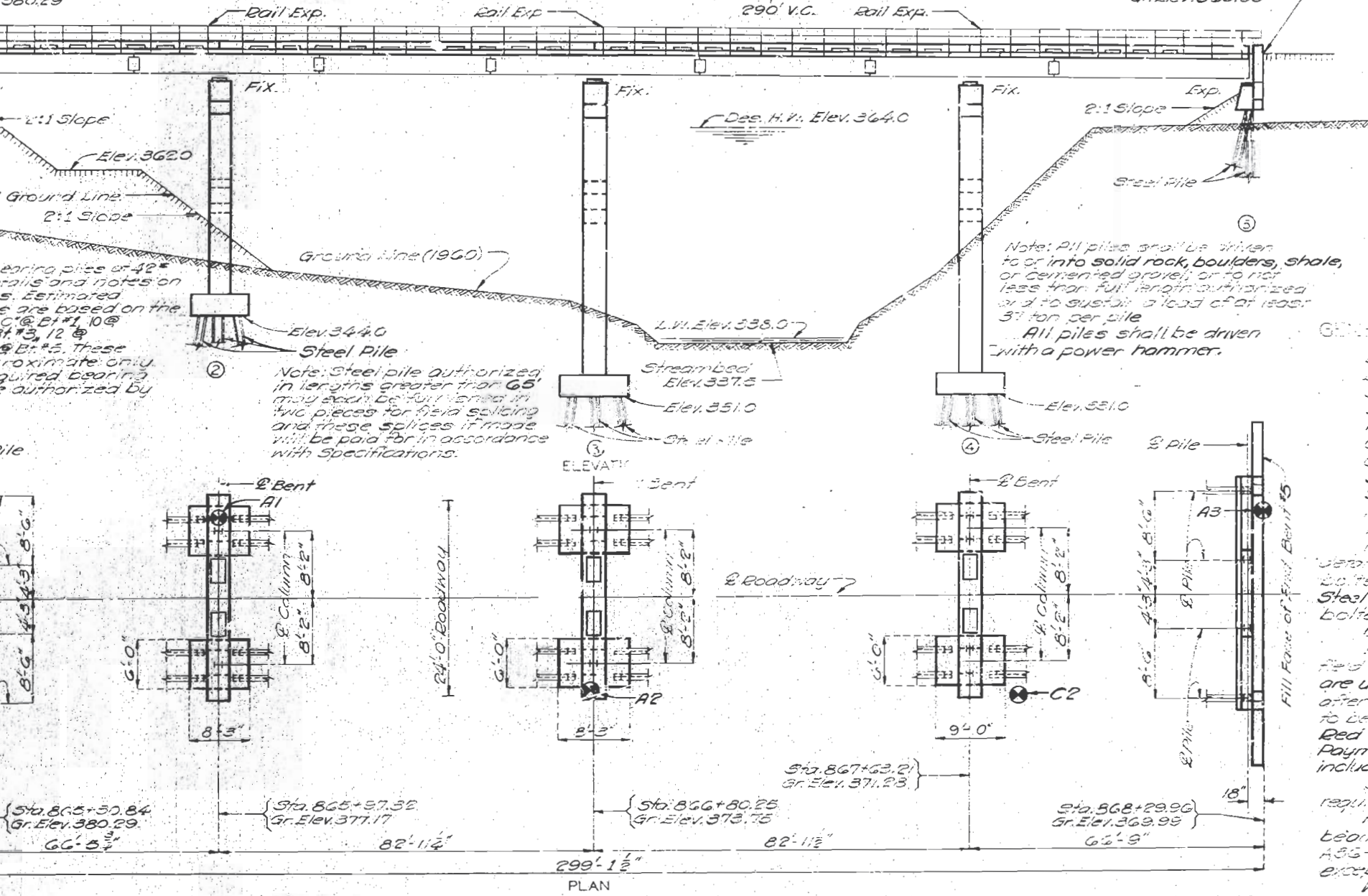
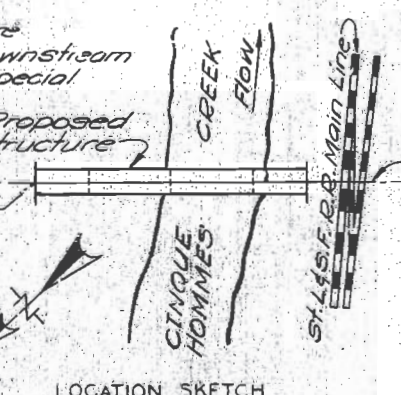




LOCATION SKETCH

Note: The estimated quantity of 10" steel piles in place include 14 estimated splices at 8' per splice.

Note: For details of soundings see sheet No. 7 of 8.
⊗ A1-A2-A3 - Auger
⊗ C1-C2 - Core

ESTIMATED QUANTITIES				
ITEM		SUBSTR.	SUPERSTR.	TOTAL
Class 1 Excavation for Structures	Cu. Yds.	160		160
Class 2 Excavation for Structures	Cu. Yds.	124		124
Steel Piles in Place (10" @ 42#)	Lin. Ft.	2352		2352
Steel Pile Cut-Offs (10" @ 42#)	Lin. Ft.	120		120
Class B Concrete	Cu. Yds.	129.9		129.9
Class B1 Concrete	Cu. Yds.		185.8	185.8
Reinforcing Steel	Lbs.	19,300	54520	73,820
Fabricated Structural Carbon Steel	Lbs.		185,480	185,480

Note: Excavation for bridge made above Elev. 339.0 will be paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 339.0 will be paid for as

Note: Con
shall be
concrete
25'-0" in
are driven
No p
Excavatio
1 and 5.

Note: All piles shall be driven to or into solid rock, boulders, shale, or cemented gravel, or to not less than full length authorized and to sustain a load of at least 37 ton per pile.
All piles shall be driven with a power hammer.

GENERAL NOTES

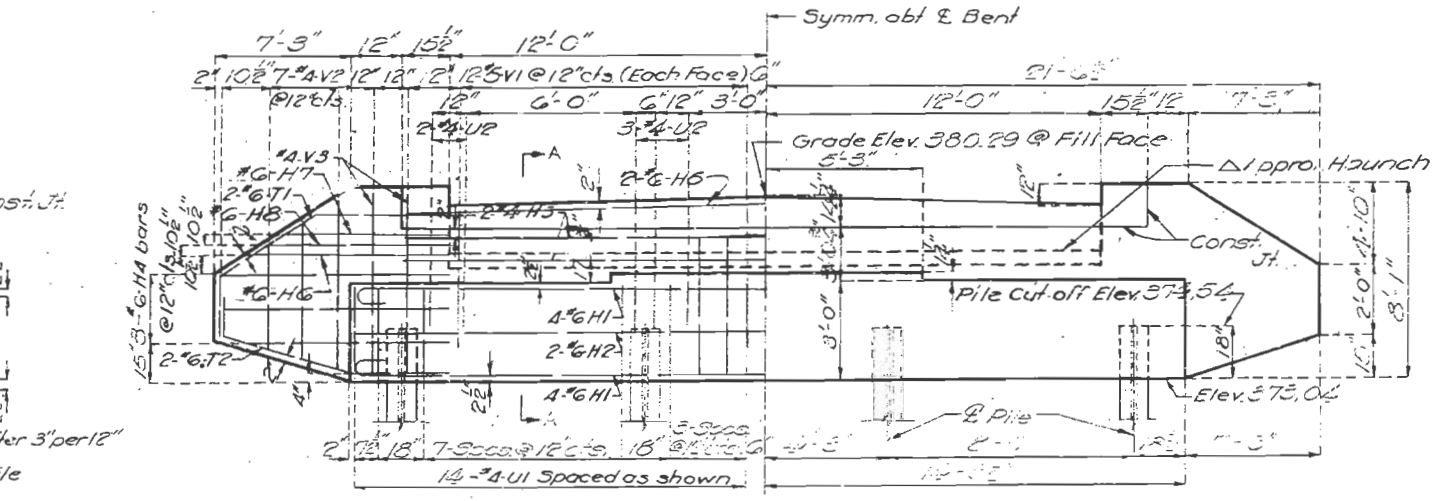
Design Specif
Loading: H15-4
Structural Stee
Structural Stee
Reinforcing Ste
Concrete, Class
Concrete, Class
Substructure
Superstructure
All concrete sh
Rivets ¾" have
Field connectio
rivets may be rive
holes. Final pay w
Steel will be based
bolted connections
Qualification of
Paint: Shop, inc
field connections, e
are used, one coat
after erection, three
to be touched by C
Red lead required
Payment for cleani
included in unit price
See Section 20
required painting
Fabricated str
beams, flange and
A36-20T and all
except as noted fo
Where joint fil
conform with the
the Standard Spec
Permits must b
legal length.

U.S.G.S. Da
B.M. #2 Elev.
Signal Base

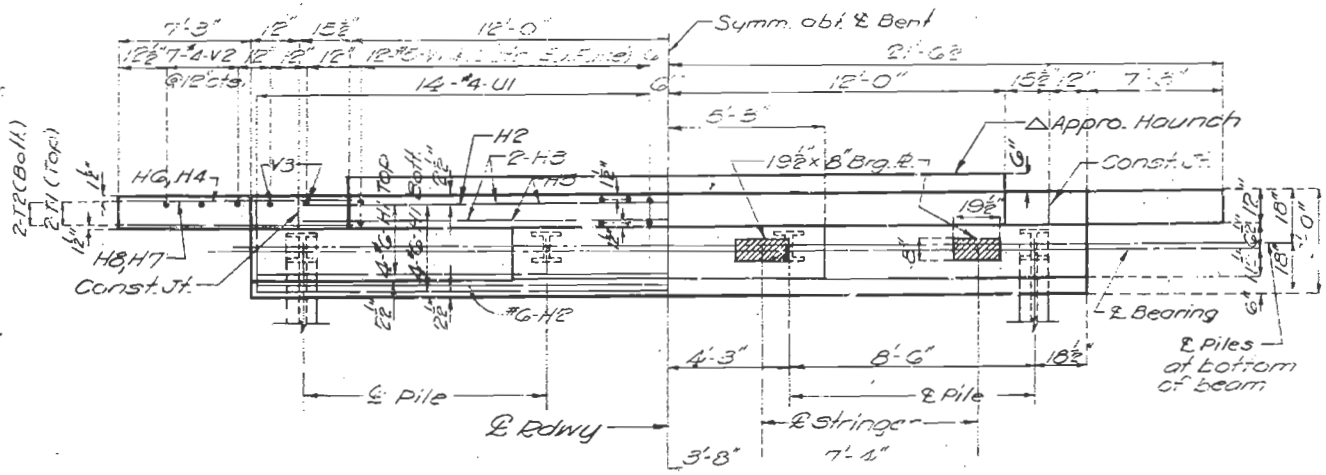
BRIDGE O

STATE ROAD
AT MENFRO
PROJECT NO.

PERRY

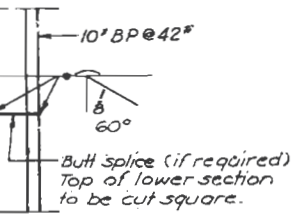


ELEVATION



PLAN

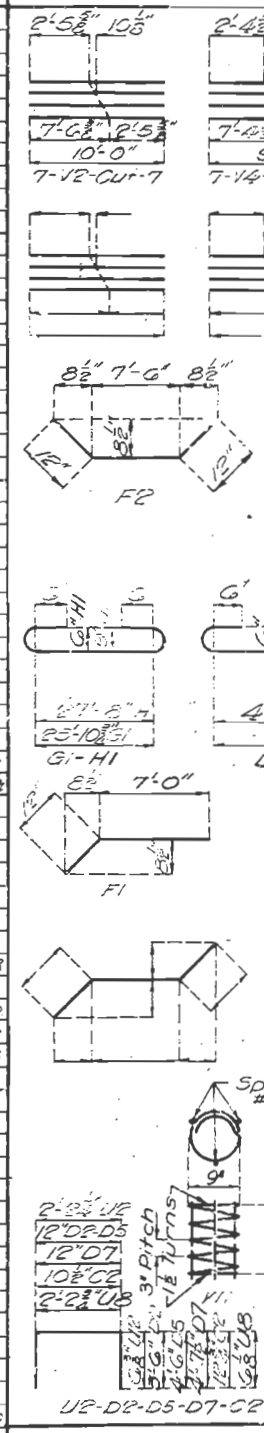
DETAILS OF END BENT NO. 1



EEL PILE SPLICE

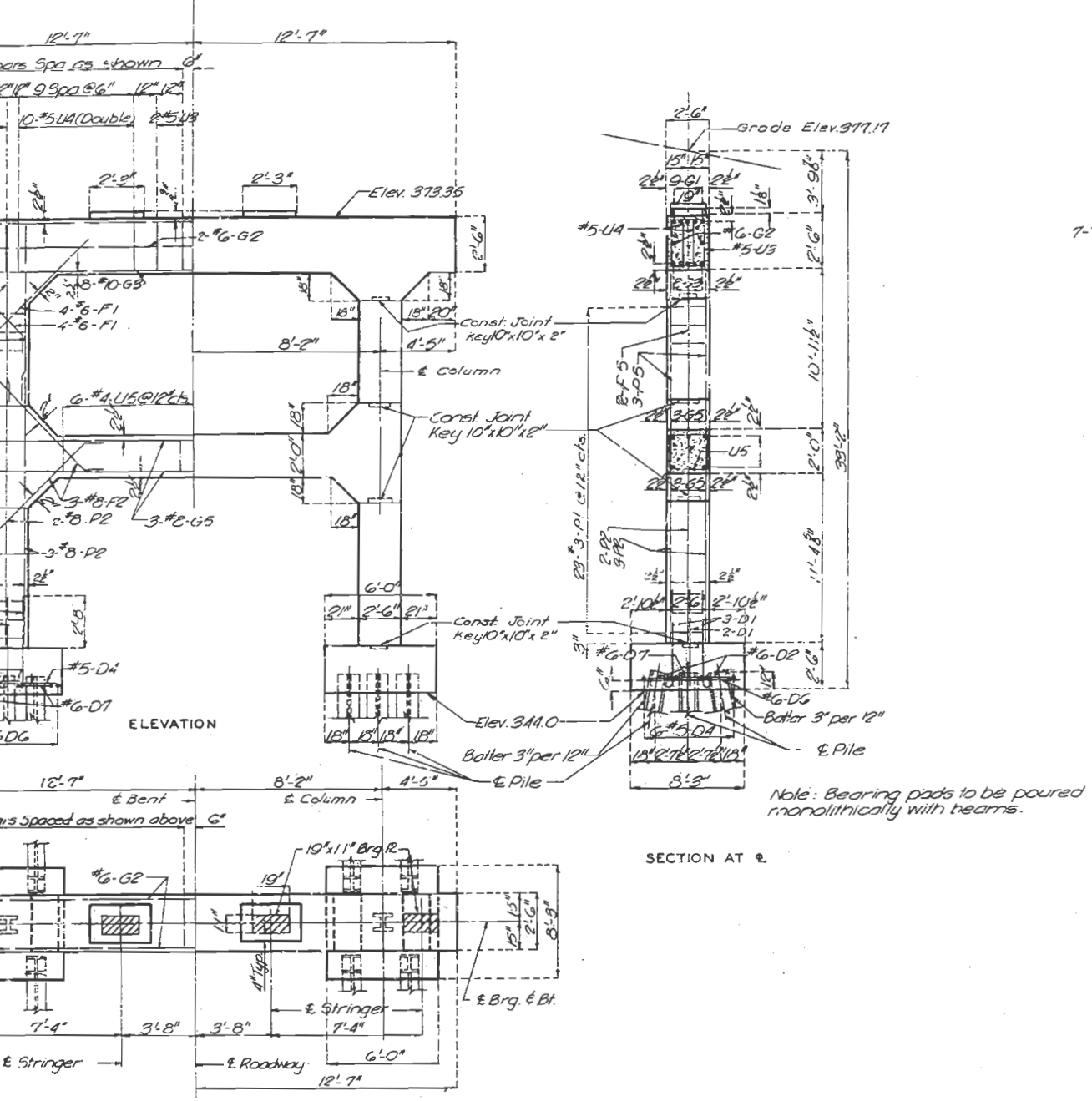
NO.	SIZE	LENGTH	MARK	LOCATION
End Bent No. 1				
8	#6	30'-3"	H1	Beam
2	#6	28'-3"	H2	"
4	#4	26'-3"	H3	Bkwll.
6	#6	9'-3"	H4	Wing
2	#6	26'-3"	H5	Bkwll.
2	#6	8'-9"	H6	Wing
2	#6	6'-3"	H7	"
2	#6	7'-6"	H8	"
4	#6	13'-3"	T1	Wing
4	#6	11'-0"	T2	"
28	#4	11'-3"	U1	Beam
10	#4	3'-5"	U2	"
48	#5	5'-9"	V1	Bkwll.
7	#4	10'-0"	V2	Wing
4	#4	7'-9"	V3	"
8	#2	19'-9"	W1	A.B. Wells
Int. Bent #2 & Bent #3				
32	#8	5'-3"	D1	Fig.
8	#6	8'-0"	D2	
24	#5	5'-9"	D4	Fig.
32	#6	5'-0"	D3	Fig.
16	#6	8'-3"	D5	"
32	#6	2'-0"	F	Col. Hdl.
15	#9	27'-3"	G1	Bm. Bt. #2-8 Bt. #3-7
4	#6	24'-9"	G2	Beam
15	#10	24'-9"	G3	Bm. Bt. #2-8 Bt. #3-7
12	#6	12'-6"	G5	Tie Beam
110	#3	9'-9"	P1	Col. Bt. #2-4 Bt. #3-5
16	#8	17'-6"	P2	Col. Bt. #2
16	#8	27'-0"	P3	Col. Bt. #3
32	#7	11'-9"	P5	Col.
20	#5	10'-0"	U3	Bm. Bt. #2
40	#5	8'-3"	U4	" " "
22	#4	8'-9"	U5	Tie Beam
16	#5	10'-6"	U6	Bm. Bt. #3
28	#5	8'-9"	U7	"
24	#8	9'-6"	F2	Tie Beam
16	#2	19'-9"	W1	A.B. Wells
12	#4	3'-3"	U8	Bm. Bt. #3
Int. Bent #4				
24	#6	5'-9"	D1	Fig.
8	#6	8'-0"	D2	"
12	#5	5'-9"	D4	"
16	#6	8'-9"	D3	"
8	#6	10'-0"	D5	"
16	#6	8'-0"	F1	Col. Hdl.
8	#9	27'-3"	G1	Beam
2	#6	24'-9"	G2	"
8	#10	24'-9"	G3	"
60	#3	9'-9"	P1	Column
16	#7	11'-9"	P5	"
16	#8	24'-6"	P7	"
20	#5	10'-0"	U3	Beam
40	#5	8'-3"	U4	"
11	#4	8'-9"	U5	Tie Beam
6	#8	18'-6"	G5	" "
8	#8	8'-0"	P4	Column

BENDING SKETCHES
CUTTING DIAGRAM



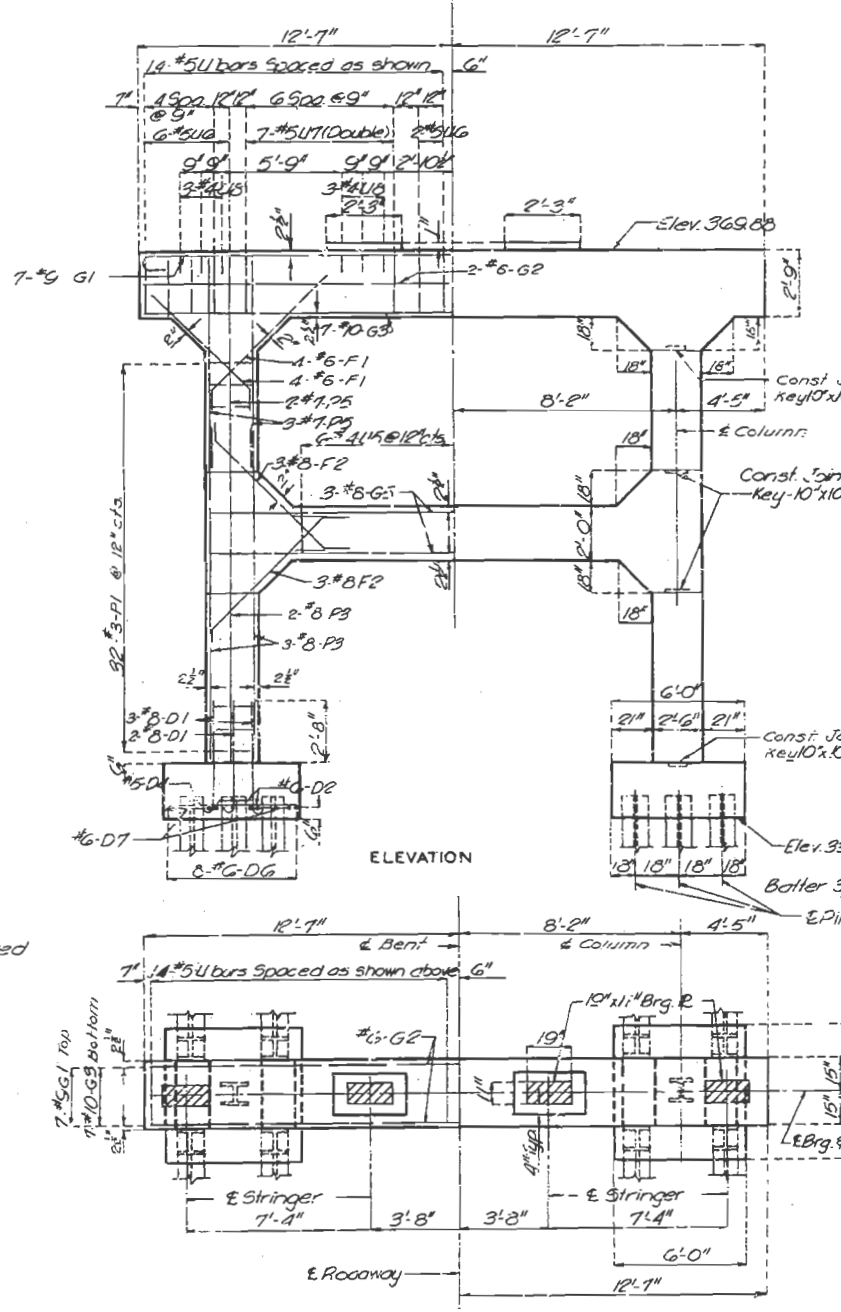
BRIDGE OV

STATE ROAD:
AT MENFRO
PROJECT NO.



PLAN

DETAILS OF INTERMEDIATE BENT NO. 2



PLAN

DETAILS OF INTERMEDIATE BENT NO. 3

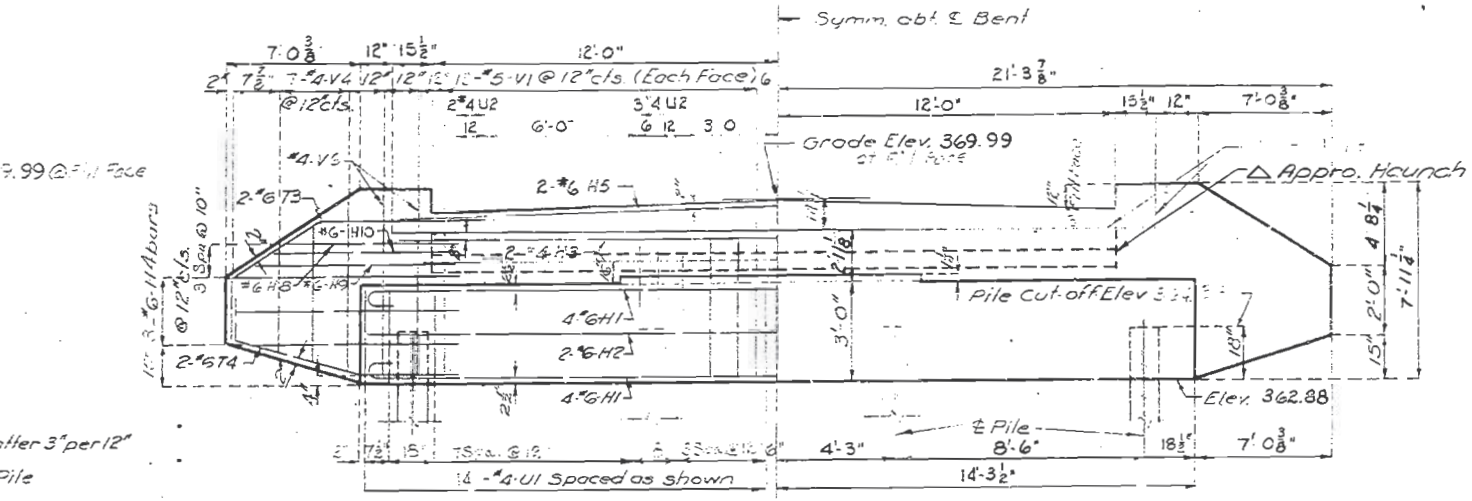
BRIDGE OV

STATE ROAD:

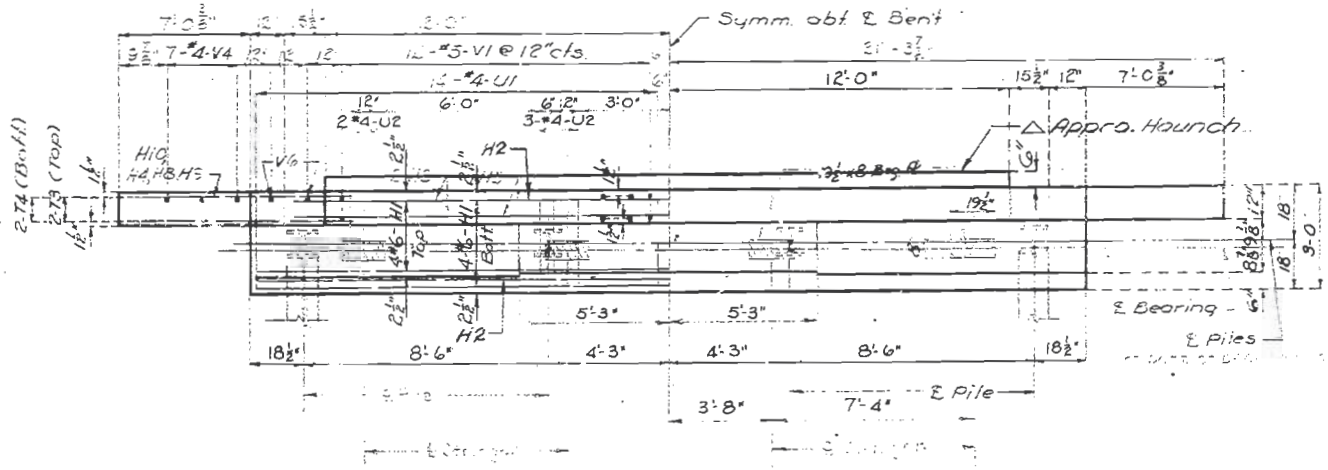
AT MENFRO

PROJECT NO.

FINISHED

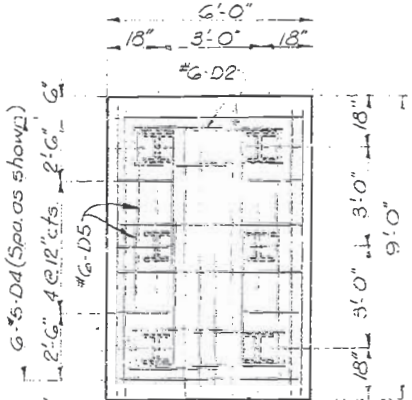


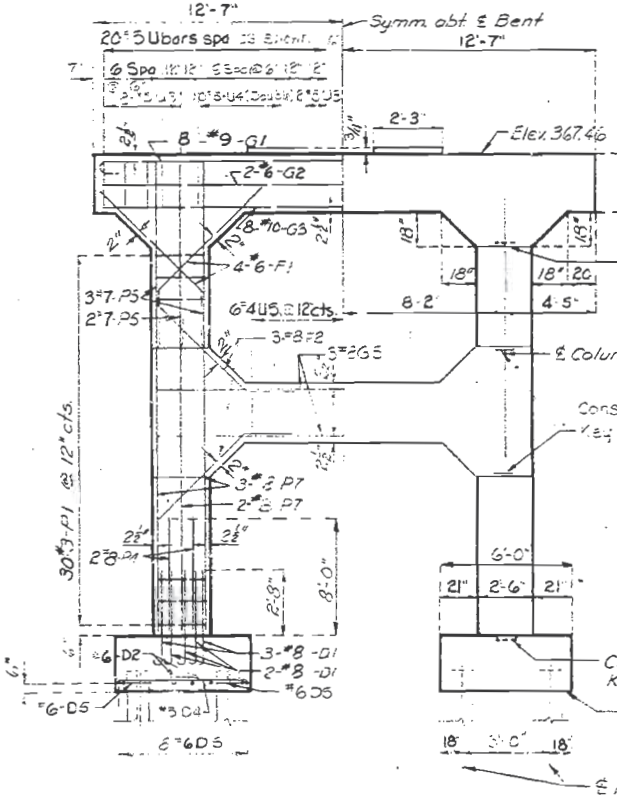
ELEVATION



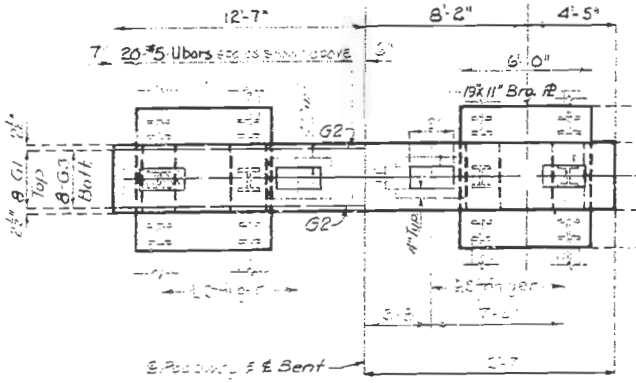
PLAN

DETAILS OF END BENT NO. 5





ELEVATION



PLAN

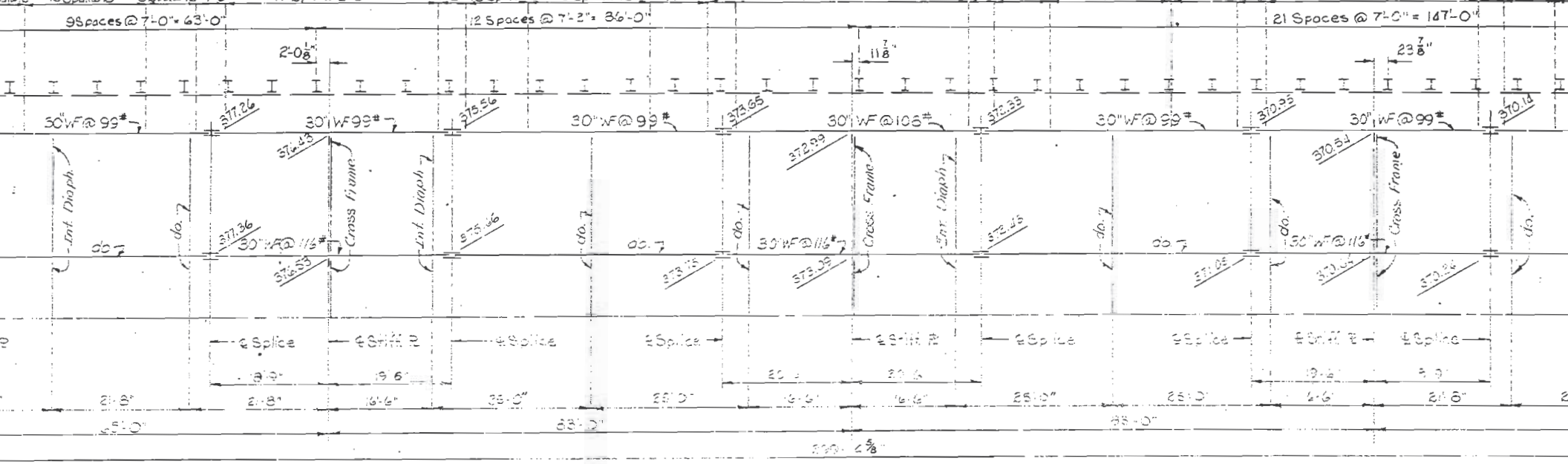
DETAILS OF INT. BENT NO. 4

BRIDGE O

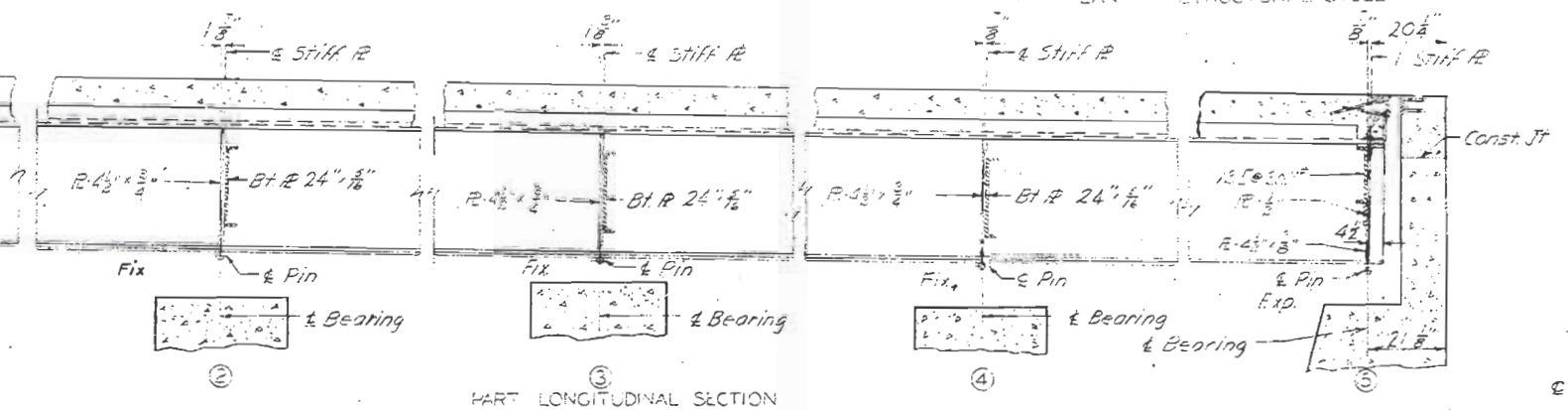
STATE ROAD

AT MENFRO

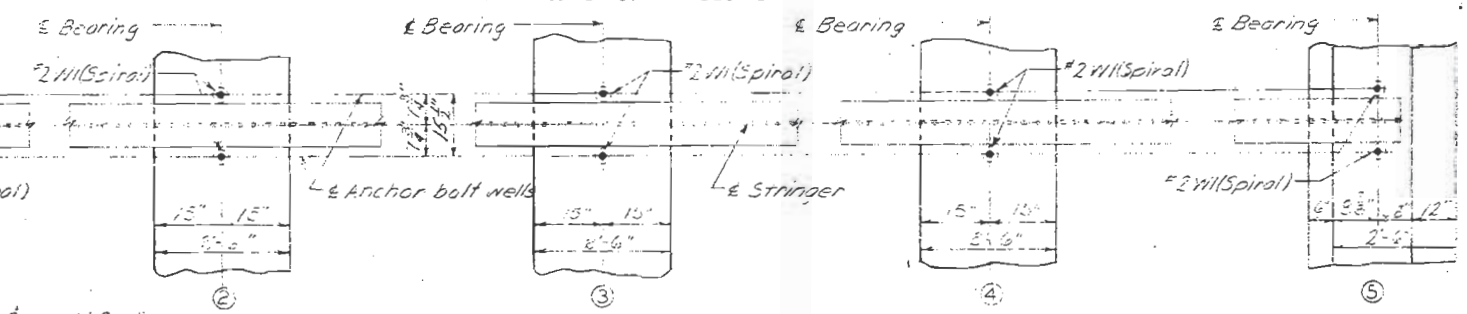
t No. 5
above bottom of
superstructure
place.
and expansion
No. 5 to
roadway slab.
construction
ured until the
the expansion
stalled and
ed in adjacent



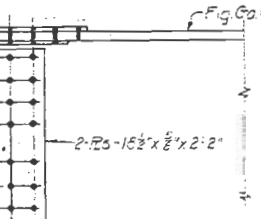
PART PLAN STRUCTURAL STEEL



PART LONGITUDINAL SECTION

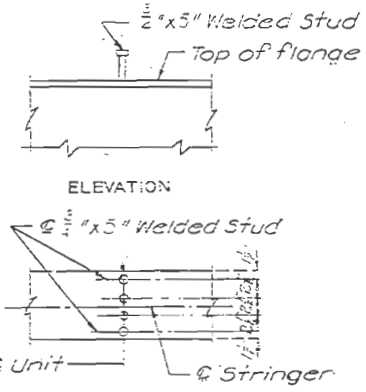


PART ANCHOR BOLT PLAN

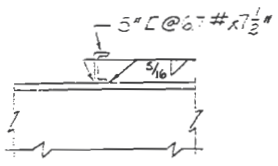


	"A"	"B"	"C"	"D"	"E"	"F" Spcs	"G"	"J"
30" WF @ 99# to 99#	7/16"	2'-0 1/2"	—	—	—	3	1/2"	18 1/2"
" " " " " 108#	7/16"	2'-0 1/2"	13 Ga.	7 Ga.	12"	3	1/2"	18 1/2"
" " " " " 116#	7/16"	2'-0 1/2"	7/16"	1/2"	12"	3	1/2"	18 1/2"

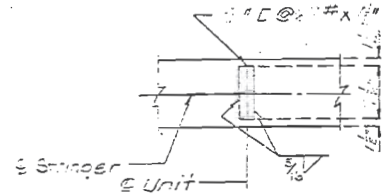
DETAILS OF FIELD SPLICE



PLAN OF STUD CONN.



ELEVATION



PLAN OF CHANNEL CONN.

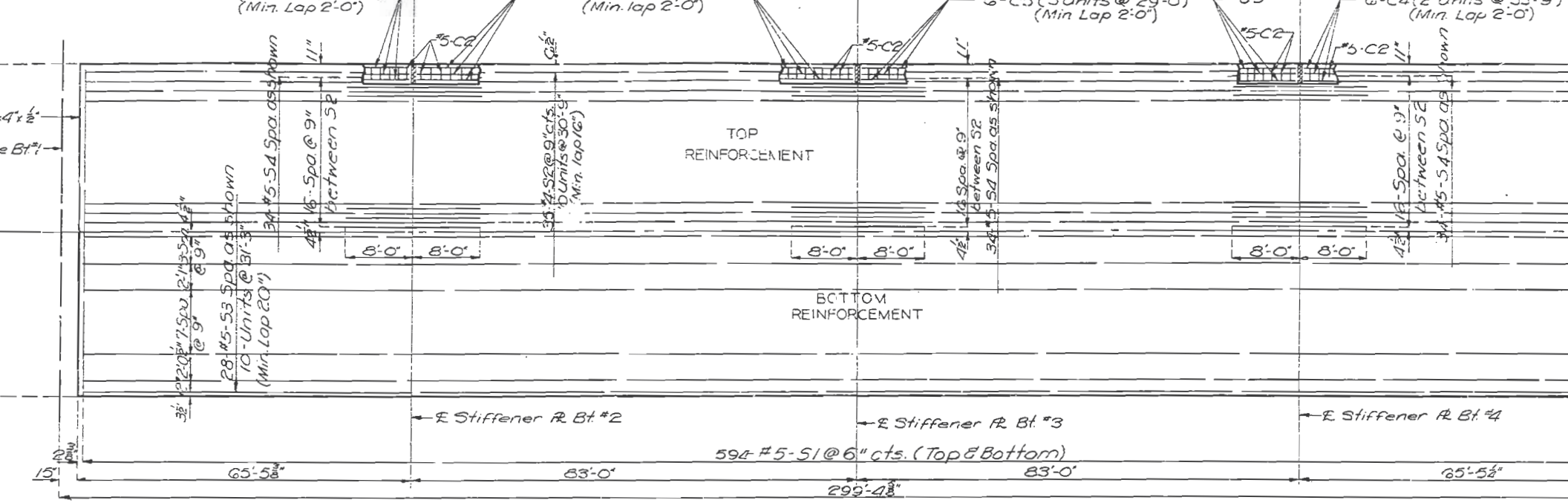
Note: See Special Provisions for shear connectors. Weight of 2440 # of shear connectors (based on studs) is included in weight of Fabricated Structural Steel.

BRIDGE O

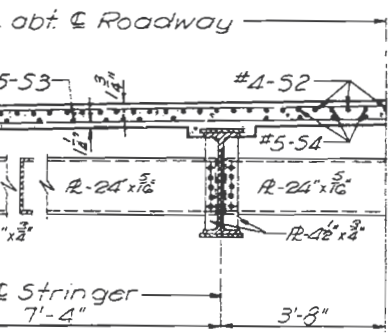
STATE ROAD

AT MENFRO

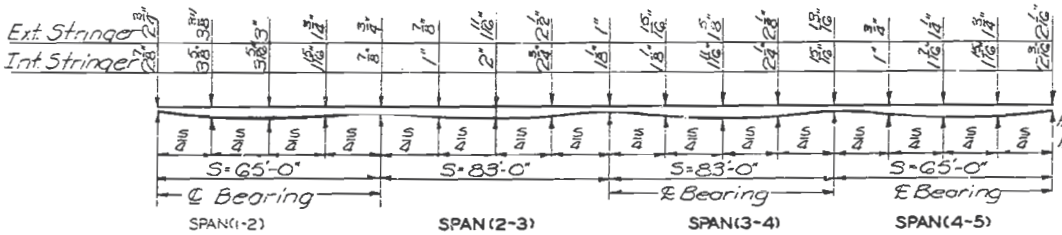
PROJECT NO.



PLAN OF SLAB SHOWING REINFORCEMENT

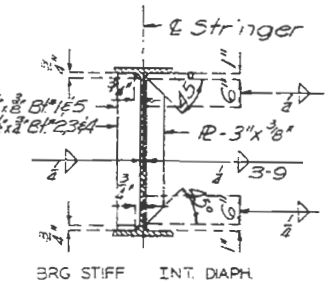


ALF SECTION AT INT. BENTS



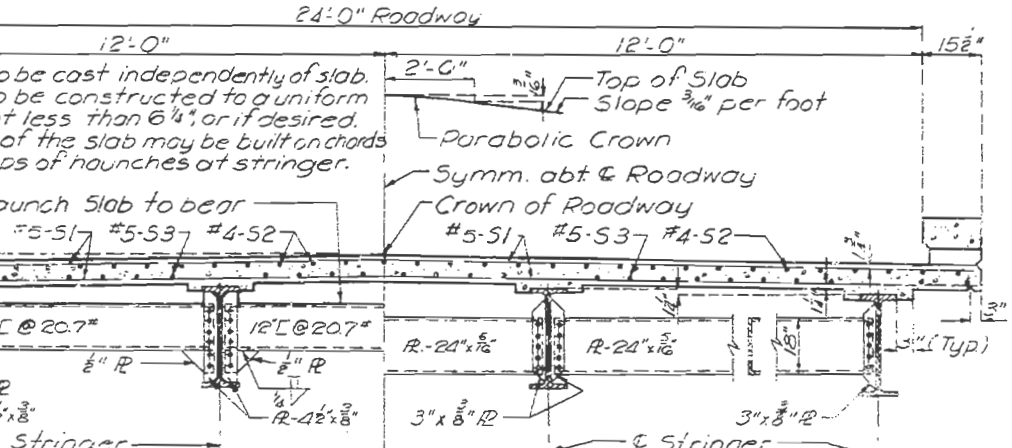
Note: The slab shall be built parallel to grade and to a minimum thickness of 6 1/4". Dead load deflection (16% due to weight of structural steel) and vertical curve (if any) shall be taken care of by haunching to the top of stringer by the dimensions shown. This additional concrete (flange, flange plates, splice plates, etc. excluded) is included in Estimated Quantities.

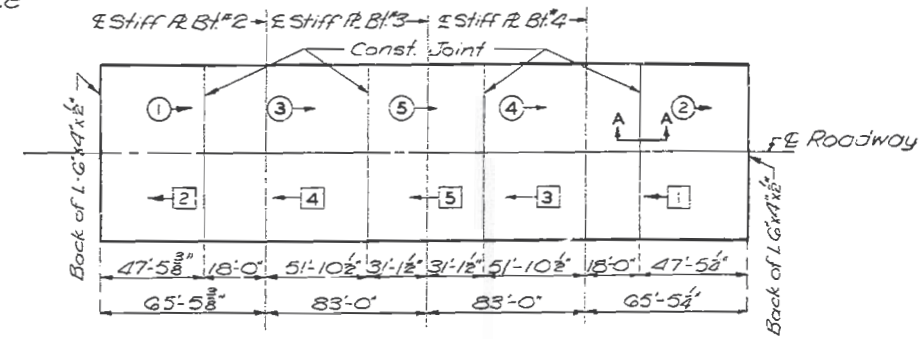
SLAB HAUNCHING DIAGRAMS



BRG STIFF INT. DIAPH.

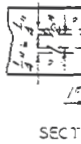
WELDING DETAILS





Note: The slab shall be poured in sections of the lengths shown above and in the sequence indicated by the numbers 1 2 3 4 5 or as an alternate by the numbers [1] [2] [3] [4] [5]. The separate pours shall progress in the direction indicated by the arrows. Longitudinal construction joints will not be permitted.

The above pouring sequence and the number of construction joints may be altered by the Engineer



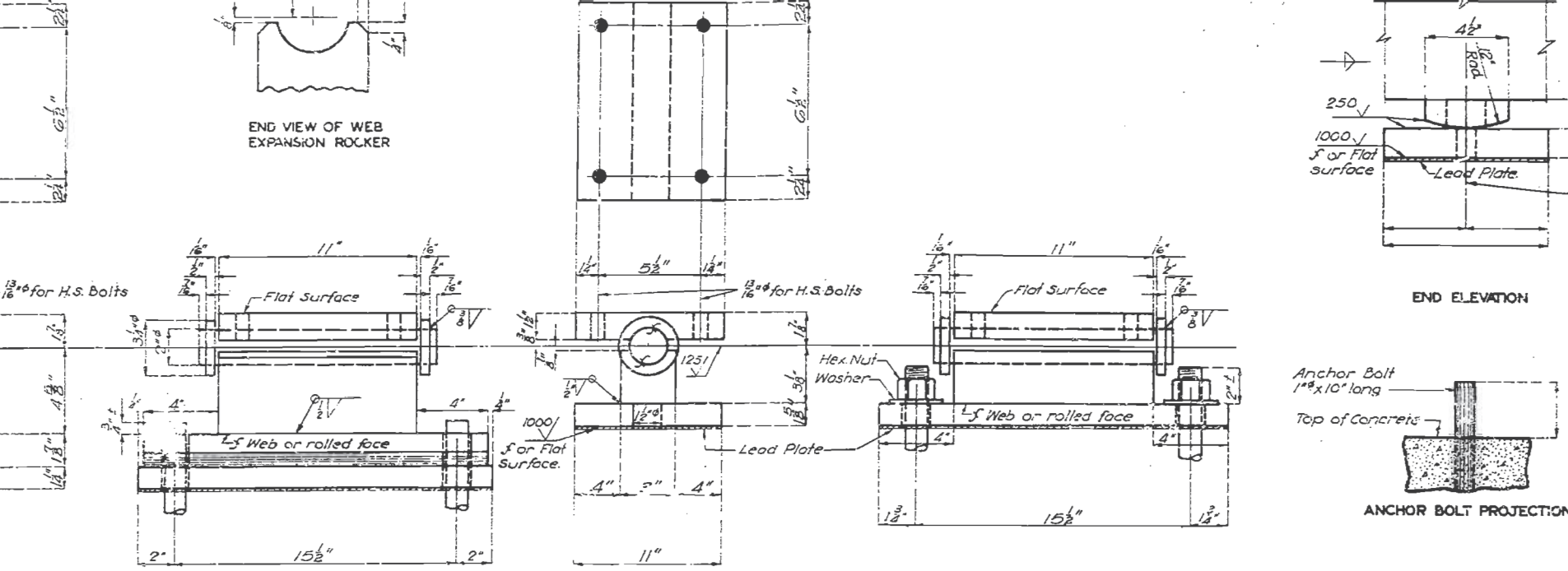
SECT

BRIDGE OV

STATE ROAD

AT MENFRO

PROJECT N



EXPANSION

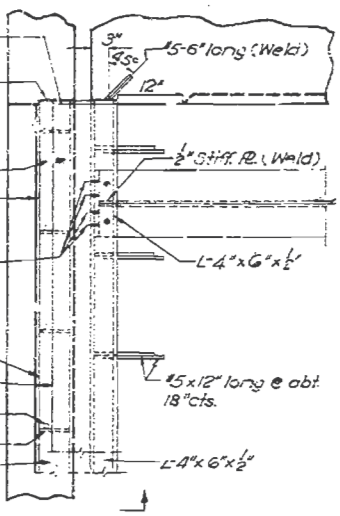
8 Required
4 Bt. #1
4 Bt. #5

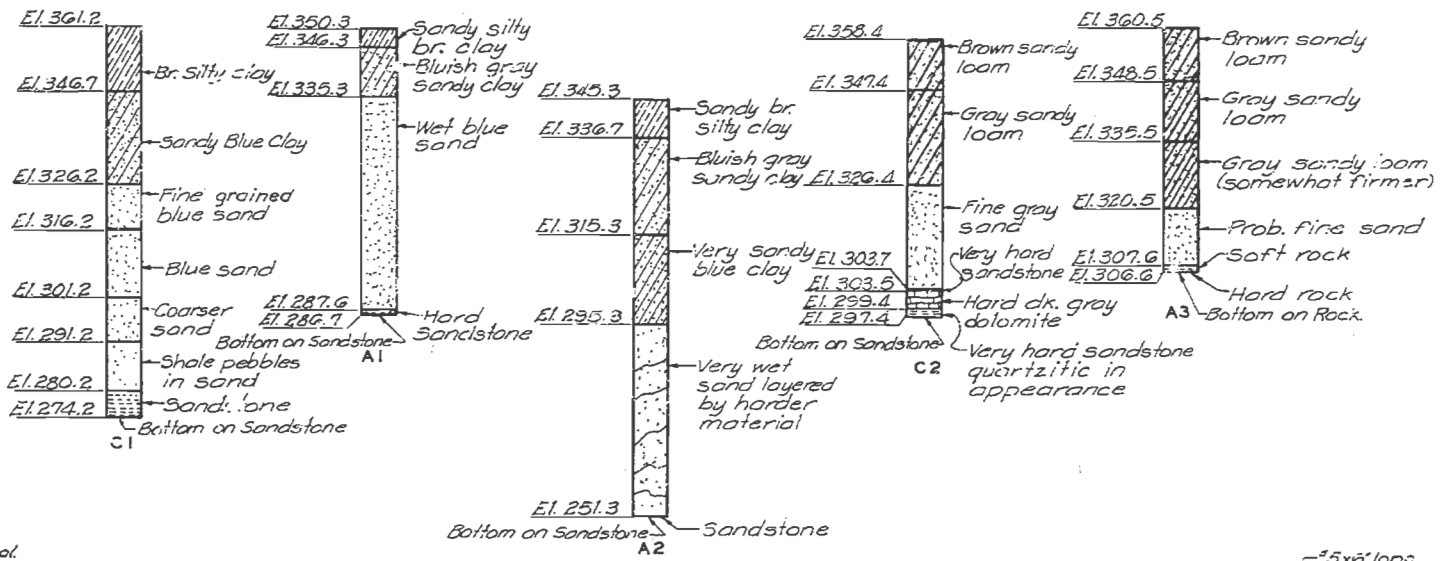
TYPE "D" BEARINGS

(Est. Wt. 3460#)

FIXED

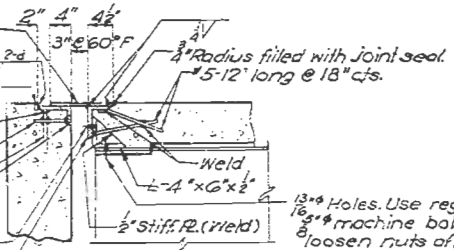
12 Required
4 - Bt. #2
4 - Bt. #3
4 - Bt. #4

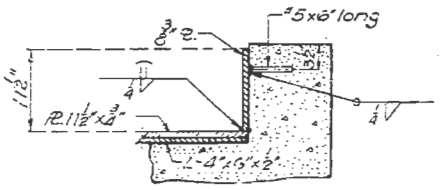




LOG OF SOUNDINGS

Note: Sounding A1, A2 & A3 were made with auger. Sounding C1 & C2 were made with core drill.





Required:

TYP

GENERAL NOTES:

Material for Typ
Steel or A7 meeting t
Material for Typ
Material for Pir
Anchor Bolts fo
shall extend 12" into
for Fixed Bearings,
Anchor Bolts fo
long with no heads
approximately ½" belo
Lead Plates und
and weigh 8#/sq. Fo
bid for other items.
Material for Be
Carbon Steel

Note: Expansion Devic
be bent to conform to
#5 Bars for e
Approved stud wel
#5 bars shown.

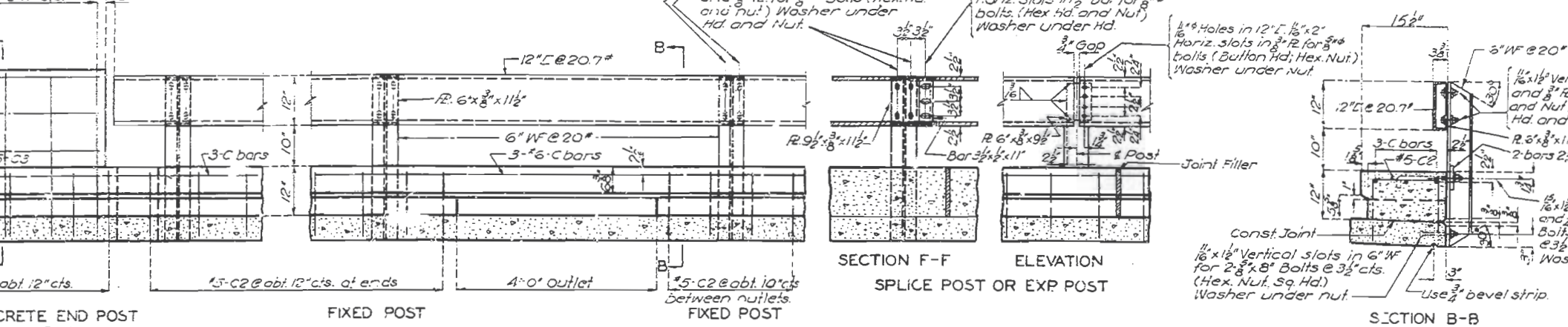
BRIDGE O

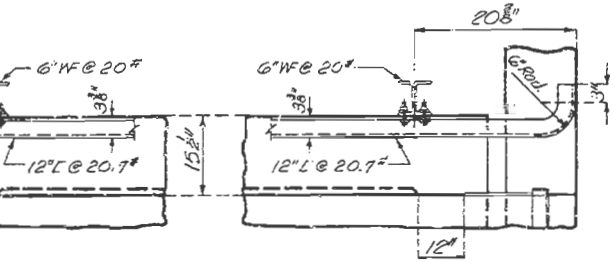
STATE ROAD

AT MENFRO

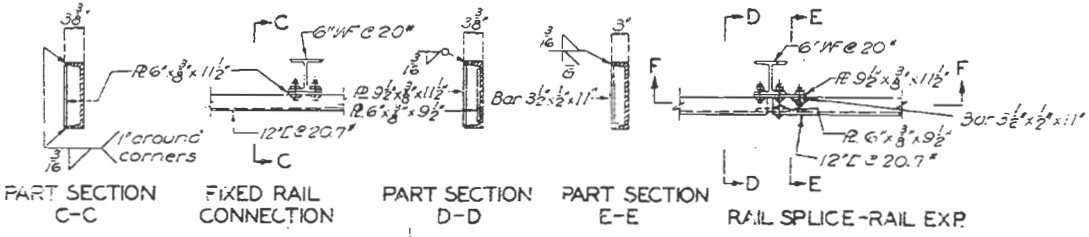
PROJECT NO.

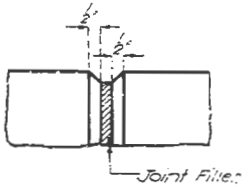
PERRY





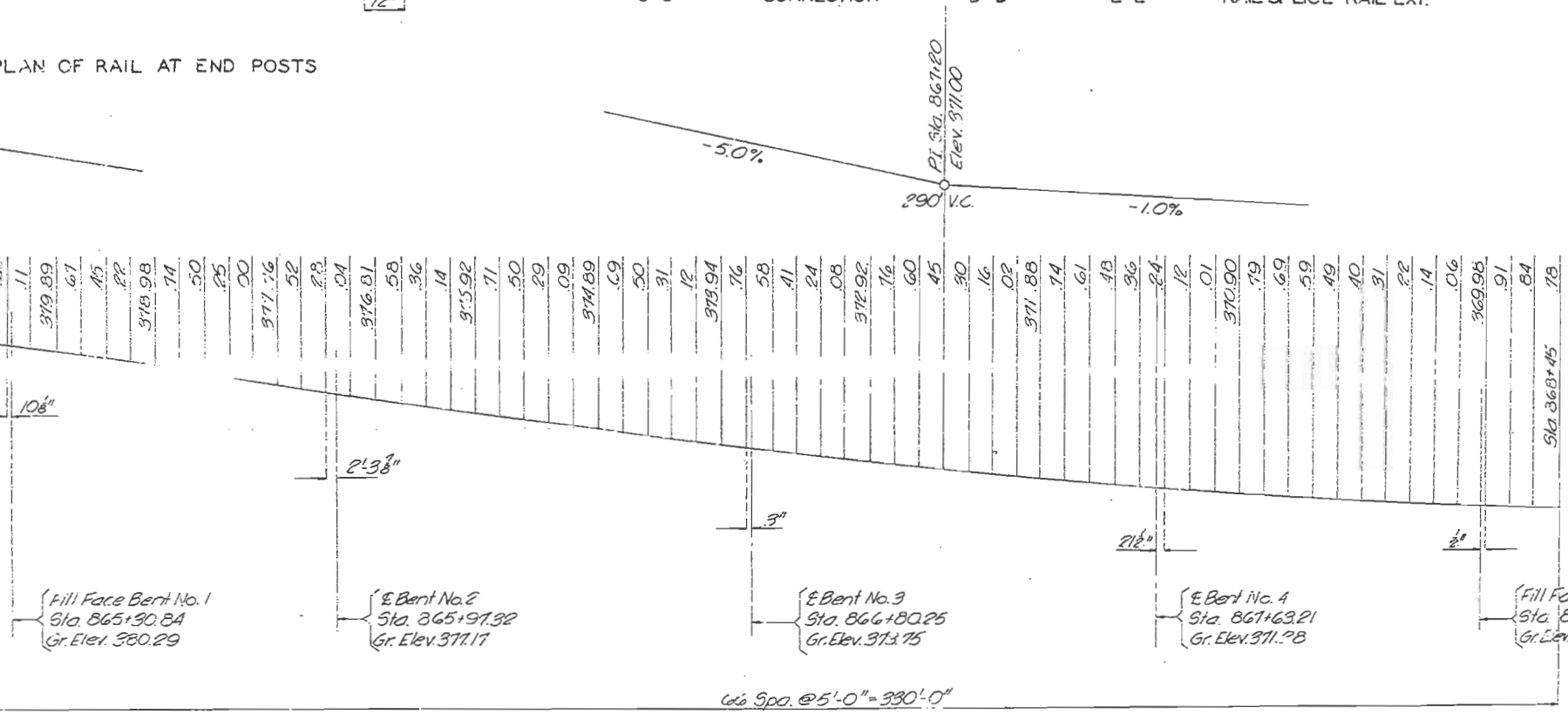
PLAN OF RAIL AT END POSTS





Note: Use bevel as shown except at top surface o 1/2" radius of top surface and fill flush with joint.

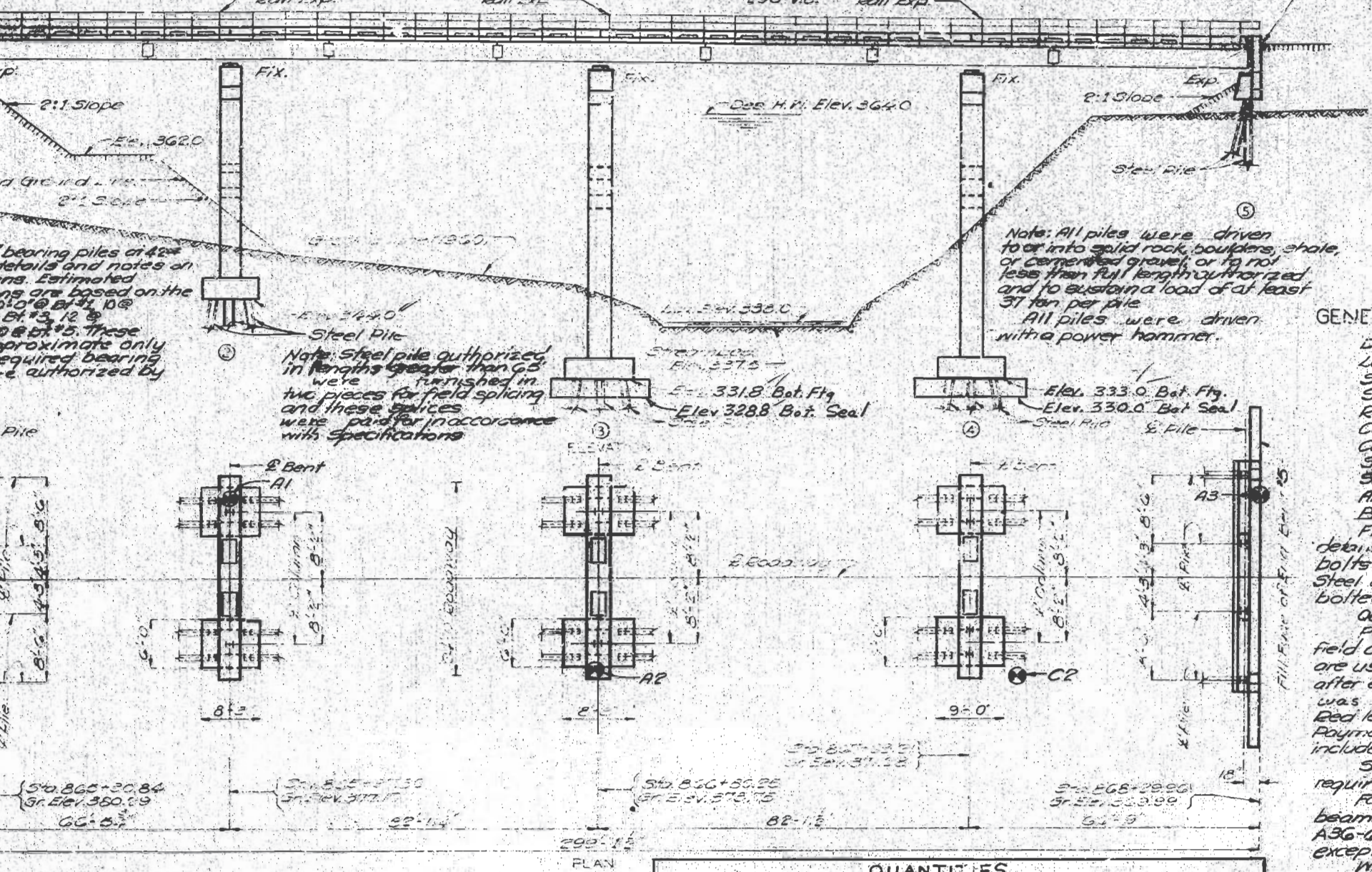
DETAILS OF BEVE



GENERAL NO

Top of c to grade. Ver All exposed 6" WF posts to 12"[rails horizontal

BRIDGE OV
STATE ROAD
AT MENFRO
PROJECT N
PERRY

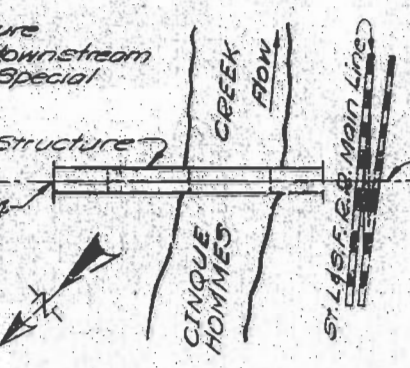


Note: Con
was
concrete
22'-0" in b
were driven
No p
Excavati
1 and 5.

GENERAL NOTES

Design Specifi
Loading H15-4
Structural Stee
Structural Stee
Reinforcing Ste
Concrete, Class
Concrete, Class
Substructure
Superstructure
All concrete
Bolts ⅞" holes
Field connectio
details were
bolts. Final pay we
Steel was based
bolted connections
Qualification of
Paint: Shop, non
field connections, e
are used, one coat
after erection three
was applied by Co
Red lead required
Payment for cleanin
included in unit price
See section 58
required painting
Fabricated stru
beams, flange and
A36-60T and all o
except as noted. Fo
Where joint fil
conform with the r
the Standard Spec
Permits were
legal length.

U.S.G.S. Da
B.M. 1.0
wing wa
BRIDGE C
STATE ROAD
AT MENFRO
PROJECT NO.



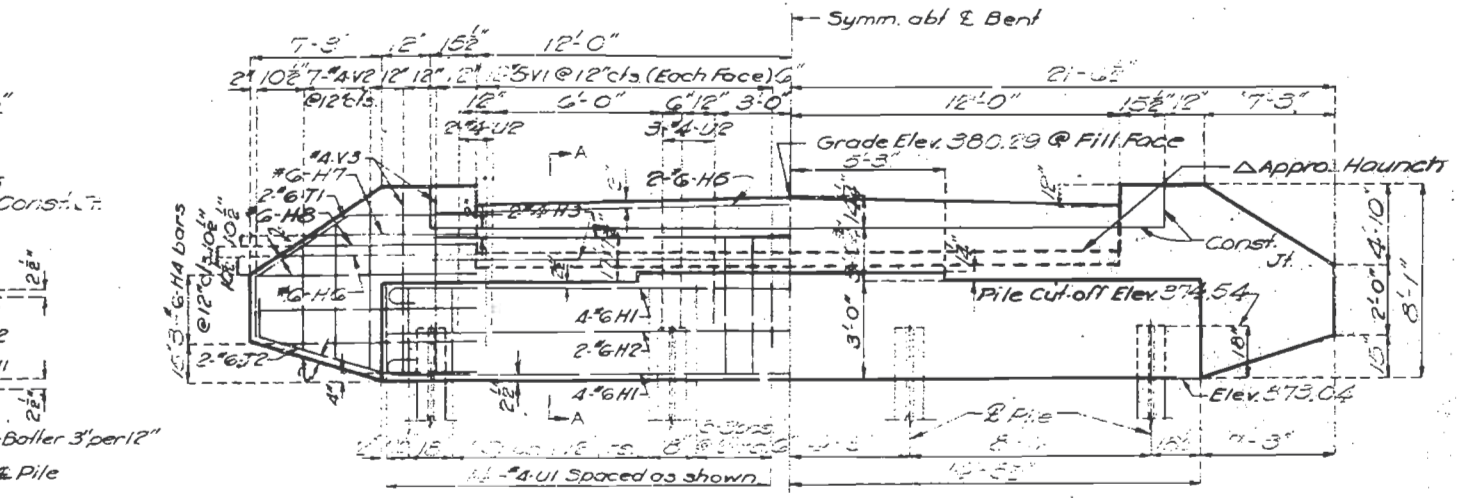
LOCATION SKETCH

Note: The final quantity of 10" steel piles in place include 15 field splices at 8' per splice.

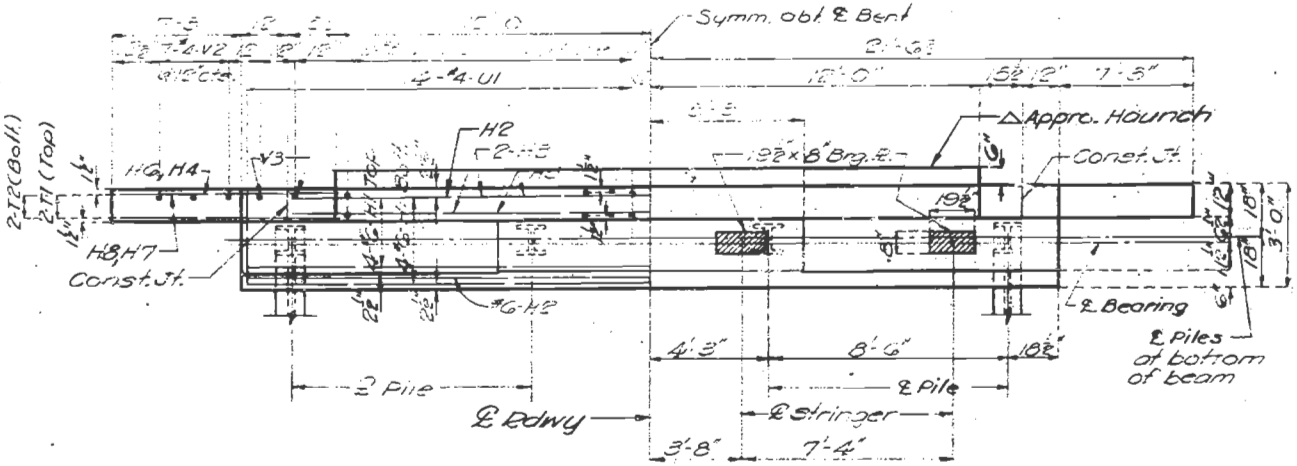
Note: For details of soundings see sheet No. 7 of 8.
⊗ A1-A2-A3 - Auger
⊗ C1-C2 - Core

QUANTITIES				
ITEM		SUBSTR	SUPERSTR	TOTAL
Class 1 Excavation for Structures	Cu. Yds.	197.0		197.0
Class 2 Excavation for Structures	Cu. Yds.	124.0		124.0
Class 2 + 50% Excavation for Str.	Cu. Yds.	24.5		24.5
Steel Piles in Place (10" @ 42#)	Lin. Ft.	2092		2092
Steel Pile Cut-Offs (10" @ 42#)	Lin. Ft.	388		388
Class B Concrete	Cu. Yds.	129.5		129.5
Class B1 Concrete	Cu. Yds.		185.8	185.8
Reinforcing Steel	Lbs.	19300	55,520	73,820
Fabricated Structural Carbon Steel	Lbs.		186,130	186,130
Class B Concrete for Seal Course		97.8		97.8

Note: Excavation for bridge made above Elev. 359.0 was paid for as Class 1 Excavation for Structures.
Excavation for bridge made below Elev. 359.0 was paid for as Class 2 Excavation for Structures.

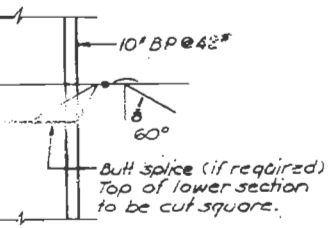


ELEVATION



PLAN

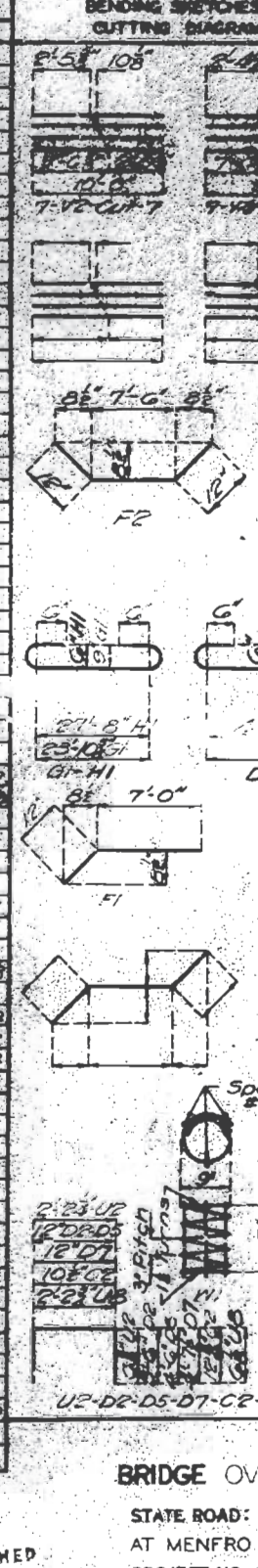
OF END BENT NO. 1



STEEL PILE SPLICE

COMPLETE BILL OF REINFO

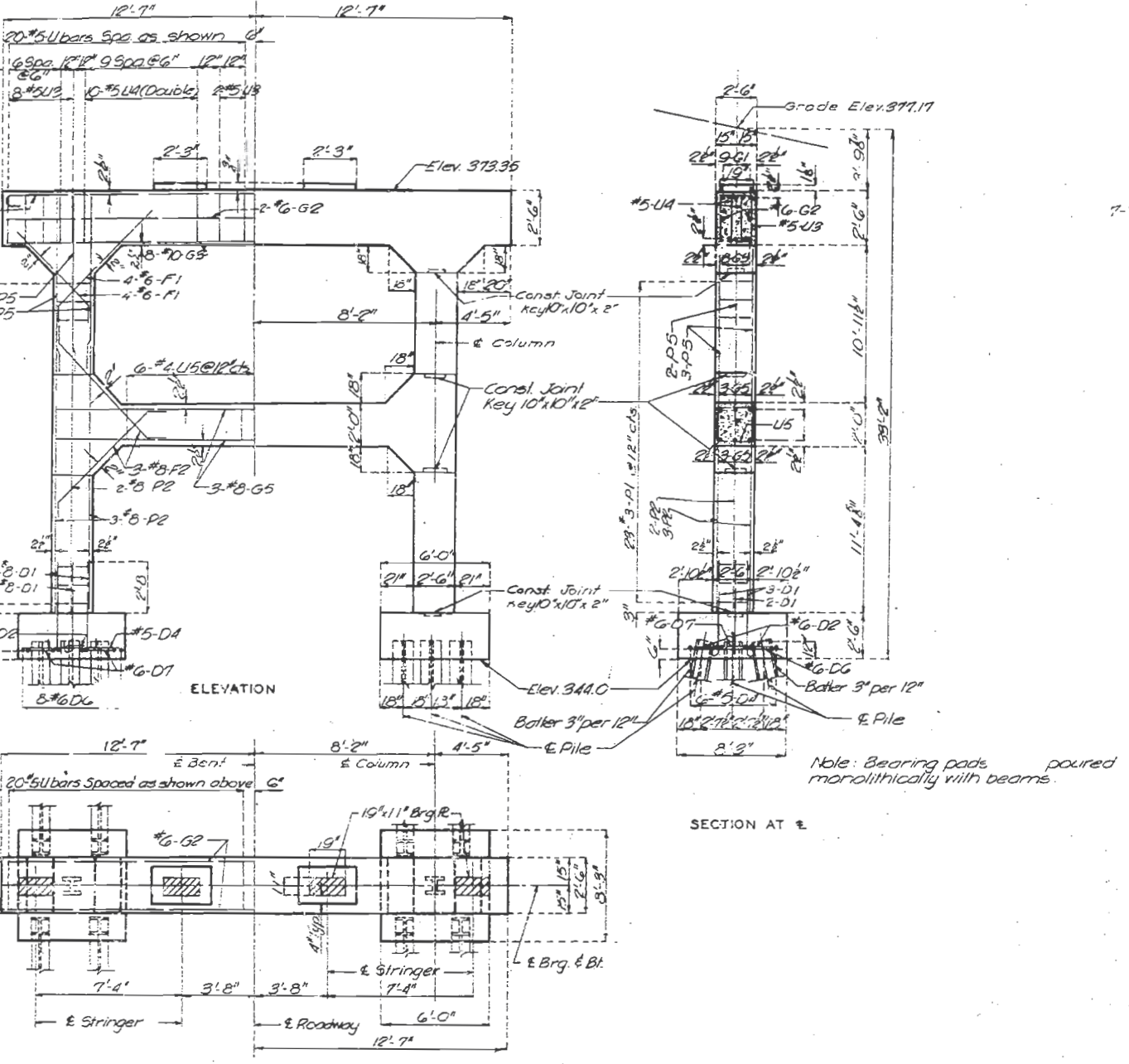
NO.	SIZE	LENGTH	MARK	LOCATION
End Bent No. 1				
8	#6	30'-5"	H1	Beam
2	#6	28'-3"	H2	"
4	#4	26'-3"	H3	Bkwll.
6	#6	9'-3"	H4	Wing
2	#6	26'-3"	H5	Bkwll.
2	#6	8'-9"	H6	Wing
2	#6	6'-5"	H7	"
2	#6	7'-6"	H8	"
4	#6	13'-3"	T1	Wing
4	#6	11'-0"	T2	"
28	#4	11'-3"	U1	Beam
10	#4	3'-5"	U2	"
48	#5	5'-9"	V1	Bkwll.
7	#4	10'-0"	V2	Wing
4	#4	7'-9"	V3	"
8	#2	19'-9"	W1	A.B. Wells
Int. Bent #2 & Bent #3				
12	#8	5'-9"	D1	Ftg.
3	#6	8'-0"	D2	"
24	#5	5'-9"	D4	Ftg.
32	#6	8'-0"	D5	Ftg.
16	#6	10'-3"	D7	"
32	#6	8'-0"	F1	Col. Hch.
15	#9	27'-3"	G1	Bm. Bt. #2
4	#6	24'-9"	G2	Beam
15	#10	24'-9"	G3	Bm. Bt. #2
12	#8	18'-6"	G5	Tie Beam
110	#3	9'-9"	P1	Col. Bt. #2
16	#8	17'-6"	P2	Col. Bt. #2
16	#8	27'-0"	P3	Col. Bt. #3
32	#7	11'-9"	P5	Col.
20	#5	10'-0"	U3	Bm. Bt. #2
40	#5	8'-3"	U4	" " "
22	#4	8'-9"	U5	Tie Beam
16	#5	10'-6"	U6	Bm. Bt. #3
28	#5	8'-9"	U7	"
24	#8	9'-6"	F2	Tie Beam
16	#2	19'-9"	W1	A.B. Wells
12	#4	3'-5"	U8	Bm. Bt. #3
Int. Bent #4				
24	#8	5'-9"	D1	Ftg.
3	#6	8'-0"	D2	"
12	#5	5'-9"	D4	"
16	#6	8'-9"	D3	"
[illegible]	[illegible]	[illegible]	[illegible]	"
[illegible]	[illegible]	[illegible]	[illegible]	Col. Hch.
[illegible]	[illegible]	[illegible]	[illegible]	Beam
[illegible]	#6	24'-[illegible]	G2	"
8	#10	24'-9"	G3	"
60	#3	9'-9"	P1	Column
16	#7	11'-9"	P5	"
16	#8	24'-6"	P7	"
20	#5	10'-0"	U3	Beam
40	#5	8'-3"	U4	"
11	#4	8'-9"	U5	Tie Beam
6	#8	8'-6"	G3	" "
8	#6	8'-0"	P4	Column



BRIDGE OV

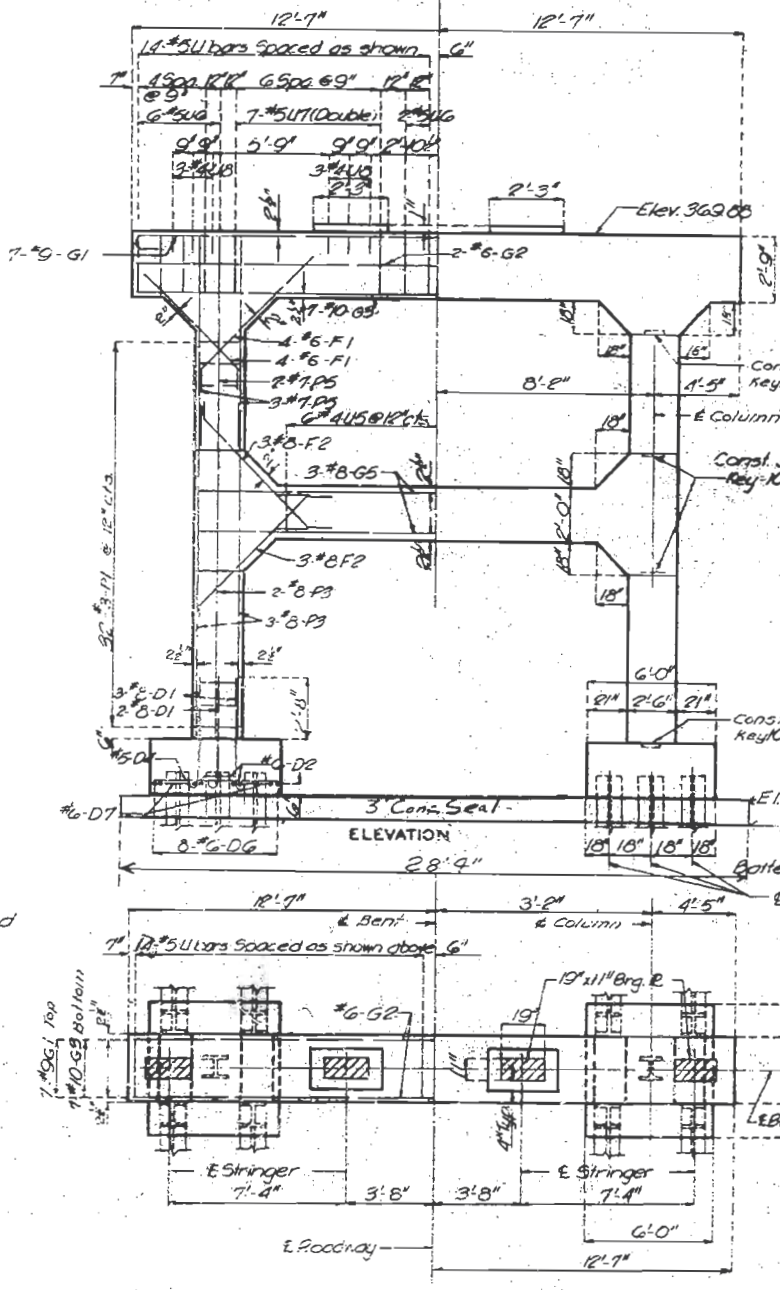
STATE ROAD:
AT MENFRO

FINISHED



PLAN

DETAILS OF INTERMEDIATE BENT NO. 2



PLAN

DETAILS OF INTERMEDIATE BENT NO. 3

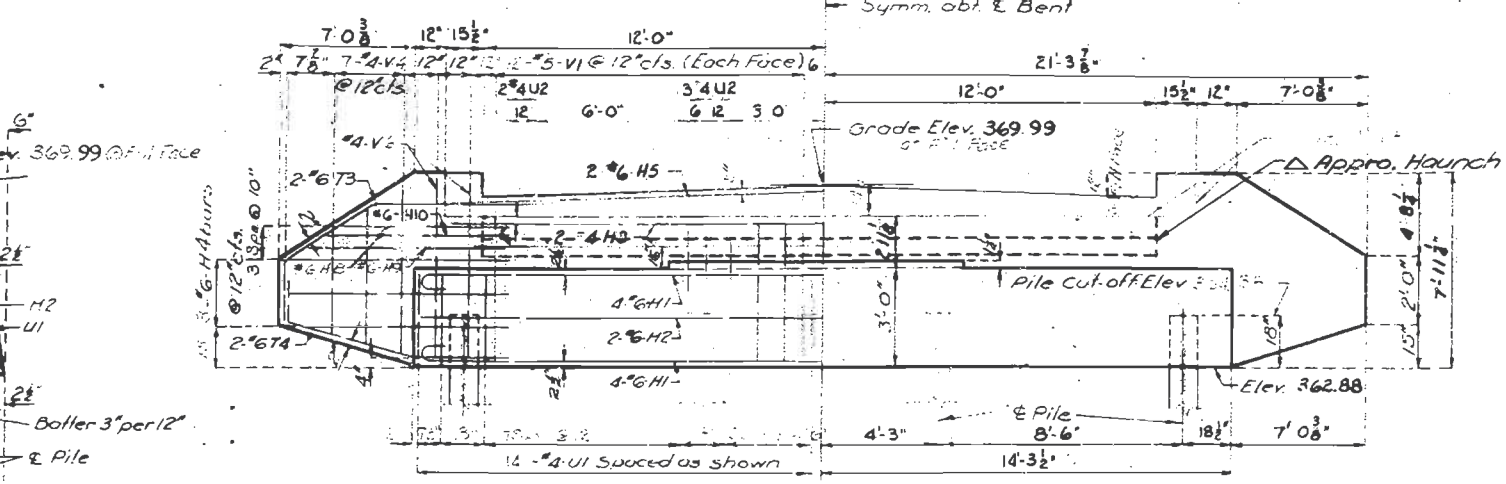
BRIDGE C

STATE ROAD

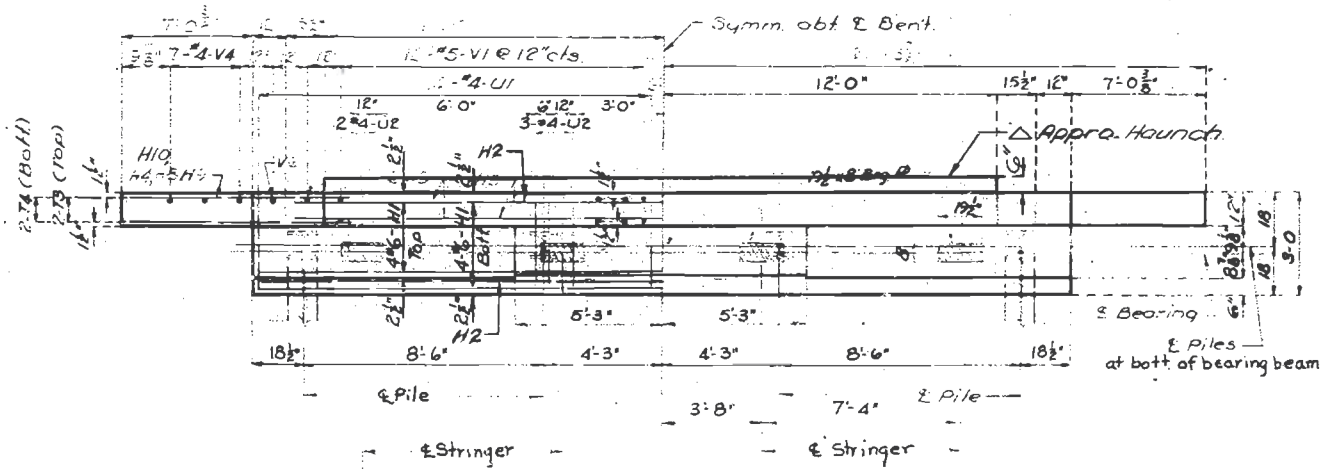
AT MENFRO

PROJECT NO

FINISHED

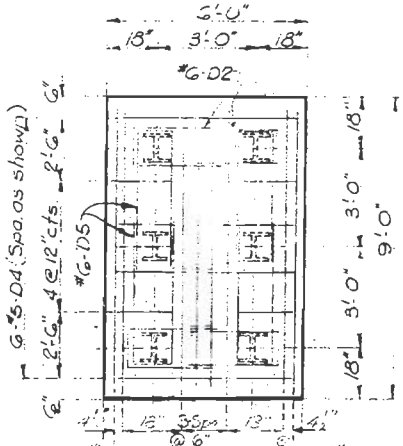


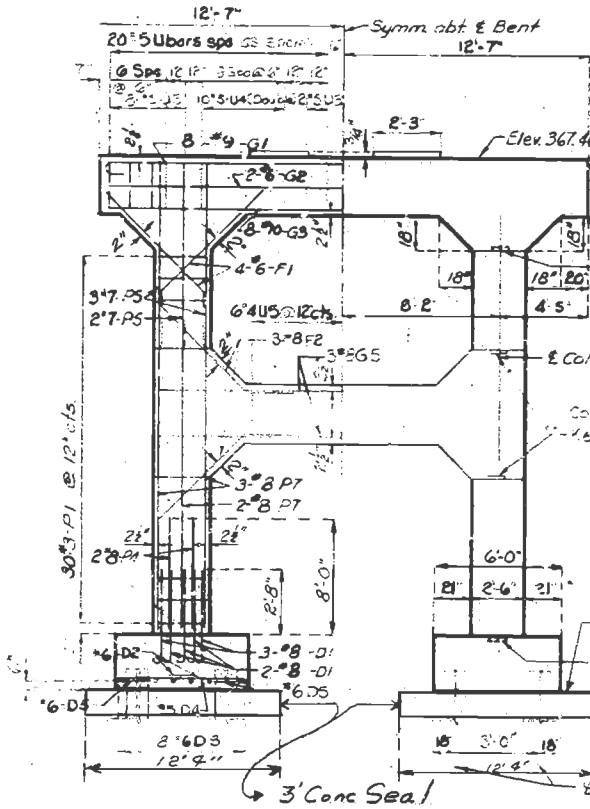
ELEVATION



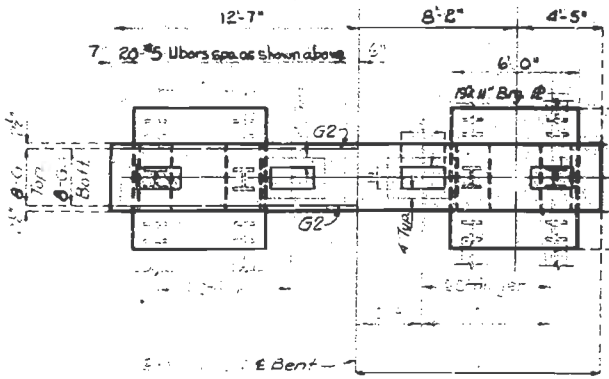
PLAN

DETAILS OF END BENT NO. 5





ELEVATION



PLAN

DETAILS OF INT. BENT NO. 4

Bent No. 5
ied above bottom of
until superstructure
s. in place.
wall and expansion
ent No. 5 did
of roadway slab.
bove construction
poured until the
of the expansion
installed and
poured in adjacent.

BRIDGE

STATE ROA

AT MENFRO

PROJECT NO

FINISHED