FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N. D.	F 308(8)		1	151

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

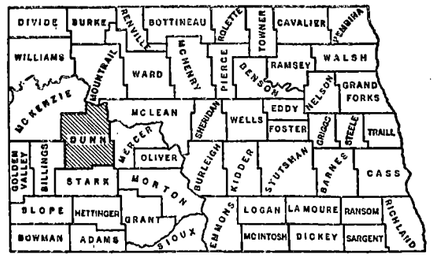
PLANS

FOR THE PROPOSED IMPROVEMENT OF A

STATE HIGHWAY

IN DUNN COUNTY

FEDERAL AID PROJECT NO. F. 308(8)



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES

SCALES
- LAYOUT SHEET: 1 IN. = 4000'
- PLAN AND PROFILE DRAWINGS: HOR. 1 IN. = 100 FT. / VERT. 1 IN. = 10 FT.
- STRUCTURAL DRAWINGS:- AS SHOWN
- CROSS SECTION SHEETS:- 1 IN. = 10 FT.

INDEX OF DRAWINGS

SHEET NO.	1	TITLE PAGE
SHEET NO.	2	TYPICAL SECTIONS & SUMMARY OF QUANTITIES
SHEET NO.	3	CULVERT AND BRIDGE LIST
SHEETS NO.	4	TO 27 INCL. PLAN AND PROFILE DRAWINGS.
SHEETS NO.	28	TO INCL. STRUCTURAL DRAWINGS
SHEETS NO.		TO INCL. SOIL PROFILE
SHEETS NO.		TO INCL. CROSS SECTIONS

LENGTH OF PROJECT		
PROJECT	MILES-GROSS	MILES-NET
F 308(8)	13.292	13.292
TOTALS	13.292	13.292

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota State Highway department Jan 1956 and approved as standard by the Bureau of Public Roads May 7, 1956 Required Special Provisions dated Oct. 9, 1957 and approved by the Bureau of Public Roads Nov. 29, 1957 and others submitted herewith.

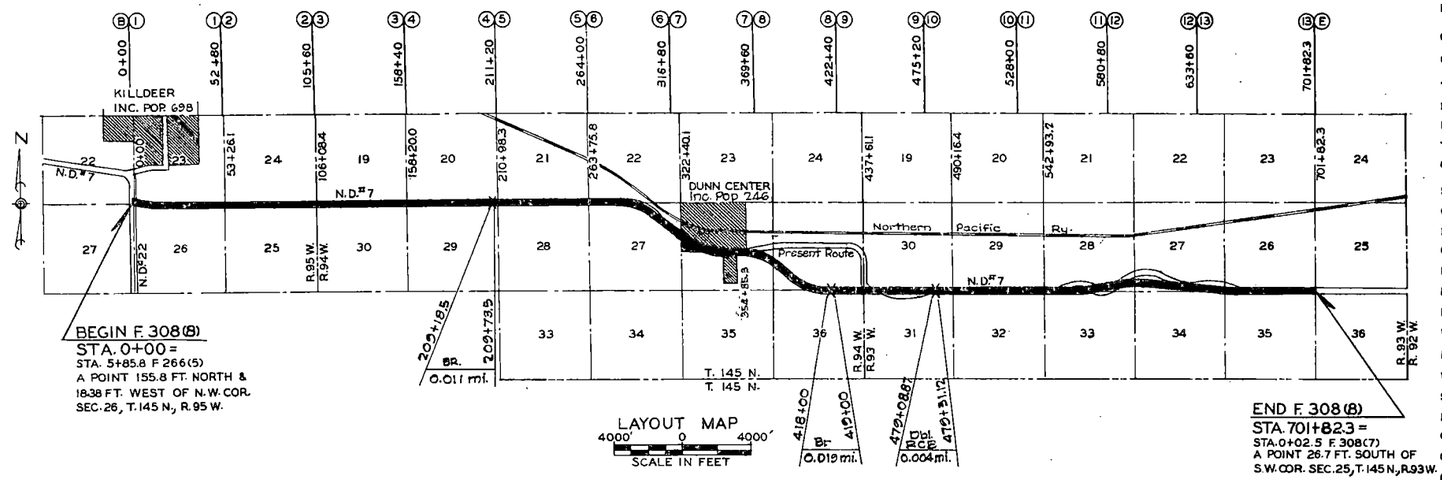
KEY TO CONVENTIONAL SIGNS

STATE & NATIONAL LINES
COUNTY LINE
TOWNSHIP & RANGE LINES
GRADE LINE
CENTERLINE OF CONSTRUCTION
OLD RIGHT OF WAY LINE
NEW RIGHT OF WAY LINE
ABANDONED RIGHT OF WAY LINE
PROPERTY LINE
STONE WALL
OTHER FENCES
POLE LINES
POWER LINES
BRIDGE
GROUND / GRADE ELEVATION
TRAVELED WAY
RAILROADS
HEDGES AND TREES
TRAILS
CITY OR VILLAGE CORPORATE LIMITS
SECTION CORNER
QUARTER SECTION CORNER
BUILDINGS
OLD CULVERTS
NEW CULVERTS
DRAINAGE
BENCH MARKS
WATERS EDGE
MARSH
WIRE ROPE GUARD RAIL
SNOW FENCE
RIPRAP
GUARD POSTS
COBBLE GUTTERS
CONCRETE GUTTERS

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. 30TH MAX. HR.
PRESENT TRAFFIC (1958)	310 PASS. 90 TRUCKS 400 TOTAL	52
TRAFFIC FORECAST (1978)	620 PASS. 180 TRUCKS 800 TOTAL	104

DESIGN SPEED	60 MPH
TRAFFIC CLASSIFICATION	M
MINIMUM SIGHT DISTANCE (NON PASSING)	475 FT.
MINIMUM SIGHT DISTANCE (SAFE PASSING)	2300 FT.
MINIMUM PASSING SIGHT DISTANCE FOR MARKING	1000 FT.



LAYOUT MAP

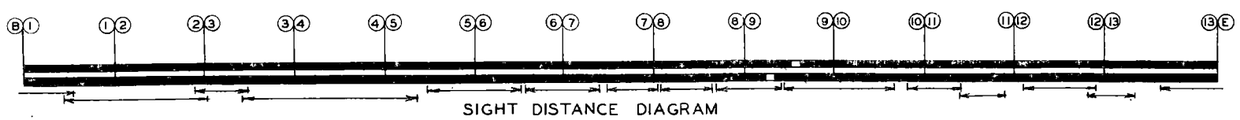
4000' 0 4000'
SCALE IN FEET

APPROVED DATE 4-21-58

R. E. Bradley

CHIEF ENGINEER
NORTH DAKOTA STATE
HIGHWAY DEPARTMENT

R. E. BRADLEY REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA



SIGHT DISTANCE DIAGRAM

LEGEND

- PASSING ZONES (1000' MIN. S.D.)
- NON-PASSING ZONES
- SAFE PASSING SECTIONS (2300' MIN. S.D.)

SKETCH MAP OF DUNN COUNTY

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

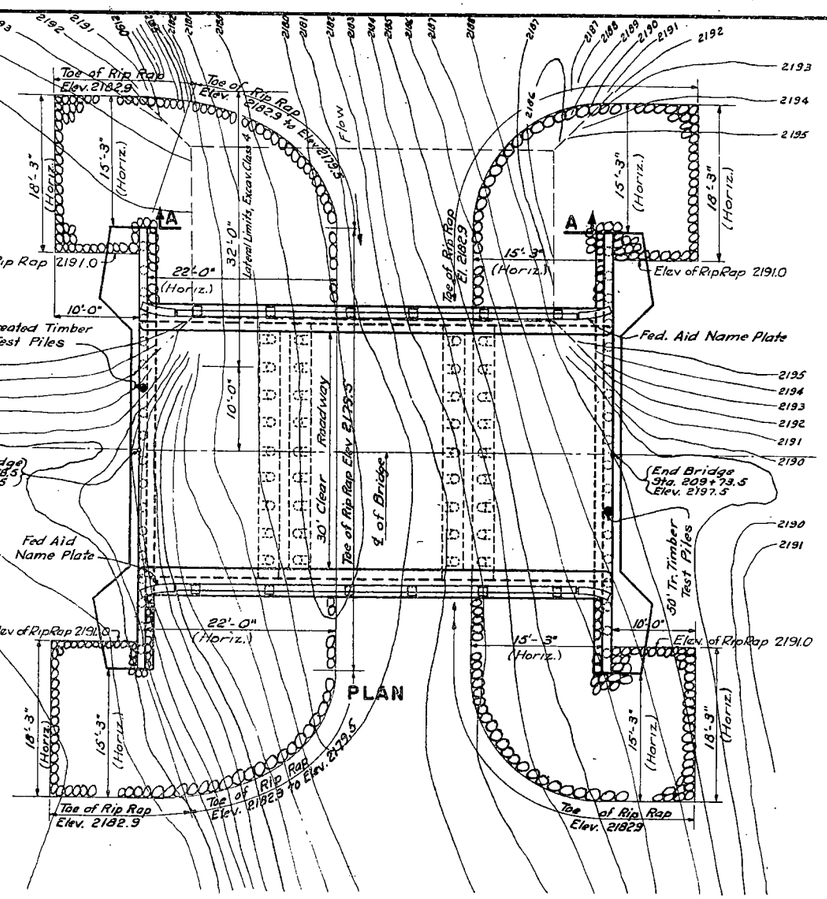
APPROVED

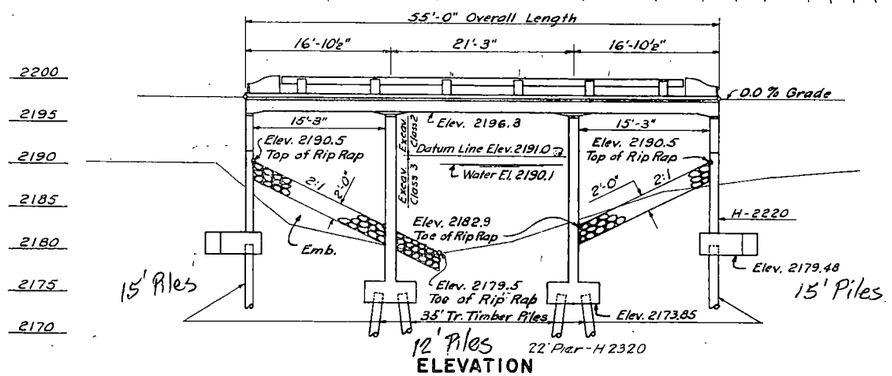
DIVISION ENGINEER DATE

F-308(8)

	PLOTTED BY	O.C.A.
TOPOGRAPHY	CHECKED BY	C.E.G. ~ R.C.A.
	MADE BY	J.C.
DETAILS	CHECKED BY	C.E.G.
	MADE BY	C.E.G.
TRACING	CHECKED BY	C.E.G.
	MADE BY	J.C.
QUANTITIES	CHECKED BY	

REVISIONS | MADE BY | CHK'D BY | DATE





ELEVATION

HYDRAULIC DESIGN DATA

Drainage Area	77 Sq. Mi.
Flood Frequency	50 Year
Peak Flood Discharge	3000 CFS
Opening Required	550 Sq. Ft.
Opening Below Elev. 2195.0	550 Sq. Ft.

CODE: X-020

FED. ROAD DIST. NO.	STATE	PROJ. NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	F-308(8)			

CONSTRUCTION NOTES

The existing structure to be removed is a 42 Ft. steel Pony Truss Bridge. "Removing Existing Structure" shall conform to Section 12 of the Standard Specifications, except that the (2) 42 foot steel trusses shall be removed as separate, complete units in a condition suitable for re-erection. All other members and parts shall be marked and all joints match marked and a diagram showing this marking furnished to the Engineer. All salvageable material shall be removed and stored as specified in Section 12 of the Standard Specifications, and shall become the property of Dunn County.

A cutoff of two feet has been assumed in estimating the pay length (below cutoff) of all timber piles as compared to the ordered length.

Curbs shall be poured in one continuous run.

Dimensions for reinforcing steel bent bars are given center to center unless noted.

The fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of structure on the project.

The entire floor slab shall be poured in one continuous run.

All concrete shall be compacted by vibration.

All exposed edges of concrete shall be beveled with ¾" triangular molding unless otherwise noted.

Substructure surfaces shall be given the "Ordinary Surface Finish".

The cost of premolded joint filler, drain pipes, pipe sleeves, rail bolts and other incidental items shall be included in the unit price bid for Class A-1½ Concrete.

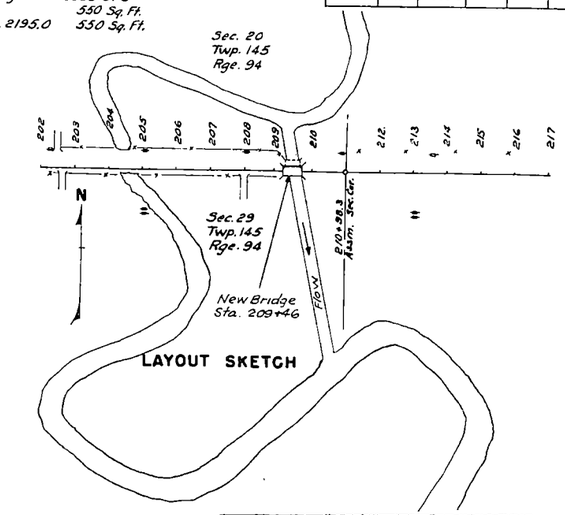
Excavation Class 4 shall be the channel excavation in front of the abutments extending laterally between the limits shown on the plan view of this sheet. The vertical limits shall extend from the 2:1 plane at the top of the rip rap upward to the natural ground line. See Section A-A, this sheet.

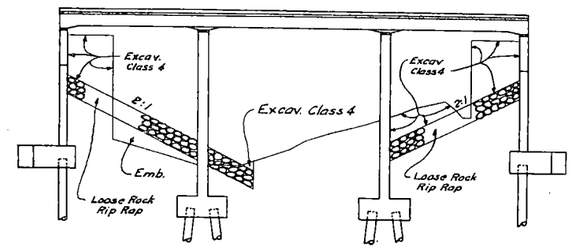
The excavation exclusive of excavation class 4 which is necessary to place the "Loose Rock Rip Rap" to the elevation shown, as well as any embankment placement shall be paid for as incidental to the pay item "Loose Rock Rip Rap".

After placement the regular and conical portions of the rip rap at the end of the abutments shall be covered with earth to elevation 2190.5 and shaped in front to meet the slope of the 2:1 channel excavation. The cost shall be considered as incidental to the pay item "Loose Rock Rip Rap".

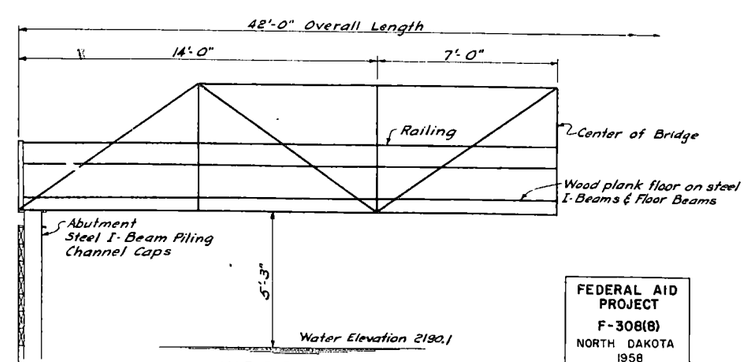
Excavation Class 2 shall be the structural excavation above elevation 2191.0 extending vertically upward to the natural ground line exclusive of Excavation Class 4.

Excavation Class 3 shall be the structural excavation extending vertically upward from the bottom of the abutment and pier footings to elevation 2191.0 or to the natural ground line or to the inclined plane at the bottom of excavation Class 4, whichever is the lesser.





A-A



HALF ELEVATION

EXISTING PONY TRUSS BRIDGE

FEDERAL AID PROJECT F-308(8) NORTH DAKOTA 1958

FEDERAL AID NAME PLATE 2 Required

ESTIMATE OF QUANTITIES

SPEC. NO.	BID ITEM			
12	REMOVING EXISTING STRUCTURE AT STA. 209+40 25' LEFT			LUMP SUM
16	EXCAVATION CLASS 1			CU. YD.
	" CLASS 2	50		CU. YD.
	" CLASS 3	450		CU. YD.
	" CLASS 4	95		CU. YD.
60A	CONCRETE CLASS A-1	2.48	·	CU. YD.
	" CLASS A-1½	270.1	·	CU. YD.
62A	REINFORCING STEEL	38,814	·	LB.
63A	STRUCTURAL STEEL			LB.
64A	UNTREATED TIMBER			M.B.M.
64B	TREATED TIMBER			M.B.M.
65A	UNTREATED TIMBER PILING 66 FT.			LIN. FT.
65B	TREATED TIMBER PILING 70 @ 35 FT.	2310	·	LIN. FT.
66K	UNTREATED TIMBER TEST PILES			EACH
65L	TREATED TIMBER TEST PILES AT 50 FT.	2	·	EACH
84*	TEMPORARY CROSSING AND DETOUR AT STA. 209+46			LUMP SUM
	BRIDGE BENCH MARKS	1		SET
72D	LOOSE ROCK RIP RAP (GRADING ITEM)	325		CU. YD.

* SEE SPECIAL PROVISIONS

STRUCTURAL DRAWINGS

GENERAL DRAWING	7-4	THIS SHEET	
SUBSTRUCTURE	H-2320	H-2220	
SUPERSTRUCTURE	H-2118	H-0108	STD. 14.0 & STD. 7.6

DESIGN LOADING	SCALE
$H_{20}S_{16}$ (1963)	1 INCH = 8 FEET

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

SPRING CREEK BRIDGE LAYOUT

PROJECT F 308(8) STA. 209+46

DUNN COUNTY

APPROVED

15 April 1958 — DATE

Joseph R. Kirby — BRIDGE ENGINEER

JOSEPH R. KIRBY REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

BENCH MARKS

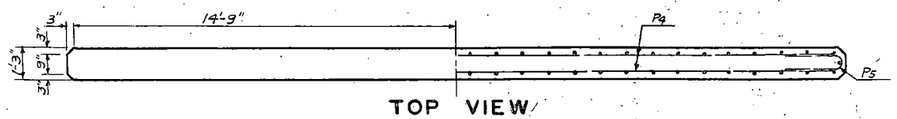
NO.	DESCRIPTION	LOCATION	ELEV.
18	Iron Mon. 2x2 gd. PK Hd. by Xfm.	Sta. 201+00 164' Rt.	2193.25
19	Iron Beam on NW wing of bridge	Sta. 209+22 36' Lt.	2195.33
20	Iron Mon. 2x2 gd. PK Hd by Xfm.	Sta. 215+77 201' Lt.	2197.12

PILE LOADING

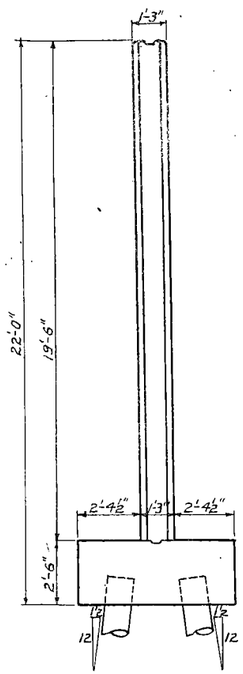
LOCATION	DEAD LOAD	LIVE LOAD	EARTH	WIND 50 LB.	WIND 15 LB.	WIND 100 LB. L.L.	LONG. FORCE	ICE		DESIGN LOAD
Abutment	7.1 T.	2.5 T.	8.5 T.							18.1 T.
Pier	9.0 T.	4.7 T.	4.3 T.							18.0 T.

7-4

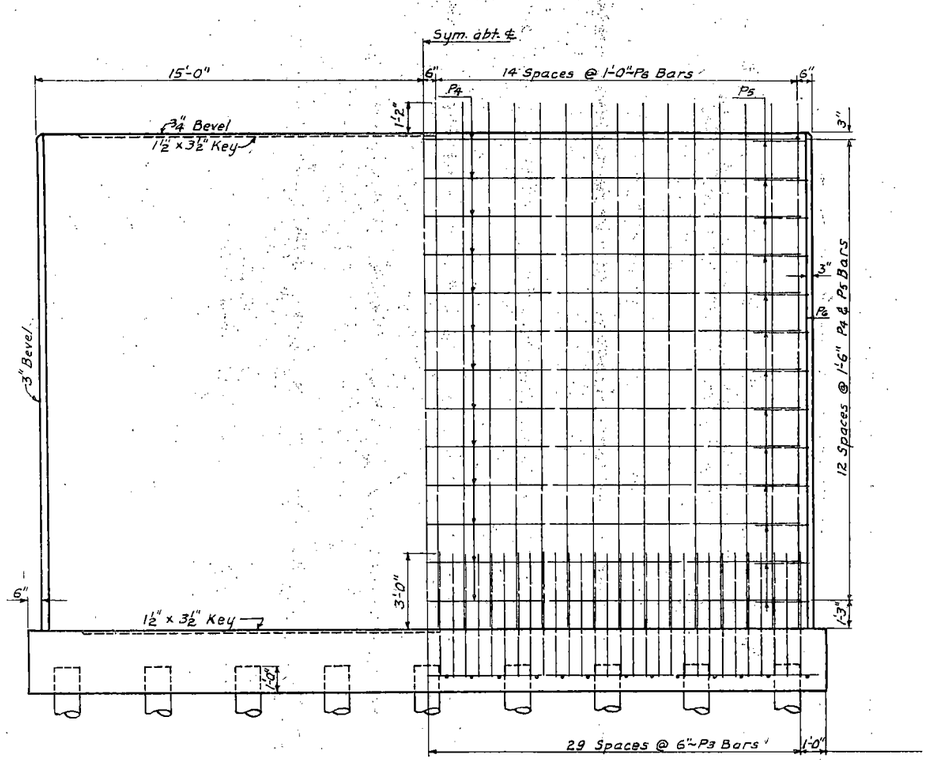
FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N. D.				



TOP VIEW

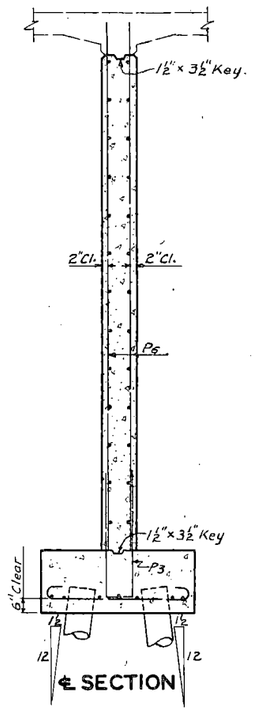


END VIEW



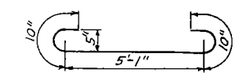
HALF ELEVATION
SHOWING DIMENSIONS

HALF ELEVATION
SHOWING REINFORCEMENT

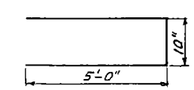


℄ SECTION

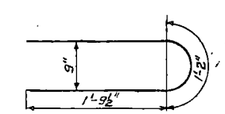
BAR LIST				
MARK	NO.	SIZE	LENGTH	SHAPE
P1	26	5	6'-9"	Bent
P2	7	8	30'-6"	Str.
P3	59	6	10'-10"	Bent
P4	26	4	29'-0"	Str.
P5	26	4	4'-9"	Bent
P6	62	6	20'-8"	Str.



P1 BAR

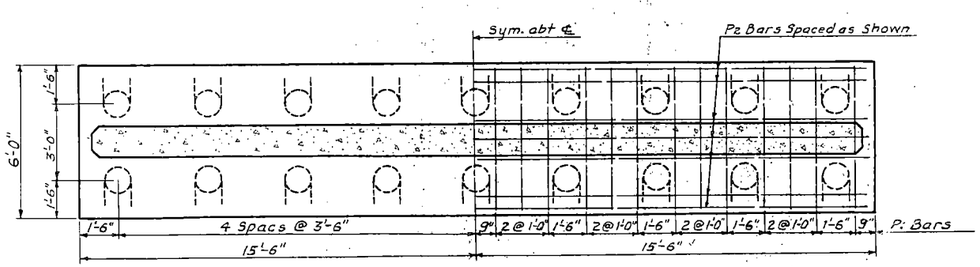


P3 BAR



P5 BAR

BENT BAR DETAILS



HALF FOOTING PLAN
SHOWING DIMENSIONS

HALF FOOTING PLAN
SHOWING REINFORCEMENT

QUANTITIES	ONE PIER
Concrete Class A-1½	43.6 Cu. Yd.
Reinforcing Steel	4223 Lbs.
Piling (See Layout)	

QUANTITIES MADE BY CEG CHECKED BY ICF

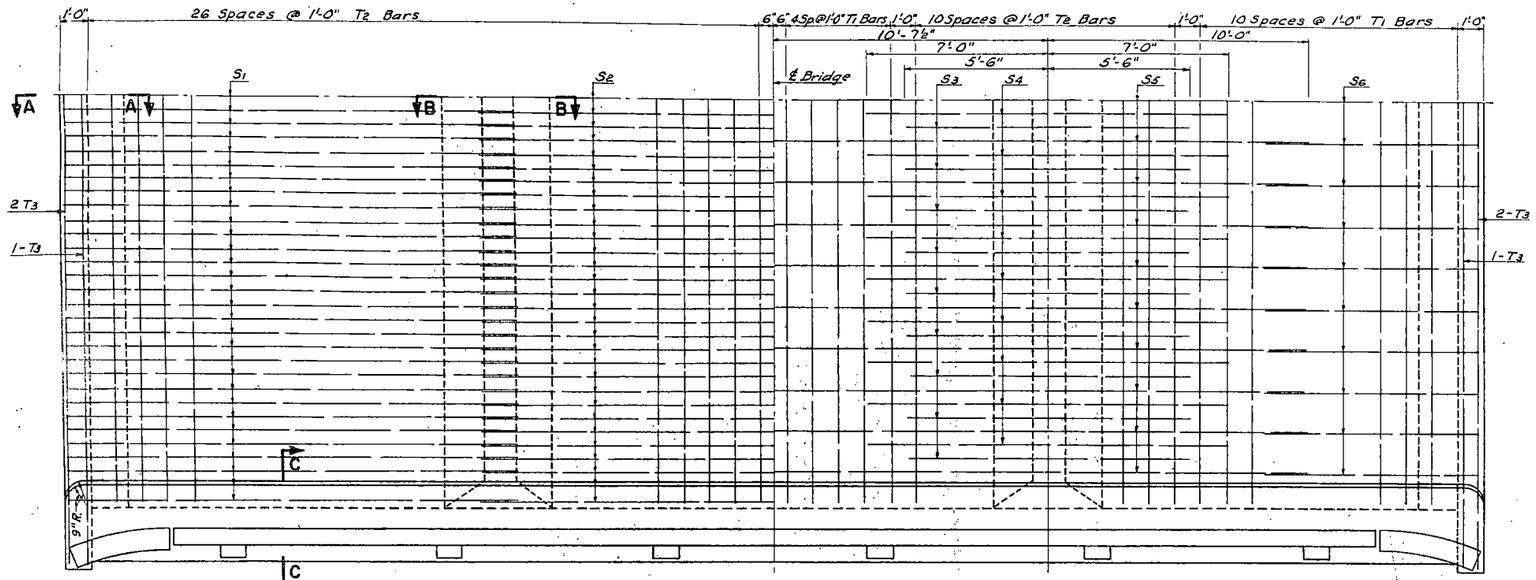
22 FT. PIER
DETAILS
FOR SLAB SPANS
30 FT. ROADWAY

H-2320

H-20

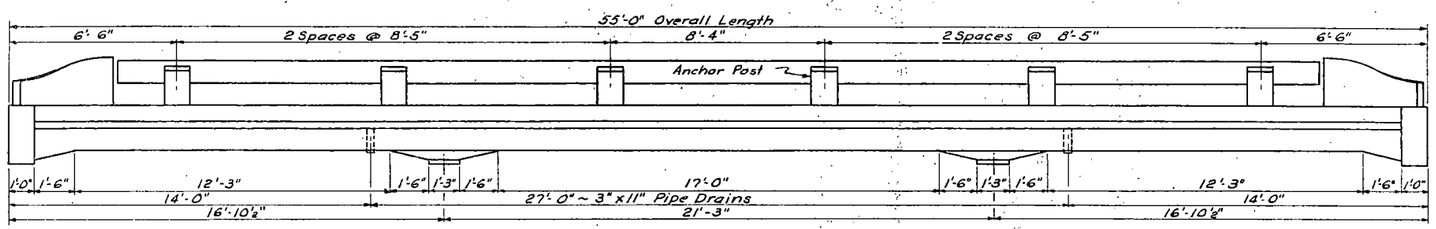
DATE	REVISIONS	MADE BY	
		DESIGN	MADE BY JC / CHECKED BY CEG
		DETAILS	MADE BY TCF / CHECKED BY CEG
		TRACING	MADE BY CCA / CHECKED BY CEG
		QUANTITIES	MADE BY CEG / CHECKED BY TCF

FED. ROAD DIST. NO.	STATE	PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
5	N.D.				

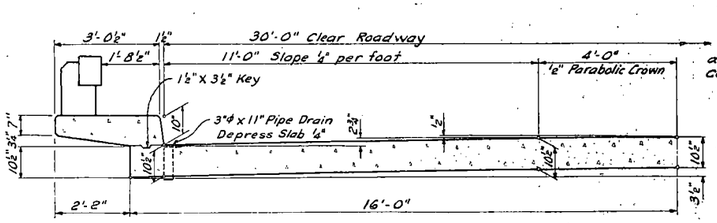


PART PLAN
Showing Reinforcing Steel ~ Bottom of Floor

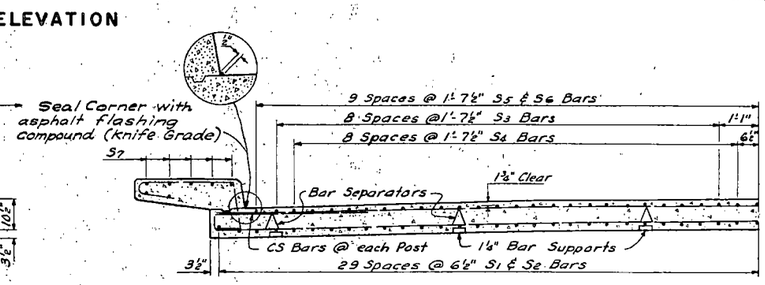
PART PLAN
Showing Reinforcing Steel ~ Top of Floor



ELEVATION



HALF SECTION OF SLAB
Showing Dimensions



HALF SECTION OF SLAB
Showing Reinforcing Steel

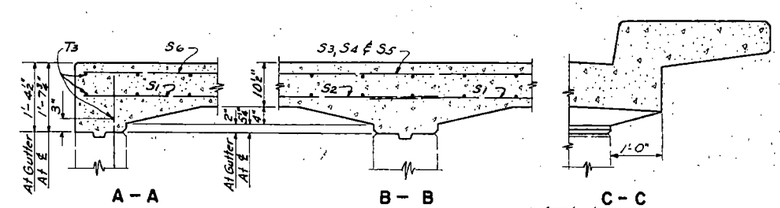
1,2,3,4,5,6

BAR LIST

MARK	NO.	SIZE	LENGTH	SHAPE
C	118	5	7'-0"	Bent
CS	12	6	8'-0"	Bent
*P0	20	5	3'-4"	Bent
*P1	4	5	4'-0"	Bent
*P2	24	5	3'-6"	Bent
*P3	20	3	3'-8"	Bent
*P4	20	3	2'-8"	Bent
*RC	82	3	2'-8"	Bent
*R	24	5	24'-3"	Str.
S1	118	7	17'-6"	Str.
S2	59	7	22'-9"	Str.
S3	36	8	11'-0"	Str.
S4	36	7	14'-0"	Str.
S5	19	7	41'-3"	Str.
S6	38	4	8'-3"	Str.
S7	28	6	28'-6"	Str.
T1	32	4	31'-6"	Str.
T2	76	5	31'-6"	Str.
T3	6	6	36'-6"	Str.

* See Drawing H0108

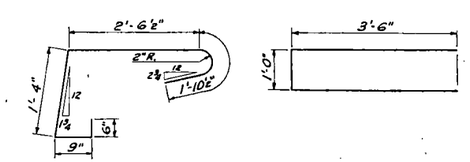
R BARS



A – A

B – B

C – C
+ Includes end posts.
++ Includes railing and end posts
See Drawing H0108



C BAR

CS BAR

QUANTITIES

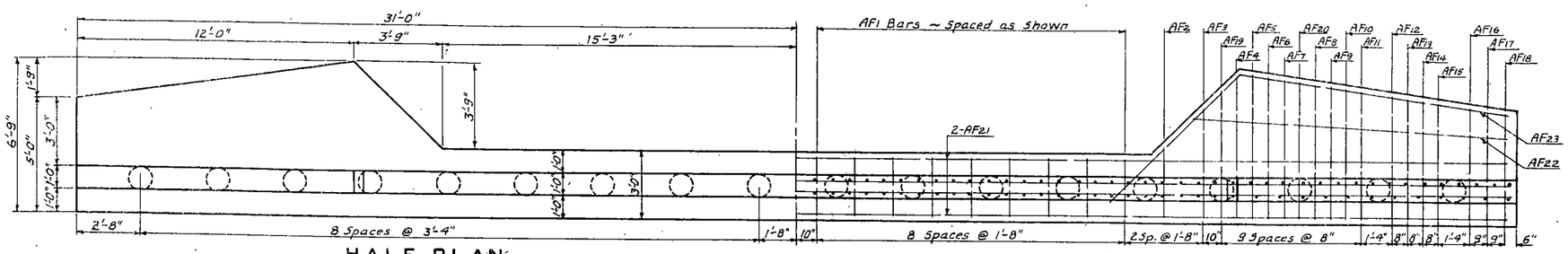
Concrete Class A-1	2.48	Cu. Yd.
Concrete Class A-1½	72.9	Cu. Yd.+
Reinforcing Steel	17,712	Lb.++

SLAB BRIDGE DETAILS
THREE SPAN CONTINUOUS
OVERALL LENGTH 55'-0"
30 FT. ROADWAY
H20 S16 LOADING

H-2118

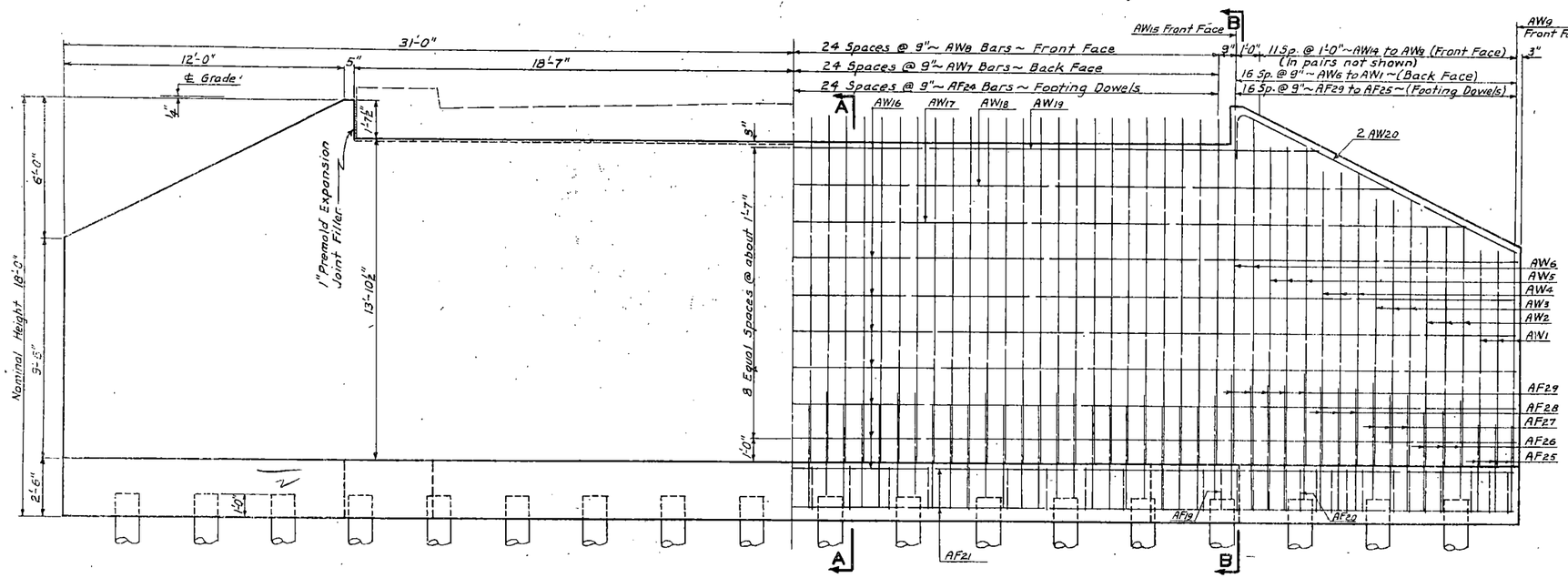
H-2118

FED. ROAD DIST. NO.	STATE	PROJ. NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				



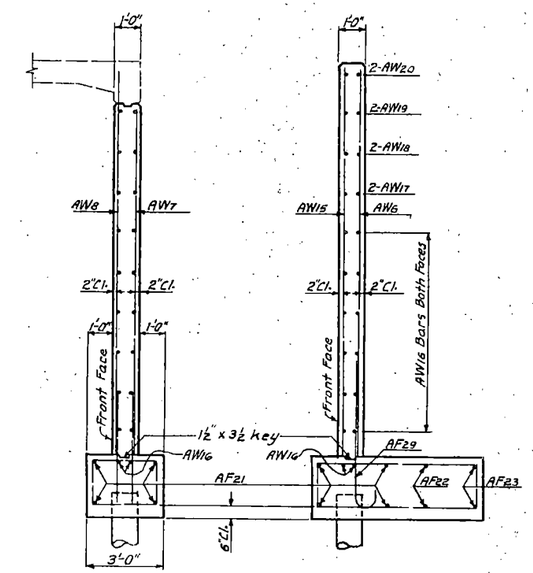
HALF PLAN
Showing Dimensions

HALF PLAN
Showing Reinforcement



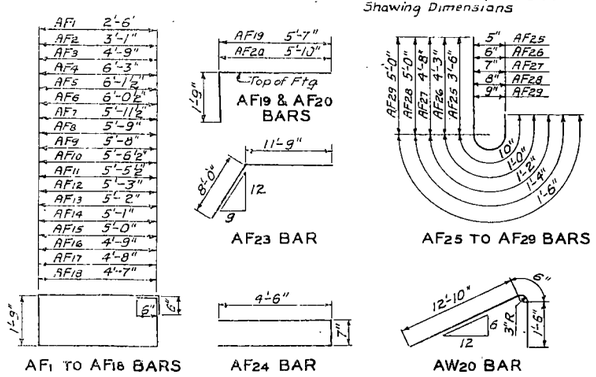
HALF ELEVATION
Showing Dimensions

HALF ELEVATION
Showing Reinforcement



A - A

B - B



BENT BAR DETAILS

BAR LIST

MARK	NO.	SIZE	LENGTH	SHAPE	MARK	NO.	SIZE	LENGTH	SHAPE	MARK	NO.	SIZE	LENGTH	SHAPE
AF1	18	5	9'-6"	Bent	AF23	4	8	19'-9"	Bent	AW15	2	4	15'-0"	Str.
AF2	2	5	10'-8"	"	AF24	49	6	9'-7"	"	AW16	28	4	31'-7"	"
AF3	2	5	14'-0"	"	AF25	6	5	4'-9"	"	AW17	4	4	29'-5"	"
AF4	2	6	17'-0"	"	AF26	6	6	5'-3"	"	AW18	4	4	26'-3"	"
AF5	2	6	16'-9"	"	AF27	6	7	5'-10"	"	AW19	4	6	23'-6"	"
AF6	2	6	16'-7"	"	AF28	6	8	6'-4	"	AW20	4	6	14'-10"	Bent
AF7	2	6	16'-5"	"	AF29	10	9	6'-6"	"					
AF8	2	6	16'-0"	"										
AF9	2	6	15'-10"	"	AW1	6	4	9'-4"	Str.					
AF10	2	5	15'-7"	"	AW2	6	5	10'-6"	"					
AF11	2	5	15'-5"	"	AW3	6	5	11'-7"	"					
AF12	2	5	15'-0"	"	AW4	6	6	12'-9"	"					
AF13	2	5	14'-10"	"	AW5	6	7	13'-10"	"					
AF14	2	4	14'-8"	"	AW6	4	7	15'-0"	"					
AF15	2	4	14'-6"	"	AW7	49	4	13'-8"	"					
AF16	2	4	14'-0"	"	AW8	49	6	15'-0"	"					
AF17	2	4	13'-10"	"	AW9	4	4	9'-4"	"					
AF18	2	4	13'-8"	"	AW10	4	4	10'-4"	"					
AF19	2	6	7'-4"	"	AW11	4	4	11'-4"	"					
AF20	2	6	7'-7"	"	AW12	4	4	12'-4"	"					
AF21	8	8	32'-6"	Str.	AW13	4	4	13'-4"	"					
AF22	4	8	13'-6"	"	AW14	4	4	14'-4"	"					

QUANTITIES ONE ABUTMENT

Concrete Class A-1b	55.0 C.Y.
Reinforcing Steel	6328 Lbs
Piling (See Layout)	

18' ABUTMENT DETAIL FOR SLAB SPANS 30' ROADWAY

QUANTITIES TAKEN BY: J.C.F. CHECKED BY: C.E.B.

H-2220

H-2220