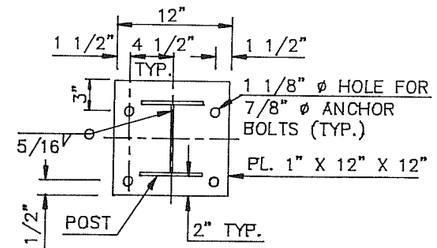
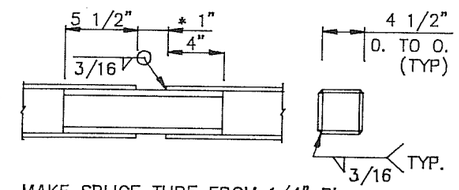
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	HES-1-021(005)106	



BASE PLATE DETAIL



MAKE SPLICE TUBE FROM 1/4" PL. GRIND ALL EDGES PRIOR TO GAVANIZING TO ASSURE PROPER FIT.

* 1" EXPANSION JT. UNLESS NOTED OTHERWISE ON PLANS. EXP. JT. WILL BE NEEDED IN PANEL THAT HAS A DECK EXP. JT.

RAIL SPLICE DETAIL

NOTES:

THE BID ITEM SHALL BE "DOUBLE BOX BEAM RAIL RETROFIT". THE PAY LENGTH SHALL BE END TO END AND IN LINEAR FEET.

RAIL ELEMENTS SHALL BE SQUARE STRUCTURAL TUBING IN ACCORDANCE WITH ASTM SPECIFICATION A 500 GRADE B.

STEEL POSTS, PLATES, BARS & ANGLES SHALL CONFORM TO AASHTO SPECIFICATION M-183, UNLESS OTHERWISE NOTED.

RAILING SHALL BE FABRICATED TO THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE STRUCTURE. POSTS TO BE NORMAL TO GRADE.

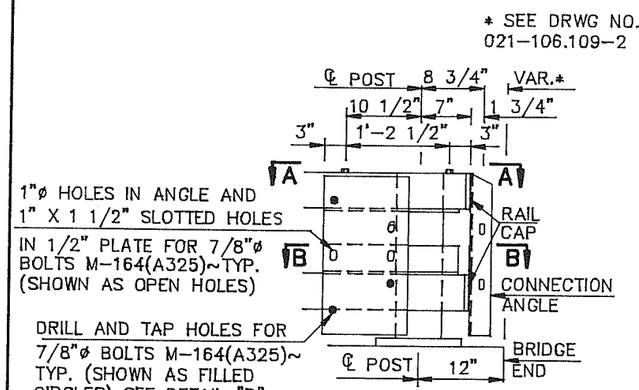
PAYMENT FOR THE RAILING SHALL INCLUDE COMPENSATION FOR FURNISHING AND INSTALLING THE GUARDRAIL CONNECTION PLATES.

ALL STRUCTURAL STEEL INCLUDING FASTENERS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION ACCORDING TO AASHTO M111.

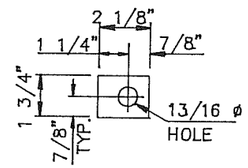
THE ANCHOR BOLTS MUST BE ABLE TO DEVELOP IN TENSION THE EQUIVALENT OF A AASHTO M-164 (A325) 7/8"ø BOLT (18,250 LBS). THE ANCHOR BOLTS MAY BE MECHANICAL TYPE, GROUT-IN TYPE OR OTHER TYPE THAT CAN DEVELOP THE REQUIRED TENSION IN THE CONCRETE.

ALL ANCHOR AND SPLICE BOLTS SHALL BE GALVANIZED AND WILL BE AASHTO M-164 (A325).

THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS FOR DOUBLE BOX BEAM RAIL FOR APPROVAL BY THE BRIDGE ENGINEER BEFORE FABRICATION.

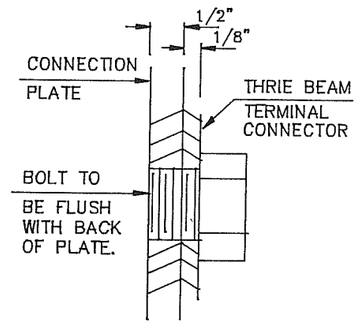


DETAIL "A"

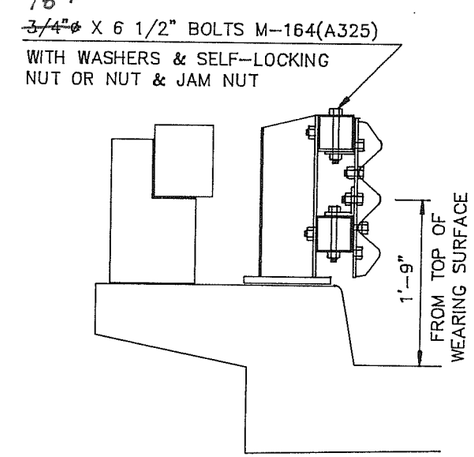


1/4" BAR AASHTO M-183 POSITION WASHERS TO COMPLETELY COVER SLOTTED HOLES

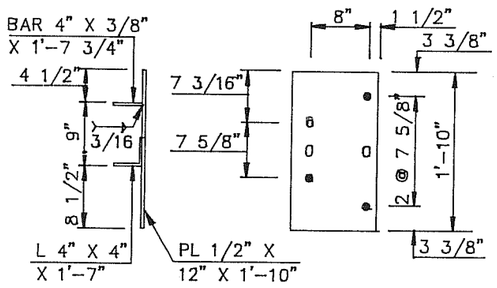
BAR WASHER "C"



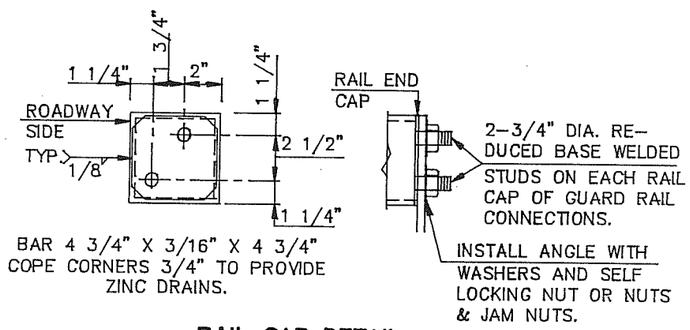
DETAIL "B"



GUARDRAIL CONNECTION DETAILS

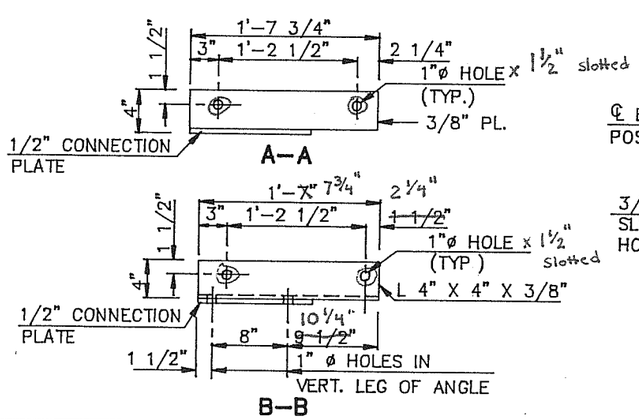


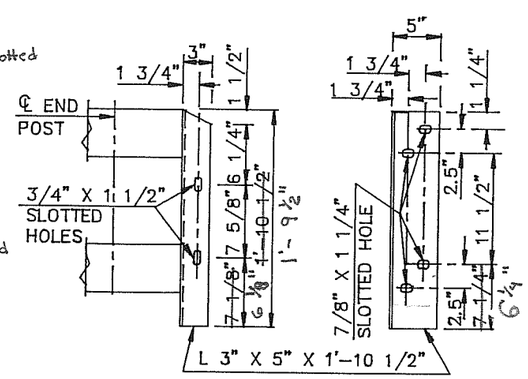
GUARDRAIL CONNECTION PLATES



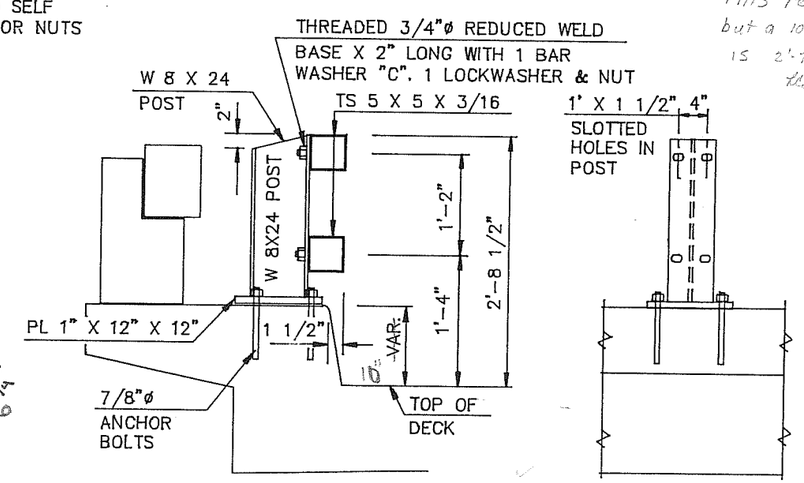
RAIL CAP DETAIL

This retrofit was built for an 11" curb but a 10" curb exists. Therefore top rail is 2'-7½" & Not 2-8½ as shown. tll 9/1/93





CONNECTION ANGLE



CURB MOUNT POST DETAILS

QUANTITIES
SEE DRWG. NO. 021-106.109-2

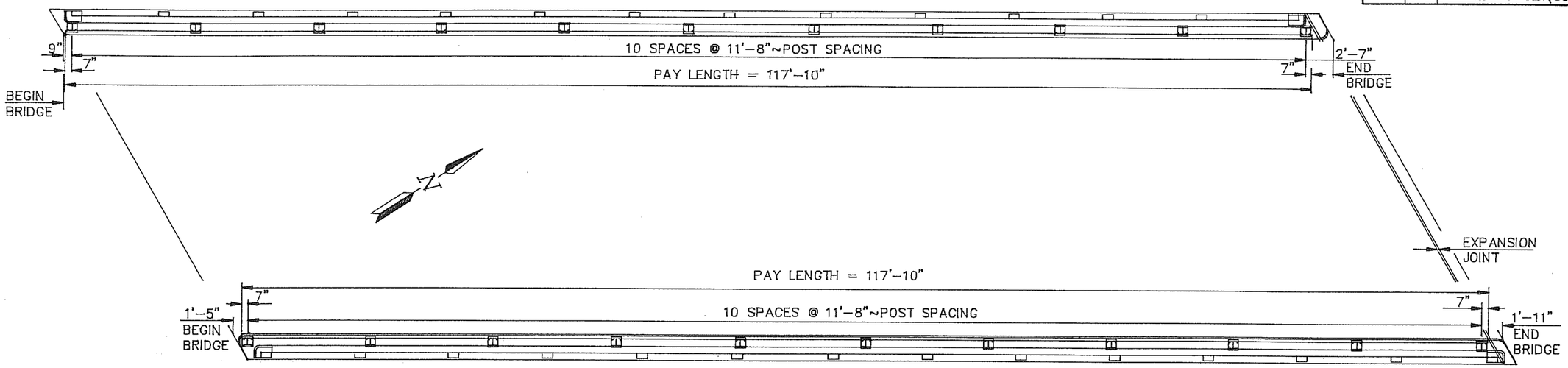
LOUSE CREEK

RAIL RETROFIT DETAILS

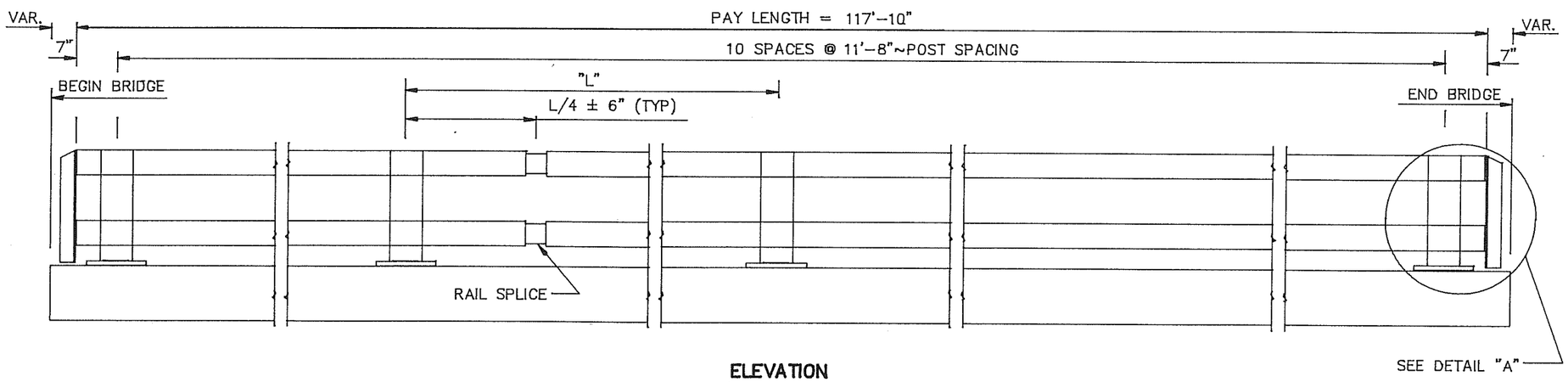
91LCS120

021-106.109-1

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	HES-1-021(005)106	



PLAN



ELEVATION
(BOTH SIDES)

NOTE:
IT WILL BE NECESSARY TO INCREASE THE 12 SLOTTED HOLES ON THE THRIE BEAM TERMINAL CONNECTOR PLATE FROM 1 1/8" TO 2 3/8" TO PROVIDE FOR EXPANSION AT THE NORTH ABUTMENT.

QUANTITIES		
DOUBLE BOX BEAM RAIL RETROFIT (FREE STANDING)	235.6	L.FT.

LOUSE CREEK

RAIL RETROFIT DETAILS

91LCS121

021-106.109-2

021-106.109

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5th	N. D.	F68(2) F395(3)		1	30

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

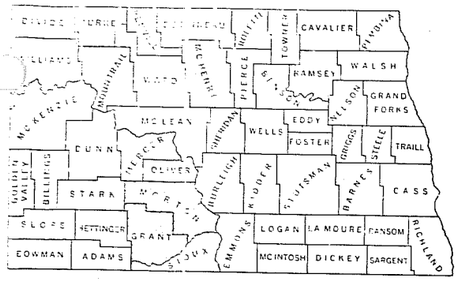
PLANS

FOR THE PROPOSED IMPROVEMENT OF A

STATE HIGHWAY

IN GRANT & MORTON COUNTY

FEDERAL AID PROJECT NO. — F68(2) F395(3)



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES

SCALES
- LAYOUT SHEET: 1 IN. = 0 — 5280
- 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 39 INCL. PLAN AND PROFILE DRAWINGS.
SHEETS NO.	40	TO 62 INCL. STRUCTURAL DRAWINGS
SHEETS NO.		TO INCL. SOIL PROFILE
SHEETS NO.	63	TO 308 INCL. CROSS SECTIONS

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota State Highway Department Nov. 1949 and approved as standard by the Bureau of Public Roads July 3, 1950 Revised Special Provisions approved as standard by the Bureau of Public Roads Aug. 5, 1948 and those submitted herewith.

LENGTH OF PROJECT

PROJECT	MILES GROSS	MILES-NET
F68(2)	0.957	0.957
F395(3)	18.895	18.895
TOTALS	19.852	19.852

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. 30TH MAX. HR.
PRESENT TRAFFIC (1959) 288	PASS. 77 TRUCKS 310 TOTAL	40
TRAFFIC FORECAST (1979) 375	PASS 25 TRUCKS 500 TOTAL	65

DESIGN SPEED: 60 MPH - Except 50 MPH Sta 184+70 to Sta. 197+50

TRAFFIC CLASSIFICATION: M

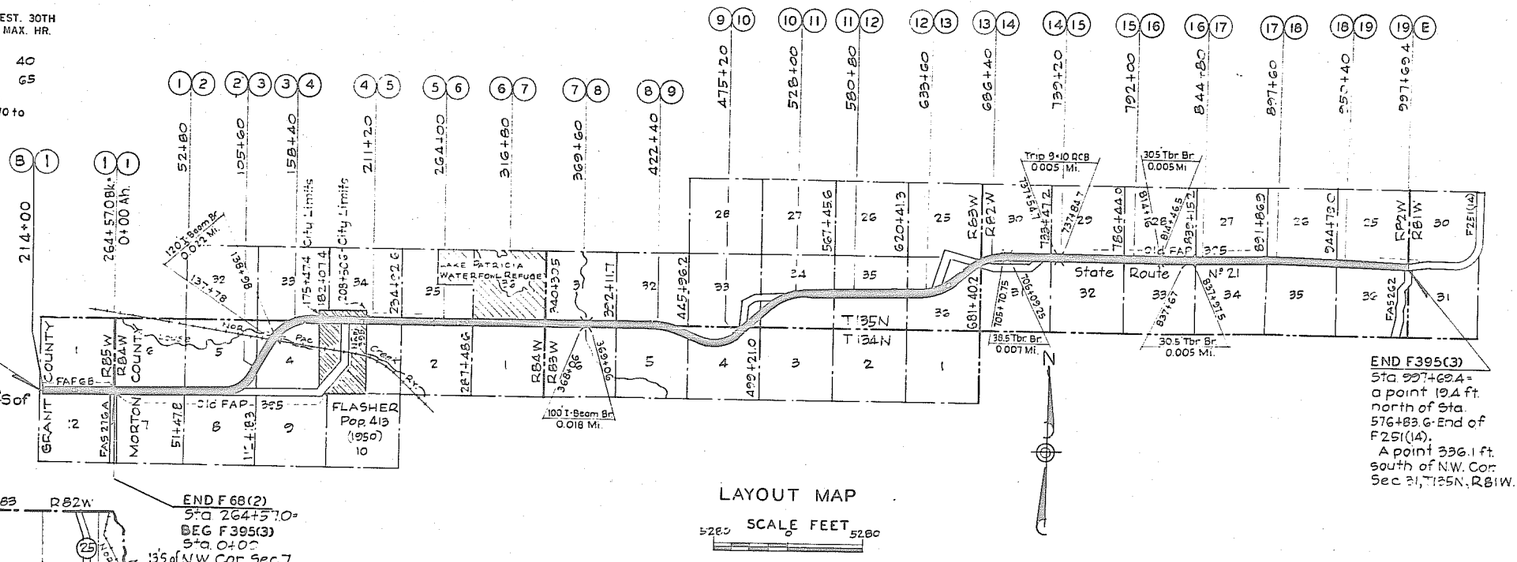
MINIMUM SIGHT DISTANCE (NON PASSING): 475 ft.

MINIMUM SIGHT DISTANCE (SAFE PASSING): 1000 ft.

MINIMUM PASSING SIGHT DISTANCE FOR MARKING: 2300 ft.

BRIDGES
MIN. WIDTH: 32' for length 50' & under
28' for over 50' Length.

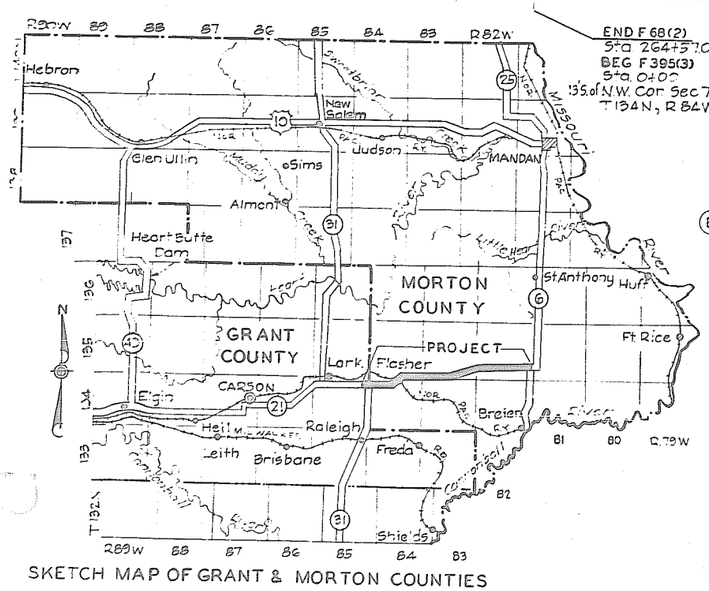
DESIGN LOADING:
H15S12 - Steel & Conc. bridges.
H15 - Treated Timber Bridges.



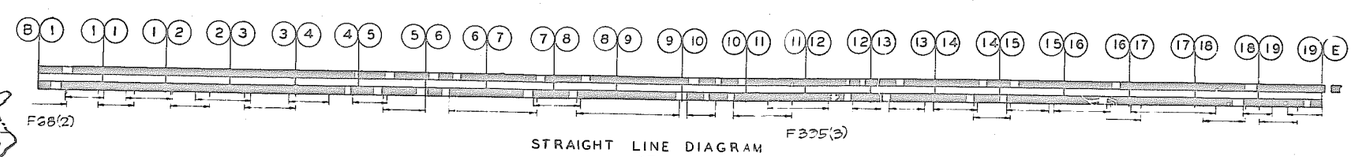
LAYOUT MAP
SCALE FEET 5280 0 5280

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



SKETCH MAP OF GRANT & MORTON COUNTIES



STRAIGHT LINE DIAGRAM
OF
PASSING ZONES NON - PASSING ZONES
AND SAFE PASSING SECTIONS

LEGEND
- Passing Zones (1000' Min S.D.)
- Non Passing Zones
- Safe Passing Sections (2300 Min. S.D.)

SCALE 6000 0 6000

APPROVED DATE June 6, '55

M L Hoyt
CHIEF ENGINEER
NORTH DAKOTA STATE
HIGHWAY DEPARTMENT

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL:

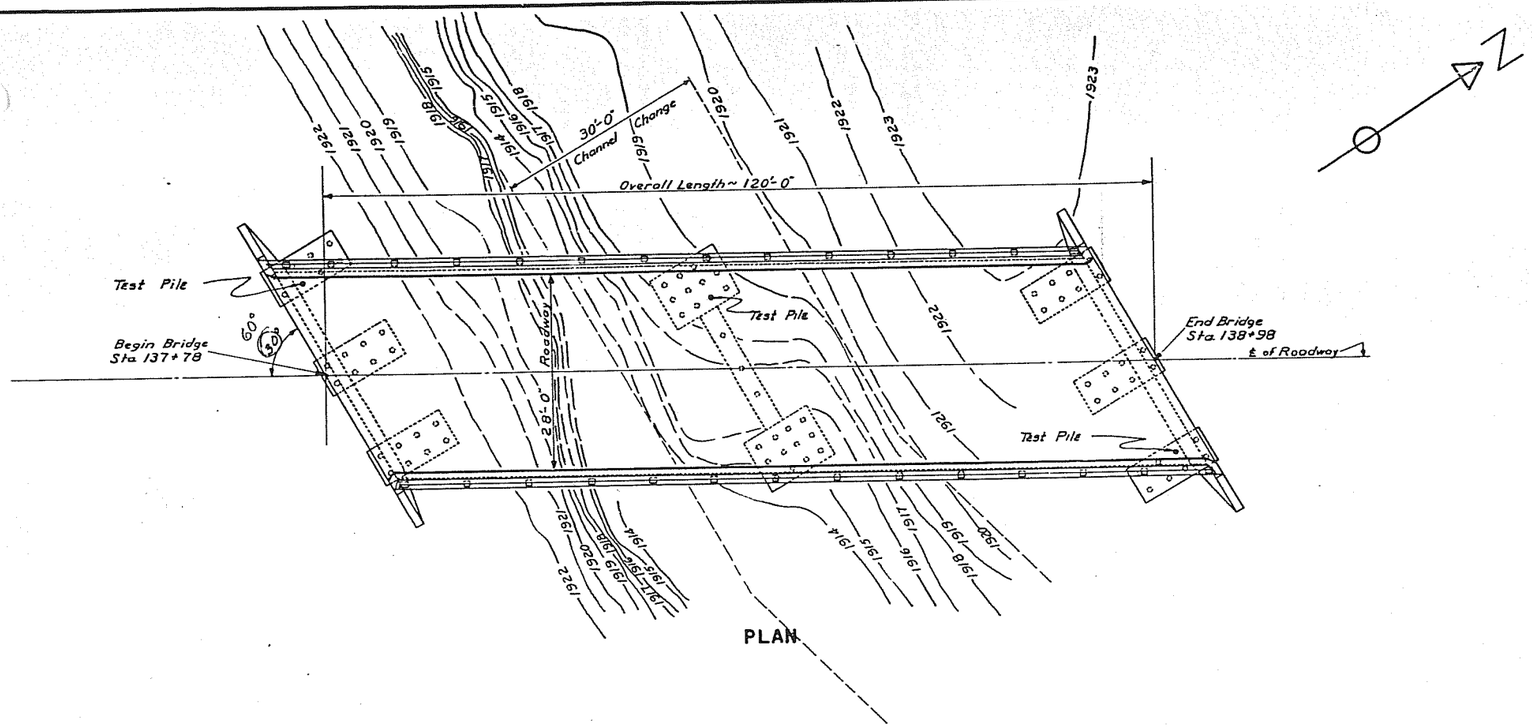
DISTRICT ENGINEER — DATE

APPROVED:

DIVISION ENGINEER — DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	N. D.	F395(3)		40	308

BENCHMARKS			
NO.	DESCRIPTION	LOCATION	ELEVATION
18	Iron rod pit f md.	131+84 ~ 130' Lt.	1934.81
19	Iron rod pit f md 4' from fa corn	135+70 ~ 188' Rt.	1922.17
20	Iron rod pit f md 4' from fa corn	134+18 ~ 316' Lt.	1923.65
21	Iron rod pit f md on cross fa	142+50 ~ 139' Rt.	1923.17



PLAN

NOTES:

All Concrete shall be compacted by vibration. Exposed edges shall be beveled with a ¾ inch triangular molding unless otherwise noted.

All Concrete above the top of curb shall be Class A-1. All other concrete shall be Class A-1½.

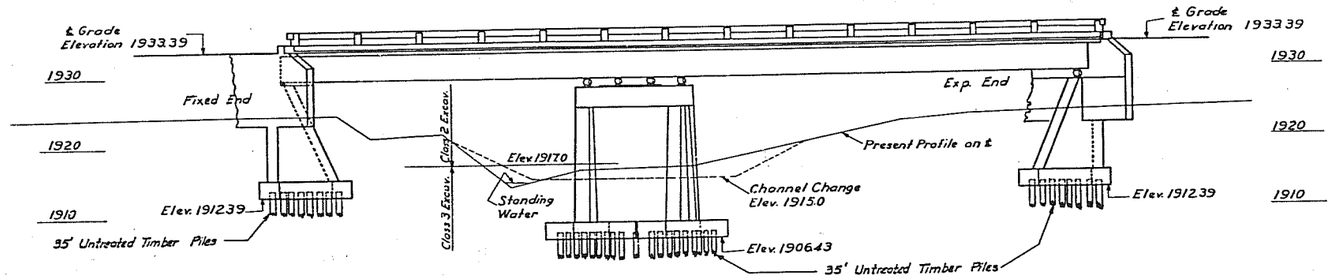
A Cut-off of two feet has been assumed in estimating the pay length (below cut-off) of piling as compared with the ordered length.

The cost of furnishing and placing the premolded expansion joint filler, drain pipes, pipe sleeves, etc, shall be included in the unit price bid for Class A-1½ concrete.

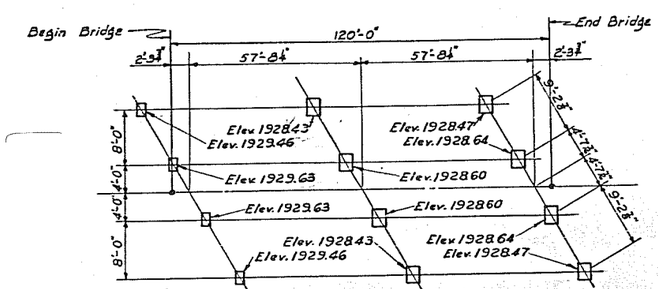
Where necessary, the bar fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

The surface of handrails, handrail posts, face of curb and outer edge of handrail post base shall be given the "Rubbed Surface Finish". All other surfaces shall be given the "Ordinary Surface Finish".

The Channel Change Excavation, as shown on this sheet, shall be removed in accordance with Section 13 of the Standard Specifications by the Grading Contractor.



ELEVATION



BEARING PLATE LAYOUT

ELEVATIONS SHOWN ARE TOP OF CON

MAXIMUM DESIGN PILE LOADS		
LOADS	ABUTMENTS	PIER
Dead Load + Live Load + Earth	19.0 T.	12.5 T.
Wind, Ice, Bouyancy	—	10.8 T.
Total	19.0 T.	23.3 T.
Design Pile Load	19.0 T.	18.6 T.

SPEC. Nº	ESTIMATE OF QUANTITIES		
	TEMPORARY CROSSING AND DETOUR	None	
	REMOVING OLD STRUCTURE	None	
15	STRUCTURAL EXCAVATION		
	CLASS 2	170	CU. YD.
	CLASS 3	230	CU. YD.
			CU. YD.
65A	UNTREATED TIMBER PILING 72 " 35 FT.	2376	LIN. FT.
65E	" " Test Piles @ 50 FT.	3	Each
	TREATED TIMBER PILING " FT.		LIN. FT.
	UNTREATED TIMBER		M. B. M.
	TREATED TIMBER		M. B. M.
*60	CONCRETE CLASS "A"-1	6.25	CU. YD.
*60	" " "A"-1½	306.5	CU. YD.
62	REINFORCING STEEL	44,532	LB.
*63A	STRUCTURAL STEEL	78,200	LB.
	* See Special Provisions		

STRUCTURAL DRAWINGS

GENERAL DRAWING	395 (3) - 1 (This Sheet)
SUBSTRUCTURE	H-1205, H-1206 & H-1303
SUPERSTRUCTURE	H-1107 & H-1108

DESIGN LOADING
H15 S12 (1953)

FRANK E. CAVE REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

SCALE: 1 IN.=10 FT.

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

LOUSE CREEK BRIDGE
BRIDGE LAYOUT

PROJECT No. F 395 (3) STA. 138 + 38

MORTON COUNTY

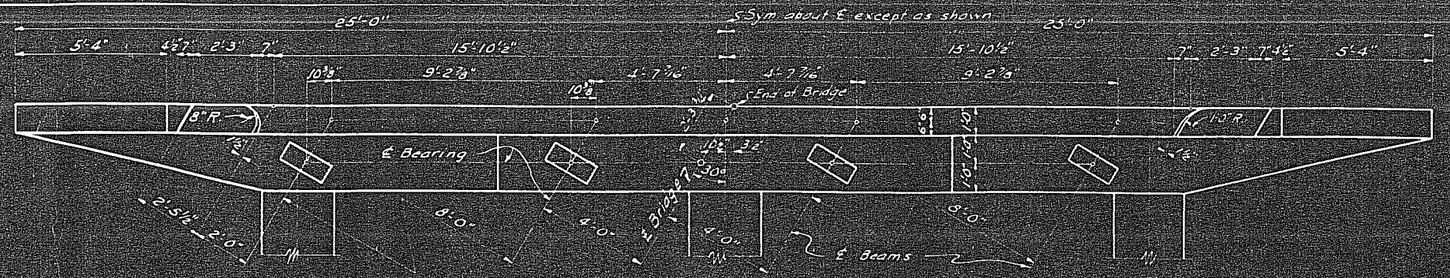
APPROVED June 4 1953 Frank E. Cave Bridge Engineer

STRUCTURE | QUANTITIES
CHECKED BY AJA
ENTERED JAK
CHECK:

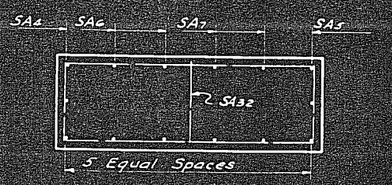
395(3)-1

395(3)-1

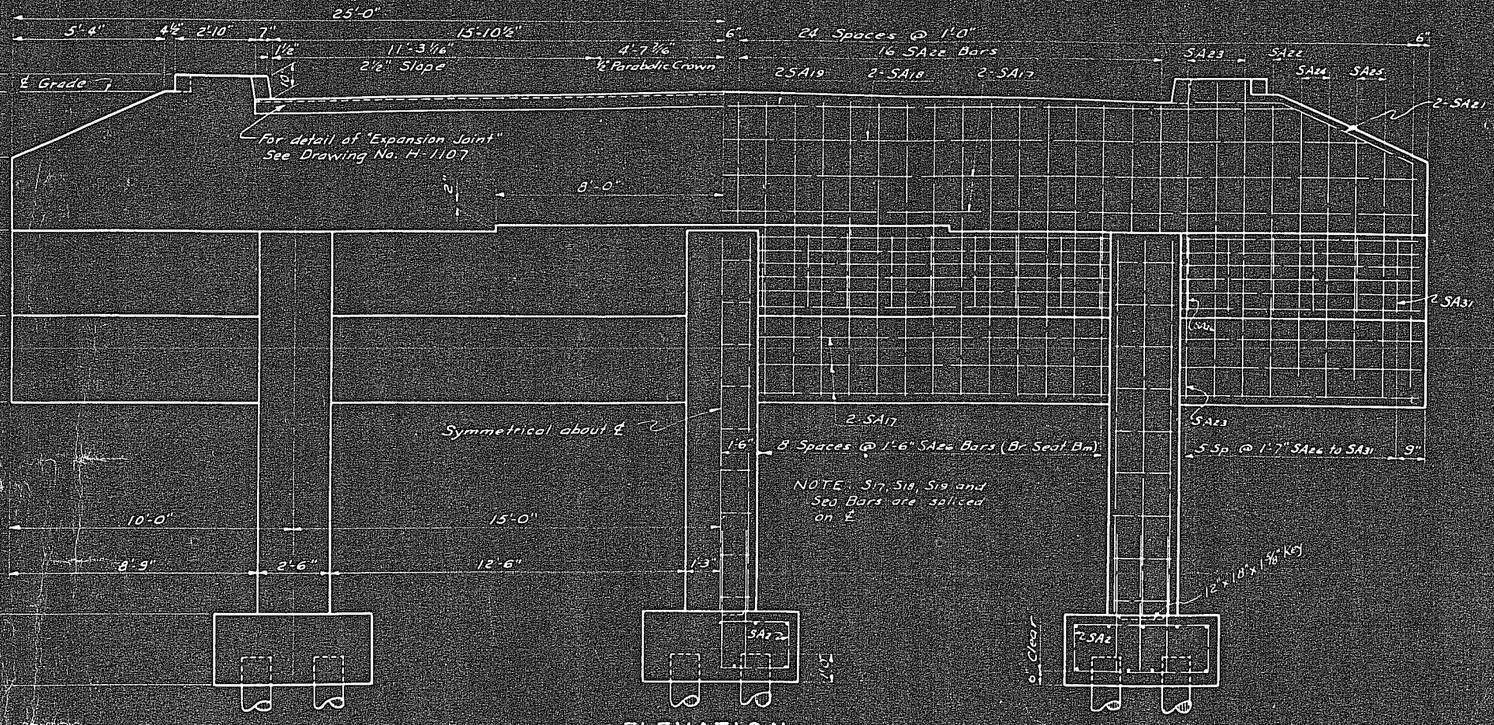
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
5N	N.D.		



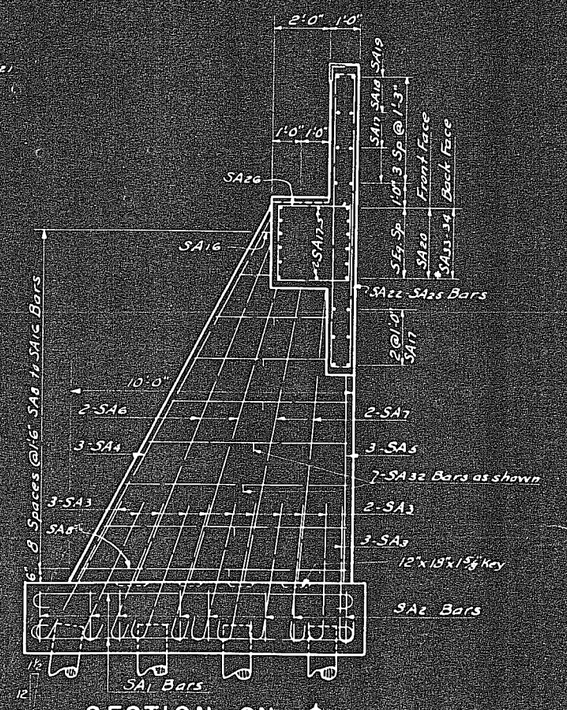
TOP PLAN



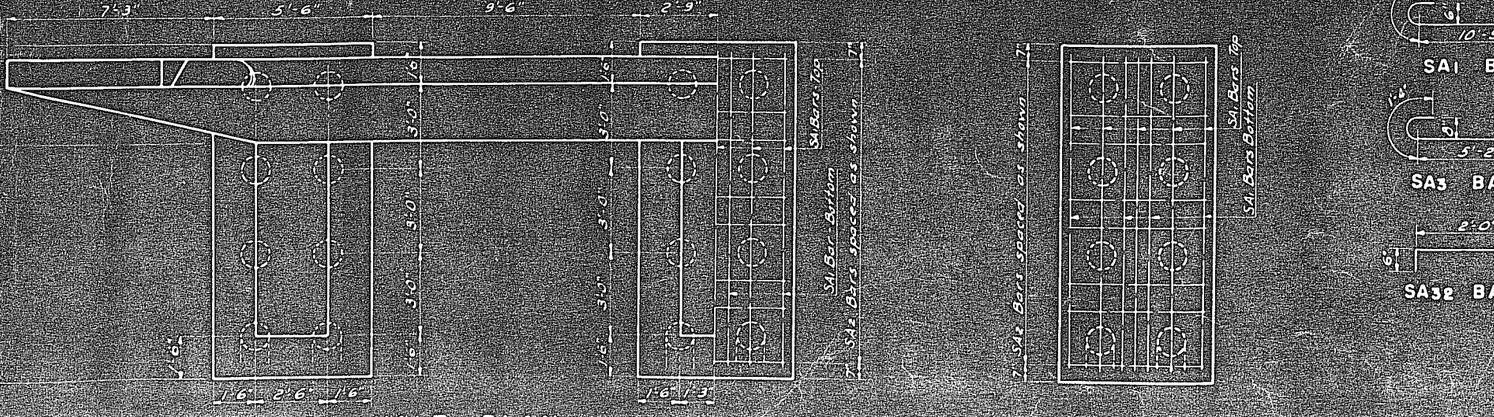
SECTION OF COLUMN



ELEVATION

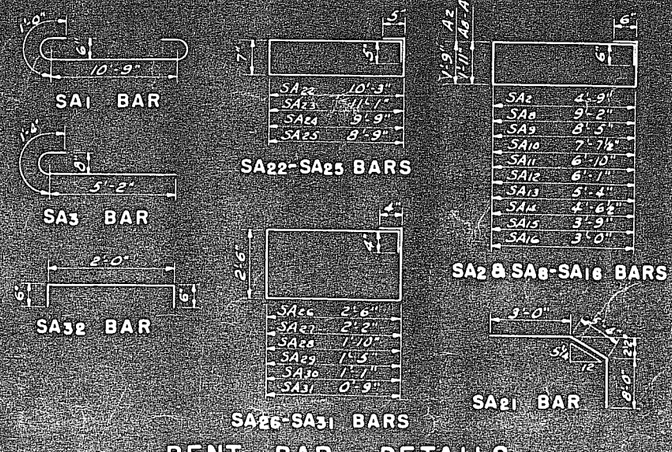


SECTION ON ℄



HALF PLAN

HALF FOOTING PLAN



BENT BAR DETAILS

BAR LIST

MARK	NO.	SIZE	LENGTH
SA1	27	#4	12'-5"
SA2	24	#4	14'-0"
SA2r	72	1'-0"	6'-6"
SA4	9	1'-4"	14'-6"
SA5	9	1'-4"	13'-0"
SA6	12	#4	14'-0"
SA7	12	"	13'-0"
SA8	3	#4	23'-6"
SA9	3	"	21'-6"
SA10	3	"	20'-1"
SA11	3	"	19'-6"
SA12	3	"	17'-6"
SA13	3	"	15'-6"
SA14	3	"	13'-1"
SA15	3	"	12'-0"
SA16	3	"	10'-10"
SA17	24	1'-4"	26'-0"
SA18	4	"	24'-0"
SA19	4	#4	21'-6"
SA20	12	#4	25'-9"
SA21	4	#4	16'-4"
SA22	34	1'-4"	22'-6"
SA23	6	"	24'-2"
SA24	4	"	21'-6"
SA25	4	"	19'-6"
SA26	20	#4	10'-3"
SA27	2	"	10'-0"
SA28	2	"	9'-4"
SA29	2	"	8'-6"
SA30	2	"	7'-10"
SA31	2	"	7'-2"
SA32	21	1'-4"	3'-0"
*SA33	6	#4	33'-9"
*SA34	6	"	18'-9"

* Alternate splice of SA33 & SA34 each side of abutment

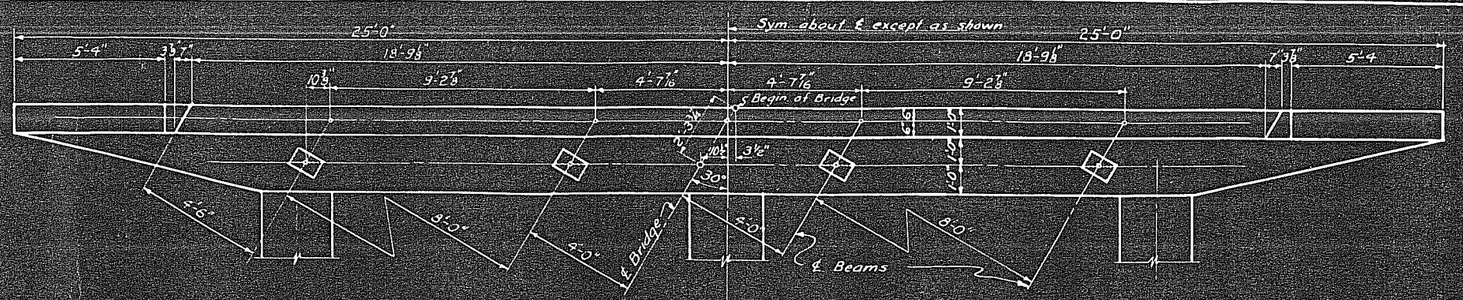
QUANTITIES

Concrete Class A1½	6[illegible]
Reinforcing Steel	64[illegible]
Piling	See L[illegible]
Excavation	See L[illegible]

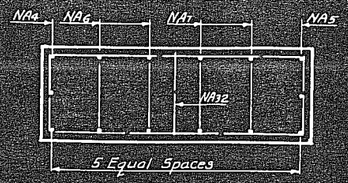
21 FT. ABUTMENT D[illegible]
FOR I-BEAM SP[illegible]
EXPANSION [illegible]
30° SKEW
28 FT. ROADWA[illegible]

H-1205

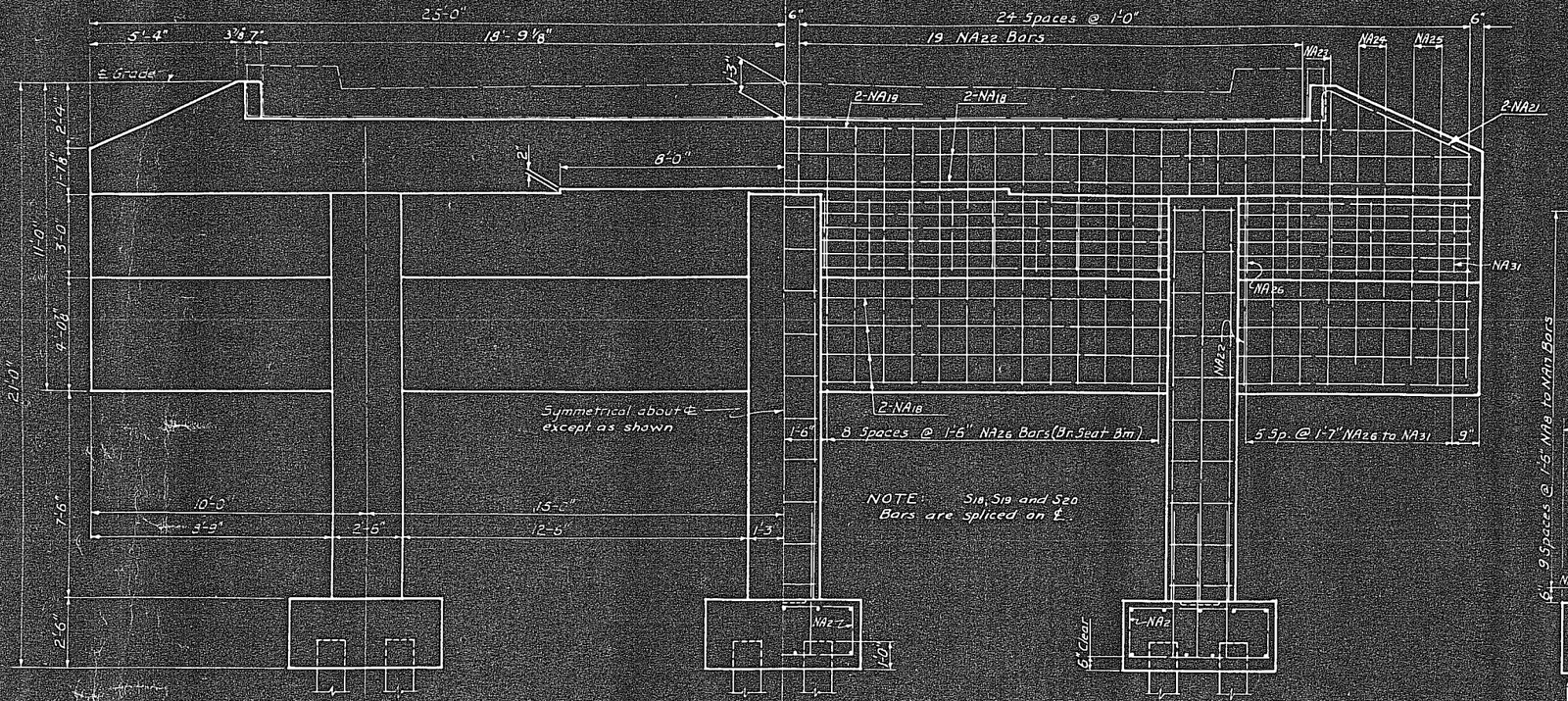
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
5N	N.D.		



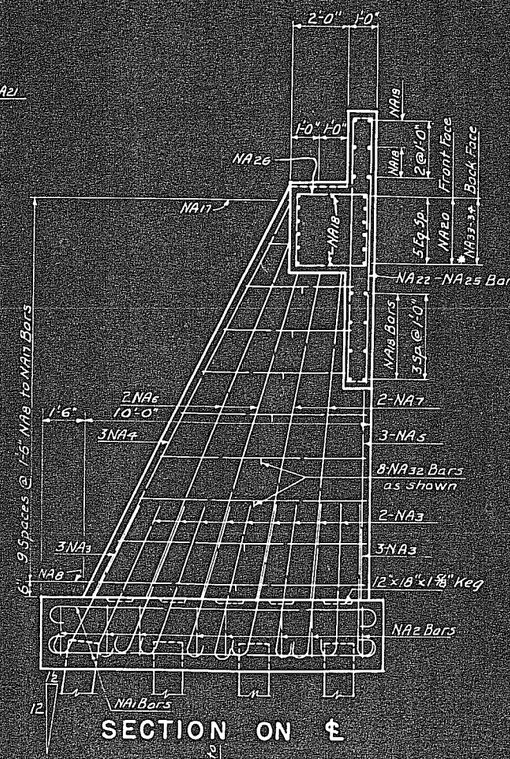
TOP PLAN



SECTION OF COLUMN



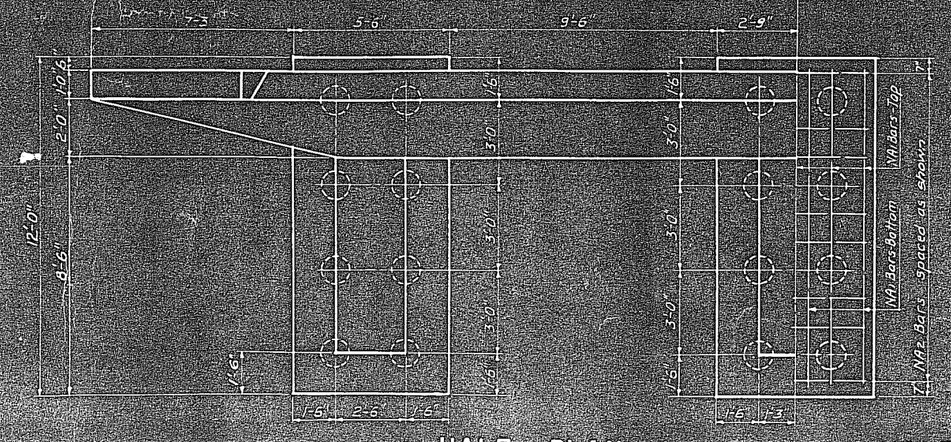
ELEVATION



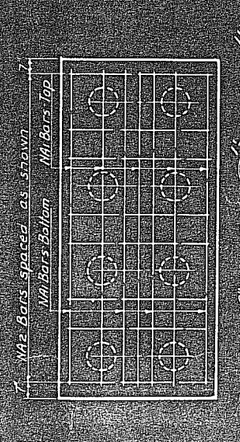
SECTION ON ℄

BAR LIST			
MARK	NO.	SIZE	LENG
NA1	27	5/8"ϕ	12'-9
NA2	24	5/8"ϕ	14'-0
NA3	72	1"ϕ	6'-6
NA4	9	"	15'-6
NA5	9	"	14'-0
NA6	12	3/4"ϕ	15'-0"
NA7	12	"	14'-0"
NA8	3	5/8"ϕ	23'-2"
NA9	3	"	21'-8"
NA10	3	"	20'-4"
NA11	3	"	18'-10"
NA12	3	"	17'-9"
NA13	3	"	16'-0"
NA14	3	"	14'-6"
NA15	3	"	13'-0"
NA16	3	"	11'-8"
NA17	3	"	10'-2"
NA18	28	5/8"ϕ	23'-6"
NA19	4	5/8"ϕ	24'-0"
NA20	12	5/8"ϕ	25'-6"
NA21	4	5/8"ϕ	16'-9"
NA22	38	5/8"	20'-6"
NA23	2	"	23'-0"
NA24	4	"	21'-6"
NA25	4	"	19'-6"
NA26	20	5/8"ϕ	10'-8"
NA27	2	"	10'-0"
NA28	2	"	9'-4"
NA29	2	"	8'-6"
NA30	2	"	7'-10"
NA31	2	"	7'-2"
NA32	24	1"ϕ	3'-0"
*NA33	6	5/8"ϕ	33'-9"
*NA34	6	5/8"ϕ	18'-9"

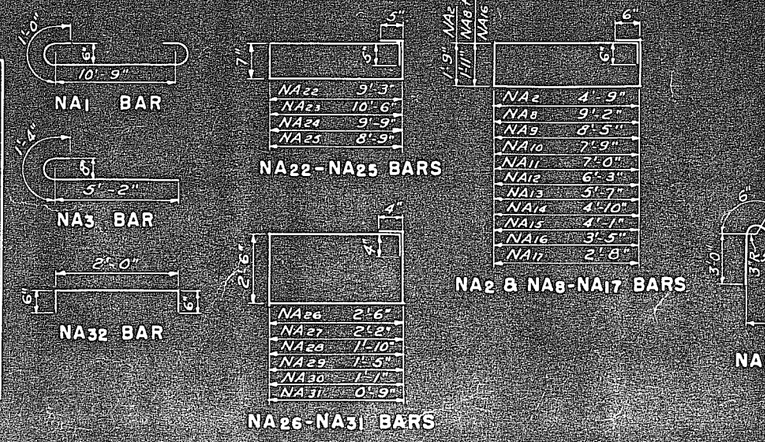
*Alternate splice of NA33 & N
on each side of abutment



HALF PLAN



HALF FOOTING PLAN



BENT BAR DETAILS

QUANTITIES	
Concrete Class A-1	67
Reinforcing Steel	656
Piling	(See Lay
Excavation	(See Lay

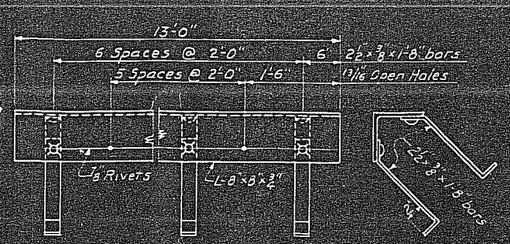
21 FT. ABUTMENT D
FOR I-BEAM SP
FIXED END
30° SKEW
28 FT. ROADWA

DETAILS CHECKED BY CCF
MADE BY CCF
TRACING CHECKED BY MJM
MADE BY MJM
TITLE CHECKED BY JRK

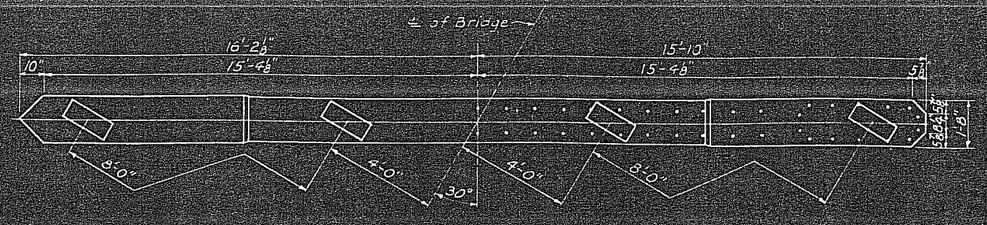
H-1206

H-1

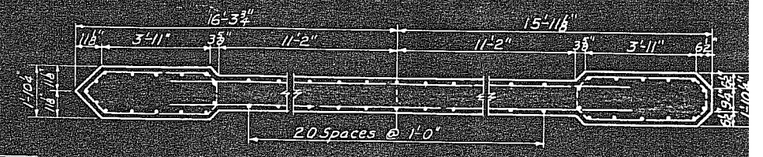
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.
5N	N.D.			



ICE NOSE ANGLE

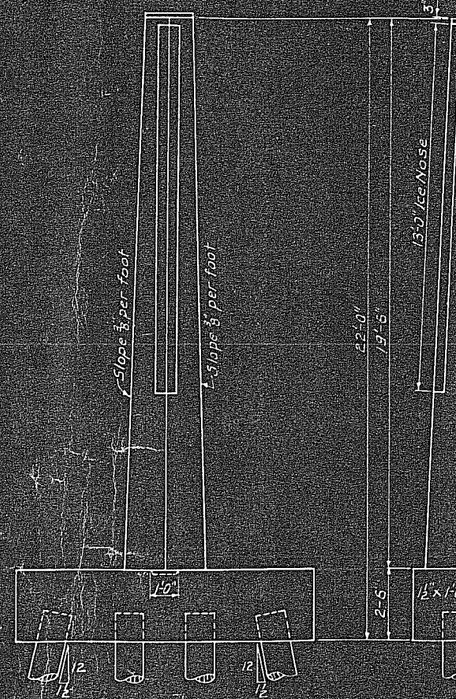


TOP PLAN

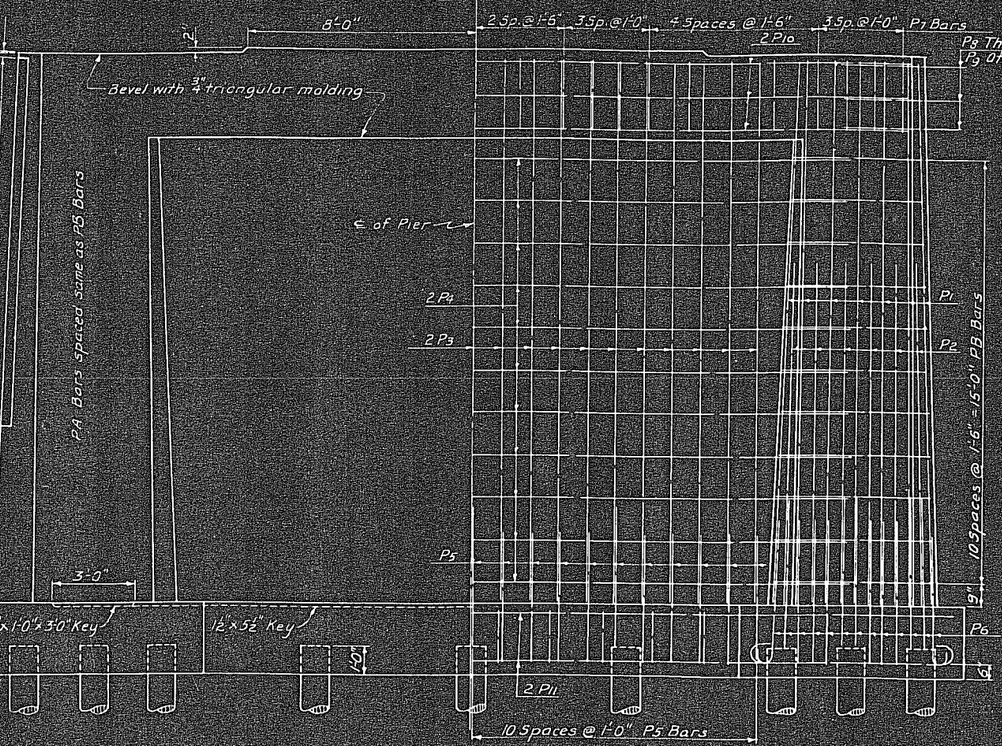


SECTION AT BOTTOM OF BEAM

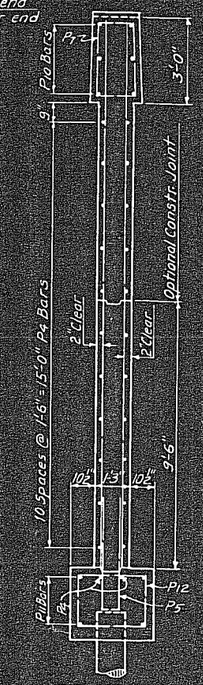
SECTION AT TOP OF FOOTING



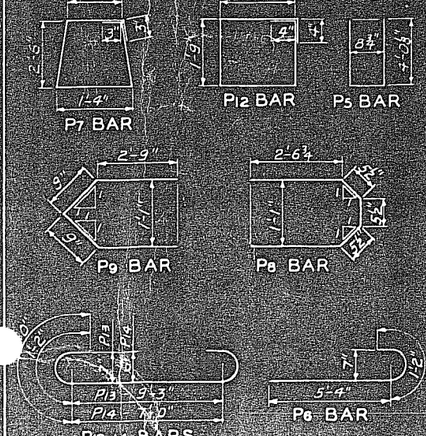
END VIEW



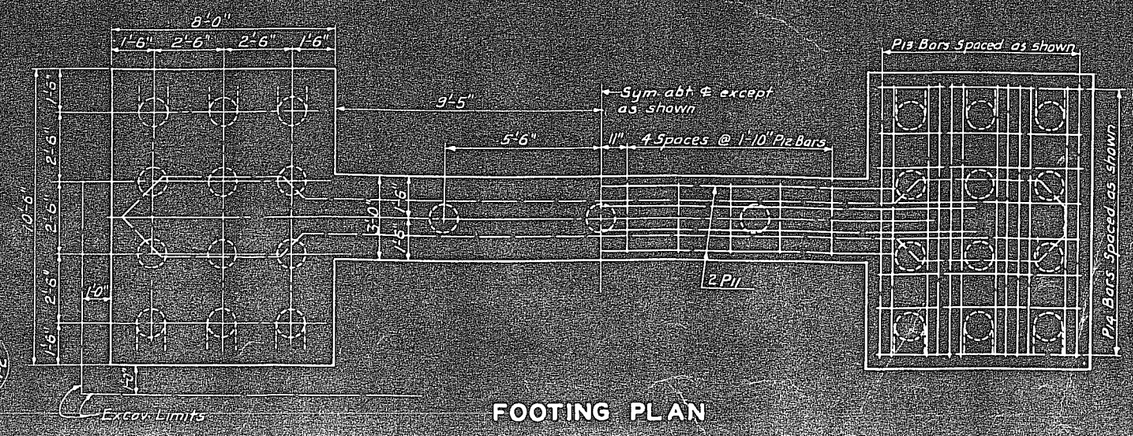
ELEVATION



SECTION ON ℄



BENT BAR DETAILS



FOOTING PLAN

PA BARS PB BARS

BAR	A	B	C	D	LENGTH	BAR	E	F	G	LENGTH
PA1	3'-8¾"	1'-0"	6 1/16"	6 5/16"	6'-4"	PB1	3'-8¾"	6 7/16"	6 1/16"	5'-11"
PA2	3'-9¼"	1'-0⅝"	7 1/16"	6 11/16"	6'-6"	PB2	3'-9¼"	6 7/16"	7 1/16"	6'-1"
PA3	3'-9¼"	1'-7½"	7 7/8"	8 ¼"	6'-8"	PB3	3'-9¼"	6¼"	7⅝"	6'-2"
PA4	3'-10⅝"	1'-2¼"	8⅜"	7⅝"	6'-10"	PB4	3'-10⅝"	6 11/16"	8⅜"	6'-3"
PA5	3'-10⅝"	1'-3⅜"	8 11/16"	7⅝"	7'-0"	PB5	3'-10⅝"	6⅜"	8⅜"	6'-5"
PA6	3'-11"	1'-3⅜"	9⅝"	7 11/16"	7'-2"	PB6	3'-11"	7⅜"	9⅝"	6'-6"
PA7	3'-11⅛"	1'-4⅝"	9⅝"	8⅛"	7'-4"	PB7	3'-11⅛"	7½"	9⅝"	6'-10"
PA8	4'-0"	1'-5¼"	10¼"	8⅝"	7'-6"	PB8	4'-0"	8⅜"	10¼"	7'-1"
PA9	4'-0⅛"	1'-6⅛"	10 1/16"	8 11/16"	7'-8"	PB9	4'-0⅛"	8 9/16"	10 1/16"	7'-3"
PA10	4'-0⅜"	1'-7⅛"	11⅛"	9⅜"	7'-11"	PB10	4'-0⅜"	8⅝"	11⅛"	7'-5"
PA11	4'-1⅜"	1'-7⅛"	11⅝"	10⅛"	8'-1"	PB11	4'-1⅜"	9⅜"	11⅝"	7'-7"
Total Length One Set					79'-0"	Total Length One Set				73'-8"

BAR LIST

MARK	NO.	SIZE	LENGTH
P1	29	⅞"φ	19'-3"
P2	24	"	12'-0"
P3	42	¾"φ	19'-0"
P4	24	1"φ	25'-0"
P5	21	⅝"φ	8'-9"
P6	53	⅝"φ	6'-6"
P7	25	½"φ	8'-0"
P8	3	¾"φ	6'-6"
P9	3	"	7'-0"
P10	6	1"φ	30'-0"
P11	4	"	21'-0"
P12	10	⅝"φ	9'-0"
P13	24	⅞"φ	11'-7"
P14	16	¾"φ	9'-0"
PA1 to PA11	2 Sets	⅝"φ	79'-0"
PB1 to PB11	2 Sets	⅝"φ	73'-8"

QUANTITIES

Concrete Class A-1½	373
Reinforcing Steel	6321
Structural Steel	400
Piling	(See Layo
Excavation	(See Layo

22' PIER DETAIL

FOR I-BEAM SPANS

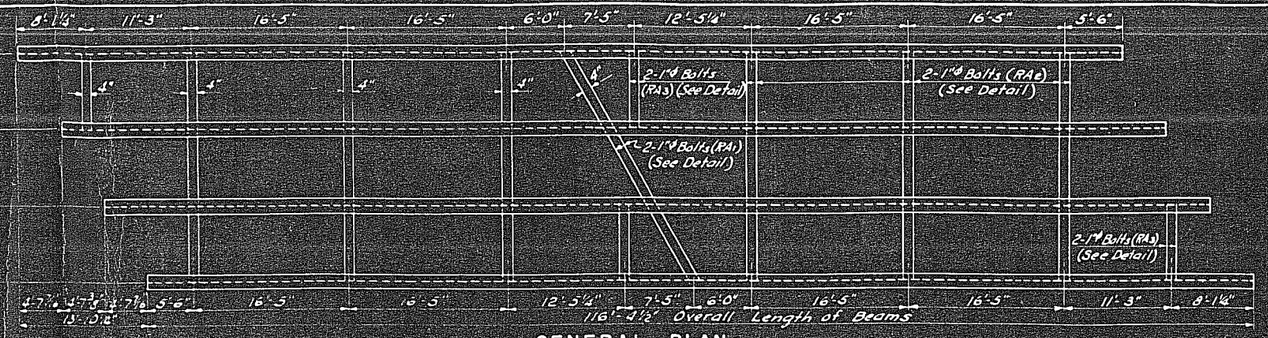
30° SKEW

28 FT ROADWAY

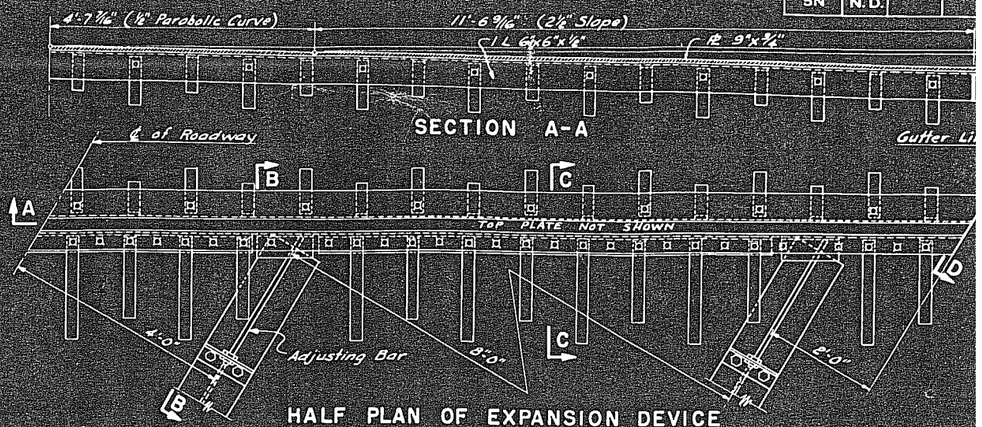
TRACING	DATE	
QUANTITIES	CHECKED BY	A.J.A. & F.E.C.
	MARK BY	A.J.A.
	CHECKED BY	F.E.C.

H1303

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR
SN	N.D.		

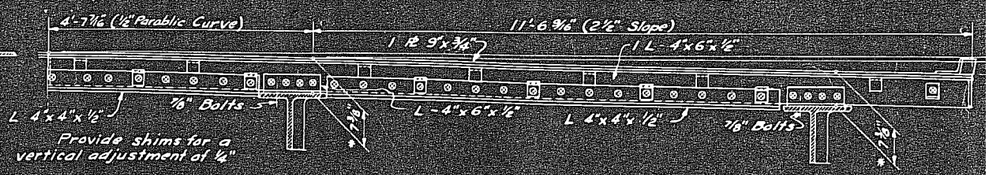


GENERAL PLAN

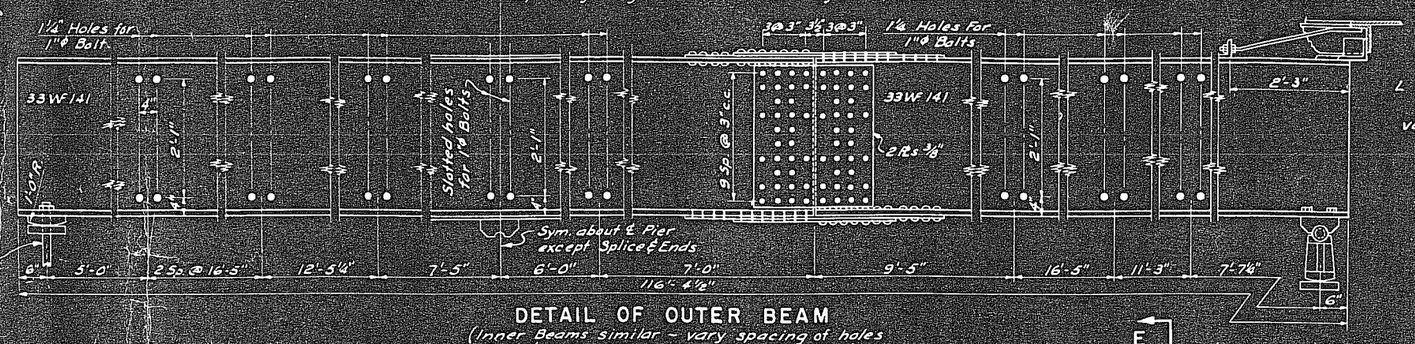


SECTION A-A

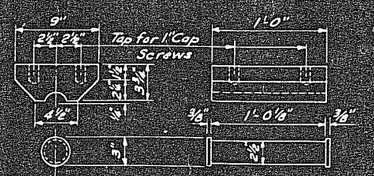
HALF PLAN OF EXPANSION DEVICE



HALF ELEV. OF EXPANSION DEVICE ON SPAN



DETAIL OF OUTER BEAM
(Inner Beams similar – vary spacing of holes for 1"ø Bolts as shown in General Plan)



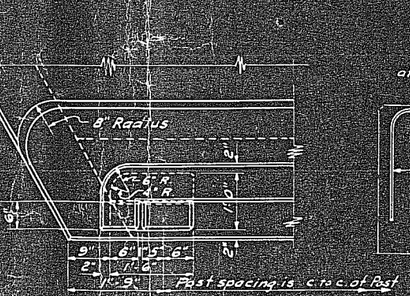
EXPANSION BEARING DETAILS
8 Req'd.

NOTES

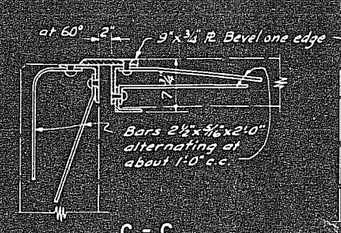
ADJUSTMENT OF EXPANSI
SHOP: Assemble each joint com
the two halves together througho
length and adjust to crown.
FIELD: 1.- The abutment unit a
ed first to the correct elevation
vature and abutment wall poured.
adjoining slab section is poured.
2.- When the floor slab is poure
in 3'-0" of the expansion device the
shall be checked and adjusted
with the abutment unit so that
device is properly placed.

GENERAL

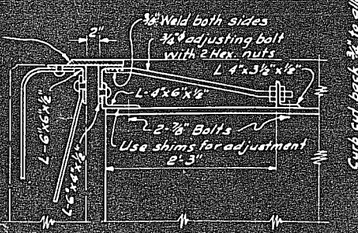
All rivets are to be ⅞".
Open holes are to be 15/16" except
Field connections shall be mad
Dardelet "Rivet Bolts" or equal.
Paint: North Dakota Highway Spe
No paint, shop or field, on top of
* To allow vertical adjustment
expansion joint by means of sh
has been cut from the height of
The Field Riser Diagram show
sions from an assumed cord dr
tween ends of the beam. Addit
subtractions must be made to th
dimensions to compensate for the
in the beam and deflection due to
of the beam.
The rockers, as detailed sha
structed from structural steel pla
ed together or shall be of cast s
The 3" hole may be omitted if ro
are constructed of welded plat



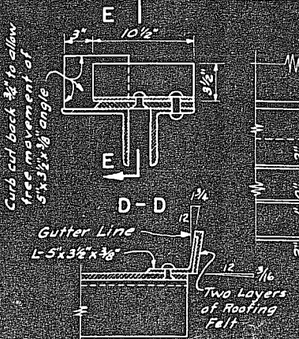
PART PLAN



C - C

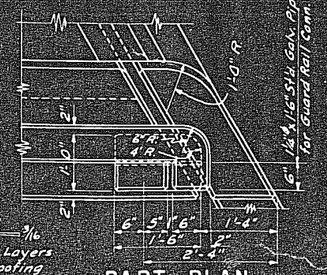


B - B

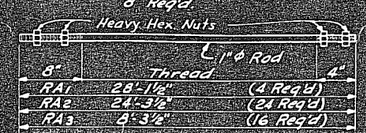


D-D

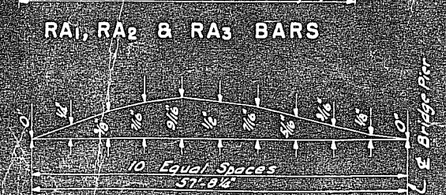
E-E



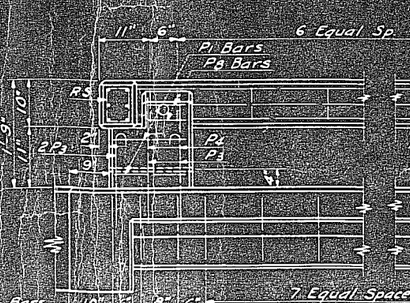
PART PLAN



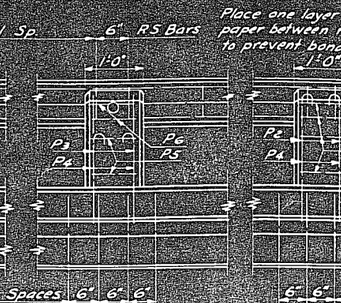
RA1, RA2 & RA3 BARS



FIELD RISER DIAGRAM
Showing Dimension "a"

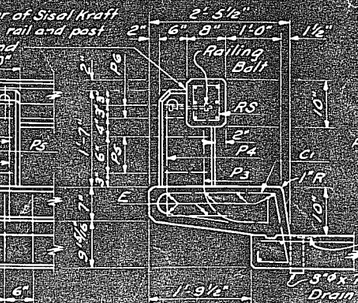


POST AT ABUT-FIXED END

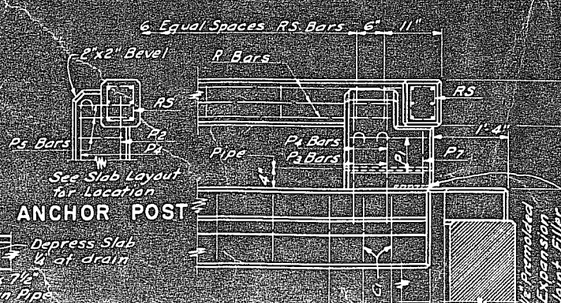


INTERMEDIATE POST

ANCHOR POST



TYPICAL SECTION



ANCHOR POST

POST AT ABUT-EXPANSION END

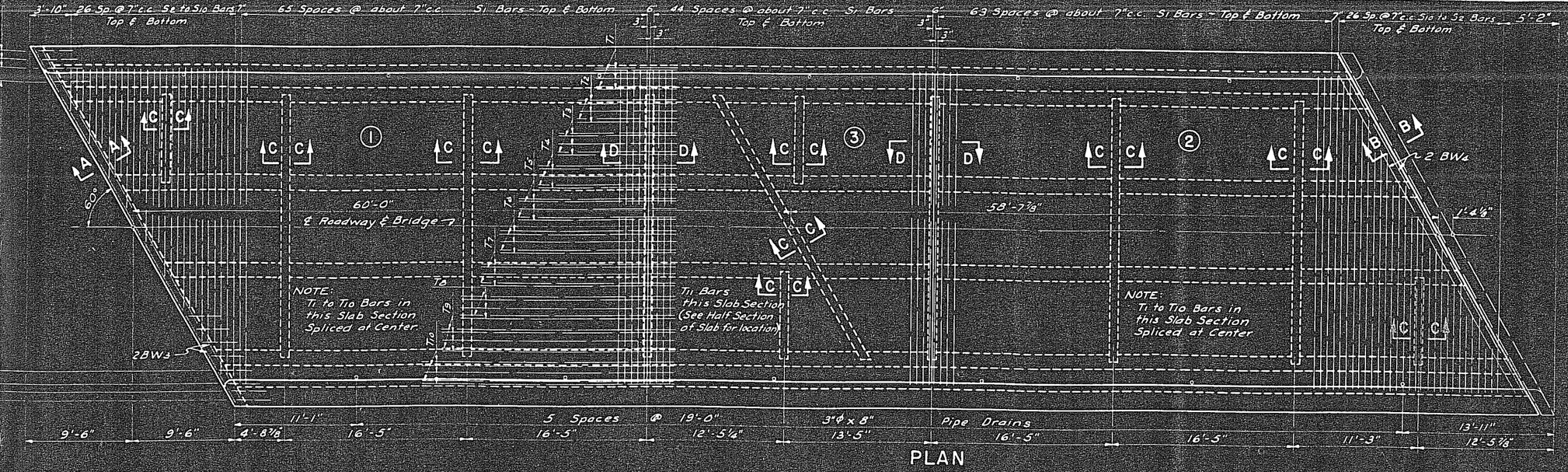
QUANTITIES
Structural Steel

SUPERSTRUCT
TWO SPAN
CONTINUOUS I-
SKEW 30°
OVERALL LENGTH
H15-S12 LOADI
SHEET 1 OF

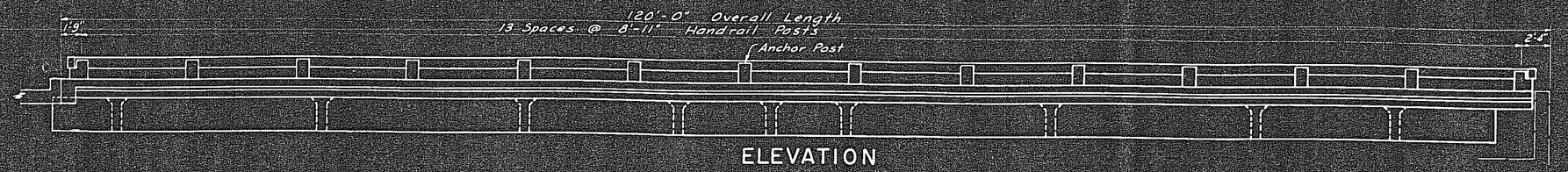
DETAILS	MADE BY	AJA
	CHECKED BY	JG
DWG	MADE BY	OCM
	CHECKED BY	KJA
QUANTITIES	MADE BY	AJA
	CHECKED BY	JRK

H-1107

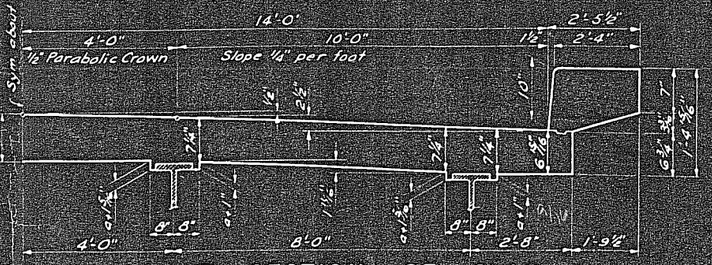
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.
5N	N.D.			



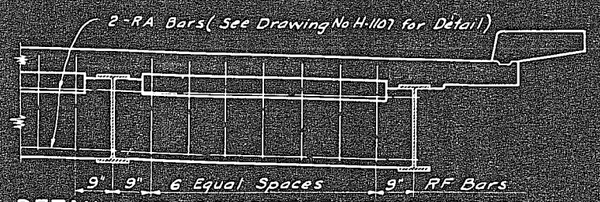
PLAN



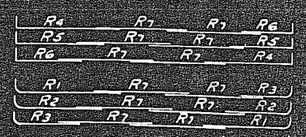
ELEVATION



HALF SECTION OF SLAB
SHOWING DIMENSIONS



DETAIL OF CONCRETE DIAPHRAGM

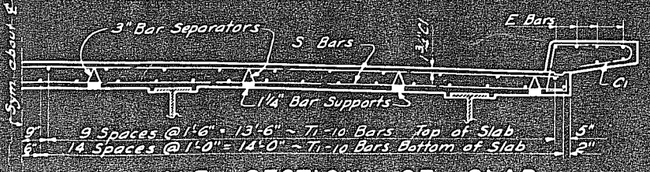


RAIL STEEL ASSEMBLY

BAR LIST
FOR ENTIRE FLOOR SLAB

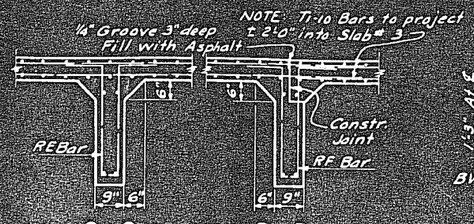
MARK	NO.	SIZE	LENGTH
BW1	22	½"φ	7'-0"
BW2	6	"	8'-10"
BW3	4	⅜"φ	37'-0"
BW4	4	"	33'-6"
C1	266	⅝"φ	5'-6"
E	48	¾"φ	31'-6"
P1	8	¾"φ	4'-8"
P2	4	⅜"φ	4'-0"
P3	56	"	3'-4"
P4	56	"	3'-6"
P5	52	⅜"φ	3'-8"
P6	44	"	2'-8"
P7	2	½"φ	3'-2"
P8	8	⅜"φ	2'-6"
R1	4	⅝"φ	34'-6"
R2	4	"	31'-6"
R3	4	"	28'-6"
R4	4	"	33'-9"
R5	4	"	30'-9"
R6	4	"	27'-9"
R7	24	"	32'-3"
RF	175	½"φ	8'-0"
RS	190	⅜"φ	2'-8"
S1	350	⅝"φ	29'-0"
S2	12	"	4'-0"
S3	12	"	7'-0"
S4	12	"	10'-0"
S5	12	"	13'-0"
S6	12	"	16'-0"
S7	12	"	19'-0"
S8	12	"	22'-0"
S9	12	"	25'-0"
S10	12	"	28'-0"
T1	20	½"φ	29'-6"
T2	20	"	28'-6"
T3	20	"	27'-6"
T4	20	"	26'-9"
T5	20	"	25'-9"
T6	20	"	25'-0"
T7	20	"	24'-0"
T8	20	"	23'-0"
T9	20	"	22'-3"
T10	20	"	21'-3"
T11	69	⅝"	25'-4"

NOTES:
The slab shall be poured i
following sequence:
1. Slab section 1.
2. Slab section 2.
3. Slab section 3.
Each curb shall be place
one continuous operation.
Each rail section shall be
in one continuous operation.
Railing and railing posts
be of class A-1 concrete.
Bevel all exposed edges
¾" triangular molding excep
shown.
For railing details see Dra
No. H-1107.

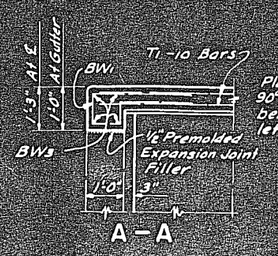


HALF SECTION OF SLAB
SHOWING REINFORCEMENT FOR SLAB NOS. 1 & 2

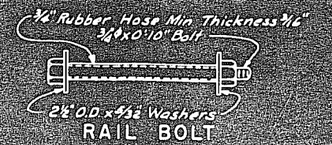
HALF SECTION OF SLAB
SHOWING REINFORCEMENT FOR SLAB NO. 3



C-C D-D

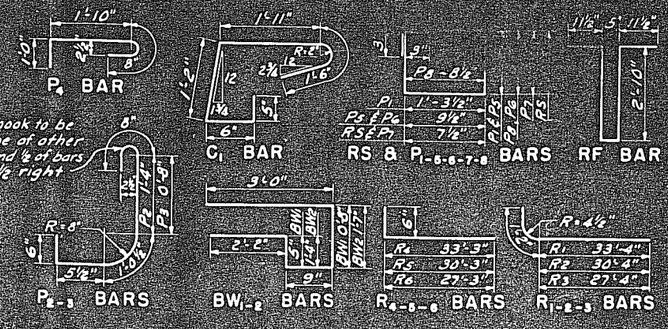


A-A



RAIL BOLT

B-B



BENT BAR DETAILS

QUANTITIES

Concrete Class A-1	6
Concrete Class A-1½	113
Reinforcing Steel	25

SUPERSTRUCTU
TWO SPAN
CONTINUOUS T-BEA
SKEW 30°
OVERALL LENGTH 12
H15-S12 LOADING
SHEET 2 OF 2

H-1108