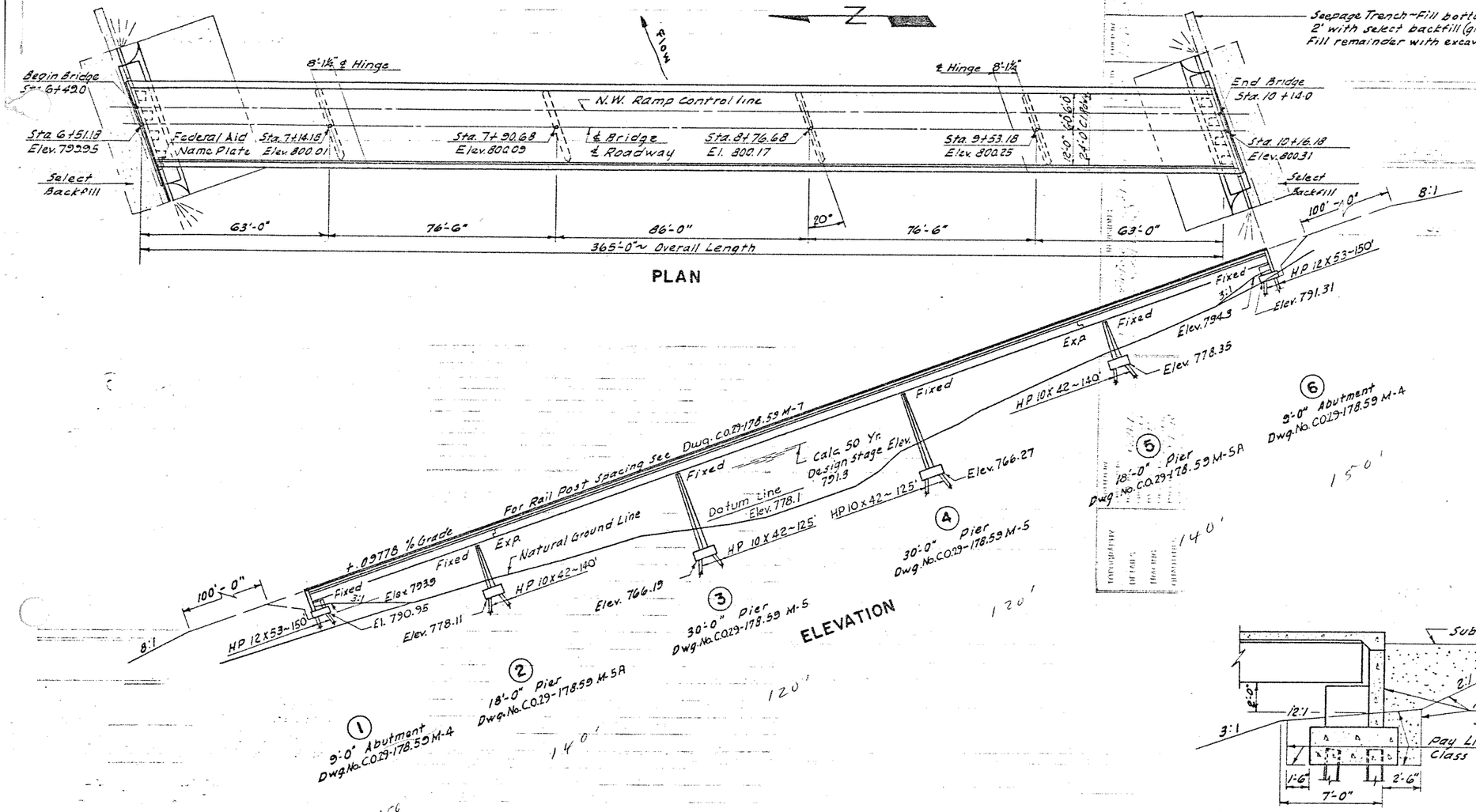
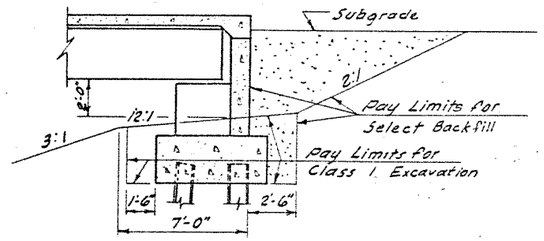
BRIDGE CODE	FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
X-071	8	N. D.	I-029-5 (16)		

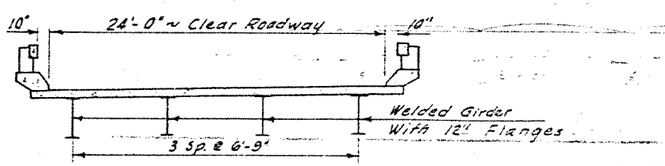
1973
FEDERAL AID PROJECT
I-29-5(16)
NORTH DAKOTA
29-178.59 M

FEDERAL AID NAME PLATE
(1) REQUIRED

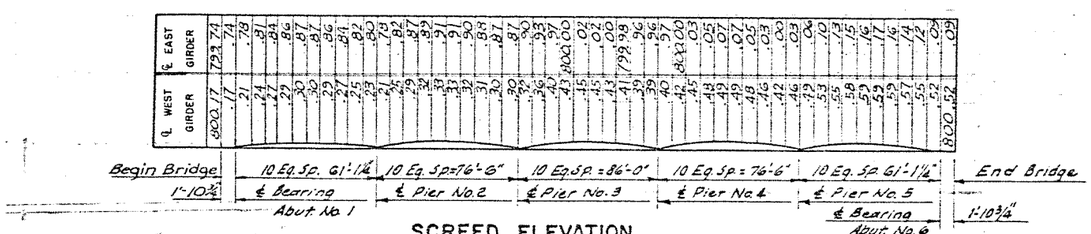




℄ SECTION AT ABUTMENT



DECK SECTION



SCREED ELEVATION
Elevations are to top of finished concrete

BENCH MARKS

NO.	DESCRIPTION	* LOCATION	ELEV.
1	Iron Mon. P Pole	2020+20 ± 7'Rt	793.16
2	...ted Sq. Cut Abut	2027+93 ± 133'Lt	795.88
3	... Mon. P Pole	2033+37 ± 42'Lt	800.32

*Stations are on ℄ of East Roadway

PILE LOADING

LOCATION	DEAD LOAD	LIVE LOAD	EARTH	LONG FORCE	DRAWDOWN	DESIGN LOAD	MAXIMUM REQUIRED RESIST.
Abut 1&6	17.0 T	7.6 T	4.4 T		25.0 T	54.0 T	60.0 T
Piers 2&5	26.5 T	10.8 T	1.1 T			38.4 T	50.0 T
Piers 3&4	38.0 T	11.2 T	3.2 T			55.0 T	55.0 T

* SPECIAL PROVISIONS

NO.	NAME
SP. 116	STRUCTURAL STEEL

ESTIMATE OF QUANTITIES

SPEC NO.	CODE NO.	BID ITEM		
203	0100	COMMON EXCAVATION	25,000	CU. YD.
208	0100	CLASS 1 EXCAVATION	220	CU. YD.
208	0110	CLASS 2 "	235	CU. YD.
203	0190	MOISTURE CONTROL		L. SUM
228	0100	SELECT BACKFILL	200	CU. YD.
610	1112	CLASS AE-1 CONCRETE (SUBSTRUCTURES)	243.8	CU. YD.
610	1134	CLASS AE-3 " (I-BEAM SUPERSTRUCTURE)	272.5	CU. YD.
610	0136	CLASS AAE-3 CONCRETE (RAILING & POSTS)	23.43	CU. YD.
612	0110	REINFORCING STEEL (GRADE 40)	123,596	LB.
616	0362	*STRUCTURAL STEEL A36 WELDED GIRDER	95,916	LB.
616	5722	*STRUCTURAL STEEL A 572 WELDED GIRDER (GRADE 50)	184,550	LB.
622	0020	STEEL PILING HP 10 X 42	3975	LIN. FT.
622	0040	STEEL PILING HP 12 X 53	2400	LIN. FT.
622	0590	STEEL TEST PILE HP 10 X 42 135 FT.	1	EACH
622	0640	STEEL TEST PILE HP 10 X 42 160 FT.	1	EACH
	8650	PREFORMED COMPRESSION JOINT SEAL 4"	53.5	LIN. FT.
730	0100	LINSEED OIL TREATMENT	49	GAL.
	3000	BRIDGE BENCH MARKS	1	SET

11-28-72 Job 247.0

STRUCTURAL DRAWINGS

GENERAL DRAWING (THIS SHEET), C.O. 29-178.59 M-1, 2, 8, 3
SUBSTRUCTURE C.O. 29-178.59 M-4, 5, 8, 54
SUPERSTRUCTURE C.O. 29-178.59 M-5, 54, 53, 6, 7, 7A, H-0.58, H-0501, [illegible]

DESIGN LOADING	SCALE
HS 20	1 INCH = 20 FEET

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

PARK RIVER

MEDIAN BRIDGE LAYOUT

PROJECT I-029-5(16)175 STA. 8+33.68

WALSH COUNTY

APPROVED

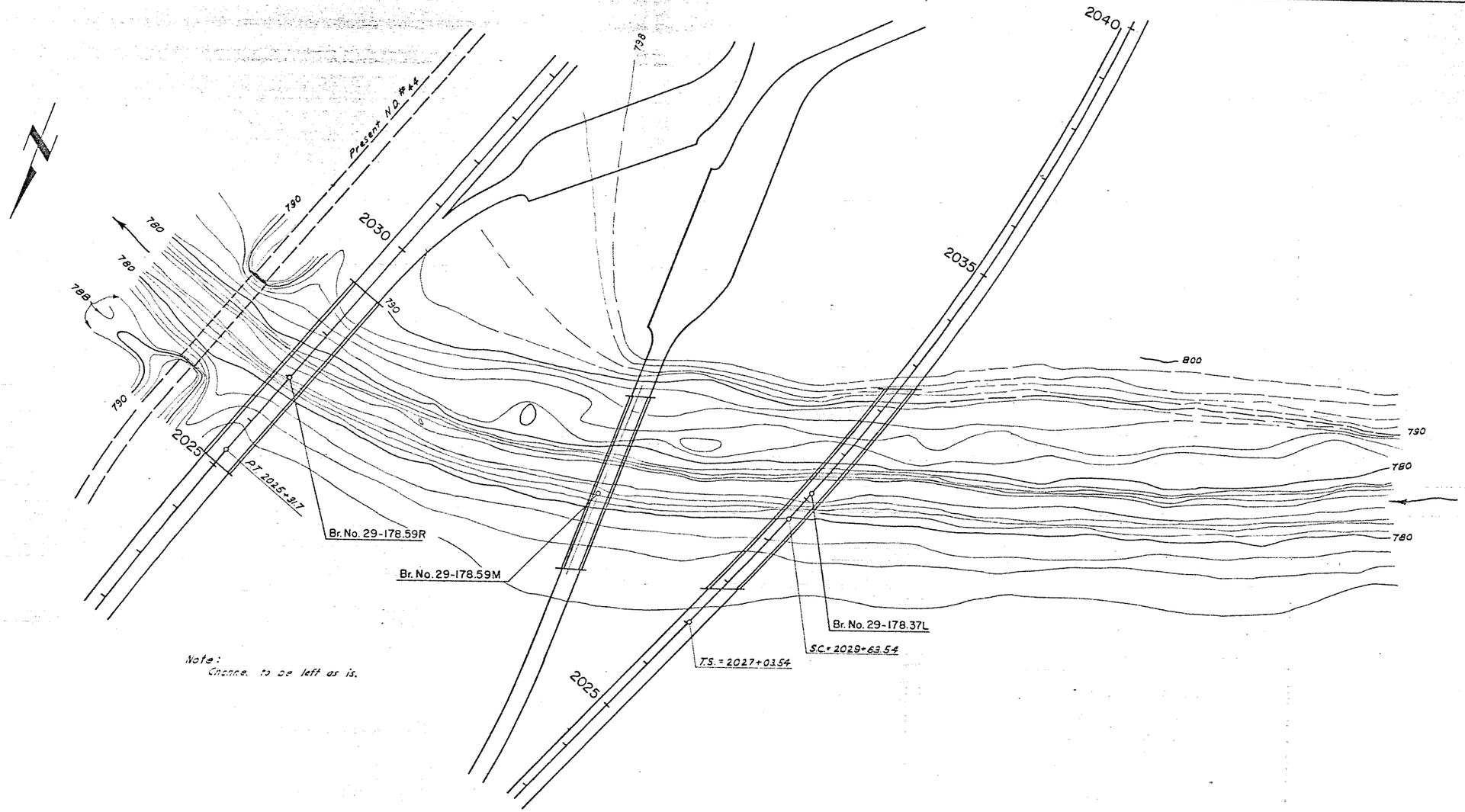
10-3-72
DATE

Allen J. Anderson
BRIDGE ENGINEER

ALLEN J. ANDERSON REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

C.O. 29-178.59 M-A

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N.D.	I-29-5(16)		



Note:
Canne. to be left as is.

HYDRAULIC DESIGN DATA

DRAINAGE AREA	990 SQ. MI.
DESIGN FREQUENCY	50-YEAR
DESIGN DISCHARGE	9800 CFS
STREAM GRADIENT	0.0002878 FT/FT.
WATERWAY PROVIDED BELOW DESIGN STAGE (AT 90° TO FLOW)	3450 SQ. FT.
WATERWAY PROVIDED BELOW MIN. CLEARANCE (AT 90° TO FLOW)	5280 SQ. FT.
VELOCITY OF FLOW UNDER BRIDGE	2.8 FPS
VELOCITY OF FLOW IN NATURAL CHANNEL	3.4 FPS
DEPTH OF FLOW	20.4 FT.
FREEBOARD PROVIDED	6.4 FT.
MINIMUM WATER ELEVATION	771.3 APPROX.
MAX. STAGE (1966) (BACKWATER FROM RED RIVER)	799.2
MAX. DISCHARGE (1950) (ESTIMATED)	15,400
FREQUENCY OF MAX. FLOOD	GREATER THAN 100 YR.

Note:
The survey stationing is from North to South whereas the bridge numbers given indicate mileage from South to North.

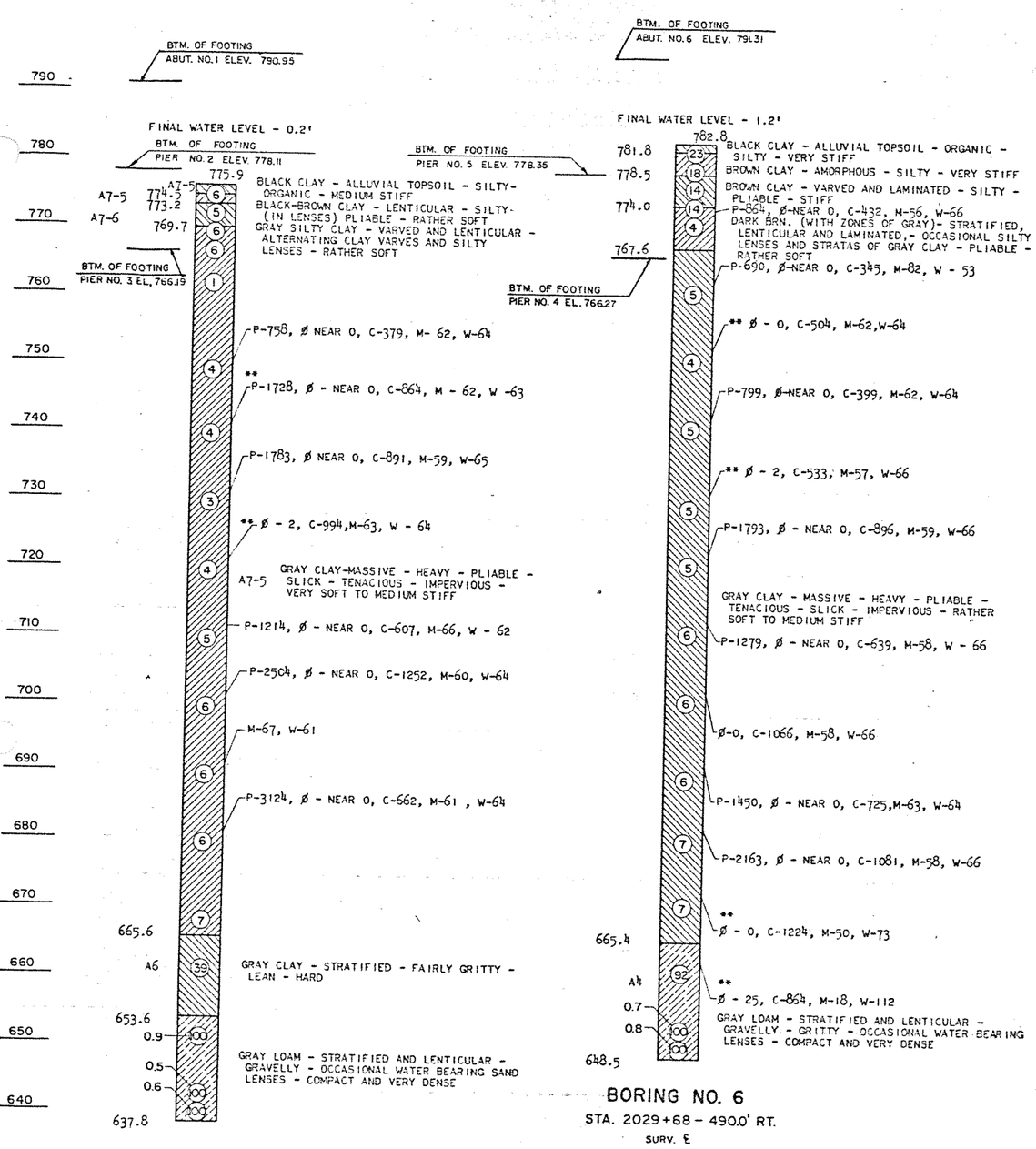
PARK RIVER

TOPOGRAPHIC LAYOUT

PROJ. I-29-5(16)

WALSH COUNTY

C.O.29-178.59M-1



BORING NO. 3

STA. 2028+66 – 489.0' RT.

SURV. ℄

BORING NO. 6

STA. 2029+68 – 490.0' RT.

SURV. ℄

SYMBOLS:
P-MAXIMUM LOAD (LBS./SQ.FT.)
Ø-SHEAR ANGLE (DEGREES)
C-COHESION (LBS/SQ.FT.)
M-MOISTURE (PER CENT)
W-DRY WEIGHT (LBS.CU.FT.)
**-TRIAXIAL

NOTES:
ENCIRCLED NUMBERS INDICATE THE NUMBER OF BLOWS DELIVERED BY A 140 LB. HAMMER FROM A HEIGHT OF 30" TO DRIVE CORE TUBE 1.0'.
THE BORING LOG DATA SHOWN IS FOR DESIGN PURPOSES ONLY. THE STATE ASSUMES NO RESPONSIBILITY IF SOIL CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFER FROM THOSE SHOWN.

NOTES:

GENERAL:

WORK SHALL CONFORM TO ALL APPLICABLE PARAGRAPHS OF THE "NORTH DAKOTA STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", 1971 EDITION (HEREAFTER REFERRED TO AS STANDARD SPECIFICATIONS) AND TO ALL SPECIAL AND SUPPLEMENTAL SPECIFICATIONS IN THIS CONTRACT.

THE COST OF FURNISHING AND PLACING JOINT FILLER, ASPHALT CURB SEAL, NAMEPLATES, AND OTHER MISCELLANEOUS ITEMS SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE.

DEAD LOAD DEFLECTIONS HAVE BEEN ACCOUNTED FOR IN THE SHOP CAMBER SPECIFIED FOR THE GIRDERS.

BEARING ELEVATIONS SHALL BE FINISHED TRUE TO PLAN AND ELEVATION BY GRINDING, IF NECESSARY, BEFORE BEARING PLATES ARE SET.

FIELD CONNECTIONS ARE TO BE MADE WITH 7/8" HIGH STRENGTH BOLTS. IN THE WEB AND FLANGE SPLICES, THE BOLTS SHALL BE PLACED WITH THE NUTS ON THE INTERIOR SIDE OF THE WEB AND ON THE UPPER SIDE OF THE FLANGE.

EMBANKMENT AND BACKFILL:

THE EMBANKMENTS AT THE ABUTMENTS SHALL BE IN PLACE 30 DAYS BEFORE PILING ARE DRIVEN.

THE CONTRACTOR WILL BE REQUIRED TO PREDRILL THROUGH THE FILL AT THE EMBANKMENTS BEFORE DRIVING PILING. VOIDS LEFT AFTER PILES ARE DRIVEN SHALL BE FILLED WITH SAND OR FINE GRAVEL AT THE CONTRACTOR'S EXPENSE.

ALL EMBANKMENT AND BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHO DESIGNATION T-99. THE MOISTURE CONTENT IN THE SOIL AT THE TIME OF COMPACTION SHALL NOT BE LESS THAN FOUR PERCENT BELOW THE OPTIMUM NOR MORE THAN THAT WHICH WILL PERMIT COMPACTION TO THE REQUIRED DENSITY. SELECT BACKFILL SHALL NOT BE PLACED ABOVE THE BERM ELEVATION UNTIL THE SUPERSTRUCTURE IS IN PLACE.

EXCAVATION:

ALL EXCAVATION ABOVE THE DATUM LINE SHOWN ON THE LAYOUT DRAWING SHALL BE CLASS 1; EXCAVATION BELOW THE DATUM LINE SHALL BE CLASS 2.

PILING:

THE PILES FOR THIS STRUCTURE SHALL BE DRIVEN BY A STEAM, AIR, OR DIESEL HAMMER HAVING A RATED ENERGY AND RAM WEIGHT OF NOT LESS THAN 37,750 FOOT-POUND-TONS AS COMPUTED BY THE FORMULA $W(E-12,100)+0.87E$, WHERE W IS THE WEIGHT OF THE RAM IN TONS AND E IS THE RATED HAMMER ENERGY AS ALLOWED IN THE STANDARD SPECIFICATIONS. IN NO CASE SHALL THE RAM WEIGH LESS THAN 2,800 POUNDS.

THE TEST PILES FOR THIS STRUCTURE SHALL BE DRIVEN TO A BEARING OF NOT LESS THAN 125% DESIGN LOAD AS DETERMINED BY DYNAMIC FORMULA.

CONCRETE:

ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.

ALL CONCRETE ABOVE THE TOP OF THE CURBS SHALL BE CLASS AAE-3. SLAB, CURBS AND END WALLS SHALL BE CLASS AE-3. SUBSTRUCTURES SHALL BE CLASS AE-1.

A "RUBBED SURFACE FINISH" SHALL BE REQUIRED FOR THE ROADWAY AND OUTSIDE FACES OF CURBS, EDGES OF SLAB, ALL FACES OF THE RAILS, RAIL POSTS, END POSTS, ALL EXPOSED FACES OF PIERS, AND ALL EXPOSED FACES OF ABUTMENT WINGS. ALL OTHER SURFACES SHALL BE GIVEN AN "ORDINARY SURFACE FINISH".

IF THE EXPOSED FACES OF ABUTMENTS AND PIERS HAVE A SURFACE FINISH ACCEPTABLE TO THE ENGINEER WITHOUT RUBBING, THE REQUIREMENT FOR "RUBBED SURFACE FINISH" MAY BE WAIVED AT THE OPTION OF THE ENGINEER, AND THE "ORDINARY SURFACE FINISH" WILL APPLY.

ALL "ORDINARY SURFACE FINISH" SHALL BE COMPLETED WITHIN 24 HOURS AFTER THE REMOVAL OF FORMS.

THE CONTRACTOR HAS THE OPTION OF USING THE "SPECIAL SURFACE FINISH" (602-3.10.5) IN LIEU OF THE "RUBBED SURFACE FINISH" (602-3.10.3) CALLED FOR ABOVE.

REINFORCING STEEL:

DIMENSIONS FOR BENT BARS ARE GIVEN OUT TO OUT. ALL BENDS ARE TO MEET ACI STANDARDS UNLESS OTHERWISE NOTED. NO CORRECTIONS IN LENGTH HAVE BEEN MADE FOR CURVATURE DUE TO BENDS IN THE BAR. THE BAR FABRICATOR SHALL ADD A PREFIX TO ALL BAR DESIGNATIONS TO DIFFERENTIATE BETWEEN THE SEVERAL PARTS OF THE STRUCTURE OR STRUCTURES.

STRUCTURAL STEEL:

THE GIRDERS SHALL BE CAMBERED IN THE SHOP AS DETAILED ON DRAWING C.O. 29-178.59M-6.

ALL SHOP BUTT WELDS IN THE FLANGE PLATES SHALL BE MADE BEFORE FINAL FITTING AND WELDING INTO THE GIRDER. ALL BUTT WELDS IN THE FLANGE AND WEB PLATES SHALL BE GROUND FLUSH.

HINGE PINS SHALL CONFORM TO ASTM A108, GRADES 1016 TO 1030, BUT WILL BE PAID FOR AS A36. FLANGE PLATES WILL BE A572 (GRADE 50) STEEL. ALL OTHER STRUCTURAL STEEL SHALL BE A36. 12X5/8-A441 FLANGE PLATE MAY BE USED IN LIEU OF THE 12X5/8-A572 FLANGE PLATE. 12X3/4-A441 FLANGE PLATE MAY BE USED IN LIEU OF THE 12X3/4-A572 FLANGE PLATE.

ALL PIN NUTS, AFTER BEING TIGHTENED, SHALL BE TACK WELDED TO THE ENDS OF THE PINS.

SUFFICIENT PARTS OF THE STRUCTURE SHALL BE SHOP ASSEMBLED, WITH EACH MEMBER IN ITS CORRECT RELATIVE POSITION, IN ORDER TO ESTABLISH THE ACCURACY OF THE WORKMANSHIP AND THE SHOP DRAWINGS.

ALL OF THE GIRDER SECTIONS FOR ONE COMPLETE SPAN SHALL BE PLACED ON THEIR SIDES AND IN THEIR CORRECT RELATIVE POSITIONS BEFORE REAMING THE HOLES FOR GIRDER SPLICES WITHIN THAT SPAN. ACCURACY IN POSITIONING THE GIRDER SECTIONS IS IMPORTANT.

BLAST CLEANING:

COMMERCIAL BLAST CLEANING OF ALL EXPOSED MAIN AND SECONDARY STEEL MEMBERS WILL BE REQUIRED PRIOR TO PAINTING. (INCLUDE IN UNIT PRICE BID FOR STRUCTURAL STEEL.)

PAINT:

PAINT AND PAINTING SHALL CONFORM TO SECTION 718 AND 870-1.2 OF THE STANDARD SPECIFICATIONS.

ALL EXPOSED STEEL SHALL BE GIVEN ONE SHOP COAT OF RED LEAD PAINT (INCLUDING TOPS OF UPPER GIRDER FLANGES, BUT NOT SHEAR CONNECTORS), ONE SPOT COAT OF RED LEAD PAINT AFTER ERECTION AND CONCRETE WORK ARE COMPLETED, AND TWO FIELD COATS OF ENAMEL.

THE FIRST FIELD COAT SHALL CONFORM TO GREEN COLOR NUMBER 24260 AND THE SECOND COAT SHALL CONFORM TO GRAY-GREEN COLOR NUMBER 24300. BOTH COATS SHALL MEET FEDERAL STANDARD NUMBER 595 FOR COLOR. COLOR CHIPS ARE ON FILE IN THE BRIDGE DIVISION OF THE NORTH DAKOTA STATE HIGHWAY DEPARTMENT IN BISMARCK.

LINSEED OIL TREATMENT:

LINSEED OIL TREATMENT SHALL NOT BE APPLIED UNTIL ALL CONCRETE WORK IS COMPLETED AND ASPHALT CURB SEAL HAS BEEN INSTALLED.

CURING CONCRETE:

EXCEPT AS PROVIDED IN THE FOLLOWING PARAGRAPH, LIQUID MEMBRANE CURING COMPOUND SHALL NOT BE USED ON ANY CONCRETE WHICH IS TO RECEIVE FURTHER TREATMENT.

THE WATER SOLUBLE LIQUID MEMBRANE CURE (SECTION 550-4.13.2.1 AND 880-5 OF THE STANDARD SPECIFICATIONS) MAY BE USED FOR CURING THE DECK SLAB CONCRETE. A PROTECTIVE COVERING SHALL BE USED SO THAT LINSEED OIL IS NOT APPLIED TO THE AREA WITHIN THREE INCHES OF THE GUTTER LINE UNTIL AFTER THE ASPHALT CURB SEAL IS IN PLACE. IF THE CONTRACTOR ELECTS TO USE THIS METHOD OF CURING THE DECK CONCRETE, THE QUANTITY FOR LINSEED OIL TREATMENT MAY BE REDUCED WITHOUT ADJUSTMENT TO ITS UNIT BID PRICE. THE COST OF LIQUID MEMBRANE CURING COMPOUND SHALL BE INCLUDED IN BID PRICE FOR CONCRETE CLASS AE-1.

DESIGN STRESSES:

FC - 1,200 PSI	AE-1 AND AE-3 CONCRETE
FC - 1,700 PSI	AAE-3 CONCRETE
FS - 20,000 PSI	STRUCTURAL STEEL A 36
FS - 27,000 PSI	STRUCTURAL STEEL A 572
FS - 20,000 PSI	REINFORCING STEEL

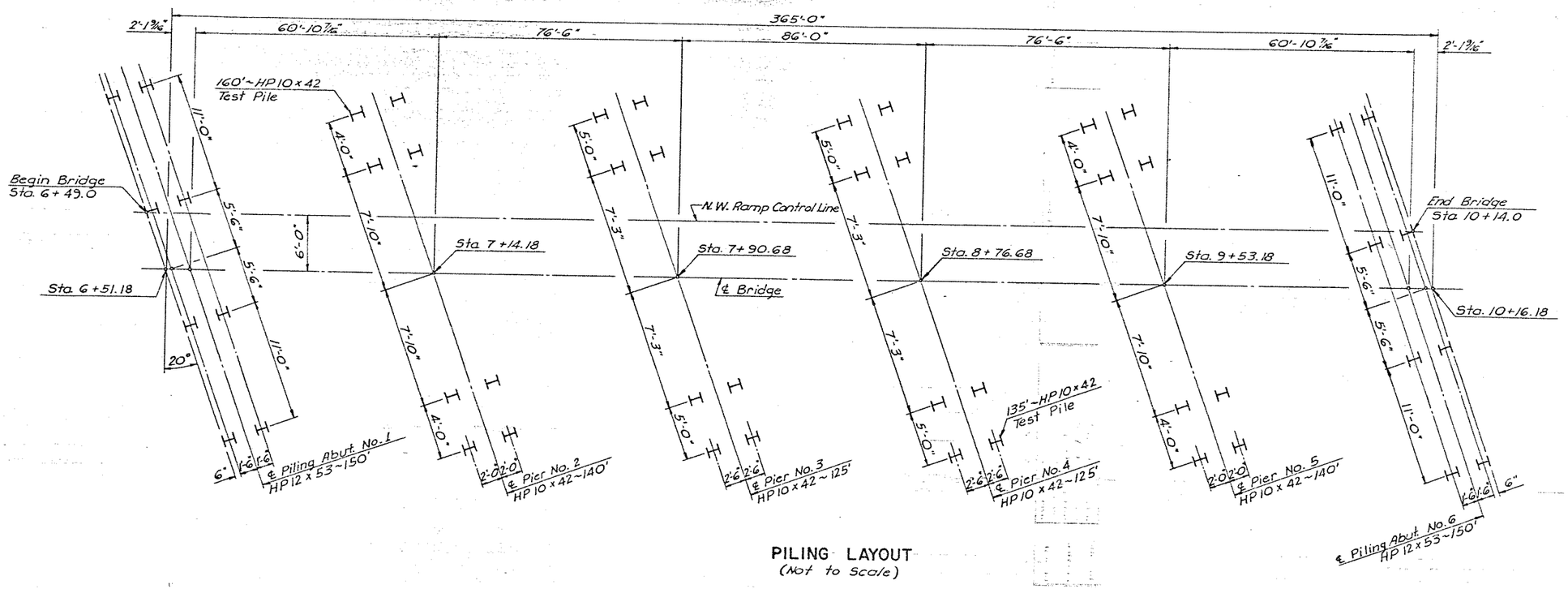
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N.D.	I-29-5(16)		

PARK RIVER
MEDIAN BRIDGE
BORING LOG
GENERAL NOTES
WALSH COUNTY

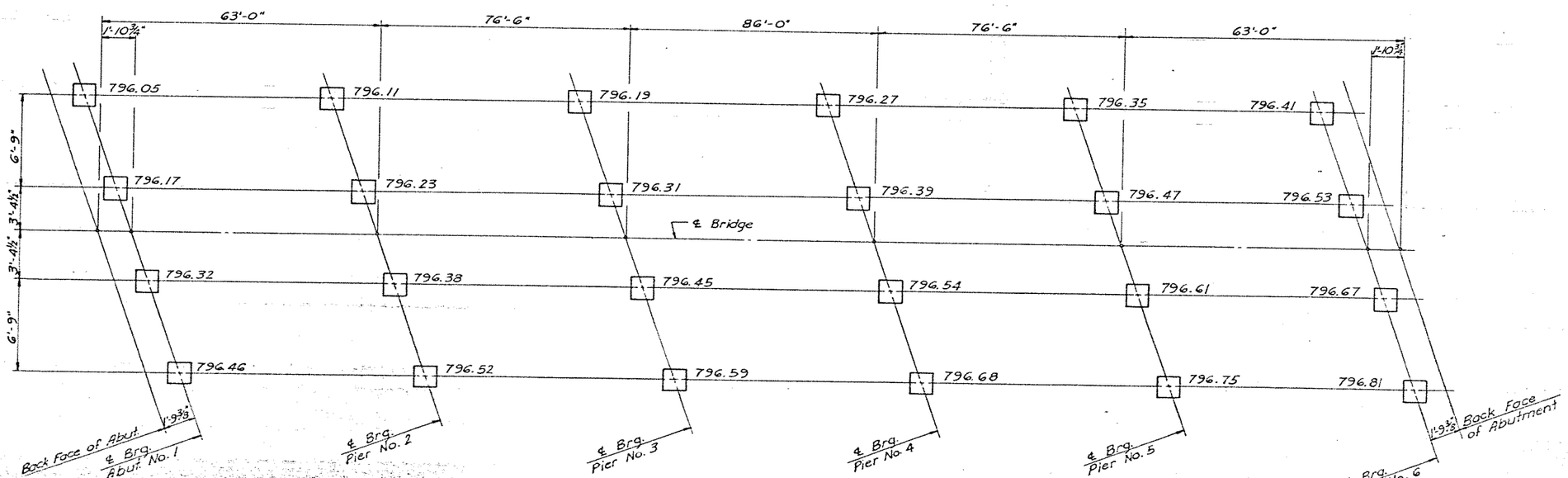
9-178.59M-2

C.O.-29-178.59M-2

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



PILING LAYOUT
(Not to Scale)



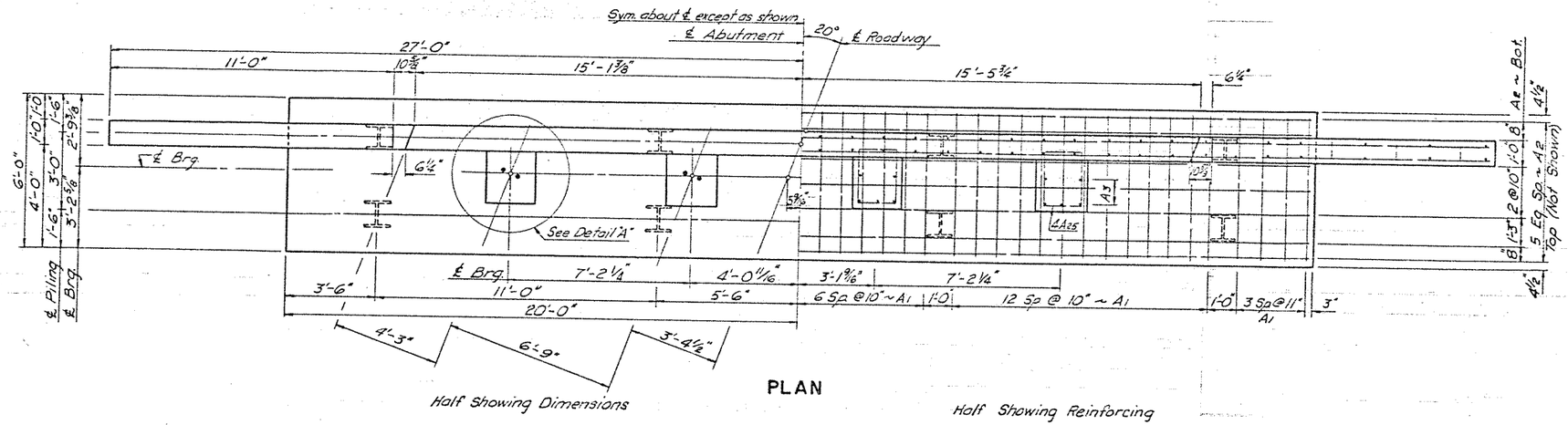
BEARING PLATE LAYOUT
Elevations are to top of finished concrete
(Not to Scale)

QUANTITIES

PARK RIVER
MEDIAN BRIDGE
BEARING PLATE LAYOUT
PILING LAYOUT

C. O. 29-178.59M-3

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



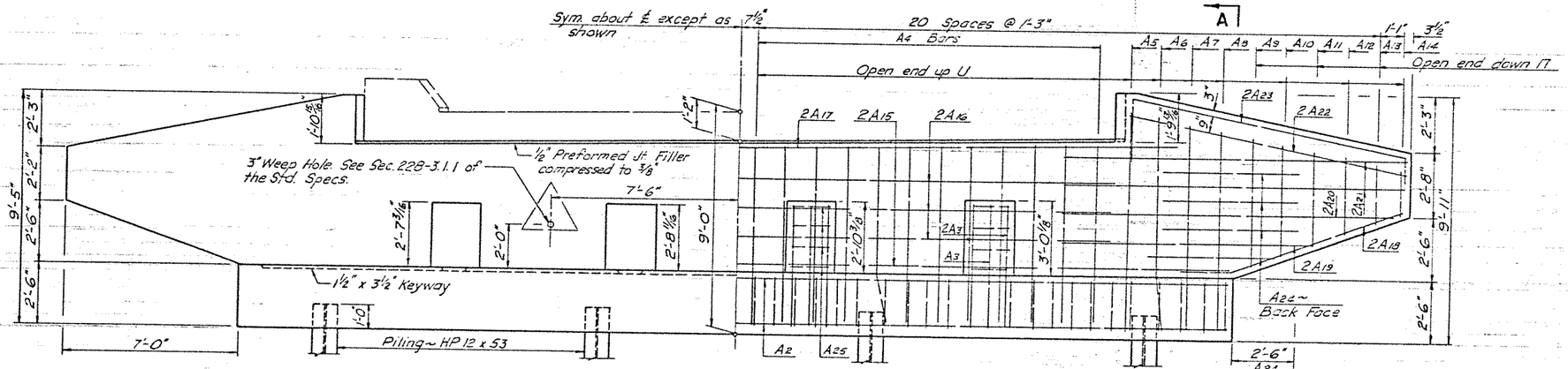
Half Showing Dimensions

PLAN

Half Showing Reinforcing

BAR LIST (ONE ABUT.)

MARK	NUMBER FOOTING	NUMBER PEDESTAL	NUMBER WALL	SIZE	LENGTH	SHAPE	UNIT WT.
A1	47		6		15'-6"	Bent	23.28
A2	13		10		39'-6"	Str.	163.97
A3	20		5		4'-6"	"	4.69
A4	23		5		14'-11"	Bent	15.56
A5	2		5		18'-1"	"	18.86
A6	2		5		17'-7"	"	18.34
A7	2		5		17'-1"	"	17.82
A8	2		5		16'-7"	"	17.30
A9		2	5		10'-11"	"	11.39
A10		2	5		9'-5"	"	9.82
A11		2	5		8'-1"	"	8.43
A12		2	5		6'-7"	"	6.87
A13		2	5		5'-5"	"	5.65
A14		2	5		4'-3"	"	4.43
A15		2	5		39'-10"	Str.	41.52
A16		6	5		30'-6"	"	31.81
A17		2	6		35'-2"	"	32.82
A18		4	6		9'-3"	Bent	13.89
A19		4	6		10'-2"	Str.	15.27
A20		4	6		13'-4"	"	20.03
A21		6	6		13'-9"	"	20.65
A22		4	6		11'-5"	"	17.15
A23		4	6		12'-9"	Bent	22.16
A24		8	6		5'-0"	Str.	7.51
A25		16	4		7'-8"	"	5.12

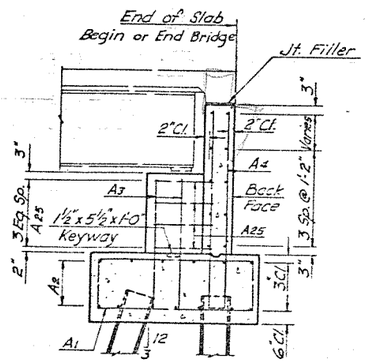


Half Showing Dimensions

ELEVATION

South Abutment Shown ~ North Abutment Opposite Hand

Half Showing Reinforcing



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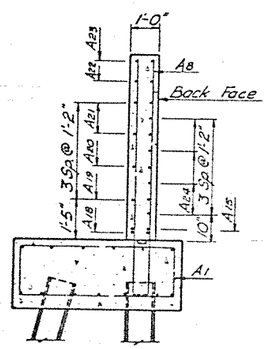
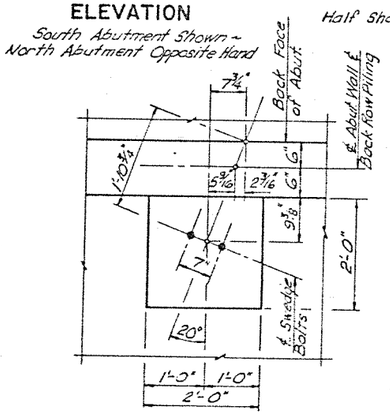
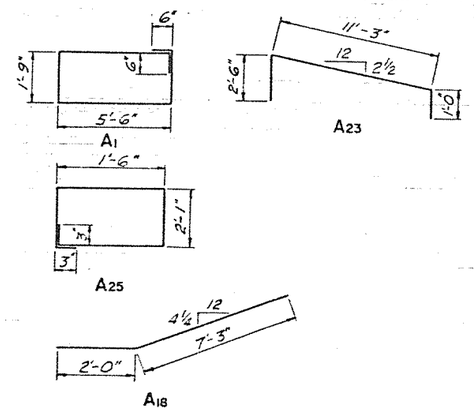
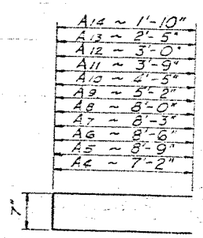


A-A



DETAIL "A"





A4 – A14

BENT BAR DETAILS

Dimensions shown are out to out

QUANTITIES (ONE ABUT.)

Class AE Concrete	32.9 C.Y.
Reinforcing Steel	5050 Lbs.
Excavation (See Layout)	
Piling (See Layouts Dwg 29-178.59M-3)	

PARK RIVER
MEDIAN BRIDGE

9'-0" ABUTMENT

C.O. 29-178.59M-4

C.O. 29-178.59M-4

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	N. D.	IES-5(16)		

PLAN

ELEVATION

℄ SECTION

END VIEW

FOOTING PLAN

D-D

ICE NOSE ANGLE

A-A

B-B

C-C

P16

P2

P3 & P17

P7

P13

P9

P14 & P15

BENT BAR DETAILS
(Dimensions Shown Are Out To Out)

NOTE:
Dowel bars extending above pier footings into column shall be secured to the lowest column tie bars to insure proper fit before footing is poured.

PA BARS

PB BARS

PC BARS

BAR LIST (ONE PIER)

MARK	NUMBER FOOTING	NUMBER LOWER PORTION	NUMBER UPPER PORTION	SIZE	LENGTH	SHAPE	UNIT WT.
P1		6	8	23'-4"	Str.		62.31
P2		3	6	6'-6"	Bent		10.01
P3		3	6	6'-11"	"		10.38
P4	10	14	5	18'-3"	Str.		19.04
P5	4		8	13'-0"	"		50.74
P6	4		11	20'-6"	"		108.91
P7		17	4	8'-0"	Bent		5.34
P8		28	5	12'-3"	Str.		12.78
P9	13		5	5'-8"	Bent		5.91
P10	28		5	11'-0"	Str.		11.47
P11		29	9	13'-3"	"		45.05
P12	54		9	16'-6"	"		38.10
P13	54		9	7'-5"	Bent		25.50
P14	24		6	8'-10"	"		13.27
P15	12		5	8'-8"	"		9.04
P16		6	4	7'-2"	"		4.78
P17			4	11'-11"	"		7.96
PA1-7		2Sets	5	47'-9"	Bent		49.81
PA8-17	2Sets		5	83'-6"	"		87.10
PB1-7		2Sets	5	45'-8"	"		47.64
PB8-17	2Sets		5	81'-6"	"		85.01
PC1-7		4Sets	4	18'-10"	"		12.57
PC8-17	4Sets		4	34'-8"	"		23.14

A	B	C	MARK	LENGTH	MARK	LENGTH	D	MARK	LENGTH
11 3/8"	3'-2 1/2"	6 1/4"	PA1	6'-3"	PB1	5'-11"	1'-5 7/8"	PC1	2'-5"
1'-0 3/8"	3'-9"	7 1/4"	PA2	6'-5"	PB2	6'-2"	1'-6 1/8"	PC2	2'-6"
1'-1 1/4"	3'-9 1/2"	7 3/4"	PA3	6'-8"	PB3	6'-4"	1'-7 3/4"	PC3	2'-7"
1'-2"	3'-10"	8 1/4"	PA4	6'-10"	PB4	6'-7"	1'-8 1/2"	PC4	2'-8"
1'-2 3/4"	3'-10 3/8"	8 3/8"	PA5	7'-0"	PB5	6'-8"	1'-9 1/8"	PC5	2'-9"
1'-3 3/8"	3'-10 1/2"	9 1/2"	PA6	7'-2"	PB6	6'-11"	1'-11"	PC6	2'-11"
1'-4 1/4"	3'-11 1/2"	9 3/8"	PA7	7'-5"	PB7	7'-1"	2'-0 1/8"	PC7	3'-0"
1'-5 1/4"	3'-11 7/8"	10 1/8"	PA8	7'-7"	PB8	7'-4"	2'-1 1/4"	PC8	3'-1"
1'-6"	4'-0 1/4"	10 1/8"	PA9	7'-9"	PB9	7'-6"	2'-2 1/8"	PC9	3'-2"
1'-6 3/4"	4'-0 3/4"	11"	PA10	7'-11"	PB10	7'-8"	2'-3 1/8"	PC10	3'-3"
1'-7 5/8"	4'-1 1/2"	11 1/2"	PA11	8'-1"	PB11	7'-11"	2'-4 1/8"	PC11	3'-4"
1'-8 1/2"	4'-1 3/4"	11 7/8"	PA12	8'-3"	PB12	8'-1"	2'-5 1/8"	PC12	3'-5"
1'-9 3/8"	4'-2 1/8"	1'-0 1/8"	PA13	8'-6"	PB13	8'-3"	2'-6 1/8"	PC13	3'-6"
1'-10"	4'-2 3/4"	1'-0 7/8"	PA14	8'-8"	PB14	8'-6"	2'-7"	PC14	3'-8"
1'-10 7/8"	4'-2 7/8"	1'-1 3/8"	PA15	8'-9"	PB15	8'-7"	2'-8 1/8"	PC15	3'-8"
1'-11 3/8"	4'-3 1/4"	1'-1 7/8"	PA16	8'-11"	PB16	8'-9"	2'-9 1/8"	PC16	3'-9"
2'-0"	4'-3 1/2"	1'-2"	PA17	9'-1"	PB17	8'-11"	2'-10 1/8"	PC17	3'-10"

QUANTITIES (ONE PIER)

Class AE-1 Concrete	578 Cu. Yds.
Reinforcing Steel	51,139 Lbs.
Structural Steel (A36)	310 Lbs.
Reinforcing Steel (Additional - For Pile Fill)	37 Lbs.

PARK RIVER

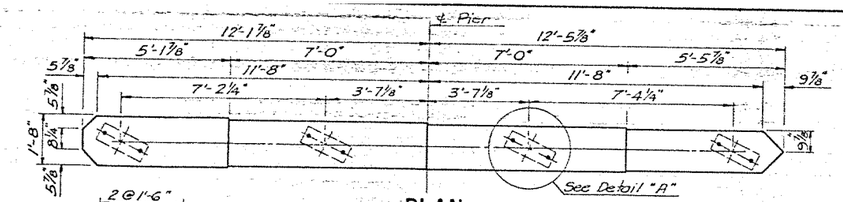
MEDIAN BRIDGE

PIER NOS. 3 & 4

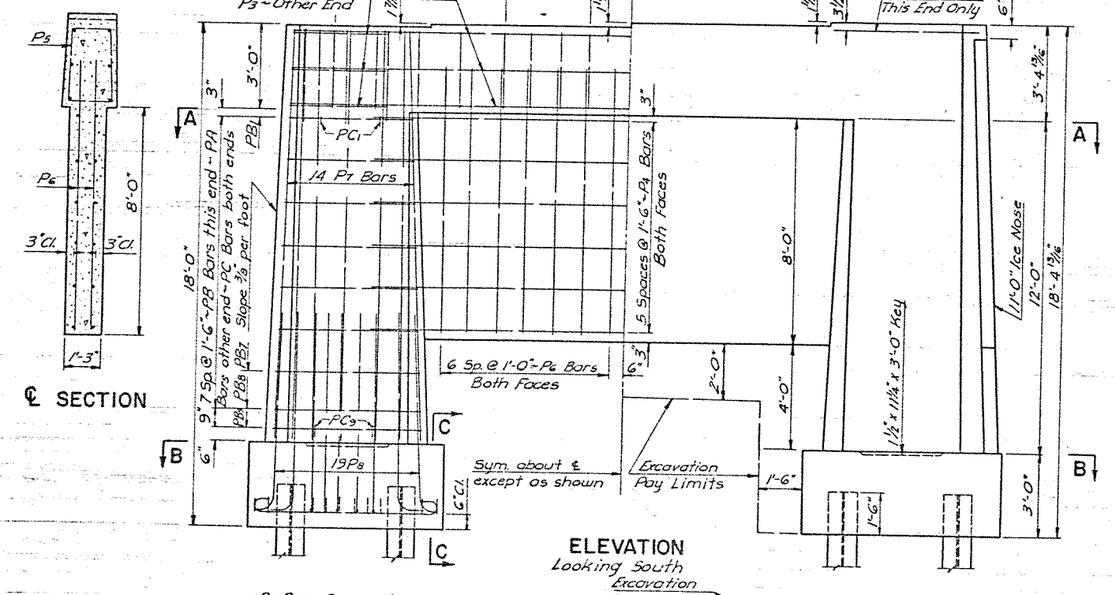
29-178.59M-5

C.O.- 29-178.59M-5

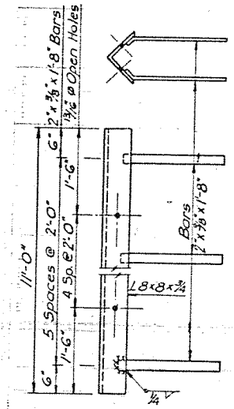
FED. ROAD DIST. NO.	STATE	PROJ NO	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



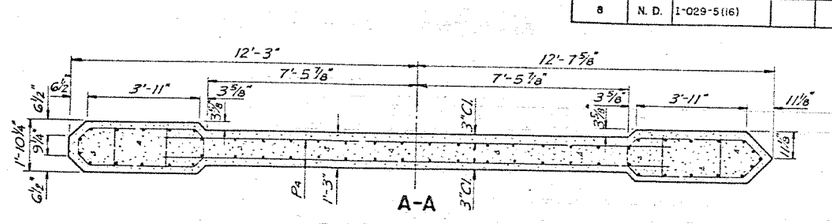
PLAN



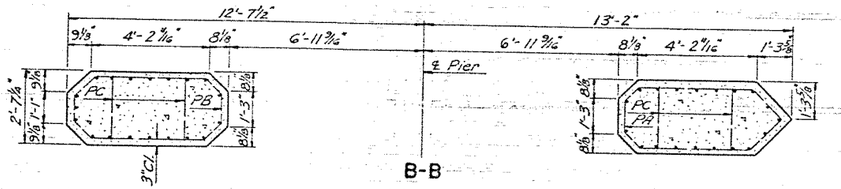
ELEVATION
Looking South



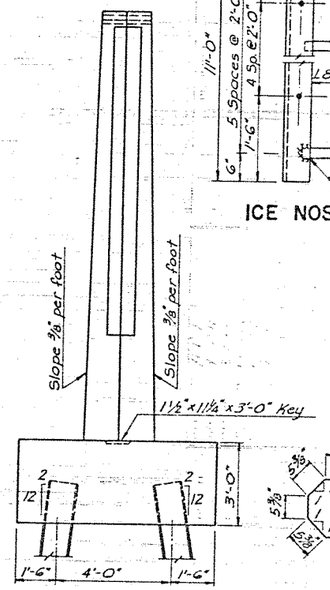
ICE NOSE ANGLE



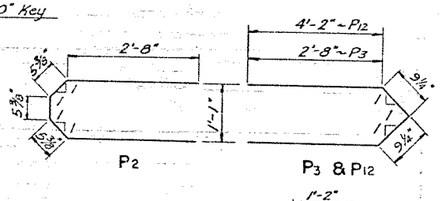
A-A

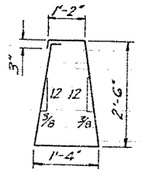


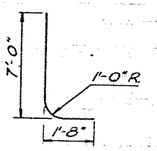
B-B

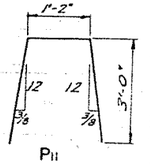


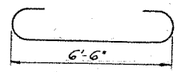
END VIEW



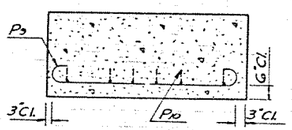




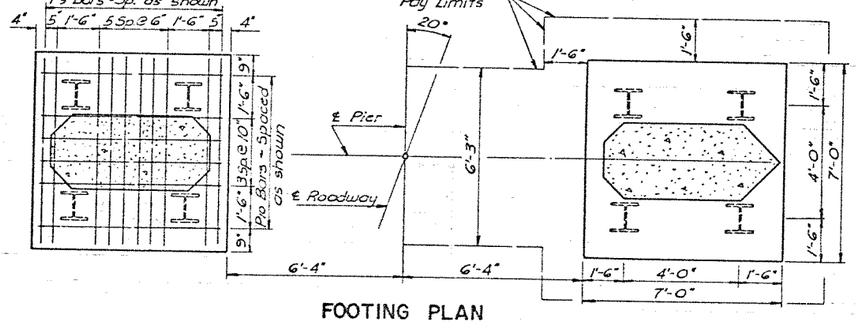




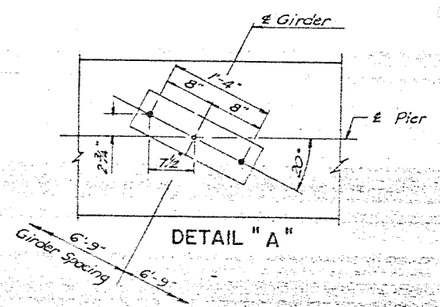
BENT BAR DETAILS
Dimensions Shown Are Out to Out



C-C

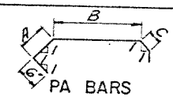


FOOTING PLAN

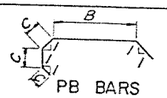


DETAIL "A"

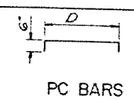
NOTE:
Dowel bars extending above pier footings into column shall be secured to the lowest column tie bars to insure proper fit before footing is poured.



PA BARS



PB BARS



PC BARS

A	B	C
11⅜"	3'-8⅝"	6¾"
1'-0⅜"	3'-9"	7¼"
1'-1¼"	3'-9½"	7¾"
1'-2"	3'-10"	8¼"
1'-2⅝"	3'-10⅜"	8⅞"
1'-3⅝"	3'-10⅞"	9⅛"
1'-4⅝"	3'-11⅜"	9⅝"
1'-5¼"	3'-11⅞"	10⅛"
1'-5⅞"	4'-0⅛"	10⅜"

MARK	LENGTH
PA1	6'-3"
PA2	6'-5"
PA3	6'-8"
PA4	6'-10"
PA5	7'-0"
PA6	7'-2"
PA7	7'-5"
PA8	7'-7"
PA9	7'-8"

MARK	LENGTH
PB1	5'-11"
PB2	6'-2"
PB3	6'-4"
PB4	6'-7"
PB5	6'-8"
PB6	6'-11"
PB7	7'-1"
PB8	7'-4"
PB9	7'-5"

MARK	LENGTH
PC1	2'-5"
PC2	2'-6"
PC3	2'-7"
PC4	2'-8"
PC5	2'-9"
PC6	2'-11"
PC7	3'-0"
PC8	3'-1"
PC9	3'-1"

BAR LIST (ONE PIER)

MARK	NUMBER FOOTING	NUMBER WALL COLUMN & CAP	SIZE	LENGTH	SHAPE	UNIT WT.
P1		6	8	23'-4"	Str.	62.31
P2		3	6	6'-8"	Bent	10.01
P3		3	6	6'-11"	"	10.38
P4		12	5	18'-3"	Str.	19.04
P5		17	4	8'-0"	Bent	5.31
P6	28		5	9'-5"	Str.	9.82
P7		29	9	14'-8"	"	49.87
P8	38		9	8'-3"	Bent	28.05
P9	20		6	7'-10"	"	11.77
P10	12		5	7'-8"	"	8.00
P11		6	4	7'-2"	"	4.78
P12		1	4	11'-11"	"	7.96
PA1-8		25ea	5	55'-4"	Bent	57.72
PA9		2	5	7'-8"	"	8.00
PB1-8		25ea	5	53'-0"	"	55.28
PB9		2	5	7'-5"	"	7.74
PC1-8		45ea	4	21'-11"	"	14.63
PC9		4	4	3'-1"	"	2.06

QUANTITIES (ONE PIER)

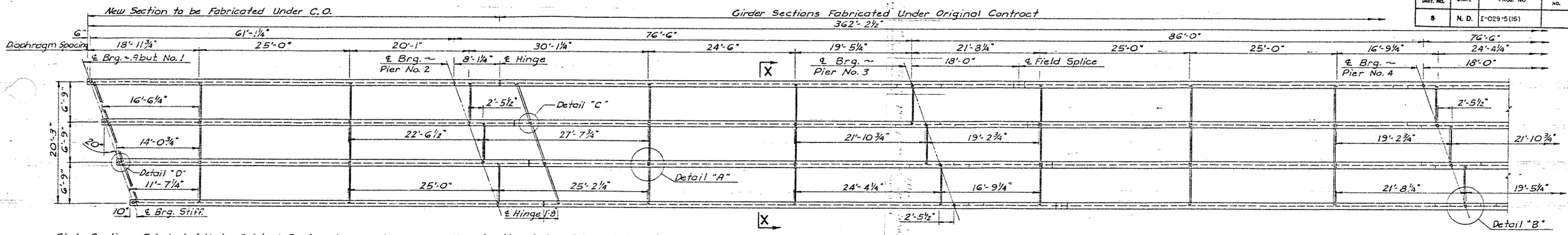
Class AE-1 Concrete	37.2 Cu Yds
Reinforcing Steel	4137 Lbs
Structural Steel (A36)	479 Lbs
Excavation (See Approach Fill Layout & Proj 29-178.59M-7)	

PARK RIVER
MEDIAN BRIDGE

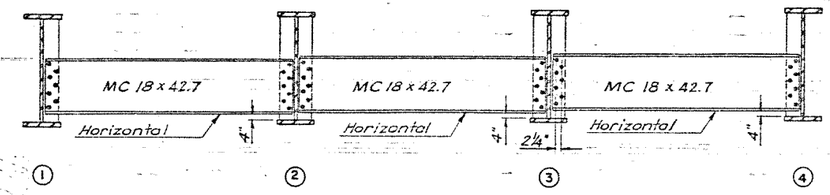
PIERS NO. 2 & NO. 5

C.O. 29-178.59M-5A

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		

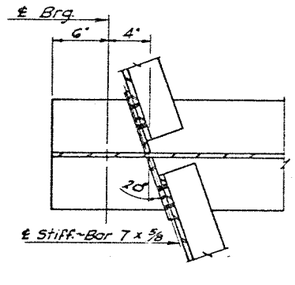


STEEL LAYOUT

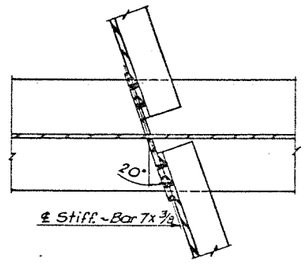


X-X

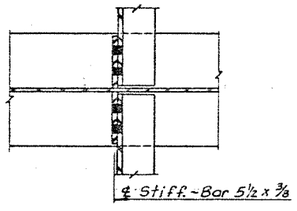
Typical for all diaphragms



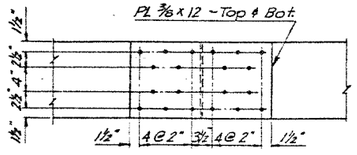
DETAIL "D"

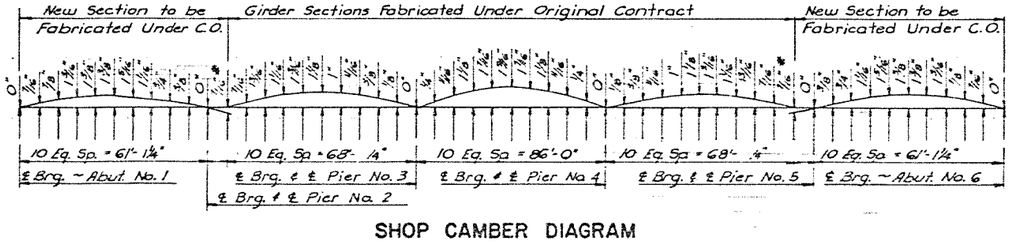


DETAIL "C"



DETAIL "A"

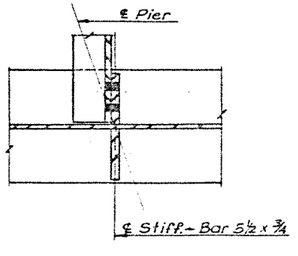




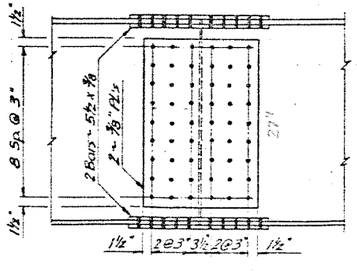
SHOP CAMBER DIAGRAM

The shop camber diagram above represents the total rise in inches above a chord between the ℄ of abutment bearings that shall be cut into the web plate of the girders to compensate for the dead load deflection of the superstructure. The depth of the web plate will also vary according to the thickness of the flange plates.

*Negative camber at cantilever end of new girder sections.
Zero camber at ends of original girder sections.



DETAIL "B"



FIELD SPLICE DETAIL

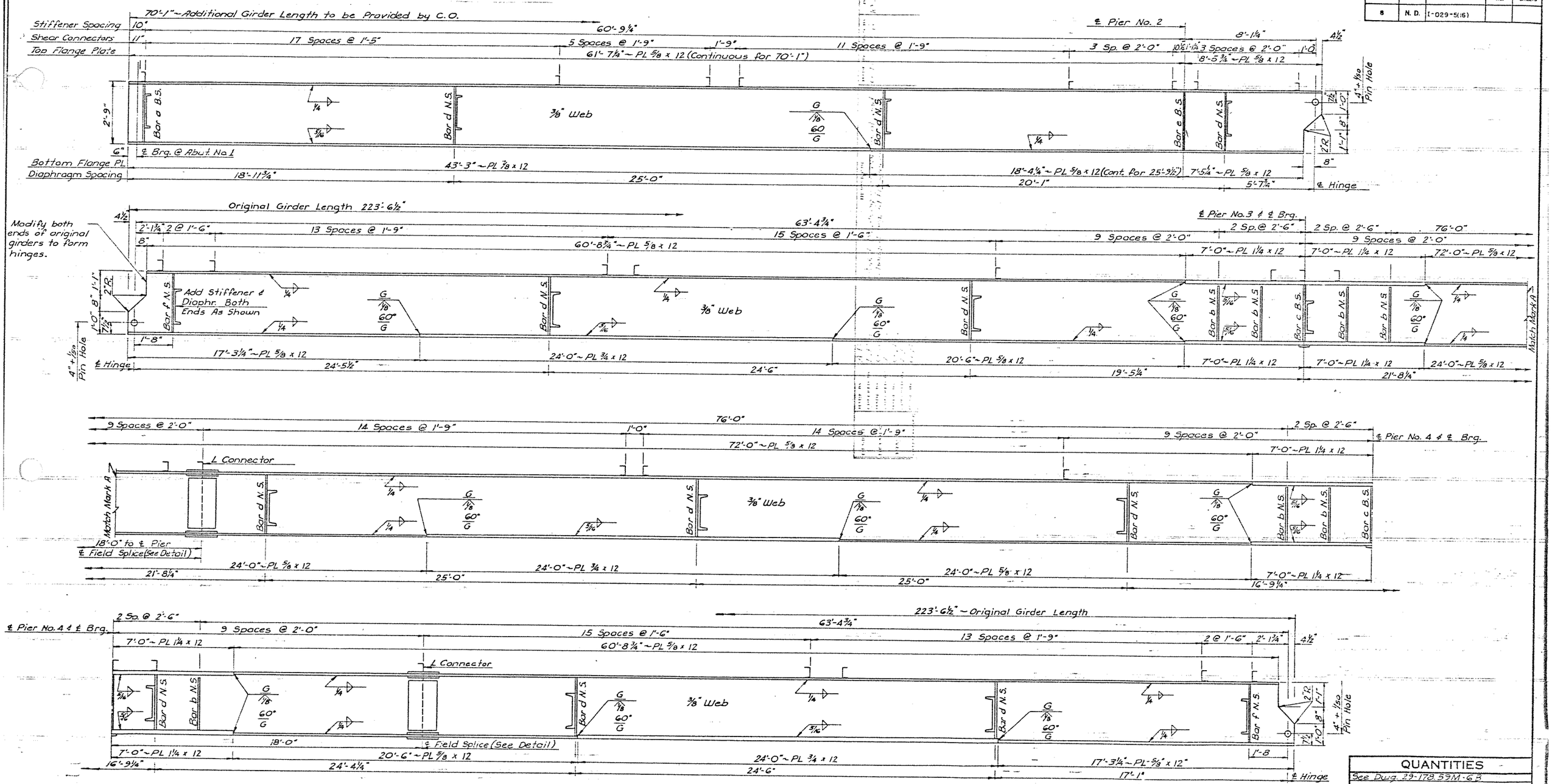
QUANTITIES

See Dwg. C.O. 29-178.59M-6B

PARK RIVER
MEDIAN BRIDGE
SUPERSTRUCTURE DETAILS

C.O. 29-178.59M-6-A

FED. ROAD DIST. NO.	STATE	PROJ. NO	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



ELEVATION
(Inside Face of Beam No. 1)

NOMENCLATURE:
B.S. - Both Sides
N.S. = Near Side

WELDING REFERENCES
Use AWS BL2b-S shown or alternate AWS BL-2.

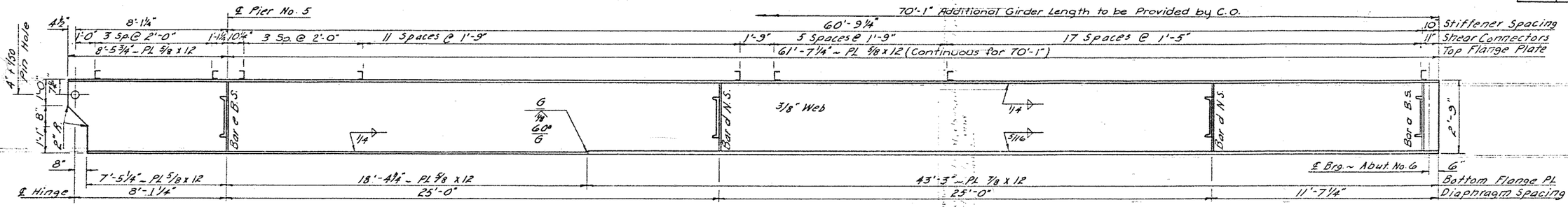
QUANTITIES
See Dwg. 29-178.59M-63

PARK RIVER
MEDIAN BRIDGE

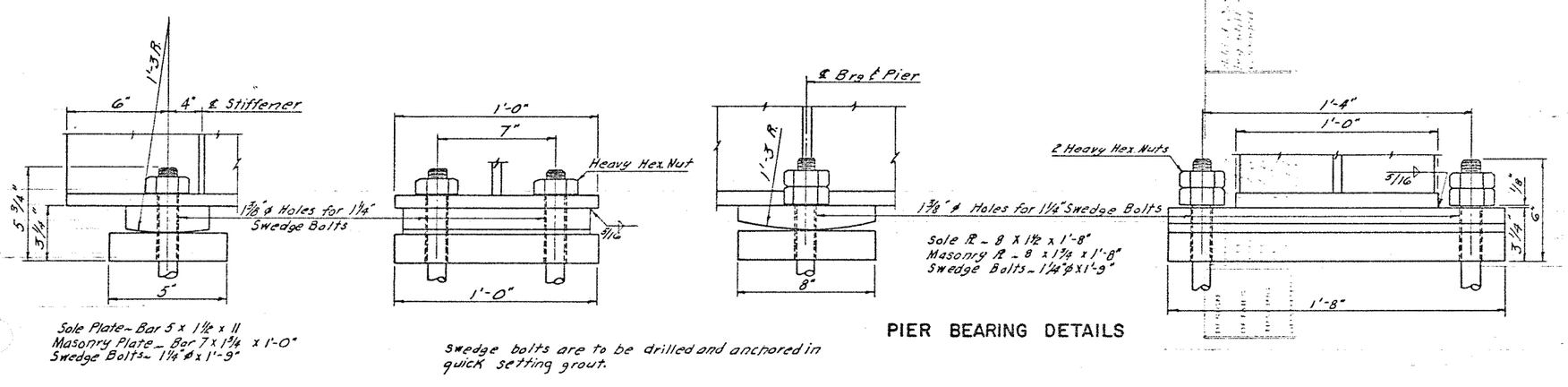
SUPERSTRUCTURE DETAILS

C.O. 29-178.59M-6A-A

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



ELEVATION
(Inside Face of Beam No. 1)

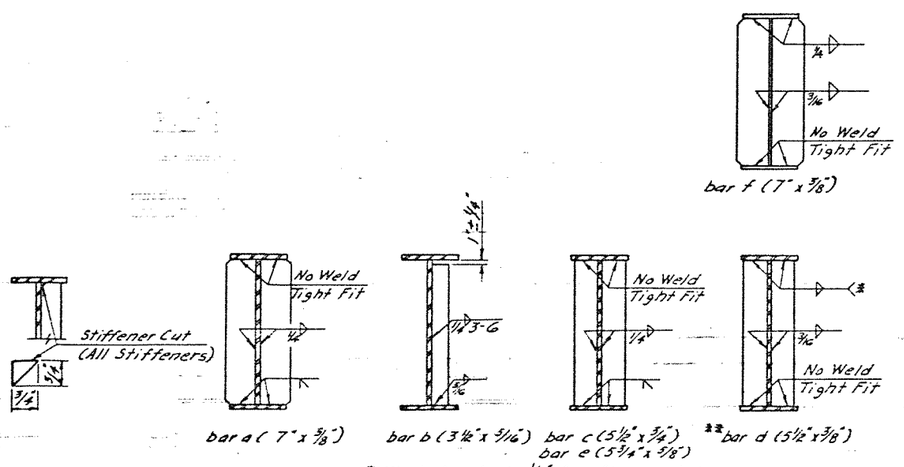


Sole Plate ~ Bar 5 x 1½ x 11
Masonry Plate ~ Bar 7 x 1¾ x 1'-0"
Swedge Bolts ~ 1¼" ø x 1'-9"

Swedge bolts are to be drilled and anchored in quick setting grout.

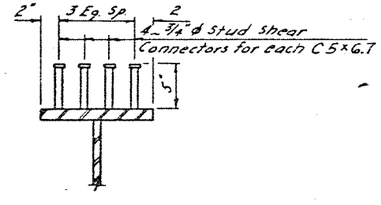
ABUTMENT BEARING DETAILS

PIER BEARING DETAILS

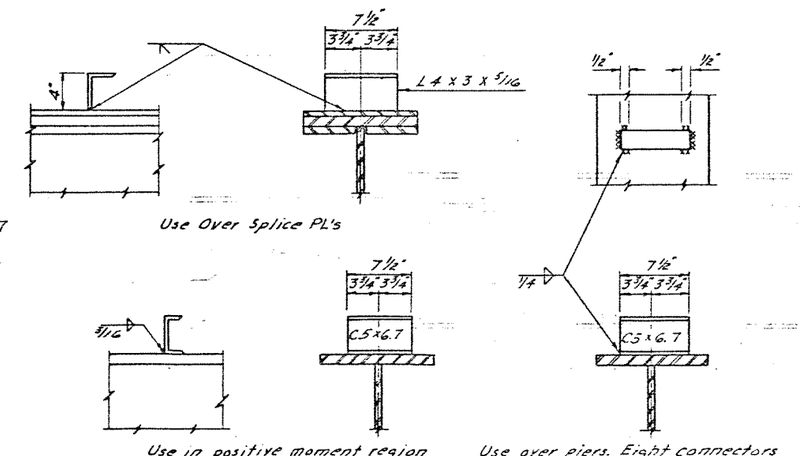


* Weld size to be ¼" for flange plates from ⅝" to ¾" thickness and 5/16" for over ¾" to 1½" flange plate thickness.
** If within 18'-0" either side of the piers the bar will be welded on the bottom flange and tight fit on top flange.

WEB STIFFENER DETAILS



ALTERNATE SHEAR CONNECTOR

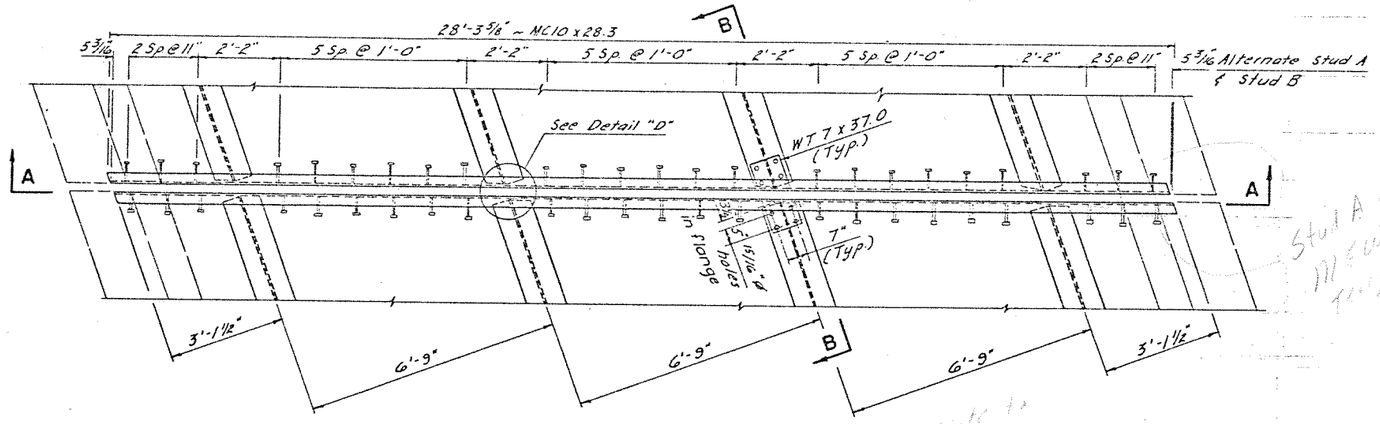


SHEAR CONNECTOR DETAILS

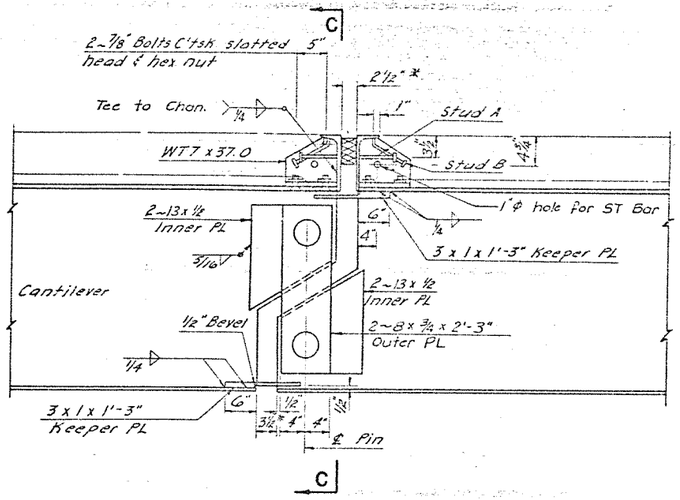
QUANTITIES	
Structural Steel A36	93,138 Lbs.
Structural Steel A572	84,550 Lbs.

PARK RIVER
MEDIAN BRIDGE
SUPERSTRUCTURE DETAILS

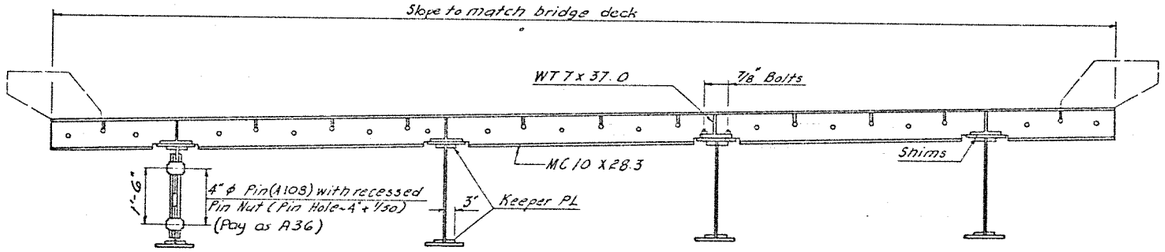
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



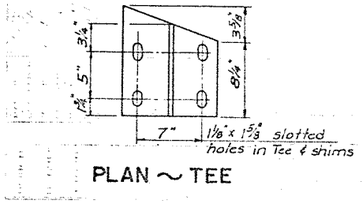
PLAN OF JOINT



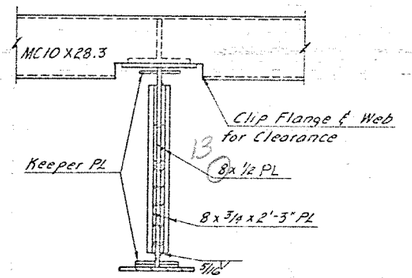
B-B



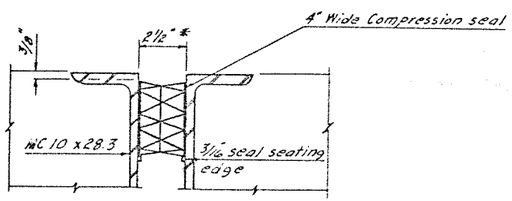
A-A



PLAN ~ TEE



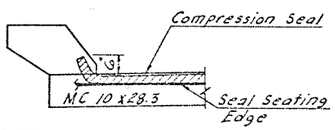
C-C



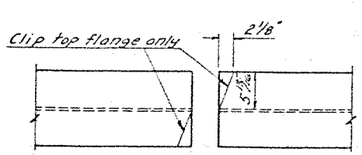
COMPRESSION SEAL DETAIL

Detail taken from Section B-B

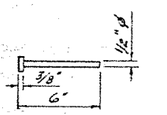
* At 50° F. – change per °F = 0.0142"



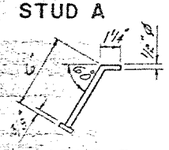
COMPRESSION SEAL AT CURB



DETAIL D



STUD A



STUD B

NOTES:

Type of seal used shall be approved by the Bridge Engineer.

All expansion joints shall be assembled to fit the crown of roadway and all interior joints shall be shop assembled on their supporting beams and properly fitted together and match marked. To allow for field adjustment, 1/2 of shims has been assumed between the tee supports and the beams.

The field shimming of the last half of each joint shall be done after the concrete has been poured in the adjoining slab.

The structural steel quantity required to fabricate the expansion joint and hanger detail is included in the structural steel quantities shown on Dwg. C.O. 29-178.59M-6B.

The preformed compression joint seal provided shall be capable of accepting a minimum total range of movement of 2.150".

QUANTITIES (ONE JOINT)	
Pref. Compr. Jt. Seal 4"	36.75 Lin.ft.

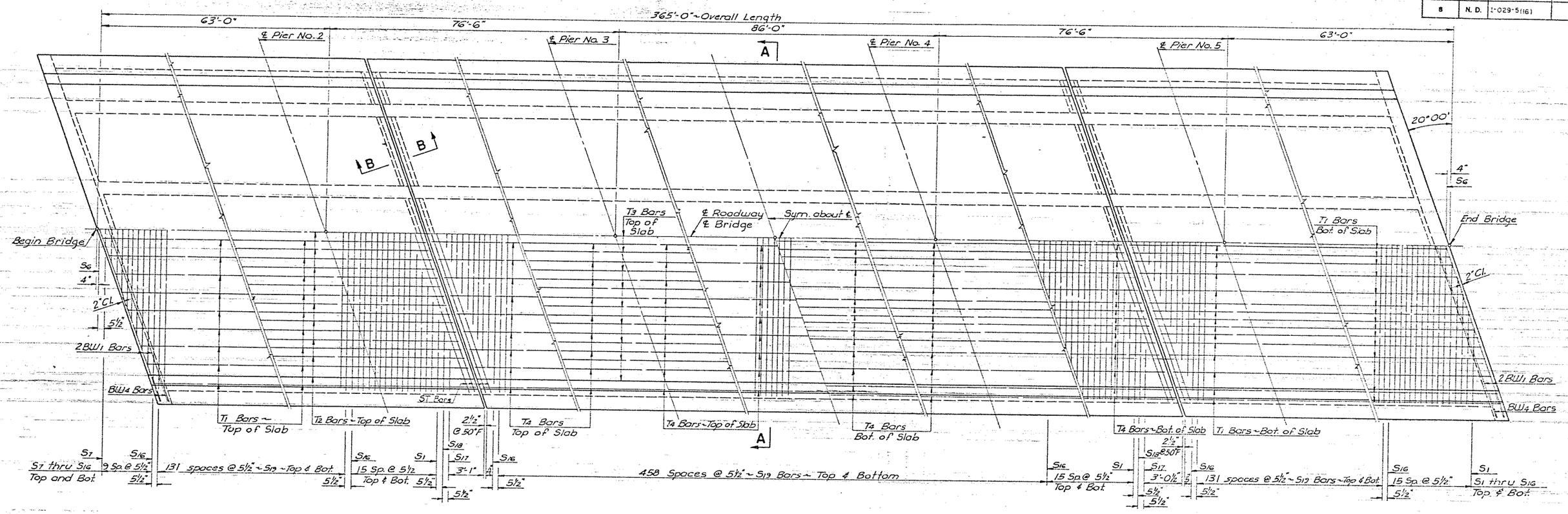
PARK RIVER
MEDIAN BRIDGE
COMPRESSION SEAL
JOINT DETAIL

CHECKED BY: L.L.R.

C.O. 29-178.59M-6C

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(116)		

CHECKED BY D.L.R.

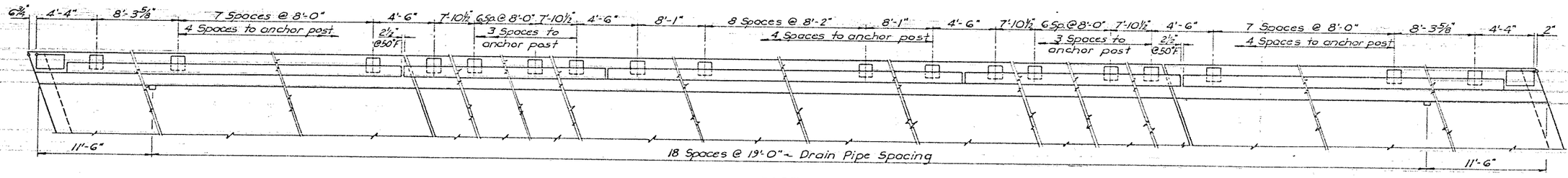


Quarter of plan showing reinforcing at top of slab

Quarter of plan showing reinforcing at bottom of slab

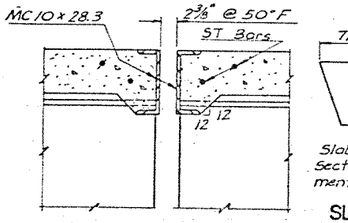
PART PLAN

Half showing slab reinforcing
Typical both sides by rotation



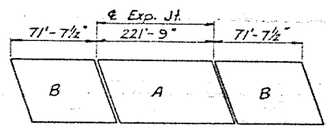
PART PLAN

Showing rail post & drain pipe spacing
Drain pipes are on east side of bridge only



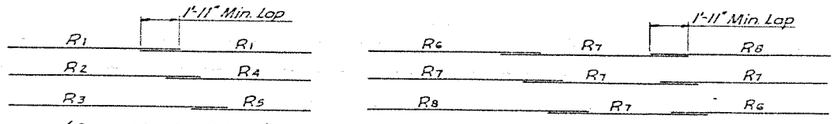
See steel detail Dwg. 29-173.59M-6C

B-B



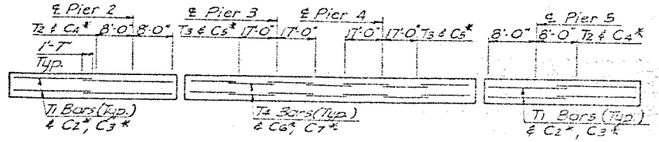
Slab Section "A" to be poured first. Pour slab Section "B" second, beginning pour at the abutments and proceeding toward center of span.

SLAB POURING SEQUENCE



R BAR SPLICING DETAILS

SPLICING DETAIL
T, C Bars



* Located in curb

BAR LAYOUT
T1, T2, T3 & T4

QUANTITIES

See Dwg. C.O. 29-178.59M-7A

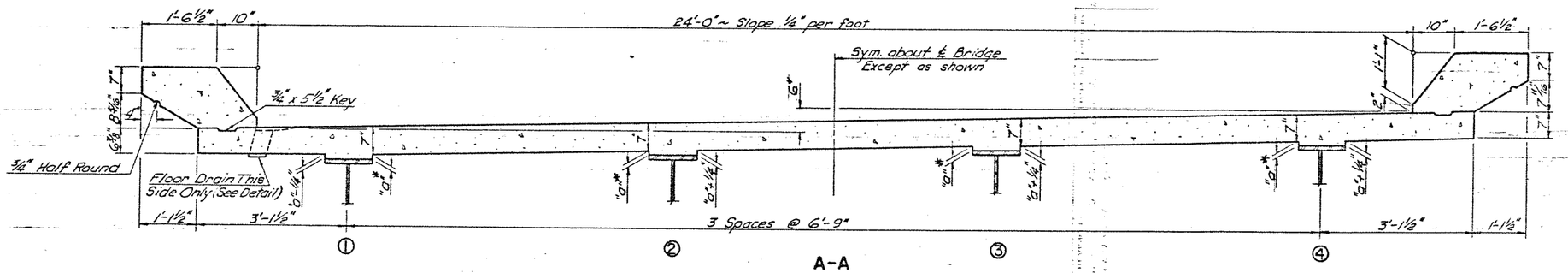
PARK RIVER
MEDIAN BRIDGE

SLAB & RAILING DETAILS

C.O. 29-178.59M-7

C.O. 29-178.59M-7

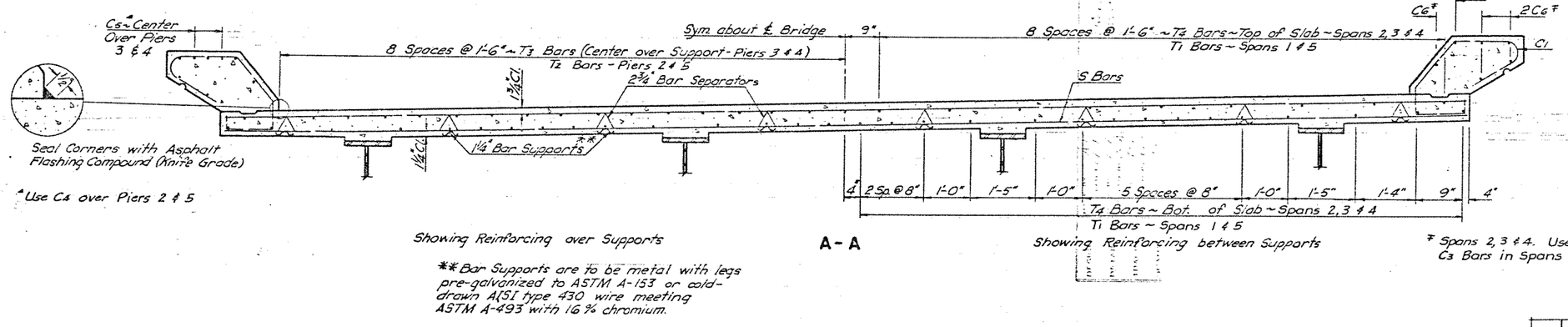
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5 (16)		



A-A

Showing Dimensions

*"a" equals 1/8" @ ℄ bearing of abutments & piers. At intermediate points "a" equals screed elevation at ℄ bridge minus top of girder elevation minus (.784 Girder #1), (.664 Girder #2), (.503 Girder #3), (.383 Girder #4).



A-A

Showing Reinforcing over Supports

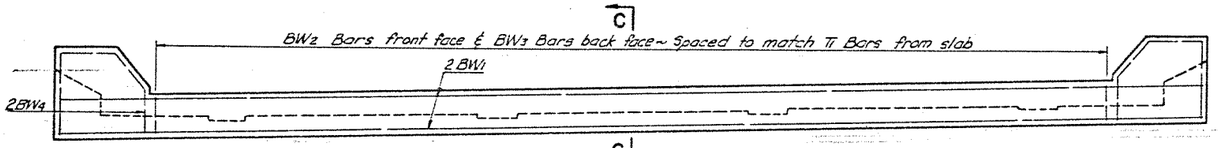
Showing Reinforcing between Supports

** Bar Supports are to be metal with legs pre-galvanized to ASTM A-153 or cold-drawn AISI type 430 wire meeting ASTM A-493 with 16% chromium.

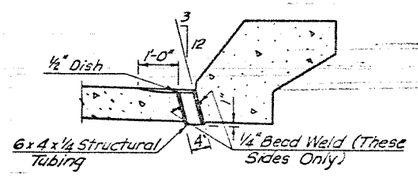
* Spans 2, 3 & 4. Use C2 & C3 Bars in Spans 1 & 5.

BAR LIST (SUPERSTRUCTURE)

MARK	NUMBER: SLAB	NUMBER: RAILING POSTS	NUMBER: CURB	SIZE	LENGTH	SHAPE	UNIT WT.
BW1	8		6	5	30'-3"	Str.	45.44
BW2	60			5	3'-1"	Bent	3.22
BW3	38			6	5'-1"	"	7.64
BW4	8			5	5'-9"	"	6.00
C1	820			5	5'-9"	"	6.00
C2			40	5	36'-4"	Str.	37.90
C3			8	6	36'-6"	"	54.83
C4			8	5	16'-0"	"	16.69
C5			8	5	34'-0"	"	35.47
C6			70	5	33'-1"	"	34.51
C7			14	6	33'-4"	"	50.07
P4			252	6	4'-4"	Bent	6.51
P5			30	6	5'-1"	"	7.64
P6			168	5	4'-9"	"	4.95
P7		188		3	4'-2"	"	1.56
P8		168		3	3'-2"	"	1.19
P9		20		3	4'-8"	"	1.75
RC		648		3	3'-3"	"	1.22
R1		32		6	35'-1"	Str.	52.70
R2		16		6	38'-1"	"	57.20
R3		16		6	41'-1"	"	61.71
R4		16		6	32'-1"	"	48.19
R5		16		6	29'-1"	"	43.69
R6		8		6	26'-9"	"	40.18
R7		20		6	29'-9"	"	44.69
R8		8		6	32'-9"	"	49.19
S1-S16	128			5	246'-8"	"	257.30
S17	8			5	3'-6"	"	3.65
S18	8			5	5'-0"	"	5.22
S19	14	NG		5	26'-2"	"	27.29
T1	192			5	36'-4"	"	37.90
T2	34			6	16'-0"	"	24.03
T3	34			6	34'-0"	"	51.07
T4	336			5	33'-1"	"	34.51
ST	8			6	27'-8"	"	41.56

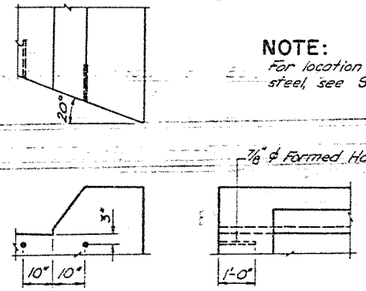


ENDWALL ELEVATION



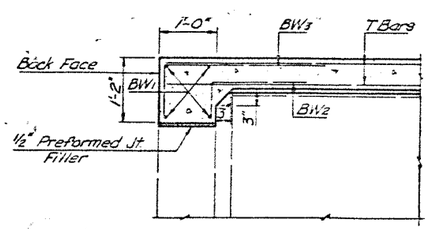
DRAIN PIPE DETAIL

Structural steel quantity is included on Dwg. 29-178.59M-68.

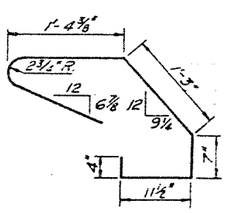


CURB SLEEVE DETAILS

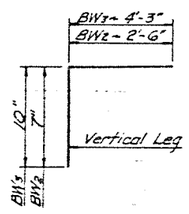
NOTE:
For location of C1 bars and railing steel, see Std. H-C158.



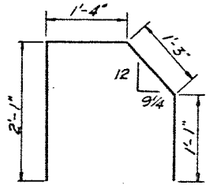
C-C



C1



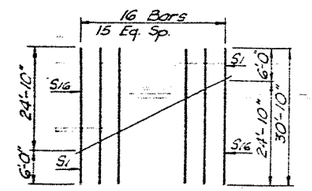
BW2 & BW3



BW4

BENT BAR DETAILS

Dimensions shown are out to out



BAR CUTTING DIAGRAM

S1 thru S16 Bars ~ Two Sets ~ 493'-4"

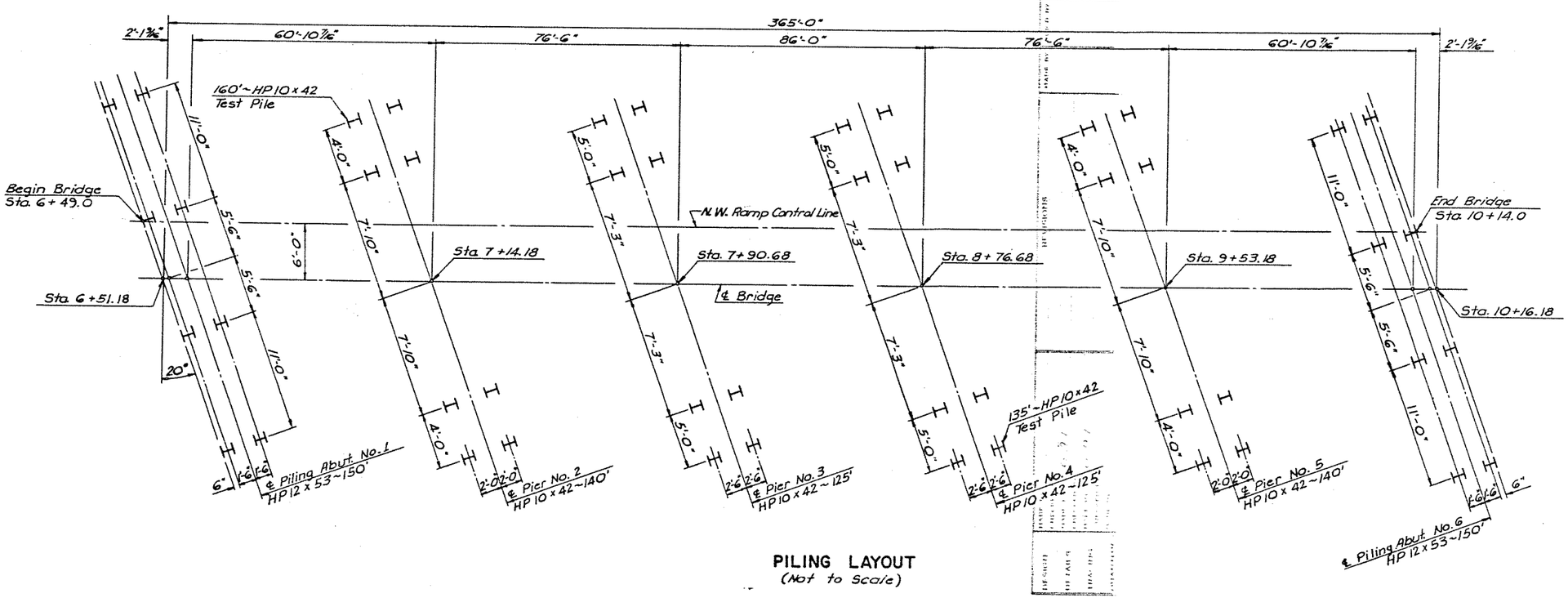
QUANTITIES

Class AE-3 Concrete	272.5 CuYds
Class AAE-3 Concrete	23.43 CuYds
Reinforcing Steel	86,430 Lbs.

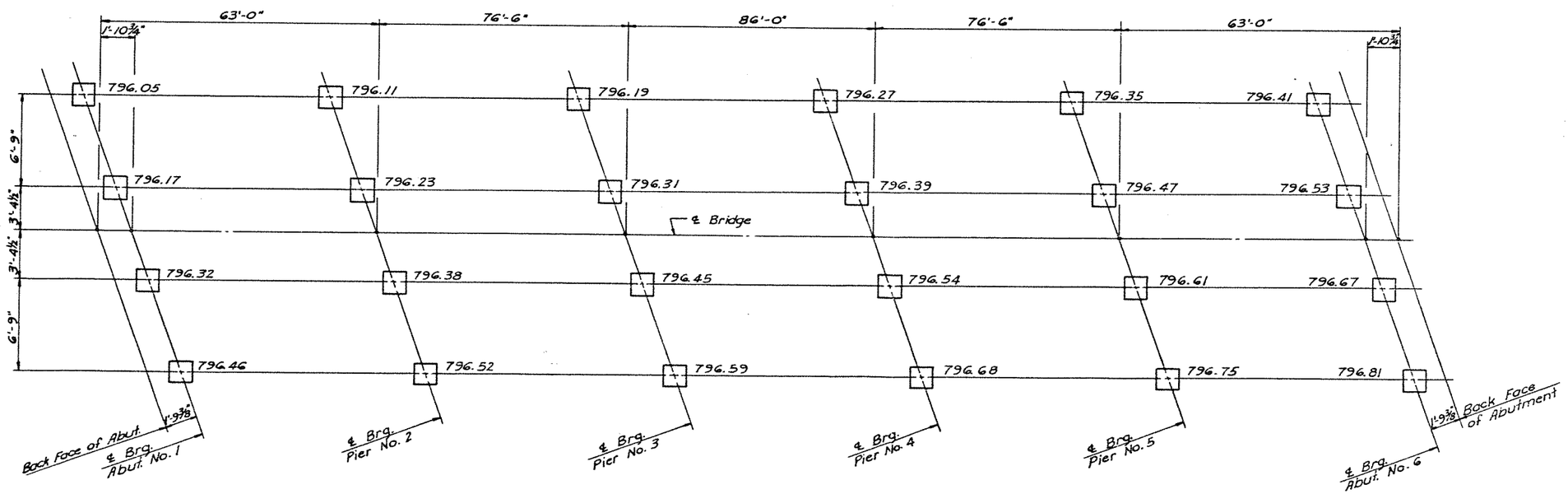
Railing and end post quantities included.

PARK RIVER
MEDIAN BRIDGE
SLAB
DETAILS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



PILING LAYOUT
(Not to Scale)



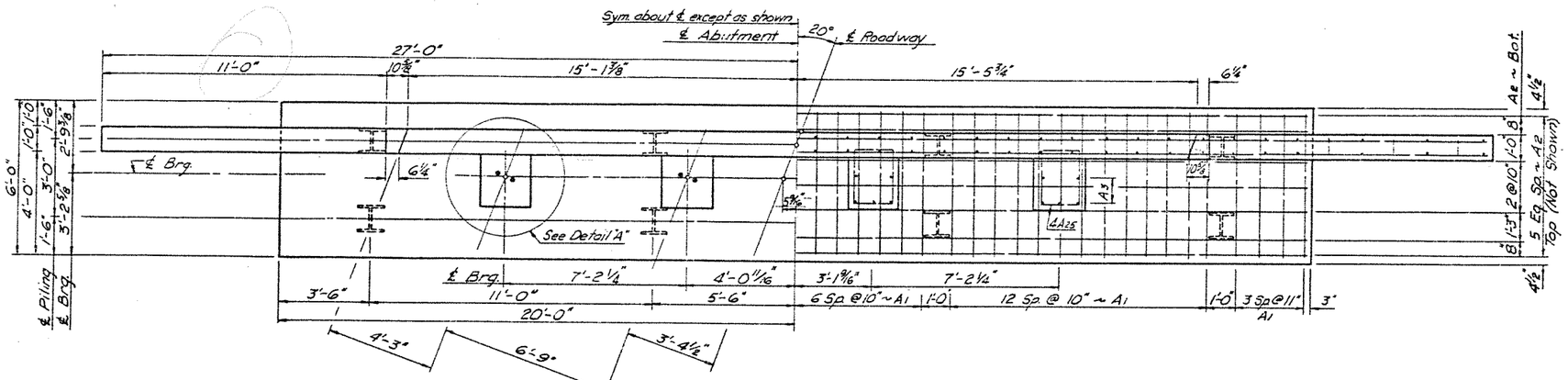
BEARING PLATE LAYOUT
Elevations are to top of finished concrete
(Not to Scale)

QUANTITIES

PARK RIVER
MEDIAN BRIDGE
BEARING PLATE LAYOUT
PILING LAYOUT

C.O. 29-178.59M-3

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



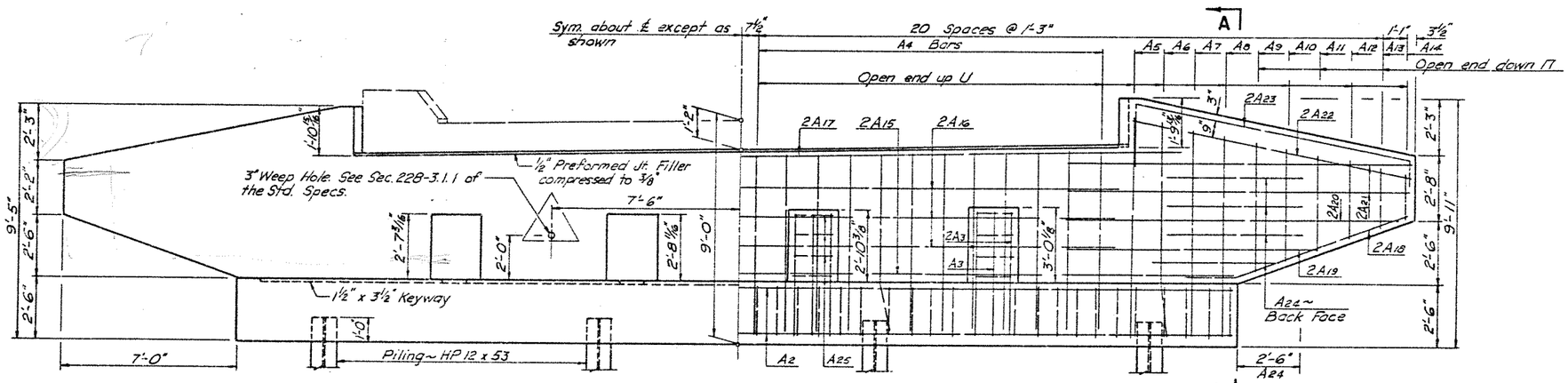
Half Showing Dimensions

PLAN

Half Showing Reinforcing

BAR LIST (ONE ABUT.)

MARK	NUMBER FOOTING	NUMBER PEDESTAL	NUMBER WALL	SIZE	LENGTH	SHAPE	UNIT WT.
A1	47		6		15'-6"	Bent	23.28
A2	13		10		39'-6"	Str.	169.97
A3	20		5		4'-6"	"	4.63
A4	24		5		14'-11"	Bent	15.56
A5	2		5		18'-1"	"	18.86
A6	2		5		17'-7"	"	18.34
A7	2		5		17'-1"	"	17.82
A8	2		5		16'-7"	"	17.30
A9		2	5		10'-11"	"	11.39
A10		2	5		9'-5"	"	9.82
A11		2	5		8'-1"	"	8.43
A12		2	5		6'-7"	"	6.87
A13		2	5		5'-5"	"	5.65
A14		2	5		4'-3"	"	4.43
A15		2	5		39'-10"	Str.	41.55
A16		6	5		30'-6"	"	31.81
A17		2	6		35'-2"	"	52.82
A18		4	6		9'-3"	Bent	13.89
A19		4	6		10'-2"	Str.	15.27
A20		4	6		13'-4"	"	20.03
A21		8	6		13'-5"	"	20.65
A22		4	6		11'-5"	"	17.15
A23		4	6		14'-9"	Bent	22.16
A24		8	6		5'-0"	Str.	7.51
A25		16	4		7'-8"	"	5.12



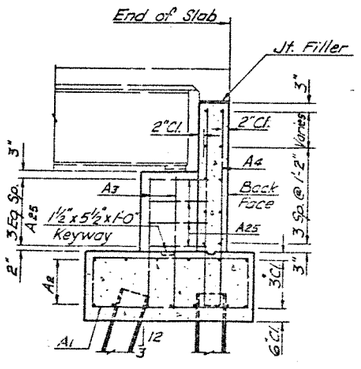
Half Showing Dimensions

ELEVATION

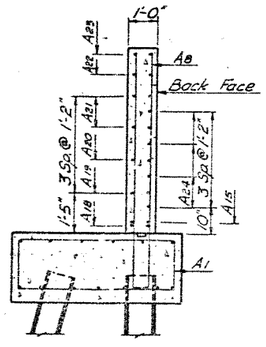
South Abutment Shown ~ North Abutment Opposite Hand

Half Showing Reinforcing

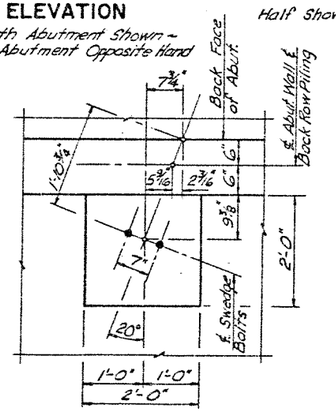
A



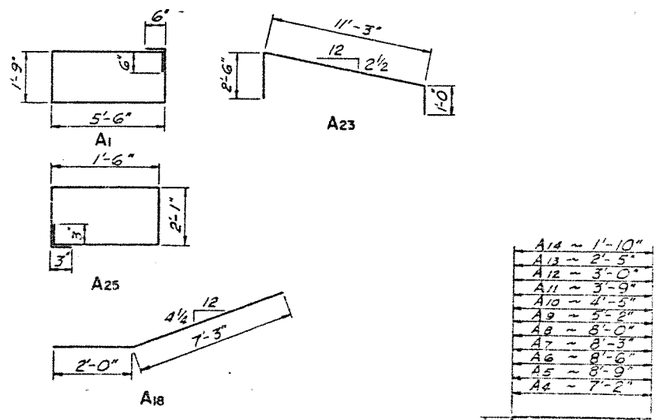
℄ SECTION



A-A



DETAIL "A"



BENT BAR DETAILS

Dimensions shown are out to out

C98
11-28-72
34.5 C.Y.

QUANTITIES (ONE ABUT.)

Class AE-1 Concrete	34.5 C.Y.
Reinforcing Steel	5050 Lbs.
Excavation (See Layout)	
Piling (See Layout & Dwg. 29-178.59M-3)	

PARK RIVER
MEDIAN BRIDGE

9'-0" ABUTMENT

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	N. D.	I-29-5(116)	118	

PLAN

12'-1 7/8" · 5'-1 7/8" · 7'-0" · 11'-8" · 7'-0" · 11'-8" · 12'-5 7/8" · 5'-5 7/8" · 9 7/8" · 5 7/8" · ℄ Pier

P16, 2 Sp. @ 1'-6" · P7 Bars · 4 Sp @ 1'-6" · 3 Sp @ 1'-0" · 1'-6" · 9"

changed by Phone 8-28-72

P2 ~ This End
P3 ~ Other End
2 P1
P17 (This End Only)

℄ SECTION

P7 · P8 · P9 · P10 · 3"Cl · 2"Cl · 10'-6" · 8'-6" · 1'-3" · 6" · 1'-0" · Construction Joint

ELEVATION

30'-0" · 3'-0" · 3" · P81 · P82 · P83 · P84 · P85 · P86 · P87 · 2 PC, 5 · 14 P11 Bars · Slope 3/8" Per Foot · 13 Spaces @ 1'-6" ~ PB Bars This End ~ PA Bars Other End ~ PC Bars Both Ends · 2 Sp @ 1'-6" ~ PA Bars 9" Both Faces · 6 Spaces @ 1'-6" ~ PA Bars Both Faces · 6 Sp @ 1'-0" ~ P9 Bars Both Faces · 27 P12 Bars · 6 Sp @ 1'-0" ~ P9 Bars · 6 Sp. @ 1'-0" ~ P10 Bars Both Faces · 4 Sp @ 1'-6" ~ PA Bars 9" Both Faces · 2 P8 · 5" PC17 · 27 P13 Bars · P14 · 10'-6" · 1'-6" x 5 1/2" Key · 1'-3" · 2'-0" · 1'-0" · 2'-0" Ice Nose · 24'-0" · 30'-4 1/16" · 3'-4 3/16" · 4'-0" · 1'-6" x 11 1/2" x 3'-0" Key · 6'-0" · 3'-0" · 2'-0" · Excavation Pay Limits · Sym. About ℄ Except As Shown · A · B · C · D

Slope 3/8" Per Foot · Slope 3/8" Per Foot

END VIEW

1 1/2 · 12 · 1 1/2 · 12 · 3'-0" · 1'-6" · 5'-0" · 1'-6"

P14 · P15 · 6" Cl · 3" Cl

D-D

P13 Bars ~ Spaced As Shown · 4" · 5" · 1'-6" · 7 Sp @ 6" · 1'-6" · 5" · 4" · 9" · 1'-6" · 3 Sp @ 1'-2" · 9" · 1'-6" · P13 Bars ~ Spaced As Shown · Excavation Pay Limits · 20° · 1'-6" · ℄ Pier · ℄ Roadway · 6'-3" · 5'-0" · 8'-0" · 1'-6" · 5'-9" · 5'-9" · 1'-6" · 5'-0" · 1'-6" · 8'-0"

FOOTING PLAN

ICE NOSE ANGLE

2'-0" · 2 1/2" x 1'-8" Bars @ Open Holes · 1/16 @ Open Holes · 21'-0" · 10 Spaces @ 2'-0" · 9 Sp @ 2'-0" · 6" · 1'-6" · 7'-6" · 6" · Bars 2 1/2" x 7/8" · L 8 x 8 x 3/4 · 1/4

P16

1'-2" · 12 · 12 · 3/8 · 3/8 · 3'-0"

P2

2'-8" · 1'-1" · 5 7/8" · 5 7/8"

P3 & P17

4'-2" ~ P17 · 2'-8" ~ P3 · 1'-1" · 9 3/4" · 9 3/4"

P7

1'-2" · 3" · 12 · 12 · 3/8 · 3/8 · 2'-6" · 1'-4"

P13

6'-3" · 1'-0" R · 1'-8"

P9

1'-11" · 3" · 6"

P14 & P15

7'-6"

BENT BAR DETAILS
(Dimensions Shown Are Out To Out)

NOTE:

Dowel bars extending above pier footings into column shall be secured to the lowest column tie bars to insure proper fit before footing is poured.

A-A

12'-3" · 12'-7 7/8" · 7'-5 7/8" · 7'-5 7/8" · 3'-11" · 3'-11" · 3 7/8" · 3 7/8" · 3 7/8" · 3'Cl · 6 1/2" · 1'-10 1/4" · 9" · 1'-3" · 11 1/8"

B-B

12'-6 15/16" · 13'-1 7/16" · 4'-2 1/2" · 7'-0 5/16" · 7'-0 5/16" · 4'-2 1/2" · 7 3/8" · 7 3/8" · 8 13/16" · 2'-6 1/2" · 1'-0" · 1'-3" · 6" · 1'-3 1/16"

C-C

13'-0" · 13'-9 5/16" · 11 1/16" · 4'-6 3/16" · 1'-0 3/8" · 6'-5 3/16" · 6'-5 3/16" · ℄ Pier · 1'-0 3/8" · 4'-6 3/16" · 1'-8 5/8" · 3'-4 1/16" · 1'-4 3/8" · 11 1/16" · PC · PB · PA · 1'-0" · 1'-3" · 1'-0 3/8" · 1'-0 3/8" · 1'-3" · 1'-0" · 1'-0 3/8"

PA BARS · PB BARS · PC BARS

A	B	C
11 3/16"	3'-8 3/8"	6 1/4"
1'-0 7/8"	3'-9"	7 1/4"
1'-1 3/4"	3'-9 1/2"	7 3/4"
1'-2"	3'-10"	8 1/4"
1'-2 3/4"	3'-10 3/8"	8 3/8"
1'-3 7/8"	3'-10 7/8"	9 1/4"
1'-4 3/8"	3'-11 3/8"	9 3/8"
1'-5 1/4"	3'-11 7/8"	10 1/8"
1'-6"	4'-0 1/8"	10 1/2"
1'-6 3/4"	4'-0 3/4"	11"
1'-7 3/8"	4'-1 1/4"	11 3/8"
1'-8 3/8"	4'-1 3/8"	11 7/8"
1'-9 1/8"	4'-2 1/8"	1'-0 1/2"
1'-10"	4'-2 3/8"	1'-0 7/8"
1'-10 7/8"	4'-2 7/8"	1'-1 3/8"
1'-11 3/8"	4'-3 1/4"	1'-1 7/8"
2'-0"	4'-3 3/4"	1'-2"

MARK	A	B	C	D
PA1	6'-3"	6'-3"	1'-5 3/8"	1'-5 3/8"
PA2	6'-5"	6'-5"	1'-6 1/2"	1'-6 1/2"
PA3	6'-8"	6'-8"	1'-7 3/4"	1'-7 3/4"
PA4	6'-10"	6'-10"	1'-8 3/4"	1'-8 3/4"
PA5	7'-0"	7'-0"	1'-9 7/8"	1'-9 7/8"
PA6	7'-2"	7'-2"	1'-11"	1'-11"
PA7	7'-5"	7'-5"	2'-0 1/8"	2'-0 1/8"
PA8	7'-7"	7'-7"	2'-1 1/4"	2'-1 1/4"
PA9	7'-9"	7'-9"	2'-2 3/8"	2'-2 3/8"
PA10	7'-11"	7'-8"	2'-3 1/2"	2'-3 1/2"
PA11	8'-1"	7'-11"	2'-4 7/8"	2'-4 7/8"
PA12	8'-3"	8'-1"	2'-5 1/4"	2'-5 1/4"
PA13	8'-6"	8'-3"	2'-6 3/8"	2'-6 3/8"
PA14	8'-8"	8'-6"	2'-7 1/2"	2'-7 1/2"
PA15	8'-9"	8'-7"	2'-8 3/4"	2'-8 3/4"
PA16	8'-11"	8'-9"	2'-9 7/8"	2'-9 7/8"
PA17	9'-1"	8'-11"	2'-10 7/8"	2'-10 7/8"

BAR LIST (ONE PIER)

MARK	NUMBER: FOOTING	NUMBER: LOWER PORTION	NUMBER: UPPER PORTION	SIZE	LENGTH	SHAPE	UNIT WT.
P1		6	8	23'-4"	Str.	62.31
P2		7	6	6'-8"	Bent	10.01
P3		3	6	6'-11"	"	10.38
P4	10	14	5	18'-3"	Str.	19.04
P5	4		8	19'-0"	"	50.74
P6	4		11	20'-6"	"	109.91
P7		17	4	8'-0"	Bent	5.34
P8		28	5	12'-3"	Str.	12.79
P9	13		5	5'-8"	Bent	5.31
P10	28		5	11'-0"	Str.	11.47
P11		29	9	13'-3"	"	43.05
P12	54		9	16'-6"	"	38.10
P13	54		9	7'-6"	Bent	25.20
P14	24		6	8'-10"	"	13.27
P15	12		5	8'-8"	"	9.04
P16		6	4	7'-2"	"	4.76
P17		1	4	11'-11"	"	7.96
PB1-7		2 Sets	5	47'-9"	Bent	49.81
PA8-17	2 Sets		5	83'-6"	"	87.10
PB1-7		2 Sets	5	45'-8"	"	47.64
PB8-13	2 Sets		5	81'-6"	"	85.01
PC1-7		4 Sets	4	18'-10"	"	12.57
PC8-17	4 Sets		4	34'-8"	"	23.14

QUANTITIES (ONE PIER)

Class FE-1 Concrete	272 Cu. Yds.
Reinforcing Steel	9,179 Lbs.
Structural Steel (A36)	910 Lbs.
Reinforcing Steel (Additional - for Pier & Pile)	37 Lbs.

PARK RIVER

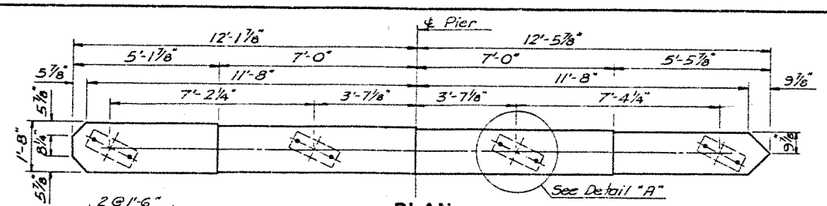
MEDIAN BRIDGE

PIER NOS. 3 & 4

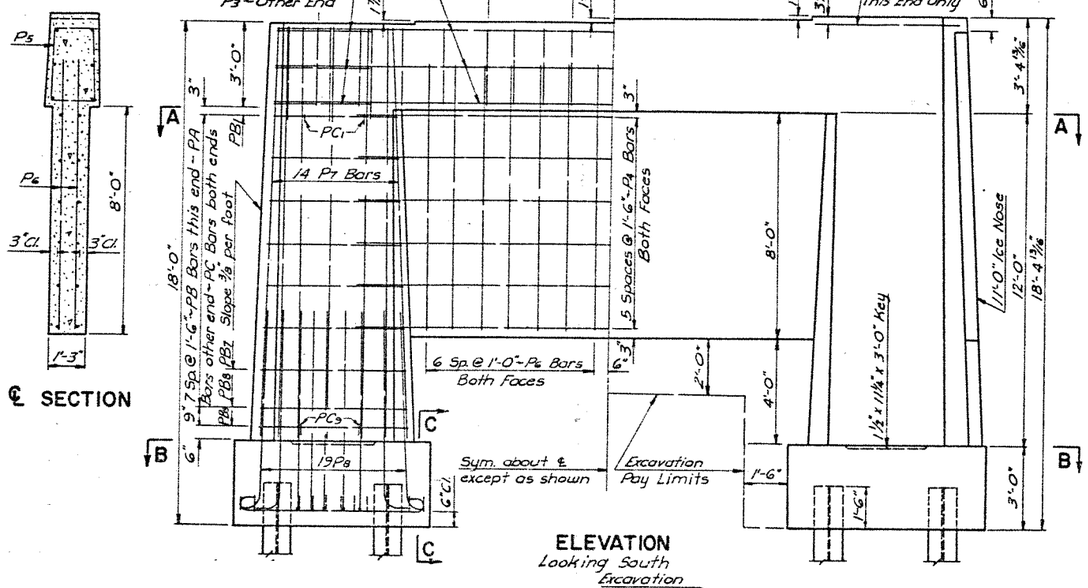
29-178.59M-5

C.O. - 29-178.59M-5

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	N. D.	I-029-5(16)		



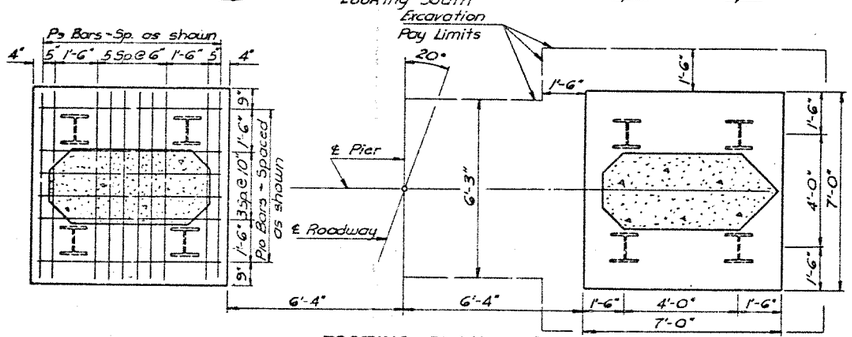
PLAN



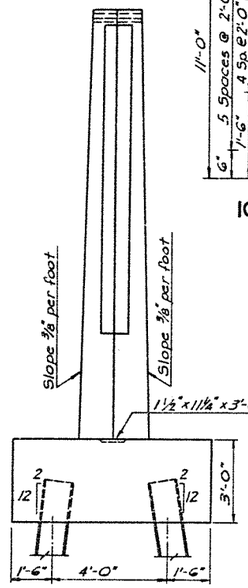
ELEVATION

Looking South

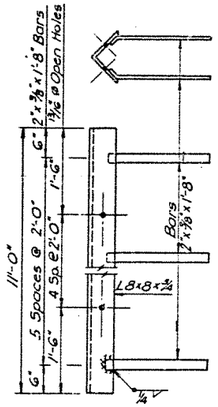
℄ SECTION



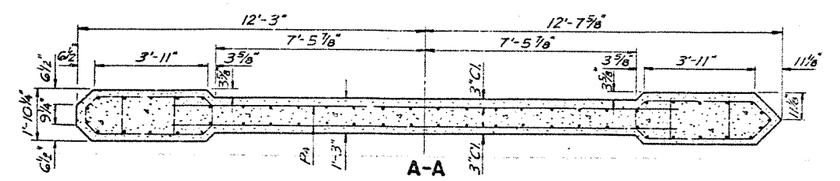
FOOTING PLAN



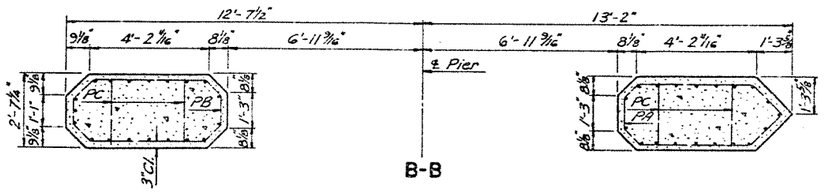
END VIEW



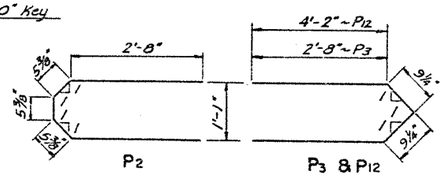
ICE NOSE ANGLE



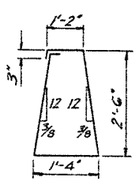
A-A



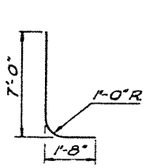
B-B



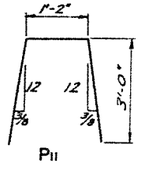
P2 P3 & P12



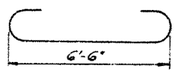
P5



P8



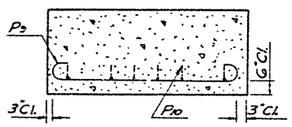
P11



P9 & P10

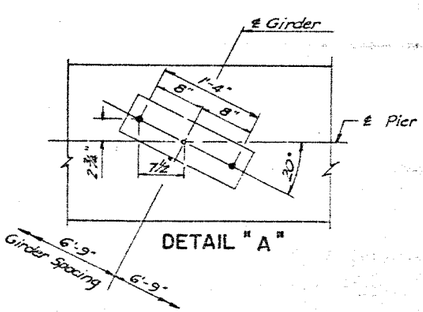
BENT BAR DETAILS

Dimensions Shown Are Out to Out



C-C

NOTE: *Dowel bars extending above pier footings into column shall be secured to the lowest column tie bars to insure proper fit before footing is poured.*

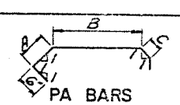


DETAIL "A"

BAR LIST (ONE PIER)

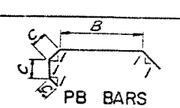
MARK	NUMBER: FOOTING	NUMBER: WALL	NUMBER: COLUMN & CAP	SIZE	LENGTH	SHAPE	UNIT WT.
P1			6	8	23'-4"	Str.	62.31
P2			3	6	6'-8"	Bent	10.01
P3			3	6	6'-11"	"	10.38
P4			12	5	18'-3"	Str.	19.04
P5			17	4	8'-0"	Bent	5.34
P6		28		5	9'-5"	Str.	9.82
P7			29	9	14'-8"	"	49.87
P8	38			9	8'-3"	Bent	28.05
P9	20			6	7'-10"	"	11.77
P10	12			5	7'-8"	"	8.00
P11			6	4	7'-2"	"	4.78
P12			1	4	11'-11"	"	7.96
PA-8			25 Sets	5	55'-4"	Bent	57.72
PA9			2	5	7'-8"	"	8.00
PB1-8			25 Sets	5	53'-0"	"	55.28
PB9			2	5	7'-5"	"	7.74
PC1-8			4 Sets	4	21'-11"	"	14.63
PC9			4	4	3'-1"	"	2.06

PA BARS



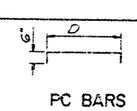
A	B	C	MARK	LENGTH
11⅜"	3'-8⅜"	6¼"	PA1	6'-3"
1'-0⅜"	3'-9"	7¼"	PA2	6'-5"
1'-1¼"	3'-9½"	7¾"	PA3	6'-8"
1'-2"	3'-10"	8¼"	PA4	6'-10"
1'-2¾"	3'-10⅝"	8⅝"	PA5	7'-0"
1'-3⅜"	3'-10⅞"	9⅛"	PA6	7'-2"
1'-4⅜"	3'-11⅜"	9⅝"	PA7	7'-5"
1'-5¼"	3'-11⅞"	10⅛"	PA8	7'-7"
1'-5⅞"	4'-0⅛"	10⅜"	PA9	7'-8"

PB BARS



MARK	LENGTH
PB1	5'-11"
PB2	6'-2"
PB3	6'-4"
PB4	6'-7"
PB5	6'-8"
PB6	6'-11"
PB7	7'-1"
PB8	7'-4"
PB9	7'-5"

PC BARS



D	MARK	LENGTH
1'-5⅜"	PC1	2'-5"
1'-6½"	PC2	2'-6"
1'-7⅜"	PC3	2'-7"
1'-8¼"	PC4	2'-8"
1'-9⅛"	PC5	2'-9"
1'-11"	PC6	2'-11"
2'-0⅛"	PC7	3'-0"
2'-1¼"	PC8	3'-1"
2'-1⅞"	PC9	3'-1"

QUANTITIES (ONE PIER)

Class AE-1 Concrete	41.2	Cu. Yds.
Main Reinforcing Steel	4127	Lbs.
Structural Steel (A36)	473	Lbs.
Excavation (See Layout)		
Piling (See Layout & Dwg 29-178.59M-3)		

PARK RIVER

MEDIAN BRIDGE

PIERS NO. 2 & NO. 5