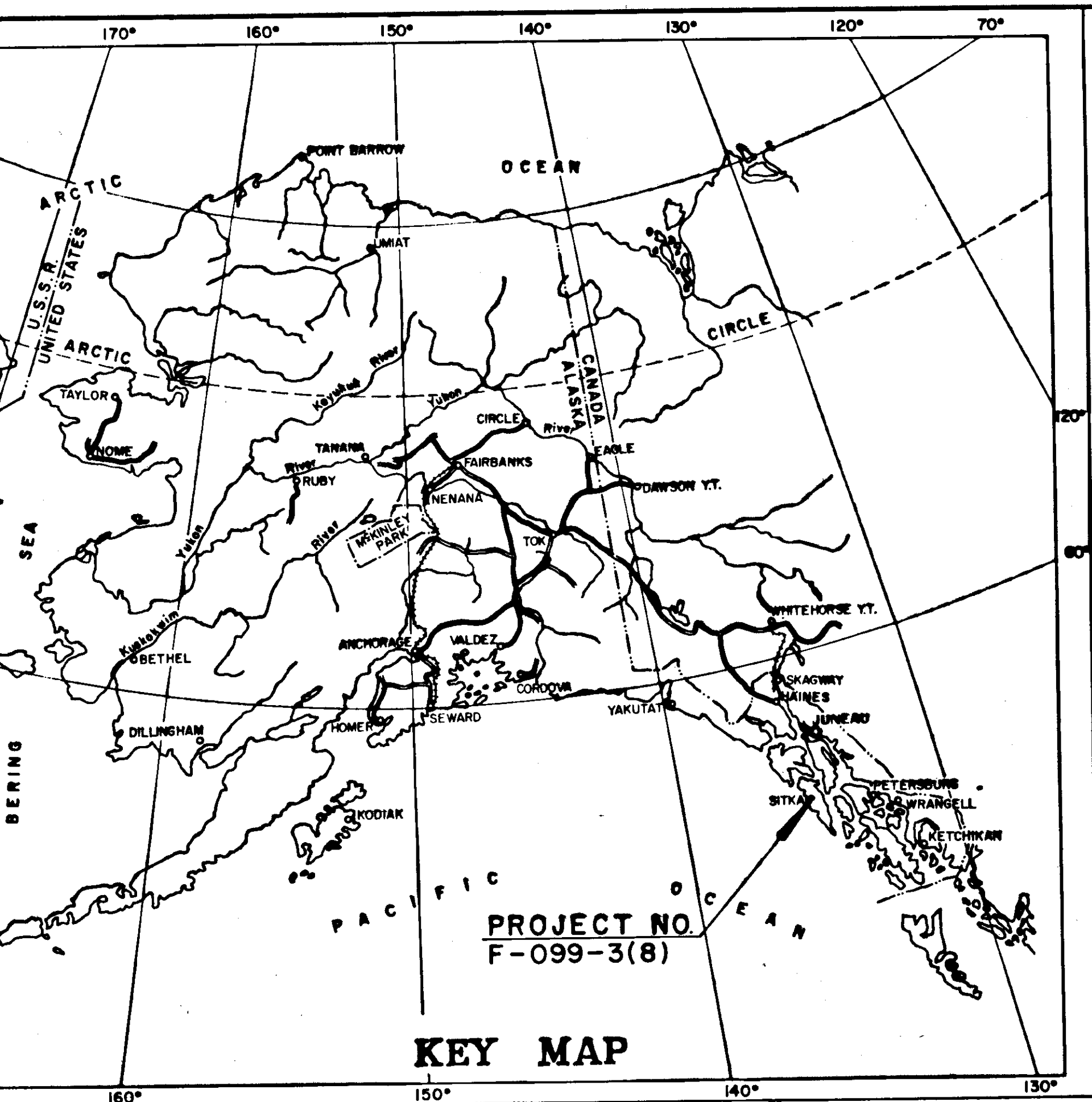


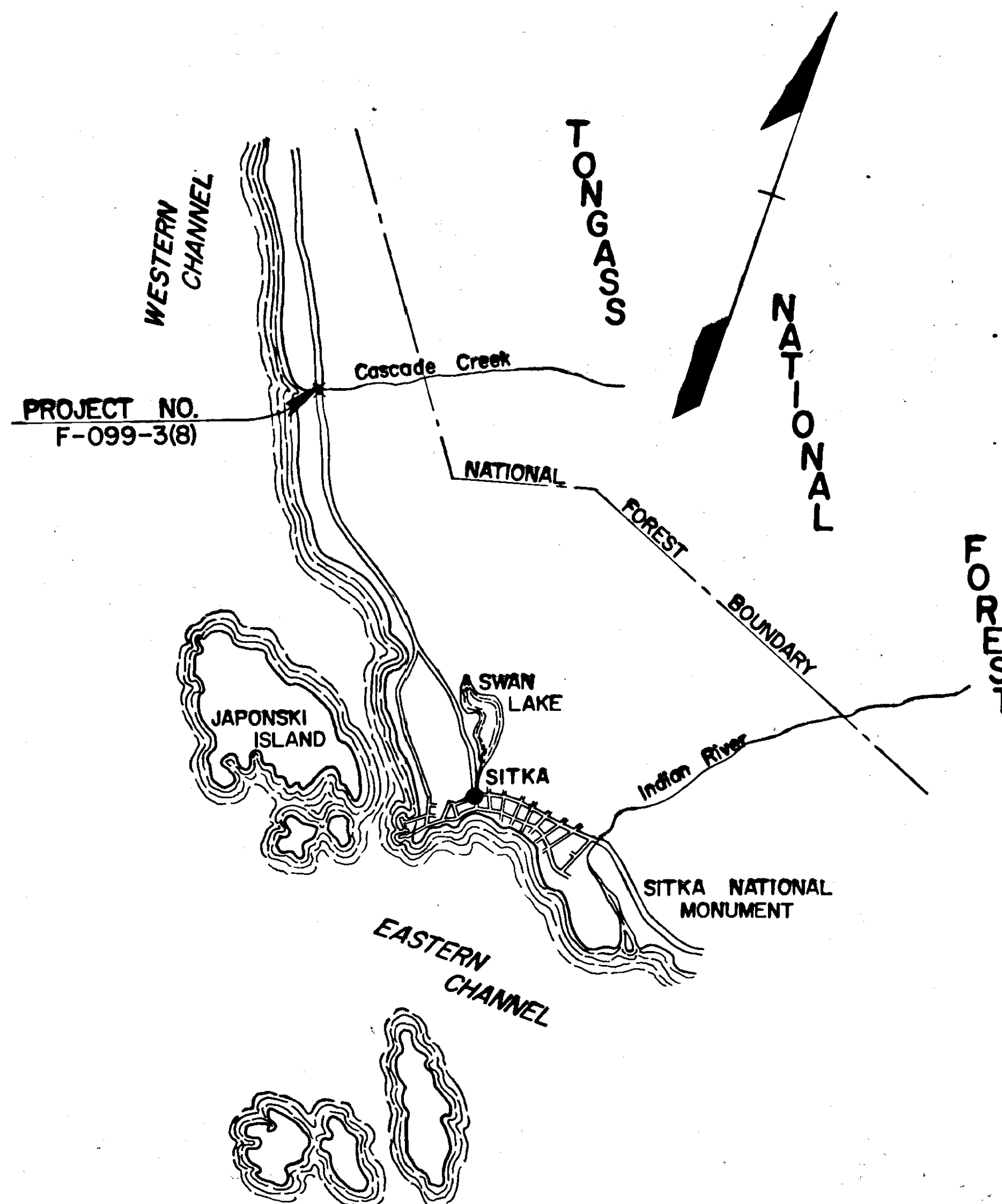


STATE OF ALASKA DEPARTMENT OF HIGHWAYS

PLAN AND PROFILE PROPOSED HIGHWAY PROJECT

F-099-3(8)

CASCADE CREEK BRIDGE & APPROACHES GRADING & BRIDGE



DESIGN DESIGNATION

CASCADE CREEK BRIDGE & APPROACHES

ADT (1970)	=	1865
ADT (1990)	=	4980
DHV (12%)	=	595
D	=	40 - 60
T	=	5%

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	1	15

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	APPROACHES & ESTIMATE
3-15	BRIDGE PLANS

The following standard drawings apply to this project:
M-1(I-2), R-5, R-6, T-11, T-15, T-16(I-2), T-20

As Built Plans
Contractor: *Associated Eng. & Cont.*
Project Engineer: *Berry Bergdall*
Began: *July 9, 1975*
Completed *July 25, 1973*

PROJECT SUMMARY

LENGTH OF BRIDGE APPROACHES - 350.00' = 0.066 Mi.
LENGTH OF BRIDGE - 53.50' = 0.010 Mi.
LENGTH OF PROJECT - 403.50' = 0.076 Mi.

STATE OF ALASKA
DEPARTMENT OF HIGHWAYS

APPROVED:

Harmon H. Will Jr.
SOUTHEAST DISTRICT ENGINEER

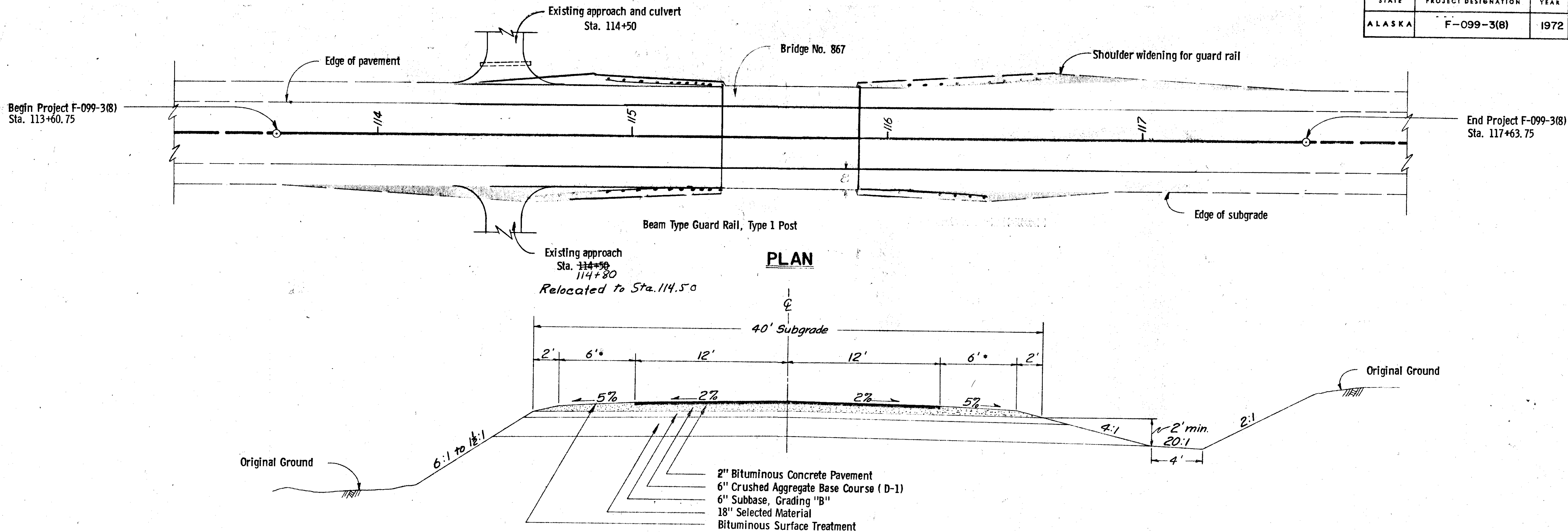
2/25/72
DATE

APPROVED:

for *Commissioner of Highways*

2-25-72
DATE

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.
ALASKA	F-099-3(8)	1972	2



* Widen to conform with Standard Drawings M-1 & R-6 where bridge approach guard rail is installed. Omit additional bituminous surface treatment.

TYPICAL SECTION EXISTING ROADWAY

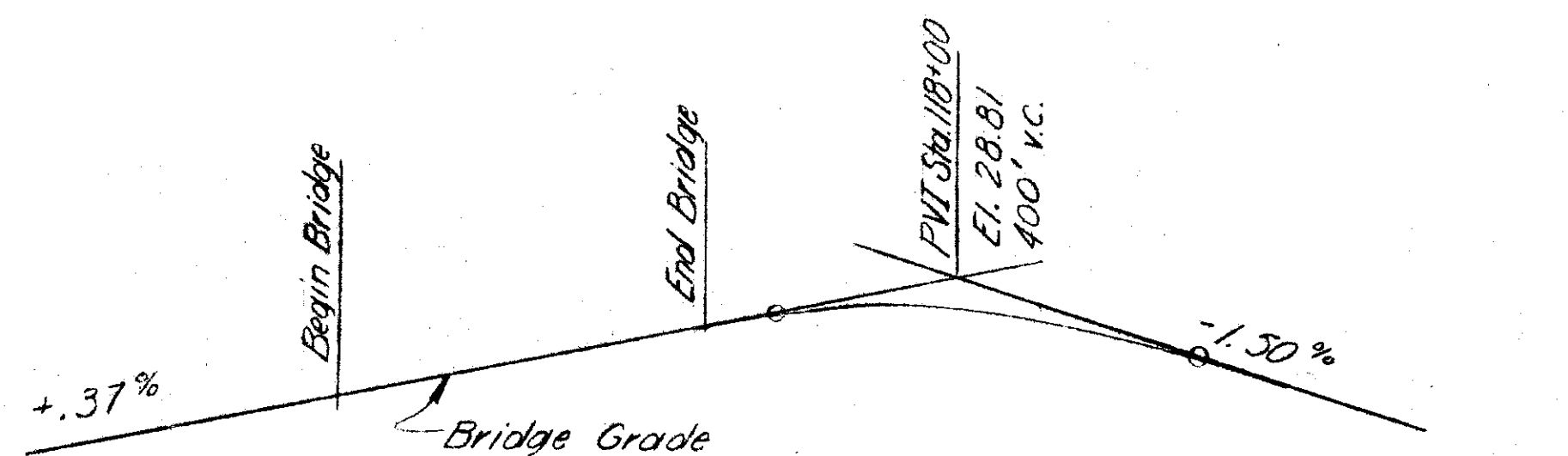
GENERAL NOTES

- Shoulder widening for guard rail shall be of same types of material as shown on the typical section, except that subbase, grading "B" may be substituted for crushed aggregate base course. Fill and cut slopes in widened area shall be comparable to existing work.
- Existing residence drive approaches within project limits shall be graded to conform to the road shoulder, as directed by the engineer.

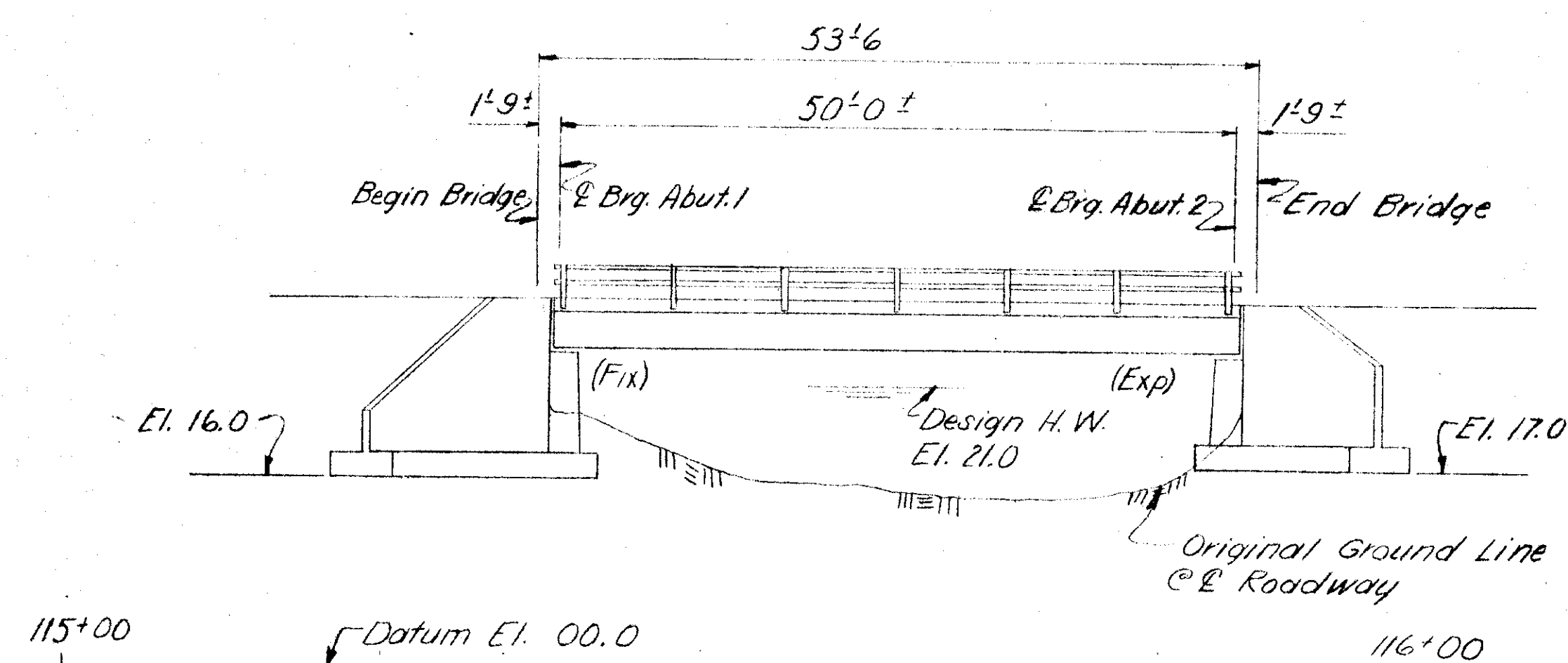
ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	Approaches	BRIDGE	TOTAL
202(1)	Removal of Structures and Obstructions	L.S.		All Req'd	All Req'd
203(3)	Unclassified Excavation	C.Y.	214		214
203(6A)	Selected Material	C.Y.	56		56
206(1)	Class 1 Excavation for Structures	C.Y.		115	115
111 (1)	Temporary Erosion & Pollution Control	C.S.		All Req'd	All Req'd
304(2)	Subbase, Grading "B"	C.Y.	63		63
501(1)	Class A Concrete	L.S.		All Req'd	All Req'd
501(3)	Class W Concrete	C.Y.		19	19
503(1)	Reinforcing Steel	L.S.		All Req'd	All Req'd
504(1)	Structural Steel, Furnished, Fabricated, and Erected	L.S.		All Req'd	All Req'd
507(1)	Metal Bridge Railing	L.F.		107	107
606(1)	Beam Type Guard Rail, Type 1 Post	L.F.	250		250

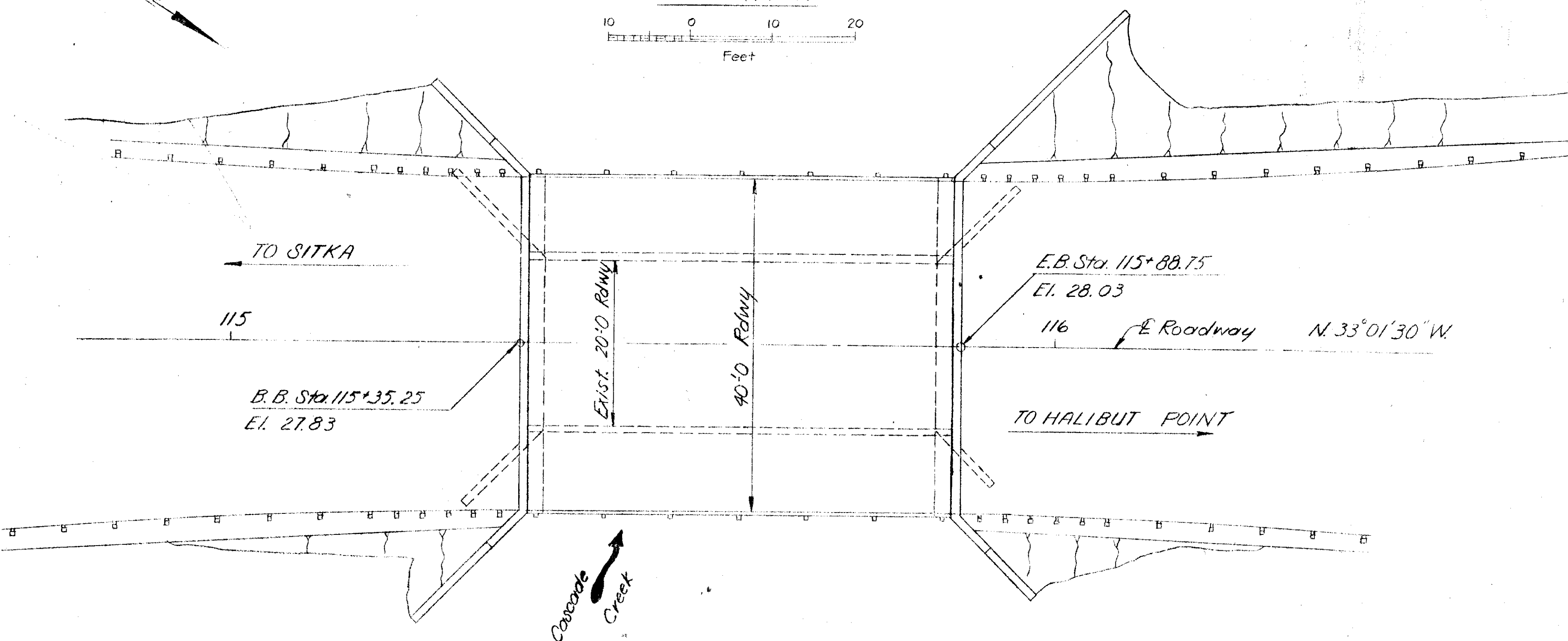
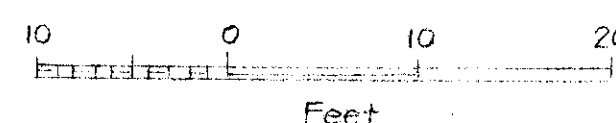
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(B)	1972	3	15



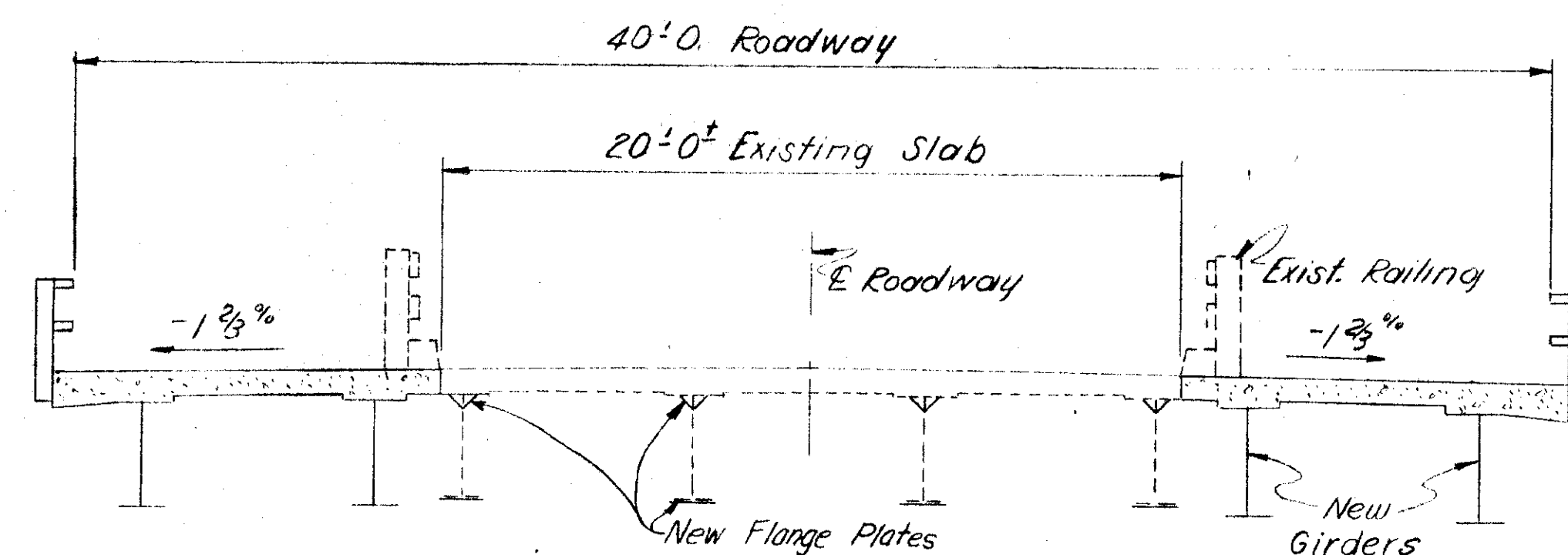
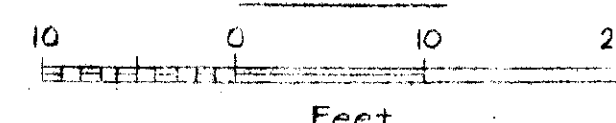
GRADE DATA
No Scale



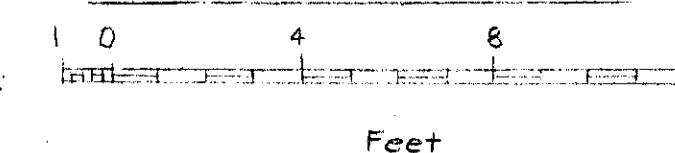
ELEVATION



PLAN



TYPICAL SECTION



INDEX

Title	Dwg. No.
General Layout	2595
Foundation Plan	2596
Abutment No. 1 Footing	2597
Abutment No. 1	2598
Abutment No. 1 Wingwalls	2599
Abutment No. 2 Footing	2600
Abutment No. 2	2601
Abutment No. 2 Wingwalls	2602
Typical Section	2603
Girders	2604
Bearings & Joint Seals	2605
Railing	2606
Log of Test Borings	2607

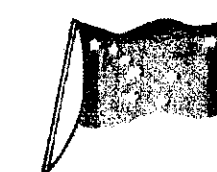
The Following Standard Drawings
Apply to this Bridge: M-1, R-5, R-6
& T-9

CASCADE CREEK BRIDGE ROUTE NO. F-99 GENERAL LAYOUT

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-72

Approved *J. Skelton*



BRIDGE NO. 867

DWG. NO. 2595

Design Live Load HS 20-44
Dead Load includes 25 psf
allowance for future paving

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	4	15

GENERAL NOTES

Specifications:

Design: A.A.S.H.O. Standard Specifications for Highway Bridges, 1963 edition, with latest interim specifications.

Construction: State of Alaska Standard Specifications for Highway Construction, 1972, and Special Provisions.

Live Load: HS 20-44

Unit Stress:

Reinforced Concrete: $f_c = 12,000$ psi, 20,000, $n=10$

Structural Steel: ASTM A36, $f_s = 20,000$ psi
ASTM A572, $f_s = 27,000$ psi

Concrete: All concrete shall be Class "A" except concrete for concrete fill which shall be Class "W".

Reinforcing Steel: All reinforcing steel shall be ASTM 615, grade 40.

Footings Pressure: Design soil bearing capacity for abutment spread footings is 4000 psf.

Structural Steel: All structural steel shall be A36 unless noted. All A572 shall be grade 50.

ESTIMATED QUANTITIES				
ITEM	UNIT	SUBSTR.	SUPERST.	TOTAL
Removal of Structures & Obstructions	L.S.	—	—	All Reg'd
Excavation	C.Y.	115.0	—	115.0
Class "A" concrete	C.Y.	992	293	1285
Class "W" concrete	C.Y.	19.0	—	19.0
Reinforcing Steel	Lb	6420	5620	12,040
* Structural Steel, furnished fabricated & erected	Lb.	—	28,710	28,710
Bridge Railing	L.F.	—	107	107

* Structural Steel: approximately 16,230 Lb. A36 and 12,480 Lb. A572.

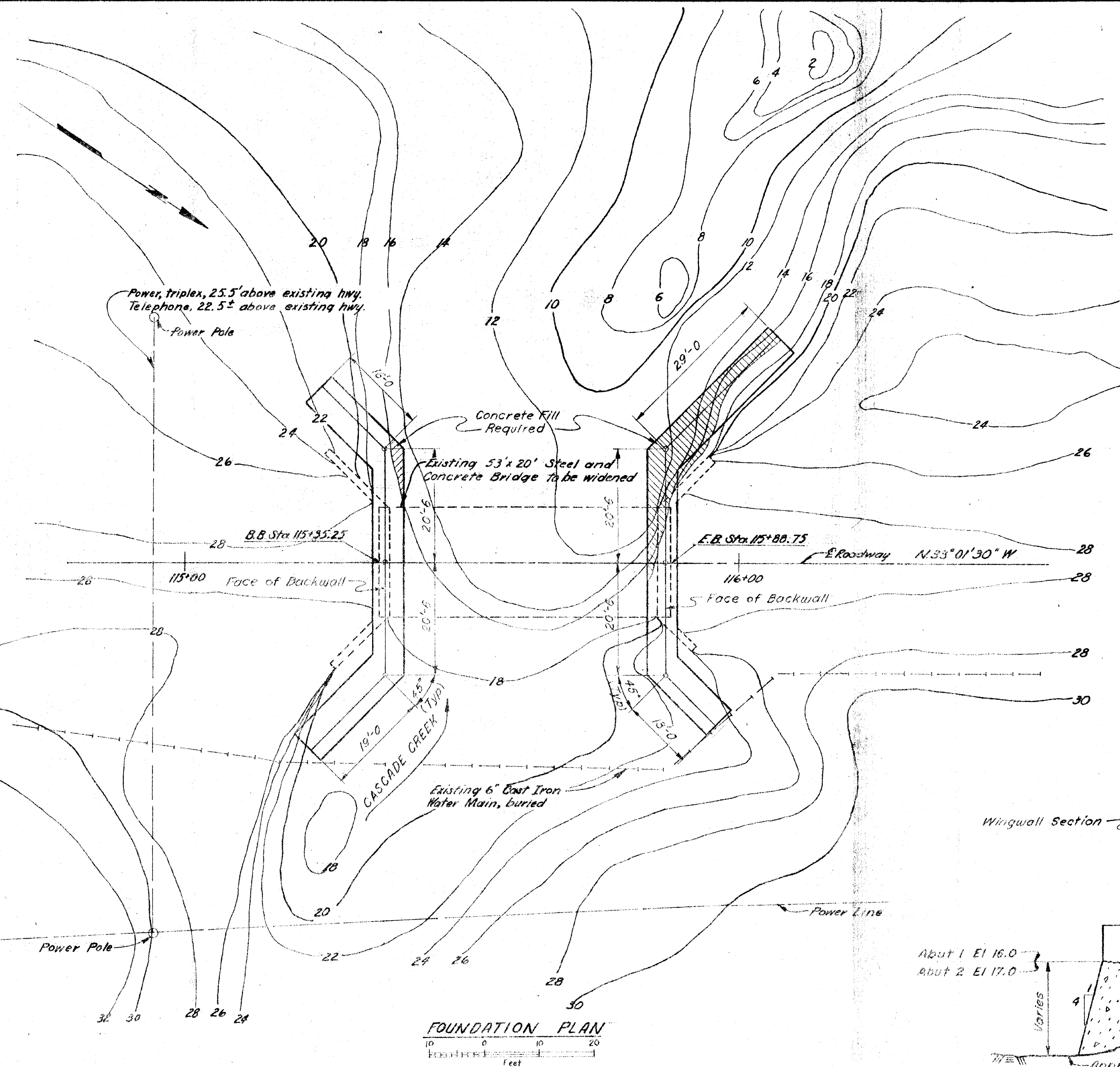
HYDRAULIC & HYDROLOGIC SUMMARY	
Drainage Area	2.1 sq. miles
Design Frequency	50 years
Design Discharge	1,700 c.f.s.
Design High Water	El. 21.0

CASCADE CREEK BRIDGE
ROUTE NO. F-99
FOUNDATION PLAN

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

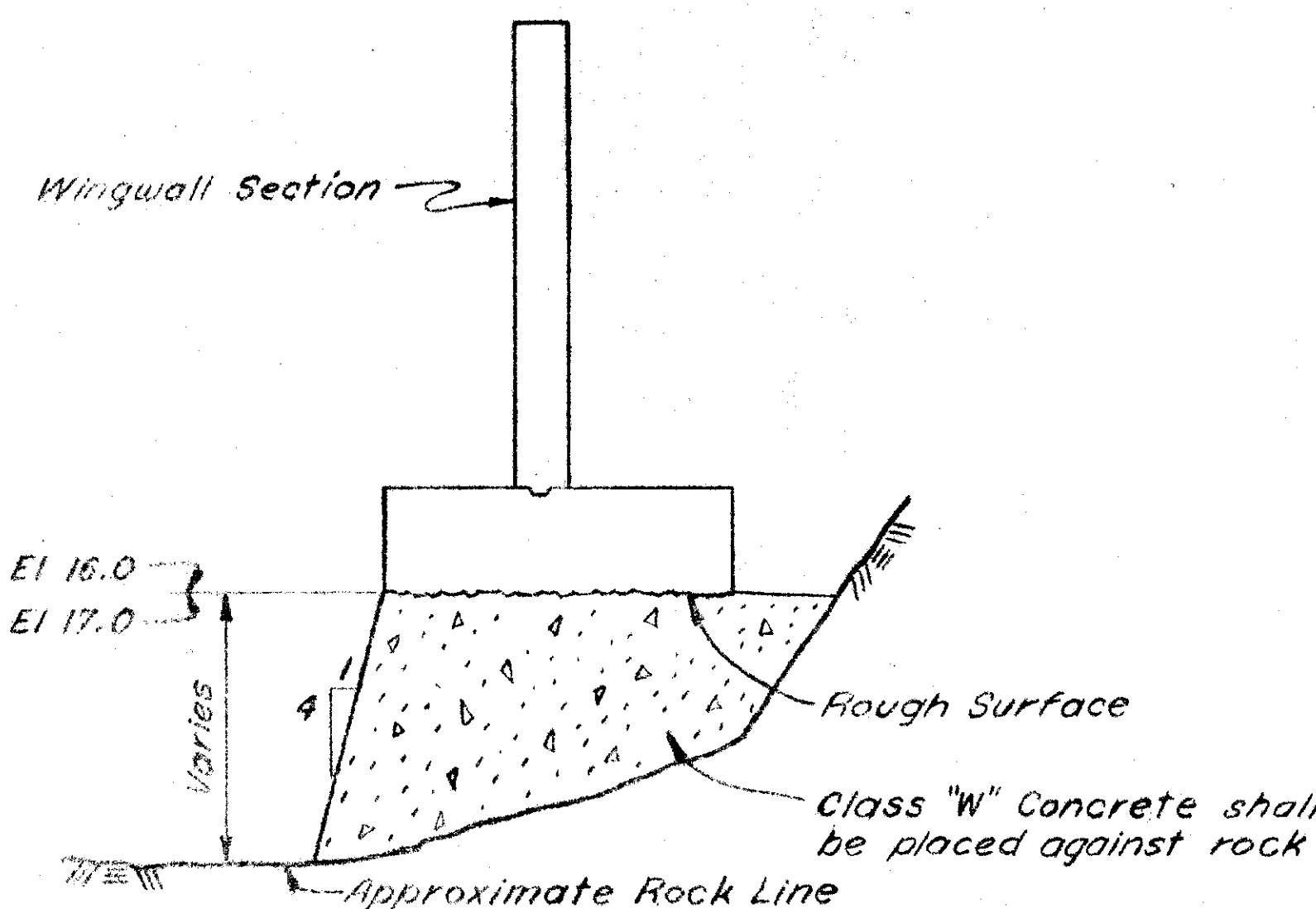
Date 2-25-72
Approved [Signature]

BRIDGE NO. 867
DWG. NO. 2596



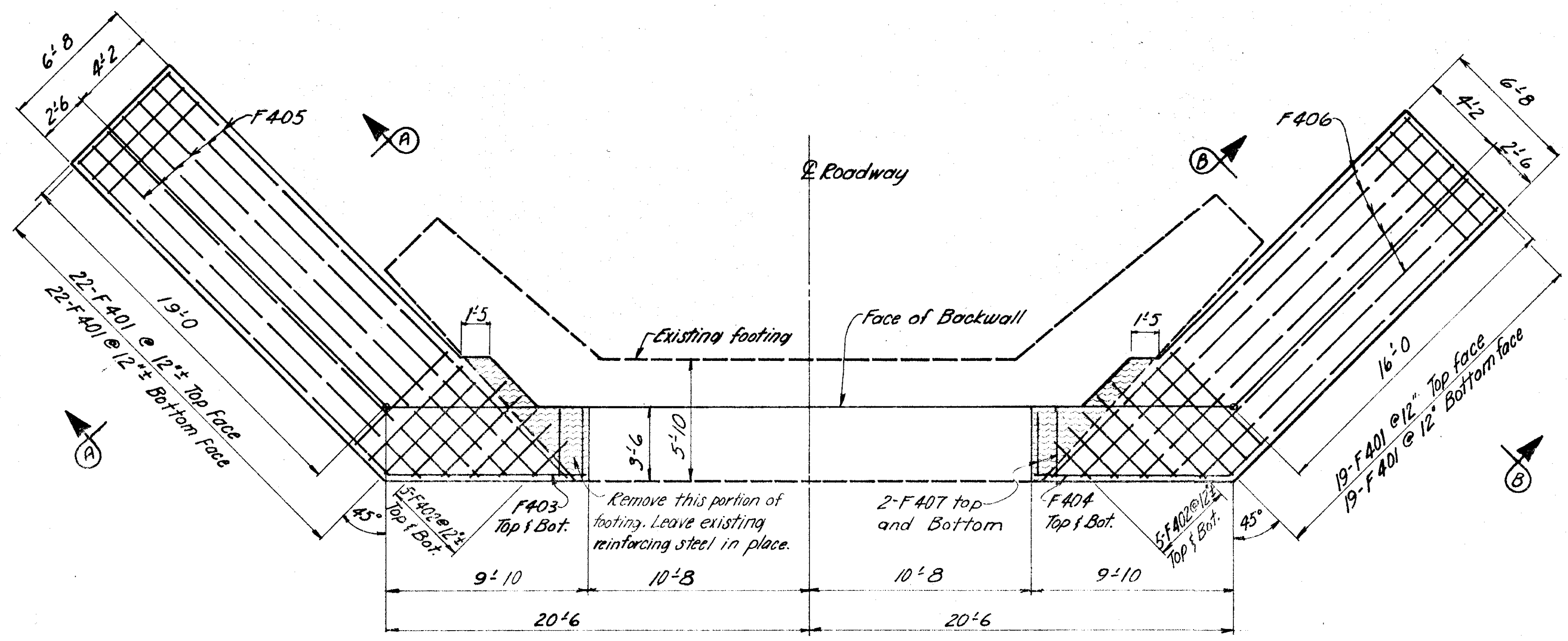
FOUNDATION PLAN
0 10 20
Feet

Note: Contours as of November, 1962



CONCRETE FILL
No Scale

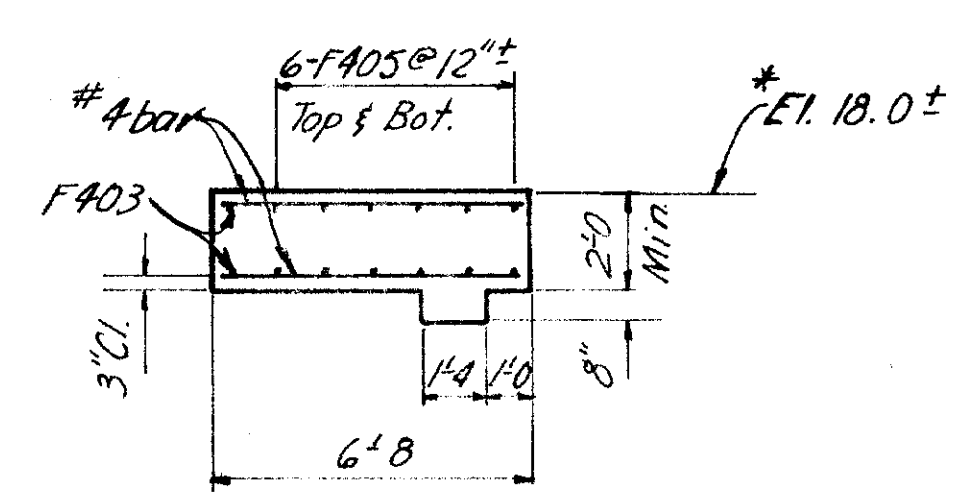
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TO SHEET
ALASKA	F-099-3(8)	1972	5	12



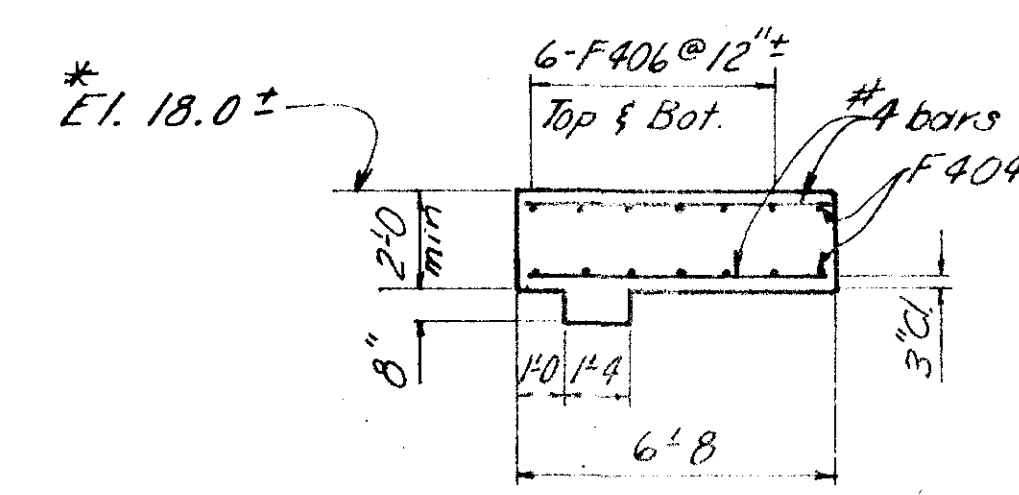
FOOTING PLAN
12 0 5 10
In. Feet

REINFORCEMENT SCHEDULE				
Mark	Size	No	Length	Type
F401	4	82	6'-4	—
F402	4	20	Varies	—
F403	4	2	30'-10	Bent
F404	4	2	27'-10	Bent
F405	4	12	Varies	—
F406	4	12	Varies	—
F407	4	8	3'-2	—

BENDING DIAGRAMS	
F403	F404
2'-6 to 6'-6 @ 12" increments	F402
22'-4 to 27'-4 @ 12" increments	F405
19'-4 to 24'-4 @ 12" increments	F406



SECTION A-A
12 0 5 10
In. Feet



SECTION B-B
12 0 5 10
In. Feet

NOTE: Key is not required in those places where footing is bearing on rock or concrete fill.

* Match with existing footing.

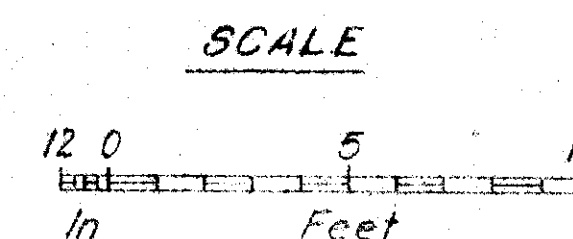
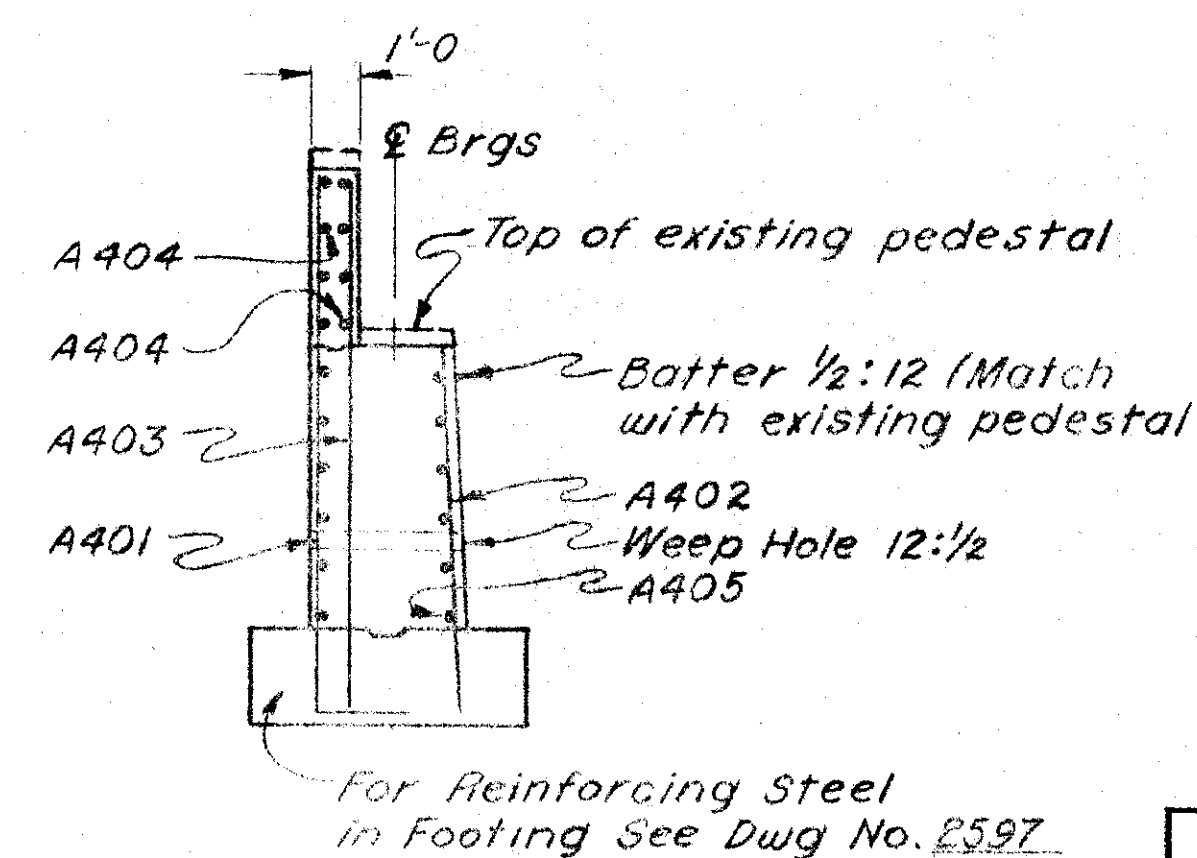
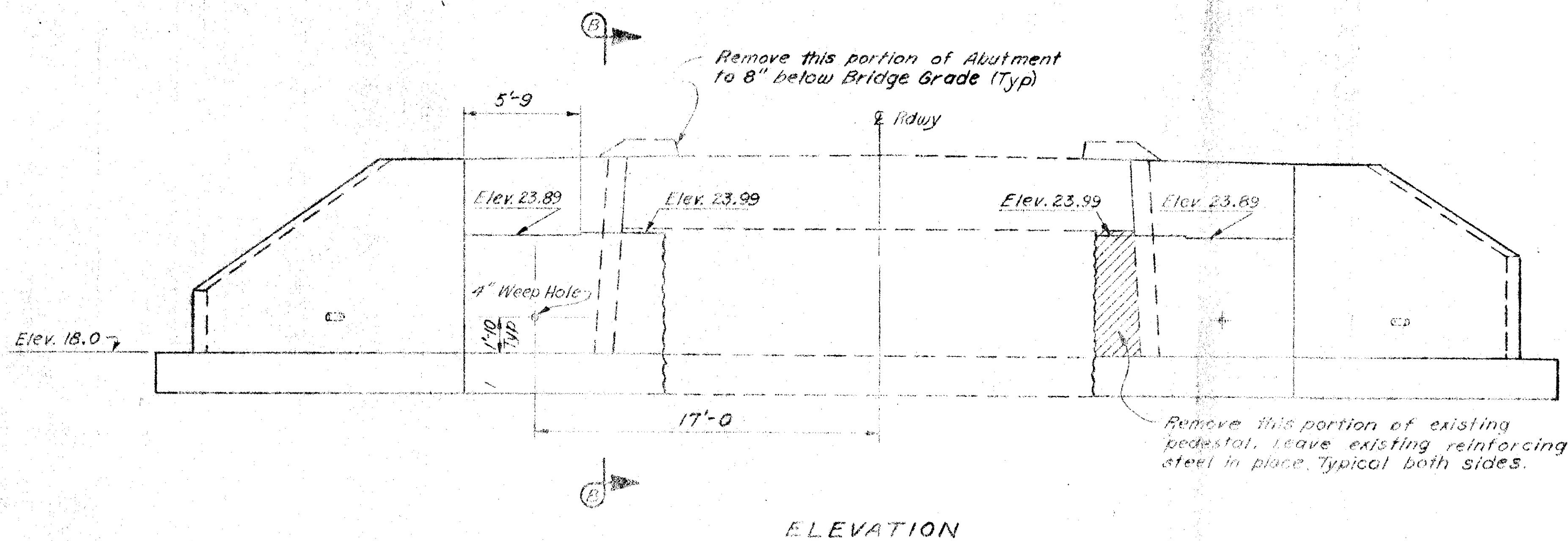
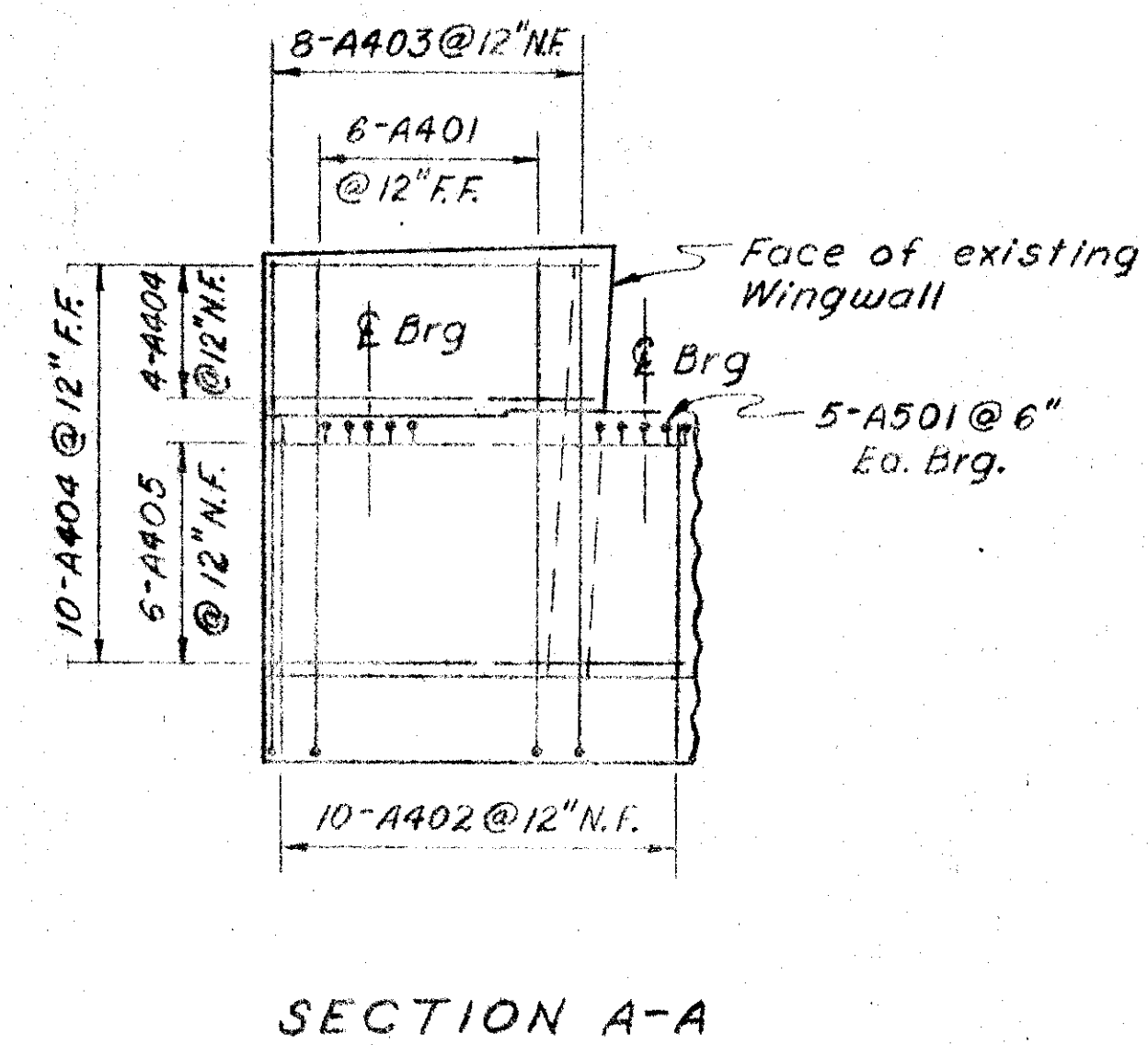
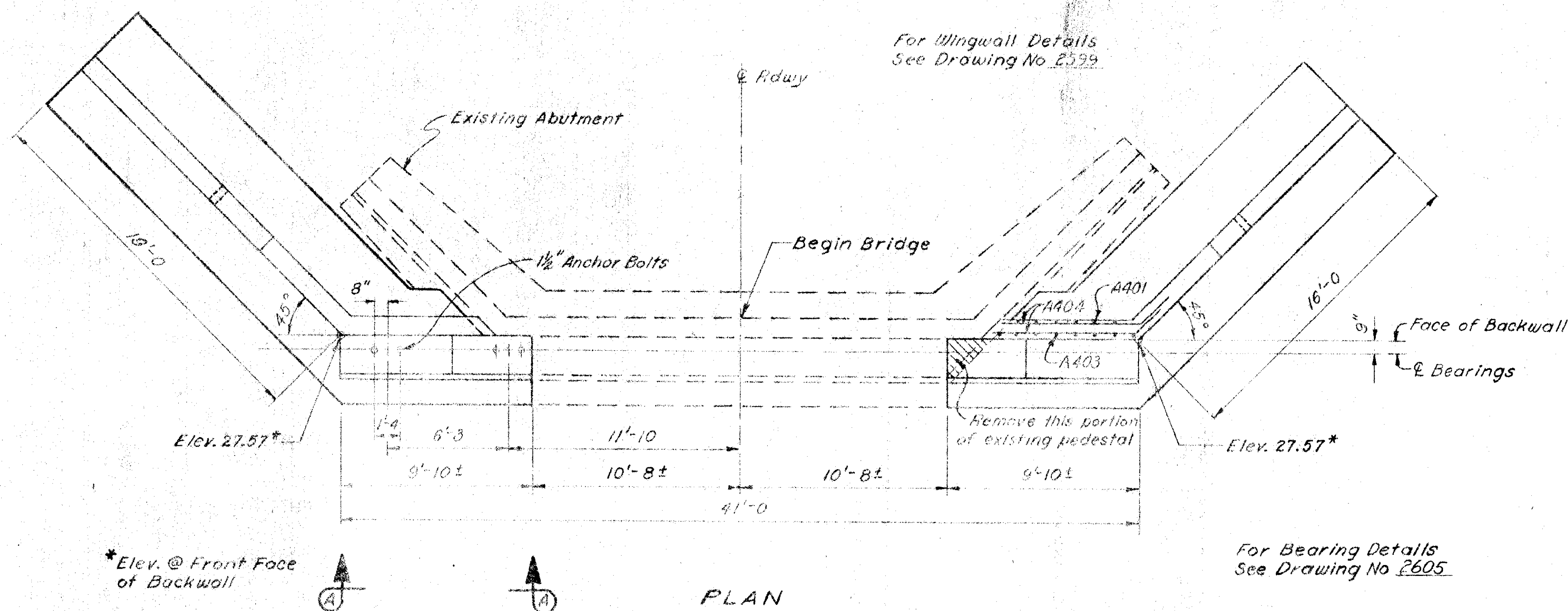
CASCADE CREEK BRIDGE
ROUTE NO. F-99
ABUTMENT NO. 1 FOOTING

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-73
Approved [Signature]

BRIDGE NO. 867
DWNG. NO. 2597

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(B)	1972	6	15



CASCADE CREEK BRIDGE

Route No. F-99

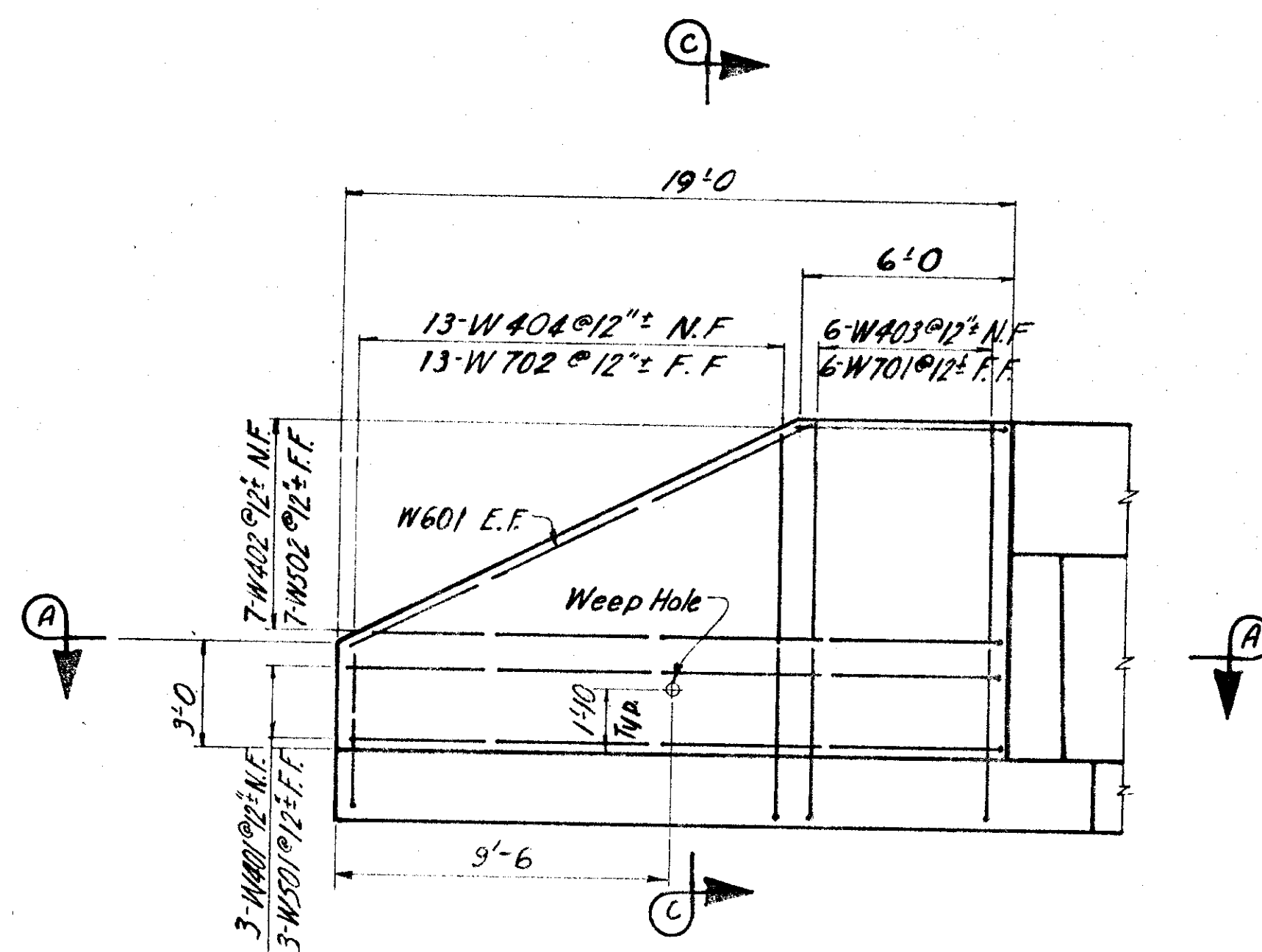
ABUTMENT NO. 1

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

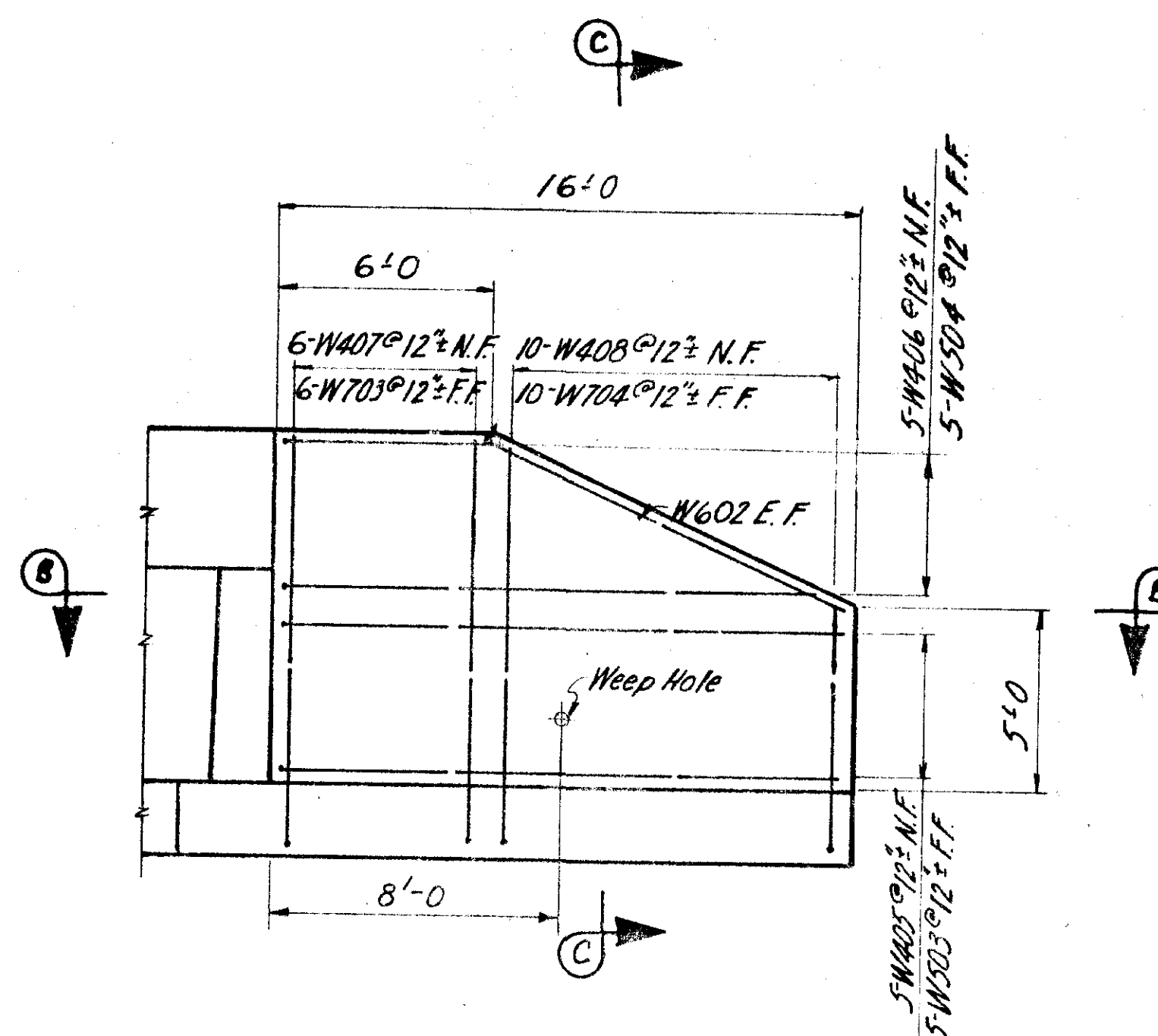
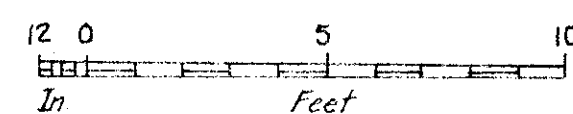
Date 2-25-72
Approved [Signature]

BRIDGE NO. 867
DWG. NO. 2598

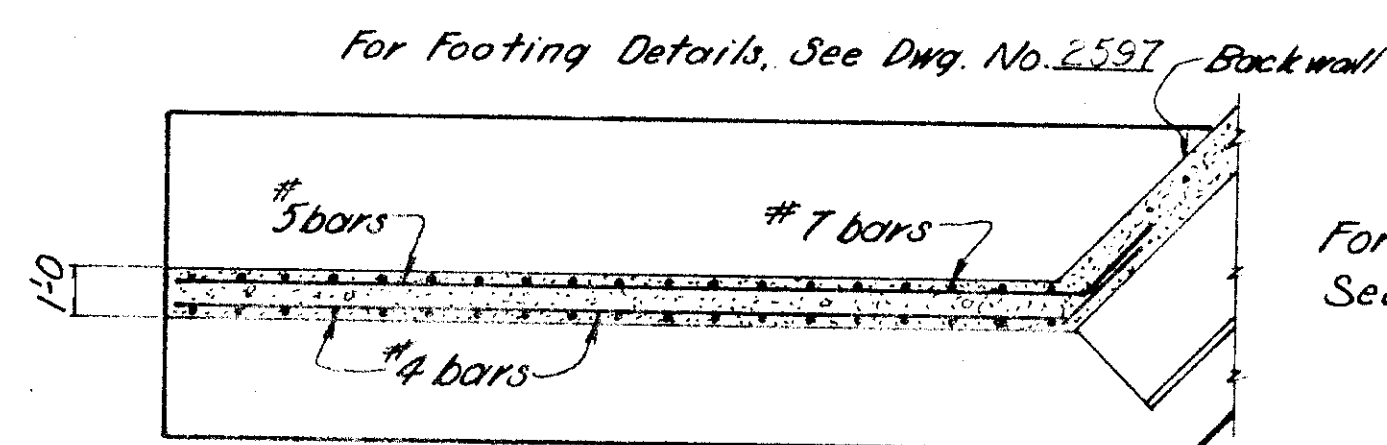
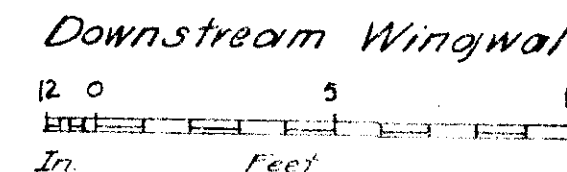
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	7	15



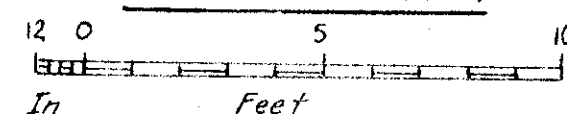
ELEVATION
Upstream Wingwall



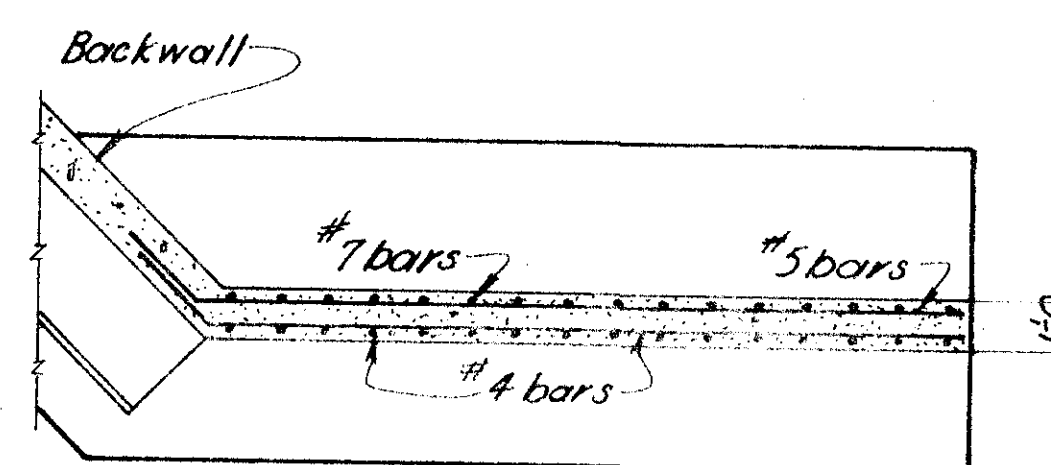
ELEVATION
Downstream Wingwall



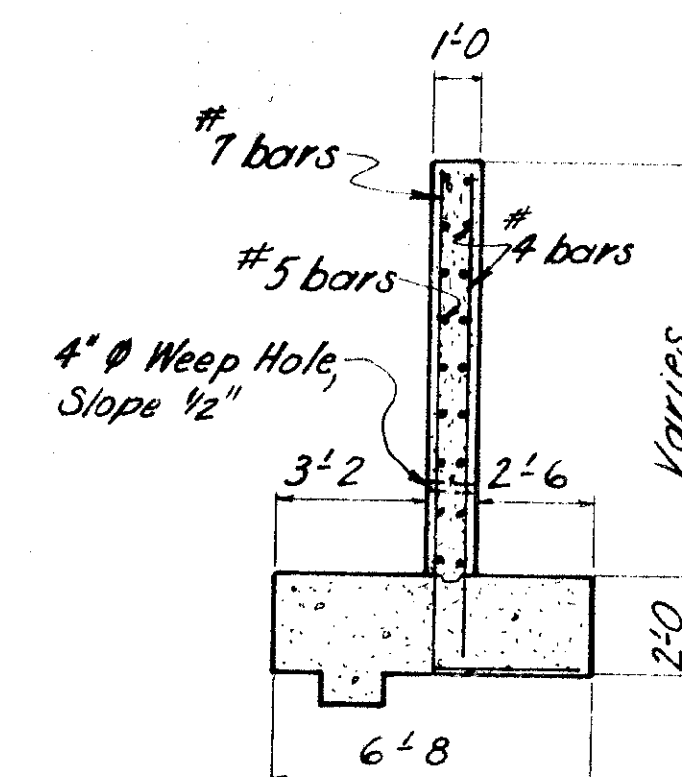
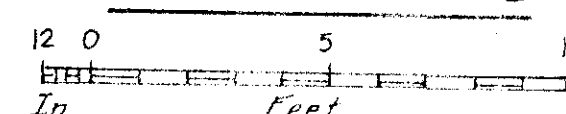
SECTION A-A



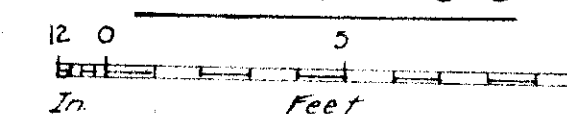
For Abutment Details,
See Dwg. No. 2598



SECTION B-B



SECTION C-C



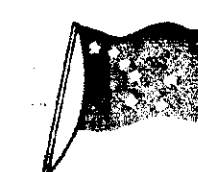
REINFORCEMENT SCHEDULE					BENDING DIAGRAM	
Location	Mark	Size	No.	Length	Type	
ABUTMENT	A401	4	12	14'-2"	Bent	
	A402	4	20	7'-6"	---	
	A403	4	16	6'-9"	---	
	A404	4	28	9'-6"	Bent	
	A405	4	12	9'-6"	---	
	A501	5	20	3'-8"	Bent	
WINGWALLS	W401	4	3	20'-9"	Bent	
	W402	4	7	Varies	Bent	
	W403	4	6	11'-2"	---	
	W404	4	13	Varies	---	
	W405	4	5	17'-9"	Bent	
	W406	4	5	Varies	Bent	
	W407	4	6	11'-2"	---	
	W408	4	10	Varies	---	
	W501	5	3	21'-3"	Bent	
	W502	5	7	Varies	Bent	
	W503	5	5	18'-3"	Bent	
	W504	5	5	Varies	Bent	
	W601	6	2	14'-7"	---	
	W602	6	2	11'-0"	---	
	W701	7	6	14'-2"	Bent	
	W702	7	13	Varies	Bent	
	W703	7	6	14'-2"	Bent	
	W704	7	10	Varies	Bent	

CASCADE CREEK BRIDGE
ROUTE NO. F-99

ABUTMENT NO. 1 WINGWALLS

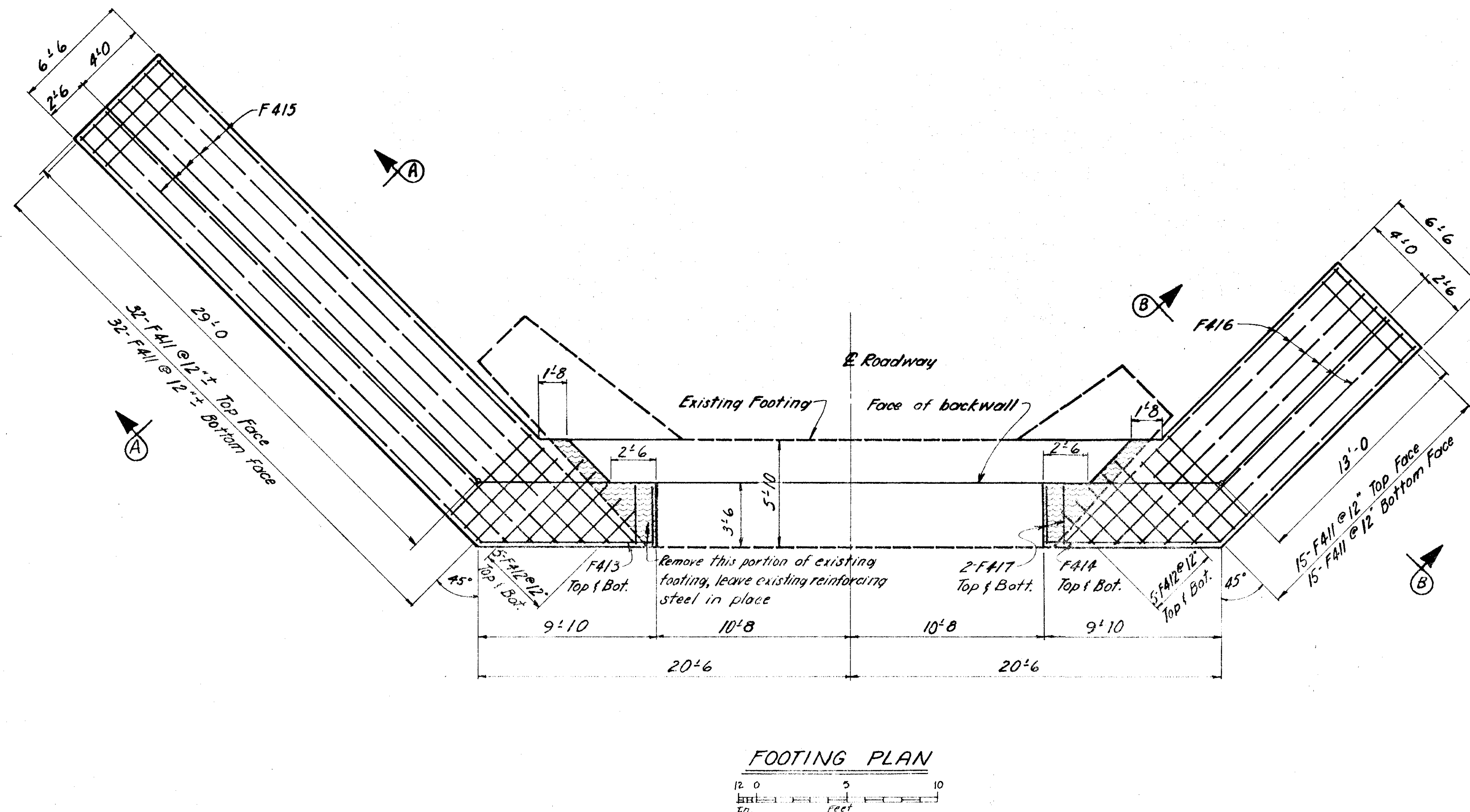
State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-72
Approved [Signature]



BRIDGE NO. 867
DWG. NO. 2599

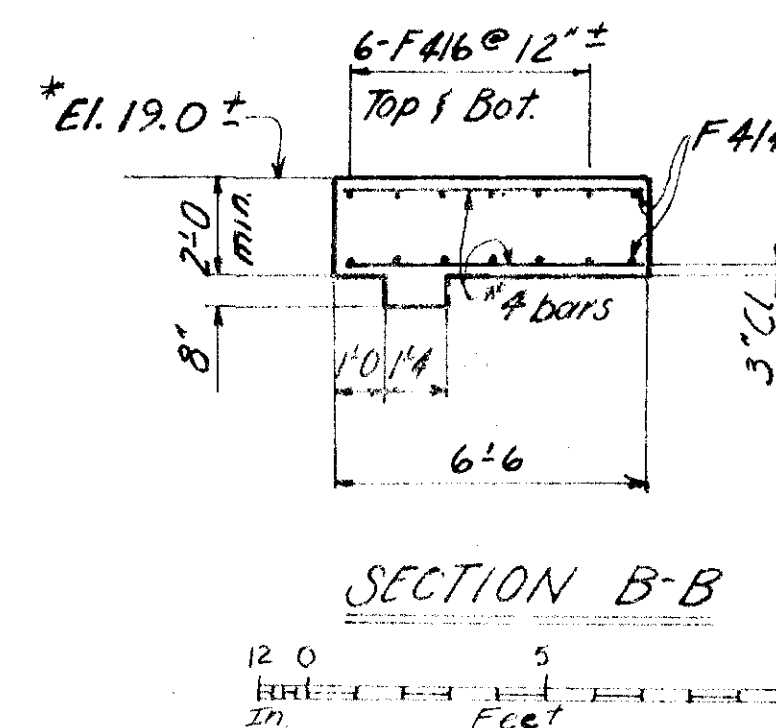
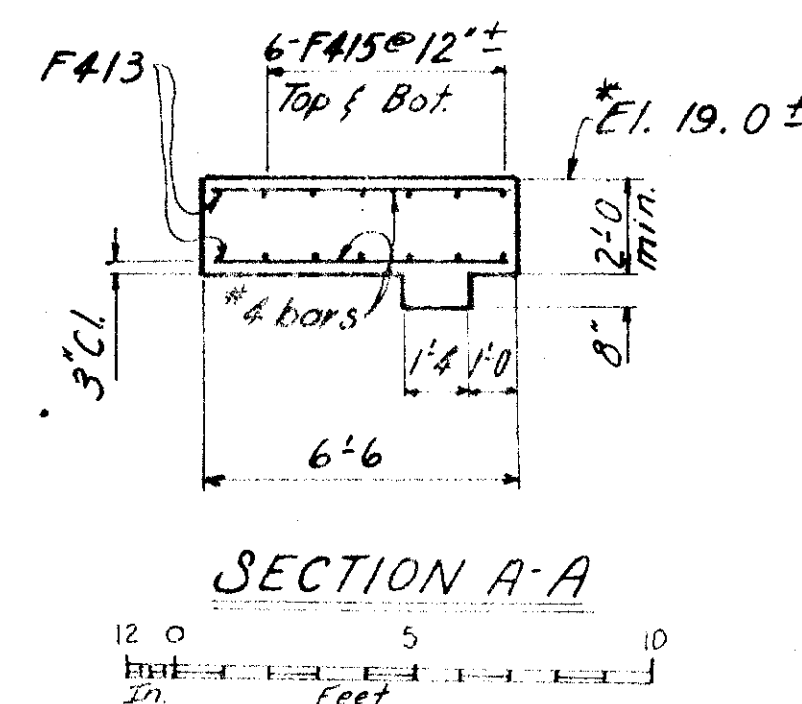
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	8	15



REINFORCEMENT SCHEDULE				
Mark	Size	No.	Length	Type
F411	4	94	6'-2"	—
F412	4	20	Varies	—
F413	4	2	40'-10"	Bent
F414	4	2	24'-10"	Bent
F415	4	12	Varies	—
F416	4	12	Varies	—
F417	4	8	3'-2"	—

BENDING DIAGRAMS	
F413	F414

2'-6" to 6'-6" @ 12" increments	F412
32'-4" to 37'-4" @ 12" increments	F415
16'-4" to 21'-4" @ 12" increments	F416



NOTE: Key is not required in those places where footing is bearing on rock or concrete fill.

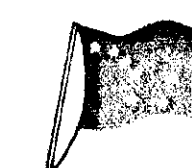
* Match with existing footing.

CASCADE CREEK BRIDGE
ROUTE NO. F-99

ABUTMENT NO. 2 FOOTING

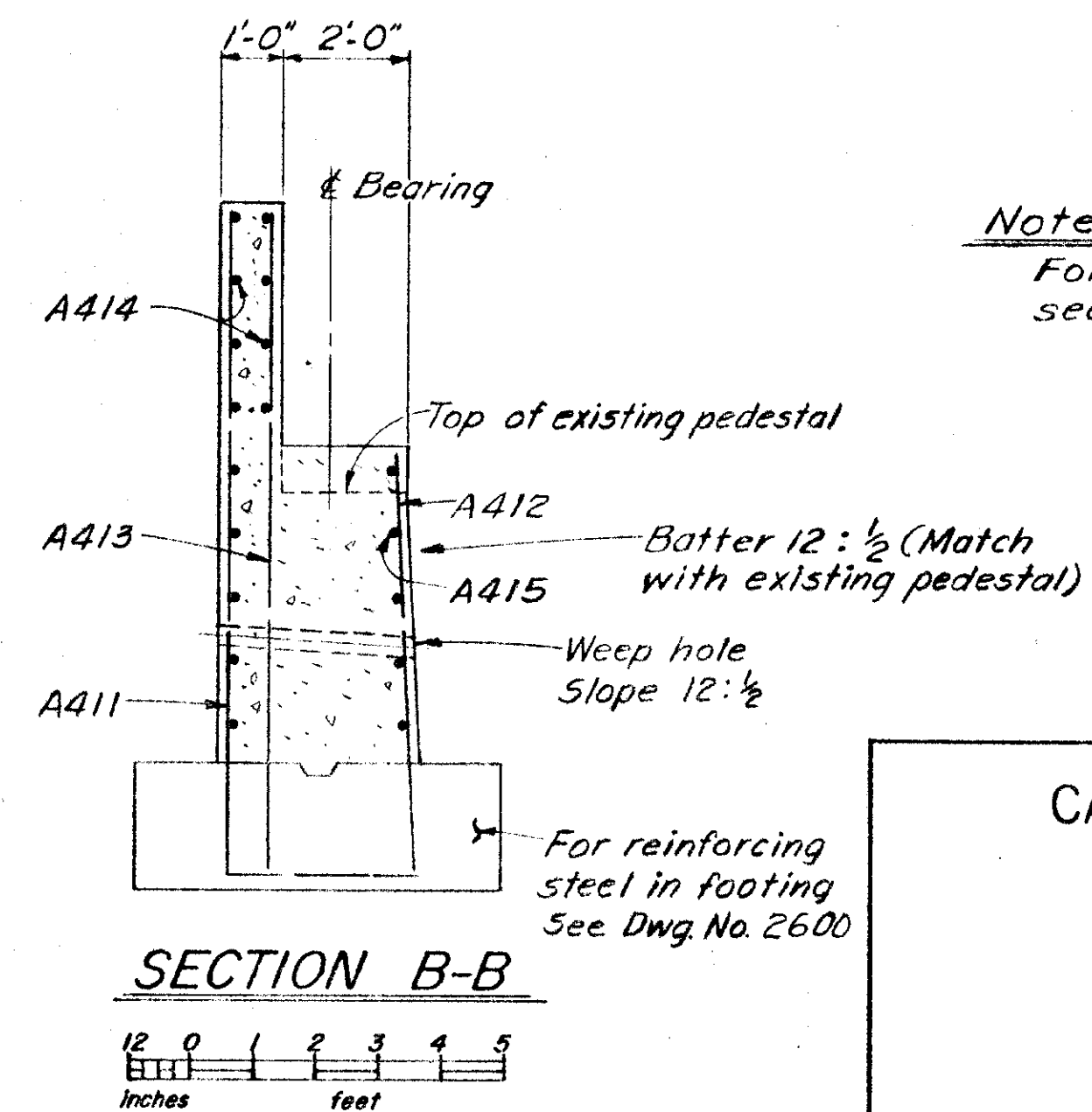
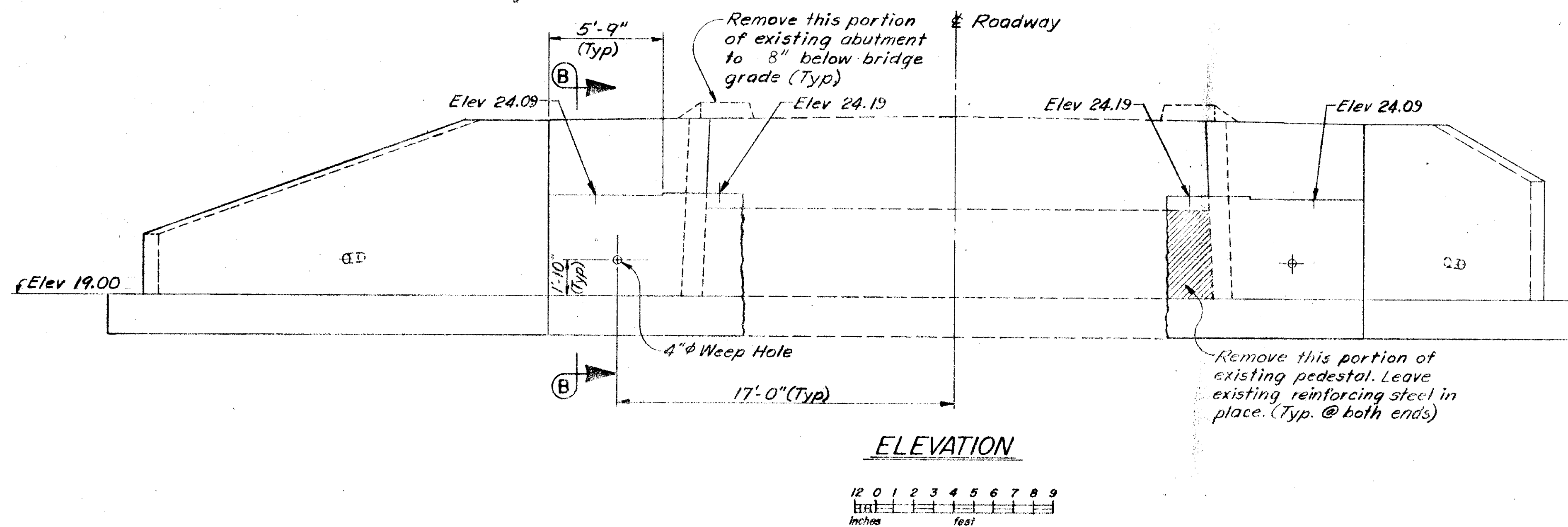
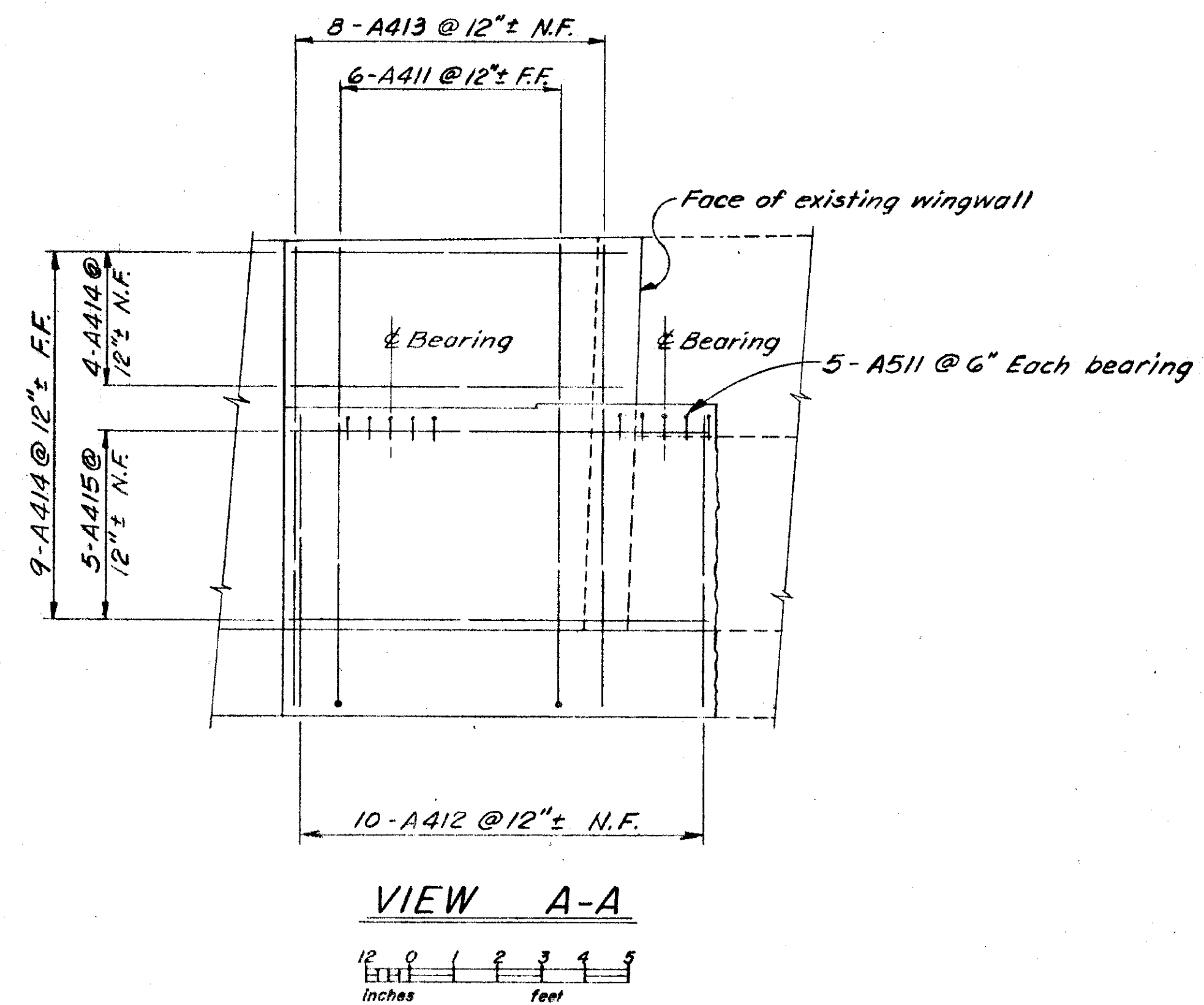
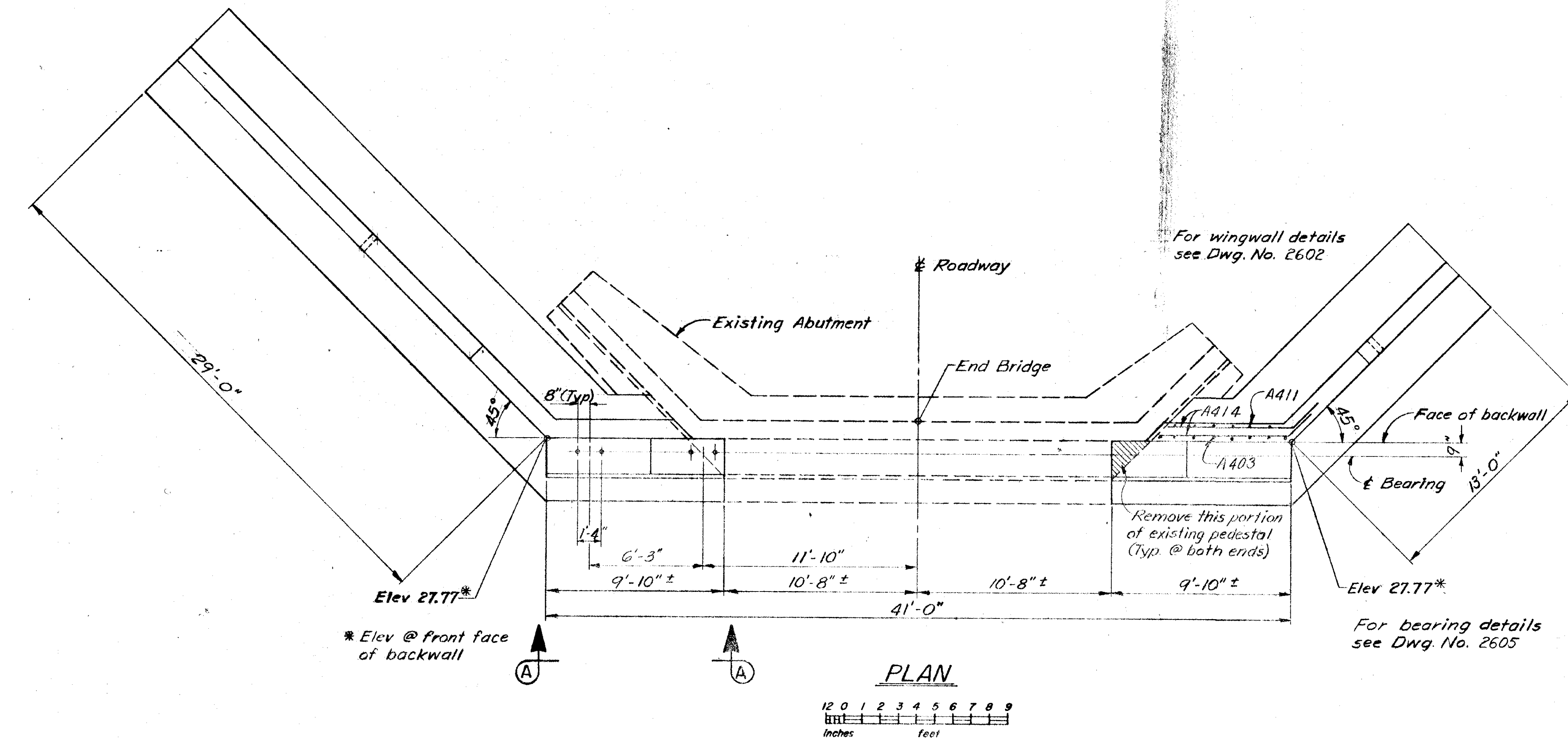
State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-23-72
Approved *[Signature]*



BRIDGE NO. 867
DWG. NO. 2600

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	9	15



Note:
For reinforcing steel schedule see Dwg. No. 2602

CASCADE CREEK BRIDGE

Route No. F-99

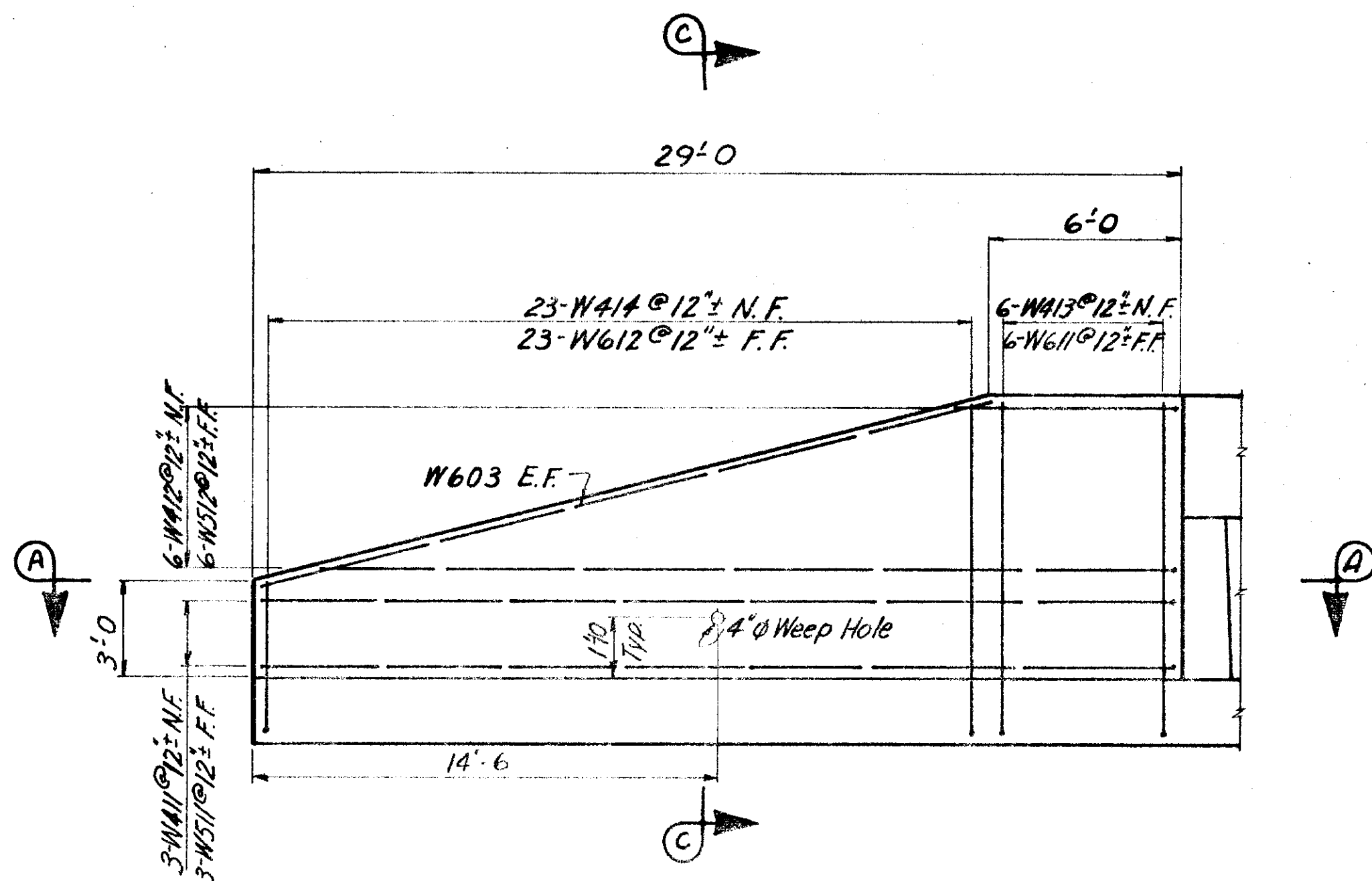
ABUTMENT NO. 2

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-72
Approved [Signature]

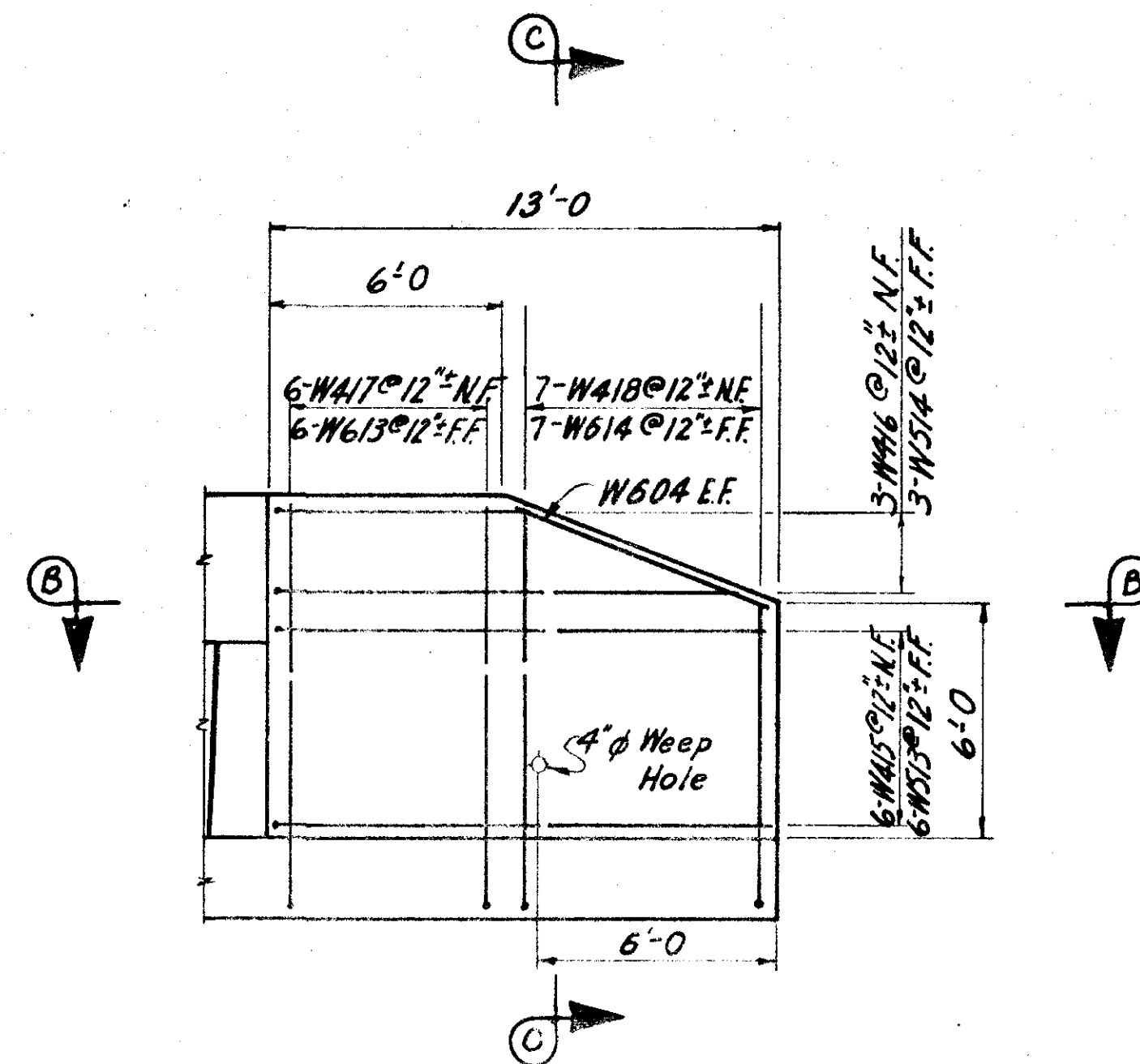
BRIDGE NO. 867
DWG. NO. 2601

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	10	15



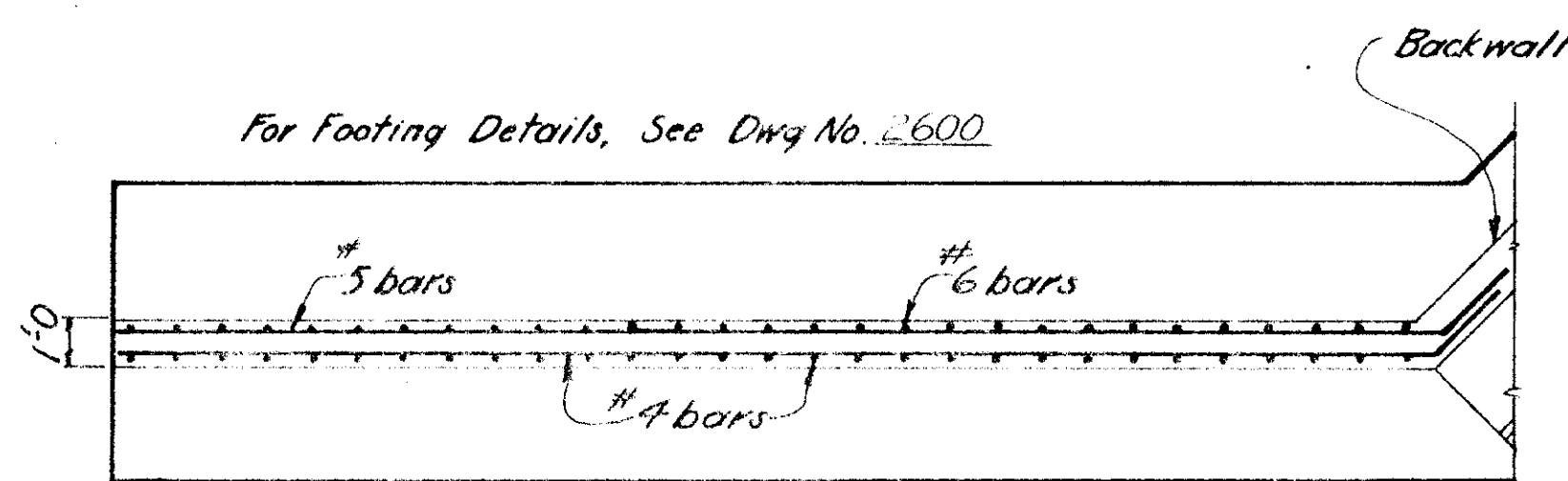
ELEVATION
Downstream Wingwall

12 0 5 10
In. Feet



ELEVATION
Upstream Wingwall

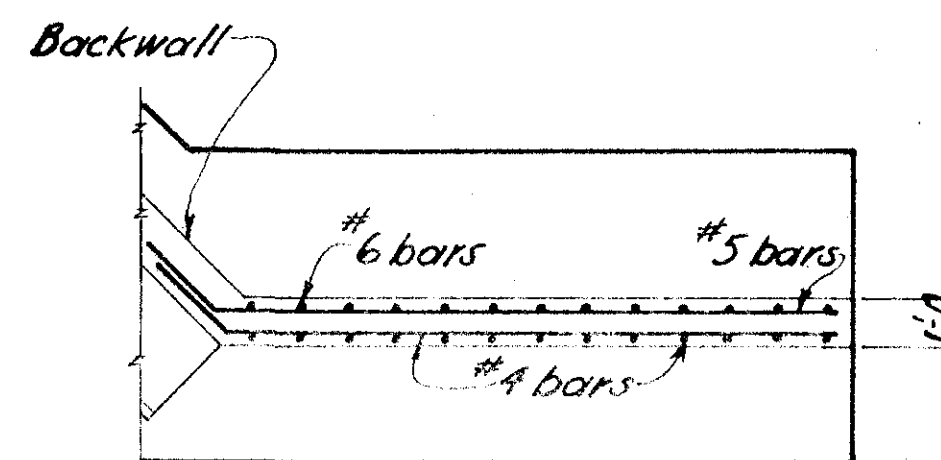
12 0 5 10
In. Feet



SECTION A-A

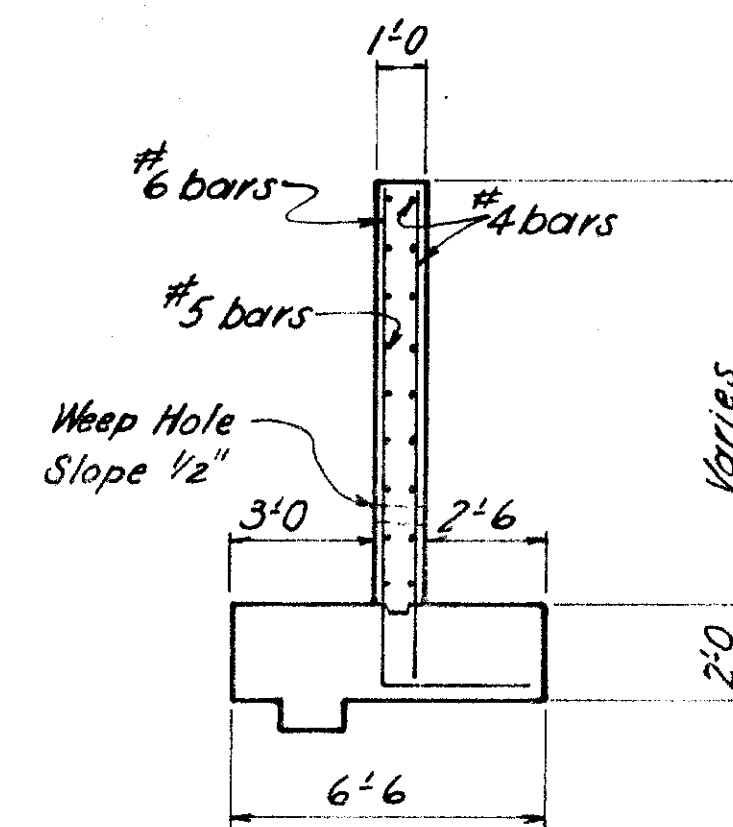
12 0 5 10
In. Feet

For Abutment Details
See Dwg. No. 2601



SECTION B-B

12 0 5 10
In. Feet



SECTION C-C

12 0 5 10
In. Feet

REINFORCEMENT SCHEDULE						BENDING DIAGRAM	
Location	Mark	Size	No.	Length	Type		
Abutment	A411	4	12	13'-5	Bent		
	A412	4	20	6'-8	—		
	A413	4	16	10'-4	—		
	A414	4	26	9'-6	Bent		
	A415	4	10	9'-6	—		
	A511	5	20	3'-8	Bent		
Wingwalls	W411	4	3	30'-9	Bent		
	W412	4	6	Varies	Bent		
	W413	4	6	10'-4	—		
	W414	4	23	Varies	—		
	W415	4	6	14'-9	Bent		
	W416	4	3	Varies	Bent		
	W417	4	6	10'-4	—		
	W418	4	7	Varies	—		
	W511	5	3	31'-3	Bent		
	W512	5	6	Varies	Bent		
	W513	5	6	15'-3	Bent		
	W514	5	3	Varies	Bent		
	W603	6	2	23'-6	—		
	W604	6	2	7'-6	—		

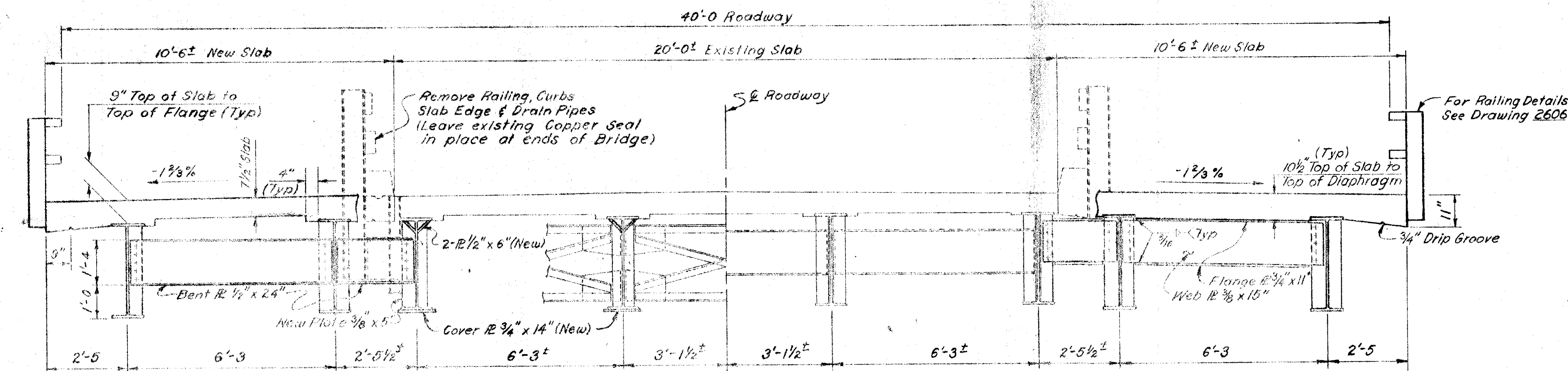
CASCADE CREEK BRIDGE
ROUTE NO. F-99
ABUTMENT NO.2 WINGWALLS

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-28-72
Approved *[Signature]*

BRIDGE NO. 867
DWNG. NO. 2602

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	11	15



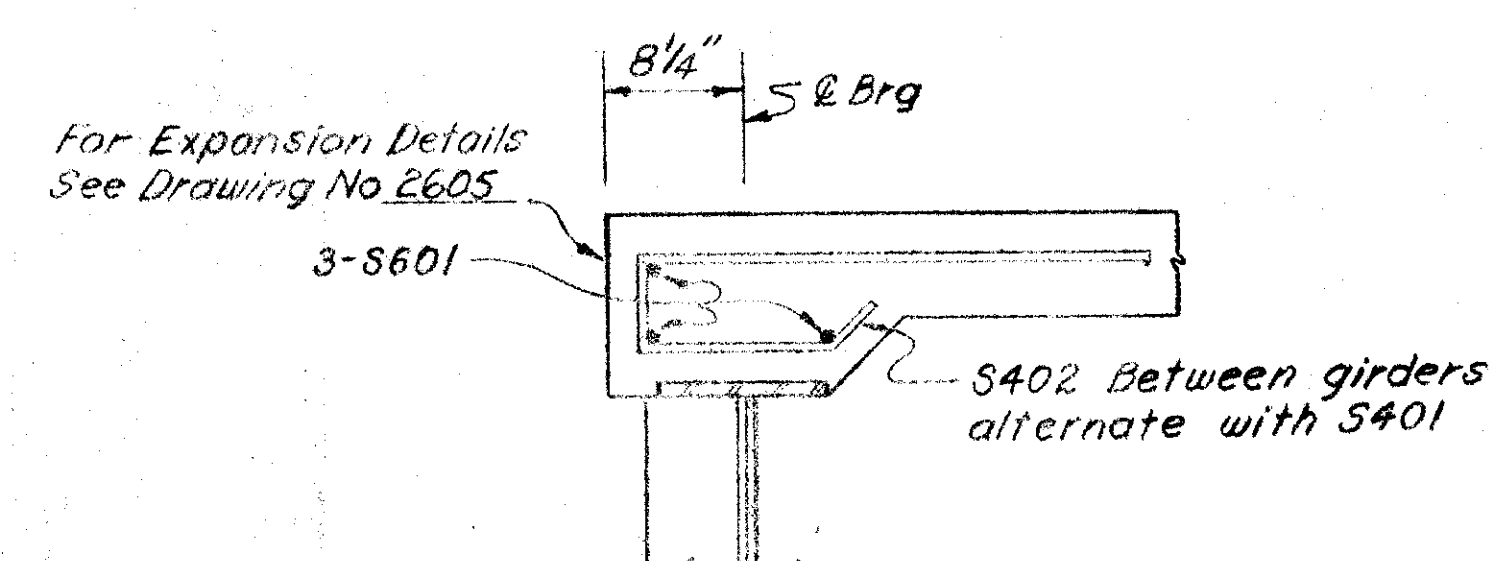
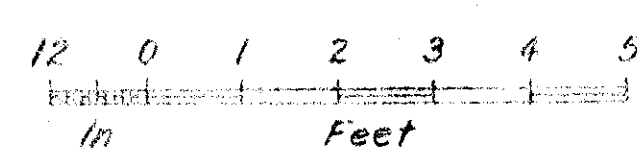
DIAPHRAGM BRACING NOTES

1. All diaphragm bracing members and R's shall be A36
2. All connection R's shall be 3/8"
3. All holes shall be 1 5/16" ϕ for 1/8" ϕ high strength bolts

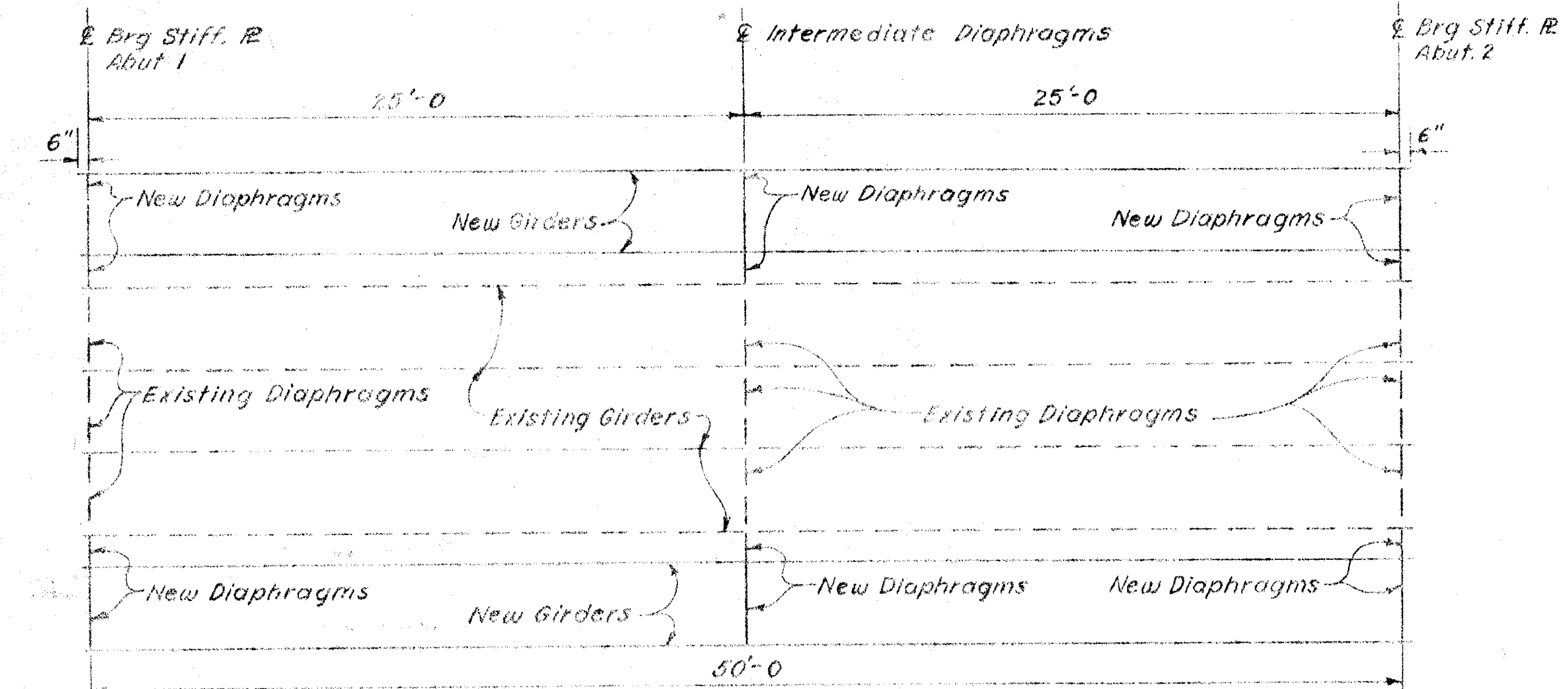
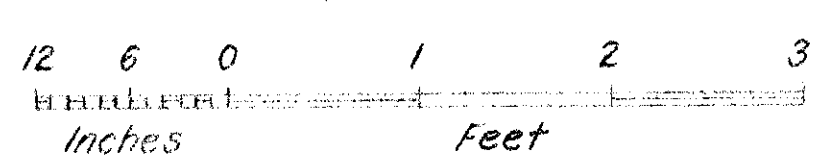
AT MIDSPAN

AT ABUTMENT

TYPICAL SECTION



SECTION AT ABUTMENTS

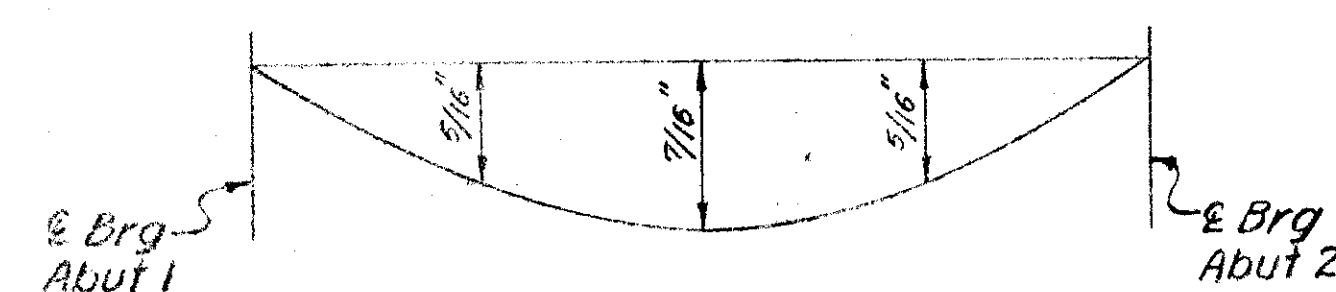


FRAMING PLAN

No Scale

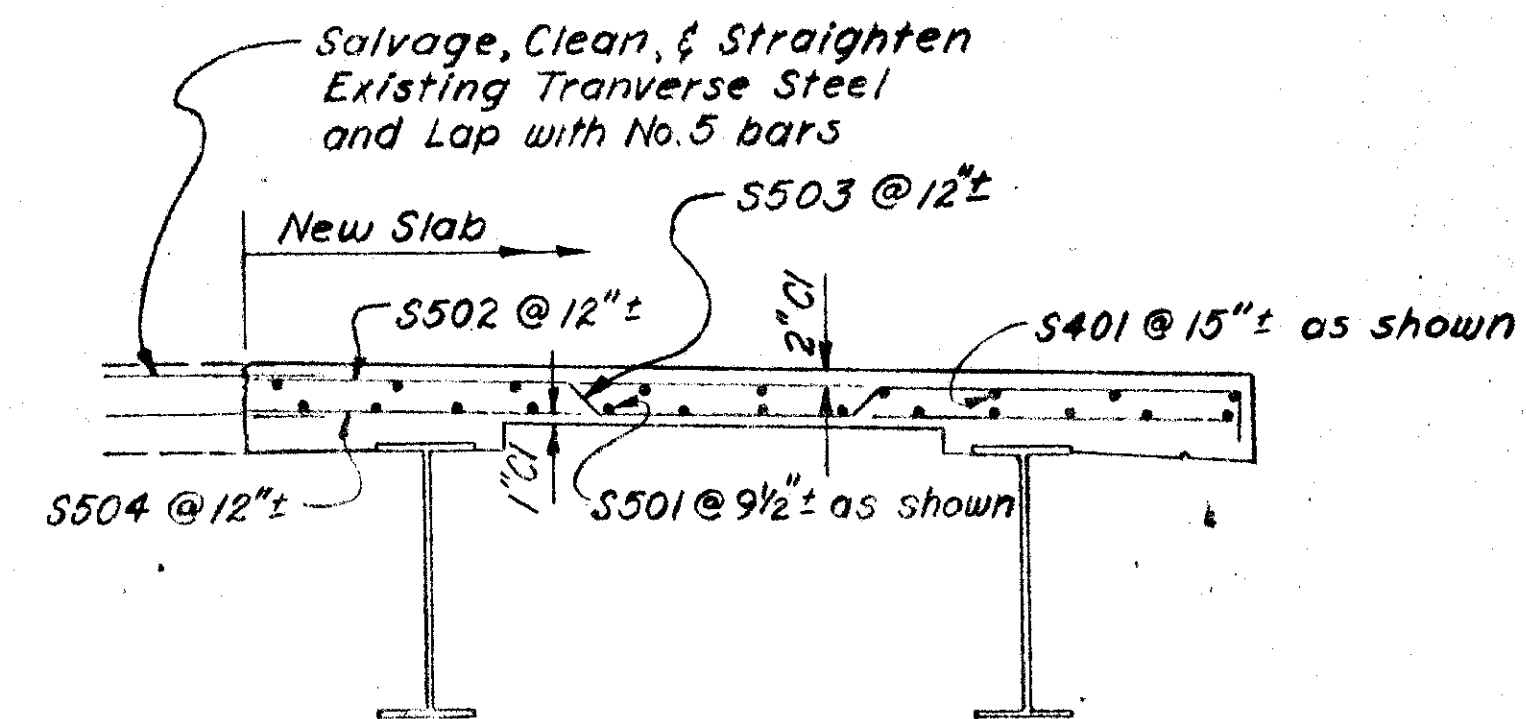
CAMBER DIAGRAM

No Scale

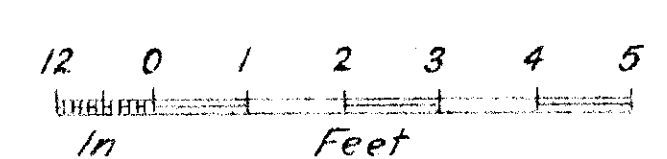


CONCRETE DEFLECTION DIAGRAM

No Scale

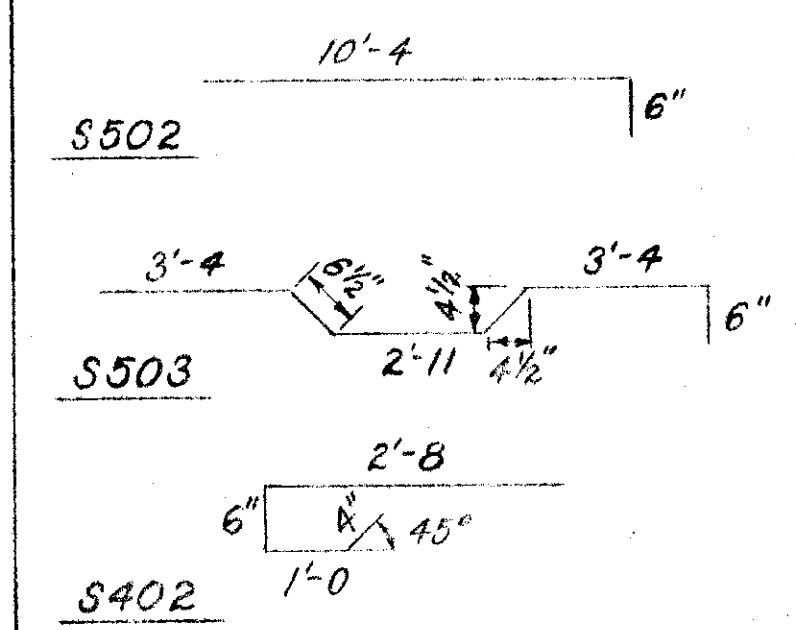


NEW SLAB DETAILS



REINFORCEMENT SCHEDULE				
Mark	Size	No	Length	Type
S401	4	18	52'-3"	
S402	4	16	4'-6"	Bent
S501	5	26	51'-0"	
S502	5	100	10'-10"	Bent
S503	5	100	11'-2"	Bent
S504	5	100	10'-4"	
S601	6	12	10'-4"	

BENDING DIAGRAM



* Total length shown - Includes allowances for splices

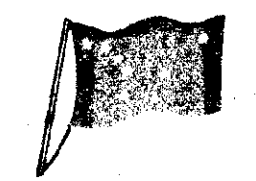
CASCADE CREEK BRIDGE

Route No F-99

TYPICAL SECTION

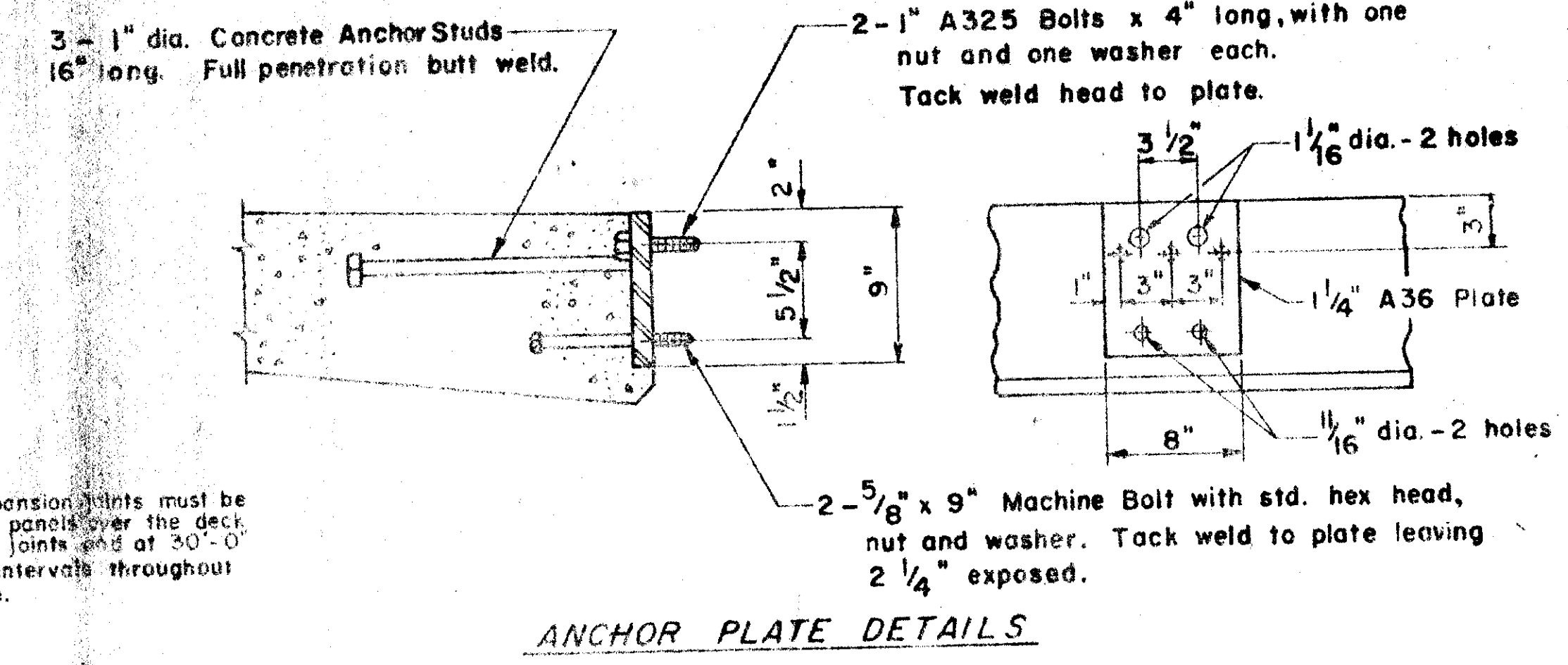
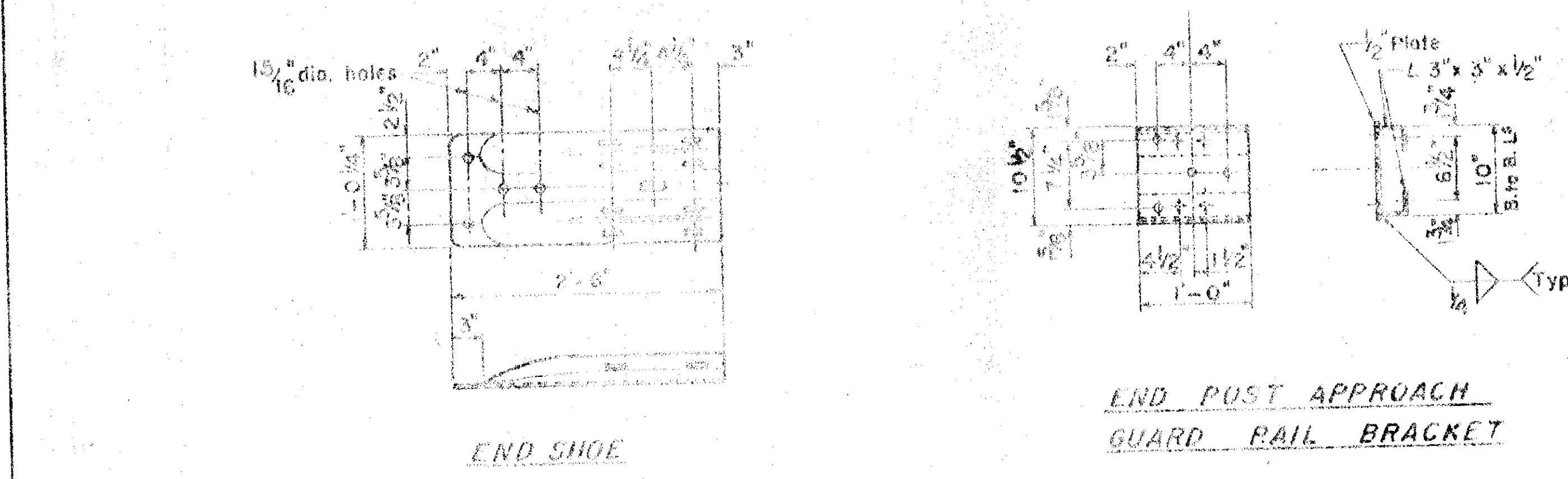
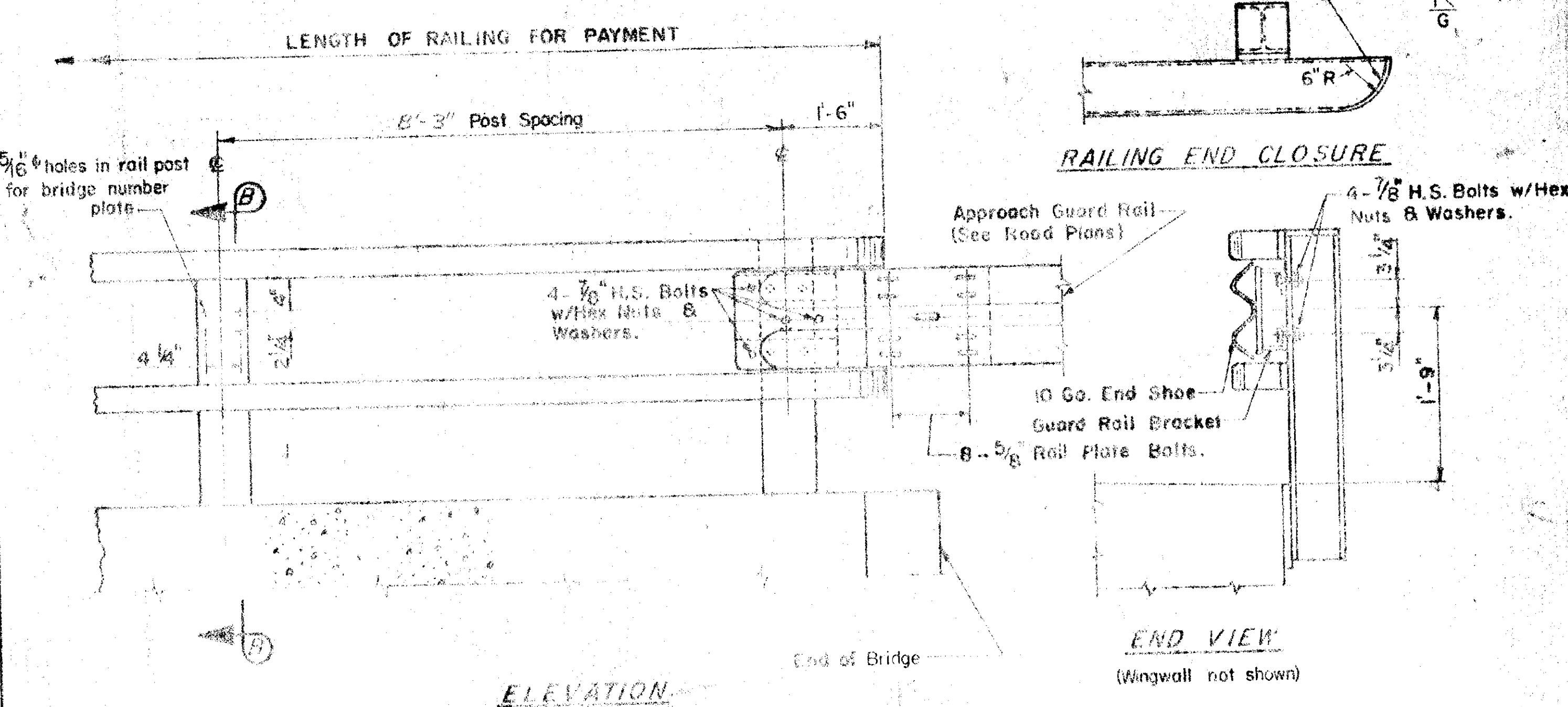
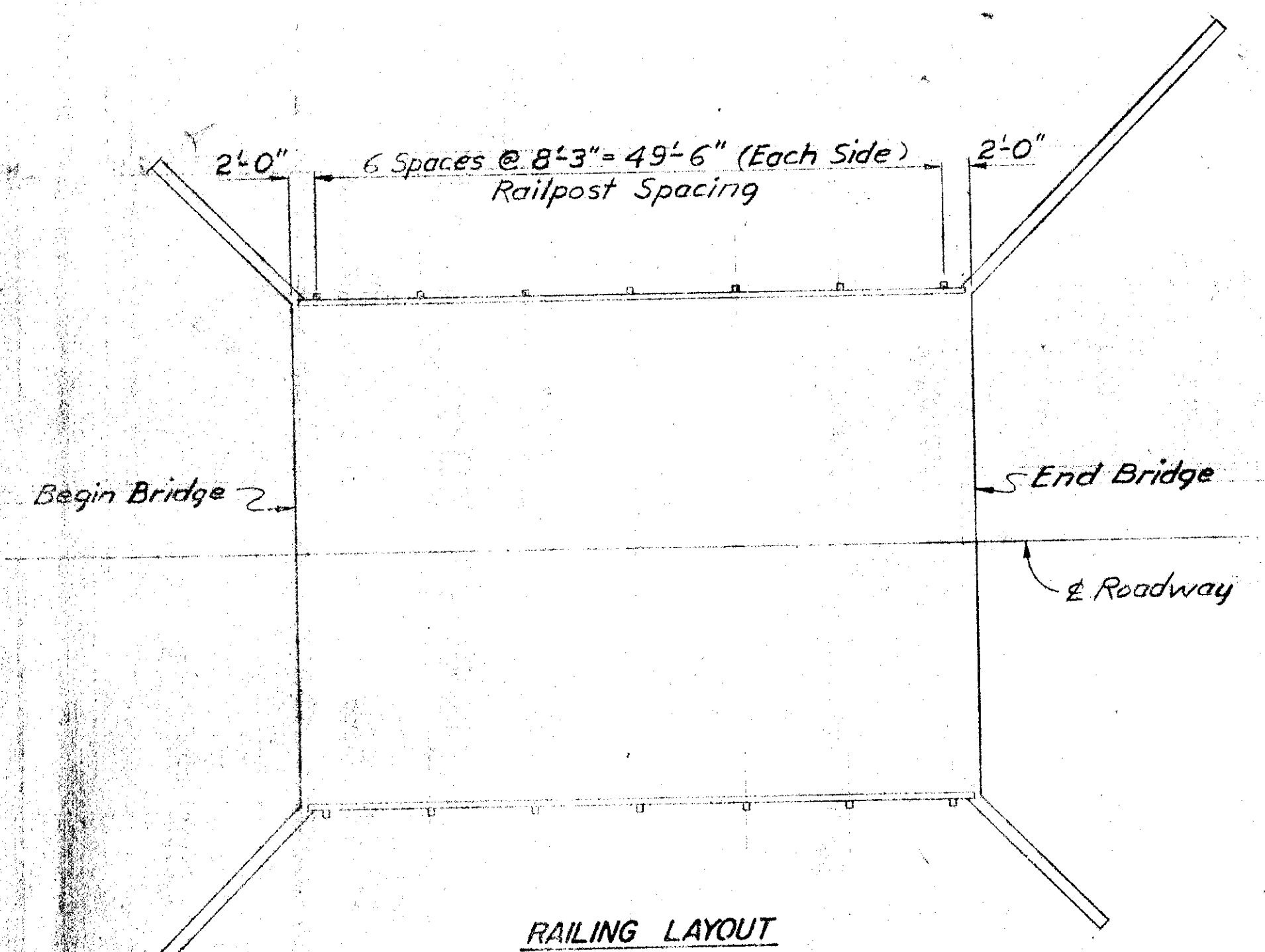
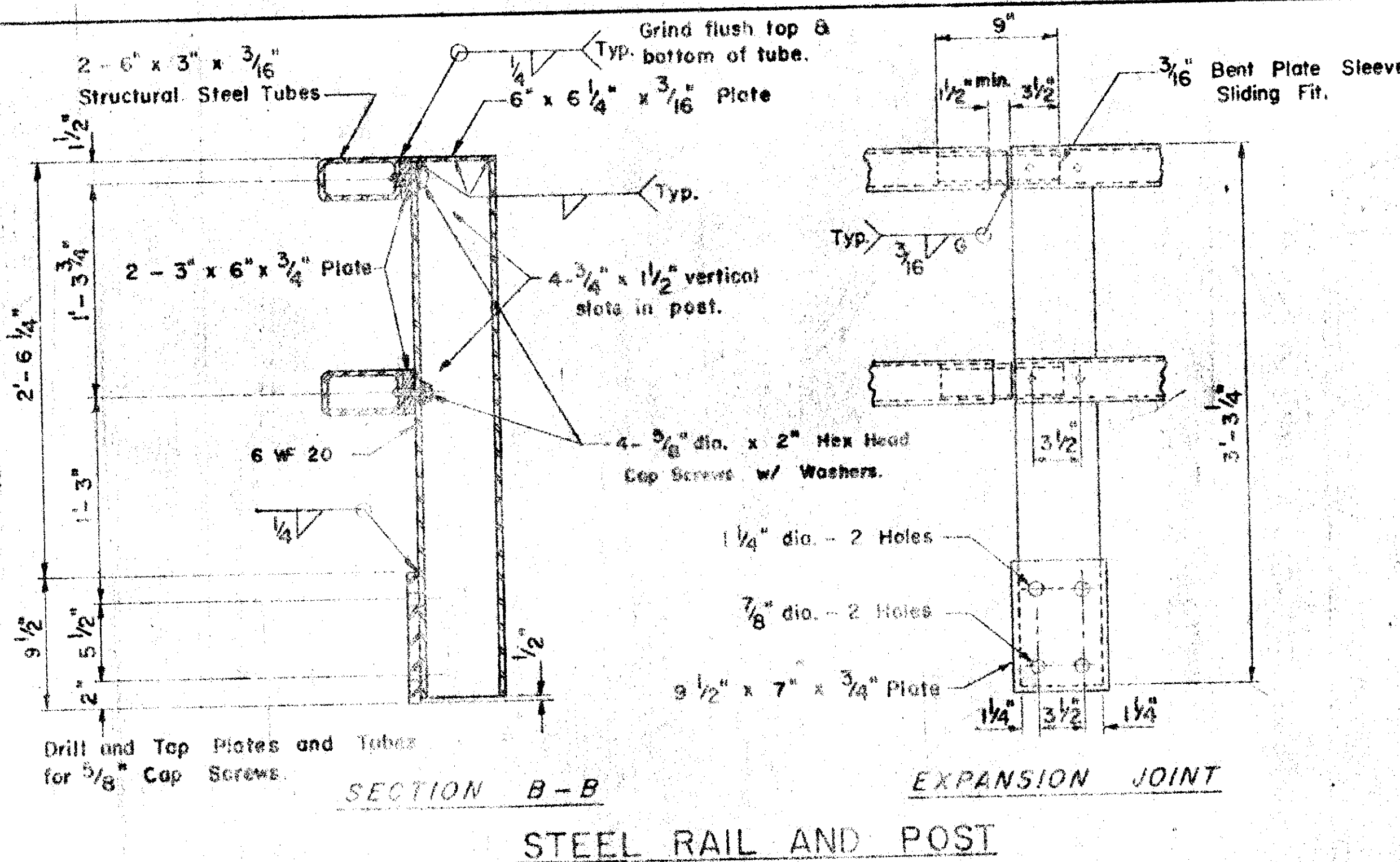
State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-72
Approved [Signature]



BRIDGE NO. 867
DWNG. NO. 2603

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1971	12	1



- NOTES**
- (1) All railing, posts, anchor assemblies and other steel components shall be galvanized after fabrication. Galvanized steel shims shall be furnished by the contractor as required.
 - (2) Locate bridge number plate on right side of roadway at each end of bridge as shown.
 - (3) Bridge number plate to be furnished by the state.
 - (4) Increase gap in railing expansion joint to match deck joint opening.
 - (5) All Machine bolts and cap screws shall have locking lock washers.

CASCADE CREEK BRIDGE

ROUTE NO. F-99

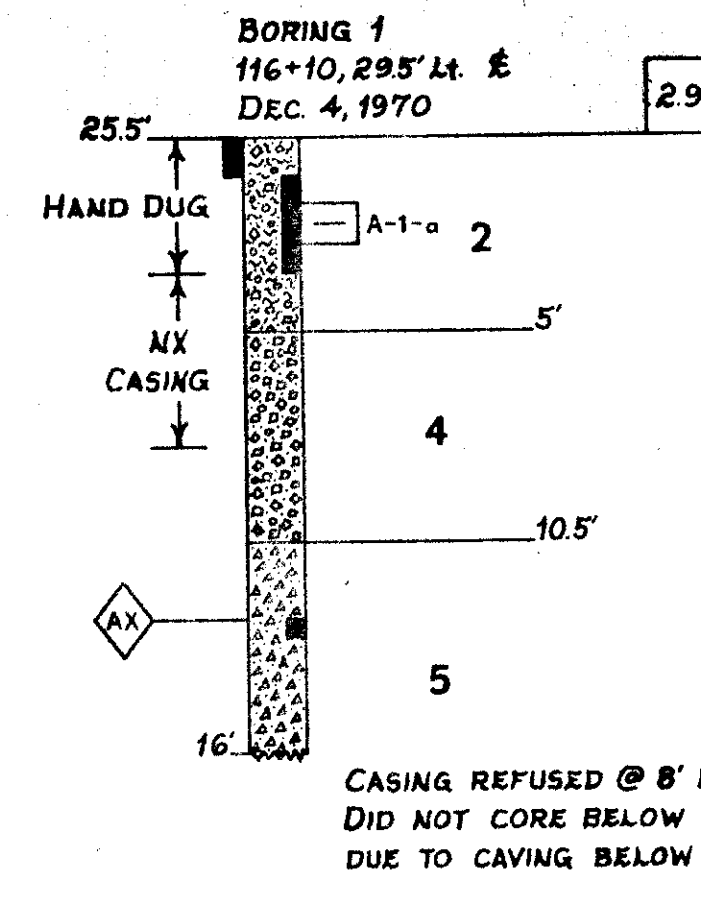
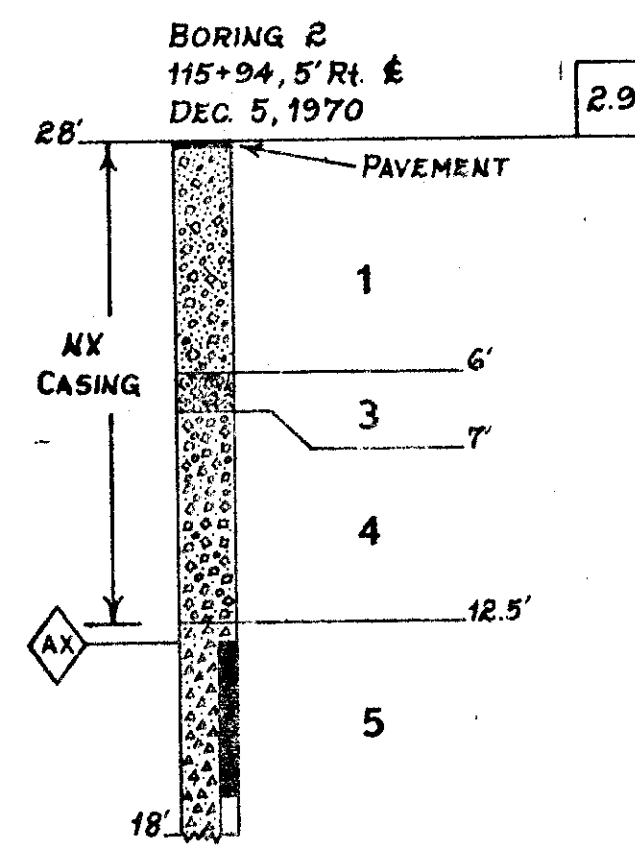
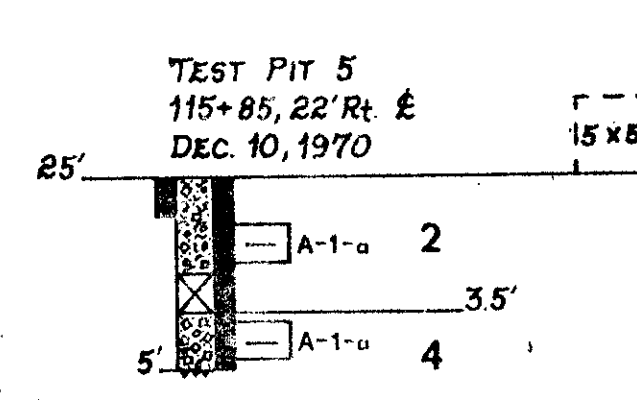
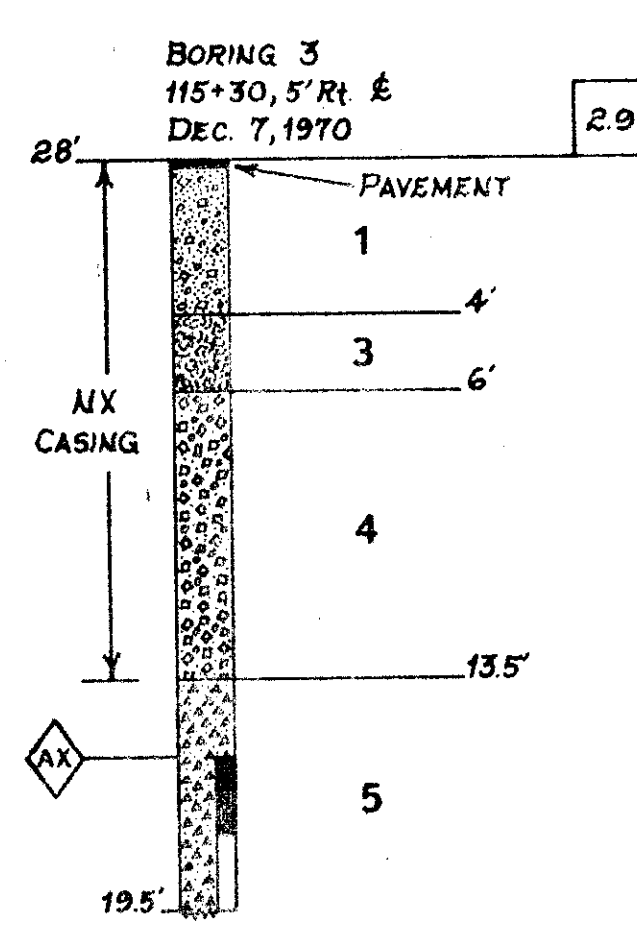
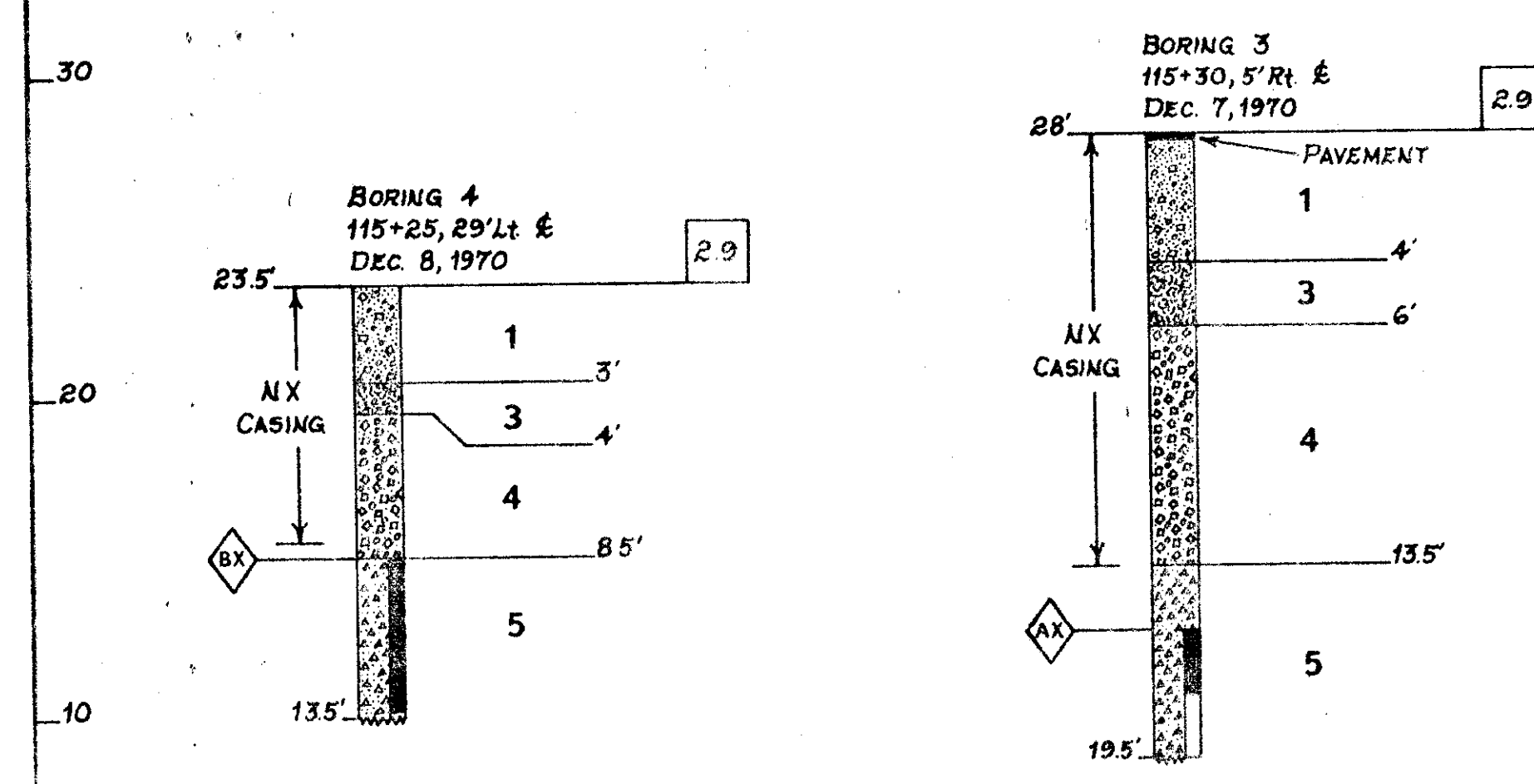
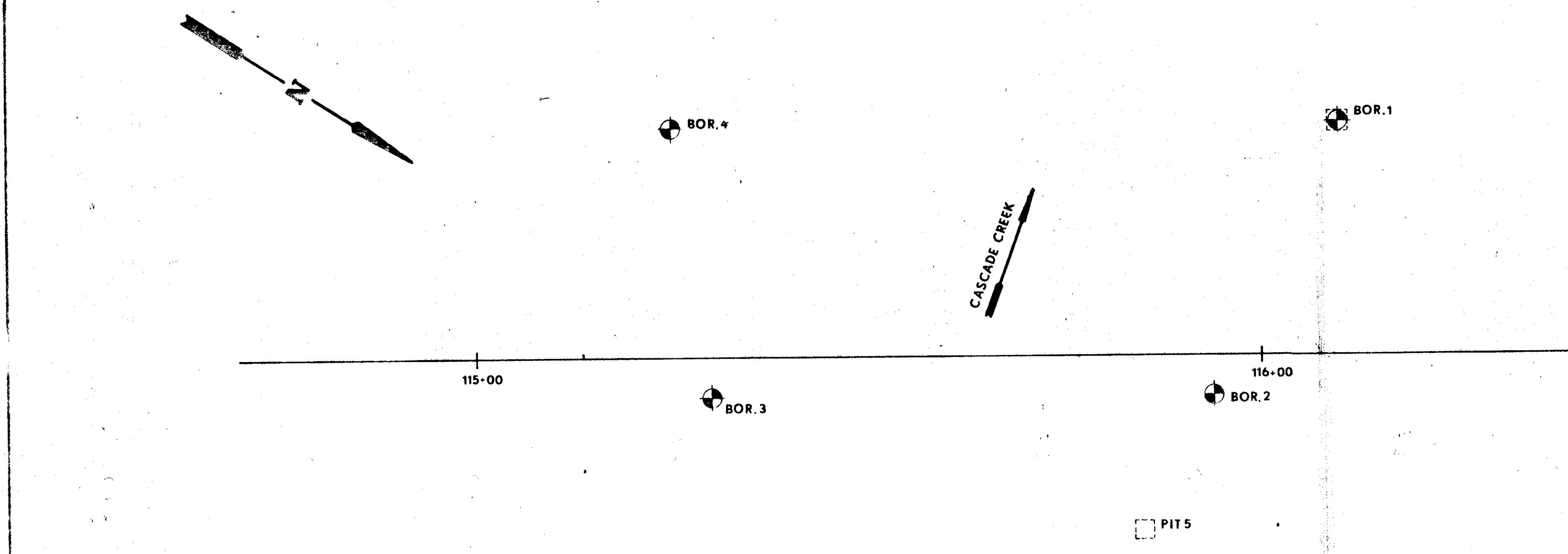
RAILING

No Scale

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 5/24/71
Approved [Signature]

BRIDGE NO. 867
DWNG. NO. 26



- SOILS DESCRIPTIONS**
- 1 FILL, STONE, BROKEN ROCK & SANDY GRAVEL
 - 2 HIGHLY ORGANIC SOILS; GRAVEL, STONE & BROKEN ROCK w/ SOME SAND
 - 3 ORGANIC; ORIGINAL GROUND SURFACE
 - 4 BROKEN ROCK & STONE w/ SOME SAND & GRAVEL; TRACE ORGANICS
 - 5 BEDROCK, GREYWACKE

NOTE: ALL SOILS SAMPLES WERE EXCAVATED BY HAND TOOL METHODS.

GROUND WATER WAS NOT DETECTED IN THE BORINGS. ELEVATION OF WATER IN CASCADE CREEK WAS APPROX. +16' IN DEC., 1970.

MATERIAL SYMBOLS

	Organic Organic Silt		Clayey Silt
	Cobbles and Boulders		Sandy Silt
	Sandy Gravel		Gravelly Silt
	Gravelly Sand		Silty Clay
	Gravel		Silty Sand
	Sand		Silty Gravel
	Clay		
	Silt		

BORING SYMBOLS

	Plan of any boring		Flush penetrometer
	Bull nose penetrometer		Rotary boring
	Auger boring		Diamond core boring
	Test pit		Probe

ROTARY BORING

Boring No.	3
Location	25' (D) x 20'
Date	DEC. 7, 1970
Graphic description of material	SI - Shelby tube pushed
Ground water surface	Blow count/H Standard van 20' (D) x 14' hammer 30.1
Consolidation test	Gradational material change
Direct shear test	Strata change
Triaxial compression test	Interval sampled w/ recovered block
Vane shear test	Unconfined compression test

FINETROMETER TEST

Number	Location	Date	Depth	Blows	Rel. Density	Consistency
1	25'	DEC. 7, 1970	2.5'	0-4	very loose	0-1
2	25'	DEC. 7, 1970	5'	5-10	loose	2-4
3	25'	DEC. 7, 1970	11'	11-20	firm	5-8
4	25'	DEC. 7, 1970	21'	21-30	very firm	9-15
5	25'	DEC. 7, 1970	31'	31-50	dense	15-30
6	25'	DEC. 7, 1970	Over 50'	Over 50	very dense	Over 30

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

According to Standard Penetration Test

LOG OF TEST BORINGS

Cascade Creek

State of Alaska

DEPARTMENT OF HIGHWAYS

Juneau, Alaska

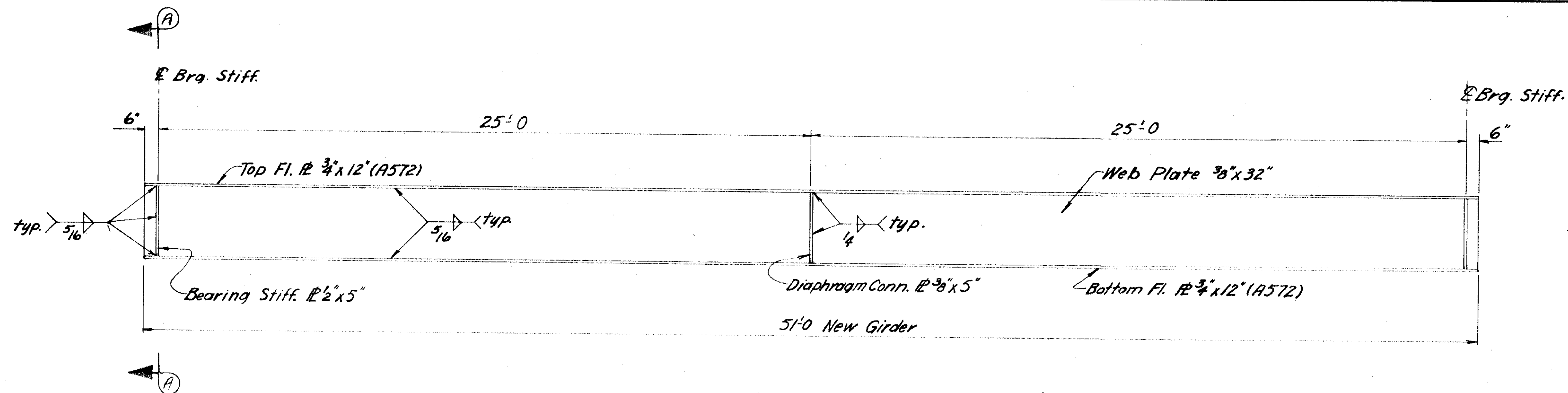
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Approved:

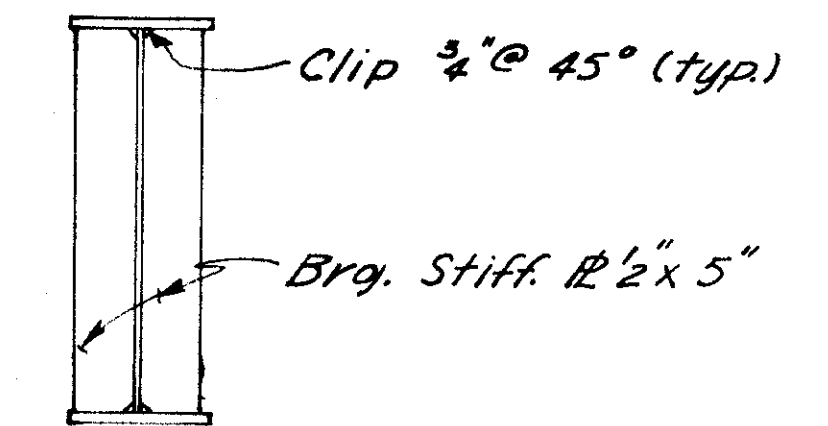
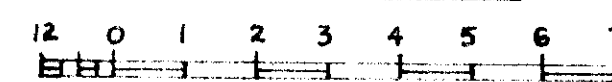
Bridge No. 86

Drawing No. 26

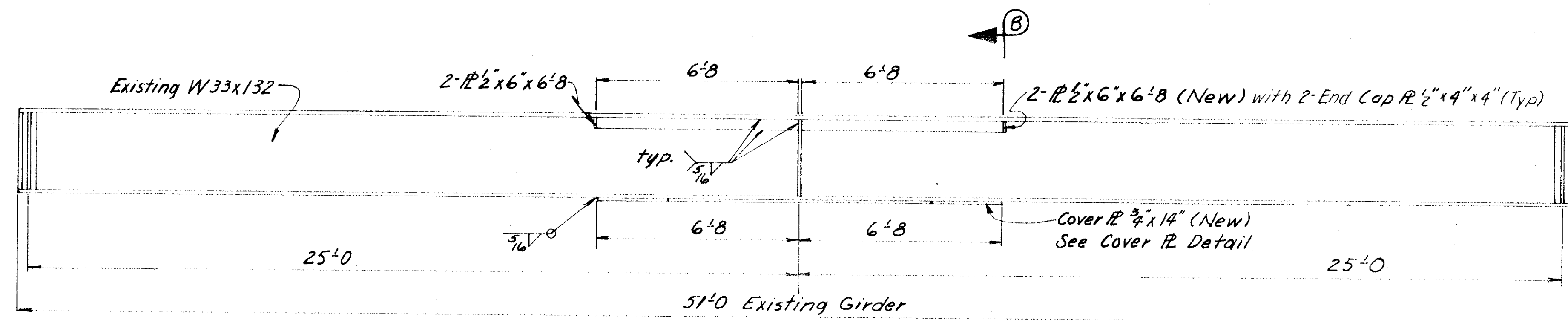
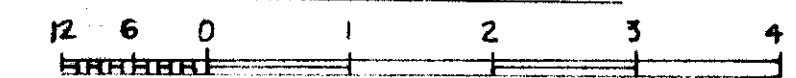
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	14	15



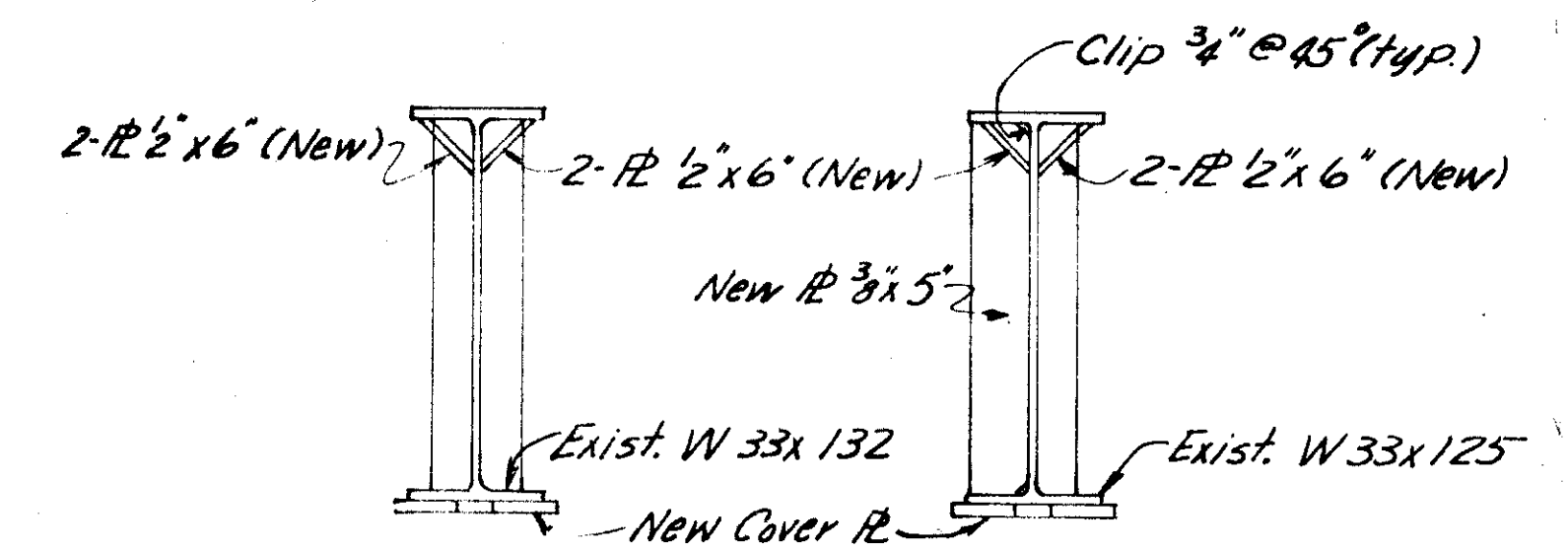
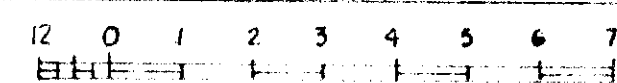
NEW GIRDER



SECTION A-A

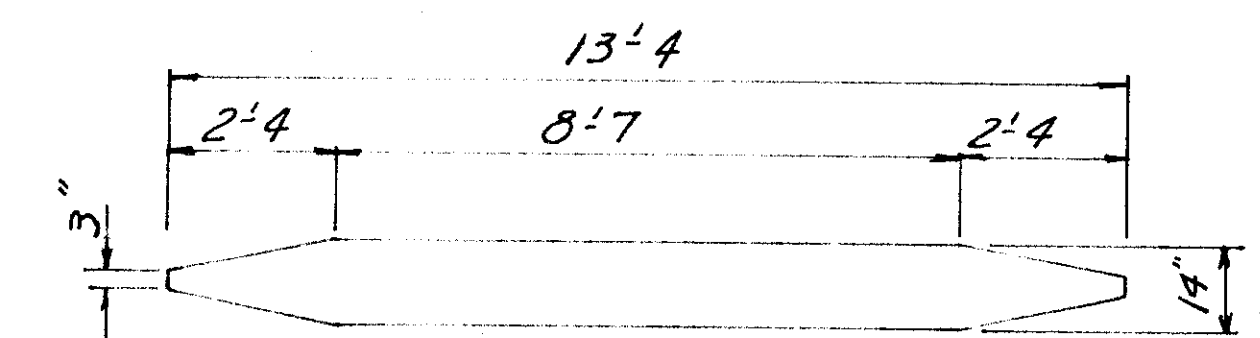


EXISTING INTERIOR GIRDER

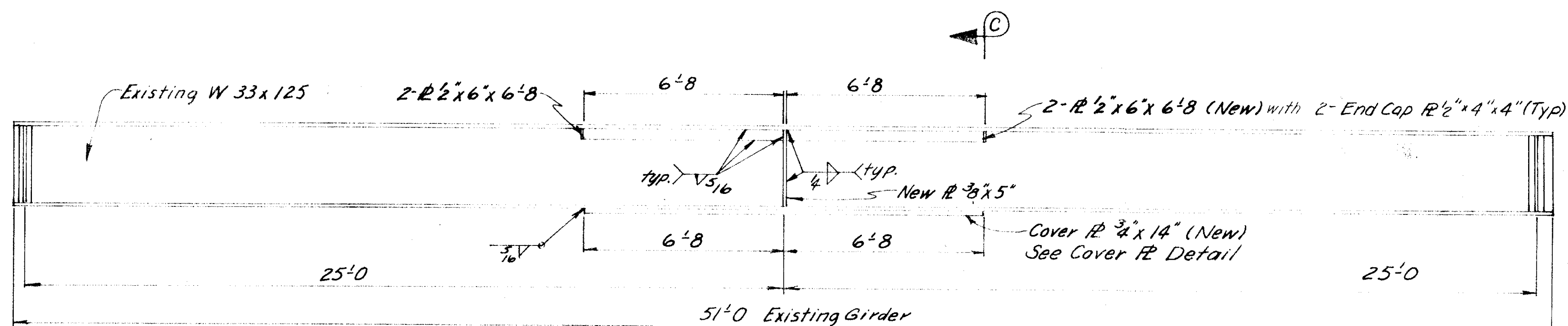
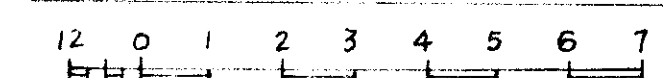


SECTION B-B

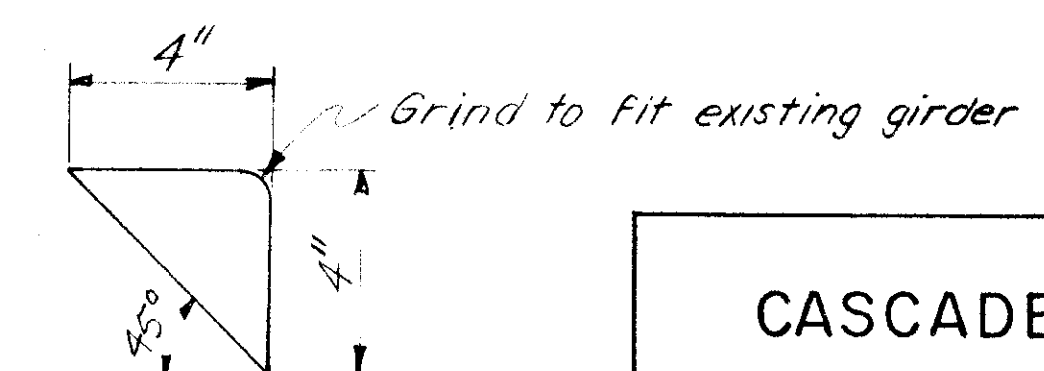
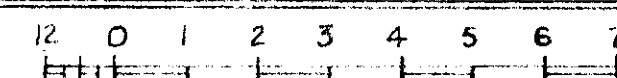
SECTION C-C



COVER PLATE DETAIL



EXISTING EXTERIOR GIRDER

* END CAP
No Scale

* Note:
End Cap is to be welded
around its perimeter to
form a water tight barrier.

CASCADE CREEK BRIDGE

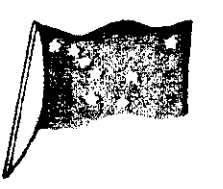
ROUTE NO. F-99

GIRDERS

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-25-72

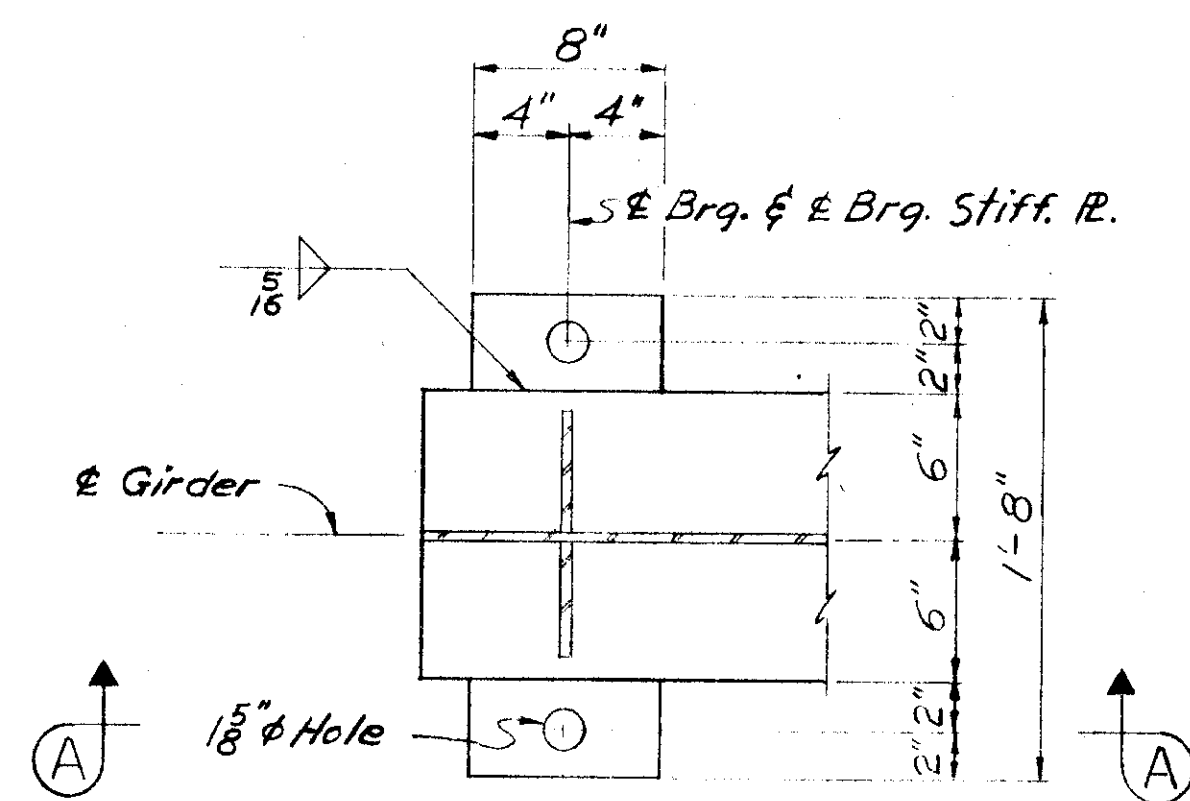
Approved



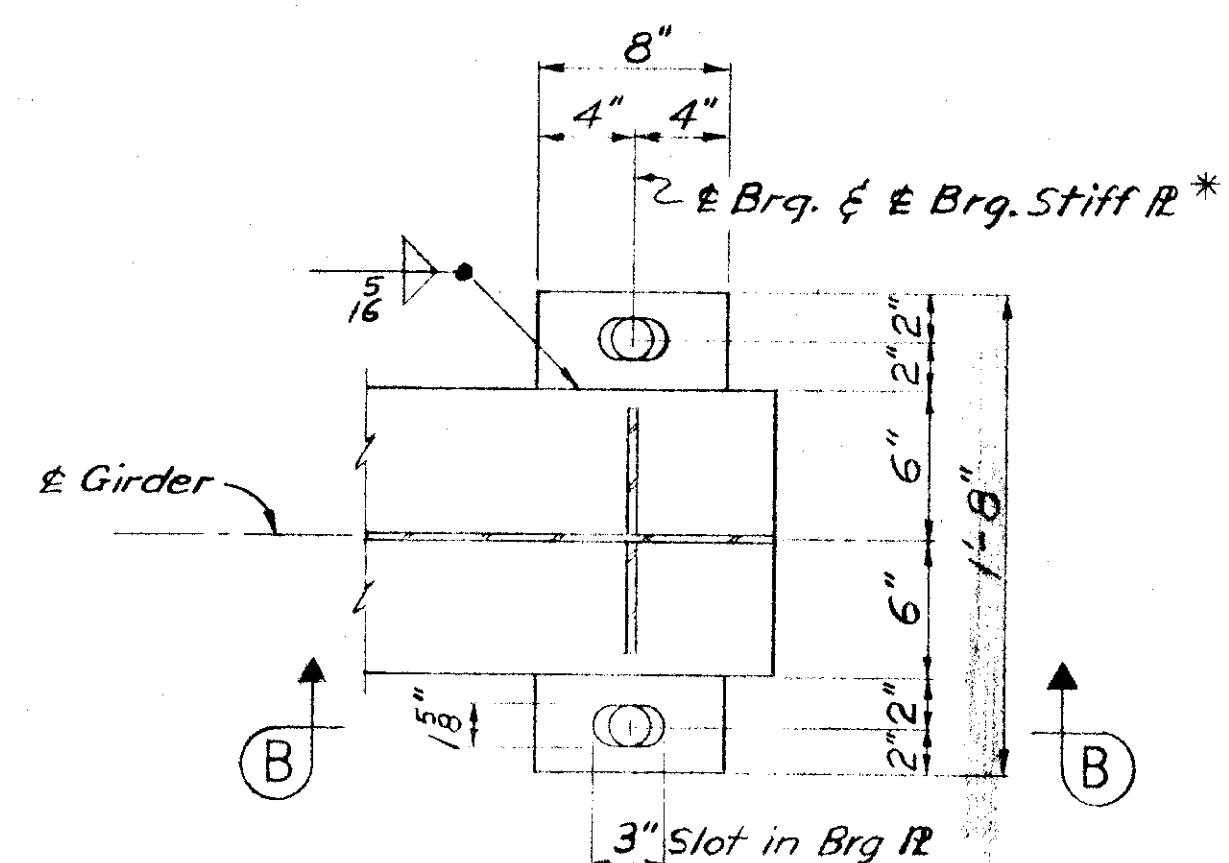
BRIDGE NO. 867

DWNG. NO. 2604

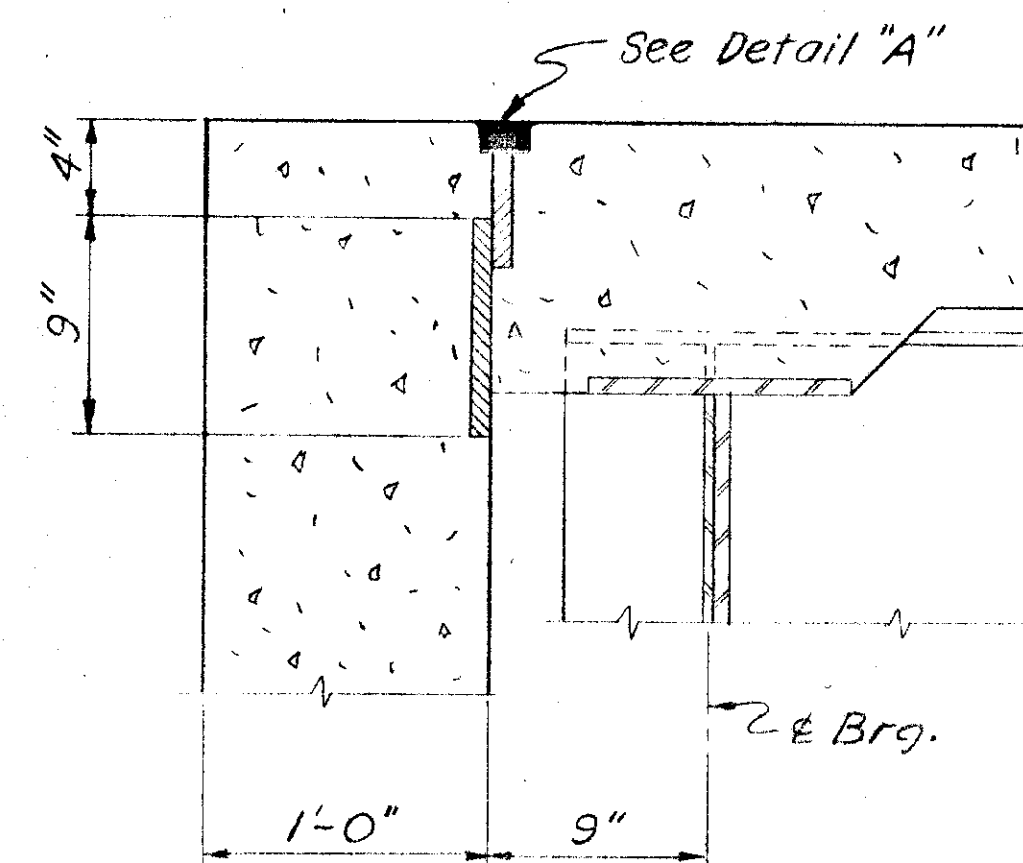
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	F-099-3(8)	1972	15	15



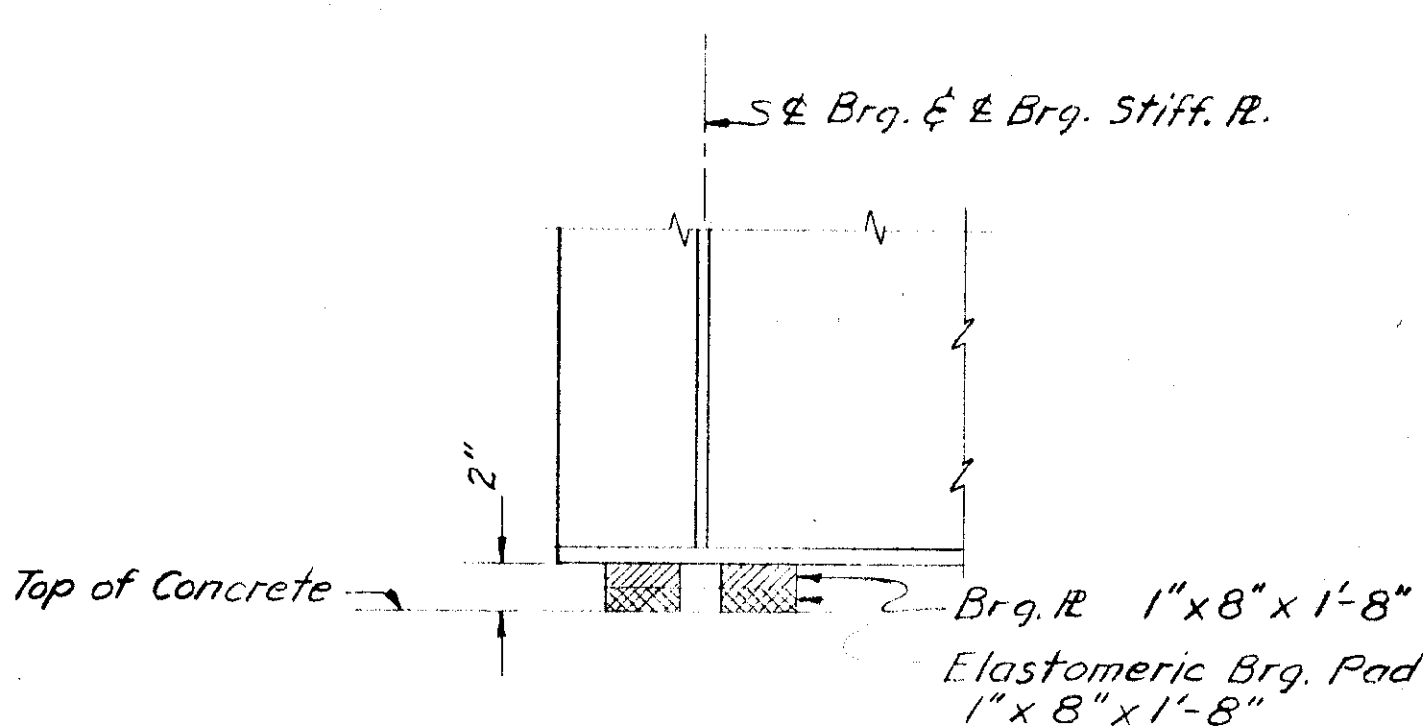
BEARING DETAIL ABUTMENT 1 (FIXED)



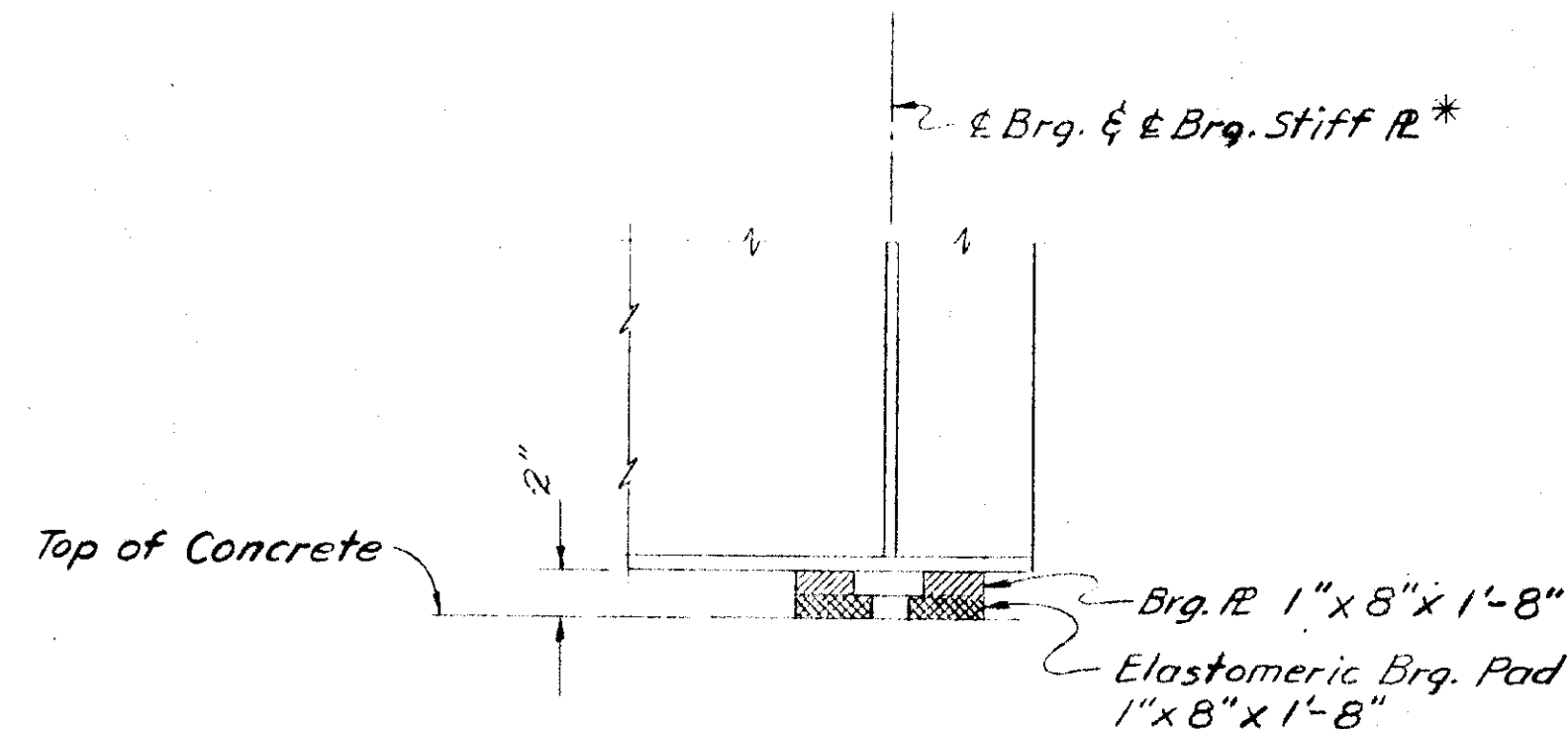
BEARING DETAIL ABUTMENT 2 (EXP)



SECTION AT ABUTMENTS

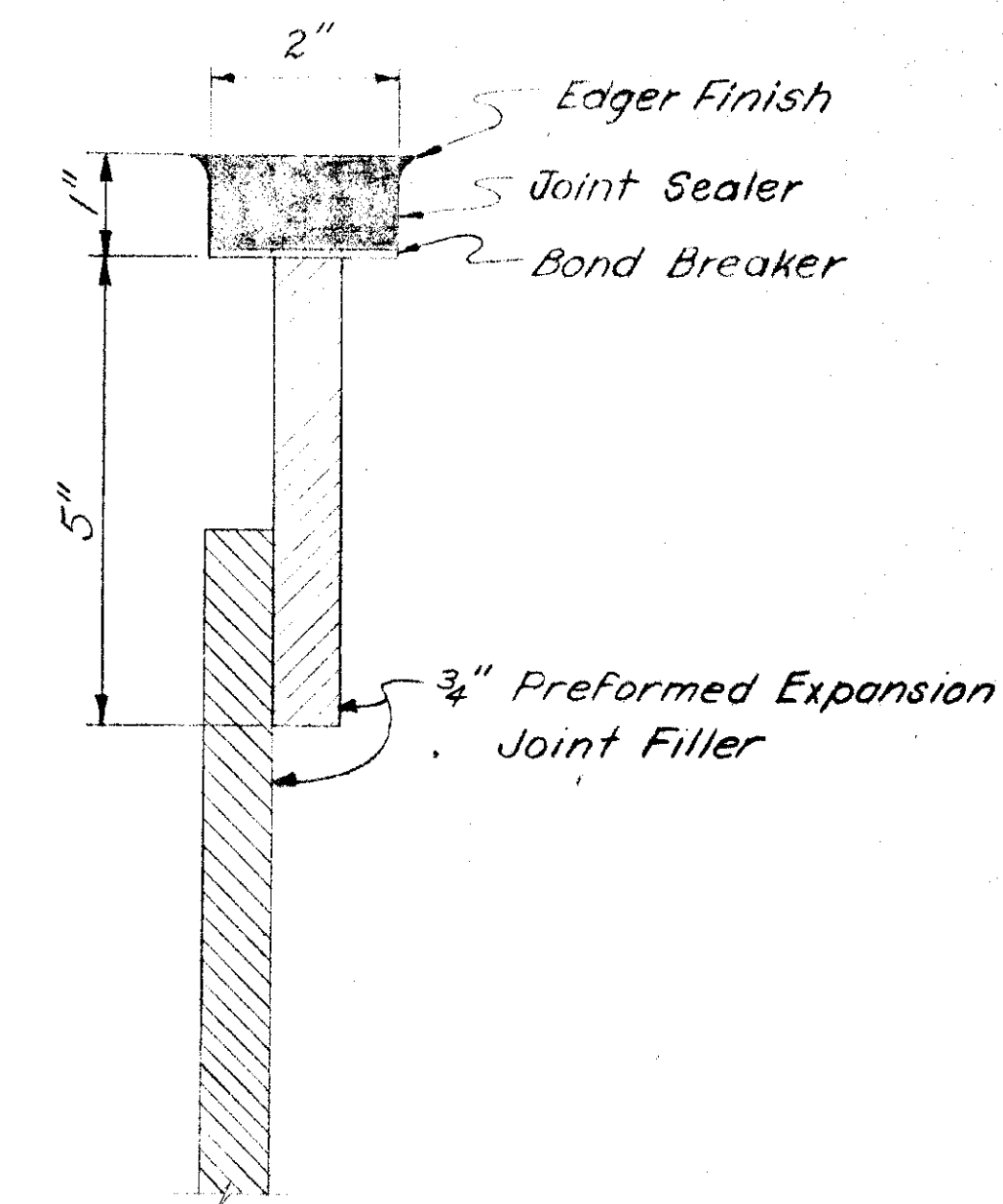


SECTION A-A



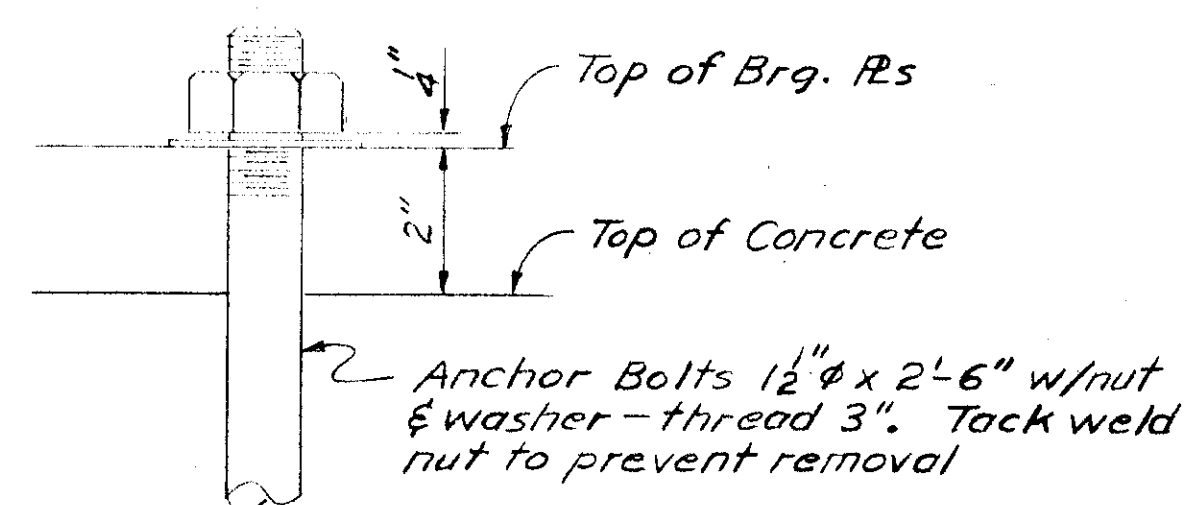
SECTION B-B

* Center bearings at 30°F. Adjust expansion bearings 1/16 inch for each 10°F of variation from 30°F.



DETAIL "A"

(No Scale)

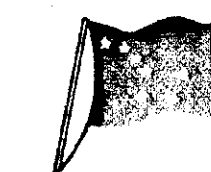


ANCHOR BOLT

CASCADE CREEK BRIDGE
ROUTE NO. F-99
BEARINGS & JOINT SEALS

State of Alaska
DEPARTMENT OF HIGHWAYS
Juneau, Alaska

Date 2-28-72
Approved [Signature]



BRIDGE NO. 867
DWNG. NO. 2605