plan
5	General Site Overall Plan with Contour Sheet I
6–8	General Site Plans
9–11	Layout Plan Sheets
12	Profile and Superelevation Diagram
13	Temporary Access Road Plan & Profile
14–15	Proposed Bridge Excavation & Backfill Areas
16–18	Construction Details
19	Additional HMA Widening Areas
20	Construction Area Signs
21–23	Pavement Delineation and Sign Plans
24–27	Erosion Control Plans
28–30	Fencing Plans
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35–36	Willow Planting Sheets
37	Bridge & Existing HMA Areas

Structures

Sheet No.	Description
38–48	Long Valley Creek Overflow Bridge on Hackstaff Road Existing Bridge No. 7C–12 New Bridge No. 7C–101

Structures

Sheet No.	Description
49–60	Long Valley Creek Bridge on Hackstaff Road Existing Bridge No. 7C–81 New Bridge No. 7C–102

Plumas County

COUNTY OF LASSEN

DEPARTMENT OF PUBLIC WORKS

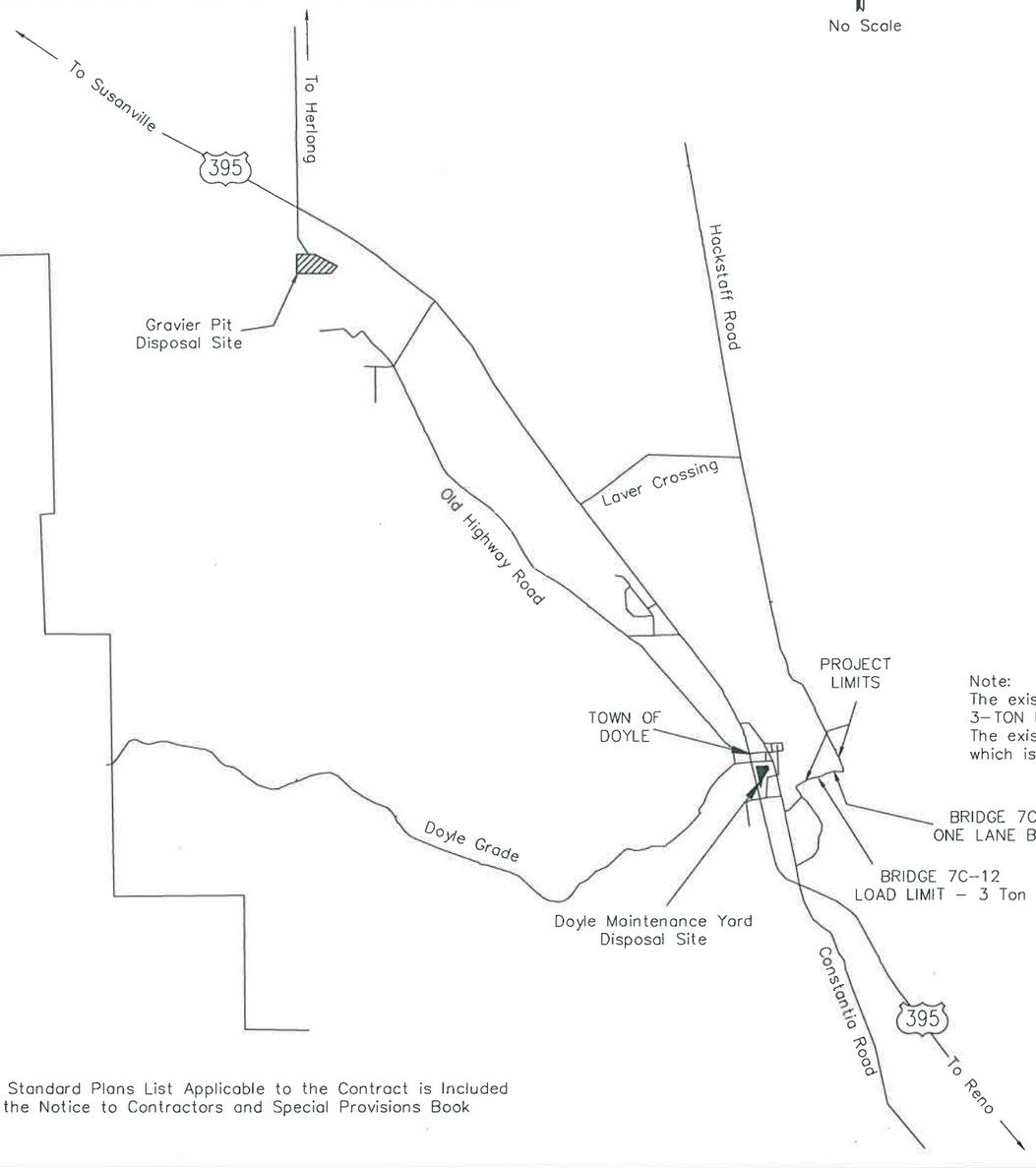
PROJECT PLANS for CONSTRUCTION on

COUNTY ROAD

HACKSTAFF ROAD BRIDGES 7C–12 & 7C–18 REPLACEMENT CONSTRUCTION PROJECT

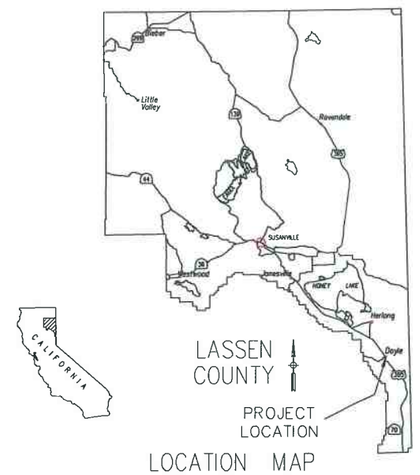
Located 0.9 miles East from the Town of Doyle
Federal Aid Project No. BRLO–5907 (033)

To BE Supplement by Caltrans Standard Plans 2018 and
Manual of Uniform Traffic Control Devices for Streets and Highways 2009 Edition, and
California Manual on Uniform Traffic Control Devices 2019 Edition



No Scale

DIST.	COUNTY	ROUTE	POST MILES – TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	LAS	Hackstaff Road	0.27 to 0.74	1	60



LOCATION MAP

Note:
The existing Bridge 7C–12 has a Load Limit Restriction of 3–TON Maximum Load.
The existing Bridge 7C–81 is a one travel lane structure which is approximately 12 foot wide.

Associate Engineer
Registered Civil Engineer

4/12/2021
Date

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

The Standard Plans List Applicable to the Contract is Included in the Notice to Contractors and Special Provisions Book

The Contractor Shall Possess the Class (or Classes) of Licence as Specified in The "Notice to Contractors".

CONTRACT NO.	122–06–7C12 & 122–06–7C81

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	Hackstaff Road	0.27 to 0.74	2	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

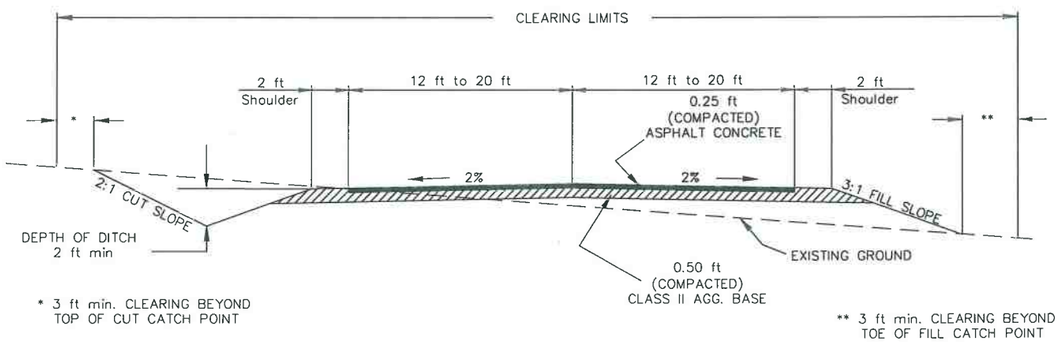
LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

NOTES:

1. DIMENSIONS SHOWN FOR STRUCTURAL SECTION ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. ABBREVIATIONS SHOWN ON THESE PLANS CONFORM TO STANDARD PLAN A10A & A10B.
3. SUPERELEVATION AS DIRECTED BY THE ENGINEER.

DESIGN DESIGNATION

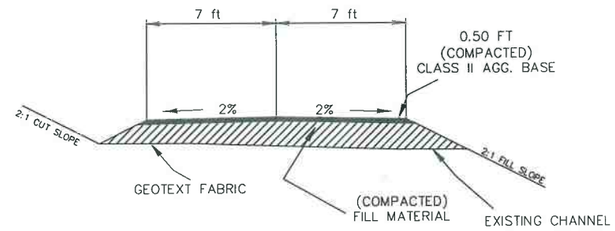
ADT (2020) = 100 D = 55%
ADT (2040) = 300 T = 05%
DHV = 15 V = 35 MPH



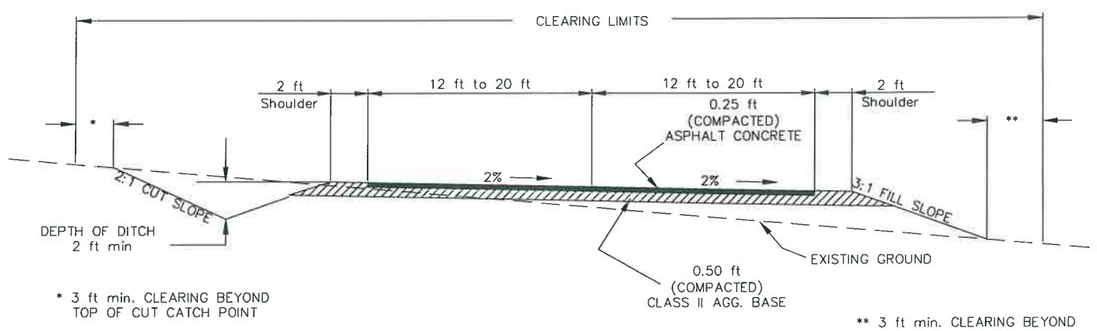
* 3 ft min. CLEARING BEYOND TOP OF CUT CATCH POINT

** 3 ft min. CLEARING BEYOND TOE OF FILL CATCH POINT

TYPICAL ROADWAY SECTION
(STANDARD CROWN)



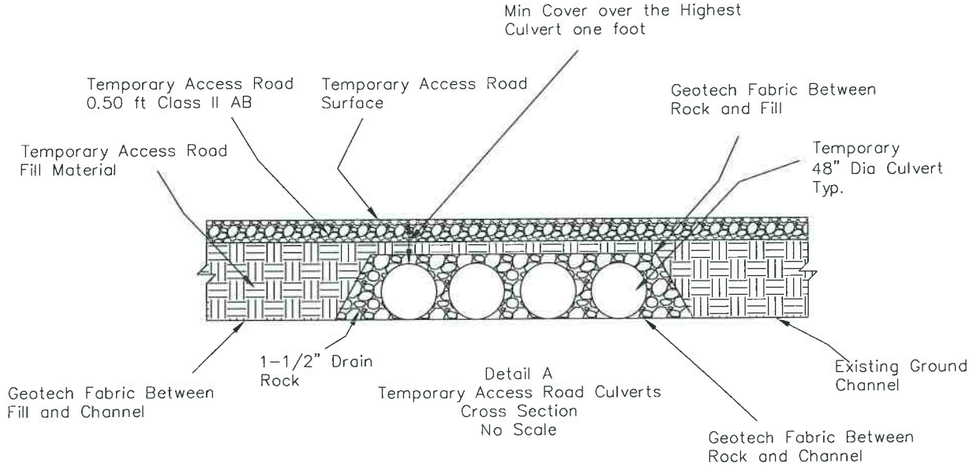
TYPICAL TEMPORARY ACCESS ROAD
STA 0+00 to 3+58.47



* 3 ft min. CLEARING BEYOND TOP OF CUT CATCH POINT

** 3 ft min. CLEARING BEYOND TOE OF FILL CATCH POINT

TYPICAL ROADWAY SECTION
(OUTSLOPE/INSLOPE)



Detail A
Temporary Access Road Culverts
Cross Section
No Scale

TYPICAL CROSS SECTIONS for HACKSATFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322

		DATE
DESIGNED	D. Ernaga	2/20
DATE	2/20	
CHECKED	P. Heimbigner	2/20
DATE	2/20	
REVISION DATES		
DATE	2/24/2021	

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	Hackstaff Road	0.27 to 0.74	3	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

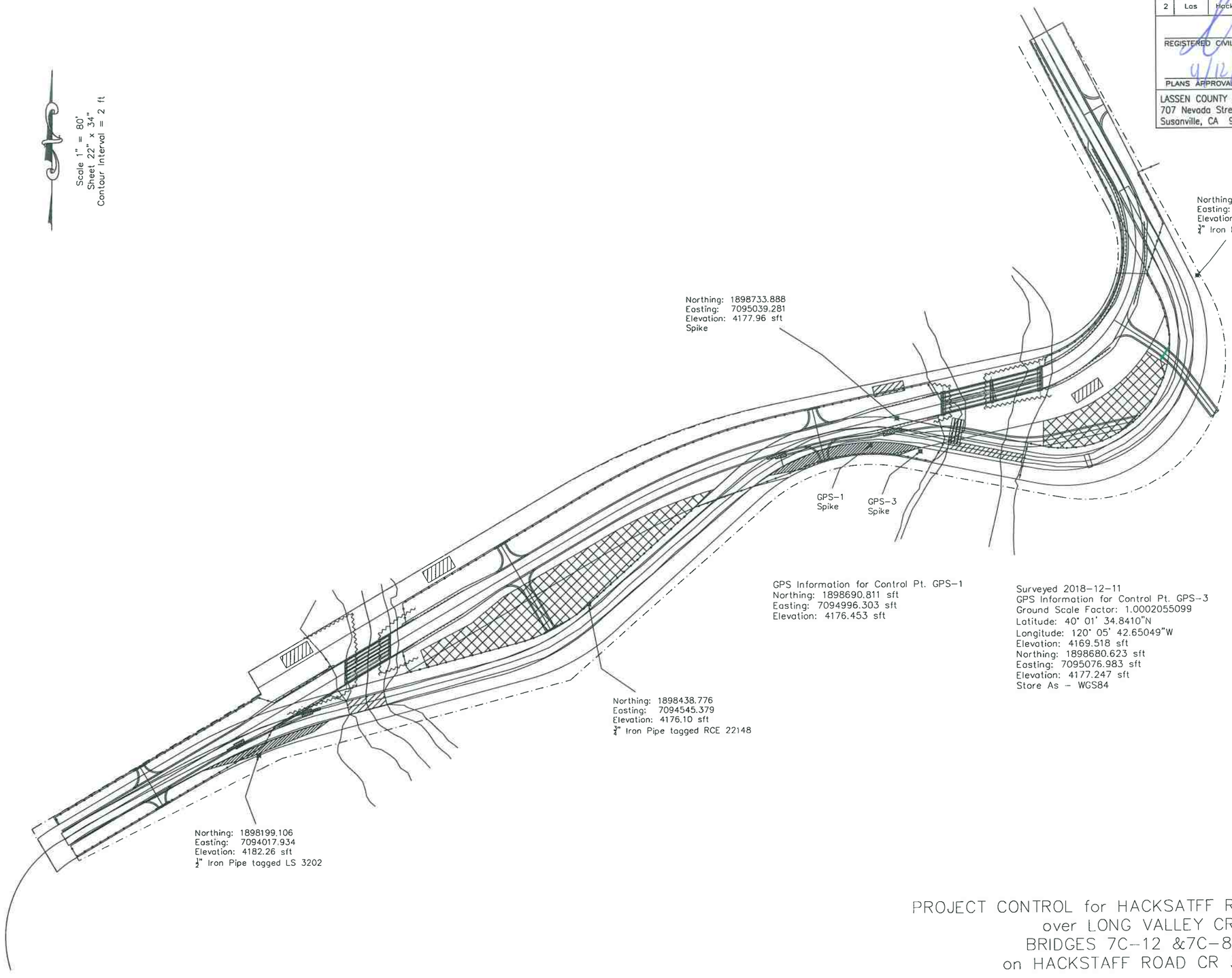
LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. ERNAGA	2/24/2021	P. Heimbigner	2/24/2021		

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 80'
Sheet 22" x 34"
Contour Interval = 2 ft



GPS Information for Control Pt. GPS-1
Northing: 1898690.811 sft
Easting: 7094996.303 sft
Elevation: 4176.453 sft

Surveyed 2018-12-11
GPS Information for Control Pt. GPS-3
Ground Scale Factor: 1.0002055099
Latitude: 40° 01' 34.8410"N
Longitude: 120° 05' 42.65049"W
Elevation: 4169.518 sft
Northing: 1898680.623 sft
Easting: 7095076.983 sft
Elevation: 4177.247 sft
Store As - WGS84

PROJECT CONTROL for HACKSATFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 &7C-81 on HACKSTAFF ROAD CR 322

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	Hackstaff Road	0.27 to 0.74	4	60

REGISTERED CIVIL ENGINEER

4/12/2021
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REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Scale 1" = 80'
Sheet 22" x 34"
Contour Interval = 2 ft

End Construction
ESL Limits
Public Road Connection
Temporary Sheet Piling
Temporary Silt Fencing
New Bridge 7C-81
Sediment Basin 20'x50'x3'
Temporary Fencing
Temporary Sheet Piling
Encroachment w/ 2-Stock Gates
ESL Limits
Temporary Silt Fencing
Existing Fencing
Encroachment w/ 2-Stock Gates
Sediment Basin 20'x50'x3'
Temporary K-Railing
Temporary Access Road w/ Culverts
ESL Limits
Construction Staging Area
Temporary Crash Cushion Module typ.
Encroachment w/ 2-Stock Gates
Existing Bridge 7C-81
Centerline Long Valley Creek
Existing Fencing
New Fencing Barbwire
Existing Centerline Hackstaff Road
Temporary Silt Fencing
Construction Staging Area
Encroachment w/ 2-Stock Gates
Existing Barbwire Fencing
New Fencing Barbwire
Existing Bridge 7C-12
Temporary K-Railing
Temporary Crash Cushion Module typ.
Centerline Long Valley Creek Overflow
Temporary Silt Fencing
Encroachment w/ 2-Stock Gates
ESL Limits
Existing Barbwire Fencing
New Fencing Barbwire
Begin Construction
New Fencing Barbwire
Existing Barbwire Fencing
Encroachment w/ 2-Stock Gates
ESL Limits
Temporary Silt Fencing
Temporary Sheet Piling
New Bridge 7C-12
Sediment Basin 20'x50'x3'
Temporary Sheet Piling
Encroachment w/ 2-Stock Gates
New Fencing Barbwire
Temporary Fencing
New Centerline Hackstaff Road
Encroachment w/ 2-Stock Gates
Sediment Basin 20'x50'x3'

GENERAL SITE OVERALL PLAN
for
HACKSATFF ROAD BRIDGES
over
LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. ERNAGA	2/24/2021	P. Heimbigner	2/24/2021		

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	Hackstaff Road	0.27 to 0.74	5	60

REGISTERED CIVIL ENGINEER

4/12/2021
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REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

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COUNTY OF LASSEN

PROJECT ENGINEER – David John Ernaga

Scale 1" = 80'
Sheet 22" x 34"
Contour Interval = 2 ft.

End Construction
ESL Limits
Public Road Connection
Temporary Sheet Piling
Temporary Silt Fencing
New Bridge 7C-81
Sediment Basin 20'x50'x3'
Encroachment w/ 2-Stock Gates
Temporary Fencing
Existing Fencing
Temporary K-Railing
Temporary Access Road w/ Culverts
Construction Staging Area
Existing Bridge 7C-81
Centerline Long Valley Creek
Temporary Crash Cushion Module typ.
New Fencing Barbwire
Existing Centerline Hackstaff Road
New Centerline Hackstaff Road
New Bridge 7C-12
Existing Barbwire Fencing
Begin Construction
Existing Bridge 7C-12
Centerline Long Valley Creek Overflow

GENERAL SITE OVERALL PLAN With CONTOURS
for HACKSATFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	6	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DATE	2/24/2021
REVISION DATES	
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
DESIGNED	D. Ernaga

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"
Contour Interval = 1 foot

0 20 40 60 80 100 150 200

Temporary Sheet Piling
Exact Location to be
Determined by CONTRACTOR

Temporary Sheet Piling
Exact Location to be
Determined by CONTRACTOR

Temporary
Construction
Easement

New Centerline
Hackstaff Road

Sediment Basin
20'x50'x3'

Temporary
K-Railing

Crash Cushion
Array 'U11'

Construction
Staging Area

ESL Project
Limits

Begin
Construction
Station 0+00

Edge of Pavement

Edge of Shoulder

Private Road
Connection

Right of Way
NEW

Private Road
Connection

Sediment Basin
20'x50'x3'

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

"S-1" Line
Hackstaff Road

N59° 22' 58"E 996.62'

Existing Centerline
Hackstaff Road

ESL Project
Limits

Private Road
Connection

Crash Cushion
Array 'U11'

Temporary Roadway
Widening Area

Existing Centerline
Hackstaff Road

Crash Cushion
Array 'U11'

Existing
Fencing

Right of Way
NEW

New Bridge 7C-101
to be Constructed

Existing Bridge 7C-12
to be Removed

Construction
Staging Area

Existing HMA Surface
to be Milled and Removed

Private Road
Connection

Top of Bank

Ordinary High
Water Mark

Ordinary High
Water Mark

Top of Bank

Legend

- Centerline New Roadway
- Centerline Existing Roadway
- Temporary Sheet Piling
- Construction Staging Area
- Existing Fence
- ESL Project Limits

GENERAL SITE PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	7	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

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David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

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707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Heimbigner	2/20		2/25/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"
Contour Interval = 1 foot

0 20 40 60 80 100 150 200

Legend

- Centerline New Roadway
- Centerline Existing Roadway
- Temporary Sheet Piling
- Construction Staging Area
- Existing Fence
- ESL Project Limits

ESL Project Limits
Temporary Construction Easement
Existing Barbwire Fencing
New bridge 7C-102 to be Constructed
Ordinary High Water Mark
Top of Bank
Ordinary High Water Mark
Edge of Pavement
Edge of Shoulder
New Centerline Hackstaff Road
Private Roadway Connection
Temporary Sheet Piling Exact Location to be Determined by Contractor
Sediment Basin 20'x50'x3'
Temporary Sheet Piling Exact Location to be Determined by Contractor
Right of Way NEW
BC= 9+96.52
9+00
10+00
11+00
D=16°56'45"
L=325.34, R=1100.00
12+00
"S-1" Line
Hackstaff Road
13+00
EC= 13+21.86
14+00
15+00
N76° 19' 43"E
393.53'
16+00
12+00
Hackstaff Centerline
Hackstaff Road
Crash Cuhion Array 'U11'
Temporary K-Railing
Private Roadway Connection
Existing Roadway Widening Area
Crash Cuhion Array 'U11'
Temporary Access Road 4-48" Culverts
Existing HMA Surface to be Milled and Removed
Right of Way NEW
Existing bridge 7C-81 to be Removed
Temporary Construction Staging Area
ESL Project Limits
Existing Barbwire Fencing
Existing Centerline Hackstaff Road
Temporary Centerline Access Road

GENERAL SITE PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	8	60

REGISTERED CIVIL ENGINEER

4/11/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

	DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
	D. Ernaga	2/20	P. Heimbigner	2/20		2/25/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Legend

- Centerline New Roadway
- Centerline Existing Roadway
- Temporary Sheet Piling
- Construction Staging Area
- Existing Fence
- ESL Project Limits

Scale 1" = 30'
Sheet Size 22"x34"
Contour Interval = 1 foot

0 20 40 60 80 100 150 200

Top of Bank

Ordinary High Water Mark

Temporary Sheet Piling Exact Location to be Determined by the Contractor

New Bridge 7C-102 to be Constructed

Ordinary High Water Mark

Top of Bank

Temporary Sheet Piling Exact Location to be Determined by the Contractor

Temporary Access Road w/ Culverts

Edge of Shoulder

Edge of Pavement

Right of Way NEW

New Centerline Hackstaff Road

ESL Project Limits

Existing Barbwire Fencing

Existing Barbwire Fencing to remain in place.

Right of Way NEW

Public Road Connection

ESL Project Limits

Existing HMA Surface to be Milled and Removed

Private Roadway Connection

Existing Centerline Hackstaff Road

Temporary Construction Staging Area

Existing Barbwire Fencing

Sediment Basin 20'x50'x3'

Existing Centerline Hackstaff Road

"S-1" Line Hackstaff Road

15+00

16+00

17+00

18+00

19+00

20+00

21+00

22+00

23+80

0+00

EC 21+80

GENERAL SITE PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	9	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
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PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

"S-1" 1+90.53, -14.00' Lt,
Private Driveway "DWY"

"S-1" 1+59.52, -37.00' Lt,
Private Driveway "DWY"

"S-1" 1+59.52, -14.00' Lt,
Private Driveway "DWY"

"S-1" 1+28.56, -14.00' Lt,
Private Driveway "DWY"

"S-1" 0+00, -12.00' Lt,
ETW Begin of Construction

"S-1" 0+00, -14.00' Lt,
ETW Begin of Construction

"S-1" 0+00, -39.62' Lt,
Right of Way

"S-1" 3+95.38, -20.00' Lt,
Begin Shoulder Taper

"S-1" 3+95.38, -16.00' Lt,
Begin ETW Taper

"S-1" 3+29.50, -14.00' Lt,
Begin Shoulder Taper

"S-1" 3+29.50, -12.00' Lt,
Begin ETW Taper

"S-1" 38+84.07, -38.00' Lt,
Right of Way

"S-1" 38+84.07, -50.00' Lt,
Right of Way

"S-1" 38+84.07, -80.00' Lt,
Temporary Construction
Easement

See Long Valley Creek
Overflow Bridge on
Hackstaff Road
Construction Plans

See Construction
Detail C-1 for
New Guardrailing
Information

"S-1" 8+34.41, -49.00' Lt,
Private Driveway "DWY"

"S-1" 8+34.41, -14.00' Lt,
Private Driveway "DWY"

"S-1" 8+12.66, -14.00' Lt,
Begin Shoulder Taper

"S-1" 8+12.66, -12.00' Lt,
Begin ETW Taper

"S-1" 8+03.48, -14.84' Lt,
Private Driveway "DWY"

"S-1" 7+46.86, -20.00' Lt,
Begin Shoulder Taper

"S-1" 7+46.86, -16.00' Lt,
Begin ETW Taper

"S-1" 8+65.09, -14.00' Lt,
Private Driveway "DWY"

384.07'
S59° 33' 44"W

S30° 26' 16"E
15.00'

S30° 35' 28"E
11.58'

614.82'
S59° 22' 58"W

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

"S-1" Line
Hackstaff Road

N59° 22' 58"E 996.62'

S30° 26' 15"E
60.00'

N59° 33' 44"E
237.14'

D=11°49'11"
L=136.06, R=654.69

N59° 22' 58"E
227.29'

Existing Centerline
Hackstaff Road

N75° 08' 49"E
188.20'

D=27°25'44"
L=129.26, R=270.00

"S-1" 1+28.56, 14.00' Rt,
Private Driveway "DWY"

"S-1" 0+00, 33.38' Rt,
Right of Way

"S-1" 0+00, 14.00' Rt,
ETW Begin of Construction

"S-1" 0+00, 12.00' Rt,
ETW Begin of Construction

"S-1" 1+59.52, 14.00' Rt,
Private Driveway "DWY"

"S-1" 1+59.52, 34.00' Rt,
Private Driveway "DWY"

"S-1" 1+90.53, 14.00' Rt,
Private Driveway "DWY"

"S-1" 2+36.90, 36.12' Rt,
Right of Way

"S-1" 3+09.11, 12.00' Rt,
Begin ETW Taper

"S-1" 3+09.11, 14.00' Rt,
Begin Shoulder Taper

"S-1" 3+09.11, 12.00' Rt,
Begin ETW Taper

"S-1" 3+09.11, 14.00' Rt,
Begin Shoulder Taper

"S-1" 3+70.39, 50.00' Rt,
Right of Way

Existing Bridge
Load Limit 3 Ton
Maximum

"S-1" 5+98.30, 50.00' Rt,
Right of Way

"S-1" 7+26.44, 16.00' Rt,
Begin ETW Taper

"S-1" 7+26.44, 20.00' Rt,
Begin Shoulder Taper

"S-1" 7+82.24, 12.00' Rt,
Begin ETW Taper

"S-1" 7+92.24, 14.00' Rt,
Begin Shoulder Taper

"S-1" 8+03.41, 14.00' Rt,
Private Driveway "DWY"

"S-1" 8+34.41, 14.00' Rt,
Private Driveway "DWY"

"S-1" 8+34.41, 110.00' Rt,
Private Driveway "DWY"

"S-1" 8+65.41, 14.00' Rt,
Private Driveway "DWY"

LAYOUT PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	10	60

REGISTERED CIVIL ENGINEER

4/14/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	D. Ernaga
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
REVISION DATES	
DATE	2/25/2021

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

"S-1" 13+10.76, -64.85' Lt.
Temporary Construction Easement

"S-1" 13+25.96, -45.86' Rt.
Right of Way

"S-1" 8+65.09, -14.00' Lt.
Private Driveway "DWY"

"S-1" 9+57.76, -80.00' Lt.
Temporary Construction Easement

"S-1" 9+98.79, -50.00' Lt.
Right of Way

L=341.53, R=1050.00
D=18°38'11"

BC: 9+56.57

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

D=16°56'45"
L=325.34, R=1100.00

"S-1" Line
Hackstaff Road

EC: 13+21.96

"S-1" 13+36.97, -14.00' Lt.
Private Driveway "DWY"

"S-1" 13+67.40, -44.00' Lt.
Private Driveway "DWY"

"S-1" 13+67.40, -14.00' Lt.
Private Driveway "DWY"

"S-1" 13+98.30, -14.00' Lt.
Private Driveway "DWY"
Begin Shoulder Taper

"S-1" 13+98.30, -12.00' Lt.
Begin ETW Taper

"S-1" 17+55.28, -55.28' Rt.
Temporary Construction Easement

"S-1" 17+33.88, -33.26' Rt.
Right of Way

See Long Valley Creek Bridge on Hackstaff Road Construction Plans

See Construction Detail C-2 for New Guardriling Information

405.37'
S78° 01' 09"W

N76° 19' 43"E
393.53'

BC: 17+05.05

N71° 27' 22"E
174.77'

D=30°11'02"
L=142.24, R=270.00

N78° 43' 59"E
161.89'

S78° 37' 53"E
99.08'

"S-1" 8+65.41, 14.00' Rt.
Private Driveway "DWY"

N47° 43' 05"E
228.54'

Existing Centerline Hackstaff Road

D=27°25'44"
L=129.26, R=270.00

"S-1" 9+23.17, 100.94' Rt.
Right of Way

"S-1" 8+34.41, 110.00' Rt.
Private Driveway "DWY"

"S-1" 11+37.66, 50.83' Rt.
Right of Way

"S-1" 13+21.52, 50.62' Rt.
Right of Way

"S-1" 13+36.47, 14.00' Rt.
Private Driveway "DWY"

"S-1" 13+67.39, 14.00' Rt.
Private Driveway "DWY"

"S-1" 13+67.43, 44.00' Rt.
Private Driveway "DWY"

"S-1" 13+90.88, 12.00' Rt.
Begin ETW Taper

"S-1" 13+90.88, 14.00' Rt.
Begin Shoulder Taper

"S-1" 13+97.65, 14.77' Rt.
Private Driveway "DWY"

"S-1" 14+51.60, 16.00' Rt.
Begin ETW Taper

"S-1" 14+51.60, 20.00' Rt.
Begin Shoulder Taper

"S-1" 14+62.02, 56.52' Rt.
Right of Way

"S-1" 16+23.80, 63.31' Rt.
Right of Way

LAYOUT PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	HACKSTAFF ROAD	0.27 to 0.74	11	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

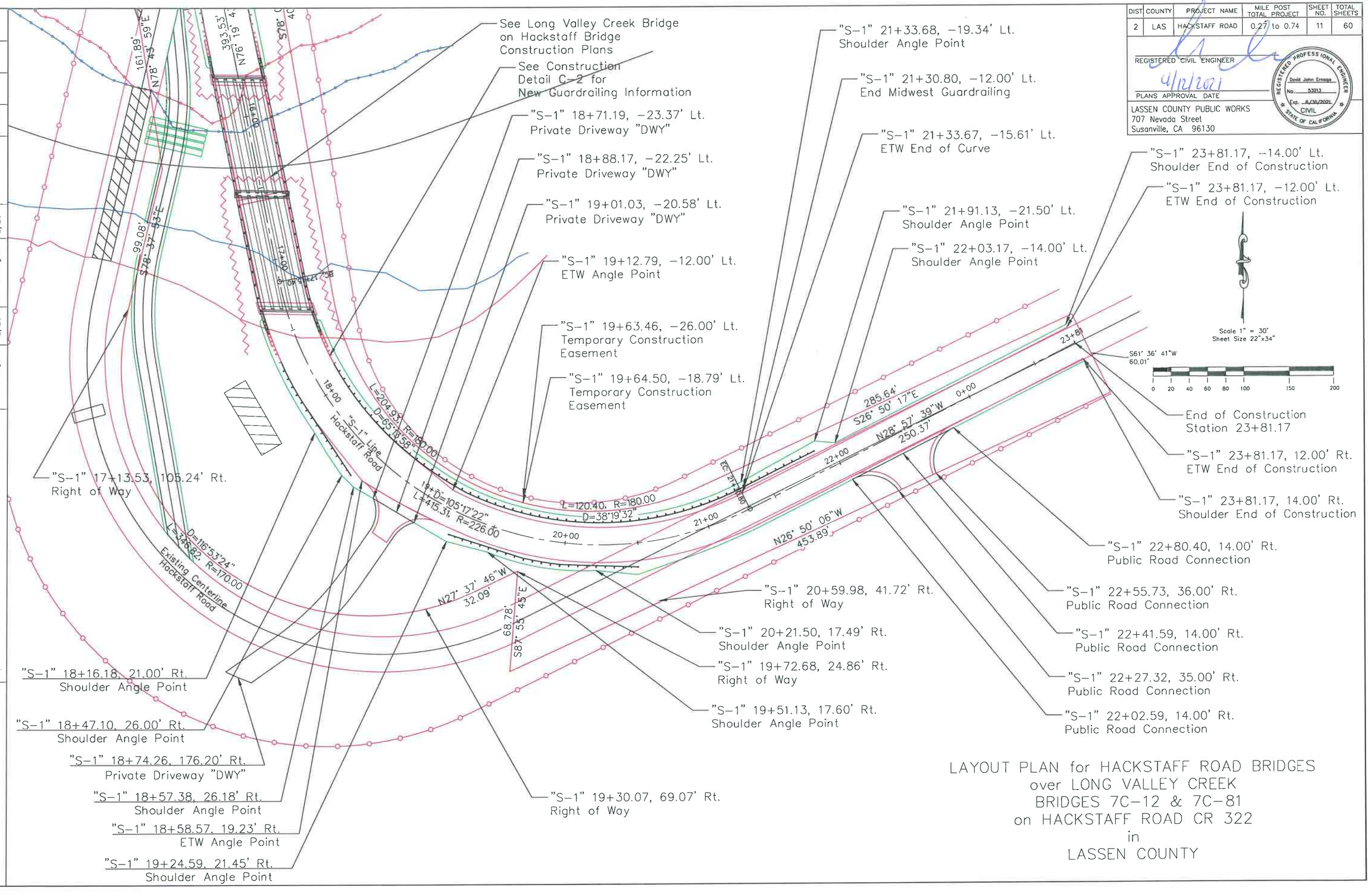
REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Helmbigner	2/20		2/25/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN



LAYOUT PLAN for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	Hackstaff Road	0.27 to 0.74	12	60

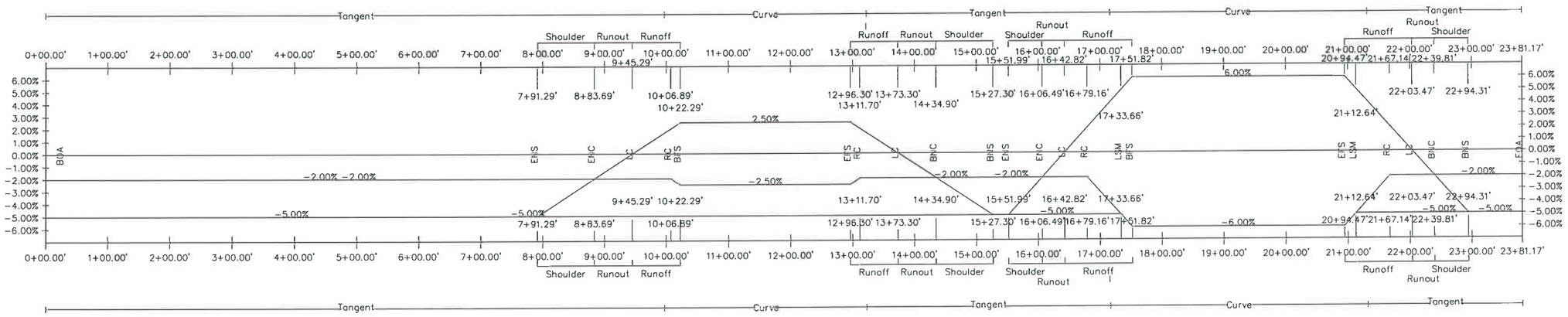
REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

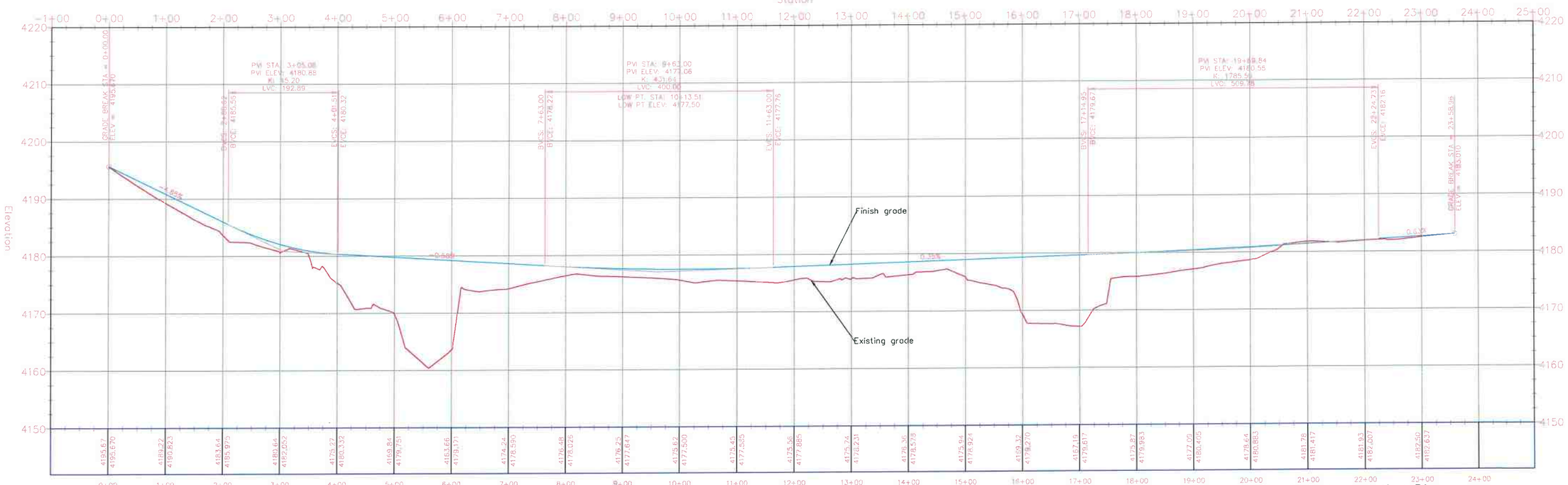
REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Superelevation



CR 322 Proposed Alignment PROFILE



Profile & Superevelation Diagrams
for the
Long Valley Creek Bridges
7C-12 and 7C-81
No Scale

DESIGNED	D. ERNAGA	
DATE	2/24/2021	
CHECKED	P. Heimbigner	
DATE	2/24/2021	
REVISION DATES		
DATE		

COUNTY OF LASSEN

PROJECT ENGINEER - David John Ernaga

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	13	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

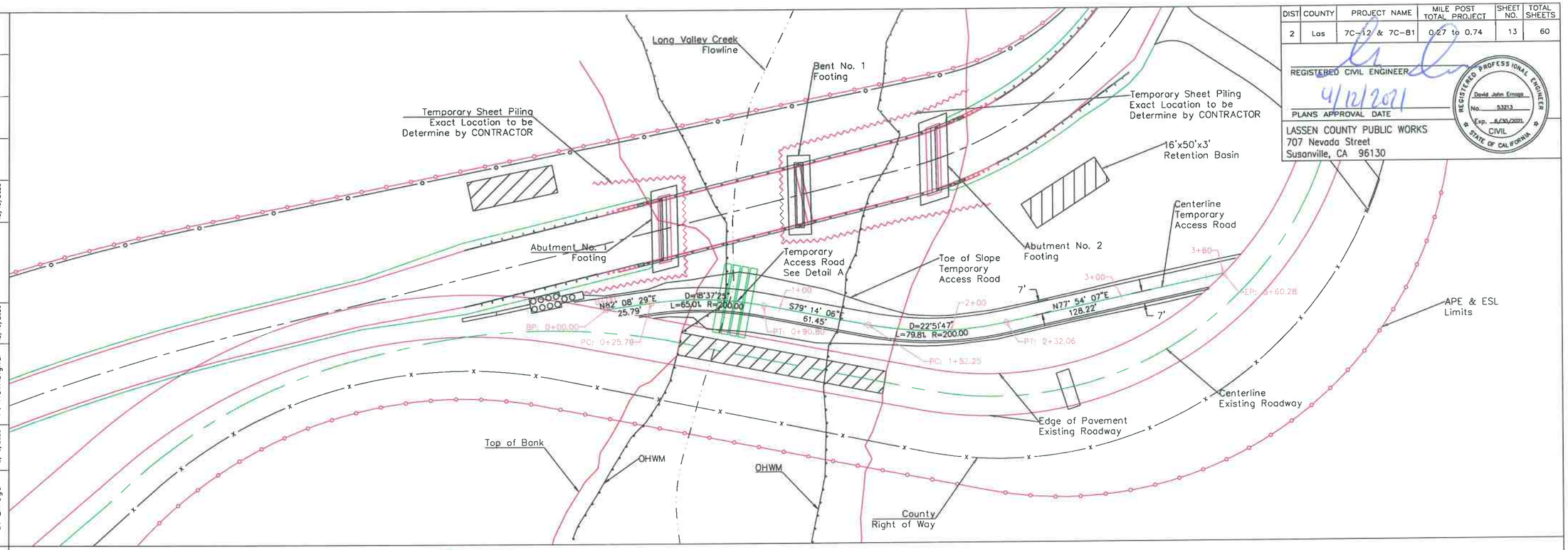
REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 8/30/2021
CIVIL
STATE OF CALIFORNIA

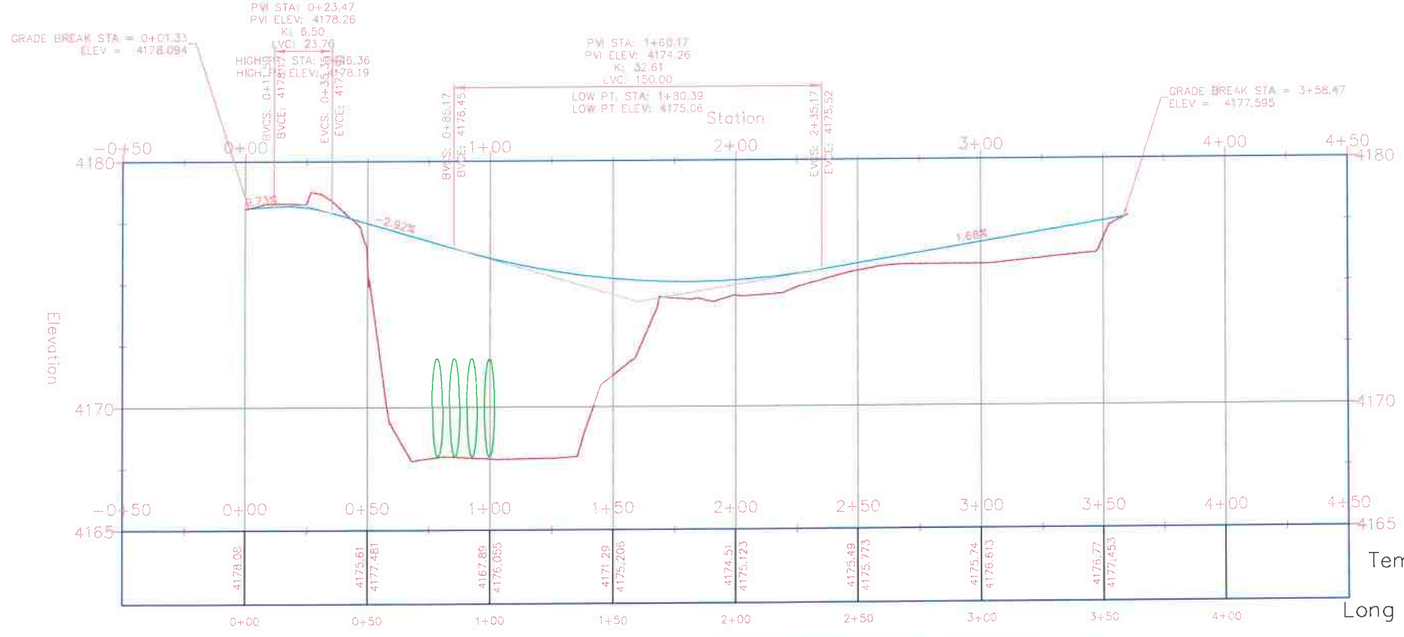
LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	12/10/2020	P. Heimbigner	12/10/2020		12/10/2020

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN





7C-81 Temporary Access Road Alignment PROFILE

Temporary Access Road Plan–Profile
for
Long Valley Creek Overflow Bridge 7C-81
on
Hackstaff Road in Lassen County
No Scale

Station		
CF	Exc	
	Emb	

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	14	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/24/2021	P. Heimbigner	2/24/2021		

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Construction Notes:

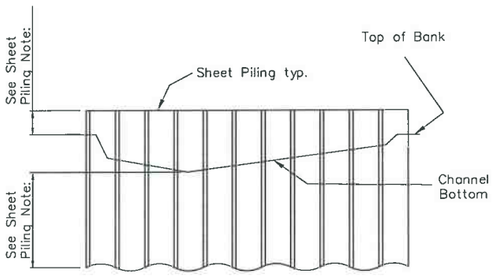
1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments and bent areas before the temporary temporary sheet piling is removed.

Sheet Piling Notes:

1. The contractor shall have a sheet piling design and safety plan developed by a registered Civil Engineer.
2. The depth of the sheet piling below the existing ground and channel shall be determined the sheet piling design and safety plan.
3. The exact layout, location and installation of the temporary sheet piling shall be the responsibility of the contractor or the contractors representative.

Legend

- Project Limits
- Centerline – New Hackstaff Road
- Centerline – Existing Hackstaff Road
- Centerline – Temporary Access Road
- Temporary Sheet Piling
- Original High Water Mark Line
- Long Valley Creek Flowline
- APE & ESL Limits
- County Right of Way
- Temporary Construction Easement
- Proposed Excavation Area
- Excavation Area Geotech & Base
- Bridge Footing Base Road
- Structure Backfill Area Class II AB



Detail B
Temporary Sheet Piling
No Scale

Scale 1" = 30'
Sheet 22" x 34"

Construction Notes:

1. It is anticipated that the abutment excavations shall require ground stabilization for the pile driving operation and footing construction. The westside abutment located in the area of a marshy area and the eastside abutment is approximately 13 feet below the ground water table.

Construction Notes:

1. The proposed excavation area was used in the design to estimate the volume of material that needed to be excavation so the pile driving equipment could drive the abutment footing piling.
2. The exact excavation required for the pile driving operation shall be determined by the CONTRACTOR or the CONTRACTORS representative.
3. The Excavation Safety Plan shall be done by a Civil Engineer currently registered in the Sate of California.
4. The proposed sheet piling layout was used in the design to estimate the quantity required.
5. The exact layout for the sheet piling shall be the responsible of the CONTRACTOR or CONTRACTORS representative.
6. The sheet piling design and safety plan shall be done by Civil Engineer currently registered in the State of California.

Proposed Excavation & Backfill Areas for Long Valley Creek Overflow Bridge 7C-12 on Hackstaff Road in Lassen County

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	15	60

REGISTERED CIVIL ENGINEER

4/14/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Construction Notes:

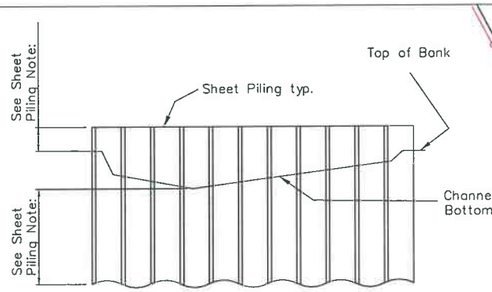
1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments and bent areas before the temporary temporary sheet piling is removed.

Construction Notes:

1. The proposed excavation area was used in the design to estimate the volume of material that needed to be excavation so the pile driving equipment could drive the abutment footing piling.
2. The exact excavation required for the pile driving operation shall be determined by the CONTRACTOR or the CONTRACTORS representative.
3. The Excavation Safety Plan shall be done by a Civil Engineer currently registered in the Sate of California.
4. The proposed sheet piling layout was used in the design to estimate the quantity required.
5. The exact layout for the sheet piling shall be the responsible of the CONTRACTOR or CONTRACTORS representative.
6. The sheet piling design and safety plan shall be done by Civil Engineer currently registered in the State of California.

Legend

- Project Limits
- Centerline – New Hackstaff Road
- Centerline – Existing Hackstaff Road
- Centerline – Temporary Access Road
- Temporary Sheet Piling
- Original High Water Mark Line
- Long Valley Creek Flowline
- APE & ESL Limits
- County Right of Way
- Temporary Construction Easement
- Proposed Excavation Area
- Bridge Footing Base Road
- Structure Backfill Area Class II AB



Detail B
Temporary Sheet Piling
No Scale

Scale 1" = 30'
Sheet 22" x 34"

Top of Bank
Temporary Sheet Piling Exact Location and Layout to be Determine by CONTRACTOR See Detail B
Structure Backfill Area Class II Aggregate Base
Long Valley Creek Flowline
Structure Backfill Area Class II Aggregate Base
Bent No. 1 Footing Base Rock
Temporary Sheet Piling Exact Location and Layout to be Determine by CONTRACTOR See Detail B
Proposed Excavation Area
16'x50'x3' Retention Basin
County Right of Way
APE & ESL Limits
16'x50'x3' Retention Basin
Centerline Temporary Access Road
Abutment No. 2 Footing Base Rock
Abutment No. 1 Footing Base Rock
Temporary Access Road See Detail A
Toe of Slope Temporary Access Road
Centerline New Roadway
APE & ESL Limits
Centerline Existing Roadway
Edge of Pavement Existing Roadway
Proposed Excavation Area
Top of Bank
OHWM
OHWM
County Right of Way

Sheet Piling Notes:

1. The contractor shall have a sheet piling design and safety plan developed by a California Registered Civil Engineer.
2. The depth of the sheet piling below the existing ground and channel shall be determined the sheet piling design and safety plan.
3. The exact layout, location and installation of the temporary sheet piling shall be the responsibility of the contractor or the contractors representative.

Proposed Excavation & Backfill Areas for Long Valley Creek Overflow Bridge 7C-81 on Hackstaff Road in Lassen County

		DATE
REVISION DATES		DATE
CHECKED	P. Heimbigner	2/24/2021
DESIGNED	D. Ernaga	2/24/2021

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	16	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DATE	3/1/2021
REVISION DATES	
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
DESIGNED	D. Ernaga

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 15'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Legend
MGS - Midwest Guardrail System

"S1" 4+99.09, -16.00 Lt.
Begin Transition Railing (Type WB-31)

Top of Bank

Temporary Construction Easement

Ordinary High Water Mark

Ordinary High Water Mark

Top of Bank

"S1" 6+42.82, -16.00 Lt.
Begin Transition Railing (Type WB-31)

Right of Way

"S1" 4+49.09, -16.00 Lt.
End MGS (Steel Posts)

"S1" 4+74.09, -16.00 Lt.
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)

See Long Valley Creek Overflow Bridge for the Construction Plans

"S1" 6+67.82, -16.00 Lt.
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)

"S1" 6+92.82, -16.00 Lt.
End MGS (Steel Posts)

Alternative In-Line Terminal System (Type SKT)

MGS

Type WB-31

5+00

6+00

Type WB-31

MGS

Alternative In-Line Terminal System (Type SKT)

"S1" Line
Hackstaff Road

4+00

MGS

Type WB-31

Type WB-31

MGS

7+00

Alternative In-Line Terminal System (Type SKT)

"S1" 6+72.42, 16.00 Rt.
End MGS (Steel Posts)

Alternative In-Line Terminal System (Type SKT)

Right of Way

"S1" 6+47.42, 16.00 Rt.
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)

"S1" 6+22.42, 16.00 Rt.
Begin Transition Railing (Type WB-31)

"S1" 4+28.70, 16.00 Rt.
End MGS (Steel Posts)

"S1" 4+53.70, 16.00 Rt.
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)

"S1" 4+78.70, 16.00 Rt.
Begin Transition Railing (Type WB-31)

Existing Centerline Hackstaff Road

Existing Bridge 7C-12 to be Removed

7C-101 CONSTRUCTION DETAIL C-1 for HACKSTAFF ROAD BRIDGES
for LONG VALLEY CREEK
BRIDGE 7C-101 & 7C-102
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

Construction Notes:
Existing Bridge 7C-12 has a
"3-TON Permanent Posted Load Limit"

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	17	60

REGISTERED CIVIL ENGINEER

4/14/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	D. Ernaga
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
REVISION DATES	
DATE	3/1/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Legend
MGS - Midwest Guardrail System

Ordinary High Water Mark
Top of Bank
"S1" 15+63.56, -16.00 Lt
Begin Transition Railing (Type WB-31)
"S1" 15+38.56, -16.00 Lt
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)
"S1" 15+13.56, -16.00 Lt
End MGS (Steel Posts)
Temporary Construction Easement
Alternative In-Line Terminal System Type (SKT)
MGS
15+00
Type WB-31
"S1" Line
Hackstaff Road
16+00
17+00
See Long Valley Creek Bridge on Hackstaff Road for the Construction Plans
Right of Way
Ordinary High Water Mark
Top of Bank
"S1" 17+58.26 -16.00 Lt
Begin Transition Railing (Type WB-31)
"S1" 17+83.26, -16.00 Lt
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)
19+00
18+00
"S1" 18+03.88, 16.00 Rt
End MGS (Steel Posts)
"S1" 17+66.38, 16.00 Rt
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)
"S1" 17+41.38, 16.00 Rt
Begin Transition Railing (Type WB-31)
"S1" 15+05.74, 16.00 Rt
End MGS (Steel Posts)
"S1" 15+30.74, 16.00 Rt
End Transition Railing (Type WB-31)
Begin MGS (Steel Posts)
"S1" 15+55.74, 16.00 Rt
Begin Transition Railing (Type WB-31)
Existing Bridge 7C-81
to be Removed
Right of Way

7C-102 CONSTRUCTION DETAIL C-2 for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

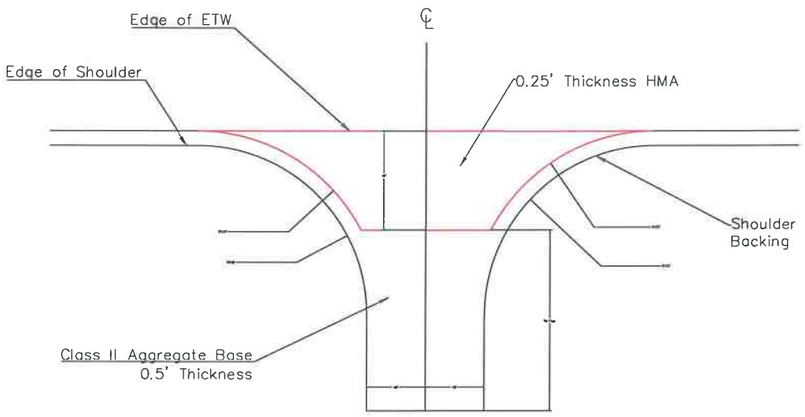
DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	18	60

REGISTERED CIVIL ENGINEER

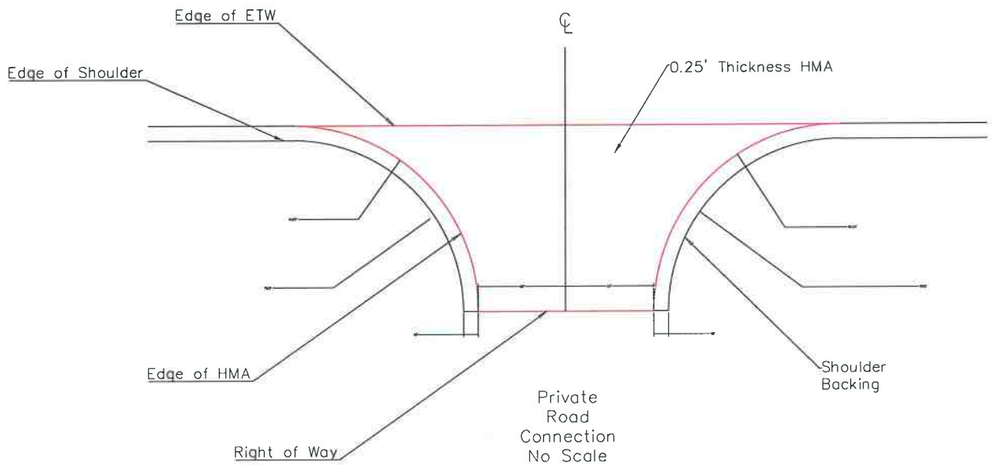
4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130



Private
Road
Connection
No Scale



Private
Road
Connection
No Scale

Note:

The length of the Private Driveway varies and terminate at the Right of Way line.

CONSTRUCTION DETAIL C-3 for
HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322
No Scale

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Heimbigner	2/20		3/1/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	19	60

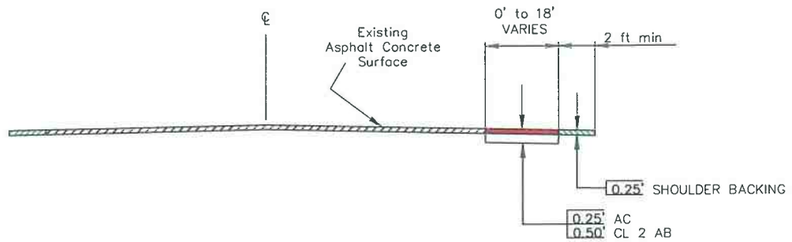
REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Scale 1" = 80'
Sheet 22" x 34"



TYPICAL HACKSTAFF ROAD WIDENING AREAS
STA 2+43 to 4+63
STA 12+77 to 15+45

ADDITIONAL HMA WIDENING AREAS
for
HACKSATFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322
No Scale

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. ERNAGA	2/24/2021	P. Helmbigner	2/24/2021		

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to .074	20	60

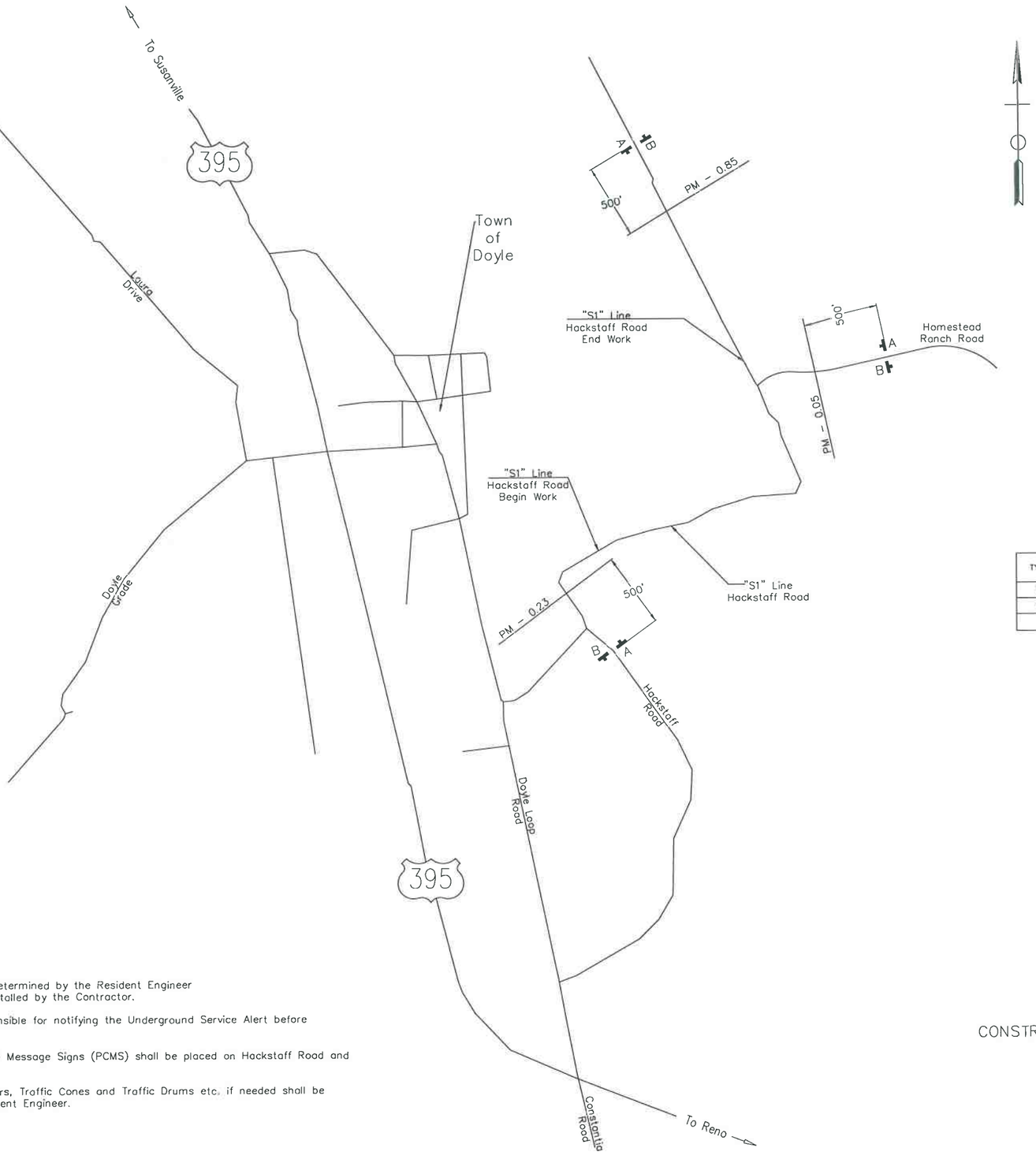
REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130



TYPE	CODE	Sign Message or Symbol	Panel Size	Number and Size of Post	No. of Sign
A	W20-1	ROAD WORK AHEAD	36" x 36"	1 – 4" x 6"	3
B	G20-2	END ROAD WORK	36" x 18"	1 – 4" x 6"	3
		PORTABLE MESSAGE SIGN	SEE NOTE	N/A	3

Note:

Sign location shall be determined by the Resident Engineer before the signs are installed by the Contractor.

The Contractor is responsible for notifying the Underground Service Alert before installing the signs.

The Portable Changeable Message Signs (PCMS) shall be placed on Hackstaff Road and Homestead Ranch Road.

Placement of Channelizers, Traffic Cones and Traffic Drums etc. if needed shall be determined by the Resident Engineer.

CONSTRUCTION SIGNAGE PLAN for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY
No Scale

DESIGNED	D. Ernaga	DATE	2/20	CHECKED	P. Heimbigner	DATE	2/20	REVISION DATES		DATE	3/3/2021

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	21	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

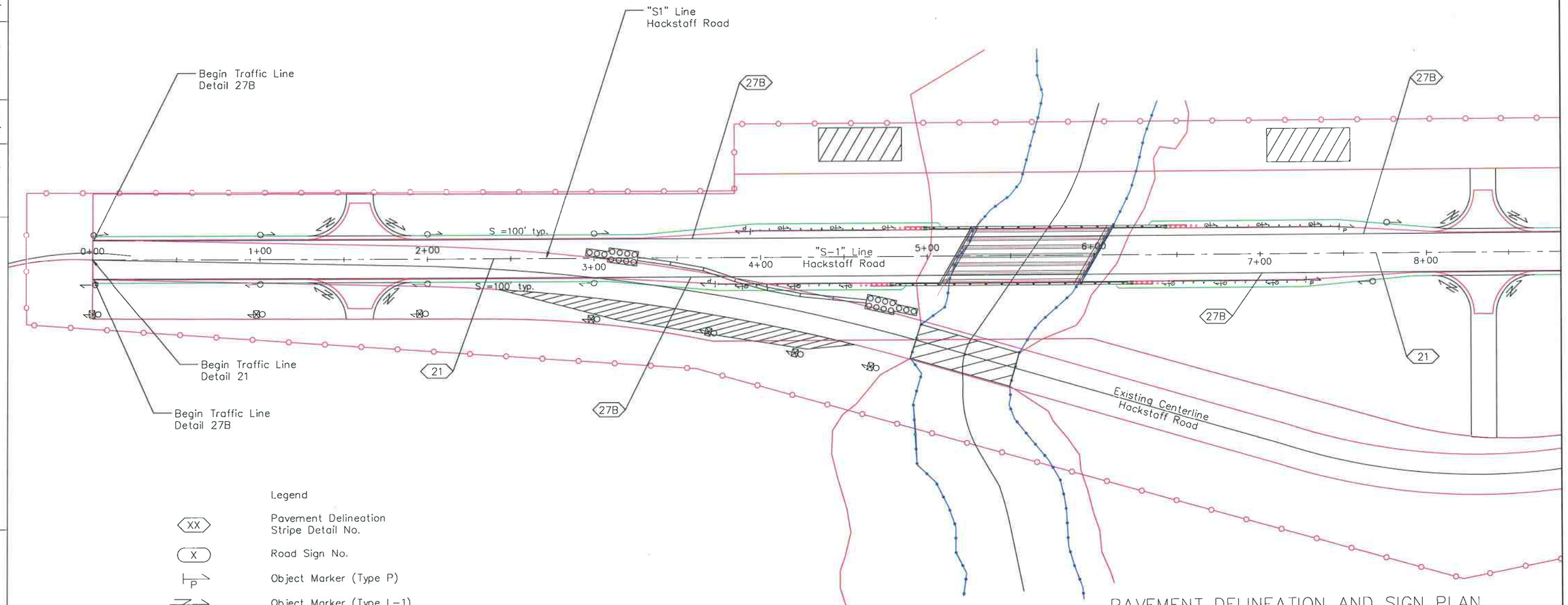
DESIGNED	D. Ernaga	
DATE	2/20	
CHECKED	P. Heimbigner	
DATE	2/20	
REVISION DATES		
DATE	3/3/2021	

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200



Legend

XX	Pavement Delineation Stripe Detail No.
X	Road Sign No.
P	Object Marker (Type P)
	Object Marker (Type L-1)
	Delineator (Class 2 Metal Post) (Type E)
	Guardrail Delineator
	Delineator (Class 1 Flexible Post) (Type E)

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

PAVEMENT DELINEATION AND SIGN PLAN
for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	22	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

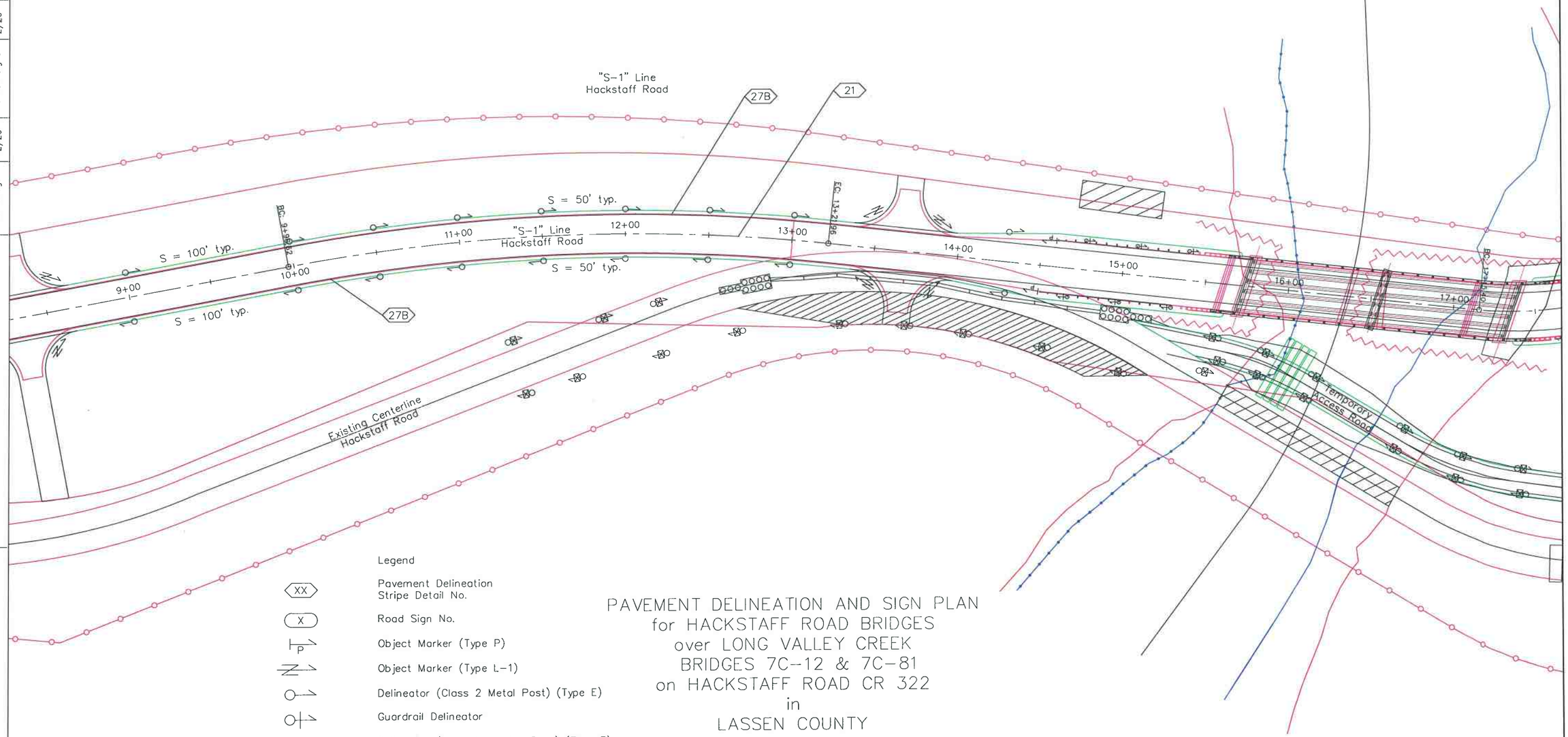
DESIGNED	D. Ernaga	
DATE	2/20	
CHECKED	P. Heimbigner	
DATE	2/20	
REVISION DATES		
DATE	3/3/2021	

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200



Legend

XX	Pavement Delineation Stripe Detail No.
X	Road Sign No.
P	Object Marker (Type P)
	Object Marker (Type L-1)
	Delineator (Class 2 Metal Post) (Type E)
	Guardrail Delineator
	Delineator (Class 1 Flexible Post) (Type E)

PAVEMENT DELINEATION AND SIGN PLAN
for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	23	60

REGISTERED CIVIL ENGINEER

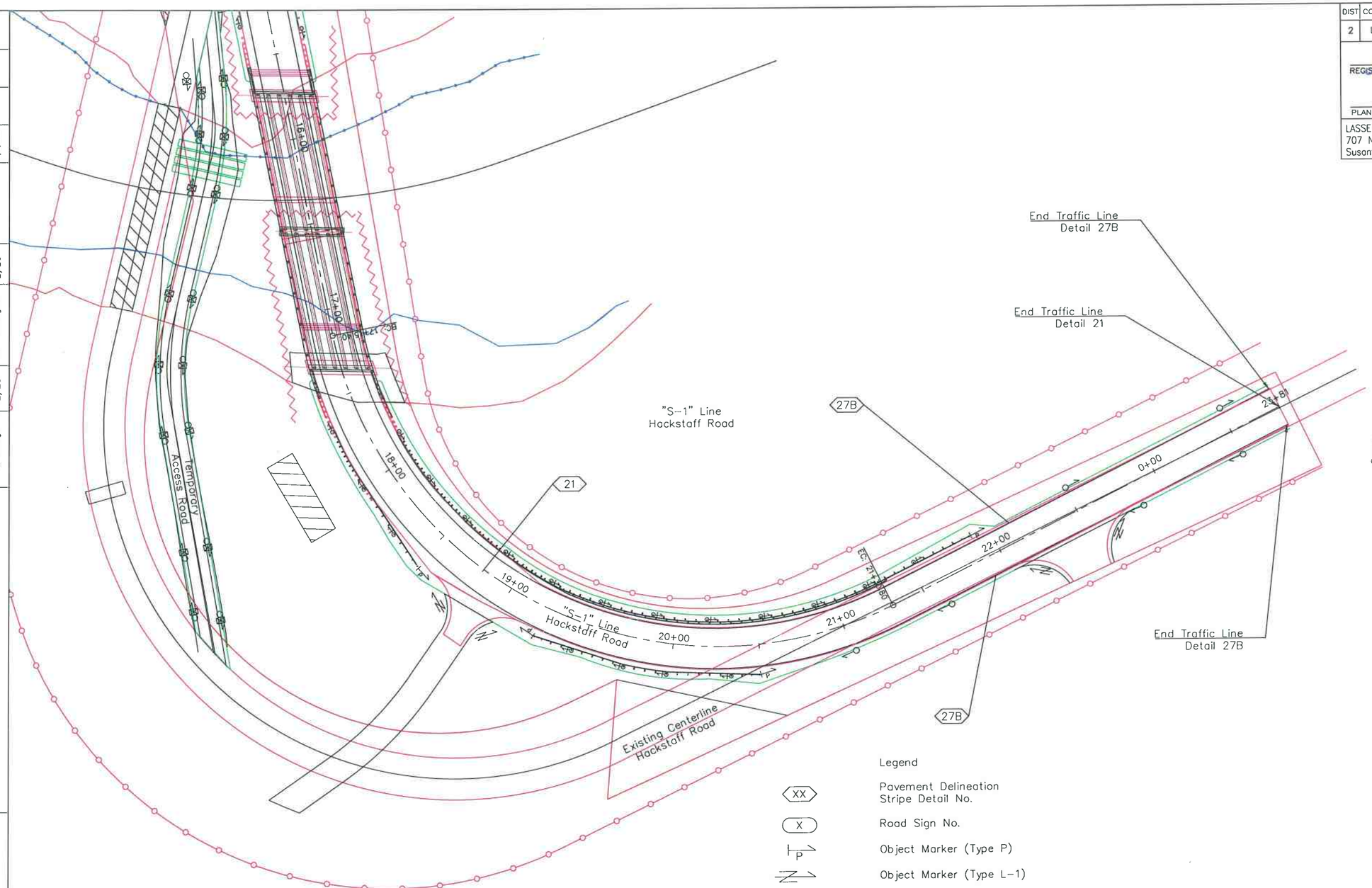
4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 33213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

	DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
PROJECT ENGINEER - David John Ernaga	D. Ernaga	2/20	P. Heimbigner	2/20		3/3/2021

COUNTY OF LASSEN



Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Legend

XX	Pavement Delineation Stripe Detail No.
X	Road Sign No.
P	Object Marker (Type P)
L-1	Object Marker (Type L-1)
	Delineator (Class 2 Metal Post) (Type E)
	Guardrail Delineator
	Delineator (Class 1 Flexible Post) (Type E)

PAVEMENT DELINEATION AND SIGN PLAN
for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

APPROVED FOR PAVEMENT DELINEATION AND SIGN WORK ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	24	60

REGISTERED CIVIL ENGINEER

4/2/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

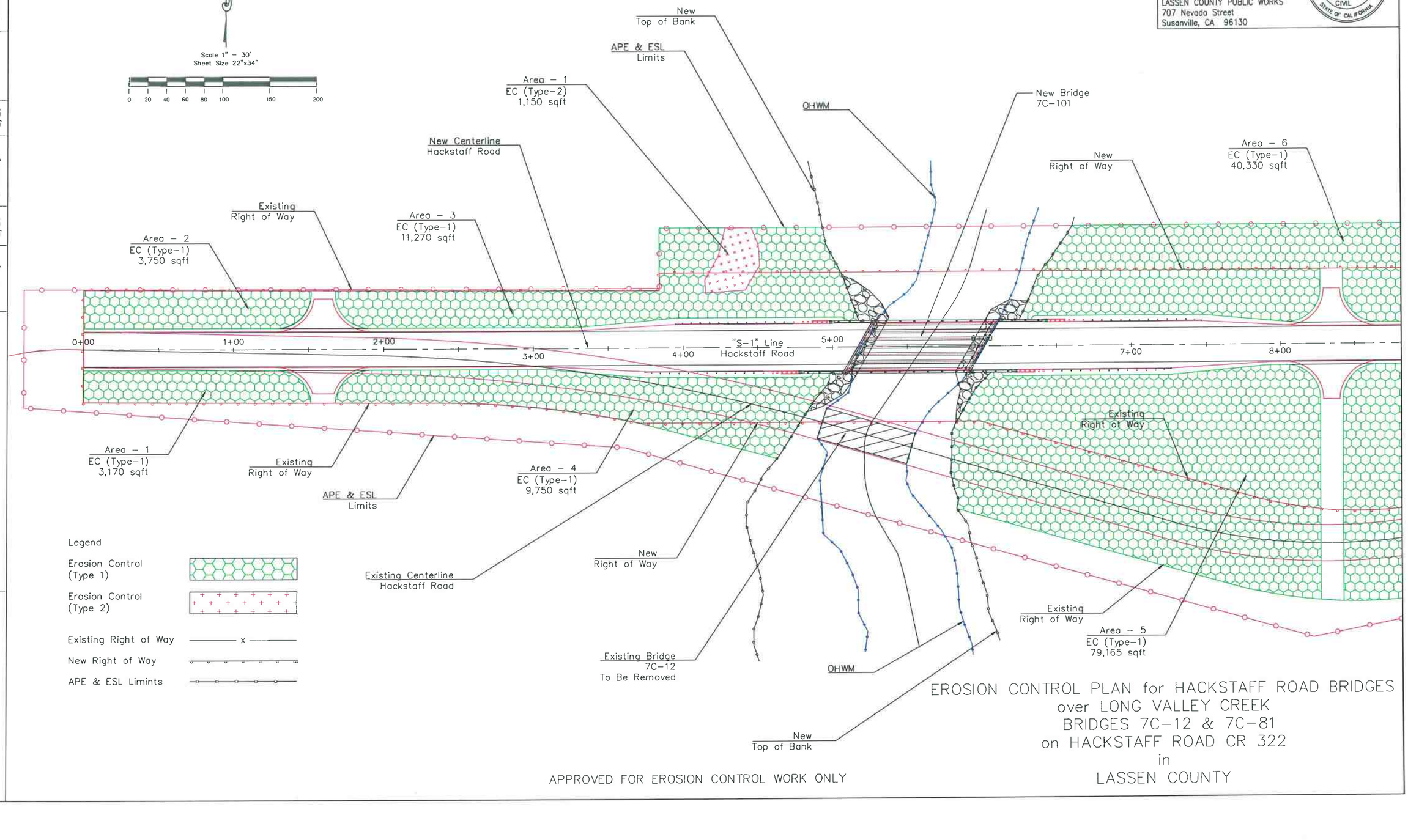
DESIGNED	D. Ernaga	2/20
DATE		
CHECKED	P. Heimbigner	2/20
DATE		
REVISION DATES		3/4/2021
DATE		

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200



Legend

Erosion Control (Type 1)

Erosion Control (Type 2)

Existing Right of Way

New Right of Way

APE & ESL Limints

EROSION CONTROL PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C–12 & 7C–81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

APPROVED FOR EROSION CONTROL WORK ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	25	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

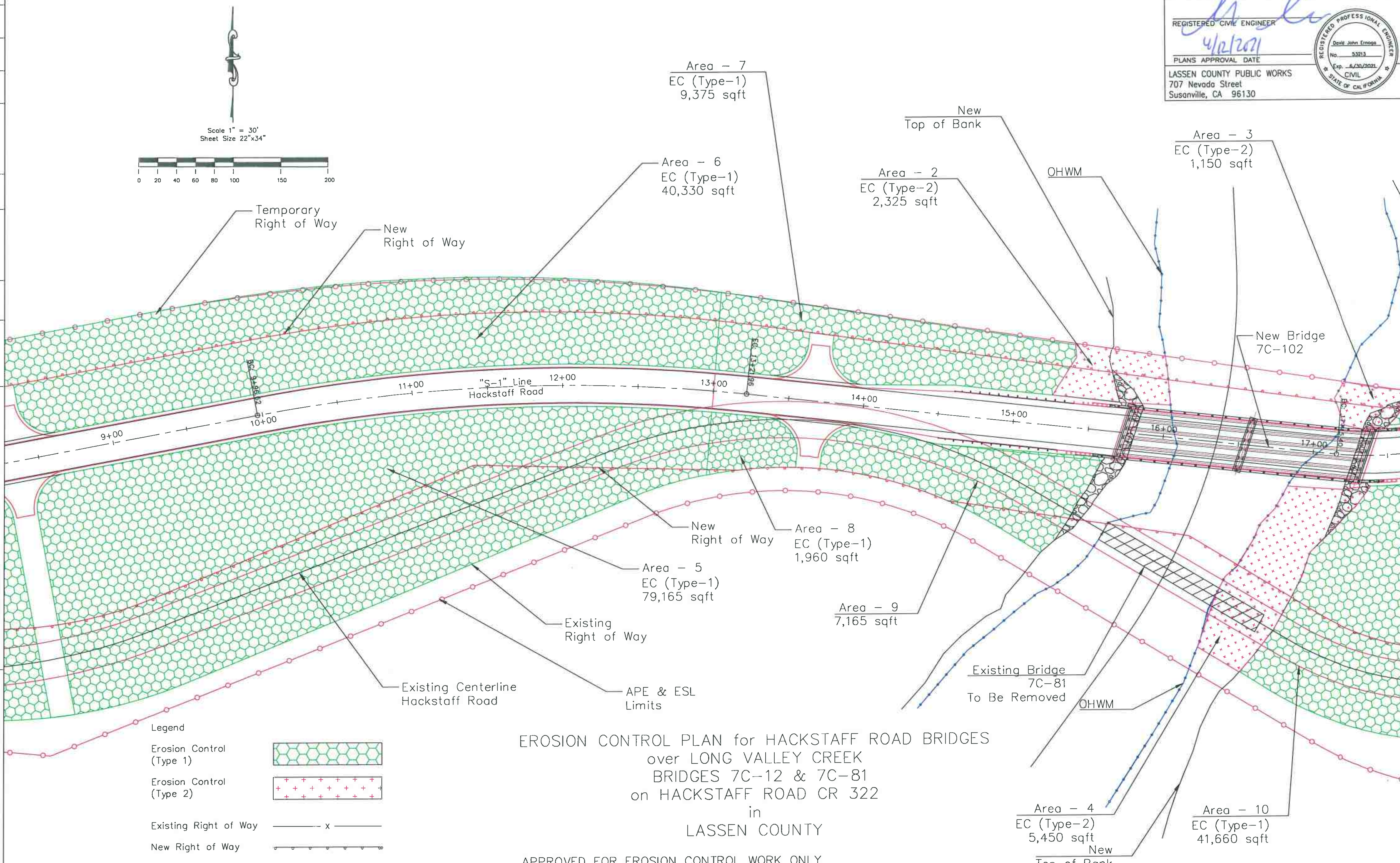
REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Heimbigner	2/20		3/4/2021

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN



Legend

Erosion Control (Type 1)	(hexagon pattern)
Erosion Control (Type 2)	(+ pattern)
Existing Right of Way	——— x ———
New Right of Way	
APE & ESL Limints	

EROSION CONTROL PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C–12 & 7C–81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

APPROVED FOR EROSION CONTROL WORK ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	26	60

REGISTERED CIVIL ENGINEER

4/7/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	D. Ernaga	DATE	2/20	CHECKED	P. Heimbigner	DATE	2/20	REVISION DATES	DATE	3/4/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

New Top of Bank
OHWM
Area – 2
EC (Type–2)
2,325 sqft
Area – 4
EC (Type–2)
5,450 sqft
Area – 3
EC (Type–2)
1,150 sqft
OHWM
New Top of Bank
Temporary Silt Fencing
APE & ESL Limits
Area – 11
EC (Type–1)
4,960 sqft
New Right of Way
"S–L" Line
Hackstaff Road
Existing Right of Way
Existing Right of Way
Area – 10
EC (Type–1)
41,660 sqft
Area – 12
EC (Type–1)
21,200 sqft
Existing Centerline Hackstaff Road
APE & ESL Limits
Area – 13
EC (Type–1)
2,970 sqft

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Legend

Erosion Control (Type 1)

Erosion Control (Type 2)

Existing Right of Way

New Right of Way

APE & ESL Limints

APPROVED FOR EROSION CONTROL WORK ONLY

EROSION CONTROL PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C–12 & 7C–81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	27	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

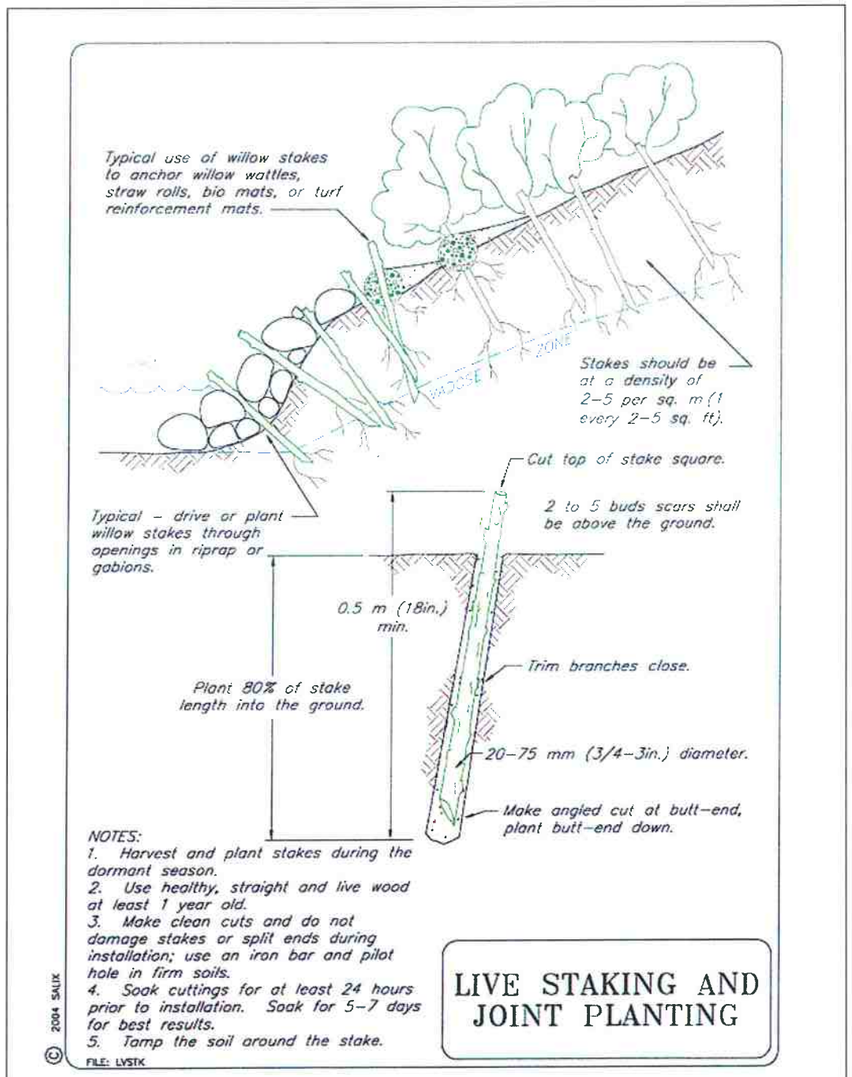
DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. ERNAGA	2/20	P. Heimbigner	2/20		3/4/2021

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

Note:

1. (N) – Not a separate pay item, for information only



EROSION CONTROL (TYPE 1)

Sequence	Item	Material		Application Rate
		Description	Type	
Step 1	Roughen Slope (N)	Scarify	--	--
Step 2	Bonded Fiber Matrix (SqFt)	Seed	Mix	53.0 Lb/Acre
		Fertilizer	Organic	1500 Lb/Acre
		Bonded Fiber Matrix		500 Lb/Acre
Step 3	Bonded Fiber Matrix (SqFt)	Bonded Fiber Matrix		2500 Lb/Acre

EROSION CONTROL TYPE 2 (WETLANDS & RIPARIAN AREAS)

Sequence	Item	Material		Application Rate
		Description	Type	
Step 1	Roughen Slope (N)	Scarify	--	--
Step 2	Bonded Fiber Matrix (SqFt)	Seed	Mix	30.0 Lb/Acre
		Fertilizer	Organic	1500 Lb/Acre
		Bonded Fiber Matrix		500 Lb/Acre
Step 3	Bonded Fiber Matrix (SqFt)	Bonded Fiber Matrix		2500 Lb/Acre

UPLAND SEED MIX

Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre
Acmispon americanus (Spanish Lotus)	60	2.0
Achillea millefolium (Common yarrow)	70	1.0
Artemisia tridentata (Big Basin sagebrush)	50	2.0
Chrysothamnus nauseosus (Rabbitbrush)	70	2.0
Elymus elymoides (Bottlebrush squirrreltail)	50	8.0
Festuca idahoensis (Idaho fescue)	70	12.0
Eschscholzia californica (California poppy)	60	2.0
Purshia tridentata (Antelope Buch)	60	4.0
Elymus x triticum (Sterile wheatgrass)	60	20.0
	Total	53.0

WETLAND AND RIPARIAN SEED MIX

Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre
Hordeum brachyantherum (Meadow barley)	60	12.0
Elymus triticoides (Creeping wildrye)	70	12.0
Beckmannia syzigachne (American sloughgrass)	50	4.0
Achillea millefolium (Common yarrow)	70	1.0
Ranunculus occidentalis (Western buttercup)	50	0.5
Trifolium wormskoldii (Cow clover)	70	0.5
	Total	30.0

EROSION CONTROL LEGEND for HACKSTAFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 & 7C-81
on HACKSTAFF ROAD CR 322
in
LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	28	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	2/20	P. Heimbigner	2/20		3/4/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Construction Note:
All posts installed shall be metal post assemblies for all End, Corner and Pull Post as shown on Caltrans 2018 Standard Plans Sheet A86.

At all gate locations a Pull Post Assembly as shown on Caltrans 2018 Standard Plans Sheet A86 installed on each side.

All sharp breaks in grade shall be installed per Caltrans 2018 Standard Plans Sheet A86A.

All Line Posts shall be 6'-0" Metal Line Post.

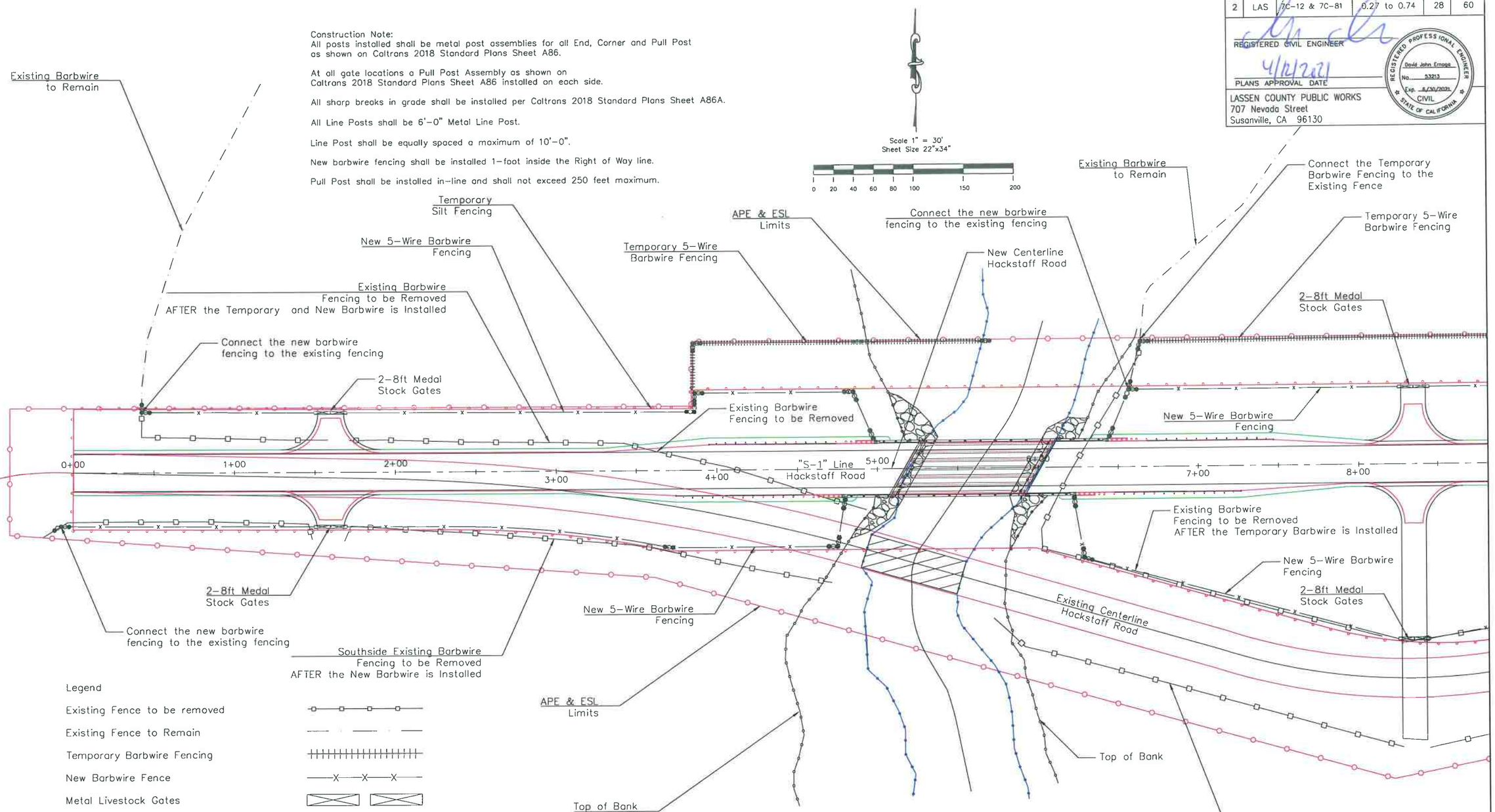
Line Post shall be equally spaced a maximum of 10'-0".

New barbwire fencing shall be installed 1-foot inside the Right of Way line.

Pull Post shall be installed in-line and shall not exceed 250 feet maximum.

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200



Legend

- Existing Fence to be removed
- Existing Fence to Remain
- Temporary Barbwire Fencing
- New Barbwire Fence
- Metal Livestock Gates
- New Right of Way
- APE & ESL Limits
- End Post Assembly
- Corner Post Assembly

THIS PLAN IS TO BE USED FOR THE FENCING INFORMATION ONLY

FENCING PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	29	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	D. Ernaga
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
REVISION DATES	
DATE	3/4/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Construction Note:
All posts installed shall be metal post assemblies for all End, Corner and Pull Post as shown on Caltrans 2018 Standard Plans Sheet A86.

At all gate locations a Pull Post Assembly as shown on Caltrans 2018 Standard Plans Sheet A86 installed on each side.

All sharp breaks in grade shall be installed per Caltrans 2018 Standard Plans Sheet A86A.

All Line Posts shall be 6'-0" Metal Line Post.

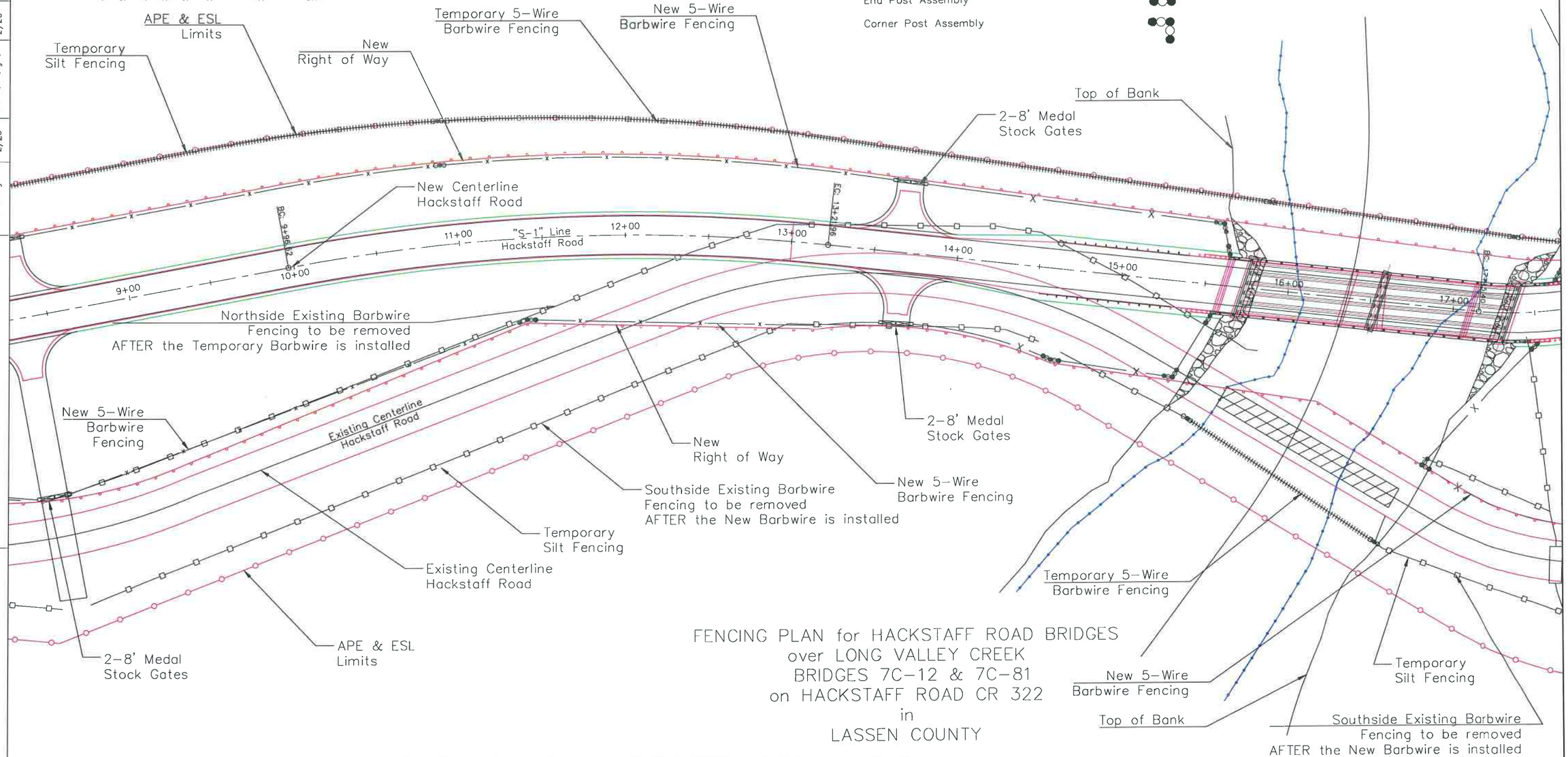
Line Post shall be equally spaced a maximum of 10'-0".

New barbwire fencing shall be installed 1-foot inside the Right of Way line.

Pull Post shall be installed in-line and shall not exceed 250 feet maximum.

Legend

- Existing Fence to be removed
- Existing Fence to Remain
- Temporary Barbwire Fencing
- New Barbwire Fence
- Metal Livestock Gates
- New Right of Way
- APE & ESL Limits
- End Post Assembly
- Corner Post Assembly



FENCING PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

THIS PLAN IS TO BE USED FOR THE FENCING INFORMATION ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	LAS	7C-12 & 7C-81	0.27 to 0.74	30	60

REGISTERED CIVIL ENGINEER

4/6/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

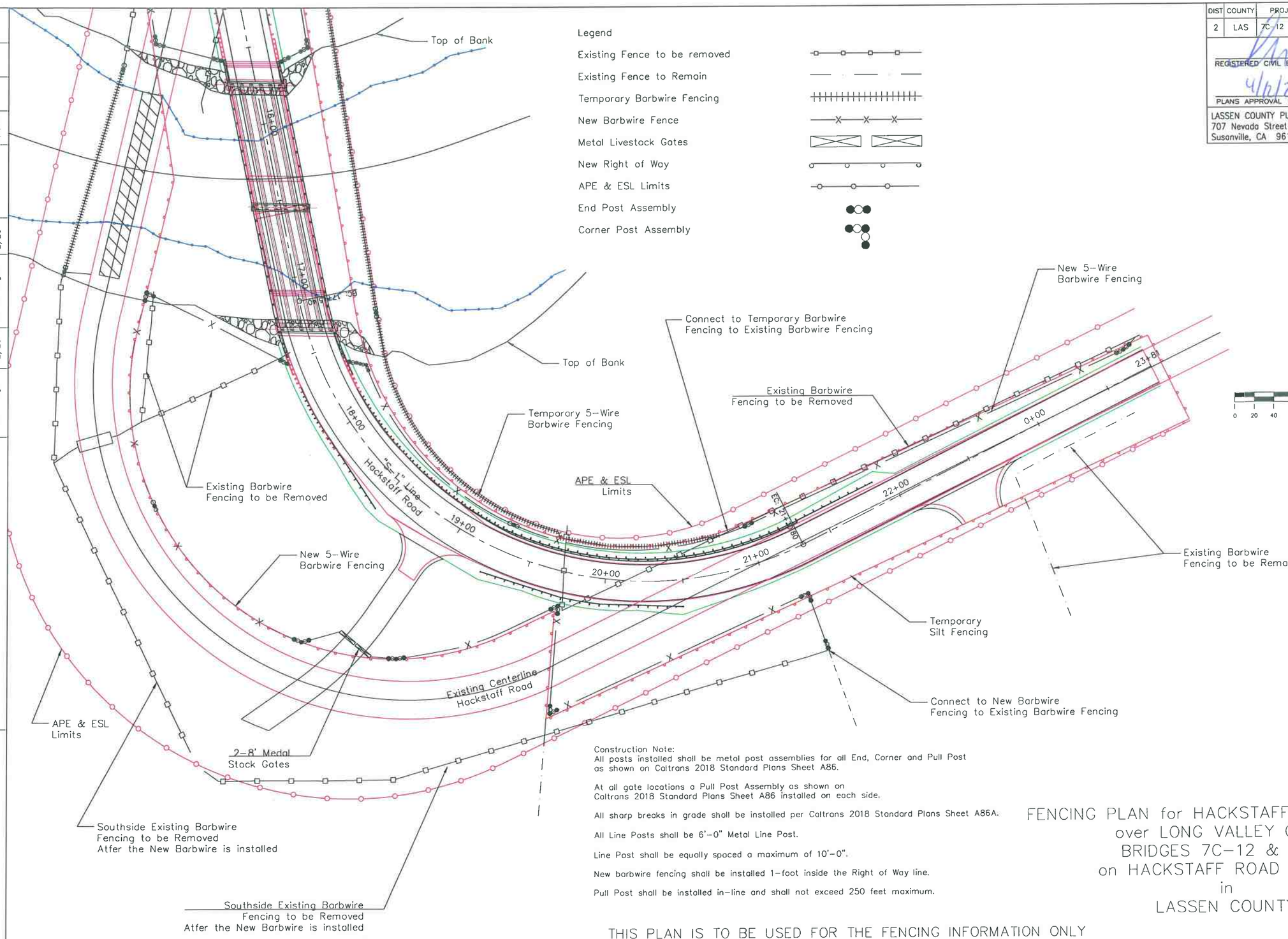
DESIGNED	D. Ernaga
DATE	2/20
CHECKED	P. Heimbigner
DATE	2/20
REVISION DATES	
DATE	3/4/2021

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

Legend

- Existing Fence to be removed
- Existing Fence to Remain
- Temporary Barbwire Fencing
- New Barbwire Fence
- Metal Livestock Gates
- New Right of Way
- APE & ESL Limits
- End Post Assembly
- Corner Post Assembly



Scale 1" = 30'
Sheet Size 22"x34"

0 20 40 60 80 100 150 200

Construction Note:
All posts installed shall be metal post assemblies for all End, Corner and Pull Post as shown on Caltrans 2018 Standard Plans Sheet A86.

At all gate locations a Pull Post Assembly as shown on Caltrans 2018 Standard Plans Sheet A86 installed on each side.

All sharp breaks in grade shall be installed per Caltrans 2018 Standard Plans Sheet A86A.

All Line Posts shall be 6'-0" Metal Line Post.

Line Post shall be equally spaced a maximum of 10'-0".

New barbwire fencing shall be installed 1-foot inside the Right of Way line.

Pull Post shall be installed in-line and shall not exceed 250 feet maximum.

FENCING PLAN for HACKSTAFF ROAD BRIDGES over LONG VALLEY CREEK BRIDGES 7C-12 & 7C-81 on HACKSTAFF ROAD CR 322 in LASSEN COUNTY

THIS PLAN IS TO BE USED FOR THE FENCING INFORMATION ONLY

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	31	60

REGISTERED CIVIL ENGINEER

4/17/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — David John Ernaga — No. 53213 — Exp. 6/30/2021 — CIVIL — STATE OF CALIFORNIA

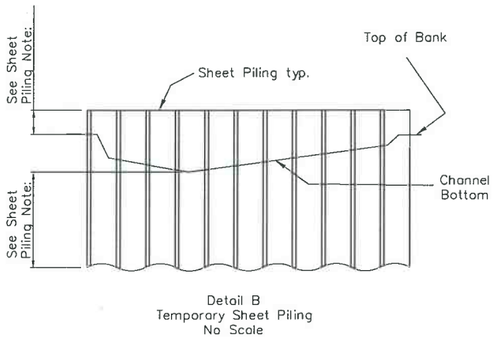
LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Construction Notes:

1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments and bent areas before the temporary temporary sheet piling is removed.

Sheet Piling Notes:

1. The contractor shall have a sheet piling design and safety plan developed by a registered Civil Engineer.
2. The depth of the sheet piling below the existing ground and channel shall be determined the sheet piling design and safety plan.
3. The exact layout, location and installation of the temporary sheet piling shall be the responsibility of the contractor or the contractors representative.



Detail B
Temporary Sheet Piling
No Scale

Scale 1" = 30'
Sheet 22" x 34"

Legend

- Project Limits
- Centerline – New Hackstaff Road
- Centerline – Existing Hackstaff Road
- Centerline – Temporary Access Road
- Temporary Sheet Piling
- Original High Water Mark Line
- Long Valley Creek Flowline
- APE & ESL Limits
- County Right of Way
- County Construction Easement

Water Diversion Plan for Long Valley Creek Overflow Bridge 7C-12 on Hackstaff Road in Lassen County

Dated 12-21-2020

	DATE
REVISION DATES	12/21/2020
CHECKED P. Heimbigner	12/10/2020
DESIGNED D. Ernaga	12/10/2020

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	32	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

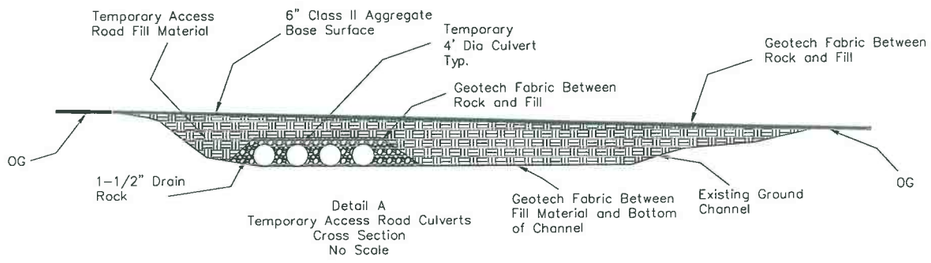
LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Construction Notes:

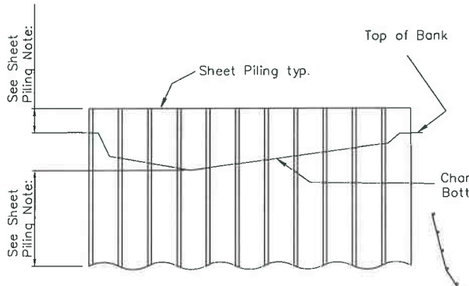
1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments and bent areas before the temporary temporary sheet piling is removed.

Sheet Piling Notes:

1. The contractor shall have a sheet piling design and safety plan developed by a registered Civil Engineer.
2. The depth of the sheet piling below the existing ground and channel shall be determined the sheet piling design and safety plan.
3. The exact layout, location and installation of the temporary sheet piling shall be the responsibility of the contractor or the contractors representative.



Detail A
Temporary Access Road Culverts
Cross Section
No Scale



Detail B
Temporary Sheet Piling
No Scale

Scale 1" = 30'
Sheet 22" x 34"

Water Diversion Plan
for
Long Valley Creek Overflow Bridge 7C-81
on
Hackstaff Road in Lassen County

Dated 12-21-2020

DESIGNED	D. Ernaga	12/10/2020	DATE
CHECKED	P. Heimbigner	12/10/2020	DATE
REVISION DATES		12/21/2020	DATE

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	33	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

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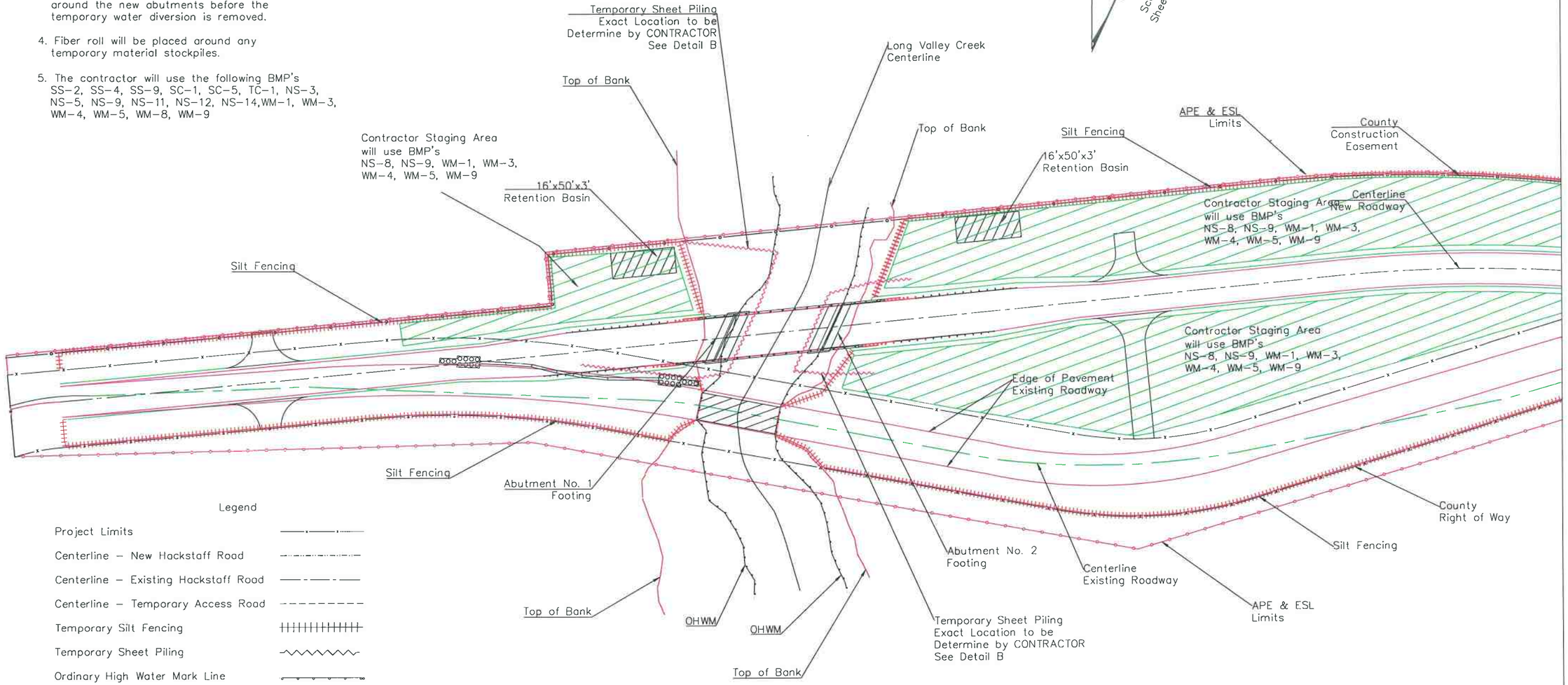
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Construction Notes:

1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments before the temporary water diversion is removed.
4. Fiber roll will be placed around any temporary material stockpiles.
5. The contractor will use the following BMP's SS-2, SS-4, SS-9, SC-1, SC-5, TC-1, NS-3, NS-5, NS-9, NS-11, NS-12, NS-14,WM-1, WM-3, WM-4, WM-5, WM-8, WM-9

Scale 1" = 40'
Sheet 22" x 34"



Legend

- Project Limits
- Centerline – New Hackstaff Road
- Centerline – Existing Hackstaff Road
- Centerline – Temporary Access Road
- Temporary Silt Fencing
- Temporary Sheet Piling
- Ordinary High Water Mark Line
- Long Valley Creek Flowline
- APE & ESL Limits
- County Right of Way
- County Construction Easement
- Construction Staging Areas

Best Management Practices Plan for Long Valley Creek Overflow Bridge 7C-12 on Hackstaff Road in Lassen County

DESIGNED	D. Ernaga		
DATE	12/10/2020		
CHECKED	P. Heimbigner		
DATE	12/10/2020		
REVISION DATES		DATE	12/10/2020

PROJECT ENGINEER – David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	34	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. Ernaga	12/10/2020	P. Heimbigner	12/10/2020		12/10/2020

PROJECT ENGINEER – David John Ernaga

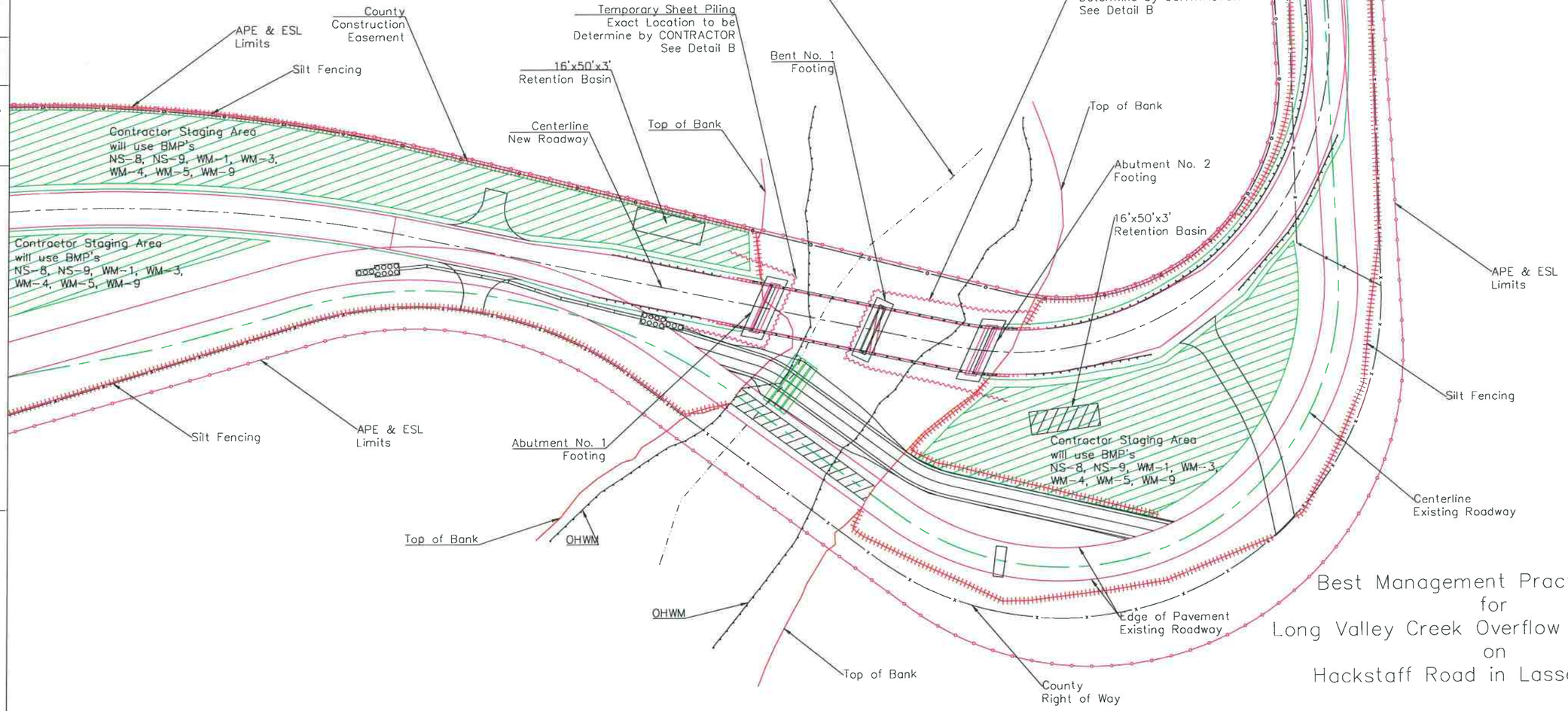
COUNTY OF LASSEN

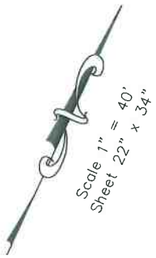
Construction Notes:

1. All Areas that are disturbed during the construction of the project shall be reseeded with native species.
2. Sheet pile dike may be modify during the construction process so that any drainage will not enter the site.
3. Rock slope protection will be placed around the new abutments before the temporary water diversion is removed.
4. Fiber roll will be placed around any temporary material stockpiles.
5. The contractor will use the following BMP's SS-2, SS-4, SS-9, SC-1, SC-5, TC-1, NS-3, NS-5, NS-9, NS-11, NS-12, NS-14,WM-1, WM-3, WM-4, WM-5, WM-8, WM-9

Legend

- Project Limits
- Centerline – New Hackstaff Road
- Centerline – Existing Hackstaff Road
- Centerline – Temporary Access Road
- Temporary Silt Fencing
- Temporary Sheet Piling
- Ordinary High Water Mark Line
- Long Valley Creek Flowline
- APE & ESL Limits
- County Right of Way
- County Construction Easement
- Construction Staging Areas





Best Management Practices Plan for Long Valley Creek Overflow Bridge 7C-81 on Hackstaff Road in Lassen County

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	35	60

REGISTERED CIVIL ENGINEER

4/12/2021

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Scale 1" = 20'
Sheet 22" x 34"

Willow Planting Area ±1120 ft^2
±250 Live Willow Stakes Cuttings

Willow Planting Area ±250 ft^2
±60 Live Willow Stakes Cuttings

New Centerline
Hackstaff Road

Rip-Rap Area

Rip-Rap Area

Existing Centerline
Hackstaff Road

Willow Planting Area ±750 ft^2
±160 Live Willow Stakes Cuttings

New Bridge
7C-12

Existing
Bridge 7C-12
to be Removed

Top of Bank

Waterline

Willow Planting Area ±650 ft^2
±150 Live Willow Stakes Cuttings

Top of Bank

Waterline

Centerline
Long Valley Creek Overflow

Top of Bank
before Bridge Removal

Top of Bank
after Bridge Removal

Top of Bank
before Bridge Removal

Top of Bank
after Bridge Removal

Willow Planting
Area

Cross Section
Along Centerline of
Existing Bridge 7C-12

Willow Planting
Area

Bottom of Channel

Bottom of Channel

Legend

Centerline CR 322 Existing

Centerline CR 322 New

7C-12 Rip Rap Area

7C-12 Willow Planting Area

Construction Notes:

See Sheet 27 " Erosion Control Legend" For the Detail for the Willow Planting Titled "Live Staking and Joint Planting"

Restoration Plan
for
Long Valley Creek Overflow Bridge 7C-12
on
Hackstaff Road in Lassen County

DESIGNED	D. Ernaga	DATE	12/10/2020
CHECKED	P. Heimbigner	DATE	12/10/2020
REVISION DATES		DATE	12/10/2020

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-12 & 7C-81	0.27 to 0.74	36	60

REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Scale 1" = 20'
Sheet 22" x 34"

Legend

- Centerline CR 322 Existing
- Centerline CR 322 New
- 7C-81 Rip Rap Area
- 7C-81 Willow Planting Area

Construction Notes:

See Sheet 27 " Erosion Control Legend" For the Detail for the Willow Planting Titled "Live Staking and Joint Planting"

Willow Planting Area ±380 ft^2
±80 Live Willow Stakes Cuttings

Willow Planting Area ±530 ft^2
±120 Live Willow Stakes Cuttings

New Bridge
7C-81

Rip-Rap Area

New Centerline
Hackstaff Road

Rip-Rap Area

Willow Planting Area ±1050 ft^2
±230 Live Willow Stakes Cuttings

Existing Centerline
Hackstaff Road

Willow Planting Area ±830 ft^2
±170 Live Willow Stakes Cuttings

Top of Bank

Existing
Bridge 7C-81
to be Removed

Top of Bank

Centerline
Long Valley Creek

Waterline

Waterline

Top of Bank after Bridge Removal

Top of Bank before Bridge Removal

Top of Bank before Bridge Removal

Top of Bank after Bridge Removal

Willow Planting Area

Bottom of Channel

Cross Section
Along Centerline of
Existing Bridge 7C-81

Bottom of Channel

Willow Planting Area

Restoration Plan for Long Valley Creek Overflow Bridge 7C-81 on Hackstaff Road in Lassen County

DESIGNED	D. Ernaga	DATE	12/10/2020	CHECKED	P. Heimbigner	DATE	12/10/2020	REVISION DATES	DATE 12/10/2020

PROJECT ENGINEER - David John Ernaga

COUNTY OF LASSEN

DIST	COUNTY	PROJECT NAME	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
2	Las	7C-81 & 7C-81	0.27 to 0.74	37	60

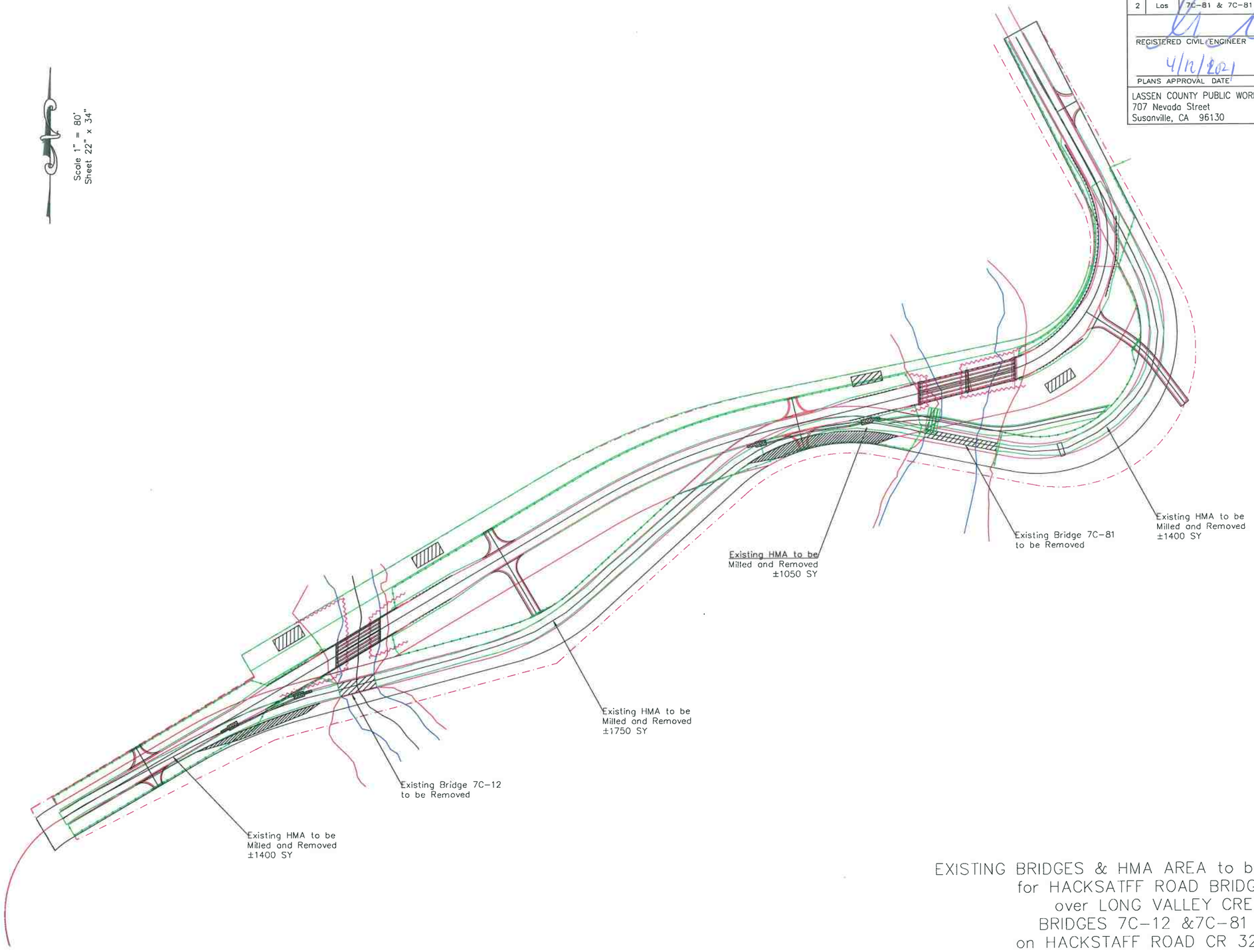
REGISTERED CIVIL ENGINEER

4/12/2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David John Ernaga
No. 53213
Exp. 6/30/2021
CIVIL
STATE OF CALIFORNIA

LASSEN COUNTY PUBLIC WORKS
707 Nevada Street
Susanville, CA 96130

Scale 1" = 80'
Sheet 22" x 34"



EXISTING BRIDGES & HMA AREA to be REMOVED
for HACKSATFF ROAD BRIDGES
over LONG VALLEY CREEK
BRIDGES 7C-12 &7C-81
on HACKSTAFF ROAD CR 322

DESIGNED	DATE	CHECKED	DATE	REVISION DATES	DATE
D. ERNAGA	2/24/2021	P. Heimbigner	2/24/2021		

COUNTY OF LASSEN — PROJECT ENGINEER - David John Ernaga

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	38	60

REGISTERED STRUCTURAL ENGINEER

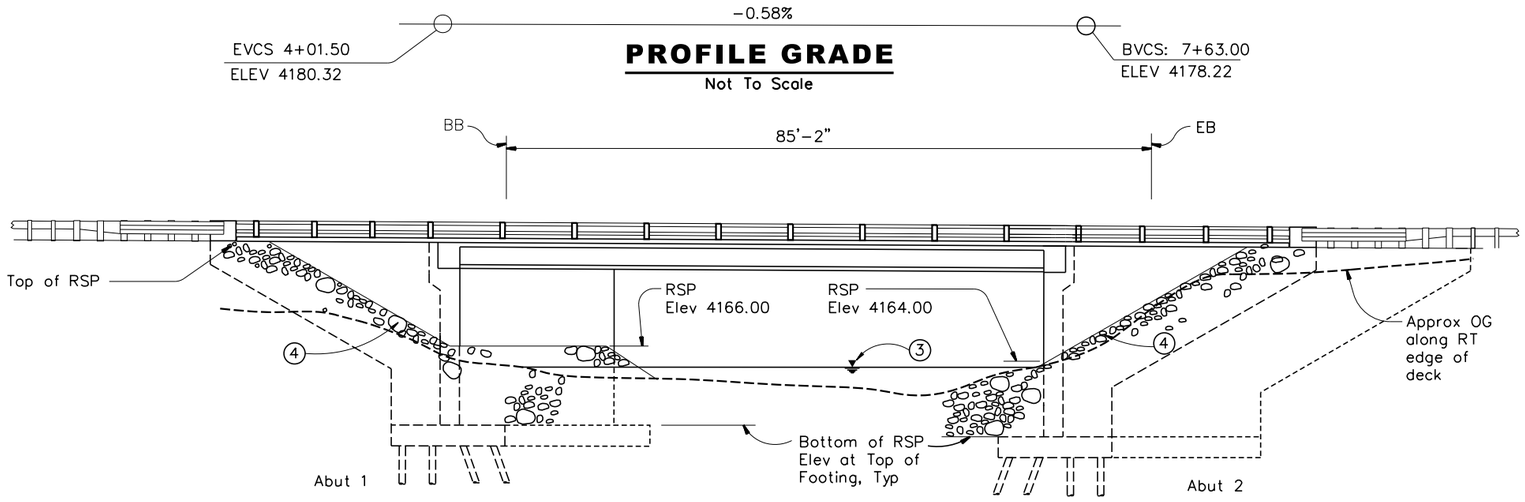
Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

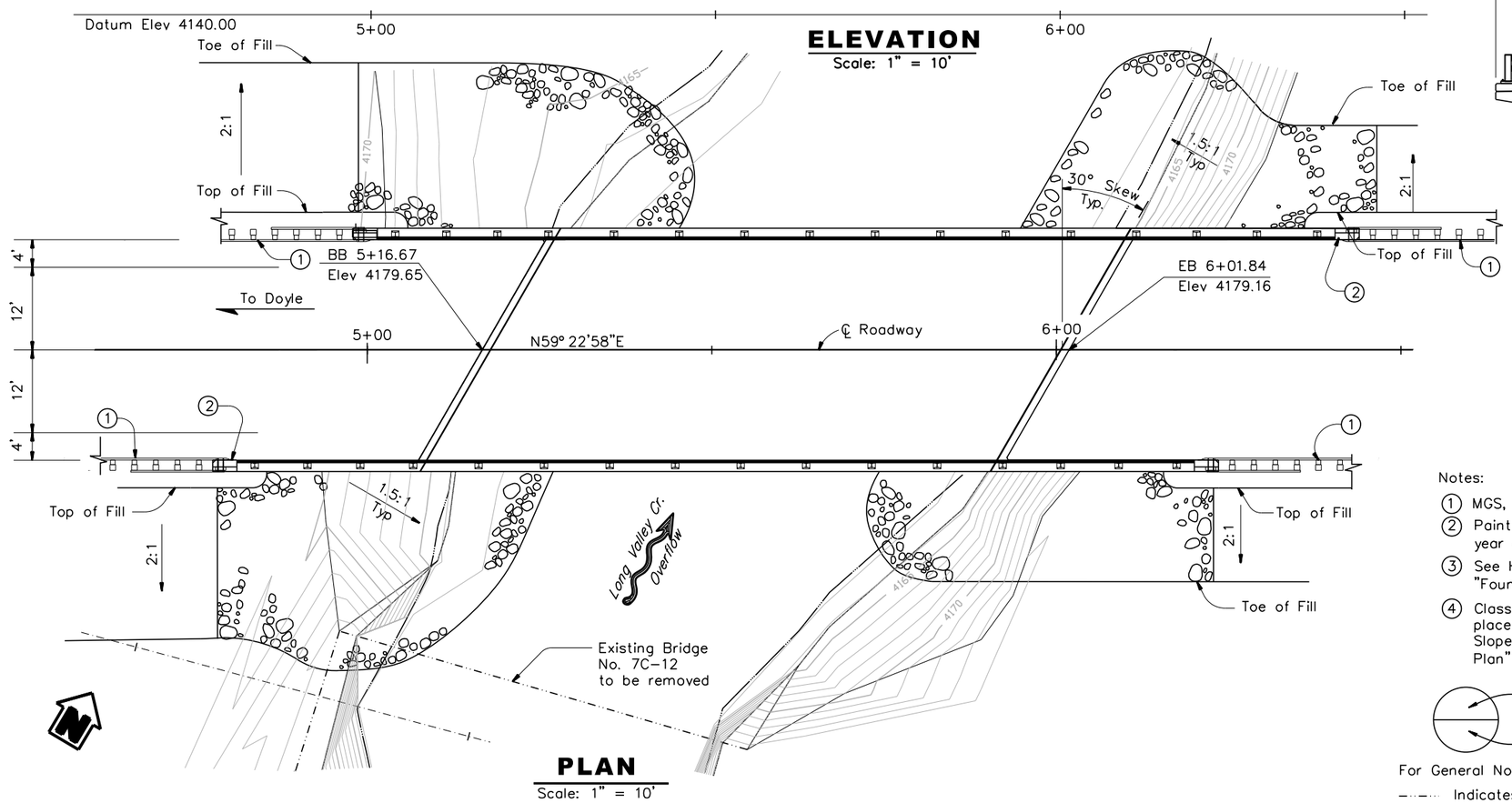
Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

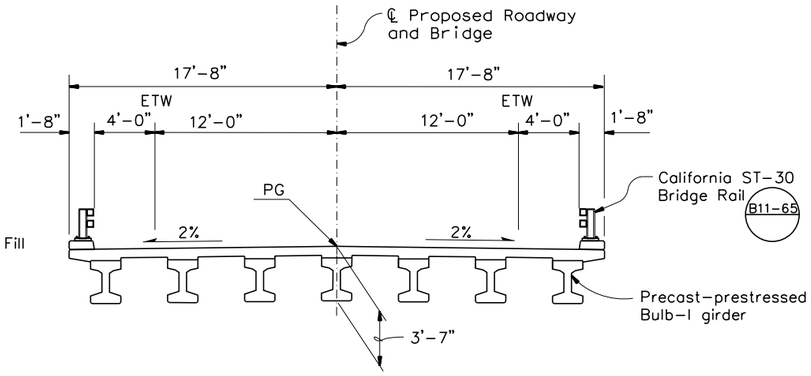
PROFILE GRADE
Not To Scale



ELEVATION
Scale: 1" = 10'



PLAN
Scale: 1" = 10'



TYPICAL SECTION
Scale: 1" = 5'

INDEX TO PLANS

Sheet	Title
1	General Plan
2	Deck Contours
3	Foundation Plan
4	Abutment No. 1 Layout
5	Abutment No. 2 Layout
6	Abutment Details No. 1
7	Abutment Details No. 2
8	Typical Section and Girder Layout
9	Precast Prestressed I-Girder Details No. 1
10	Precast Prestressed I-Girder Details No. 2
11	Log of Test Borings

Notes:
1. (1) MGS, See Road Plans
2. (2) Paint "BR NO.7C-101" and year completed.
3. (3) See Hydrologic Summary on "Foundation Plan" sheet.
4. (4) Class V RSP, method B placement. For details see Rock Slope Protection detail on "Foundation Plan" sheet

Standard Plan Sheet No.
Detail No.

For General Notes see "Foundation Plan" sheet.

Indicates Existing Structure

INDEX TO STANDARD PLANS

A3A-C	Abbreviations (3 Sheets)
A10A-H	Lines and Symbols (8 Sheets)
A62C	Limits of Payment for Excavation and Backfill - Bridge
BO-1	Bridge Details
BO-3	Bridge Details
BO-5	Bridge Details
BO-13	Bridge Details
B6-21	Joint Seals (Maximum Movement Rating = 2")
B11-65	California ST-30 Bridge Rail

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

Robert Morrison, Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	1	11

FILE => $REQUEST

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	39	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

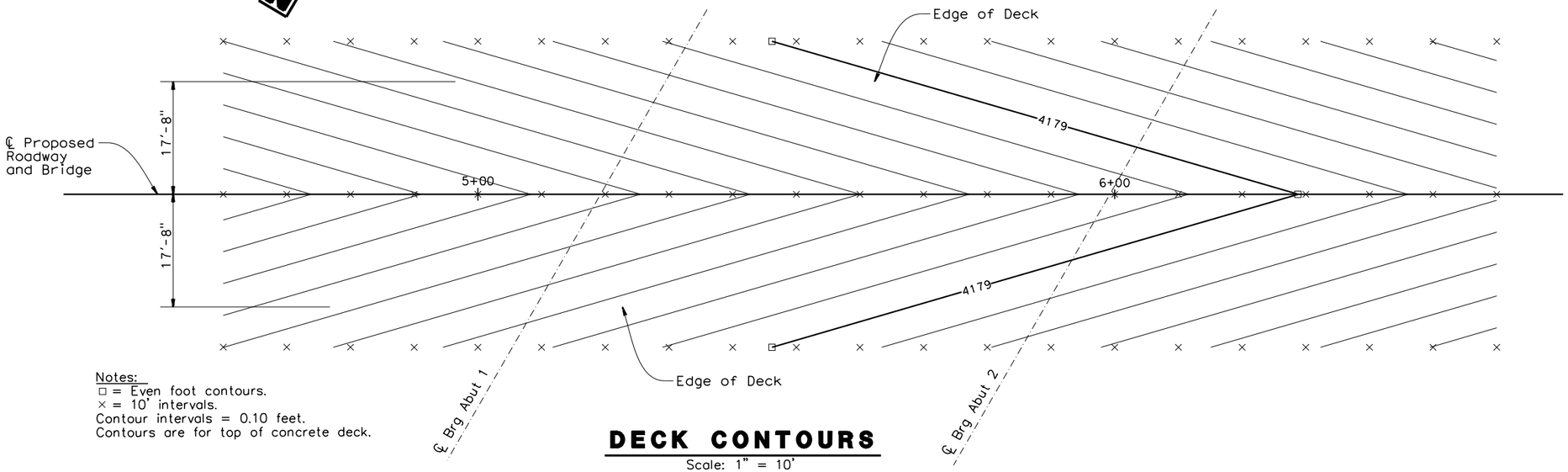
March 3, 2021
PLANS APPROVAL DATE

Prepared for:

LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:

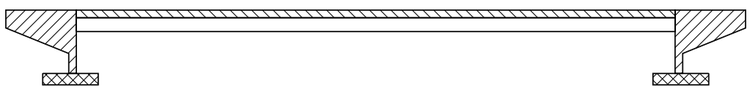
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



Notes:
□ = Even foot contours.
× = 10' intervals.
Contour intervals = 0.10 feet.
Contours are for top of concrete deck.

DECK CONTOURS

Scale: 1" = 10'



Structural Concrete, Bridge, 4,000 psi at 28 days

Structural Concrete, Bridge

Structural Concrete, Bridge Footing

Precast Prestressed I-Girders. (See Precast Prestressed I-Girder Details No. 2" sheet)

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner
DETAILS	BY R. Uhlmann	CHECKED D. Roesner
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison

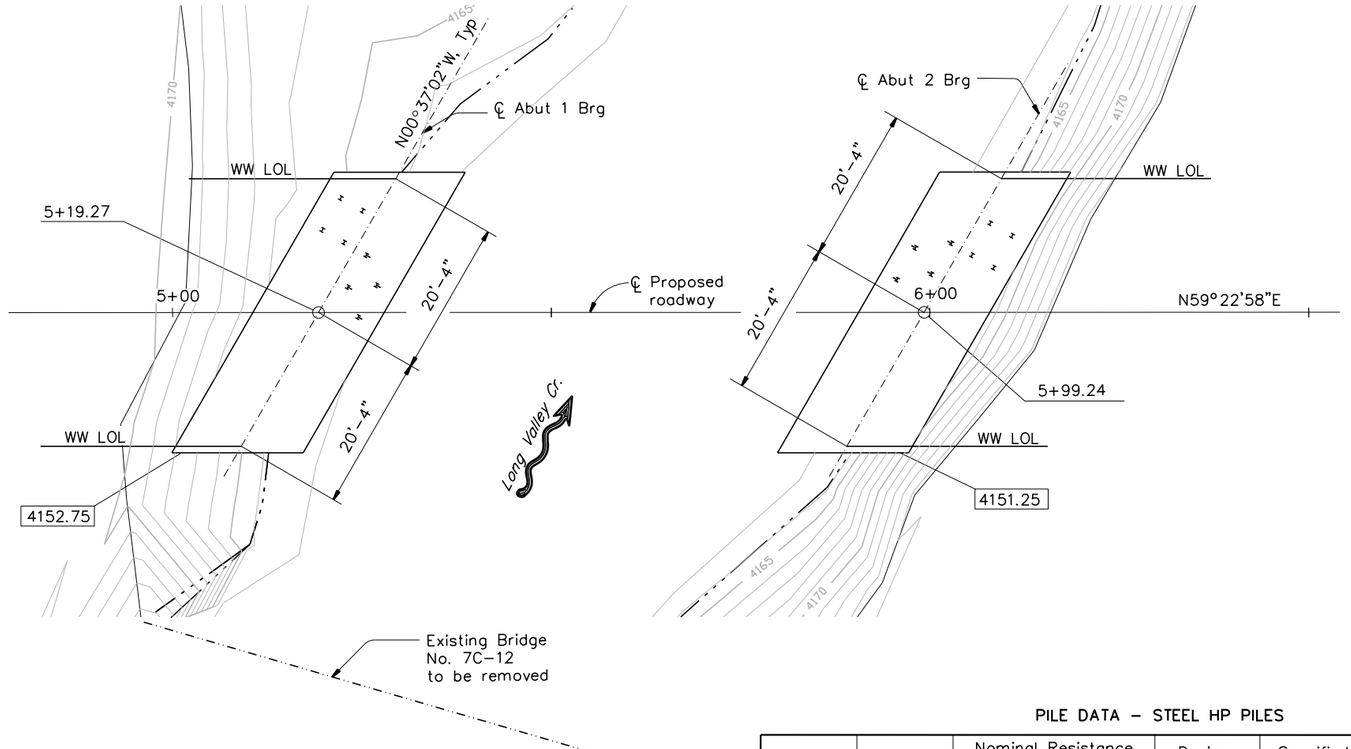
Robert Morrison Jr.
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

BRIDGE NO.	LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
7C-101	
POST MILE	DECK CONTOURS

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)											SHEET	OF
3/3/21											2	11



FOUNDATION PLAN 7C-12

Scale: 1" = 10'

Notes:

4151.25 — Indicates bottom of footing elevation

Not all piles shown.

Contour data based on topographic maps prepared by Lassen County dated 10/17/2013.

DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	40	60

REGISTERED ENGINEER - STRUCTURAL

March 3, 2021
PLAN APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-21 — STRUCTURAL — STATE OF CALIFORNIA

PREPARED FOR:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96120

PREPARED BY:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

HYDROLOGIC SUMMARY

DRAINAGE AREA 403 SQ MI

	DESIGN FLOOD	BASE FLOOD	OVERTOPPING FLOOD	RECORD FLOOD
FREQUENCY, YEARS	50	100	>200	N/A
DISCHARGE CUBIC FT/SEC.	6410	8,320	>12,000	N/A
WATER SURFACE ELEVATION AT BRIDGE	4169.45	4172.33	4176.7	N/A

LOCATION HYDRAULIC STUDY PREPARED BY PACIFIC HYDROLOGIC, INC. 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. INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.

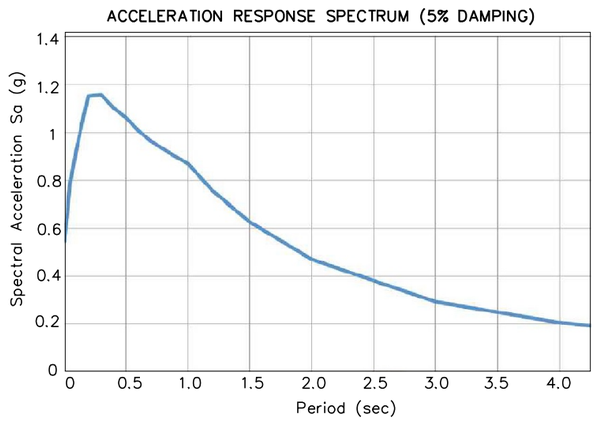
PILE DATA – STEEL HP PILES

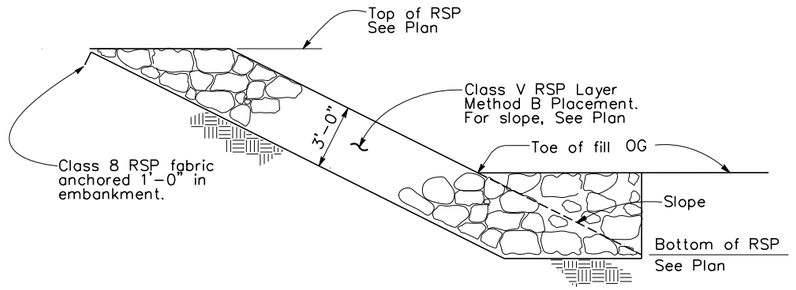
Location	Pile Type	Nominal Resistance		Design Tip Elev	Specified Tip Elev	Nominal Driving Resistance
		Compression	Tension			
Abut 1	HP10x57	280 Kips	0 Kips	4107	4107	280 Kips
Abut 2	HP10x57	280 Kips	0 Kips	4111	4107	280 Kips

Design tip elevation is controlled by the following conditions:
(1) Axial Compression.
(2) The Specified tip shall not be raised.

SCOUR DATA TABLE

SUPPORT NO.	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR DEPTH (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
ABUT 1	0	10
ABUT 2	0	10





ROCK SLOPE PROTECTION

No Scale

GENERAL NOTES
LOAD RESISTANCE FACTOR DESIGN

DESIGN:	AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments.
SEISMIC DESIGN:	Caltrans Seismic Design Criteria (SDC), Version 1.7, April, 2013.
DEAD LOAD:	Includes 35 psf for future wearing surface.
LIVE LOADING:	HL93 w/ "Low-Boy" and Permit Design Vehicle.
SEISMIC LOADING:	Soil Profile – Type D Moment Magnitude – 6.9 Peak Ground Acceleration – 0.48 g
(E):	Designates epoxy coated reinforcing
REINFORCED CONCRETE:	fy = 60ksi f'c = 4.0 ksi (unless noted)
PRESTRESSED CONCRETE:	See "Notes" on "PRECAST PRESTRESSED I GIRDER DETAILS NO. 1" Sheet

GEOTECHNICAL PROFESSIONAL — APPROVAL DATE

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino; W. Morrison

Robert Morrison, Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:
PROJECT NUMBER & PHASE:
CONTRACT NO.:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/3/21				3	11

FILE => $REQUEST

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	41	60

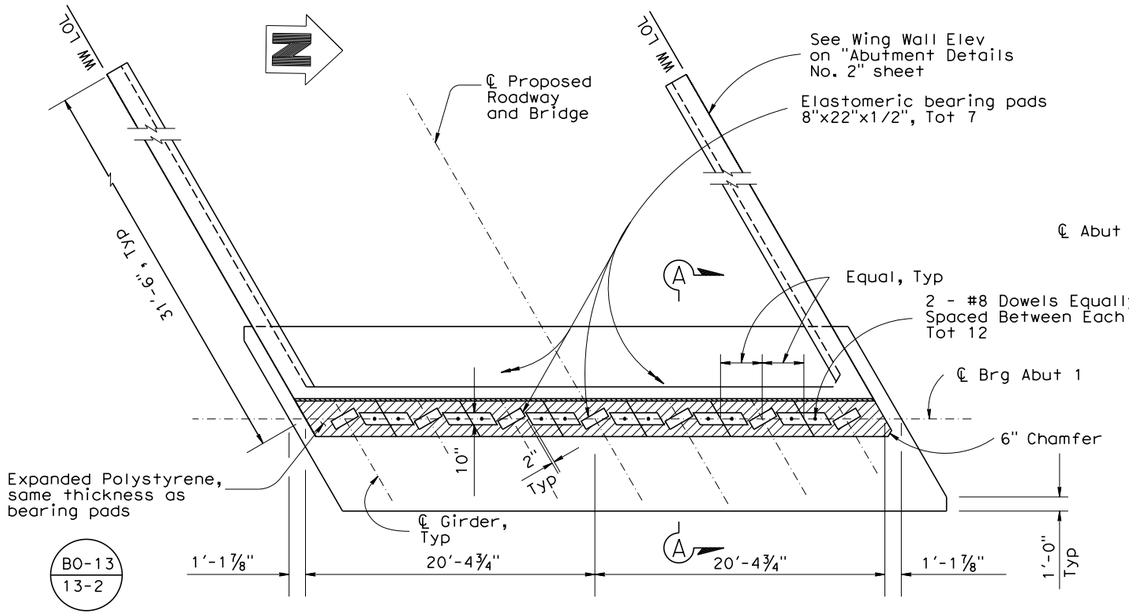
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL STATE OF CALIFORNIA — REGISTERED PROFESSIONAL ENGINEER

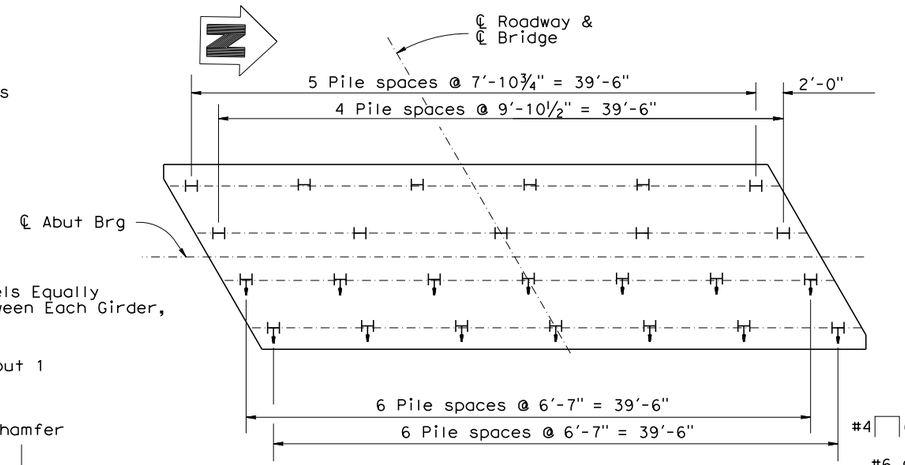
March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

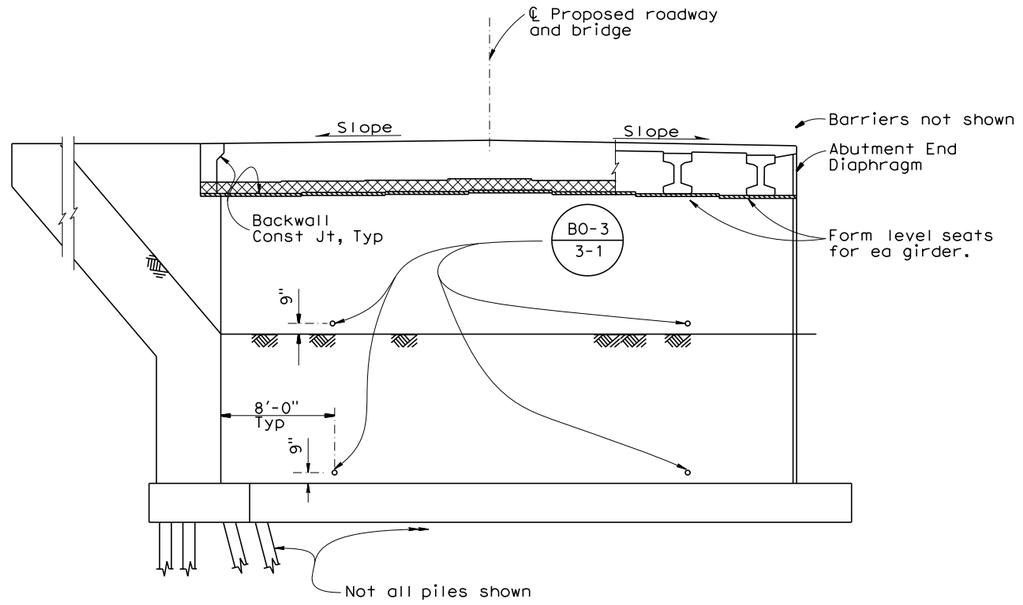


PLAN
Scale: 3/16" = 1'-0"

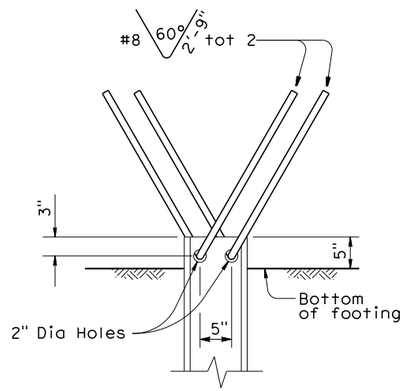


PILE LAYOUT
Scale: 3/16" = 1'-0"

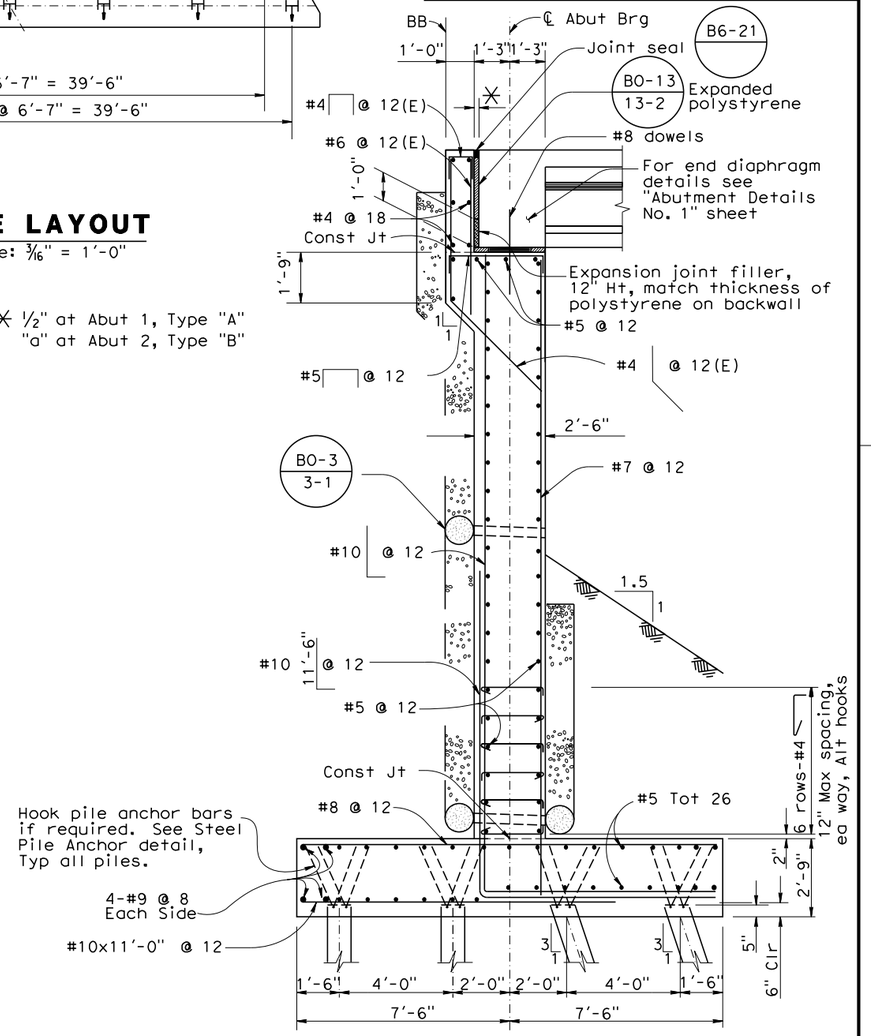
✳ 1/2" at Abut 1, Type "A"
"a" at Abut 2, Type "B"



ELEVATION
Scale: 3/16" = 1'-0"



STEEL PILE ANCHOR
Scale: 1" =1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD

ABUTMENT NO. 1 LAYOUT

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 4 OF 11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	42	60

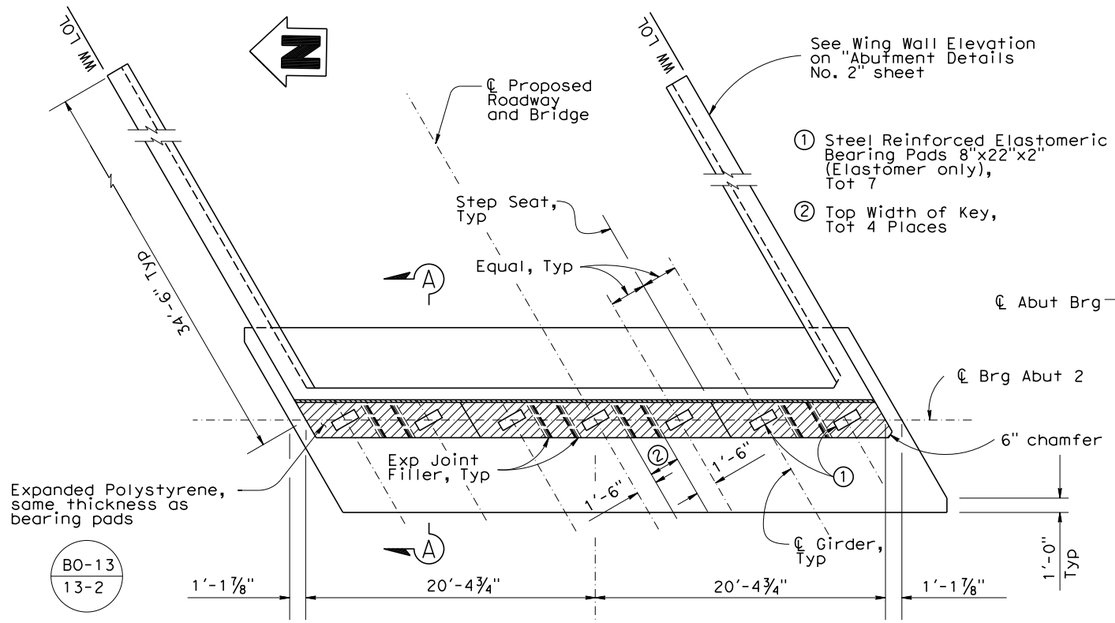
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

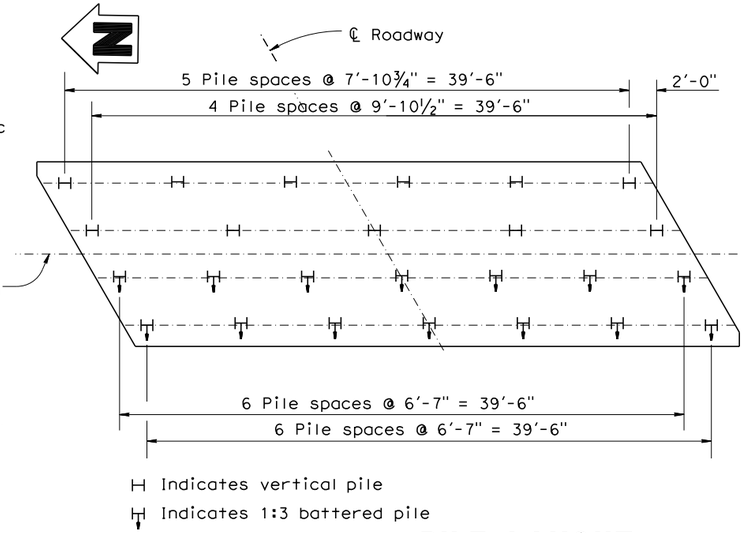
March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

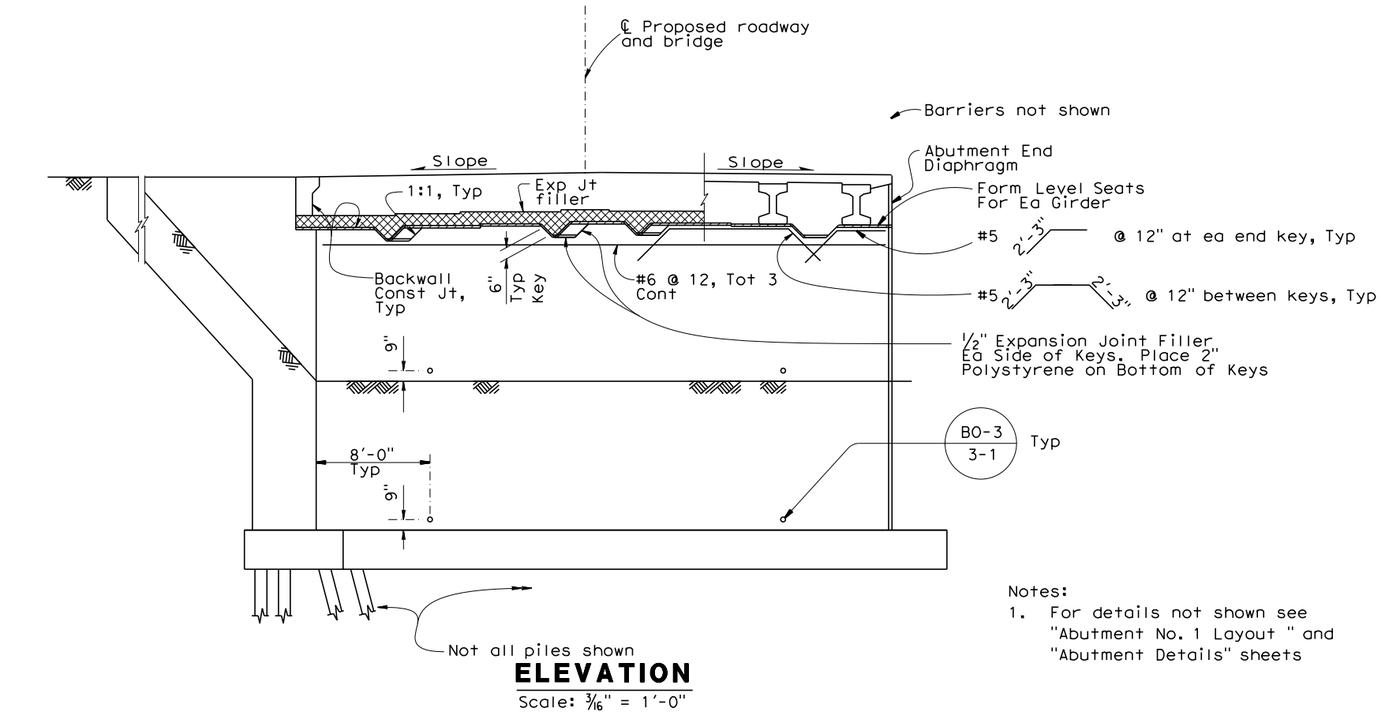
Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



PLAN
Scale: 3/16" = 1'-0"

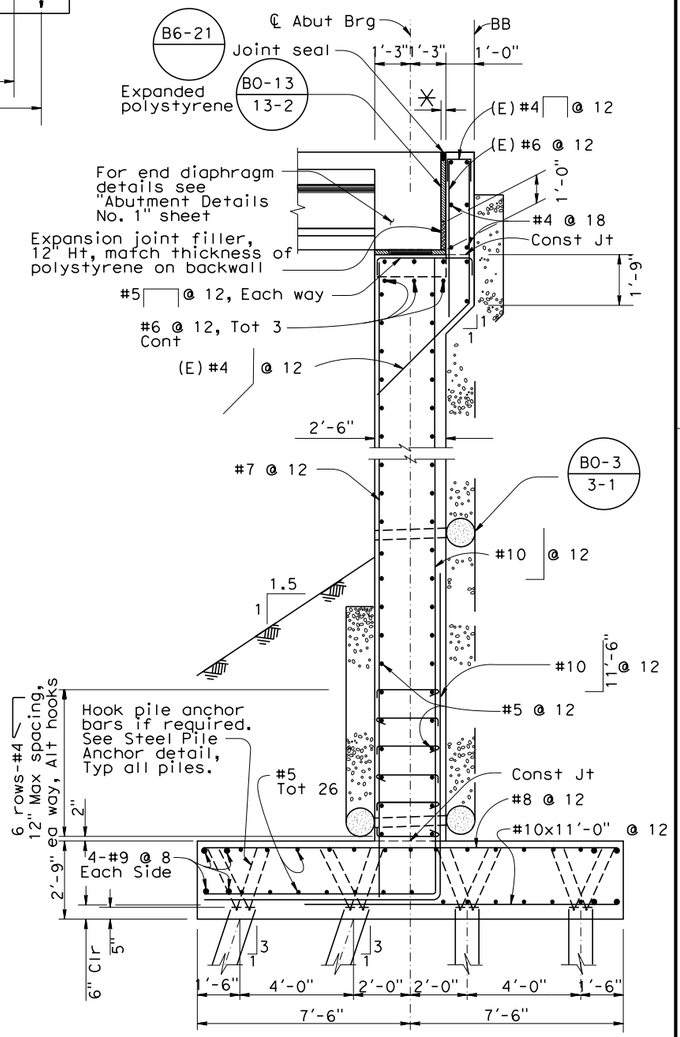


PILE LAYOUT
Scale: 3/16" = 1'-0"



ELEVATION
Scale: 3/16" = 1'-0"

Notes:
1. For details not shown see "Abutment No. 1 Layout " and "Abutment Details" sheets



SECTION A-A
Scale: 3/8" = 1'-0"

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO.	LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
7C-101	
POST MILE	ABUTMENT NO. 2 LAYOUT

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	5	11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	43	60

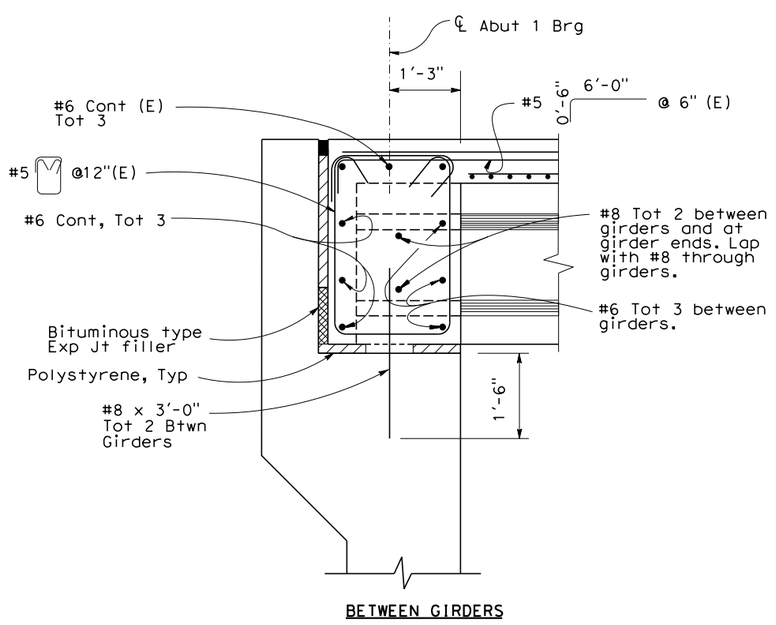
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

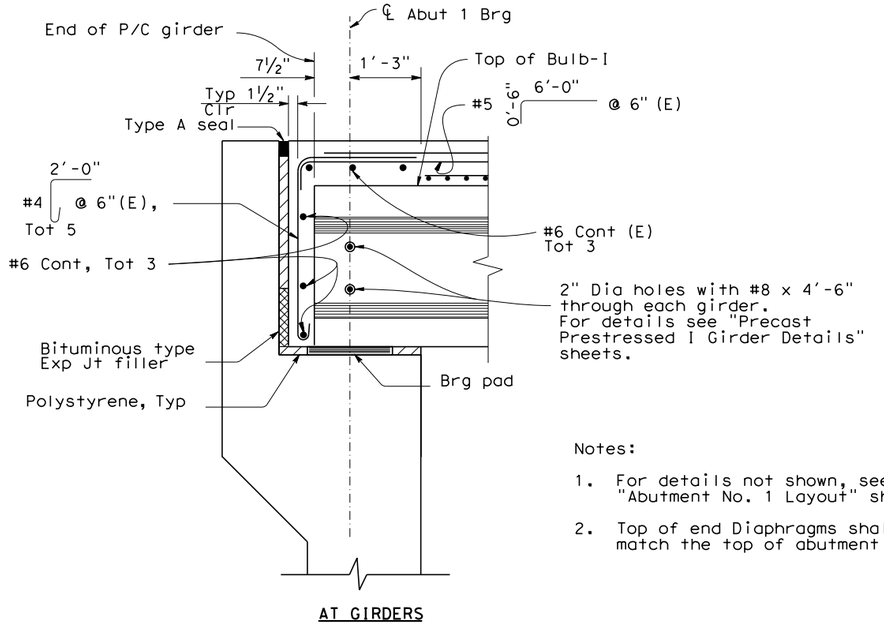
March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



BETWEEN GIRDERS



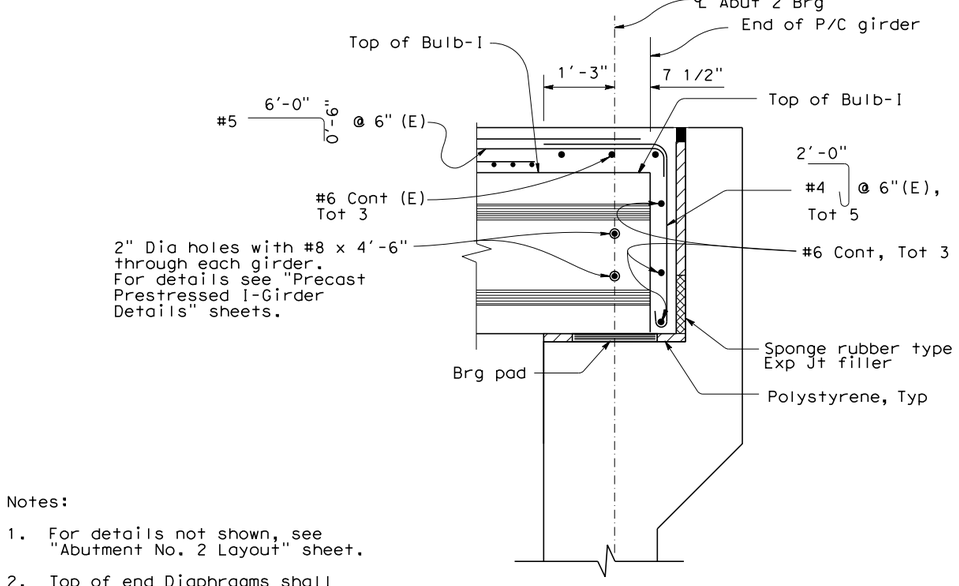
AT GIRDERS

Notes:

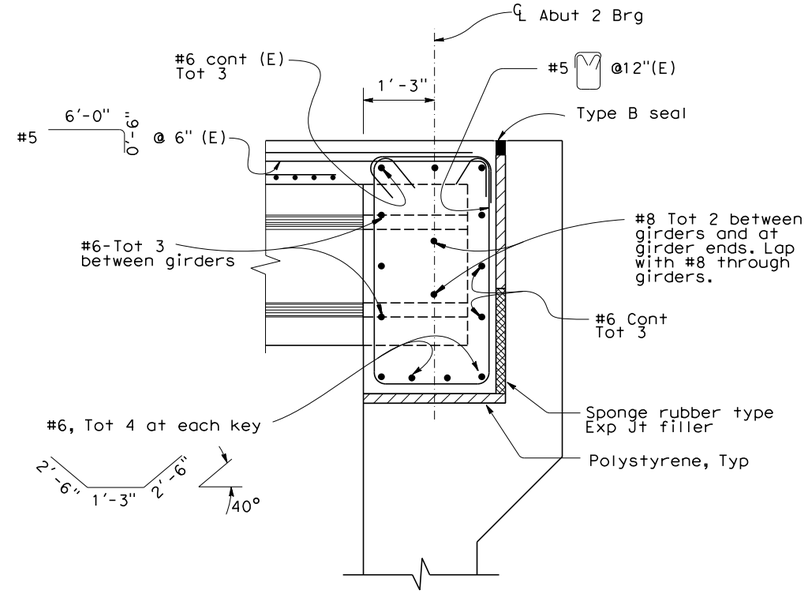
1. For details not shown, see "Abutment No. 1 Layout" sheet.
2. Top of end Diaphragms shall match the top of abutment back walls.

ABUTMENT 1 END DIAPHRAGM

Scale: 3/4" = 1'-0"



AT GIRDERS



BETWEEN GIRDERS AT KEYS

Notes:

1. For details not shown, see "Abutment No. 2 Layout" sheet.
2. Top of end Diaphragms shall match the top of abutment back walls.

ABUTMENT 2 END DIAPHRAGM

Scale: 3/4" = 1'-0"

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner
DETAILS	BY J. Gallino	CHECKED D. Roesner
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD

ABUTMENT DETAILS NO. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 6 OF 11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	44	60

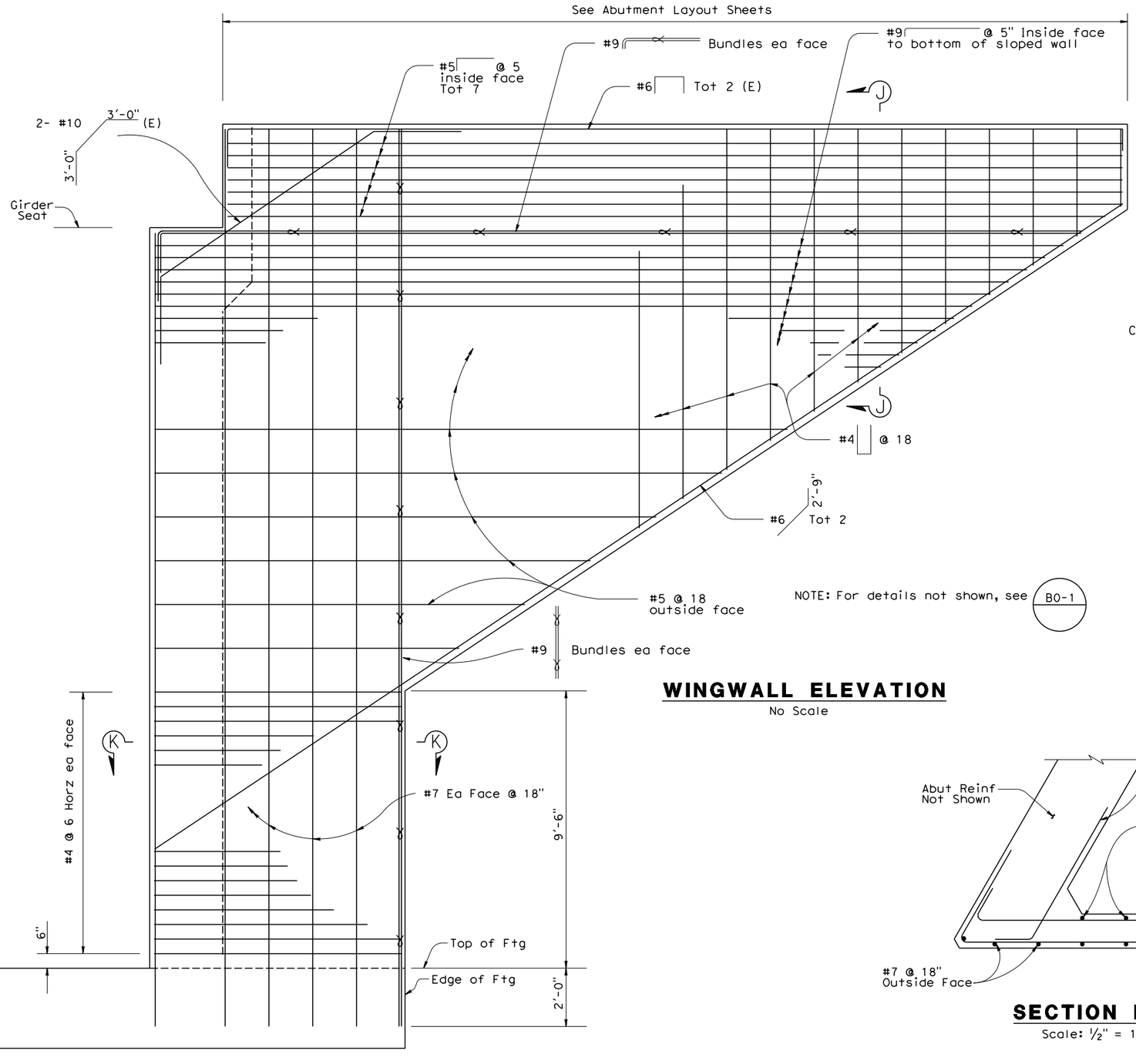
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL STATE OF CALIFORNIA

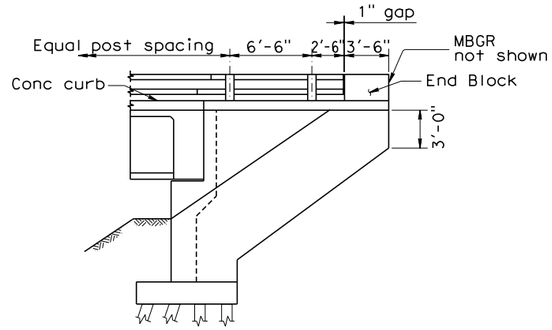
March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

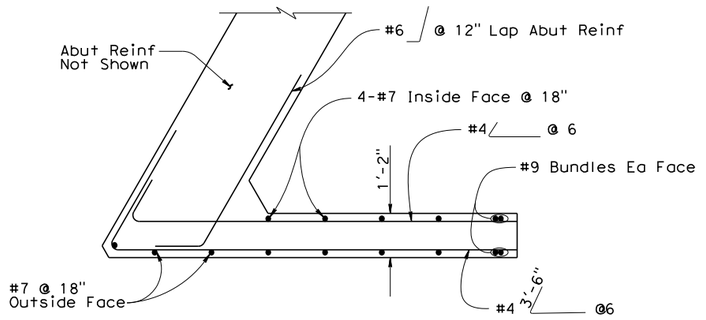


WINGWALL ELEVATION
No Scale

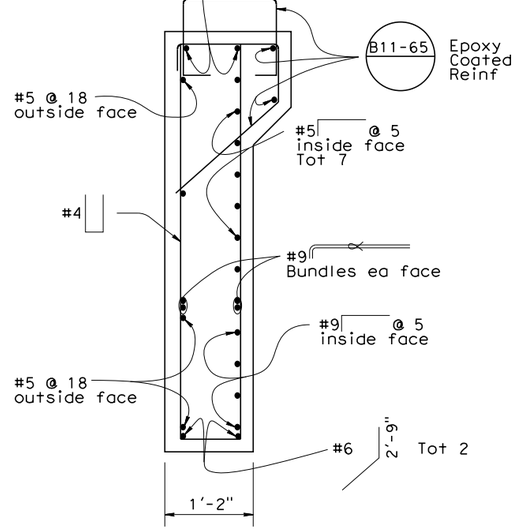


WINGWALL ELEVATION
No Scale

NOTE: For details not shown, see B0-1



SECTION K-K
Scale: ½" = 1'-0"



SECTION J-J
Scale: 1" = 1'-0"

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

Robert Morrison Jr.
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
ABUTMENT DETAILS NO. 2

DISREGARD PRINTS BEARING EARLIER REVISION DATES →
REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 7 OF 11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	45	60

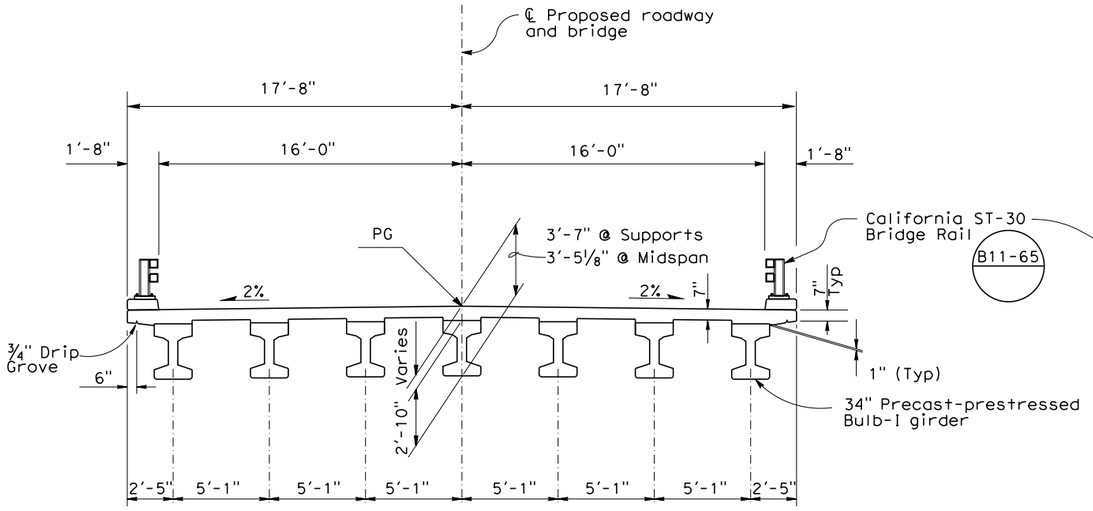
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

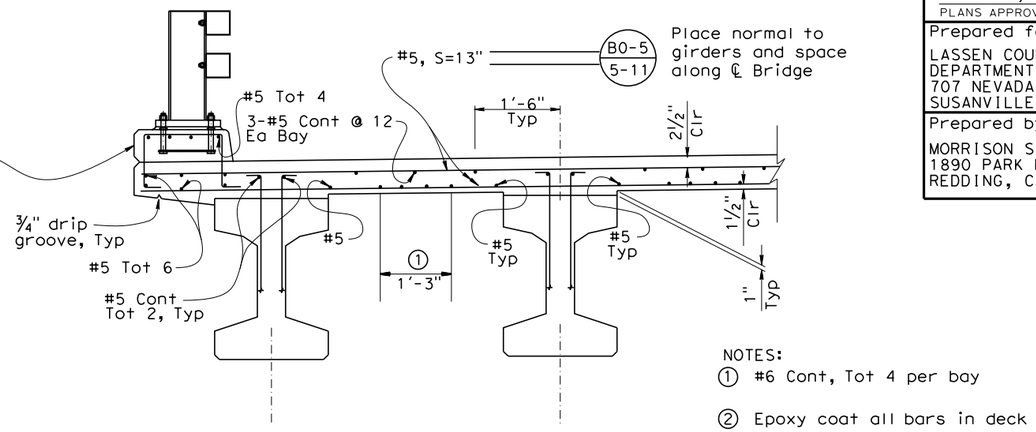
Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



TYPICAL SECTION

Scale: ¼" = 1'-0"

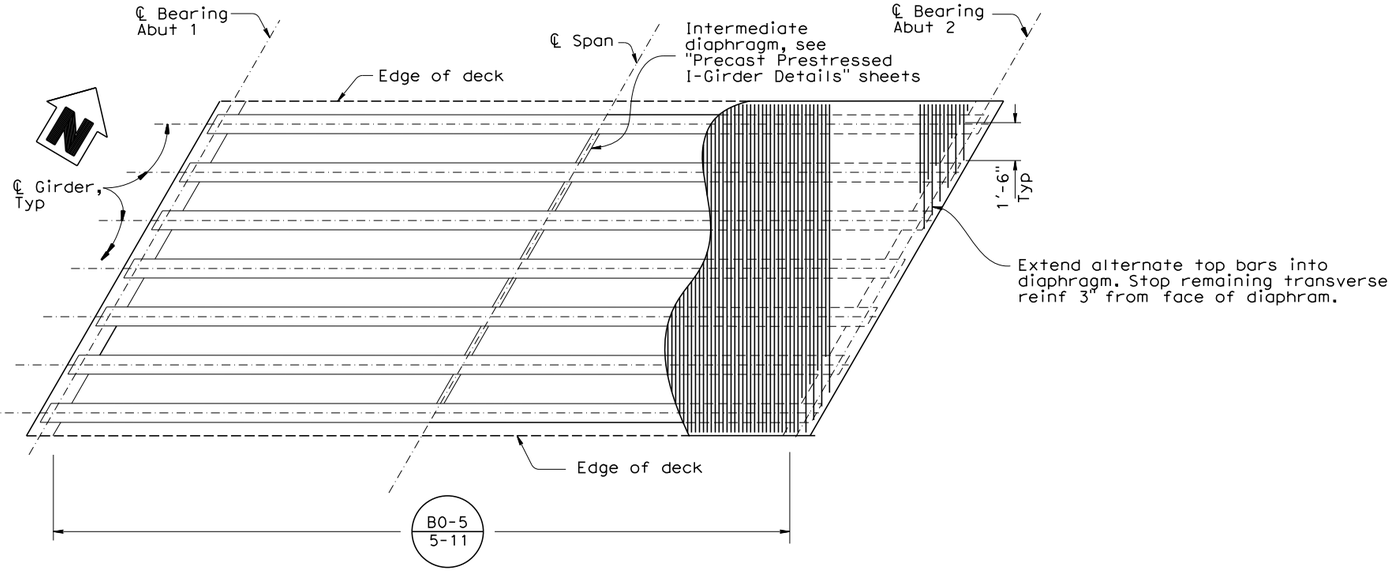


NOTES:
① #6 Cont, Tot 4 per bay

② Epoxy coat all bars in deck slab and barrier.

PART TYPICAL SECTION

Scale: ¾" = 1'-0"



GIRDER LAYOUT

Scale: ⅛" = 1'-0"

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino; W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO.	7C-101
POST MILE	

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD

TYPICAL SECTION AND GIRDER LAYOUT

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	8	11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	46	60

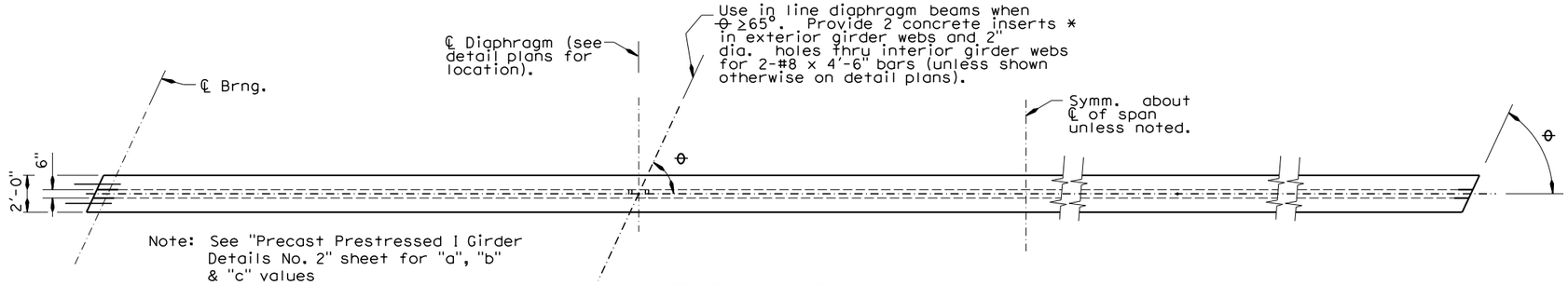
REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-21 — STRUCTURAL — STATE OF CALIFORNIA

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

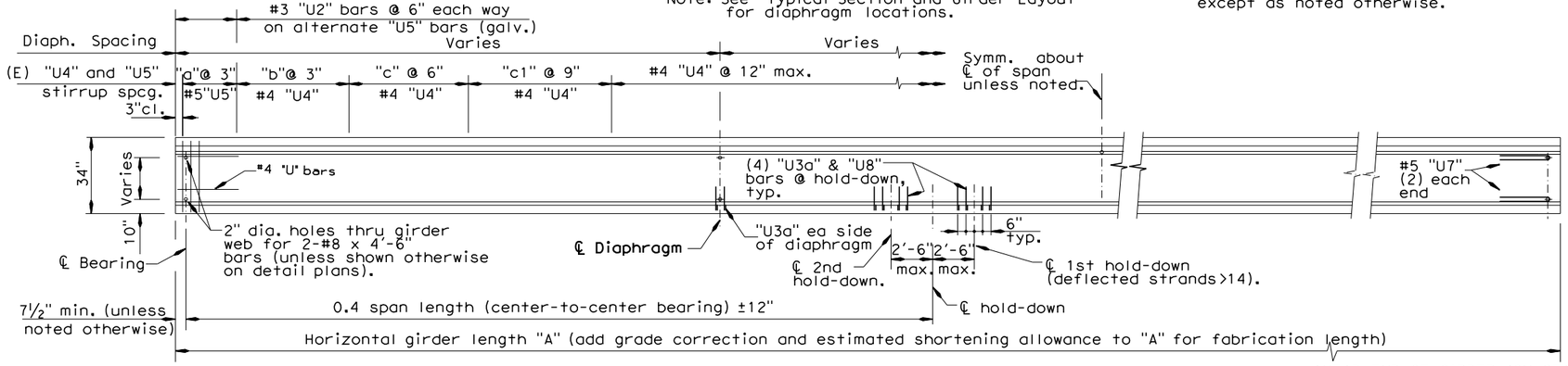
Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



TYPICAL PLAN

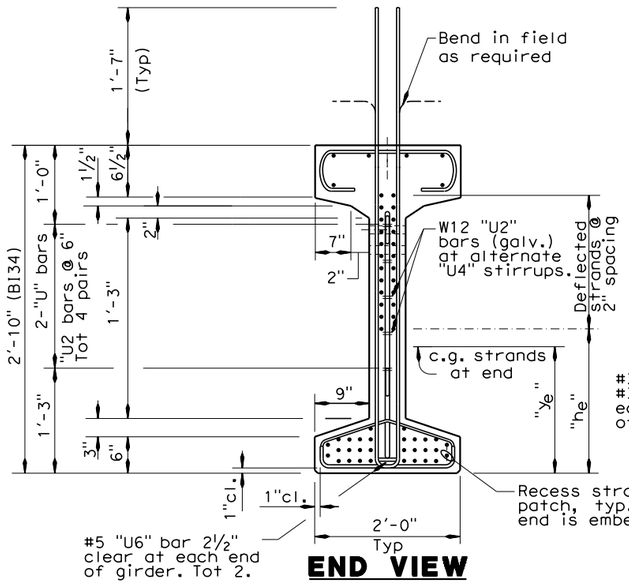
Note: See "Typical Section and Girder Layout" for diaphragm locations.

Note:
Girder details are symmetrical except as noted otherwise.

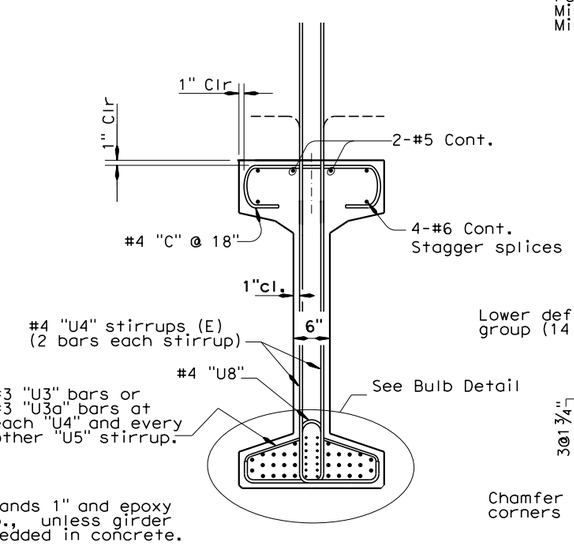


Notes:
1. Girders are designed for live loading and superimposed dead load as shown in the General Notes.
2. Provide the strength of concrete shown on the Girder Schedule. Provide concrete strength at transfer of prestress not less than that shown on the Girder Schedule on "Precast, Prestressed I-Girder Details No.2" sheet.
3. Provide ½" dia. 7-wire low relaxation prestressing strands conforming to AASHTO M203 (ASTM A416) Grade 270, Supplement 1.
4. Tension straight strands initially to 31.0 kips, Ensure deflected strands have the same tension after deflecting.
5. Provide reinforcing steel as shown in the General Notes, except as noted. For "U2" bars, provide galvanized wire conforming to ASTM Specification A82. Cut ends need not be galvanized.
6. Maintain girders in an upright position at all times with the support points within 2'-0" of the girder ends.
7. Deflected strands may be bundled between hold-down points.
8. For details not shown, see "Precast, Prestressed I-Girder Details No. 2" sheet.

TYPICAL ELEVATION

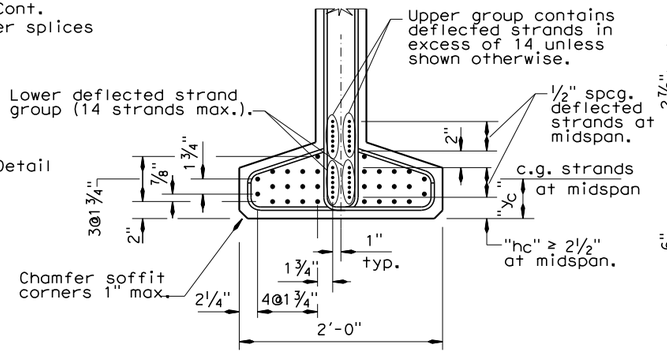


END VIEW

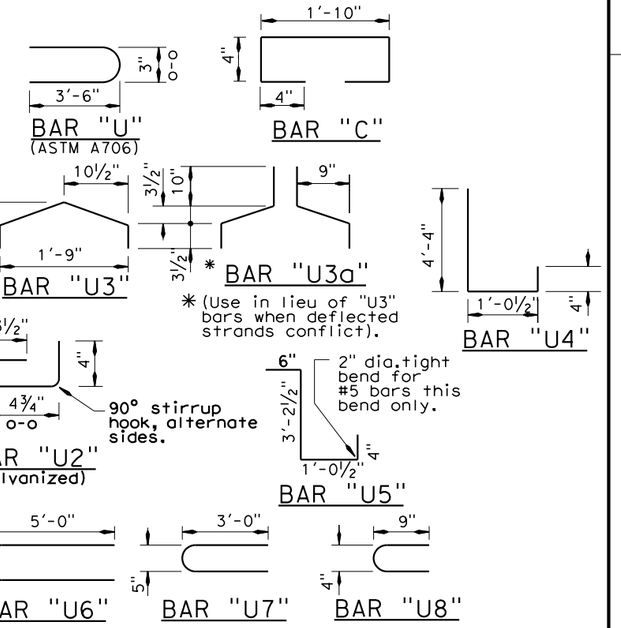


MIDSPAN SECTION

*CONCRETE INSERTS:
Hot-dip galvanized expanded coil concrete inserts with closed-back ferrule threaded to receive 1" x 2'-3" rods (ASTM A307) threaded full length.
Minimum insert length = 5".
Minimum safe working load in tension = 6000 lbs.



BULB DETAIL



BAR BENDING DETAILS

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

MORRISON STRUCTURES

Robert Morrison Jr.
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

BRIDGE NO.	LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
7C-101	
POST MILE	PRECAST PRESTRESSED I-GIRDER DETAILS NO. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	9	11

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	47	60

REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

Prepared for:

LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:

MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

GIRDER SCHEDULE

GIRDER NUMBER	NO. REQUIRED	LT. = LT. EXT. / RT. = RT. EXT.	SPAN NUMBER	SPAN, CTR-CTR BRGS	"A" O-O GIRDER HORIZ. (AFTER SHORTING & GRADE CORRECTION)	"W" WIDTH OF BOT & TOP FLANGE	GIRDER Weight, kips	CONCRETE STRENGTH* AT 28 DAYS, ksi	CONCRETE STRENGTH AT RELEASE, ksi	NO. OF STRANDS PER GIRDER "N"	DEFLECTED STRANDS PER GIRDER "Ds"	FIGURE NO. FOR STRAND PATTERN	STIRRUP SPACES a	STIRRUP SPACES b	STIRRUP SPACES c	STIRRUP SPACES c1	GIRDER END DIMENSIONS BACK ON STATION d	BACK ON STATION e	BACK ON STATION Θ	AHEAD ON STATION d	AHEAD ON STATION e	AHEAD ON STATION Θ	"f" END OF DECK TO ℄ EDGE CONN.	DIAPHRAGM OFFSET (6" MIN.) "DR"	DIAPHRAGM OFFSET (6" MIN.) "DL"	ESTIMATED MID-SPAN DEFLECTION DECK DL (ft)	ESTIMATED MID-SPAN DEFLECTION RAIL DL (ft)
1	7	—	1	79"-11⅝"	81'-5"	2'-0"	40.1	6.5	6.0	32	16	1	16	70	21	8	—	—	60°	—	—	60°	—	—	—	0.116	0.005

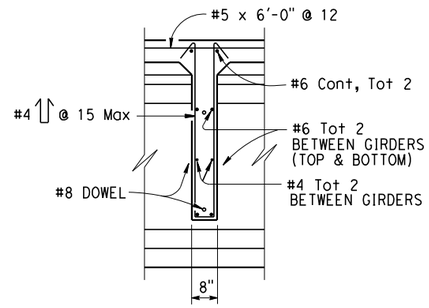
	FIGURES		
	FIGURE 1 	FIGURE 2 	FIGURE 3 
"N"	32		
"Ds"	16		
"Yc"	3.94"		
"hc"	2.50"		
	Back / Ahead	Back / Ahead	Back / Ahead
"Ye"	13.5" / 13.5"		
"he"	17" / 17"		

DETENSIONING NOTE:
Detension strands in a systematic order about girder ℄ to limit eccentricity.

girder ℄

(8)(1) | (2)(7)
(9)(4) | (3)(10)
(12)(5) | (6)(11)

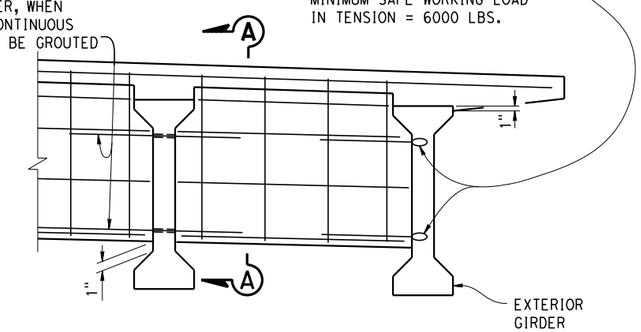
TYPICAL DETENSIONING ORDER



SECTION A-A

#8 X 4'-6" DOWELS PLACED THROUGH 2" Ø HOLES FORMED IN GIRDER, WHEN DIAPHRAGM IS CONTINUOUS HOLES NEED NOT BE GROUTED

CONCRETE INSERTS:
HOT-DIP GALVANIZED EXPANDED COIL CONCRETE INSERTS WITH CLOSED-BACK FERRULE THREADED TO RECIEVE 1" DIA. X 2'-3" RODS (ASTM A307) THREADED FULL LENGTH.
MINIMUM INSERT LENGTH = 5 ".
MINIMUM SAFE WORKING LOAD IN TENSION = 6000 LBS.



INTERMEDIATE DIAPHRAGM DETAIL

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino; W. Morrison	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-101
POST MILE

LONG VALLEY CREEK BRIDGE ON HACKSTAFF ROAD
PRECAST PRESTRESSED I GIRDER DETAILS NO. 2

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	10	11

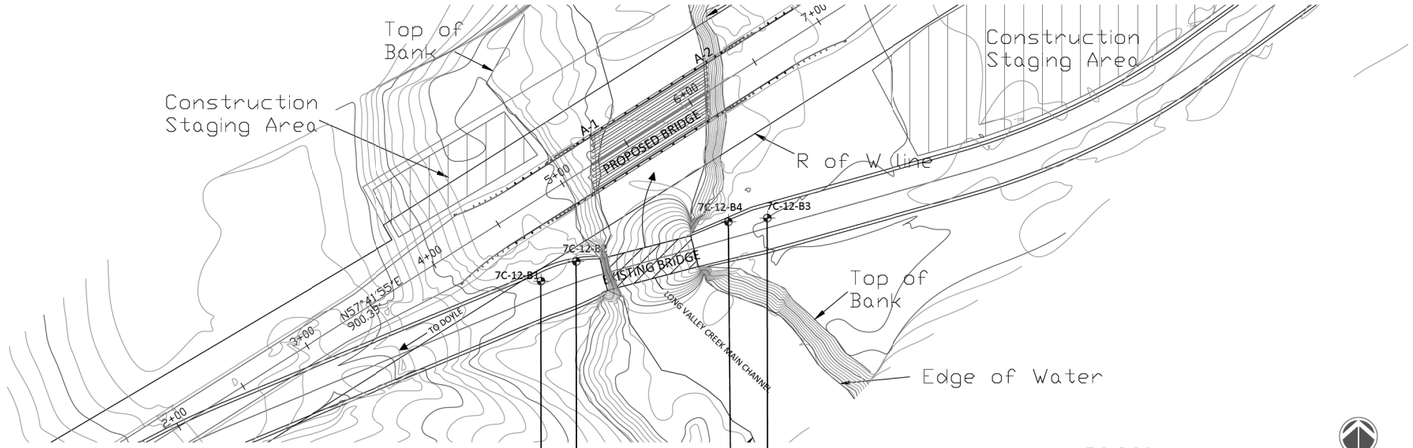
DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO	TOTAL SHEETS
2	LASSEN	CR322	0.27 to 0.74	48	60

REGISTERED CIVIL ENGINEER — DATE 6-16-16

REGISTERED PROFESSIONAL ENGINEER — ADAM J. KILLINGER — No. 72364 — Exp. 6-30-18 — CIVIL — STATE OF CALIFORNIA

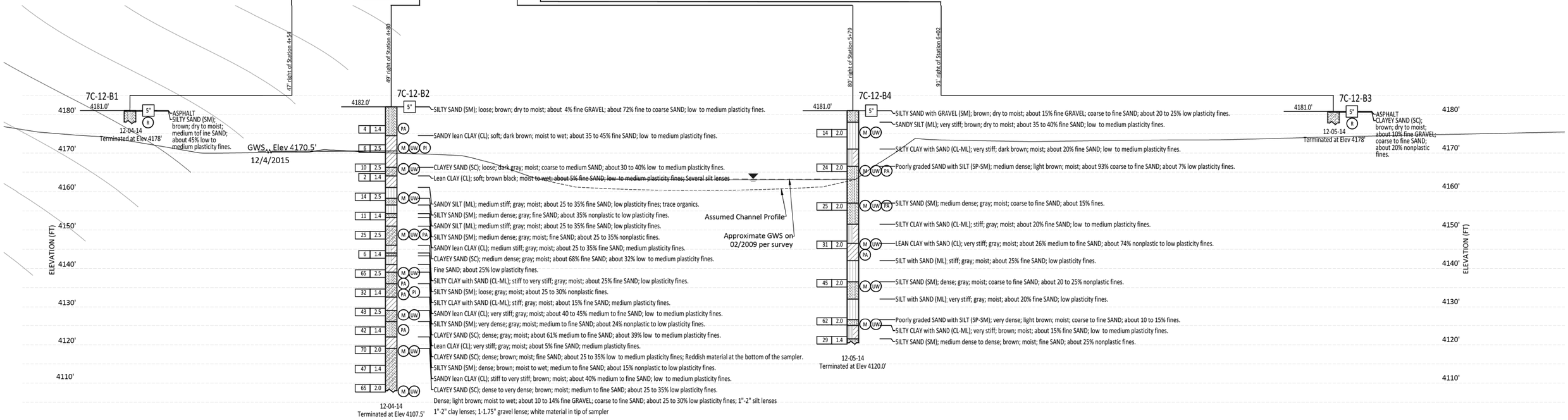
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PLAN
SCALE: 1"=50'

NOTES:
1. Field classification of soils was in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010). See Log of Test Borings No. 2, "Soil Legend".
2. Standard Penetration tests were performed using in accordance with ASTM D 1586-99 using a hammer operated with an automated drop system. Drill rods were 1 5/8-inch diameter "A"-rods; sampler was driven with brass liners.
3. "2.4 inch sampler": ID=2.4 inch, OD=2.9 inch. "2.0 inch sampler": ID=2.0 inch, OD=2.5 inch. Both driven in same manner as SPT ("1.4 inch") sampler.
4. If laboratory tests are not shown as being performed, the soil descriptions presented in the LOTB are based solely on the visual practices described in this Manual.
5. The length of each sampled interval is shown graphically on the boring log. Whole number blow counts ("N") represent the "standard penetration resistance" interval in accordance with the Caltrans Soil & Logging, Classification, and Presentation Manual (June 2010). Where less than 0.5 feet of penetration is achieved, the blow count shown is for that fraction of the "standard penetration resistance" interval actually penetrated.
6. Consistency of soils shown in ( ) where estimated.
7. Ground water surface (GWS) elevations in the borings indicated on the Log of Test Boring Sheets reflect the fluid level in the borings on the specified date.
8. Ground water surface elevations are subject to seasonal fluctuations and may occur at higher or lower elevations depending on the conditions at any particular time.
9. The "Log of Test Borings" drawing is included with plans in accordance with Section 2-1.03 of Caltrans "Standard Specifications".
10. Groundwater was encountered in boring 7C-12-B4, but elevation was not measured.
11. Test borings were drilled with offset (top of boring may not match profile grade).
12. Profile grade is based on a cross section through project stationing (along proposed alignment) and was surveyed by Lassen County.
13. Surveying datum is based on NAVD 88.
14. Edge of water is based on survey by Lassen County for Hackstaff Road Preliminary Plan dated 02/2009.



NOTE:
New Bridge No. 7C-101
Exist Bridge No. 7C-12

PROFILE
HORIZ: 1"=12.5'
VERT: 1"=12.5'

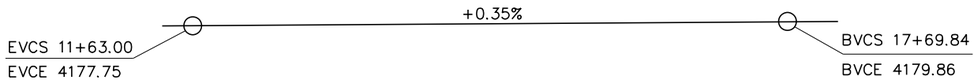
ENGINEERING SERVICES	GEOTECHNICAL SERVICES		PREPARED FOR THE	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	HACKSTAFF ROAD BRIDGE 7C-12
FUNCTIONAL SUPERVISOR	DRAWN BY: SJC	FIELD INVESTIGATION BY: Shawn M. Leyva	STATE OF CALIFORNIA	STRUCTURE DESIGN	7C-12	
NAME: Benjamin D. Crawford	CHECKED BY: AJK		DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH	POST MILE	LOG OF TEST BORINGS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU XXXXX
EA XXXXXX

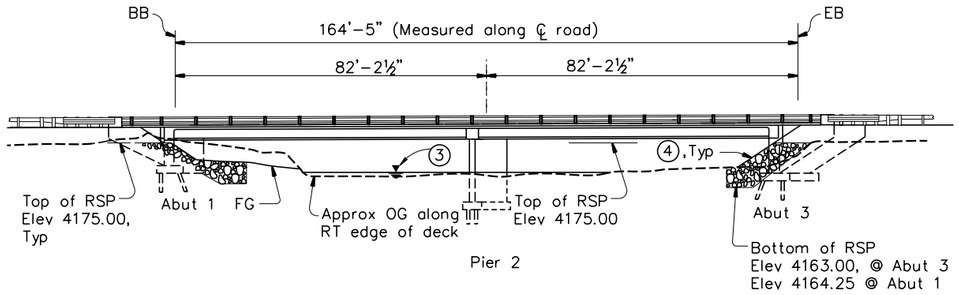
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

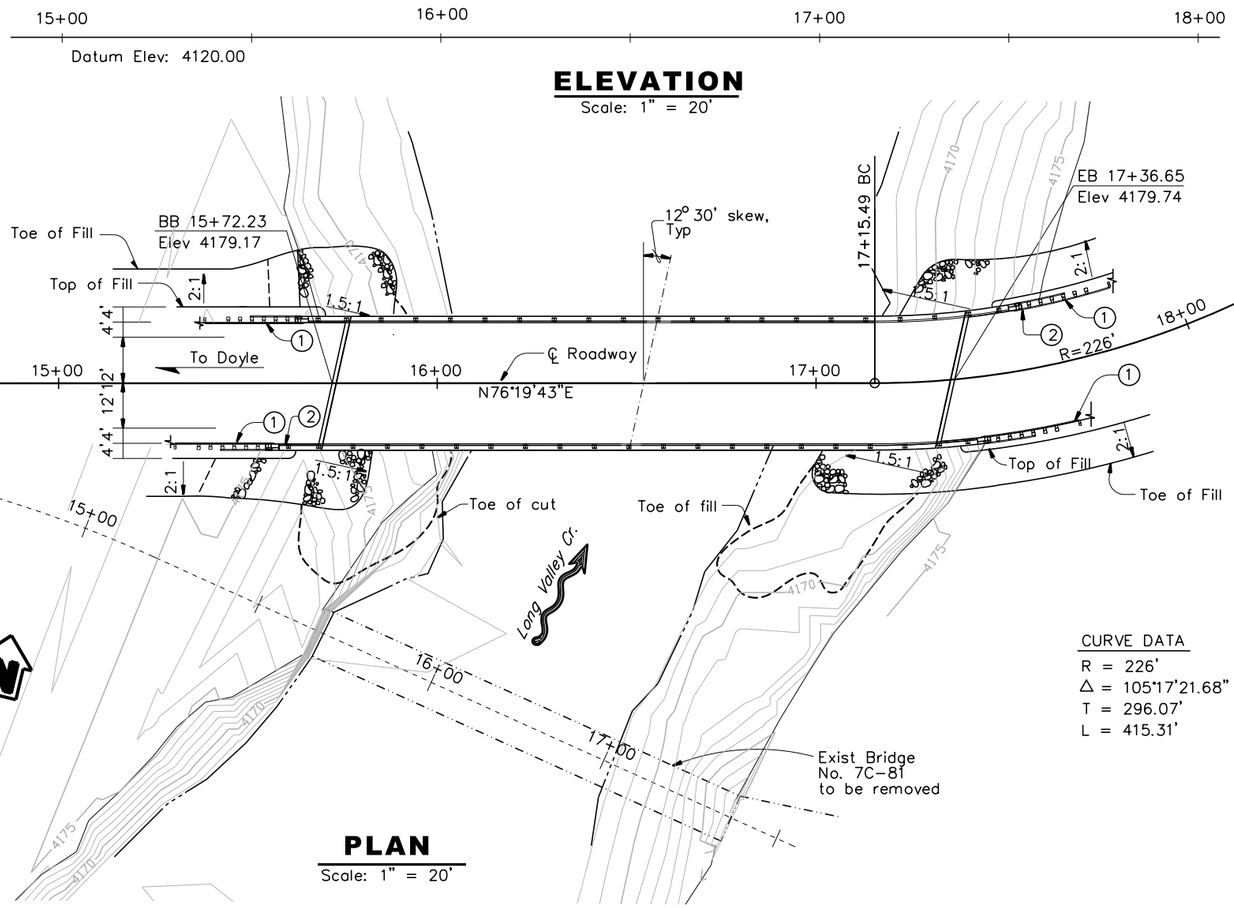
REVISION DATES					SHEET	OF
					11	11



PROFILE GRADE

Not To Scale





ELEVATION

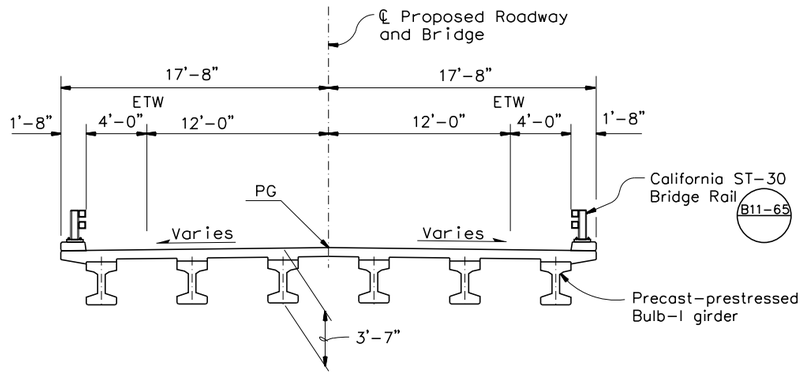
Scale: 1" = 20'

PLAN

Scale: 1" = 20'

CURVE DATA

R = 226'
Δ = 105°17'21.68"
T = 296.07'
L = 415.31'



TYPICAL SECTION

Scale: 1" = 5'

Notes:

1. ① MBGR, See Road Plans
2. ② Paint "BR NO. 7C-102" and year completed.
3. ③ See Hydrologic Summary on "Foundation Plan" sheet.
4. ④ Class V RSP method B placement. For details see Rock Slope Protection detail on "Foundation Plan" sheet

Standard Plan Sheet No.

Detail No.

For General Notes see "Foundation Plan" sheet.

Indicates Existing Structure

INDEX TO STANDARD PLANS

A3A-C	Abbreviations (3 Sheets)
A10A-H	Lines and Symbols (8 Sheets)
A62C	Limits of Payment for Excavation and Backfill – Bridge
B0-1	Bridge Details
B0-3	Bridge Details
B0-5	Bridge Details
B0-13	Bridge Details
B6-21	Joint Seals (Maximum Movement Rating = 2")
B11-65	California ST-30 Bridge Rail

INDEX TO PLANS

Sheet	Title
1	General Plan
2	Deck Contours
3	Foundation Plan
4	Abutment No. 1 Layout
5	Abutment No. 3 Layout
6	Abutment Details No. 1
7	Pier Details
8	Typical Section
9	Girder Layout and Deck Reinforcement
10	Precast Prestressed I-Girder Details No. 1
11	Precast Prestressed I-Girder Details No. 2
12	Log of Test Borings

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.24 TO 0.74	49	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:

LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:

MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

MORRISON STRUCTURES

DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	
DETAILS	BY J. Gallino	CHECKED D. Roesner	
QUANTITIES	BY D. Roesner	CHECKED J. Gallino, W. Morrison	

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 1 OF 12

FILE => $REQUEST

USERNAME => $USER
$DATE
TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	50	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:

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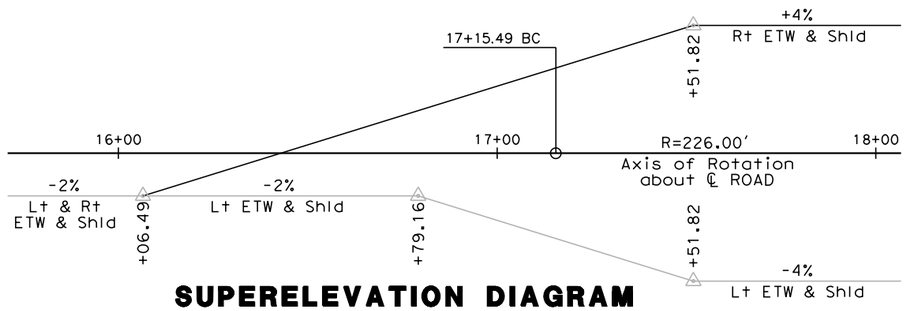
Prepared by:

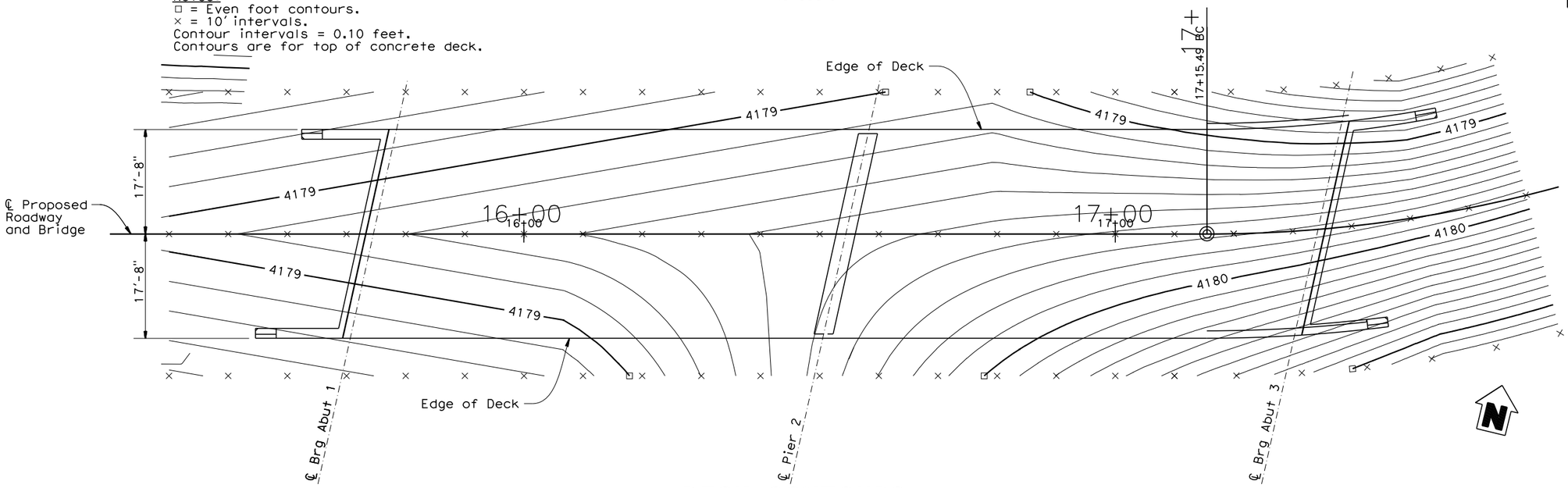
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



SUPERELEVATION DIAGRAM

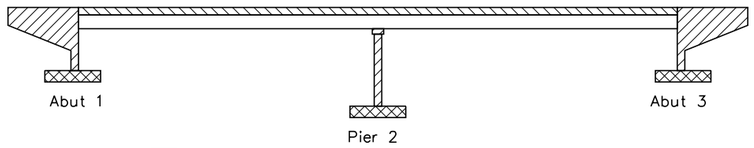
No Scale

Notes:
□ = Even foot contours.
× = 10' intervals.
Contour intervals = 0.10 feet.
Contours are for top of concrete deck.



DECK CONTOURS

Scale: 1" = 10'



Structural Concrete, Bridge, 4,000 psi at 28 days

Structural Concrete, Bridge

Structural Concrete, Bridge Footing

Precast Prestressed Concrete I–Girders.
(See "Precast Prestressed I–Girder Details No. 2" sheet)

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	R. Uhlmann	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

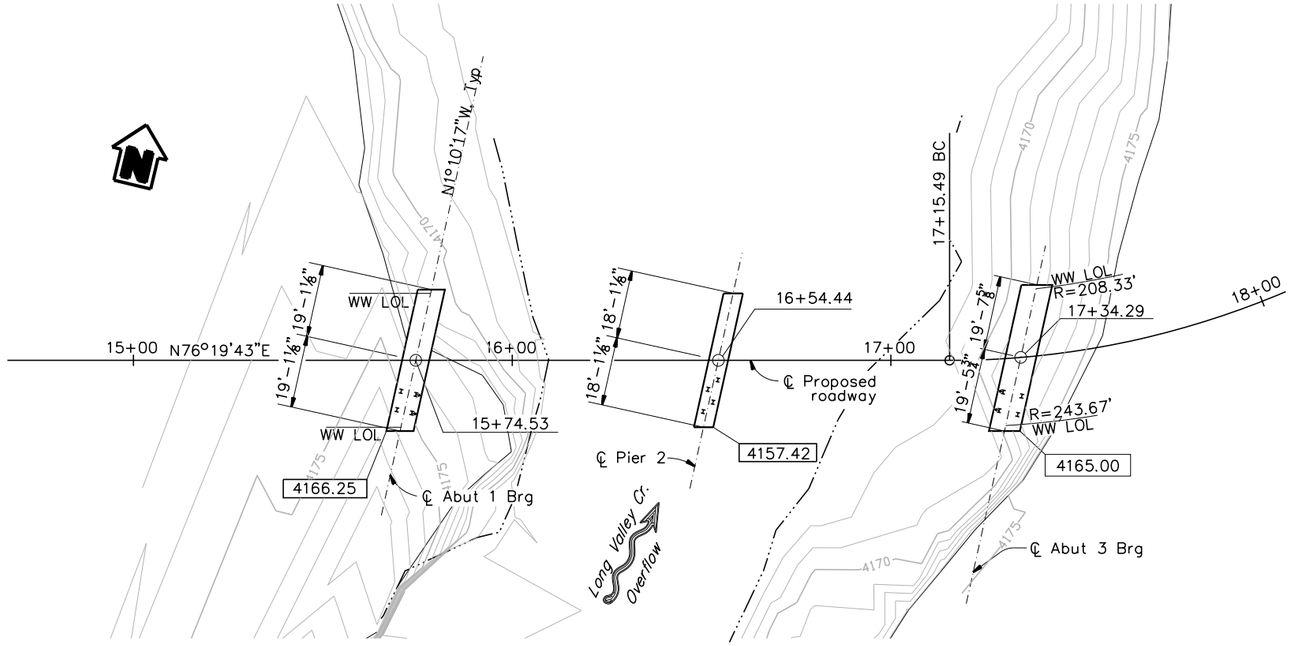
DECK CONTOURS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 2 OF 12



FOUNDATION PLAN

Scale: 1" = 20'

Notes:

4165.00 Indicates bottom of footing elevation

Not all piles shown.
Contour data based on topographic maps prepared by Lassen County dated 10/17/2013.

CURVE DATA

R = 226'
Δ = 105°17'21.68"
T = 296.07'
L = 415.31'

DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	51	60

REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLAN APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-17 — STRUCTURAL — STATE OF CALIFORNIA

PREPARED FOR:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96120

PREPARED BY:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

HYDROLOGIC SUMMARY

DRAINAGE AREA 403 SQ MI

	DESIGN FLOOD	BASE FLOOD	OVERTOPPING FLOOD	RECORD FLOOD
FREQUENCY, YEARS	50	100	>200	N/A
DISCHARGE CUBIC FT/SEC.	6,410	8,320	>12,000	N/A
WATER SURFACE ELEVATION AT BRIDGE	4172.70	4173.50	4177.52	N/A

LOCATION HYDRAULIC STUDY PREPARED BY PACIFIC HYDROLOGIC, INC. 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. INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.

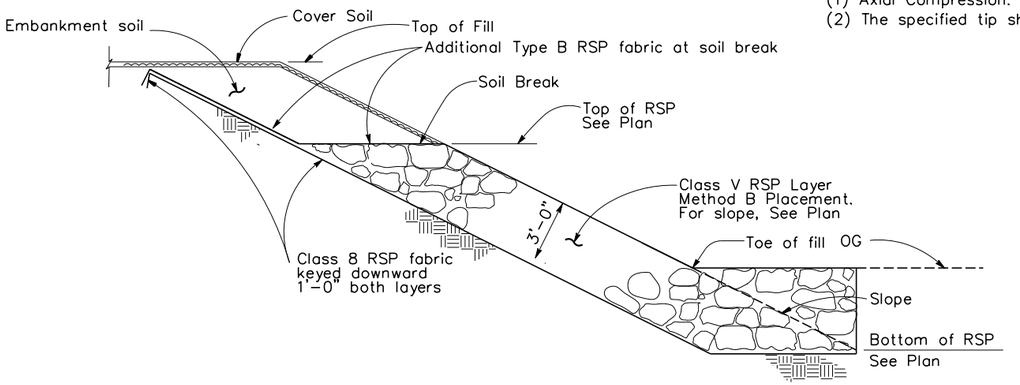
SCOUR DATA TABLE

SUPPORT NO.	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR DEPTH (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
ABUT 1	0	6
PIER 2	0	8.4
ABUT 3	0	6

PILE DATA – STEEL HP PILES

Location	Pile Type	Nominal Resistance		Design Tip Elev	Specified Tip Elev	Req'd Nominal Driving Resistance
		Compression	Tension			
Abut 1	HP10x57	280 Kips	0 Kips	4119.0(1)	4119.0	280 Kips
Pier 2	HP10x57	280 Kips	66 Kips	4110.0(1)	4110.0	280 Kips
Abut 3	HP10x57	280 Kips	0 Kips	4118.0(1)	4118.0	280 Kips

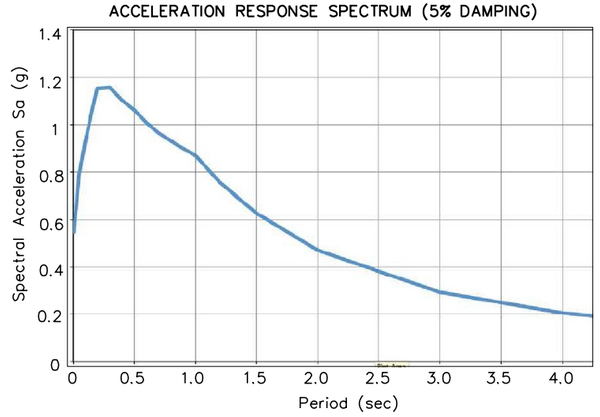
Design tip elevation is controlled by the following conditions:
(1) Axial Compression.
(2) The specified tip shall not be raised.



ROCK SLOPE PROTECTION

No Scale

ACCELERATION RESPONSE SPECTRUM (5% DAMPING)



GENERAL NOTES
LOAD RESISTANCE FACTOR DESIGN

DESIGN:	AASHTO LRFD Bridge Design Specifications, 6th Edition W/ California Amendments.
SEISMIC DESIGN:	Caltrans Seismic Design Criteria (SDC), Version 1.7 dated April 2013
DEAD LOAD:	Includes 35 psf for future wearing surface.
LIVE LOADING:	HL93 W/ "Low-Boy" and Permit Design Vehicle
SEISMIC LOADING:	Soil Profile: Type D Moment Magnitude: 6.9 Peak Ground Acceleration = 0.49g
(E):	Designates epoxy coated reinforcing
REINFORCED CONCRETE:	fy = 60 ksi f'c = 4.0 ksi (unless noted)
PRESTRESSED CONCRETE:	See General Notes on "PRECAST PRESTRESSED I GIRDER DETAILS NO. 1" Sheet

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

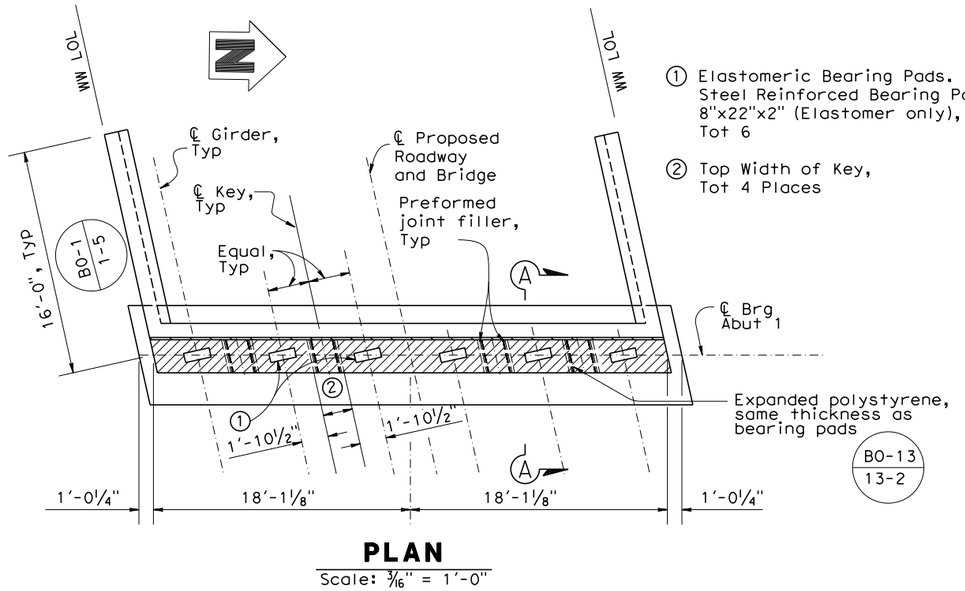
UNIT:
PROJECT NUMBER & PHASE:
CONTRACT NO.:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3/3/21				3	12

FILE => $REQUEST

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

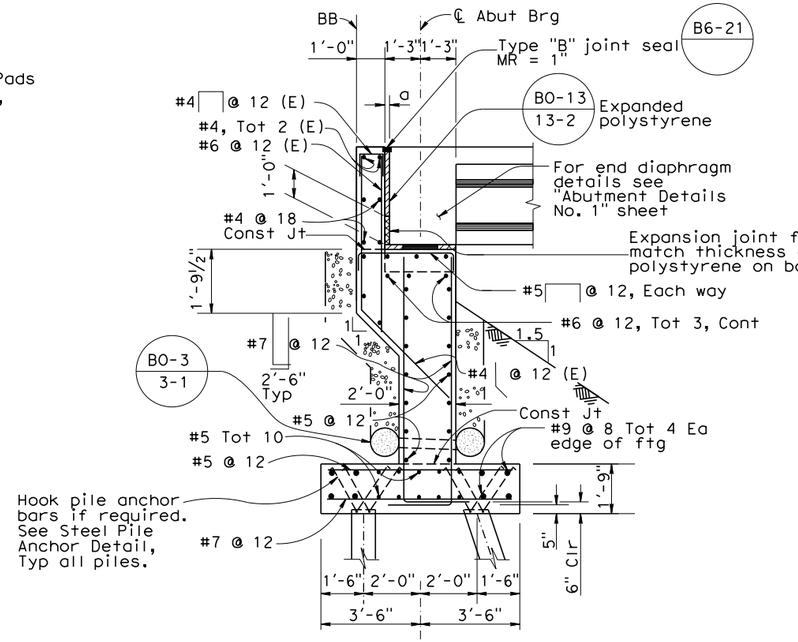


① Elastomeric Bearing Pads. Steel Reinforced Bearing Pads 8"x22"x2" (Elastomer only), Tot 6

② Top Width of Key, Tot 4 Places

PLAN

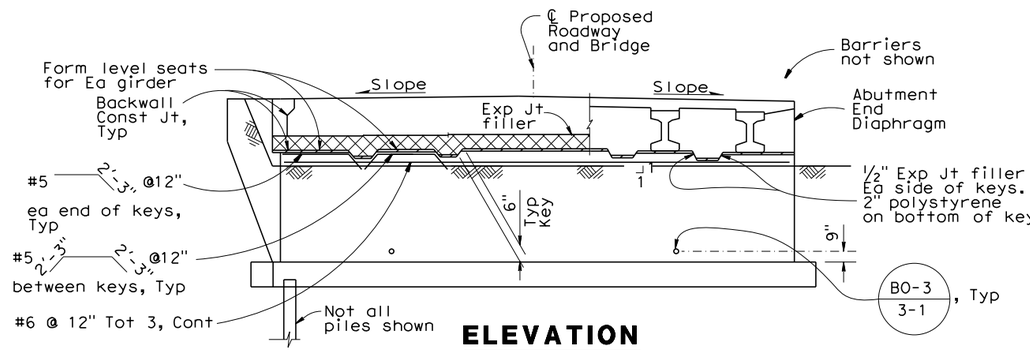
Scale: 3/16" = 1'-0"



Note: For "a" dimension, see B6-21 Joint Seals

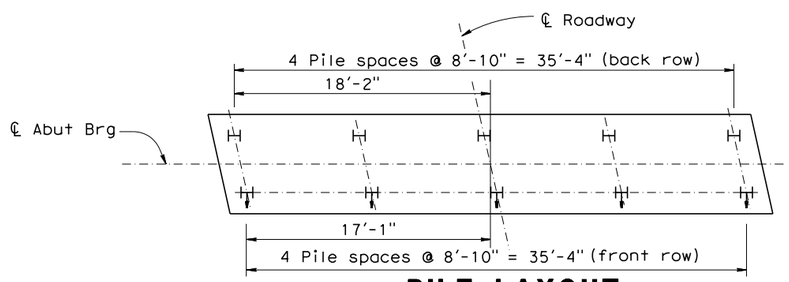
SECTION A-A

Scale: 3/8" = 1'-0"



ELEVATION

Scale: 3/16" = 1'-0"

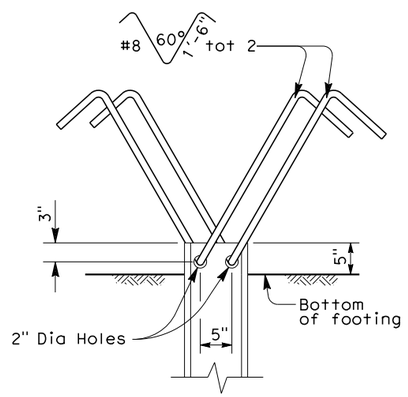


H Indicates vertical piles

H Indicates 1:3 battered piles

PILE LAYOUT

Scale: 3/16" = 1'-0"



STEEL PILE ANCHOR

Scale: 1" =1'-0"

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	52	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 PROFESSIONAL ENGINEER STRUCTURAL STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

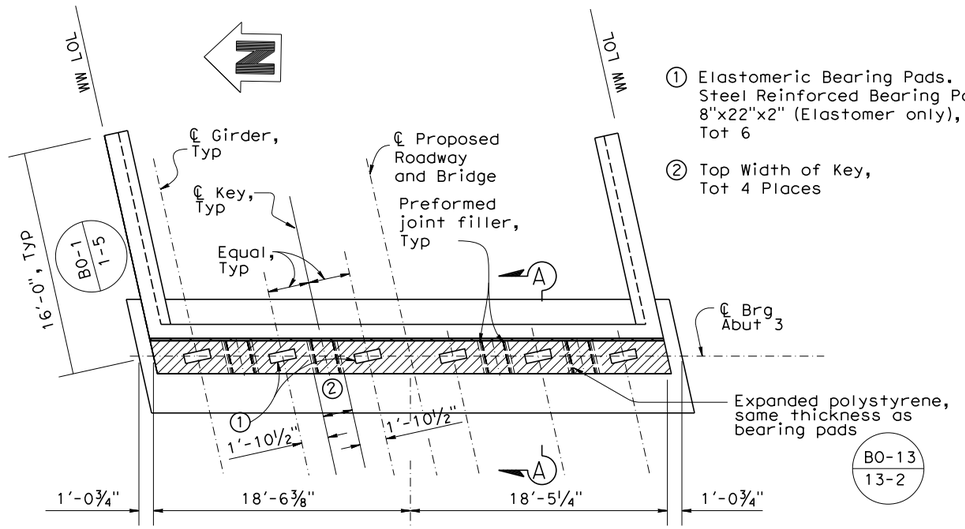
ABUTMENT NO. 1 LAYOUT

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 4 OF 12

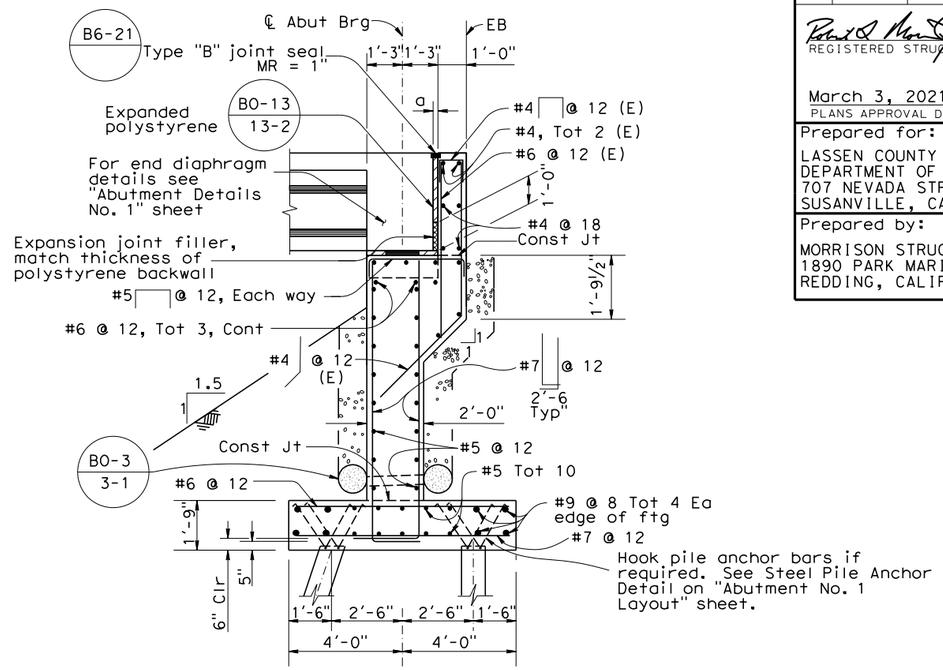


① Elastomeric Bearing Pads. Steel Reinforced Bearing Pads 8"x22"x2" (Elastomer only), Tot 6

② Top Width of Key, Tot 4 Places

PLAN

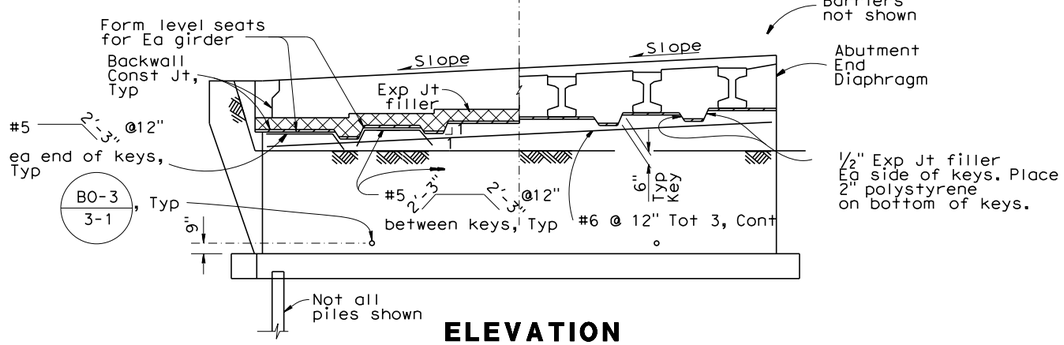
Scale: 3/16" = 1'-0"



Note:
For "a" dimension, see B6-21 Joint Seals

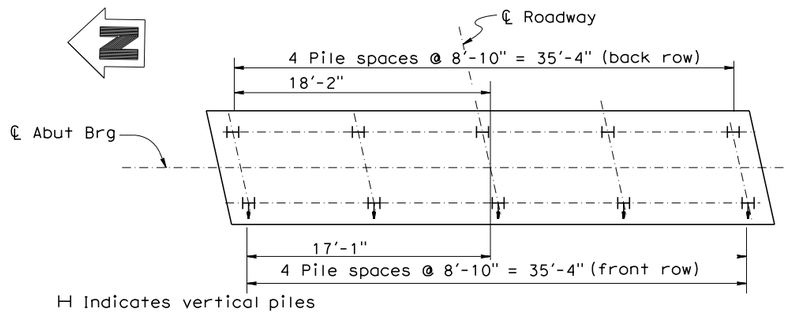
SECTION A-A

Scale: 3/8" = 1'-0"



ELEVATION

Scale: 3/16" = 1'-0"



H Indicates vertical piles

H Indicates 1:3 battered piles

PILE LAYOUT

Scale: 3/16" = 1'-0"

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	53	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL PROFESSIONAL ENGINEER STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

ABUTMENT NO. 3 LAYOUT

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 5 OF 12

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	54	60

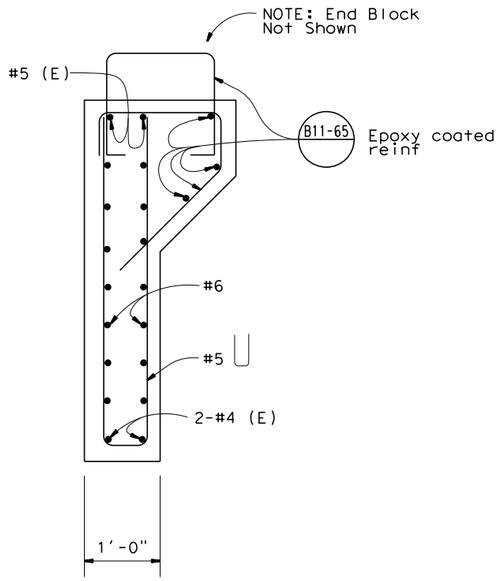
REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

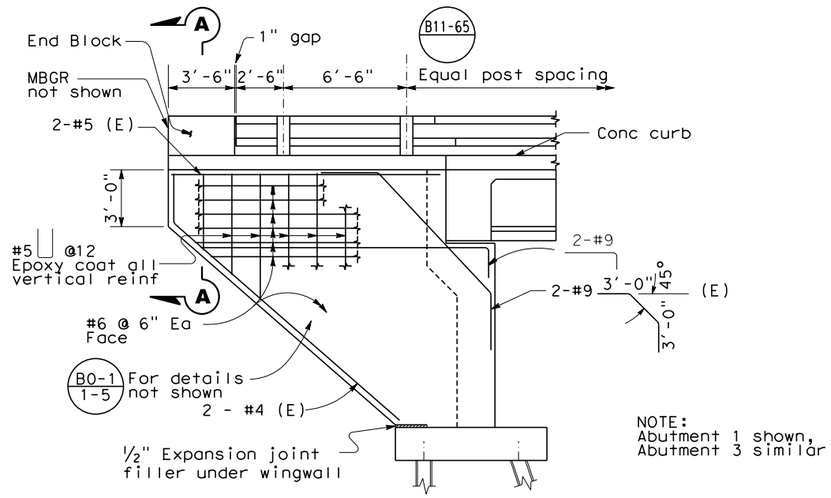
REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-21 — STRUCTURAL — STATE OF CALIFORNIA

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

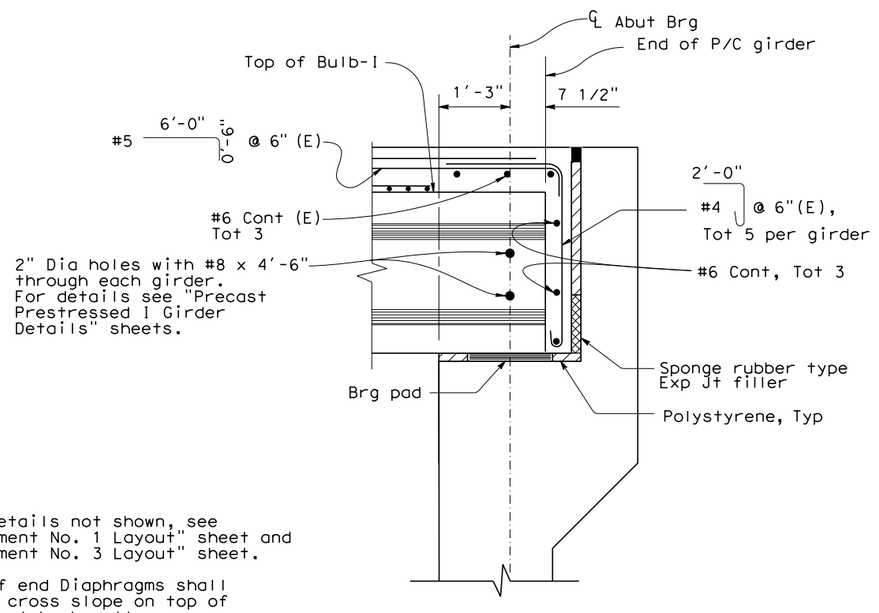
Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



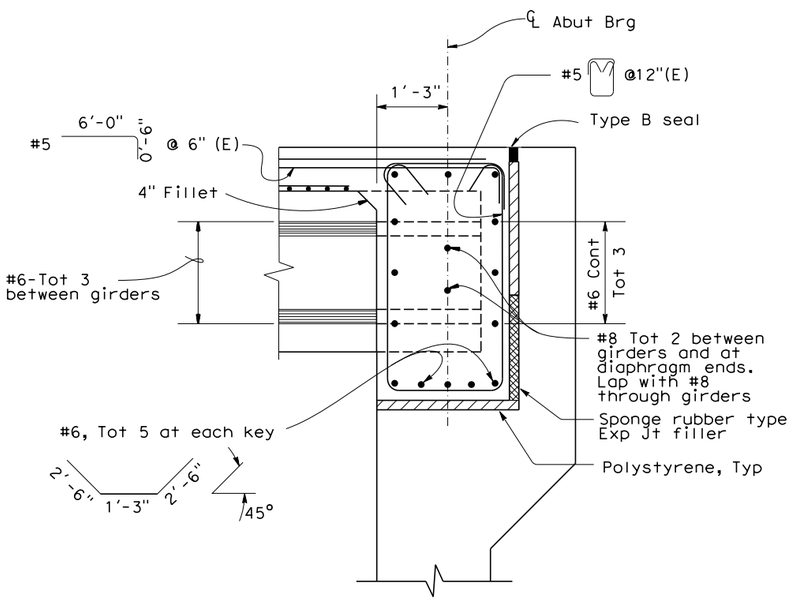
SECTION A-A
Scale: 1" = 1'-0"



WINGWALL ELEVATION
No Scale



AT GIRDERS



BETWEEN GIRDERS

Notes:

1. For details not shown, see "Abutment No. 1 Layout" sheet and "Abutment No. 3 Layout" sheet.
2. Top of end Diaphragms shall match cross slope on top of abutment back walls.
3. Abutment 3 shown, Abutment 1 similar.

ABUTMENT END DIAPHRAGM
Scale: 3/4" = 1'-0"

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD
ABUTMENT DETAILS NO. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 6 OF 12

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	55	60

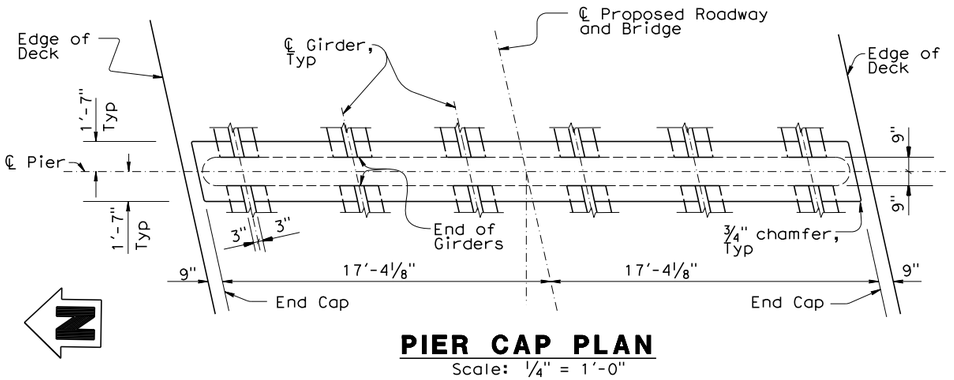
REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

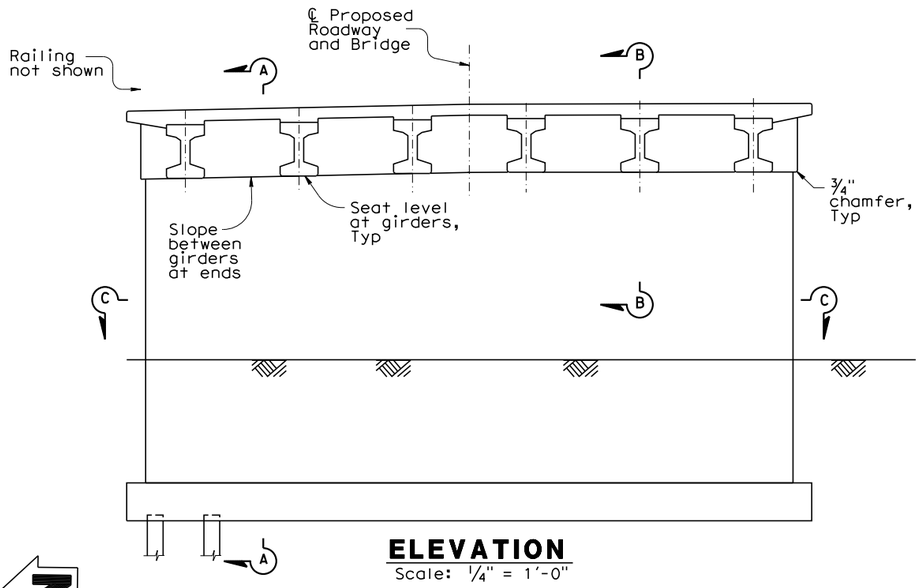
Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

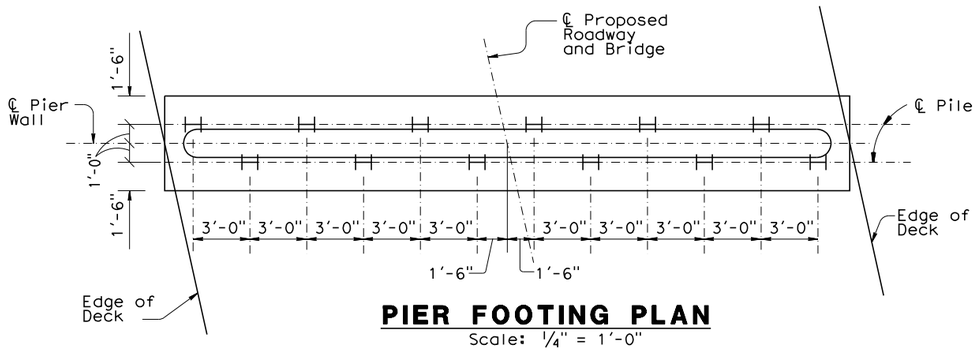
Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



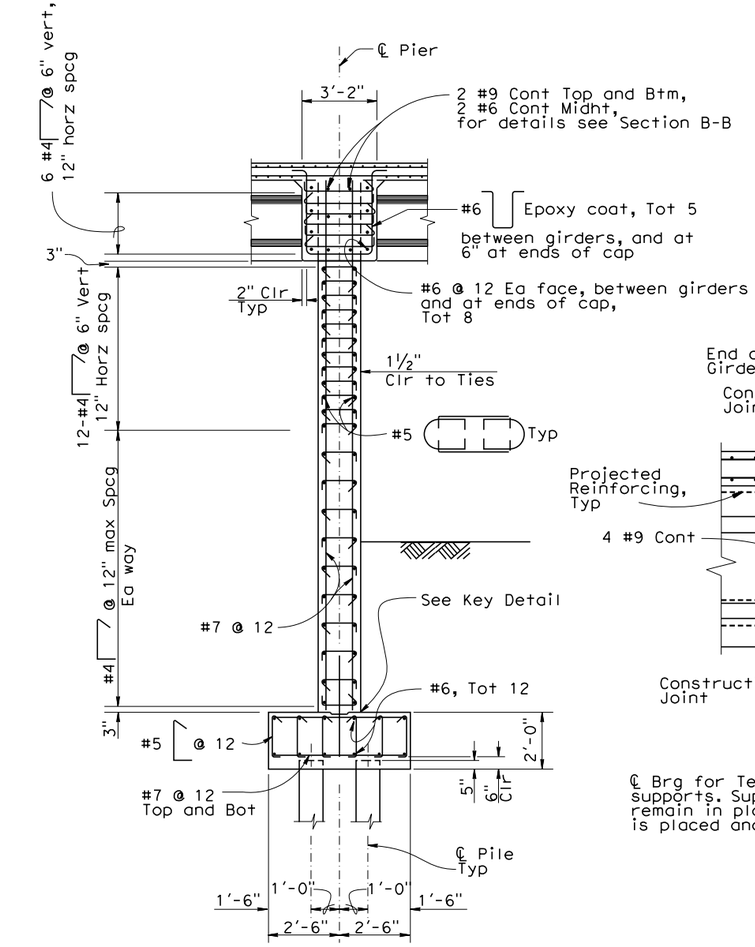
PIER CAP PLAN
Scale: ¼" = 1'-0"



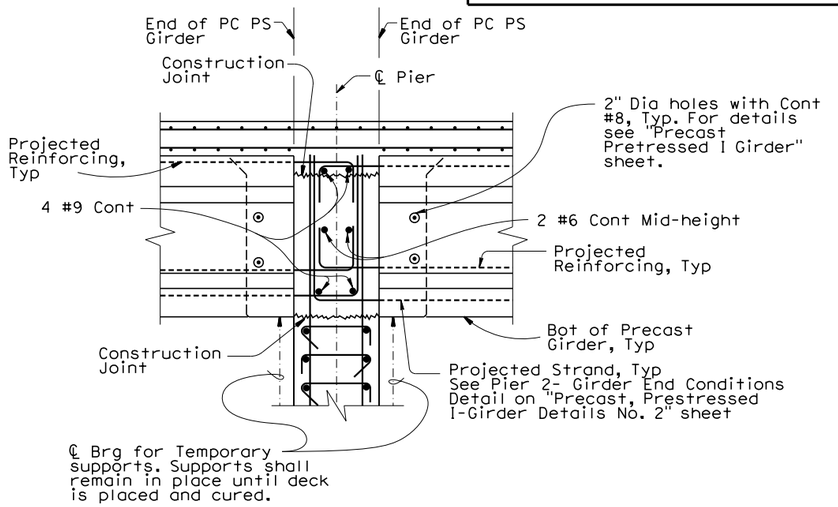
ELEVATION
Scale: ¼" = 1'-0"



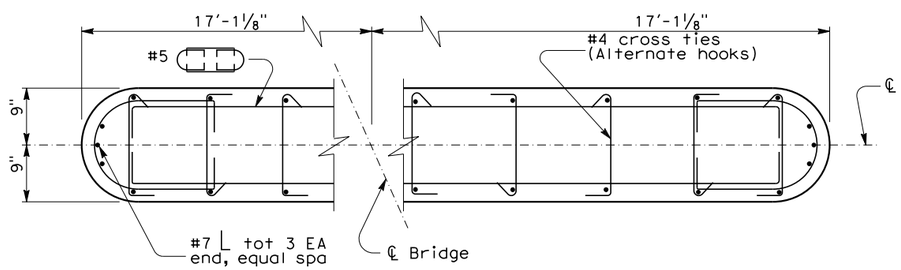
PIER FOOTING PLAN
Scale: ¼" = 1'-0"



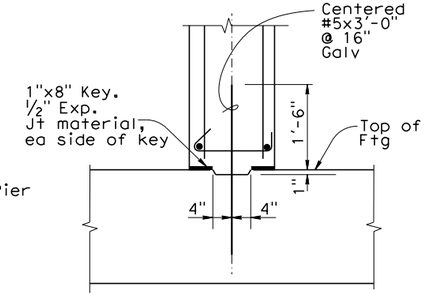
SECTION A-A
Scale: ⅜" = 1'-0"



SECTION B-B
Scale: ¾" = 1'-0"



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



KEY DETAIL
Scale: ¾" = 1'-0"

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

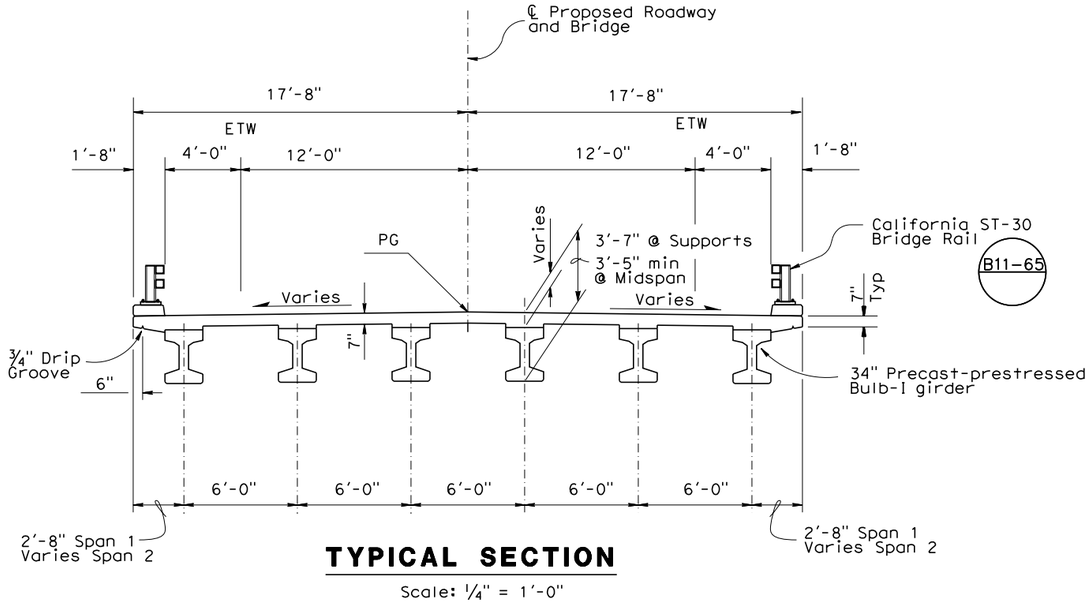
BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD
PIER DETAILS

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

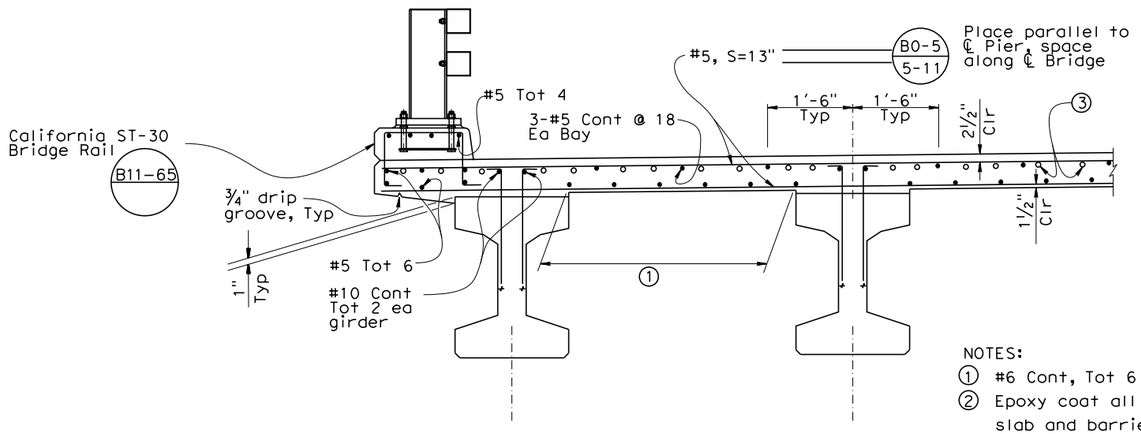
REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 7 OF 12



TYPICAL SECTION

Scale: ¼" = 1'-0"



PART TYPICAL SECTION

Scale: ¾" = 1'-0"

NOTES:

① #6 Cont, Tot 6 per bay

② Epoxy coat all bars in deck slab and barrier.

③ For main top longitudinal girder reinforcement see "Girder Layout and Deck Reinforcement" sheet.

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	56	60

REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 7C-102
POST MILE

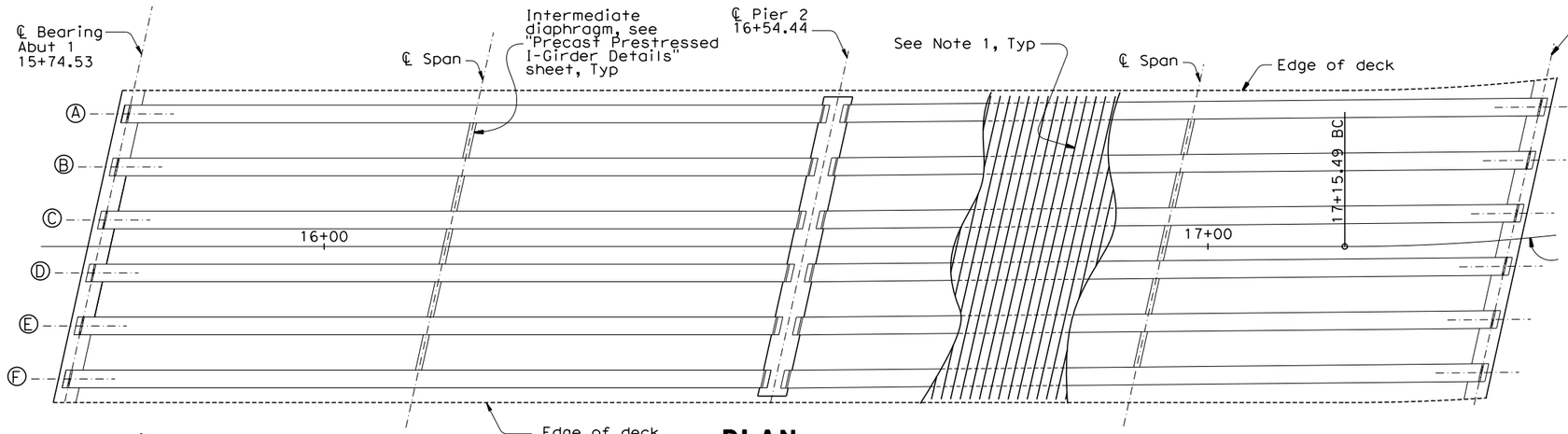
LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

TYPICAL SECTION

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

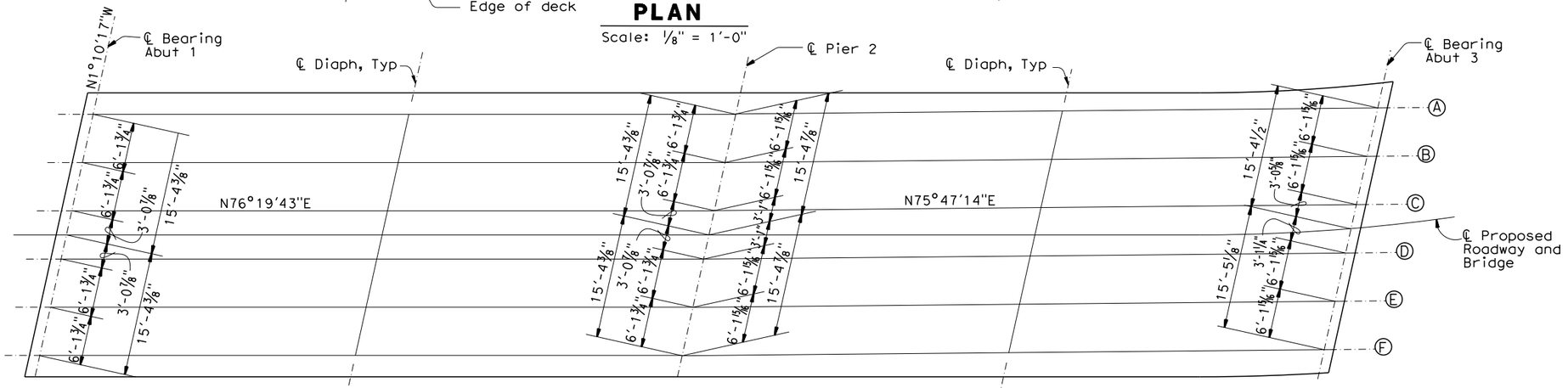
SHEET 8 OF 12



Note:
1. Transverse deck reinforcing to be placed parallel to ℄ Abutments and piers. See "Typical Section" sheet.

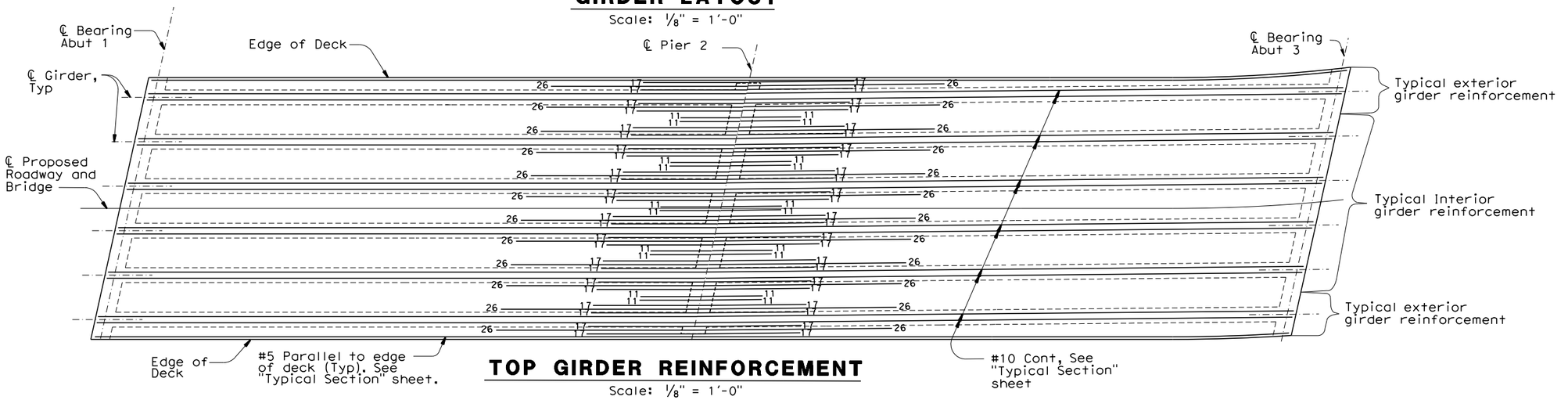
PLAN

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



GIRDER LAYOUT

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



TOP GIRDER REINFORCEMENT

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

NOTES:
1. All reinforcement #10 unless otherwise noted.
2. Numbers at end of bars indicate distance to bar end from ℄ pier.
3. Reinforcement shall be placed parallel to girders.

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	57	60

REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-21 — STRUCTURAL — STATE OF CALIFORNIA

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

Robert Morrison Jr.
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

BRIDGE NO. 7C-102
POST MILE

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD
GIRDER LAYOUT AND DECK REINFORCEMENT

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
3/3/21	9	12

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	58	60

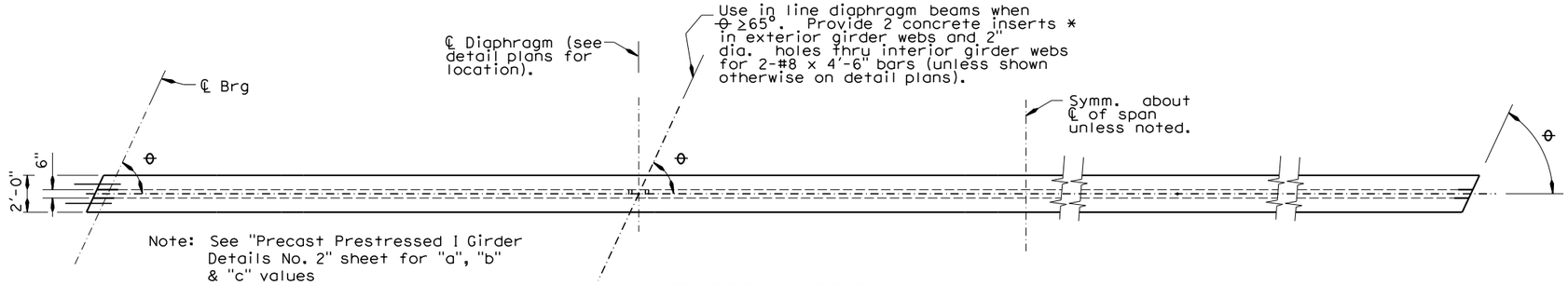
REGISTERED STRUCTURAL ENGINEER

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL STATE OF CALIFORNIA

March 3, 2021
PLANS APPROVAL DATE

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

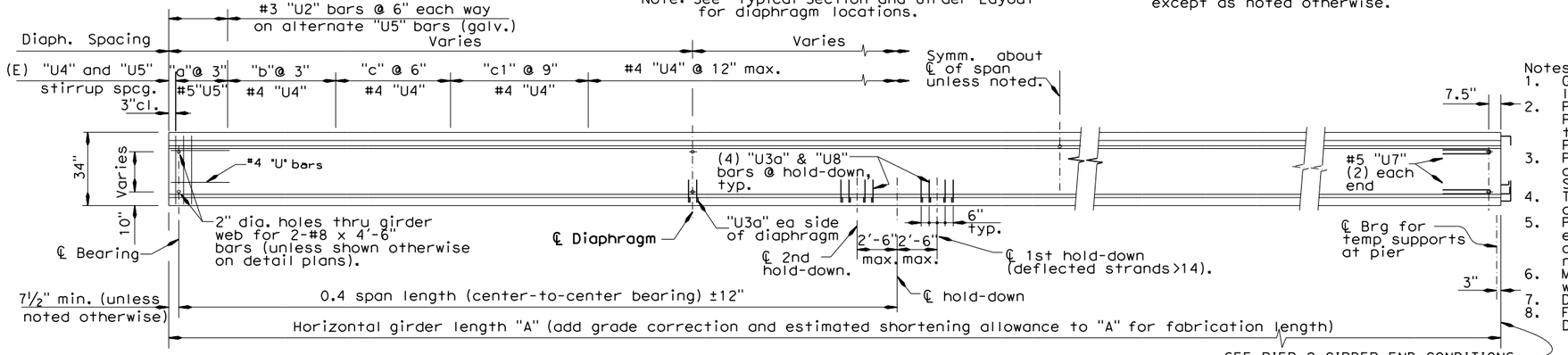
Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001



TYPICAL PLAN

Note: See "Typical Section and Girder Layout" for diaphragm locations.

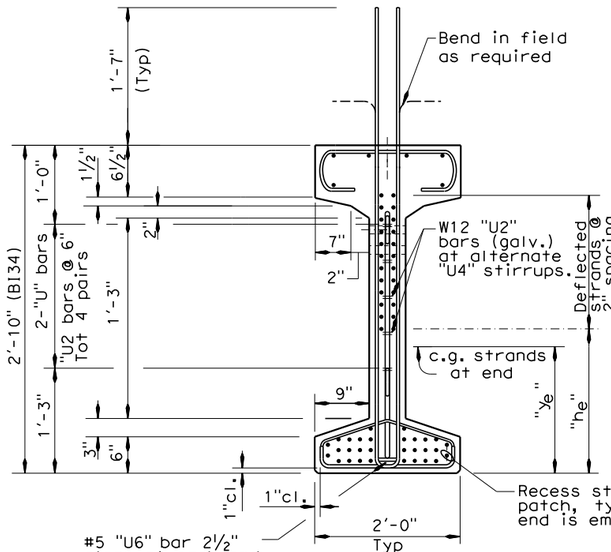
Note:
Girder details are symmetrical except as noted otherwise.



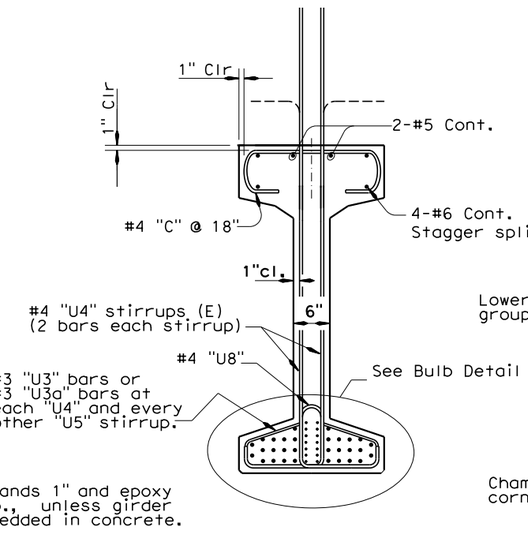
TYPICAL ELEVATION

Notes:
1. Girders are designed for live loading and superimposed dead load as shown in the General Notes.
2. Provide the strength of concrete shown on the Girder Schedule. Provide concrete strength at transfer of prestress not less than that shown on the Girder Schedule on "Precast, Prestressed I-Girder Details No.2" sheet.
3. Provide ½" dia. 7-wire low relaxation prestressing strands conforming to AASHTO M203 (ASTM A416) Grade 270, Supplement 1.
4. Tension straight strands initially to 31.0 kips, Ensure deflected strands have the same tension after deflecting.
5. Provide reinforcing steel as shown in the General Notes, except as noted. For "U2" bars, provide galvanized wire conforming to ASTM Specification A82. Cut ends need not be galvanized.
6. Maintain girders in an upright position at all times with the support points within 2'-0" of the girder ends.
7. Deflected strands may be bundled between hold-down points.
8. For details not shown, see "Precast, Prestressed I-Girder Details No. 2" sheet.

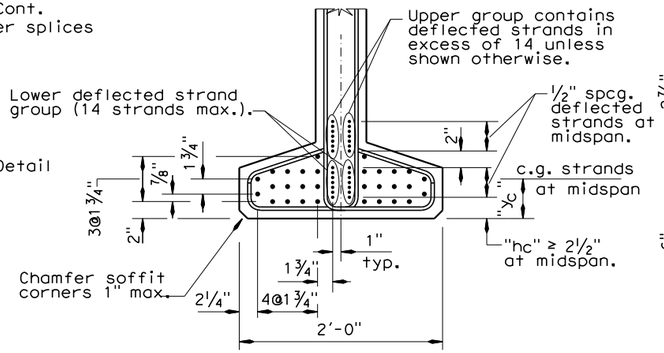
*CONCRETE INSERTS:
Hot-dip galvanized expanded coil concrete inserts with closed-back ferrule threaded to receive 1" x 2'-3" rods (ASTM A307) threaded full length.
Minimum insert length = 5".
Minimum safe working load in tension = 6000 lbs.



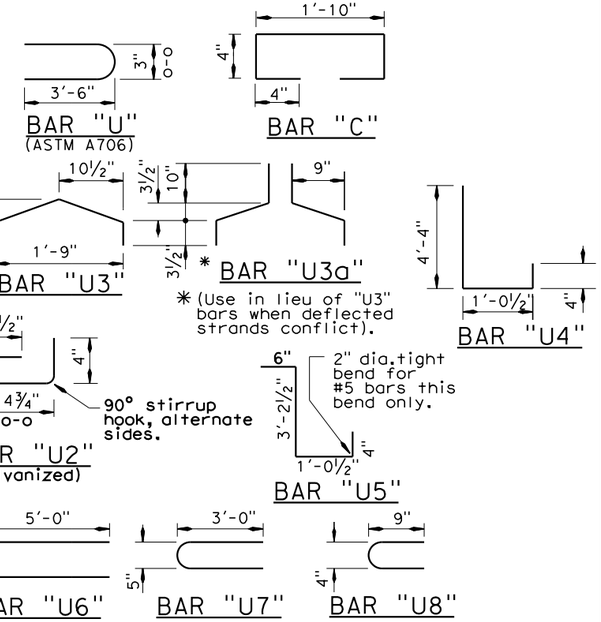
END VIEW



MIDSPAN SECTION



BULB DETAIL



BAR BENDING DETAILS

MORRISON STRUCTURES

	BY	CHECKED
DESIGN	R. Morrison, Jr.	D. Roesner
DETAILS	J. Gallino	D. Roesner
QUANTITIES	D. Roesner	J. Gallino, W. Morrison

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO.	7C-102
POST MILE	

LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD

PRECAST PRESTRESSED I-GIRDER DETAILS NO. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/3/21

SHEET 10 OF 12

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
02	LAS	CR322	0.27 TO 0.74	59	60

REGISTERED STRUCTURAL ENGINEER

March 3, 2021
PLANS APPROVAL DATE

Robert Morrison, Jr. No. S3577 Exp. 3-31-21 STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

Prepared for:
LASSEN COUNTY
DEPARTMENT OF PUBLIC WORKS
707 NEVADA STREET, SUITE 4
SUSANVILLE, CALIFORNIA 96130

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

GIRDER SCHEDULE

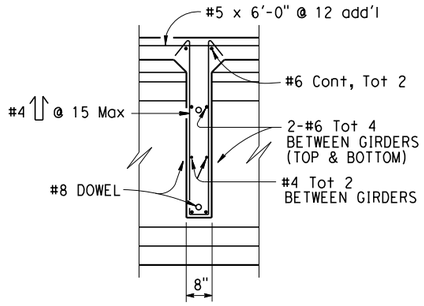
GIRDER NUMBER	NO. REQUIRED	LT. = LT. EXT. RT. = RT. EXT.	SPAN NUMBER	SPAN, CTR-CTR BRGS	"A" O-O GIRDER HORIZ. (After SHORTENING & GRADE CORRECTION)	"W" WIDTH OF FLANGE	GIRDER Weight, kips	CONCRETE STRENGTH* AT 28 DAYS, ksi	CONCRETE STRENGTH AT RELEASE, ksi	NO. OF STRANDS PER GIRDER "N"	DEFLECTED STRANDS PER GIRDER "Ds"	FIGURE NO. FOR STRAND PATTERN	STIRRUP SPACES a	STIRRUP SPACES b	STIRRUP SPACES c	STIRRUP SPACES c1	GIRDER END DIMENSIONS BACK ON STATION d	BACK ON STATION e	BACK ON STATION ϕ	AHEAD ON STATION d	AHEAD ON STATION e	AHEAD ON STATION ϕ	END OF DECK TO ℄ EDGE CONN. "f"	DIAPHRAGM OFFSET (6" MIN.) "DR"	DIAPHRAGM OFFSET (6" MIN.) "DL"	ESTIMATED MID-SPAN DEFLECTION DECK DL (ft)	ESTIMATED MID-SPAN DEFLECTION RAIL DL (ft)
1	6		1	78'-10⅝"	79'-9¼"	2'-0"	40	6.5	5.5	30	14	1	16	54	14	6	0"	—	77.5°	0"	—	77.5°	—	—	—	0.123	0.004
2	6		2	78'-10⅝"	79'-9¼"	2'-0"	40	6.5	5.5	30	14	1	16	54	14	6	0"	—	77.5°	0"	—	77.0°	—	—	—	0.123	0.004

	FIGURES					
	FIGURE 1 	FIGURE 2 	FIGURE 3 			
"N"	30					
"Ds"	14					
"Yc"	3.33"					
"hc"	2.50"					
	Back	Ahead	Back	Ahead	Back	Ahead
"Ye"	11.9"	11.9"				
"he"	17"	17"				

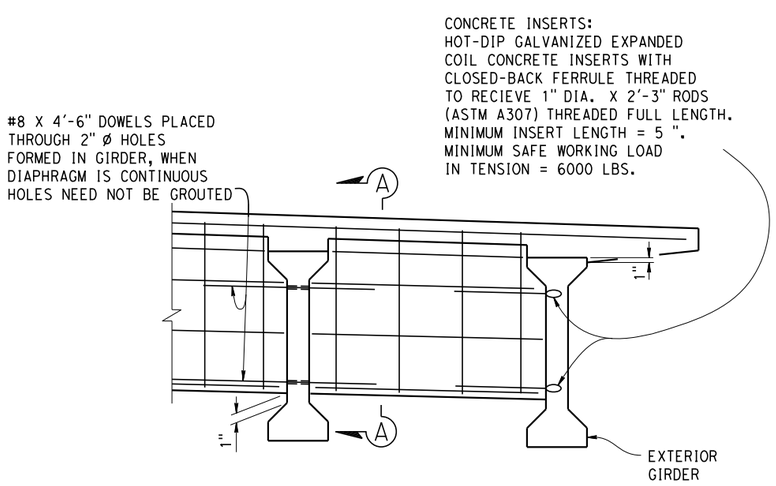
DETENSIONING NOTE:
Detension strands in a systematic order about girder ℄ to limit eccentricity.

girder ℄
8 1 2 7
9 4 3 10
12 5 6 11

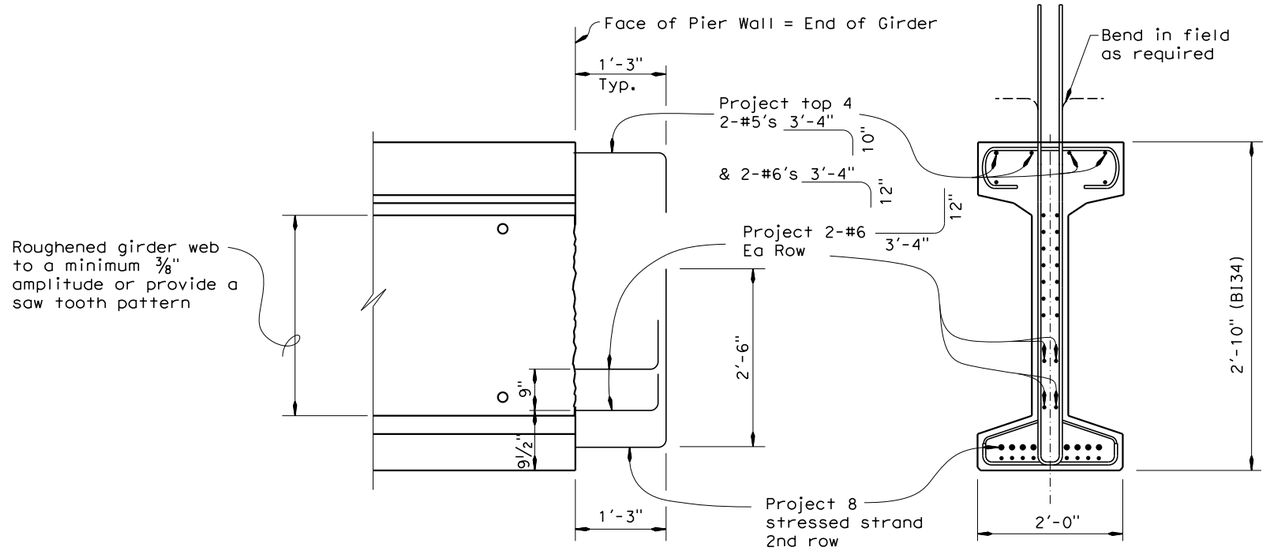
TYPICAL DETENSIONING ORDER



SECTION A-A



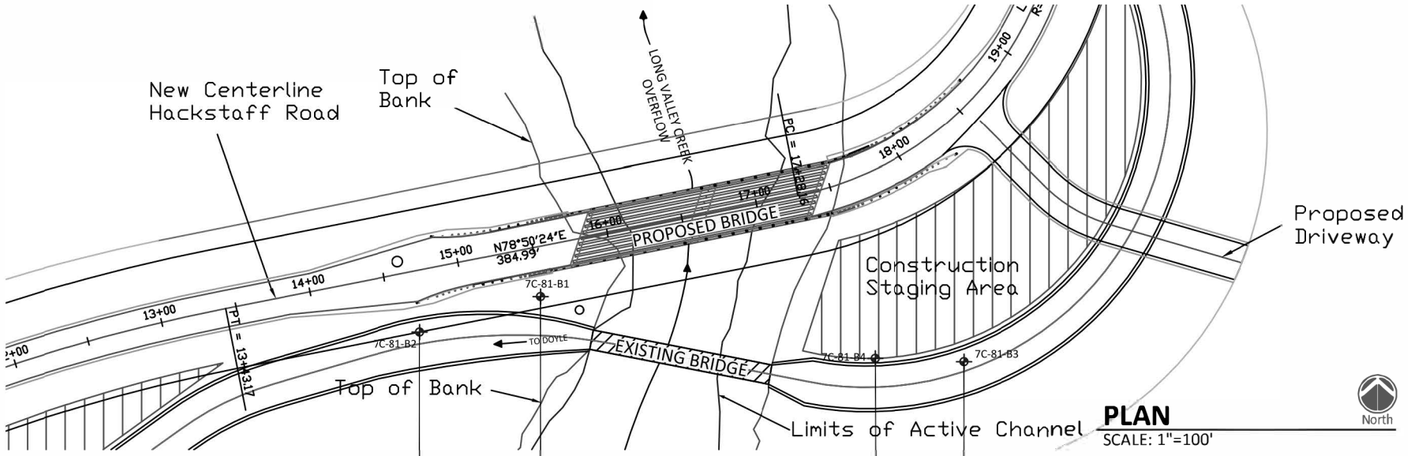
INTERMEDIATE DIAPHRAGM DETAIL



PIER 2-GIRDER END CONDITIONS

No Scale

MORRISON STRUCTURES	DESIGN	BY R. Morrison, Jr.	CHECKED D. Roesner	REUSE OF DOCUMENTS THIS DOCUMENT, AND THE IDEAS AND DESIGN INCORPORATED HEREIN, AS AN INVESTMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF MORRISON STRUCTURES, INC. AND IS NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF MORRISON STRUCTURES, INC. © MORRISON STRUCTURES, INC.	Robert Morrison Jr. PROJECT ENGINEER	BRIDGE NO. 7C-102	LONG VALLEY CREEK OVERFLOW BRIDGE ON HACKSTAFF ROAD		
	DETAILS	BY J. Gallino	CHECKED D. Roesner			POST MILE	PRECAST PRESTRESSED I-GIRDER DETAILS NO. 2		
	QUANTITIES	BY D. Roesner	CHECKED J. Gallino, W. Morrison						
		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3				DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) 3/3/21	SHEET 11	OF 12



PLAN
SCALE: 1"=100'

NOTES:
1. Field classification of soils was in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010). See Log of Test Borings No. 2, "Soil Legend".
2. Standard Penetration tests were performed using in accordance with ASTM D 1586-99 using a hammer operated with an automated drop system. Drill rods were 1 5/8-inch diameter "A"-rods; sampler was driven with brass liners.
3. "2.4 inch sampler": ID=2.4 inch, OD=2.9 inch. "2.0 inch sampler": ID=2.0 inch, OD=2.5 inch. Both driven in same manner as SPT ("1.4 inch") sampler.
4. If laboratory tests are not shown as being performed, the soil descriptions presented in the LOTB are based solely on the visual practices described in this Manual.
5. The length of each sampled interval is shown graphically on the boring log. Whole number blow counts ("N") represent the "standard penetration resistance" interval in accordance with the Caltrans Soil & Logging, Classification, and Presentation Manual (June 2010). Where less than 0.5 feet of penetration is achieved, the blow count shown is for that fraction of the "standard penetration resistance" interval actually penetrated.
6. Consistency of soils shown in ( ) where estimated.
7. Ground water surface (GWS) elevations in the borings indicated on the Log of Test Boring Sheets reflect the fluid level in the borings on the specified date.
8. Ground water surface elevations are subject to seasonal fluctuations and may occur at higher or lower elevations depending on the conditions at any particular time.
9. The "Log of Test Borings" drawing is included with plans in accordance with Section 2-1.03 of Caltrans "Standard Specifications".
10. Groundwater was encountered in boring 7C-81-B4, but elevation was not measured.
11. Test borings were drilled with offset (top of boring may not match profile grade).
12. Profile grade is based on proposed bridge alignment.

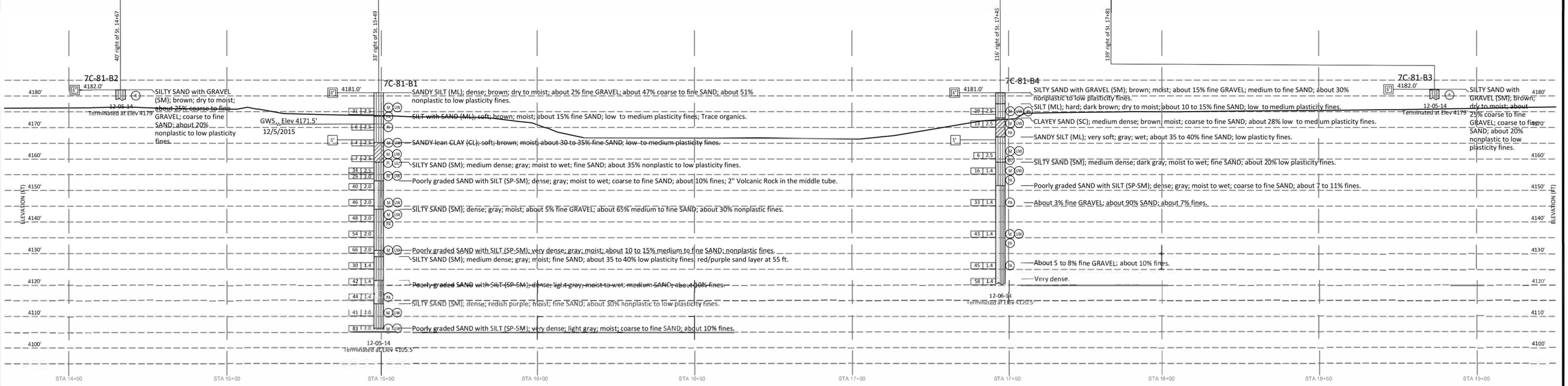
DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO	TOTAL SHEETS
2	LASSEN	CR322	0.27 to 0.74	60	60

REGISTERED CIVIL ENGINEER — DATE: 6-27-19

REGISTERED PROFESSIONAL ENGINEER — BENJAMIN D. CRAWFORD — No. 68457 — Exp. 9-30-19 — 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 electronic copies of this plan sheet.



NOTE:
New Bridge No. 7C-102
Exist Bridge No. 7C-81

PROFILE — HORIZ: 1"=30' VERT: 1"=30'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 7C-81	HACKSTAFF ROAD BRIDGE 7C-81
FUNCTIONAL SUPERVISOR	DRAWN BY: SJC	FIELD INVESTIGATION BY: Shawn M. Leyva		DESIGN BRANCH	POST MILE	LOG OF TEST BORINGS
NAME: Benjamin D. Crawford	CHECKED BY: AJK					

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 0.5 1.0 1.5

CU XXXXX EA XXXXXX

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
					12	12