STATE	PROJ. NO.	SHEET NO.
MO.		114

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE)	f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60)	fy=60,000 PSI.
STEEL PILE	fb= 9,000 PSI.
STRUCTURAL CARBON STEEL	fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50)	fy=50,000 PSI.

FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	669		669
STRUCTURAL STEEL PILE (12")	LIN. FT.	1956		1956
PREBORE FOR PILING	LIN. FT.	327		327
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,570		67,570
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21

2190 △

ESTIMATED QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

ESTIMATED QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

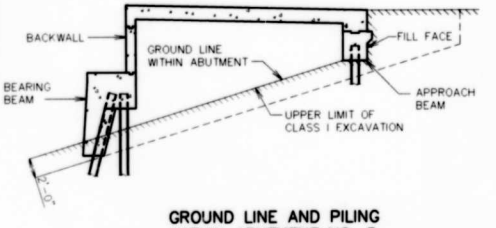
ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM	BRG. BM	COLUMNS	BRG. BM	APPR. BM
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	37	34		37	41
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

JACKSON COUNTY

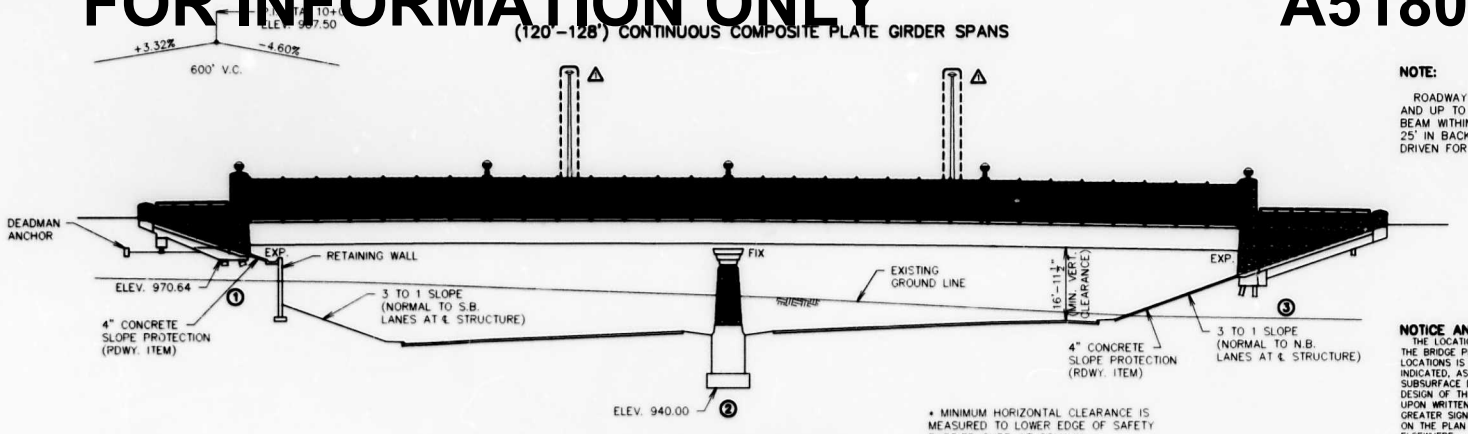
GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

SHEET NO.

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



GENERAL ELEVATION

* MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

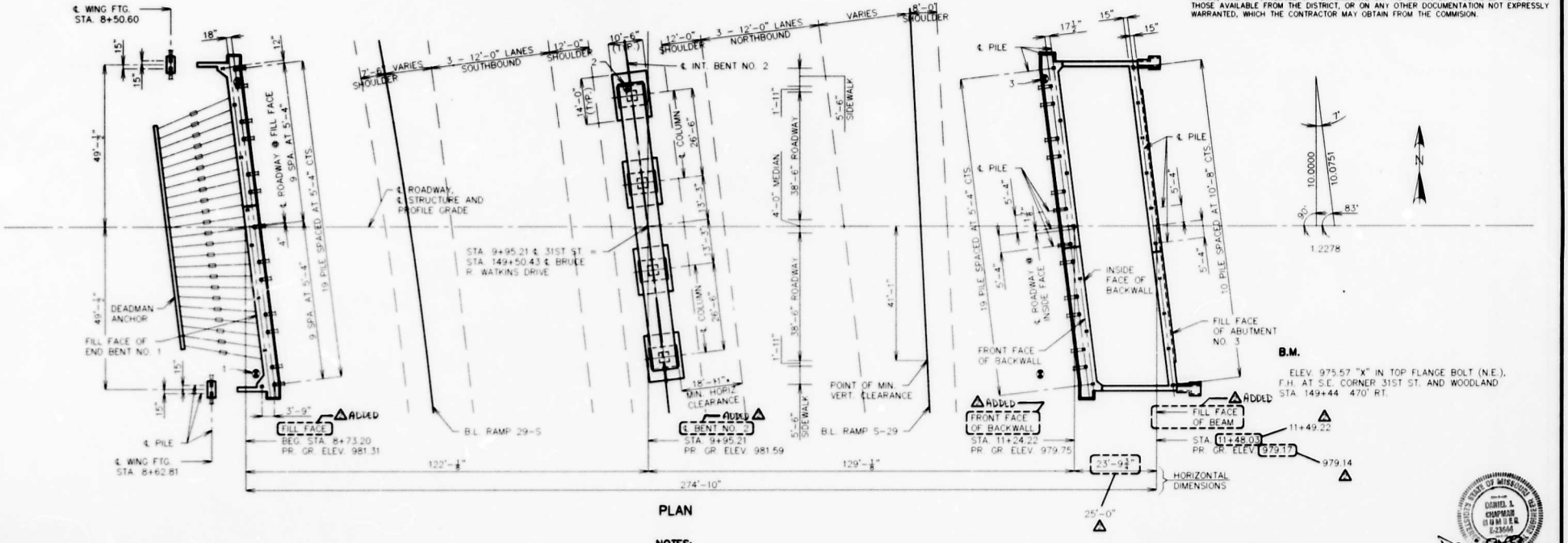
NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



PLAN

B.M.

ELEV. 975.57 "X" IN TOP FLANGE BOLT (N.E.), F.H. AT S.E. CORNER 31ST ST. AND WOODLAND STA. 149+44 47.0' RT.

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DANIEL L. CHAPMAN NUMBER E-23666 STATE OF MISSOURI ENGINEER

4-26-96

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

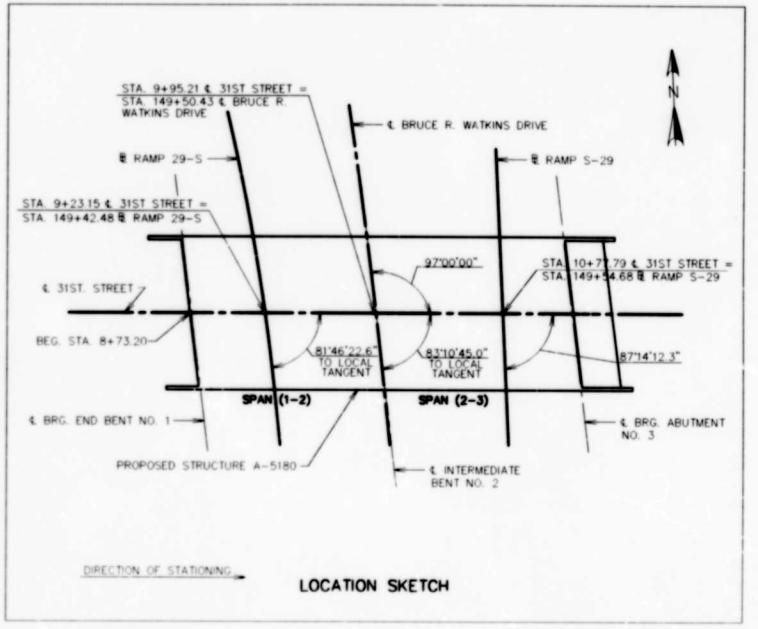
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		112
SEC. 15	TWP. 49 N.	RGE. 33 W



BRIDGE: 31ST. STREET OVER RELOCATED ROUTE 71, BRUCE R. WATKINS DRIVE

STATE ROAD N. OF 31ST. STREET TO SWOPE PARKWAY
IN KANSAS CITY
PROJECT NO.
JOB NO. J4U0011B
JACKSON COUNTY

STA. 9+95.21 (℄ 31ST. STREET)=
STA. 149+50.43 (℄ BRUCE R. WATKINS DR.)
RTE. 71

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

Date 4/17/95 SHEET NO. 1 OF 50

STD. 708.35
STD. 903.03AQ
A-5180

PROJ. NO.	SHEET NO.
	115

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	2/4/6	3.0
10'	5/10/14	4.5 +
15'	12/35/49	4.5 +
20'	22/50	4.5 +

ELEV. 964.3
DARK GREEN FAT CLAY, MOIST, VERY STIFF
ELEV. 954.3
TAN BROWN FAT CLAY, MOIST, HARD
ELEV. 949.3
GRAY SHALE, HARD
ELEV. 941.6
THIN TO MEDIUM BEDDED LIMESTONE, MODERATELY HARD
ELEV. 930.4

① (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	9/18/25	3.5
10'	10/22/34	4.5 +
15'	8/26/42	4.5 +
20'	50/4"	4.5 +

ELEV. 961.2
TAN BROWN FAT CLAY, MOIST, SOFT TO VERY STIFF
ELEV. 951.8
OLIVE BROWN FAT CLAY, SLIGHTLY MOIST, HARD
ELEV. 945.2
GRAY WEATHERED SHALE, HARD
ELEV. 941.6
GRAY, THICK BEDDED LIMESTONE, HARD
ELEV. 931.9

② (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	6/6/7	1.5
10'	5/12/17	4.5 +
15'	5/12/15	4.5 +
20'	2/2/2	0.5

ELEV. 959.5
DARK BROWN FAT CLAY, MOIST, STIFF
ELEV. 950.5
TAN BROWN FAT CLAY, MOIST, VERY STIFF
ELEV. 944.5
OLIVE TAN BROWN SHALE, HARD
ELEV. 940.1
REDDISH BROWN FAT CLAY, MOIST, SOFT
ELEV. 935.9
GRAY WEATHERED LIMESTONE, BROWN CLAY ALONG BEDDING PLANES, MODERATELY HARD, THIN TO MEDIUM BEDDING
ELEV. 920.3

③ (CORE)

NOTE: FOR LOCATION OF BORINGS, SEE SHEET NO. 2. BORING DATA FOR ALL LOCATIONS IS AVAILABLE UPON REQUEST FROM THE DISTRICT OFFICE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR 4/93
TRACED BY:	KAM 5/93
CHECKED BY:	DJM 5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

BORING DATA

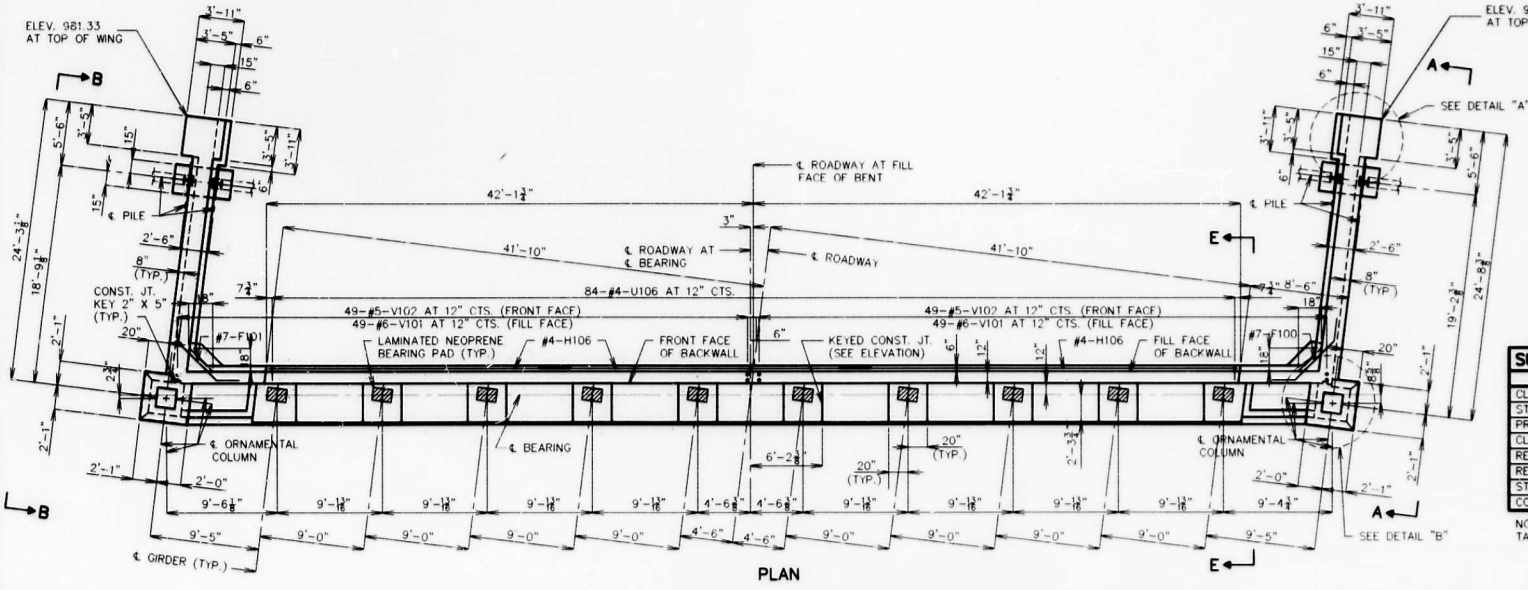
SHEET NO. 4 OF 50

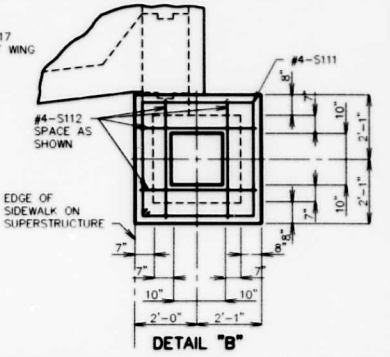
A-5180

[redacted] 24 to 1

FOR INFORMATION ONLY

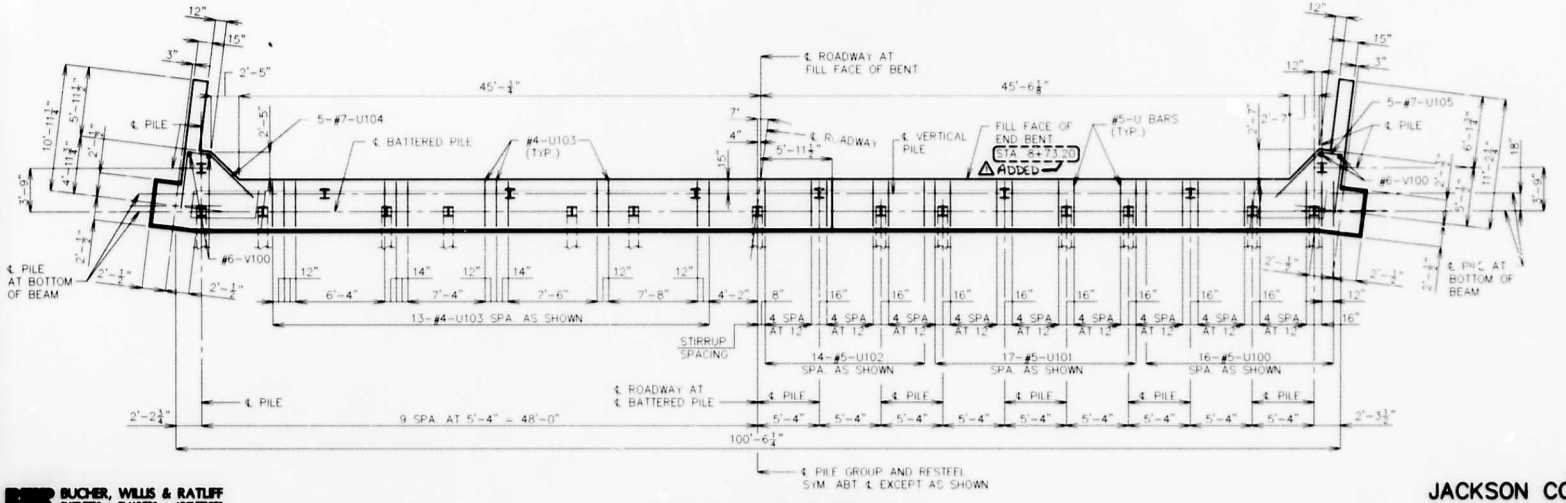
A51801, Sht. 5





SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITIY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.8 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITIY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 8.

FOR SECTION E-E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WNGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

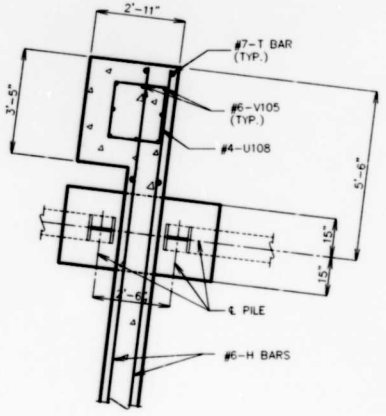
DETAILS OF END BENT NO. 1 PLAN

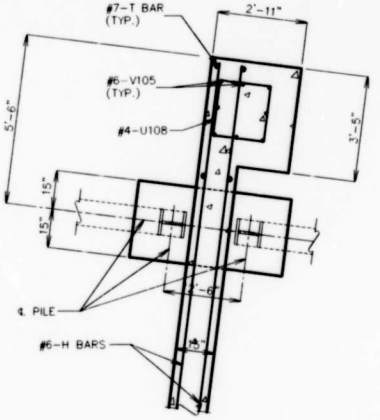
SHEET NO. 5 OF 50

A-5180

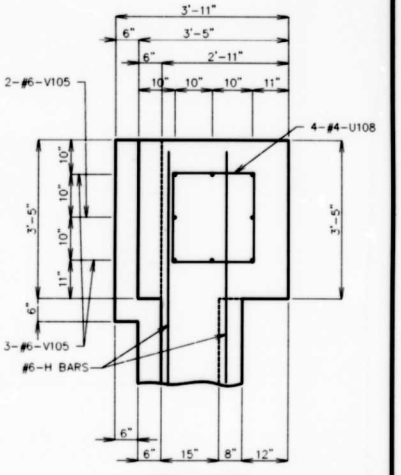
24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		

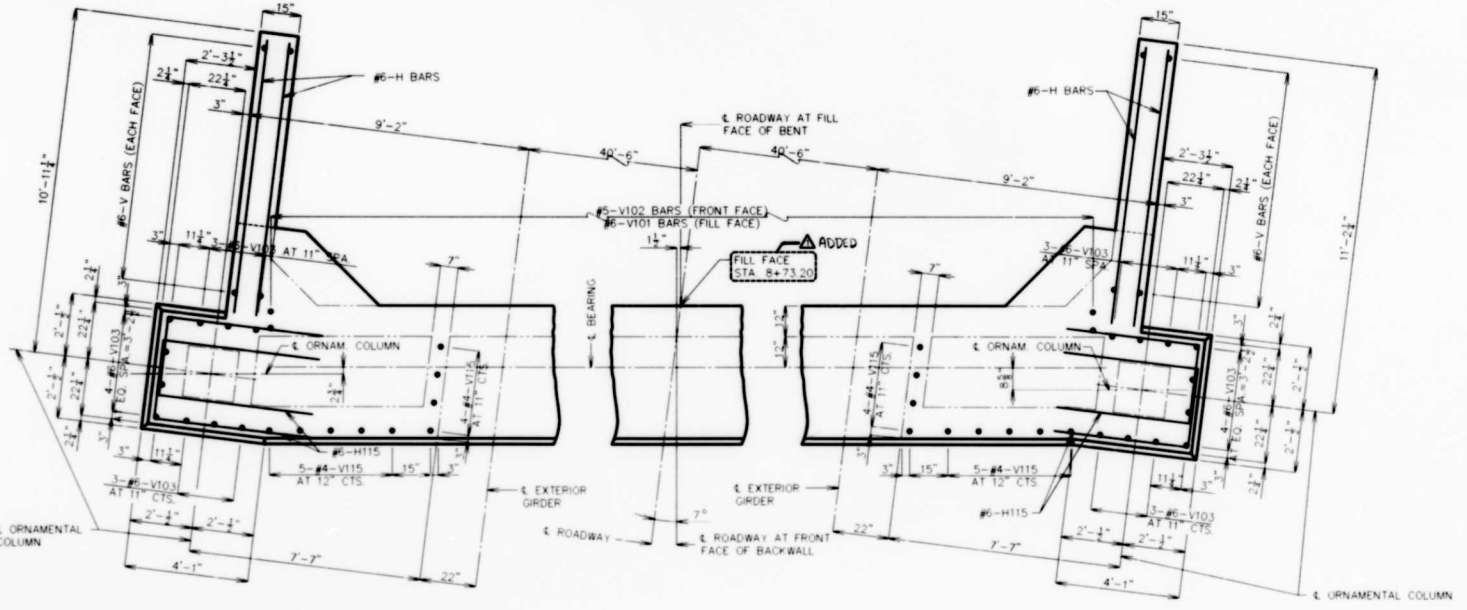




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCKER, WILLIS & RATLIFF
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DRAWN BY:	SAC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

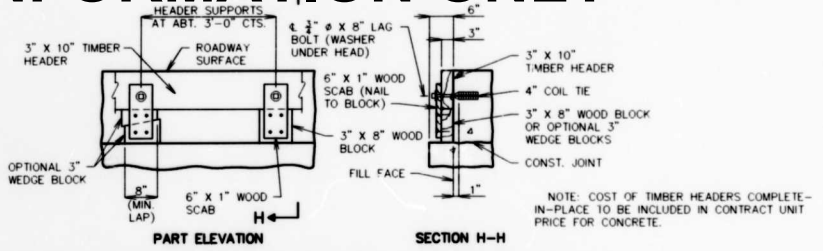
DANIEL A. CHAPMAN NUMBER E-23548 4-26-96

JACKSON COUNTY

DETAILS OF END BENT NO. 1 PART PLAN

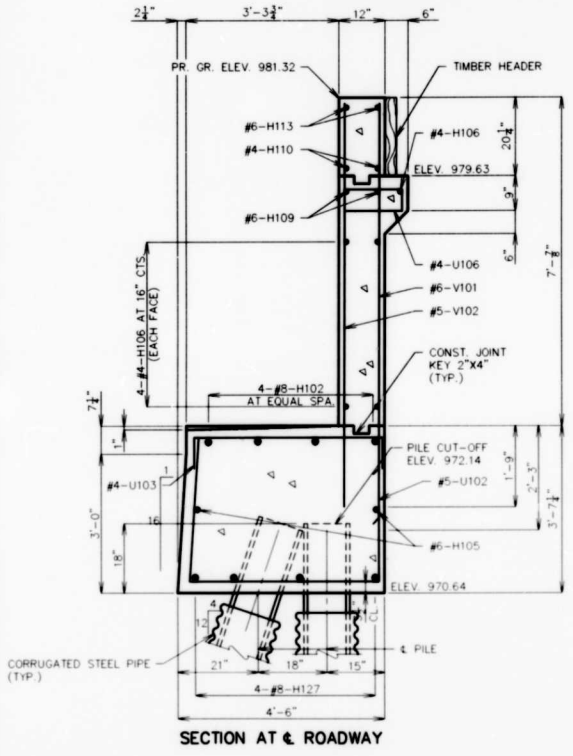
SHEET NO. 6 OF 50

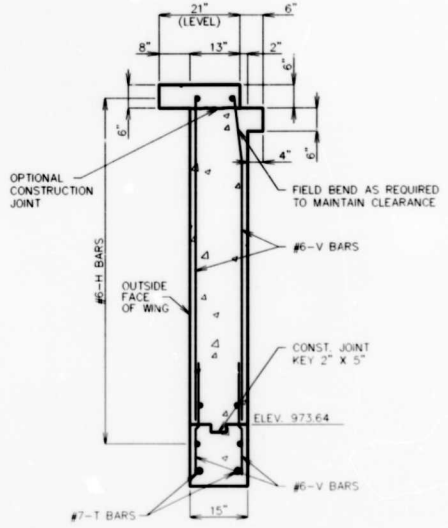
A-5180

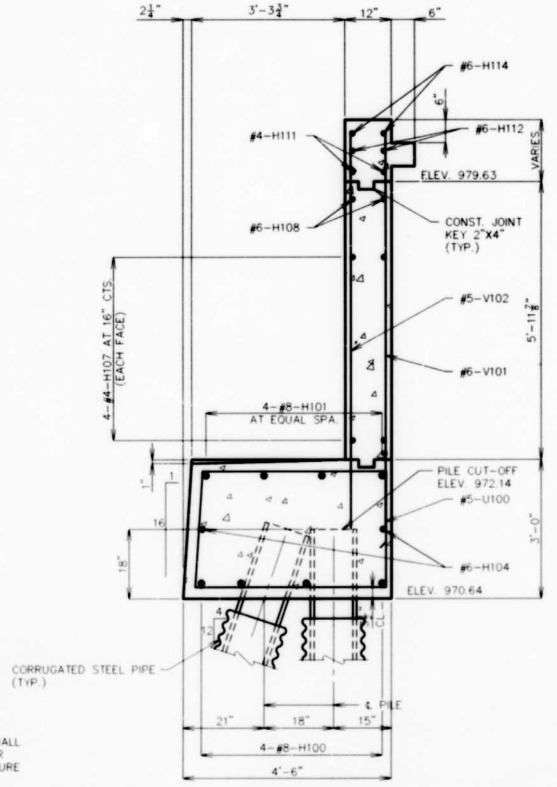


NOTE: COST OF TIMBER HEADERS COMPLETE-IN-PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONCRETE.

DETAILS OF TIMBER HEADER AT END BENT NO. 1 AND ABUTMENT NO. 3







NOTES:

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO THE CROWN OF ROADWAY SLAB. BACKWALL ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR LOCATION OF SECTION E-E, SEE SHEET NO. 5 & 7.

FOR LOCATION OF SECTION G-G, SEE SHEET NO. 8.

FOR DETAILS OF VERTICAL DRAIN CORE, SEE SHEET NO. 12.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 MISCELLANEOUS

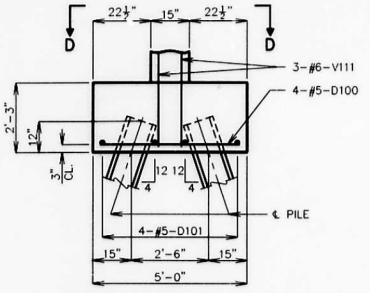
SHEET NO. 9 OF 50

A-5180

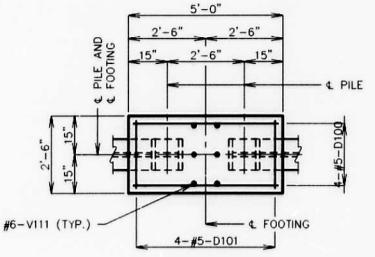
FOR INFORMATION ONLY

A51801, Sht. 8

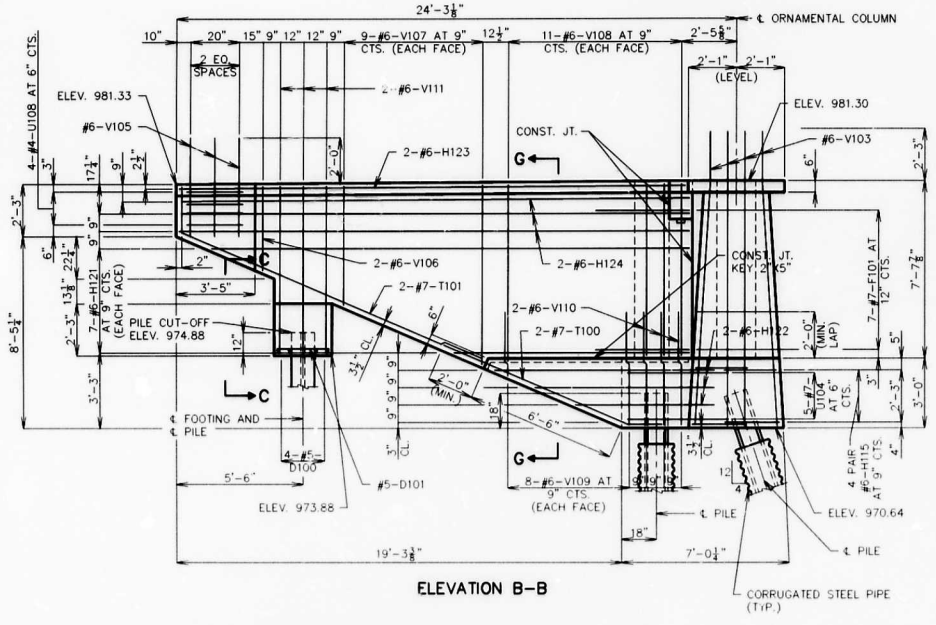
STATE	PROJ. NO.	SHEET NO.
MO.		179



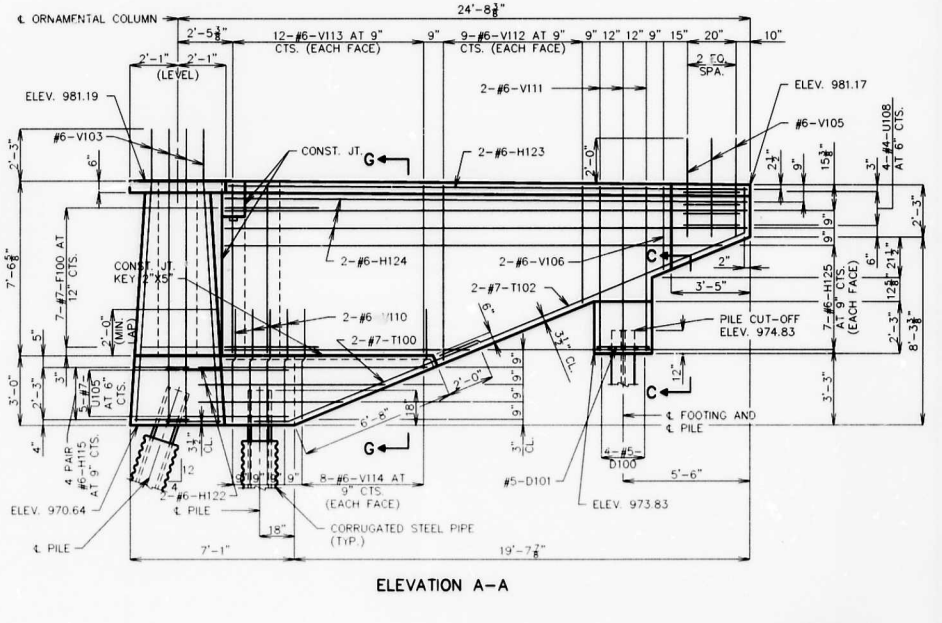
PART ELEVATION C-C



PLAN D-D



ELEVATION B-B



ELEVATION A-A

NOTE:

FOR LOCATION OF ELEVATIONS A-A AND ELEVATION B-B SEE SHEET NO. 5.

FOR SECTION G-G, SEE SHEET NO. 9.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 10.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

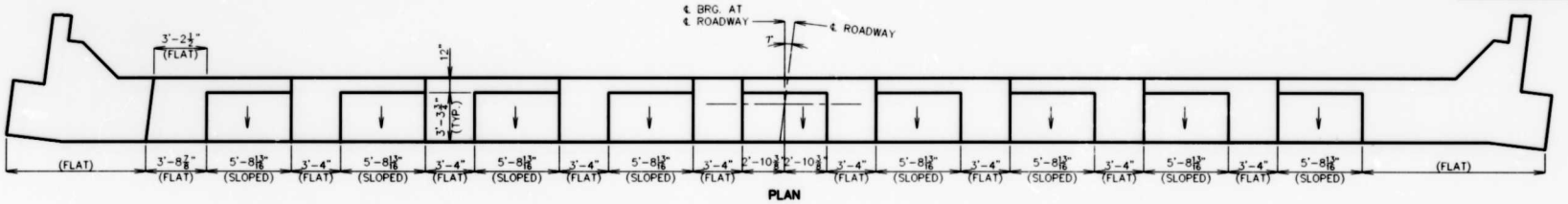
JACKSON COUNTY

DETAILS OF END BENT NO. 1 WINGS

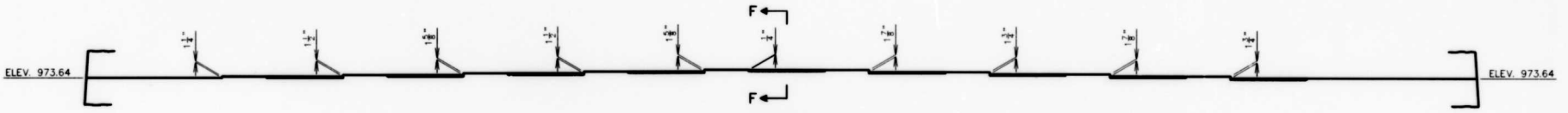
SHEET NO. 8 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		118

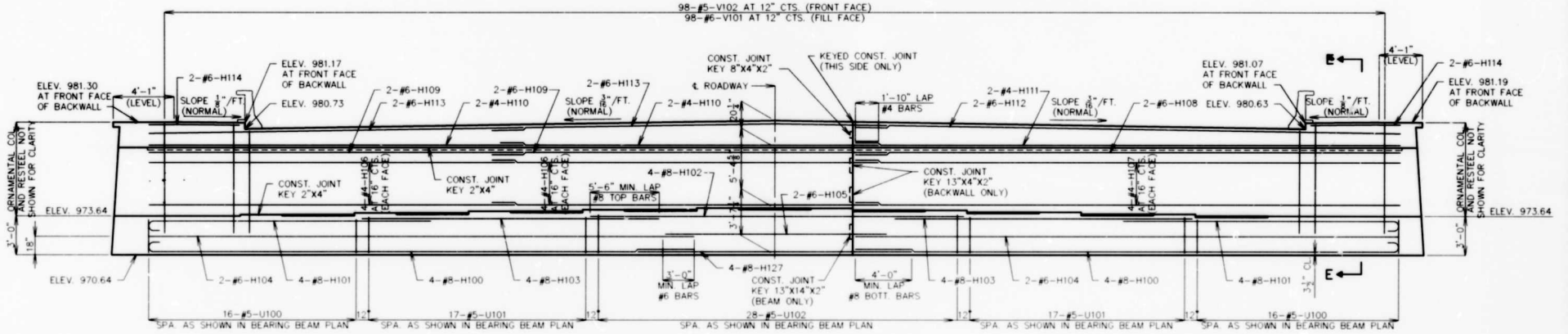


PLAN

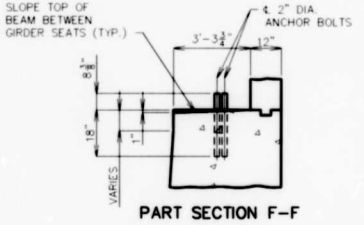


ELEVATION

BEARING SEAT DETAIL



ELEVATION



PART SECTION F-F

NOTES:

FOR SECTION E-E, SEE SHEET NO. 9.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO CROWN OF ROADWAY SLAB.

BACKWALL ABOVE THE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST ½".

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 10.

3-27-95

BUCKER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 ELEVATION

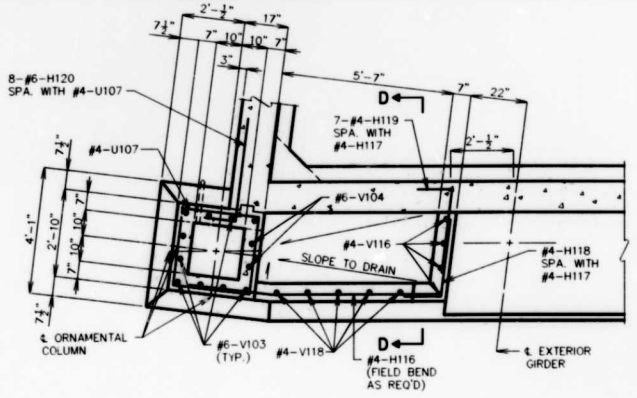
SHEET NO. 7 OF 50

A-5180

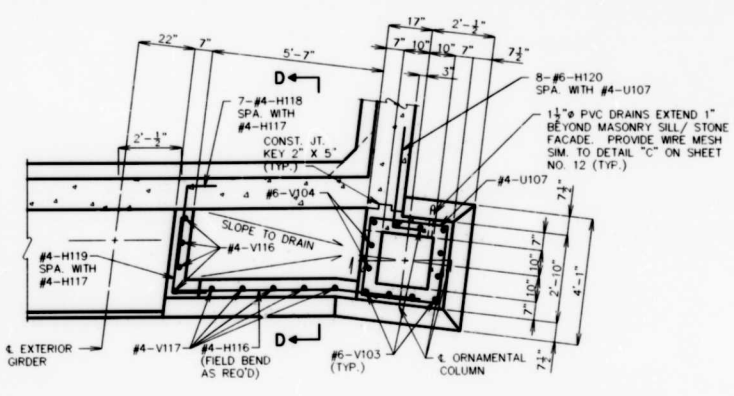
FOR INFORMATION ONLY

A51801, Sht. 10

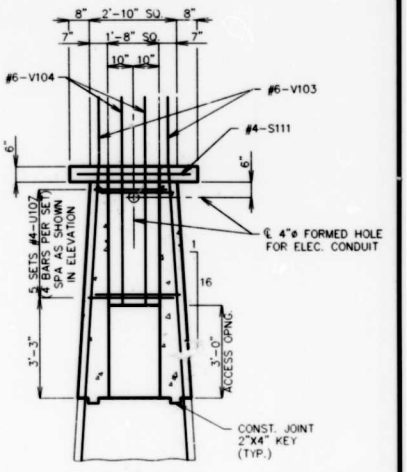
STATE	PROJ. NO.	SHEET NO.
MO.		121



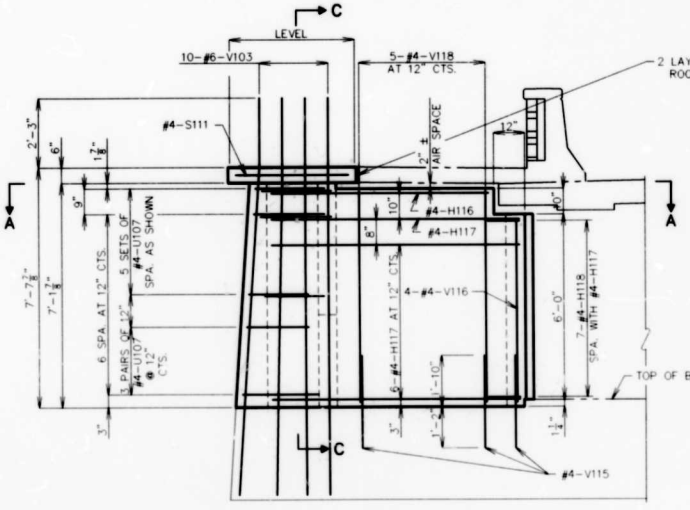
SECTION A-A



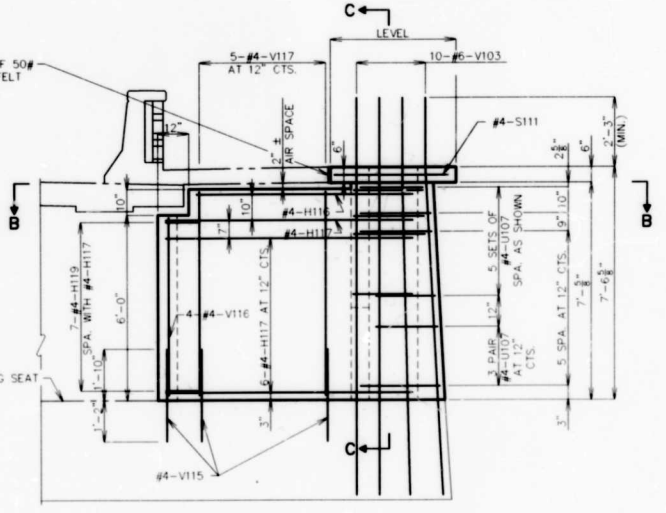
SECTION B-B



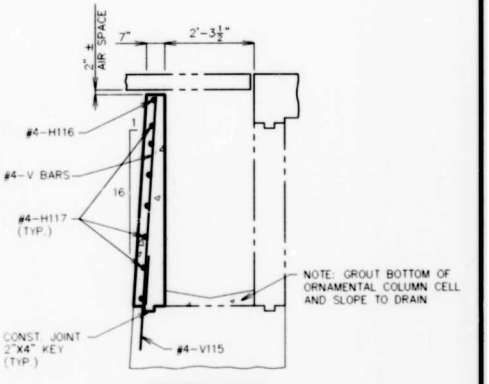
SECTION C-C



ELEVATION SOUTH WING



ELEVATION NORTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1
ORNAMENTAL COLUMN

SHEET NO. 10 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		122

BILL OF REINFORCING STEEL EACH DEADMAN		
NUMBER	SIZE & MARK	LENGTH
272	#4–V150	21"
16	#4–H150	35'–0"

NOTES:

CONSTRUCTION SEQUENCE:

CONSTRUCT END BENT NO. 1 WITH ANCHOR TEES IN PLACE.

MACHINE COMPACT FILL UP TO ELEVATION OF $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

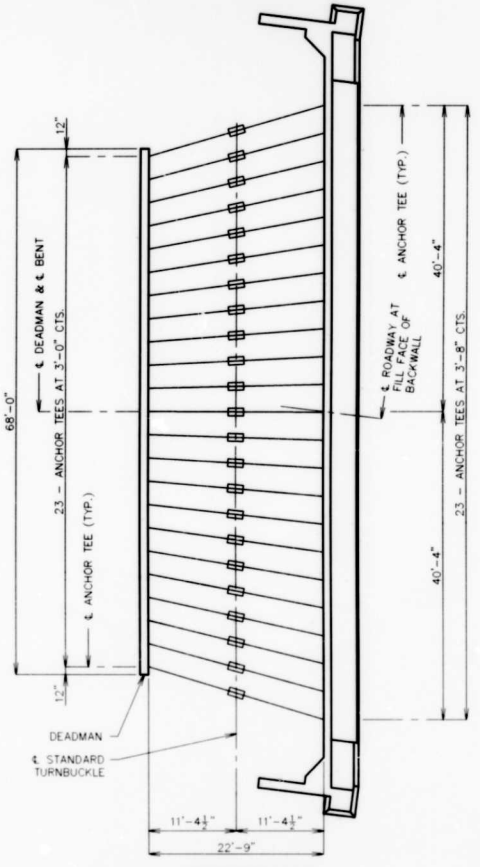
CONSTRUCT DEADMAN WITH ANCHOR TEES IN PLACE.

INSTALL $\frac{7}{8}$" ø ROD, CLEVIS AND TURNBUCKLE ASSEMBLY.

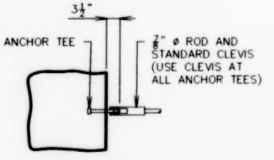
TIGHTEN TURNBUCKLE UNTIL SNUG.

HAND COMPACT FILL FOR 12" (MIN.) OVER $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

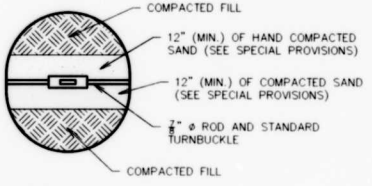
MACHINE COMPACT REMAINING FILL.



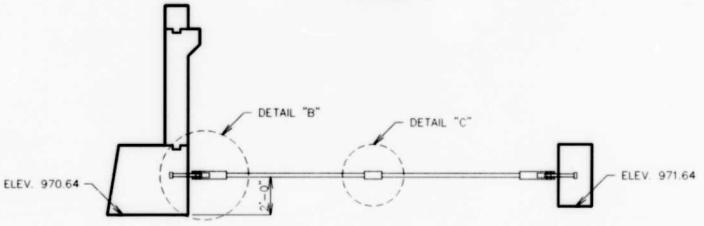
DEADMAN PLAN AT END BENT NO. 1



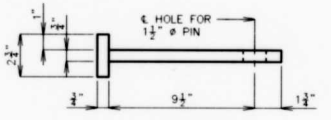
DETAIL "B"



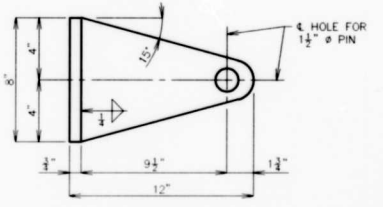
DETAIL "C"



LOCATION OF ANCHOR TEE

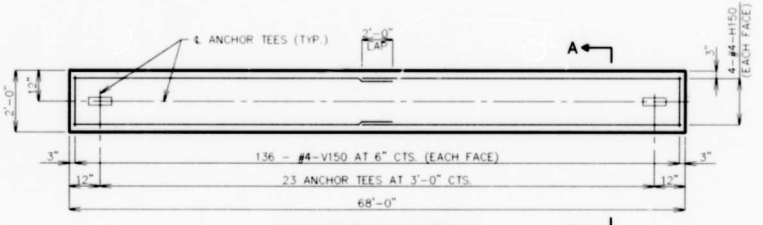


ELEVATION

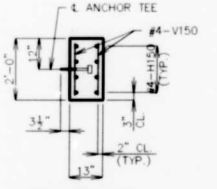


PLAN

DETAIL OF ANCHOR TEE



ELEVATION OF DEADMAN



SECTION A–A

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	5/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF DEADMAN ANCHORAGE SYSTEM

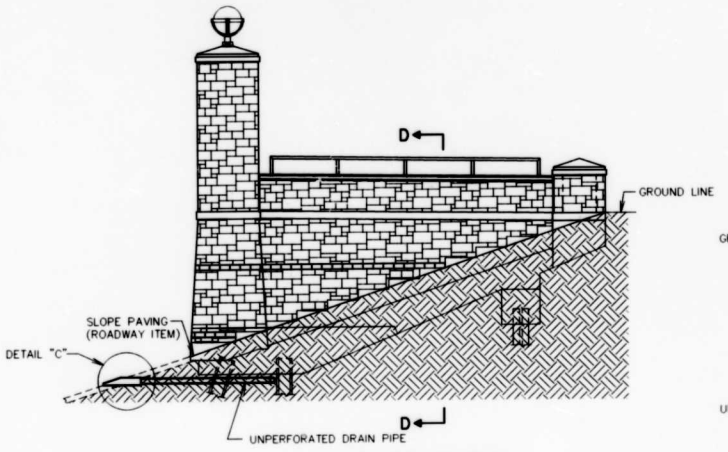
SHEET NO. 11 OF 50

A–5180

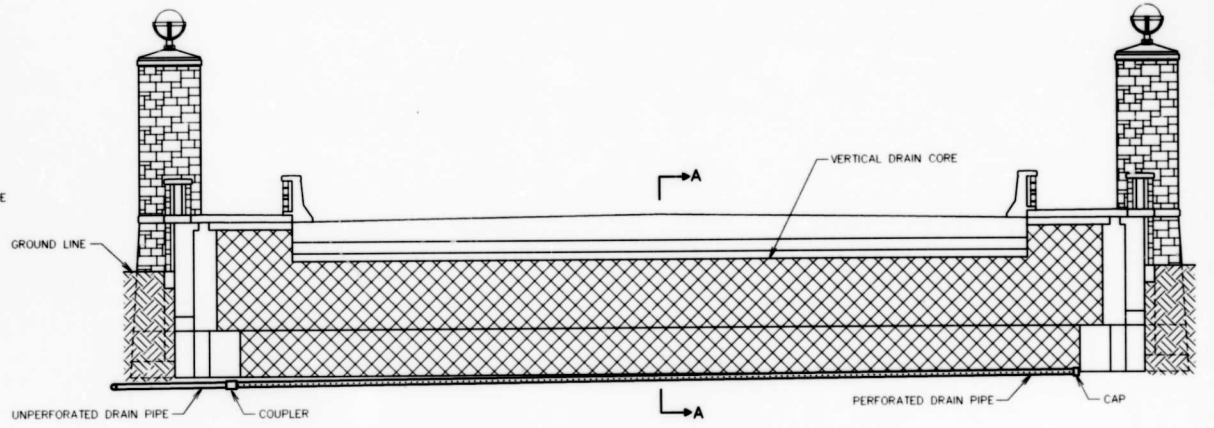
FOR INFORMATION ONLY

A51801, Sht. 12

STATE	PROJ. NO.	SHEET NO.
MO.		123

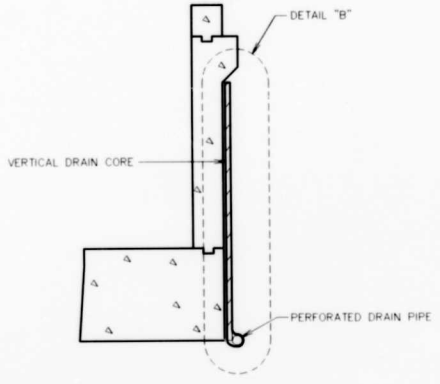


ELEVATION OF WING

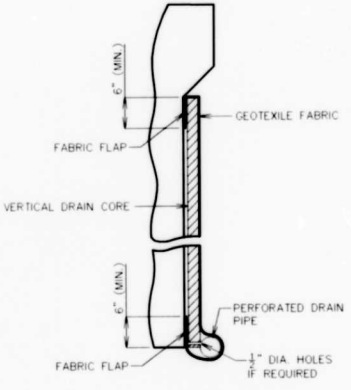


SECTION D–D
ELEVATION AT END BENT

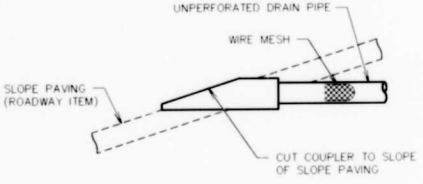
VERTICAL DRAIN AT END BENT NO. 1



SECTION A–A



DETAIL "B"



DETAIL "C"

NOTES:

DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½". (SEE ELEVATION AT END BENT)

PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM 5/93
TRACED BY:	RCC 5/93
CHECKED BY:	DMA 6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

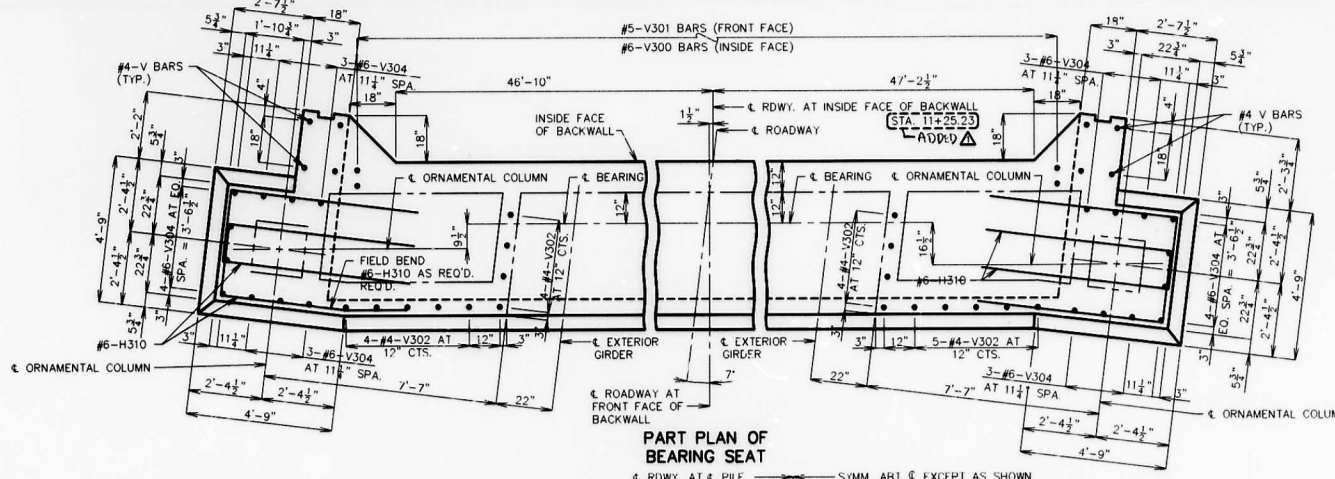
JACKSON COUNTY

DETAILS OF VERTICAL DRAIN AT END BENT NO. 1

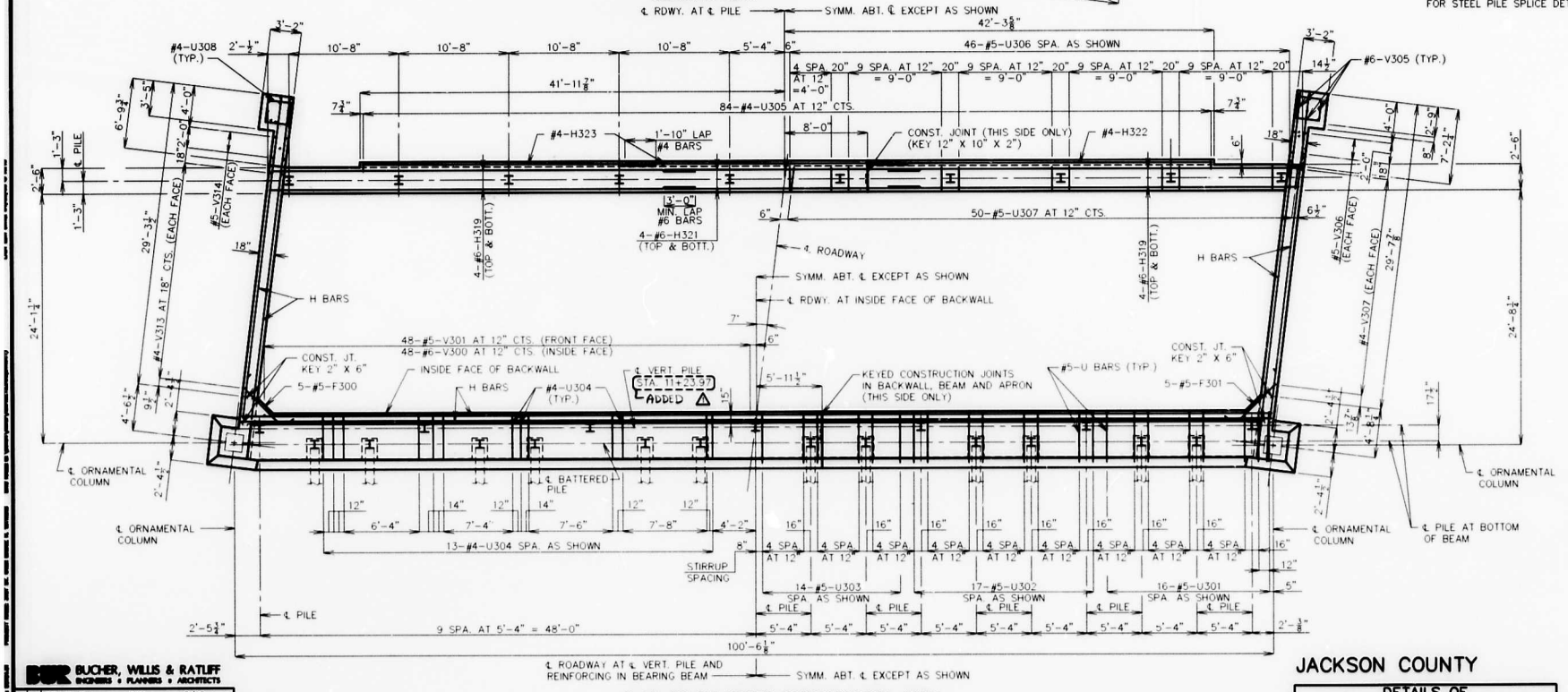
SHEET NO. 12 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PART PLAN OF BEARING SEAT



PLAN BELOW UPPER CONSTRUCTION JOINT

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

STATE OF MISSOURI DANIEL A. CHAPMAN NUMBER E-23644 ENGINEER

4-26-96

JACKSON COUNTY

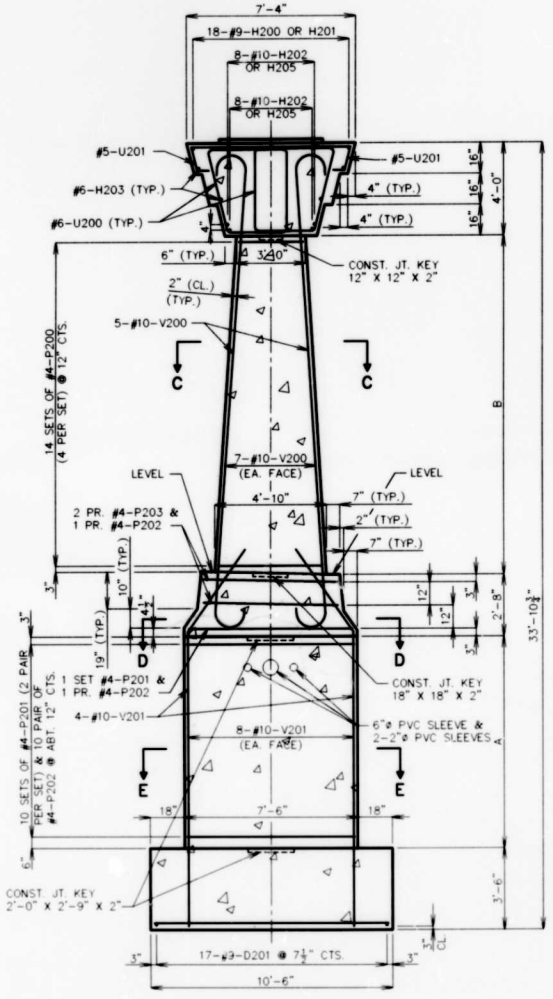
DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

SHEET NO. 15 OF 50

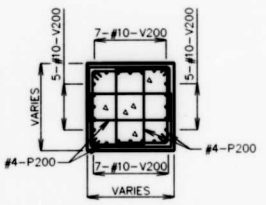
A-5180

[redacted] 24 to 1

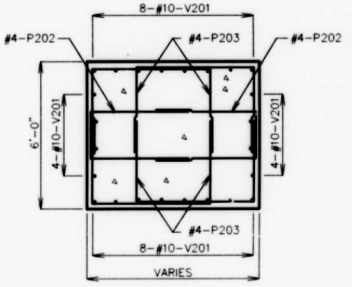
STATE	J. NO.	SHEET NO.
MO.		125



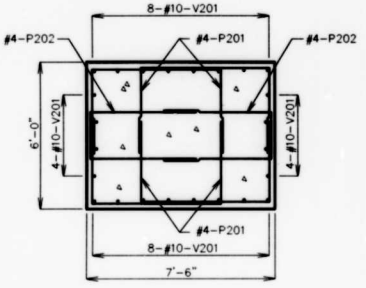
TYPICAL SECTION THRU COLUMN



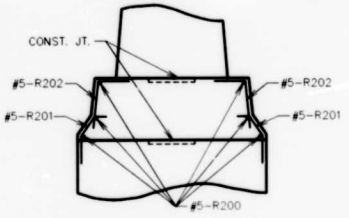
SECTION C-C



SECTION D-D

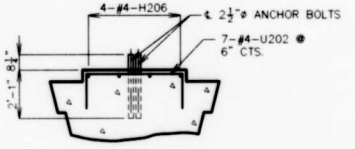


SECTION E-E



PART ELEVATION F-F
(SHOWING R BARS)

FOR LOCATION OF ELEVATION F-F, SEE SHEET NO. 12.



SECTION B-B

NOTE: USE #4-H206 & #4-U202 BARS IN MONOLITHIC BEARING BASES 4" AND OVER IN HEIGHT.

FOR LOCATION OF SECTION B-B, SEE SHEET NO. 12.

TABLE OF DIMENSIONS		
COLUMN NO.	A	B
1	9'-9¼"	13'-11½"
2	9'-10¼"	13'-10½"
3	10'-¼"	13'-8½"
4	10'-2¼"	13'-6½"

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 2		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	437
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	263.3
REINFORCING STEEL (BRIDGE)	LBS.	45,500
REINFORCING STEEL (EPOXY COATED)	LBS.	520
STONE FACADE ON INT. BENT	SQ. FT.	1074

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB 5/93
TRACED BY:	RCC 5/93
CHECKED BY:	SAC 6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2

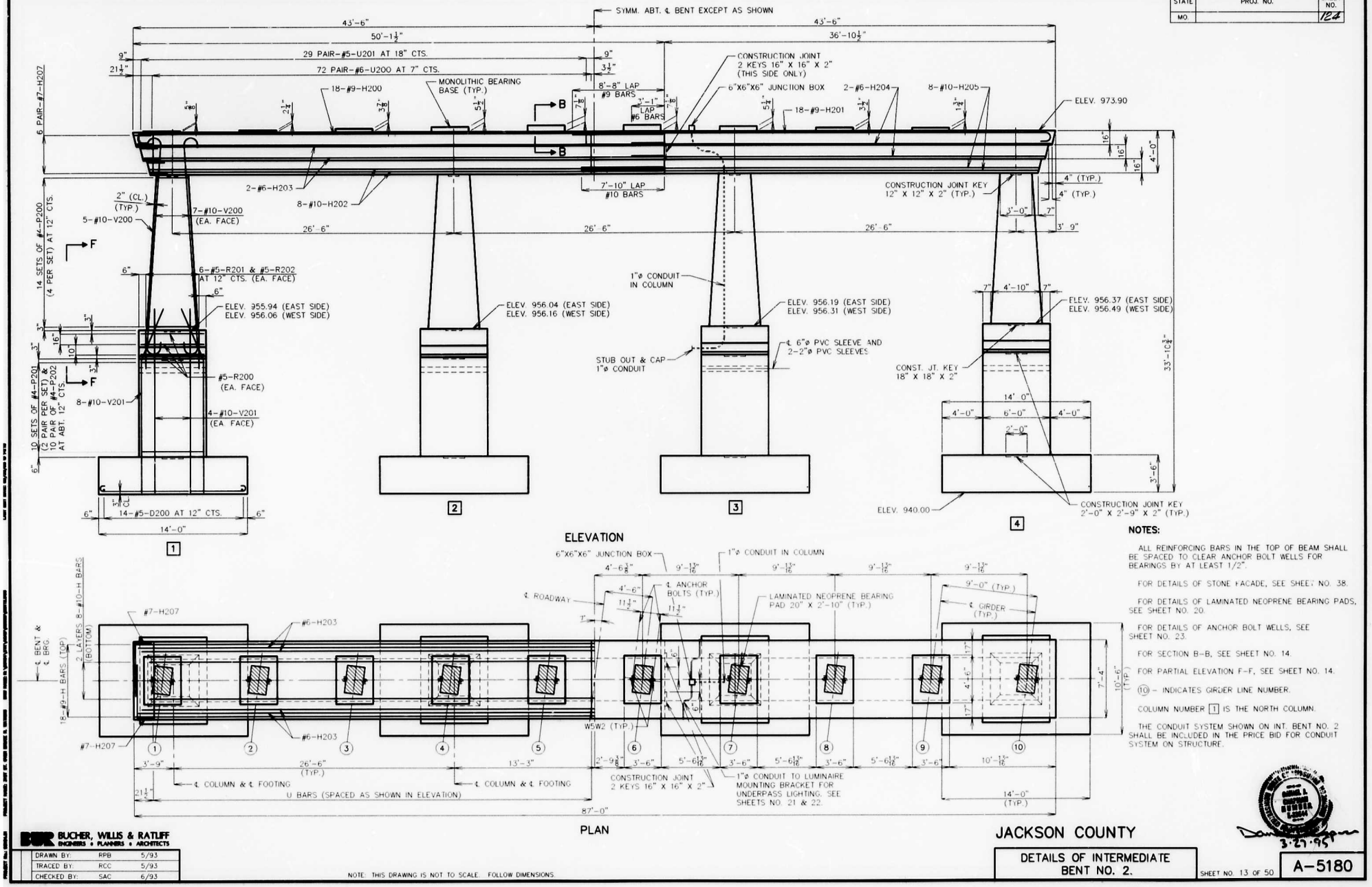
SHEET NO. 14 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 15

STATE	PROJ. NO.	SHEET NO.
MO.		12A



NOTES:

ALL REINFORCING BARS IN THE TOP OF BEAM SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 38.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR SECTION B-B, SEE SHEET NO. 14.

FOR PARTIAL ELEVATION F-F, SEE SHEET NO. 14.

(10) - INDICATES GIRDER LINE NUMBER.

COLUMN NUMBER 1 IS THE NORTH COLUMN.

THE CONDUIT SYSTEM SHOWN ON INT. BENT NO. 2 SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2.

SHEET NO. 13 OF 50

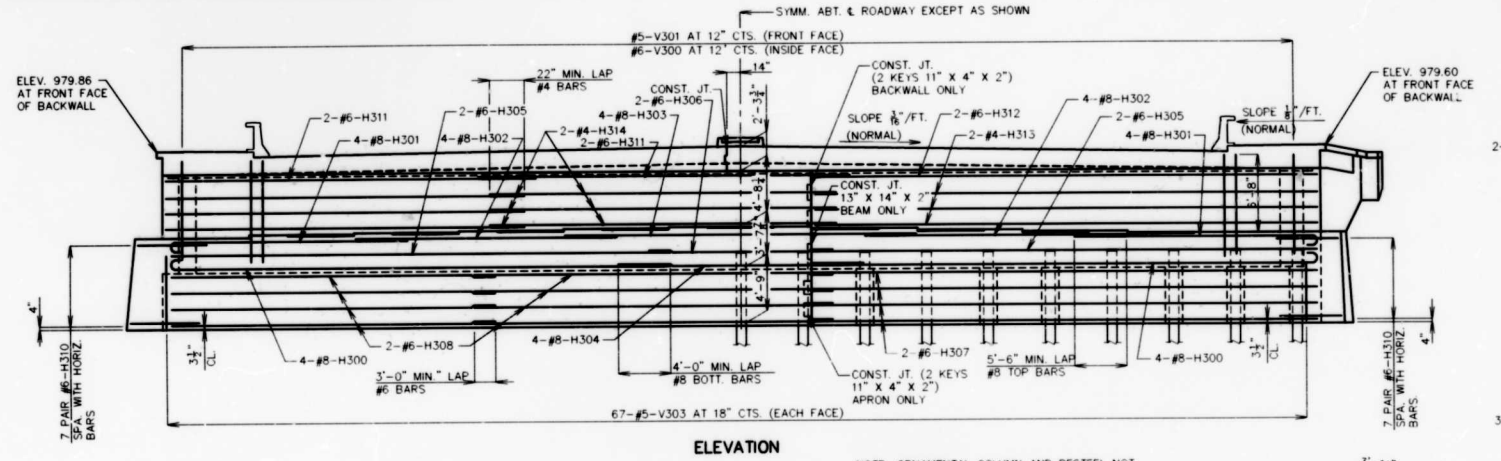
A-5180

3-27-95

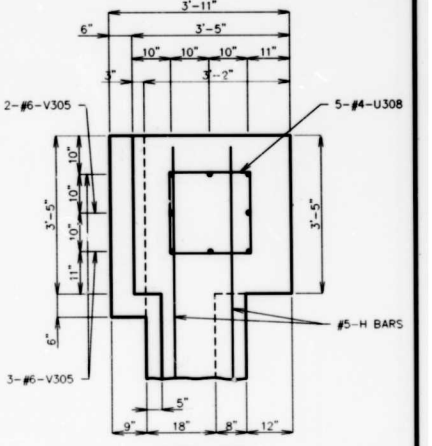
FOR INFORMATION ONLY

A51801, Sht. 16

STATE	PROJ. NO.	SHEET NO.
MO.		

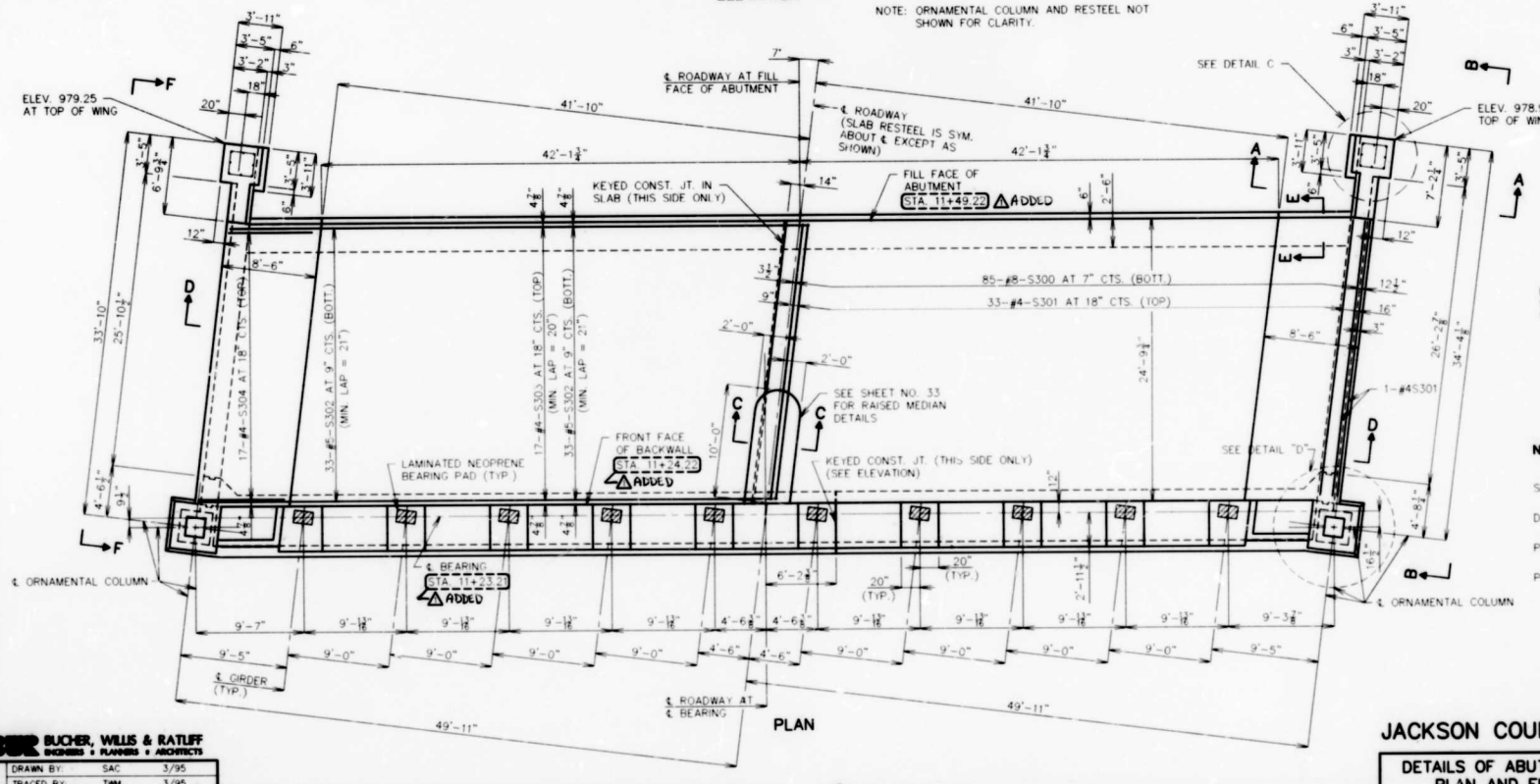


ELEVATION

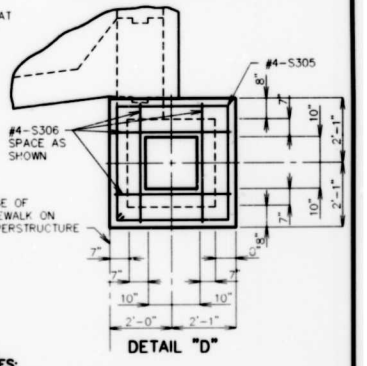


DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

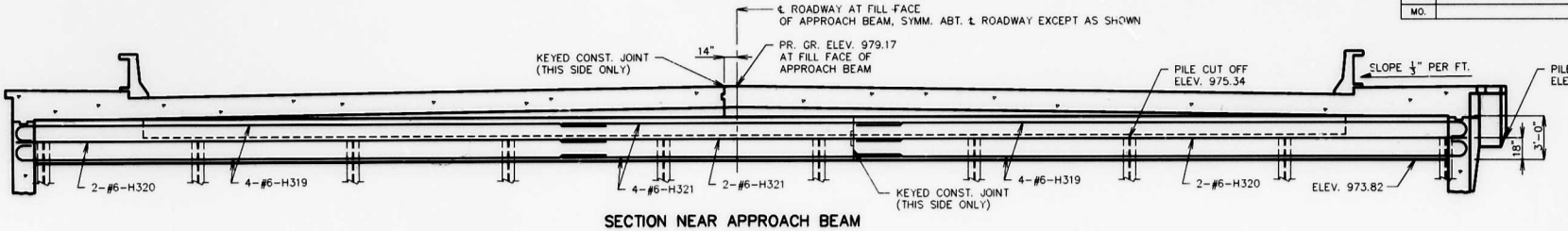
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

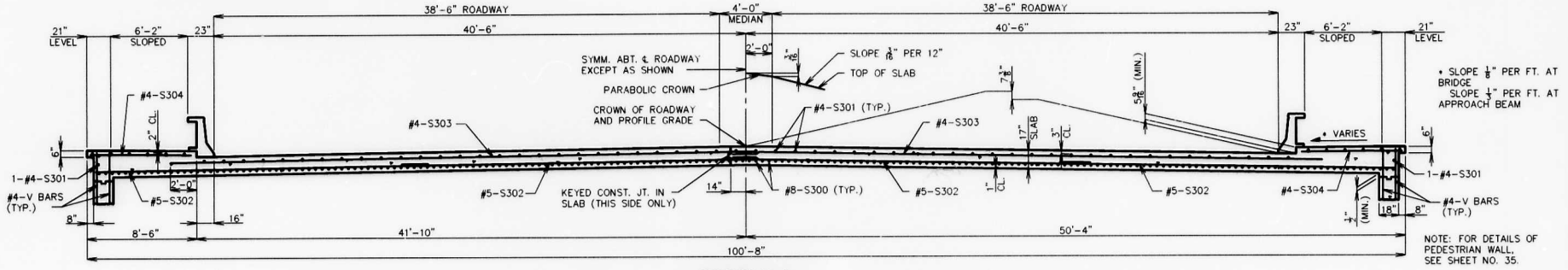
SHEET NO. 16 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		128

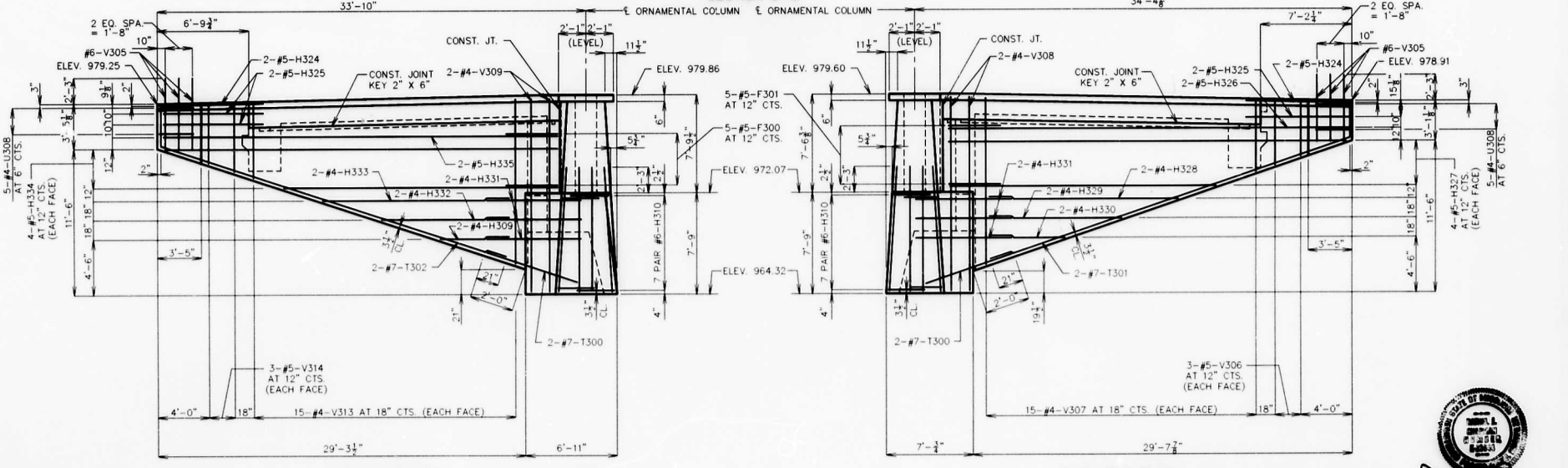


SECTION NEAR APPROACH BEAM



NOTE: FOR DETAILS OF PEDESTRIAN WALL, SEE SHEET NO. 35.

SECTION D-D



ELEVATION F-F

ELEVATION B-B

NOTE:

FOR LOCATION OF ELEVATIONS B-B, D-D AND SECTION F-F, SEE SHEET NO. 16.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 19

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC	3/95
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CHECKED BY:	DMA	3/95

3-27-95

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 WING ELEVATIONS AND SLAB SECTIONS

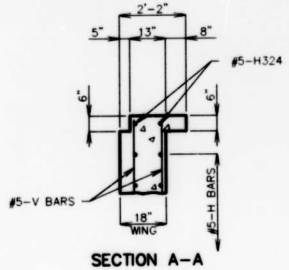
SHEET NO. 17 OF 50

A-5180

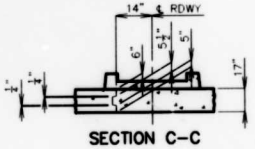
[redacted] 24 to 1

FOR INFORMATION ONLY

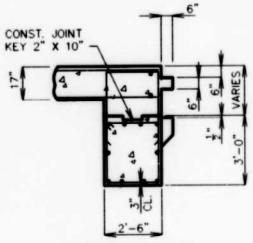
A51801, Sht. 18



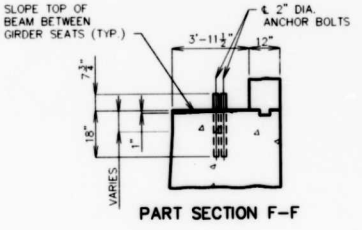
SECTION A-A



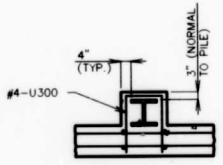
SECTION C-C



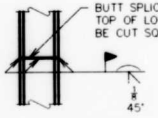
SECTION E-E



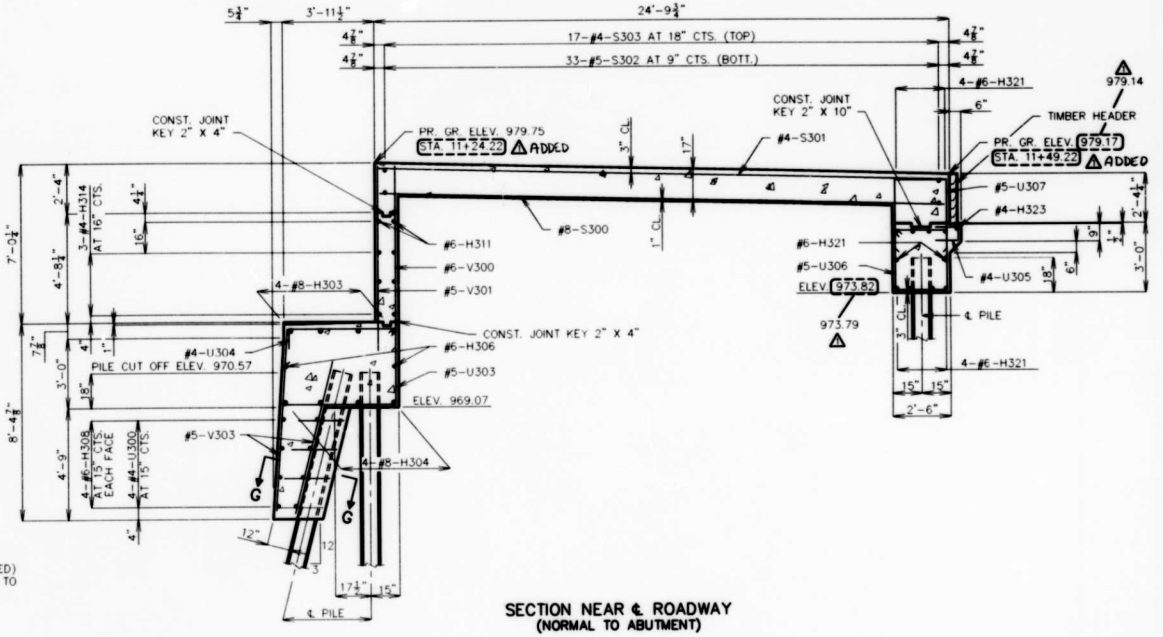
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE

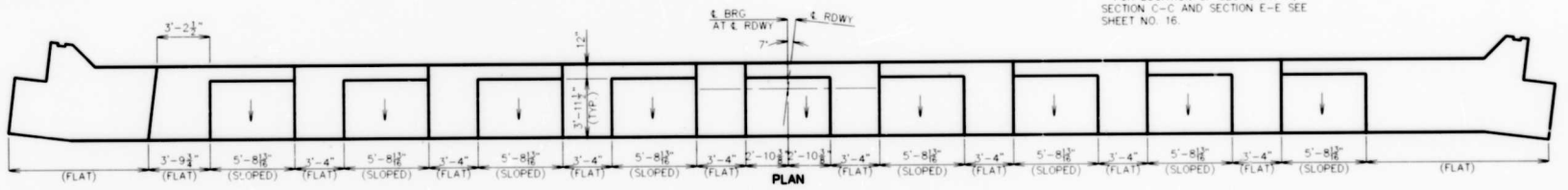


SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

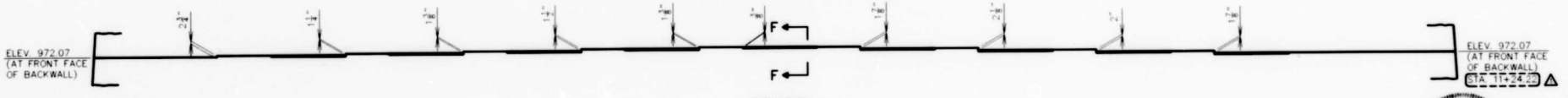
NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.



PLAN



ELEVATION

BEARING SEAT DETAIL

STATE	PROJ. NO.	SHEET NO.
MO.		

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE - FOLLOW DIMENSIONS

△ REVISED 4-25-96

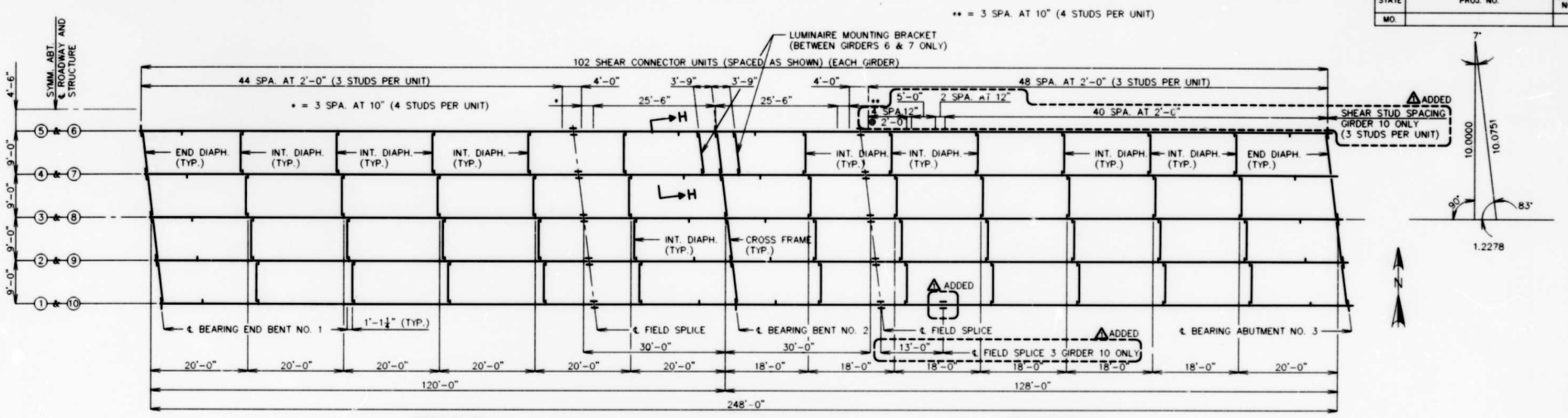
JACKSON COUNTY

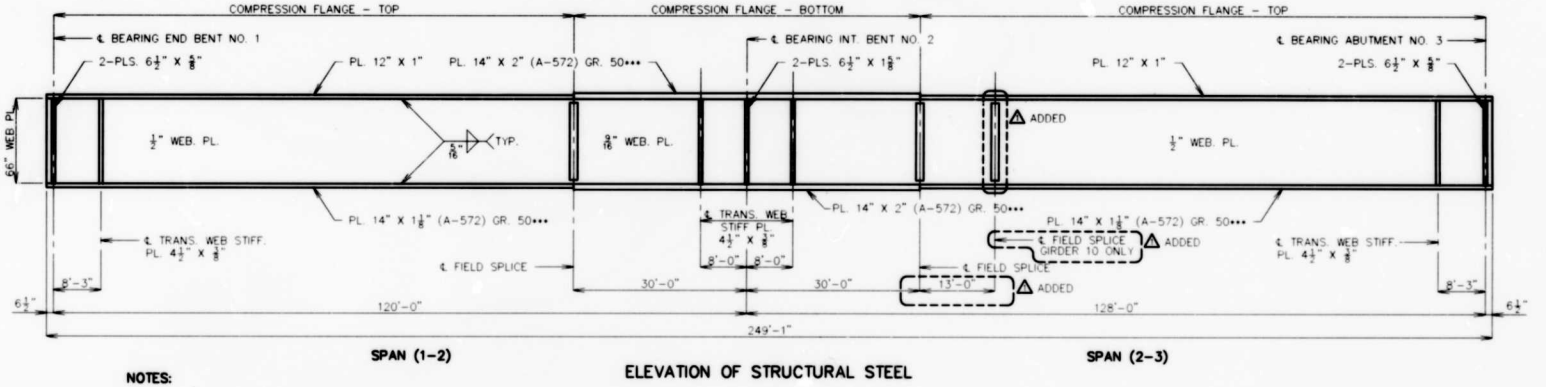
DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

SHEET NO. 18 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		





NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

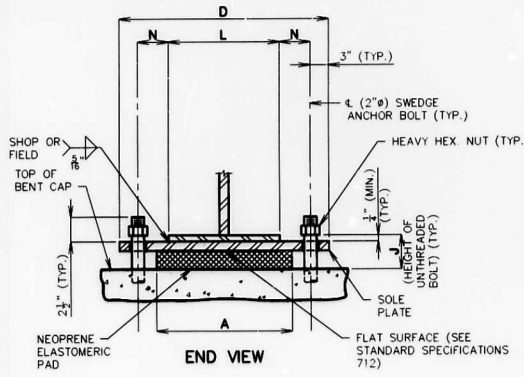
JACKSON COUNTY

PLAN AND ELEVATION OF STRUCTURAL STEEL

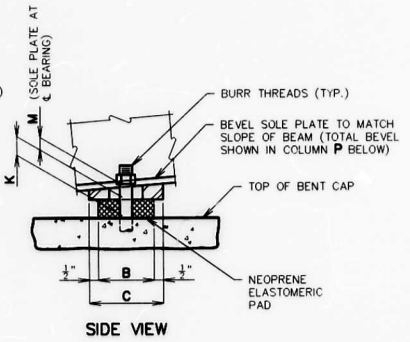
SHEET NO. 21 OF 50

A-5180

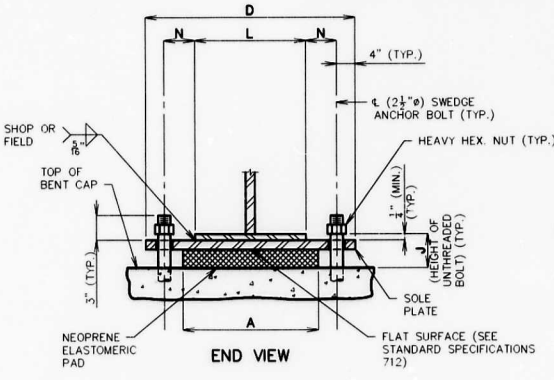
STATE	PROJ. NO.	SHEET NO.
MO.		



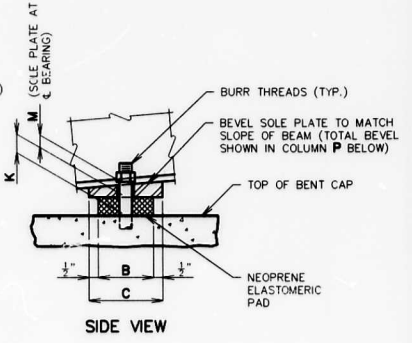
END VIEW



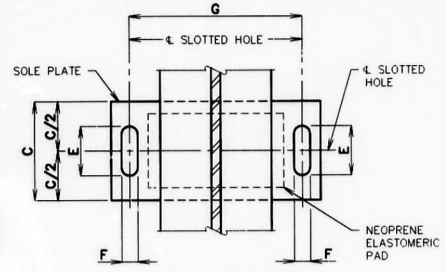
SIDE VIEW



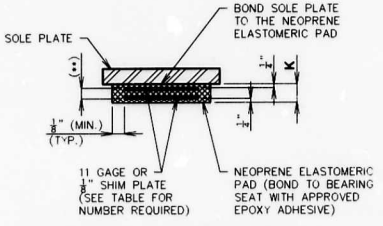
END VIEW



SIDE VIEW

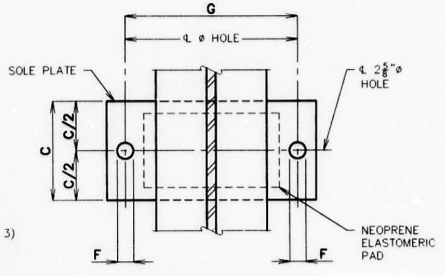


PART PLAN VIEW

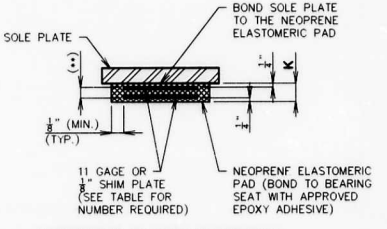


NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	△1 7-⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

DANIEL L. CHAPMAN NUMBER E-22048 STATE OF MISSOURI

9-12-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

△1 REVISED AUGUST 10, 1995

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

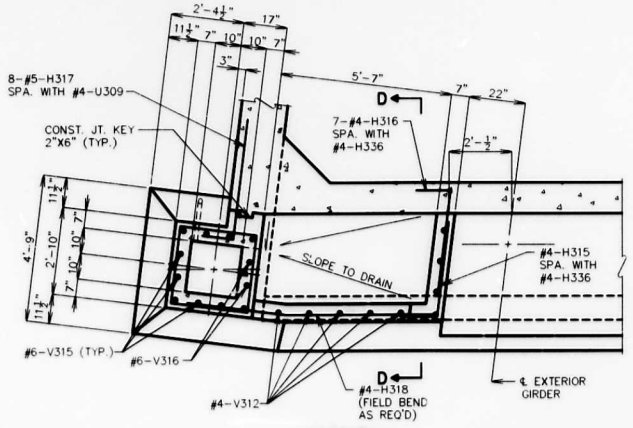
SHEET NO. 20 OF 50

A-5180

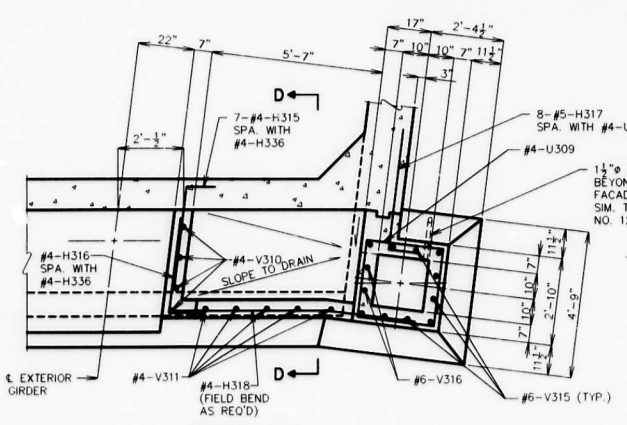
FOR INFORMATION ONLY

A51801, Sht. 21

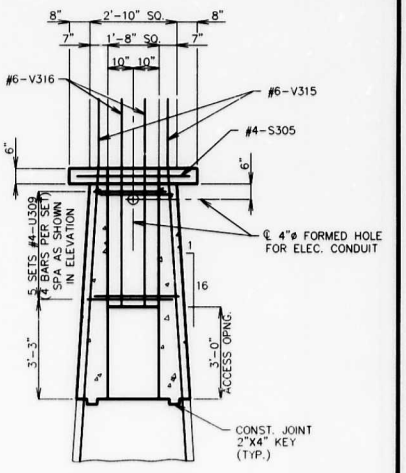
STATE	PROJ. NO.	SHEET NO.
MO.		130



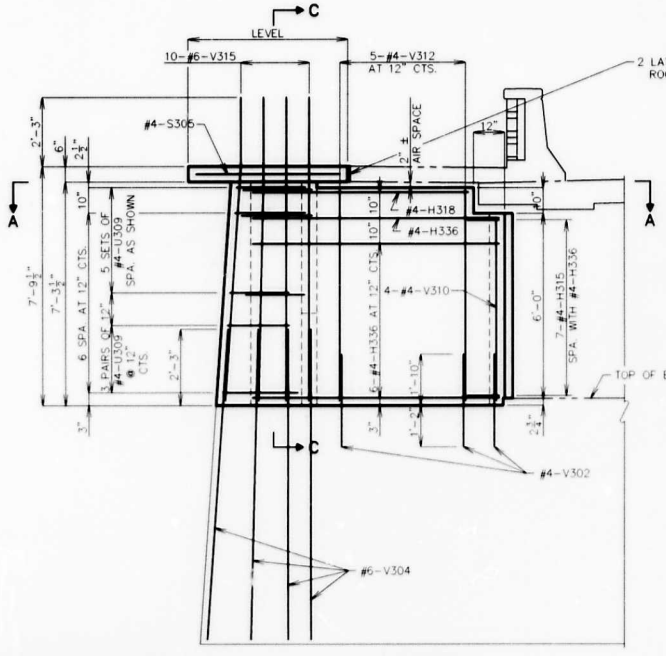
SECTION A-A



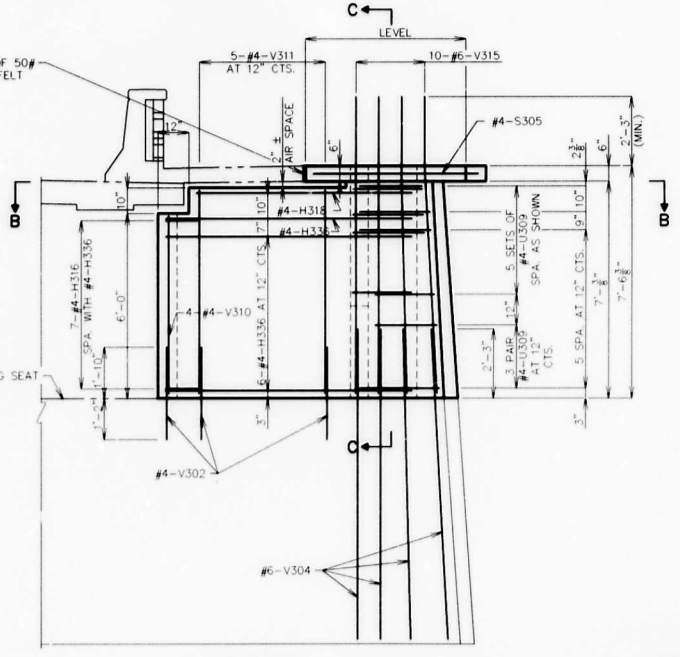
SECTION B-B



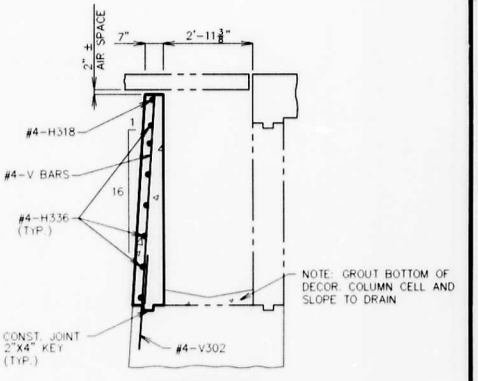
SECTION C-C



ELEVATION NORTH WING



ELEVATION SOUTH WING



SECTION D-D

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 ORNAMENTAL COLUMN

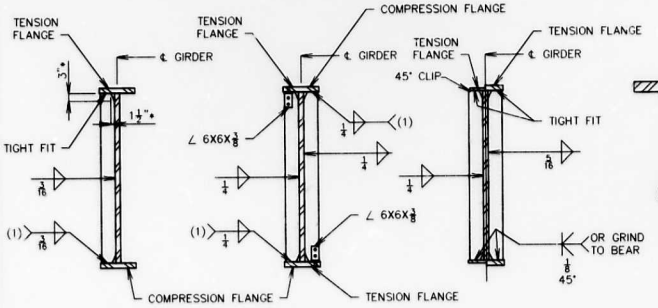
SHEET NO. 19 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 22

STATE	PROJ. NO.	SHEET NO.
MO.		133

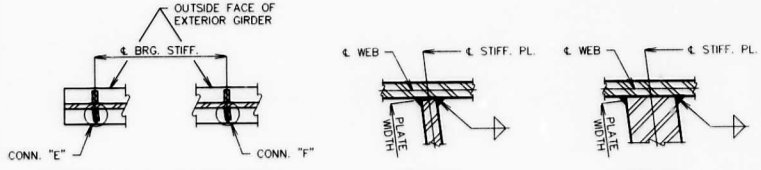


INT. WEB STIFF. (ONE SIDE ONLY) | INT. DIAPH. CONN. PLATE | END BRG. STIFF. | INT. BRG. STIFF.

BRG. STIFF. BEVEL DETAIL

(1) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.

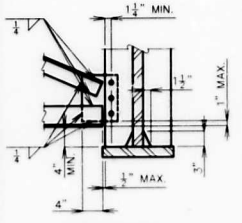
* TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF.



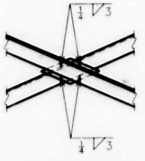
END BRG. STIFF. | INT. BRG. STIFF. | CONN. "E" | CONN. "F"

TYPICAL LOCATION DETAILS

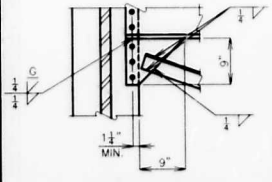
WELDING DETAILS



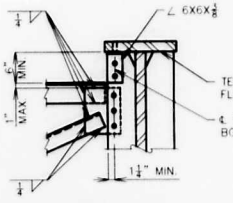
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

NOTES:

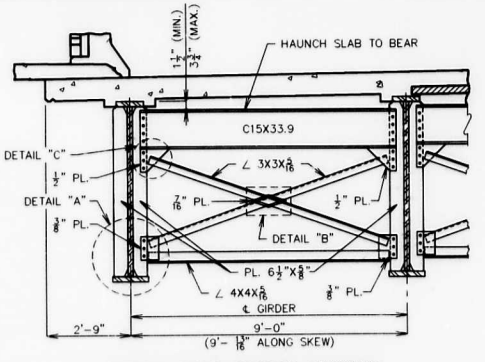
END DIAPHRAGMS, CROSS FRAMES AND INTERMEDIATE DIAPHRAGMS USE ¾" HIGH STRENGTH BOLTS.

PAYMENT FOR LUMINAIRE MOUNTING BRACKETS AND MOUNTING PLATE IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

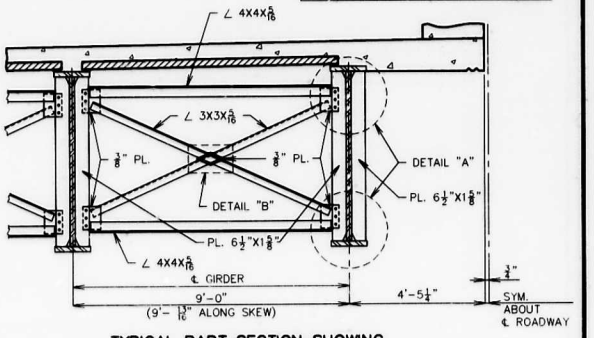
AT THE CONTRACTORS OPTION, HOLES IN THE DIAPHRAGM PLATE OF NON SLAB BEARING DIAPHRAGMS MAY BE MADE 3/16" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT. A HARDENED WASHER MAY BE USED UNDER THE BOLT HEAD AND NUT WHEN THIS OPTION IS USED. HOLES IN THE GIRDER DIAPHRAGM CONNECTION PLATE OR TRANSVERSE WEB STIFFENER SHALL BE STANDARD SIZE.

THE COST OF FURNISHING, FABRICATING AND INNSTALLING THE LUMINAIRE MOUNTING BRACKET, COMPLETE-IN-PLACE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR CONDUIT SYSTEM ON STRUCTURE.

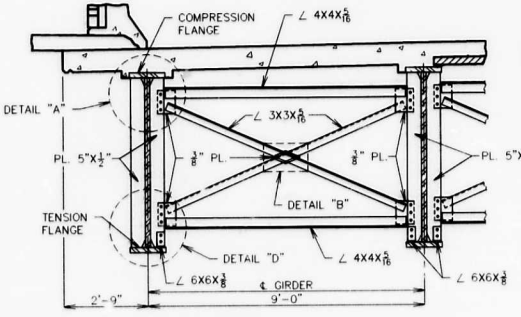
SEE SHEET NO. 21 FOR LOCATION OF SECTION H-H.



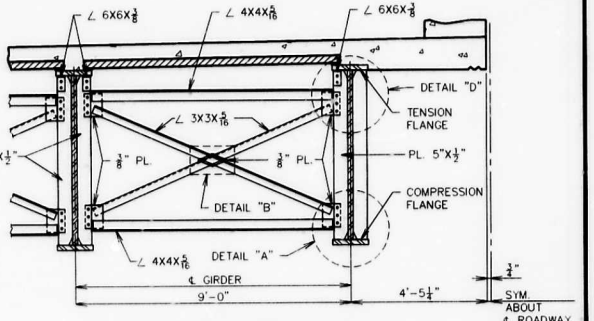
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



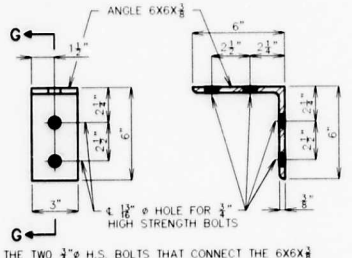
TYPICAL PART SECTION SHOWING CROSS FRAMES



TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS BOTTOM FLANGE IN TENSION

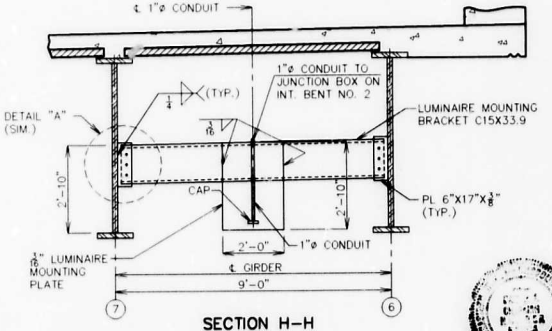


TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS TOP FLANGE IN TENSION



THE TWO ¾"ø H.S. BOLTS THAT CONNECT THE 6X6X⅜ ANGLE TO THE TOP FLANGE SHALL BE PLACED SO THE NUT IS ON THE INSIDE OF FLANGE TOWARD THE WEB.

DETAIL OF FLANGE CONNECTION ANGLE | SECTION G-G



SECTION H-H

3·21·95

JACKSON COUNTY

DETAILS OF CROSS FRAMES AND DIAPHRAGMS

SHEET NO. 22 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
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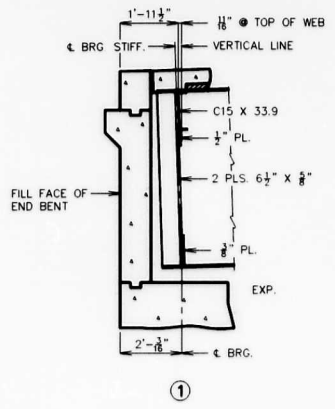
DRAWN BY:	KLW	4/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

FOR INFORMATION ONLY

A51801, Sht. 23

STATE	PROJ. NO.	SHEET NO.
MO.		134



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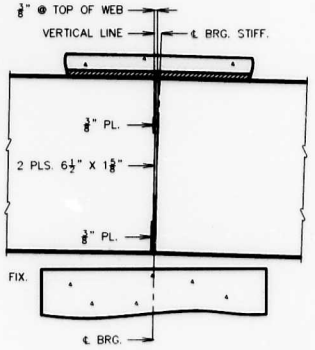
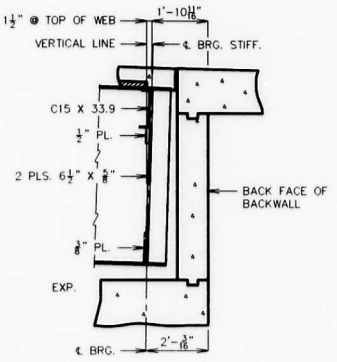
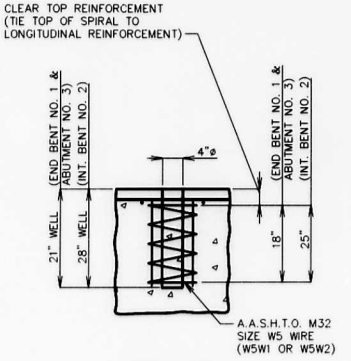


②

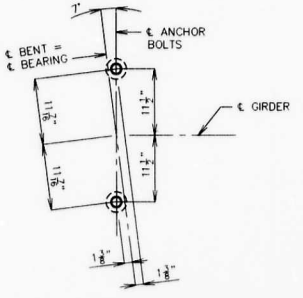


③

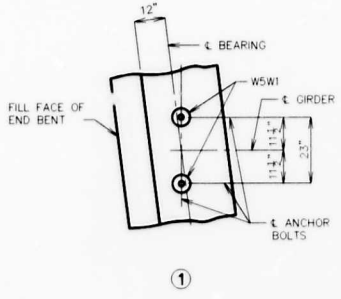
PART LONGITUDINAL SECTION
(NEAR INTERIOR GIRDER)



DETAIL OF ANCHOR BOLT WELLS



ANCHOR BOLT LOCATION DETAIL



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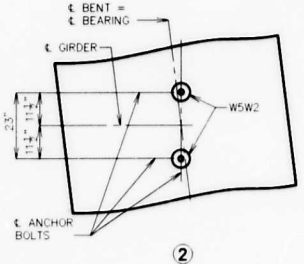

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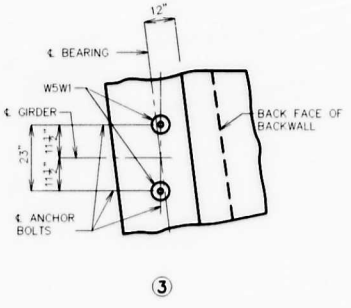


③

PART PLAN OF ANCHOR BOLTS

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

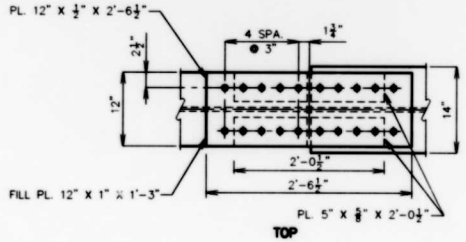
JACKSON COUNTY

MISCELLANEOUS DETAILS OF STRUCTURAL STEEL

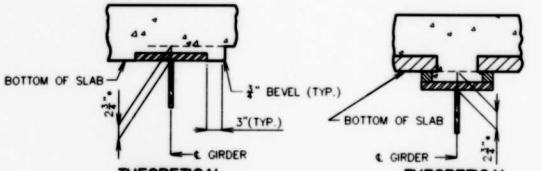
SHEET NO. 23 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



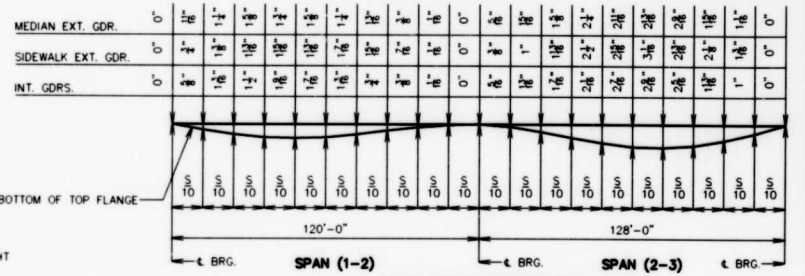
TOP



THEORETICAL SLAB HAUNCH (C.I.P. SECTION)

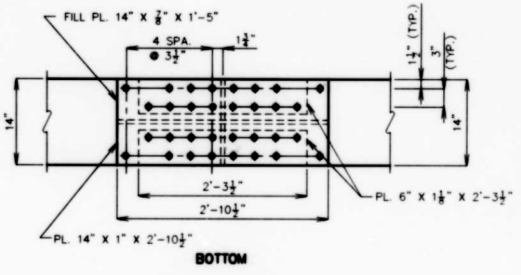
THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.



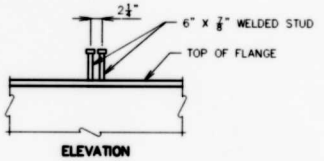
DEAD LOAD DEFLECTION

NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.

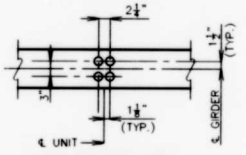


BOTTOM

PLAN OF FLANGE



ELEVATION



PLAN OF STUD CONN. (4 STUDS PER UNIT)

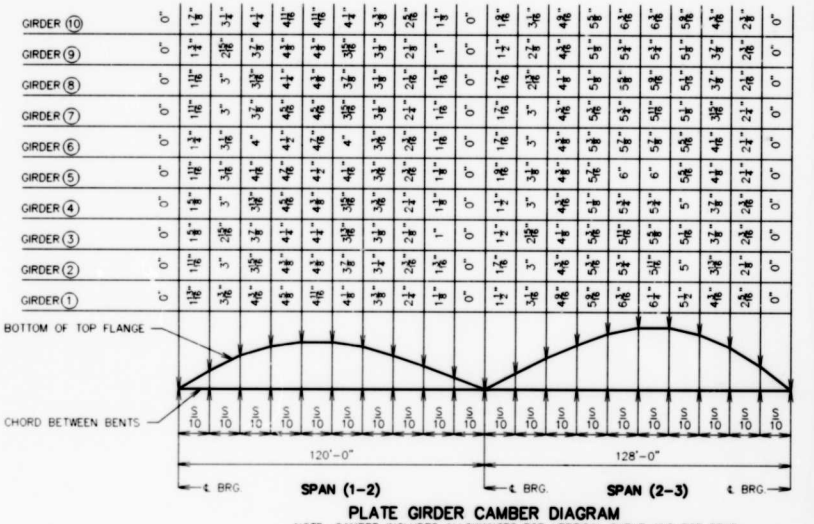
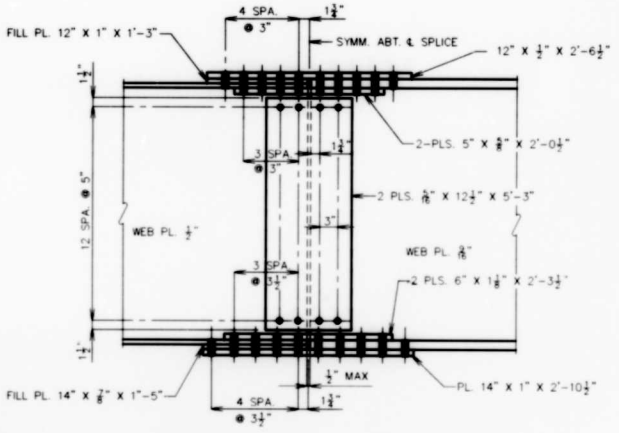


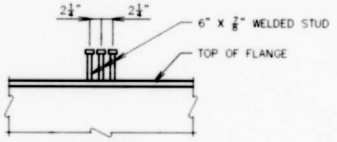
PLATE GIRDER CAMBER DIAGRAM

NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

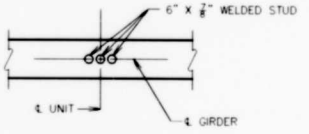


DETAIL OF BOLTED FIELD SPLICE

NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 15/16"ø REAMED HOLES



ELEVATION



PLAN OF STUD CONN. (3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)

⚠ ADDED FIELD SPLICE 3 GIRDER TO IS SIMILAR. NO FILL PLATES REQUIRED

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

JACKSON COUNTY

CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

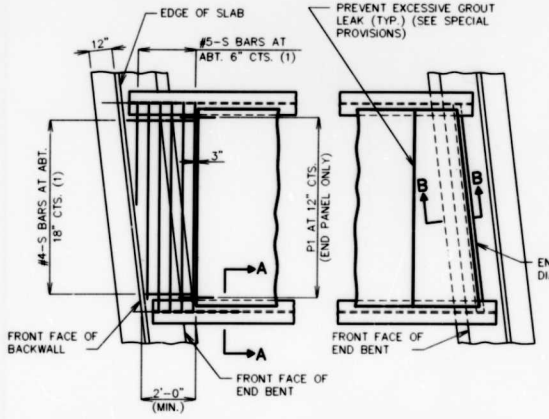
SHEET NO. 24 OF 50

A-5180

FOR INFORMATION ONLY

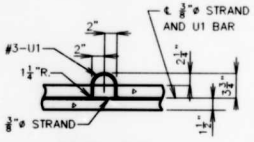
A51801, Sht. 25

STATE	PROJ. NO.	SHEET NO.
MO.		138

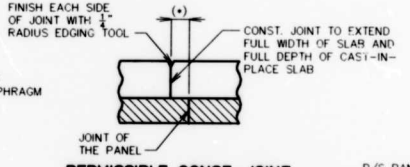


PANELS – SQUARED ENDS **PANELS – SKEWED ENDS**

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

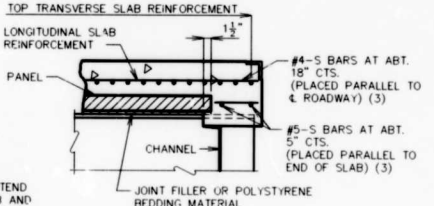


DETAIL "A"

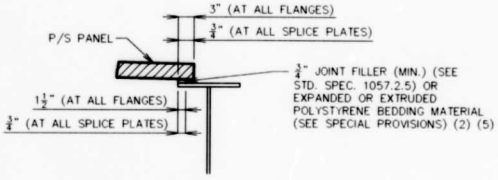


PERMISSIBLE CONST. JOINT

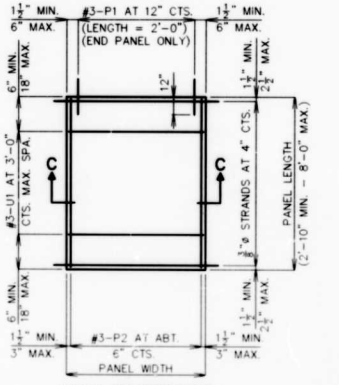
(•) ADJUST THE PERMISSIBLE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE JOINTS OF THE PANELS.



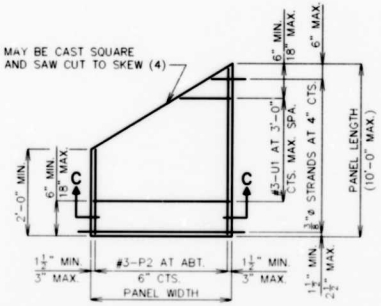
PART SECTION B–B



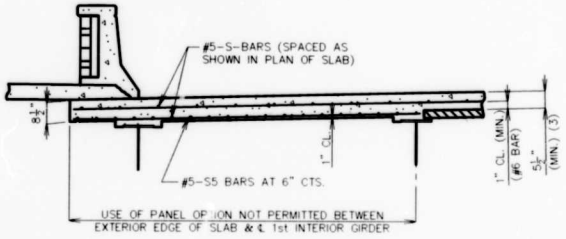
SECTION A–A



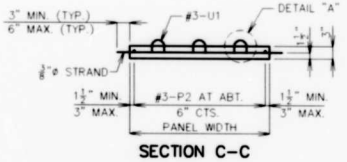
PLAN OF PRECAST PRESTRESSED PANEL



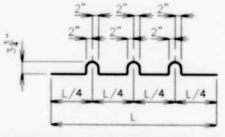
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END OPTIONAL)



SECTION THRU CANTILEVER AND EXTERIOR GIRDER BAY



SECTION C–C



BENDING DIAGRAM FOR U1 BAR

(U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.)

NOTES:

(1) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY. COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(2) ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE % OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

(3) S-BARS SHOWN ARE USED WITH SKEWED END PANELS ONLY. THE #5-S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES. S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(4) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATOR'S OPTION.

(5) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1-1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 24 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'C = 5,000 PSI, F'CI = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7), LOW-RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMAL ULTIMATE STRENGTH = 22,950 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/4 INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN 1/2 INCH THICK OVER A SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT THE SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P3 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2FT.

THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8"ø STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
#3-P2 BARS AT 16 INCHES.
WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 INCHES.

TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR TO THE WELDED DEFORMED BAR MATS AT ABOUT 3'-0" CENTERS.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 4/93
TRACED BY:	RCC 4/93
CHECKED BY:	DJM 5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

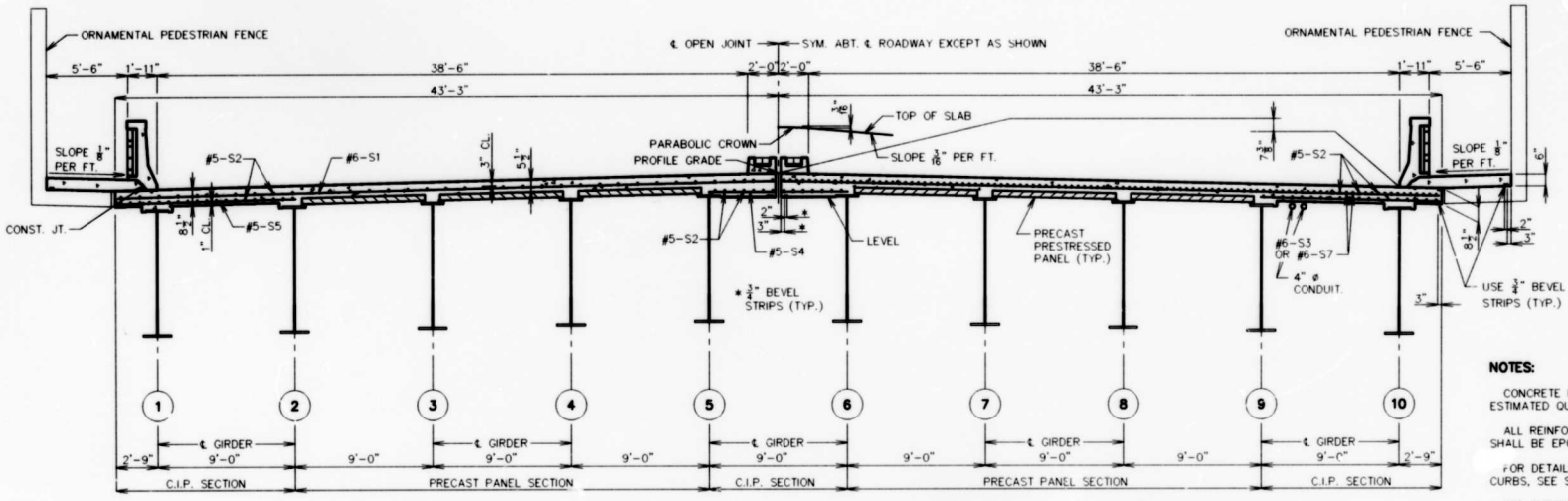
JACKSON COUNTY

DETAILS OF PRECAST PRESTRESSED PANELS

SHEET NO. 27 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		157



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INTERMEDIATE BENT

NOTES:

CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON STEEL.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURBS, SEE SHEET NO. 34.

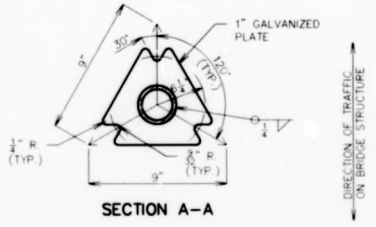
FOR THEORETICAL SLAB HAUNCH AND DEAD LOAD DEFLECTION DIAGRAM, SEE SHEET NO. 24.

FOR DETAILS OF BRIDGE SIDEWALK SEE SHEETS NO. 31 & 32.

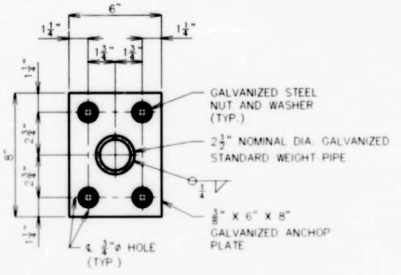
FOR DETAILS OF PRECAST PRESTRESSED PANELS, SEE SHEET NO. 27.

FOR DETAILS AND REINFORCEMENT OF RAISED MEDIAN SEE SHEET NO. 33.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE, SEE SHEETS NO. 42-45.



SECTION A-A



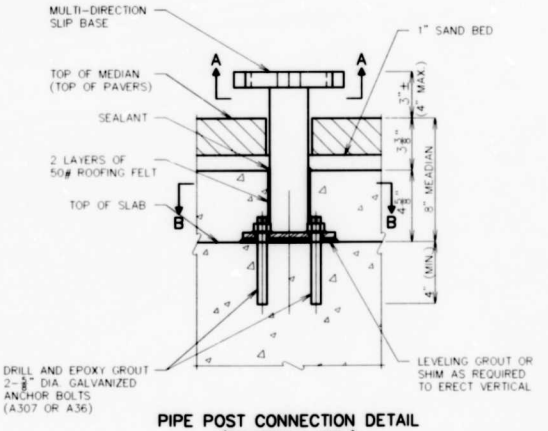
SECTION B-B

NOTES:

SEE MISSOURI STANDARD PLANS DRAWING 903.03AQ FOR GENERAL NOTES AND DETAILS OF PIPE POST CONNECTION FOR HIGHWAY SIGNING.

WRAP PORTION OF POST TO BE EMBEDDED IN CONCRETE MEDIAN WITH 2 LAYERS OF 50# ROOFING FELT. CAULK PERIMETER OF POST AT INTERFACE BETWEEN C.I.P. CONCRETE MEDIAN AND SAND BED.

SEE SHEET NO. 33 FOR PIPE POST CONNECTION LOCATIONS.



PIPE POST CONNECTION DETAIL (ROADWAY ITEM)

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

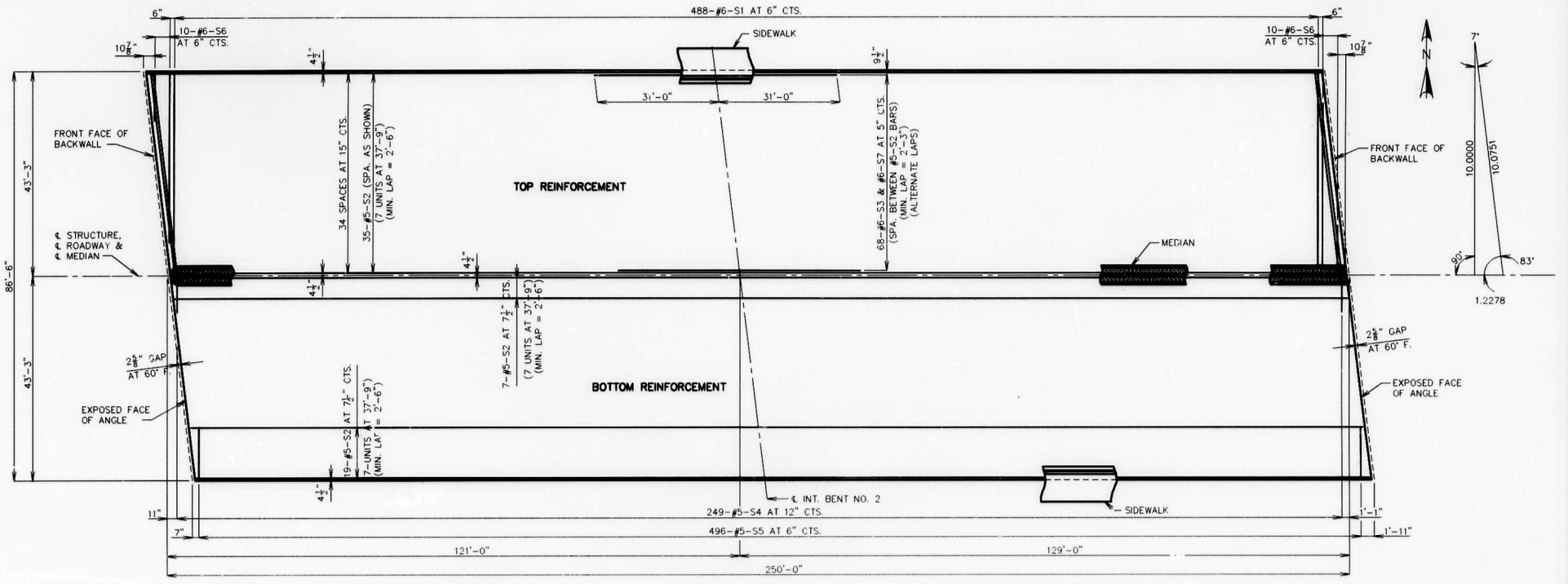
DETAILS OF SLAB CROSS SECTION

SHEET NO. 26 OF 50

A-5180

[redacted] 24 to 1

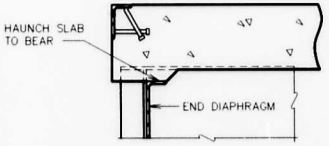
STATE	PROJ. NO.	SHEET NO.
MO.		130



PLAN OF SLAB SHOWING REINFORCEMENT

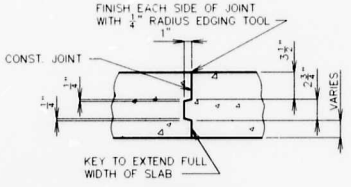
NOTE: LONGITUDINAL DIMENSIONS ARE HORIZONTAL.

LONGITUDINAL REINFORCING STEEL SHALL BE PLACED SO THAT ENDS SHALL NOT BE MORE THAN 1"± FROM VERTICAL LEG OF ANGLE AT EXPANSION DEVICE.

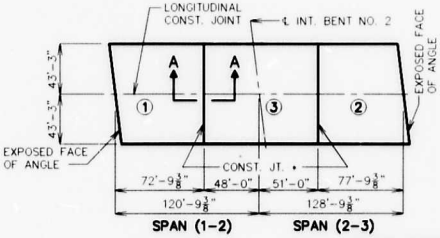


PART LONGITUDINAL SECTION AT END OF SLAB

SECTION CUT THROUGH CAST-IN-PLACE SLAB FOR PART LONGITUDINAL SECTION THROUGH PRECAST PANEL SEE SHEET NO. 27.



SECTION A-A



	SEQUENCE OF POURS			MIN. RATE OF POUR CU. YDS./HR.
	DIRECTION			WITH RETARDER
BASIC SEQUENCE	1	2	3	25
	EITHER DIRECTION			
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.				
ALTERNATE "A" POURS	1		3 + 2	45
	END TO 3		1 TO END	
ALTERNATE "B" POURS	1 + 3 + 2			45
	END TO END			

SLAB POURING SEQUENCE

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

• FOR DETAIL OF CONSTRUCTION JOINT AT PRESTRESSED PANELS SEE SHEET NO. 27.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	4/93
TRACED BY:	RCC	4/93
CHECKED BY:	DJM	5/93

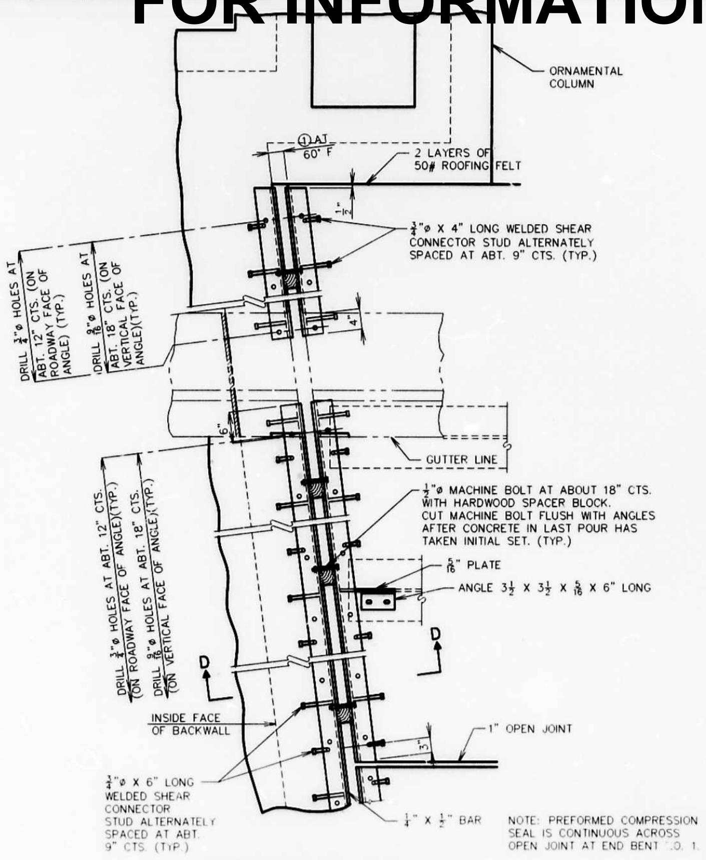
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF SLAB PLAN

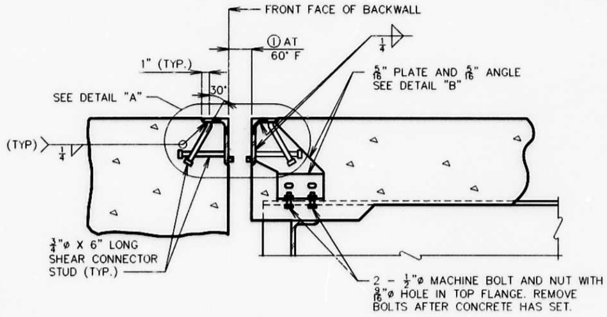
SHEET NO. 25 OF 50

A-5180

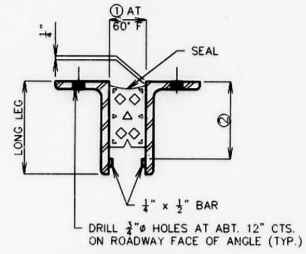


PART PLAN AT END BENT NO. 1
(ABUTMENT NO. 3 SIMILAR)

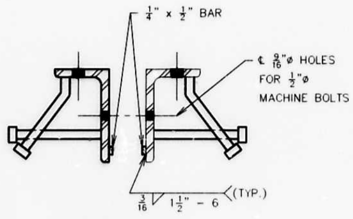
FOR DETAILS OF EXPANSION JOINT THRU MEDIAN, SEE SHEET NO. 29.



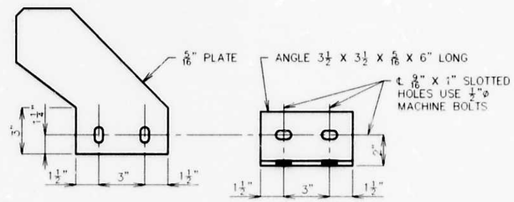
PART SECTION D-D



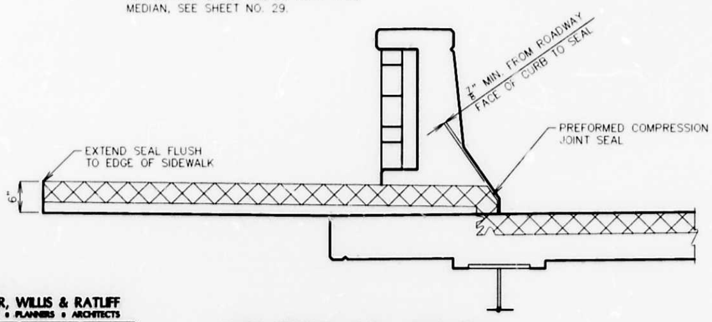
PART CROSS SECTION
THRU EXPANSION JOINT



DETAIL "A"



DETAIL "B"



PART SECTION THRU JOINT SEAL

TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS

LOCATION	SEAL WIDTH	①	②	REQUIRED MOVEMENT RANGE
BENT NO. 1	4.0"	2 5/8"	SEAL DEPTH + 3/4"	1.6"
ABUTMENT NO. 3	4.0"	2 5/8"	SEAL DEPTH + 3/4"	1.6"

NOTE: DEPTH OF SEAL SHALL NOT BE LESS THAN WIDTH OF SEAL.

SIZE OF ARMOR JOINT

VERTICAL LEG OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL +1 1/2". VERTICAL LEG OF ANGLE IN SIDEWALK SHALL BE A MAXIMUM OF 6". HORIZONTAL LEG OF ANGLE SHALL BE A MINIMUM OF 3". MINIMUM THICKNESS OF ANGLE SHALL BE 1/2".

IF A SEAL SIZE LARGER THAN THAT INDICATED ON THE PLANS IS USED, THE MOVEMENT RANGE, THE OPENING AT 60° F AND ALL DIMENSIONS FOR THE ARMOR ANGLES SHALL BE SHOWN ON THE SHOP DRAWINGS.

GENERAL NOTES:

STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN ONE SECTION, EXCEPT THAT WHEN THE LENGTH IS OVER 50', SPLICING IS PERMISSABLE.

THE EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.

STRUCTURAL STEEL FOR THE ARMORED JOINT SHALL BE GRADE A36.

ANCHORS FOR COMPRESSION SEAL ARMOR SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F.

DIMENSION ① SHALL BE INCREASED 1/8" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 1/8" FOR EACH 10° RISE IN TEMPERATURE AT INSTALLATION.

SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PREFORMED EXPANSION JOINT SEAL.

NEOPRENE EXTRUSIONS SHALL MEET A.S.T.M. D3542-83.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

3-27-95

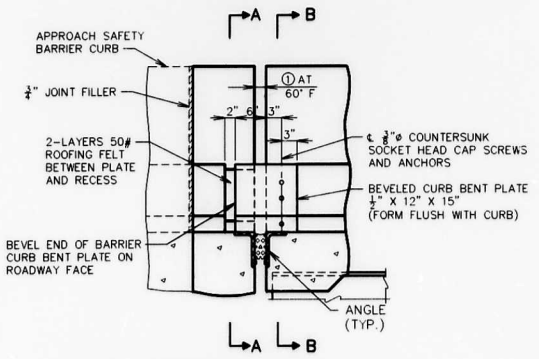
JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL

A-5180

24 to 1

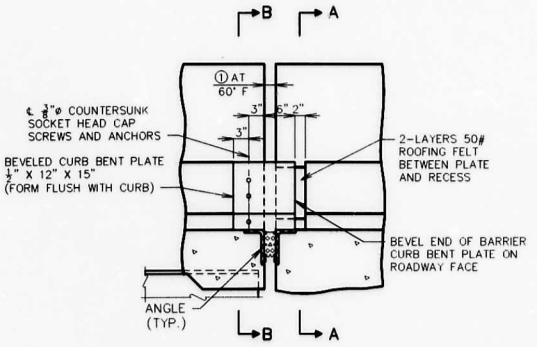
STATE	PROJ. NO.	SHEET NO.
MO.		140



PART ELEVATION OF BARRIER CURB AT END BENT NO. 1

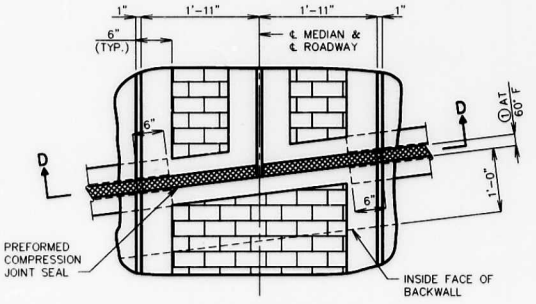
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR

SEE SHEET NO. 26 FOR DIMENSION ①.

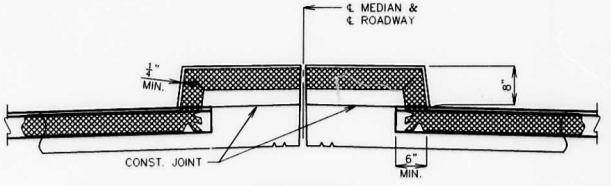


PART ELEVATION OF BARRIER CURB AT ABUTMENT NO. 3

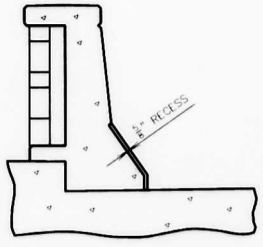
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR



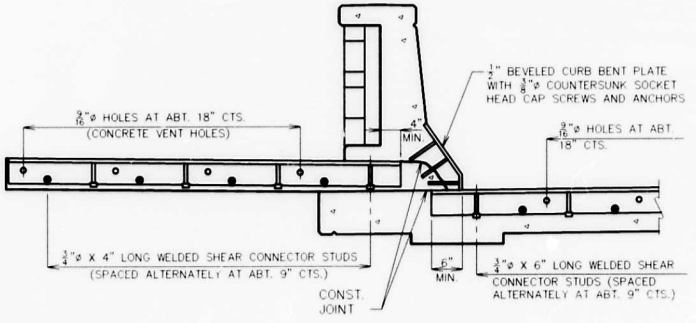
PART PLAN OF JOINT SEAL THRU MEDIAN AT ABUTMENT NO. 3



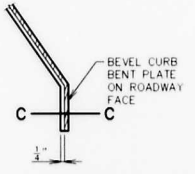
SECTION D-D



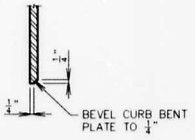
PART SECTION A-A



PART SECTION B-B



PART ELEVATION AT END OF BEVELED CURB BENT PLATE



SECTION C-C

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AND BENT CURB PLATES

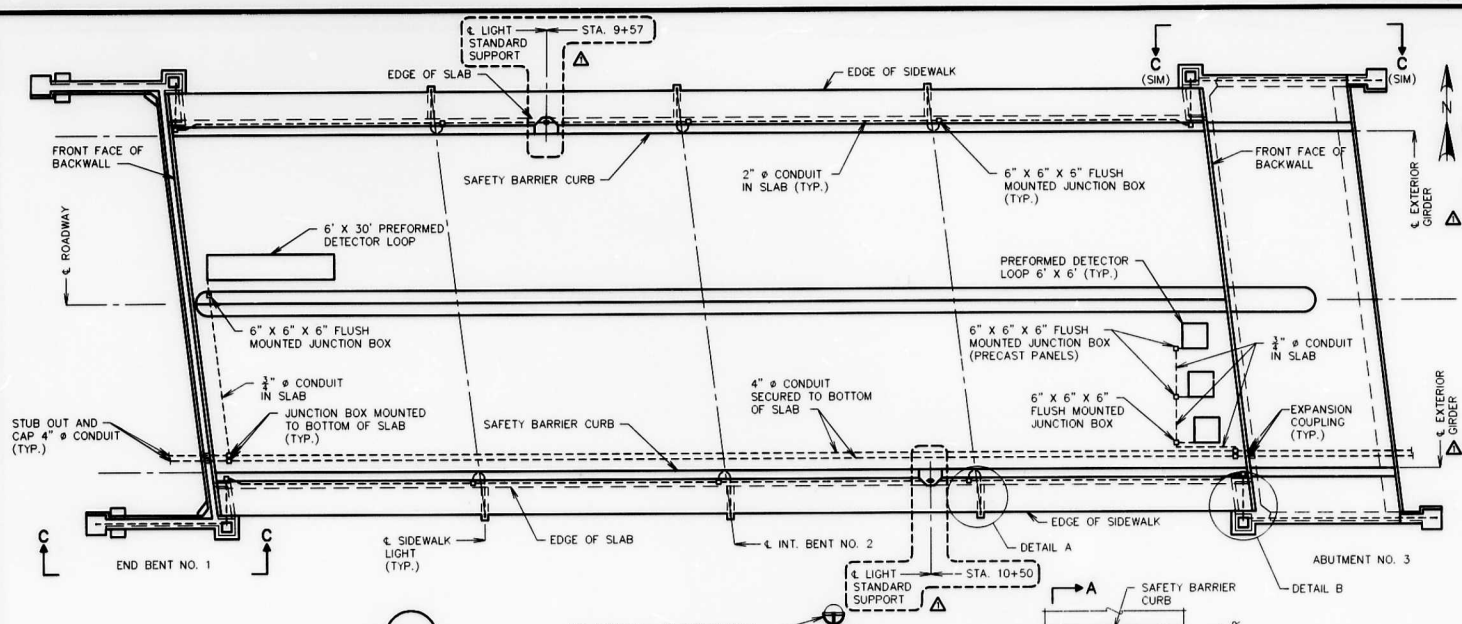
SHEET NO. 29 OF 50

A-5180

3-27-95

FOR INFORMATION ONLY

A51801, Sht. 30



STATE	PROJ. NO.	SHEET NO.
MO.		141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN ETHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS.

⚠ CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

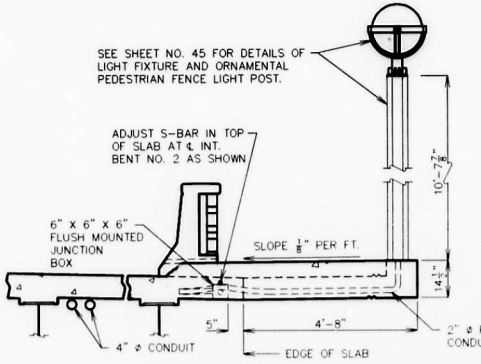
4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

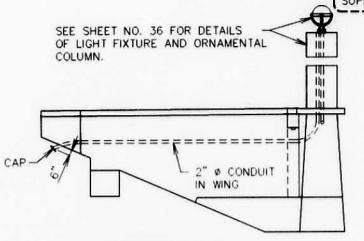
THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

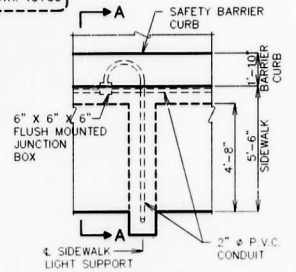
⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.



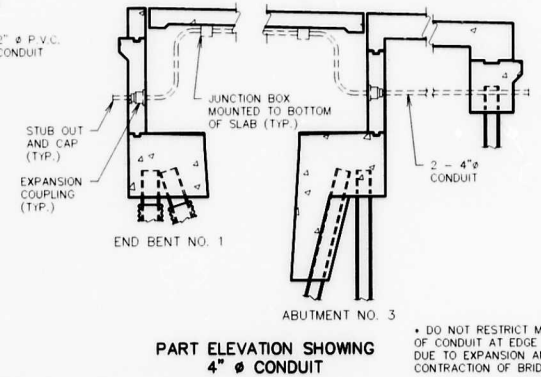
SECTION A-A



SECTION C-C

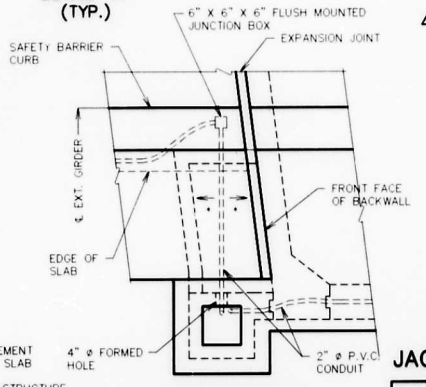


DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE



DETAIL "B" (TYP.)

BUCHER, WILLIS & RATLIFF
ENGINEERS : PLANNERS : ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

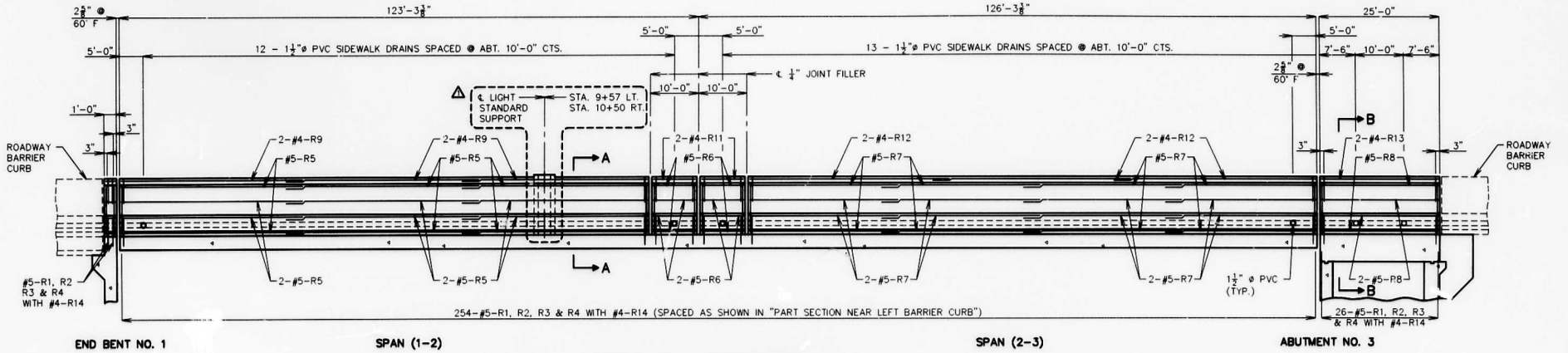
JACKSON COUNTY

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

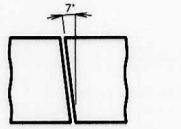
STATE	PROJ. NO.	SHEET NO.
MO.		165



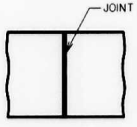
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

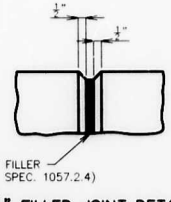


AT 2⅝" EXPANSION JOINT

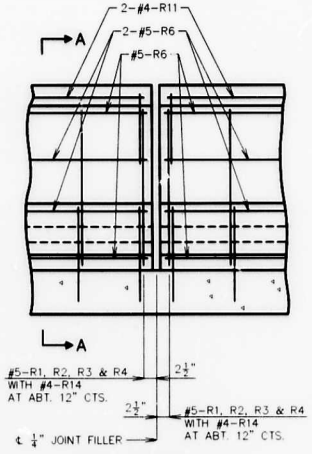


AT ¼" JOINT

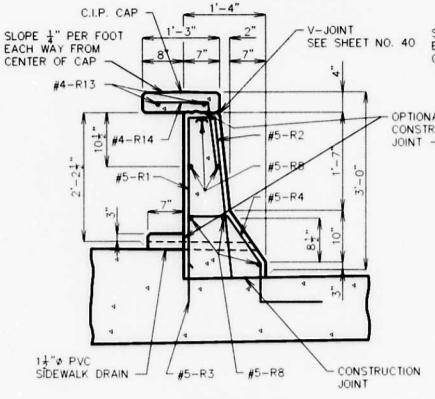
PART PLAN VIEW



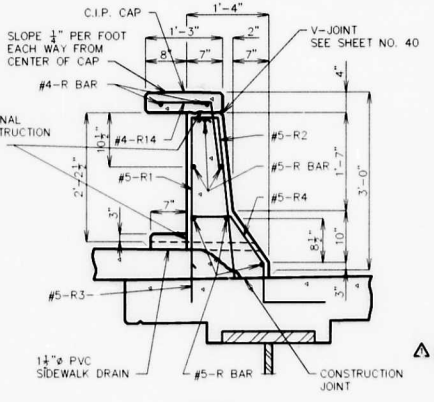
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

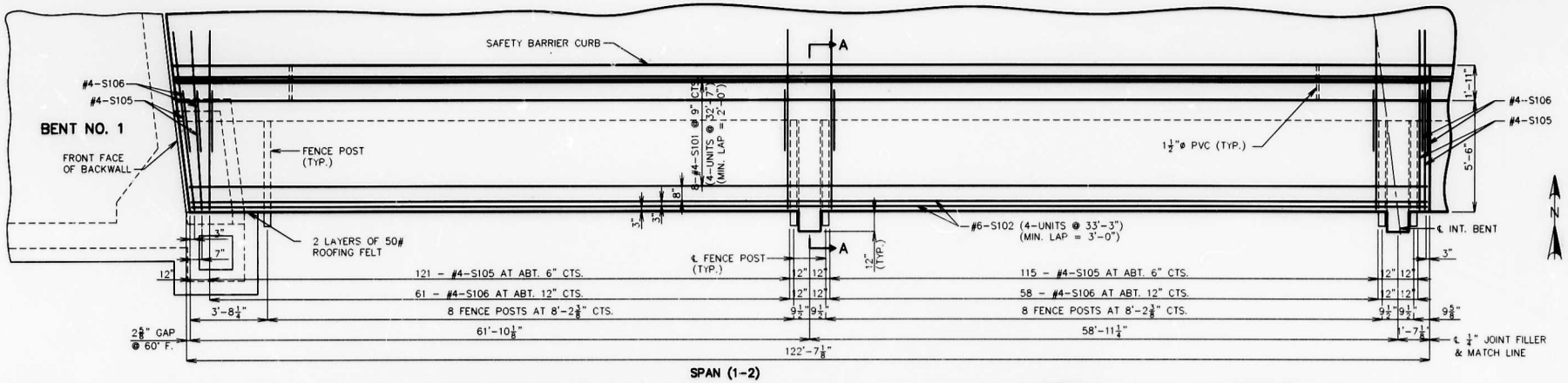
JACKSON COUNTY

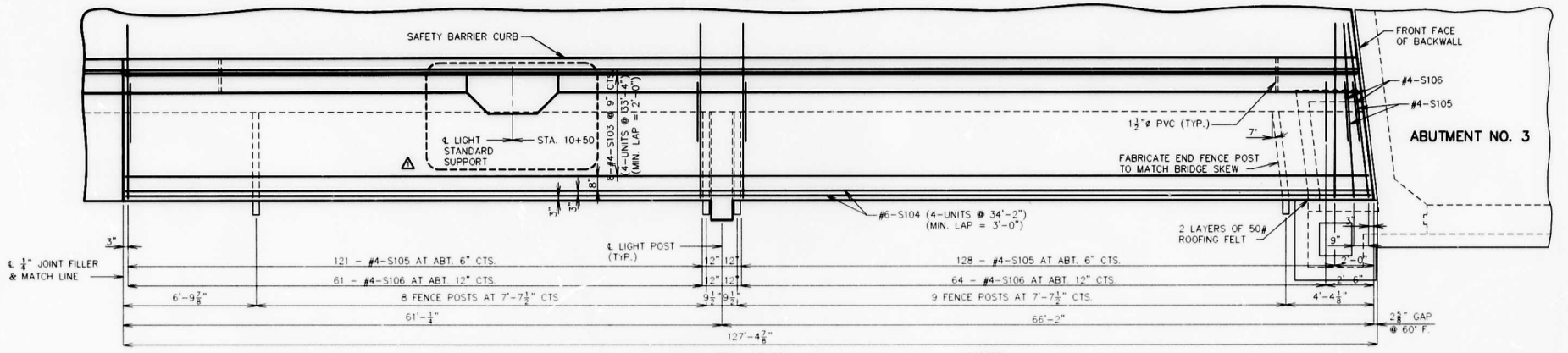
DETAILS OF SAFETY BARRIER CURB

SHEET NO. 34 OF 50

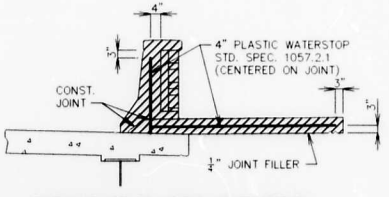
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		143





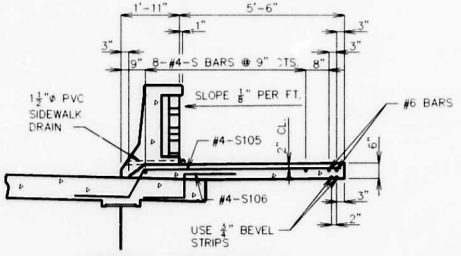
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

BUCHER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

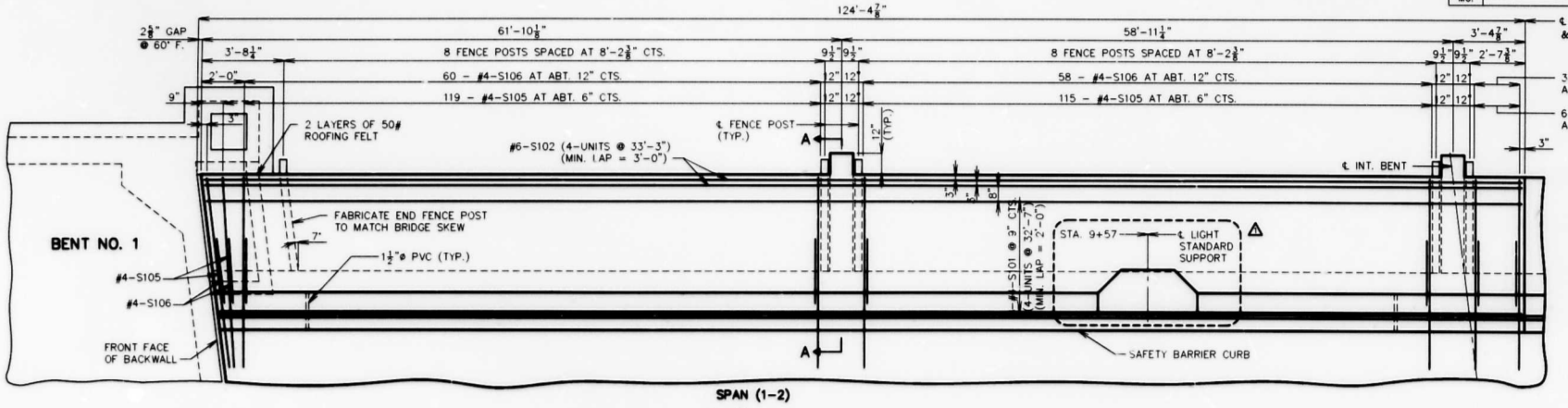
DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

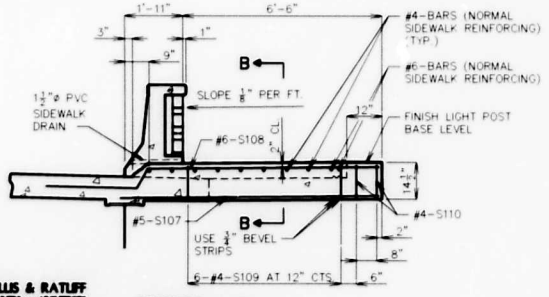
SHEET NO. 32 OF 50

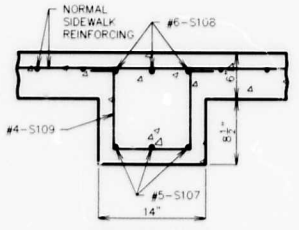
A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		142







SPAN (2-3)

PLAN OF LEFT SIDEWALK

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A 1/4" RADIUS OR A 3/4" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

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DRAWN BY:	DMA 3/95	
TRACED BY:	RCC 3/95	
CHECKED BY:	DJM 3/95	

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

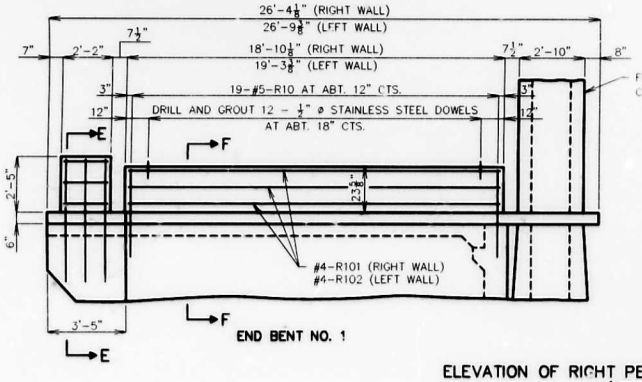
SHEET NO. 31 OF 50

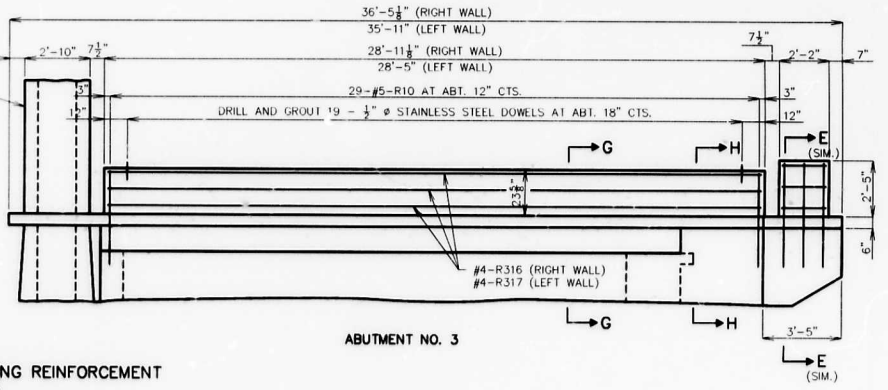
A-5180

FOR INFORMATION ONLY

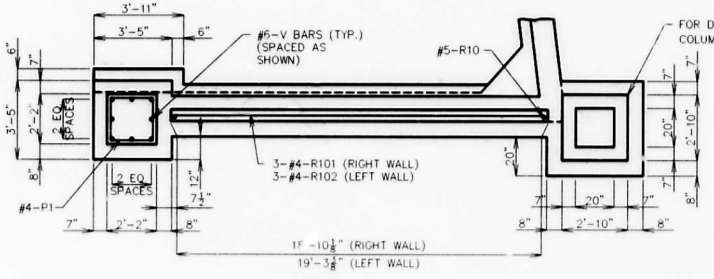
A51801, Sht. 34

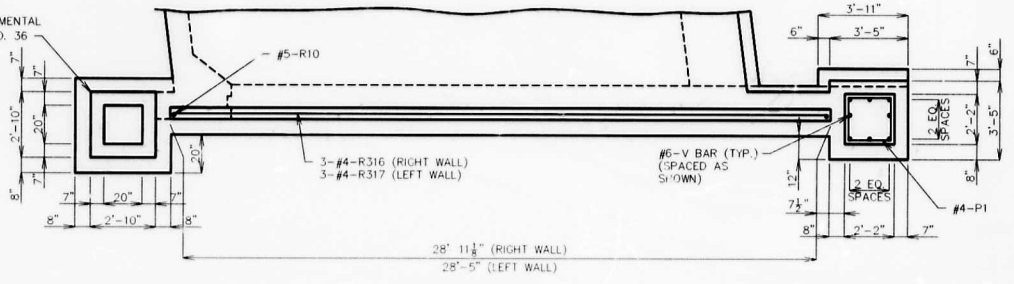
STATE	PROJ. NO.	SHEET NO.
MO.		146



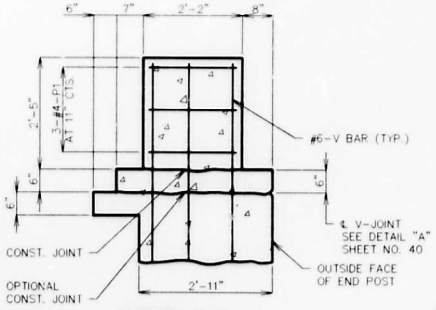


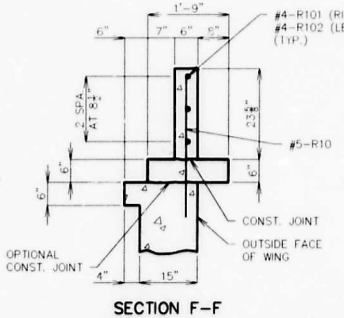
ELEVATION OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)

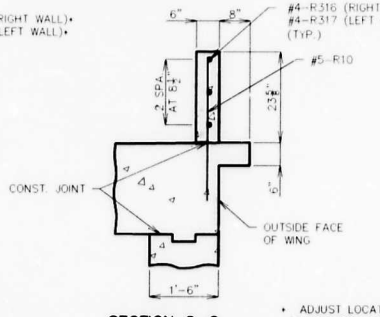


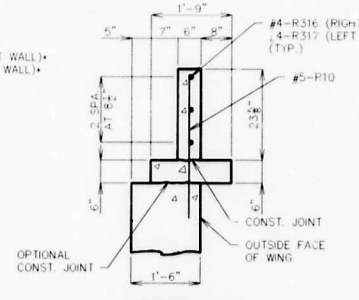


PLAN OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)









NOTES:

FOR DETAILS OF PRECAST CONCRETE CAP, STONE VENEER AND HANDRAIL, SEE SHEET NO. 41.

CONCRETE FOR PEDESTRIAN WALLS AND END POSTS SHALL BE INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

REINFORCING STEEL IN PEDESTRIAN WALLS AND END POSTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

• ADJUST LOCATION OF HORIZONTAL RESTEEL AS REQUIRED TO CLEAR SLEEVE FOR HANDRAIL POST, SEE SHEET NO. 41.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

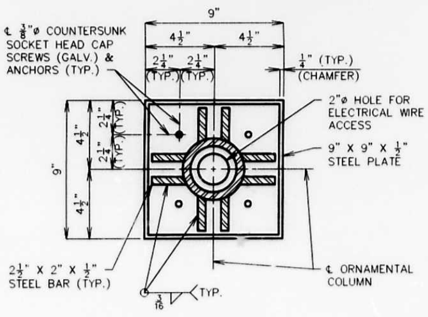
JACKSON COUNTY

DETAILS OF PEDESTRIAN WALLS AND END POST

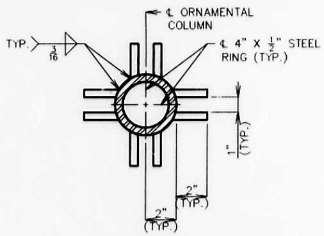
SHEET NO. 35 OF 50

A-5180

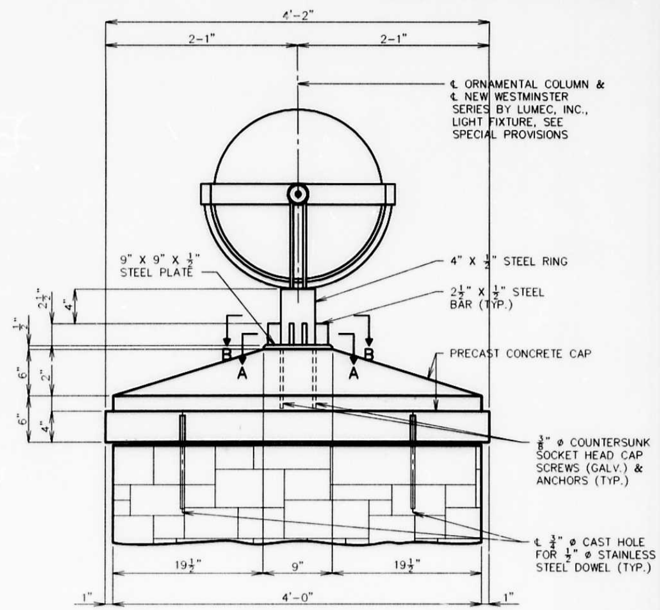
STATE	PROJ. NO.	SHEET NO.
MO.		147



SECTION A–A

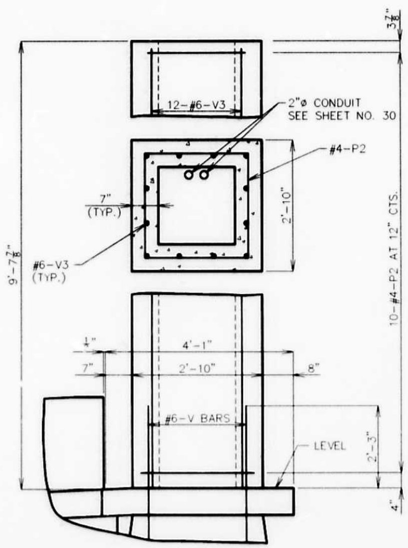


SECTION B–B

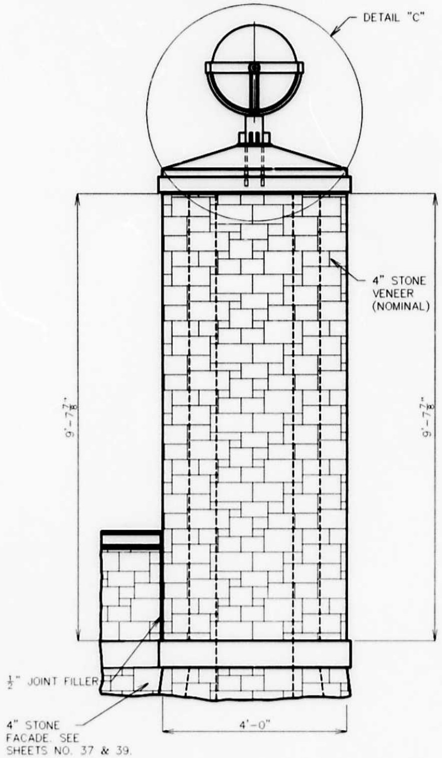


DETAIL "C"

PROVIDE FOR ELECTRICAL WIRE THROUGH PRECAST CONCRETE CAP.



ELEVATION OF ORNAMENTAL COLUMN SHOWING REINFORCEMENT



ELEVATION OF ORNAMENTAL COLUMN SHOWING STONE VENEER

NOTE:

RIGHT COLUMN ON END BENT NO. 1 SHOWN, LEFT COLUMN AND COLUMNS ON ABUTMENT NO. 3 SIMILAR.

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

STRUCTURAL STEEL SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE 3/8" ø COUNTERSUNK SOCKET HEAD CAP SCREWS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

ANCHORS SHALL BE CAST IN PLACE AND SHALL HAVE A CONCRETE PULL OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 4,000 LBS. IN 4,000 PSI CONCRETE.

CONCRETE FOR THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPSTR.).

REINFORCING STEEL IN THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR FURNISHING AND INSTALLING THE PRECAST CONCRETE CAP AND OTHER ACCESSORIES SHALL BE INCLUDED IN THE UNIT PRICE FOR PRECAST CAP ON ORNAMENTAL COLUMN.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

3·27·95

JACKSON COUNTY

DETAILS OF ORNAMENTAL COLUMN

SHEET NO. 36 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		118

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{1}{8}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

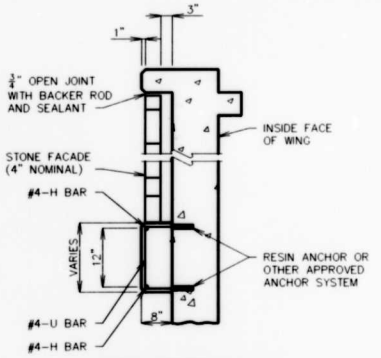
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

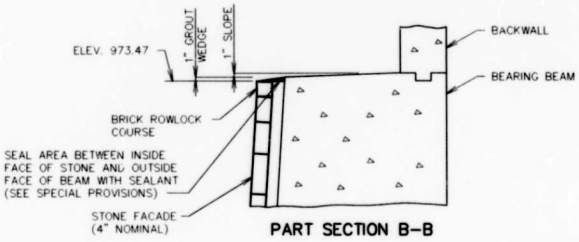
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

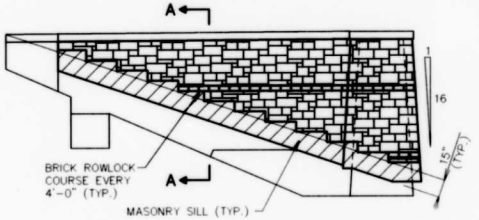


PART SECTION A-A

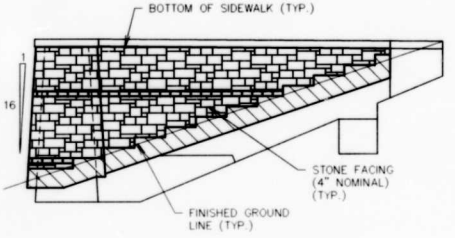
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



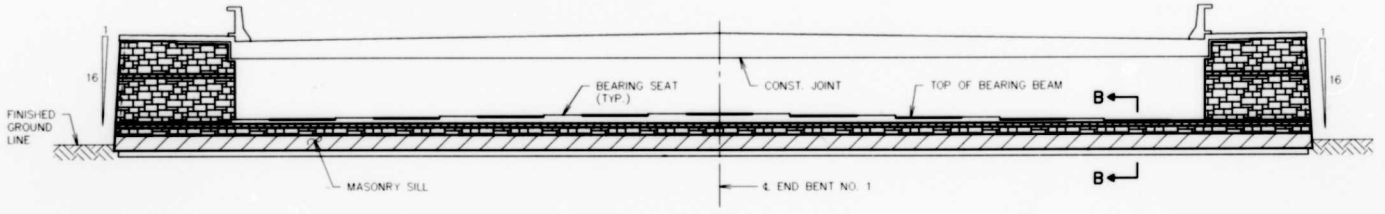
PART SECTION B-B



ELEVATION SOUTH WING



ELEVATION NORTH WING



ELEVATION

7-27-95

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DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

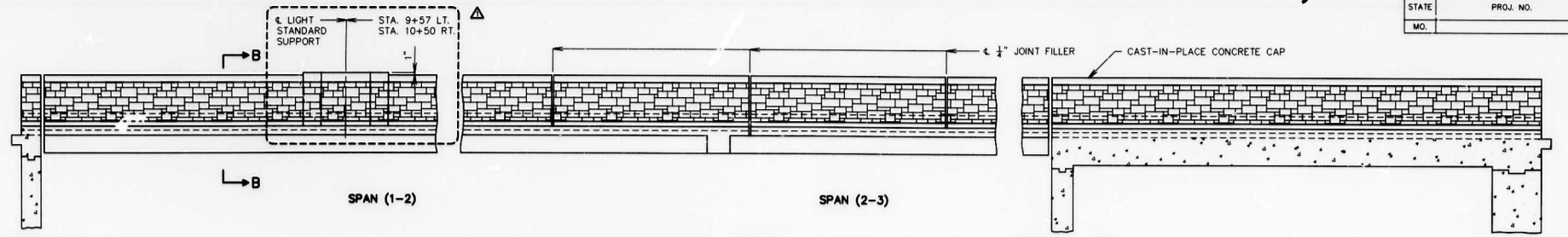
JACKSON COUNTY

DETAILS OF STONE FACADE ON END BENT NO. 1

SHEET NO. 37 OF 50

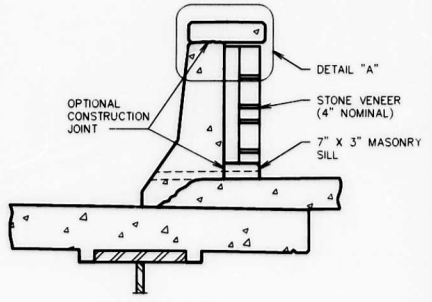
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		151

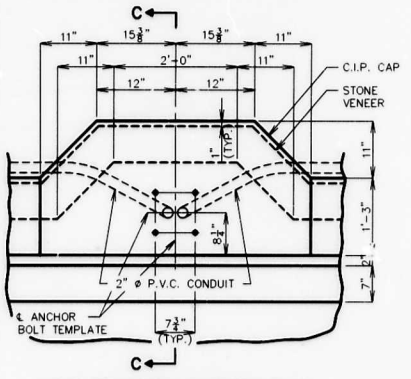


ELEVATION OF RIGHT SAFETY BARRIER CURB

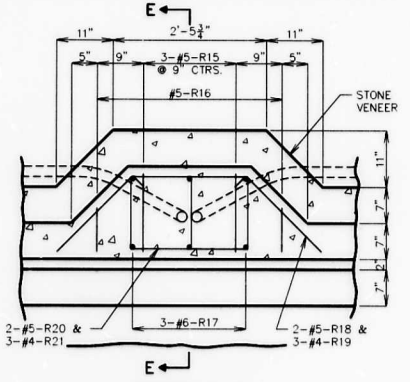
(LEFT CURB IS SIMILAR)



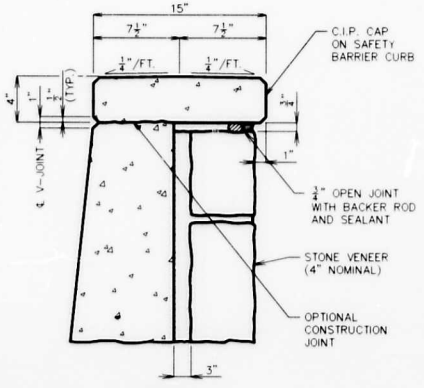
PART SECTION B-B



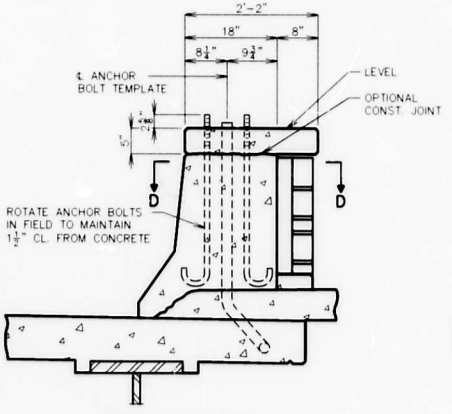
LIGHT STANDARD SUPPORT PLAN



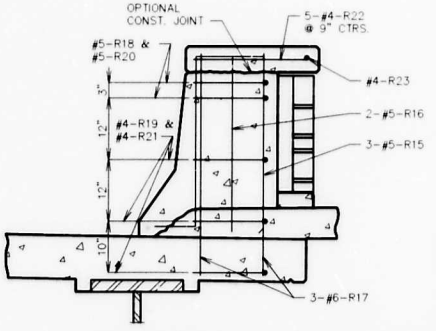
SECTION D-D



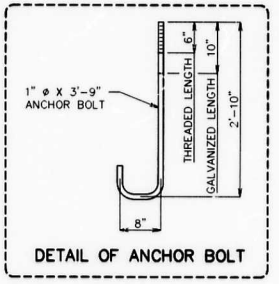
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		150

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

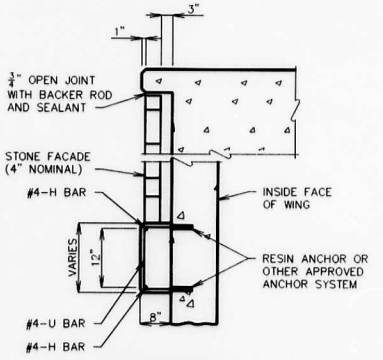
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

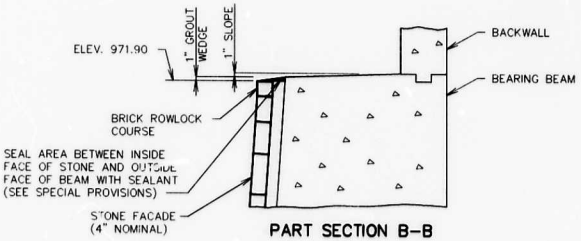
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

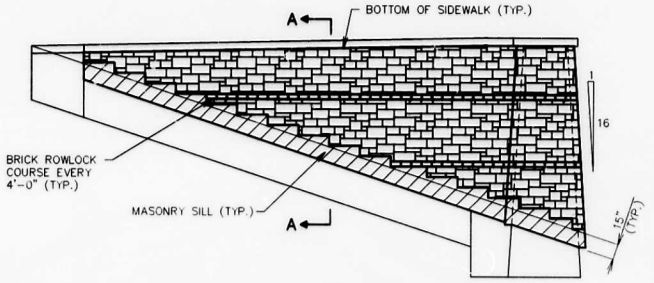


PART SECTION A-A

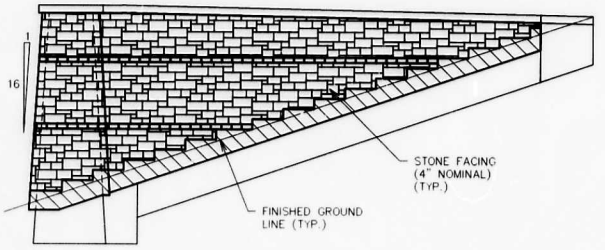
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



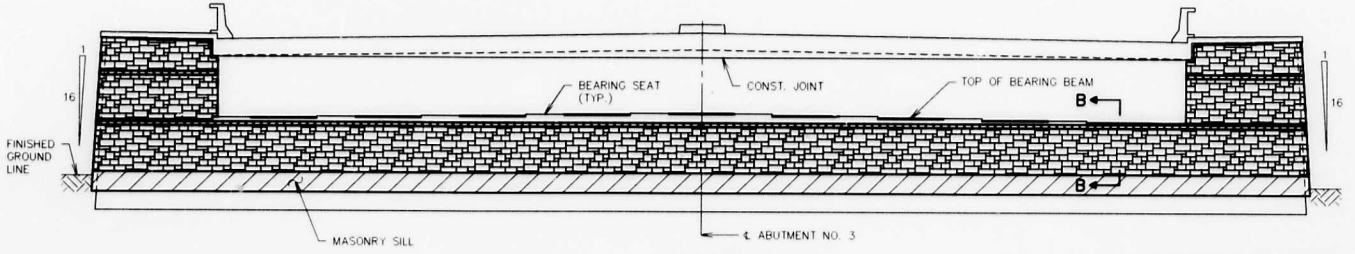
PART SECTION B-B



ELEVATION NORTH WING



ELEVATION SOUTH WING



ELEVATION

3-21-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

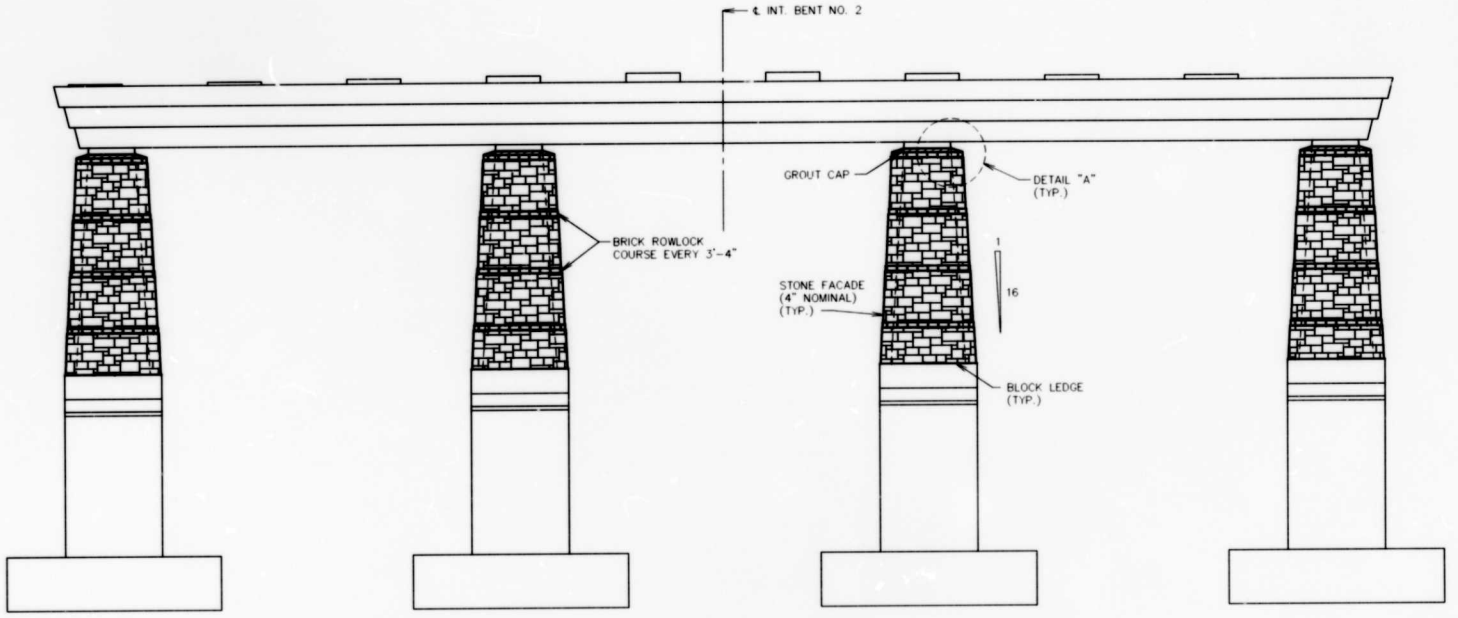
DETAILS OF STONE FACADE ON ABUTMENT NO. 3

SHEET NO. 39 OF 50

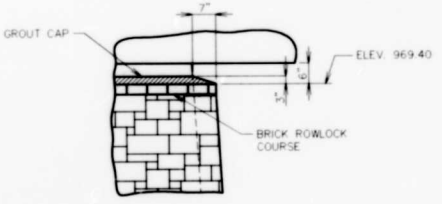
A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		139



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

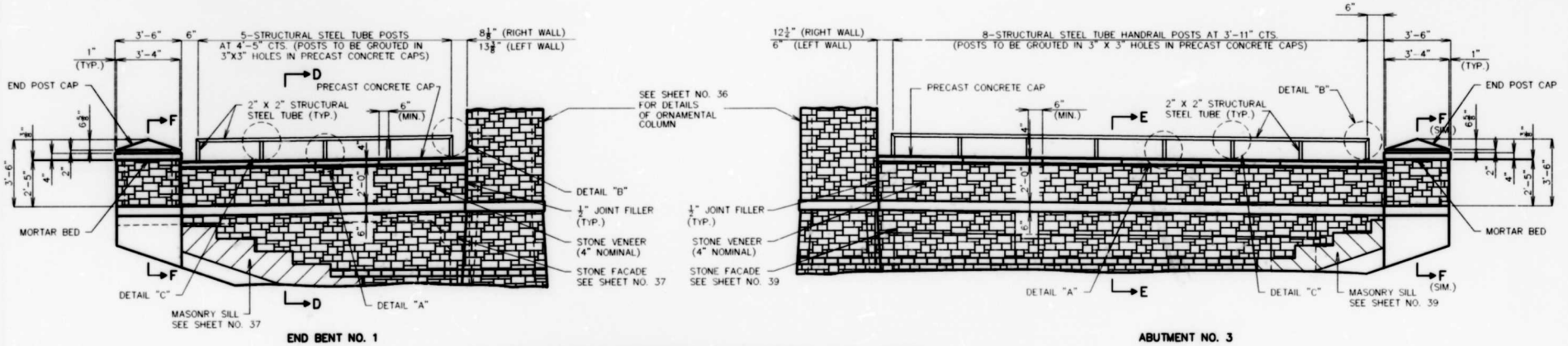
JACKSON COUNTY

DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

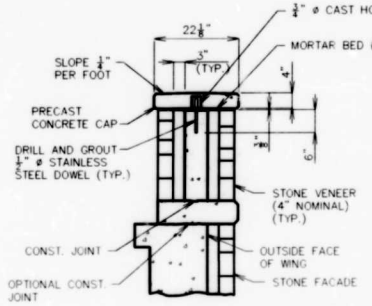
SHEET NO. 38 OF 50

A-5180

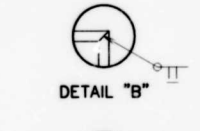
STATE	PROJ. NO.	SHEET NO.
		152



ELEVATION OF RIGHT PEDESTRIAN WALLS SHOWING STONE VENEER
(LEFT PEDESTRIAN WALLS SIMILAR)

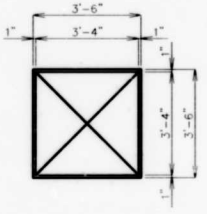


SECTION D-D

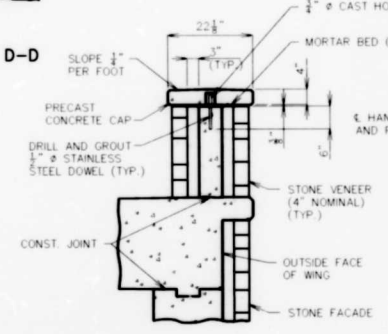


DETAIL "B"

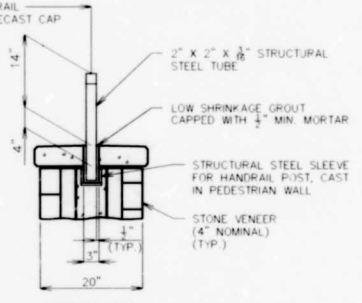
DETAIL "C"



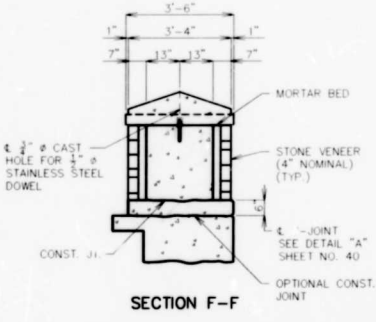
PLAN OF PRECAST END POST CAP



SECTION E-E



DETAIL "A"



SECTION F-F

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

2" X 2" STRUCTURAL STEEL TUBING FOR PEDESTRIAN HANDRAIL SHALL BE A.S.T.M. A500 OR A501.

STRUCTURAL STEEL SLEEVE SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS OF PEDESTRIAN HANDRAILS.

THE STRUCTURAL STEEL TUBE COMPLETE-IN-PLACE SHALL BE PAID FOR AS TUBE HANDRAIL ON PEDESTRIAN WALLS, PER LIN. FT.

THE UNIT PRICE BID PER LINEAR FOOT OF PRECAST CONCRETE CAP SHALL INCLUDE THE COST OF THE PRECAST CAP, STAINLESS STEEL DOWELS, AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER EACH FOR PRECAST CAP ON END POST SHALL INCLUDE THE COST OF THE PRECAST CAP AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PEDESTRIAN WALL AND END POST ARCHITECTURAL TREATMENT

SHEET NO. 41 OF 50

A-5180

8-27-95

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		153

NOTES:

ALL FENCE POSTS SHALL BE PLACED VERTICAL. SHIM PLATES MAY BE REQUIRED BETWEEN FENCE POSTS AND SIDEWALK FOR ALIGNMENT.

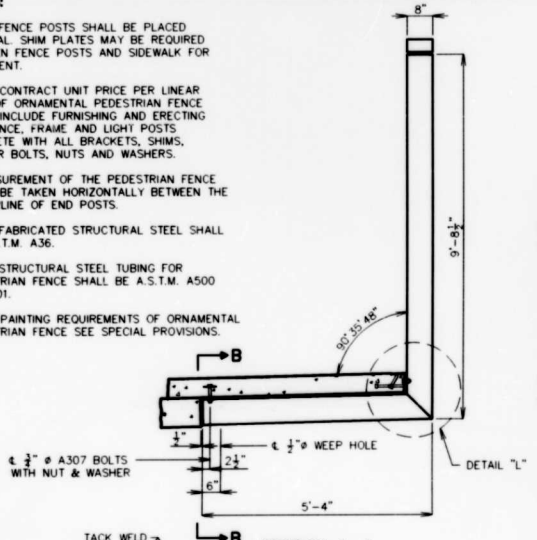
THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ORNAMENTAL PEDESTRIAN FENCE SHALL INCLUDE FURNISHING AND ERECTING THE FENCE, FRAME AND LIGHT POSTS COMPLETE WITH ALL BRACKETS, SHIMS, ANCHOR BOLTS, NUTS AND WASHERS.

MEASUREMENT OF THE PEDESTRIAN FENCE SHALL BE TAKEN HORIZONTALLY BETWEEN THE CENTERLINE OF END POSTS.

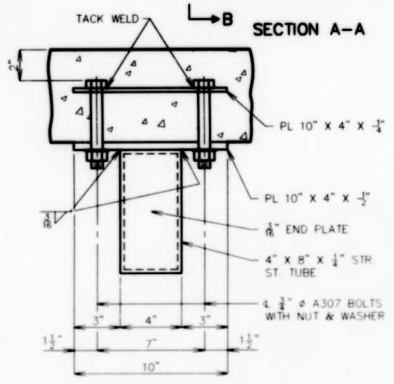
ALL FABRICATED STRUCTURAL STEEL SHALL BE A.S.T.M. A36.

ALL STRUCTURAL STEEL TUBING FOR PEDESTRIAN FENCE SHALL BE A.S.T.M. A500 OR A501.

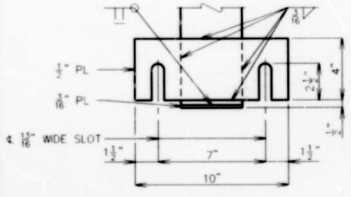
FOR PAINTING REQUIREMENTS OF ORNAMENTAL PEDESTRIAN FENCE SEE SPECIAL PROVISIONS.



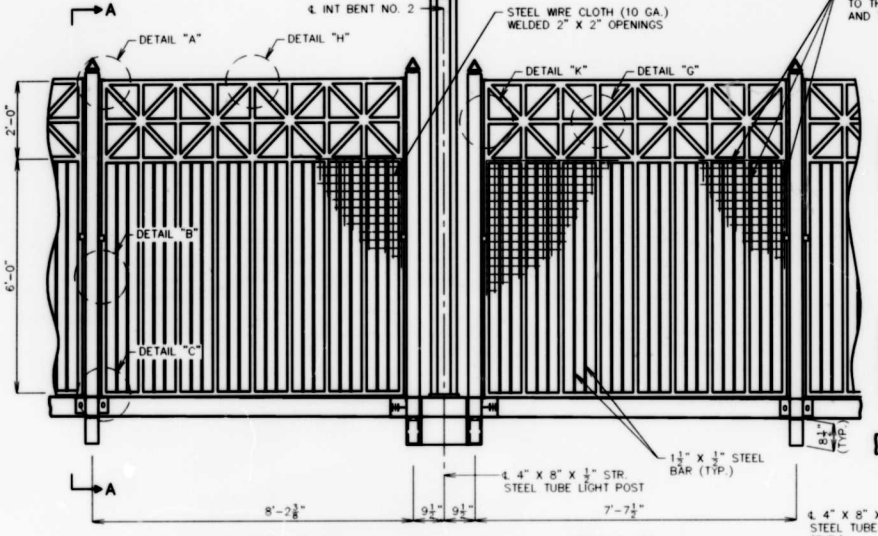
SECTION A-A



SECTION B-B



PLAN

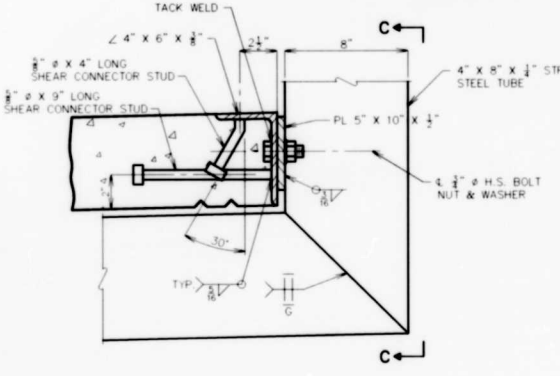


SPAN (1-2) SPAN (2-3)

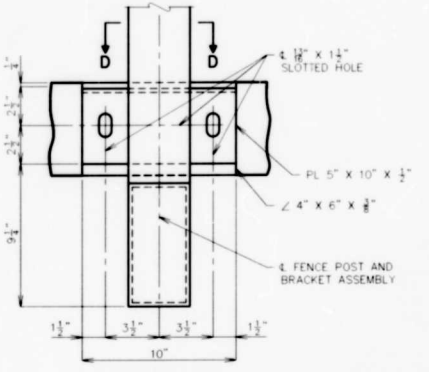
TYPICAL ELEVATION

NOTE:
FOR DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 40.

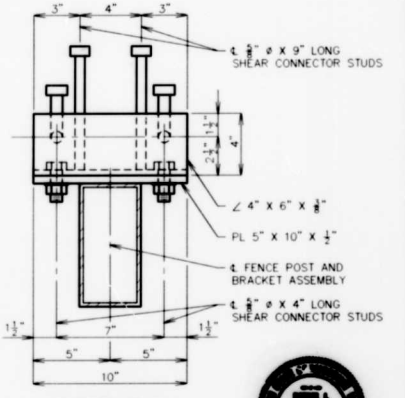
SEE SHEETS NO. 31 & 32 FOR FENCE POST SPACING.



DETAIL "L"



ELEVATION C-C
(TYPICAL EXCEPT AS NOTED)



SECTION D-D

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:		3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 42 OF 50

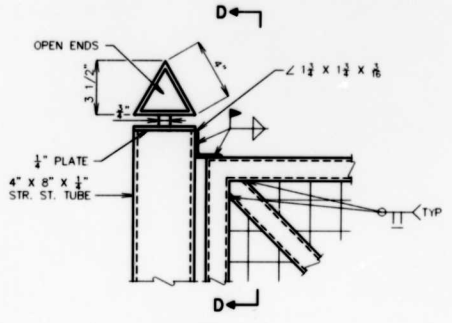
A-5180

[redacted] 24 to 1

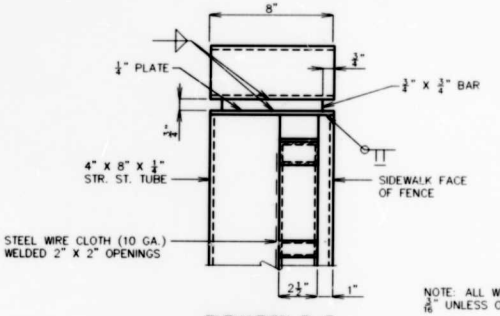
FOR INFORMATION ONLY

A51801, Sht. 42

STATE	PROJ. NO.	SHEET NO.
MO.		

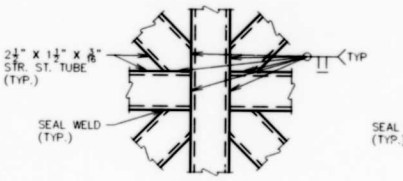


DETAIL "A"

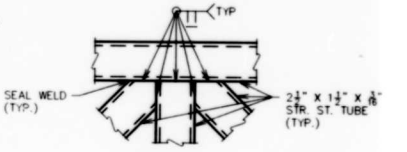


ELEVATION D-D

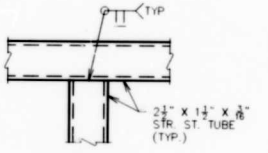
NOTE: ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.



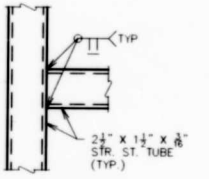
DETAIL "G"



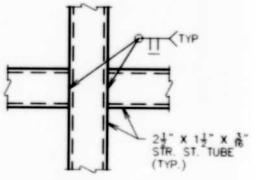
DETAIL "H"



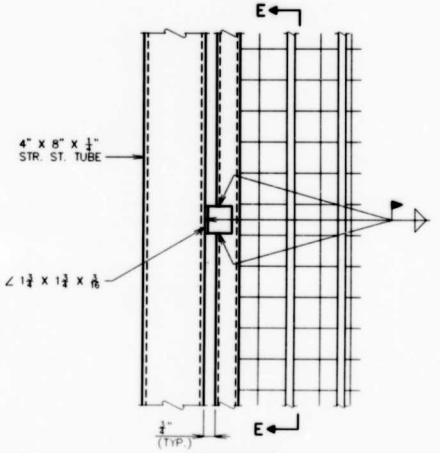
DETAIL "J"



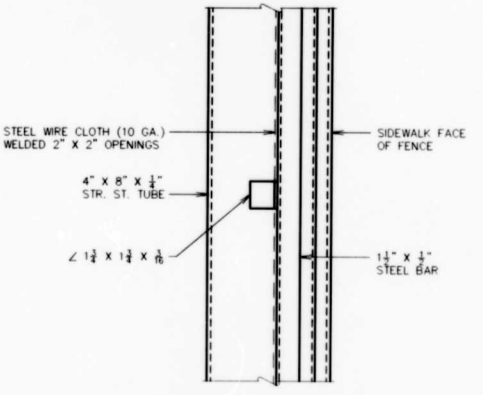
DETAIL "K"



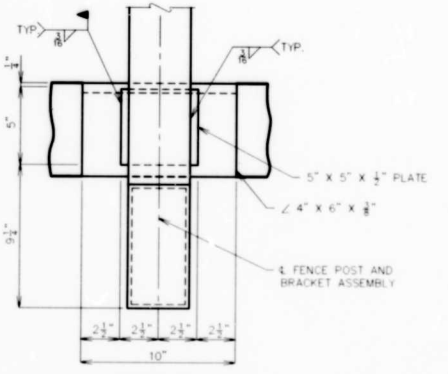
DETAIL "M"



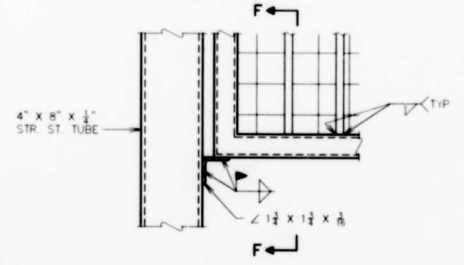
DETAIL "B"



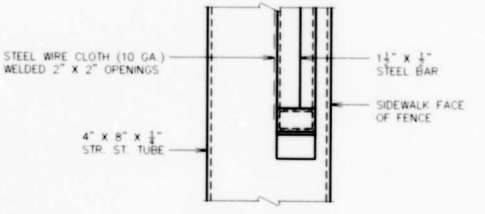
ELEVATION E-E



DETAIL "I"
(POSTS AT END BENT NO. 1 AND ABUTMENT NO. 3 ONLY)



DETAIL "C"



ELEVATION F-F

NOTE:

ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.

FOR ADDITIONAL PEDESTRIAN FENCE DETAILS AND LOCATION OF DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 42.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 43 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 43

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
END BENT NO. 1																												
8	5	D100	WING FOOTING		20		X			4	6.000													4	6	4	6	38
8	5	D101	WING FOOTING		20		X			2	0.000													2	0	2	0	17
7	7	F100	WING BRACE		15		X			15.000		4	10.000	15.000		10.625		10.625		9.250		11.750		7	4	7	3	104
7	7	F101	WING BRACE		15		X			15.000		4	5.000	15.000		10.625		10.625		11.750		9.250		6	11	6	10	98
8	8	H100	BEAM		17		X			43	6.000													44	5	44	5	949
8	8	H101	BEAM		17		X			22	4.500													23	4	23	4	498
4	8	H102	BEAM		20		X			30	2.000													30	2	30	2	322
8	8	H103	BEAM		20		X			23	8.000													23	8	23	8	506
4	6	H104	BEAM		20		X			43	6.000													43	6	43	6	281
2	6	H105	BEAM		20		X			19	3.000													19	3	19	3	58
19	4	H106	BACKWALL		20		X			30	0.000													30	0	30	0	381
8	4	H107	BACKWALL		20		X			43	6.000													43	6	43	6	232
2	6	H108	BACKWALL		20		X			43	6.000													43	6	43	6	131
4	6	H109	BACKWALL		20		X			31	0.000													31	0	31	0	186
4	4	H110	BACKWALL	E	20		X			30	0.000													30	0	30	0	80
2	4	H111	BACKWALL	E	20		X			43	6.000													43	6	43	6	58
2	6	H112	BACKWALL	E	20		X			43	6.000													43	6	43	6	131
4	6	H113	BACKWALL	E	20		X			31	0.000													31	0	31	0	186
4	4	H114	BACKWALL	E	20		X			7	6.000													7	6	7	6	20
16	8	H115	BEAM		10	S	X					5	0.000	2	6.000									12	6	12	2	292
2	4	H116	ORN. COLUMN	E	20		X			6	6.000													6	6	6	6	9
14	4	H117	ORN. COLUMN	E	20		X			7	6.000													7	6	7	6	70
14	4	H118	ORN. COLUMN	E	21		X			2	6.000			12.000						2	5.750	3.625		3	6	3	5	32
14	4	H119	ORN. COLUMN	E	21		X			2	6.000	12.000								2	5.750	3.625		3	6	3	5	32
16	6	H120	ORN. COLUMN	E	19		X			4	0.000	16.000												5	4	5	2	124
14	6	H121	WING		20		X	V	2	10	0.000													10	0	10	0	
			INCREMENT =							20	3.000													20	3	20	3	321
			20.500 INCH																									
12	6	H122	WING		20		X	V	2	7	2.000													7	2	7	2	
			INCREMENT =							10	1.000													10	1	10	1	156
			17.500 INCH																									
4	6	H123	WING	E	20		X			21	10.000													21	10	21	10	131
12	6	H124	WING		20		X			21	10.000													21	10	21	10	393
14	6	H125	WING		20		X	V	2	10	6.000													10	6	10	6	
			INCREMENT =							21	3.000													21	3	21	3	334
			21.500 INCH																									
4	8	H127	BEAM		20		X			21	3.000													21	3	21	3	227
2	4	S111	ORN. COLUMN	E	13	S	X			3	9.000	3	10.000	3	9.000	3	10.000							15	11	15	8	21
8	4	S112	ORN.COLUMN	E	20		X			3	9.000													3	9	3	9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7	T100	WING		14		X					6	8.000	1	6.000							7.250		16.500	10	2	10	2	83
2	7	T101	WING		14		X					14	3.000	1	11.000							21.000		9.250	16	2	16	1	66
2	7	T102	WING		14		X					14	6.000	1	11.000							21.250		8.875	16	5	16	4	67
32	5	U100	BEAM		13	S	X			4	0.875	2	6.000	4	2.750	2	2.000							14	3	13	11	485
34	5	U101	BEAM		13	S	X			4	0.750	2	7.750	4	2.750	2	7.750							14	6	14	2	502
28	5	U102	BEAM		13	S	X			4	0.500	2	11.500	4	2.750	2	11.375							15	1	14	9	431
26	4	U103	BEAM		10	S	X						6.000	4	0.000									5	0	4	10	84
5	7	U104	BEAM		14		X			5	0.000		23.000	4	6.000									11	5	11	2	114
5	7	U105	BEAM		14		X			5	0.000		23.000	4	6.000									11	5	11	2	114
84	4	U106	BACKWALL		10	S	X						1 2.000		6.000									2	10	2	8	150
52	4	U107	ORN. COLUMN	E	19	S	X			2	6.000	2	6.000											5	0	4	11	171
8	4	U108	WING		13	S	X				23.000		23.000		23.000		23.000							8	5	8	2	44
4	6	V100	BEAM		20		X			2	7.000													2	7	2	7	16
98	6	V101	BACKWALL	E	20		X			9	2.000													9	2	9	2	1350
98	5	V102	BACKWALL	E	20		X			8	8.000													8	8	8	8	686
20	6	V103	ORN. COLUMN	E	20		X			2	8.000													12	8	12	8	381
4	6	V104	ORN. COLUMN	E	20		X			6	9.000													6	9	6	9	41
16	6	V105	WING	E	20		X			4	2.000													4	2	4	2	100
4	6	V106	WING		20		X			3	6.000													3	6	3	6	21
16	6	V107	WING		20		X	V	2	5	1.000													5	1	5	1	
			INCREMENT =							7	8.000													7	8	7	8	172
			3.875 INCH																									
22	6	V108	WING		20		X			7	5.000													7	5	7	5	245
16	6	V109	WING		20		X	V	2	8	8.000													2	8	2	8	
			INCREMENT =							5	0.000													5	0	5	0	92
			3.500 INCH																									
14	6	V110	WING		20		X			5	0.000													5	0	5	0	105
12	6	V111	WING FOOTING		20		X			6	11.000													6	11	6	11	125
18	6	V112	WING		20		X	V	2	4	11.000													4	11	4	11	
			INCREMENT =							7	8.000													7	8	7	8	168
			3.875 INCH																									
24	6	V113	WING		20		X			7	3.000													7	3	7	3	261
16	6	V114	WING		20		X	V	2	2	7.000													2	7	2	7	
			INCREMENT =							4	8.000													4	8	4	8	87
			3.625 INCH																									
18	4	V115	ORN.COLUMN	E	20		X			3	0.000													3	0	3	0	36
8	4	V116	ORN.COLUMN	E	20		X			5	10.000													5	10	5	10	31
5	4	V117	ORN.COLUMN	E	20		X			6	8.000													6	8	6	8	22
5	4	V118	ORN.COLUMN	E	20		X			6	9.000													6	9	6	9	23
20	WSW1		A B WELLS		22		X				18.000		9.125											26	1	26	1	88

STATE	PROJ. NO.	SHEET NO.
MO.		157

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 (VERTICAL LEG) SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION, HOOK A or G, 4d or 2-1/2" MIN., 180°, 90°, 12d

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS
JACKSON COUNTY

REINFORCING SCHEDULE

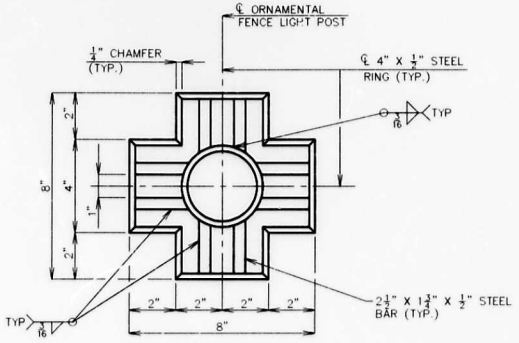
SHEET NO. 46 OF 50

A-5180

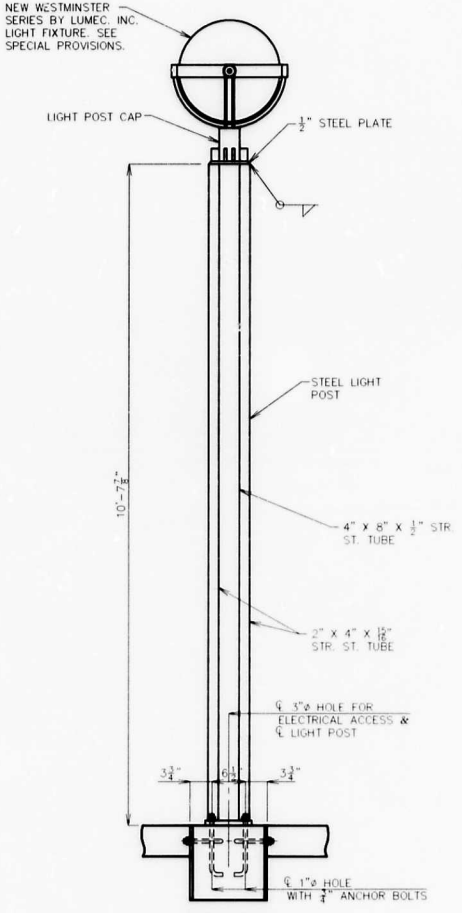
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

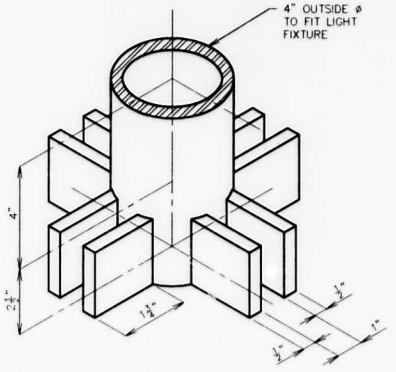
STATE	PROJ. NO.	SHEET NO.
MO.		156



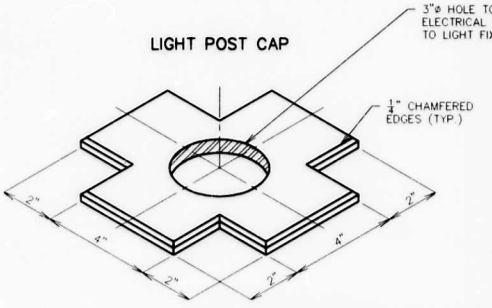
LIGHT POST CAP PLATE



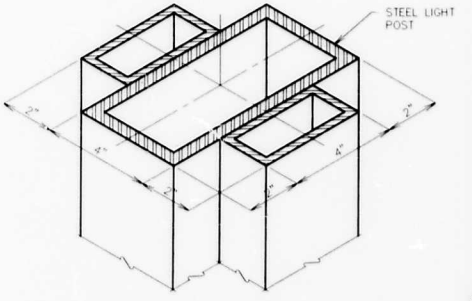
ELEVATION



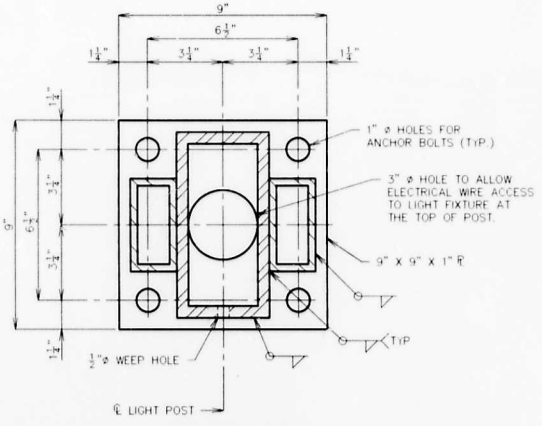
LIGHT POST CAP



½" STEEL PLATE



STEEL LIGHT POLE



LIGHT POST BASE

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

3-27-98

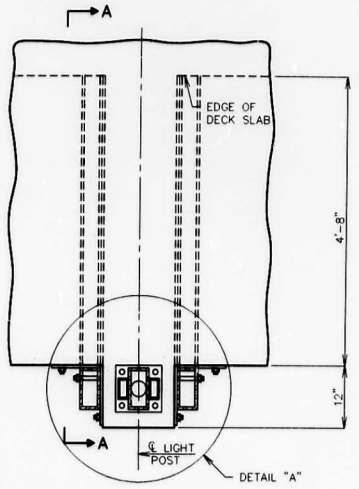
JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

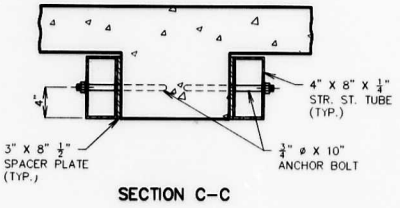
SHEET NO. 45 OF 50

A-5180

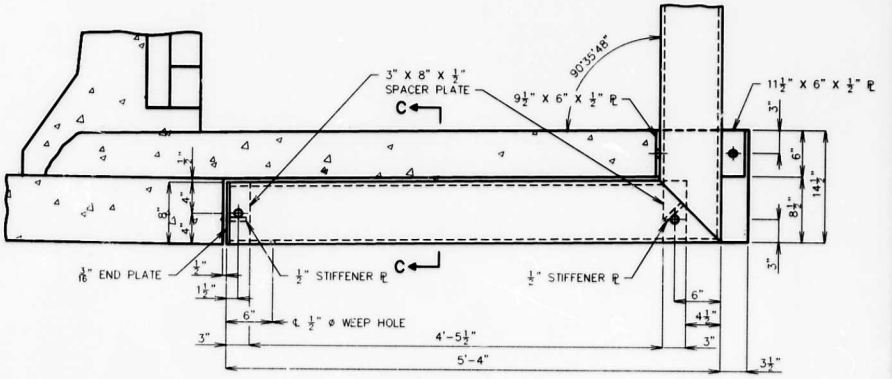
STATE	PROJ. NO.	SHEET NO.
MO.		155



PLAN VIEW OF SIDEWALK LIGHT SUPPORT



SECTION C-C



SECTION A-A

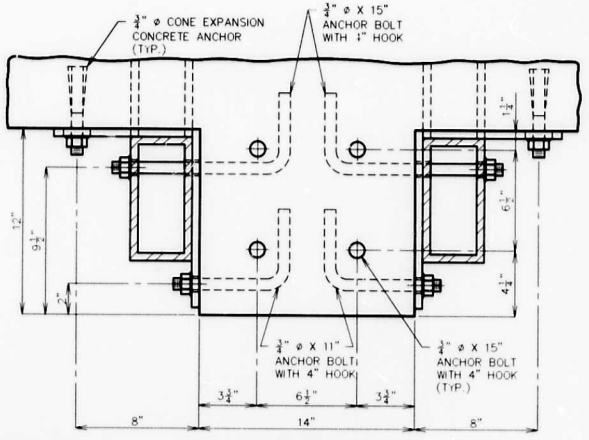
NOTE:

CONCRETE ANCHORS SHALL BE THE CONE EXPANSION TYPE FOR HOT DIP GALVANIZED BOLTS.

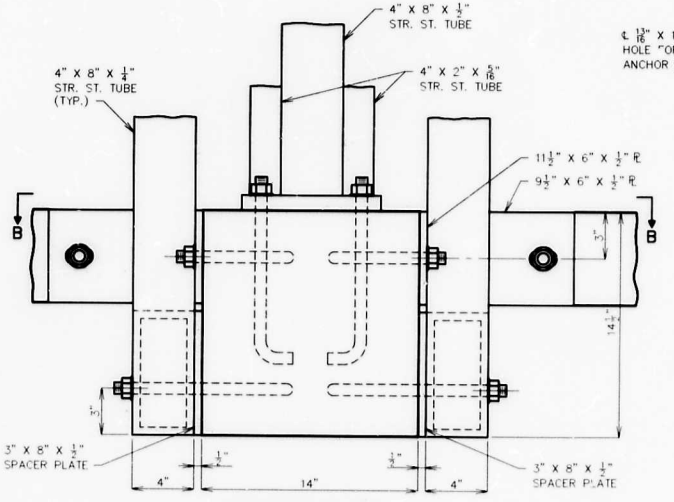
CONCRETE ANCHORS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 10,000 LBS. IN 4,000 PSI CONCRETE.

ALL WELDS TO BE ⅜" UNLESS OTHERWISE NOTED.

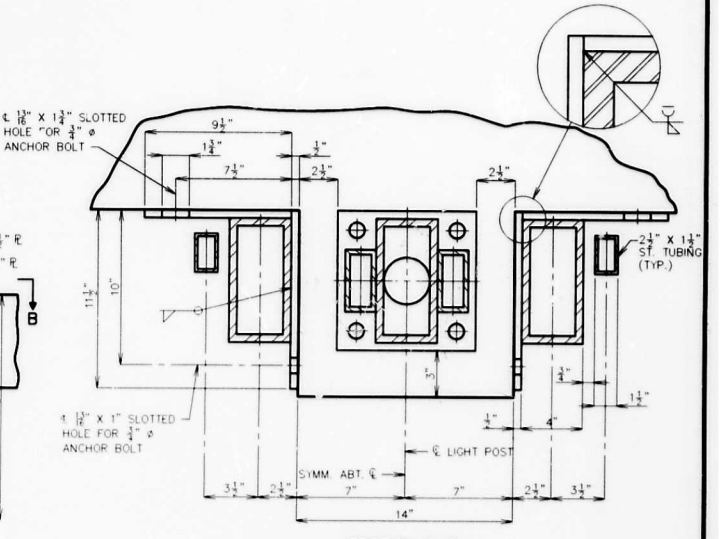
ALL ANCHOR BOLTS SHALL BE GALVANIZED, AND SHALL INCLUDE HEX NUT AND H.S. WASHERS.



DETAIL "A"
SHOWING ANCHOR BOLTS ONLY



ELEVATION OF BEAM
UNDER LIGHT POST



SECTION B-B

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 44 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
INTERMEDIATE BENT NO. 2																		
56	5-D200	FOOTING		20		X			10 2.000							10 2	10 2	594
68	9-D201	FOOTING		18		X			13 8.000							16 2	16 2	3736
18	9-H200	BEAM		17		X			49 7.500							50 10	50 10	3111
18	9-H201	BEAM		17		X			45 5.000							46 8	46 8	2856
16	10-H202	BEAM		20		X			48 2.000							48 2	48 2	3316
4	6-H203	BEAM		20		X			48 10.000							48 10	48 10	293
4	6-H204	BEAM		20		X			40 4.000							40 4	40 4	242
16	10-H205	BEAM		20		X			43 3.000							43 3	43 3	2978
16	4-H206	BRG. BASE		20		X			3 3.000							3 3	3 3	35
24	7-H207	BEAM		19		X	V	4	3 9.000	2 6.000						6 3	6 1	
		INCREMENT = 4.00 INCH							5 5.000	2 6.000						7 11	7 9	339
224	4-P200	COLUMN		13	S	X	V	16	2 0.000	2 9.500	2 0.000	2 9.500				10 4	10 1	
									3 1.000	4 6.625	3 1.000	4 6.625				16 0	15 9	1932
		INCREMENT =							1.000	1.625	1.000	1.625						
176	4-P201	COLUMN		10	S	X				3 9.000	5 3.000					12 9	12 7	1479
104	4-P202	COLUMN		10	S	X				4 6.000	1 4.000					10 4	10 2	707
32	4-P203	COLUMN		10	S	X				3 9.000	4 6.000					12 0	11 10	253
24	5-R200	COLUMN	E	20		X			5 8.000							5 8	5 8	142
48	5-R201	COLUMN	E	15		X			12.000	12.250	1 8.250	11.625	16.625	9.875	6.875	3 9	3 8	184
48	5-R202	COLUMN	E	15		X				2 0.000	2 0.000	23.875	2.500			4 0	3 11	196
288	6-U200	BEAM		13	S	X			2 5.750	3 10.375	3 5.000	3 9.000				14 10	14 5	6238
116	5-U201	BEAM		21	S	X			13.375	4 9.000	12.000			13.000	3.250	6 10	6 8	807
28	4-U202	BRG. BASE		10	S	X				12.000	4 3.000					6 3	6 1	114
96	10-V200	COLUMN		36		X			19 4.000							22 2	22 2	9158
96	10-V201	COLUMN		15		X			4 2.000	13 3.000				2 4.750	3 5.000	17 5	17 3	7196
20	W5W1	A B WELLS		22		X			2 1.000	9.125						33 2	33 2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.

STATE	PROJ. NO.	SHEET NO.
MO.		15B

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

SHAPE 19 SHAPE 20

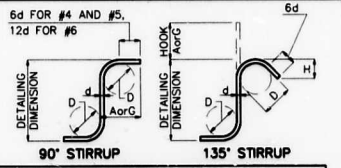
SHAPE 21

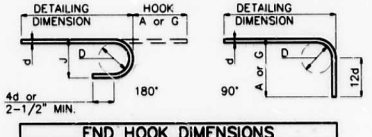
SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

7-27-95

BUCHER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 47 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 47

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

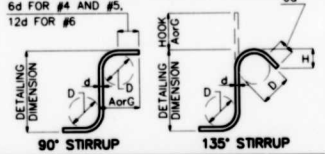
SHAPE 12 SHAPE 13 SHAPE 14

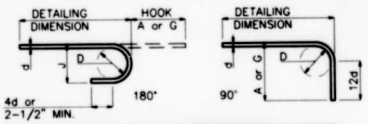
SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24





STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 48

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000	2 3.250				9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000	23.000			8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 | SHAPE 7 | SHAPE 8

SHAPE 9 | SHAPE 10 | SHAPE 11

SHAPE 12 | SHAPE 13 | SHAPE 14

SHAPE 15 | SHAPE 16

SHAPE 17 | SHAPE 18 | SHAPE 19 | SHAPE 20

SHAPE 21 | SHAPE 22

SHAPE 23 | SHAPE 24

SHAPE 25 | SHAPE 26 | SHAPE 27 | SHAPE 28 | SHAPE 29 | SHAPE 30

SHAPE 31 | SHAPE 32 | SHAPE 33 | SHAPE 34 | SHAPE 35 | SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP | 135° STIRRUP

STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. | 180° | 90° | 12d

END HOOK DIMENSIONS ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 49

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																												
5	5	F300	BACKWALL		15		X					15.000		4	8.000	15.000		10.625		10.625		11.750		9.250		7	2	7	1	37
5	5	F301	BACKWALL		15		X					15.000		5	2.000	15.000		10.625		10.625		9.250		11.750		7	8	7	7	40
8	6	H300	BEAM		17		X			43	10.000															44	9	44	9	956
8	6	H301	BEAM		17		X			22	5.000															23	4	23	4	488
8	6	H302	BEAM		20		X			23	8.000															23	8	23	8	506
4	6	H303	BEAM		20		X			30	2.000															30	2	30	2	322
4	6	H304	BEAM		20		X			21	3.000															21	3	21	3	227
4	6	H305	BEAM		20		X			43	10.000															43	10	43	10	263
2	6	H306	BEAM		20		X			18	9.000															18	9	18	9	96
8	6	H307	APRON		20		X			43	10.000															43	10	43	10	527
16	6	H308	APRON		20		X			31	4.000															31	4	31	4	753
2	6	H309	WING		20		X			7	8.000															7	8	7	8	10
28	6	H310	APRON		10		X					6	0.000	2	7.000											14	7	14	3	569
4	6	H311	BACKWALL		20		X			31	0.000															31	0	31	0	186
2	6	H312	BACKWALL		20		X			43	9.000															43	9	43	9	131
6	6	H313	BACKWALL		20		X			43	9.000															43	9	43	9	175
12	6	H314	BACKWALL		20		X			29	10.000															29	10	29	10	239
14	4	H315	ORN. COLUMN	E	21		X			3	6.000				12.000							3	5.625	5.125		4	8	4	5	41
14	4	H316	ORN. COLUMN	E	21		X			3	6.000		12.000									3	5.625	5.125		4	8	4	5	41
16	5	H317	ORN. COLUMN	E	19		X			4	1.000		12.000													5	1	5	0	83
2	4	H318	ORN. COLUMN	E	20		X			7	0.000															7	0	7	0	9
16	6	H319	APPR. BEAM		17		X			41	7.000															42	3	42	3	1015
4	6	H320	APPR. BEAM		20		X			41	7.000															41	7	41	7	250
10	6	H321	APPR. BEAM		20		X			22	8.000															22	8	22	8	341
1	4	H322	PVMT. REST		20		X			34	0.000															34	0	34	0	23
2	4	H323	PVMT. REST		20		X			28	8.000															28	8	28	8	38
4	5	H324	WING	E	20		X			9	0.000															9	0	9	0	38
6	5	H325	WING		20		X			9	0.000															9	0	9	0	56
2	5	H326	WING		20		X			31	10.000															31	10	31	10	66
8	5	H327	WING		20		X	V	2	22	10.000															22	10	22	10	
			INCREMENT =							31	10.000															31	10	31	10	228
			36.000 INCH																											
2	4	H328	WING		20		X			17	1.000															17	1	17	1	23
2	4	H329	WING		20		X			12	7.000															12	7	12	7	17
2	4	H330	WING		20		X			8	1.000															8	1	8	1	11
12	4	H331	WING		20		X			5	6.000															5	6	5	6	44
2	4	H332	WING		20		X			12	2.000															12	2	12	2	16
2	4	H333	WING		20		X			16	8.000															16	8	16	8	22
8	5	H334	WING		20		X	V	2	22	4.000															22	4	22	4	
			INCREMENT =							31	4.000															31	4	31	4	224
			36.000 INCH																											
2	5	H335	WING		20		X			31	4.000															31	4	31	4	65
14	4	H336	ORN. COLUMN	E	20		X			8	0.000															8	0	8	0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7	T300	WING		20		X			6	0.000															6	0	6	0	48
2	7	T301	WING		14		X						29	7.875	2	8.000						2	6.375	10.125		33	7	33	8	7
2	7	T302	WING		14		X						30	7.000	3	0.000						2	10.125	11.375		33	7	33	8	7
48	4	U300	APRON		10	S	X						2	0.000	1	5.000										5	5	5	3	168
32	5	U301	BEAM		13	S	X			4	8.500		2	8.000	4	10.500	2	8.000								15	10	15	8	517
34	5	U302	BEAM		13	S	X			4	8.375		2	10.000	4	10.500	2	10.000								16	2	15	10	561
28	5	U303	BEAM		13	S	X			4	6.125		3	2.125	4	10.500	3	2.000								16	10	16	8	483
26	4	U304	BEAM		10	S	X							6.000	4	8.500										5	9	5	7	97
84	4	U305	PVMT. REST		10	S	X							17.500		6.000										3	5	3	3	182
92	5	U306	APPR. BEAM		13	S	X			2	3.000	2	6.000	3	3.000	2	6.000									10	5	10	1	967
100	5	U307	APPR. BEAM	E	10	S	X						3	6.000	2	3.250										9	3	9	1	947
10	4	U308	END POST		13	S	X				23.000		23.000		23.000		23.000									8	5	8	2	55
52	4	U309	ORN. COLUMN	E	19	S	X			2	6.500	2	6.500													5	1	5	0	174
96	6	V300	BACKWALL		20		X			8	11.000															8	11	8	11	1288
96	5	V301	BACKWALL	E	20		X			8	6.000															8	6	8	6	801
18	4	V302	ORN. COLUMN	E	20		X			3	0.000															3	0	3	0	36
134	5	V303	APRON		20		X			6	3.000															6	3	6	3	874
20	6	V304	ORN. COLUMN		20		X			9	9.000															9	9	9	9	283
16	6	V305	END POST	E	20		X			5	3.000															5	3	5	3	126
6	5	V306	WING		20		X	V	2	4	0.000															4	0	4	0	
			INCREMENT =							4	9.000															4	9	4	9	40
			4.500 INCH																											
30	4	V307	WING		20		X	V	2	5	4.000															5	4	5	4	
			INCREMENT =							12	8.000															12	8	12	8	180
			6.250 INCH																											
4	4	V308	WING		20		X			14	10.000															14	10	14	10	40
4	4	V309	WING		20		X			15	1.000															15	1	15	1	40
8	4	V310	ORN. COLUMN	E	20		X			5	10.000															5	10	5	10	31
5	4	V311	ORN. COLUMN	E	20		X			6	8.000															6	8	6	8	22
5	4	V312	ORN. COLUMN	E	20		X			6	11.000															6	11	6	11	23
30	4	V313	WING		20		X	V	2	5	7.500															5	8	5	8	
			INCREMENT =							12	11.000															12	11	12	11	186
			6.250 INCH																											
6	5	V314	WING		20		X	V	2	4	5.000															4	5	4	5	
			INCREMENT =							5	1.000															5	1	5	1	30
			4.000 INCH																											
20	6	V315	ORN. COLUMN	E	20		X			10	1.000															10	1	10	1	303
4	6	V316	ORN. COLUMN	E	20		X			6	11.000															6	11	6	11	42
20	W	W1	A.B. WELLS		22		X				18.000			9.125												26	1	26	1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

VERTICAL LEG

SHAPE 19 SHAPE 20

SHAPE 21

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

3" PITCH 1½ TURNS

SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION HOOK A or G

4d or 2-1/2" MIN. 180° 90° 12d

STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

BAR SIZE	ALL GRADES D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32

SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

135° HOOK

3" PITCH 1½ TURNS

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 50

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	561
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X				18.000	9.125					26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. 180° 90° 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 51

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
564	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
564	5-R2	BARRIER CURB	E	15				2	6.125	3.500				2 6.000	3.000	2 10	2 8	1571
564	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
564	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20				38	8.000							38 8	38 8	1452
24	5-R6	BARRIER CURB	E	20				9	8.000							9 8	9 8	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	8.000							24 8	24 8	309
12	4-R9	C.I.P CAP	E	20				38	5.000							38 5	38 5	308
96	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
8	4-R11	C.I.P CAP	E	20				9	8.000							9 8	9 8	52
12	4-R12	C.I.P CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P CAP	E	20				24	8.000							24 8	24 8	66
564	4-R14	C.I.P CAP	E	20					15.000	11.000				1.500	15.000	2 2	2 1	784
6	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
6	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
6	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	8.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 8	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	56
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	8171
498	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20		V	4	4	0.000							4 0	4 0	
		INCREMENT = 49.000 INCH						40	9.000							40 9	40 9	1344
138	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	968
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
6	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	684
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	684
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1393
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1425
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
982	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	8 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000					3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000								8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	6.000				9.375	6.500	11 6	11 4	306
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500					3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000					4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000								9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20				24	8.000								24 8	24 8	11329
72	4-S301	SLAB	E	20				24	8.000								24 8	24 8	1187
132	5-S302	SLAB	E	20				26	3.000								26 3	26 3	3614
34	4-S303	SLAB	E	20				44	8.000								44 8	44 8	1015
34	4-S304	SLAB	E	20				8	2.000								8 2	8 2	186
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000					15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000								3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS

STATE	PROJ. NO.	SHEET NO.
MO.		1GO

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

4d or 2-1/2" MIN. 180° 90°

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTES:
- ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
- E = EPOXY COATED REINFORCEMENT
- S = STIRRUP
- X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
- V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
- NO. EA. = NUMBER OF BARS OF EACH LENGTH.
- NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
- ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
- PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
- FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
- REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-27-95

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE)	f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60)	fy=60,000 PSI.
STEEL PILE	fb= 9,000 PSI.
STRUCTURAL CARBON STEEL	fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50)	fy=50,000 PSI.

FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM.	BRG. BM.	COLUMNS	BRG. BM.	APPR. BM.
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	29	30		31	34
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS.	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:
MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

FINAL ~ QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	681		681
STRUCTURAL STEEL PILE (12")	LIN. FT.	1688		1688
PREBORE FOR PILING	LIN. FT.	487		487
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,601		67,601
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21
TEST HOLES	LIN. FT.	12		12
ADDITIONAL MOBILIZATION	LUMP SUM	1		1

2190 △

NOTES:
ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.

FINAL PLANS

STATE	NO.	SHEET NO.
MO.	J4U0118	114

FINAL QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

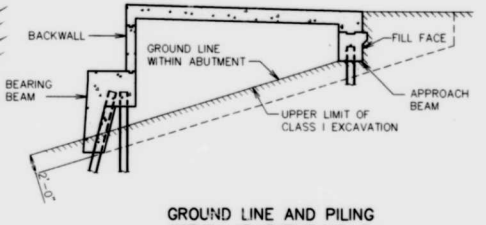
FINAL QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:
IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

DANIEL L. CHAPMAN NUMBER E-23644 STATE OF MISSOURI REGISTERED PROFESSIONAL ENGINEER
11-2-95

BUCHER, WILLIS & RATLIFF ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

JACKSON COUNTY

GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

24 to 1

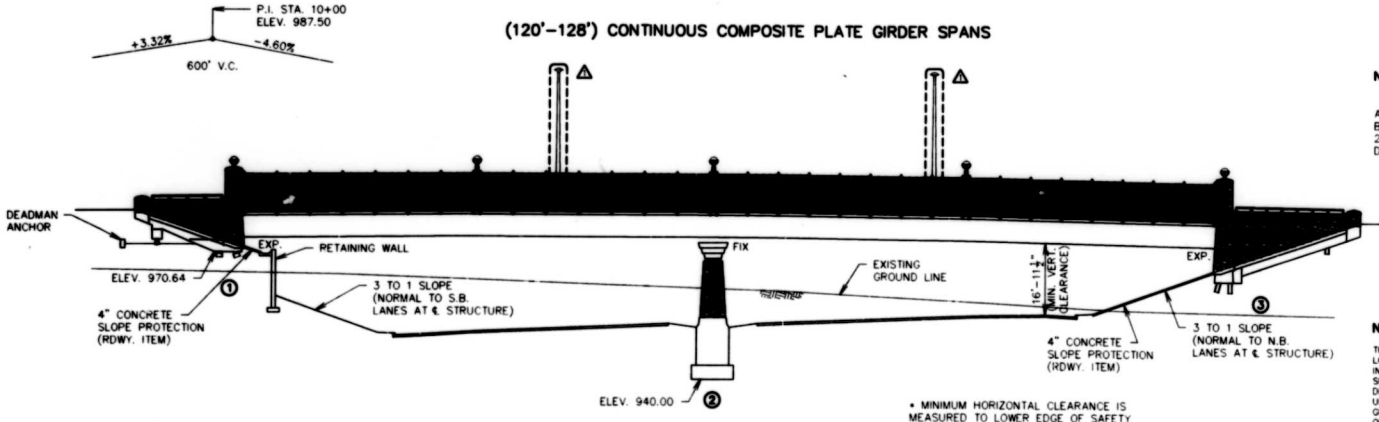
STATE	PROJ. NO.	SHEET NO.
MO.	J4UC011B	113

FINAL PLANS

FINAL PLANS

NOTE:

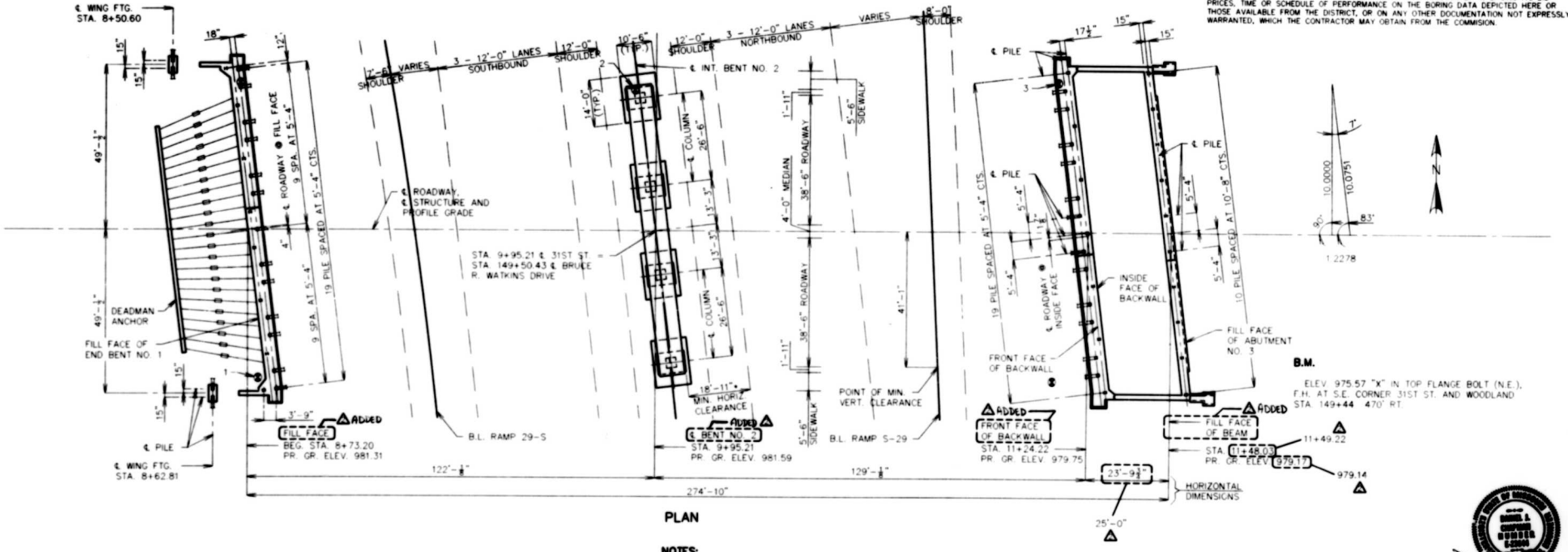
ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.



NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OFFICE OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

SUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

⚠ REVISED 4-25-96

JACKSON COUNTY

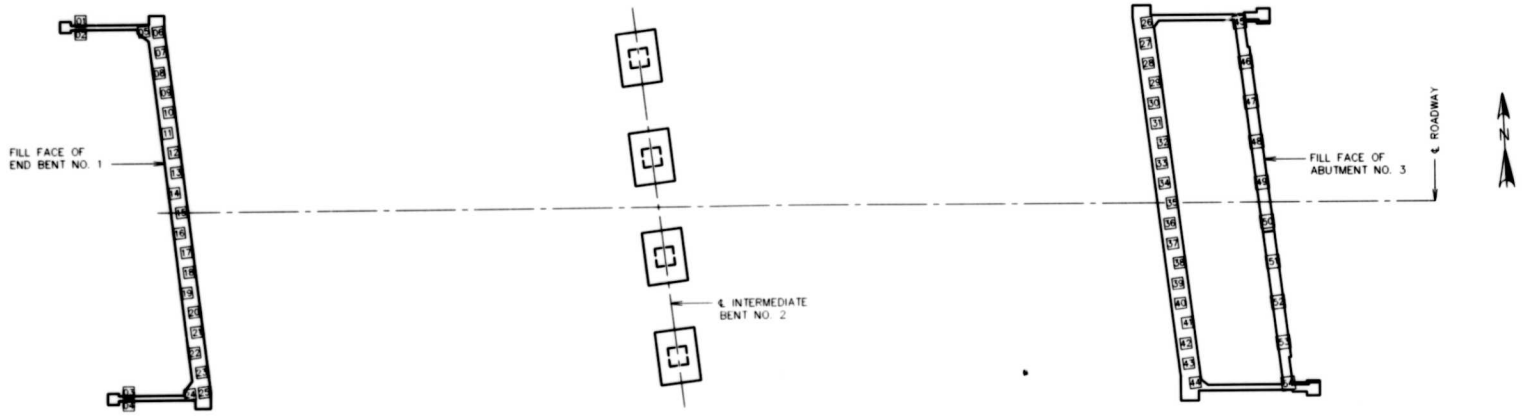
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

24 to 1

STR. NO.	PROJ. NO.	SHEET NO.
MO.		161



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET
C.) TYPE OF PILING USED

3-27-95

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

AS-BUILT PILE DATA

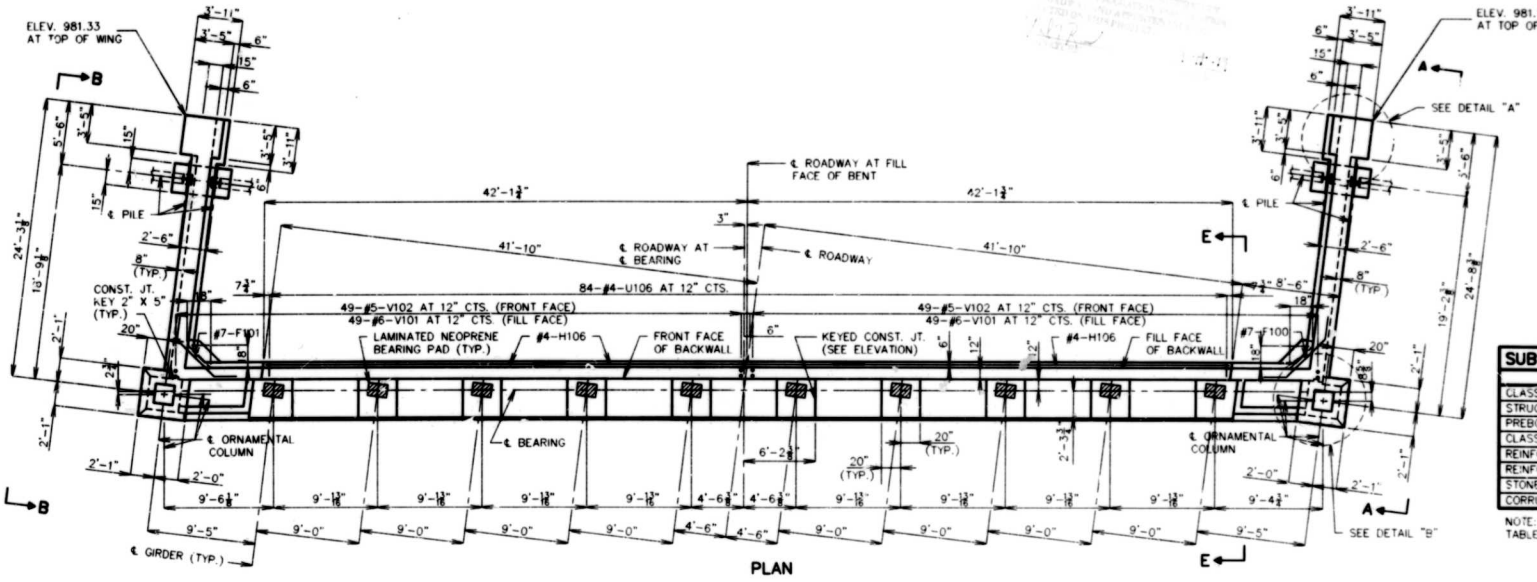
SHEET NO. 50 OF 50

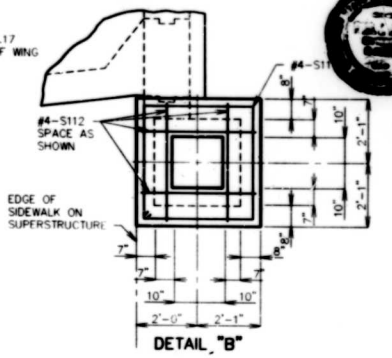
A-5180

24 to 1

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4uc11P	H4

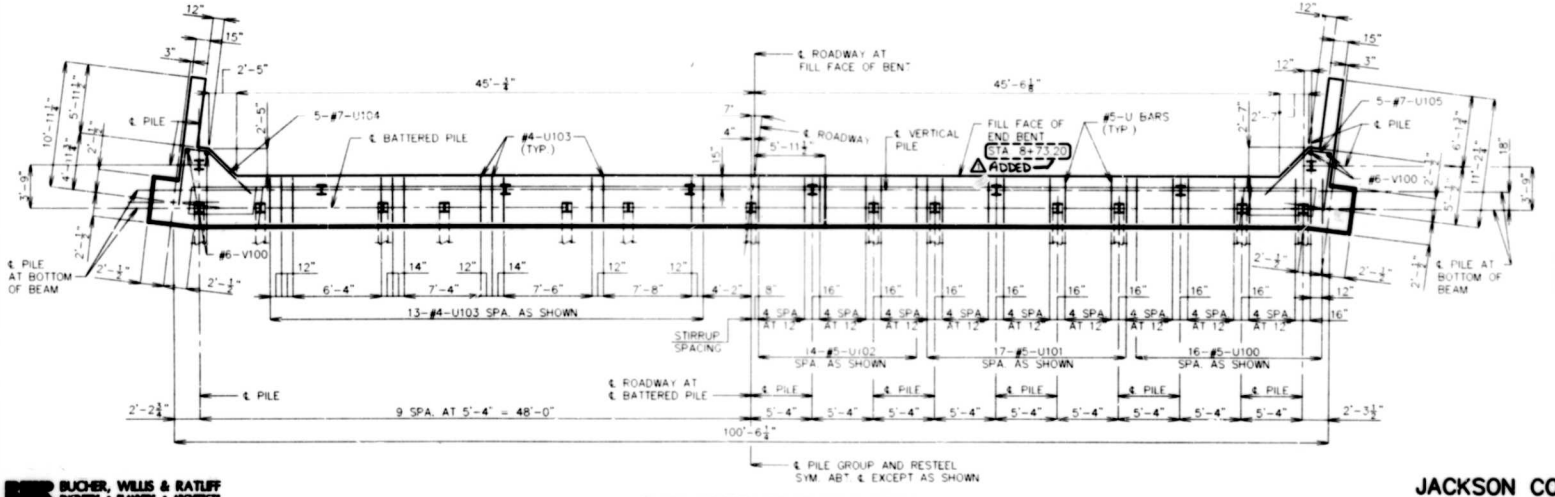




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.6 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A–A AND B–B, SEE SHEET NO. 8.

FOR SECTION E–E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WINGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. △ REVISED 4-25-96

JACKSON COUNTY

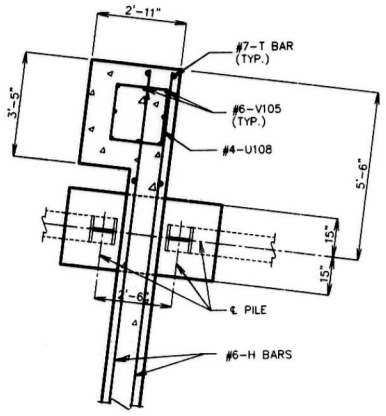
DETAILS OF END BENT NO. 1 PLAN

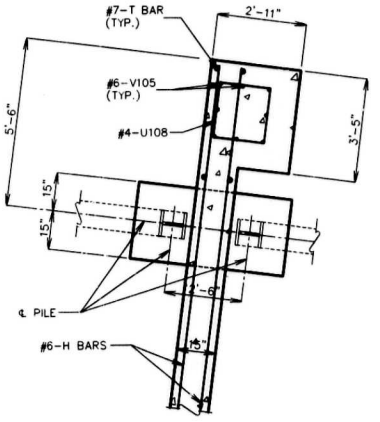
SHEET NO. 5 OF 50

A-5180

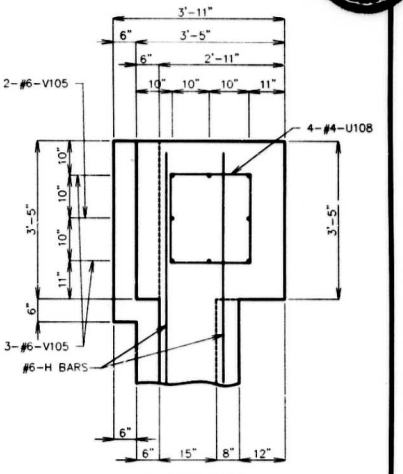
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	117

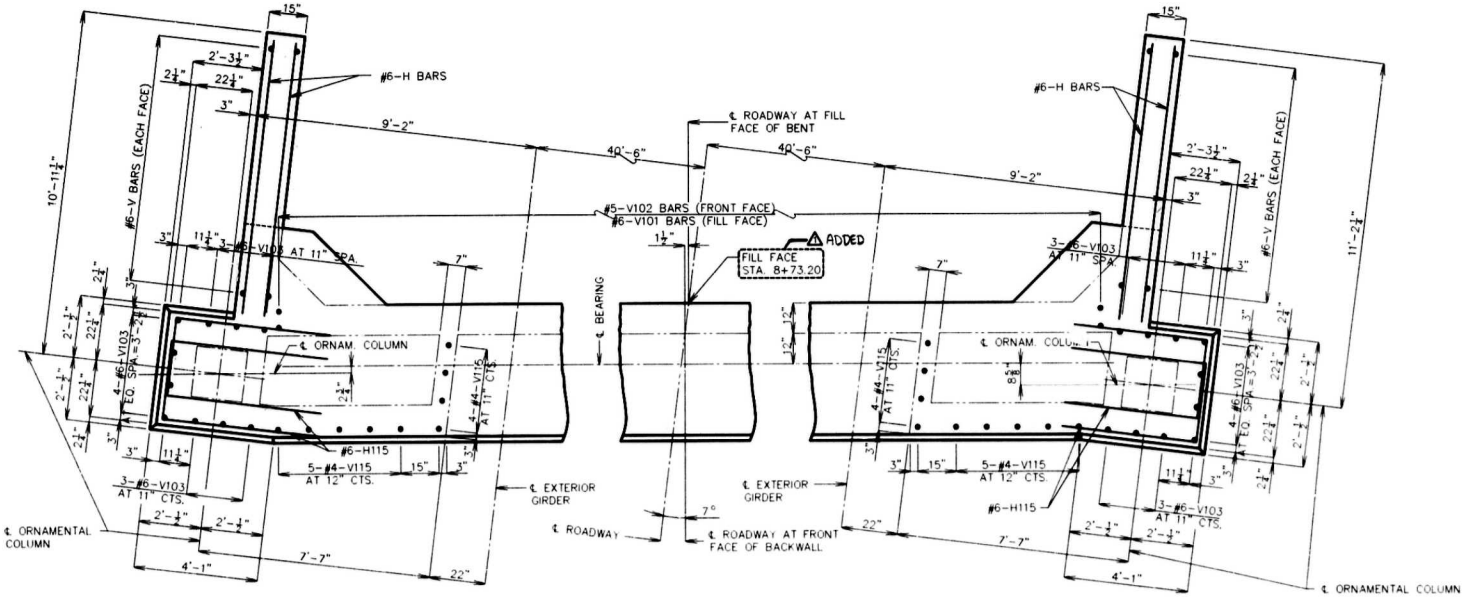




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF
END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

A-5180

4-26-96

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	126

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.

#5-V301 BARS (FRONT FACE)
#6-V300 BARS (INSIDE FACE)

#4-V BARS (TYP.)

3-#6-V304 AT 11¼" SPA.

46'-10"

47'-2½"

℄ RDWY. AT INSIDE FACE OF BACKWALL
STA. 11+25.23 ADDED △

INSIDE FACE OF BACKWALL

1½"

℄ ROADWAY

#4 V BARS (TYP.)

℄ ORNAMENTAL COLUMN

℄ BEARING

FIELD BEND #6-H310 AS REQ'D.

4-#4-V302 AT 12" CTS.

4-#6-V304 AT EQ. SPA. = 3'-6½"

#6-H310

℄ EXTERIOR GIRDER

3-#6-V304 AT 11¼" SPA.

7'-7"

℄ ROADWAY AT FRONT FACE OF BACKWALL

5-#4-V302 AT 12" CTS.

#6-H310

℄ ORNAMENTAL COLUMN

PART PLAN OF BEARING SEAT

℄ RDWY. AT ℄ PILE

SYMM. ABT. ℄ EXCEPT AS SHOWN

42'-3⅜"

46-#5-U306 SPA. AS SHOWN

4 SPA. 20" = 9'-0" | 9 SPA. AT 12" = 9'-0" | 20" | 9 SPA. AT 12" = 9'-0" | 20" | 9 SPA. AT 12" = 9'-0" | 20" | 9 SPA. AT 12" = 9'-0" | 20"

AT 12" =4'-0"

41'-11⅞"

84-#4-U305 AT 12" CTS.

#4-U308 (TYP.)

#4-H323

1'-10" LAP #4 BARS

8'-0"

CONST. JOINT (THIS SIDE ONLY) (KEY 12" X 10" X 2")

#4-H322

#6-V305 (TYP.)

3'-0" MIN. LAP #6 BARS

4-#6-H321 (TOP & BOTT.)

50-#5-U307 AT 12" CTS.

4-#6-H319 (TOP & BOTT.)

#5-V314 (EACH FACE)

#4-V313 AT 18" CTS. (EACH FACE)

#5-V306 (EACH FACE)

#4-V307 (EACH FACE)

H BARS

℄ ROADWAY

SYMM. ABT. ℄ EXCEPT AS SHOWN

℄ RDWY. AT INSIDE FACE OF BACKWALL

48-#5-U301 AT 12" CTS. (FRONT FACE)
48-#6-V300 AT 12" CTS. (INSIDE FACE)

CONST. JT. KEY 2" X 6"

5-#5-F300

INSIDE FACE OF BACKWALL

#4-U304 (TYP.)

℄ VERT. PILE
STA. 11+23.97 ADDED △

KEYED CONSTRUCTION JOINTS IN BACKWALL, BEAM AND APRON (THIS SIDE ONLY)

#5-U BARS (TYP.)

5-#5-F301

℄ ORNAMENTAL COLUMN

℄ BATTERED PILE

℄ PILE AT BOTTOM OF BEAM

13-#4-U304 SPA. AS SHOWN

STIRRUP SPACING

14-#5-U303 SPA. AS SHOWN

17-#5-U302 SPA. AS SHOWN

16-#5-U301 SPA. AS SHOWN

℄ PILE

9 SPA. AT 5'-4" = 48'-0"

100'-6⅛"

℄ ROADWAY AT ℄ VERT. PILE AND REINFORCING IN BEARING BEAM

SYMM. ABT. ℄ EXCEPT AS SHOWN

PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

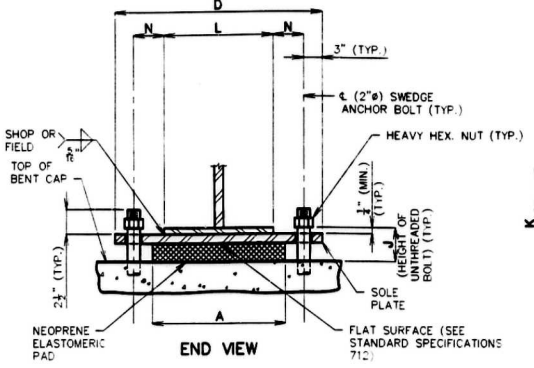
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

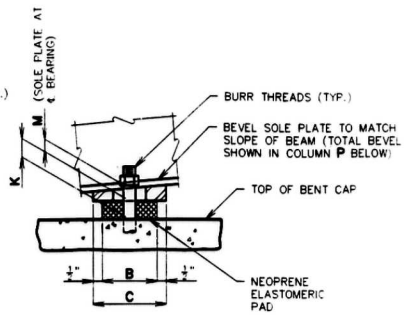
SHEET NO. 15 OF 50

A-5180

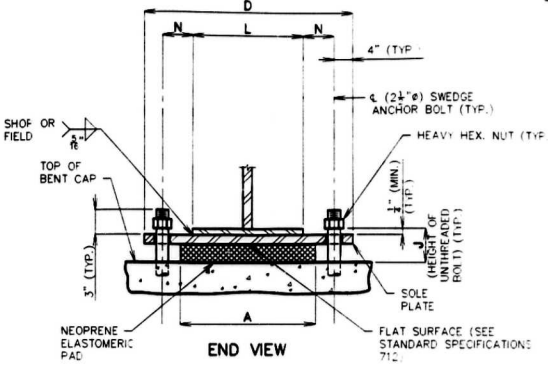
STATE	FED. AID PROJ. NO.	SHEET NO.
MO.	J4U0118	137



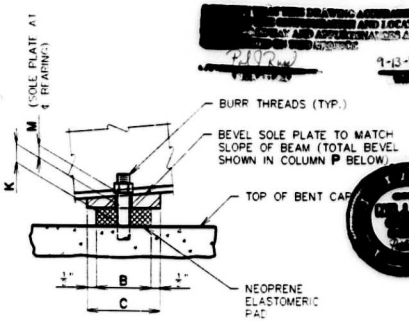
END VIEW



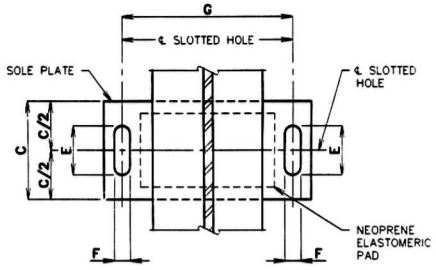
SIDE VIEW



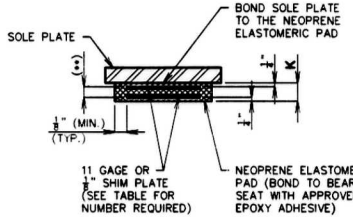
END VIEW



SIDE VIEW



PART PLAN VIEW

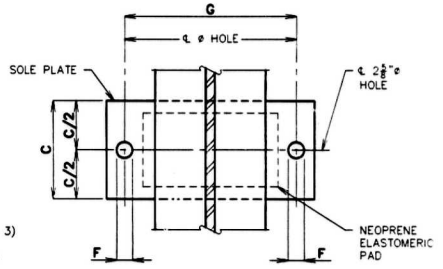


NEOPRENE ELASTOMERIC PAD

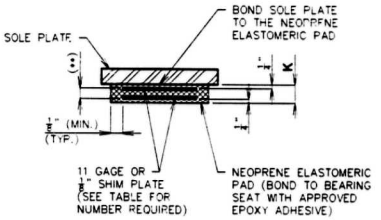
(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	① 7 - ⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10½"	2'-11"	2'-7"	2⅝"	23"	5½"	3¼"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

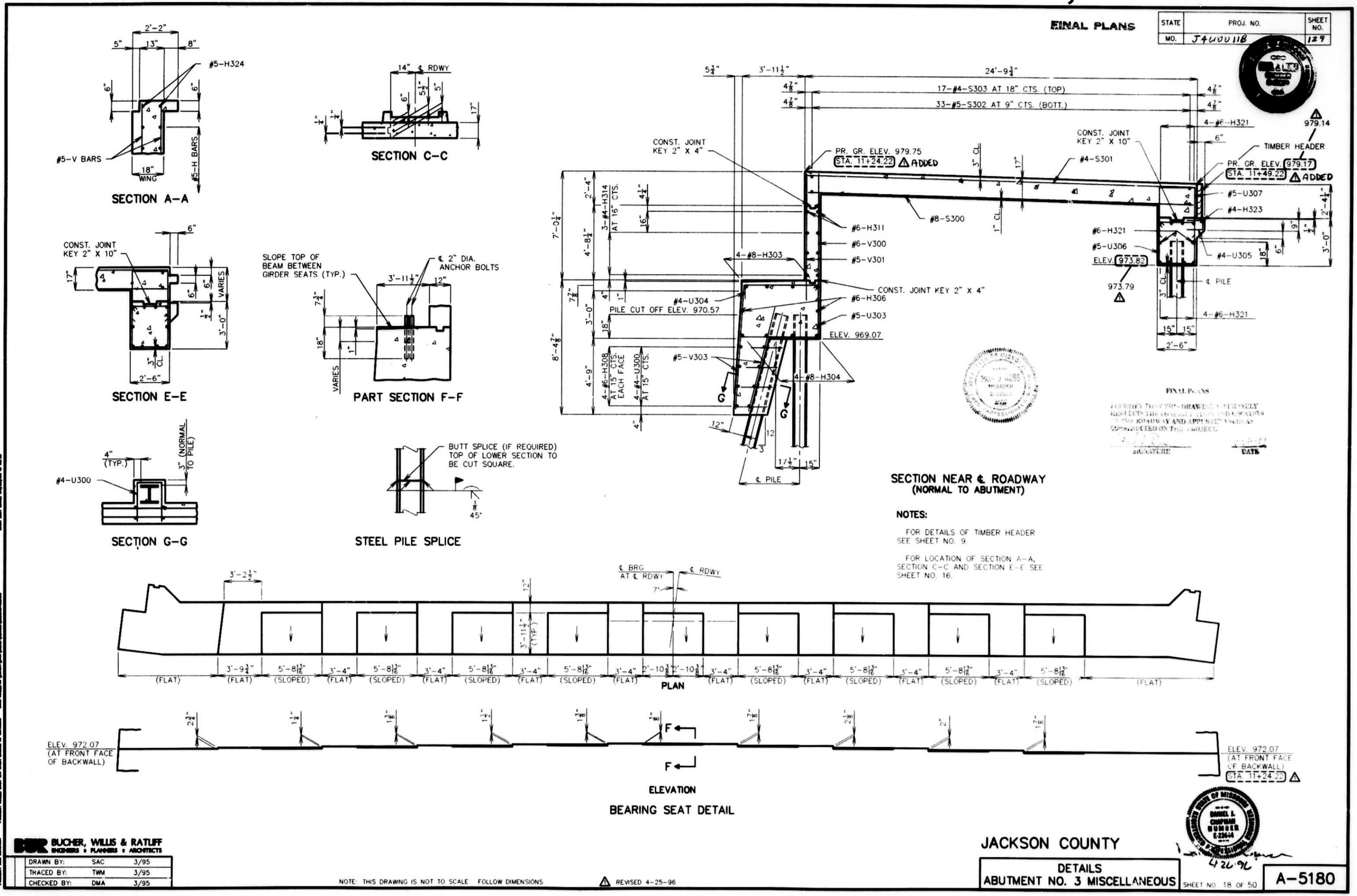
⚠ REVISED AUGUST 10, 1995

JACKSON COUNTY

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

SHEET NO. 20 OF 50

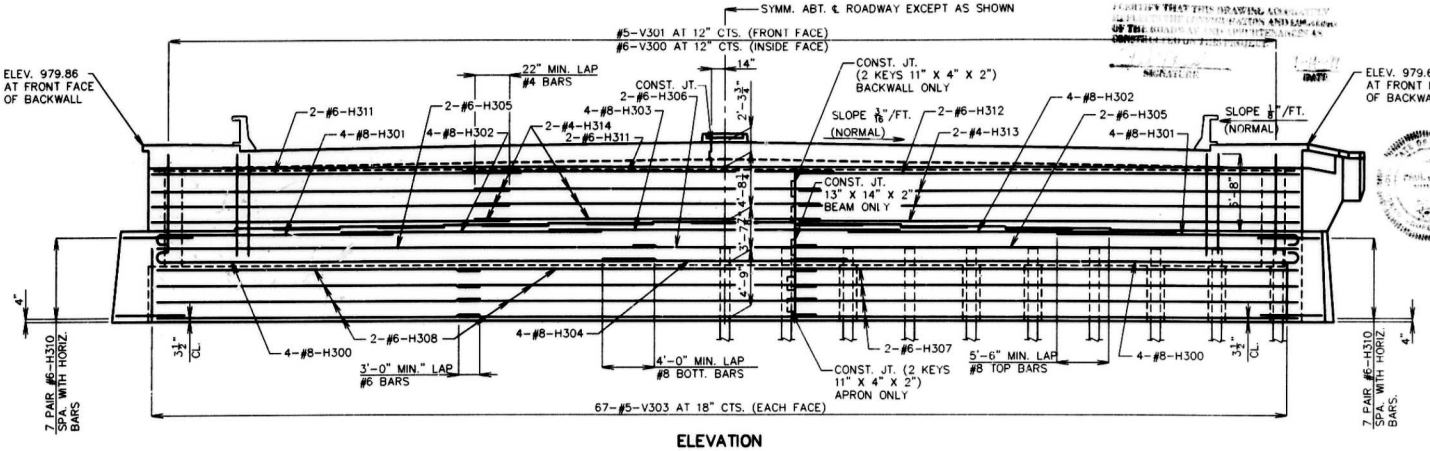
A-5180


FINAL PLANS
STATE MO. PROJ. NO. J4U0011B SHEET NO. 129
SECTION A-A
#5-H324
#5-V BARS
#5-H BARS
18" WING
SECTION C-C
14" ℄ RDWY
SECTION E-E
CONST. JOINT KEY 2" X 10"
VARIES
PART SECTION F-F
SLOPE TOP OF BEAM BETWEEN GIRDER SEATS (TYP.)
℄ 2" DIA. ANCHOR BOLTS
SECTION G-G
#4-U300
4" (TYP.)
3" (NORMAL TO PILE)
STEEL PILE SPLICE
BUTT SPLICE (IF REQUIRED) TOP OF LOWER SECTION TO BE CUT SQUARE.
17-#4-S303 AT 18" CTS. (TOP)
33-#5-S302 AT 9" CTS. (BOTT.)
CONST. JOINT KEY 2" X 4"
PR. GR. ELEV. 979.75
STA. 11+24.22 ADDED
#4-S301
#8-S300
CONST. JOINT KEY 2" X 10"
TIMBER HEADER
PR. GR. ELEV. 979.17
STA. 11+49.22 ADDED
979.14
4-#6-H321
#5-U307
#4-H323
#6-H321
#5-U306
#4-U305
ELEV. 973.82
973.79
℄ PILE
3-#4-H314 AT 16" CTS.
#6-H311
#6-V300
#5-V301
4-#8-H303
#4-U304
PILE CUT OFF ELEV. 970.57
CONST. JOINT KEY 2" X 4"
#6-H306
#5-U303
ELEV. 969.07
4-#6-H308 AT 15" CTS. EACH FACE
4-#4-U300 AT 15" CTS.
#5-V303
4-#8-H304
SECTION NEAR ℄ ROADWAY (NORMAL TO ABUTMENT)
NOTES:
FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.
FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.
℄ BRG AT ℄ RDWY
℄ RDWY
PLAN
(FLAT)
(SLOPED)
ELEV. 972.07 (AT FRONT FACE OF BACKWALL)
STA. 11+24.22
ELEVATION
BEARING SEAT DETAIL
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS
DRAWN BY: SAC 3/95
TRACED BY: TWM 3/95
CHECKED BY: DMA 3/95
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS
REVISED 4-25-96
JACKSON COUNTY
DETAILS ABUTMENT NO. 3 MISCELLANEOUS
SHEET NO. 18 OF 50
A-5180
4-26-96

24 to 1

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J6U0118	Sheet No. 127



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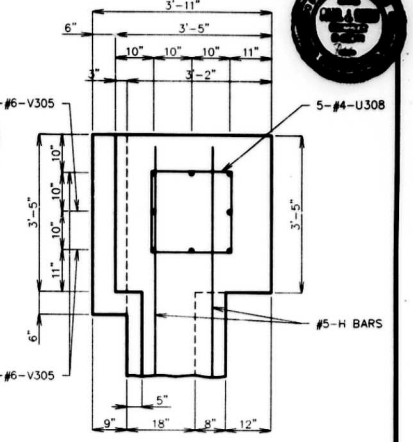
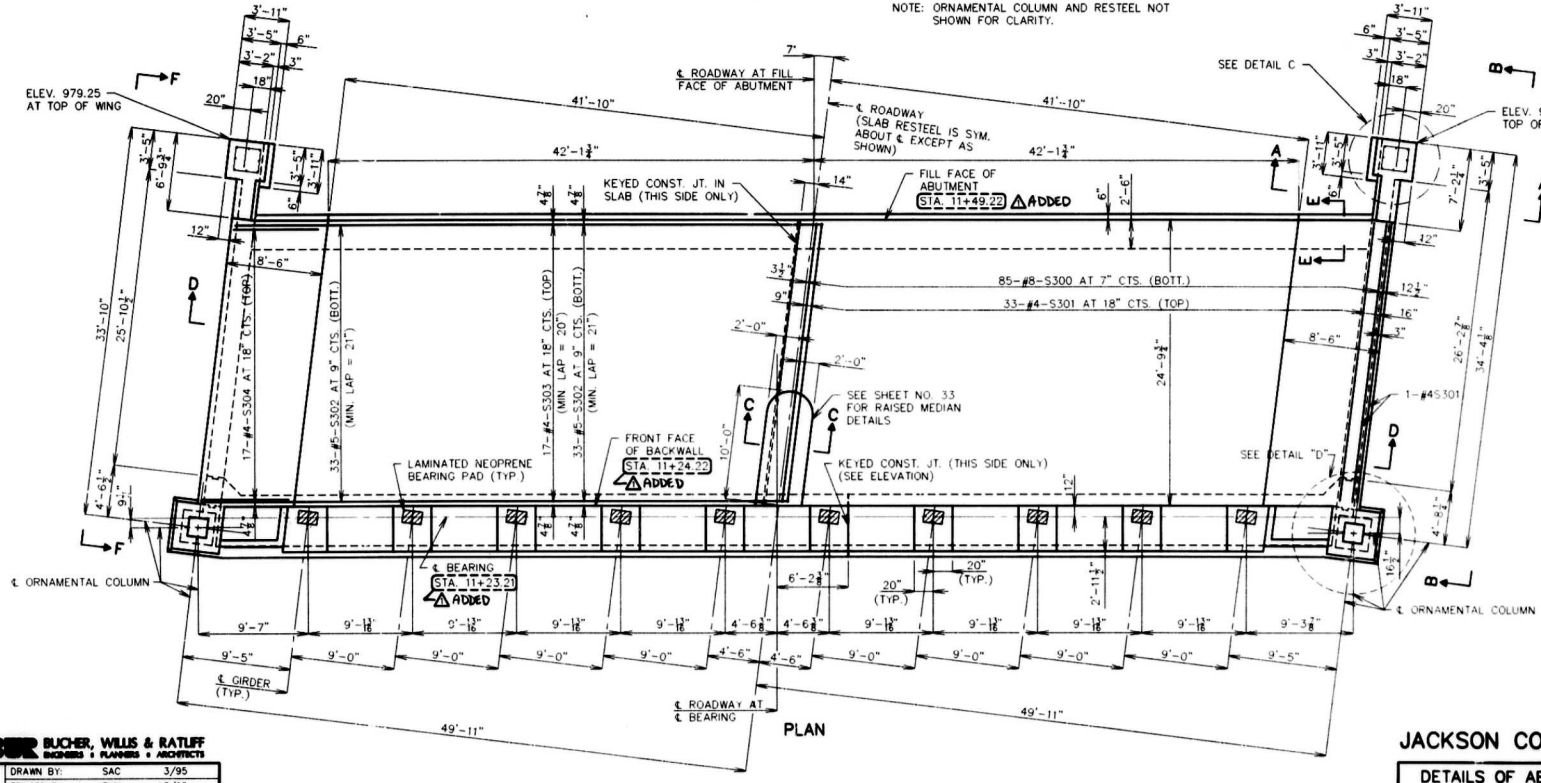
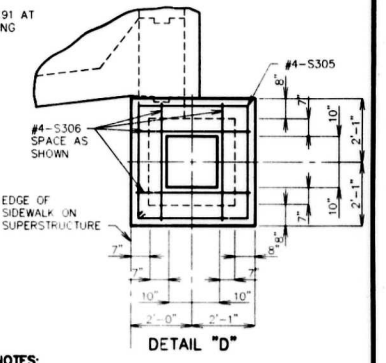


DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

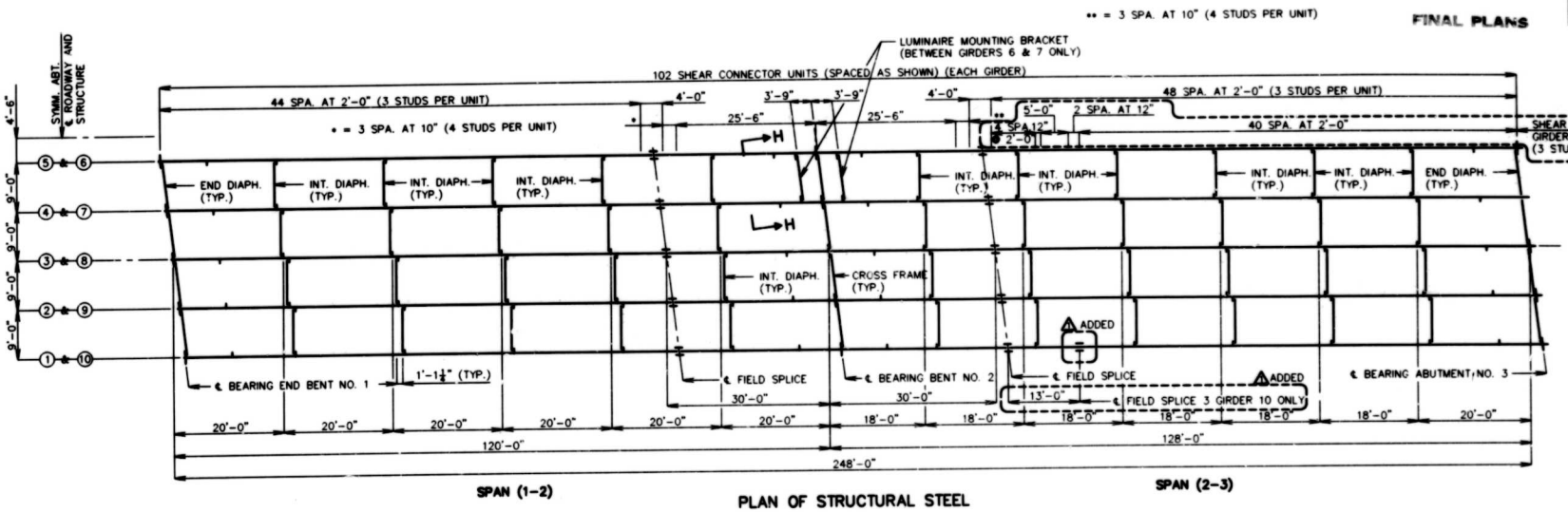
SHEET NO. 16 OF 50

A-5180

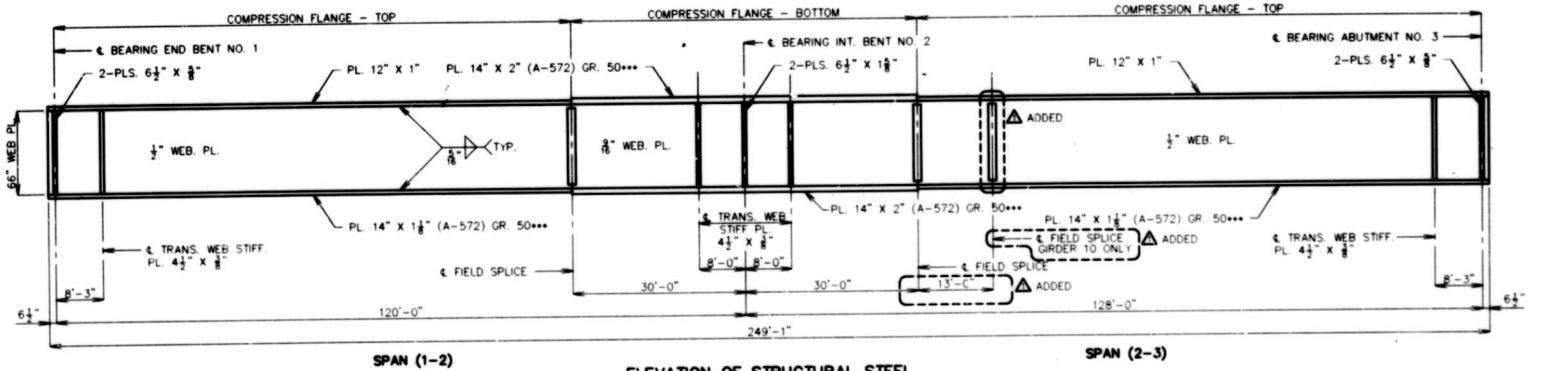
4-2-96

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	132

FINAL PLANS



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCKER, WILLIS & RATLIFF ENGINEERS ▼ PLANNERS ▼ ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

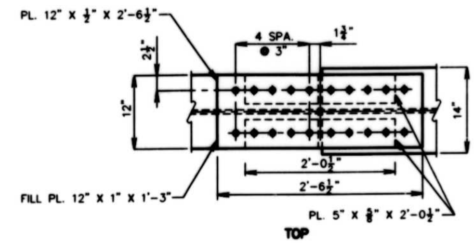
PLAN AND ELEVATION OF STRUCTURAL STEEL

SHEET NO. 21 OF 50

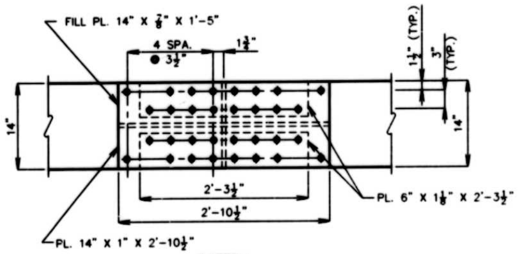
A-5180

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	135

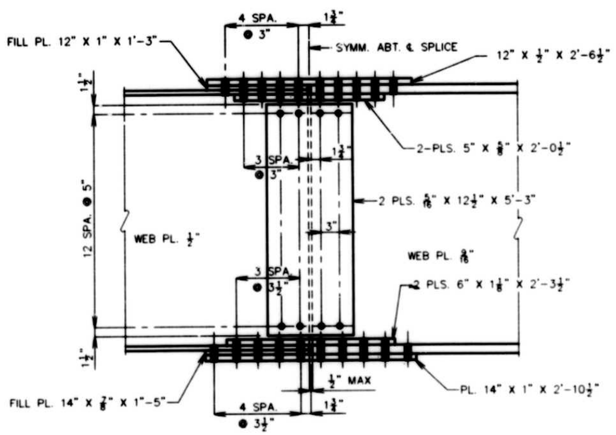


TOP



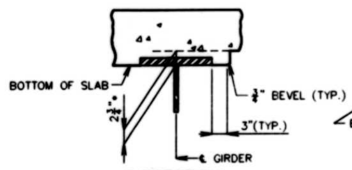
BOTTOM

PLAN OF FLANGE



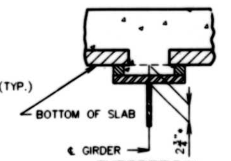
DETAIL OF BOLTED FIELD SPLICE

NOTE: FOR BOLTED FIELD SPLICE PLATES USE 7/8"⌀ H.S. BOLTS W/ 15/16"⌀ REAMED HOLES



THEORETICAL SLAB HAUNCH

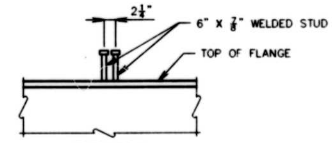
(C.I.P. SECTION)



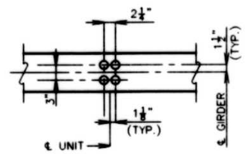
THEORETICAL SLAB HAUNCH

(P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

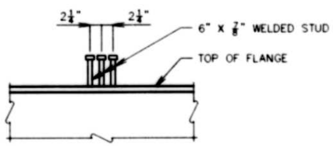


ELEVATION

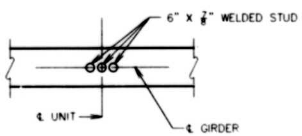


PLAN OF STUD CONN.

(4 STUDS PER UNIT)



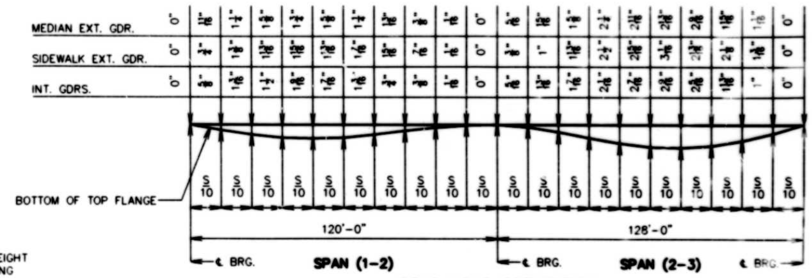
ELEVATION



PLAN OF STUD CONN.

(3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS



DEAD LOAD DEFLECTION

NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.

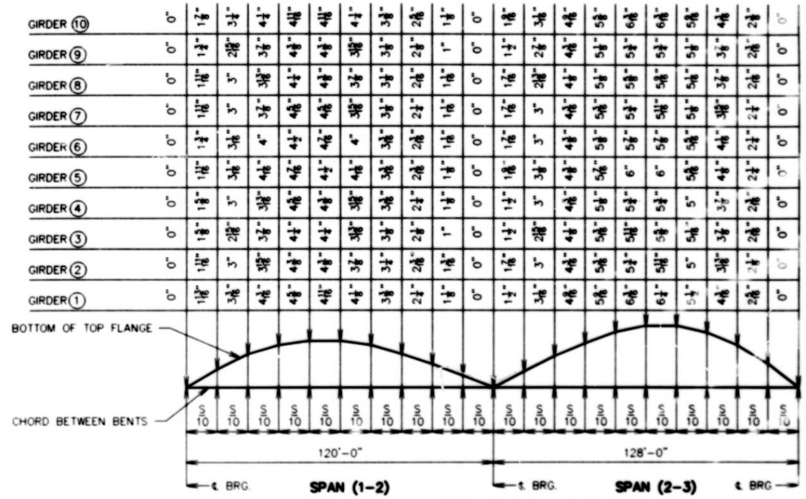


PLATE GIRDER CAMBER DIAGRAM

NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONSTRUCTION INFORMATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

SIGNATURE 9-14-99 DATE

⚠ ADDED FIELD SPLICE 3 GIRDER 10 IS SIMILAR. NO FILL PLATES REQUIRED.

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

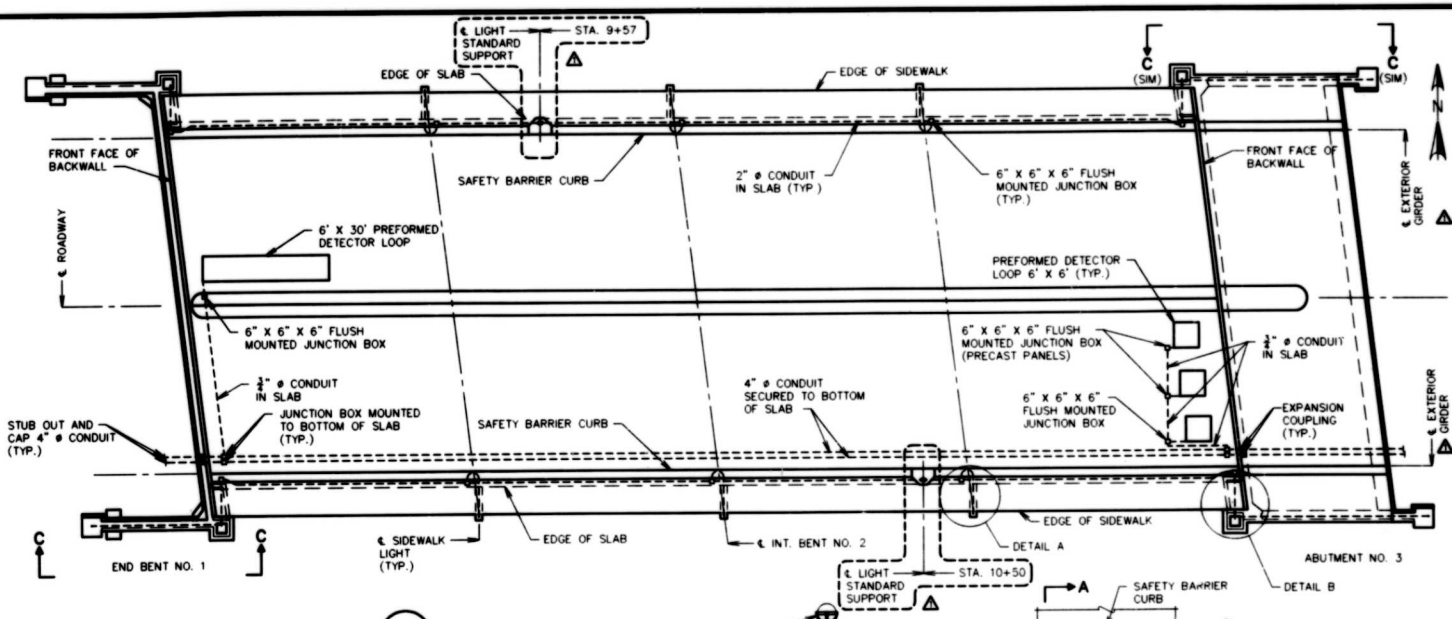
JACKSON COUNTY

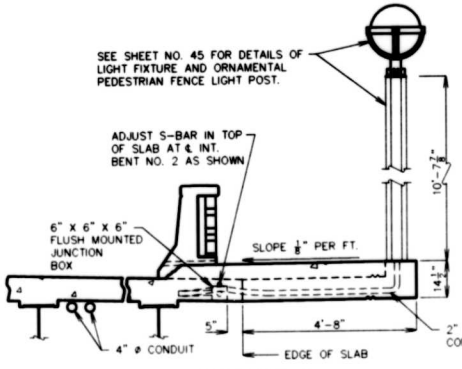
CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

SHEET NO. 24 OF 50

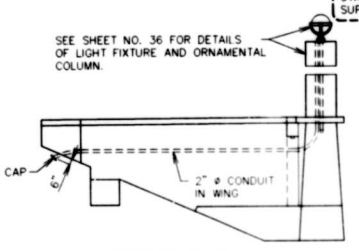
A-5180

FOR INFORMATION ONLY A51801, Sht. 63

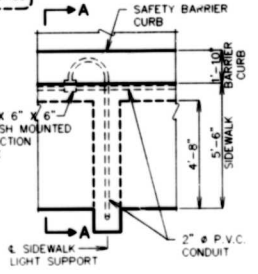




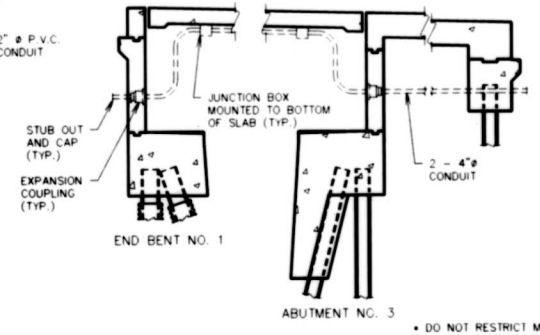
SECTION A-A



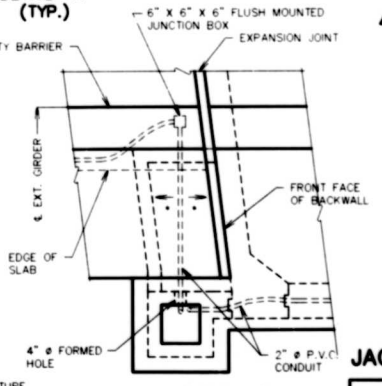
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN EITHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

⚠ 4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

[redacted]

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

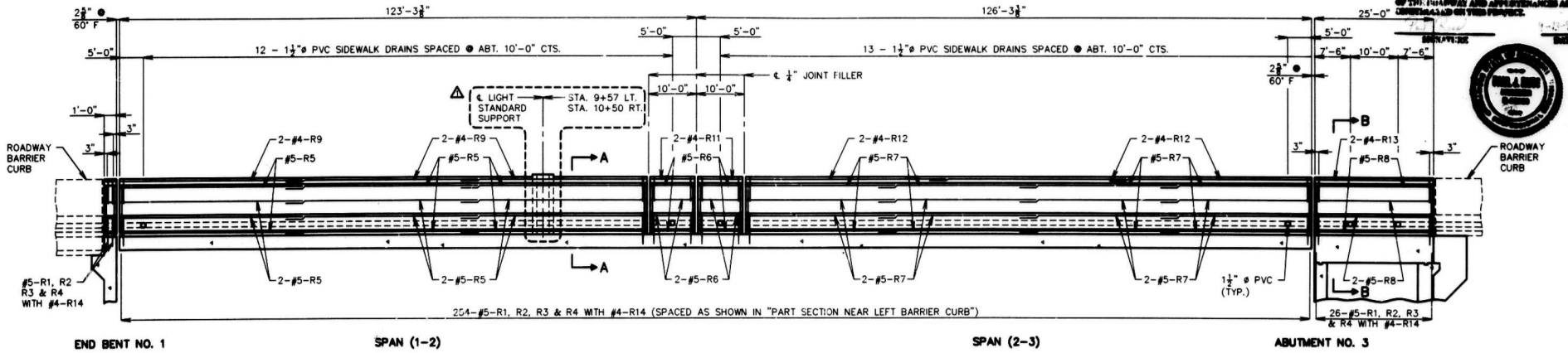
DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

FINAL PLANS

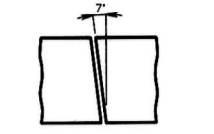
STATE	PROJ. NO.	SHEET NO.
MO.	J4M0118	145



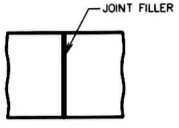
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

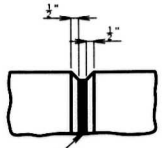


AT 2⅜" EXPANSION JOINT

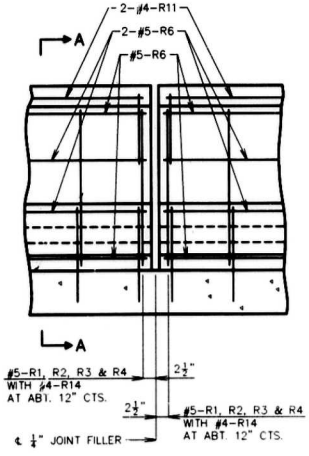


AT ¼" JOINT

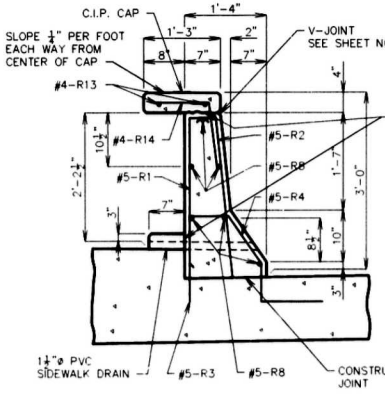
PART PLAN VIEW



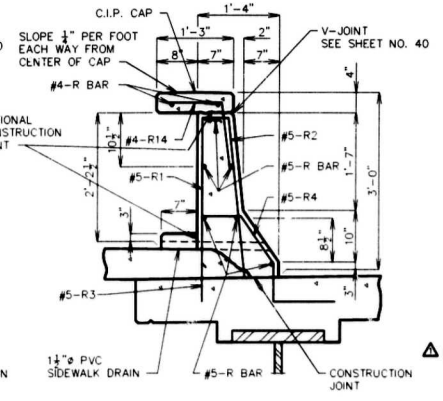
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB

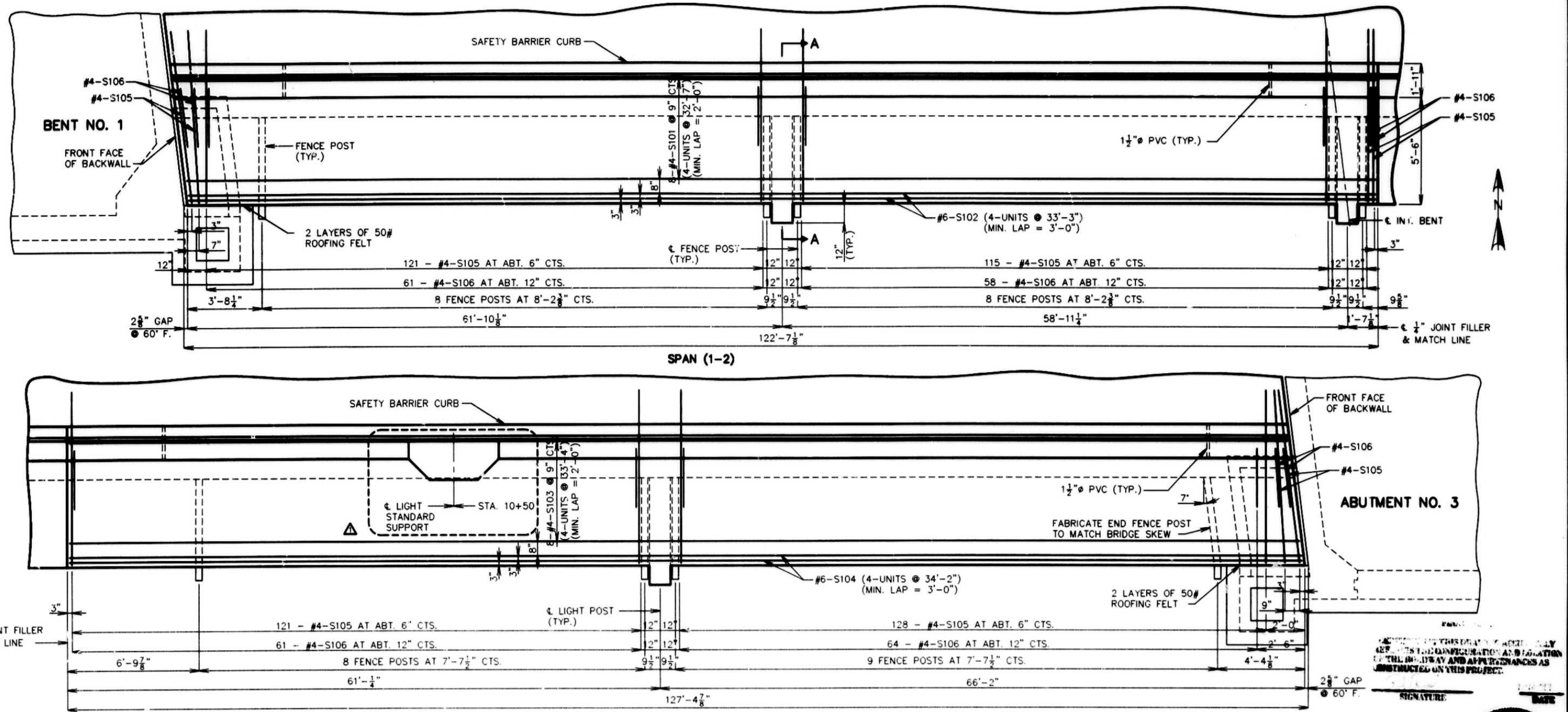
SHEET NO. 34 OF 50

A-5180

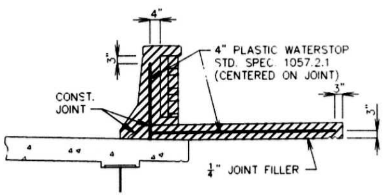
FOR INFORMATION ONLY

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	183



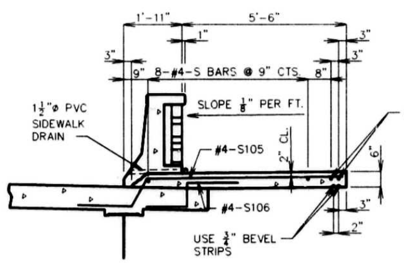
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONC[RETE] REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

BUCHER, WILLIS & RATLIFF — ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

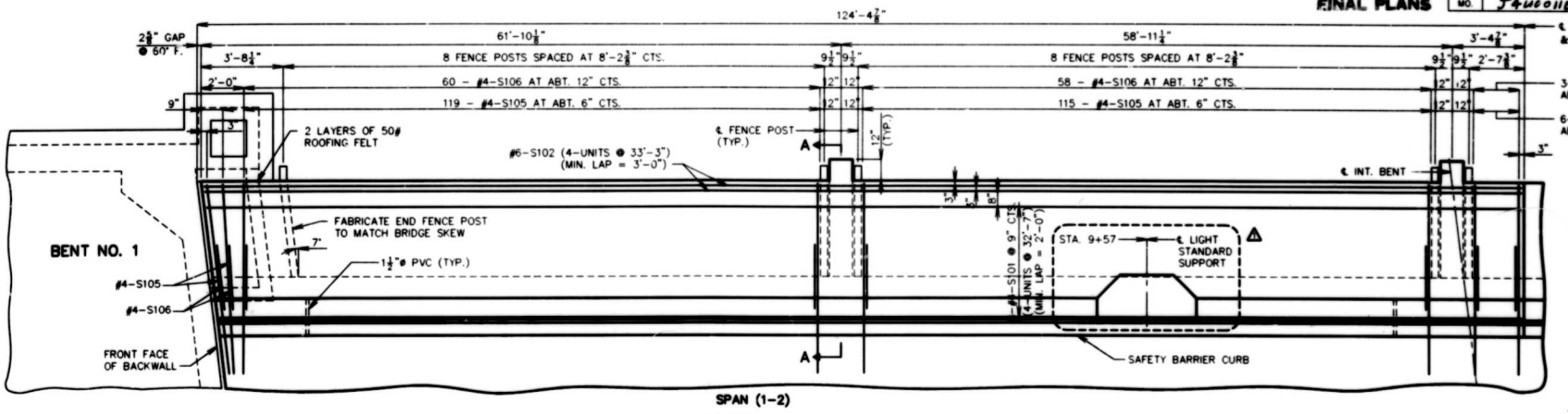
SHEET NO. 32 OF 50

A-5180

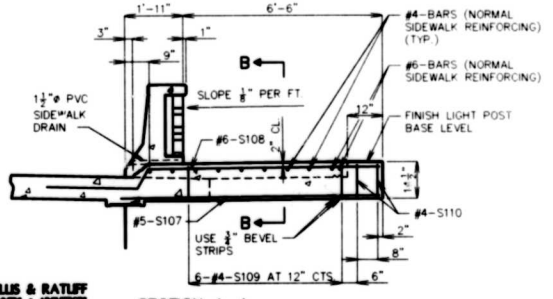
SIGNATURE DATE

STATE	PROJ. NO.	SHEET NO.
MO.	J4U60118	162

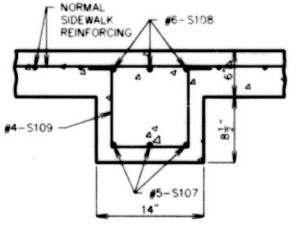
FINAL PLANS



PLAN OF LEFT SIDEWALK



SECTION A-A



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 31 OF 50

A-5180

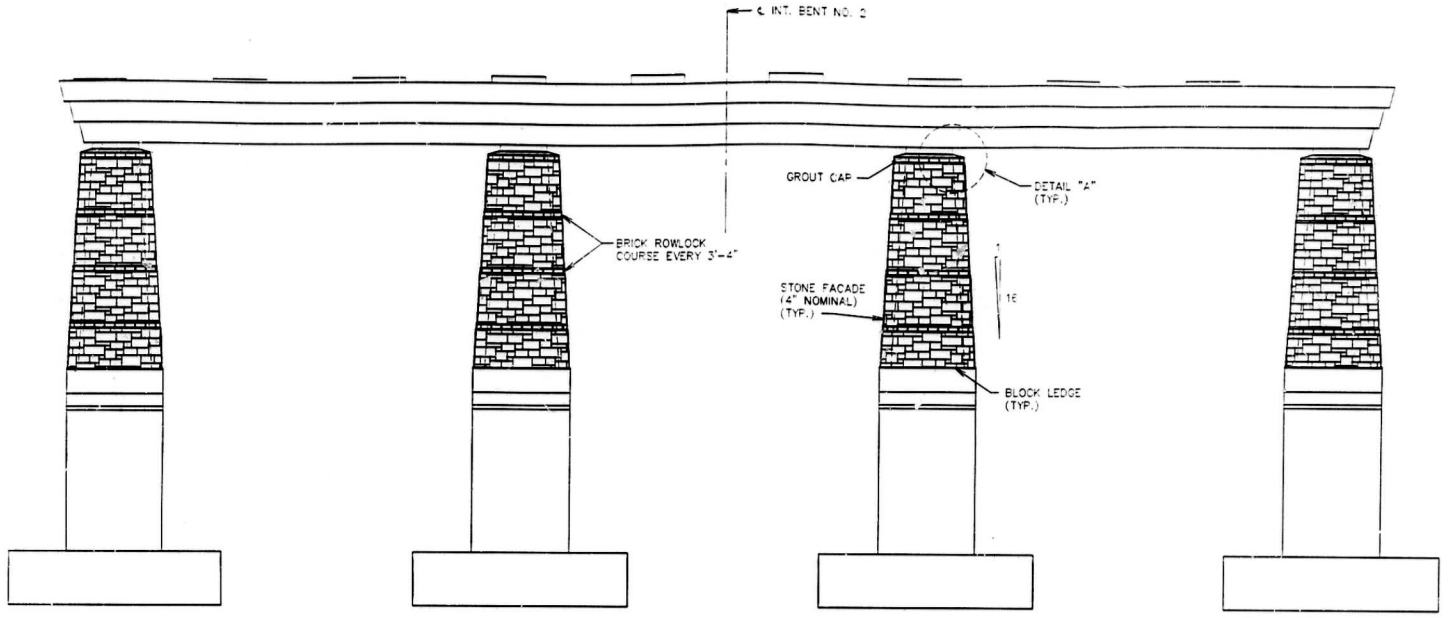
STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	129

FINAL PLANS

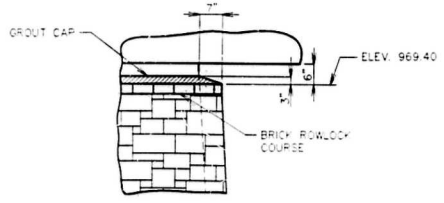
FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND DETAILS OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

7-18-97



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

7-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

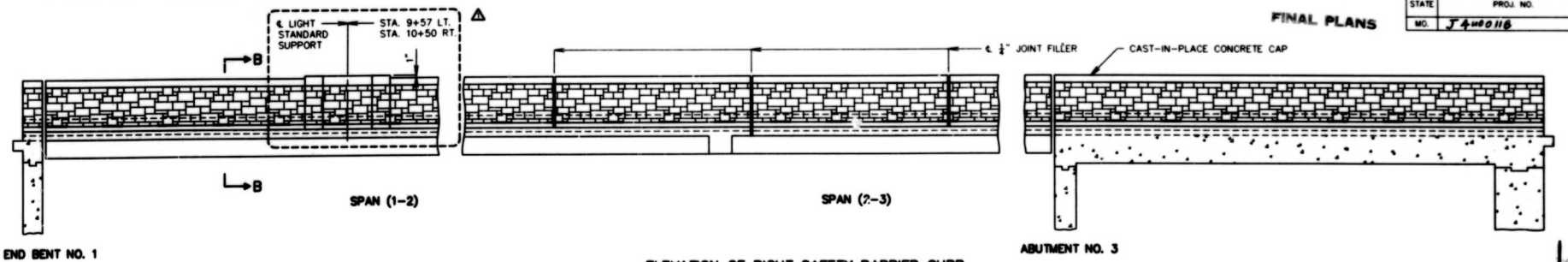
DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

SHEET NO. 38 OF 50

A-5180

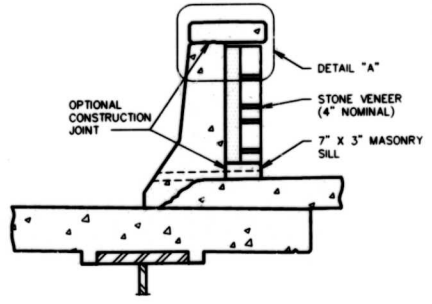
STATE	PROJ. NO.	SHEET NO.
MO.	J4H0116	151

FINAL PLANS

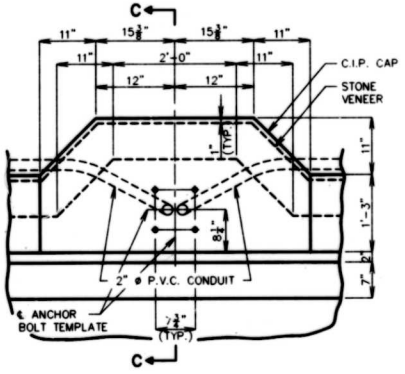


ELEVATION OF RIGHT SAFETY BARRIER CURB

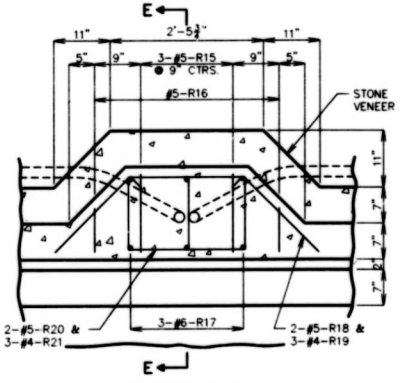
(LEFT CURB IS SIMILAR)



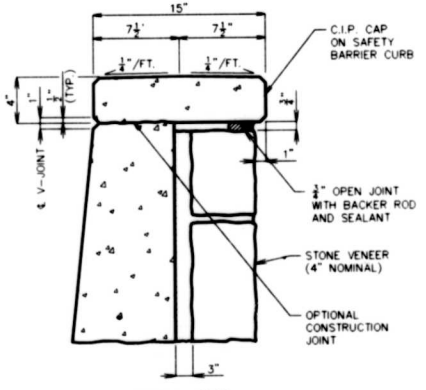
PART SECTION B-B



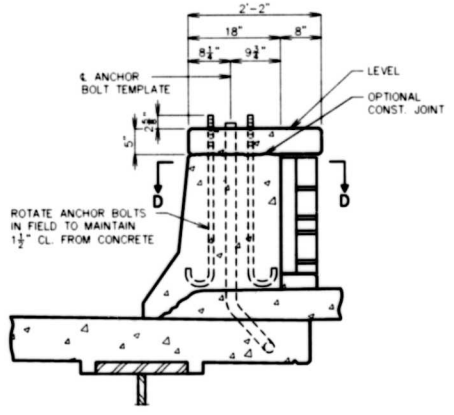
LIGHT STANDARD SUPPORT PLAN



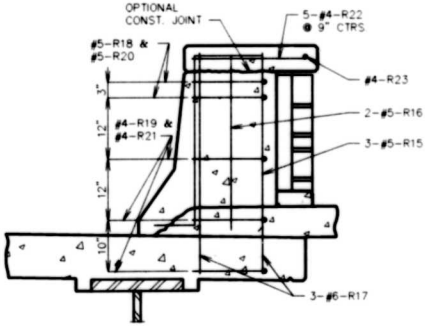
SECTION D-D



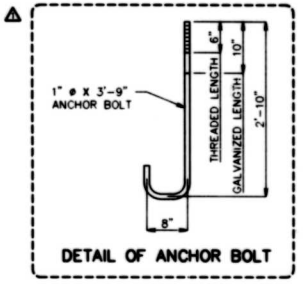
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

⚠ FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

24 to 1

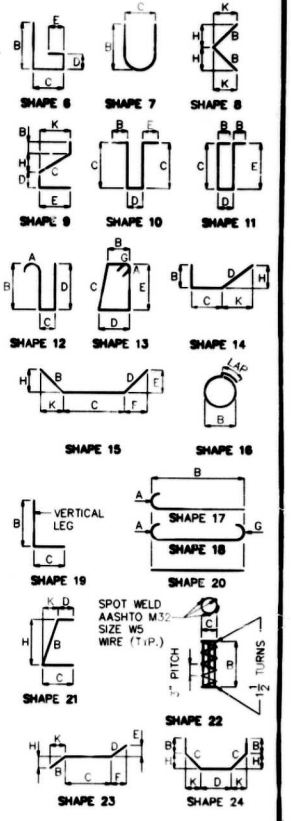
STATE	PROJ. NO.	SHEET NO.
MO.	J4L0011B	157

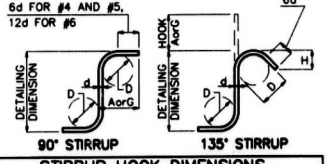
BILL OF REINFORCING STEEL

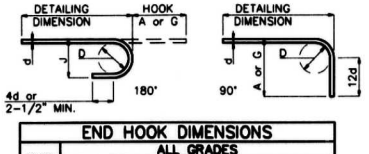
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
END BENT NO. 1																		
8	5-D100	WING FOOTING		20		X			4 6.000							4 6	4 6	38
8	5-D101	WING FOOTING		20		X			2 0.000							2 0	2 0	17
7	7-F100	WING BRACE		15		X			15.000	4 10.000	15.000	10.625	10.625	9.250	11.750	7 4	7 3	104
7	7-F101	WING BRACE		15		X			15.000	4 5.000	15.000	10.625	10.625	11.750	9.250	6 11	6 10	98
8	6-H100	BEAM		17		X			43 6.000							44 5	44 5	949
8	6-H101	BEAM		17		X			22 4.500							23 4	23 4	498
4	6-H102	BEAM		20		X			30 2.000							30 2	30 2	322
8	6-H103	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H104	BEAM		20		X			43 6.000							43 6	43 6	261
2	6-H105	BEAM		20		X			19 3.000							19 3	19 3	58
19	4-H106	BACKWALL		20		X			30 0.000							30 0	30 0	381
8	4-H107	BACKWALL		20		X			43 6.000							43 6	43 6	232
2	6-H108	BACKWALL		20		X			43 6.000							43 6	43 6	131
4	6-H109	BACKWALL		20		X			31 0.000							31 0	31 0	188
4	4-H110	BACKWALL	E	20		X			30 0.000							30 0	30 0	80
2	4-H111	BACKWALL	E	20		X			43 6.000							43 6	43 6	58
2	6-H112	BACKWALL	E	20		X			43 6.000							43 6	43 6	131
4	6-H113	BACKWALL	E	20		X			31 0.000							31 0	31 0	186
4	4-H114	BACKWALL	E	20		X			7 6.000							7 6	7 6	20
16	6-H115	BEAM		10	S	X				5 0.000	2 6.000					12 6	12 2	282
2	4-H116	ORN. COLUMN	E	20		X			6 6.000							6 6	6 6	9
14	4-H117	ORN. COLUMN	E	20		X			7 6.000							7 6	7 6	70
14	4-H118	ORN. COLUMN	E	21		X			2 6.000		12.000			2 5.750	3.625	3 6	3 5	32
14	4-H119	ORN. COLUMN	E	21		X			2 6.000	12.000				2 5.750	3.625	3 6	3 5	32
16	6-H120	ORN. COLUMN	E	19		X			4 0.000	16.000						5 4	5 2	124
14	6-H121	WING		20		X	V	2	10 0.000							10 0	10 0	
		INCREMENT = 20.500 INCH							20 3.000							20 3	20 3	321
12	6-H122	WING		20		X	V	2	7 2.000							7 2	7 2	
		INCREMENT = 17.500 INCH							10 1.000							10 1	10 1	156
4	6-H123	WING	E	20		X			21 10.000							21 10	21 10	131
12	6-H124	WING		20		X			21 10.000							21 10	21 10	393
14	6-H125	WING		20		X	V	2	10 6.000							10 6	10 6	
		INCREMENT = 21.500 INCH							21 3.000							21 3	21 3	334
4	6-H127	BEAM		20		X			21 3.000							21 3	21 3	227
2	4-S111	ORN. COLUMN	E	13	S	X			3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S112	ORN.COLUMN	E	20		X			3 9.000							3 9	3 9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T100	WING		14		X				8 8.000	1 6.000			7.250	16.500	10 2	10 2	83
2	7-T101	WING		14		X				14 3.000	1 11.000			21.000	9.250	16 2	16 1	66
2	7-T102	WING		14		X				14 6.000	1 11.000			21.250	8.875	16 5	16 4	67
32	5-U100	BEAM		13	S	X			4 0.875	2 6.000	4 2.750	2 2.000				14 3	13 11	485
34	5-U101	BEAM		13	S	X			4 0.750	2 7.750	4 2.750	2 7.750				14 8	14 2	502
28	5-U102	BEAM		13	S	X			4 0.500	2 11.500	4 2.750	2 11.375				15 1	14 9	431
26	4-U103	BEAM		10	S	X				6.000	4 0.000					5 0	4 10	84
5	7-U104	BEAM		14		X			5 0.000	23.000	4 6.000			2 9.250	3 6.500	11 5	11 2	114
5	7-U105	BEAM		14		X			5 0.000	23.000	4 6.000			3 6.500	2 9.250	11 5	11 2	114
84	4-U106	BACKWALL		10	S	X				1 2.000	6.000					2 10	2 8	150
32	4-U107	ORN. COLUMN	E	19	S	X			2 6.000	2 6.000						5 0	4 11	171
8	4-U108	WING		13	S	X			23.000	23.000	23.000	23.000				8 5	8 2	44
4	6-V100	BEAM		20		X			2 7.000							2 7	2 7	18
98	6-V101	BACKWALL	E	20		X			9 2.000							9 2	9 2	1350
98	5-V102	BACKWALL	E	20		X			8 8.000							8 8	8 8	885
20	6-V103	ORN. COLUMN	E	20		X			2 8.000							12 8	12 8	381
4	6-V104	ORN. COLUMN	E	20		X			6 9.000							6 9	6 9	41
16	6-V105	WING	E	20		X			4 2.000							4 2	4 2	100
4	6-V106	WING		20		X			3 6.000							3 6	3 6	21
18	6-V107	WING		20		X	V	2	5 1.000							5 1	5 1	
		INCREMENT = 3.875 INCH							7 8.000							7 8	7 8	172
22	6-V108	WING		20		X			7 5.000							7 5	7 5	245
16	6-V109	WING		20		X	V	2	2 8.000							2 8	2 8	
		INCREMENT = 3.500 INCH							5 0.000							5 0	5 0	92
14	6-V110	WING		20		X			5 0.000							5 0	5 0	105
12	6-V111	WING FOOTING		20		X			6 11.000							6 11	6 11	125
18	6-V112	WING		20		X	V	2	4 11.000							4 11	4 11	
		INCREMENT = 3.875 INCH							7 6.000							7 8	7 8	168
24	6-V113	WING		20		X			7 3.000							7 3	7 3	261
16	6-V114	WING		20		X	V	2	2 7.000							2 7	2 7	
		INCREMENT = 3.625 INCH							4 8.000							4 8	4 8	87
18	4-V115	ORN.COLUMN	E	20		X			3 0.000							3 0	3 0	36
8	4-V116	ORN.COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V117	ORN.COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V118	ORN.COLUMN	E	20		X			6 9.000							6 9	6 9	23
20	W5W1	A B WELLS		22		X			18.000	9.125						26 1	26 1	88







STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

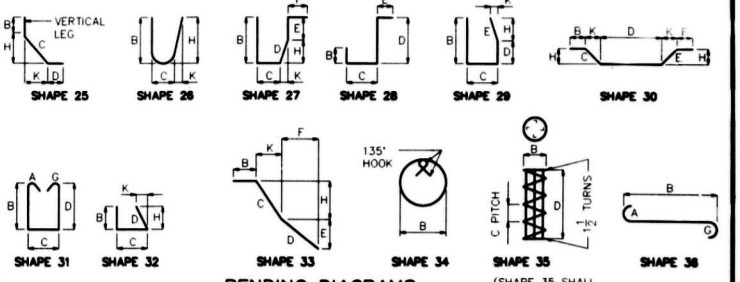
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 46 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

3-27-95

24 to 1

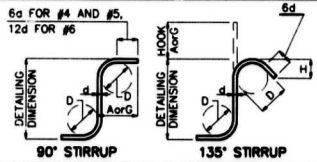
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
864	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
864	5-R2	BARRIER CURB	E	19				2	6.125	3.500				2 6.000	3.000	2 10	2 8	1571
864	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
864	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20				36	6.000							36 6	36 6	1452
24	5-R6	BARRIER CURB	E	20				9	6.000							9 6	9 6	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	6.000							24 6	24 6	309
12	4-R9	C.I.P. CAP	E	20				36	5.000							36 5	36 5	308
66	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
6	4-R11	C.I.P. CAP	E	20				9	6.000							9 6	9 6	52
12	4-R12	C.I.P. CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P. CAP	E	20				24	6.000							24 6	24 6	66
864	4-R14	C.I.P. CAP	E	15					15.000	11.000				15.00	1.500	2 2	2 1	784
8	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
8	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 6	24
8	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	6.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 6	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	5
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	817
468	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT = 49.000 INCH						40	9.000							40 9	40 9	1344
136	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	966
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
8	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

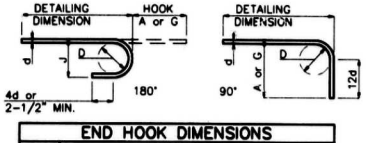
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	984
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	984
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1363
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1428
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
992	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	6 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000				3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	7 5.000				9.375	6.500	11 6	11 4	497
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500					3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000					4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000								9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20				24	6.000								24 8	24 8	11329
72	4-S301	SLAB	E	20				24	6.000								24 8	24 8	1187
132	5-S302	SLAB	E	20				26	3.000								26 3	26 3	3614
34	4-S303	SLAB	E	20				44	6.000								44 8	44 8	1015
34	4-S304	SLAB	E	20				8	2.000								8 2	8 2	188
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000					15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000								3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS



90° STIRRUP 135° STIRRUP



STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

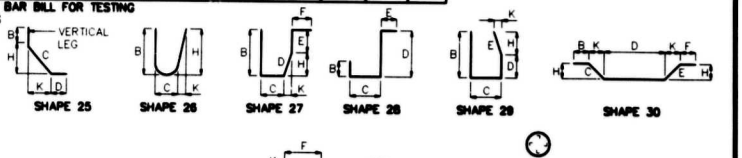
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

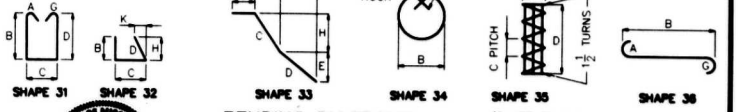
END HOOK DIMENSIONS

BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.





(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS
JACKSON COUNTY

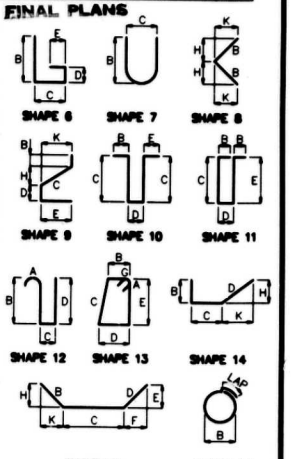
REVISED 10-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	160

FINAL PLANS



REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

BILL OF REINFORCING STEEL

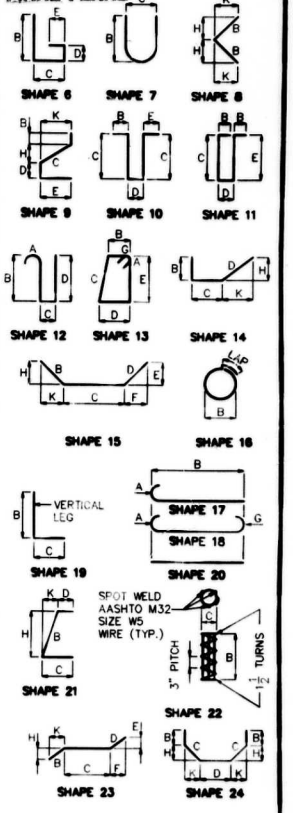
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15	X				15.000	4 6.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15	X				15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	8-H300	BEAM		17	X				43 10.000							44 9	44 9	956
8	8-H301	BEAM		17	X				22 5.000							23 4	23 4	496
8	8-H302	BEAM		20	X				23 8.000							23 8	23 8	506
4	8-H303	BEAM		20	X				30 2.000							30 2	30 2	322
4	8-H304	BEAM		20	X				21 3.000							21 3	21 3	227
4	8-H306	BEAM		20	X				43 10.000							43 10	43 10	263
2	8-H308	BEAM		20	X				18 9.000							18 9	18 9	56
8	8-H307	APRON		20	X				43 10.000							43 10	43 10	527
16	8-H308	APRON		20	X				31 4.000							31 4	31 4	753
2	4-H309	WING		20	X				7 8.000							7 8	7 8	10
28	6-H310	APRON		10	X					6 0.000	2 7.000					14 7	14 3	599
4	6-H311	BACKWALL		20	X				31 0.000							31 0	31 0	186
2	8-H312	BACKWALL		20	X				43 9.000							43 9	43 9	131
8	4-H313	BACKWALL		20	X				43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20	X				29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21	X				3 6.000		12.000			3 5.625	5.125	4 6	4 5	41
14	4-H316	ORN. COLUMN	E	21	X				3 6.000	12.000				3 5.625	5.125	4 6	4 5	41
16	5-H317	ORN. COLUMN	E	19	X				4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20	X				7 0.000							7 0	7 0	9
16	8-H319	APPR. BEAM		17	X				41 7.000							42 3	42 3	1015
4	8-H320	APPR. BEAM		20	X				41 7.000							41 7	41 7	250
10	8-H321	APPR. BEAM		20	X				22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20	X				34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20	X				26 8.000							26 8	26 8	36
4	5-H324	WING	E	20	X				9 0.000							9 0	9 0	36
6	5-H325	WING		20	X				9 0.000							9 0	9 0	56
2	5-H326	WING		20	X				31 10.000							31 10	31 10	66
8	5-H327	WING		20	X	V	2		22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20	X				17 1.000							17 1	17 1	23
2	4-H329	WING		20	X				12 7.000							12 7	12 7	17
2	4-H330	WING		20	X				8 1.000							8 1	8 1	11
12	4-H331	WING		20	X				5 6.000							5 6	5 6	44
2	4-H332	WING		20	X				12 2.000							12 2	12 2	16
2	4-H333	WING		20	X				16 8.000							16 8	16 8	22
8	5-H334	WING		20	X	V	2		22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20	X				31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20	X				8 0.000							8 0	8 0	75

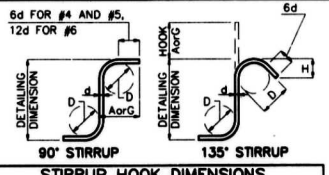
BILL OF REINFORCING STEEL

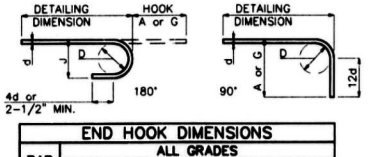
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X					29 7.875	2 6.000			2 6.375	10.125	33 7	33 6	7
2	7-T302	WING		14		X					30 7.000	3 0.000			2 10.125	11.375	33 7	33 6	7
48	4-U300	APRON		10	S	X						2 0.000	1 5.000				5 5	5 3	168
32	8-U301	BEAM		13	S	X				4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 6	517
34	8-U302	BEAM		13	S	X				4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	591
28	8-U303	BEAM		13	S	X				4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 6	462
28	4-U304	BEAM		10	S	X						6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X						17.500	6.000				3 5	3 3	182
92	8-U306	APPR. BEAM		13	S	X				2 3.000	2 8.000	2 3.000	2 6.000				10 5	10 1	677
109	8-U307	APPR. BEAM	E	10	S	X					3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000	23.000				8 5	8 2	56
52	4-U309	ORN. COLUMN	E	19	S	X				2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL	E	20		X				8 11.000							8 11	8 11	1286
98	5-V301	BACKWALL	E	20		X				8 6.000							8 6	8 6	851
18	4-V302	ORN. COLUMN	E	20		X				3 0.000							3 0	3 0	38
134	5-V303	APRON		20		X				6 3.000							6 3	6 3	874
20	8-V304	ORN. COLUMN		20		X				9 9.000							9 9	9 9	293
16	8-V305	END POST	E	20		X				5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2		4 0.000							4 0	4 0	
		INCREMENT =								4 9.000							4 9	4 9	40
		4.500 INCH																	
30	4-V307	WING		20		X	V	2		5 4.000							5 4	5 4	
		INCREMENT =								12 8.000							12 8	12 8	180
		6.250 INCH																	
4	4-V308	WING		20		X				14 10.000							14 10	14 10	40
4	4-V309	WING		20		X				15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X				5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X				8 8.000							8 8	8 8	22
5	4-V312	ORN. COLUMN	E	20		X				8 11.000							8 11	8 11	23
30	4-V313	WING		20		X	V	2		5 7.500							5 8	5 8	
		INCREMENT =								12 11.000							12 11	12 11	188
		6.250 INCH																	
6	5-V314	WING		20		X	V	2		4 5.000							4 5	4 5	
		INCREMENT =								5 1.000							5 1	5 1	30
		4.000 INCH																	
20	6-V315	ORN. COLUMN	E	20		X				10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X				6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X				18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	194

FINAL PLANS







STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

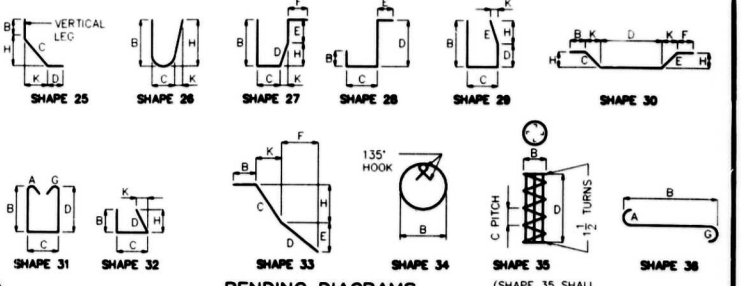
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
INTERMEDIATE BENT NO. 2																												
56	5	D200	FOOTING		20		X			10	2.000													10	2	10	2	564
68	9	D201	FOOTING		18		X			13	8.000													18	2	18	2	3739
18	9	H200	BEAM		17		X			49	7.500													50	10	50	10	3111
18	9	H201	BEAM		17		X			45	5.000													46	8	46	8	2856
18	10	H202	BEAM		20		X			48	2.000													48	2	48	2	3316
4	8	H203	BEAM		20		X			48	10.000													48	10	48	10	293
4	8	H204	BEAM		20		X			40	4.000													40	4	40	4	242
16	10	H205	BEAM		20		X			43	3.000													43	3	43	3	2976
12	4	H206	BRG. BASE		20		X			3	3.000													3	3	3	3	35
24	7	H207	BEAM		19		X	V	4	3	9.000	2	6.000											6	3	6	1	
			INCREMENT =							5	5.000	2	6.000											7	11	7	9	339
			4.00 INCH																									
224	4	P200	COLUMN		13	S	X	V	16	2	0.000	2	9.500	2	0.000	2	9.500							10	4	10	1	
										3	1.000	4	6.625	3	1.000	4	6.625							16	0	15	9	1932
			INCREMENT =								1.000		1.625		1.000		1.625											
176	4	P201	COLUMN		10	S	X					3	9.000	5	3.000									12	9	12	7	1479
104	4	P202	COLUMN		10	S	X					4	9.000	1	4.000									10	4	10	2	707
32	4	P203	COLUMN		10	S	X					3	9.000	4	6.000									12	0	11	10	253
24	5	R200	COLUMN	E	20		X			5	8.000													5	8	5	8	142
48	5	R201	COLUMN	E	15		X				12.000		12.250	1	8.250		11.625		16.625		9.875		6.875	3	9	3	8	184
48	5	R202	COLUMN	E	15		X					2	0.000	2	0.000		23.875		2.500					4	0	3	11	196
288	6	U200	BEAM		13	S	X			2	5.750	3	10.375	3	5.000	3	9.000							14	10	14	5	6238
116	5	U201	BEAM		21	S	X				13.375	4	9.000		12.000						13.000		3.250	8	10	8	8	807
28	4	U202	BRG. BASE		10	S	X						12.000	4	3.000									8	3	8	1	114
96	10	V200	COLUMN		36		X			19	4.000													22	2	22	2	9158
96	10	V201	COLUMN		15		X			4	2.000	13	3.000							2	4.750	3	5.000	17	5	17	5	7196
20	W	W1	A B WELLS		22		X			2	1.000		9.125											33	2	33	2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.

STATE | PROJ. NO. | SHEET NO.
MO. J4400118 | 15B

FINAL PLANS

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 19 (VERTICAL LEG) SHAPE 17 SHAPE 18 SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24

6d FOR #4 AND #5.
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

DETAILING DIMENSION | HOOK A or G | 4d or 2-1/2" MIN. | 180° | 90° | 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 (VERTICAL LEG) SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 (135° HOOK) SHAPE 35 (SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.) SHAPE 36

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 47 OF 50

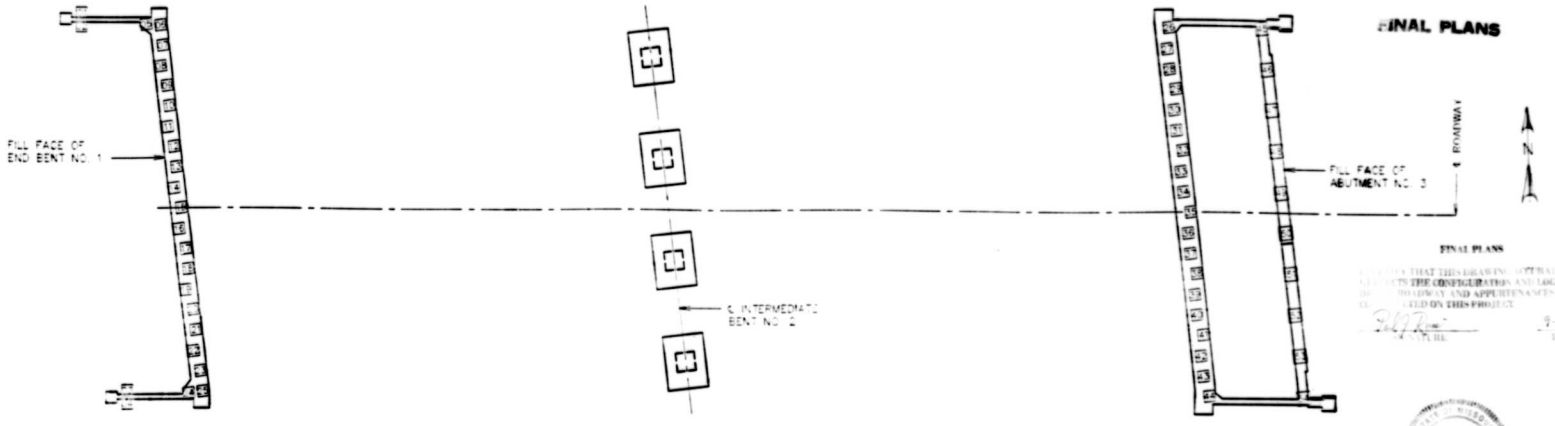
A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	161

FINAL PLANS



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

[signature] 9-14-97
SIGNATURE DATE

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1	30.4	99.6	Wingwall, All piles driven to practical refusal
2	32.4	82.0	" Used HP 12 x 53 piles
3	26.0	47.8	"
4	25.8	51.0	"
5	28.6	158.7	
6	31.3	128.1	Battered
7	31.7	138.1	Battered
8	28.7	150.3	
9	30.7	130.8	Battered 3/12
10	31.1	130.8	Battered 3/12
11	28.7	142.8	
12	31.0	130.8	Battered 3/12
13	31.1	138.1	Battered 3/12
14	28.9	142.8	
15	31.0	146.1	Battered
16	29.5	142.8	
17	31.3	130.8	Battered 3/12
18	31.2	128.1	Battered 3/12
19	27.6	136.0	
20	31.4	130.8	Battered 3/12
21	31.6	128.1	Battered 3/12
22	29.8	158.7	
23	31.6	130.8	Battered 3/12
24	30.2	142.8	
25	31.8	130.8	Battered

755.2 Lin. Ft. Total for Bent 1

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26	35.1	150.3	
27	30.7	138.3	Battered 3/12
28	36.0	138.3	Battered 3/12
29	29.6	168.0	
30	30.6	131.4	Battered 3/12
31	30.7	138.3	Battered 3/12
32	29.7	137.8	Battered 3/12
33	30.9	128.3	Battered 3/12
34	30.6	131.4	Battered 3/12
35	29.7	158.7	
36	33.4	128.3	Battered 3/12
37	30.8	146.0	Battered 4/12
38	29.7	150.3	
39	30.7	146.0	Battered 3/12
40	30.6	131.4	Battered 3/12
41	29.6	158.7	
42	30.7	138.3	Battered 3/12
43	30.5	131.4	Battered
44	30.0	150.3	
45	23.8	95.2	
46	24.1	79.3	
47	24.1	95.2	
48	24.2	102.0	
49	24.8	109.9	
50	28.5	142.8	
51	28.4	109.9	
52	24.6	158.7	
53	24.7	124.2	
54	24.6	136.0	

933.2 Lin. Ft. total for Bent 3

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C) TYPE OF PILING USED.

Note: All piling were driven to practical refusal

[signature] 3.27.95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

AS-BUILT PILE DATA

SHEET NO. 50 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		114

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE)	f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60)	fy=60,000 PSI.
STEEL PILE	fb= 9,000 PSI.
STRUCTURAL CARBON STEEL	fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50)	fy=50,000 PSI.

FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	669		669
STRUCTURAL STEEL PILE (12")	LIN. FT.	1956		1956
PREBORE FOR PILING	LIN. FT.	327		327
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,570		67,570
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21

2190 △

ESTIMATED QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

ESTIMATED QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

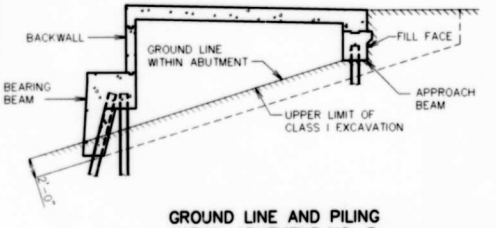
ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM	BRG. BM	COLUMNS	BRG. BM	APPR. BM
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	37	34		37	41
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

JACKSON COUNTY

GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

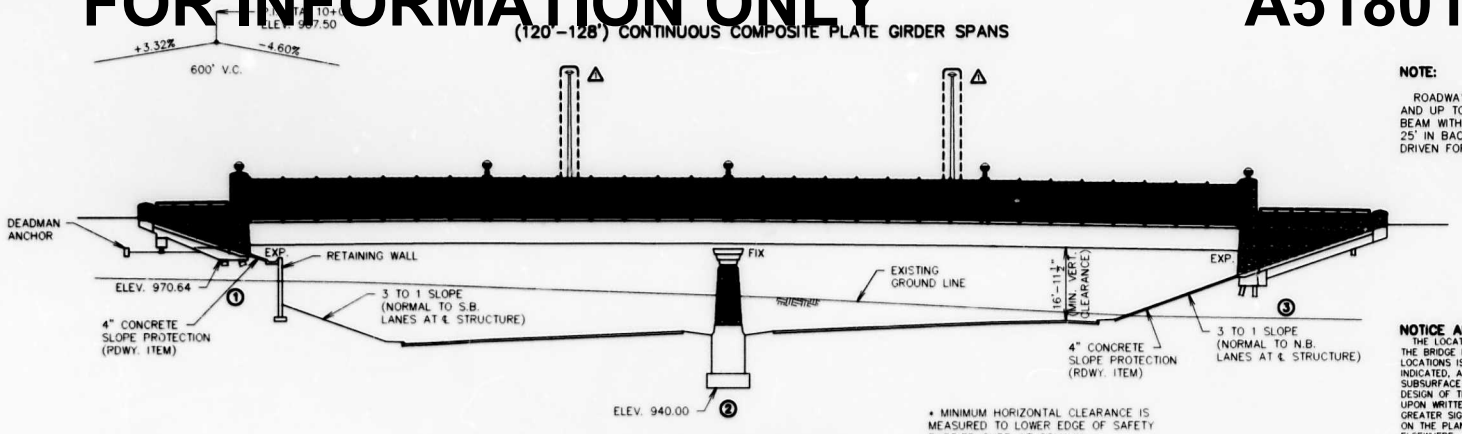
A–5180

FOR INFORMATION ONLY

A51801, Sht. 75

STATE	FED. AID PROJ. NO.	SHEET NO.

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



GENERAL ELEVATION

* MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

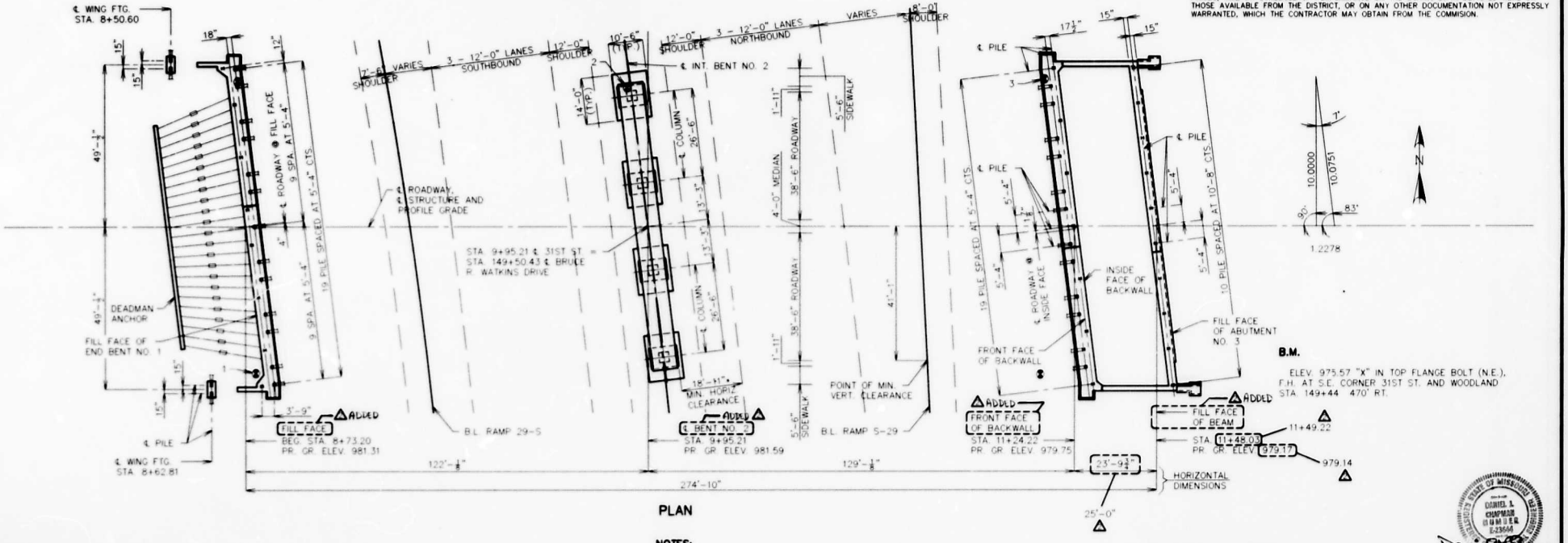
NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DANIEL L. CHAPMAN NUMBER E-23666 STATE OF MISSOURI

4-26-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

GENERAL PLAN AND ELEVATION

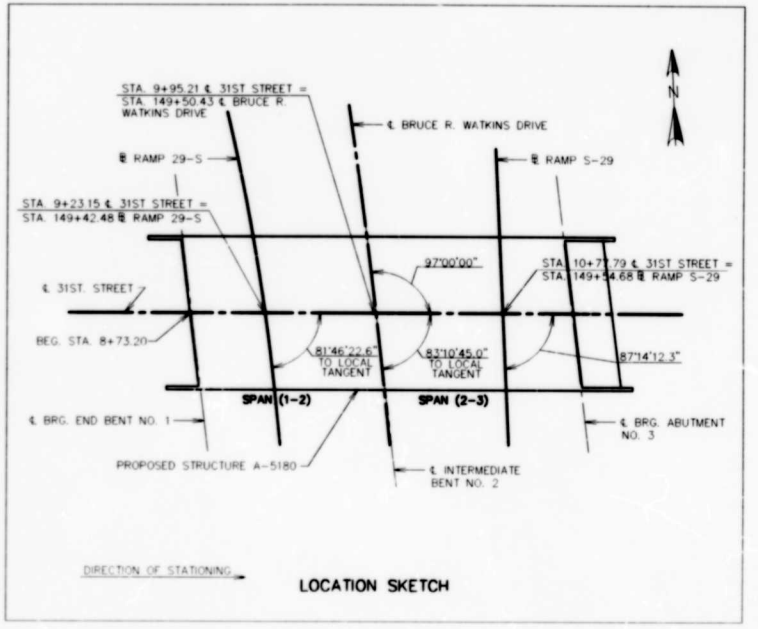
SHEET NO. 2 OF 50

A-5180

24 to 1

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		112
SEC. 15	TWP. 49 N.	RGE. 33 W



BRIDGE: 31ST. STREET OVER RELOCATED ROUTE 71, BRUCE R. WATKINS DRIVE

STATE ROAD N. OF 31ST. STREET TO SWOPE PARKWAY
IN KANSAS CITY
PROJECT NO.
JOB NO. J4U0011B
JACKSON COUNTY

STA. 9+95.21 (℄ 31ST. STREET)=
STA. 149+50.43 (℄ BRUCE R. WATKINS DR.)
RTE. 71

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

Date 4/17/95 SHEET NO. 1 OF 50

STD.	708.35
STD.	903.03AQ
	A-5180

STATE	PROJ. NO.	SHEET NO.
MO		115

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	2/4/6	3.0
10'	5/10/14	4.5 +
15'	12/35/49	4.5 +
20'	22/50	4.5 +

ELEV. 964.3
DARK GREEN FAT CLAY, MOIST, VERY STIFF
ELEV. 954.3
TAN BROWN FAT CLAY, MOIST, HARD
ELEV. 949.3
GRAY SHALE, HARD
ELEV. 941.6
THIN TO MEDIUM BEDDED LIMESTONE, MODERATELY HARD
ELEV. 930.4

① (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	9/18/25	3.5
10'	10/22/34	4.5 +
15'	8/26/42	4.5 +
20'	50/4"	4.5 +

ELEV. 961.2
TAN BROWN FAT CLAY, MOIST, SOFT TO VERY STIFF
ELEV. 951.8
OLIVE BROWN FAT CLAY, SLIGHTLY MOIST, HARD
ELEV. 945.2
GRAY WEATHERED SHALE, HARD
ELEV. 941.6
GRAY, THICK BEDDED LIMESTONE, HARD
ELEV. 931.9

② (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	6/6/7	1.5
10'	5/12/17	4.5 +
15'	5/12/15	4.5 +
20'	2/2/2	0.5

ELEV. 959.5
DARK BROWN FAT CLAY, MOIST, STIFF
ELEV. 950.5
TAN BROWN FAT CLAY, MOIST, VERY STIFF
ELEV. 944.5
OLIVE TAN BROWN SHALE, HARD
ELEV. 940.1
REDDISH BROWN FAT CLAY, MOIST, SOFT
ELEV. 935.9
GRAY WEATHERED LIMESTONE, BROWN CLAY ALONG BEDDING PLANES, MODERATELY HARD, THIN TO MEDIUM BEDDING
ELEV. 920.3

③ (CORE)

NOTE: FOR LOCATION OF BORINGS, SEE SHEET NO. 2. BORING DATA FOR ALL LOCATIONS IS AVAILABLE UPON REQUEST FROM THE DISTRICT OFFICE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

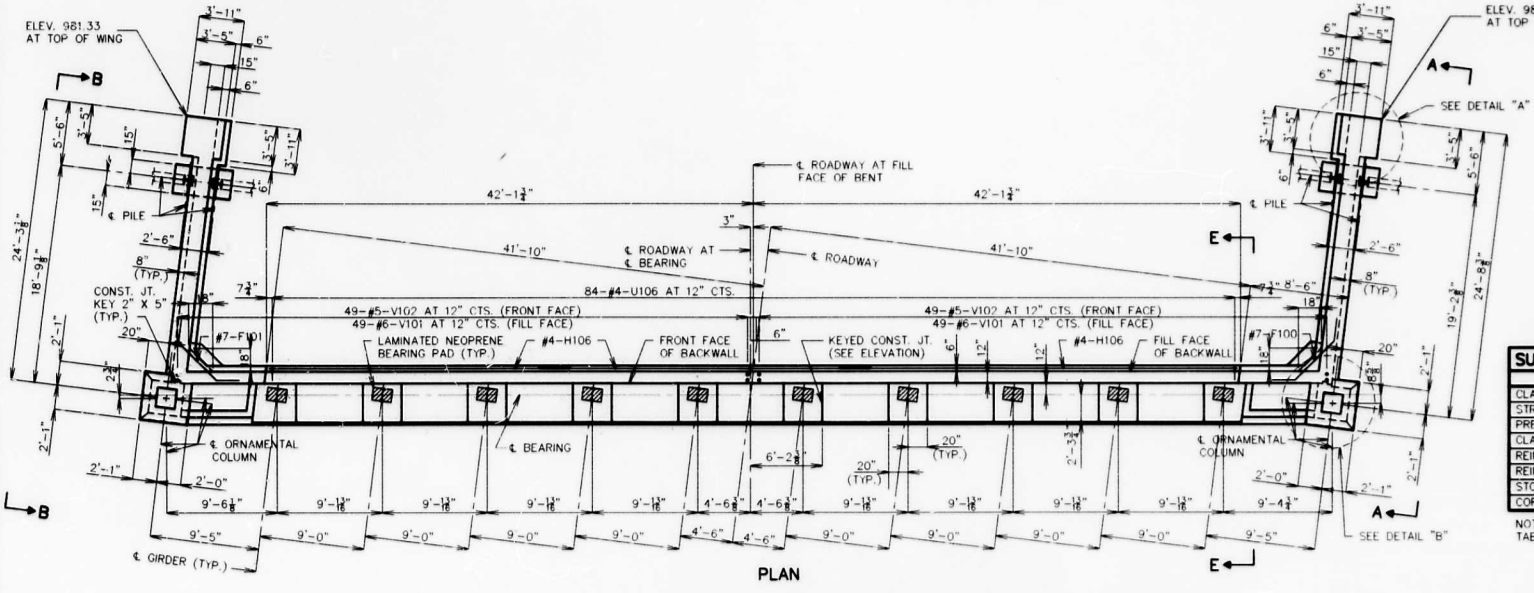
JACKSON COUNTY

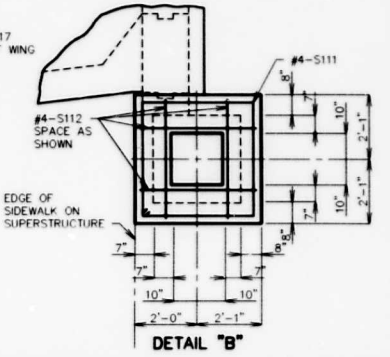
BORING DATA

SHEET NO. 4 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.

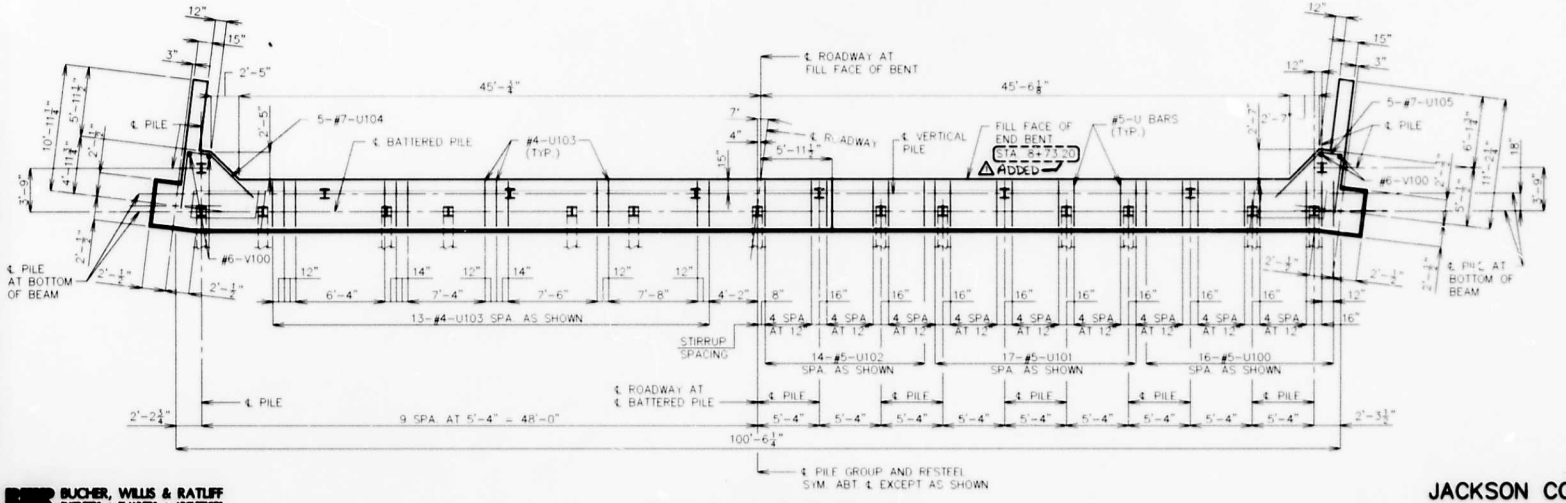




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITIY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.8 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITIY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 8.

FOR SECTION E-E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WNGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

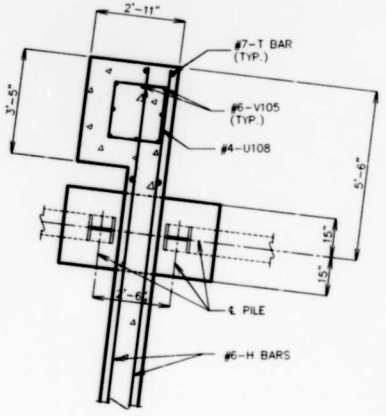
DETAILS OF END BENT NO. 1 PLAN

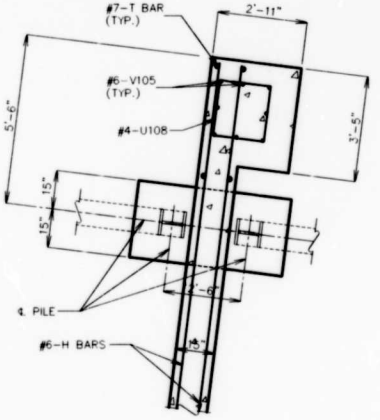
SHEET NO. 5 OF 50

A-5180

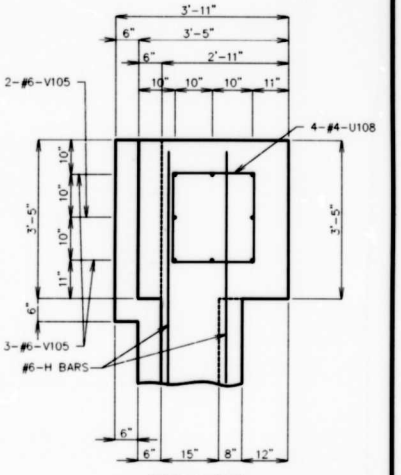
24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		

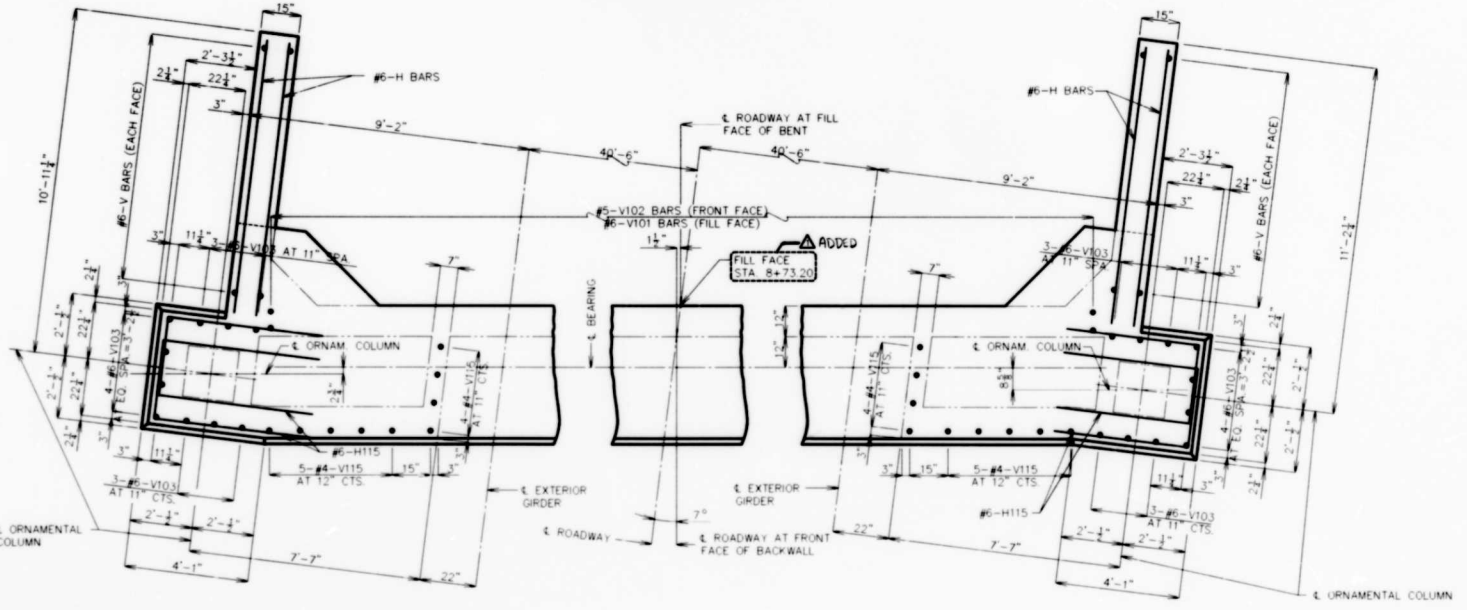




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCKER, WILLIS & RATLIFF
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DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

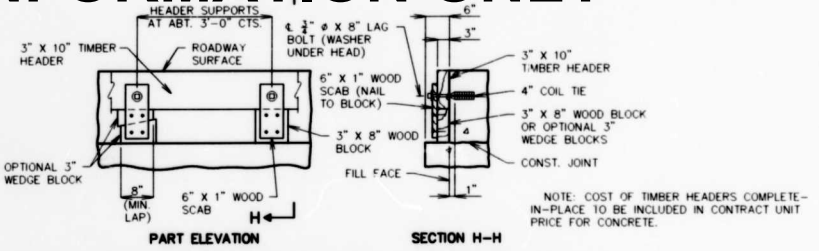
DETAILS OF
END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

A-5180

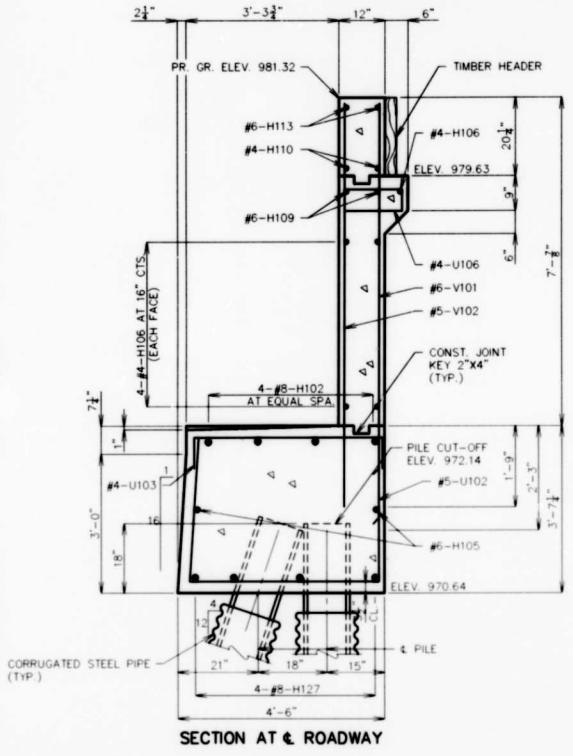
4-26-96

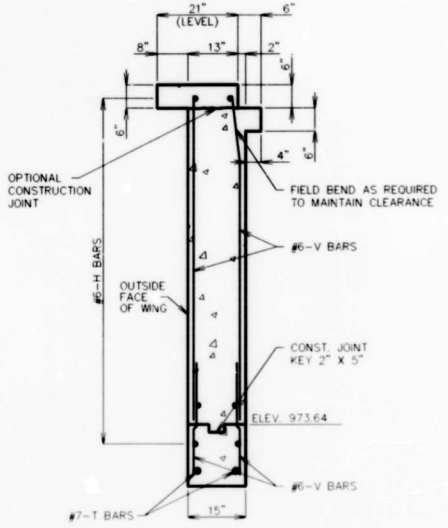
STATE	PROJ. NO.	SHEET NO.
MO.		120

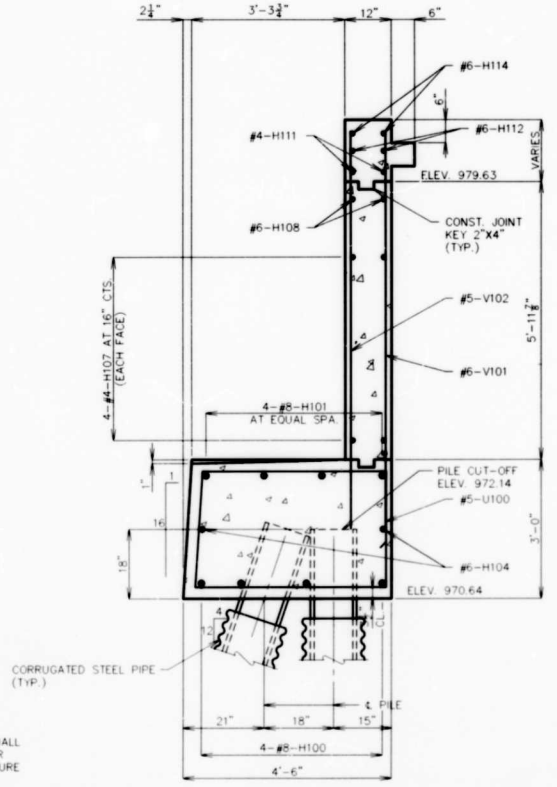


NOTE: COST OF TIMBER HEADERS COMPLETE-IN-PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONCRETE.

DETAILS OF TIMBER HEADER AT END BENT NO. 1 AND ABUTMENT NO. 3







NOTES:

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO THE CROWN OF ROADWAY SLAB. BACKWALL ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR LOCATION OF SECTION E-E, SEE SHEET NO. 5 & 7.

FOR LOCATION OF SECTION G-G, SEE SHEET NO. 8.

FOR DETAILS OF VERTICAL DRAIN CORE, SEE SHEET NO. 12.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 MISCELLANEOUS

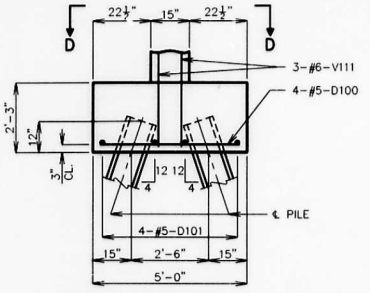
SHEET NO. 9 OF 50

A-5180

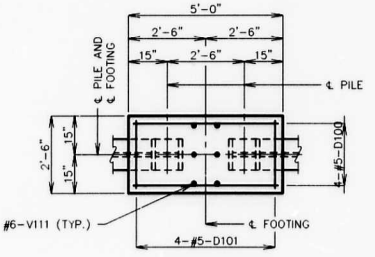
FOR INFORMATION ONLY

A51801, Sht. 81

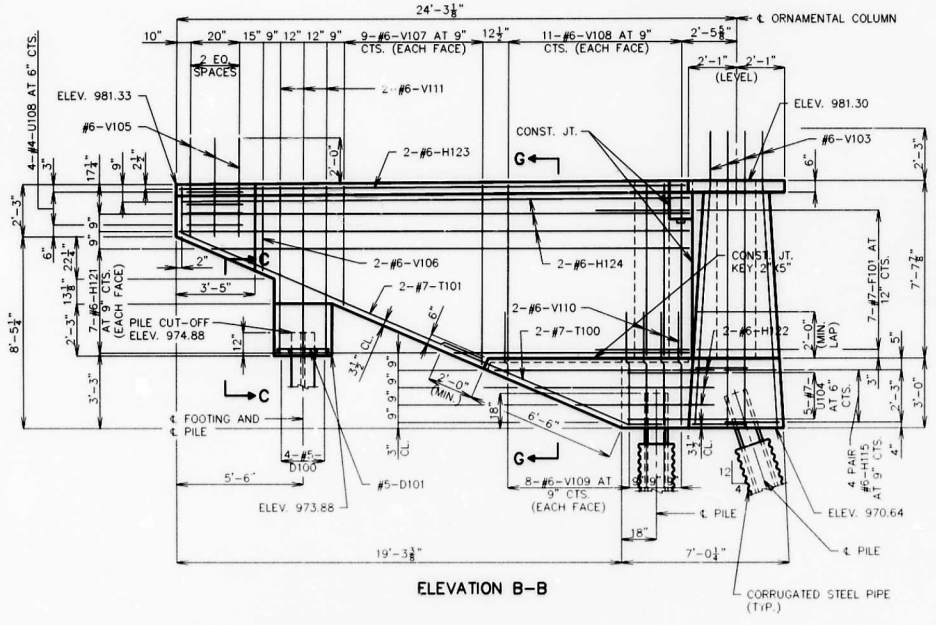
STATE	PROJ. NO.	SHEET NO.
MO.		179



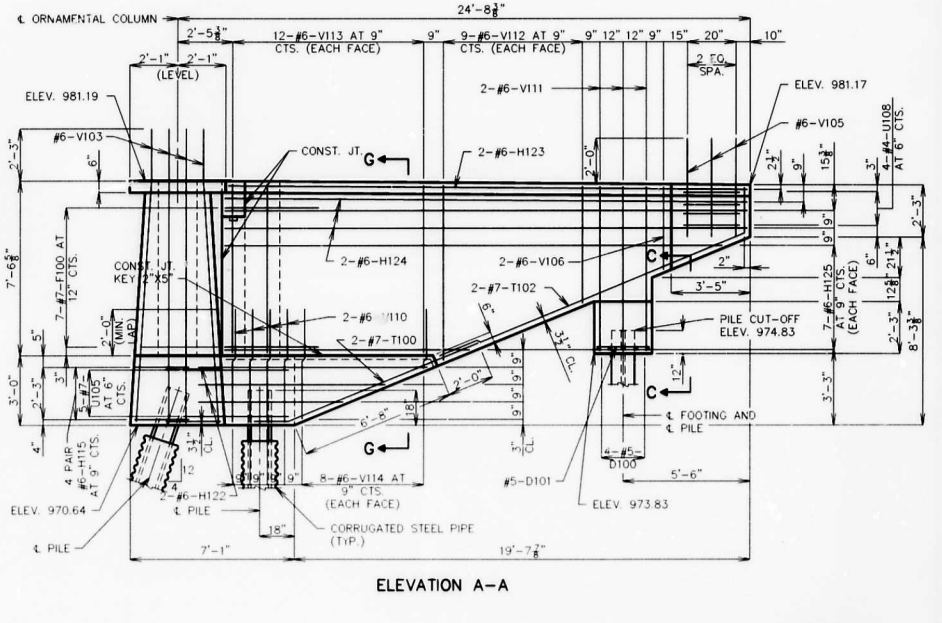
PART ELEVATION C-C



PLAN D-D



ELEVATION B-B



ELEVATION A-A

NOTE:

FOR LOCATION OF ELEVATIONS A-A AND ELEVATION B-B SEE SHEET NO. 5.

FOR SECTION G-G, SEE SHEET NO. 9.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 10.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

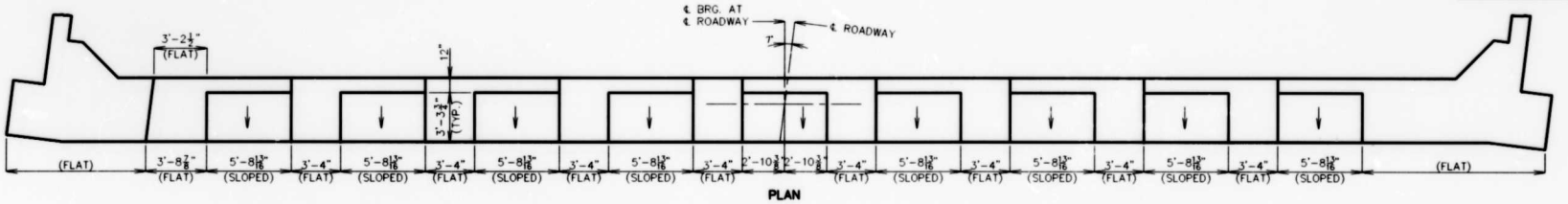
JACKSON COUNTY

DETAILS OF END BENT NO. 1 WINGS

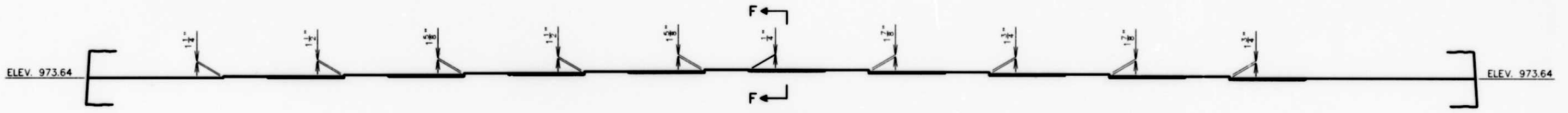
SHEET NO. 8 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		118

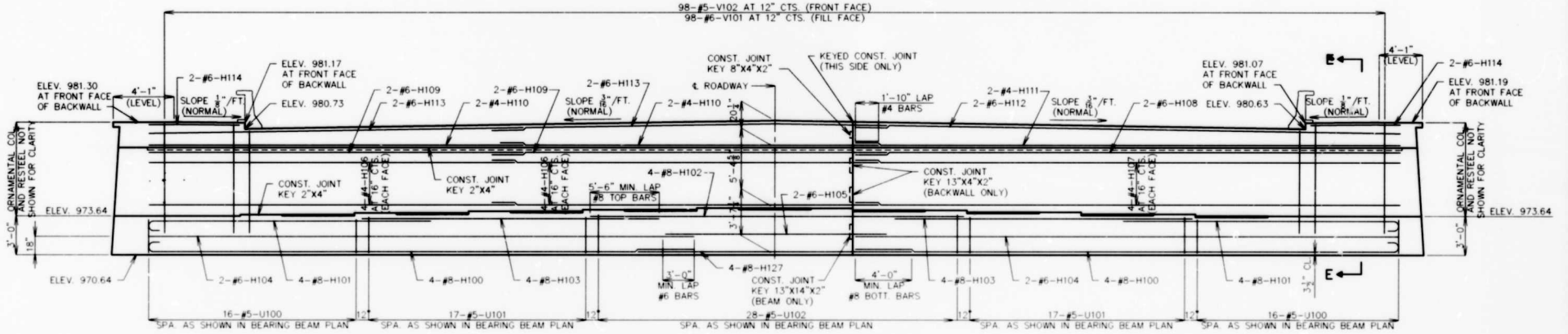


PLAN

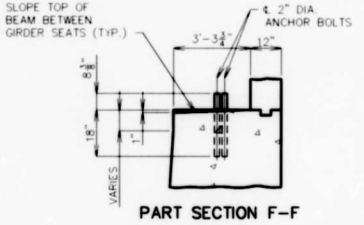


ELEVATION

BEARING SEAT DETAIL



ELEVATION



PART SECTION F-F

NOTES:

FOR SECTION E-E, SEE SHEET NO. 9.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO CROWN OF ROADWAY SLAB.

BACKWALL ABOVE THE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST ½".

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 10.

3-27-95

BUCKER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 ELEVATION

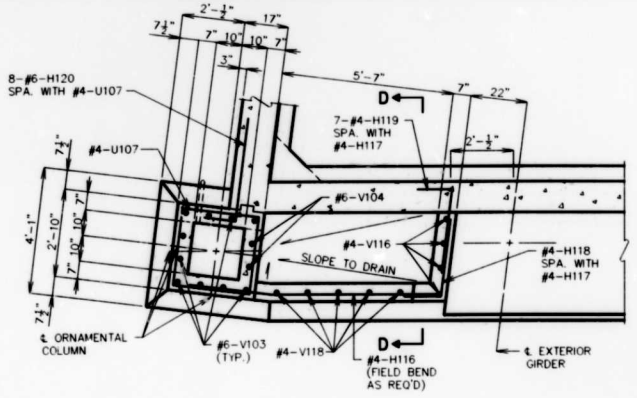
SHEET NO. 7 OF 50

A-5180

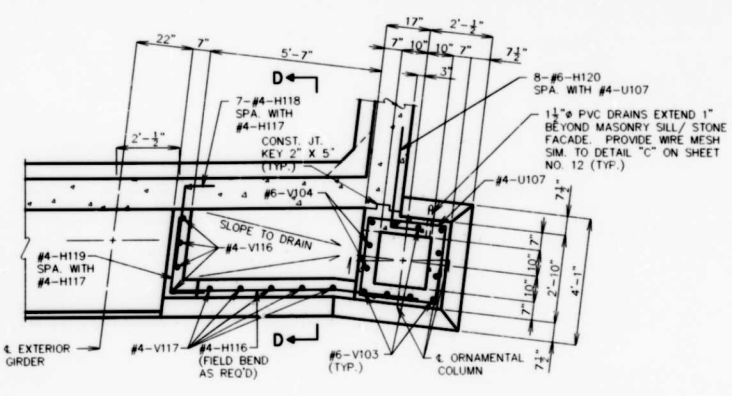
FOR INFORMATION ONLY

A51801, Sht. 83

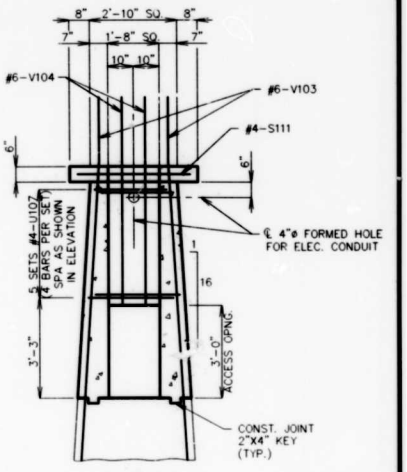
STATE	PROJ. NO.	SHEET NO.
MO.		121



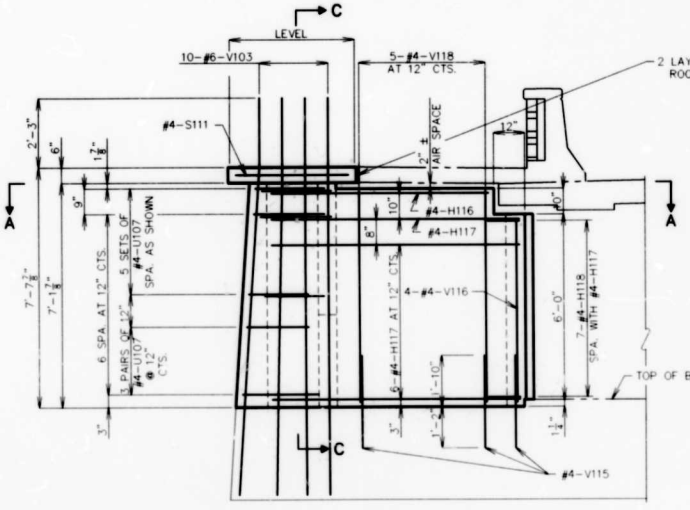
SECTION A-A



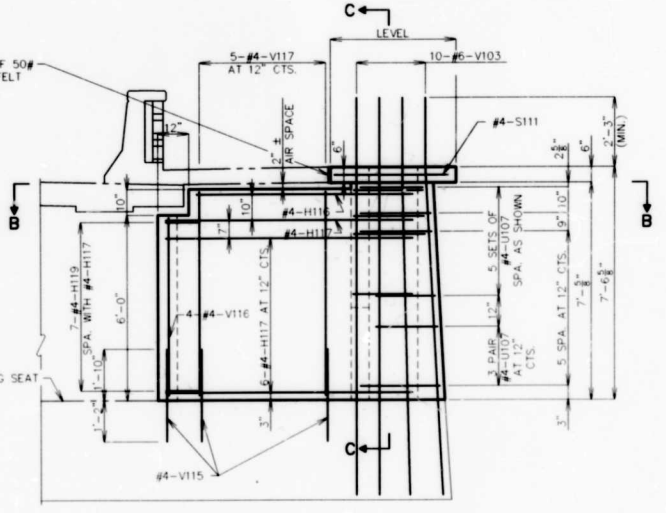
SECTION B-B



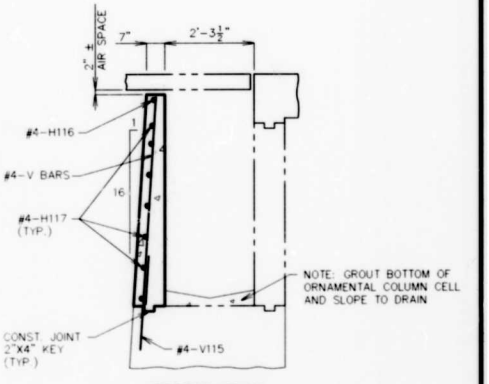
SECTION C-C



ELEVATION SOUTH WING



ELEVATION NORTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 ORNAMENTAL COLUMN

SHEET NO. 10 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		122

BILL OF REINFORCING STEEL EACH DEADMAN		
NUMBER	SIZE & MARK	LENGTH
272	#4–V150	21"
16	#4–H150	35'–0"

NOTES:

CONSTRUCTION SEQUENCE:

CONSTRUCT END BENT NO. 1 WITH ANCHOR TEES IN PLACE.

MACHINE COMPACT FILL UP TO ELEVATION OF $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

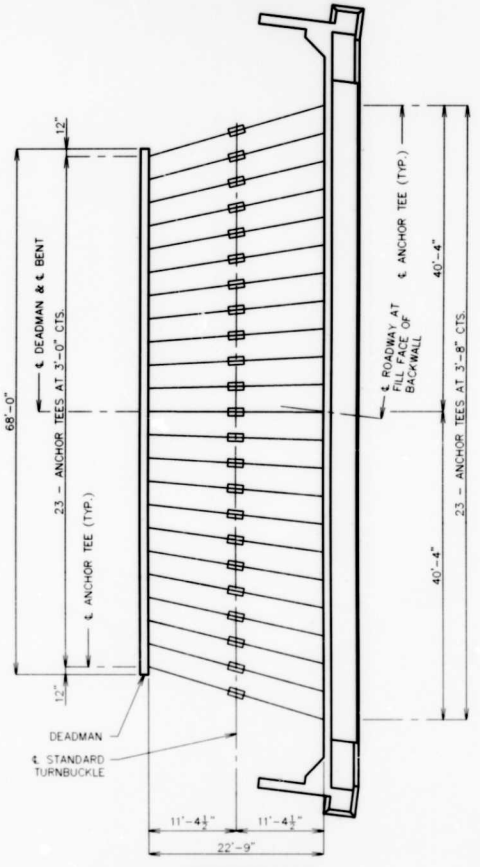
CONSTRUCT DEADMAN WITH ANCHOR TEES IN PLACE.

INSTALL $\frac{7}{8}$" ø ROD, CLEVIS AND TURNBUCKLE ASSEMBLY.

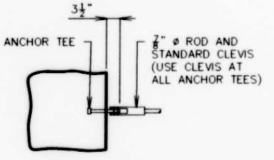
TIGHTEN TURNBUCKLE UNTIL SNUG.

HAND COMPACT FILL FOR 12" (MIN.) OVER $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

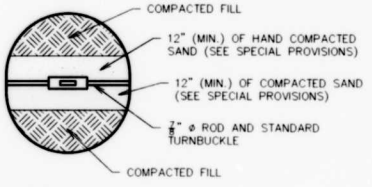
MACHINE COMPACT REMAINING FILL.



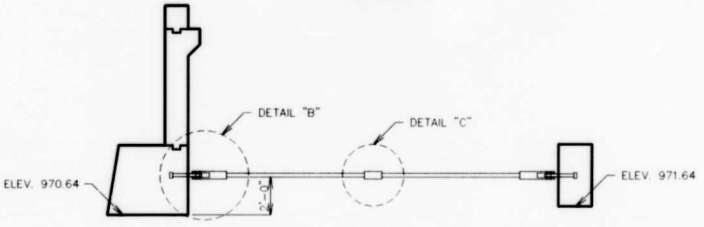
DEADMAN PLAN AT END BENT NO. 1



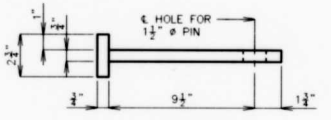
DETAIL "B"



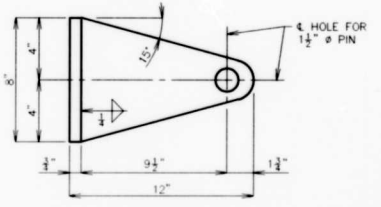
DETAIL "C"



LOCATION OF ANCHOR TEE

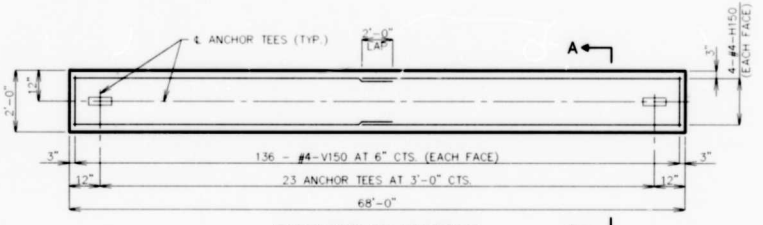


ELEVATION

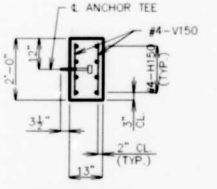


PLAN

DETAIL OF ANCHOR TEE



ELEVATION OF DEADMAN



SECTION A–A

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	5/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

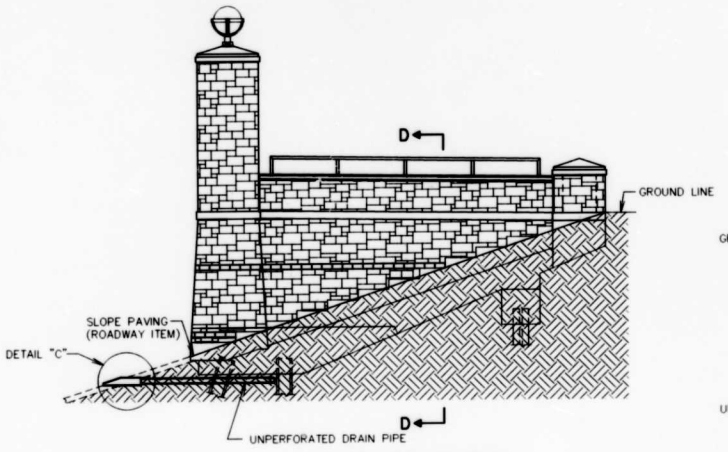
JACKSON COUNTY

DETAILS OF DEADMAN ANCHORAGE SYSTEM

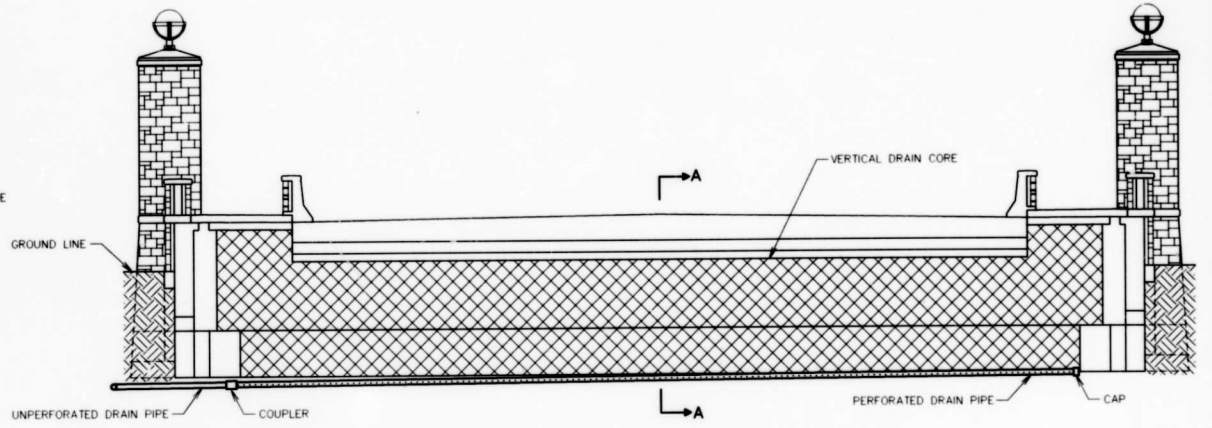
SHEET NO. 11 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		123

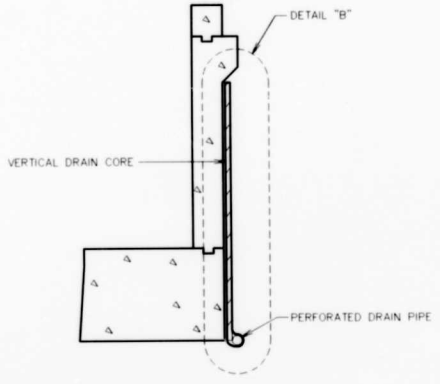


ELEVATION OF WING

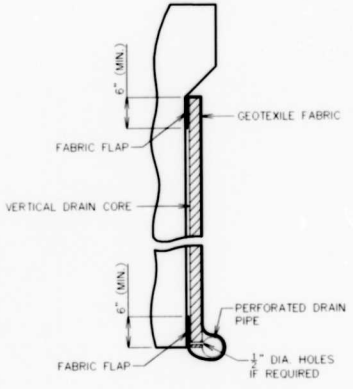


SECTION D–D
ELEVATION AT END BENT

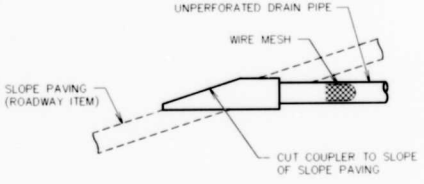
VERTICAL DRAIN AT END BENT NO. 1



SECTION A–A



DETAIL "B"



DETAIL "C"

NOTES:

DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½". (SEE ELEVATION AT END BENT)

PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DMA	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

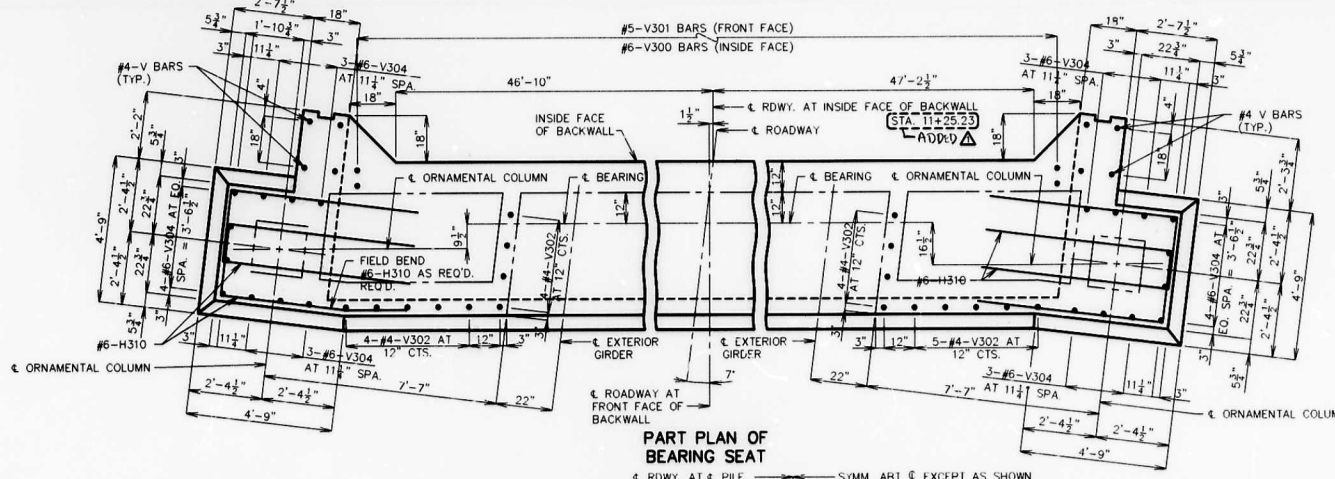
JACKSON COUNTY

DETAILS OF VERTICAL DRAIN AT END BENT NO. 1

SHEET NO. 12 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PART PLAN OF BEARING SEAT

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

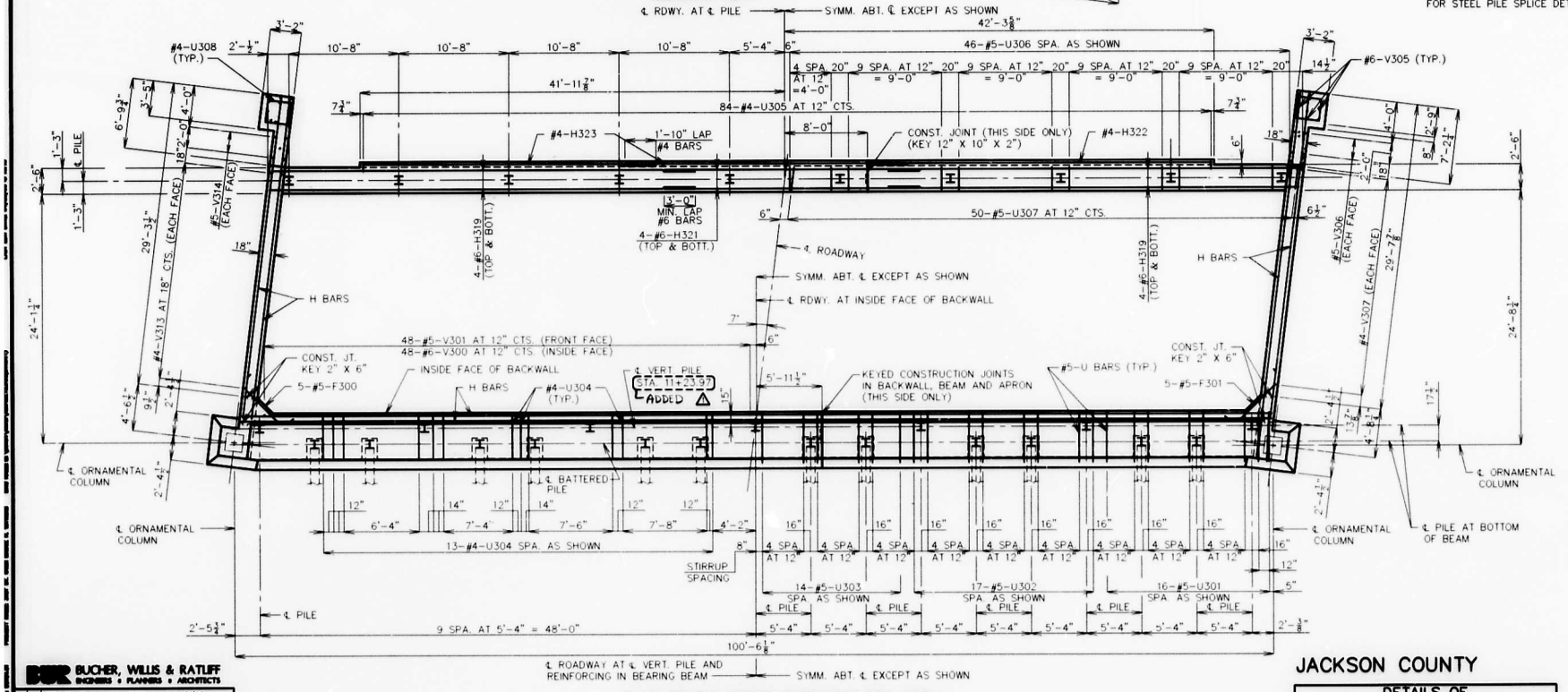
TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.



PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

DANIEL L. CHAPMAN NUMBER E-23644 STATE OF MISSOURI REGISTERED ENGINEER

4-2-96

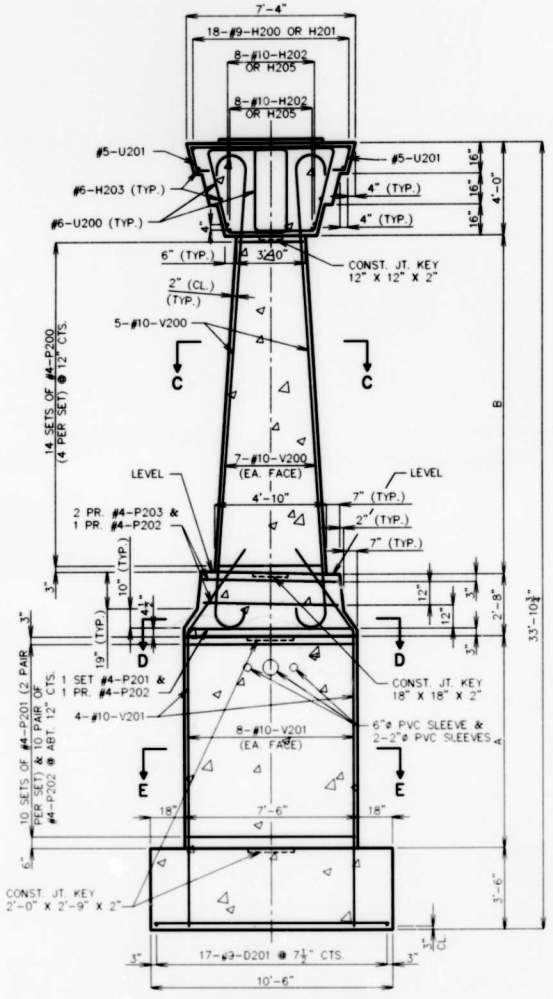
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

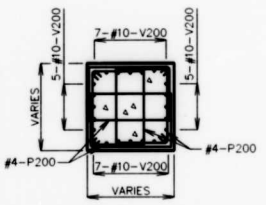
SHEET NO. 15 OF 50

A-5180

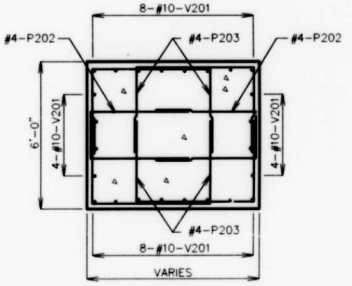
STATE	PROJ. NO.	SHEET NO.
MO.		125



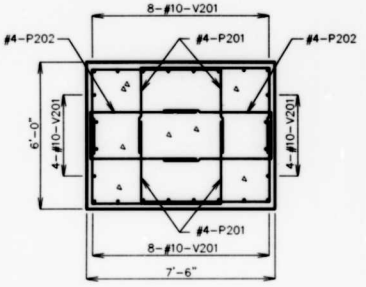
TYPICAL SECTION THRU COLUMN



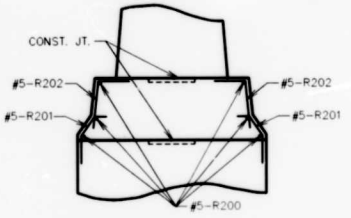
SECTION C-C



SECTION D-D

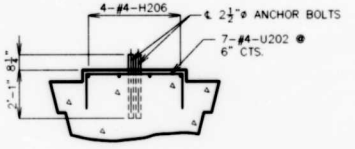


SECTION E-E



PART ELEVATION F-F
(SHOWING R BARS)

FOR LOCATION OF ELEVATION F-F, SEE SHEET NO. 12.



SECTION B-B

NOTE: USE #4-H206 & #4-U202 BARS IN MONOLITHIC BEARING BASES 4" AND OVER IN HEIGHT.

FOR LOCATION OF SECTION B-B, SEE SHEET NO. 12.

TABLE OF DIMENSIONS		
COLUMN NO.	A	B
1	9'-9¼"	13'-11¼"
2	9'-10¼"	13'-10¼"
3	10'-¼"	13'-8¼"
4	10'-2¼"	13'-6¼"

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 2		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	437
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	263.3
REINFORCING STEEL (BRIDGE)	LBS.	45,500
REINFORCING STEEL (EPOXY COATED)	LBS.	520
STONE FACADE ON INT. BENT	SQ. FT.	1074

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB 5/93
TRACED BY:	RCC 5/93
CHECKED BY:	SAC 6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2

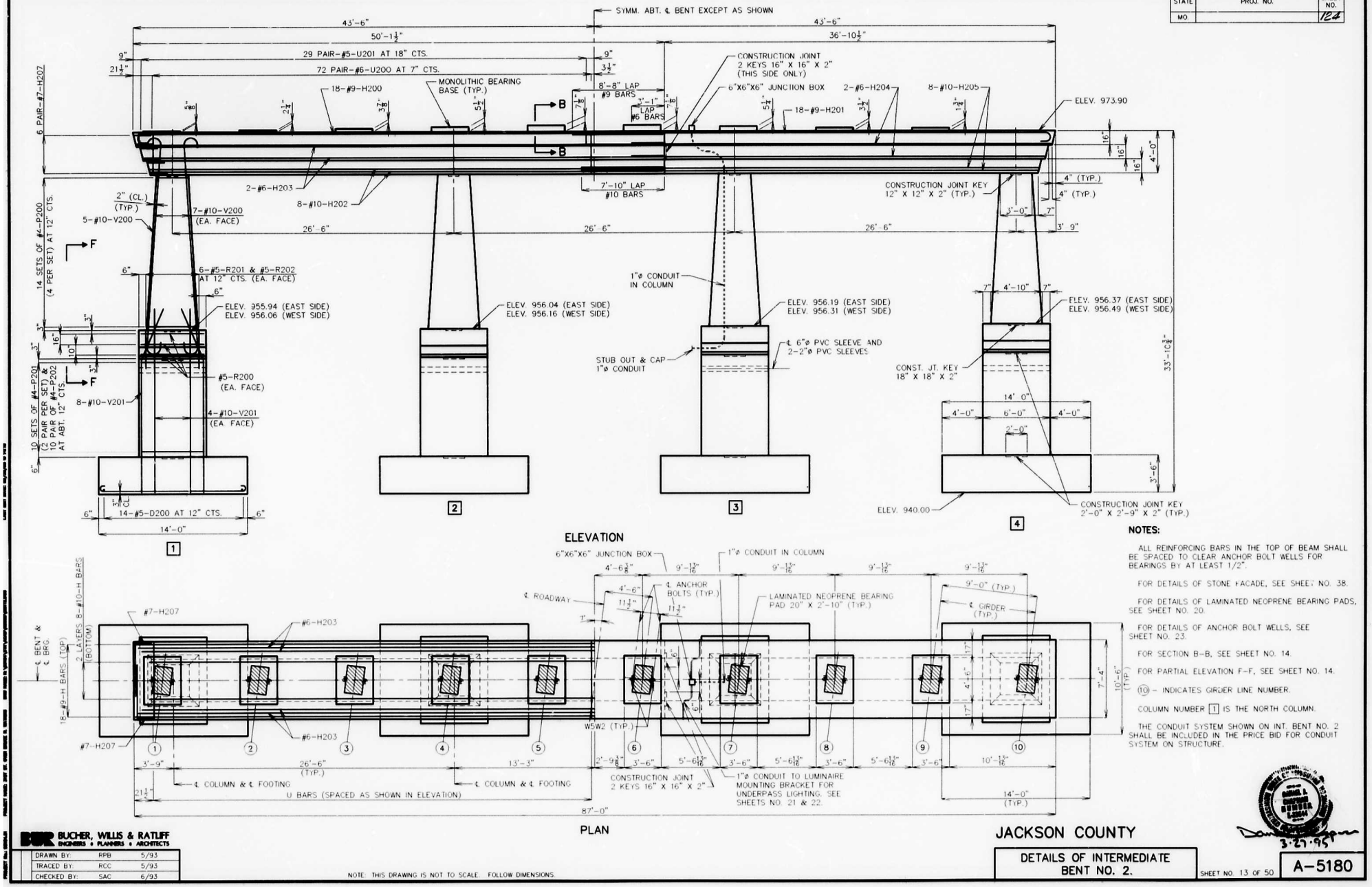
SHEET NO. 14 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 88

STATE	PROJ. NO.	SHEET NO.
MO.		12A



NOTES:

ALL REINFORCING BARS IN THE TOP OF BEAM SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 38.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR SECTION B-B, SEE SHEET NO. 14.

FOR PARTIAL ELEVATION F-F, SEE SHEET NO. 14.

(10) - INDICATES GIRDER LINE NUMBER.

COLUMN NUMBER 1 IS THE NORTH COLUMN.

THE CONDUIT SYSTEM SHOWN ON INT. BENT NO. 2 SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2.

SHEET NO. 13 OF 50

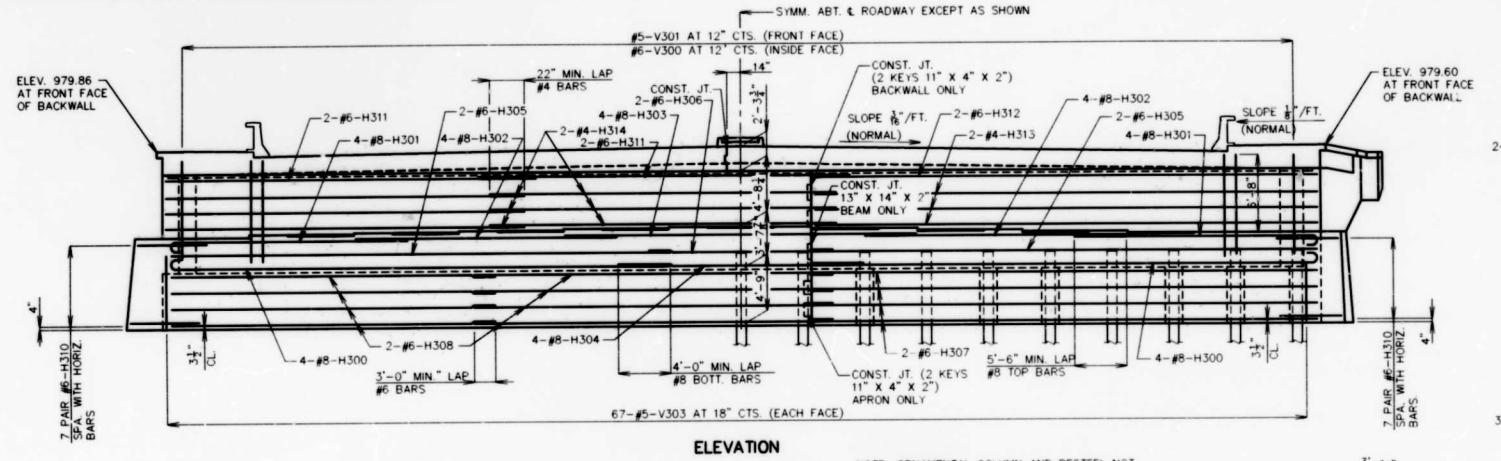
A-5180

3-27-95

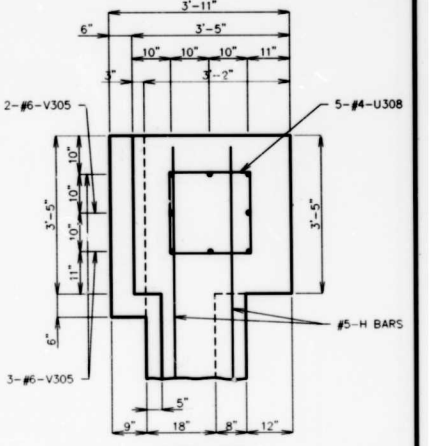
FOR INFORMATION ONLY

A51801, Sht. 89

STATE	PROJ. NO.	SHEET NO.
MO.		



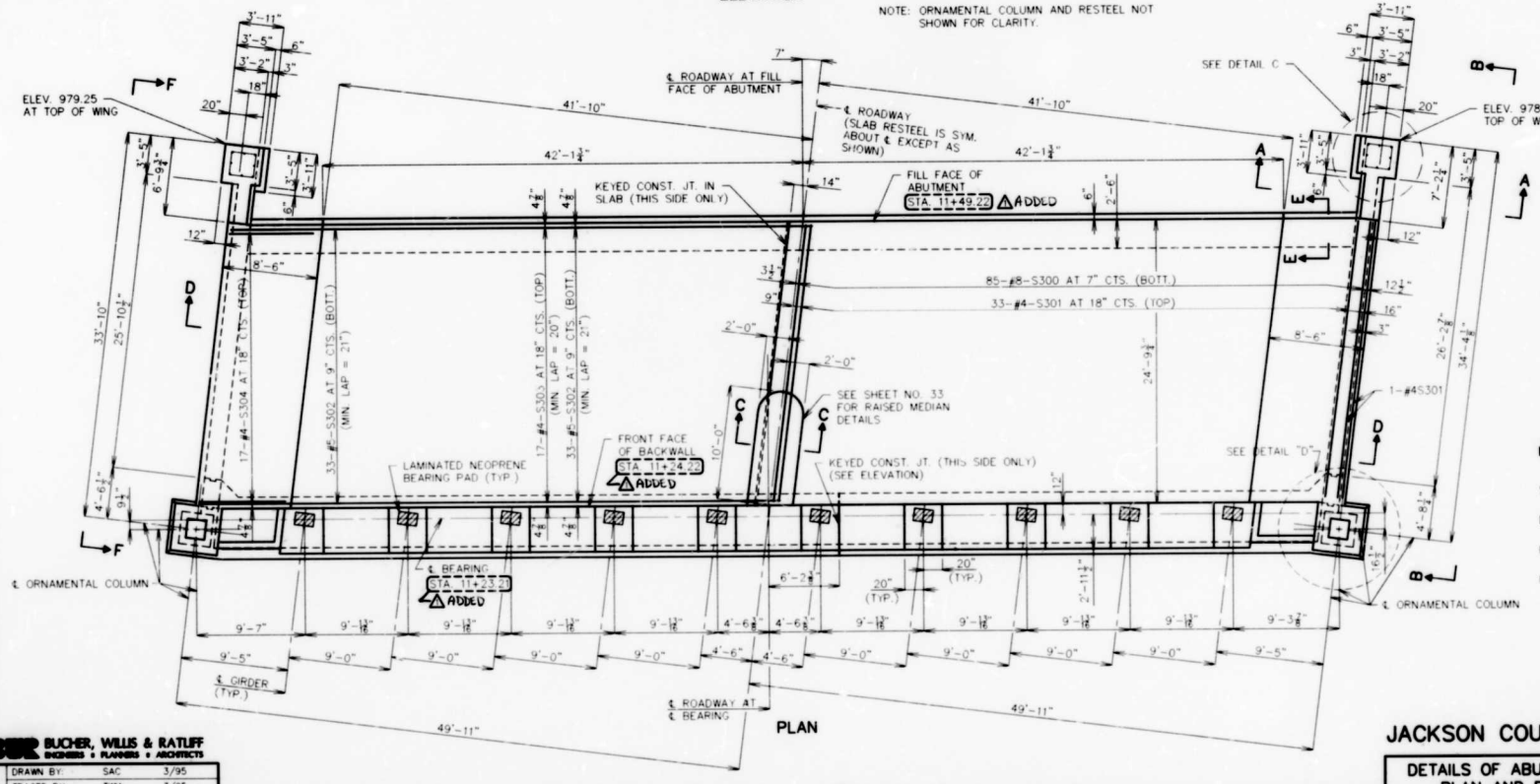
ELEVATION



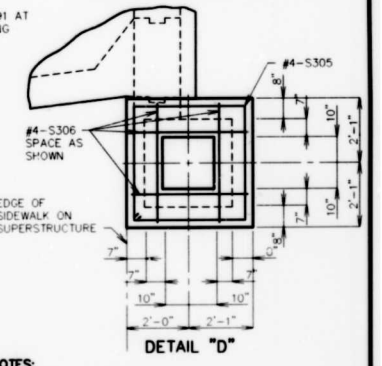
DETAIL "C"

SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

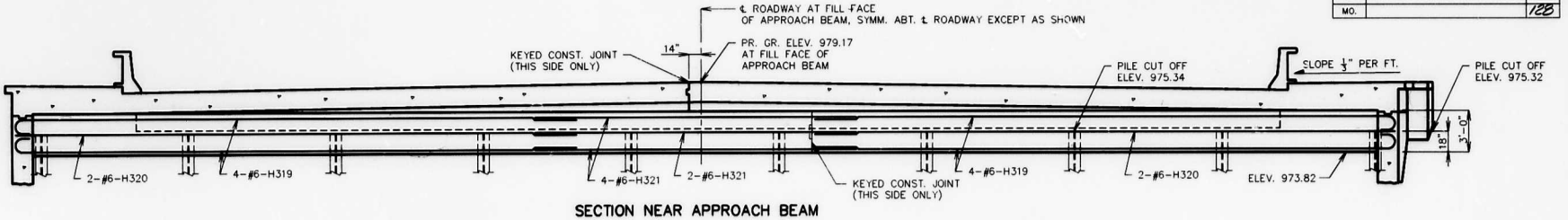
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

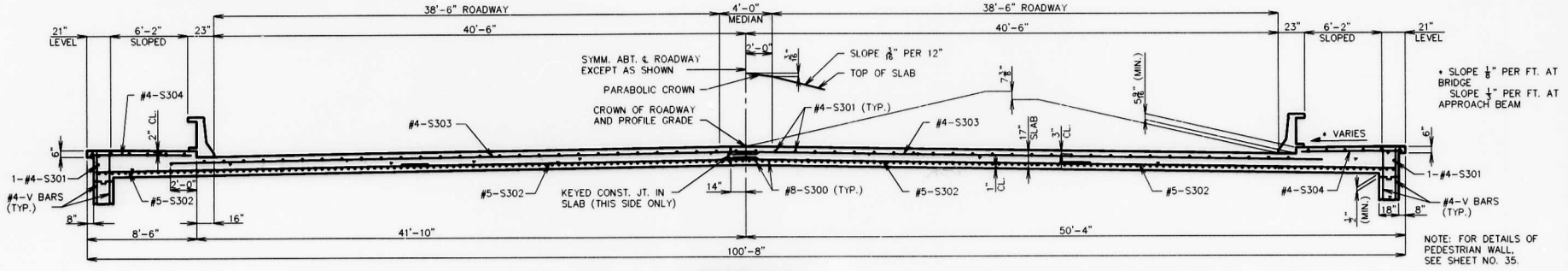
SHEET NO. 16 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		128

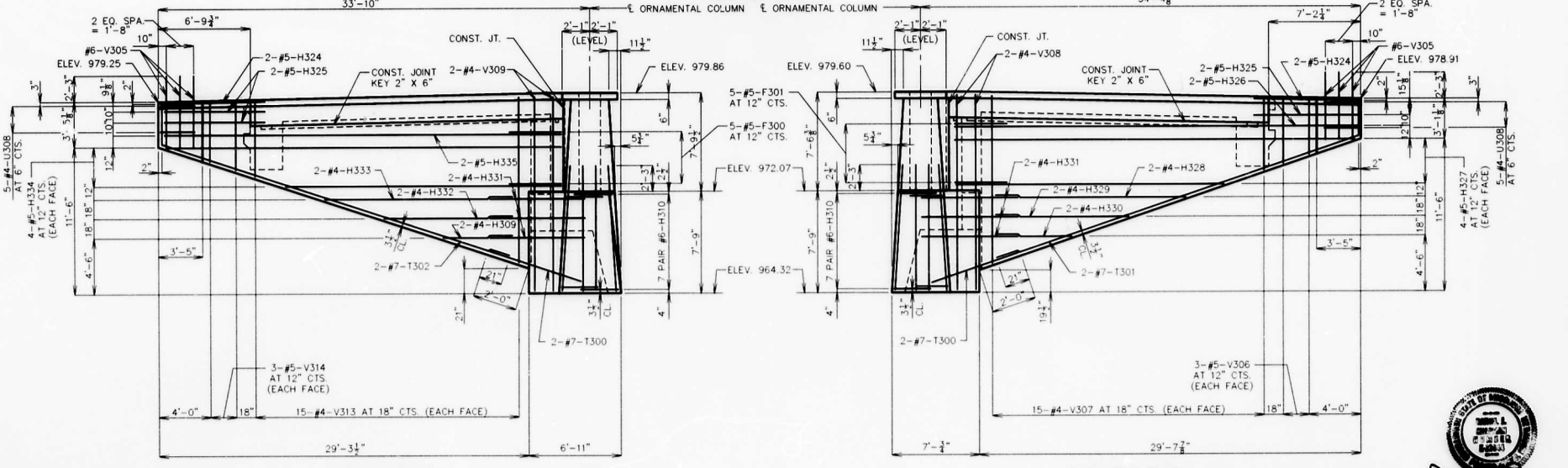


SECTION NEAR APPROACH BEAM



NOTE: FOR DETAILS OF PEDESTRIAN WALL, SEE SHEET NO. 35.

SECTION D-D



ELEVATION F-F

NOTE:

FOR LOCATION OF ELEVATIONS B-B, D-D AND SECTION F-F, SEE SHEET NO. 16.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 19

ELEVATION B-B

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

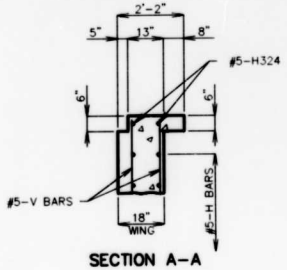
DETAILS OF ABUTMENT NO. 3 WING ELEVATIONS AND SLAB SECTIONS

SHEET NO. 17 OF 50

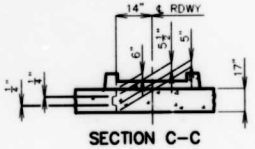
A-5180

[redacted] 24 to 1

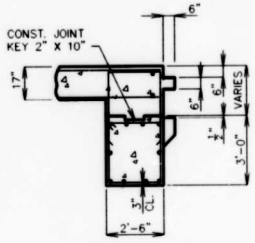
STATE	PROJ. NO.	SHEET NO.
MO.		



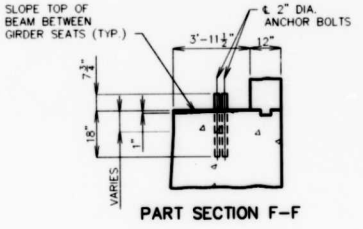
SECTION A-A



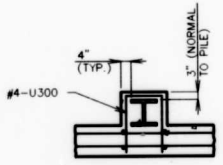
SECTION C-C



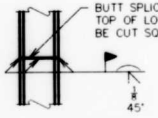
SECTION E-E



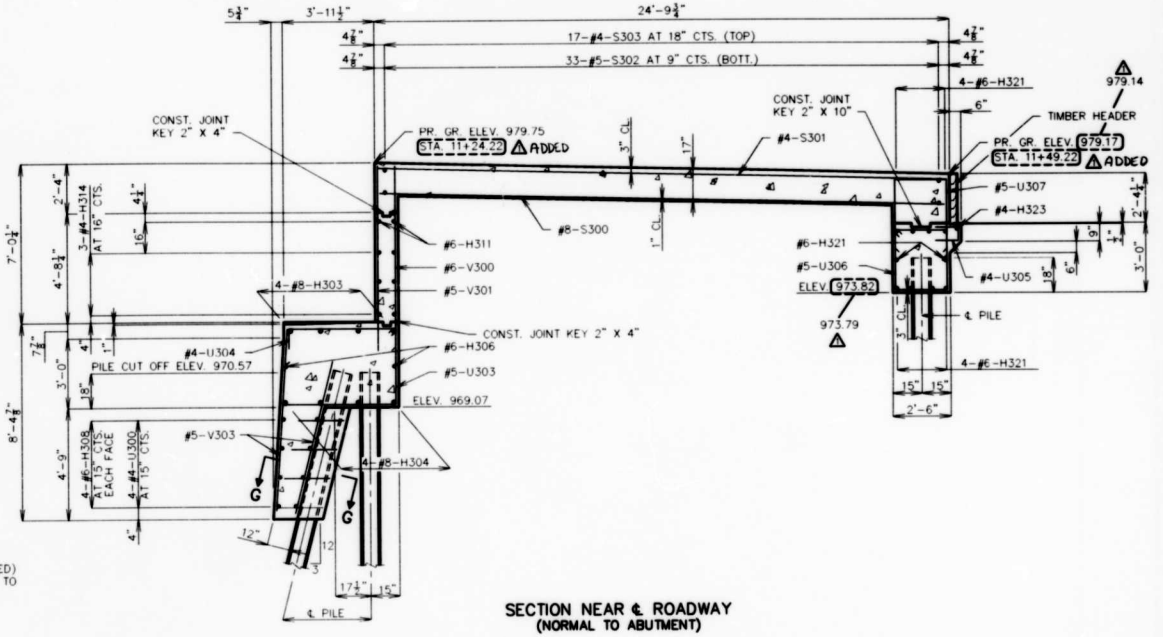
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE

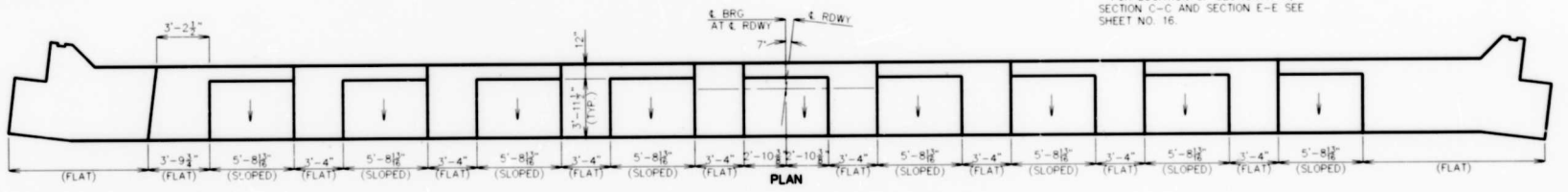


SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

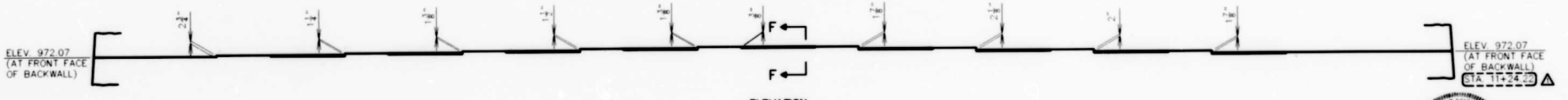
NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.



PLAN



ELEVATION

BEARING SEAT DETAIL

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

DANIEL A. CHAPMAN NUMBER E-23544 STATE OF MISSOURI

4-26-96

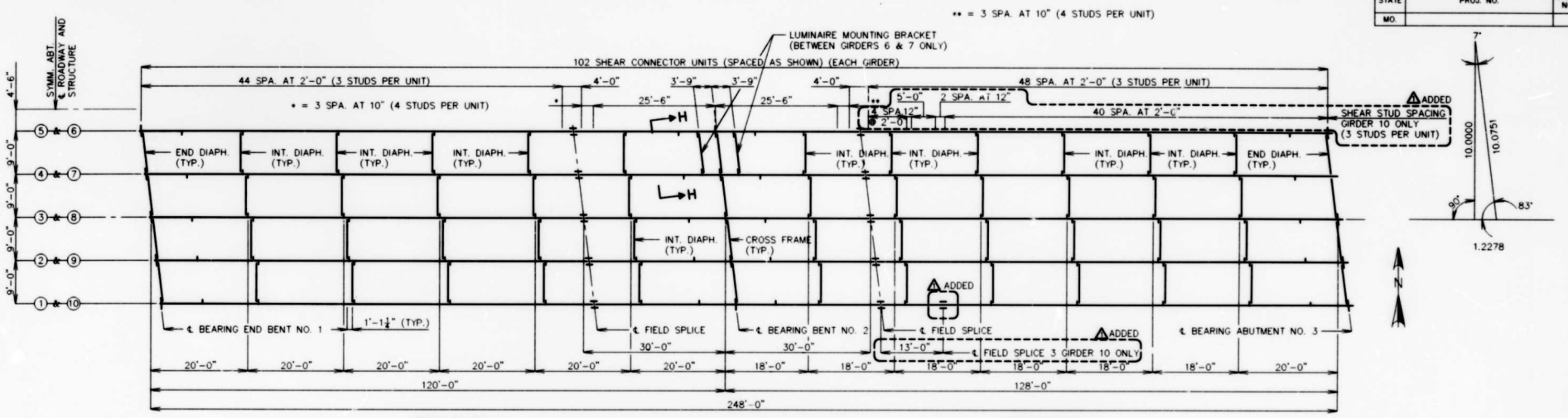
JACKSON COUNTY

DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

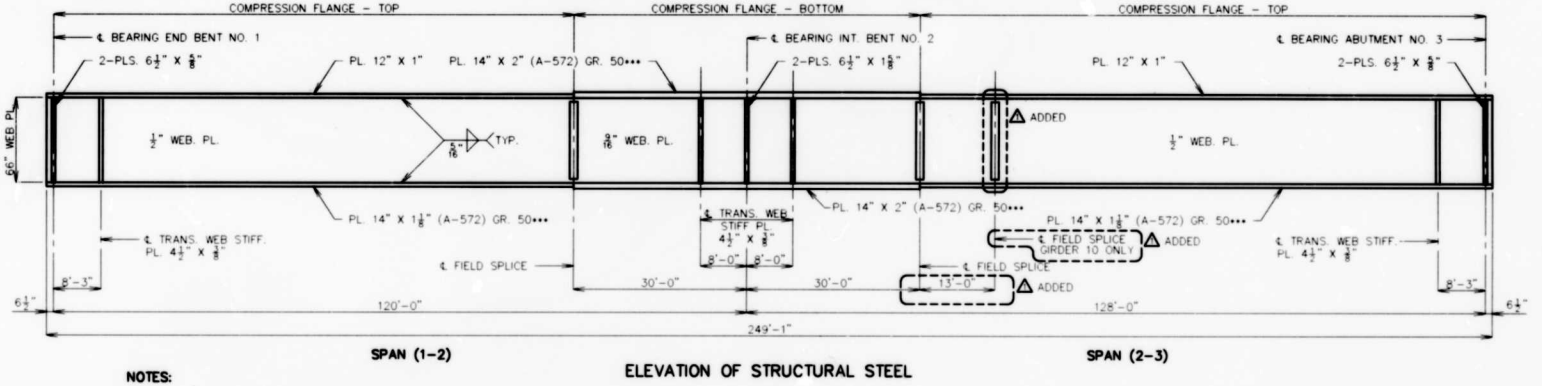
SHEET NO. 18 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

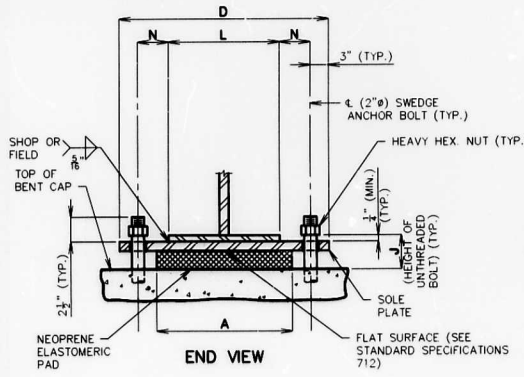
JACKSON COUNTY

PLAN AND ELEVATION OF STRUCTURAL STEEL

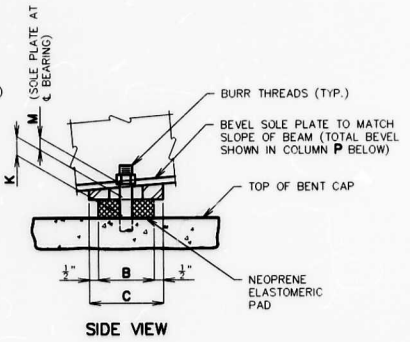
SHEET NO. 21 OF 50

A-5180

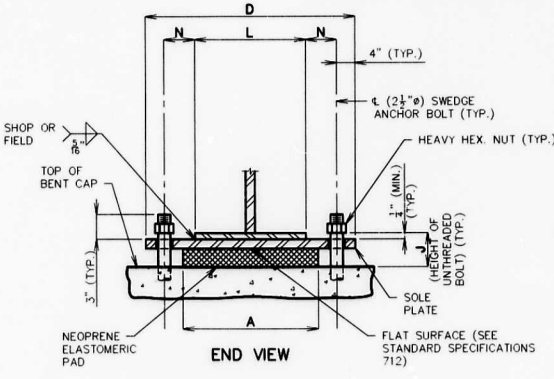
STATE	PROJ. NO.	SHEET NO.
MO.		



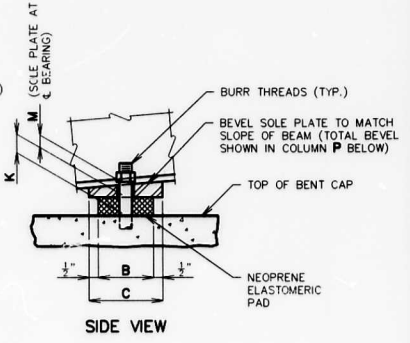
END VIEW



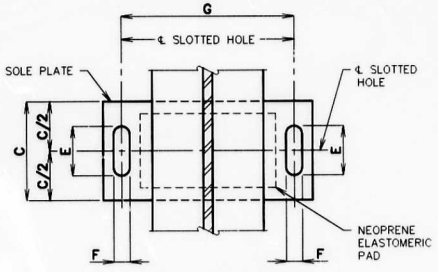
SIDE VIEW



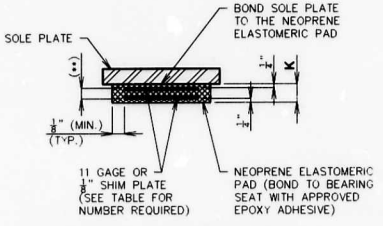
END VIEW



SIDE VIEW

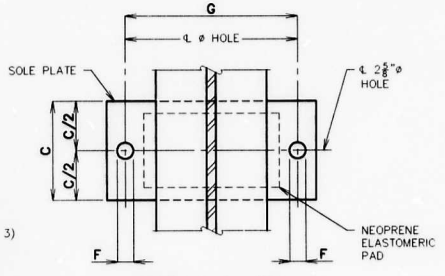


PART PLAN VIEW

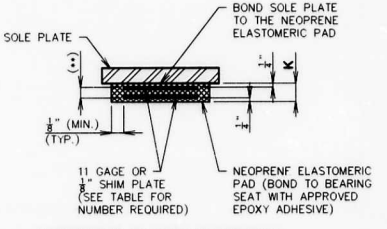


NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	△1 7-⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

DANIEL L. CHAPMAN NUMBER E-22048 STATE OF MISSOURI

9-12-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△1 REVISED AUGUST 10, 1995

JACKSON COUNTY

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

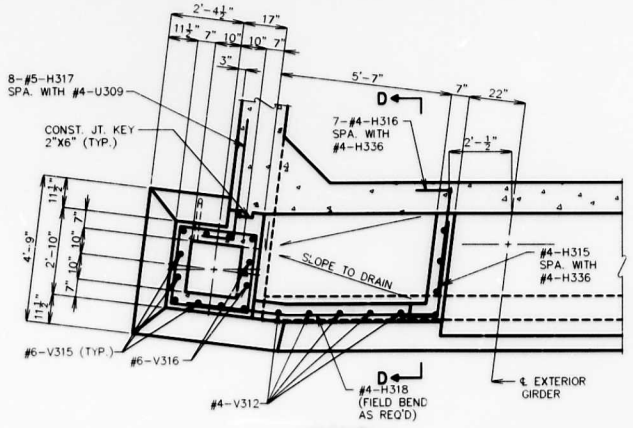
SHEET NO. 20 OF 50

A-5180

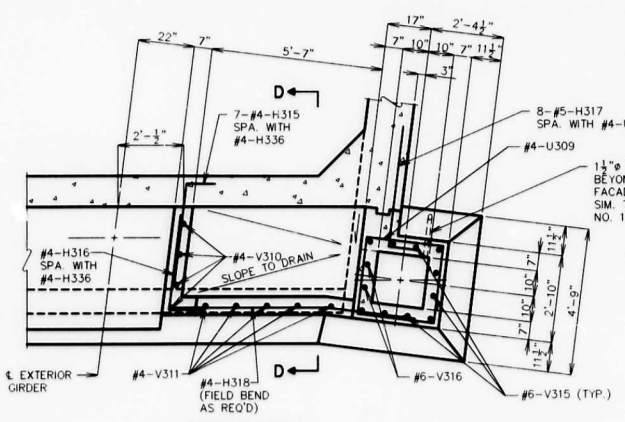
FOR INFORMATION ONLY

A51801, Sht. 94

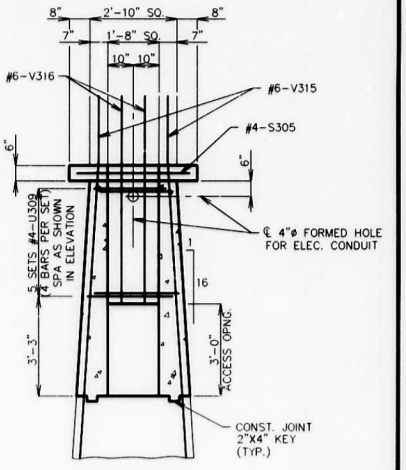
STATE	PROJ. NO.	SHEET NO.
MO.		130



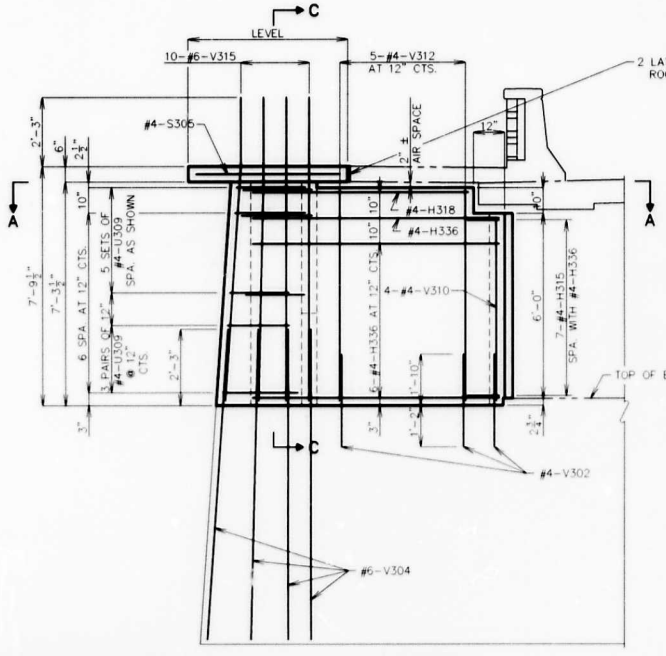
SECTION A-A



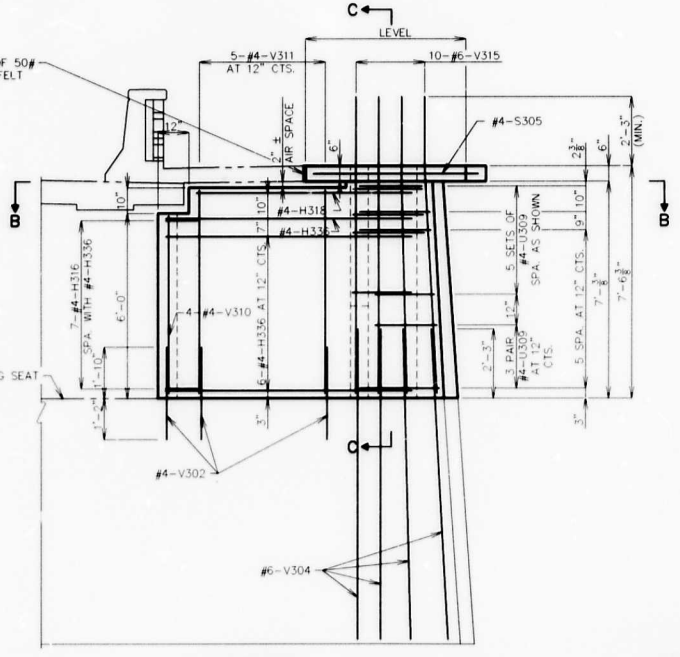
SECTION B-B



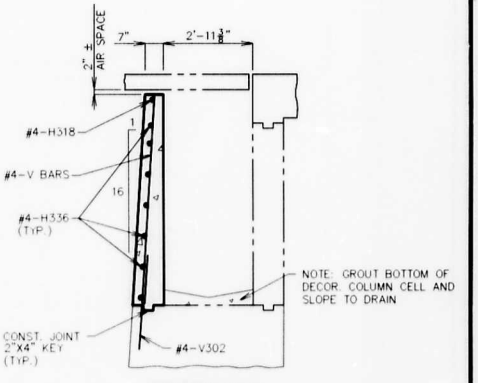
SECTION C-C



ELEVATION NORTH WING



ELEVATION SOUTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 ORNAMENTAL COLUMN

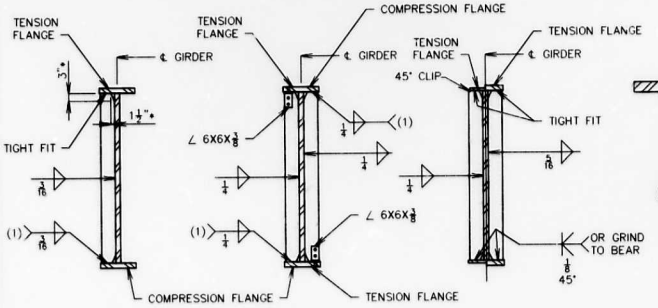
SHEET NO. 19 OF 50

A-5180

FOR INFORMATION ONLY

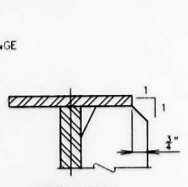
A51801, Sht. 95

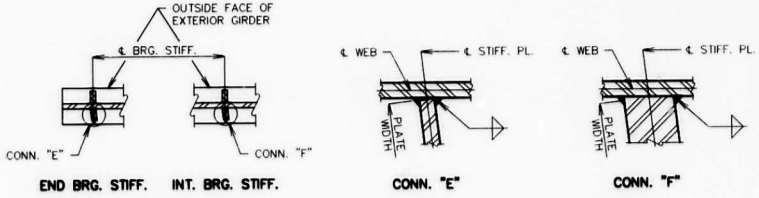
STATE	PROJ. NO.	SHEET NO.
MO.		133



(1) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.

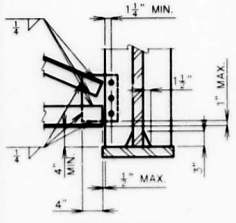
* TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF.



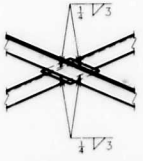


TYPICAL LOCATION DETAILS

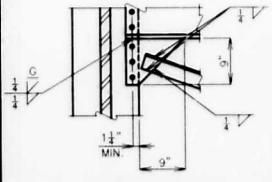
WELDING DETAILS



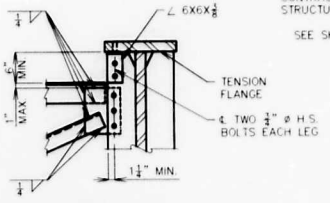
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

NOTES:

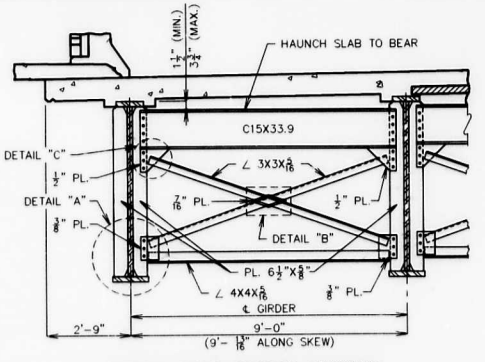
END DIAPHRAGMS, CROSS FRAMES AND INTERMEDIATE DIAPHRAGMS USE ¾" HIGH STRENGTH BOLTS.

PAYMENT FOR LUMINAIRE MOUNTING BRACKETS AND MOUNTING PLATE IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

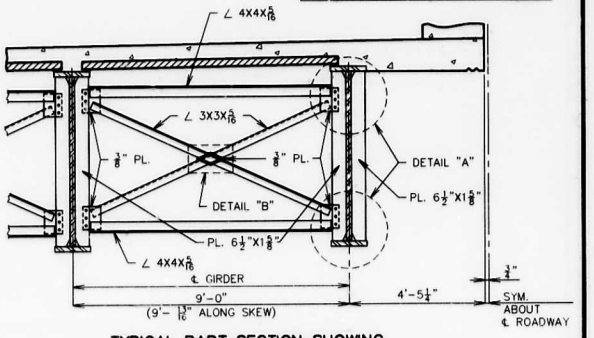
AT THE CONTRACTORS OPTION, HOLES IN THE DIAPHRAGM PLATE OF NON SLAB BEARING DIAPHRAGMS MAY BE MADE 3/16" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT. A HARDENED WASHER MAY BE USED UNDER THE BOLT HEAD AND NUT WHEN THIS OPTION IS USED. HOLES IN THE GIRDER DIAPHRAGM CONNECTION PLATE OR TRANSVERSE WEB STIFFENER SHALL BE STANDARD SIZE.

THE COST OF FURNISHING, FABRICATING AND INNSTALLING THE LUMINAIRE MOUNTING BRACKET, COMPLETE-IN-PLACE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR CONDUIT SYSTEM ON STRUCTURE.

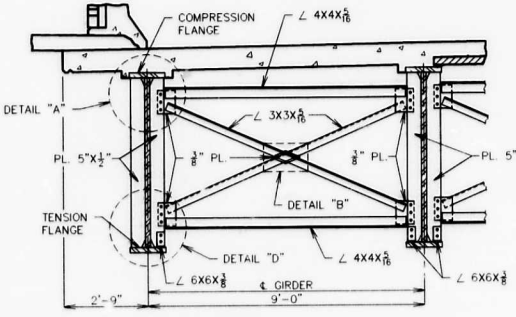
SEE SHEET NO. 21 FOR LOCATION OF SECTION H-H.



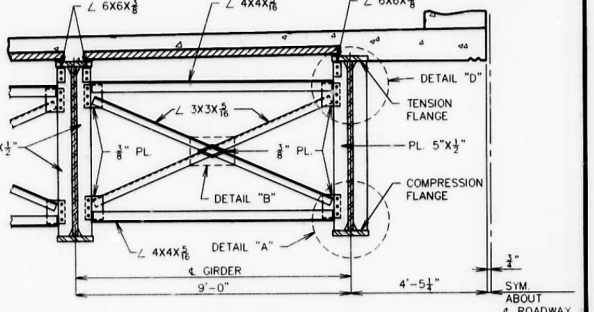
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



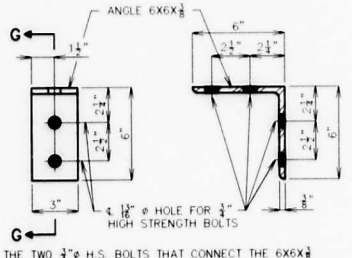
TYPICAL PART SECTION SHOWING CROSS FRAMES



TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS BOTTOM FLANGE IN TENSION



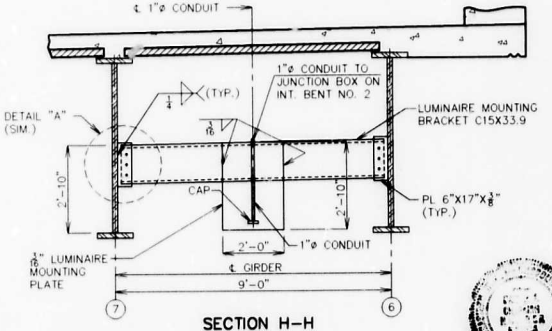
TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS TOP FLANGE IN TENSION



THE TWO ¾"ø H.S. BOLTS THAT CONNECT THE 6X6X⅜ ANGLE TO THE TOP FLANGE SHALL BE PLACED SO THE NUT IS ON THE INSIDE OF FLANGE TOWARD THE WEB.

DETAIL OF FLANGE CONNECTION ANGLE

SECTION G-G



SECTION H-H

3·21·95

JACKSON COUNTY

DETAILS OF CROSS FRAMES AND DIAPHRAGMS

SHEET NO. 22 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

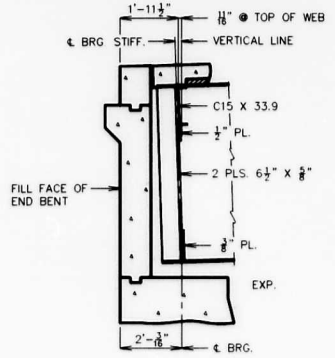
DRAWN BY:	KLW	4/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

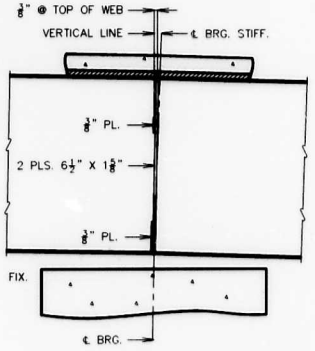
FOR INFORMATION ONLY

A51801, Sht. 96

STATE	PROJ. NO.	SHEET NO.
MO.		134



①



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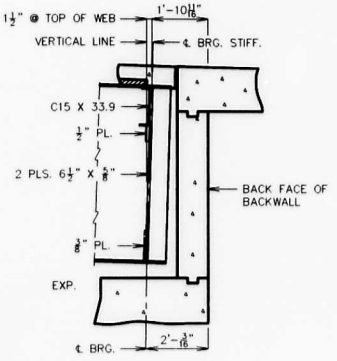
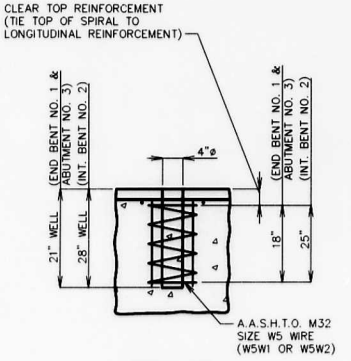
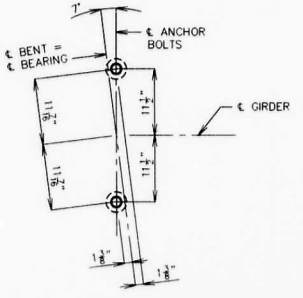


③

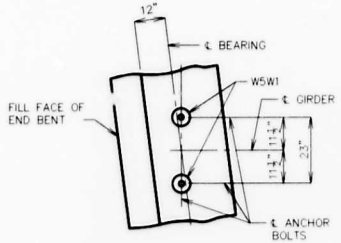
PART LONGITUDINAL SECTION
(NEAR INTERIOR GIRDER)



DETAIL OF ANCHOR BOLT WELLS



ANCHOR BOLT LOCATION DETAIL



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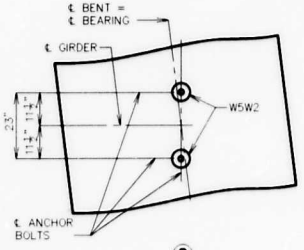

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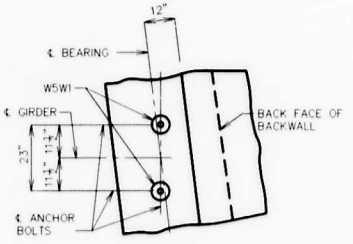


③

PART PLAN OF ANCHOR BOLTS

3·27·95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

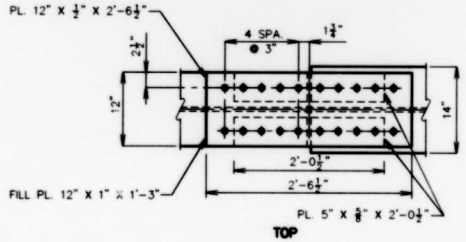
JACKSON COUNTY

MISCELLANEOUS DETAILS OF STRUCTURAL STEEL

SHEET NO. 23 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



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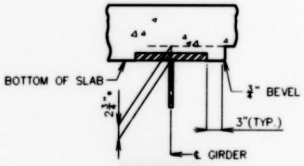
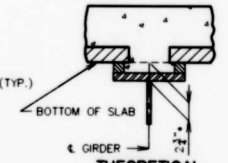
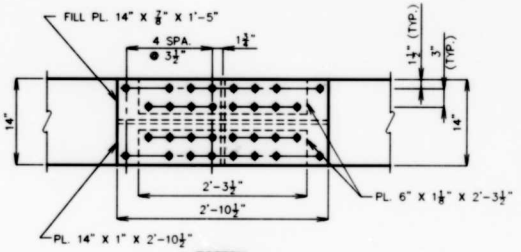


THEORETICAL SLAB HAUNCH
(C.I.P. SECTION)



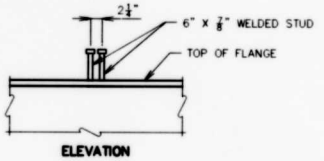
THEORETICAL SLAB HAUNCH
(P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

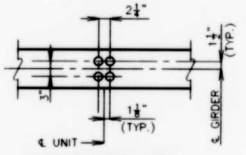


BOTTOM

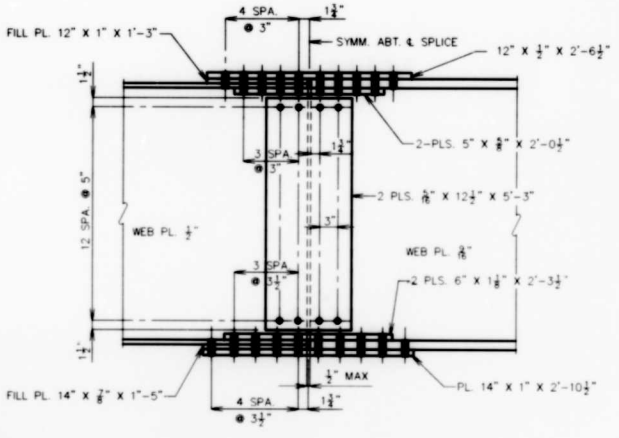
PLAN OF FLANGE



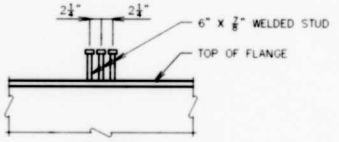
ELEVATION



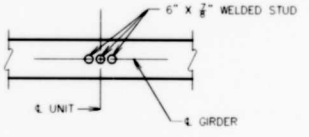
PLAN OF STUD CONN.
(4 STUDS PER UNIT)



DETAIL OF BOLTED FIELD SPLICE
NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 15/16"ø REAMED HOLES



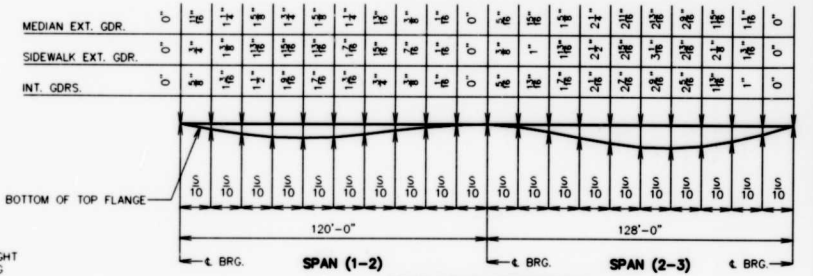
ELEVATION



PLAN OF STUD CONN.
(3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)



DEAD LOAD DEFLECTION
NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.

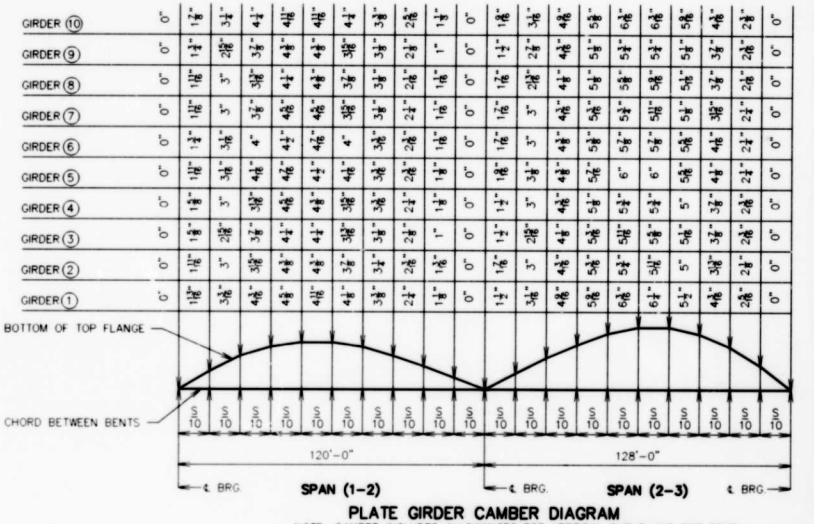


PLATE GIRDER CAMBER DIAGRAM
NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

ADDED
FIELD SPLICE 3 GIRDER TO IS SIMILAR. NO FILL PLATES REQUIRED.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED 8-12-96

JACKSON COUNTY

CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

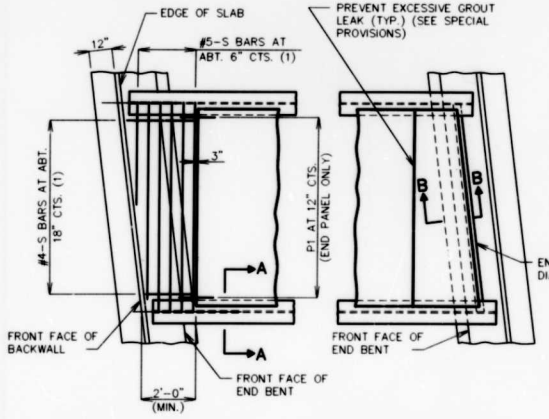
SHEET NO. 24 OF 50

A-5180

FOR INFORMATION ONLY

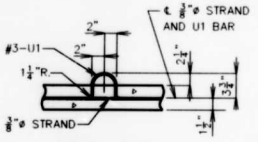
A51801, Sht. 98

STATE	PROJ. NO.	SHEET NO.
MO.		138

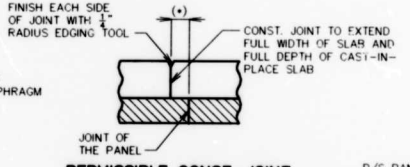


PANELS – SQUARED ENDS **PANELS – SKEWED ENDS**

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

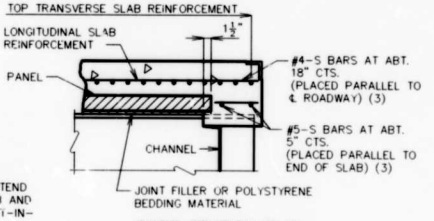


DETAIL "A"

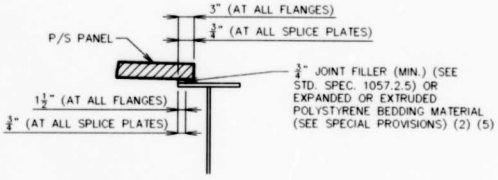


PERMISSIBLE CONST. JOINT

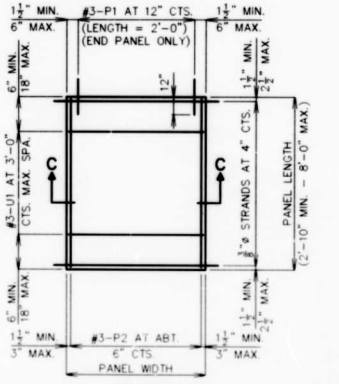
(•) ADJUST THE PERMISSIBLE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE JOINTS OF THE PANELS.



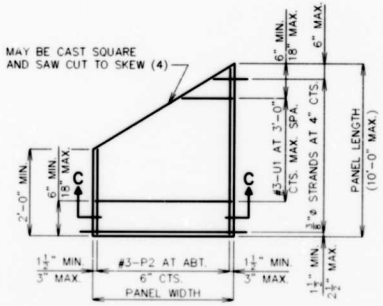
PART SECTION B–B



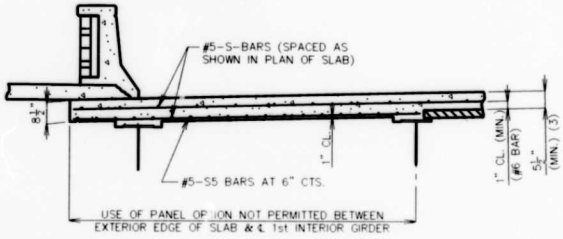
SECTION A–A



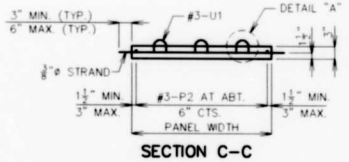
PLAN OF PRECAST PRESTRESSED PANEL



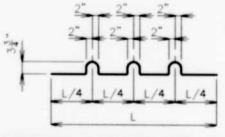
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END OPTIONAL)



SECTION THRU CANTILEVER AND EXTERIOR GIRDER BAY



SECTION C–C



BENDING DIAGRAM FOR U1 BAR

(U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.)

NOTES:

(1) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY. COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(2) ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE % OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

(3) S-BARS SHOWN ARE USED WITH SKEWED END PANELS ONLY. THE #5-S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES. S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(4) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATOR'S OPTION.

(5) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1-1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 24 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'C = 5,000 PSI, F'CI = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7), LOW-RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMAL ULTIMATE STRENGTH = 22,950 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/4 INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN 1/2 INCH THICK OVER A SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT THE SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P3 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2FT.

THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8"ø STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
#3-P2 BARS AT 16 INCHES.
WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 INCHES.

TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR TO THE WELDED DEFORMED BAR MATS AT ABOUT 3'-0" CENTERS.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 4/93
TRACED BY:	RCC 4/93
CHECKED BY:	DJM 5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

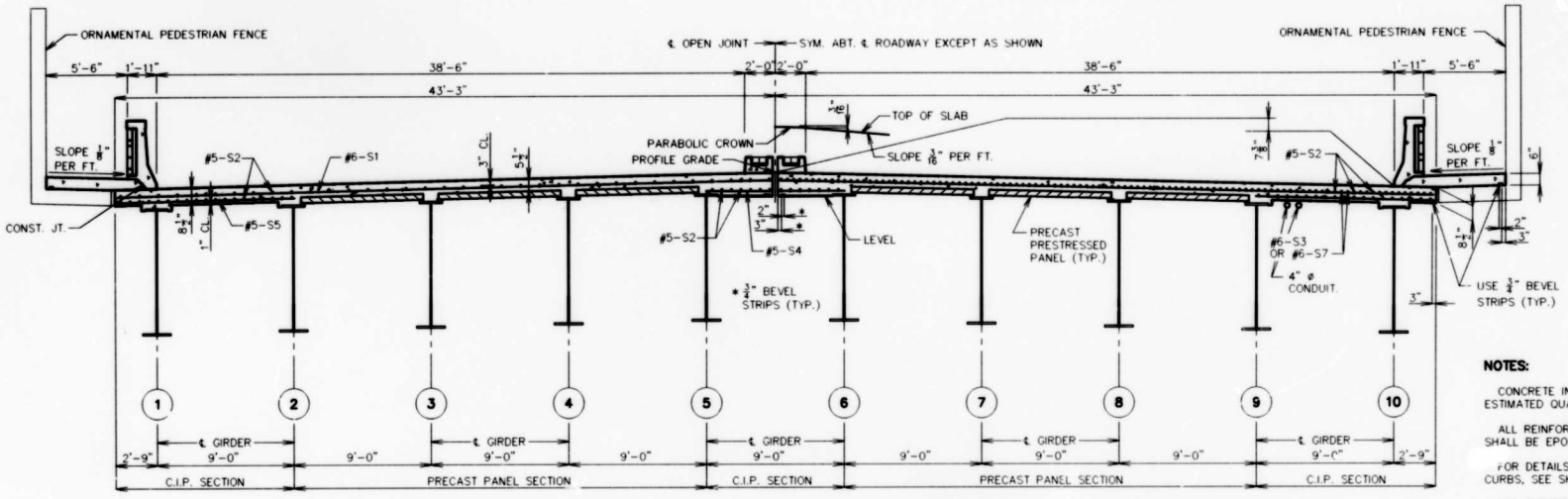
JACKSON COUNTY

DETAILS OF PRECAST PRESTRESSED PANELS

SHEET NO. 27 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		157



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INTERMEDIATE BENT

NOTES:

CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON STEEL.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURBS, SEE SHEET NO. 34.

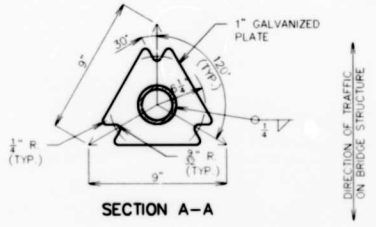
FOR THEORETICAL SLAB HAUNCH AND DEAD LOAD DEFLECTION DIAGRAM, SEE SHEET NO. 24.

FOR DETAILS OF BRIDGE SIDEWALK SEE SHEETS NO. 31 & 32.

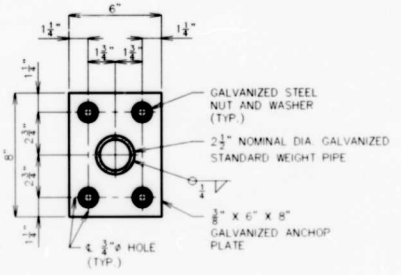
FOR DETAILS OF PRECAST PRESTRESSED PANELS, SEE SHEET NO. 27.

FOR DETAILS AND REINFORCEMENT OF RAISED MEDIAN SEE SHEET NO. 33.

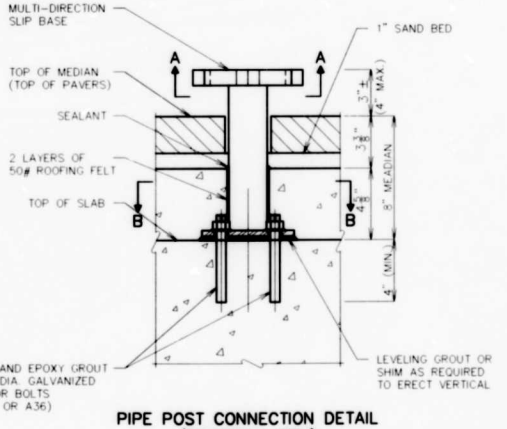
FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE, SEE SHEETS NO. 42-45.



SECTION A-A



SECTION B-B



PIPE POST CONNECTION DETAIL (ROADWAY ITEM)

NOTES:

SEE MISSOURI STANDARD PLANS DRAWING 903.03AQ FOR GENERAL NOTES AND DETAILS OF PIPE POST CONNECTION FOR HIGHWAY SIGNING.

WRAP PORTION OF POST TO BE EMBEDDED IN CONCRETE MEDIAN WITH 2 LAYERS OF 50# ROOFING FELT. CAULK PERIMETER OF POST AT INTERFACE BETWEEN C.I.P. CONCRETE MEDIAN AND SAND BED.

SEE SHEET NO. 33 FOR PIPE POST CONNECTION LOCATIONS.

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

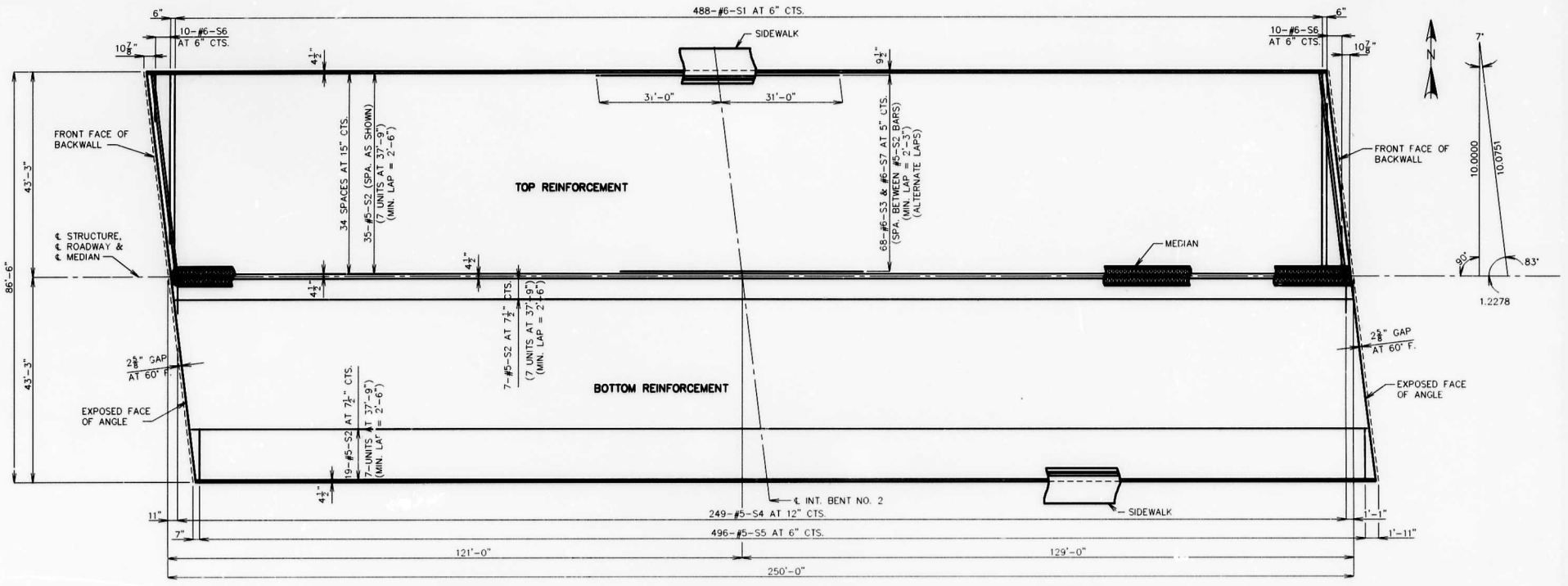
DETAILS OF SLAB CROSS SECTION

SHEET NO. 26 OF 50

A-5180

[redacted] 24 to 1

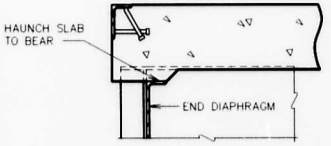
STATE	PROJ. NO.	SHEET NO.
MO.		130



PLAN OF SLAB SHOWING REINFORCEMENT

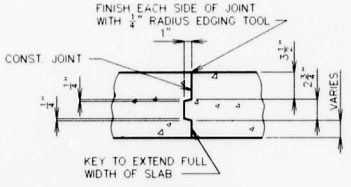
NOTE: LONGITUDINAL DIMENSIONS ARE HORIZONTAL.

LONGITUDINAL REINFORCING STEEL SHALL BE PLACED SO THAT ENDS SHALL NOT BE MORE THAN 1"± FROM VERTICAL LEG OF ANGLE AT EXPANSION DEVICE.

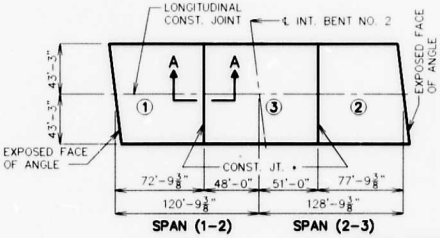


PART LONGITUDINAL SECTION AT END OF SLAB

SECTION CUT THROUGH CAST-IN-PLACE SLAB FOR PART LONGITUDINAL SECTION THROUGH PRECAST PANEL SEE SHEET NO. 27.



SECTION A-A



	SEQUENCE OF POURS			MIN. RATE OF POUR CU. YDS./HR.
	DIRECTION			WITH RETARDER
BASIC SEQUENCE	1	2	3	25
	EITHER DIRECTION			
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.				
ALTERNATE "A" POURS	1		3 + 2	45
	END TO 3		1 TO END	
ALTERNATE "B" POURS	1 + 3 + 2			45
	END TO END			

SLAB POURING SEQUENCE

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

• FOR DETAIL OF CONSTRUCTION JOINT AT PRESTRESSED PANELS SEE SHEET NO. 27.

3-27-95

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	DMA	4/93
TRACED BY:	RCC	4/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

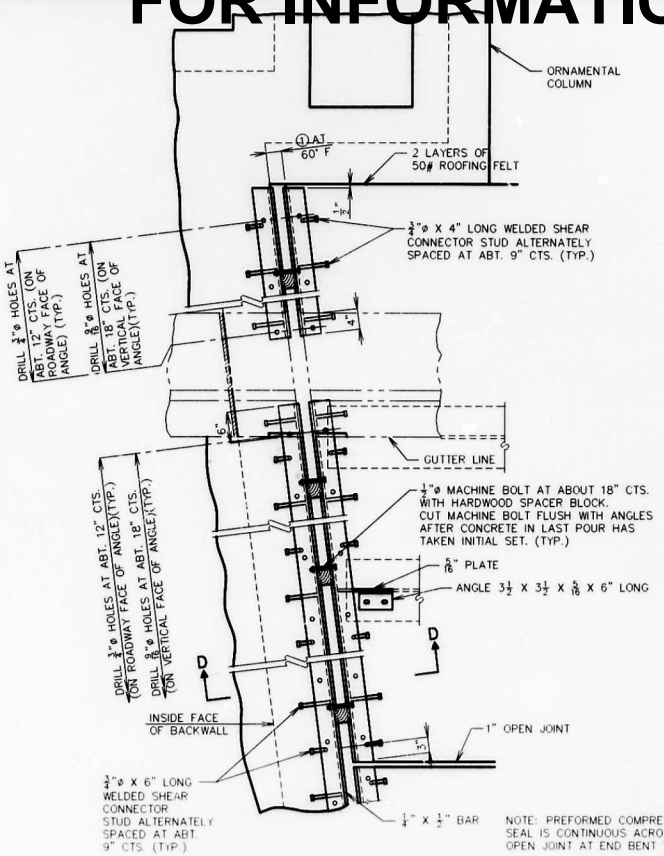
JACKSON COUNTY

DETAILS OF SLAB PLAN

SHEET NO. 25 OF 50

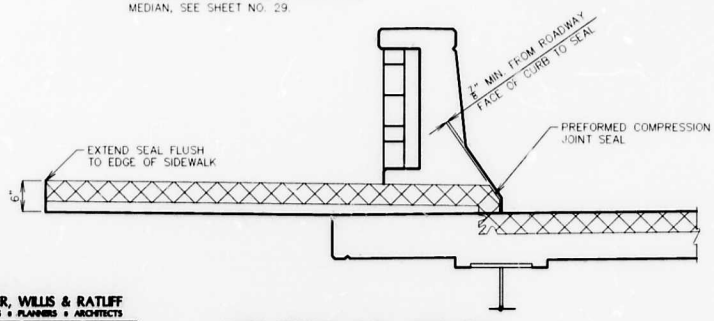
A-5180

STATE	PROJ. NO.	SHEET NO.
TEX.		139

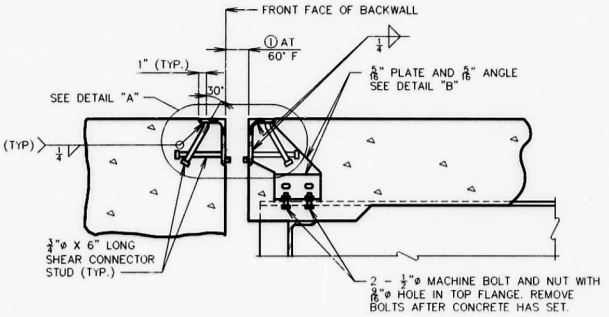


PART PLAN AT END BENT NO. 1
(ABUTMENT NO. 3 SIMILAR)

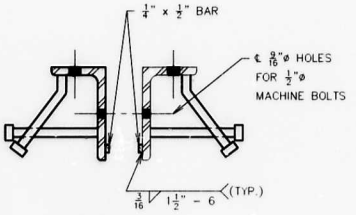
FOR DETAILS OF EXPANSION JOINT THRU MEDIAN, SEE SHEET NO. 29.



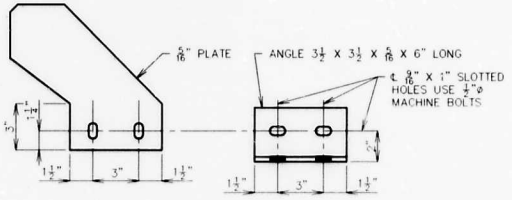
PART SECTION THRU JOINT SEAL



PART SECTION D-D



DETAIL "A"



DETAIL "B"

GENERAL NOTES:

STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN ONE SECTION, EXCEPT THAT WHEN THE LENGTH IS OVER 50', SPLICING IS PERMISSABLE.

THE EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.

STRUCTURAL STEEL FOR THE ARMORED JOINT SHALL BE GRADE A36.

ANCHORS FOR COMPRESSION SEAL ARMOR SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

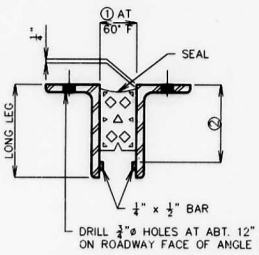
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F.

DIMENSION ① SHALL BE INCREASED ⅛" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED ⅛" FOR EACH 10° RISE IN TEMPERATURE AT INSTALLATION.

SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PREFORMED EXPANSION JOINT SEAL.

NEOPRENE EXTRUSIONS SHALL MEET A.S.T.M. D3542-83.



PART CROSS SECTION
THRU EXPANSION JOINT

TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS				
LOCATION	SEAL WIDTH	①	②	REQUIRED MOVEMENT RANGE
BENT NO. 1	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"
ABUTMENT NO. 3	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"

NOTE: DEPTH OF SEAL SHALL NOT BE LESS THAN WIDTH OF SEAL.

SIZE OF ARMOR JOINT

VERTICAL LEG OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL +1½". VERTICAL LEG OF ANGLE IN SIDEWALK SHALL BE A MAXIMUM OF 6" HORIZONTAL LEG OF ANGLE SHALL BE A MINIMUM OF 3". MINIMUM THICKNESS OF ANGLE SHALL BE ½".

IF A SEAL SIZE LARGER THAN THAT INDICATED ON THE PLANS IS USED, THE MOVEMENT RANGE, THE OPENING AT 60° F AND ALL DIMENSIONS FOR THE ARMOR ANGLES SHALL BE SHOWN ON THE SHOP DRAWINGS.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

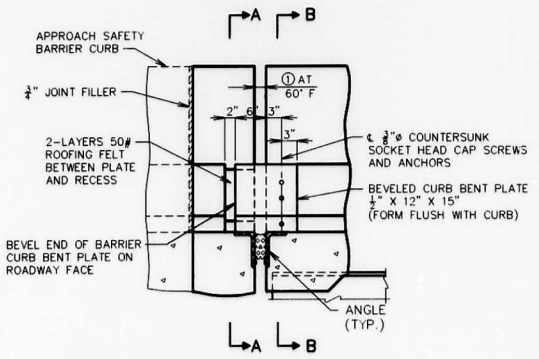
JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL

SHEET NO. 28 OF 50

A-5180

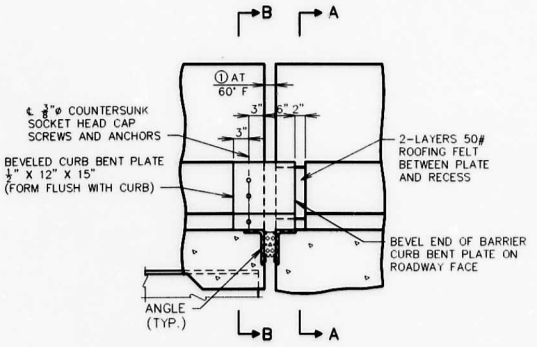
STATE	PROJ. NO.	SHEET NO.
MO.		140



PART ELEVATION OF BARRIER CURB AT END BENT NO. 1

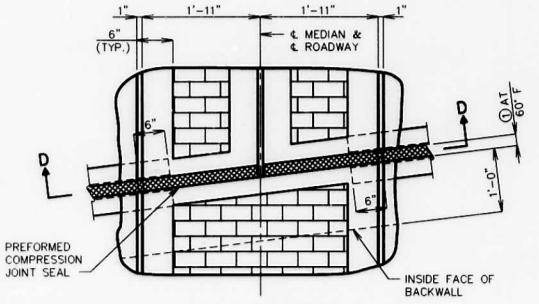
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR

SEE SHEET NO. 26 FOR DIMENSION ①.

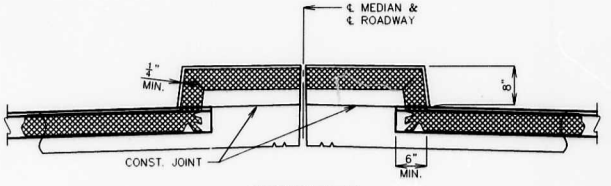


PART ELEVATION OF BARRIER CURB AT ABUTMENT NO. 3

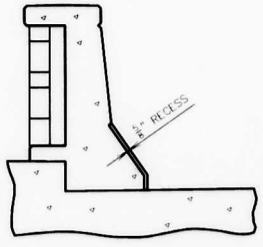
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR



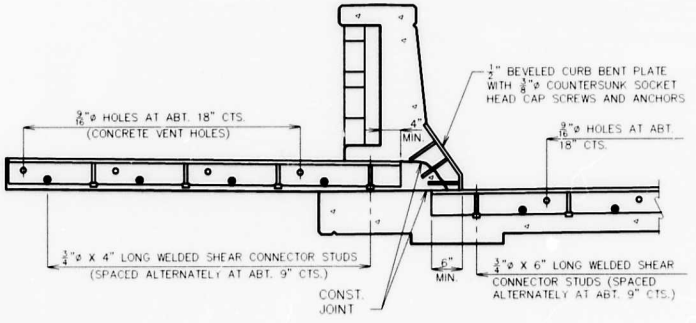
PART PLAN OF JOINT SEAL THRU MEDIAN AT ABUTMENT NO. 3



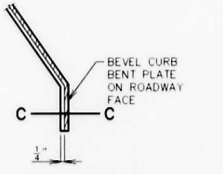
SECTION D-D



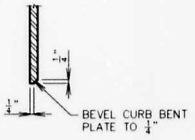
PART SECTION A-A



PART SECTION B-B



PART ELEVATION AT END OF BEVELED CURB BENT PLATE



SECTION C-C

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AND BENT CURB PLATES

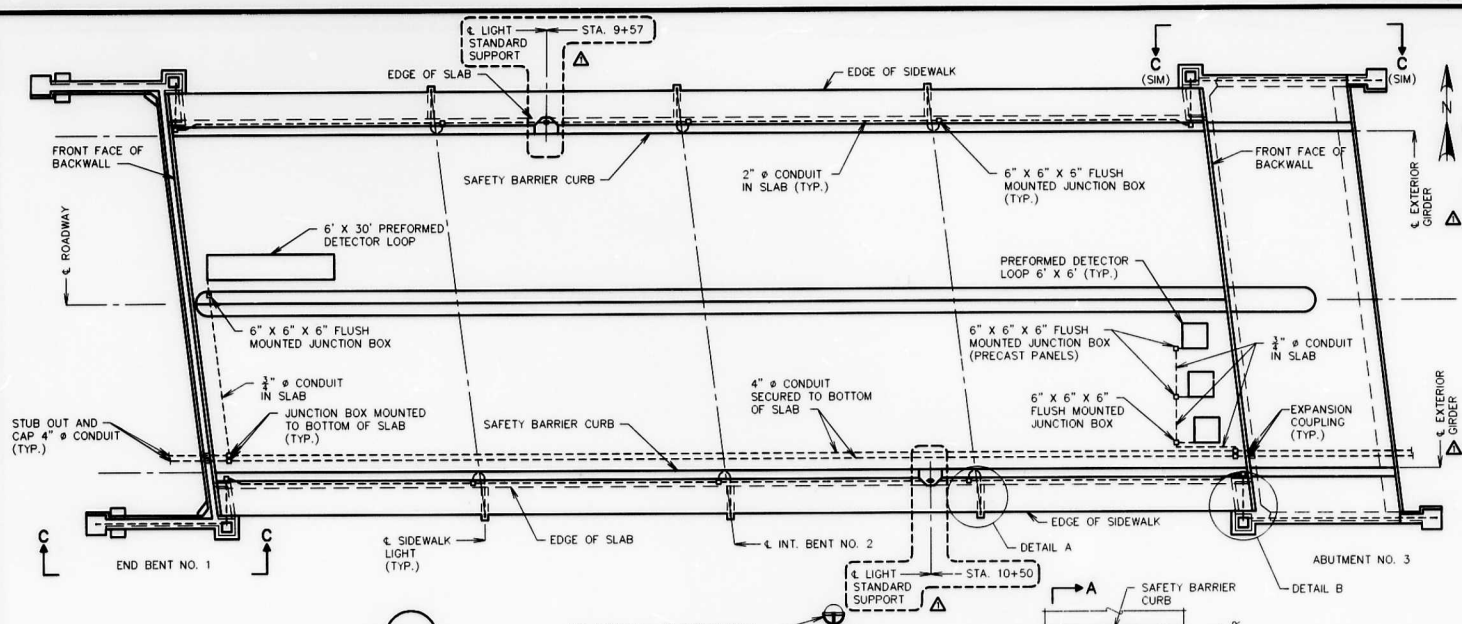
SHEET NO. 29 OF 50

A-5180

3-27-95

FOR INFORMATION ONLY

A51801, Sht. 103



STATE	PROJ. NO.	SHEET NO.
MO.		141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN ETHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS.

⚠ CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

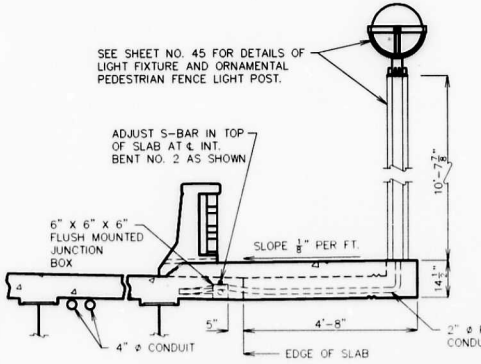
4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

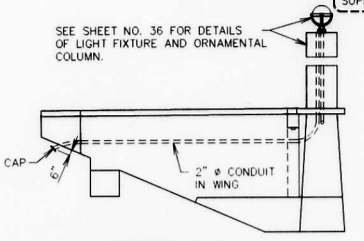
THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

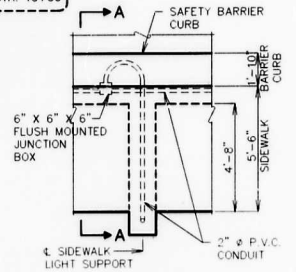
⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.



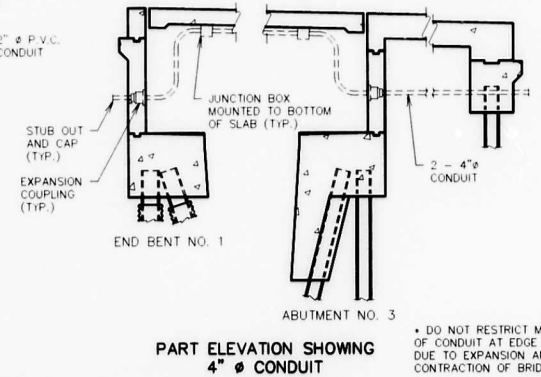
SECTION A-A



SECTION C-C

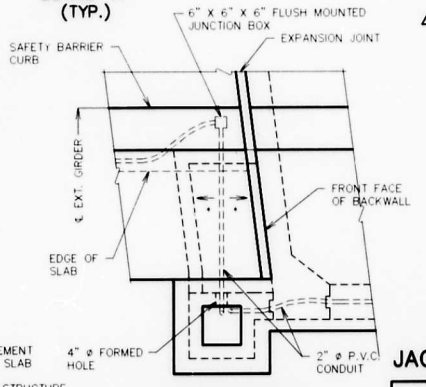


DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE



DETAIL "B" (TYP.)

BUCHER, WILLIS & RATLIFF
ENGINEERS : PLANNERS : ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

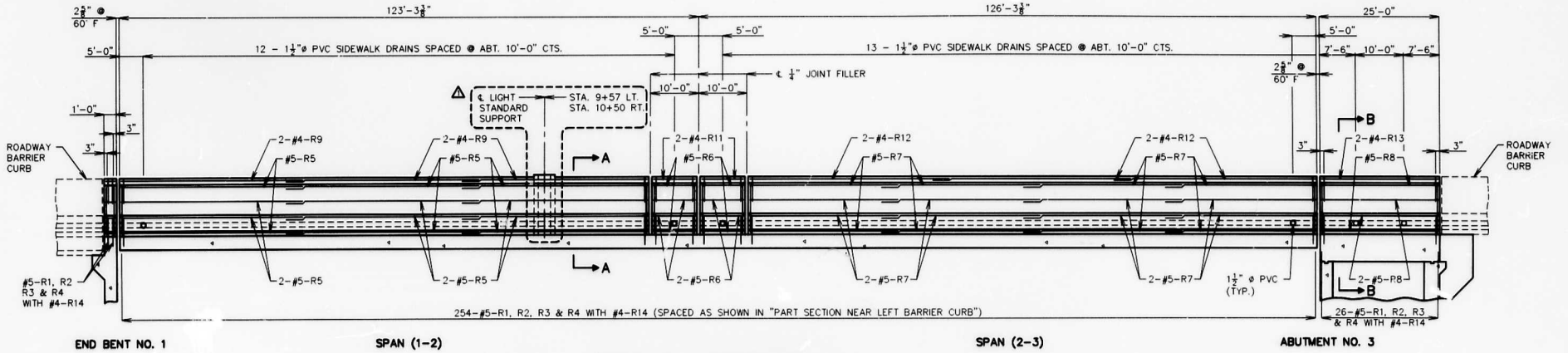
JACKSON COUNTY

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

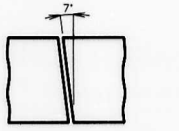
STATE	PROJ. NO.	SHEET NO.
MO.		165



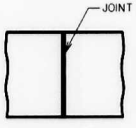
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

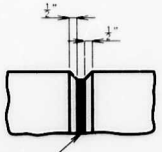


AT 2⅝" EXPANSION JOINT

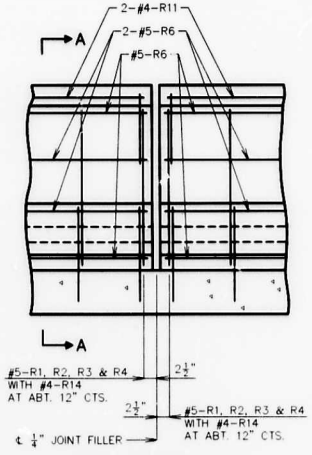


AT ¼" JOINT

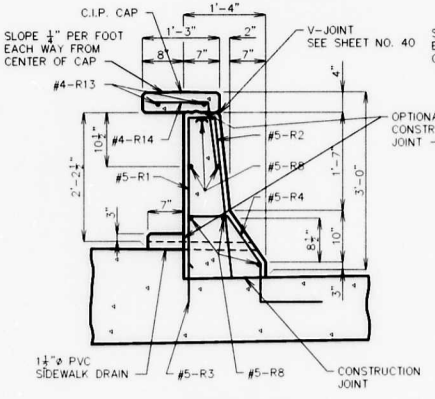
PART PLAN VIEW



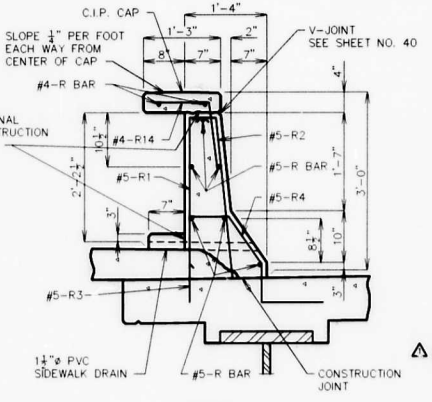
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

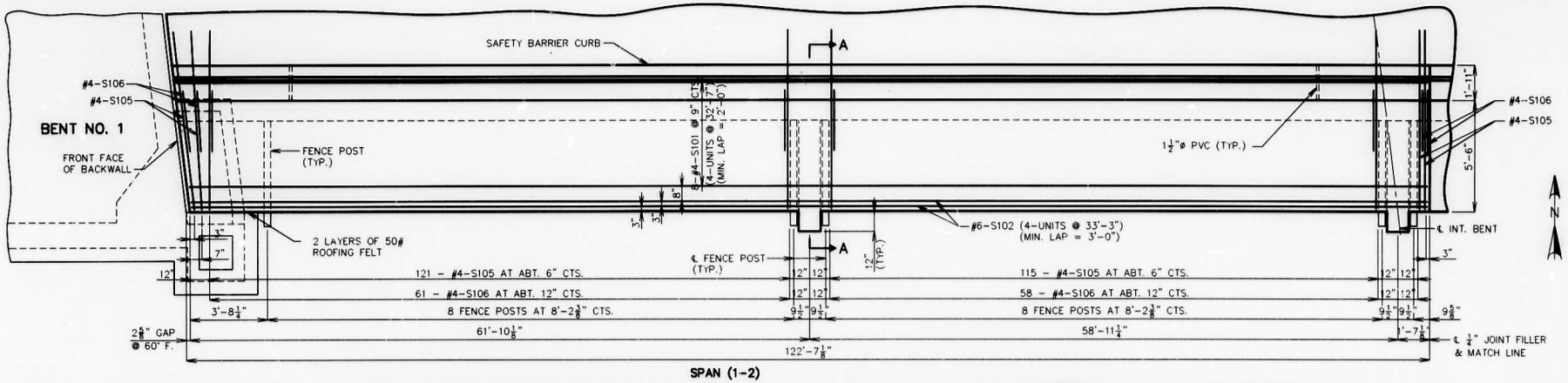
JACKSON COUNTY

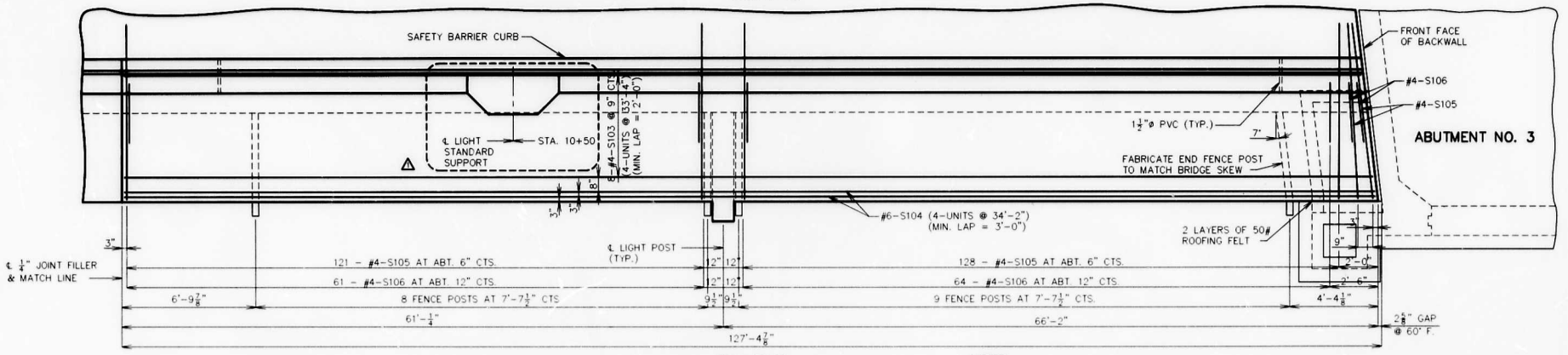
DETAILS OF SAFETY BARRIER CURB

SHEET NO. 34 OF 50

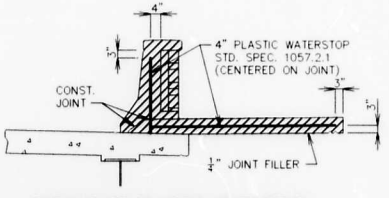
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		143





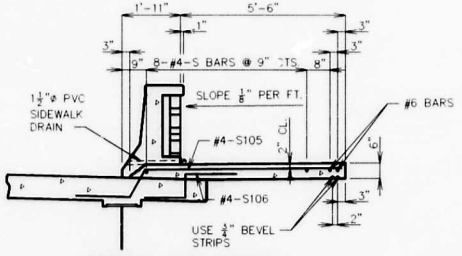
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

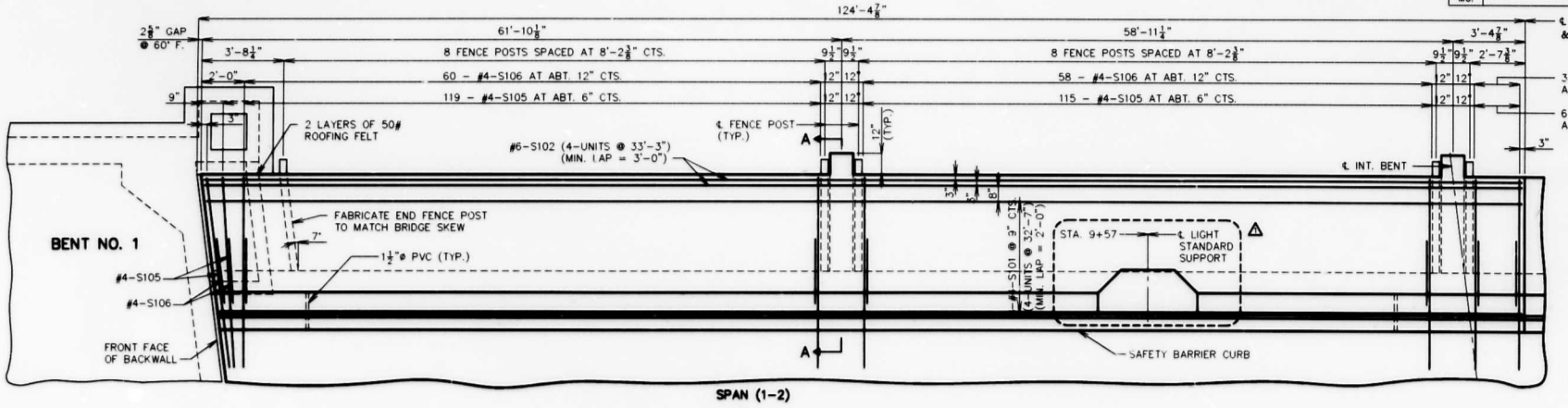
DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 32 OF 50

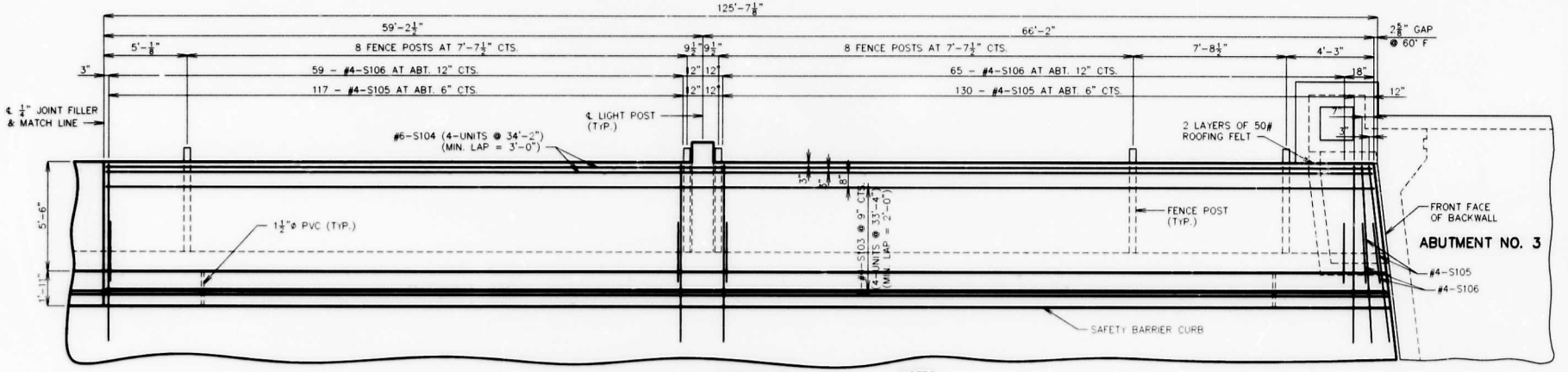
A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		142

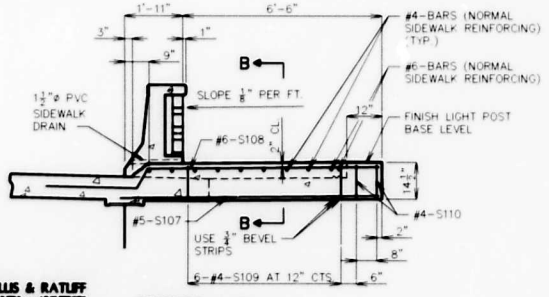


SPAN (1-2)

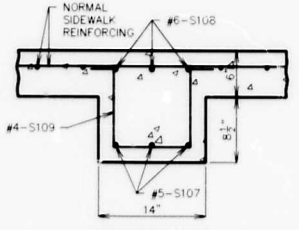


SPAN (2-3)

PLAN OF LEFT SIDEWALK



SECTION A-A



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A 1/4" RADIUS OR A 3/4" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

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DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. △ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

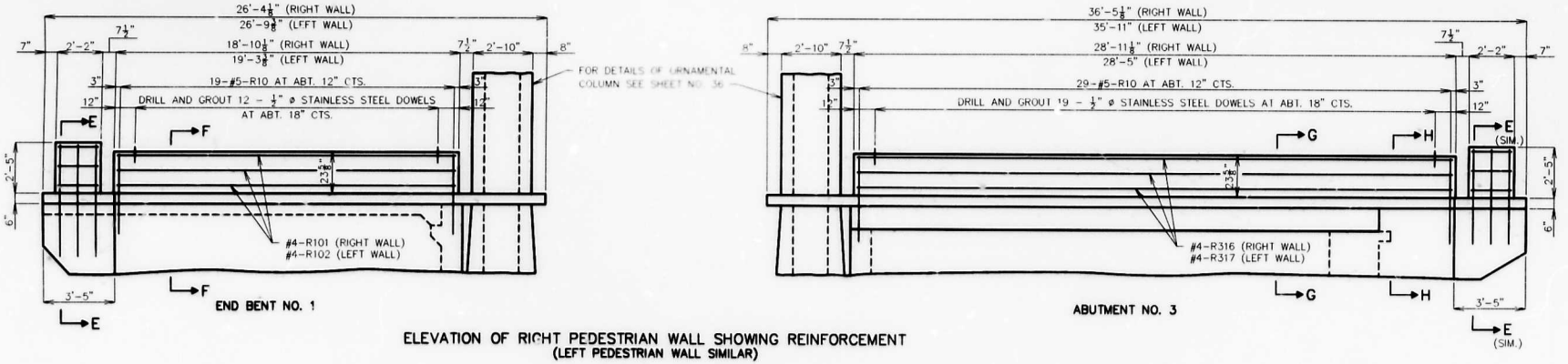
SHEET NO. 31 OF 50

A-5180

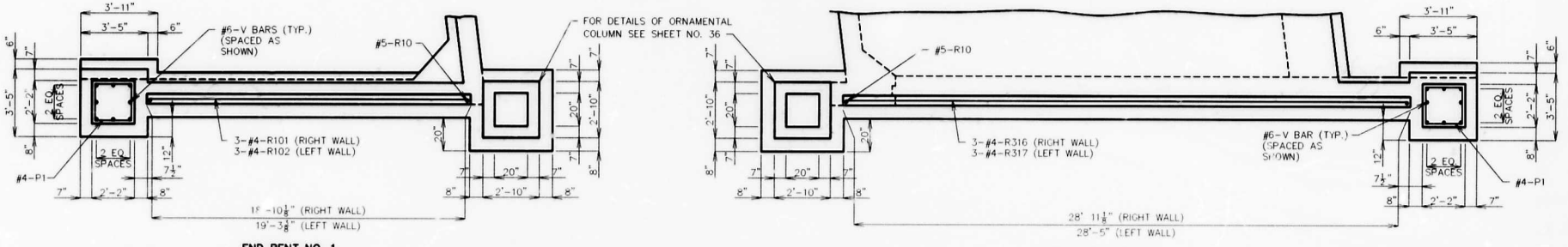
FOR INFORMATION ONLY

A51801, Sht. 107

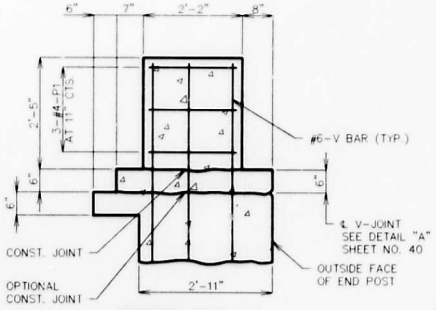
STATE	PROJ. NO.	SHEET NO.
MO.		146



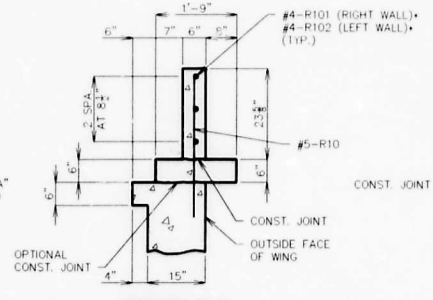
ELEVATION OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)



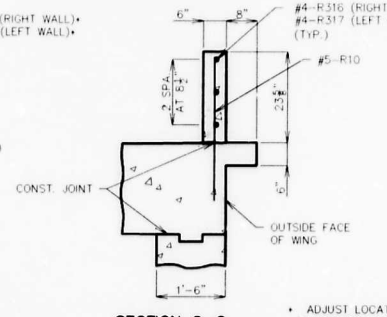
PLAN OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)



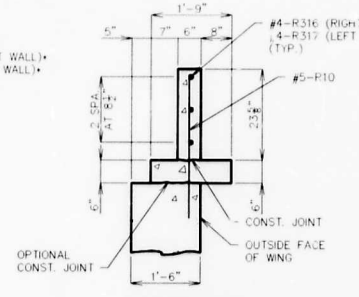
SECTION E-E



SECTION F-F



SECTION G-G



SECTION H-H

* ADJUST LOCATION OF HORIZONTAL RESTEEL AS REQUIRED TO CLEAR SLEEVE FOR HANDRAIL POST, SEE SHEET NO. 41.

NOTES:

FOR DETAILS OF PRECAST CONCRETE CAP, STONE VENEER AND HANDRAIL, SEE SHEET NO. 41.

CONCRETE FOR PEDESTRIAN WALLS AND END POSTS SHALL BE INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

REINFORCING STEEL IN PEDESTRIAN WALLS AND END POSTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

3-27-95

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PEDESTRIAN WALLS AND END POST

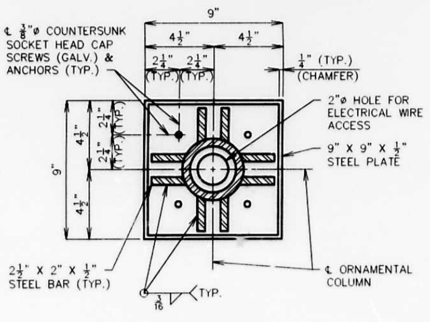
SHEET NO. 35 OF 50

A-5180

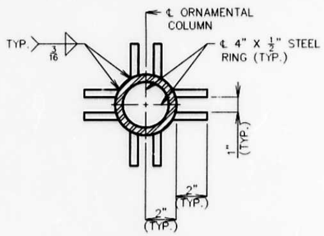
FOR INFORMATION ONLY

A51801, Sht. 108

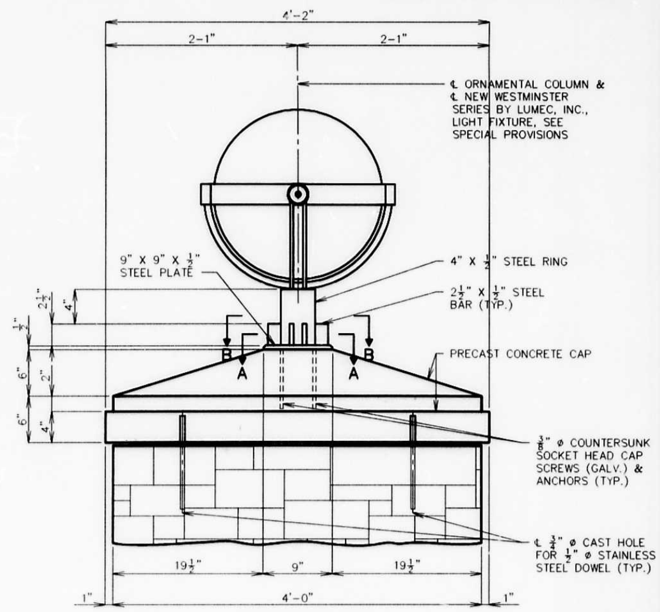
STATE	PROJ. NO.	SHEET NO.
MO.		147



SECTION A–A

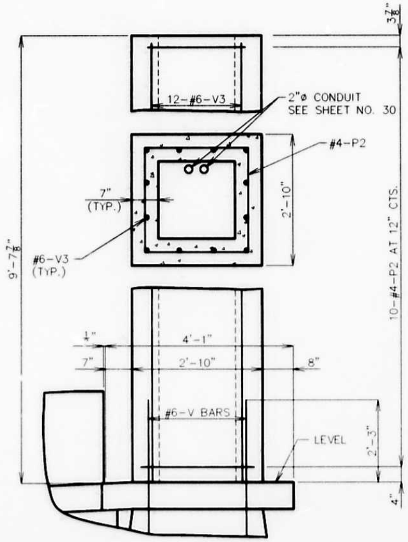


SECTION B–B

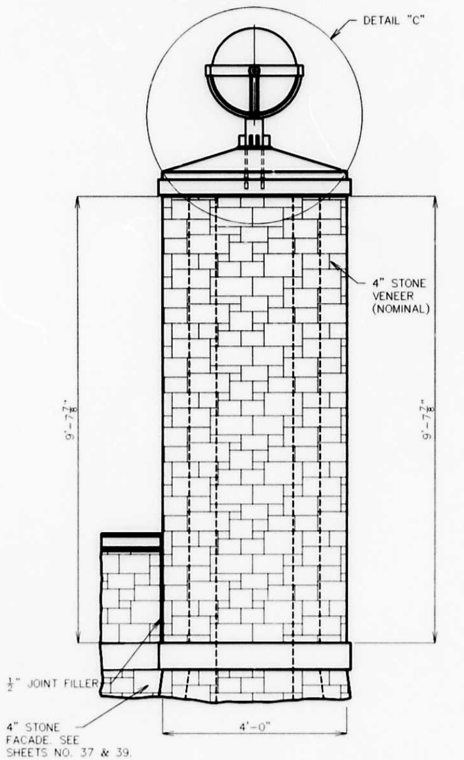


DETAIL "C"

PROVIDE FOR ELECTRICAL WIRE THROUGH PRECAST CONCRETE CAP.



ELEVATION OF ORNAMENTAL COLUMN SHOWING REINFORCEMENT



ELEVATION OF ORNAMENTAL COLUMN SHOWING STONE VENEER

NOTE:

RIGHT COLUMN ON END BENT NO. 1 SHOWN, LEFT COLUMN AND COLUMNS ON ABUTMENT NO. 3 SIMILAR.

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

STRUCTURAL STEEL SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE ⅜" ø COUNTERSUNK SOCKET HEAD CAP SCREWS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

ANCHORS SHALL BE CAST IN PLACE AND SHALL HAVE A CONCRETE PULL OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 4,000 LBS. IN 4,000 PSI CONCRETE.

CONCRETE FOR THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPSTR.).

REINFORCING STEEL IN THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR FURNISHING AND INSTALLING THE PRECAST CONCRETE CAP AND OTHER ACCESSORIES SHALL BE INCLUDED IN THE UNIT PRICE FOR PRECAST CAP ON ORNAMENTAL COLUMN.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

3-27-95

JACKSON COUNTY

DETAILS OF ORNAMENTAL COLUMN

SHEET NO. 36 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		109

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{1}{8}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

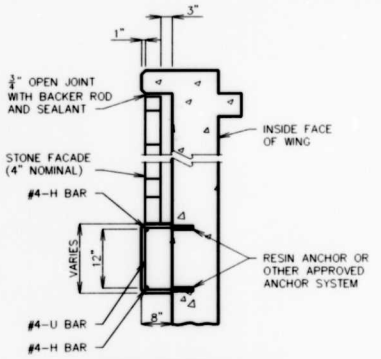
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

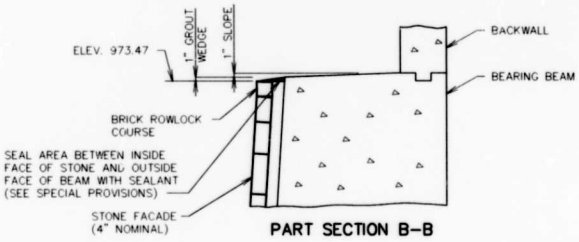
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

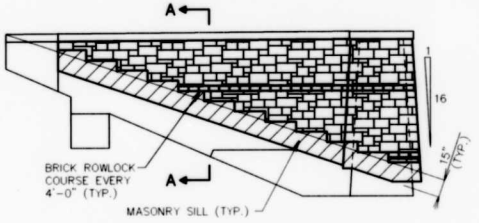


PART SECTION A-A

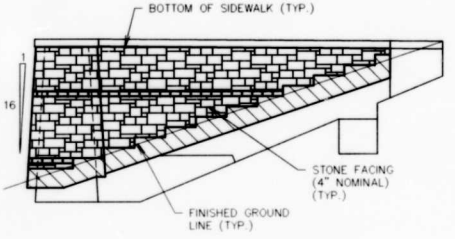
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



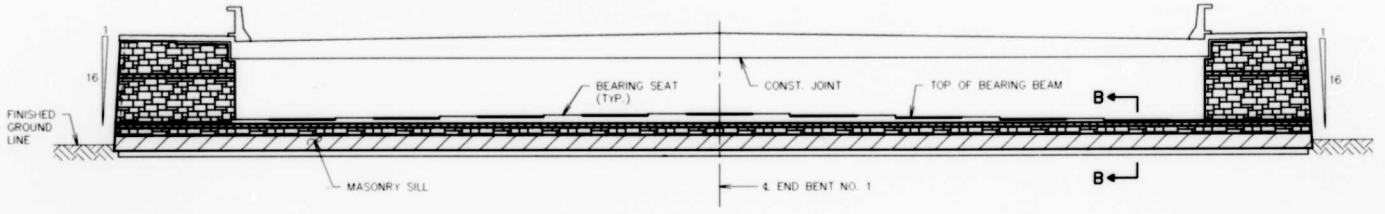
PART SECTION B-B



ELEVATION SOUTH WING



ELEVATION NORTH WING



ELEVATION

7-27-95

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DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

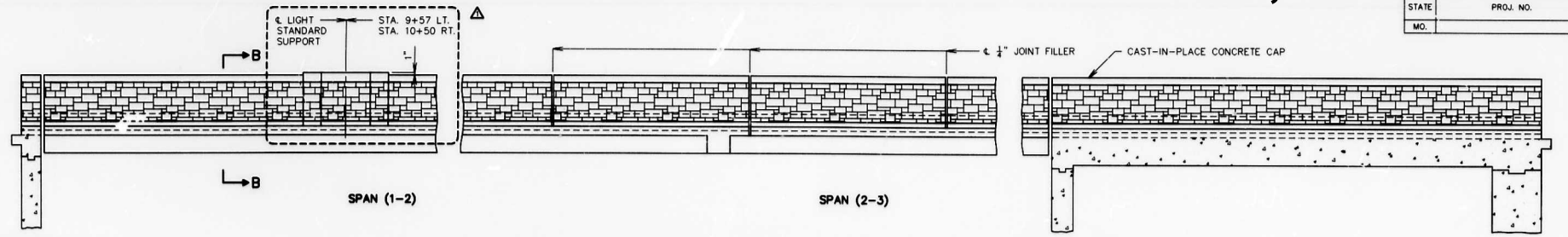
JACKSON COUNTY

DETAILS OF STONE FACADE ON END BENT NO. 1

SHEET NO. 37 OF 50

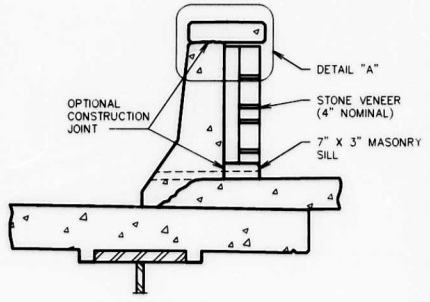
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		151

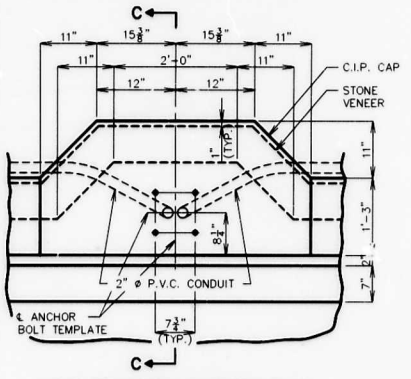


ELEVATION OF RIGHT SAFETY BARRIER CURB

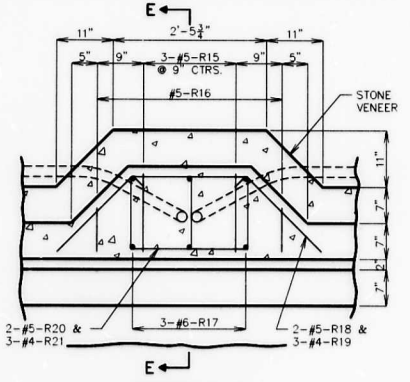
(LEFT CURB IS SIMILAR)



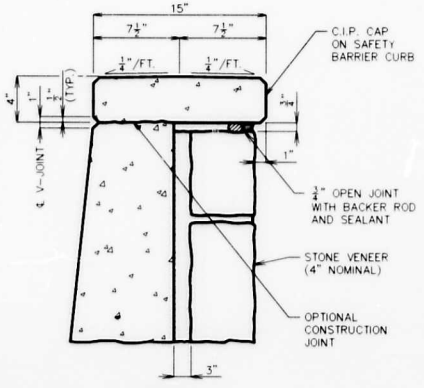
PART SECTION B-B



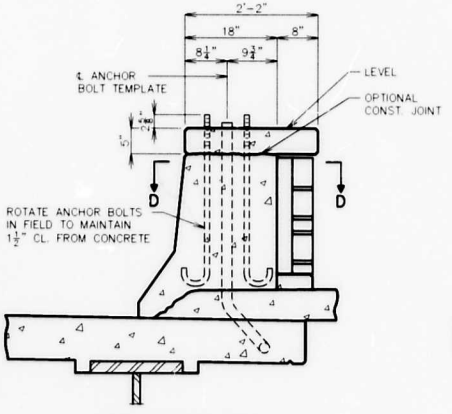
LIGHT STANDARD SUPPORT PLAN



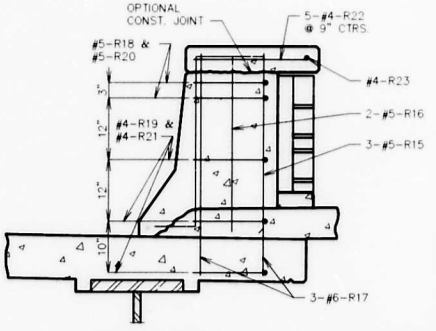
SECTION D-D



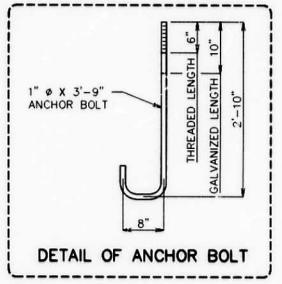
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

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DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		150

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

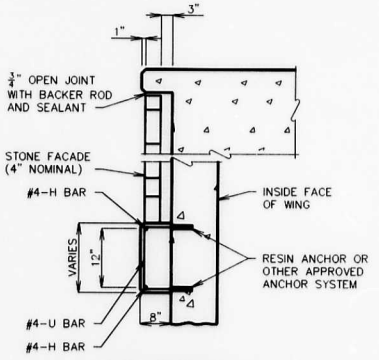
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

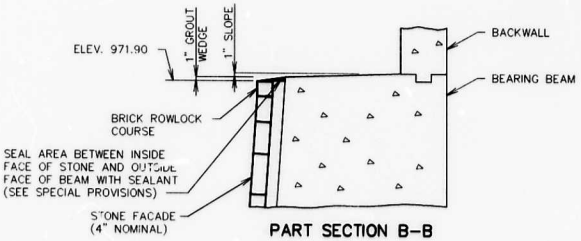
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

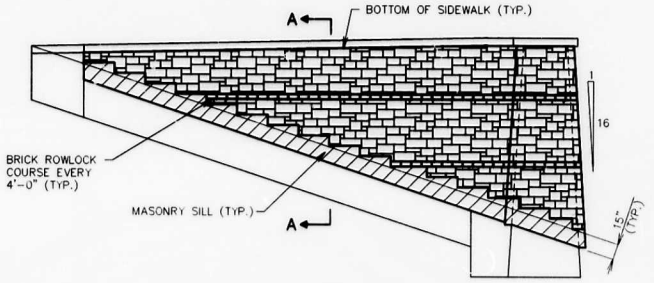


PART SECTION A-A

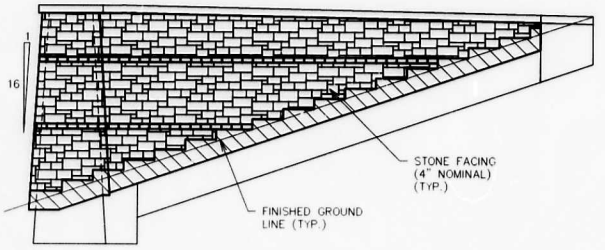
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



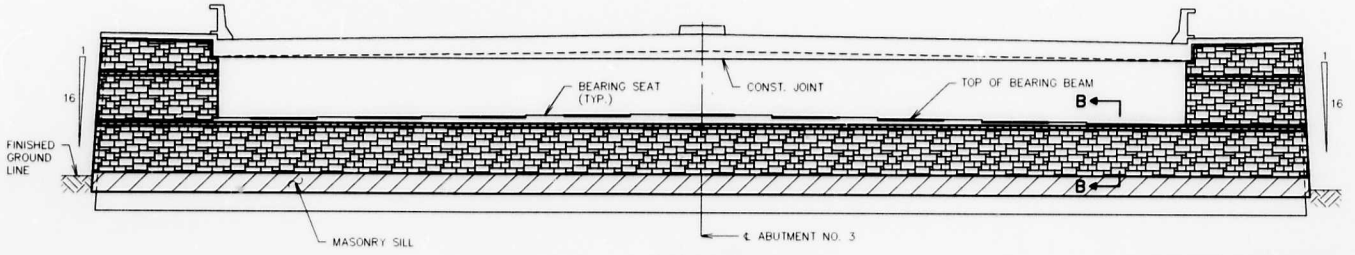
PART SECTION B-B



ELEVATION NORTH WING



ELEVATION SOUTH WING



ELEVATION

3-21-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

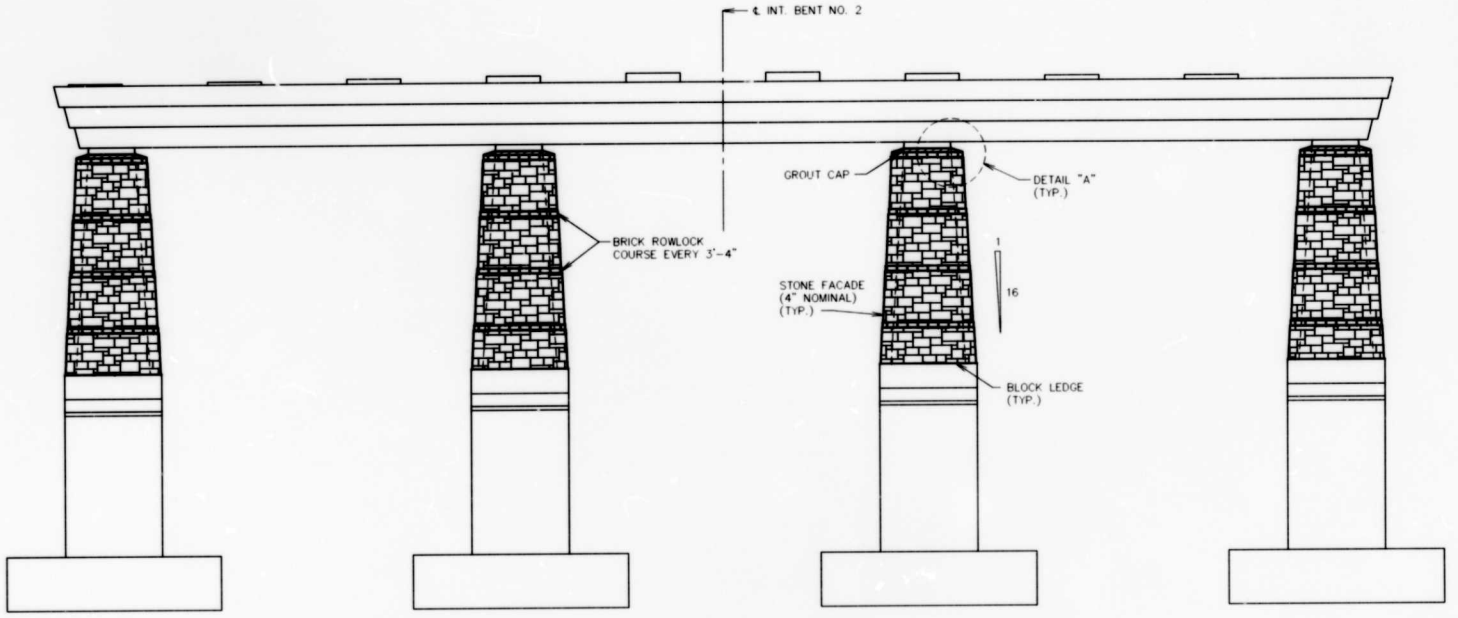
JACKSON COUNTY

DETAILS OF STONE FACADE ON ABUTMENT NO. 3

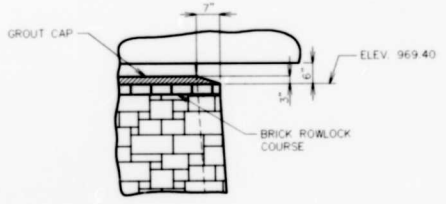
SHEET NO. 39 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		139



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

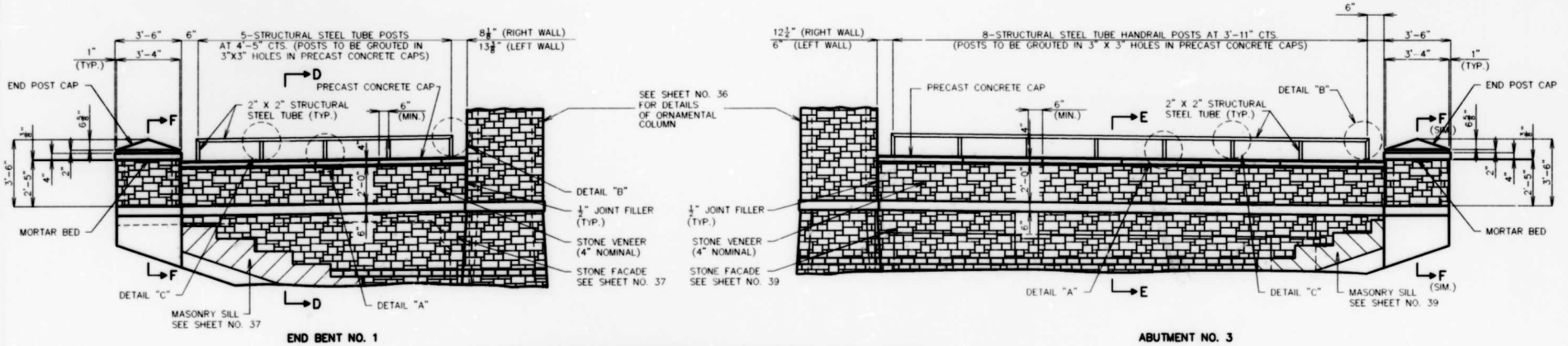
JACKSON COUNTY

DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

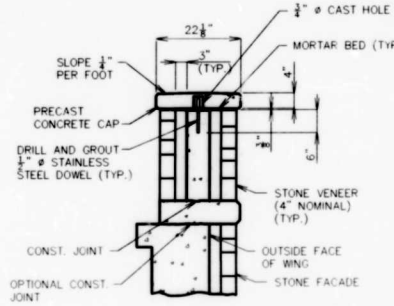
SHEET NO. 38 OF 50

A-5180

24 to 1



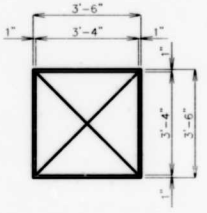
ELEVATION OF RIGHT PEDESTRIAN WALLS SHOWING STONE VENEER
(LEFT PEDESTRIAN WALLS SIMILAR)



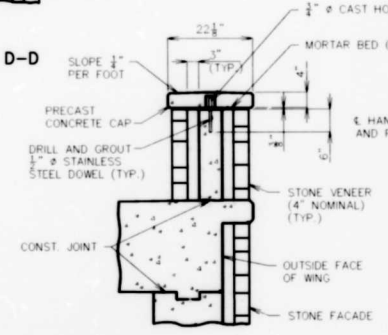
SECTION D-D

DETAIL "B"

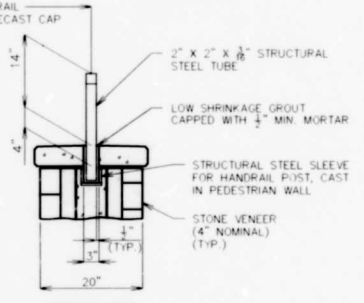
DETAIL "C"



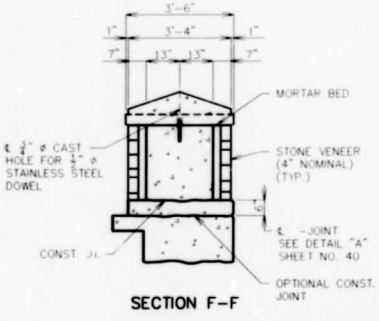
PLAN OF PRECAST END POST CAP



SECTION E-E



DETAIL "A"



SECTION F-F

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

2" X 2" STRUCTURAL STEEL TUBING FOR PEDESTRIAN HANDRAIL SHALL BE A.S.T.M. A500 OR A501.

STRUCTURAL STEEL SLEEVE SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS OF PEDESTRIAN HANDRAILS.

THE STRUCTURAL STEEL TUBE COMPLETE-IN-PLACE SHALL BE PAID FOR AS TUBE HANDRAIL ON PEDESTRIAN WALLS, PER LIN. FT.

THE UNIT PRICE BID PER LINEAR FOOT OF PRECAST CONCRETE CAP SHALL INCLUDE THE COST OF THE PRECAST CAP, STAINLESS STEEL DOWELS, AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER EACH FOR PRECAST CAP ON END POST SHALL INCLUDE THE COST OF THE PRECAST CAP AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PEDESTRIAN WALL AND END POST ARCHITECTURAL TREATMENT

SHEET NO. 41 OF 50

A-5180

8-27-95

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		153

NOTES:

ALL FENCE POSTS SHALL BE PLACED VERTICAL. SHIM PLATES MAY BE REQUIRED BETWEEN FENCE POSTS AND SIDEWALK FOR ALIGNMENT.

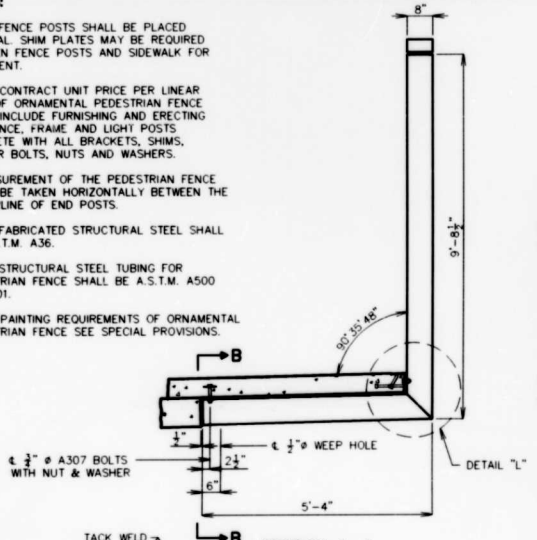
THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ORNAMENTAL PEDESTRIAN FENCE SHALL INCLUDE FURNISHING AND ERECTING THE FENCE, FRAME AND LIGHT POSTS COMPLETE WITH ALL BRACKETS, SHIMS, ANCHOR BOLTS, NUTS AND WASHERS.

MEASUREMENT OF THE PEDESTRIAN FENCE SHALL BE TAKEN HORIZONTALLY BETWEEN THE CENTERLINE OF END POSTS.

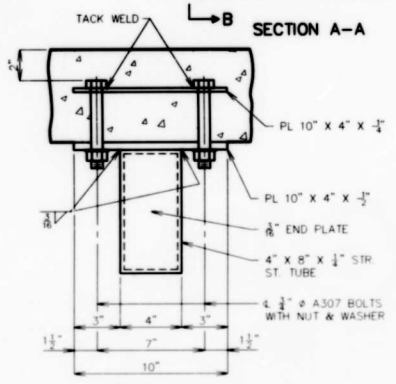
ALL FABRICATED STRUCTURAL STEEL SHALL BE A.S.T.M. A36.

ALL STRUCTURAL STEEL TUBING FOR PEDESTRIAN FENCE SHALL BE A.S.T.M. A500 OR A501.

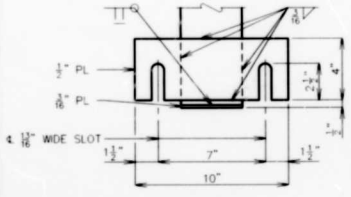
FOR PAINTING REQUIREMENTS OF ORNAMENTAL PEDESTRIAN FENCE SEE SPECIAL PROVISIONS.



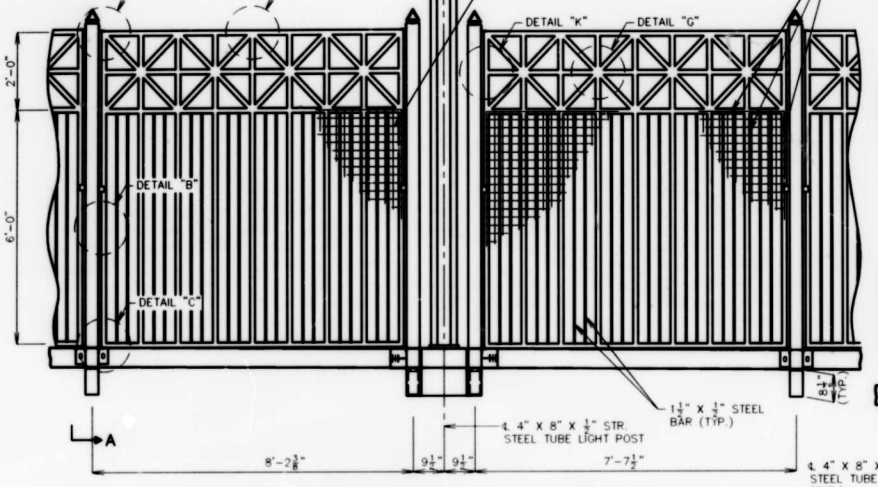
SECTION A-A



SECTION B-B



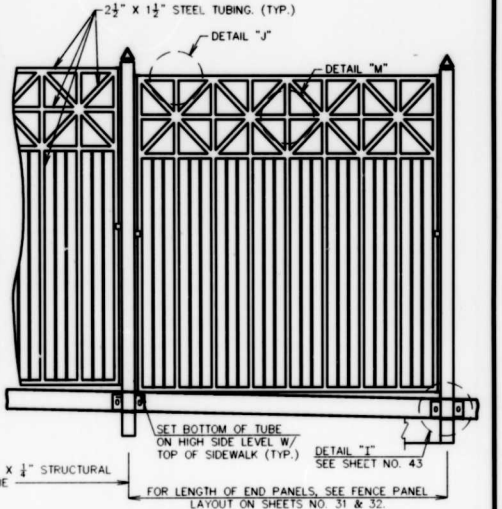
PLAN



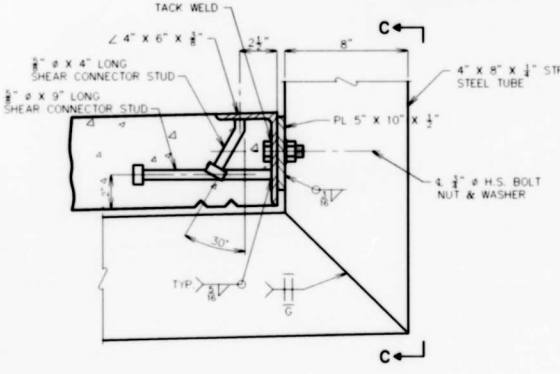
SPAN (1-2) SPAN (2-3)

NOTE:
FOR DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 40.

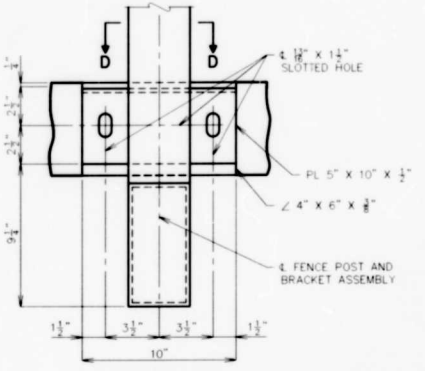
SEE SHEETS NO. 31 & 32 FOR FENCE POST SPACING.



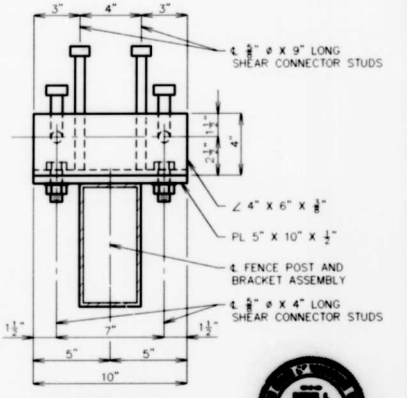
TYPICAL ELEVATION



DETAIL "L"



ELEVATION C-C
(TYPICAL EXCEPT AS NOTED)



SECTION D-D

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:		3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

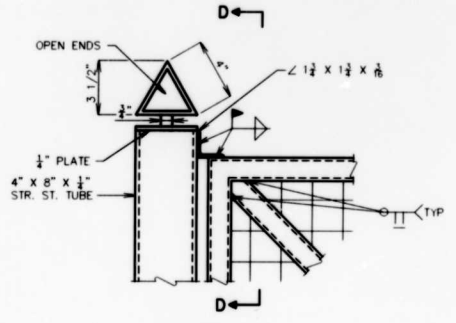
SHEET NO. 42 OF 50

A-5180

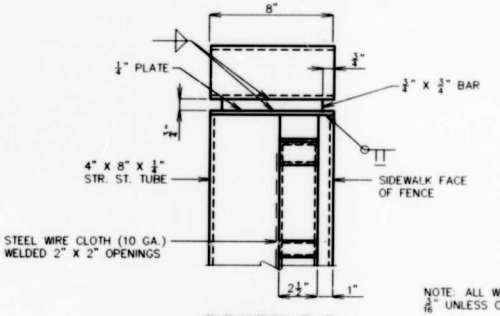
3-27-95

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		

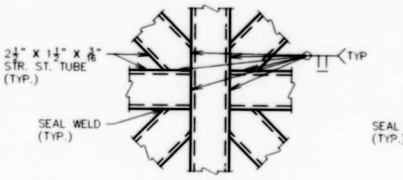


DETAIL "A"

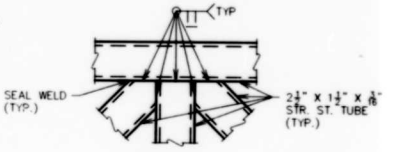


ELEVATION D-D

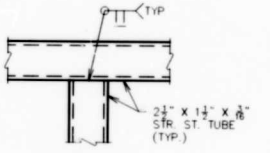
NOTE: ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.



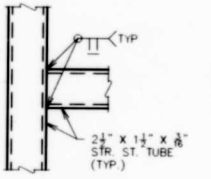
DETAIL "G"



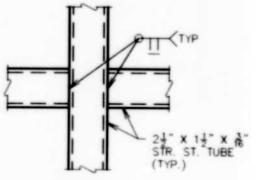
DETAIL "H"



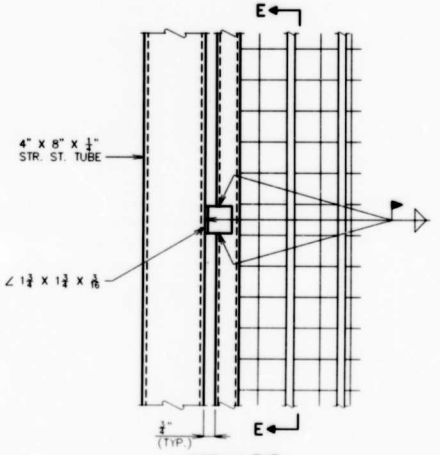
DETAIL "J"



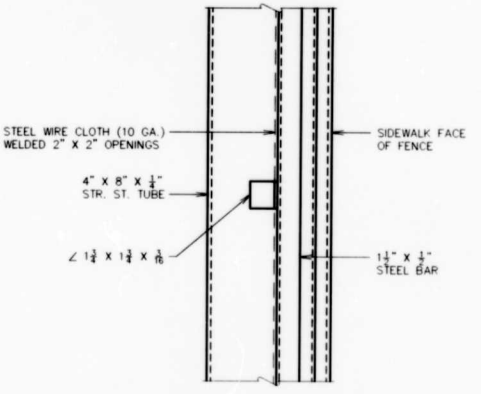
DETAIL "K"



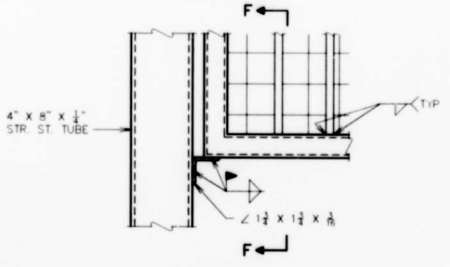
DETAIL "M"



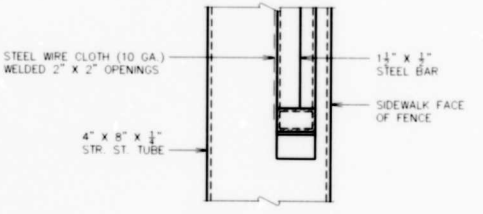
DETAIL "B"



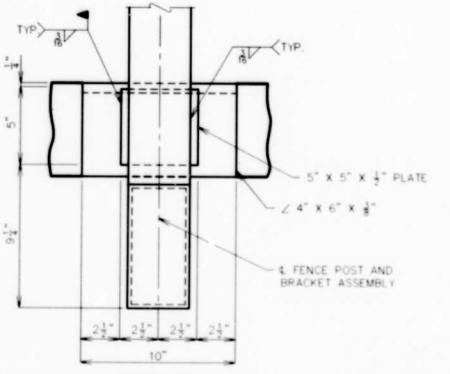
ELEVATION E-E



DETAIL "C"



ELEVATION F-F



DETAIL "I"
(POSTS AT END BENT NO. 1 AND ABUTMENT NO. 3 ONLY)

NOTE:

ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.

FOR ADDITIONAL PEDESTRIAN FENCE DETAILS AND LOCATION OF DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 42.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 43 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 116

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
END BENT NO. 1																	
8	5-D100	WING FOOTING		20		X		4 6.000							4 6	4 6	38
8	5-D101	WING FOOTING		20		X		2 0.000							2 0	2 0	17
7	7-F100	WING BRACE		15		X		15.000	4 10.000	15.000	10.625	10.625	9.250	11.750	7 4	7 3	104
7	7-F101	WING BRACE		15		X		15.000	4 5.000	15.000	10.625	10.625	11.750	9.250	6 11	6 10	98
8	8-H100	BEAM		17		X		43 6.000							44 5	44 5	949
8	8-H101	BEAM		17		X		22 4.500							23 4	23 4	498
4	8-H102	BEAM		20		X		30 2.000							30 2	30 2	322
8	8-H103	BEAM		20		X		23 8.000							23 8	23 8	506
4	6-H104	BEAM		20		X		43 6.000							43 6	43 6	261
2	6-H105	BEAM		20		X		19 3.000							19 3	19 3	58
19	4-H106	BACKWALL		20		X		30 0.000							30 0	30 0	381
8	4-H107	BACKWALL		20		X		43 6.000							43 6	43 6	232
2	6-H108	BACKWALL		20		X		43 6.000							43 6	43 6	131
4	6-H109	BACKWALL		20		X		31 0.000							31 0	31 0	186
4	4-H110	BACKWALL	E	20		X		30 0.000							30 0	30 0	80
2	4-H111	BACKWALL	E	20		X		43 6.000							43 6	43 6	58
2	6-H112	BACKWALL	E	20		X		43 6.000							43 6	43 6	131
4	6-H113	BACKWALL	E	20		X		31 0.000							31 0	31 0	186
4	4-H114	BACKWALL	E	20		X		7 6.000							7 6	7 6	20
16	8-H115	BEAM		10	S	X			5 0.000	2 6.000					12 8	12 2	292
2	4-H116	ORN. COLUMN	E	20		X		6 6.000							6 6	6 6	9
14	4-H117	ORN. COLUMN	E	20		X		7 6.000							7 6	7 6	70
14	4-H118	ORN. COLUMN	E	21		X		2 6.000		12.000			2 5.750	3.625	3 6	3 5	32
14	4-H119	ORN. COLUMN	E	21		X		2 6.000	12.000				2 5.750	3.625	3 6	3 5	32
16	6-H120	ORN. COLUMN	E	19		X		4 0.000	16.000						5 4	5 2	124
14	6-H121	WING		20		X	V 2	10 0.000							10 0	10 0	
		INCREMENT = 20.500 INCH						20 3.000							20 3	20 3	321
12	6-H122	WING		20		X	V 2	7 2.000							7 2	7 2	
		INCREMENT = 17.500 INCH						10 1.000							10 1	10 1	156
4	6-H123	WING	E	20		X		21 10.000							21 10	21 10	131
12	6-H124	WING		20		X		21 10.000							21 10	21 10	383
14	6-H125	WING		20		X	V 2	10 6.000							10 6	10 6	
		INCREMENT = 21.500 INCH						21 3.000							21 3	21 3	334
4	8-H127	BEAM		20		X		21 3.000							21 3	21 3	227
2	4-S111	ORN. COLUMN	E	13	S	X		3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S112	ORN.COLUMN	E	20		X		3 9.000							3 9	3 9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
4	7-T100	WING		14		X			8 8.000	1 6.000			7.250	16.500	10 2	10 2	83
2	7-T101	WING		14		X			14 3.000	1 11.000			21.000	9.250	16 2	16 1	98
2	7-T102	WING		14		X			14 6.000	1 11.000			21.250	8.875	16 5	16 4	97
32	5-U100	BEAM		13	S	X		4 0.875	2 6.000	4 2.750	2 2.000				14 3	13 11	485
34	5-U101	BEAM		13	S	X		4 0.750	2 7.750	4 2.750	2 7.750				14 8	14 2	502
28	5-U102	BEAM		13	S	X		4 0.500	2 11.500	4 2.750	2 11.375				15 1	14 9	431
26	4-U103	BEAM		10	S	X			6.000	4 0.000					5 0	4 10	84
5	7-U104	BEAM		14		X		5 0.000	23.000	4 6.000			2 9.250	3 6.500	11 5	11 2	114
5	7-U105	BEAM		14		X		5 0.000	23.000	4 6.000			3 6.500	2 9.250	11 5	11 2	114
84	4-U106	BACKWALL		10	S	X			1 2.000	6.000					2 10	2 8	150
52	4-U107	ORN. COLUMN	E	19	S	X		2 6.000	2 6.000						5 0	4 11	171
8	4-U108	WING		13	S	X		23.000	23.000	23.000	23.000				8 5	8 2	44
4	6-V100	BEAM		20		X		2 7.000							2 7	2 7	16
98	6-V101	BACKWALL	E	20		X		9 2.000							9 2	9 2	1350
98	5-V102	BACKWALL	E	20		X		8 8.000							8 8	8 8	886
20	6-V103	ORN. COLUMN	E	20		X		2 6.000							12 8	12 8	381
4	6-V104	ORN. COLUMN	E	20		X		6 9.000							6 9	6 9	41
16	6-V105	WING	E	20		X		4 2.000							4 2	4 2	100
4	6-V106	WING		20		X		3 6.000							3 6	3 6	21
16	6-V107	WING		20		X	V 2	5 1.000							5 1	5 1	
		INCREMENT = 3.875 INCH						7 8.000							7 8	7 8	172
22	6-V108	WING		20		X		7 5.000							7 5	7 5	245
16	6-V109	WING		20		X	V 2	2 8.000							2 8	2 8	
		INCREMENT = 3.500 INCH						5 0.000							5 0	5 0	92
14	6-V110	WING		20		X		5 0.000							5 0	5 0	105
12	6-V111	WING FOOTING		20		X		6 11.000							6 11	6 11	125
18	6-V112	WING		20		X	V 2	4 11.000							4 11	4 11	
		INCREMENT = 3.875 INCH						7 8.000							7 8	7 8	168
24	6-V113	WING		20		X		7 3.000							7 3	7 3	261
16	6-V114	WING		20		X	V 2	2 7.000							2 7	2 7	
		INCREMENT = 3.625 INCH						4 8.000							4 8	4 8	87
18	4-V115	ORN.COLUMN	E	20		X		3 0.000							3 0	3 0	36
8	4-V116	ORN.COLUMN	E	20		X		5 10.000							5 10	5 10	31
5	4-V117	ORN.COLUMN	E	20		X		6 8.000							6 8	6 8	22
5	4-V118	ORN.COLUMN	E	20		X		6 9.000							6 9	6 9	23
20	WSW1	A B WELLS		22		X		18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		157

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

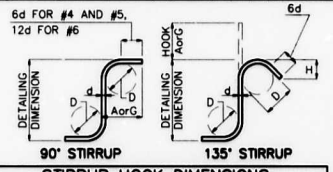
SHAPE 12 SHAPE 13 SHAPE 14

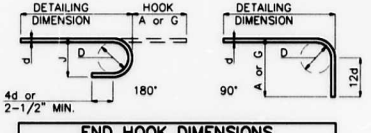
SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24





STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

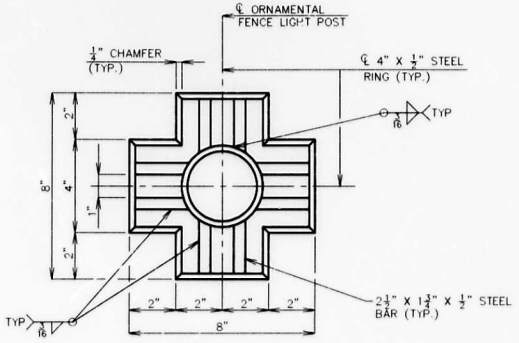
SHEET NO. 46 OF 50

A-5180

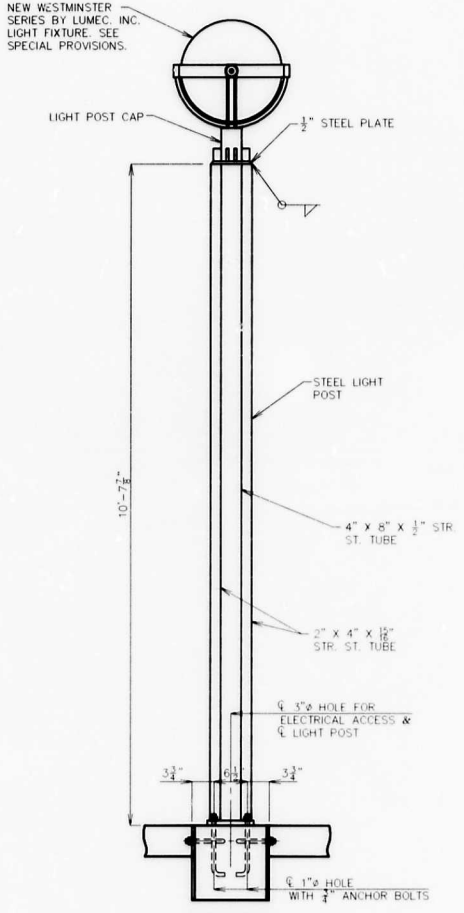
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

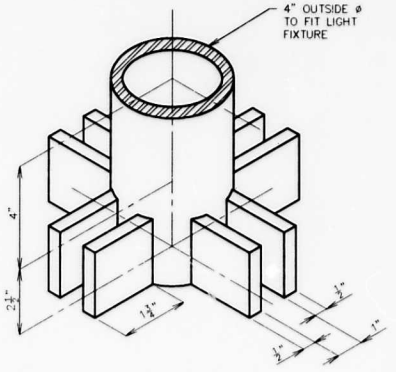
STATE	PROJ. NO.	SHEET NO.
MO.		156



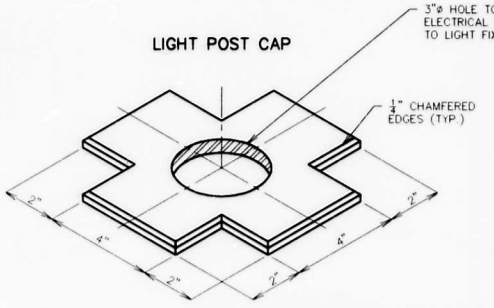
LIGHT POST CAP PLATE



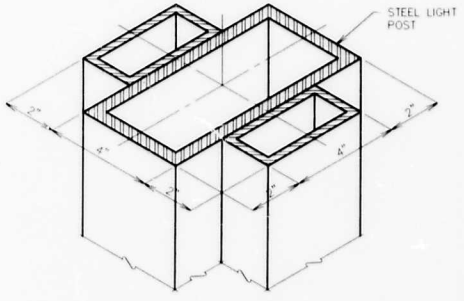
ELEVATION



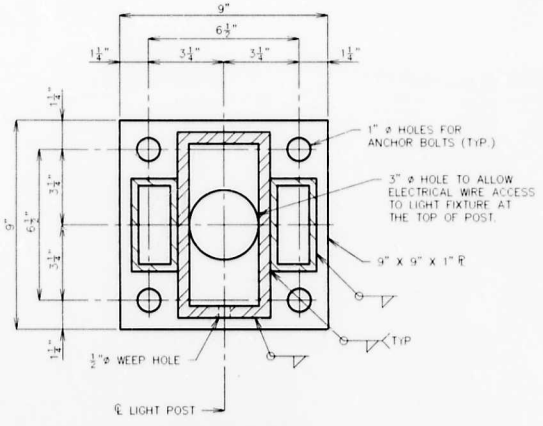
LIGHT POST CAP



½" STEEL PLATE



STEEL LIGHT POLE



LIGHT POST BASE

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

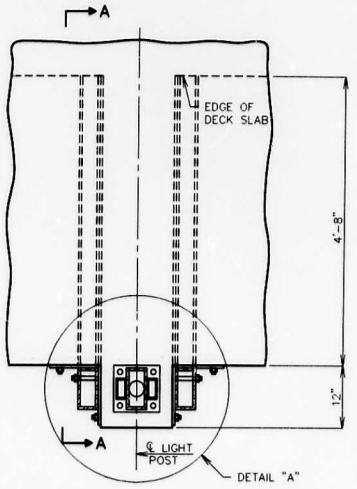
DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 45 OF 50

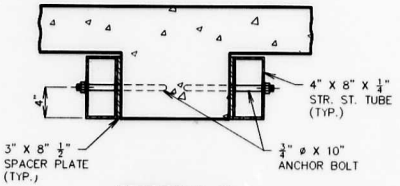
A-5180

3-27-98

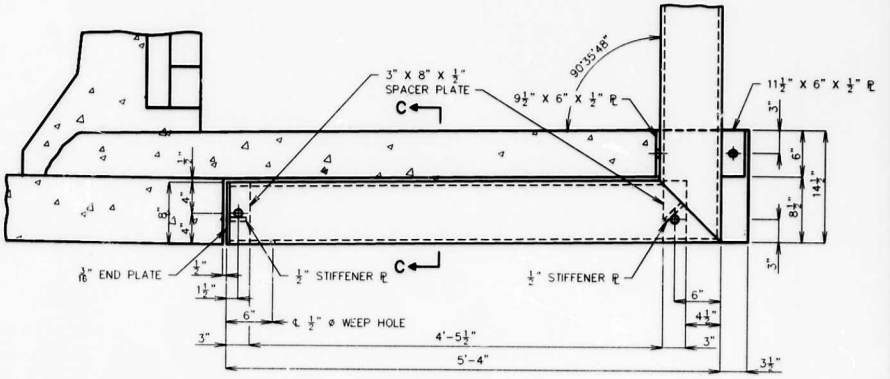
STATE	PROJ. NO.	SHEET NO.
MO.		155



PLAN VIEW OF SIDEWALK LIGHT SUPPORT



SECTION C-C



SECTION A-A

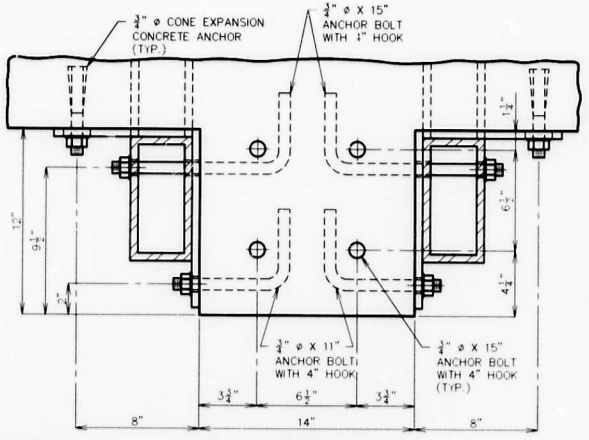
NOTE:

CONCRETE ANCHORS SHALL BE THE CONE EXPANSION TYPE FOR HOT DIP GALVANIZED BOLTS.

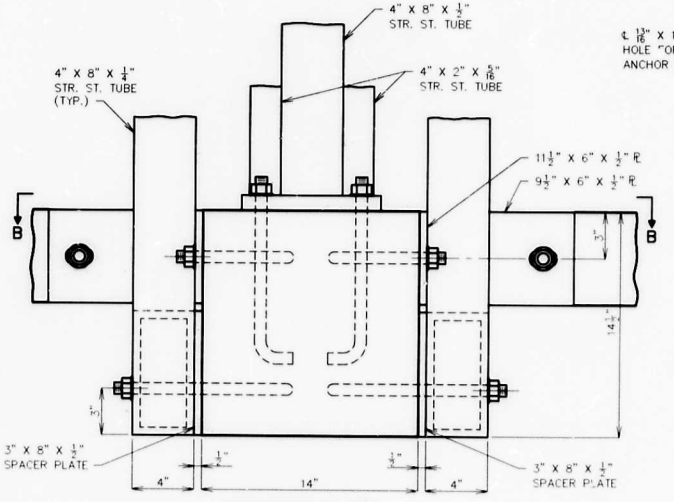
CONCRETE ANCHORS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 10,000 LBS. IN 4,000 PSI CONCRETE.

ALL WELDS TO BE ⅜" UNLESS OTHERWISE NOTED.

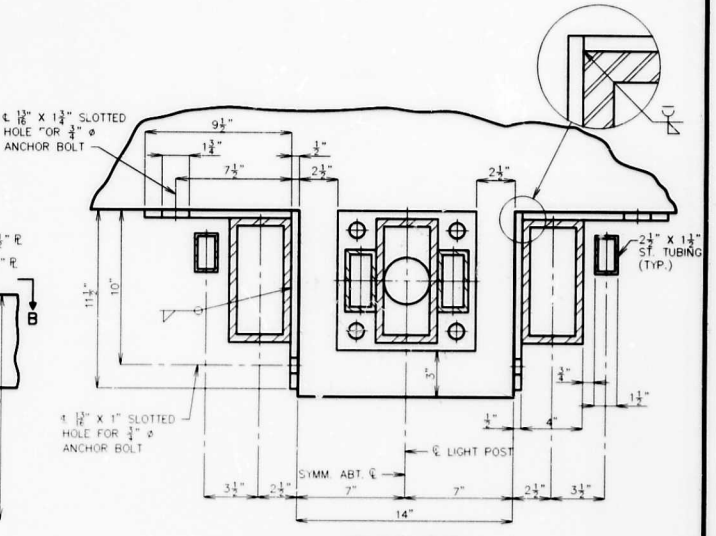
ALL ANCHOR BOLTS SHALL BE GALVANIZED, AND SHALL INCLUDE HEX NUT AND H.S. WASHERS.



DETAIL "A"
SHOWING ANCHOR BOLTS ONLY



ELEVATION OF BEAM
UNDER LIGHT POST



SECTION B-B

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 44 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
INTERMEDIATE BENT NO. 2																												
56	5	D200	FOOTING		20		X			10	2.000													10	2	10	2	594
68	9	D201	FOOTING		18		X			13	8.000													16	2	16	2	3736
18	9	H200	BEAM		17		X			49	7.500													50	10	50	10	3111
18	9	H201	BEAM		17		X			45	5.000													46	8	46	8	2856
16	10	H202	BEAM		20		X			48	2.000													48	2	48	2	3316
4	6	H203	BEAM		20		X			48	10.000													48	10	48	10	293
4	6	H204	BEAM		20		X			40	4.000													40	4	40	4	242
16	10	H205	BEAM		20		X			43	3.000													43	3	43	3	2978
16	4	H206	BRG. BASE		20		X			3	3.000													3	3	3	3	35
24	7	H207	BEAM		19		X	V	4	3	9.000	2	6.000											6	3	6	1	
			INCREMENT = 4.00 INCH							5	5.000	2	6.000											7	11	7	9	339
224	4	P200	COLUMN		13	S	X	V	16	2	0.000	2	9.500	2	0.000	2	9.500							10	4	10	1	
										3	1.000	4	6.625	3	1.000	4	6.625							16	0	15	9	1932
			INCREMENT =								1.000		1.625		1.000		1.625											
176	4	P201	COLUMN		10	S	X					3	9.000	5	3.000									12	9	12	7	1479
104	4	P202	COLUMN		10	S	X					4	6.000	1	4.000									10	4	10	2	707
32	4	P203	COLUMN		10	S	X					3	9.000	4	6.000									12	0	11	10	253
24	5	R200	COLUMN	E	20		X			5	8.000													5	8	5	8	142
48	5	R201	COLUMN	E	15		X				12.000		12.250	1	8.250		11.625		16.625		9.875		6.875	3	9	3	8	184
48	5	R202	COLUMN	E	15		X					2	0.000	2	0.000		23.875		2.500					4	0	3	11	196
288	6	U200	BEAM		13	S	X			2	5.750	3	10.375	3	5.000	3	9.000							14	10	14	5	6238
116	5	U201	BEAM		21	S	X				13.375	4	9.000		12.000						13.000		3.250	6	10	6	8	807
28	4	U202	BRG. BASE		10	S	X						12.000	4	3.000									6	3	6	1	114
96	10	V200	COLUMN		36		X			19	4.000													22	2	22	2	9158
96	10	V201	COLUMN		15		X			4	2.000	13	3.000							2	4.750	3	5.000	17	5	17	3	7196
20	W5	W1	A B WELLS		22		X			2	1.000		9.125											33	2	33	2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.

STATE	PROJ. NO.	SHEET NO.
MO.		15B

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

VERTICAL LEG

SHAPE 19 SHAPE 20

SHAPE 21

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

3" PITCH $1\frac{1}{2}$ TURNS

SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

DETAILING DIMENSION

HOOK A or G

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION HOOK A or G

4d or 2-1/2" MIN. 180°

DETAILING DIMENSION A or G 12d 90°

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32

SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

135° HOOK

C PITCH $1\frac{1}{2}$ TURNS

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS
JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 47 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

7-27-95

24 to 1

FOR INFORMATION ONLY

A51801, Sht. 120

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X					6 0.000		2 7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														43 9		43 9		131
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		175
6	4-H313	BACKWALL		20		X			43 9.000														29 10		29 10		239
12	4-H314	BACKWALL		20		X			29 10.000														4 8		4 5		41
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		5 1		5 0		83
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												7 0		7 0		9
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														42 3		42 3		1015
16	6-H319	APPR. BEAM		17		X			41 7.000														41 7		41 7		250
4	6-H320	APPR. BEAM		20		X			41 7.000														22 8		22 8		341
10	6-H321	APPR. BEAM		20		X			22 8.000														34 0		34 0		23
1	4-H322	PVMT. REST		20		X			34 0.000														26 8		26 8		38
2	4-H323	PVMT. REST		20		X			26 8.000														9 0		9 0		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		56
6	5-H325	WING		20		X			9 0.000														31 10		31 10		66
2	5-H326	WING		20		X			31 10.000														22 10		22 10		
8	5-H327	WING		20		X	V	2	22 10.000														31 10		31 10		228
		INCREMENT = 36.000 INCH							31 10.000																		
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT = 36.000 INCH							31 4.000														31 4		31 4		224
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		581
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X			23.000		23.000		23.000		23.000								8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT = 4.500 INCH							4 9.000														4 9		4 9		40
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT = 6.250 INCH							12 8.000														12 8		12 8		180
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT = 6.250 INCH							12 11.000														12 11		12 11		186
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT = 4.000 INCH							5 1.000														5 1		5 1		30
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X			18.000		9.125												26 1		26 1		88

STATE | PROJ. NO. | SHEET NO.
MO. | | 119

SHAPE 6 | SHAPE 7 | SHAPE 8

SHAPE 9 | SHAPE 10 | SHAPE 11

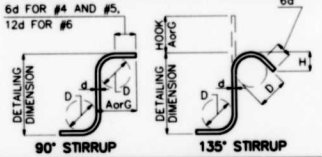
SHAPE 12 | SHAPE 13 | SHAPE 14

SHAPE 15 | SHAPE 16

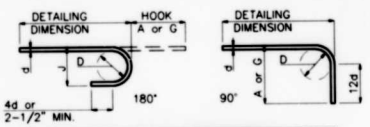
SHAPE 17 | SHAPE 18 | SHAPE 19 | SHAPE 20

SHAPE 21 | SHAPE 22

SHAPE 23 | SHAPE 24



90° STIRRUP | 135° STIRRUP



STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 | SHAPE 26 | SHAPE 27 | SHAPE 28 | SHAPE 29 | SHAPE 30

SHAPE 31 | SHAPE 32

SHAPE 33 | SHAPE 34 | SHAPE 35 | SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 121

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5.
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. 180° 90° 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 122

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP

135° STIRRUP

STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI					
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H	
#4	2"	4-1/2"	4-1/2"	3"	
#5	2-1/2"	6"	5-1/2"	3-3/4"	
#6	4-1/2"	12"	8"	4-1/2"	

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN.

180°

90°

END HOOK DIMENSIONS ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 123

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000			2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000			2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X					6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X					17.500	6.000				3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X				18.000	9.125					26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. 180° 90° 12d

END HOOK DIMENSIONS ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 124

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S				1 11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S				2 7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
564	5-R1	BARRIER CURB	E	19					2 6.000	3.500						2 10	2 8	1571
564	5-R2	BARRIER CURB	E	15					2 6.125	3.500				2 6.000	3.000	2 10	2 8	1571
564	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
564	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20					38 8.000							38 8	38 8	1452
24	5-R6	BARRIER CURB	E	20					9 8.000							9 8	9 8	242
48	5-R7	BARRIER CURB	E	20					30 5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20					24 8.000							24 8	24 8	309
12	4-R9	C.I.P CAP	E	20					36 5.000							36 5	36 5	308
96	5-R10	PED. WALL	E	20					3 2.000							3 2	3 2	317
8	4-R11	C.I.P CAP	E	20					9 8.000							9 8	9 8	52
12	4-R12	C.I.P CAP	E	20					39 11.000							39 11	39 11	320
4	4-R13	C.I.P CAP	E	20					24 8.000							24 8	24 8	66
564	4-R14	C.I.P CAP	E	20					15.000	11.000				1.500	15.000	2 2	2 1	784
6	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20					3 5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
6	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
6	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20					1 7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15					2 8.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 8	10
3	4-R101	PED. WALL	E	20					18 6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20					18 11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20					28 7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20					28 1.000							28 1	28 1	56
976	6-S1	SLAB	E	20					42 10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20					37 9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20					40 0.000							40 0	40 0	8171
498	5-S4	SLAB	E	20					4 4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20					11 7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT = 49.000 INCH							40 9.000							40 9	40 9	1344
138	6-S7	SLAB	E	20					24 3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	968
1	4-S31	MEDIAN	E	7					3 7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20					31 5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20					33 4.000							33 4	33 4	534
6	4-S35	MEDIAN	E	20					7 7.000							7 7	7 7	30

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	684
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	684
64	4-S101	SIDEWALK	E	20					32 7.000							32 7	32 7	1393
16	6-S102	SIDEWALK	E	20					33 3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20					33 4.000							33 4	33 4	1425
16	6-S104	SIDEWALK	E	20					34 2.000							34 2	34 2	821
982	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	8 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000					3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20					8 2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30					3 0.000	11.500	6.000				9.375	6.500	11 6	11 4	306
36	4-S109	LT. POLE BEAM	E	10	S					4.500	11.000	11.000	4.500				3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S					11.000	11.000	11.000	11.000				4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20					9 6.000								9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20					24 8.000							24 8	24 8	11329
72	4-S301	SLAB	E	20					24 8.000							24 8	24 8	1187
132	5-S302	SLAB	E	20					26 3.000							26 3	26 3	3614
34	4-S303	SLAB	E	20					44 8.000							44 8	44 8	1015
34	4-S304	SLAB	E	20					8 2.000							8 2	8 2	186
2	4-S305	ORN. COLUMN	E	13	S				3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20					3 9.000							3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS

STATE	PROJ. NO.	SHEET NO.
MO.		1GO

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

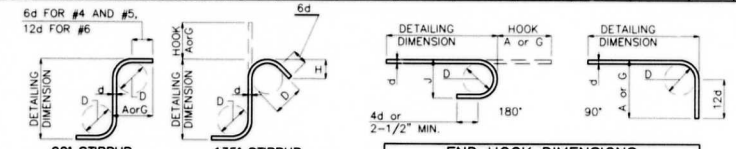
SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36



STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-27-95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

STATE	NO.	SHEET NO.
MO.	J4U0611E	114

FINAL PLANS

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:
CLASS B CONCRETE (SUBSTRUCTURE) f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60) fy=60,000 PSI.
STEEL PILE fb= 9,000 PSI.
STRUCTURAL CARBON STEEL fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50) fy=50,000 PSI.
FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

FINAL ~ QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	681		681
STRUCTURAL STEEL PILE (12")	LIN. FT.	1688		1688
PREBORE FOR PILING	LIN. FT.	487		487
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,461		67,461
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21
TEST HOLES	LIN. FT.	12		12
ADDITIONAL MOBILIZATION	LUMP SUM	1		1

2190 △

FINAL QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

FINAL QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

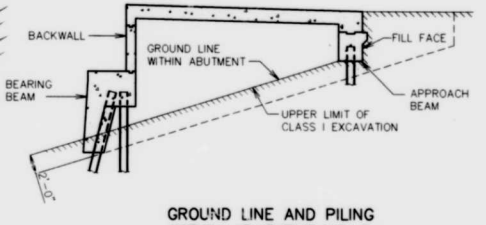
ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM.	BRG. BM.	COLUMNS	BRG. BM.	APPR. BM.
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	29	30		31	34
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS.	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

DANIEL L. CHAPMAN NUMBER E-23644 — 11-2-95

JACKSON COUNTY

GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4UC011B	113

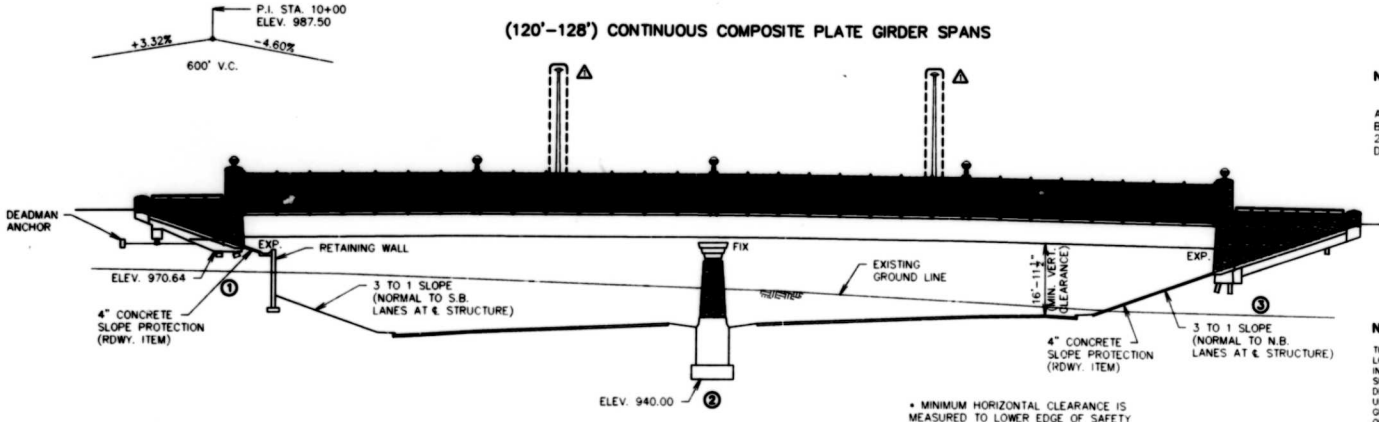
FINAL PLANS

FINAL PLANS

NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



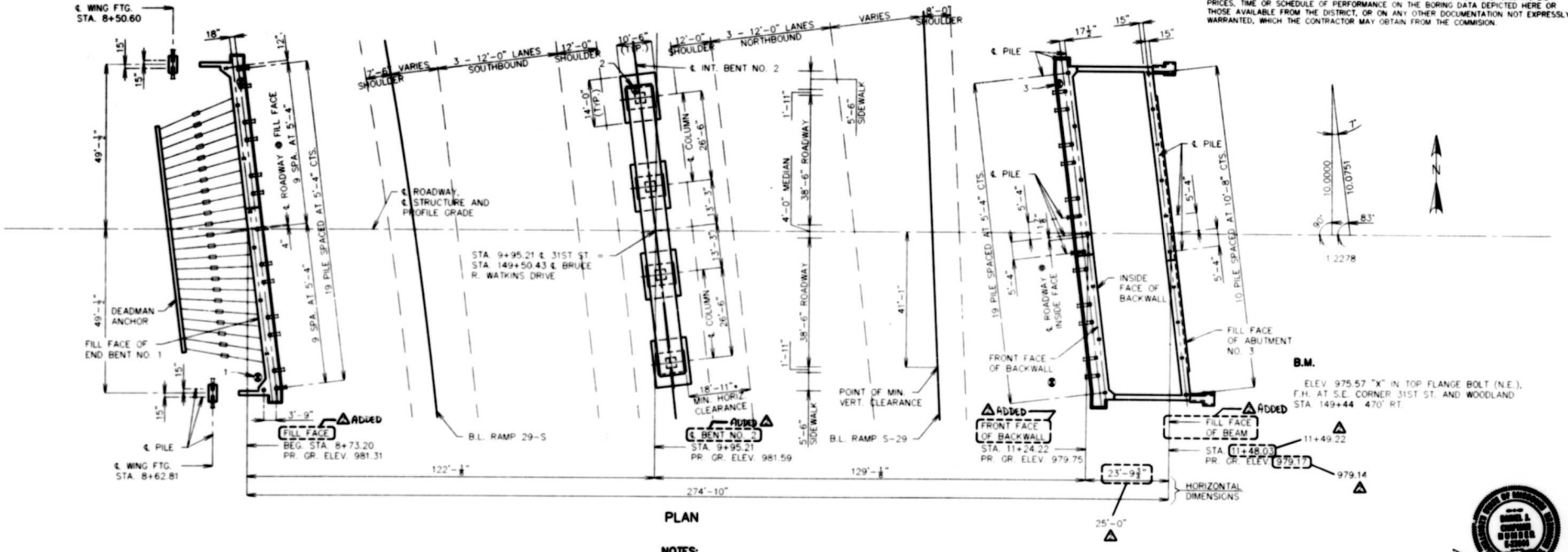
• MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

GENERAL ELEVATION

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OFFICE OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



B.M.

ELEV. 975.57 "X" IN TOP FLANGE BOLT (N.E.), F.H. AT S.E. CORNER 31ST ST. AND WOODLAND STA. 149+44 470' RT.

PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

SUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

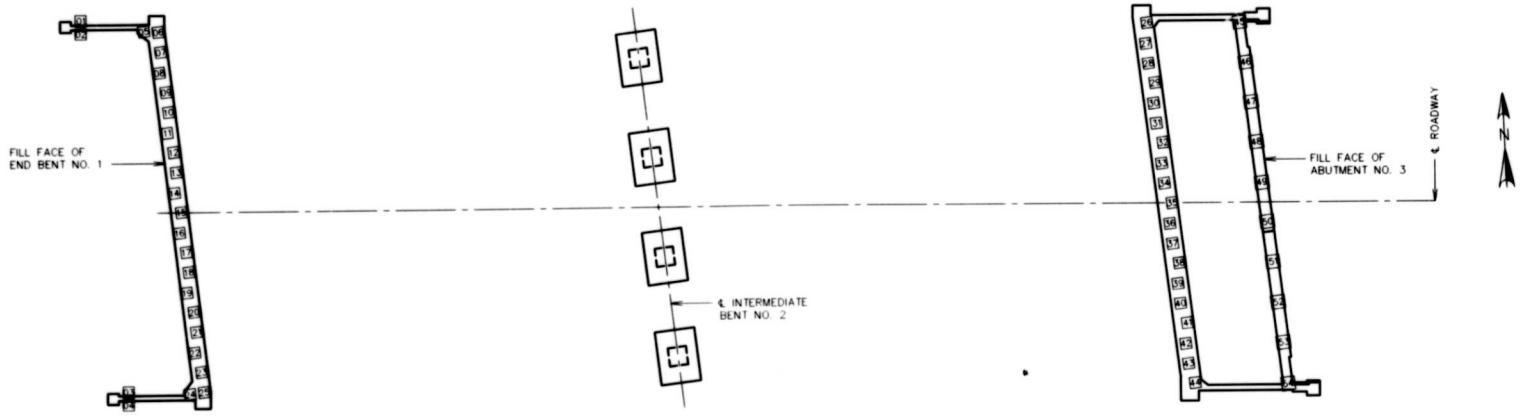
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		127



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

3-27-95

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

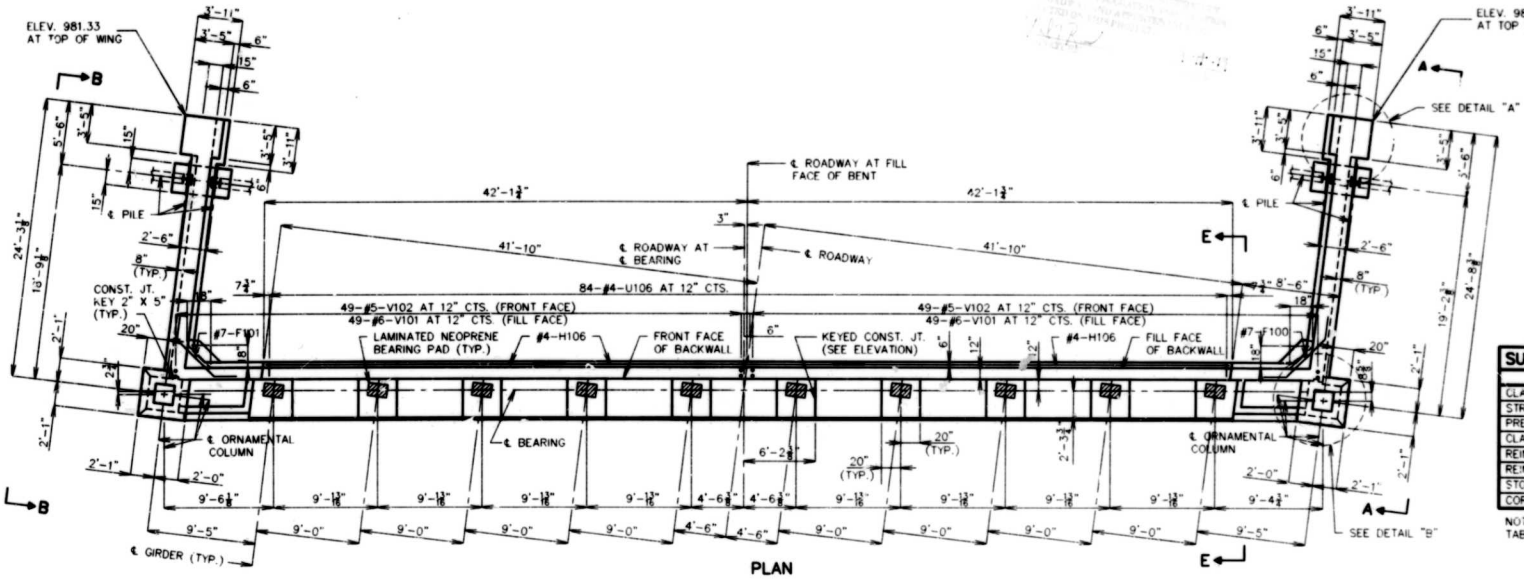
AS-BUILT PILE DATA

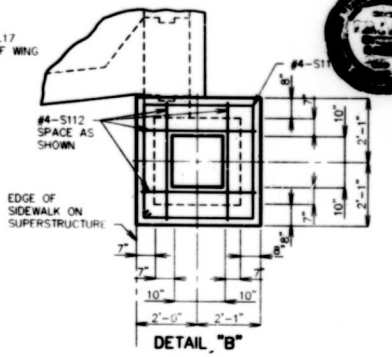
SHEET NO. 50 OF 50

A-5180

FINAL PLANS

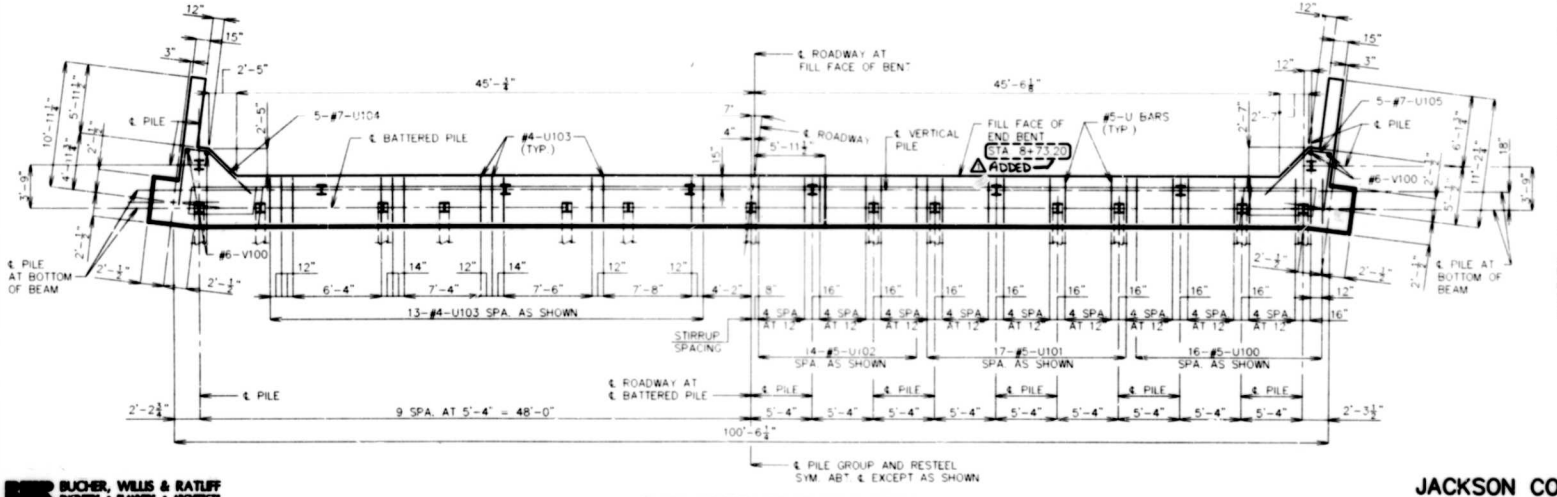
STATE	PROJ. NO.	SHEET NO.
MO.	J4uc11P	H4





SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.6 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 8.

FOR SECTION E-E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WINGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. △ REVISED 4-25-96

JACKSON COUNTY

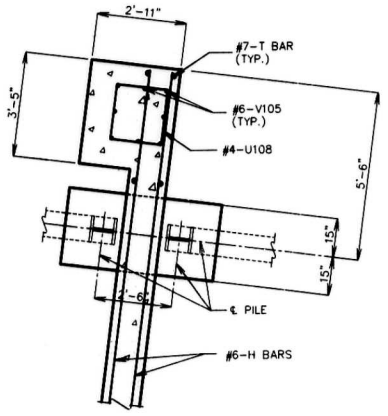
DETAILS OF END BENT NO. 1 PLAN

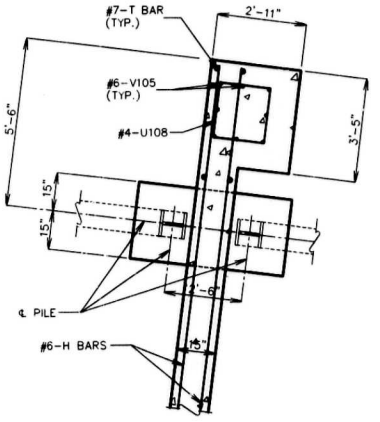
SHEET NO. 5 OF 50

A-5180

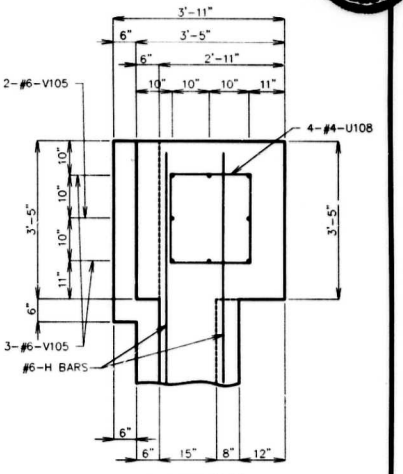
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	117

FINAL PLANS

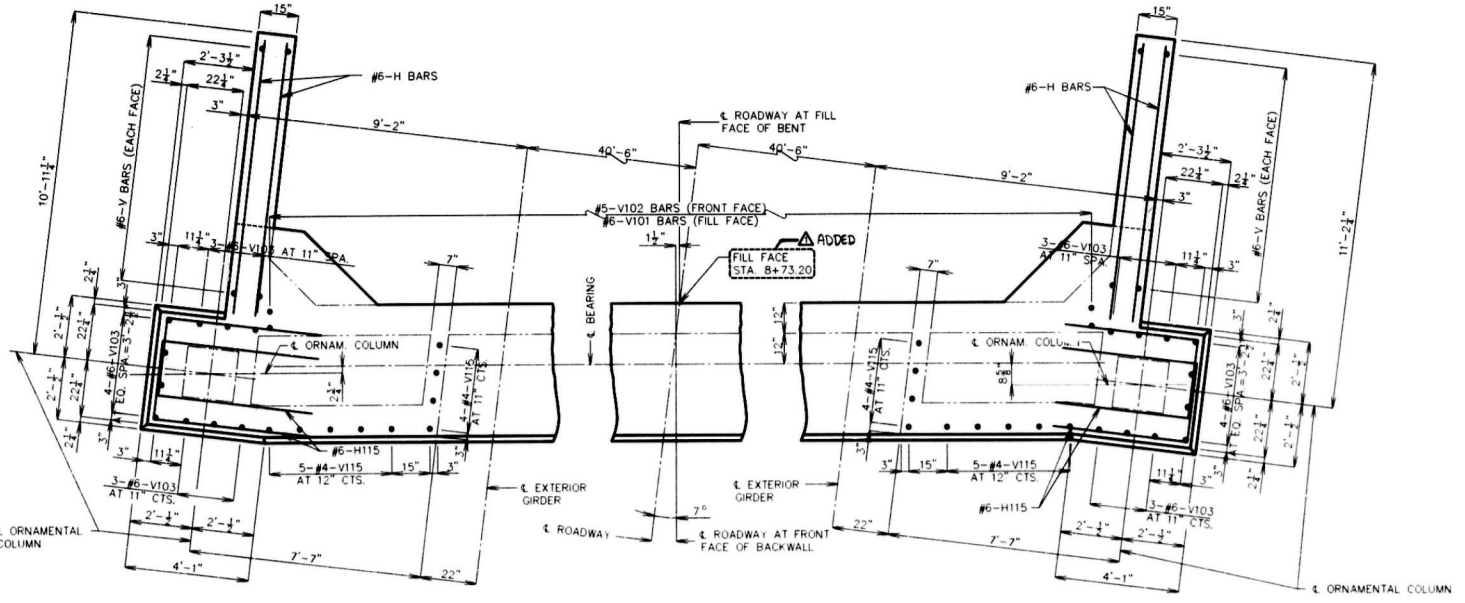




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF
END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

A-5180

4-26-96

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	126

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

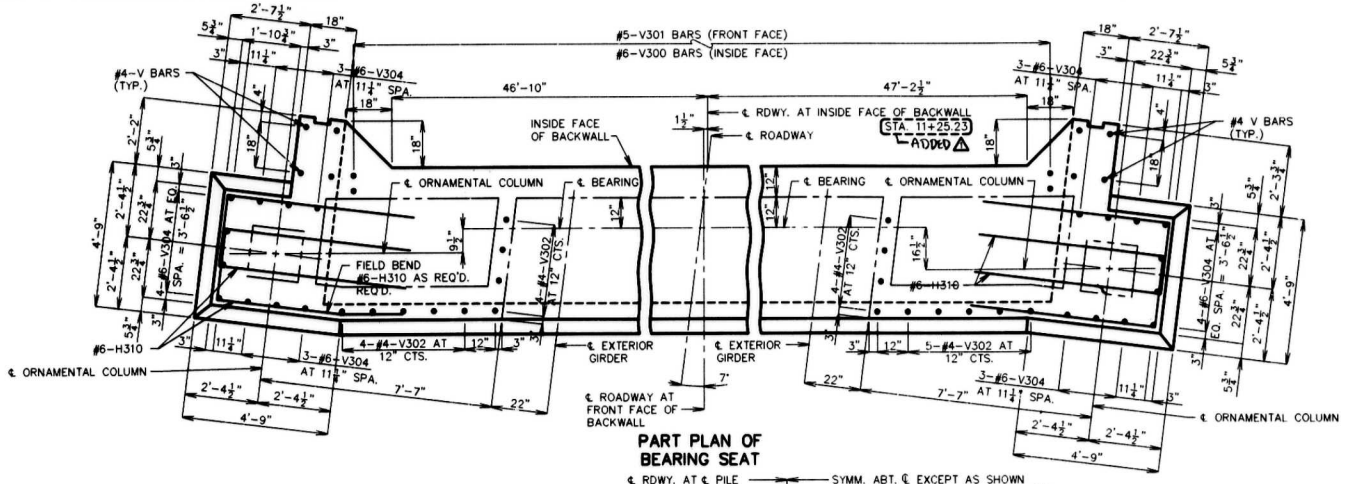
TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

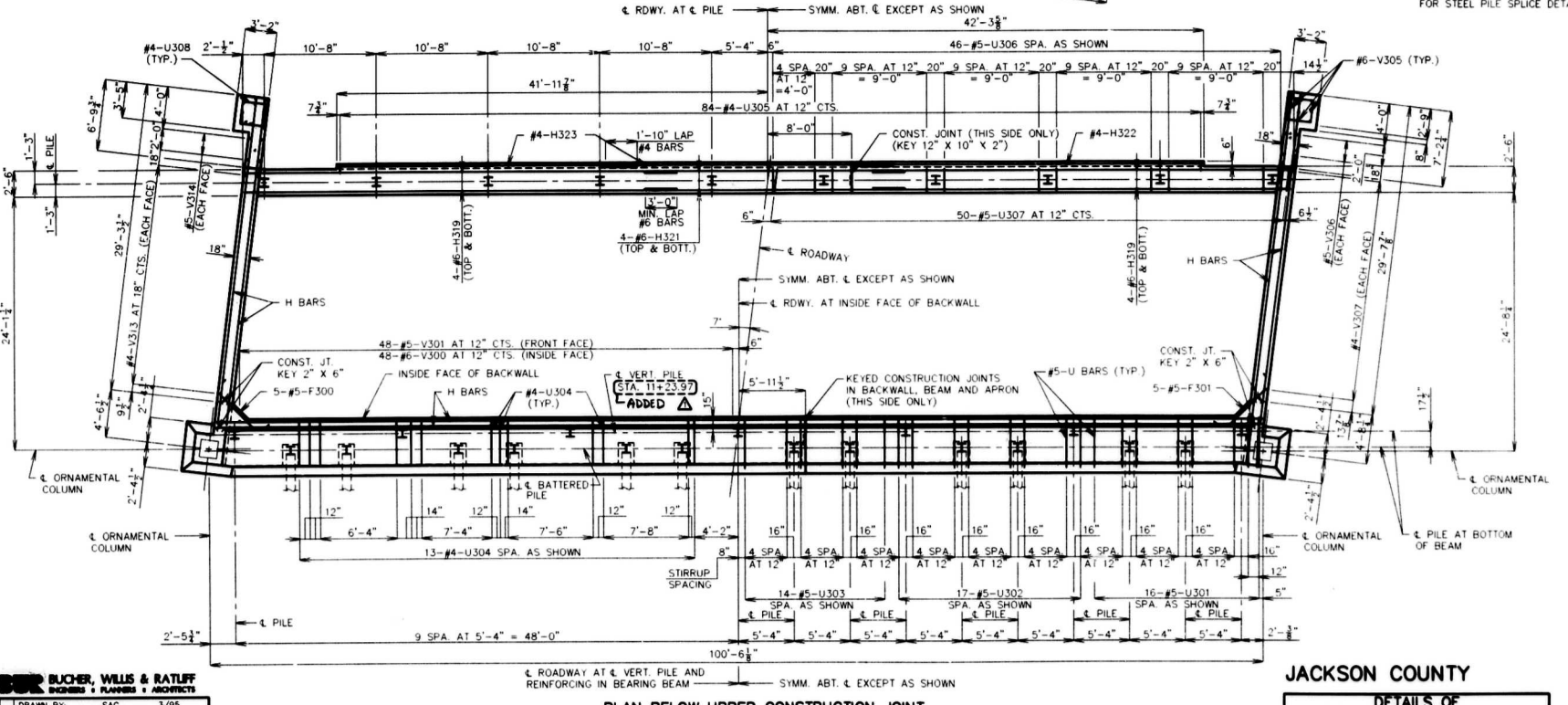
FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.



PART PLAN OF BEARING SEAT



PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

⚠ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

JACKSON COUNTY

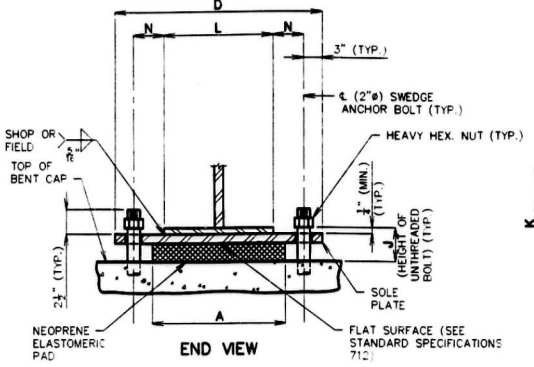
DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

SHEET NO. 15 OF 50

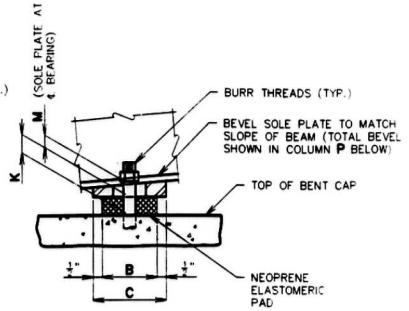
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	131

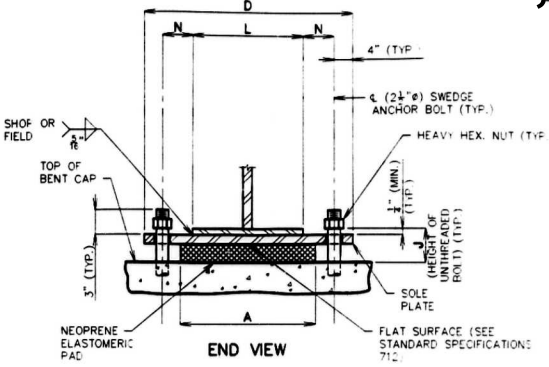
FINAL PLANS



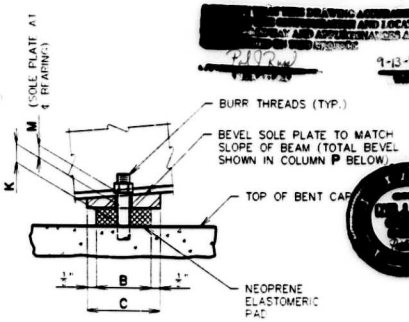
END VIEW



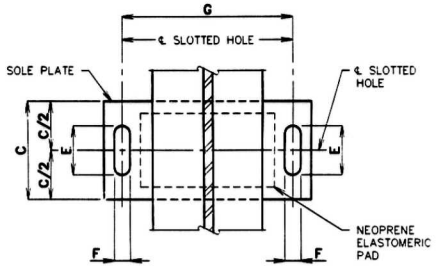
SIDE VIEW



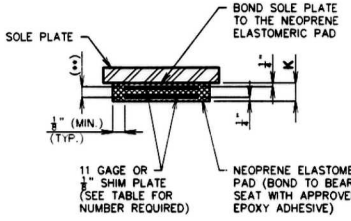
END VIEW



SIDE VIEW



PART PLAN VIEW

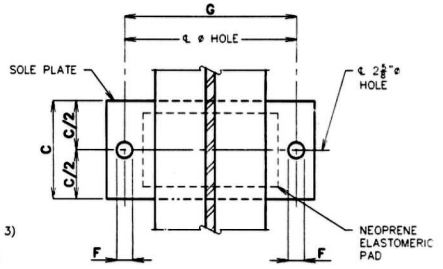


NEOPRENE ELASTOMERIC PAD

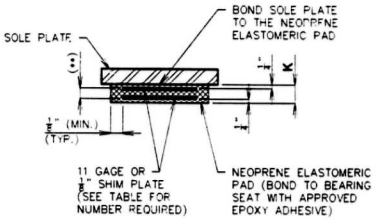
(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	① 7 - ⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10½"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED AUGUST 10, 1995

JACKSON COUNTY

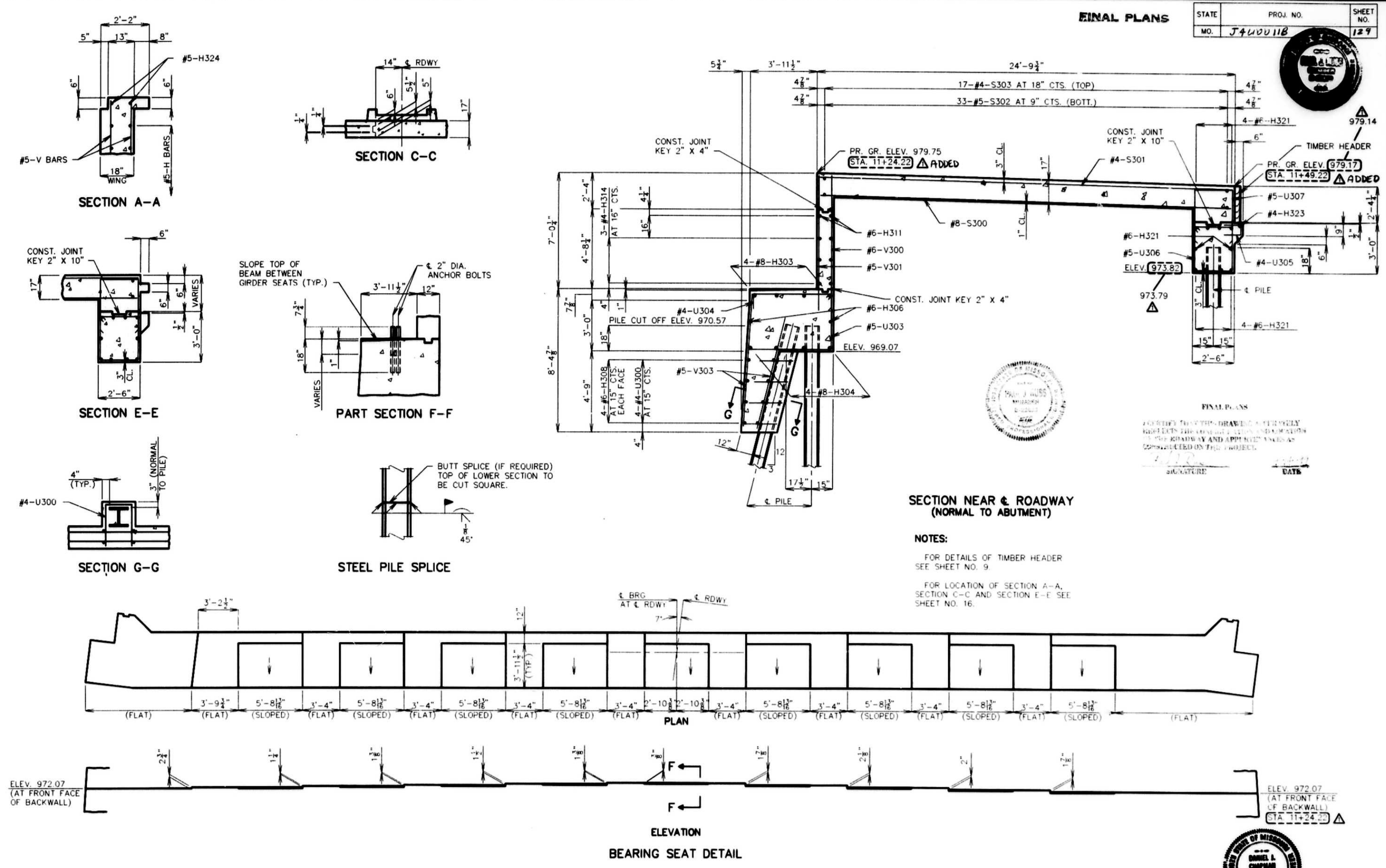
DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

SHEET NO. 20 OF 50

A-5180

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	129



NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.

FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE ... OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THE PROJECT.

SIGNATURE DATE

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

SHEET NO. 18 OF 50

A-5180

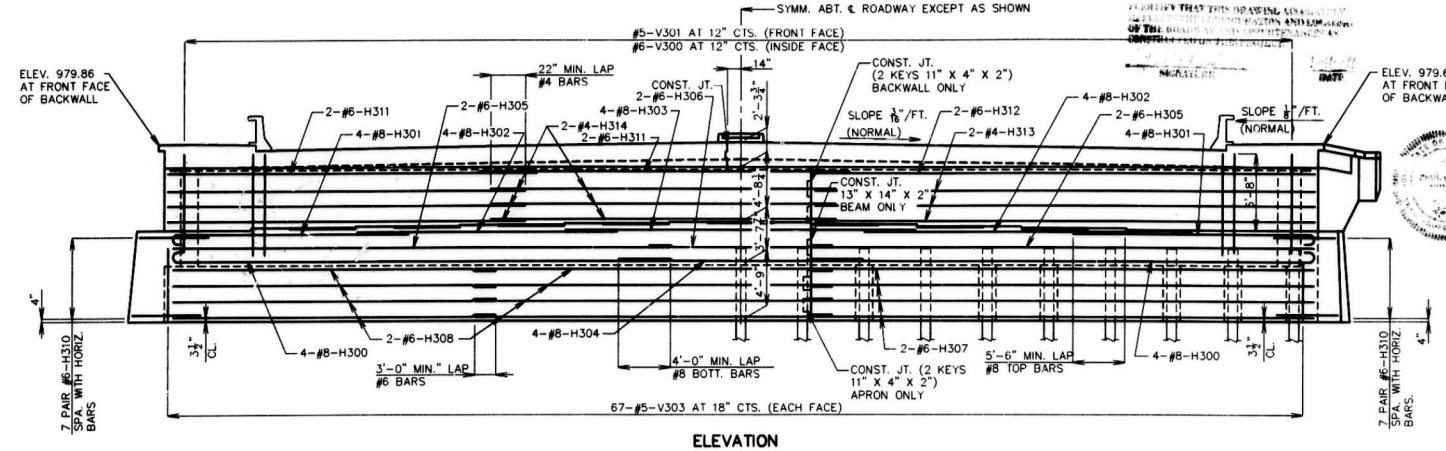
4-26-96

24 to 1

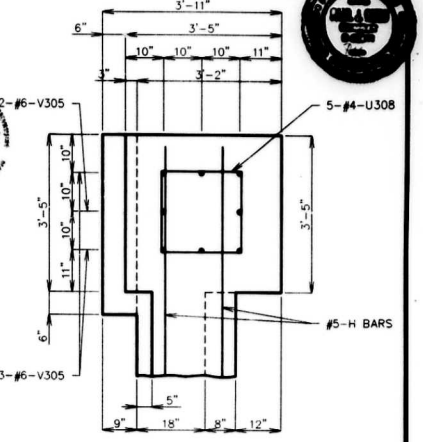
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J6U0118	Sheet No. 127

FINAL PLANS

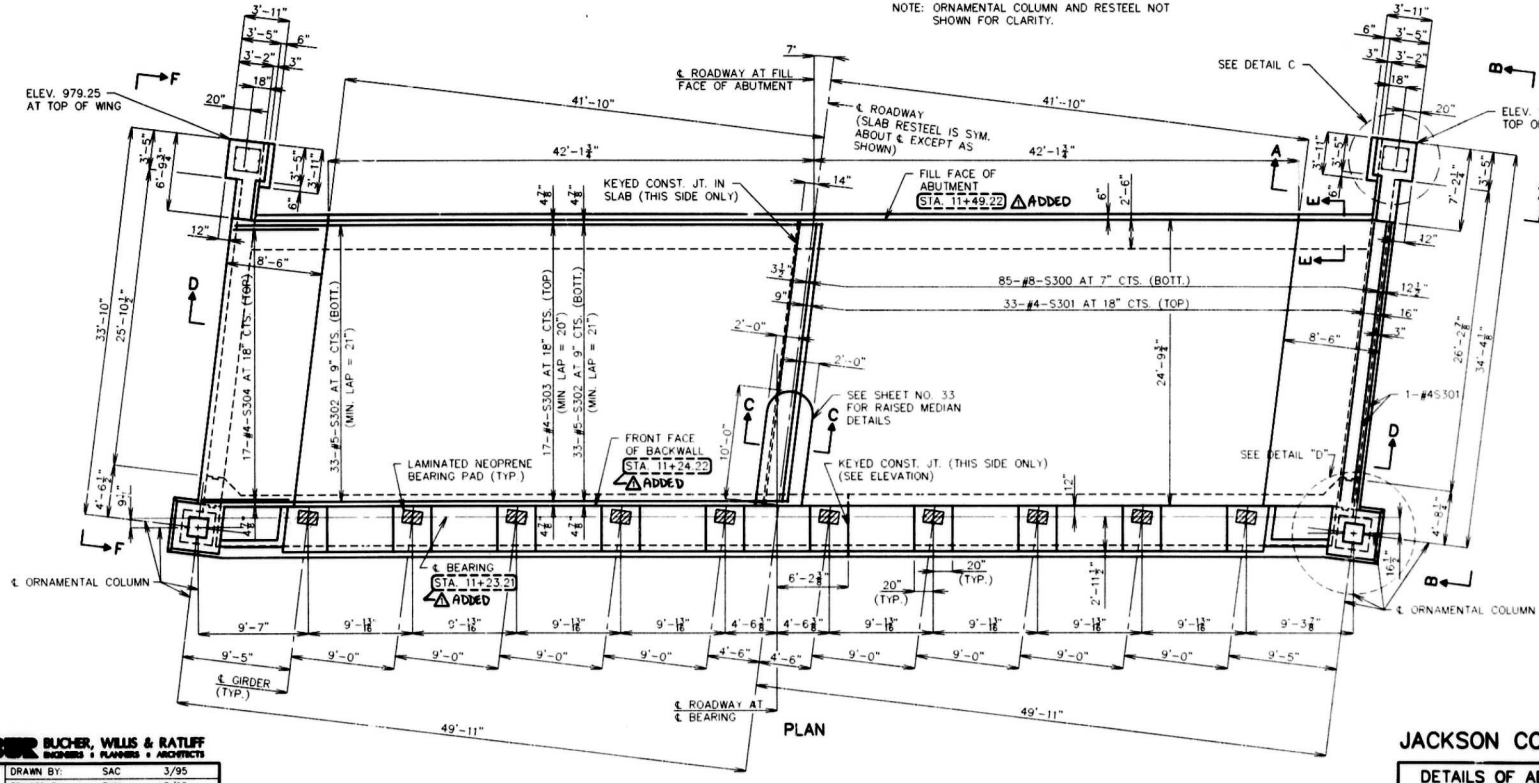


ELEVATION

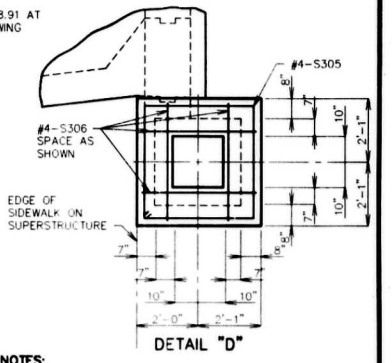


DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

SHEET NO. 16 OF 50

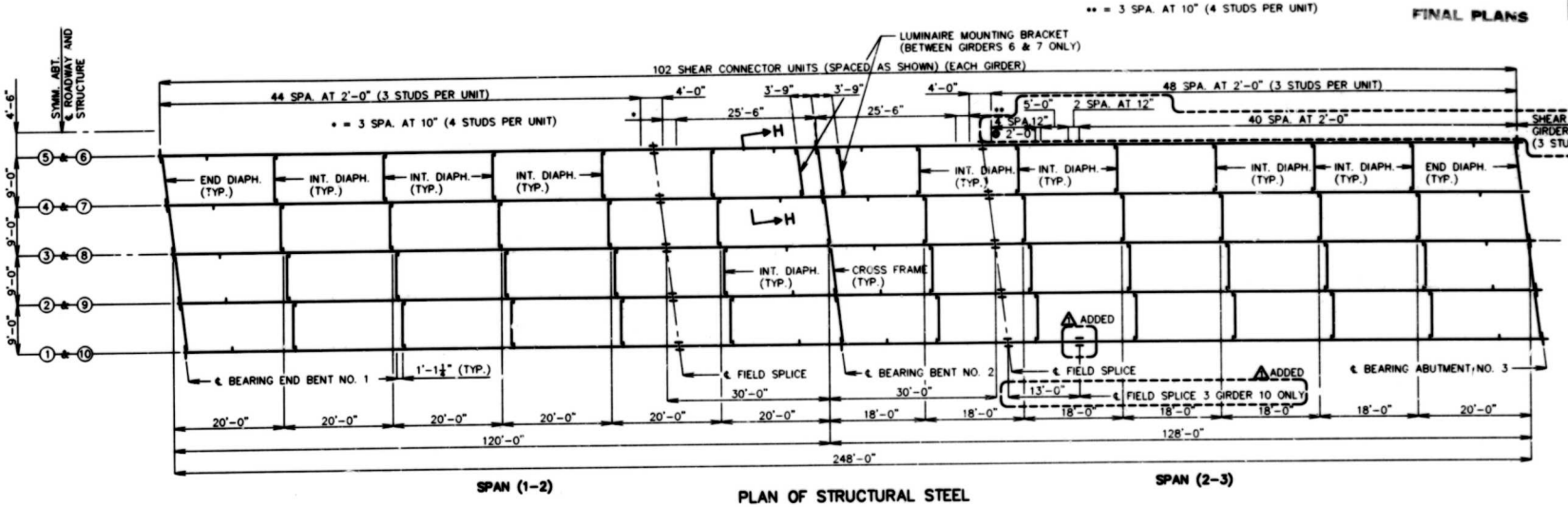
A-5180

4-2-96

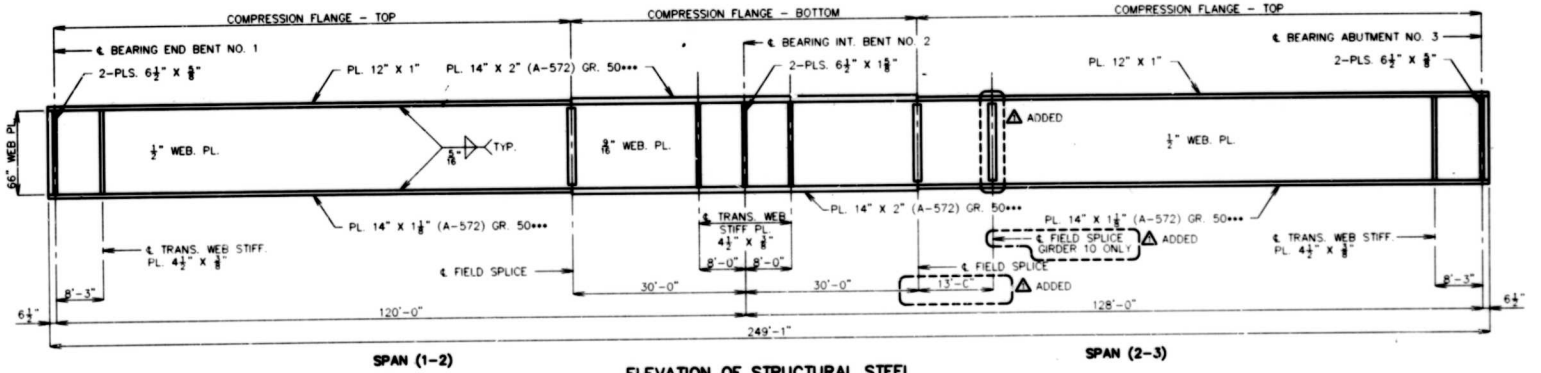
124 to 1

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	132

FINAL PLANS



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCKER, WILLS & RATLIFF ENGINEERS ▼ PLANNERS ▼ ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

PLAN AND ELEVATION OF STRUCTURAL STEEL

SHEET NO. 21 OF 50

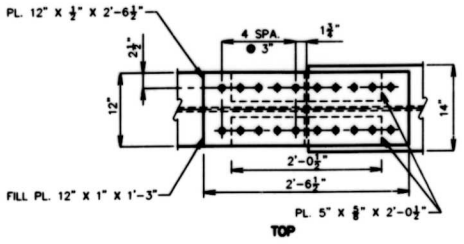
A-5180

FOR INFORMATION ONLY

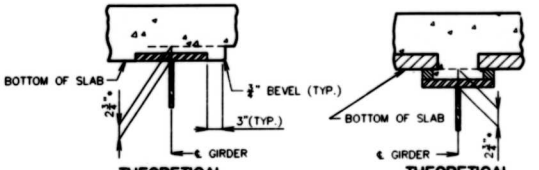
A51801, [redacted]

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	135



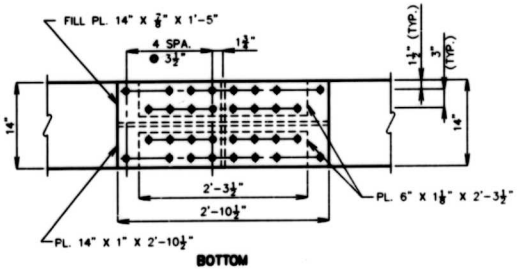
TOP



THEORETICAL SLAB HAUNCH (C.I.P. SECTION)

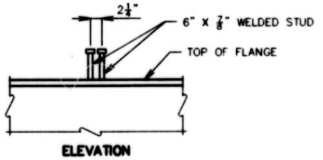
THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

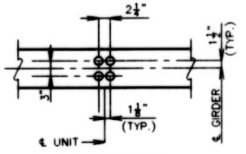


BOTTOM

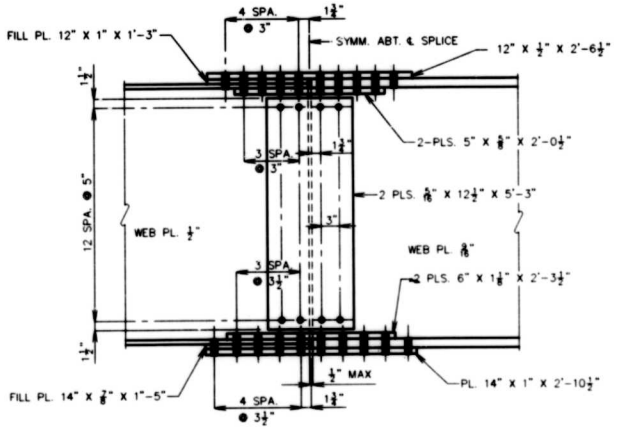
PLAN OF FLANGE



ELEVATION

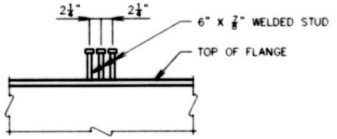


PLAN OF STUD CONN. (4 STUDS PER UNIT)

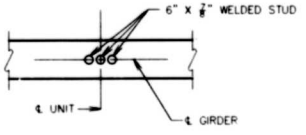


DETAIL OF BOLTED FIELD SPLICE

NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 1"ø REAMED HOLES



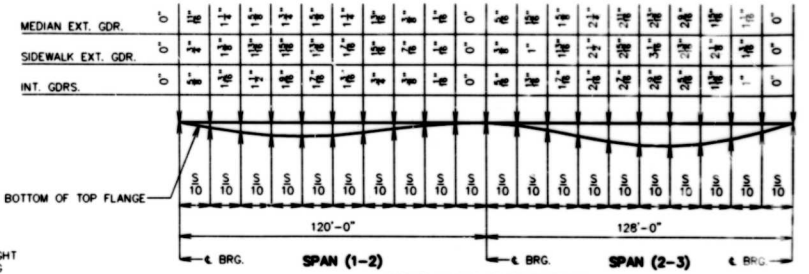
ELEVATION



PLAN OF STUD CONN. (3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)



DEAD LOAD DEFLECTION

NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL

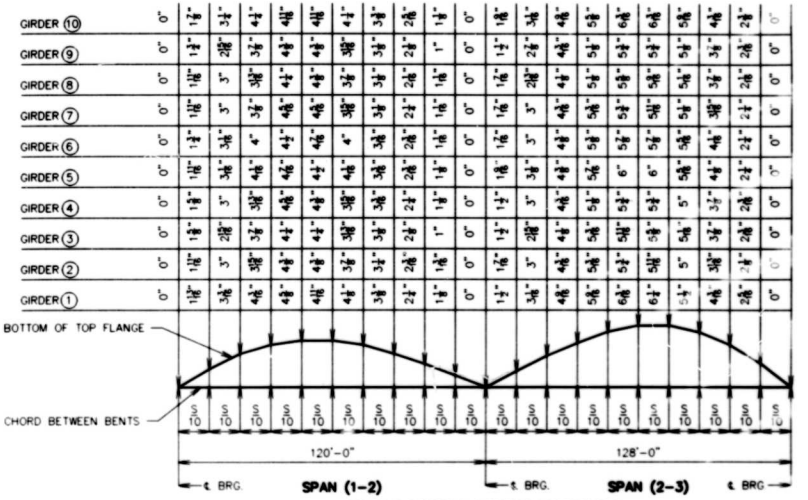


PLATE GIRDER CAMBER DIAGRAM

NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

[redacted]

[redacted]

ADDED FIELD SPLICE 3 GIRDER TO 15 SIMILAR. NO FILL PLATES REQUIRED.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

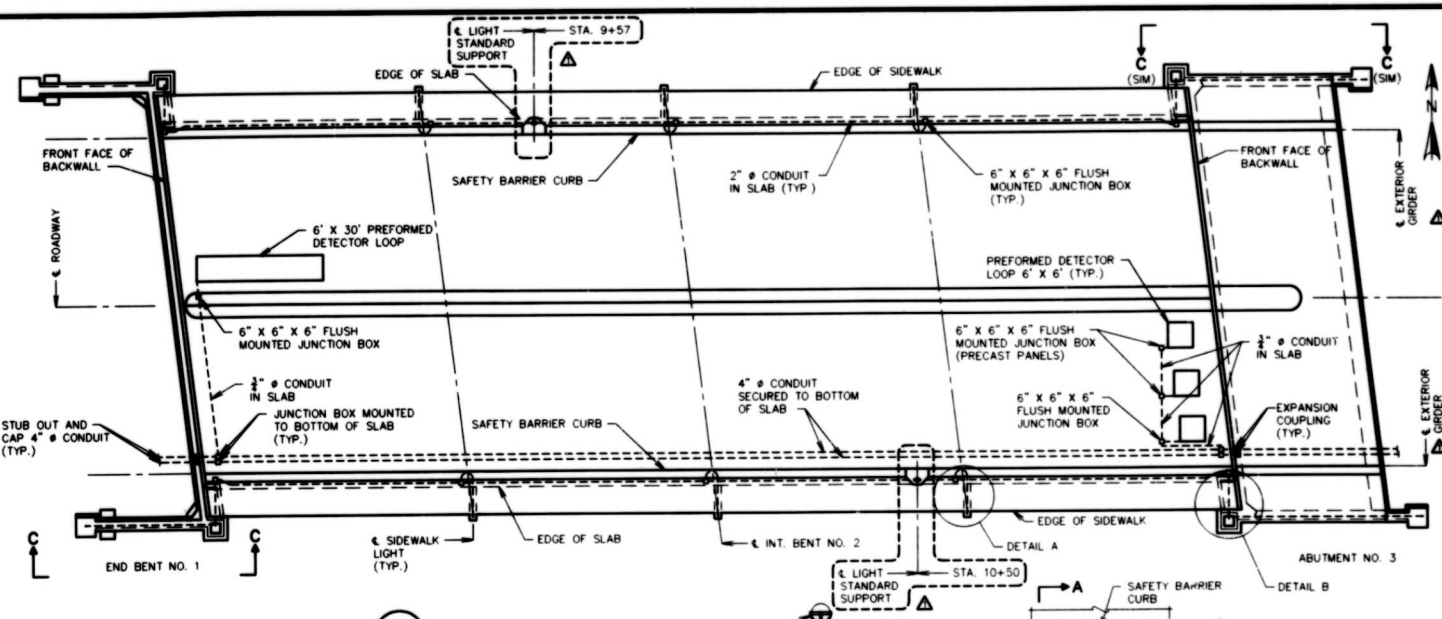
⚠ REVISED 8-12-96

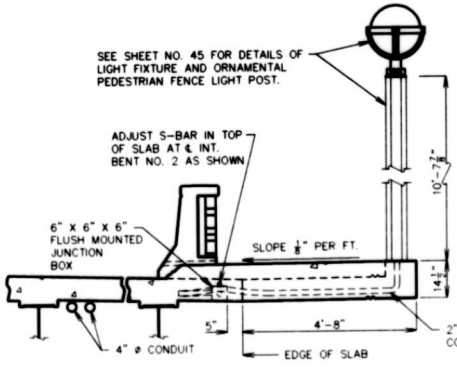
JACKSON COUNTY

CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

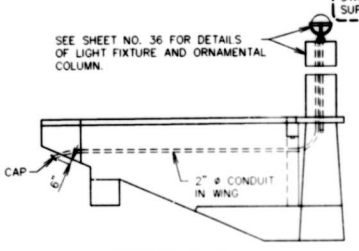
SHEET NO. 24 OF 50

A-5180

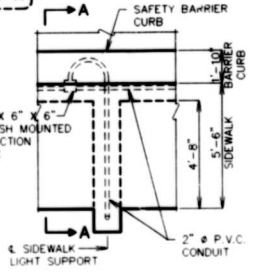




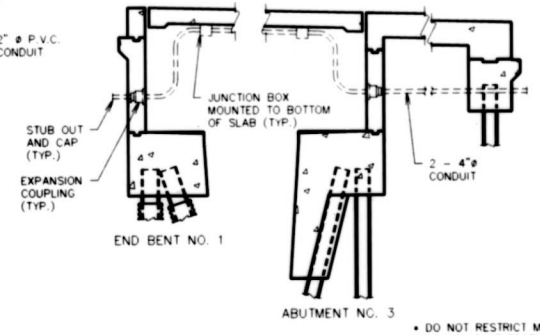
SECTION A-A



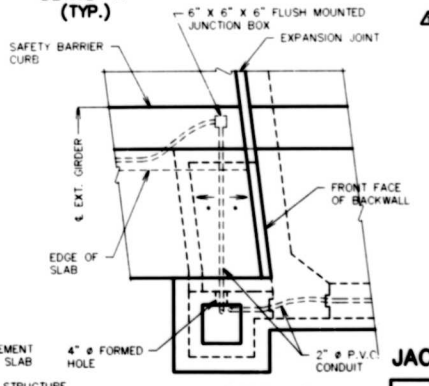
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4UC0118	141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN EITHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

⚠ 4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

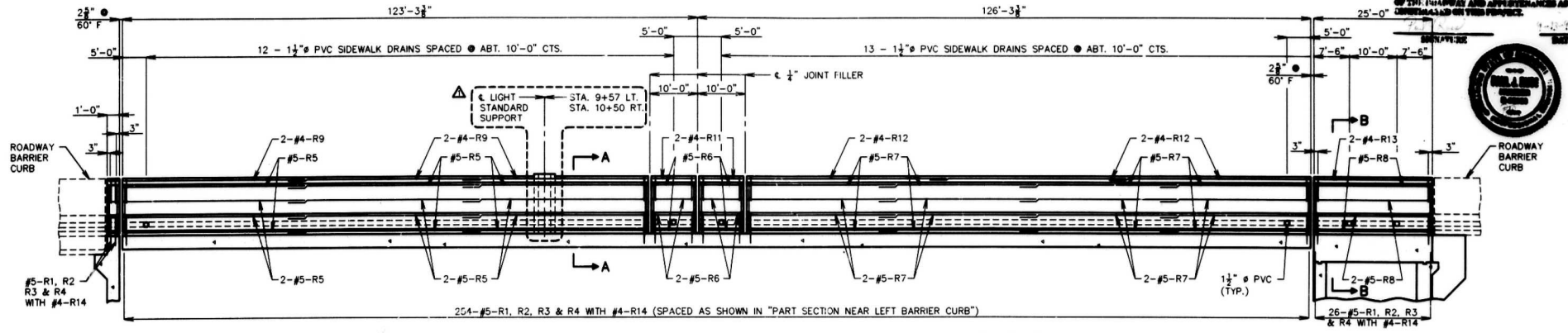
DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

FINAL PLANS

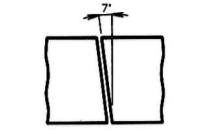
STATE	PROJ. NO.	SHEET NO.
MO.	J4W0118	145



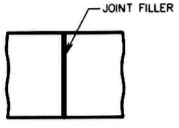
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

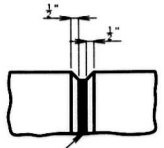


AT 2⅝" EXPANSION JOINT

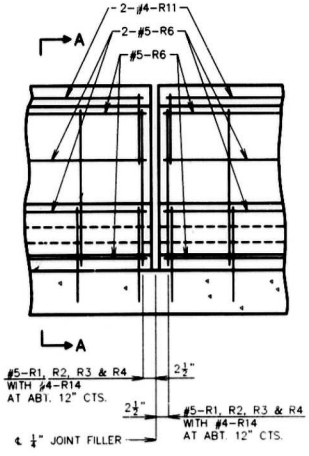


AT ¼" JOINT

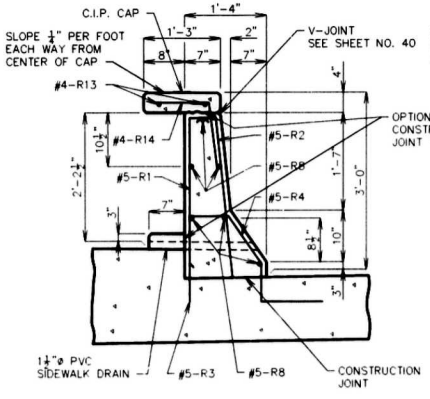
PART PLAN VIEW



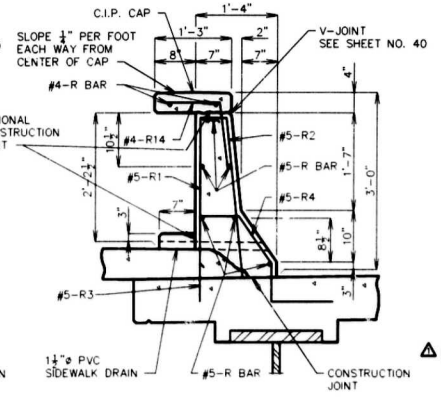
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

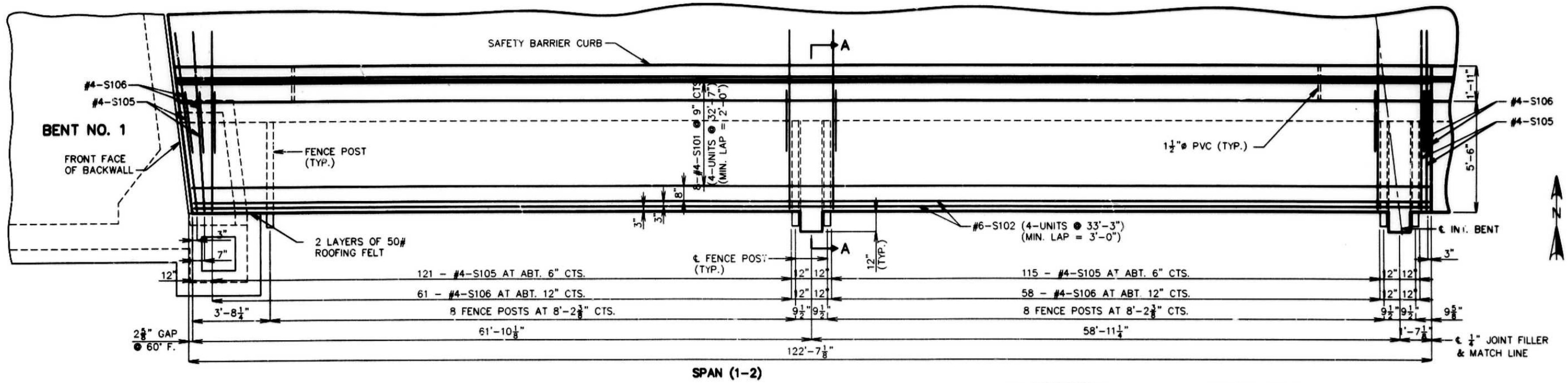
DETAILS OF SAFETY BARRIER CURB

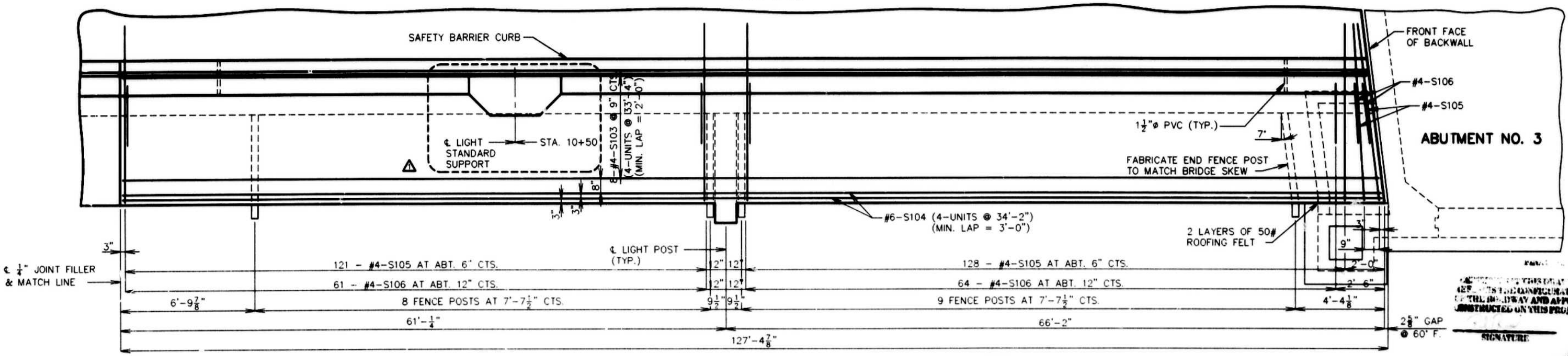
SHEET NO. 34 OF 50

A-5180

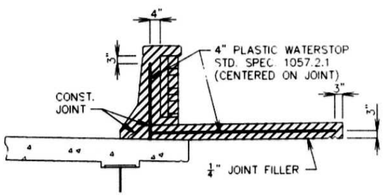
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	163





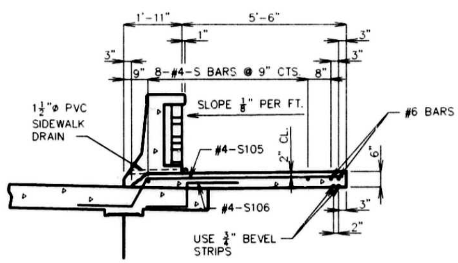
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONC[RETE,] REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

SIGNATURE DATE

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

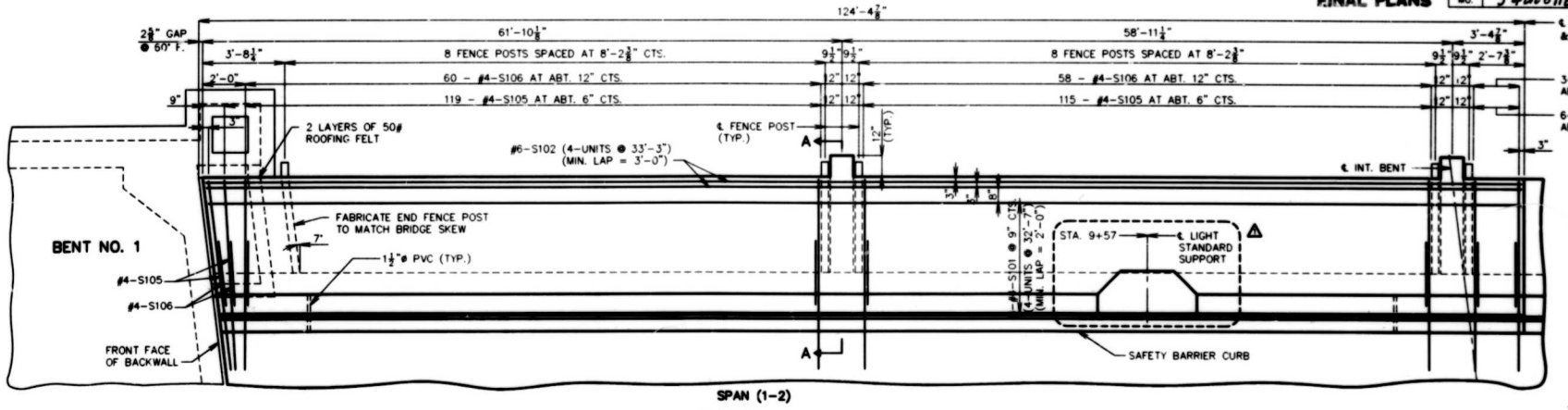
SHEET NO. 32 OF 50

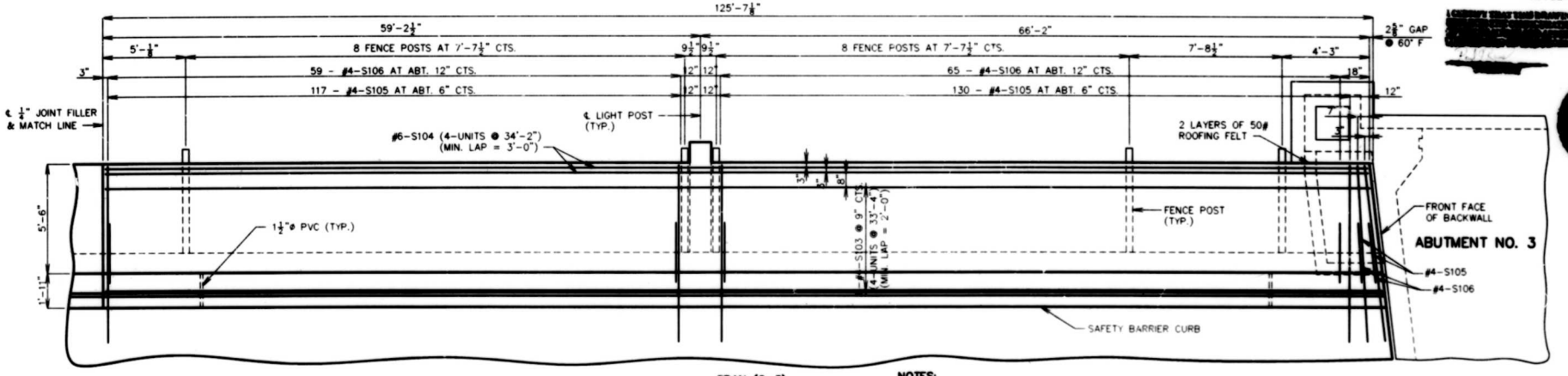
A-5180

24 to 1

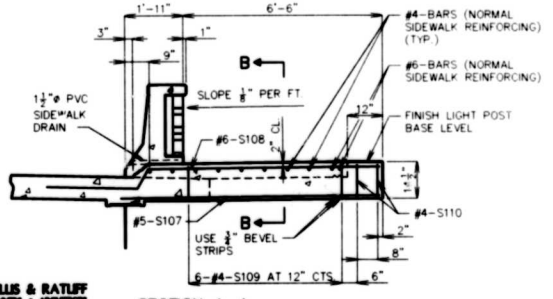
STATE	PROJ. NO.	SHEET NO.
MO.	J4U60118	162

FINAL PLANS

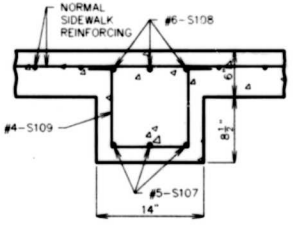




PLAN OF LEFT SIDEWALK



SECTION A-A



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 31 OF 50

A-5180

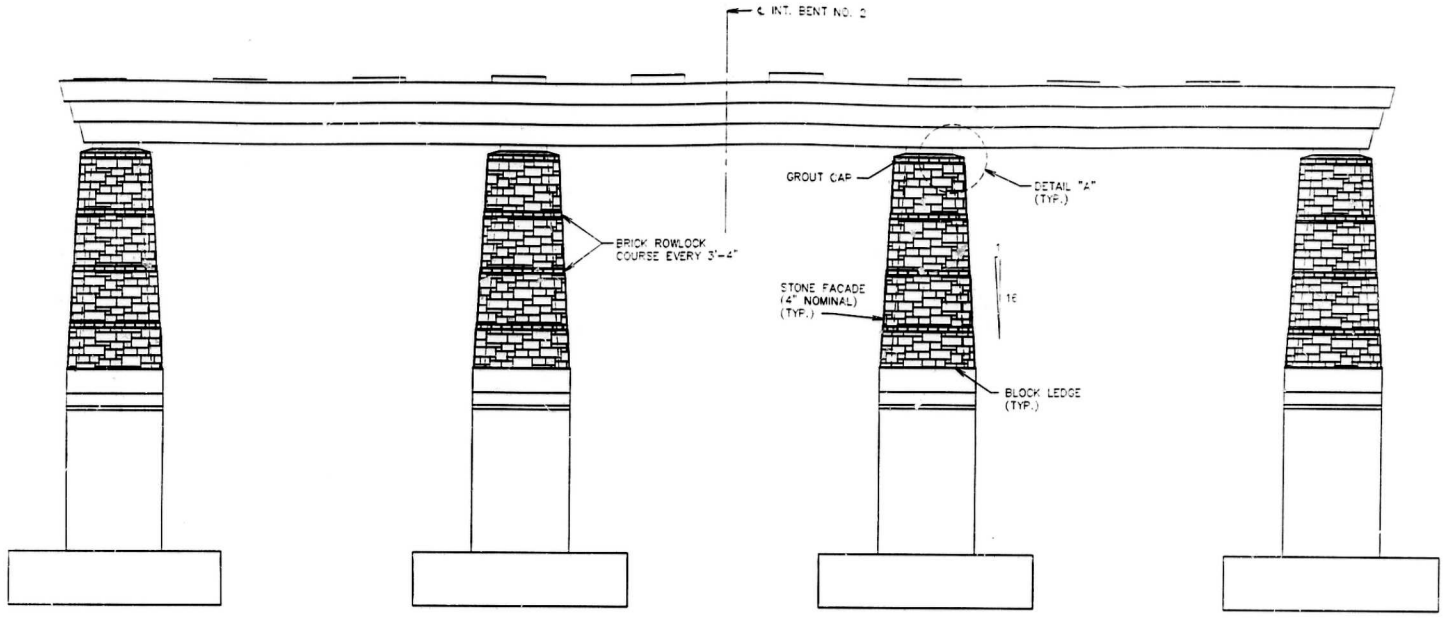
STATE	PROJ. NO.	SHEET NO.
MO.	J3400118	140

FINAL PLANS

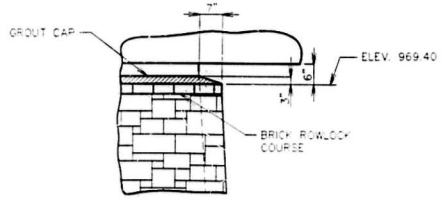
FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

7-18-97



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

7-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

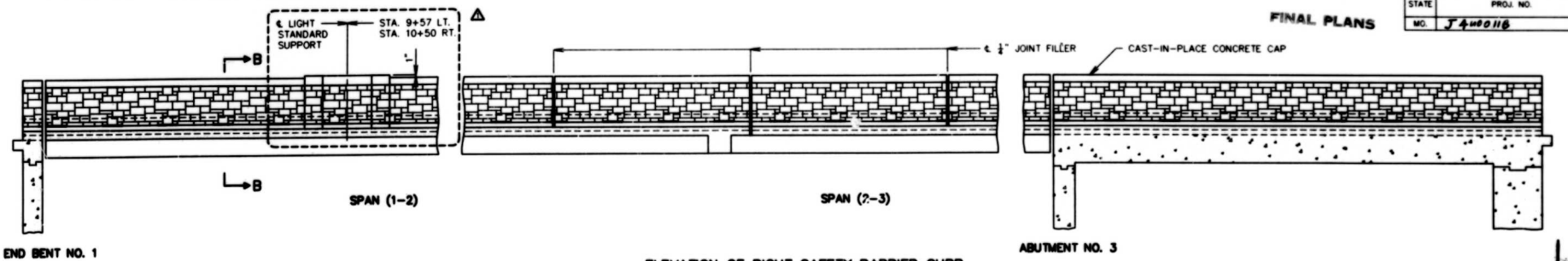
DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

SHEET NO. 38 OF 50

A-5180

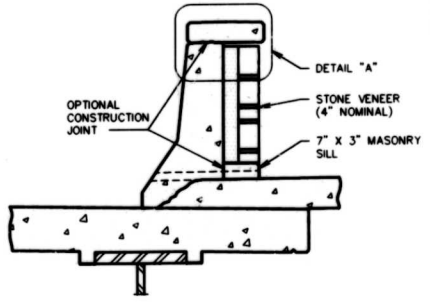
STATE	PROJ. NO.	SHEET NO.
MO.	J4H0116	151

FINAL PLANS

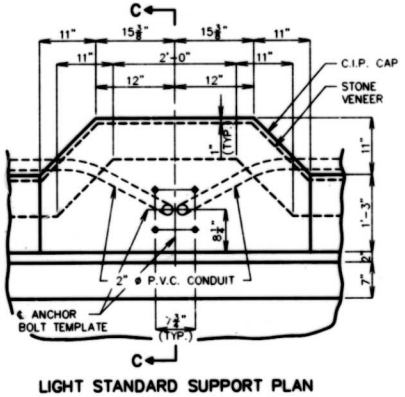


ELEVATION OF RIGHT SAFETY BARRIER CURB

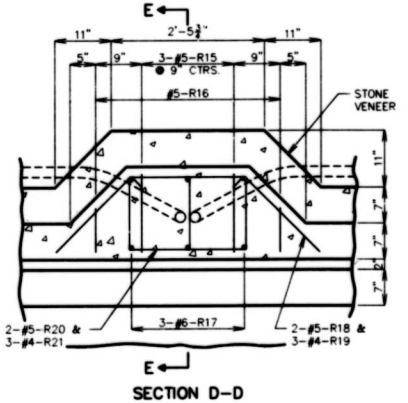
(LEFT CURB IS SIMILAR)



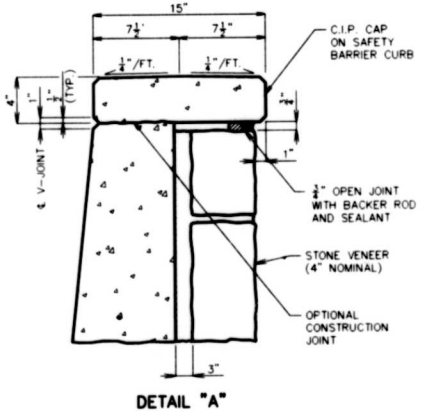
PART SECTION B-B



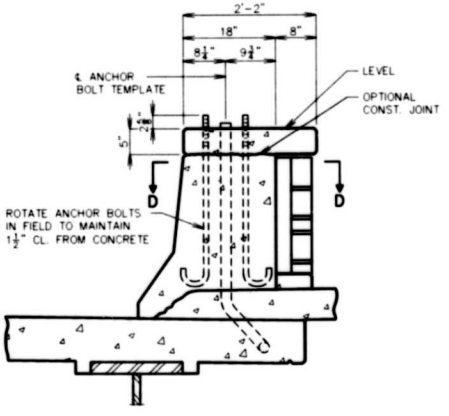
LIGHT STANDARD SUPPORT PLAN



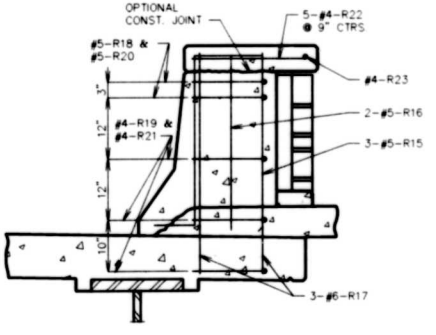
SECTION D-D



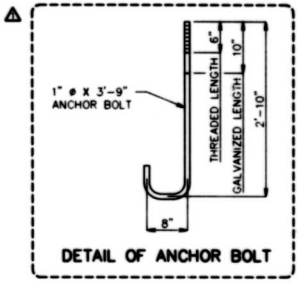
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

⚠ FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

24 to 1

FOR INFORMATION ONLY

A51801, Sht. ~~142~~

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
END BENT NO. 1																			
8	5-D100		WING FOOTING		20		X			4 6.000							4 6	4 6	38
8	5-D101		WING FOOTING		20		X			2 0.000							2 0	2 0	17
7	7-F100		WING BRACE		15		X			15.000	4 10.000	15.000	10.625	10.625	9.250	11.750	7 4	7 3	104
7	7-F101		WING BRACE		15		X			15.000	4 5.000	15.000	10.625	10.625	11.750	9.250	6 11	6 10	98
8	8-H100		BEAM		17		X			43 6.000							44 5	44 5	949
8	8-H101		BEAM		17		X			22 4.500							23 4	23 4	498
4	8-H102		BEAM		20		X			30 2.000							30 2	30 2	322
8	8-H103		BEAM		20		X			23 8.000							23 8	23 8	506
4	8-H104		BEAM		20		X			43 6.000							43 6	43 6	261
2	8-H106		BEAM		20		X			19 3.000							19 3	19 3	58
19	4-H108		BACKWALL		20		X			30 0.000							30 0	30 0	381
8	4-H107		BACKWALL		20		X			43 6.000							43 6	43 6	232
2	8-H108		BACKWALL		20		X			43 6.000							43 6	43 6	131
4	8-H109		BACKWALL		20		X			31 0.000							31 0	31 0	186
4	4-H110		BACKWALL	E	20		X			30 0.000							30 0	30 0	80
2	4-H111		BACKWALL	E	20		X			43 6.000							43 6	43 6	58
2	8-H112		BACKWALL	E	20		X			43 6.000							43 6	43 6	131
4	8-H113		BACKWALL	E	20		X			31 0.000							31 0	31 0	186
4	4-H114		BACKWALL	E	20		X			7 6.000							7 6	7 6	20
16	8-H115		BEAM		10	S	X				5 0.000	2 6.000					12 6	12 2	282
2	4-H116		ORN. COLUMN	E	20		X			6 6.000							6 6	6 6	9
14	4-H117		ORN. COLUMN	E	20		X			7 6.000							7 6	7 6	70
14	4-H118		ORN. COLUMN	E	21		X			2 6.000		12.000			2 5.750	3.625	3 6	3 5	32
14	4-H119		ORN. COLUMN	E	21		X			2 6.000	12.000				2 5.750	3.625	3 6	3 5	32
16	8-H120		ORN. COLUMN	E	19		X			4 0.000	16.000						5 4	5 2	124
14	8-H121		WING		20		X	V	2	10 0.000							10 0	10 0	
			INCREMENT = 20.500 INCH							20 3.000							20 3	20 3	321
12	8-H122		WING		20		X	V	2	7 2.000							7 2	7 2	
			INCREMENT = 17.500 INCH							10 1.000							10 1	10 1	156
4	8-H123		WING	E	20		X			21 10.000							21 10	21 10	131
12	8-H124		WING		20		X			21 10.000							21 10	21 10	393
14	8-H125		WING		20		X	V	2	10 6.000							10 6	10 6	
			INCREMENT = 21.500 INCH							21 3.000							21 3	21 3	334
4	8-H127		BEAM		20		X			21 3.000							21 3	21 3	227
2	4-S111		ORN. COLUMN	E	13	S	X			3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S112		ORN.COLUMN	E	20		X			3 9.000							3 9	3 9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T100		WING		14		X				8 8.000	1 6.000				7.250	16.500	10 2	83
2	7-T101		WING		14		X				14 3.000	1 11.000				21.000	9.250	16 2	16 1	66
2	7-T102		WING		14		X				14 6.000	1 11.000				21.250	8.875	16 5	16 4	67
32	5-U100		BEAM		13	S	X			4 0.875	2 6.000	4 2.750	2 2.000					14 3	13 11	485
34	5-U101		BEAM		13	S	X			4 0.750	2 7.750	4 2.750	2 7.750					14 8	14 2	502
28	5-U102		BEAM		13	S	X			4 0.500	2 11.500	4 2.750	2 11.375					15 1	14 9	431
26	4-U103		BEAM		10	S	X				6.000	4 0.000						5 0	4 10	84
5	7-U104		BEAM		14		X			5 0.000	23.000	4 6.000			2 9.250	3 6.500		11 5	11 2	114
5	7-U105		BEAM		14		X			5 0.000	23.000	4 6.000			3 6.500	2 9.250		11 5	11 2	114
84	4-U106		BACKWALL		10	S	X				1 2.000	6.000						2 10	2 8	150
52	4-U107		ORN. COLUMN	E	19	S	X			2 6.000	2 6.000							5 0	4 11	171
8	4-U108		WING		13	S	X			23.000	23.000	23.000	23.000					8 5	8 2	44
4	8-V100		BEAM		20		X			2 7.000								2 7	2 7	18
98	8-V101		BACKWALL	E	20		X			9 2.000								9 2	9 2	1350
98	8-V102		BACKWALL	E	20		X			8 8.000								8 8	8 8	885
20	8-V103		ORN. COLUMN	E	20		X			2 8.000								12 8	12 8	381
4	8-V104		ORN. COLUMN	E	20		X			6 9.000								6 9	6 9	41
16	8-V105		WING	E	20		X			4 2.000								4 2	4 2	100
4	8-V106		WING		20		X			3 6.000								3 6	3 6	21
18	8-V107		WING		20		X	V	2	5 1.000								5 1	5 1	
			INCREMENT = 3.875 INCH							7 8.000								7 8	7 8	172
22	8-V108		WING		20		X			7 5.000								7 5	7 5	245
16	8-V109		WING		20		X	V	2	2 8.000								2 8	2 8	
			INCREMENT = 3.500 INCH							5 0.000								5 0	5 0	92
14	8-V110		WING		20		X			5 0.000								5 0	5 0	105
12	8-V111		WING FOOTING		20		X			6 11.000								6 11	6 11	125
18	8-V112		WING		20		X	V	2	4 11.000								4 11	4 11	
			INCREMENT = 3.875 INCH							7 6.000								7 8	7 8	168
24	8-V113		WING		20		X			7 3.000								7 3	7 3	261
16	8-V114		WING		20		X	V	2	2 7.000								2 7	2 7	
			INCREMENT = 3.625 INCH							4 8.000								4 8	4 8	87
18	4-V115		ORN.COLUMN	E	20		X			3 0.000								3 0	3 0	36
8	4-V116		ORN.COLUMN	E	20		X			5 10.000								5 10	5 10	31
5	4-V117		ORN.COLUMN	E	20		X			6 8.000								6 8	6 8	22
5	4-V118		ORN.COLUMN	E	20		X			6 9.000								6 9	6 9	23
20	W5W1		A B WELLS		22		X			18.000	9.125							26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	157

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 19 SHAPE 17 SHAPE 18 SHAPE 20

SHAPE 21 SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.) SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION — HOOK A or G — 4d or 2-1/2" MIN. — 180° — 90° — 12d

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 46 OF 50

A-5180

24 to 1

FOR INFORMATION ONLY

A51801, Sht. 143

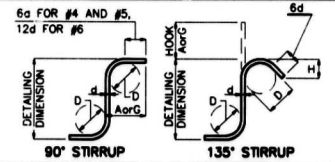
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	269
864	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
864	5-R2	BARRIER CURB	E	19				2	6.125	3.500				6.000	3.000	2 10	2 8	1571
864	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
864	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20				36	6.000							36 6	36 6	1452
24	5-R6	BARRIER CURB	E	20				9	6.000							9 6	9 6	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	6.000							24 6	24 6	309
12	4-R9	C.I.P. CAP	E	20				36	5.000							36 5	36 5	308
99	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
6	4-R11	C.I.P. CAP	E	20				9	6.000							9 6	9 6	52
12	4-R12	C.I.P. CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P. CAP	E	20				24	6.000							24 6	24 6	66
864	4-R14	C.I.P. CAP	E	15					15.000	11.000				15.00	1.500	2 2	2 1	784
8	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
8	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 6	24
8	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	6.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 6	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	5
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	817
468	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT =						40	9.000							40 9	40 9	1344
		49.000 INCH																
136	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	966
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
8	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

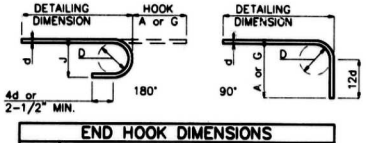
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	984
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	984
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1363
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1428
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
992	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	6 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000				3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	7 5.000				9.375	6.500	11 6	11 4	497
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500					3 8	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000					4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000								9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20				24	6.000							24 8	24 8	11329
72	4-S301	SLAB	E	20				24	6.000							24 8	24 8	1187
132	5-S302	SLAB	E	20				26	3.000							26 3	26 3	3814
34	4-S303	SLAB	E	20				44	8.000							44 8	44 8	1015
34	4-S304	SLAB	E	20				8	2.000							8 2	8 2	188
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000							3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS



90° STIRRUP 135° STIRRUP



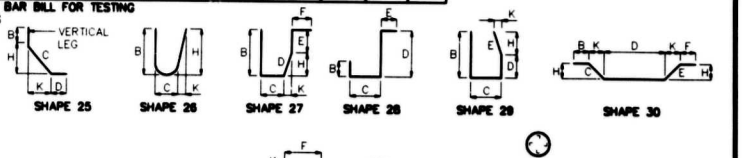
STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

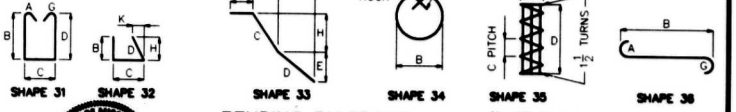
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS				
BAR SIZE	D	ALL GRADES 180° HOOKS		90° HOOKS
	(IN.)	A OR G	J	A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

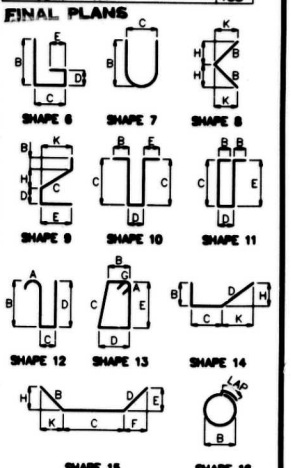
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.





(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)



STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	140

FINAL PLANS

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

REVISED 10-27-95

24 to 1

BILL OF REINFORCING STEEL

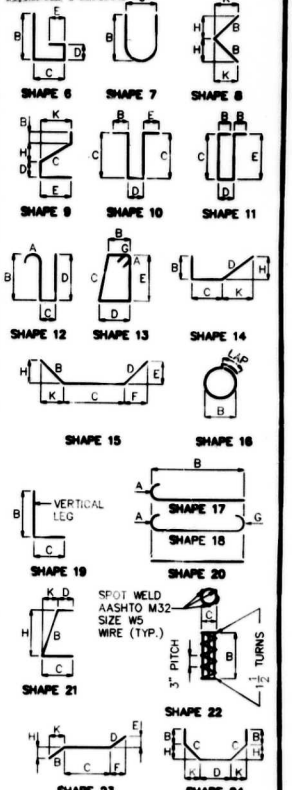
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15	X				15.000	4 6.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15	X				15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	8-H300	BEAM		17	X				43 10.000							44 9	44 9	956
8	8-H301	BEAM		17	X				22 5.000							23 4	23 4	496
8	8-H302	BEAM		20	X				23 8.000							23 8	23 8	506
4	8-H303	BEAM		20	X				30 2.000							30 2	30 2	322
4	8-H304	BEAM		20	X				21 3.000							21 3	21 3	227
4	8-H306	BEAM		20	X				43 10.000							43 10	43 10	263
2	8-H308	BEAM		20	X				18 9.000							18 9	18 9	56
8	8-H307	APRON		20	X				43 10.000							43 10	43 10	527
16	8-H306	APRON		20	X				31 4.000							31 4	31 4	753
2	4-H309	WING		20	X				7 8.000							7 8	7 8	10
28	8-H310	APRON		10	X					6 0.000	2 7.000					14 7	14 3	599
4	8-H311	BACKWALL		20	X				31 0.000							31 0	31 0	186
2	8-H312	BACKWALL		20	X				43 9.000							43 9	43 9	131
8	4-H313	BACKWALL		20	X				43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20	X				29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21	X				3 6.000		12.000			3 5.625	5.125	4 6	4 5	41
14	4-H316	ORN. COLUMN	E	21	X				3 6.000	12.000				3 5.625	5.125	4 6	4 5	41
16	5-H317	ORN. COLUMN	E	19	X				4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20	X				7 0.000							7 0	7 0	9
16	8-H319	APPR. BEAM		17	X				41 7.000							42 3	42 3	1015
4	8-H320	APPR. BEAM		20	X				41 7.000							41 7	41 7	250
10	8-H321	APPR. BEAM		20	X				22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20	X				34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20	X				26 8.000							26 8	26 8	36
4	5-H324	WING	E	20	X				9 0.000							9 0	9 0	36
6	5-H325	WING		20	X				9 0.000							9 0	9 0	56
2	5-H326	WING		20	X				31 10.000							31 10	31 10	66
8	5-H327	WING		20	X	V	2		22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20	X				17 1.000							17 1	17 1	23
2	4-H329	WING		20	X				12 7.000							12 7	12 7	17
2	4-H330	WING		20	X				8 1.000							8 1	8 1	11
12	4-H331	WING		20	X				5 6.000							5 6	5 6	44
2	4-H332	WING		20	X				12 2.000							12 2	12 2	16
2	4-H333	WING		20	X				16 8.000							16 8	16 8	22
8	5-H334	WING		20	X	V	2		22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20	X				31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20	X				8 0.000							8 0	8 0	75

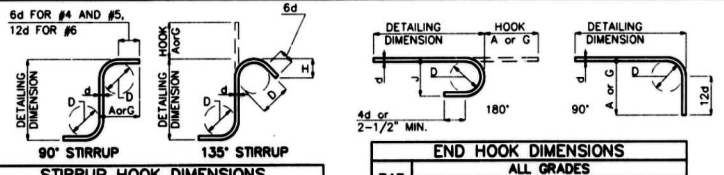
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 6.000				2 6.375	10.125	33 7	33 6	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 6	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000						5 5	5 3	168
32	8-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000					15 10	15 6	517
34	8-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000					16 2	15 10	891
28	8-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000					16 10	16 6	482
28	4-U304	BEAM		10	S	X				6.000	4 8.500						5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X				17.500	6.000						3 5	3 3	182
92	8-U306	APPR. BEAM		13	S	X			2 3.000	2 8.000	2 3.000	2 6.000					10 5	10 1	677
109	8-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250						9 3	9 1	947
10	4-U308	END POST		13	S	X			23.000	23.000	23.000	23.000					8 5	8 2	56
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500							5 1	5 0	174
96	6-V300	BACKWALL	E	20		X			8 11.000								8 11	8 11	1286
96	5-V301	BACKWALL	E	20		X			8 6.000								8 6	8 6	851
18	4-V302	ORN. COLUMN	E	20		X			3 0.000								3 0	3 0	38
134	5-V303	APRON		20		X			6 3.000								6 3	6 3	874
20	8-V304	ORN. COLUMN		20		X			9 9.000								9 9	9 9	293
16	8-V305	END POST	E	20		X			5 3.000								5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000								4 0	4 0	
		INCREMENT =							4 9.000								4 9	4 9	40
		4.500 INCH																	
30	4-V307	WING		20		X	V	2	5 4.000								5 4	5 4	
		INCREMENT =							12 8.000								12 8	12 8	180
		6.250 INCH																	
4	4-V308	WING		20		X			14 10.000								14 10	14 10	40
4	4-V309	WING		20		X			15 1.000								15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000								5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000								6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000								6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500								5 8	5 8	
		INCREMENT =							12 11.000								12 11	12 11	186
		6.250 INCH																	
6	5-V314	WING		20		X	V	2	4 5.000								4 5	4 5	
		INCREMENT =							5 1.000								5 1	5 1	30
		4.000 INCH																	
20	6-V315	ORN. COLUMN	E	20		X			10 1.000								10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000								6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125							26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	139

FINAL PLANS





STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

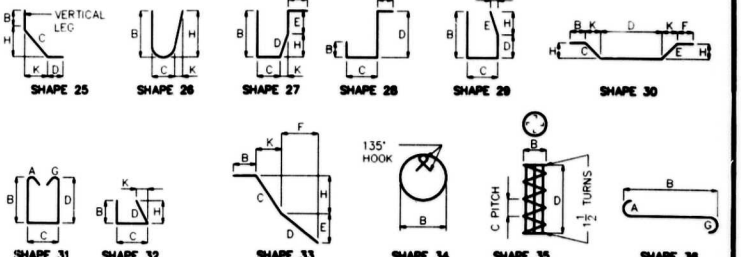
END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
INTERMEDIATE BENT NO. 2																												
56	5	D200	FOOTING		20		X			10	2.000													10	2	10	2	564
68	9	D201	FOOTING		18		X			13	8.000													18	2	18	2	3739
18	9	H200	BEAM		17		X			49	7.500													50	10	50	10	3111
18	9	H201	BEAM		17		X			45	5.000													46	8	46	8	2856
18	10	H202	BEAM		20		X			48	2.000													48	2	48	2	3316
4	8	H203	BEAM		20		X			48	10.000													48	10	48	10	293
4	8	H204	BEAM		20		X			40	4.000													40	4	40	4	242
16	10	H205	BEAM		20		X			43	3.000													43	3	43	3	2976
12	4	H206	BRG. BASE		20		X			3	3.000													3	3	3	3	35
24	7	H207	BEAM		19		X	V	4	3	9.000	2	6.000											6	3	6	1	
			INCREMENT =							5	5.000	2	6.000											7	11	7	9	339
			4.00 INCH																									
224	4	P200	COLUMN		13	S	X	V	16	2	0.000	2	9.500	2	0.000	2	9.500							10	4	10	1	
										3	1.000	4	6.625	3	1.000	4	6.625							16	0	15	9	1932
			INCREMENT =								1.000		1.625		1.000		1.625											
176	4	P201	COLUMN		10	S	X					3	9.000	5	3.000									12	9	12	7	1479
104	4	P202	COLUMN		10	S	X					4	9.000	1	4.000									10	4	10	2	707
32	4	P203	COLUMN		10	S	X					3	9.000	4	6.000									12	0	11	10	253
24	5	R200	COLUMN	E	20		X			5	8.000													5	8	5	8	142
48	5	R201	COLUMN	E	15		X				12.000		12.250	1	8.250		11.625		16.625		9.875		6.875	3	9	3	8	184
48	5	R202	COLUMN	E	15		X					2	0.000	2	0.000		23.875		2.500					4	0	3	11	196
288	6	U200	BEAM		13	S	X			2	5.750	3	10.375	3	5.000	3	9.000							14	10	14	5	6238
116	5	U201	BEAM		21	S	X				13.375	4	9.000		12.000						13.000		3.250	8	10	8	8	807
28	4	U202	BRG. BASE		10	S	X						12.000	4	3.000									8	3	8	1	114
96	10	V200	COLUMN		36		X			19	4.000													22	2	22	2	9158
96	10	V201	COLUMN		15		X			4	2.000	13	3.000							2	4.750	3	5.000	17	5	17	5	7196
20	W	W1	A B WELLS		22		X			2	1.000		9.125											33	2	33	2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.

STATE | PROJ. NO. | SHEET NO.
MO. J4400118 | 15B

FINAL PLANS

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 (VERTICAL LEG) SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24

6d FOR #4 AND #5.
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

DETAILING DIMENSION, HOOK A or G, 4d or 2-1/2" MIN., 180°, 90°, 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 (135° HOOK) SHAPE 35 (SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.) SHAPE 36

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

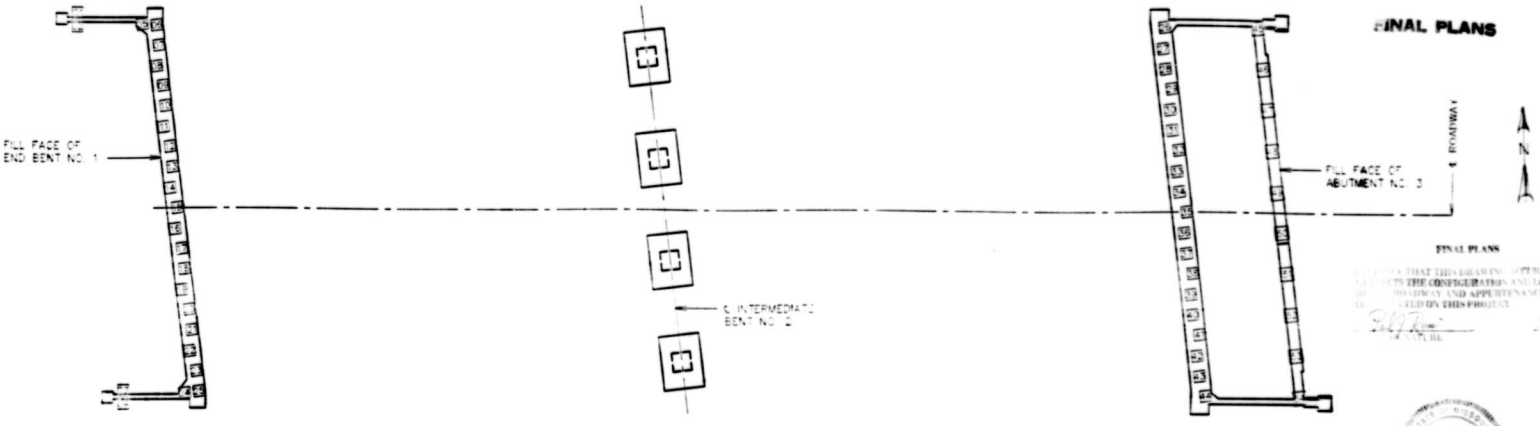
DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 47 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	161



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

FINAL PLANS

FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE BRIDGE, ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

9-14-97
DATE

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1	30.4	99.6	Wingwall, All Piles driven to practical refusal
2	32.4	82.0	" Used HP 12 x 53 piles
3	26.0	47.8	"
4	25.8	51.0	"
5	28.6	158.7	
6	31.3	128.1	Battered
7	31.7	138.1	Battered
8	28.7	150.3	
9	30.7	130.8	Battered 3/12
10	31.1	130.8	Battered 3/12
11	28.7	142.8	
12	31.0	130.8	Battered 3/12
13	31.1	138.1	Battered 3/12
14	28.9	142.8	
15	31.0	146.1	Battered
16	29.5	142.8	
17	31.3	130.8	Battered 3/12
18	31.2	128.1	Battered 3/12
19	27.6	136.0	
20	31.4	130.8	Battered 3/12
21	31.6	128.1	Battered 3/12
22	29.8	158.7	
23	31.6	130.8	Battered 3/12
24	30.2	142.8	
25	31.8	130.8	Battered

755.2 Lin. Ft. Total for Bent 1

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26	35.1	150.3	
27	30.7	138.3	Battered 3/12
28	36.0	138.3	Battered 3/12
29	29.6	168.0	
30	30.6	131.4	Battered 3/12
31	30.7	138.3	Battered 3/12
32	29.7	131.8	Battered 3/12
33	30.9	128.3	Battered 3/12
34	30.6	131.4	Battered 3/12
35	29.7	158.7	
36	33.4	128.3	Battered 3/12
37	30.8	146.0	Battered 4/12
38	29.7	150.3	
39	30.7	146.0	Battered 3/12
40	30.6	131.4	Battered 3/12
41	29.6	158.7	
42	30.7	138.3	Battered 3/12
43	30.5	131.4	Battered
44	30.0	150.3	
45	13.8	95.2	
46	34.1	79.3	
47	34.1	95.2	
48	34.2	102.0	
49	34.8	109.9	
50	28.5	142.8	
51	36.4	109.9	
52	34.6	158.7	
53	34.7	124.2	
54	34.6	136.0	

933.2 Lin. Ft. total for Bent 3

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C) TYPE OF PILING USED.

Note: All piling were driven to practical refusal

3-27-98

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

AS-BUILT PILE DATA

SHEET NO. 50 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		114

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE)	f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60)	fy=60,000 PSI.
STEEL PILE	fb= 9,000 PSI.
STRUCTURAL CARBON STEEL	fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50)	fy=50,000 PSI.

FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	669		669
STRUCTURAL STEEL PILE (12")	LIN. FT.	1956		1956
PREBORE FOR PILING	LIN. FT.	327		327
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,570		67,570
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21

2190 △

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.

ESTIMATED QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

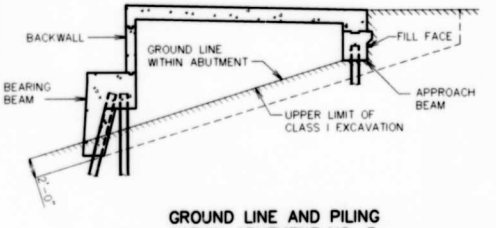
ESTIMATED QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM	BRG. BM	COLUMNS	BRG. BM	APPR. BM
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	37	34		37	41
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

JACKSON COUNTY

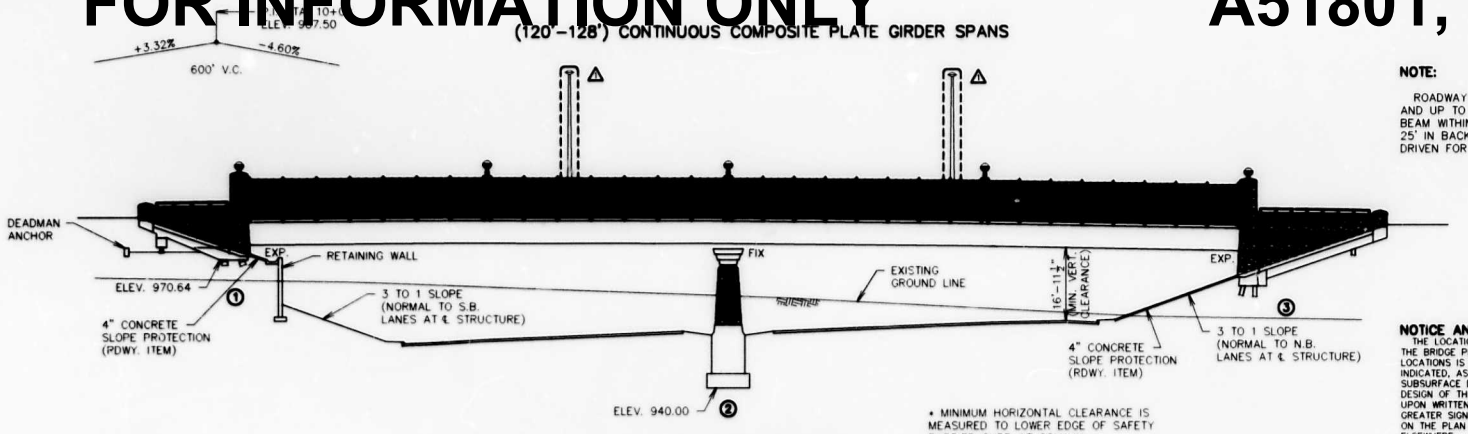
GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

STATE	NO.	SHEET NO.
MO.		

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



GENERAL ELEVATION

* MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

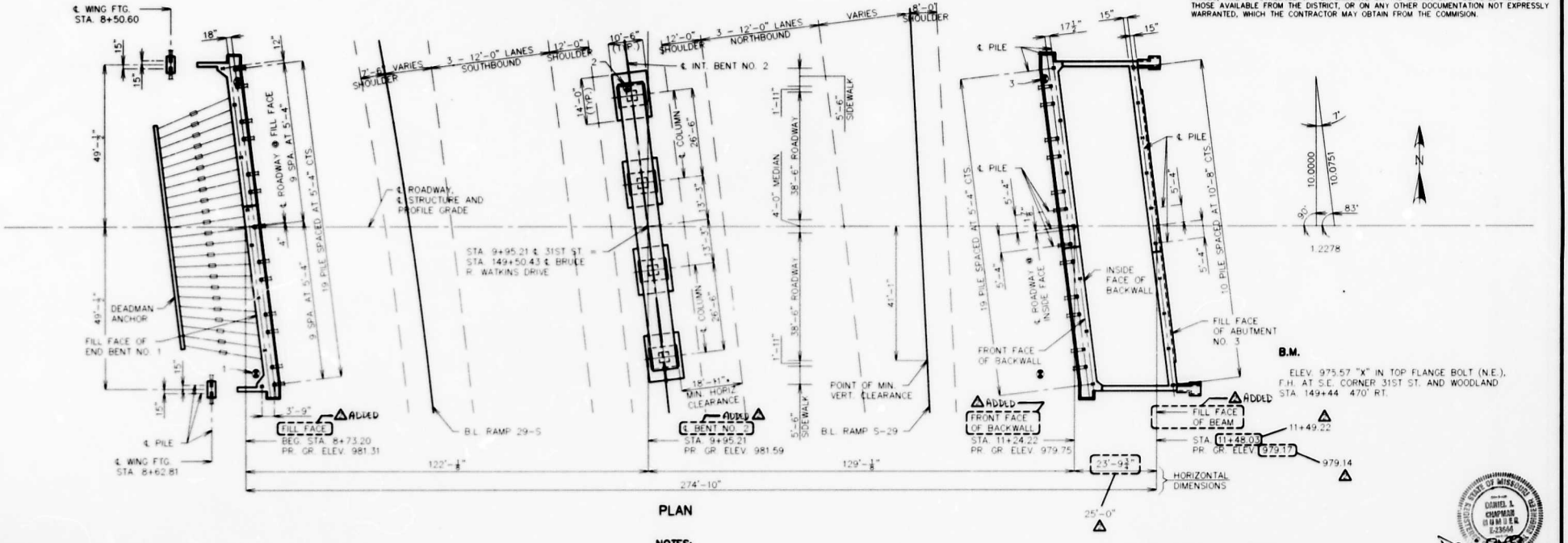
NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

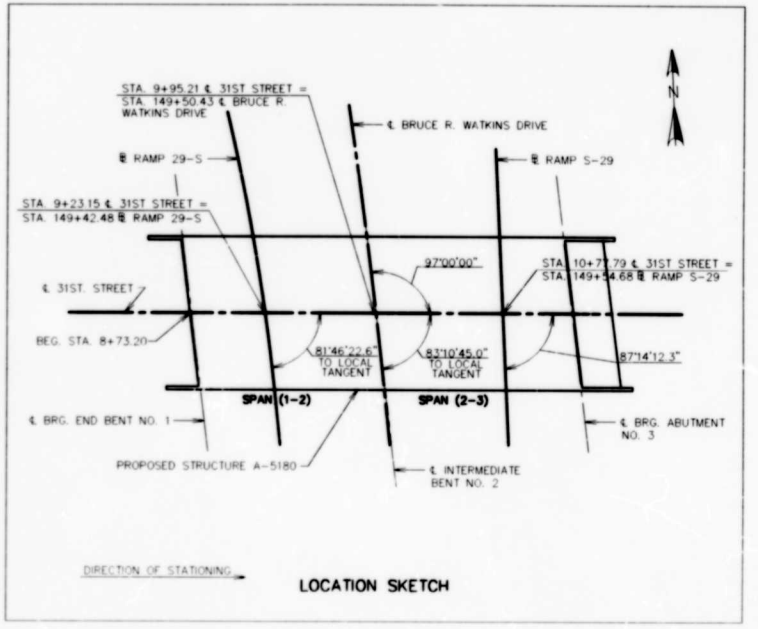
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		112
SEC. 15	TWP. 49 N.	RGE. 33 W



BRIDGE: 31ST. STREET OVER RELOCATED ROUTE 71, BRUCE R. WATKINS DRIVE

STATE ROAD N. OF 31ST. STREET TO SWOPE PARKWAY
IN KANSAS CITY
PROJECT NO.
JOB NO. J4U0011B
JACKSON COUNTY

STA. 9+95.21 (℄ 31ST. STREET)=
STA. 149+50.43 (℄ BRUCE R. WATKINS DR.)
RTE. 71

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

Date 4/17/95 SHEET NO. 1 OF 50

STD.	708.35
STD.	903.03A0
	A-5180

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	2/4/6	3.0
10'	5/10/14	4.5 +
15'	12/35/49	4.5 +
20'	22/50	4.5 +

ELEV. 964.3
DARK GREEN FAT CLAY, MOIST, VERY STIFF
ELEV. 954.3
TAN BROWN FAT CLAY, MOIST, HARD
ELEV. 949.3
GRAY SHALE, HARD
ELEV. 941.6
THIN TO MEDIUM BEDDED LIMESTONE, MODERATELY HARD
ELEV. 930.4

① (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	9/18/25	3.5
10'	10/22/34	4.5 +
15'	8/26/42	4.5 +
20'	50/4"	4.5 +

ELEV. 961.2
TAN BROWN FAT CLAY, MOIST, SOFT TO VERY STIFF
ELEV. 951.8
OLIVE BROWN FAT CLAY, SLIGHTLY MOIST, HARD
ELEV. 945.2
GRAY WEATHERED SHALE, HARD
ELEV. 941.6
GRAY, THICK BEDDED LIMESTONE, HARD
ELEV. 931.9

② (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	6/6/7	1.5
10'	5/12/17	4.5 +
15'	5/12/15	4.5 +
20'	2/2/2	0.5

ELEV. 959.5
DARK BROWN FAT CLAY, MOIST, STIFF
ELEV. 950.5
TAN BROWN FAT CLAY, MOIST, VERY STIFF
ELEV. 944.5
OLIVE TAN BROWN SHALE, HARD
ELEV. 940.1
REDDISH BROWN FAT CLAY, MOIST, SOFT
ELEV. 935.9
GRAY WEATHERED LIMESTONE, BROWN CLAY ALONG BEDDING PLANES, MODERATELY HARD, THIN TO MEDIUM BEDDING
ELEV. 920.3

③ (CORE)

NOTE: FOR LOCATION OF BORINGS, SEE SHEET NO. 2. BORING DATA FOR ALL LOCATIONS IS AVAILABLE UPON REQUEST FROM THE DISTRICT OFFICE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR 4/93
TRACED BY:	KAM 5/93
CHECKED BY:	DJM 5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

BORING DATA

SHEET NO. 4 OF 50

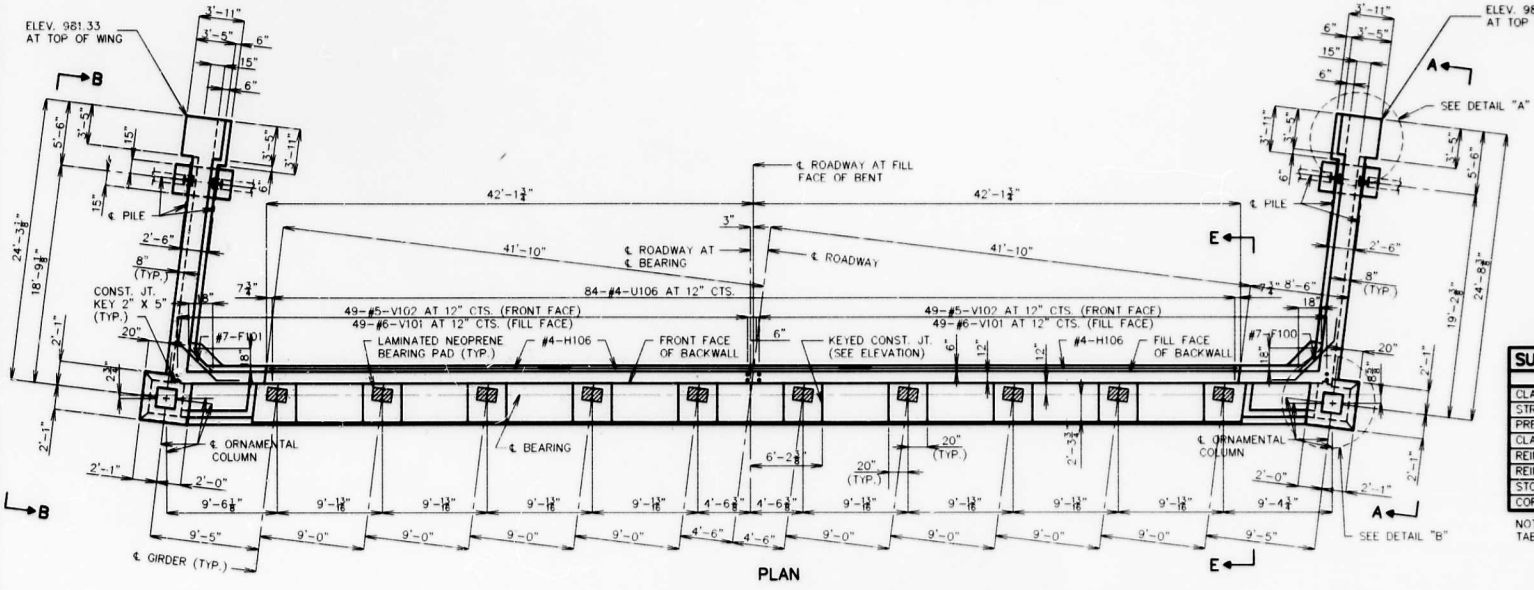
A-5180

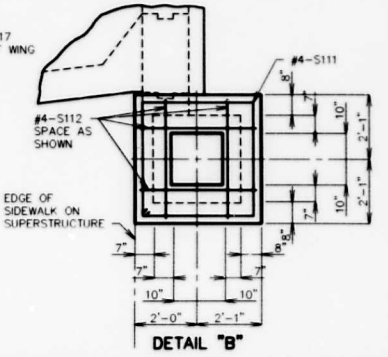
[redacted] 24 to 1

FOR INFORMATION ONLY

A51801, Sht. 151

PROJ. NO.	SHEET NO.

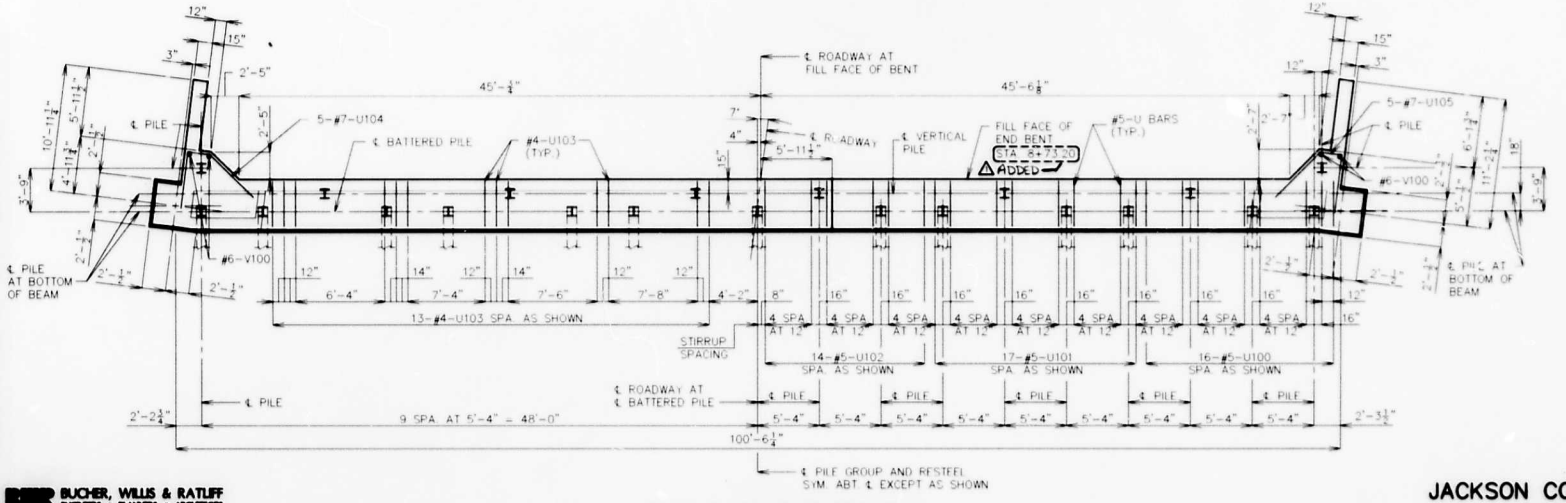




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITIY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.8 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITIY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 8.

FOR SECTION E-E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WNGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

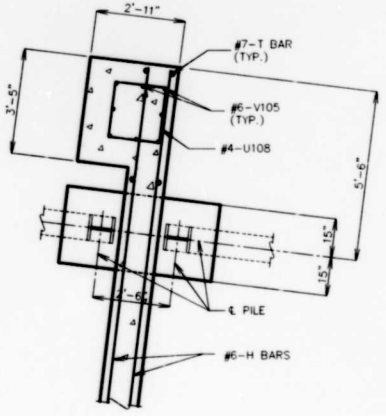
DETAILS OF END BENT NO. 1 PLAN

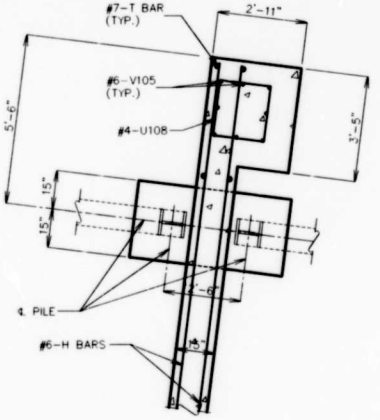
SHEET NO. 5 OF 50

A-5180

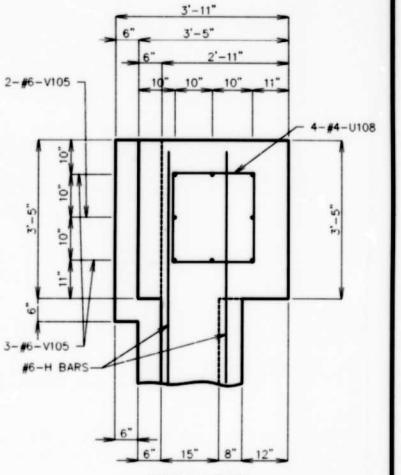
24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		

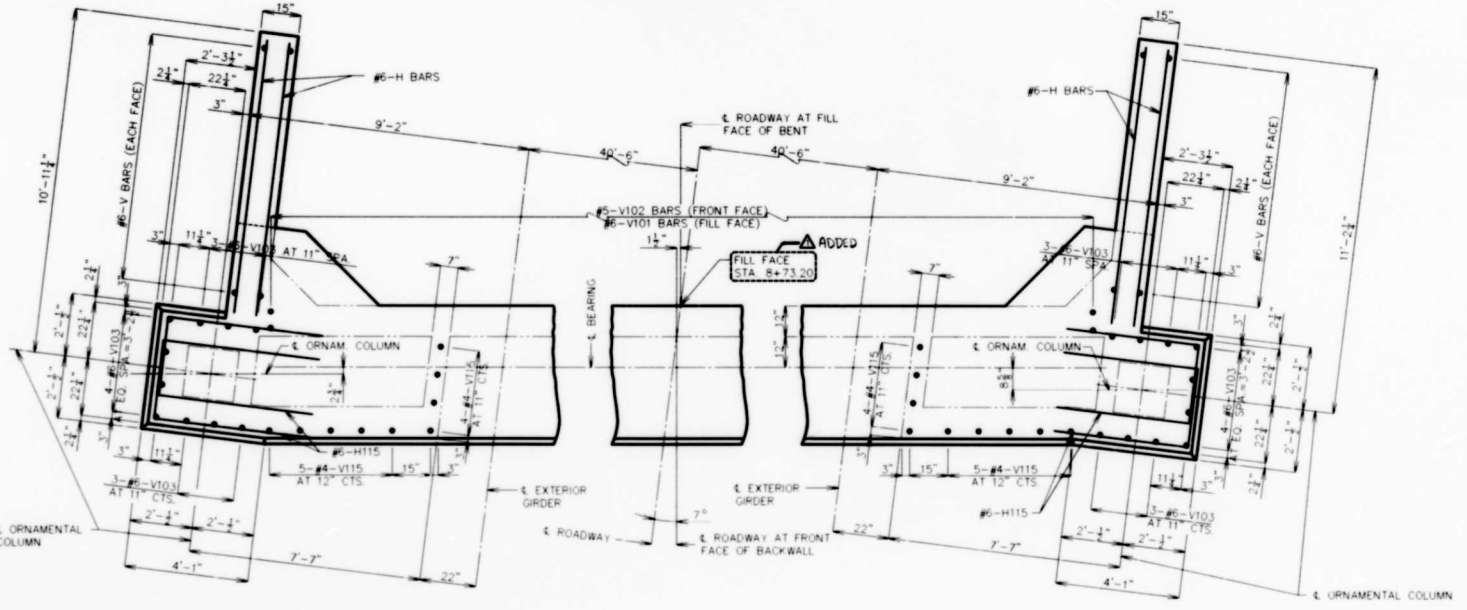




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCKER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

DANIEL A. CHAPMAN NUMBER E-23548 STATE OF MISSOURI
4-26-96

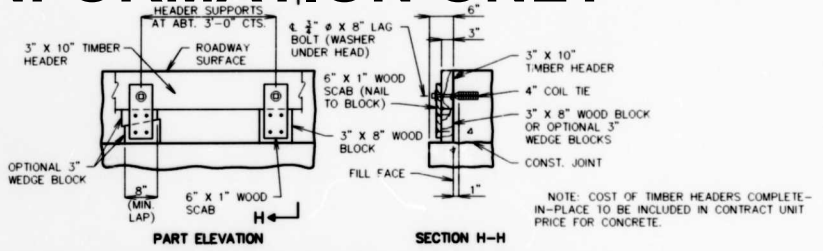
JACKSON COUNTY

DETAILS OF END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

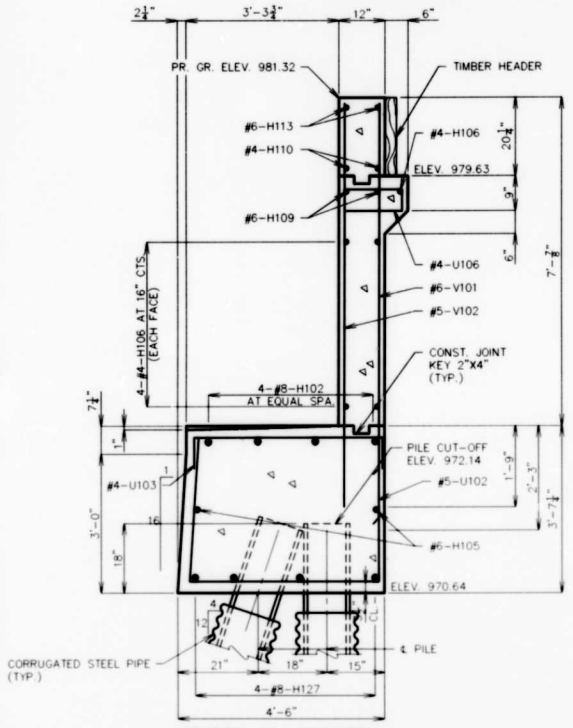
A-5180

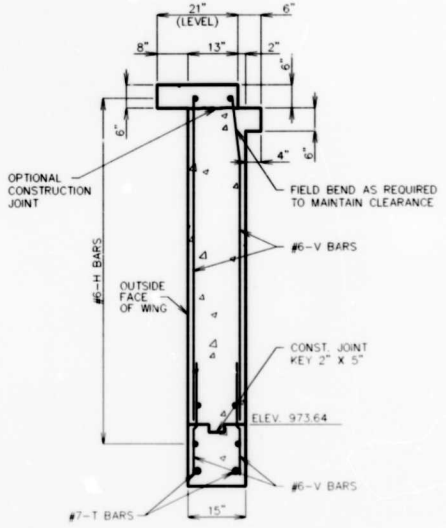
STA.	PROJ. NO.	SHEET NO.
MO.		120

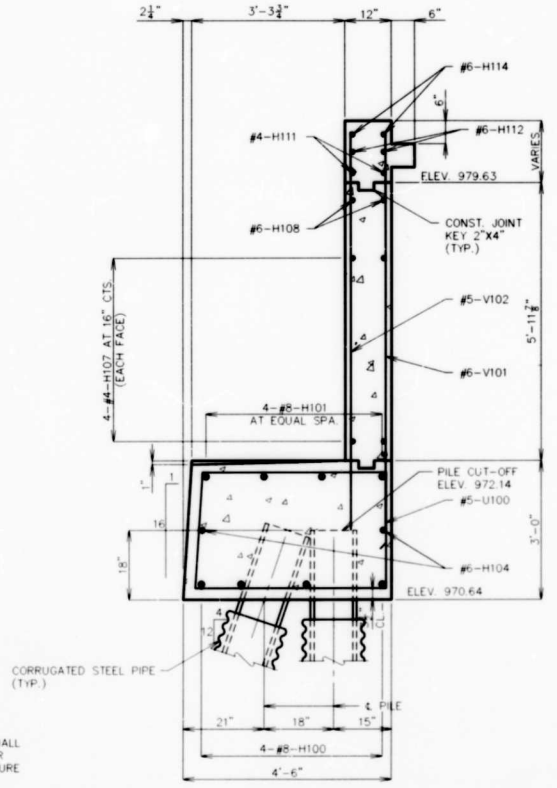


NOTE: COST OF TIMBER HEADERS COMPLETE-IN-PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONCRETE.

DETAILS OF TIMBER HEADER AT END BENT NO. 1 AND ABUTMENT NO. 3







NOTES:

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO THE CROWN OF ROADWAY SLAB. BACKWALL ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR LOCATION OF SECTION E-E, SEE SHEET NO. 5 & 7.

FOR LOCATION OF SECTION G-G, SEE SHEET NO. 8.

FOR DETAILS OF VERTICAL DRAIN CORE, SEE SHEET NO. 12.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 MISCELLANEOUS

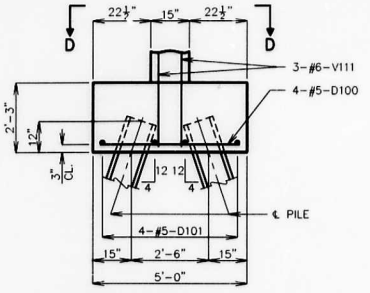
SHEET NO. 9 OF 50

A-5180

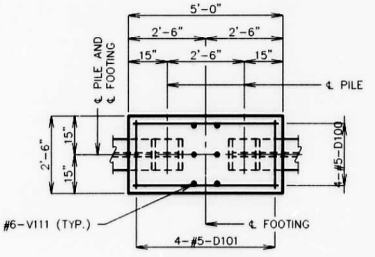
FOR INFORMATION ONLY

A51801, Sht. 154

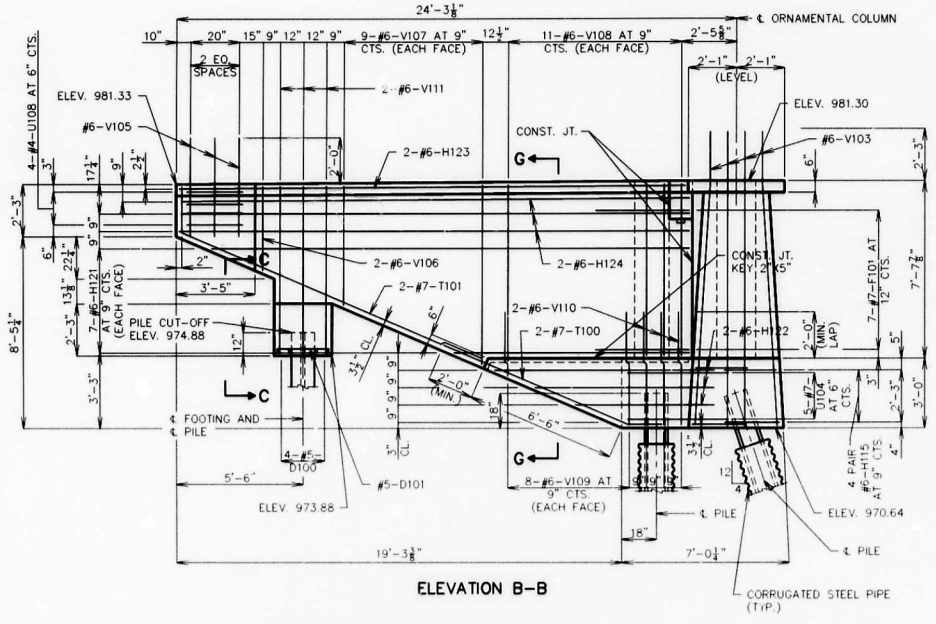
STATE	PROJ. NO.	SHEET NO.
MO.		179



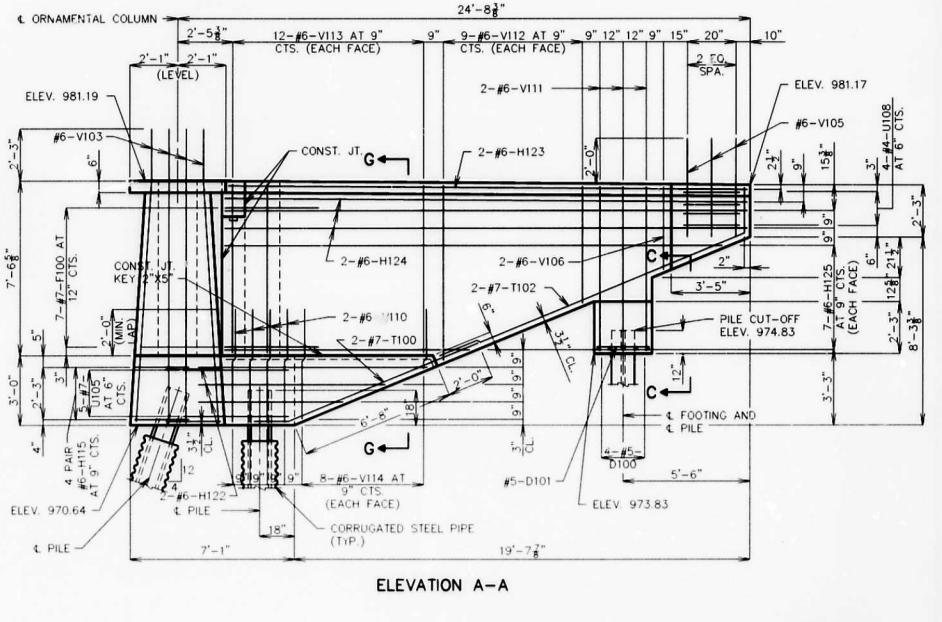
PART ELEVATION C-C



PLAN D-D



ELEVATION B-B



ELEVATION A-A

NOTE:

FOR LOCATION OF ELEVATIONS A-A AND ELEVATION B-B SEE SHEET NO. 5.

FOR SECTION G-G, SEE SHEET NO. 9.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 10.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

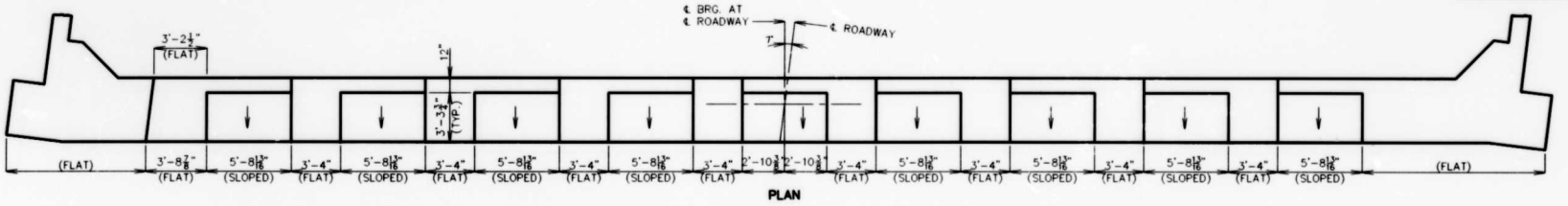
JACKSON COUNTY

DETAILS OF END BENT NO. 1 WINGS

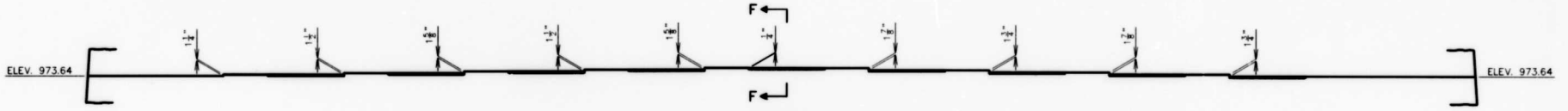
SHEET NO. 8 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		118

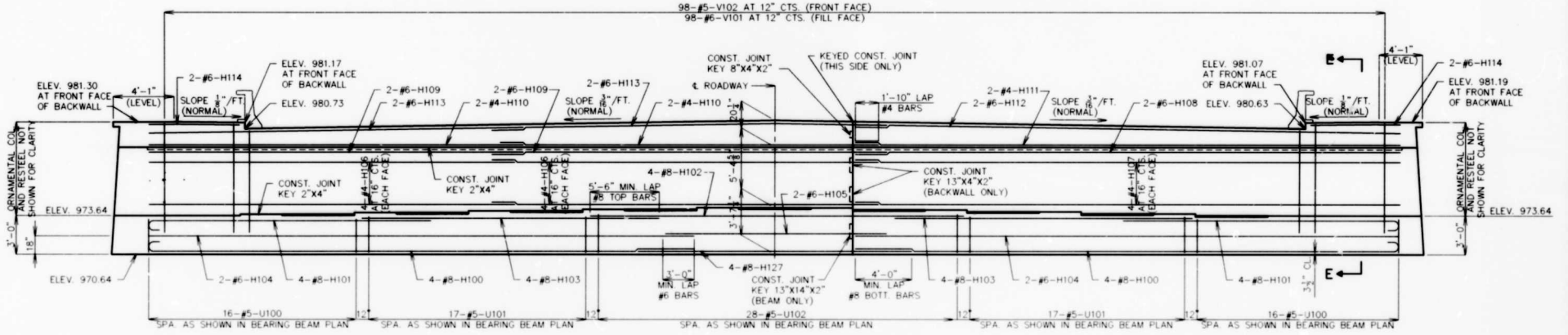


PLAN

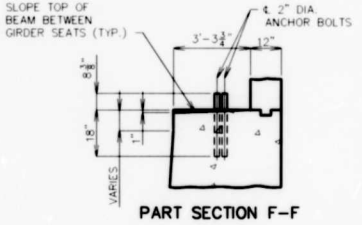


ELEVATION

BEARING SEAT DETAIL



ELEVATION



PART SECTION F-F

NOTES:

FOR SECTION E-E, SEE SHEET NO. 9.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO CROWN OF ROADWAY SLAB.

BACKWALL ABOVE THE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST ½".

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 10.

3-27-95

BUCKER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1 ELEVATION

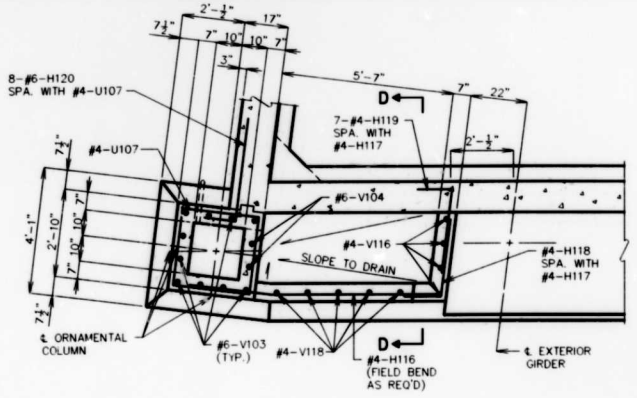
SHEET NO. 7 OF 50

A-5180

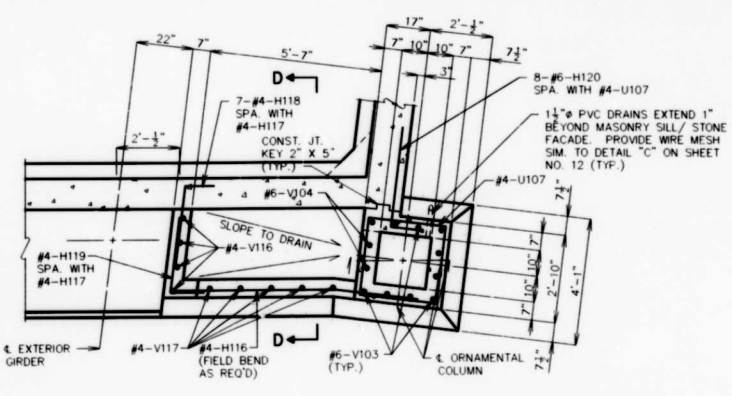
FOR INFORMATION ONLY

A51801, Sht. 156

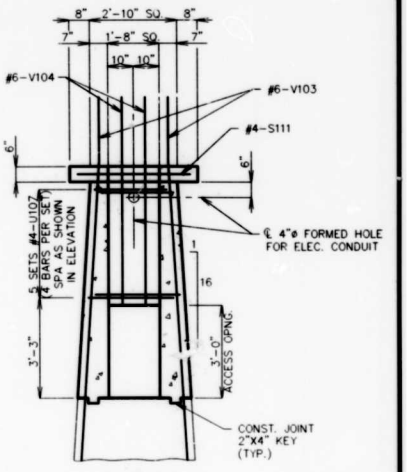
STATE	PROJ. NO.	SHEET NO.
MO.		121



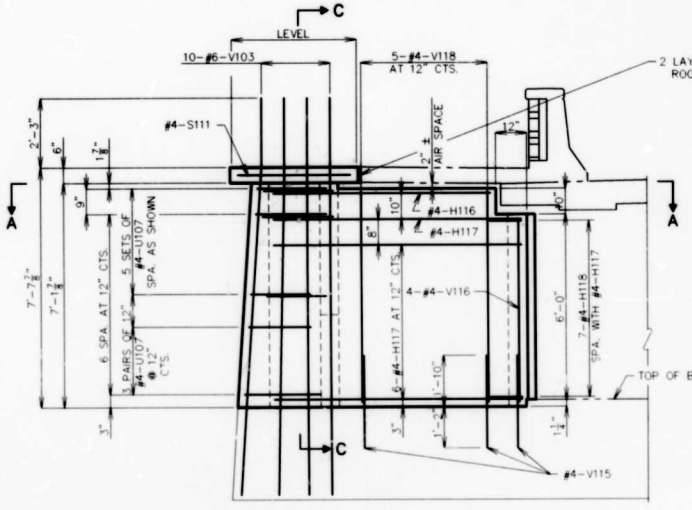
SECTION A-A



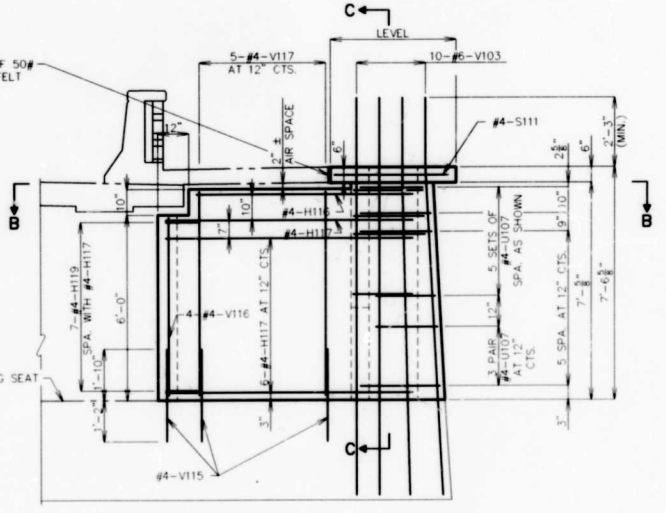
SECTION B-B



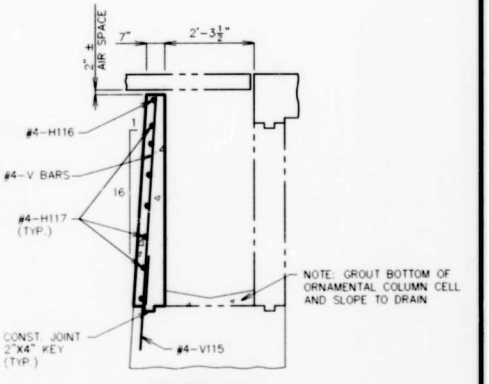
SECTION C-C



ELEVATION SOUTH WING



ELEVATION NORTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF END BENT NO. 1
ORNAMENTAL COLUMN

SHEET NO. 10 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		122

BILL OF REINFORCING STEEL EACH DEADMAN		
NUMBER	SIZE & MARK	LENGTH
272	#4–V150	21"
16	#4–H150	35'–0"

NOTES:

CONSTRUCTION SEQUENCE:

CONSTRUCT END BENT NO. 1 WITH ANCHOR TEES IN PLACE.

MACHINE COMPACT FILL UP TO ELEVATION OF $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

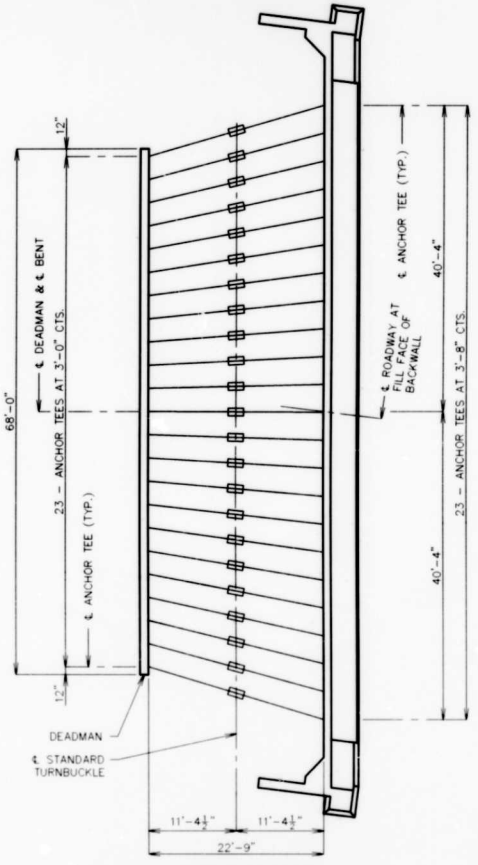
CONSTRUCT DEADMAN WITH ANCHOR TEES IN PLACE.

INSTALL $\frac{7}{8}$" ø ROD, CLEVIS AND TURNBUCKLE ASSEMBLY.

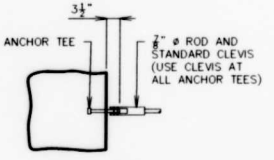
TIGHTEN TURNBUCKLE UNTIL SNUG.

HAND COMPACT FILL FOR 12" (MIN.) OVER $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

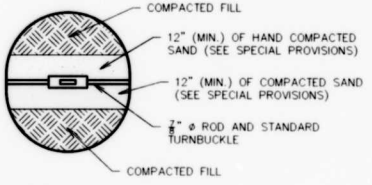
MACHINE COMPACT REMAINING FILL.



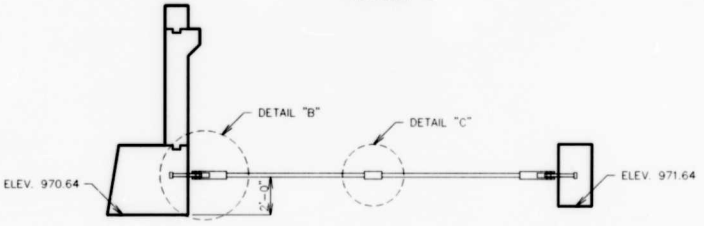
DEADMAN PLAN AT END BENT NO. 1



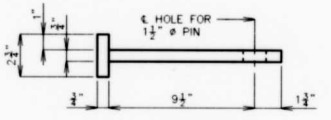
DETAIL "B"



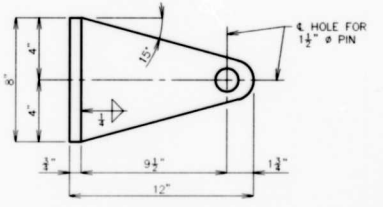
DETAIL "C"



LOCATION OF ANCHOR TEE

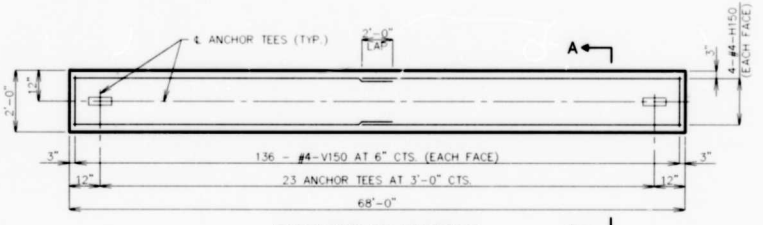


ELEVATION

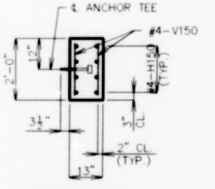


PLAN

DETAIL OF ANCHOR TEE



ELEVATION OF DEADMAN



SECTION A–A

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	5/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

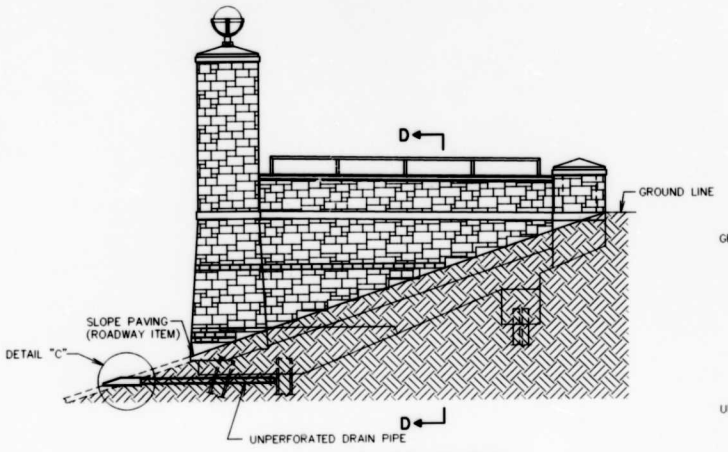
JACKSON COUNTY

DETAILS OF DEADMAN ANCHORAGE SYSTEM

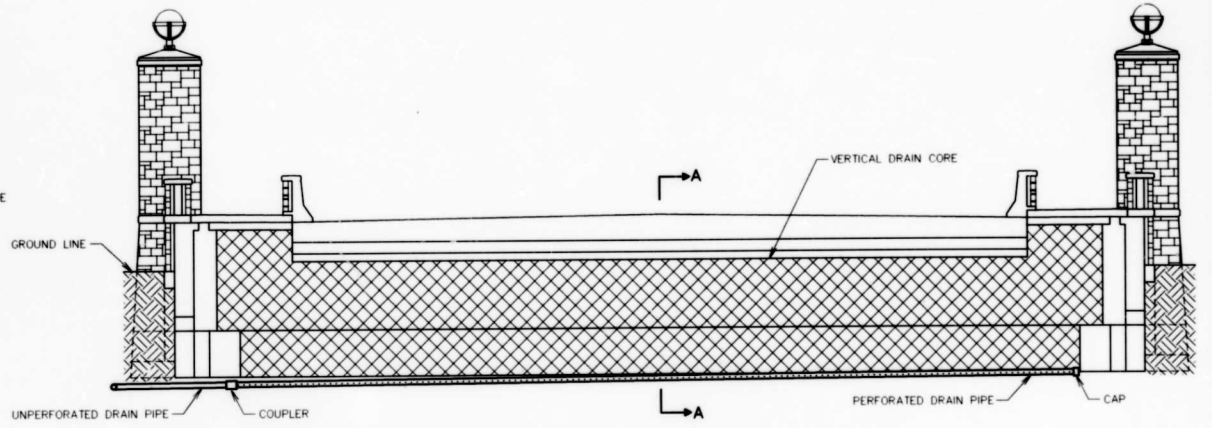
SHEET NO. 11 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		123

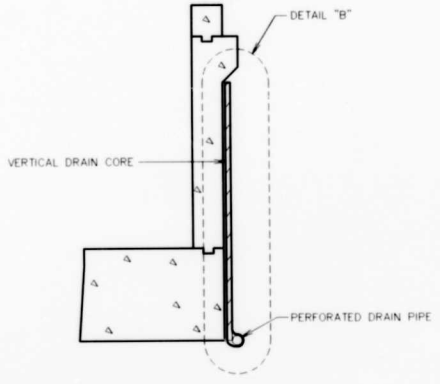


ELEVATION OF WING

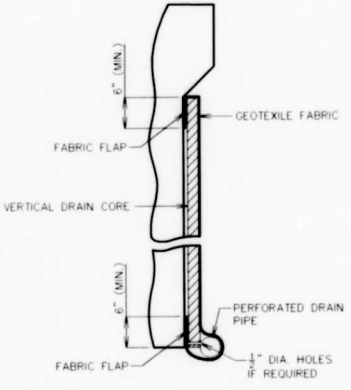


SECTION D–D
ELEVATION AT END BENT

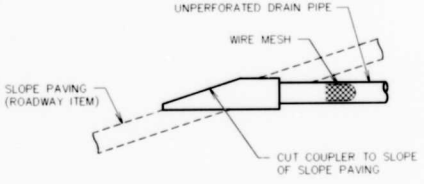
VERTICAL DRAIN AT END BENT NO. 1



SECTION A–A



DETAIL "B"



DETAIL "C"

NOTES:

DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC–COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½". (SEE ELEVATION AT END BENT)

PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DMA	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

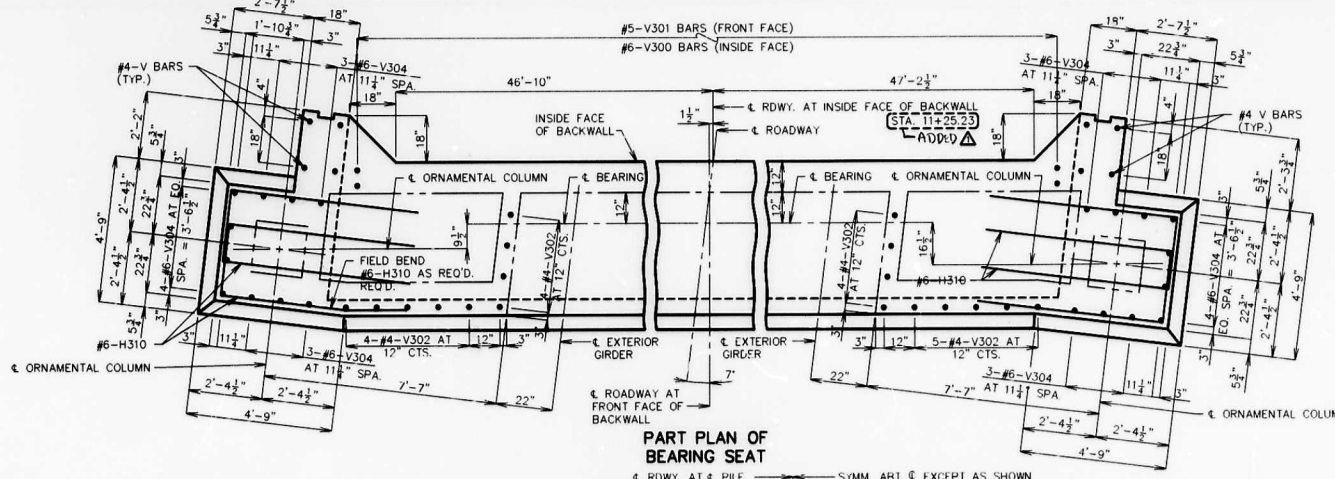
JACKSON COUNTY

DETAILS OF VERTICAL DRAIN AT END BENT NO. 1

SHEET NO. 12 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PART PLAN OF BEARING SEAT

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

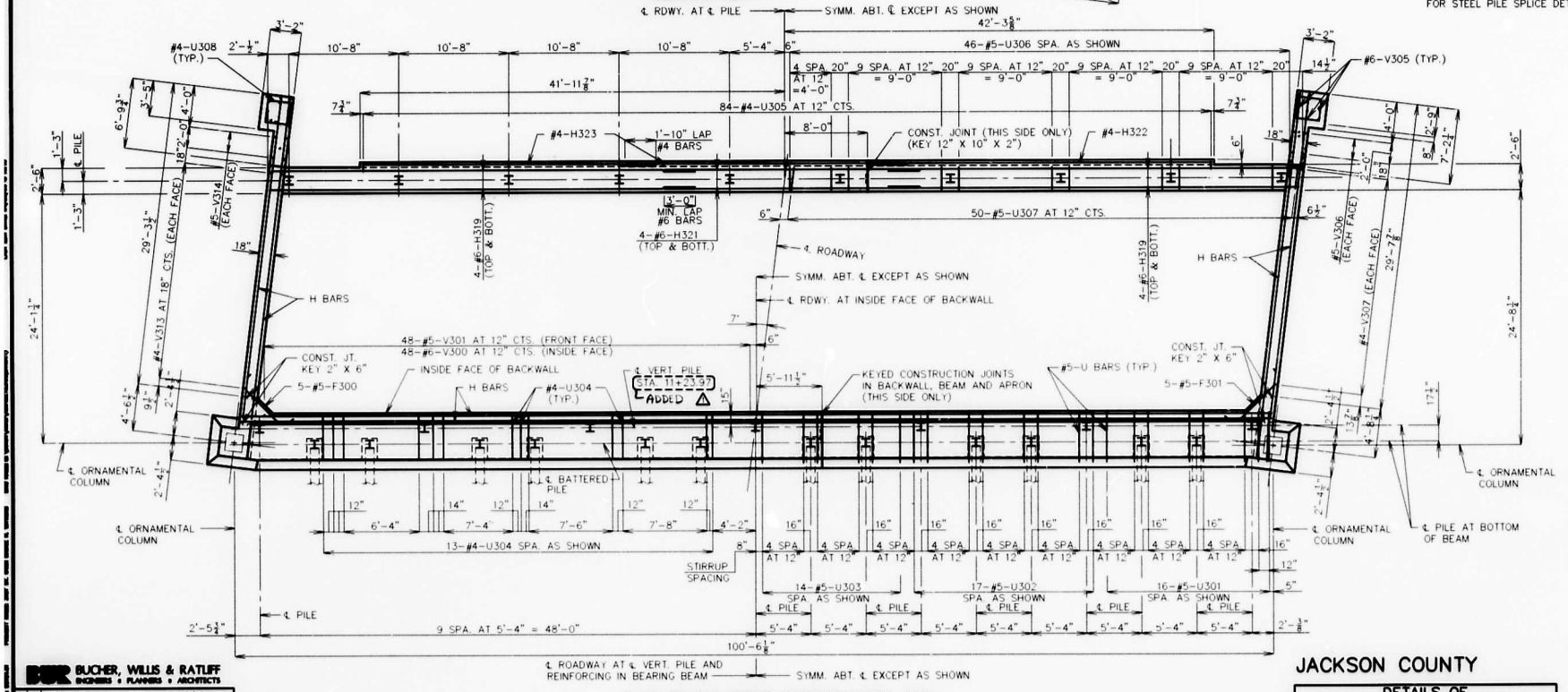
TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.



PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

DANIEL L. CHAPMAN NUMBER E-23644 STATE OF MISSOURI REGISTERED ENGINEER

4-2-96

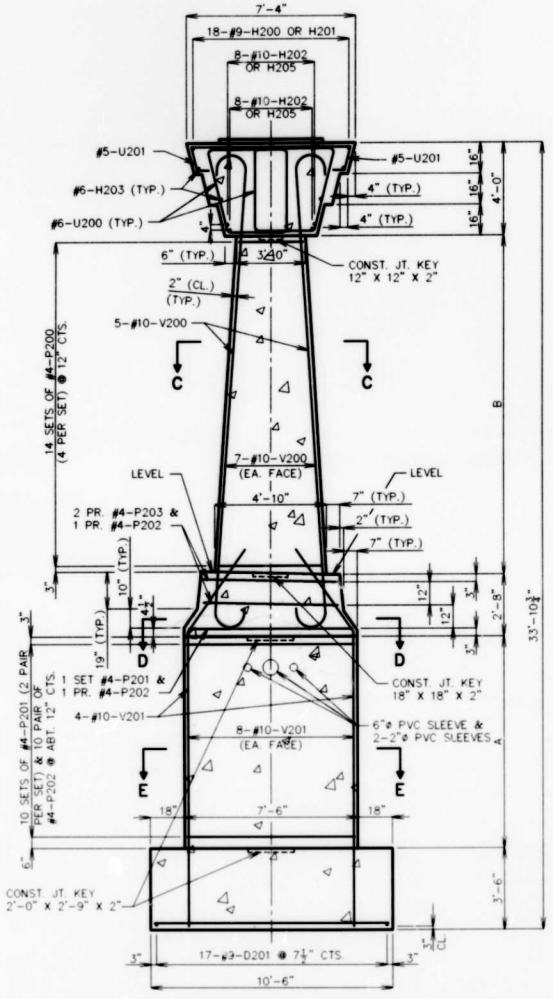
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

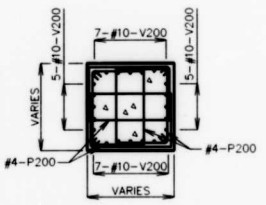
SHEET NO. 15 OF 50

A-5180

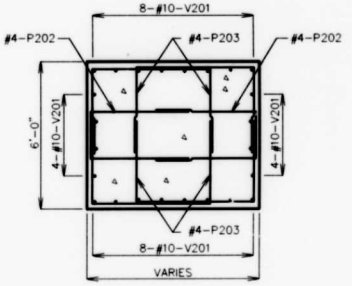
STATE	C.J. NO.	SHEET NO.
MO.		165



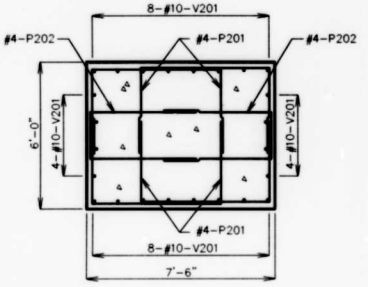
TYPICAL SECTION THRU COLUMN



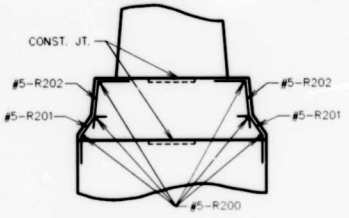
SECTION C-C



SECTION D-D

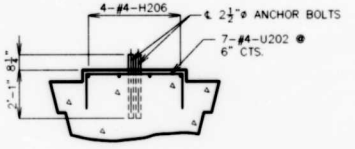


SECTION E-E



PART ELEVATION F-F
(SHOWING R BARS)

FOR LOCATION OF ELEVATION F-F, SEE SHEET NO. 12.



SECTION B-B

NOTE: USE #4-H206 & #4-U202 BARS IN MONOLITHIC BEARING BASES 4" AND OVER IN HEIGHT.

FOR LOCATION OF SECTION B-B, SEE SHEET NO. 12.

TABLE OF DIMENSIONS		
COLUMN NO.	A	B
1	9'-9½"	13'-11½"
2	9'-10½"	13'-10½"
3	10'-1½"	13'-8½"
4	10'-2½"	13'-6½"

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 2		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	437
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	263.3
REINFORCING STEEL (BRIDGE)	LBS.	45,500
REINFORCING STEEL (EPOXY COATED)	LBS.	520
STONE FACADE ON INT. BENT	SQ. FT.	1074

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB 5/93
TRACED BY:	RCC 5/93
CHECKED BY:	SAC 6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

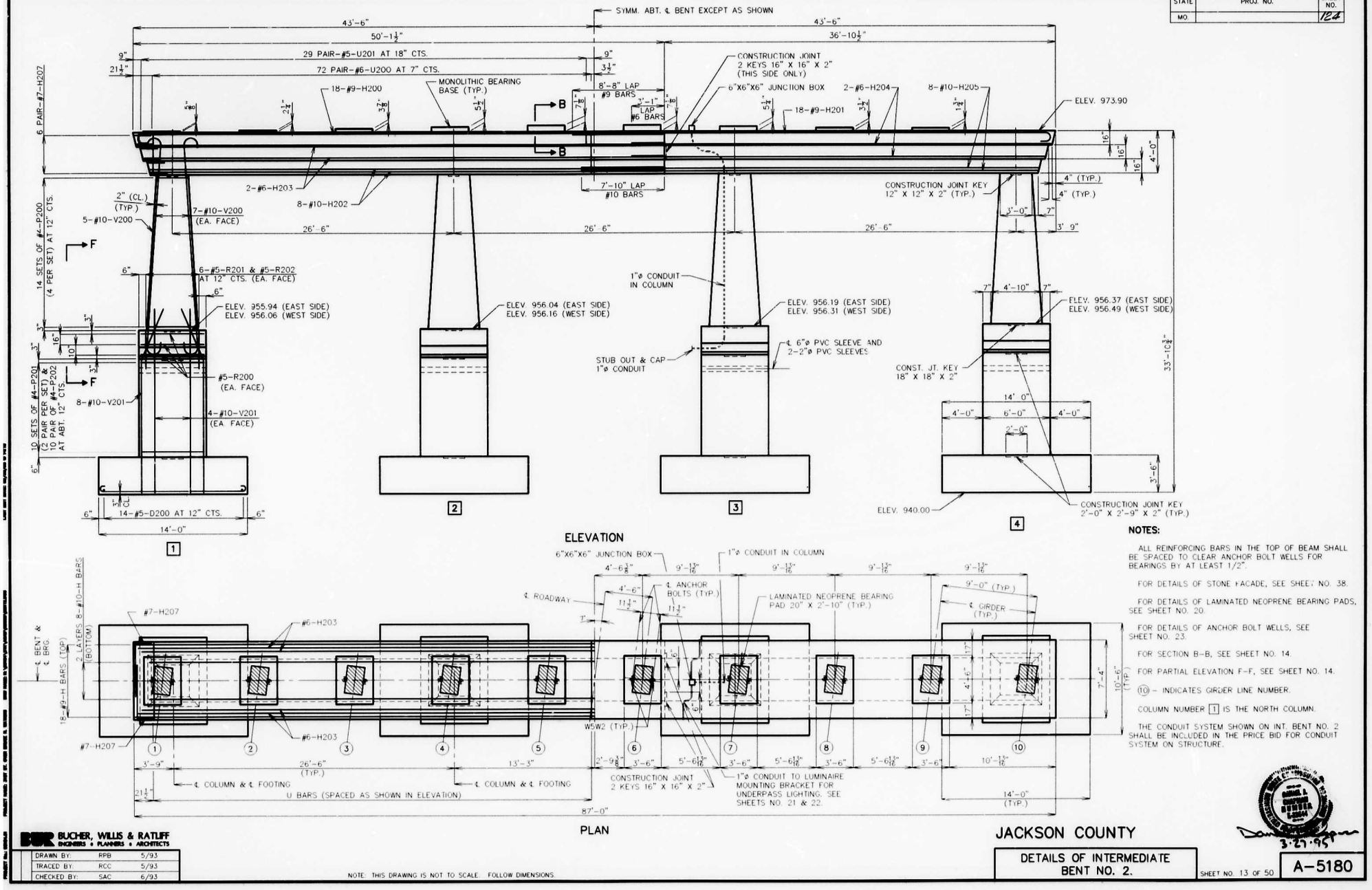
DETAILS OF INTERMEDIATE BENT NO. 2

SHEET NO. 14 OF 50

A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		12A



ELEVATION

PLAN

NOTES:

ALL REINFORCING BARS IN THE TOP OF BEAM SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 38.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR SECTION B-B, SEE SHEET NO. 14.

FOR PARTIAL ELEVATION F-F, SEE SHEET NO. 14.

(10) - INDICATES GIRDER LINE NUMBER.

COLUMN NUMBER 1 IS THE NORTH COLUMN.

THE CONDUIT SYSTEM SHOWN ON INT. BENT NO. 2 SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2.

SHEET NO. 13 OF 50

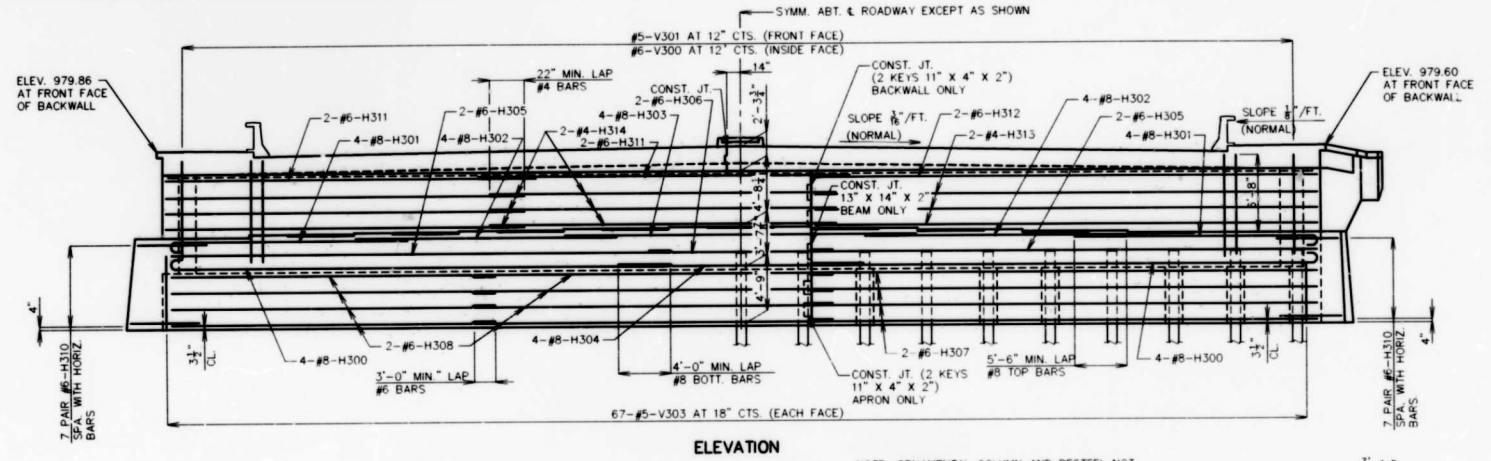
A-5180

3-27-95

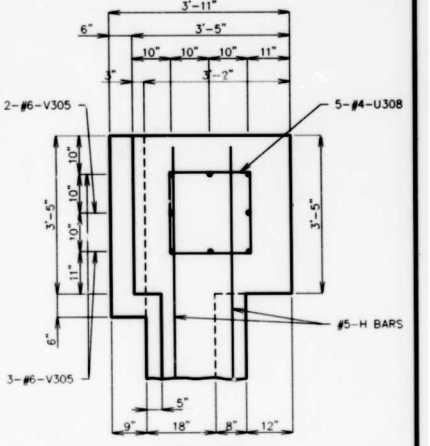
FOR INFORMATION ONLY

A51801, Sht. 162

STATE	PROJ. NO.	SHEET NO.
MO.		

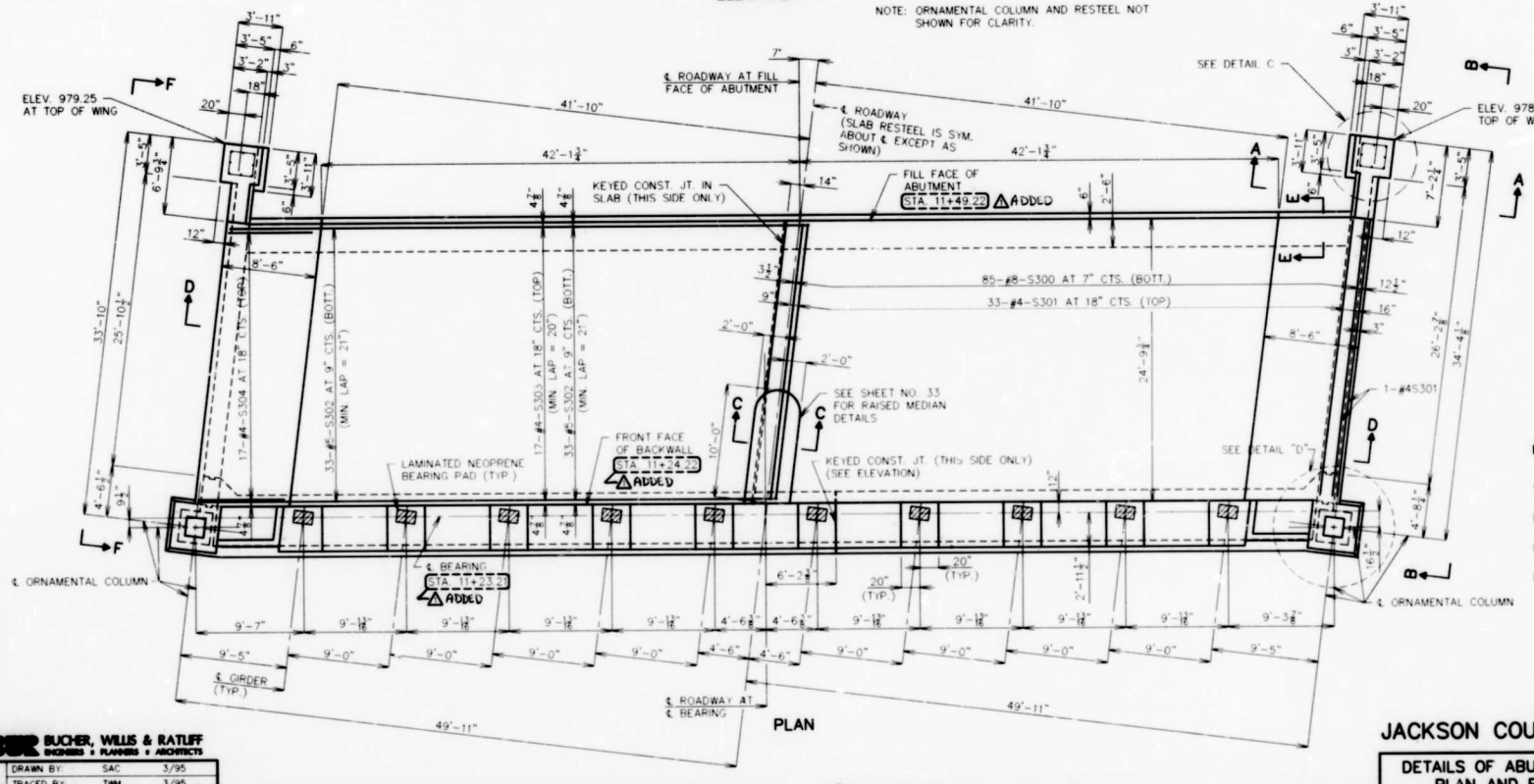


ELEVATION

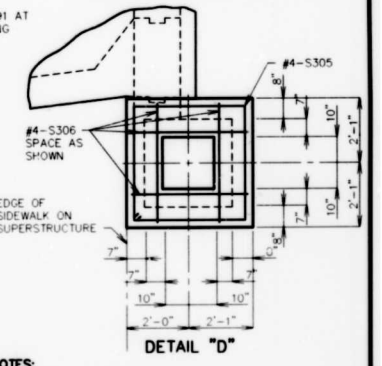


DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

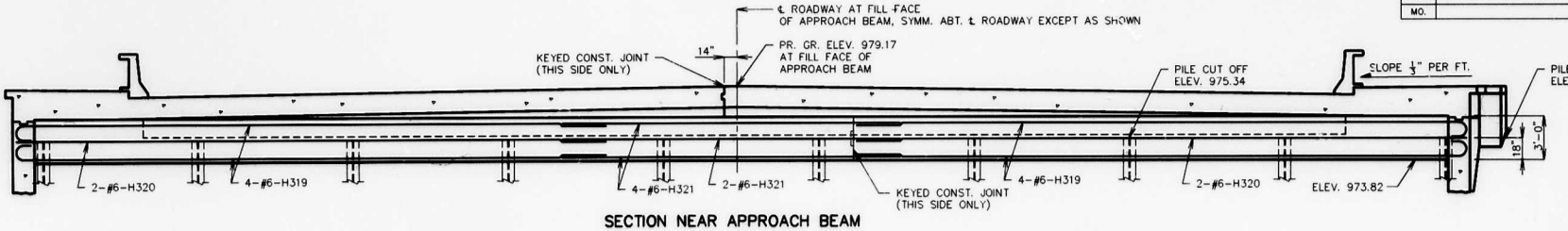
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

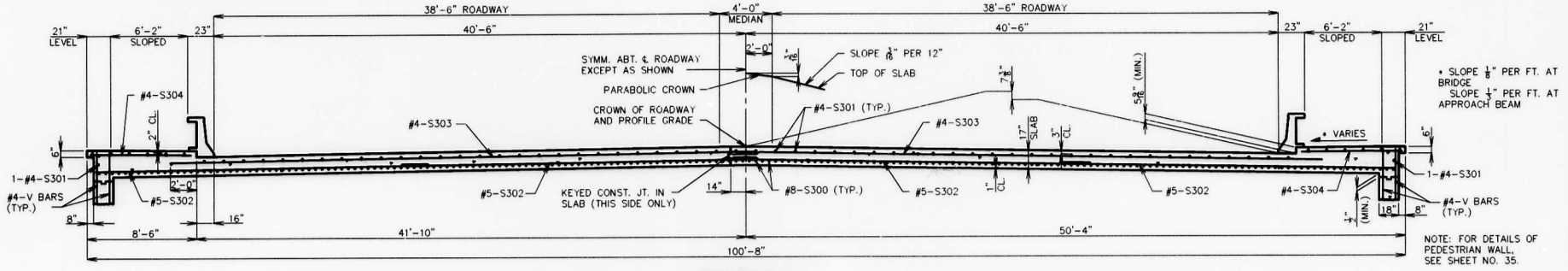
SHEET NO. 16 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		128

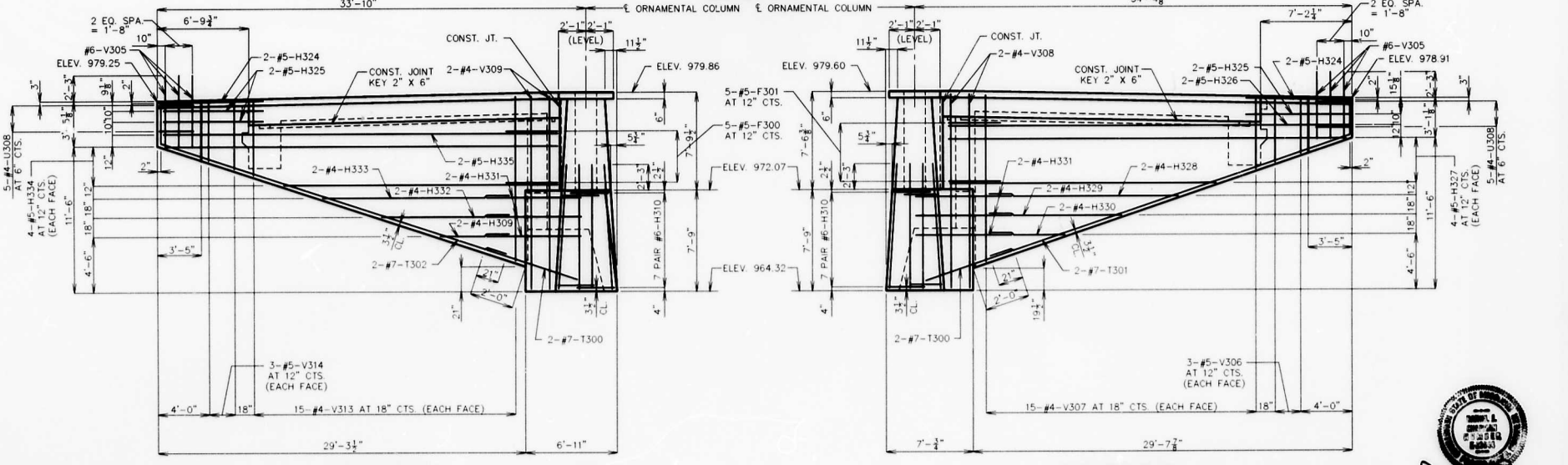


SECTION NEAR APPROACH BEAM



NOTE: FOR DETAILS OF PEDESTRIAN WALL, SEE SHEET NO. 35.

SECTION D-D



ELEVATION F-F

ELEVATION B-B

NOTE:

FOR LOCATION OF ELEVATIONS B-B, D-D AND SECTION F-F, SEE SHEET NO. 16.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 19

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

7-27-95

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 WING ELEVATIONS AND SLAB SECTIONS

SHEET NO. 17 OF 50

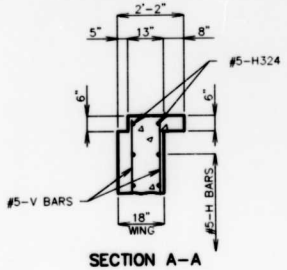
A-5180

[redacted] 24 to 1

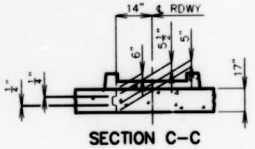
FOR INFORMATION ONLY

A51801, Sht. 164

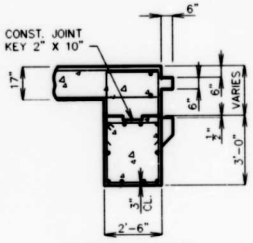
STATE	PROJ. NO.	SHEET NO.
MO.		



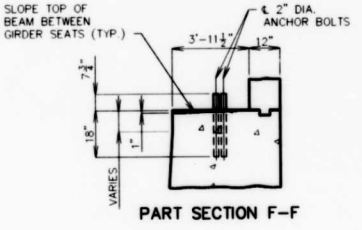
SECTION A-A



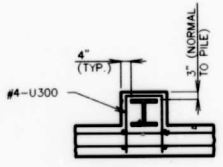
SECTION C-C



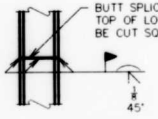
SECTION E-E



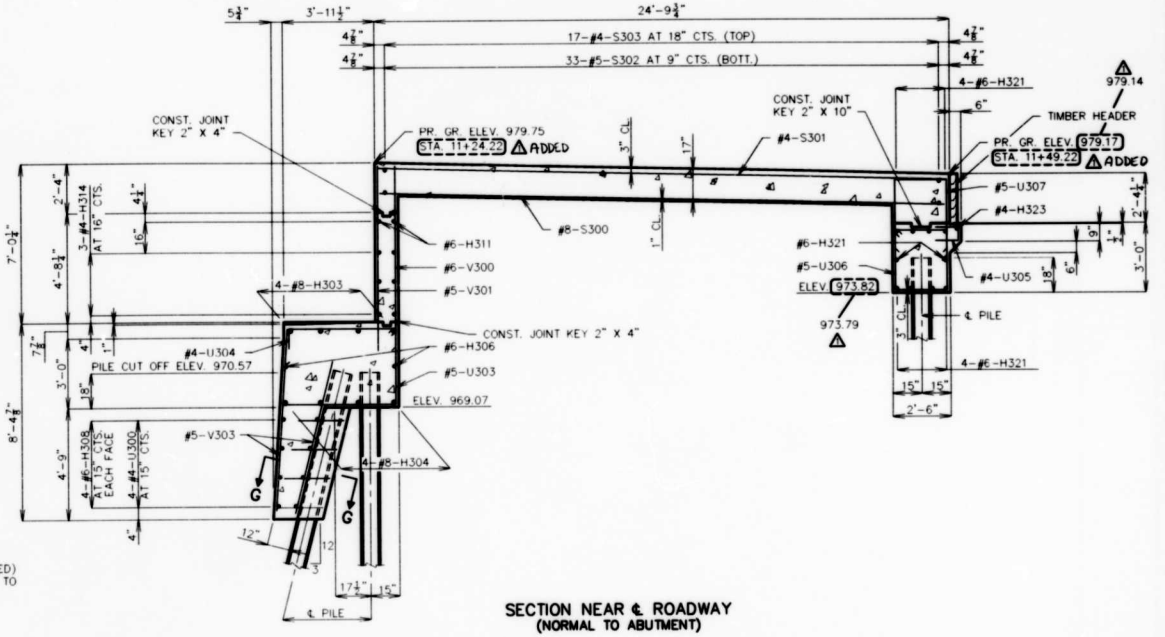
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE

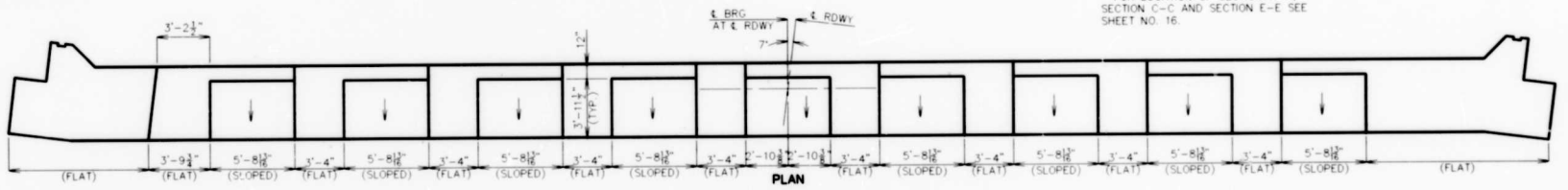


SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

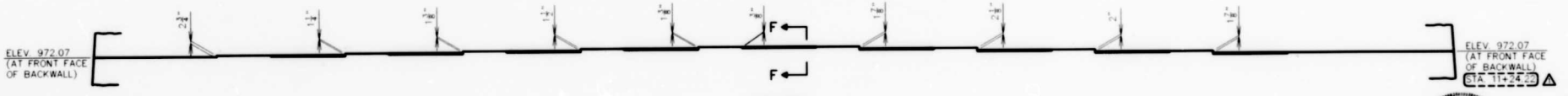
NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.



PLAN



ELEVATION

BEARING SEAT DETAIL

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

STATE OF MISSOURI DANIEL A. CHAPMAN NUMBER E-23544

4-26-96

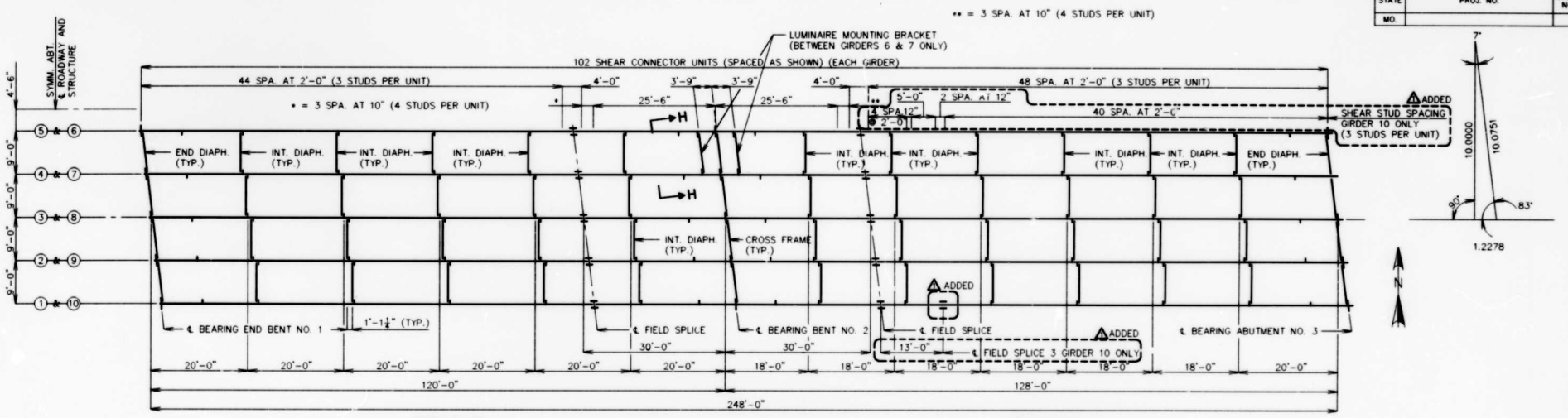
JACKSON COUNTY

DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

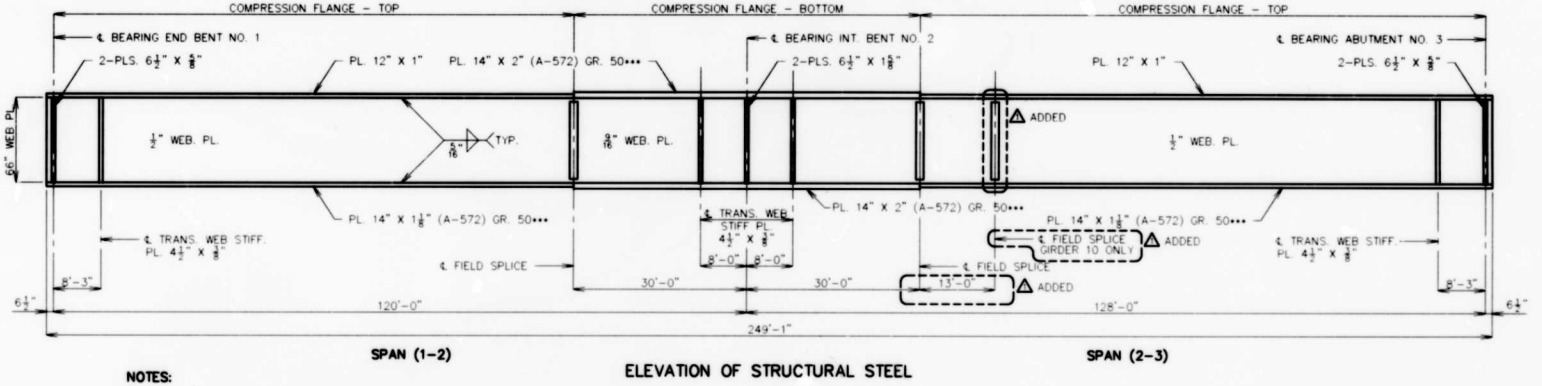
SHEET NO. 18 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

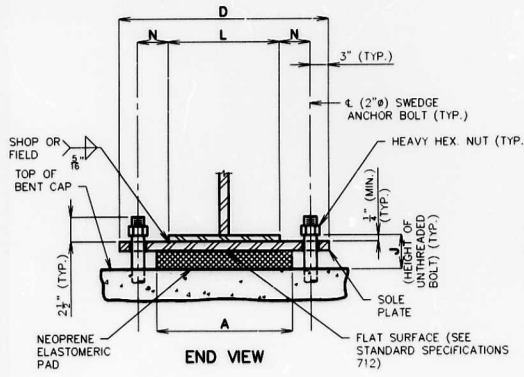
JACKSON COUNTY

PLAN AND ELEVATION OF STRUCTURAL STEEL

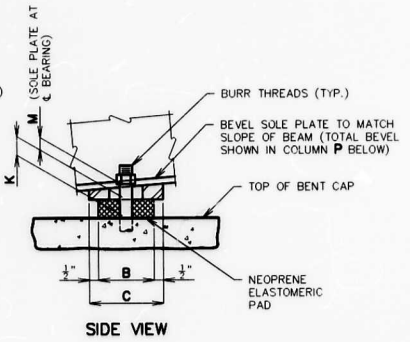
SHEET NO. 21 OF 50

A-5180

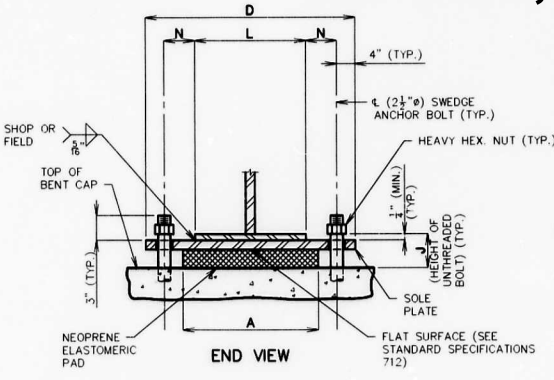
STATE	PROJ. NO.	SHEET NO.
MO.		



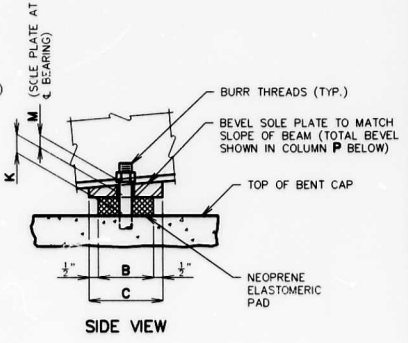
END VIEW



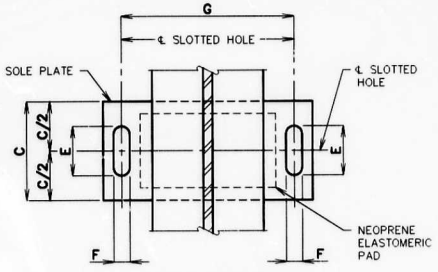
SIDE VIEW



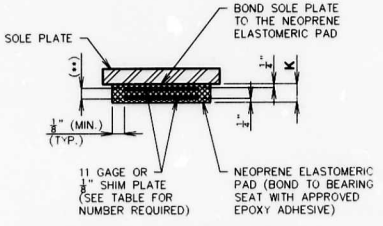
END VIEW



SIDE VIEW

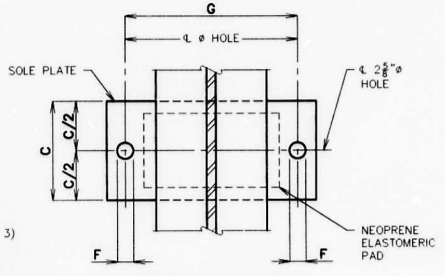


PART PLAN VIEW

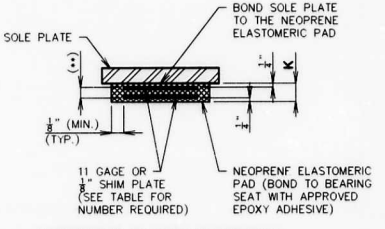


NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	△1 7-⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

DANIEL L. CHAPMAN NUMBER E-22048 STATE OF MISSOURI

9-12-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△1 REVISED AUGUST 10, 1995

JACKSON COUNTY

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

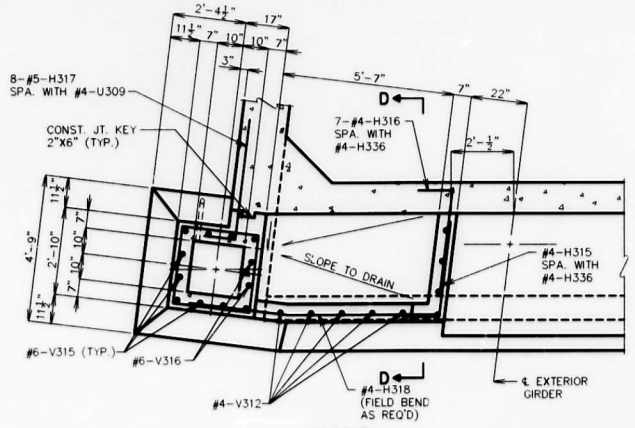
SHEET NO. 20 OF 50

A-5180

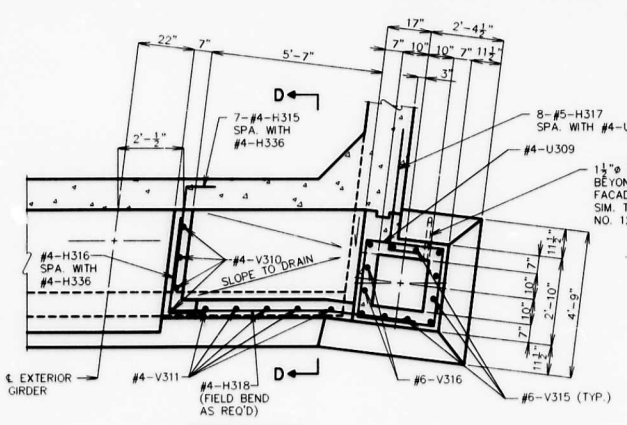
FOR INFORMATION ONLY

A51801, Sht. 167

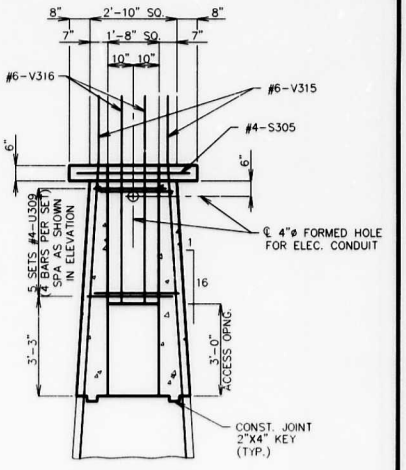
STATE	PROJ. NO.	SHEET NO.
MO.		130



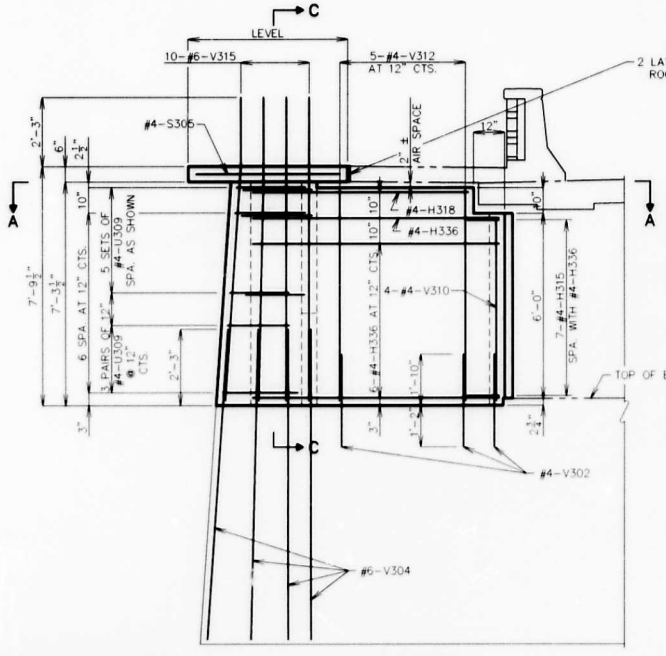
SECTION A-A



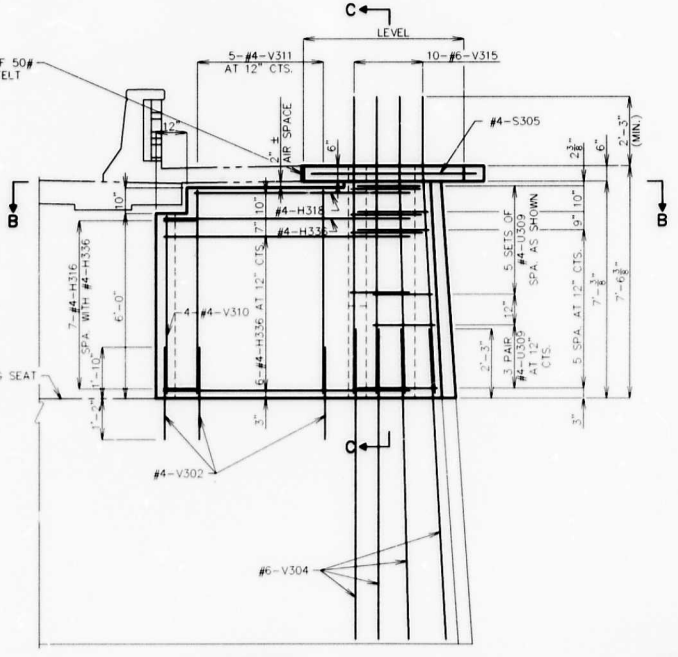
SECTION B-B



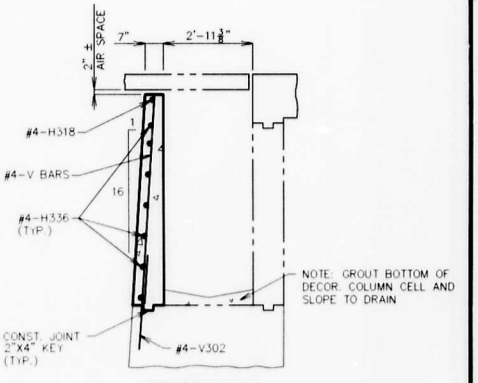
SECTION C-C



ELEVATION NORTH WING



ELEVATION SOUTH WING



SECTION D-D

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 ORNAMENTAL COLUMN

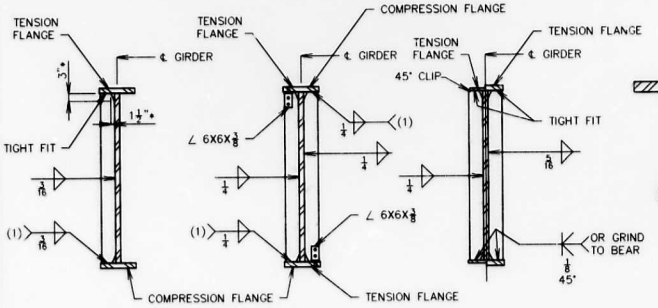
SHEET NO. 19 OF 50

A-5180

FOR INFORMATION ONLY

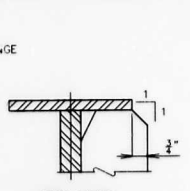
A51801, Sht. 168

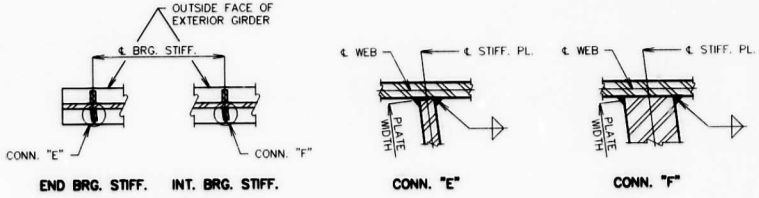
STATE	PROJ. NO.	SHEET NO.
MO.		133



(1) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.

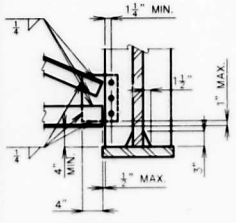
* TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF.

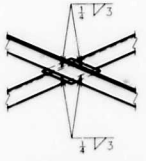


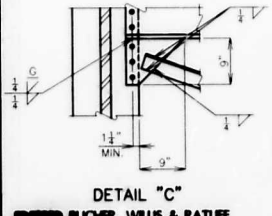


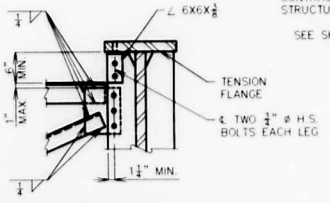
TYPICAL LOCATION DETAILS

WELDING DETAILS









NOTES:

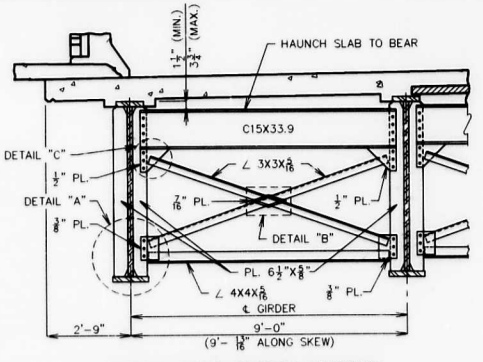
END DIAPHRAGMS, CROSS FRAMES AND INTERMEDIATE DIAPHRAGMS USE ¾" HIGH STRENGTH BOLTS.

PAYMENT FOR LUMINAIRE MOUNTING BRACKETS AND MOUNTING PLATE IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

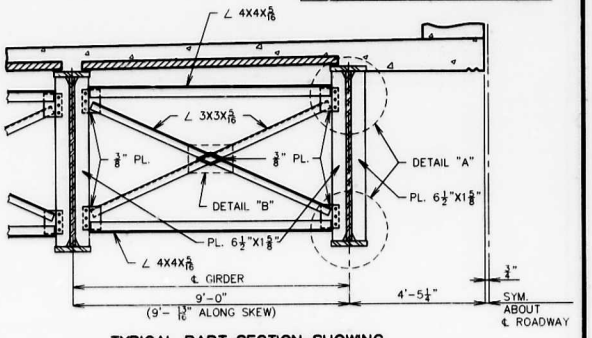
AT THE CONTRACTORS OPTION, HOLES IN THE DIAPHRAGM PLATE OF NON SLAB BEARING DIAPHRAGMS MAY BE MADE 3/16" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT. A HARDENED WASHER MAY BE USED UNDER THE BOLT HEAD AND NUT WHEN THIS OPTION IS USED. HOLES IN THE GIRDER DIAPHRAGM CONNECTION PLATE OR TRANSVERSE WEB STIFFENER SHALL BE STANDARD SIZE.

THE COST OF FURNISHING, FABRICATING AND INNSTALLING THE LUMINAIRE MOUNTING BRACKET, COMPLETE-IN-PLACE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR CONDUIT SYSTEM ON STRUCTURE.

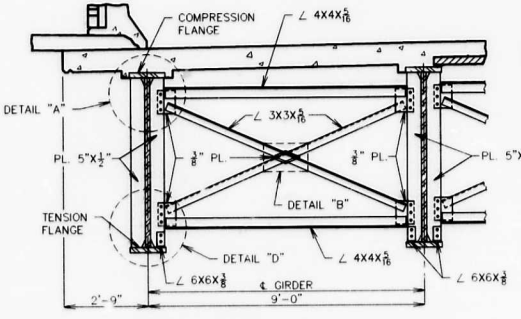
SEE SHEET NO. 21 FOR LOCATION OF SECTION H-H.



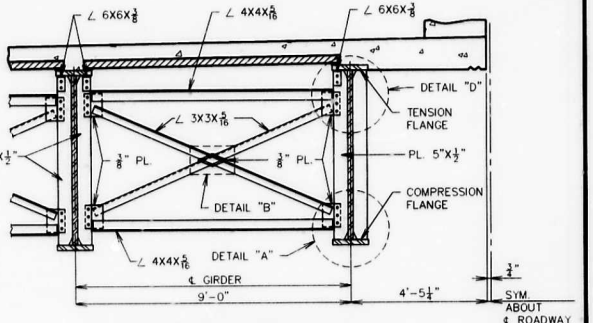
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



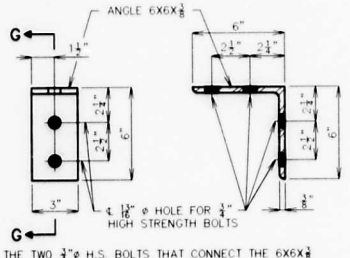
TYPICAL PART SECTION SHOWING CROSS FRAMES



TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS BOTTOM FLANGE IN TENSION



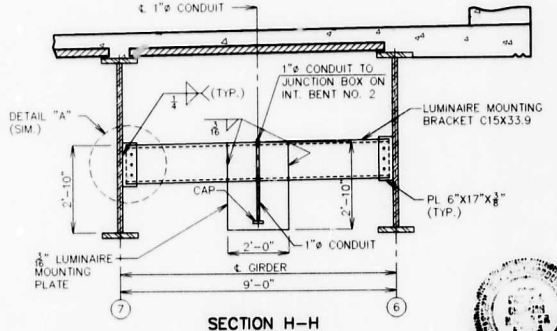
TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS TOP FLANGE IN TENSION



THE TWO ¾"ø H.S. BOLTS THAT CONNECT THE 6X6X⅜ ANGLE TO THE TOP FLANGE SHALL BE PLACED SO THE NUT IS ON THE INSIDE OF FLANGE TOWARD THE WEB.

DETAIL OF FLANGE CONNECTION ANGLE

SECTION G-G



SECTION H-H

JACKSON COUNTY

DETAILS OF CROSS FRAMES AND DIAPHRAGMS

SHEET NO. 22 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

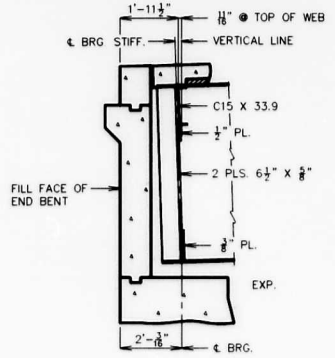
DRAWN BY:	KLW	4/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

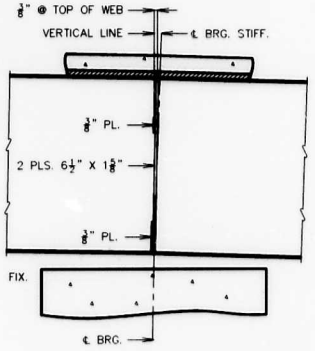
FOR INFORMATION ONLY

A51801, Sht. 169

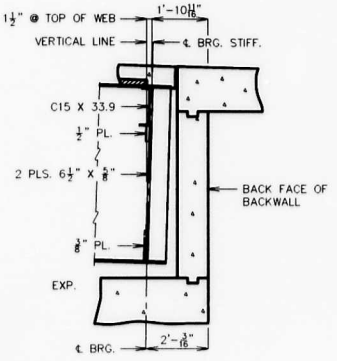
STATE	PROJ. NO.	SHEET NO.
MO.		134



①

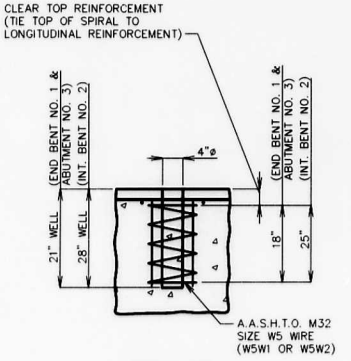


②

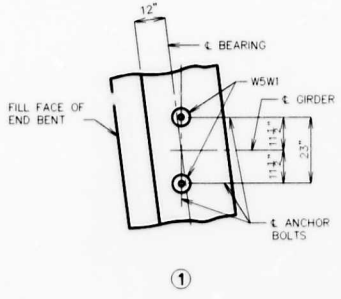


③

PART LONGITUDINAL SECTION
(NEAR INTERIOR GIRDER)



DETAIL OF ANCHOR BOLT WELLS



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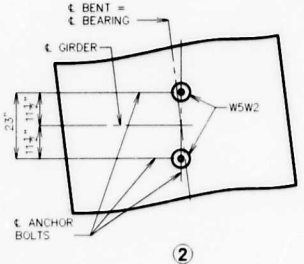

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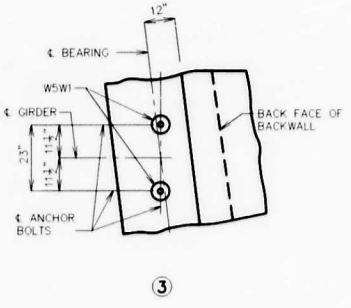
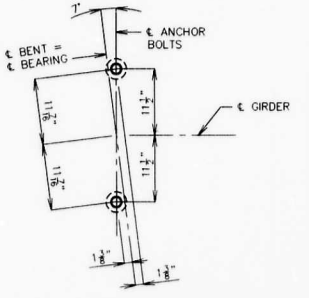


③

PART PLAN OF ANCHOR BOLTS



ANCHOR BOLT LOCATION DETAIL

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

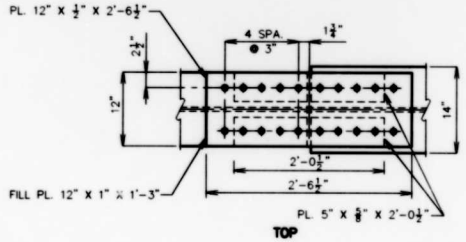
JACKSON COUNTY

MISCELLANEOUS DETAILS OF STRUCTURAL STEEL

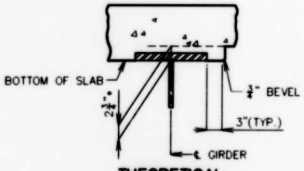
SHEET NO. 23 OF 50

A-5180

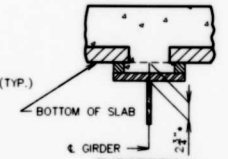
STATE	PROJ. NO.	SHEET NO.
MO.		



TOP

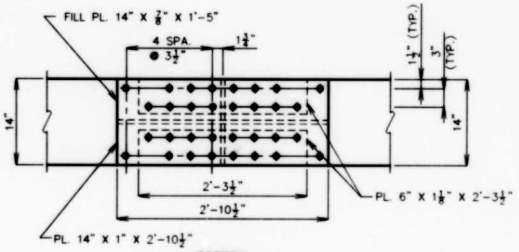


THEORETICAL SLAB HAUNCH
(C.I.P. SECTION)



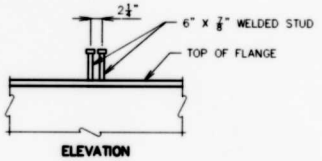
THEORETICAL SLAB HAUNCH
(P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

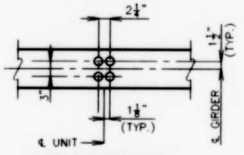


BOTTOM

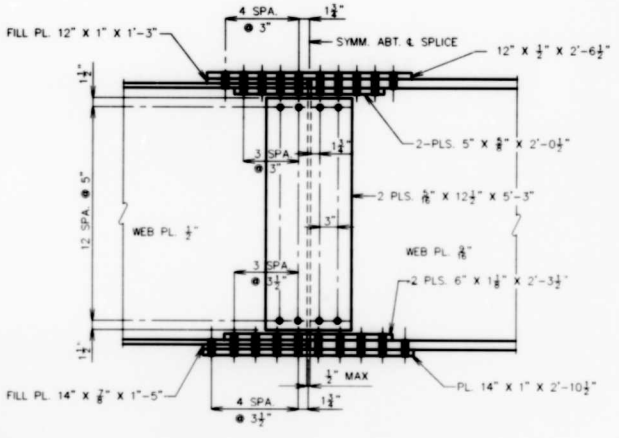
PLAN OF FLANGE



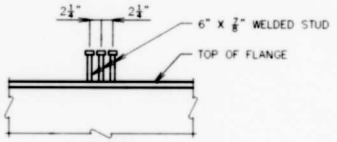
ELEVATION



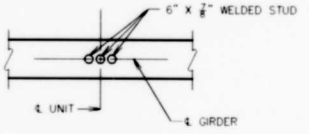
PLAN OF STUD CONN.
(4 STUDS PER UNIT)



DETAIL OF BOLTED FIELD SPLICE
NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 15/16"ø REAMED HOLES



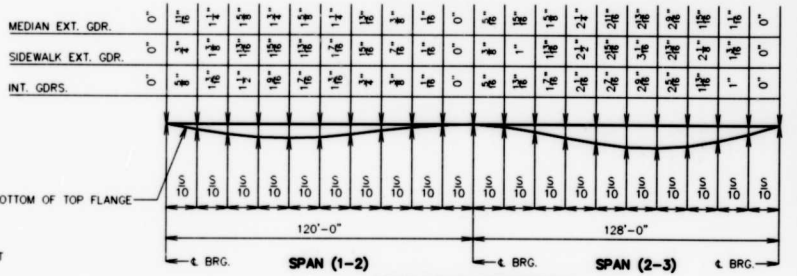
ELEVATION



PLAN OF STUD CONN.
(3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)



DEAD LOAD DEFLECTION
NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.

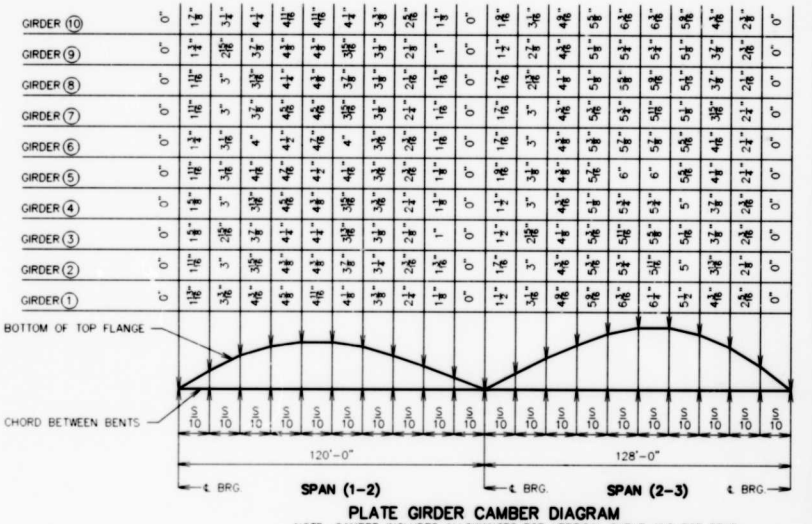


PLATE GIRDER CAMBER DIAGRAM
NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

⚠ ADDED FIELD SPLICE 3 GIRDER TO 15 SIMILAR. NO FILL PLATES REQUIRED.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

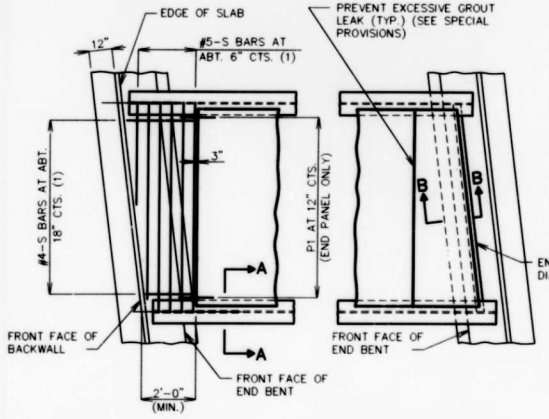
JACKSON COUNTY

CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

SHEET NO. 24 OF 50

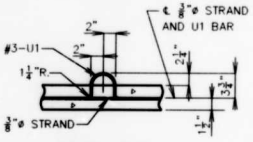
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		138

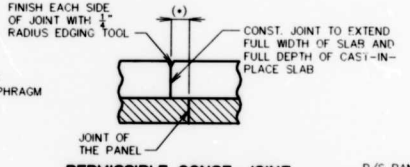


PANELS – SQUARED ENDS **PANELS – SKEWED ENDS**

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

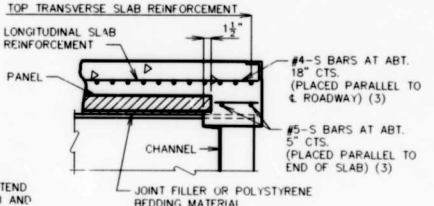


DETAIL "A"

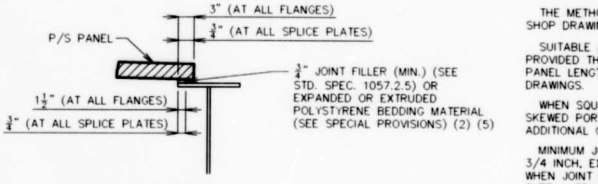


PERMISSIBLE CONST. JOINT

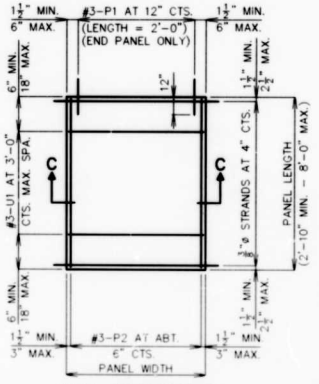
(•) ADJUST THE PERMISSIBLE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE JOINTS OF THE PANELS.



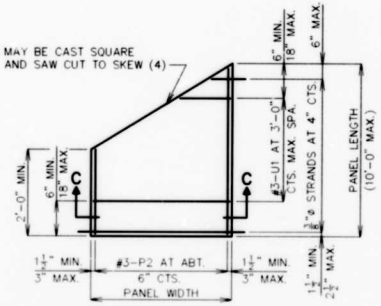
PART SECTION B–B



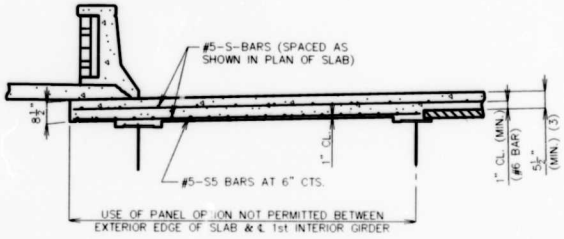
SECTION A–A



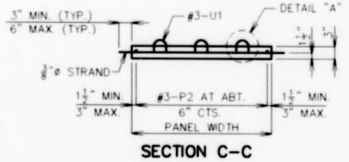
PLAN OF PRECAST PRESTRESSED PANEL



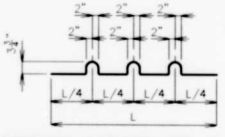
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END OPTIONAL)



SECTION THRU CANTILEVER AND EXTERIOR GIRDER BAY



SECTION C–C



BENDING DIAGRAM FOR U1 BAR

(U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.)

NOTES:

(1) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY. COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(2) ADJUSTMENT IN T'E SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE % OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

(3) S-BARS SHOWN ARE USED WITH SKEWED END PANELS ONLY. THE #5-S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES. S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(4) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATOR'S OPTION.

(5) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1-1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 24 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'C = 5,000 PSI, F'CI = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7), LOW-RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMAL ULTIMATE STRENGTH = 22,950 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/4 INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN 1/2 INCH THICK OVER A SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT THE SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

IF UI BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, UI LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P3 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2FT.

THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8"ø STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
#3-P2 BARS AT 16 INCHES.
WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 INCHES.

TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR TO THE WELDED DEFORMED BAR MATS AT ABOUT 3'-0" CENTERS.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	4/93
TRACED BY:	RCC	4/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

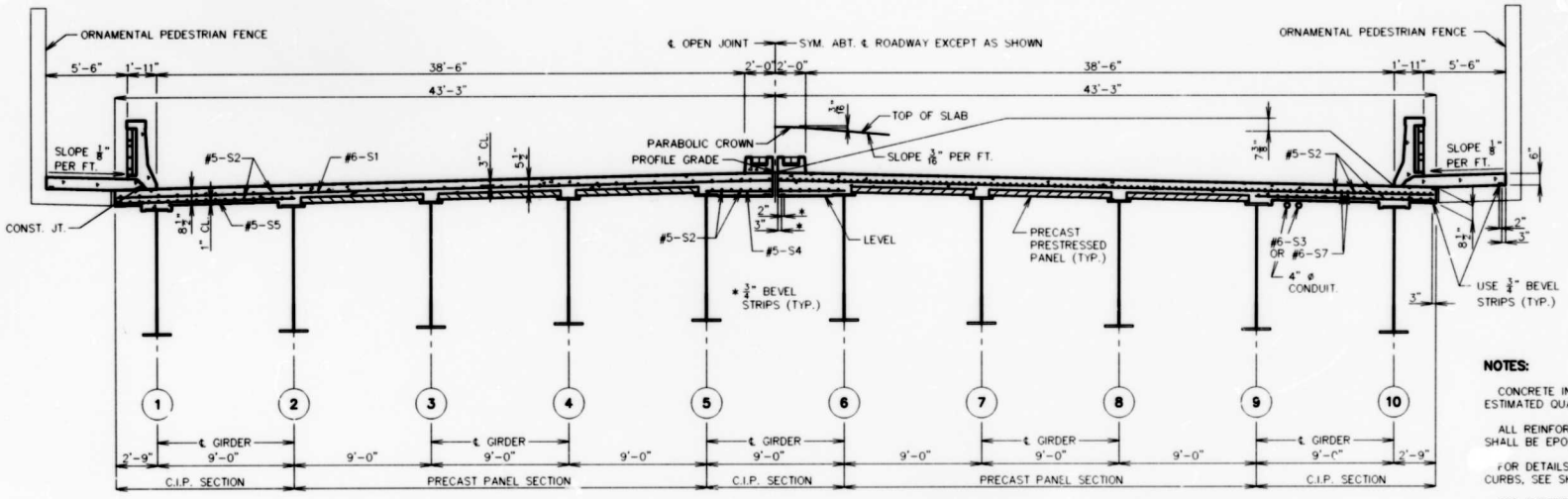
JACKSON COUNTY

DETAILS OF PRECAST PRESTRESSED PANELS

SHEET NO. 27 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		157



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INTERMEDIATE BENT

NOTES:

CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON STEEL.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURBS, SEE SHEET NO. 34.

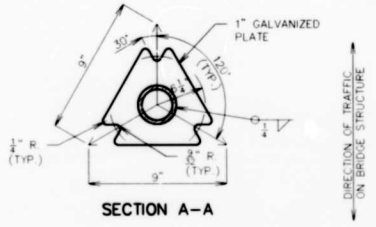
FOR THEORETICAL SLAB HAUNCH AND DEAD LOAD DEFLECTION DIAGRAM, SEE SHEET NO. 24.

FOR DETAILS OF BRIDGE SIDEWALK SEE SHEETS NO. 31 & 32.

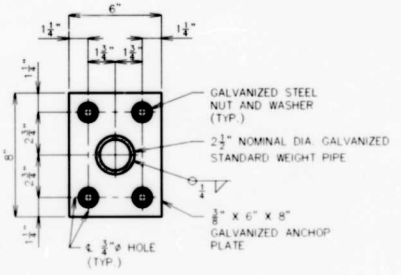
FOR DETAILS OF PRECAST PRESTRESSED PANELS, SEE SHEET NO. 27.

FOR DETAILS AND REINFORCEMENT OF RAISED MEDIAN SEE SHEET NO. 33.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE, SEE SHEETS NO. 42-45.



SECTION A-A



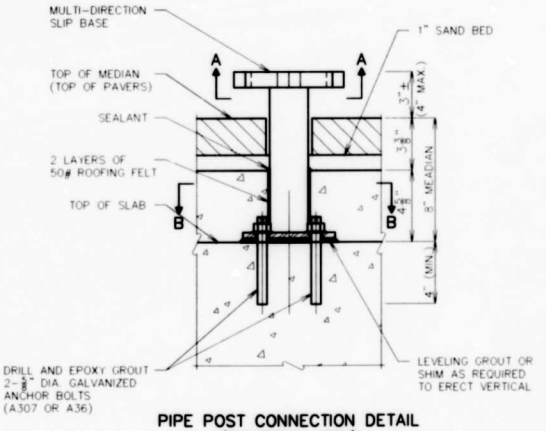
SECTION B-B

NOTES:

SEE MISSOURI STANDARD PLANS DRAWING 903.03AQ FOR GENERAL NOTES AND DETAILS OF PIPE POST CONNECTION FOR HIGHWAY SIGNING.

WRAP PORTION OF POST TO BE EMBEDDED IN CONCRETE MEDIAN WITH 2 LAYERS OF 50# ROOFING FELT. CAULK PERIMETER OF POST AT INTERFACE BETWEEN C.I.P. CONCRETE MEDIAN AND SAND BED.

SEE SHEET NO. 33 FOR PIPE POST CONNECTION LOCATIONS.



PIPE POST CONNECTION DETAIL (ROADWAY ITEM)

3-27-95

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DRAWN BY:	DJC	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

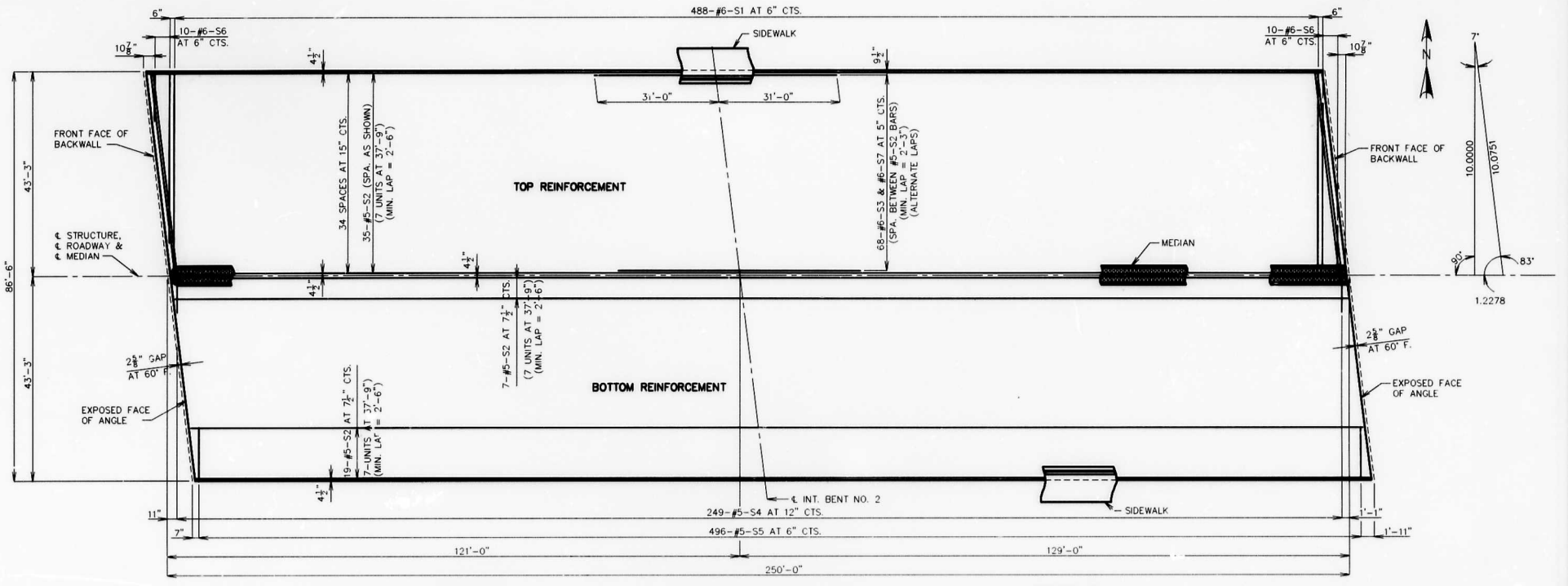
DETAILS OF SLAB CROSS SECTION

SHEET NO. 26 OF 50

A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		130

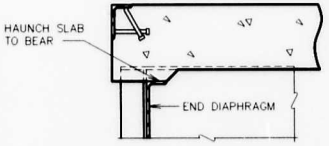


SPAN (1-2) SPAN (2-3)

PLAN OF SLAB SHOWING REINFORCEMENT

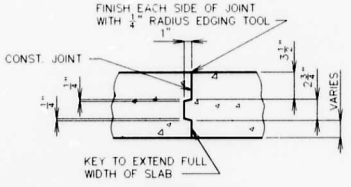
NOTE: LONGITUDINAL DIMENSIONS ARE HORIZONTAL.

LONGITUDINAL REINFORCING STEEL SHALL BE PLACED SO THAT ENDS SHALL NOT BE MORE THAN 1"± FROM VERTICAL LEG OF ANGLE AT EXPANSION DEVICE.

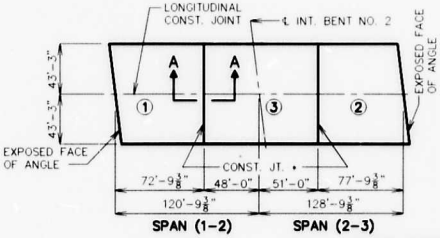


PART LONGITUDINAL SECTION AT END OF SLAB

SECTION CUT THROUGH CAST-IN-PLACE SLAB FOR PART LONGITUDINAL SECTION THROUGH PRECAST PANEL SEE SHEET NO. 27.



SECTION A-A



SPAN (1-2) SPAN (2-3)

	SEQUENCE OF POURS			MIN. RATE OF POUR CU. YDS./HR.
	DIRECTION			WITH RETARDER
BASIC SEQUENCE	1	2	3	25
	EITHER DIRECTION			
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.				
ALTERNATE "A" POURS	1		3 + 2	45
	END TO 3		1 TO END	
ALTERNATE "B" POURS	1 + 3 + 2			45
	END TO END			

SLAB POURING SEQUENCE

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

* FOR DETAIL OF CONSTRUCTION JOINT AT PRESTRESSED PANELS SEE SHEET NO. 27.

3-27-95

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DRAWN BY:	DMA	4/93
TRACED BY:	RCC	4/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

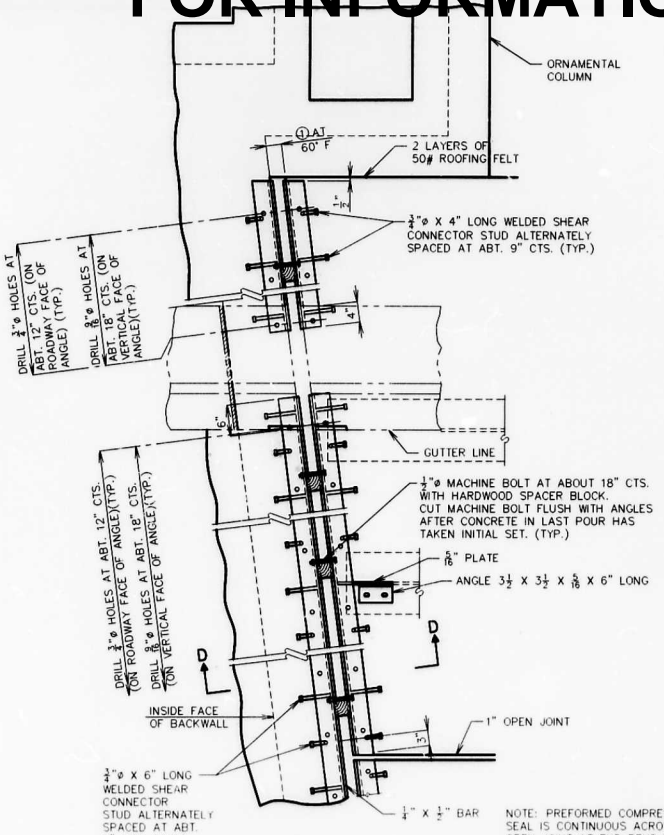
JACKSON COUNTY

DETAILS OF SLAB PLAN

SHEET NO. 25 OF 50

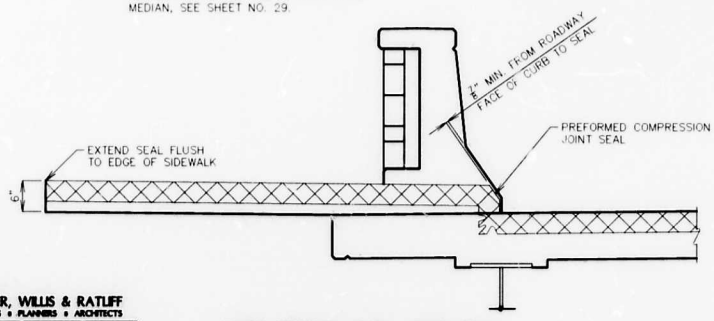
A-5180

STATE	PROJ. NO.	SHEET NO.
NO.		139

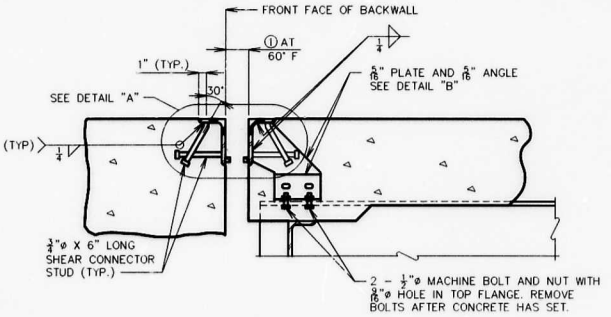


PART PLAN AT END BENT NO. 1 (ABUTMENT NO. 3 SIMILAR)

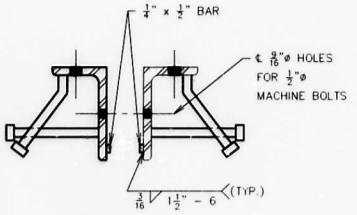
FOR DETAILS OF EXPANSION JOINT THRU MEDIAN, SEE SHEET NO. 29.



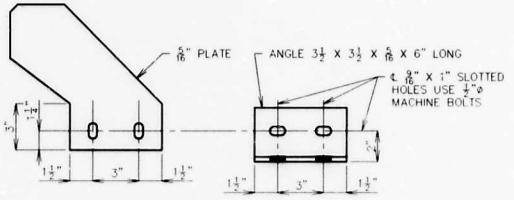
PART SECTION THRU JOINT SEAL



PART SECTION D-D



DETAIL "A"



DETAIL "B"

GENERAL NOTES:

STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN ONE SECTION, EXCEPT THAT WHEN THE LENGTH IS OVER 50', SPLICING IS PERMISSABLE.

THE EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.

STRUCTURAL STEEL FOR THE ARMORED JOINT SHALL BE GRADE A36.

ANCHORS FOR COMPRESSION SEAL ARMOR SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

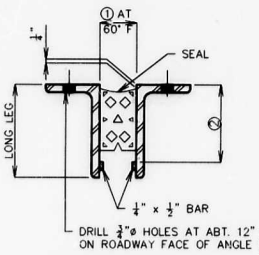
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F.

DIMENSION ① SHALL BE INCREASED ⅛" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED ⅛" FOR EACH 10° RISE IN TEMPERATURE AT INSTALLATION.

SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PREFORMED EXPANSION JOINT SEAL.

NEOPRENE EXTRUSIONS SHALL MEET A.S.T.M. D3542-83.



PART CROSS SECTION THRU EXPANSION JOINT

TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS				
LOCATION	SEAL WIDTH	①	②	REQUIRED MOVEMENT RANGE
BENT NO. 1	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"
ABUTMENT NO. 3	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"

NOTE: DEPTH OF SEAL SHALL NOT BE LESS THAN WIDTH OF SEAL.

SIZE OF ARMOR JOINT

VERTICAL LEG OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL +1½". VERTICAL LEG OF ANGLE IN SIDEWALK SHALL BE A MAXIMUM OF 6" HORIZONTAL LEG OF ANGLE SHALL BE A MINIMUM OF 3". MINIMUM THICKNESS OF ANGLE SHALL BE ½".

IF A SEAL SIZE LARGER THAN THAT INDICATED ON THE PLANS IS USED, THE MOVEMENT RANGE, THE OPENING AT 60° F AND ALL DIMENSIONS FOR THE ARMOR ANGLES SHALL BE SHOWN ON THE SHOP DRAWINGS.

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DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

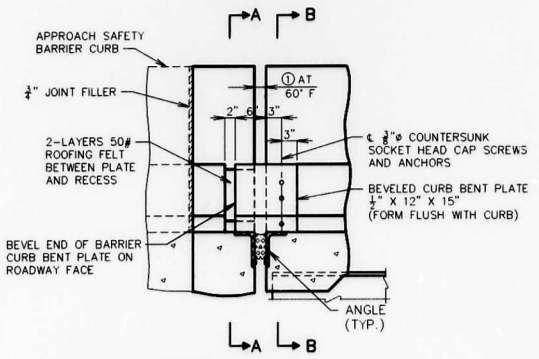
JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL

SHEET NO. 28 OF 50

A-5180

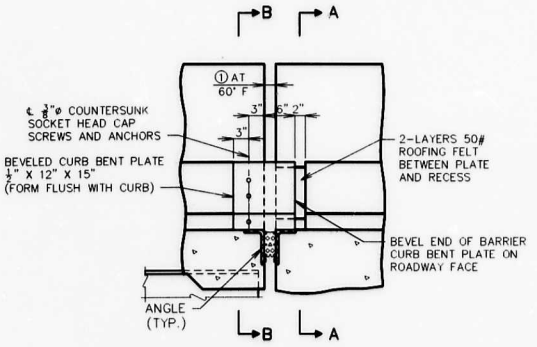
STATE	PROJ. NO.	SHEET NO.
MO.		140



PART ELEVATION OF BARRIER CURB AT END BENT NO. 1

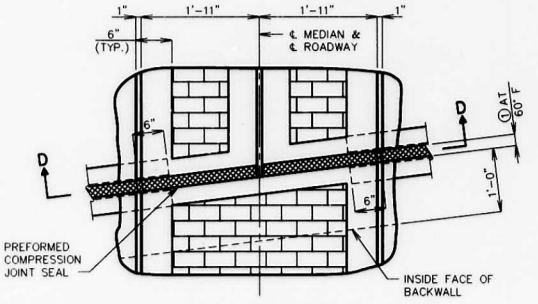
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR

SEE SHEET NO. 26 FOR DIMENSION ①.

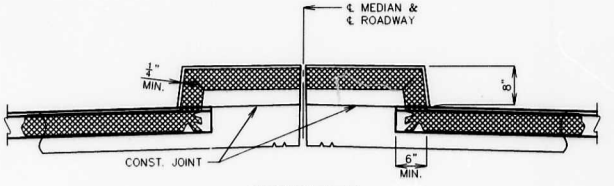


PART ELEVATION OF BARRIER CURB AT ABUTMENT NO. 3

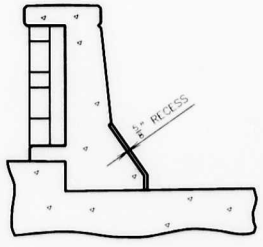
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR



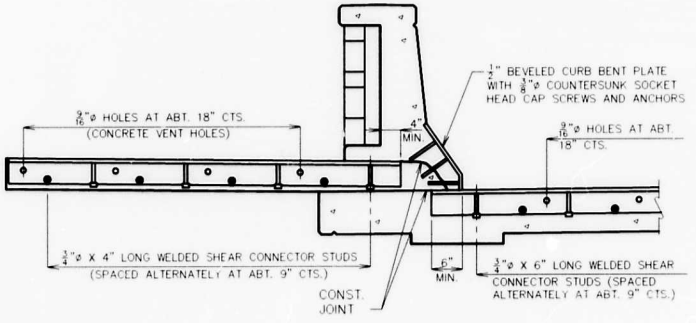
PART PLAN OF JOINT SEAL THRU MEDIAN AT ABUTMENT NO. 3



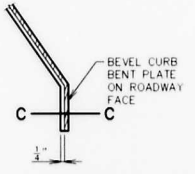
SECTION D-D



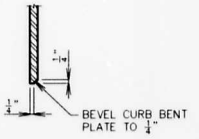
PART SECTION A-A



PART SECTION B-B



PART ELEVATION AT END OF BEVELED CURB BENT PLATE



SECTION C-C

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AND BENT CURB PLATES

SHEET NO. 29 OF 50

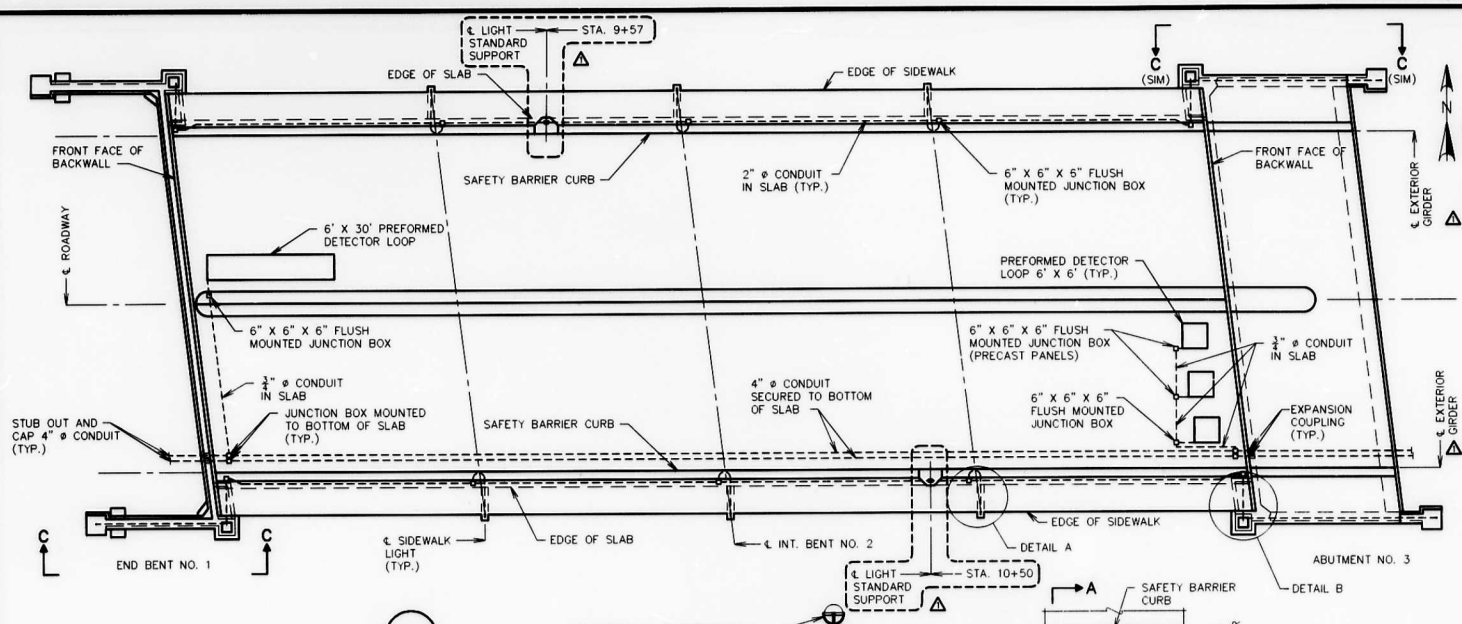
A-5180

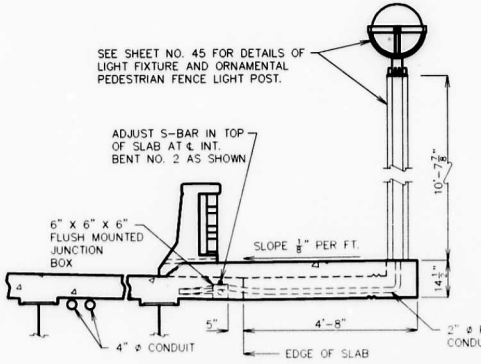
3-27-95

FOR INFORMATION ONLY

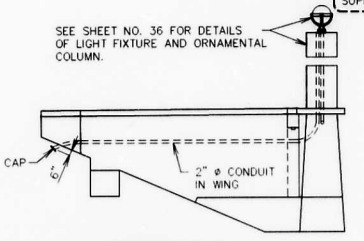
A51801, Sht. 176

STATE	PROJ. NO.	SHEET NO.
MO.		161

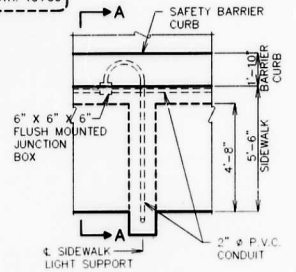




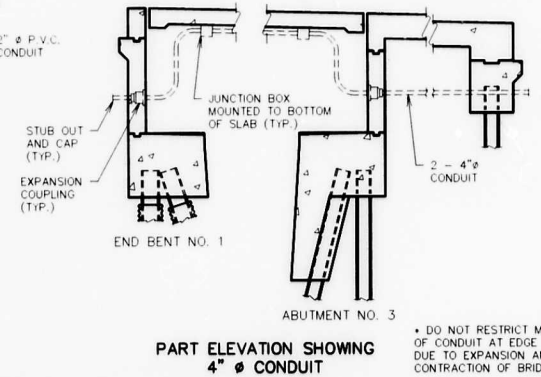
SECTION A-A



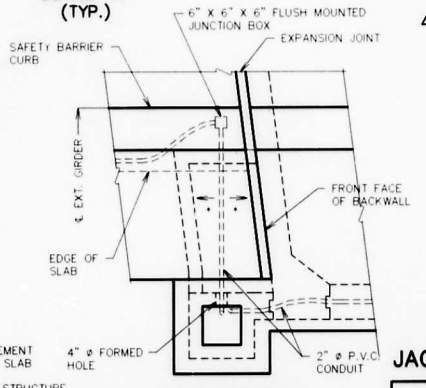
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN ETHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS.

⚠ CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

DANIEL L. CHAPMAN NUMBER E-23644 — 11-2-95

BUCHER, WILLIS & RATLIFF ENGINEERS : PLANNERS : ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

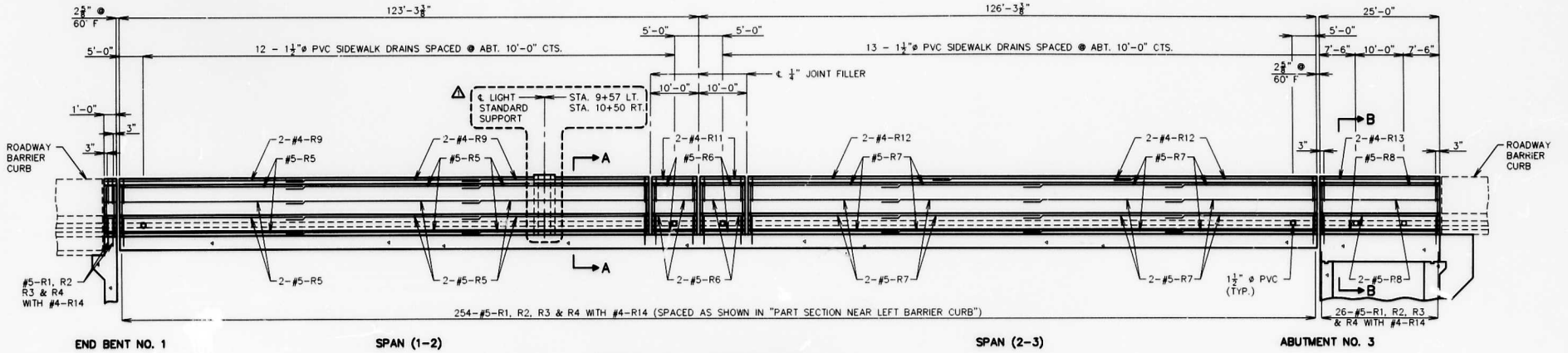
JACKSON COUNTY

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

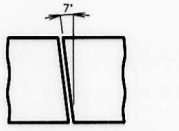
STATE	PROJ. NO.	SHEET NO.
MO.		165



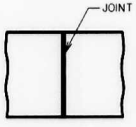
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

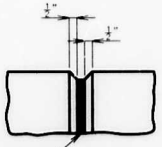


AT 2⅝" EXPANSION JOINT

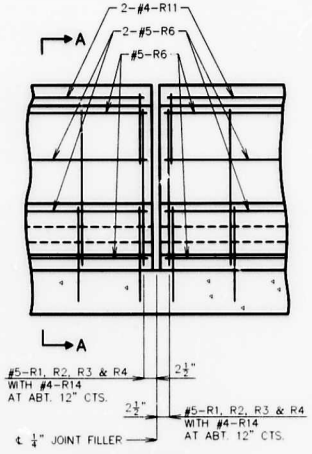


AT ¼" JOINT

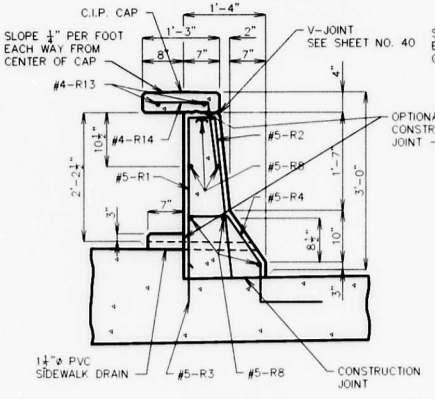
PART PLAN VIEW



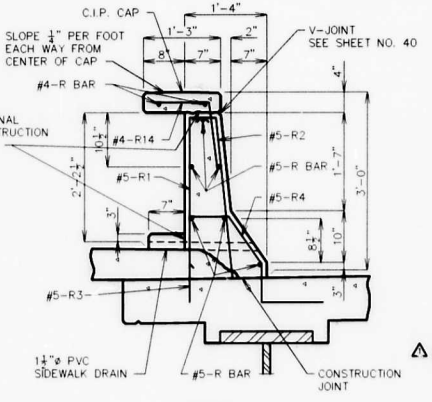
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

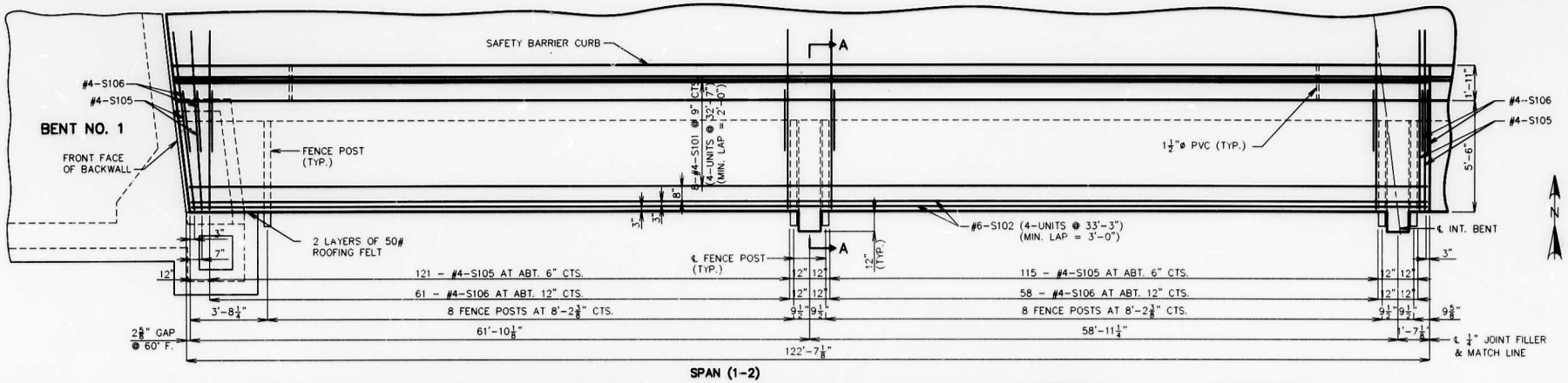
JACKSON COUNTY

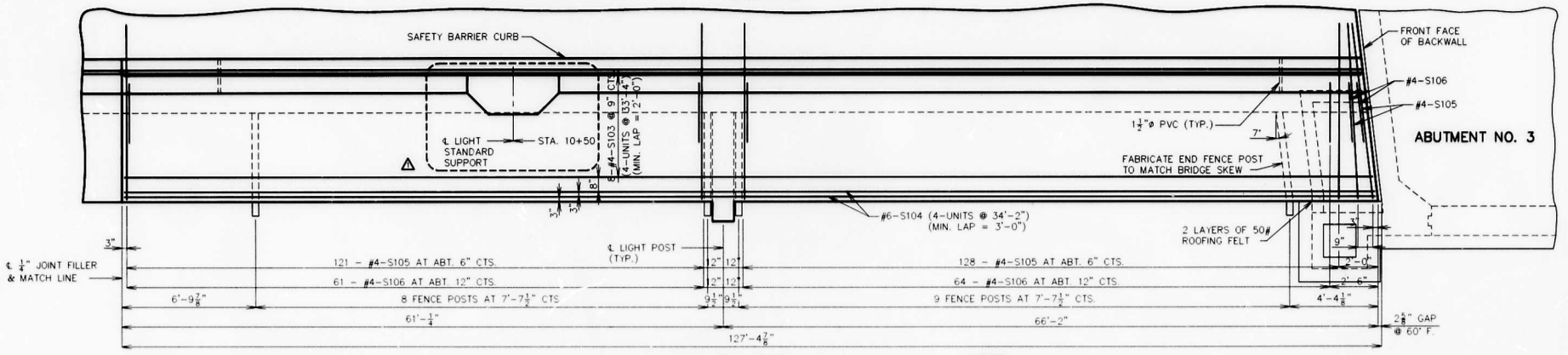
DETAILS OF SAFETY BARRIER CURB

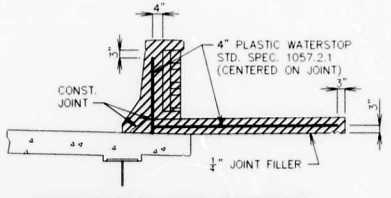
SHEET NO. 34 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		143





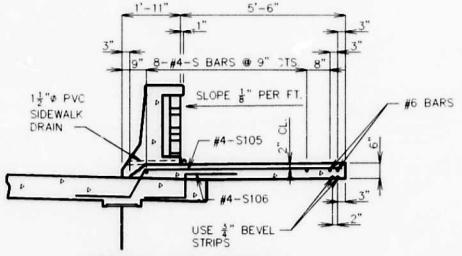


DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.

PLAN OF RIGHT SIDEWALK



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

STATE OF MISSOURI — DANIEL A. CAMPBELL — NUMBER E-23044 — REGISTERED ENGINEER — 11-7-95

JACKSON COUNTY

DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 32 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

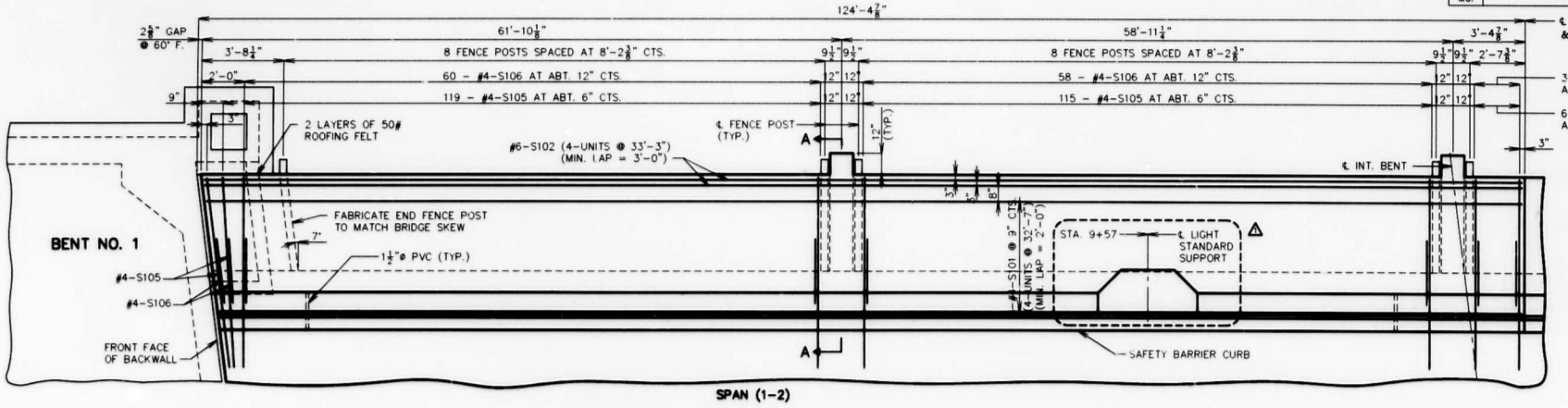
DRAWN BY:	DMA 3/95
TRACED BY:	TWM 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

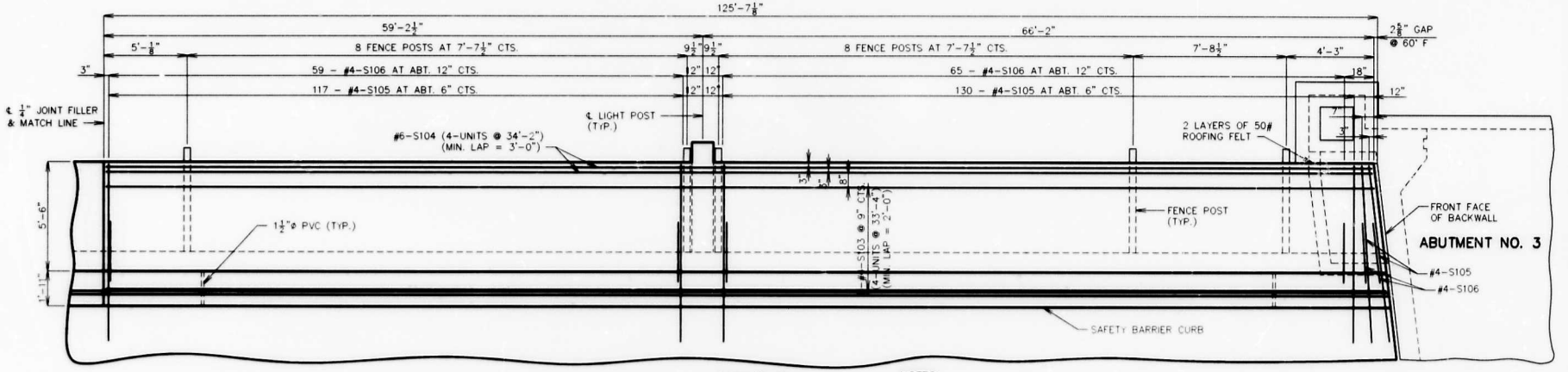
⚠ REVISED 10-26-95

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		142

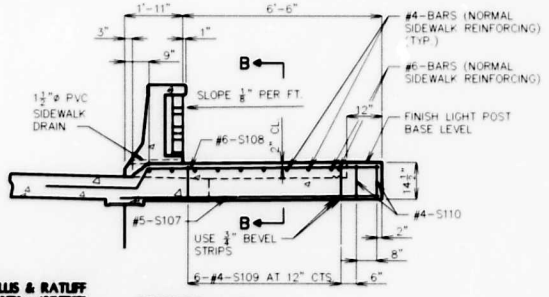


SPAN (1-2)

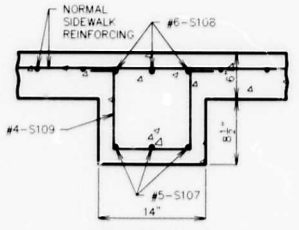


SPAN (2-3)

PLAN OF LEFT SIDEWALK



SECTION A-A



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A 1/4" RADIUS OR A 3/4" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95	
TRACED BY:	RCC 3/95	
CHECKED BY:	DJM 3/95	

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

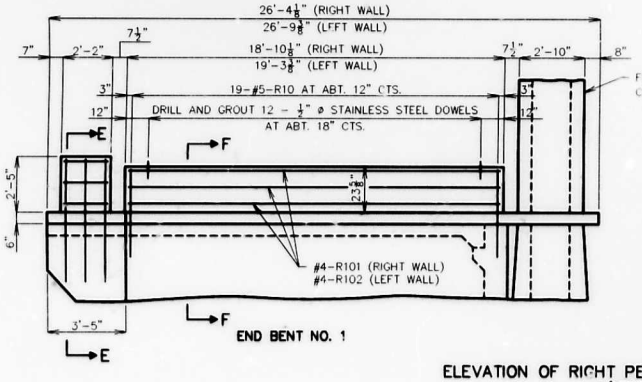
SHEET NO. 31 OF 50

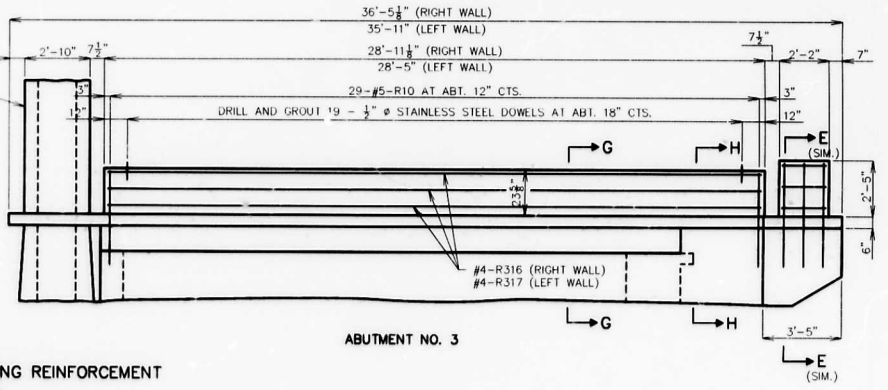
A-5180

FOR INFORMATION ONLY

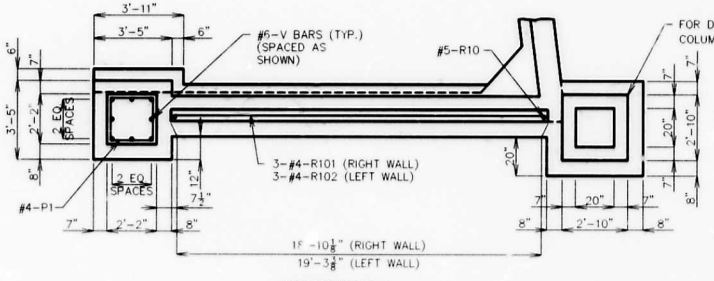
A51801, Sht. 180

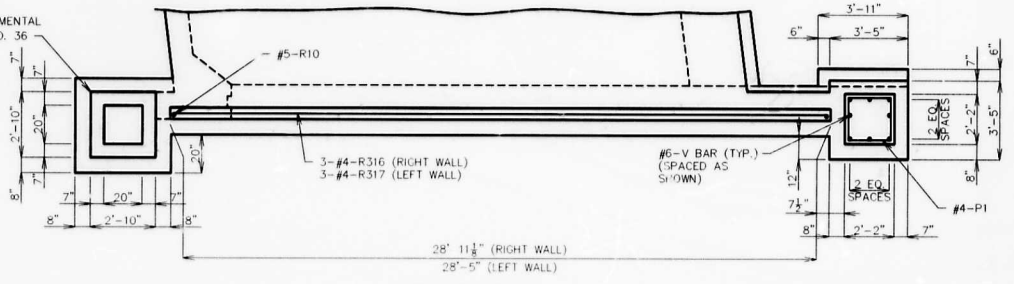
STATE	PROJ. NO.	SHEET NO.
MO.		146



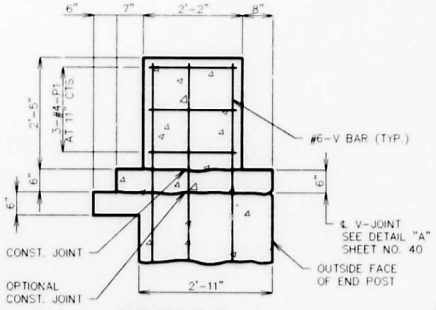


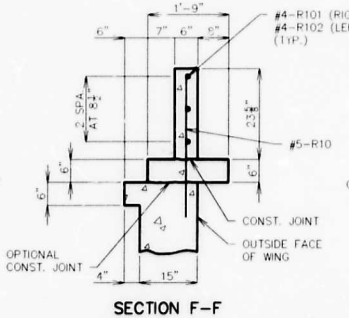
ELEVATION OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)

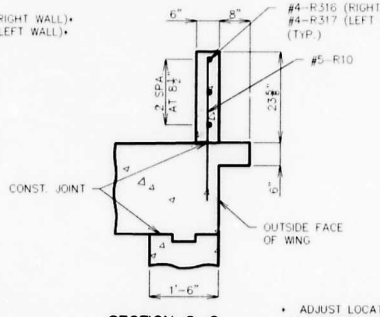


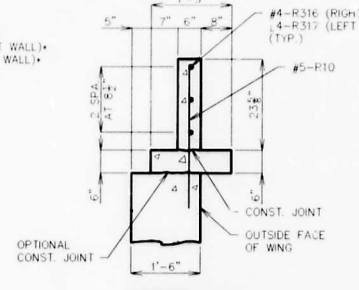


PLAN OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)









NOTES:

FOR DETAILS OF PRECAST CONCRETE CAP, STONE VENEER AND HANDRAIL, SEE SHEET NO. 41.

CONCRETE FOR PEDESTRIAN WALLS AND END POSTS SHALL BE INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

REINFORCING STEEL IN PEDESTRIAN WALLS AND END POSTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

• ADJUST LOCATION OF HORIZONTAL RESTEEL AS REQUIRED TO CLEAR SLEEVE FOR HANDRAIL POST, SEE SHEET NO. 41.

3-27-95

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

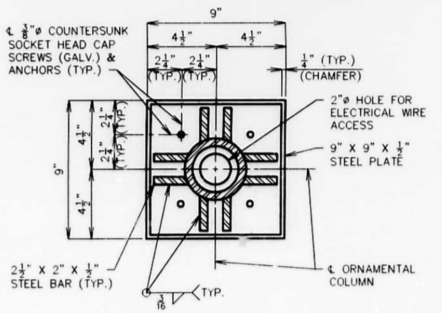
JACKSON COUNTY

DETAILS OF PEDESTRIAN WALLS AND END POST

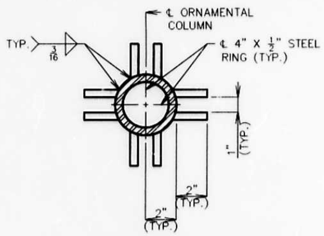
SHEET NO. 35 OF 50

A-5180

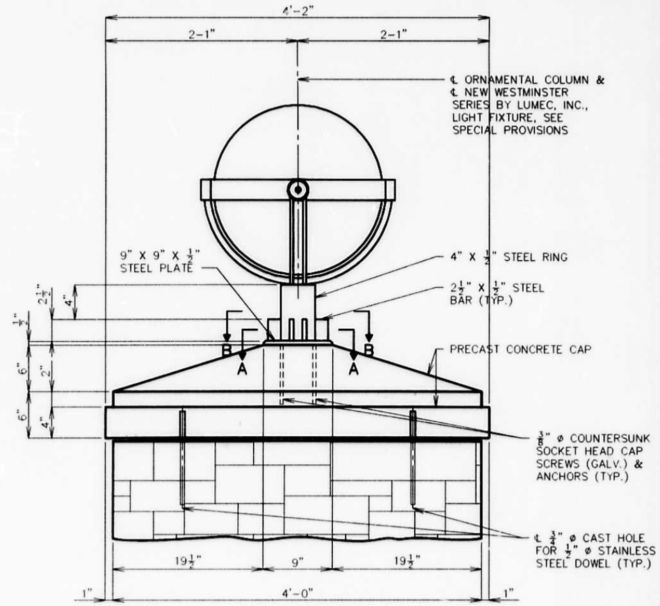
STATE	PROJ. NO.	SHEET NO.
MO.		147



SECTION A–A

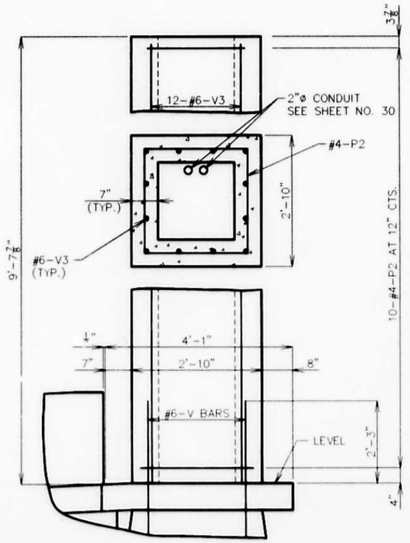


SECTION B–B

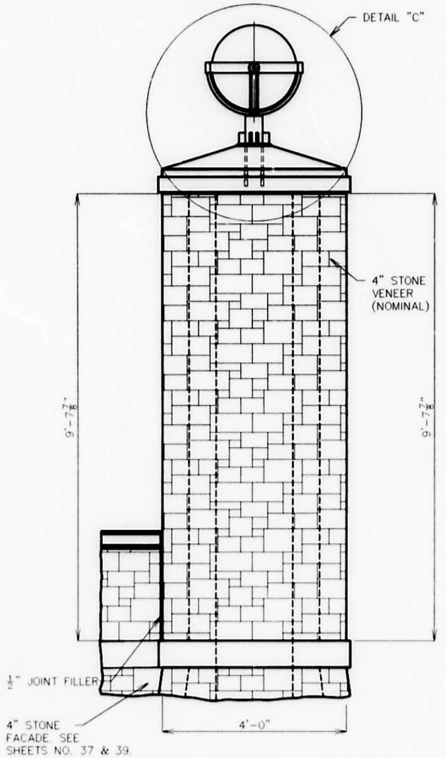


DETAIL "C"

PROVIDE FOR ELECTRICAL WIRE THROUGH PRECAST CONCRETE CAP.



ELEVATION OF ORNAMENTAL COLUMN SHOWING REINFORCEMENT



ELEVATION OF ORNAMENTAL COLUMN SHOWING STONE VENEER

NOTE:

RIGHT COLUMN ON END BENT NO. 1 SHOWN, LEFT COLUMN AND COLUMNS ON ABUTMENT NO. 3 SIMILAR.

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

STRUCTURAL STEEL SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE 3/8" ø COUNTERSUNK SOCKET HEAD CAP SCREWS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

ANCHORS SHALL BE CAST IN PLACE AND SHALL HAVE A CONCRETE PULL OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 4,000 LBS. IN 4,000 PSI CONCRETE.

CONCRETE FOR THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPSTR.).

REINFORCING STEEL IN THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR FURNISHING AND INSTALLING THE PRECAST CONCRETE CAP AND OTHER ACCESSORIES SHALL BE INCLUDED IN THE UNIT PRICE FOR PRECAST CAP ON ORNAMENTAL COLUMN.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

3-27-95

JACKSON COUNTY

DETAILS OF ORNAMENTAL COLUMN

SHEET NO. 36 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		182

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{1}{8}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

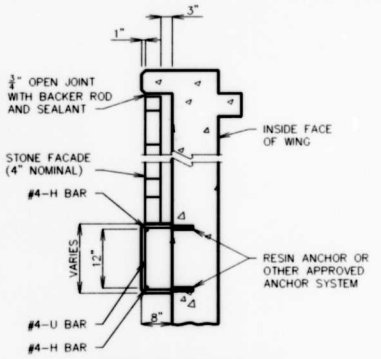
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

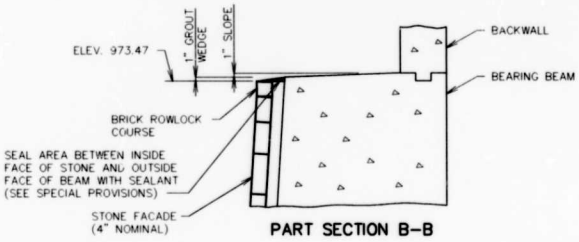
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

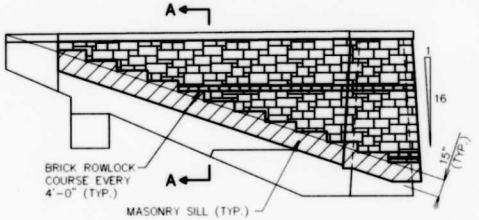


PART SECTION A-A

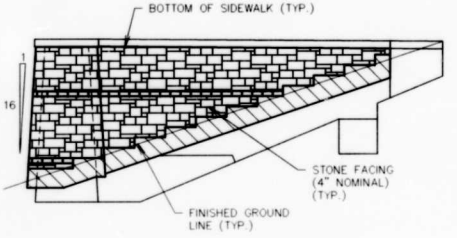
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



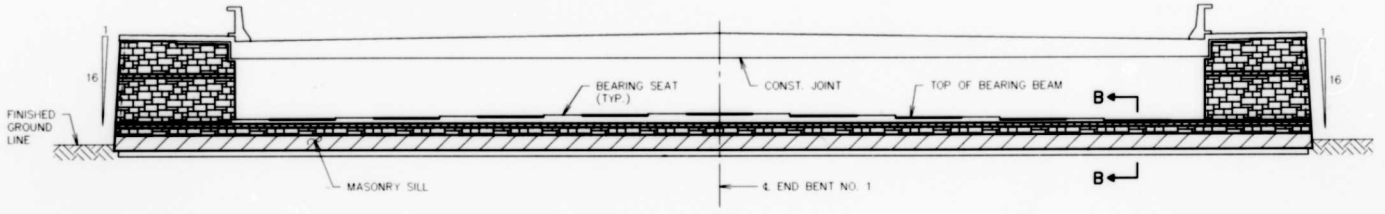
PART SECTION B-B



ELEVATION SOUTH WING



ELEVATION NORTH WING



ELEVATION

7-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

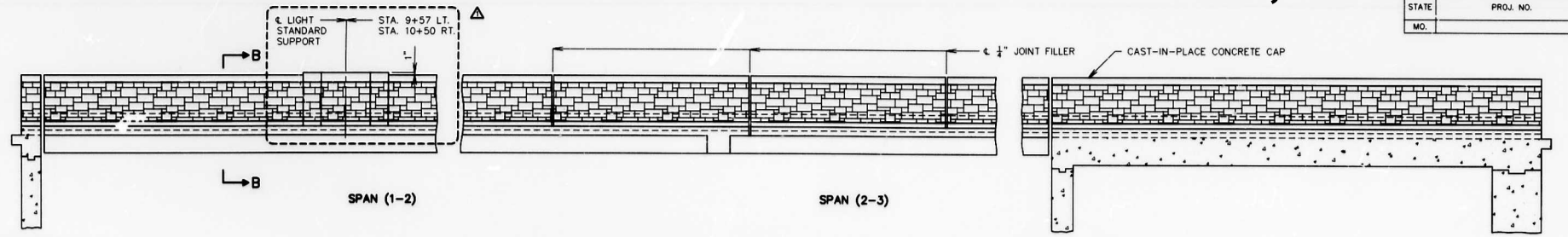
JACKSON COUNTY

DETAILS OF STONE FACADE ON END BENT NO. 1

SHEET NO. 37 OF 50

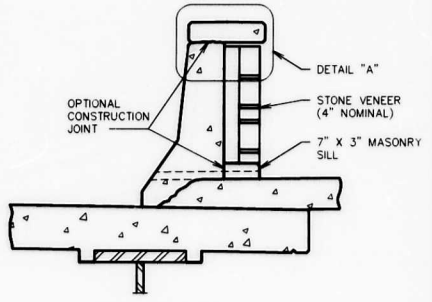
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		151

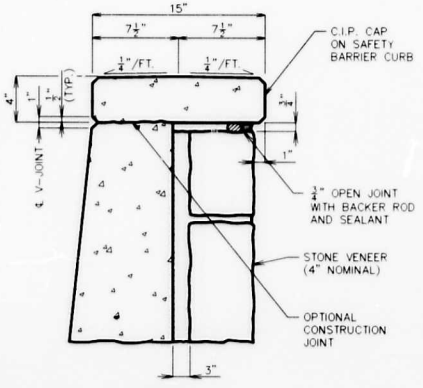


ELEVATION OF RIGHT SAFETY BARRIER CURB

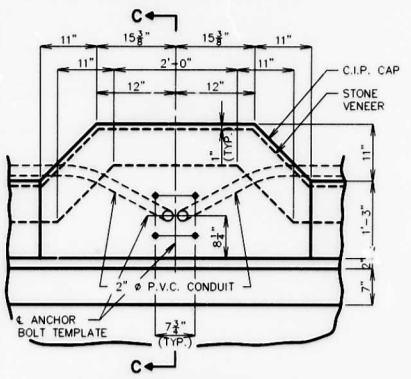
(LEFT CURB IS SIMILAR)



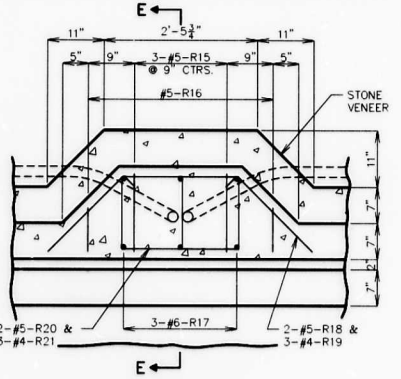
PART SECTION B-B



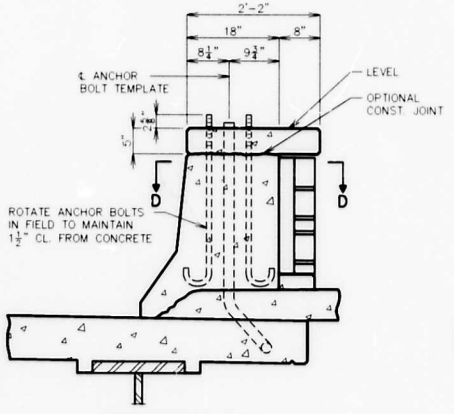
DETAIL "A"



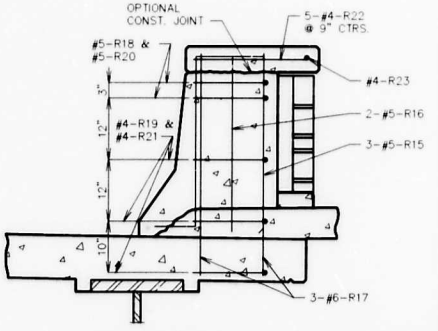
LIGHT STANDARD SUPPORT PLAN



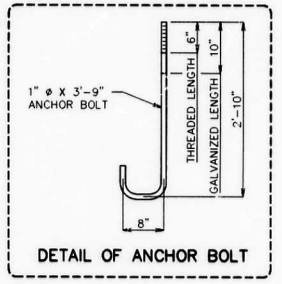
SECTION D-D



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		150

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

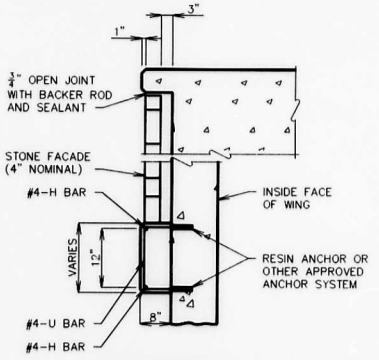
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

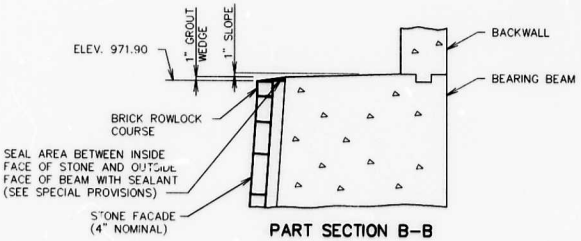
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

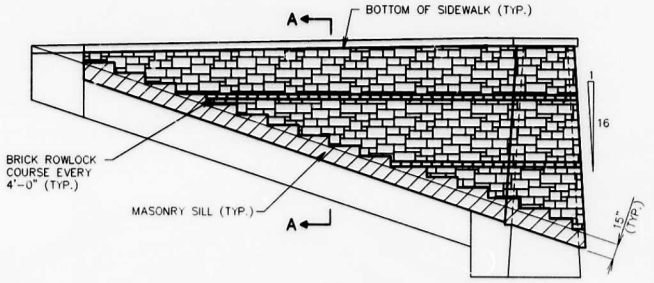


PART SECTION A-A

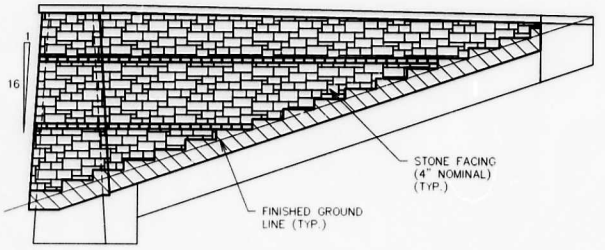
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



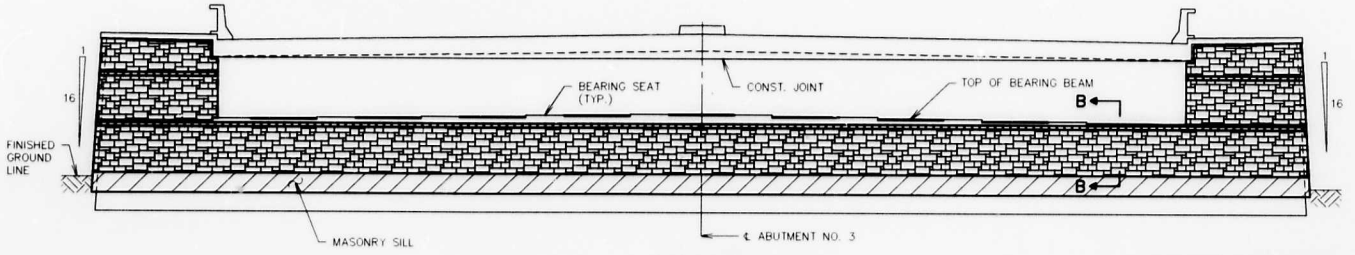
PART SECTION B-B



ELEVATION NORTH WING



ELEVATION SOUTH WING



ELEVATION

3-21-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

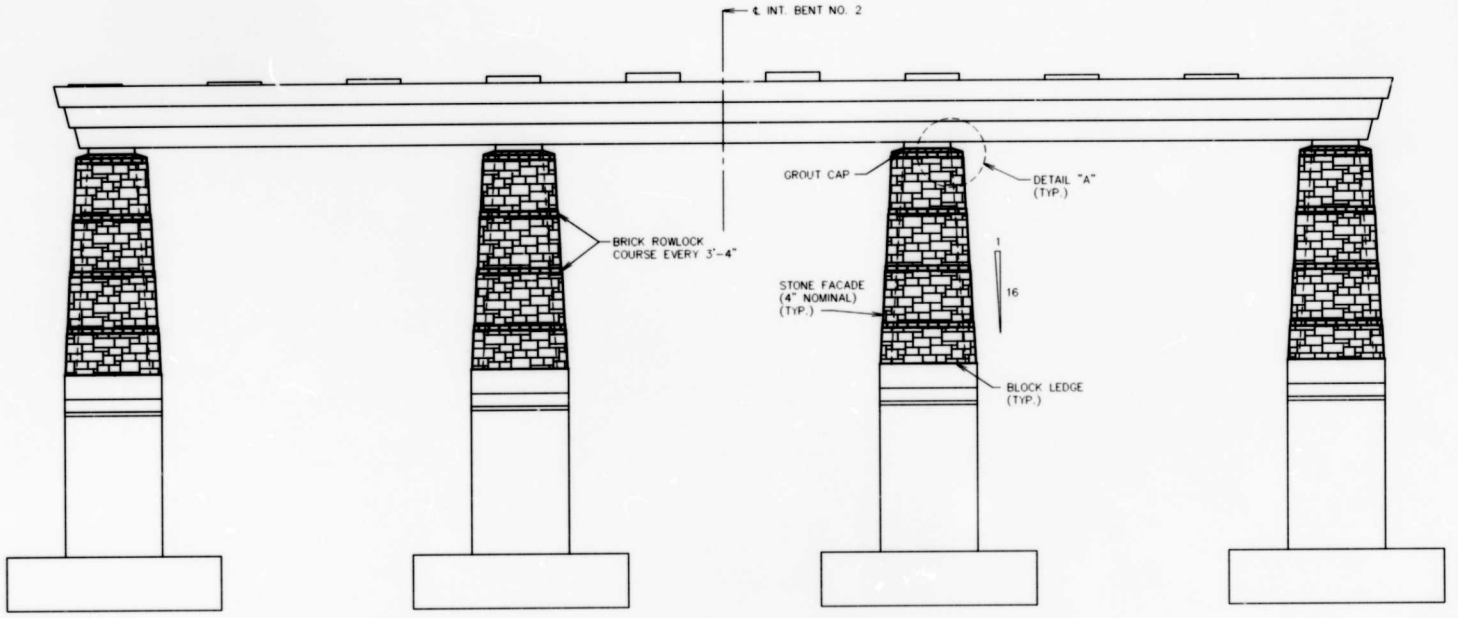
JACKSON COUNTY

DETAILS OF STONE FACADE ON ABUTMENT NO. 3

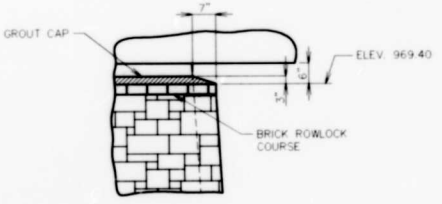
SHEET NO. 39 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		139



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

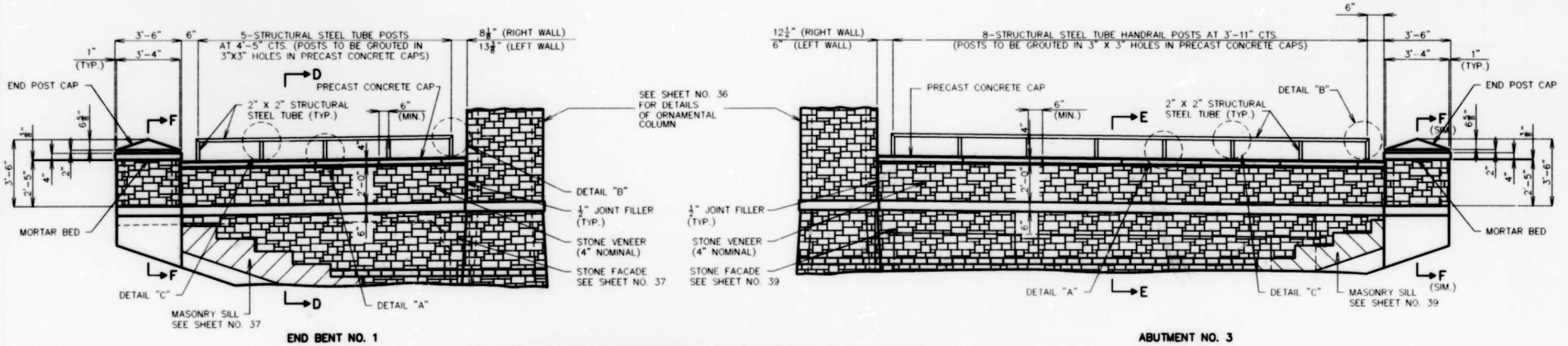
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

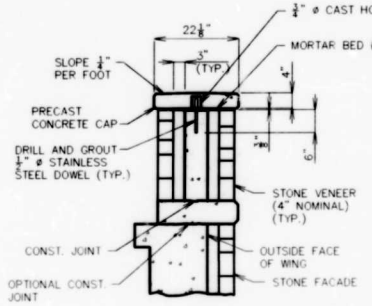
DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

SHEET NO. 38 OF 50

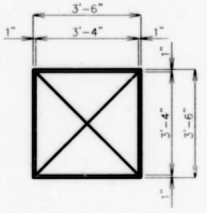
A-5180

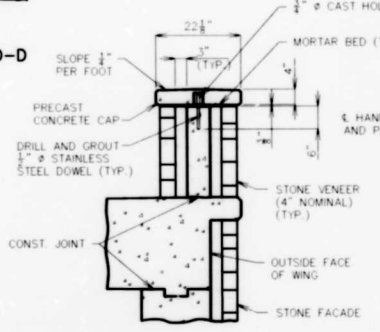


ELEVATION OF RIGHT PEDESTRIAN WALLS SHOWING STONE VENEER
(LEFT PEDESTRIAN WALLS SIMILAR)

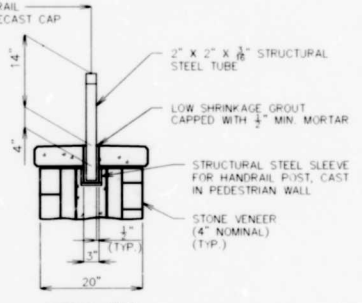


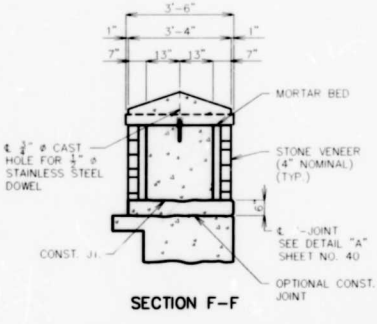
SECTION D-D





SECTION E-E





SECTION F-F

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

2" X 2" STRUCTURAL STEEL TUBING FOR PEDESTRIAN HANDRAIL SHALL BE A.S.T.M. A500 OR A501.

STRUCTURAL STEEL SLEEVE SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS OF PEDESTRIAN HANDRAILS.

THE STRUCTURAL STEEL TUBE COMPLETE-IN-PLACE SHALL BE PAID FOR AS TUBE HANDRAIL ON PEDESTRIAN WALLS, PER LIN. FT.

THE UNIT PRICE BID PER LINEAR FOOT OF PRECAST CONCRETE CAP SHALL INCLUDE THE COST OF THE PRECAST CAP, STAINLESS STEEL DOWELS, AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER EACH FOR PRECAST CAP ON END POST SHALL INCLUDE THE COST OF THE PRECAST CAP AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PEDESTRIAN WALL AND END POST ARCHITECTURAL TREATMENT

SHEET NO. 41 OF 50

A-5180

8-27-95

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		153

NOTES:

ALL FENCE POSTS SHALL BE PLACED VERTICAL. SHIM PLATES MAY BE REQUIRED BETWEEN FENCE POSTS AND SIDEWALK FOR ALIGNMENT.

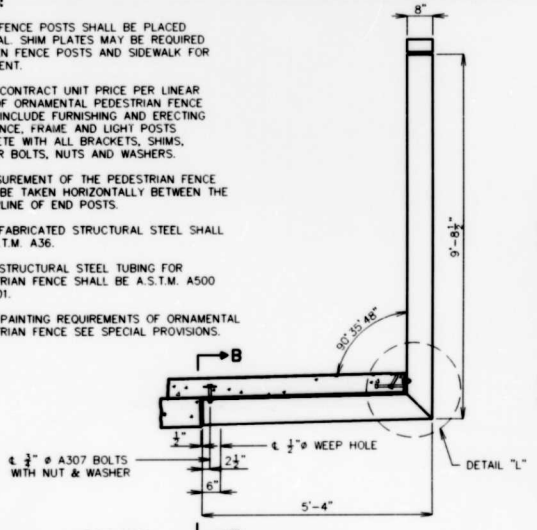
THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ORNAMENTAL PEDESTRIAN FENCE SHALL INCLUDE FURNISHING AND ERECTING THE FENCE, FRAME AND LIGHT POSTS COMPLETE WITH ALL BRACKETS, SHIMS, ANCHOR BOLTS, NUTS AND WASHERS.

MEASUREMENT OF THE PEDESTRIAN FENCE SHALL BE TAKEN HORIZONTALLY BETWEEN THE CENTERLINE OF END POSTS.

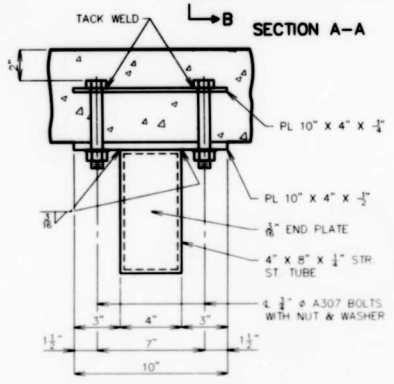
ALL FABRICATED STRUCTURAL STEEL SHALL BE A.S.T.M. A36.

ALL STRUCTURAL STEEL TUBING FOR PEDESTRIAN FENCE SHALL BE A.S.T.M. A500 OR A501.

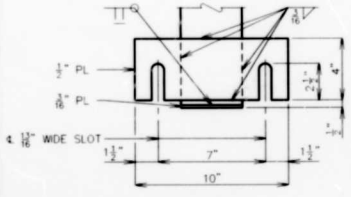
FOR PAINTING REQUIREMENTS OF ORNAMENTAL PEDESTRIAN FENCE SEE SPECIAL PROVISIONS.



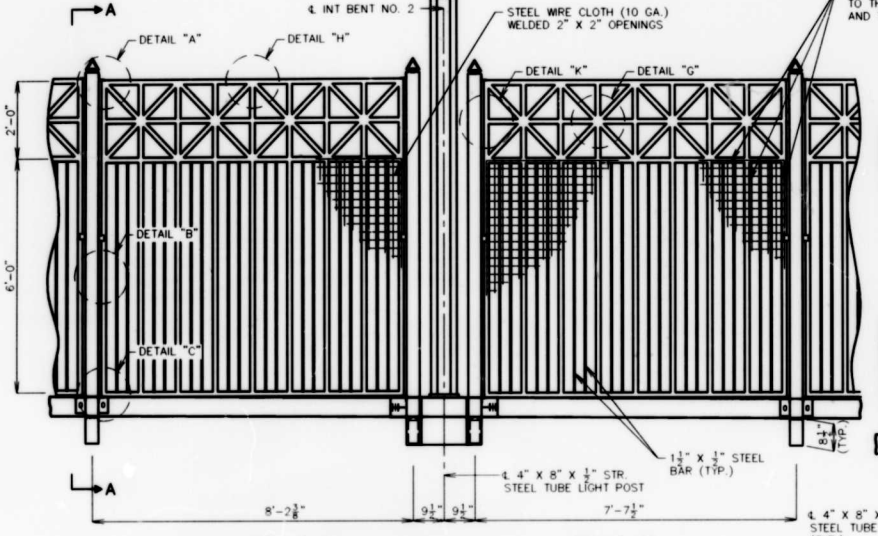
SECTION A-A



SECTION B-B



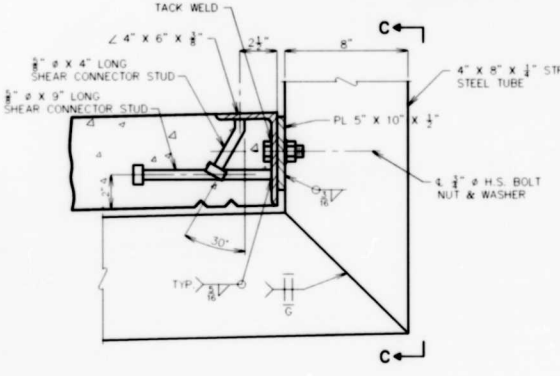
PLAN



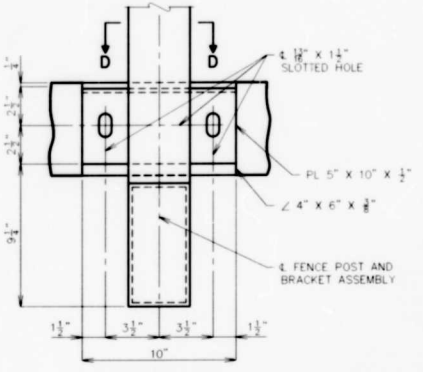
TYPICAL ELEVATION

NOTE:
FOR DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 40.

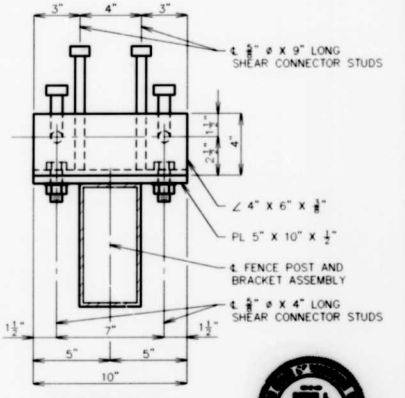
SEE SHEETS NO. 31 & 32 FOR FENCE POST SPACING.



DETAIL "L"



ELEVATION C-C
(TYPICAL EXCEPT AS NOTED)



SECTION D-D

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:		3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 42 OF 50

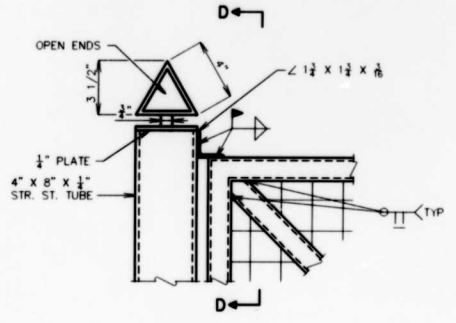
A-5180

24 to 1

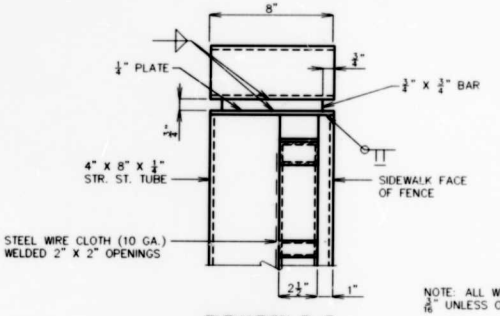
FOR INFORMATION ONLY

A51801, Sht. 188

STATE	PROJ. NO.	SHEET NO.
MO.		

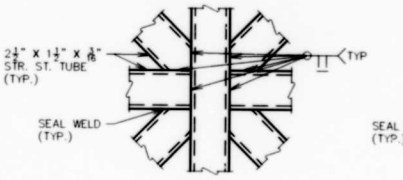


DETAIL "A"

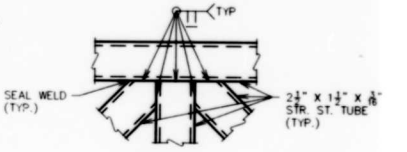


ELEVATION D-D

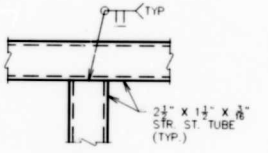
NOTE: ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.



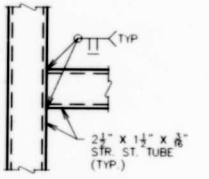
DETAIL "G"



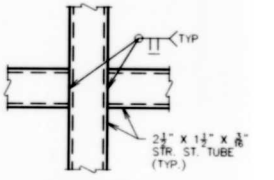
DETAIL "H"



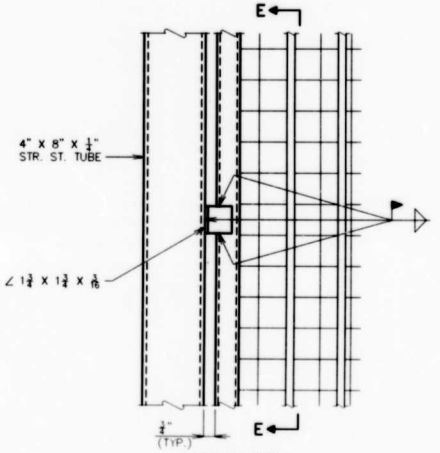
DETAIL "J"



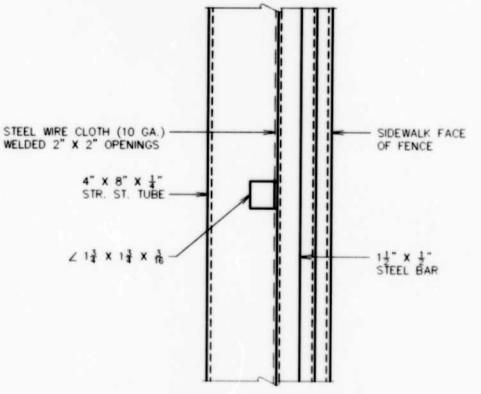
DETAIL "K"



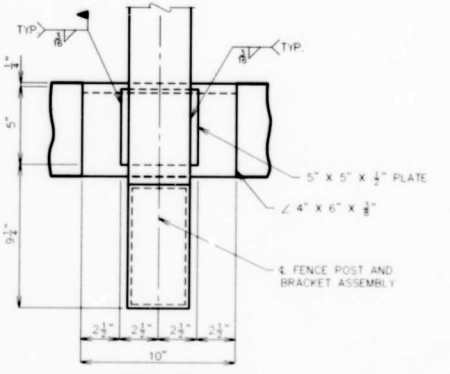
DETAIL "M"



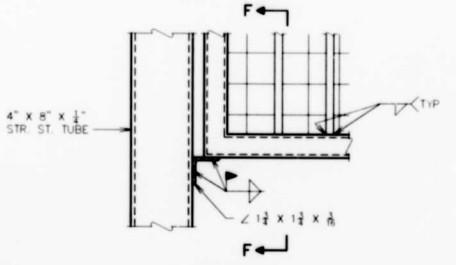
DETAIL "B"



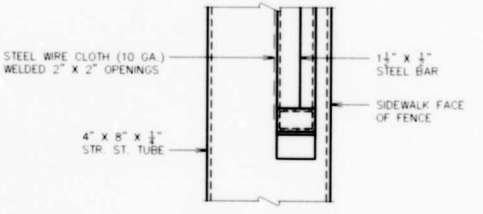
ELEVATION E-E



DETAIL "I"
(POSTS AT END BENT NO. 1 AND ABUTMENT NO. 3 ONLY)



DETAIL "C"



ELEVATION F-F

NOTE:

ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.

FOR ADDITIONAL PEDESTRIAN FENCE DETAILS AND LOCATION OF DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 42.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 43 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	DIMENSIONS EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
END BENT NO. 1																												
8	5	D100	WING FOOTING		20		X		4	6.000														4	6	4	6	38
8	5	D101	WING FOOTING		20		X		2	0.000														2	0	2	0	17
7	7	F100	WING BRACE		15		X			15.000	4	10.000		15.000		10.625		10.625		9.250		11.750		7	4	7	3	104
7	7	F101	WING BRACE		15		X			15.000	4	5.000		15.000		10.625		10.625		11.750		9.250		6	11	6	10	98
8	8	H100	BEAM		17		X		43	6.000														44	5	44	5	949
8	8	H101	BEAM		17		X		22	4.500														23	4	23	4	498
4	8	H102	BEAM		20		X		30	2.000														30	2	30	2	322
8	8	H103	BEAM		20		X		23	8.000														23	8	23	8	506
4	6	H104	BEAM		20		X		43	6.000														43	6	43	6	281
2	6	H105	BEAM		20		X		19	3.000														19	3	19	3	58
19	4	H108	BACKWALL		20		X		30	0.000														30	0	30	0	381
8	4	H107	BACKWALL		20		X		43	6.000														43	6	43	6	232
2	6	H108	BACKWALL		20		X		43	6.000														43	6	43	6	131
4	6	H109	BACKWALL		20		X		31	0.000														31	0	31	0	186
4	4	H110	BACKWALL	E	20		X		30	0.000														30	0	30	0	80
2	4	H111	BACKWALL	E	20		X		43	6.000														43	6	43	6	58
2	6	H112	BACKWALL	E	20		X		43	6.000														43	6	43	6	131
4	6	H113	BACKWALL	E	20		X		31	0.000														31	0	31	0	186
4	4	H114	BACKWALL	E	20		X		7	6.000														7	6	7	6	20
16	8	H115	BEAM		10	S	X				5	0.000	2	6.000										12	6	12	2	292
2	4	H116	ORN. COLUMN	E	20		X		6	6.000														6	6	6	6	9
14	4	H117	ORN. COLUMN	E	20		X		7	6.000														7	6	7	6	70
14	4	H118	ORN. COLUMN	E	21		X		2	6.000				12.000						2	5.750	3.625		3	6	3	5	32
14	4	H119	ORN. COLUMN	E	21		X		2	6.000		12.000								2	5.750	3.625		3	6	3	5	32
16	6	H120	ORN. COLUMN	E	19		X		4	0.000		16.000												5	4	5	2	124
14	6	H121	WING		20		X	V	2	10	0.000													10	0	10	0	
			INCREMENT =							20	3.000													20	3	20	3	321
			20.500 INCH																									
12	6	H122	WING		20		X	V	2	7	2.000													7	2	7	2	
			INCREMENT =							10	1.000													10	1	10	1	156
			17.500 INCH																									
4	6	H123	WING	E	20		X			21	10.000													21	10	21	10	131
12	6	H124	WING		20		X			21	10.000													21	10	21	10	393
14	6	H125	WING		20		X	V	2	10	6.000													10	6	10	6	
			INCREMENT =							21	3.000													21	3	21	3	334
			21.500 INCH																									
4	8	H127	BEAM		20		X			21	3.000													21	3	21	3	227
2	4	S111	ORN. COLUMN	E	13	S	X			3	9.000	3	10.000	3	9.000	3	10.000							15	11	15	8	21
8	4	S112	ORN.COLUMN	E	20		X			3	9.000													3	9	3	9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	DIMENSIONS EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7	T100	WING		14		X					6	8.000	1	6.000									7.250		16.500		83
2	7	T101	WING		14		X					14	3.000	1	11.000									21.000		9.250		66
2	7	T102	WING		14		X					14	6.000	1	11.000									21.250		8.875		67
32	5	U100	BEAM		13	S	X		4	0.875		2	6.000	4	2.750	2	2.000							14	3	13	11	485
34	5	U101	BEAM		13	S	X		4	0.750		2	7.750	4	2.750	2	7.750							14	6	14	2	502
28	5	U102	BEAM		13	S	X		4	0.500		2	11.500	4	2.750	2	11.375							15	1	14	9	431
26	4	U103	BEAM		10	S	X						6.000	4	0.000									5	0	4	10	84
5	7	U104	BEAM		14		X		5	0.000			23.000	4	6.000					2	9.250	3	6.500	11	5	11	2	114
5	7	U105	BEAM		14		X		5	0.000			23.000	4	6.000					3	6.500	2	9.250	11	5	11	2	114
84	4	U106	BACKWALL		10	S	X					1	2.000		6.000									2	10	2	8	150
52	4	U107	ORN. COLUMN	E	19	S	X		2	6.000		2	6.000											5	0	4	11	171
8	4	U108	WING		13	S	X			23.000		23.000		23.000		23.000								8	5	8	2	44
4	6	V100	BEAM		20		X		2	7.000														2	7	2	7	16
98	6	V101	BACKWALL	E	20		X		9	2.000														9	2	9	2	1350
98	5	V102	BACKWALL	E	20		X		8	8.000														8	8	8	8	886
20	6	V103	ORN. COLUMN	E	20		X		2	6.000														12	8	12	8	381
4	6	V104	ORN. COLUMN	E	20		X		6	9.000														6	9	6	9	41
16	6	V105	WING	E	20		X		4	2.000														4	2	4	2	100
4	6	V106	WING		20		X		3	6.000														3	6	3	6	21
16	6	V107	WING		20		X	V	2	5	1.000													5	1	5	1	
			INCREMENT =							7	8.000													7	8	7	8	172
			3.875 INCH																									
22	6	V108	WING		20		X			7	5.000													7	5	7	5	245
16	6	V109	WING		20		X	V	2	8	0.000													8	0	8	0	
			INCREMENT =							5	0.000													5	0	5	0	92
			3.500 INCH																									
14	6	V110	WING		20		X			5	0.000													5	0	5	0	105
12	6	V111	WING FOOTING		20		X			6	11.000													6	11	6	11	125
18	6	V112	WING		20		X	V	2	4	11.000													4	11	4	11	
			INCREMENT =							7	8.000													7	8	7	8	168
			3.875 INCH																									
24	6	V113	WING		20		X			7	3.000													7	3	7	3	261
16	6	V114	WING		20		X	V	2	7	7.000													2	7	2	7	
			INCREMENT =							4	8.000													4	8	4	8	87
			3.625 INCH																									
18	4	V115	ORN.COLUMN	E	20		X			3	0.000													3	0	3	0	36
8	4	V116	ORN.COLUMN	E	20		X			5	10.000													5	10	5	10	31
5	4	V117	ORN.COLUMN	E	20		X			6	8.000													6	8	6	8	22
5	4	V118	ORN.COLUMN	E	20		X			6	9.000													6	9	6	9	23
20	WSW1		A B WELLS		22		X			18.000		9.125												26	1	26	1	88

STATE	PROJ. NO.	SHEET NO.
MO.		157

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

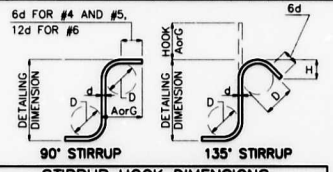
SHAPE 12 SHAPE 13 SHAPE 14

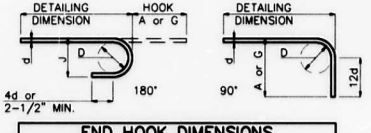
SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS
JACKSON COUNTY

REINFORCING SCHEDULE

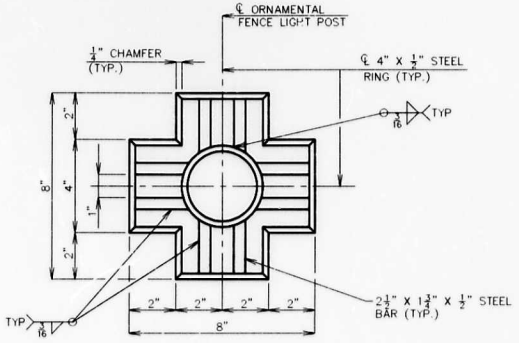
SHEET NO. 46 OF 50

A-5180

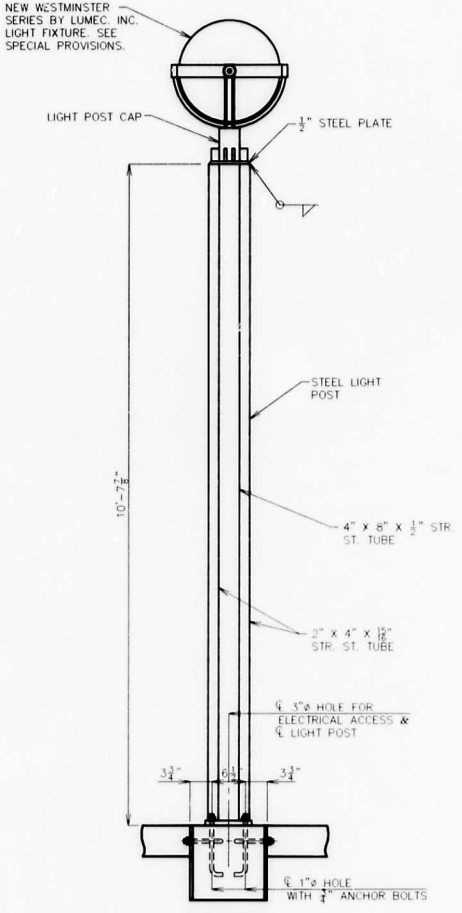
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

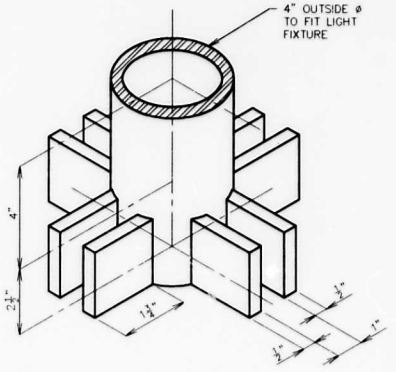
STATE	PROJ. NO.	SHEET NO.
MO.		150



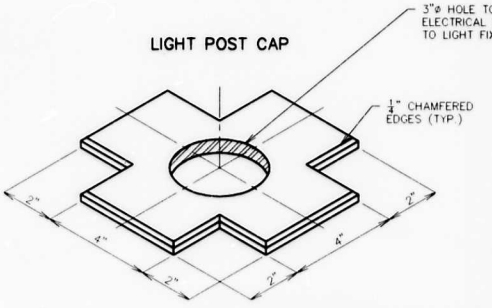
LIGHT POST CAP PLATE



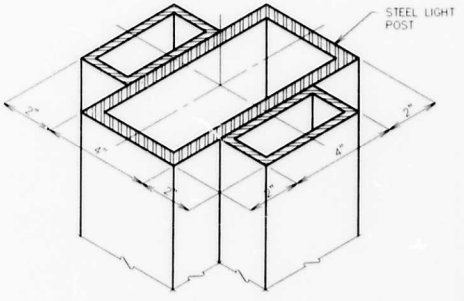
ELEVATION



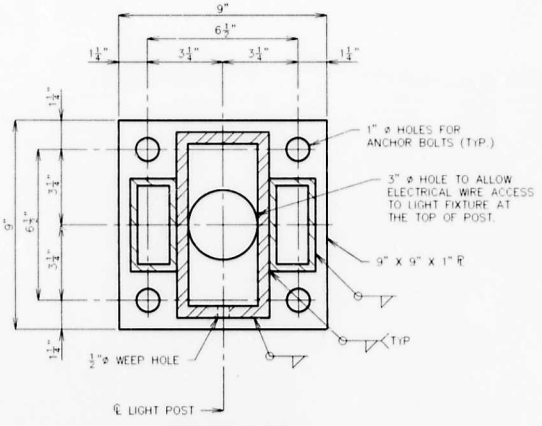
LIGHT POST CAP



½" STEEL PLATE



STEEL LIGHT POLE



LIGHT POST BASE

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

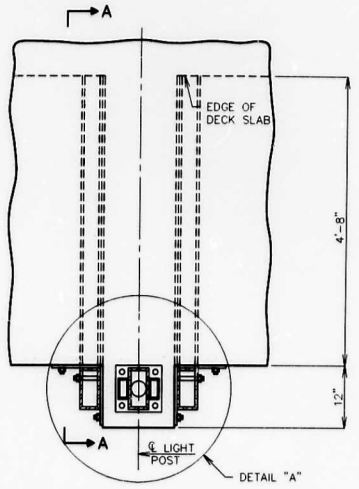
DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 45 OF 50

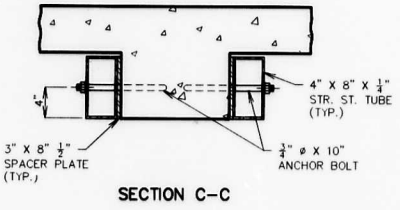
A-5180

3-27-98

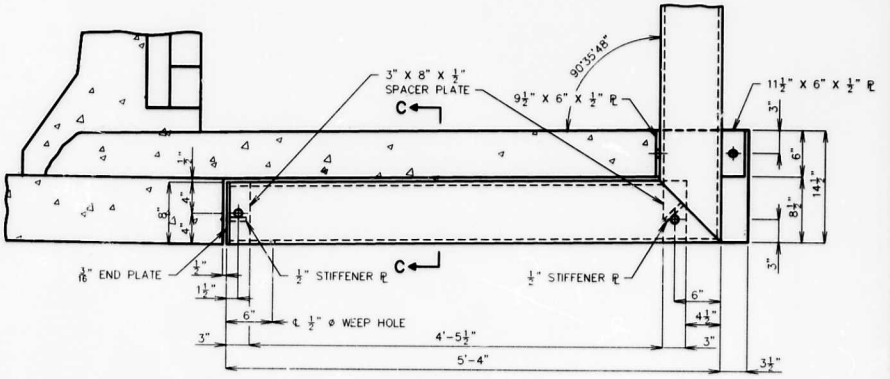
STATE	PROJ. NO.	SHEET NO.
MO.		155



PLAN VIEW OF SIDEWALK LIGHT SUPPORT



SECTION C-C



SECTION A-A

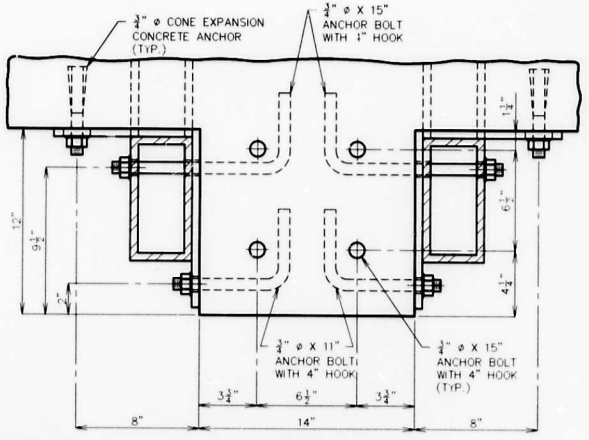
NOTE:

CONCRETE ANCHORS SHALL BE THE CONE EXPANSION TYPE FOR HOT DIP GALVANIZED BOLTS.

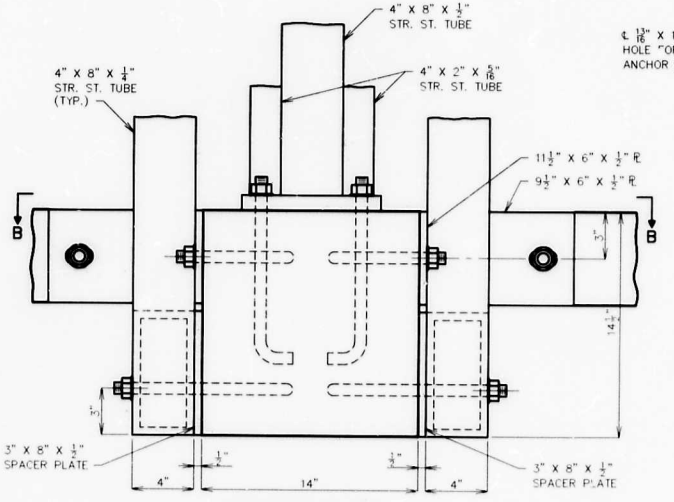
CONCRETE ANCHORS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 10,000 LBS. IN 4,000 PSI CONCRETE.

ALL WELDS TO BE ⅜" UNLESS OTHERWISE NOTED.

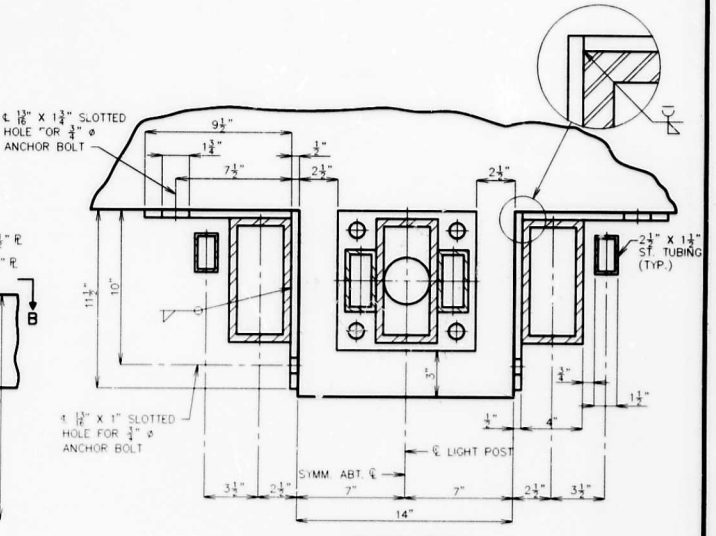
ALL ANCHOR BOLTS SHALL BE GALVANIZED, AND SHALL INCLUDE HEX NUT AND H.S. WASHERS.



DETAIL "A"
SHOWING ANCHOR BOLTS ONLY



ELEVATION OF BEAM UNDER LIGHT POST



SECTION B-B

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 44 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
INTERMEDIATE BENT NO. 2																		
56	5-D200	FOOTING		20		X			10 2.000							10 2	10 2	594
68	9-D201	FOOTING		18		X			13 8.000							16 2	16 2	3736
18	9-H200	BEAM		17		X			49 7.500							50 10	50 10	3111
18	9-H201	BEAM		17		X			45 5.000							46 8	46 8	2856
16	10-H202	BEAM		20		X			48 2.000							48 2	48 2	3316
4	6-H203	BEAM		20		X			48 10.000							48 10	48 10	293
4	6-H204	BEAM		20		X			40 4.000							40 4	40 4	242
16	10-H205	BEAM		20		X			43 3.000							43 3	43 3	2978
16	4-H206	BRG. BASE		20		X			3 3.000							3 3	3 3	35
24	7-H207	BEAM		19		X	V	4	3 9.000	2 6.000						6 3	6 1	
		INCREMENT = 4.00 INCH							5 5.000	2 6.000						7 11	7 9	339
224	4-P200	COLUMN		13	S	X	V	16	2 0.000	2 9.500	2 0.000	2 9.500				10 4	10 1	
									3 1.000	4 6.625	3 1.000	4 6.625				16 0	15 9	1932
		INCREMENT =							1.000	1.625	1.000	1.625						
176	4-P201	COLUMN		10	S	X				3 9.000	5 3.000					12 9	12 7	1479
104	4-P202	COLUMN		10	S	X				4 6.000	1 4.000					10 4	10 2	707
32	4-P203	COLUMN		10	S	X				3 9.000	4 6.000					12 0	11 10	253
24	5-R200	COLUMN	E	20		X			5 8.000							5 8	5 8	142
48	5-R201	COLUMN	E	15		X			12.000	12.250	1 8.250	11.625	16.625	9.875	6.875	3 9	3 8	184
48	5-R202	COLUMN	E	15		X				2 0.000	2 0.000	23.875	2.500			4 0	3 11	196
288	6-U200	BEAM		13	S	X			2 5.750	3 10.375	3 5.000	3 9.000				14 10	14 5	6238
116	5-U201	BEAM		21	S	X			13.375	4 9.000	12.000			13.000	3.250	6 10	6 8	807
28	4-U202	BRG. BASE		10	S	X				12.000	4 3.000					6 3	6 1	114
96	10-V200	COLUMN		36		X			19 4.000							22 2	22 2	9158
96	10-V201	COLUMN		15		X			4 2.000	13 3.000				2 4.750	3 5.000	17 5	17 3	7196
20	W5W1	A B WELLS		22		X			2 1.000	9.125						33 2	33 2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.

STATE MO. | PROJ. NO. | SHEET NO. 15B

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

SHAPE 19 SHAPE 20

SHAPE 21

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

4d or 2-1/2" MIN. 180° 90°

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 47 OF 50

A-5180

24 to 1

FOR INFORMATION ONLY

A51801, Sht. 193

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X																	15.000		7 2	7 1	37
5	5-F301	BACKWALL		15		X																	15.000		7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X				6 0.000	2 7.000												14 7		14 3		589
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625	5.125			4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625	5.125			4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		581
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X				23.000		23.000		23.000		23.000							8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		293
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X					18.000		9.125										26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		189

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9 · SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13 · SHAPE 14 · SHAPE 15 · SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20 · SHAPE 21 · SHAPE 22 · SHAPE 23 · SHAPE 24

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.) — 3" PITCH — 1½ TURNS

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP · 135° STIRRUP

DETAILING DIMENSION · HOOK A or G · 4d or 2-1/2" MIN. · 180° · 90° · 12d

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 · SHAPE 26 · SHAPE 27 · SHAPE 28 · SHAPE 29 · SHAPE 30 · SHAPE 31 · SHAPE 32 · SHAPE 33 · SHAPE 34 · SHAPE 35 · SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 194

BILL OF REINFORCING STEEL

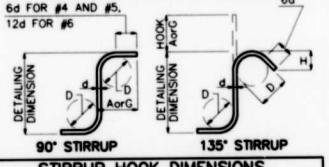
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X				6	0.000	2	7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

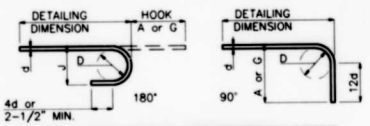
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 6.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X				23.000		23.000		23.000		23.000							8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X					18.000		9.125										26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		189

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9 · SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13 · SHAPE 14 · SHAPE 15 · SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20 · SHAPE 21 · SHAPE 22 · SHAPE 23 · SHAPE 24





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 · SHAPE 26 · SHAPE 27 · SHAPE 28 · SHAPE 29 · SHAPE 30 · SHAPE 31 · SHAPE 32 · SHAPE 33 · SHAPE 34 · SHAPE 35 · SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 195

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15		X			15.000	4 8.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15		X			15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	6-H300	BEAM		17		X			43 10.000							44 9	44 9	656
8	6-H301	BEAM		17		X			22 5.000							23 4	23 4	468
8	6-H302	BEAM		20		X			23 8.000							23 8	23 8	506
4	6-H303	BEAM		20		X			30 2.000							30 2	30 2	322
4	6-H304	BEAM		20		X			21 3.000							21 3	21 3	227
4	6-H305	BEAM		20		X			43 10.000							43 10	43 10	263
2	6-H306	BEAM		20		X			18 9.000							18 9	18 9	56
8	6-H307	APRON		20		X			43 10.000							43 10	43 10	527
16	6-H308	APRON		20		X			31 4.000							31 4	31 4	753
2	4-H309	WING		20		X			7 8.000							7 8	7 8	10
28	6-H310	APRON		10		X				6 0.000	2 7.000					14 7	14 3	589
4	6-H311	BACKWALL		20		X			31 0.000							31 0	31 0	186
2	6-H312	BACKWALL		20		X			43 9.000							43 9	43 9	131
6	4-H313	BACKWALL		20		X			43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20		X			29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000		12.000			3 5.625	5.125	4 8	4 5	41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000	12.000				3 5.625	5.125	4 8	4 5	41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000							7 0	7 0	9
16	6-H319	APPR. BEAM		17		X			41 7.000							42 3	42 3	1015
4	6-H320	APPR. BEAM		20		X			41 7.000							41 7	41 7	250
10	6-H321	APPR. BEAM		20		X			22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20		X			34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20		X			28 8.000							28 8	28 8	38
4	5-H324	WING	E	20		X			9 0.000							9 0	9 0	38
6	5-H325	WING		20		X			9 0.000							9 0	9 0	56
2	5-H326	WING		20		X			31 10.000							31 10	31 10	66
8	5-H327	WING		20		X	V	2	22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20		X			17 1.000							17 1	17 1	23
2	4-H329	WING		20		X			12 7.000							12 7	12 7	17
2	4-H330	WING		20		X			8 1.000							8 1	8 1	11
12	4-H331	WING		20		X			5 6.000							5 6	5 6	44
2	4-H332	WING		20		X			12 2.000							12 2	12 2	16
2	4-H333	WING		20		X			16 8.000							16 8	16 8	22
8	5-H334	WING		20		X	V	2	22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20		X			31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 8.000				2 6.375	10.125	33 7	33 8	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 8	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000					5 5	5 3	188
32	5-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 8	517
34	5-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	581
28	5-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 8	483
26	4-U304	BEAM		10	S	X				6.000	4 8.500					5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X				17.500	6.000					3 5	3 3	182
92	5-U306	APPR. BEAM		13	S	X			2 3.000	2 6.000	3 3.000	2 6.000				10 5	10 1	967
100	5-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X			23.000	23.000	23.000	23.000				8 5	8 2	55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL		20		X			8 11.000							8 11	8 11	1288
96	5-V301	BACKWALL	E	20		X			8 6.000							8 6	8 6	801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000							3 0	3 0	36
134	5-V303	APRON		20		X			6 3.000							6 3	6 3	874
20	6-V304	ORN. COLUMN		20		X			9 9.000							9 9	9 9	293
16	6-V305	END POST	E	20		X			5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000							4 0	4 0	
		INCREMENT =							4 9.000							4 9	4 9	40
		4.500 INCH																
30	4-V307	WING		20		X	V	2	5 4.000							5 4	5 4	
		INCREMENT =							12 8.000							12 8	12 8	180
		6.250 INCH																
4	4-V308	WING		20		X			14 10.000							14 10	14 10	40
4	4-V309	WING		20		X			15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500							5 8	5 8	
		INCREMENT =							12 11.000							12 11	12 11	186
		6.250 INCH																
6	5-V314	WING		20		X	V	2	4 5.000							4 5	4 5	
		INCREMENT =							5 1.000							5 1	5 1	30
		4.000 INCH																
20	6-V315	ORN. COLUMN	E	20		X			10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.		189

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. 180° 90° 12d

END HOOK DIMENSIONS ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 196

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X					6 0.000		2 7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X				23.000		23.000		23.000		23.000							8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X			18.000		9.125												26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		189

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

VERTICAL LEG

SHAPE 19 SHAPE 20

SHAPE 21

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

3" PITCH 1½ TURNS

SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

DETAILING DIMENSION

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION HOOK A or G

4d or 2-1/2" MIN. 180°

DETAILING DIMENSION 90° 12d

STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32

SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

135° HOOK

3" PITCH 1½ TURNS

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

FOR INFORMATION ONLY

A51801, Sht. 197

BILL OF REINFORCING STEEL

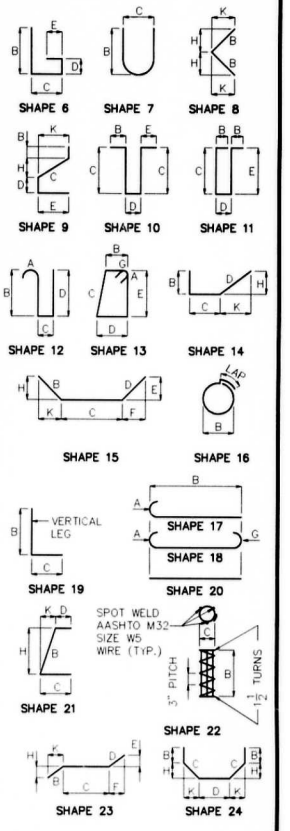
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S				1 11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S				2 7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
564	5-R1	BARRIER CURB	E	19					2 6.000	3.500						2 10	2 8	1571
564	5-R2	BARRIER CURB	E	15					2 6.125	3.500				2 6.000	3.000	2 10	2 8	1571
564	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
564	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20					38 8.000							38 8	38 8	1452
24	5-R6	BARRIER CURB	E	20					9 8.000							9 8	9 8	242
48	5-R7	BARRIER CURB	E	20					30 5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20					24 8.000							24 8	24 8	309
12	4-R9	C.I.P CAP	E	20					38 5.000							38 5	38 5	308
96	5-R10	PED. WALL	E	20					3 2.000							3 2	3 2	317
8	4-R11	C.I.P CAP	E	20					9 8.000							9 8	9 8	52
12	4-R12	C.I.P CAP	E	20					39 11.000							39 11	39 11	320
4	4-R13	C.I.P CAP	E	20					24 8.000							24 8	24 8	66
564	4-R14	C.I.P CAP	E	20					15.000	11.000				1.500	15.000	2 2	2 1	784
6	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20					3 5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
6	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
6	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20					1 7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15					2 8.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 8	10
3	4-R101	PED. WALL	E	20					18 6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20					18 11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20					28 7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20					28 1.000							28 1	28 1	56
976	6-S1	SLAB	E	20					42 10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20					37 9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20					40 0.000							40 0	40 0	8171
498	5-S4	SLAB	E	20					4 4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20					11 7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT = 49.000 INCH							40 9.000							40 9	40 9	1344
138	6-S7	SLAB	E	20					24 3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	968
1	4-S31	MEDIAN	E	7					3 7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20					31 5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20					33 4.000							33 4	33 4	534
6	4-S35	MEDIAN	E	20					7 7.000							7 7	7 7	30

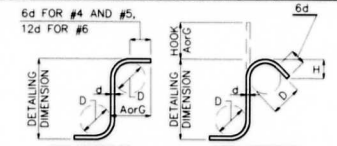
BILL OF REINFORCING STEEL

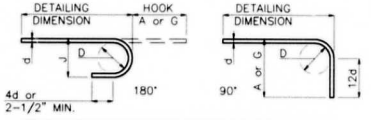
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	684
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	684
64	4-S101	SIDEWALK	E	20					32 7.000							32 7	32 7	1393
16	6-S102	SIDEWALK	E	20					33 3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20					33 4.000							33 4	33 4	1425
16	6-S104	SIDEWALK	E	20					34 2.000							34 2	34 2	821
982	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	8 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000					3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20					8 2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30					3 0.000	11.500	6.000				9.375	6.500	11 6	11 4	306
36	4-S109	LT. POLE BEAM	E	10	S					4.500	11.000	11.000	4.500				3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S					11.000	11.000	11.000	11.000				4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20					9 6.000								9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20					24 8.000							24 8	24 8	11329
72	4-S301	SLAB	E	20					24 8.000							24 8	24 8	1187
132	5-S302	SLAB	E	20					26 3.000							26 3	26 3	3614
34	4-S303	SLAB	E	20					44 8.000							44 8	44 8	1015
34	4-S304	SLAB	E	20					8 2.000							8 2	8 2	186
2	4-S305	ORN. COLUMN	E	13	S				3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20					3 9.000							3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS

STATE	PROJ. NO.	SHEET NO.
MO.		160







STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

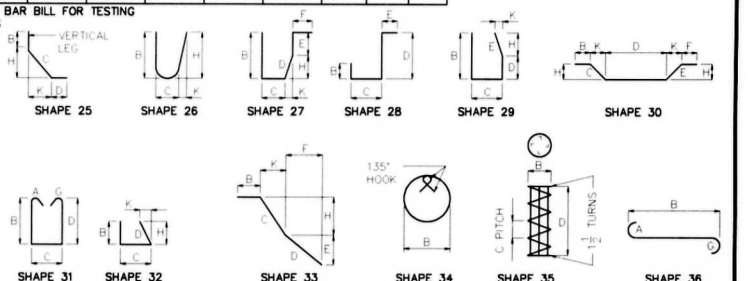
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-27-95

STATE		SHEET NO.
MO.	J4U0011E	114

FINAL PLANS

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.-1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20-44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT., EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS - CASE II

DESIGN UNIT STRESSES:
CLASS B CONCRETE (SUBSTRUCTURE) f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60) fy=60,000 PSI.
STEEL PILE fb= 9,000 PSI.
STRUCTURAL CARBON STEEL fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50) fy=50,000 PSI.
FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS-712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

FINAL ~ QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	681		681
STRUCTURAL STEEL PILE (12")	LIN. FT.	1688		1688
PREBORE FOR PILING	LIN. FT.	487		487
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI-DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,661		67,661
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187 — 2190 △
UNI-STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21
TEST HOLES	LIN. FT.	12		12
ADDITIONAL MOBILIZATION	LUMP SUM	1		1

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI-DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI-DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE-IN-PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.

FINAL QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

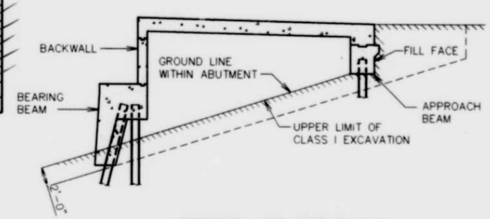
FINAL QUANTITIES FOR SLAB ON SEMI-DEEP ABUTMENT

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM.	BRG. BM.	COLUMNS	BRG. BM.	APPR. BM.
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	29	30		31	34
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.-LBS.	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-27-95

JACKSON COUNTY

GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A-5180

DANIEL L. CHAPMAN NUMBER E-23644 11-2-95

24 to 1

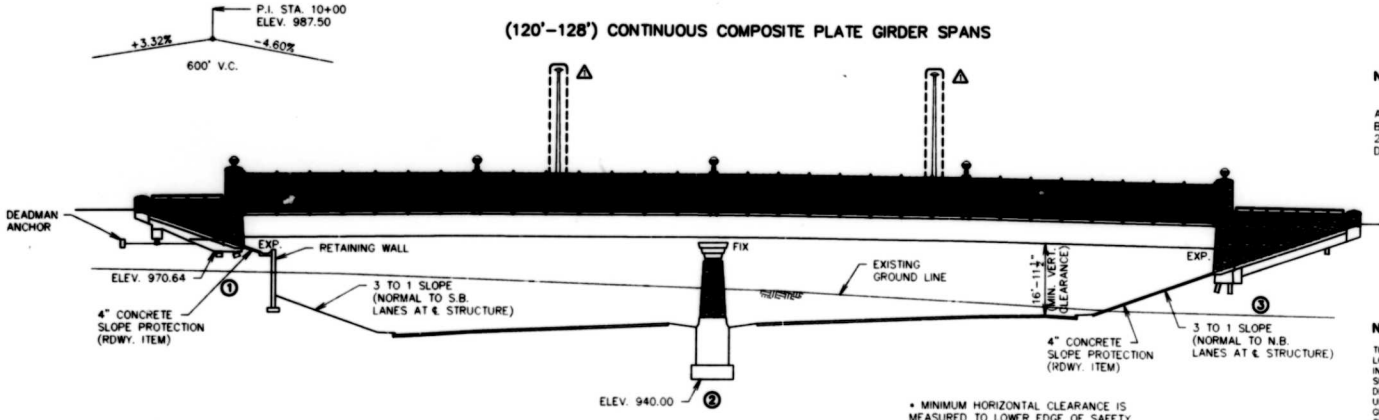
STATE	PROJ. NO.	SHEET NO.
MO.	J4UC011B	113

FINAL PLANS

FINAL PLANS

NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

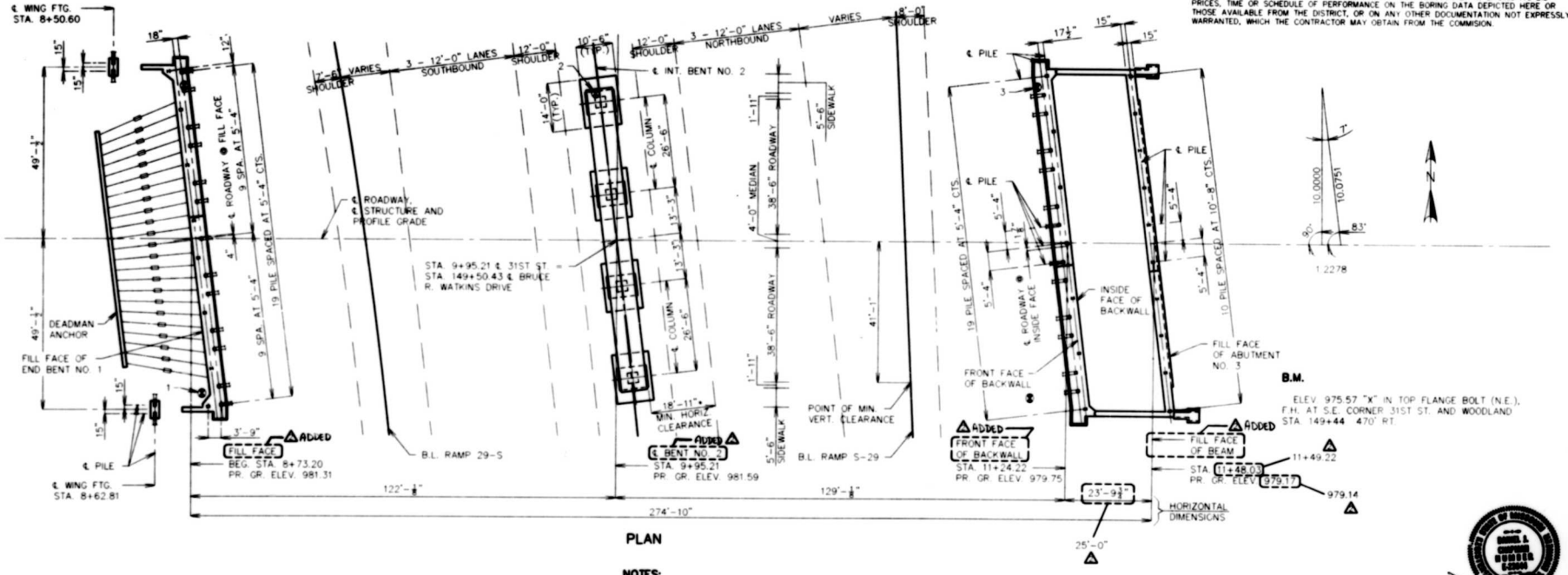


• MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT O- ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

SUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

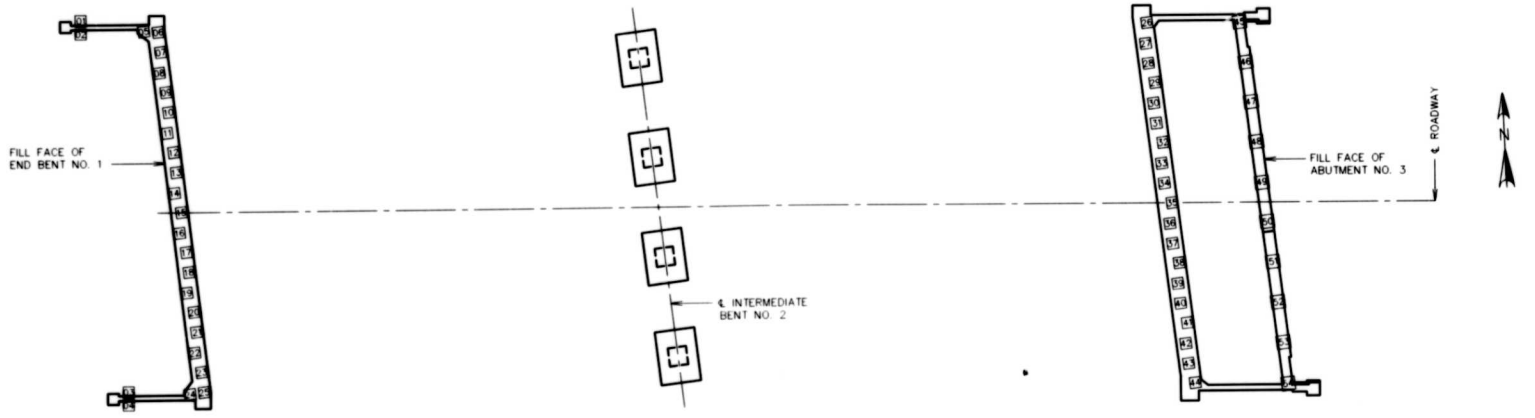
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		161



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

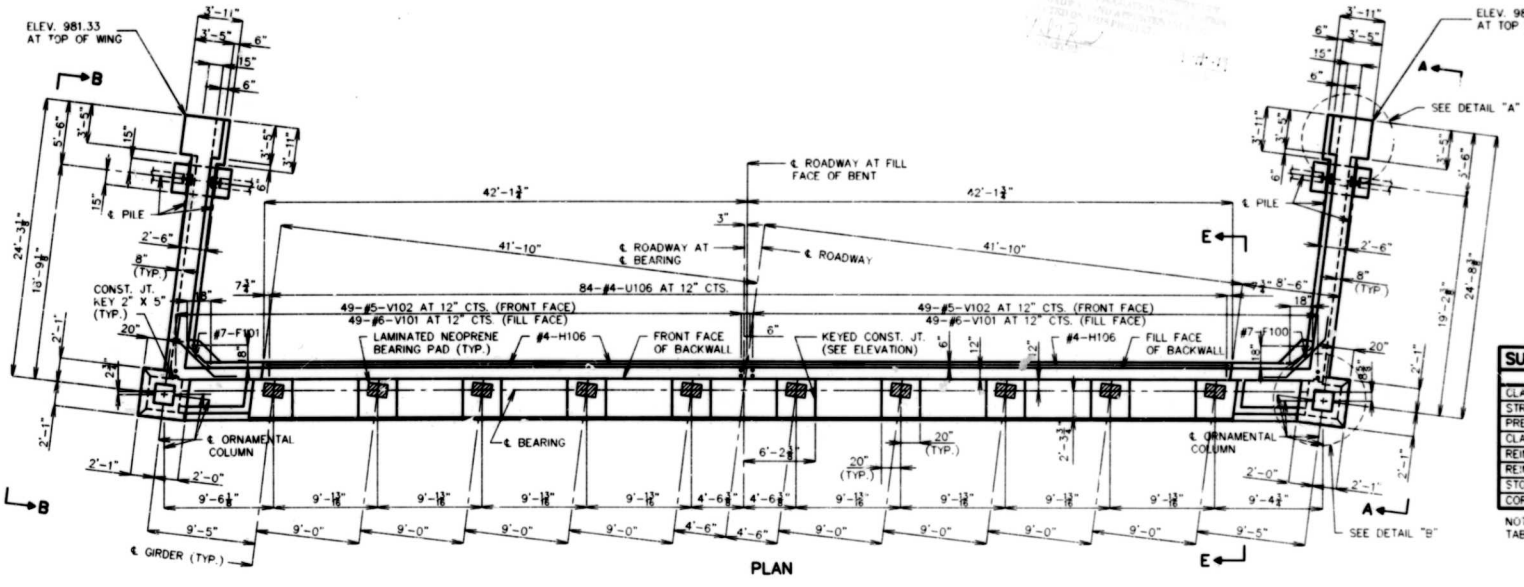
AS-BUILT PILE DATA

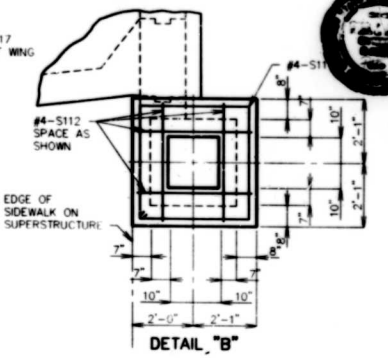
SHEET NO. 50 OF 50

A-5180

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4uc11P	H4

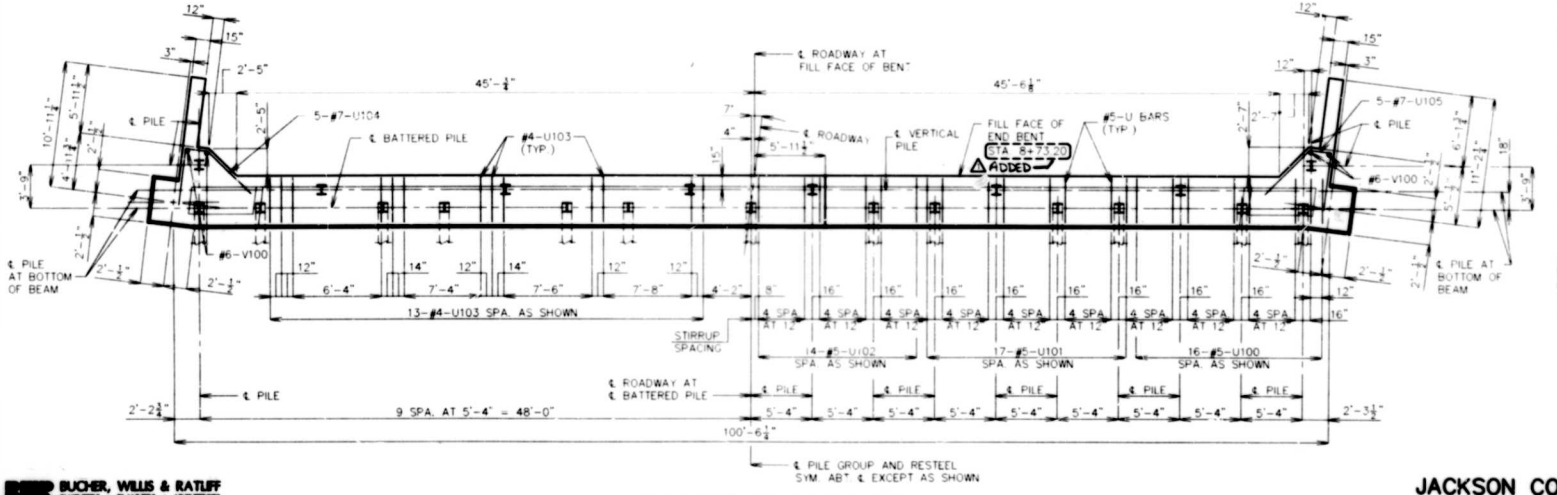




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.6 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A–A AND B–B, SEE SHEET NO. 8.

FOR SECTION E–E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WINGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

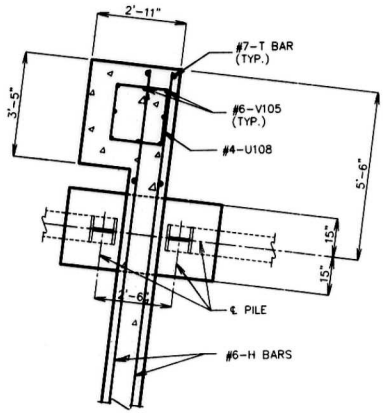
DETAILS OF END BENT NO. 1 PLAN

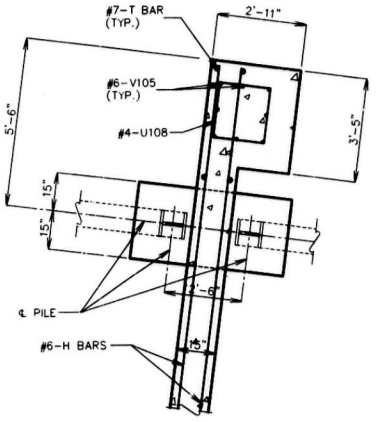
SHEET NO. 5 OF 50

A-5180

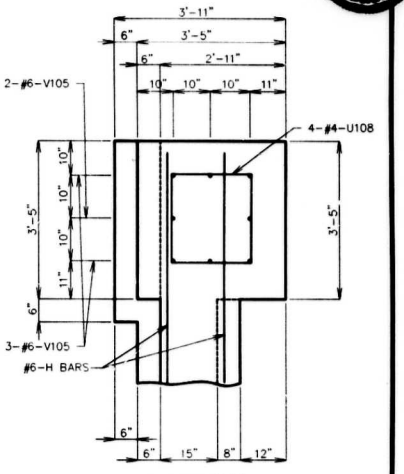
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	117

FINAL PLANS

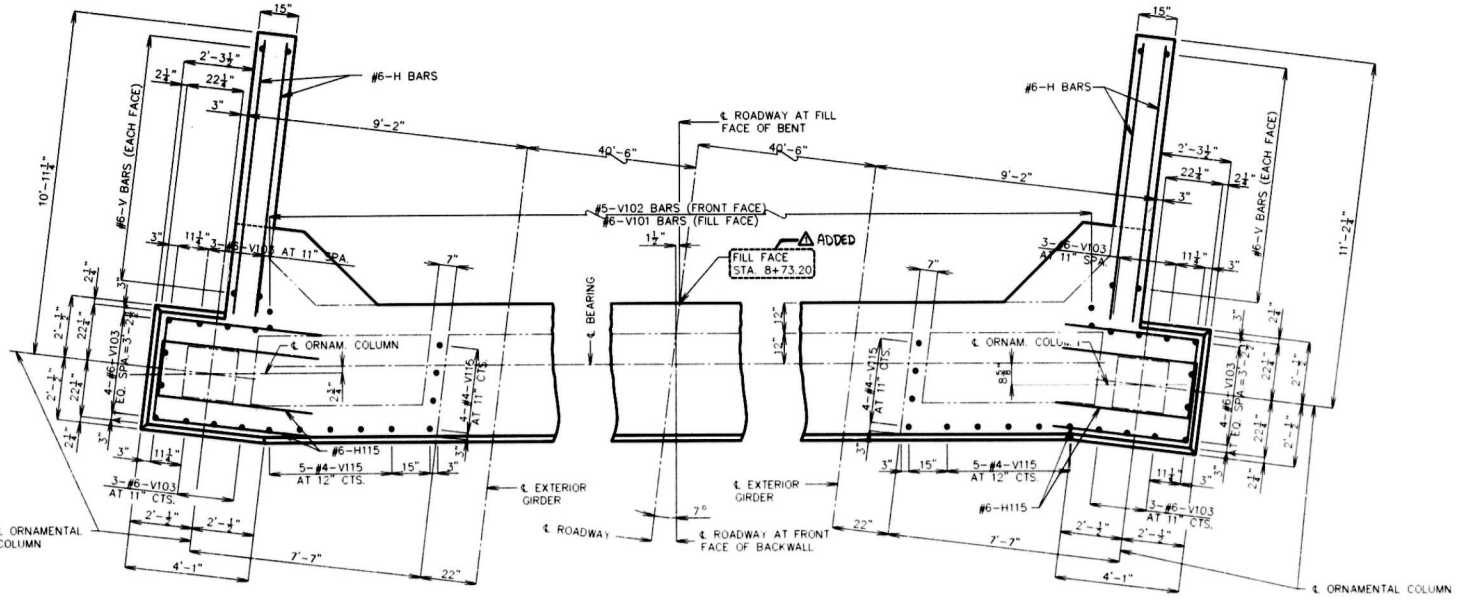




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCHER, WILLIS & RATLIFF
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TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF
END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

A-5180

4-26-96

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	126

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

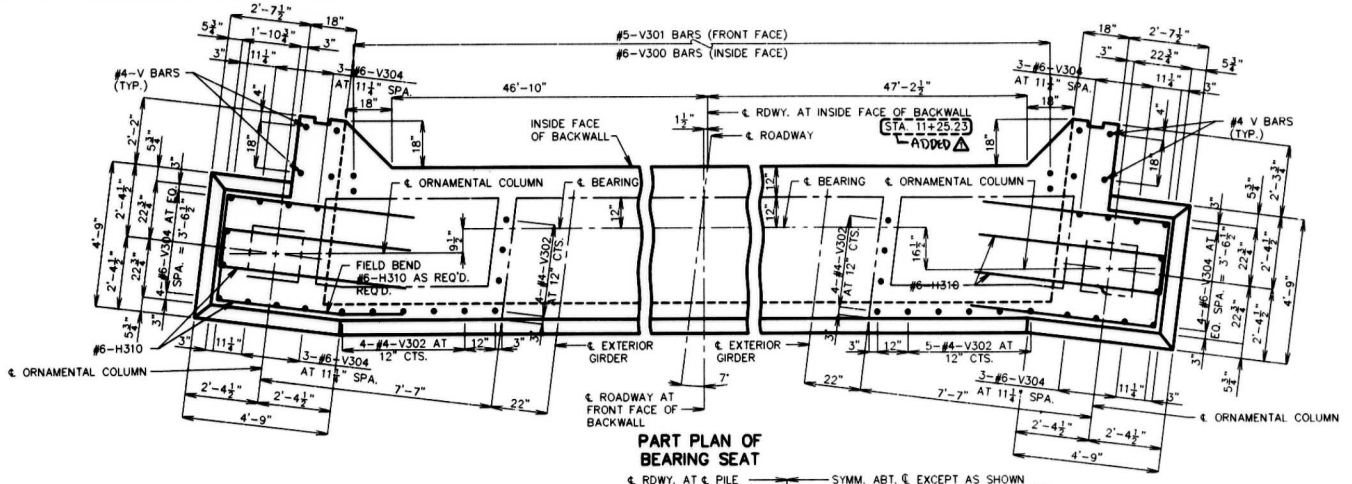
TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

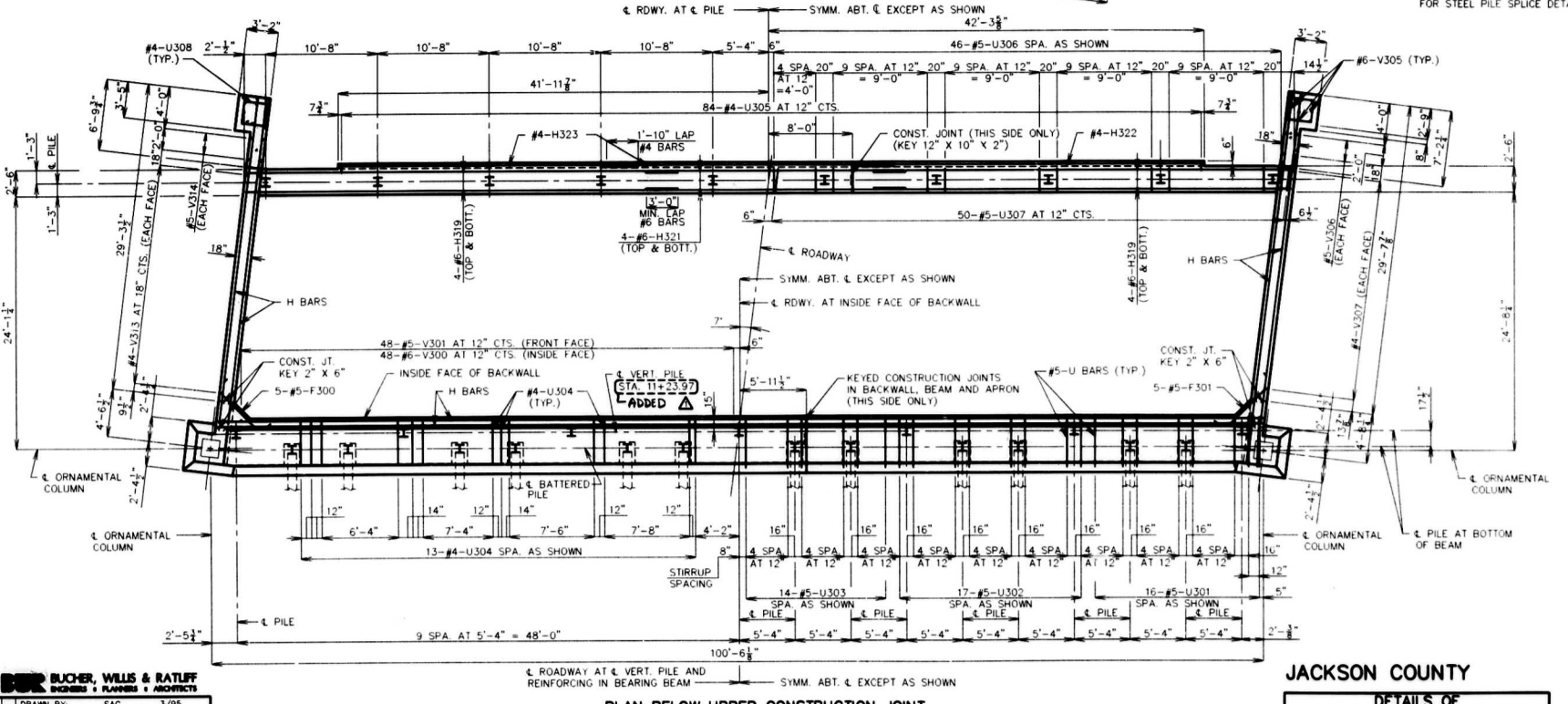
FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.



PART PLAN OF BEARING SEAT



PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

⚠ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

SHEET NO. 15 OF 50

A-5180

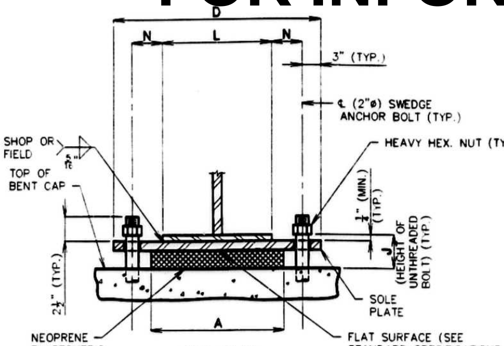
FOR INFORMATION ONLY **A51801, Sht. 204**

FINAL PLANS

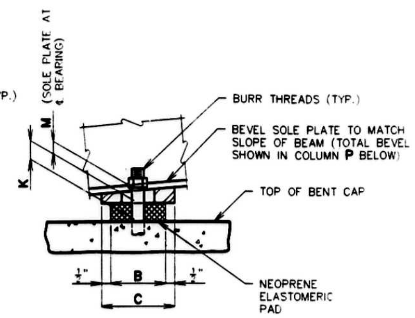
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	131

[redacted]

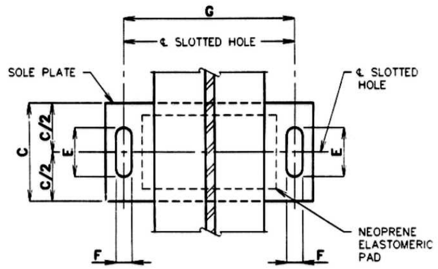
9-13-77



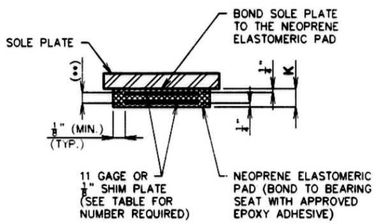
END VIEW



SIDE VIEW



PART PLAN VIEW

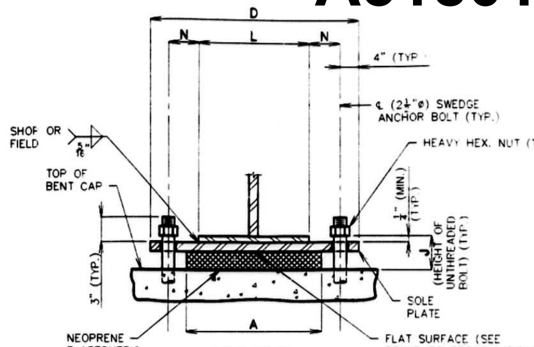


NEOPRENE ELASTOMERIC PAD

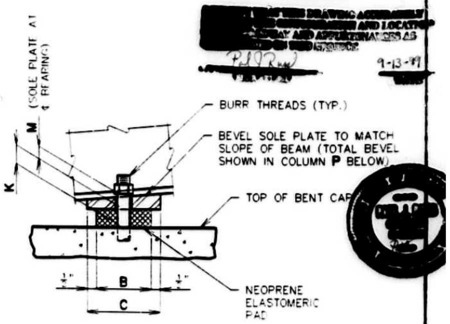
(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

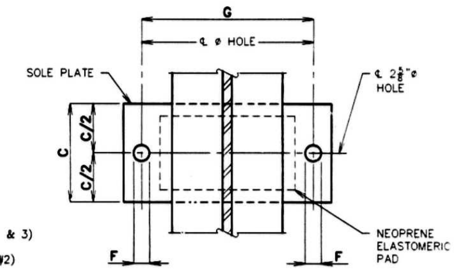
② 18" (BT. #1 & 3)
2'-1" (BT. #2)



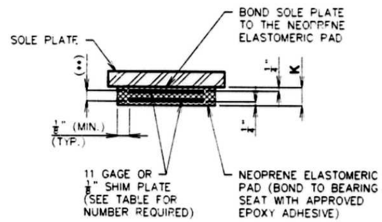
END VIEW



SIDE VIEW



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅜"	14"	1½"	4½"	0"	⚠1 7 –⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

STATE OF MISSOURI — DANIEL A. CHAPMAN — NUMBER E-23044 — REGISTERED PROFESSIONAL ENGINEER

9-10-95

BWR BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠1 REVISED AUGUST 10, 1995

JACKSON COUNTY

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

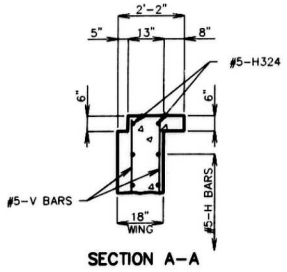
SHEET NO. 20 OF 50

A-5180

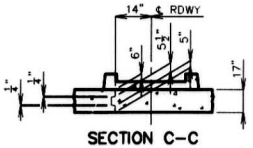
24 to 1

FINAL PLANS

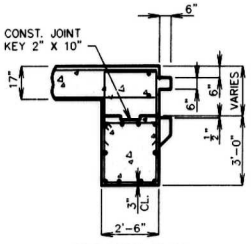
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0U11B	129



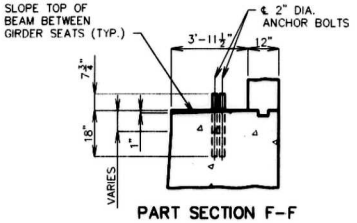
SECTION A-A



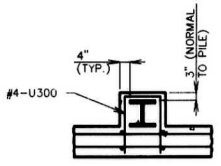
SECTION C-C



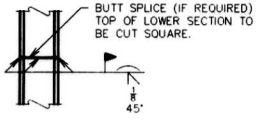
SECTION E-E



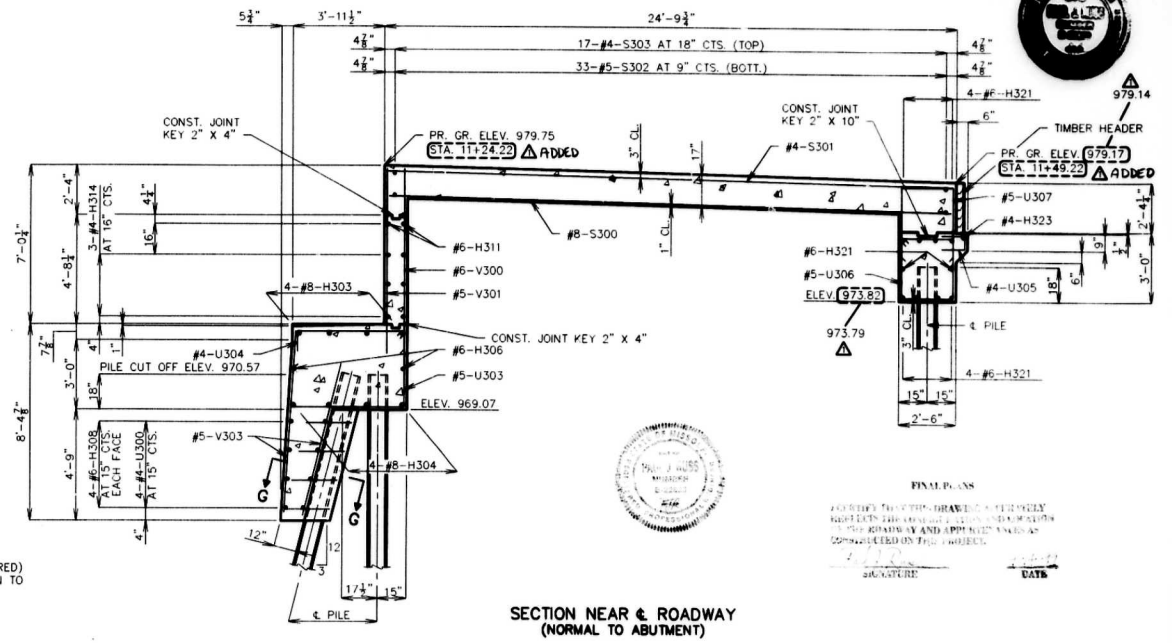
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE



SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

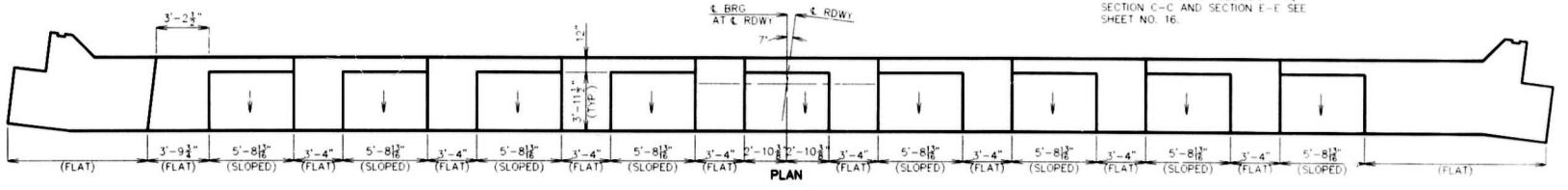
FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.

FINAL PLANS

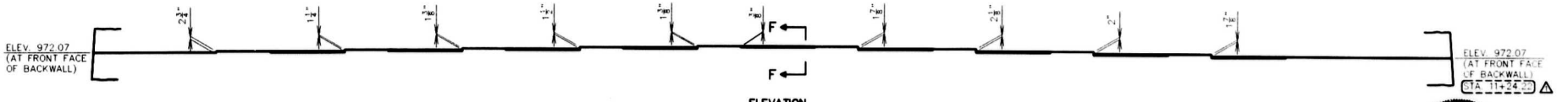
I HEREBY CERTIFY THAT THIS DRAWING ACCURATELY REPRESENTS THE CONSTRUCTION AND LOCATION OF THE BRIDGE AND APPURTENANCES CONSTRUCTED ON THIS PROJECT.

SIGNATURE

DATE



PLAN



ELEVATION

BEARING SEAT DETAIL

DANIEL L. CHIPMAN NUMBER E-23644 STATE OF MISSOURI REGISTERED ENGINEER

4-26-96

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

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⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

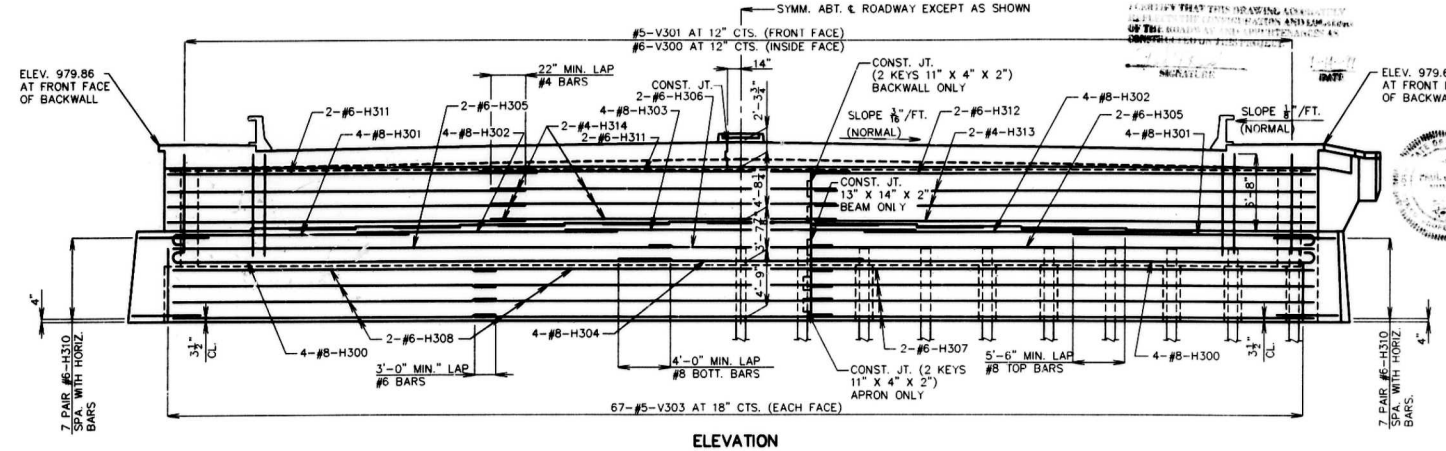
SHEET NO. 18 OF 50

A-5180

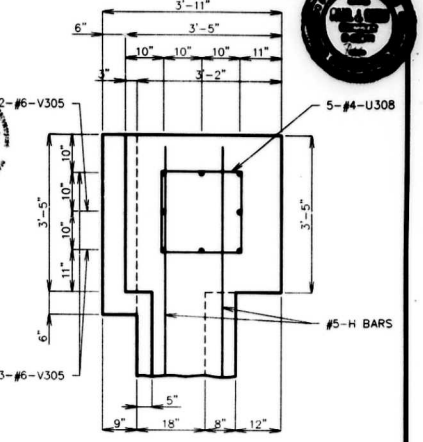
FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J6U0118	Sheet No. 127

FINAL PLANS

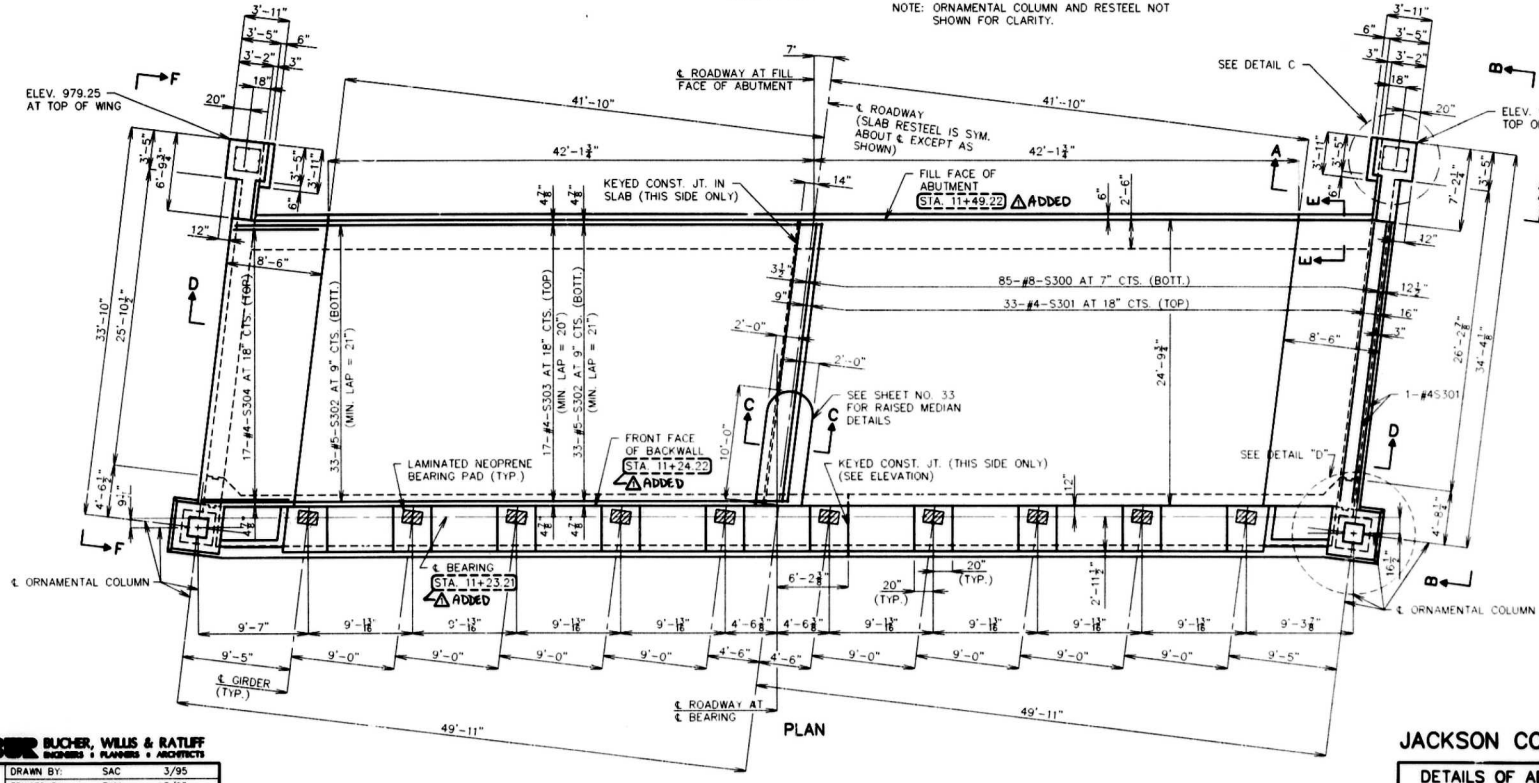


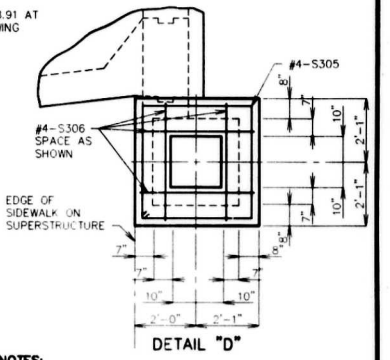
ELEVATION



DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.





DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

SHEET NO. 16 OF 50

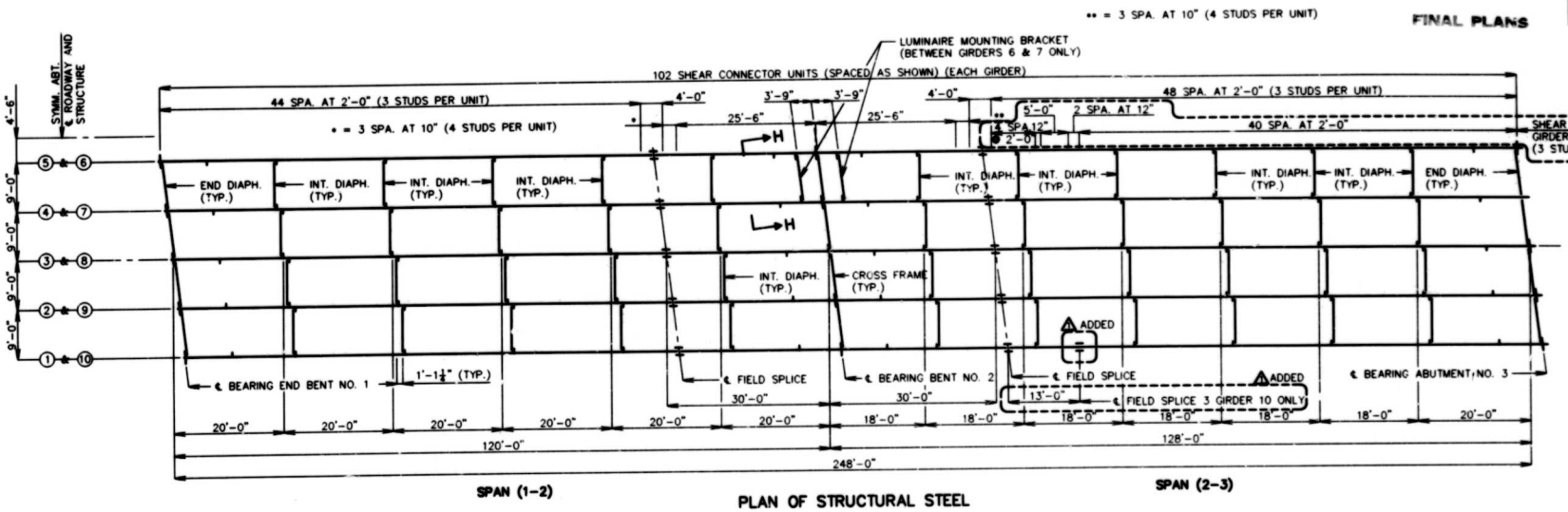
A-5180

4-2-96

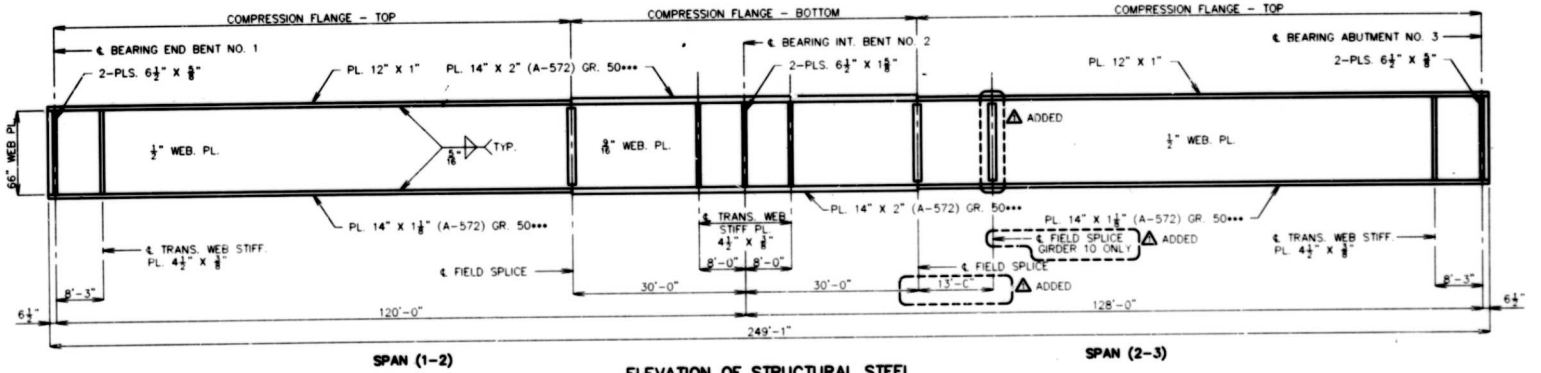
124 to 1

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	132

FINAL PLANS



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCKER, WILLIS & RATLIFF ENGINEERS ▼ PLANNERS ▼ ARCHITECTS

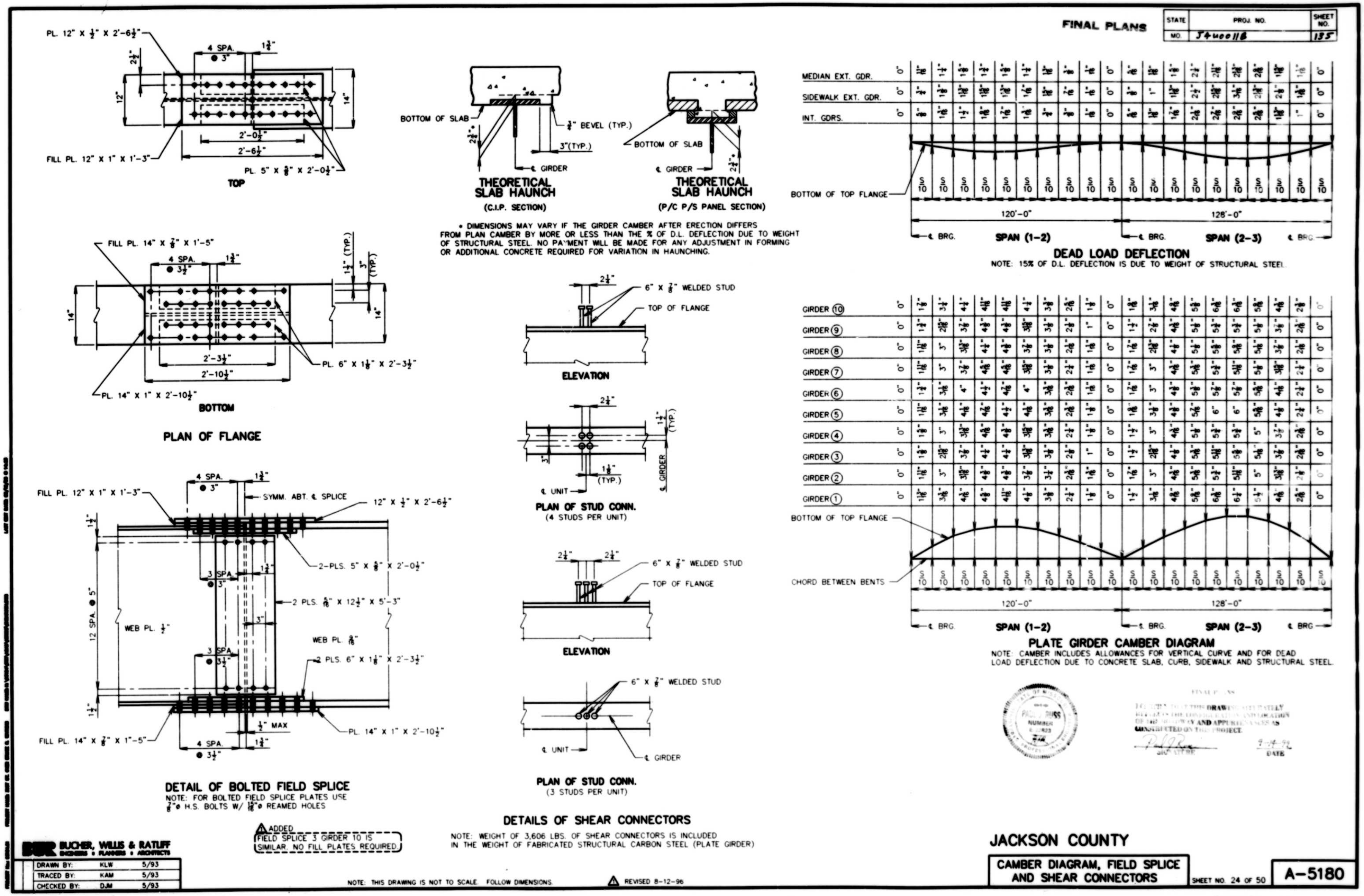
DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

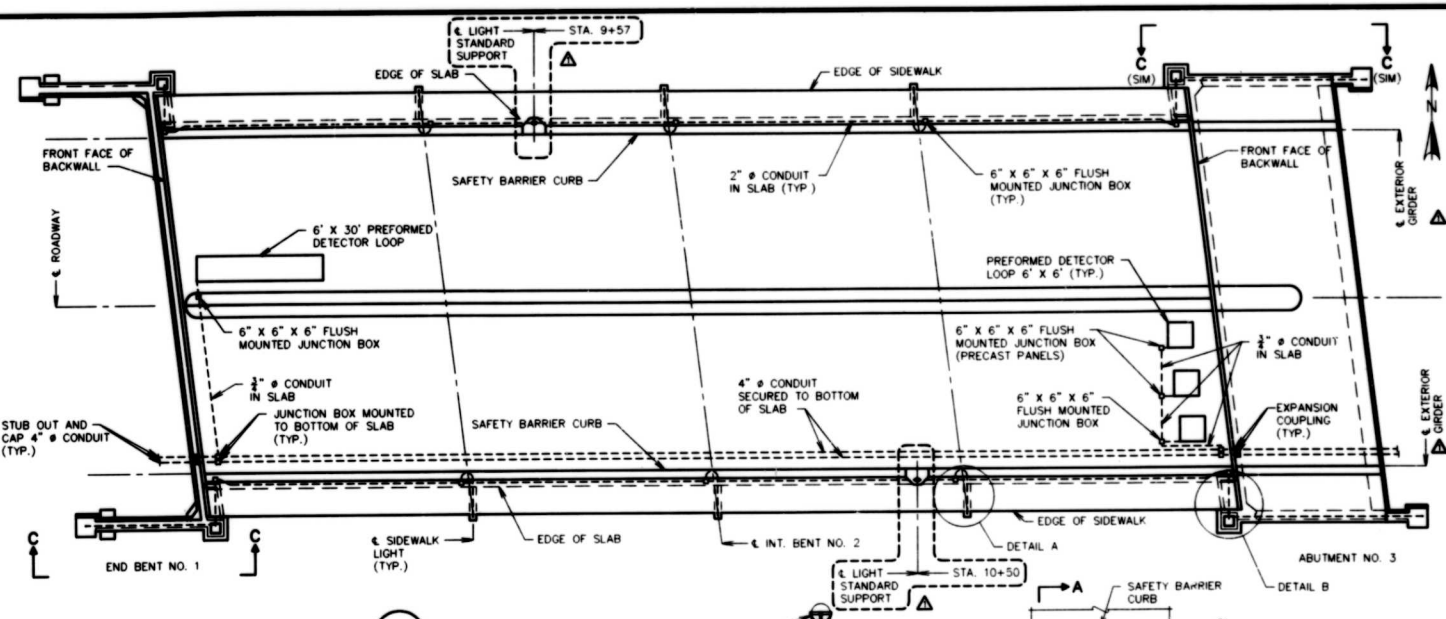
PLAN AND ELEVATION OF STRUCTURAL STEEL

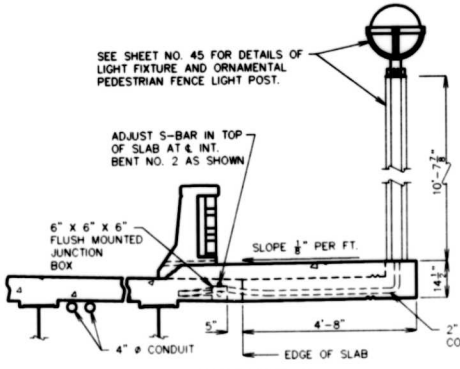
SHEET NO. 21 OF 50

A-5180

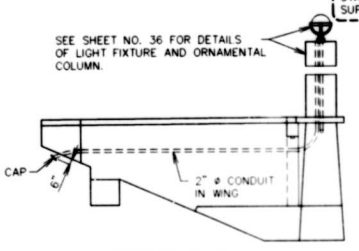

FINAL PLANS
STATE MO. PROJ. NO. J4U0011B SHEET NO. 135
TOP
PLAN OF FLANGE
BOTTOM
THEORETICAL SLAB HAUNCH (C.I.P. SECTION)
THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)
• DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.
DEAD LOAD DEFLECTION
NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.
MEDIAN EXT. GDR.
SIDEWALK EXT. GDR.
INT. GDRS.
BOTTOM OF TOP FLANGE
SPAN (1-2) 120'-0"
SPAN (2-3) 128'-0"
PLATE GIRDER CAMBER DIAGRAM
NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.
CHORD BETWEEN BENTS
DETAIL OF BOLTED FIELD SPLICE
NOTE: FOR BOLTED FIELD SPLICE PLATES USE 7/8"ø H.S. BOLTS W/ 15/16"ø REAMED HOLES
ELEVATION
PLAN OF STUD CONN. (4 STUDS PER UNIT)
PLAN OF STUD CONN. (3 STUDS PER UNIT)
DETAILS OF SHEAR CONNECTORS
NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)
ADDED FIELD SPLICE 3 GIRDER 10 IS SIMILAR. NO FILL PLATES REQUIRED.
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS
DRAWN BY: KLW 5/93
TRACED BY: KAM 5/93
CHECKED BY: DJM 5/93
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.
REVISED 8-12-96
JACKSON COUNTY
CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS
SHEET NO. 24 OF 50
A-5180

FOR INFORMATION ONLY A51801, Sht. 209

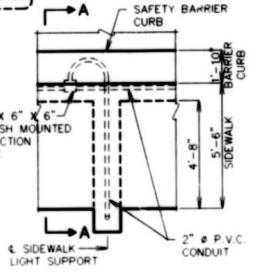




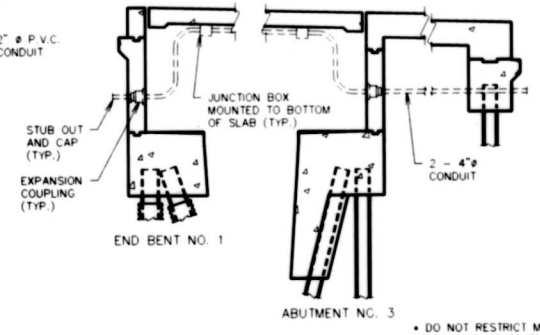
SECTION A-A



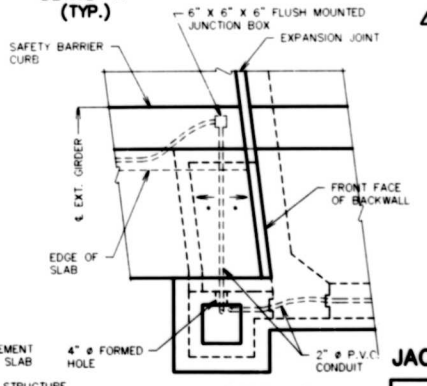
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN EITHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

⚠ 4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

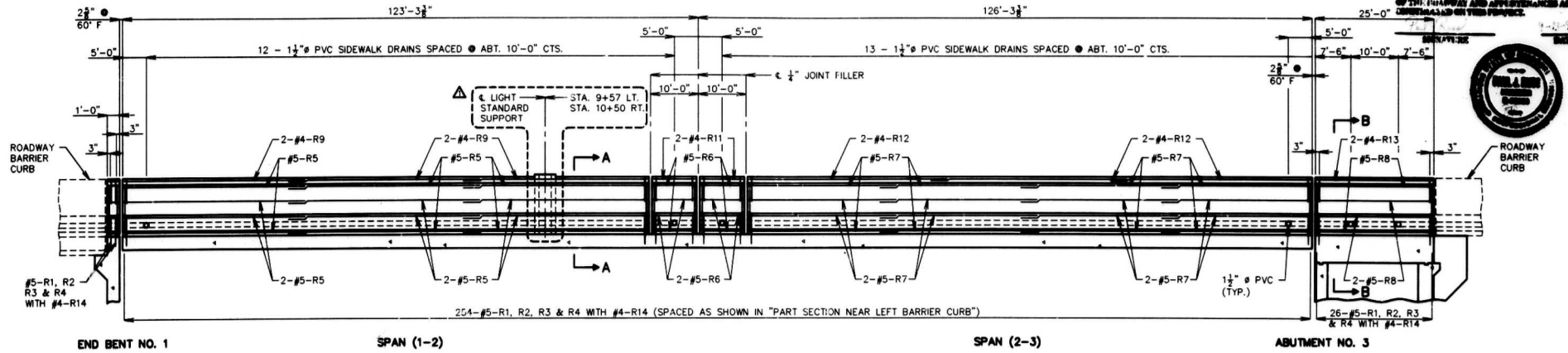
DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

FINAL PLANS

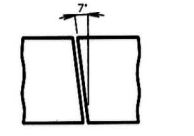
STATE	PROJ. NO.	SHEET NO.
MO.	J4M0118	145



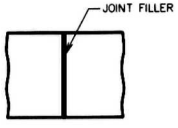
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

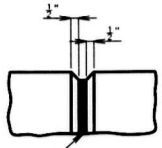


AT 2⅝" EXPANSION JOINT

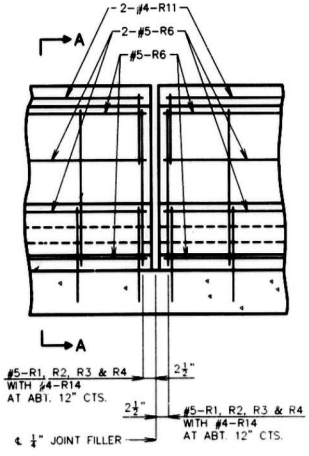


AT ¼" JOINT

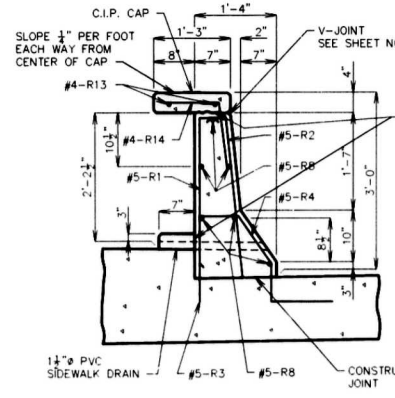
PART PLAN VIEW



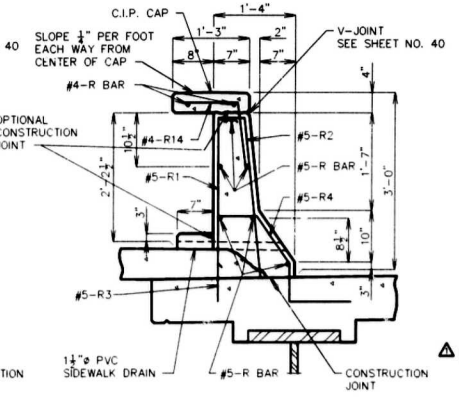
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB

SHEET NO. 34 OF 50

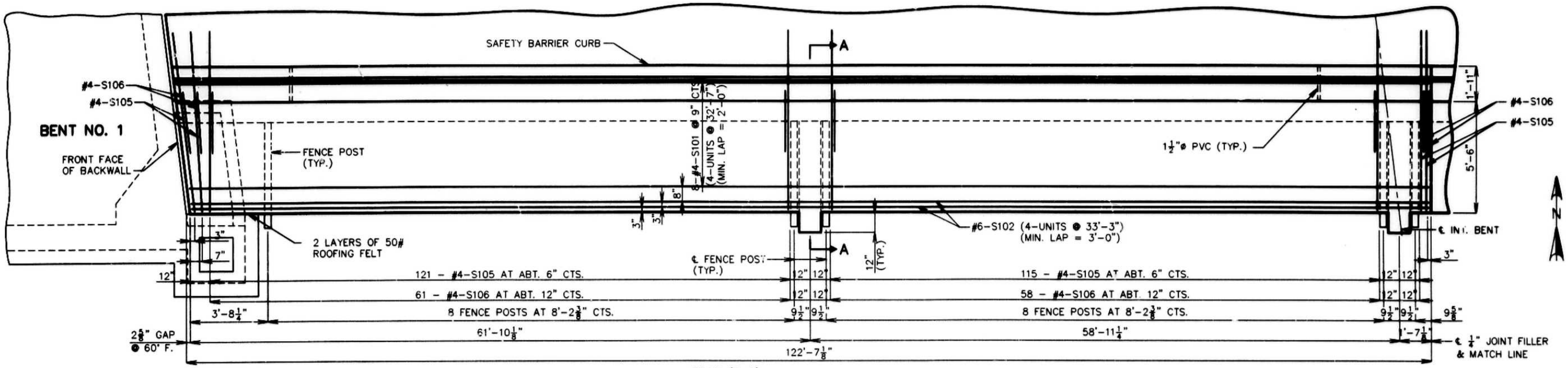
A-5180

FOR INFORMATION ONLY

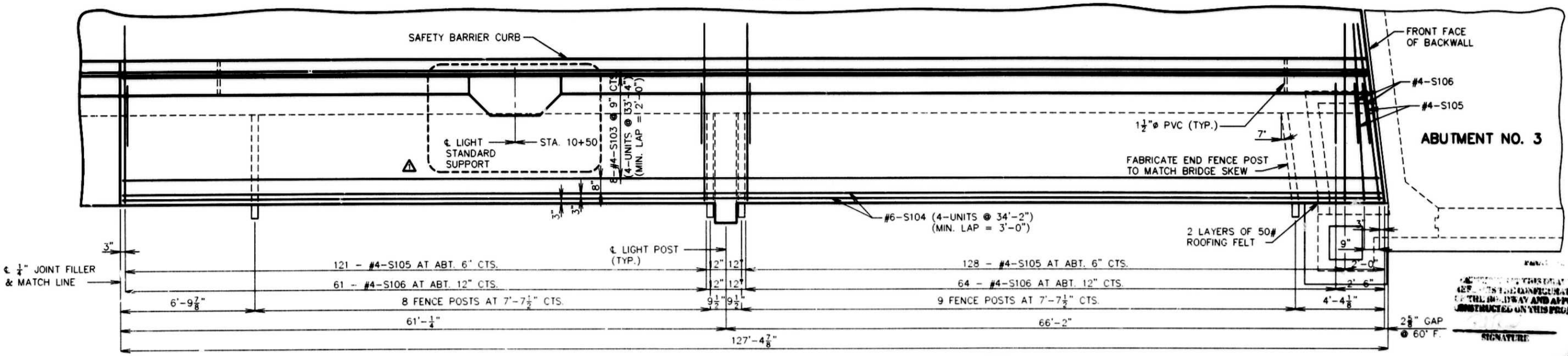
A51801, Sht. 211

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J.4U0011B	163



SPAN (1-2)

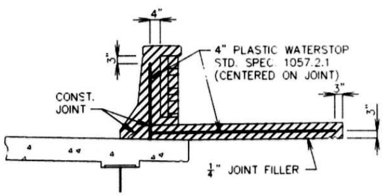


SPAN (2-3)

PLAN OF RIGHT SIDEWALK

THE ... THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

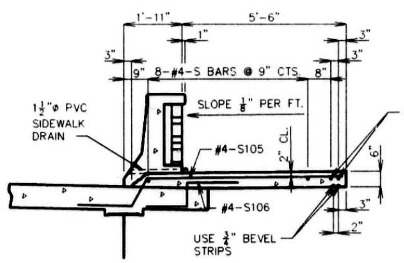
SIGNATURE DATE



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONC... REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 32 OF 50

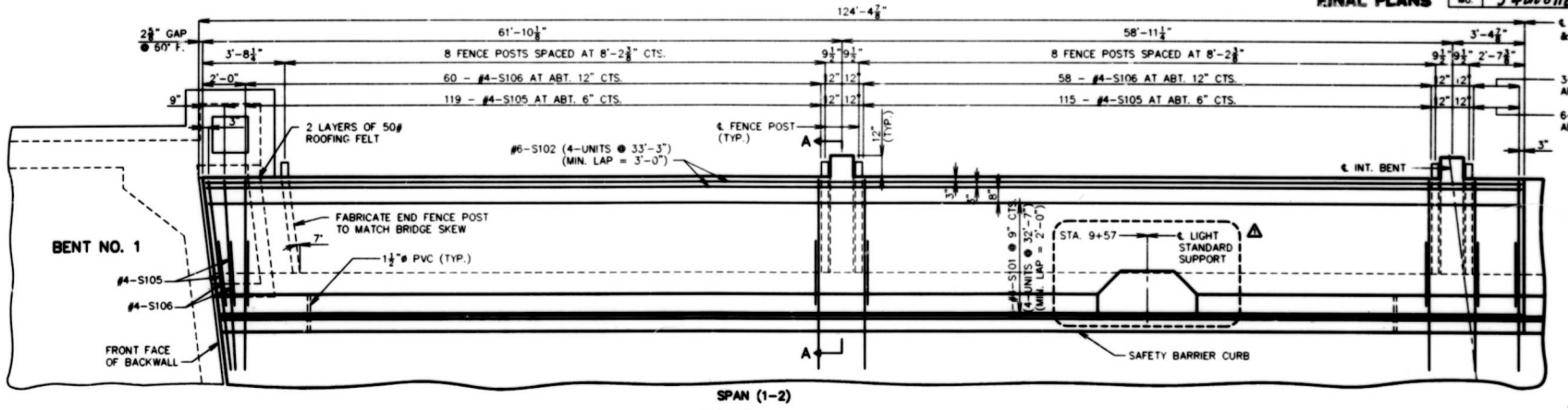
A-5180

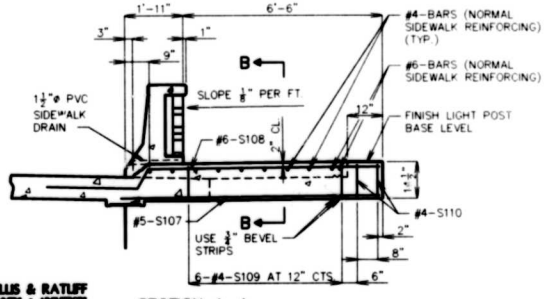
11-7-95

■ 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.	J4U60118	162

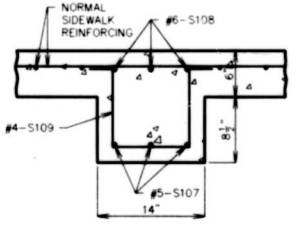
FINAL PLANS





SECTION A-A

PLAN OF LEFT SIDEWALK



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 31 OF 50

A-5180

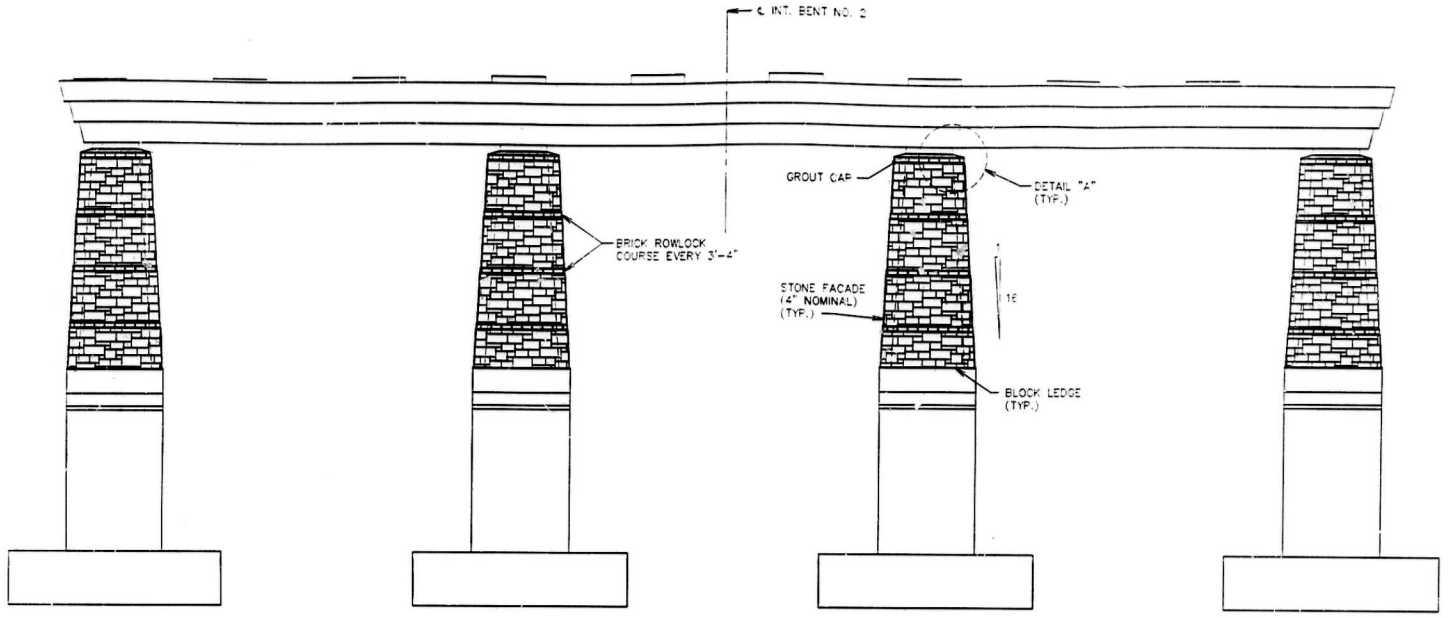
STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	129

FINAL PLANS

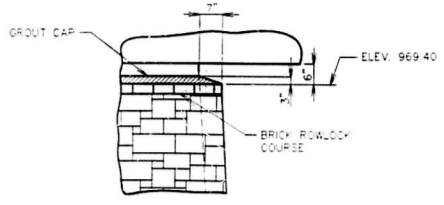
FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

7-18-97



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-98

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

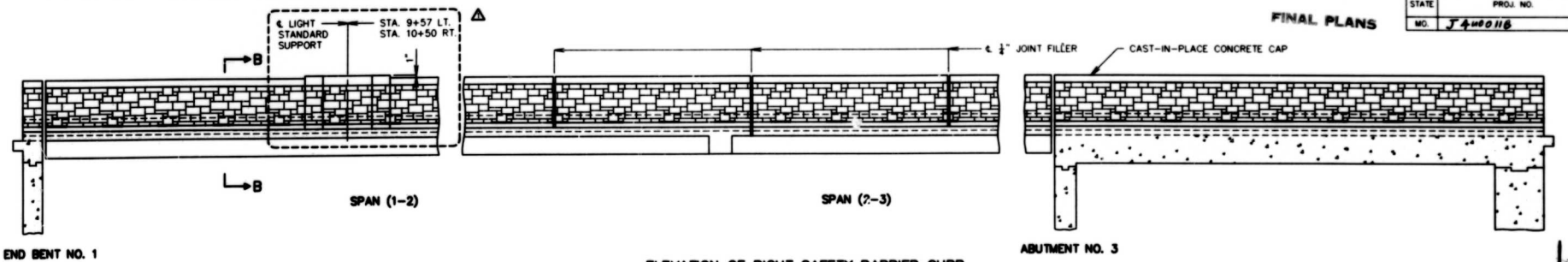
DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

SHEET NO. 38 OF 50

A-5180

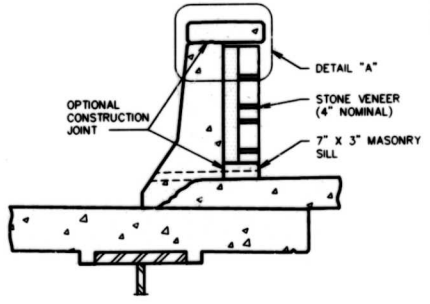
STATE	PROJ. NO.	SHEET NO.
MO.	J4H0116	151

FINAL PLANS

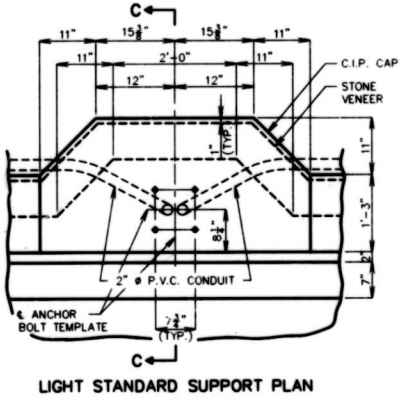


ELEVATION OF RIGHT SAFETY BARRIER CURB

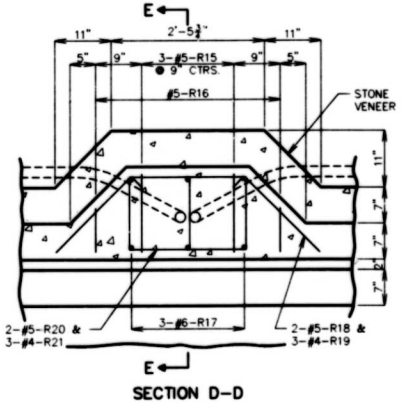
(LEFT CURB IS SIMILAR)



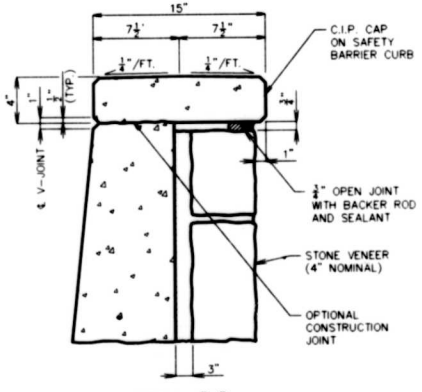
PART SECTION B-B



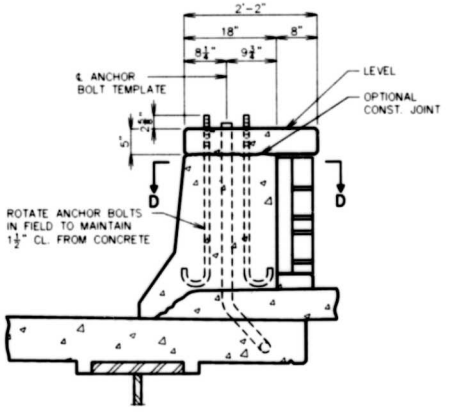
LIGHT STANDARD SUPPORT PLAN



SECTION D-D



DETAIL "A"



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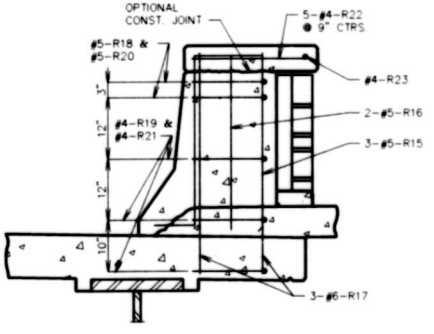
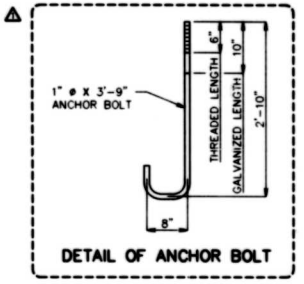


PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

⚠ FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

24 to 1

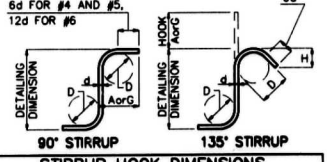
STATE	PROJ. NO.	SHEET NO.
MO.	J4L0011B	157

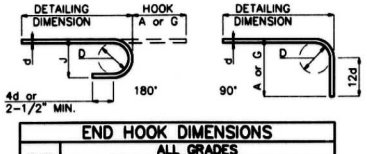
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
END BENT NO. 1																		
8	5-D100	WING FOOTING		20		X			4 6.000							4 6	4 6	38
8	5-D101	WING FOOTING		20		X			2 0.000							2 0	2 0	17
7	7-F100	WING BRACE		15		X			15.000	4 10.000	15.000	10.625	10.625	9.250	11.750	7 4	7 3	104
7	7-F101	WING BRACE		15		X			15.000	4 5.000	15.000	10.625	10.625	11.750	9.250	6 11	6 10	98
8	8-H100	BEAM		17		X			43 6.000							44 5	44 5	949
8	8-H101	BEAM		17		X			22 4.500							23 4	23 4	498
4	8-H102	BEAM		20		X			30 2.000							30 2	30 2	322
8	8-H103	BEAM		20		X			23 8.000							23 8	23 8	506
4	8-H104	BEAM		20		X			43 6.000							43 6	43 6	261
2	8-H106	BEAM		20		X			19 3.000							19 3	19 3	58
19	4-H108	BACKWALL		20		X			30 0.000							30 0	30 0	381
8	4-H107	BACKWALL		20		X			43 6.000							43 6	43 6	232
2	8-H108	BACKWALL		20		X			43 6.000							43 6	43 6	131
4	8-H109	BACKWALL		20		X			31 0.000							31 0	31 0	186
4	4-H110	BACKWALL	E	20		X			30 0.000							30 0	30 0	80
2	4-H111	BACKWALL	E	20		X			43 6.000							43 6	43 6	58
2	8-H112	BACKWALL	E	20		X			43 6.000							43 6	43 6	131
4	8-H113	BACKWALL	E	20		X			31 0.000							31 0	31 0	186
4	4-H114	BACKWALL	E	20		X			7 6.000							7 6	7 6	20
16	8-H115	BEAM		10	S	X				5 0.000	2 6.000					12 6	12 2	292
2	4-H116	ORN. COLUMN	E	20		X			6 6.000							6 6	6 6	9
14	4-H117	ORN. COLUMN	E	20		X			7 6.000							7 6	7 6	70
14	4-H118	ORN. COLUMN	E	21		X			2 6.000		12.000			2 5.750	3.625	3 6	3 5	32
14	4-H119	ORN. COLUMN	E	21		X			2 6.000	12.000				2 5.750	3.625	3 6	3 5	32
16	8-H120	ORN. COLUMN	E	19		X			4 0.000	16.000						5 4	5 2	124
14	8-H121	WING		20		X	V	2	10 0.000							10 0	10 0	
		INCREMENT =							20 3.000							20 3	20 3	321
		20.500 INCH																
12	8-H122	WING		20		X	V	2	7 2.000							7 2	7 2	
		INCREMENT =							10 1.000							10 1	10 1	156
		17.500 INCH																
4	8-H123	WING	E	20		X			21 10.000							21 10	21 10	131
12	8-H124	WING		20		X			21 10.000							21 10	21 10	393
14	8-H125	WING		20		X	V	2	10 6.000							10 6	10 6	
		INCREMENT =							21 3.000							21 3	21 3	334
		21.500 INCH																
4	8-H127	BEAM		20		X			21 3.000							21 3	21 3	227
2	4-S111	ORN. COLUMN	E	13	S	X			3 9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S112	ORN.COLUMN	E	20		X			3 9.000							3 9	3 9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
4	7-T100	WING		14		X				8 8.000	1 6.000			7.250	16.500	10 2	10 2	83
2	7-T101	WING		14		X				14 3.000	1 11.000			21.000	9.250	16 2	16 1	66
2	7-T102	WING		14		X				14 6.000	1 11.000			21.250	8.875	16 5	16 4	67
32	5-U100	BEAM		13	S	X			4 0.875	2 6.000	4 2.750	2 2.000				14 3	13 11	485
34	5-U101	BEAM		13	S	X			4 0.750	2 7.750	4 2.750	2 7.750				14 8	14 2	502
28	5-U102	BEAM		13	S	X			4 0.500	2 11.500	4 2.750	2 11.375				15 1	14 9	431
26	4-U103	BEAM		10	S	X				6.000	4 0.000					5 0	4 10	84
5	7-U104	BEAM		14		X			5 0.000	23.000	4 6.000			2 9.250	3 6.500	11 5	11 2	114
5	7-U105	BEAM		14		X			5 0.000	23.000	4 6.000			3 6.500	2 9.250	11 5	11 2	114
84	4-U106	BACKWALL		10	S	X				1 2.000	6.000					2 10	2 8	150
52	4-U107	ORN. COLUMN	E	19	S	X			2 6.000	2 6.000						5 0	4 11	171
8	4-U108	WING		13	S	X			23.000	23.000	23.000	23.000				8 5	8 2	44
4	8-V100	BEAM		20		X			2 7.000							2 7	2 7	18
98	8-V101	BACKWALL	E	20		X			9 2.000							9 2	9 2	1350
98	8-V102	BACKWALL	E	20		X			8 8.000							8 8	8 8	885
20	8-V103	ORN. COLUMN	E	20		X			2 8.000							12 8	12 8	381
4	8-V104	ORN. COLUMN	E	20		X			6 9.000							6 9	6 9	41
16	8-V105	WING	E	20		X			4 2.000							4 2	4 2	100
4	8-V106	WING		20		X			3 6.000							3 6	3 6	21
18	8-V107	WING		20		X	V	2	5 1.000							5 1	5 1	
		INCREMENT =							7 8.000							7 8	7 8	172
		3.875 INCH																
22	8-V108	WING		20		X			7 5.000							7 5	7 5	245
16	8-V109	WING		20		X	V	2	2 8.000							2 8	2 8	
		INCREMENT =							5 0.000							5 0	5 0	92
		3.500 INCH																
14	8-V110	WING		20		X			5 0.000							5 0	5 0	105
12	8-V111	WING FOOTING		20		X			6 11.000							6 11	6 11	125
18	8-V112	WING		20		X	V	2	4 11.000							4 11	4 11	
		INCREMENT =							7 6.000							7 8	7 8	168
		3.875 INCH																
24	8-V113	WING		20		X			7 3.000							7 3	7 3	261
16	8-V114	WING		20		X	V	2	2 7.000							2 7	2 7	
		INCREMENT =							4 8.000							4 8	4 8	87
		3.625 INCH																
18	4-V115	ORN.COLUMN	E	20		X			3 0.000							3 0	3 0	36
8	4-V116	ORN.COLUMN	E	20		X			5 10.000							5 10	5 10	31
5	4-V117	ORN.COLUMN	E	20		X			6 8.000							6 8	6 8	22
5	4-V118	ORN.COLUMN	E	20		X			6 9.000							6 9	6 9	23
20	W5W1	A B WELLS		22		X			18.000	9.125						26 1	26 1	88





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

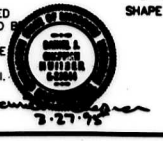
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

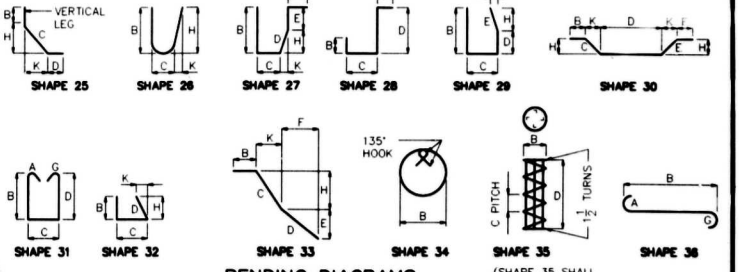
END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

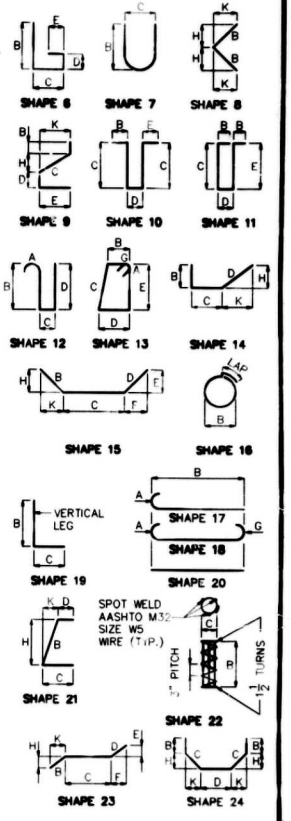
NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.





BENDING DIAGRAMS
JACKSON COUNTY

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)



BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

REINFORCING SCHEDULE

SHEET NO. 46 OF 50

A-5180

24 to 1

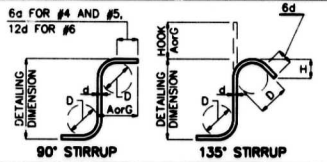
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
864	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
864	5-R2	BARRIER CURB	E	19				2	6.125	3.500				6.000	3.000	2 10	2 8	1571
864	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
864	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1685
36	5-R5	BARRIER CURB	E	20				36	6.000							36 6	36 6	1452
24	5-R6	BARRIER CURB	E	20				9	6.000							9 6	9 6	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	6.000							24 6	24 6	309
12	4-R9	C.I.P. CAP	E	20				36	5.000							36 5	36 5	308
99	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
8	4-R11	C.I.P. CAP	E	20				9	6.000							9 6	9 6	52
12	4-R12	C.I.P. CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P. CAP	E	20				24	6.000							24 6	24 6	66
864	4-R14	C.I.P. CAP	E	15					15.000	11.000				15.00	1.500	2 2	2 1	784
8	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					9 10	9 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
8	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
8	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	6.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 6	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	6
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	817
468	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT = 49.000 INCH						40	9.000							40 9	40 9	1344
136	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	966
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
8	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

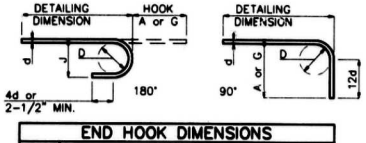
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	984
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	984
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1363
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1428
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
992	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	6 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000				3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	7 5.000				9.375	6.500	11 6	11 4	497
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500				3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000				4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000							9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20				24	6.000							24 8	24 8	11329
72	4-S301	SLAB	E	20				24	6.000							24 6	24 8	1187
132	5-S302	SLAB	E	20				26	3.000							26 3	26 3	3814
34	4-S303	SLAB	E	20				44	6.000							44 6	44 8	1015
34	4-S304	SLAB	E	20				8	2.000							8 2	8 2	188
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000							3 6	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS



90° STIRRUP 135° STIRRUP



STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

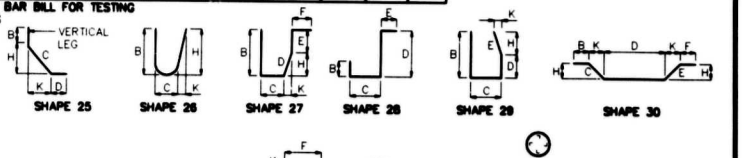
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

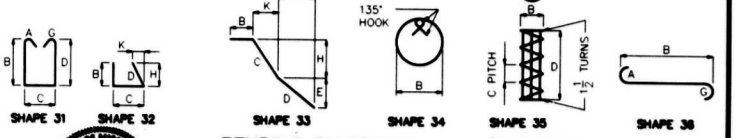
END HOOK DIMENSIONS

BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

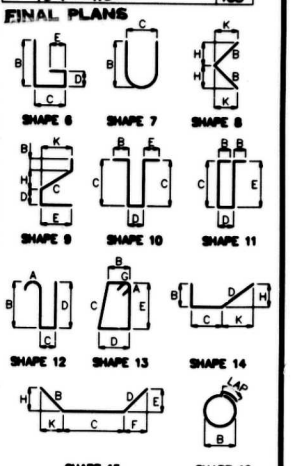
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.





(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)



BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

⚠ REVISED 10-27-95

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	160

FINAL PLANS

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

24 to 1

BILL OF REINFORCING STEEL

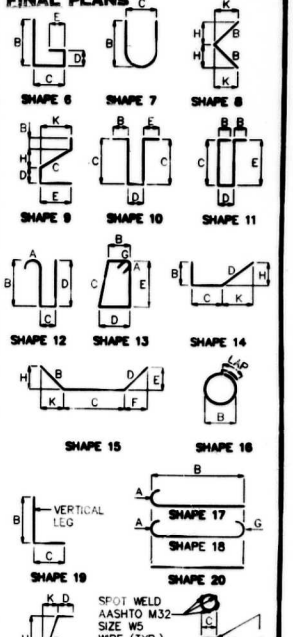
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15	X				15.000	4 6.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15	X				15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	8-H300	BEAM		17	X				43 10.000							44 9	44 9	956
8	8-H301	BEAM		17	X				22 5.000							23 4	23 4	496
8	8-H302	BEAM		20	X				23 8.000							23 8	23 8	506
4	8-H303	BEAM		20	X				30 2.000							30 2	30 2	322
4	8-H304	BEAM		20	X				21 3.000							21 3	21 3	227
4	8-H306	BEAM		20	X				43 10.000							43 10	43 10	263
2	8-H308	BEAM		20	X				18 9.000							18 9	18 9	56
8	8-H307	APRON		20	X				43 10.000							43 10	43 10	527
16	8-H308	APRON		20	X				31 4.000							31 4	31 4	753
2	4-H309	WING		20	X				7 8.000							7 8	7 8	10
28	8-H310	APRON		10	X					6 0.000	2 7.000					14 7	14 3	599
4	8-H311	BACKWALL		20	X				31 0.000							31 0	31 0	186
2	8-H312	BACKWALL		20	X				43 9.000							43 9	43 9	131
8	4-H313	BACKWALL		20	X				43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20	X				29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21	X				3 6.000		12.000			3 5.625	5.125	4 6	4 5	41
14	4-H316	ORN. COLUMN	E	21	X				3 6.000	12.000				3 5.625	5.125	4 6	4 5	41
16	5-H317	ORN. COLUMN	E	19	X				4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20	X				7 0.000							7 0	7 0	9
16	8-H319	APPR. BEAM		17	X				41 7.000							42 3	42 3	1015
4	8-H320	APPR. BEAM		20	X				41 7.000							41 7	41 7	250
10	8-H321	APPR. BEAM		20	X				22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20	X				34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20	X				26 8.000							26 8	26 8	36
4	5-H324	WING	E	20	X				9 0.000							9 0	9 0	36
6	5-H325	WING		20	X				9 0.000							9 0	9 0	56
2	5-H326	WING		20	X				31 10.000							31 10	31 10	66
8	5-H327	WING		20	X	V	2		22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20	X				17 1.000							17 1	17 1	23
2	4-H329	WING		20	X				12 7.000							12 7	12 7	17
2	4-H330	WING		20	X				8 1.000							8 1	8 1	11
12	4-H331	WING		20	X				5 6.000							5 6	5 6	44
2	4-H332	WING		20	X				12 2.000							12 2	12 2	16
2	4-H333	WING		20	X				16 8.000							16 8	16 8	22
8	5-H334	WING		20	X	V	2		22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20	X				31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20	X				8 0.000							8 0	8 0	75

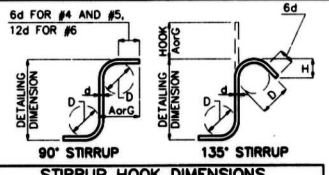
BILL OF REINFORCING STEEL

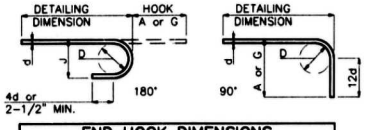
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 6.000				2 6.375	10.125	33 7	33 6	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 6	7
48	4-U300	APRON		10	S	X				2 0.000	1 5.000						5 5	5 3	168
32	8-U301	BEAM		13	S	X			4 8.500	2 8.000	4 10.500	2 8.000					15 10	15 6	517
34	8-U302	BEAM		13	S	X			4 8.375	2 10.000	4 10.500	2 10.000					16 2	15 10	891
28	8-U303	BEAM		13	S	X			4 8.125	3 2.125	4 10.500	3 2.000					16 10	16 6	482
28	4-U304	BEAM		10	S	X				6.000	4 8.500						5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X				17.500	6.000						3 5	3 3	182
92	8-U306	APPR. BEAM		13	S	X			2 3.000	2 8.000	2 3.000	2 6.000					10 5	10 1	677
109	8-U307	APPR. BEAM	E	10	S	X				3 6.000	2 3.250						9 3	9 1	947
10	4-U308	END POST		13	S	X			23.000	23.000	23.000	23.000					8 5	8 2	56
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500	2 6.500							5 1	5 0	174
96	6-V300	BACKWALL	E	20		X			8 11.000								8 11	8 11	1286
96	5-V301	BACKWALL	E	20		X			8 6.000								8 6	8 6	851
18	4-V302	ORN. COLUMN	E	20		X			3 0.000								3 0	3 0	38
134	5-V303	APRON		20		X			6 3.000								6 3	6 3	874
20	8-V304	ORN. COLUMN		20		X			9 9.000								9 9	9 9	293
16	8-V305	END POST	E	20		X			5 3.000								5 3	5 3	126
6	5-V306	WING		20		X	V	2	4 0.000								4 0	4 0	
		INCREMENT =							4 9.000								4 9	4 9	40
		4.500 INCH																	
30	4-V307	WING		20		X	V	2	5 4.000								5 4	5 4	
		INCREMENT =							12 8.000								12 8	12 8	180
		6.250 INCH																	
4	4-V308	WING		20		X			14 10.000								14 10	14 10	40
4	4-V309	WING		20		X			15 1.000								15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000								5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000								6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000								6 11	6 11	23
30	4-V313	WING		20		X	V	2	5 7.500								5 8	5 8	
		INCREMENT =							12 11.000								12 11	12 11	186
		6.250 INCH																	
6	5-V314	WING		20		X	V	2	4 5.000								4 5	4 5	
		INCREMENT =							5 1.000								5 1	5 1	30
		4.000 INCH																	
20	6-V315	ORN. COLUMN	E	20		X			10 1.000								10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000								6 11	6 11	42
20	W5W1	A.B. WELLS		22		X			18.000	9.125							26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	199

FINAL PLANS







STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

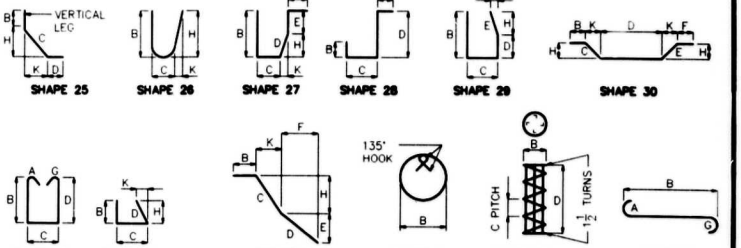
END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
INTERMEDIATE BENT NO. 2																												
56	5	D200	FOOTING		20		X			10	2.000													10	2	10	2	564
68	9	D201	FOOTING		18		X			13	8.000													18	2	18	2	3739
18	9	H200	BEAM		17		X			49	7.500													50	10	50	10	3111
18	9	H201	BEAM		17		X			45	5.000													46	8	46	8	2856
18	10	H202	BEAM		20		X			48	2.000													48	2	48	2	3316
4	8	H203	BEAM		20		X			48	10.000													48	10	48	10	293
4	8	H204	BEAM		20		X			40	4.000													40	4	40	4	242
16	10	H205	BEAM		20		X			43	3.000													43	3	43	3	2976
12	4	H206	BRG. BASE		20		X			3	3.000													3	3	3	3	36
24	7	H207	BEAM		19		X	V	4	3	9.000	2	6.000											6	3	6	1	
			INCREMENT =							5	5.000	2	6.000											7	11	7	9	339
			4.00 INCH																									
224	4	P200	COLUMN		13	S	X	V	16	2	0.000	2	9.500	2	0.000	2	9.500							10	4	10	1	
										3	1.000	4	6.625	3	1.000	4	6.625							16	0	15	9	1932
			INCREMENT =								1.000		1.625		1.000		1.625											
176	4	P201	COLUMN		10	S	X					3	9.000	5	3.000									12	9	12	7	1479
104	4	P202	COLUMN		10	S	X					4	9.000	1	4.000									10	4	10	2	707
32	4	P203	COLUMN		10	S	X					3	9.000	4	6.000									12	0	11	10	253
24	5	R200	COLUMN	E	20		X			5	8.000													5	8	5	8	142
48	5	R201	COLUMN	E	15		X				12.000		12.250	1	8.250		11.625		16.625		9.875		6.875	3	9	3	8	184
48	5	R202	COLUMN	E	15		X					2	0.000	2	0.000		23.875		2.500					4	0	3	11	196
288	6	U200	BEAM		13	S	X			2	5.750	3	10.375	3	5.000	3	9.000							14	10	14	5	6238
116	5	U201	BEAM		21	S	X				13.375	4	9.000		12.000						13.000		3.250	8	10	8	8	807
28	4	U202	BRG. BASE		10	S	X						12.000	4	3.000									8	3	8	1	114
96	10	V200	COLUMN		36		X			19	4.000													22	2	22	2	9158
96	10	V201	COLUMN		15		X			4	2.000	13	3.000							2	4.750	3	5.000	17	5	17	5	7196
20	W	W1	A B WELLS		22		X			2	1.000		9.125											33	2	33	2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.

STATE | PROJ. NO. | SHEET NO.
MO. J4400118 | 15B

FINAL PLANS

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5.
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

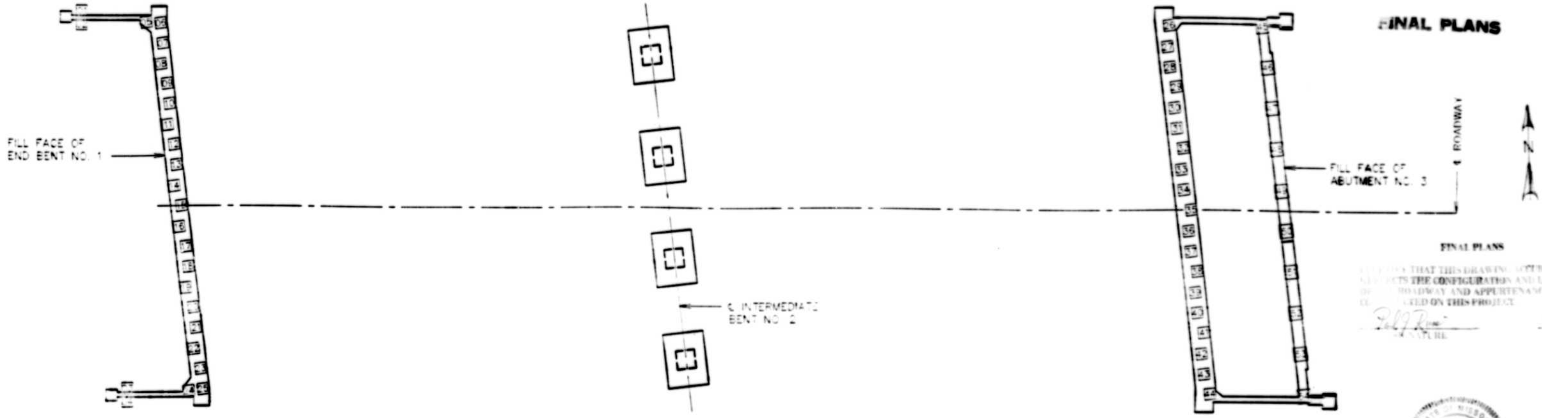
SHEET NO. 47 OF 50

A-5180

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.	J4I0011B	161

FINAL PLANS



PART PLAN SHOWING PILE NUMBERING FOR RECORDING "AS-BUILT" PILE DATA

FINAL PLANS
... THAT THIS DRAWING ACCURATELY ... THE CONFIGURATION AND LOCATION ... ROADWAY AND APPURTENANCES ... ON THIS PROJECT
SIGNATURE 9-14-99 DATE

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1	30.4 ✓	29.6	Wingwall, All Piles driven to practical refusal
2	32.4 ✓	82.8	" Used HP 12 x 53 piles
3	26.0 ✓	47.8	"
4	25.8 ✓	51.8	"
5	28.6 ✓	158.7 ✓	
6	31.3 ✓	138.1 ✓	Battered
7	31.7 ✓	138.1 ✓	Battered
8	28.7 ✓	150.3 ✓	
9	30.7 ✓	130.8 ✓	Battered 4/12
10	31.1 ✓	130.8 ✓	Battered 4/12
11	28.7 ✓	142.8 ✓	
12	31.0 ✓	130.8 ✓	Battered 4/12
13	31.1 ✓	138.1 ✓	Battered 4/12
14	28.9 ✓	142.8 ✓	
15	31.0 ✓	146.1 ✓	Battered
16	29.3 ✓	142.8 ✓	
17	31.3 ✓	130.8 ✓	Battered 4/12
18	31.2 ✓	138.1 ✓	Battered 4/12
19	29.6 ✓	136.0 ✓	
20	31.4 ✓	130.8 ✓	Battered 4/12
21	31.6 ✓	138.1 ✓	Battered 4/12
22	29.8 ✓	158.7 ✓	
23	31.6 ✓	130.8 ✓	Battered 4/12
24	30.2 ✓	142.8 ✓	
25	31.8 ✓	130.8 ✓	Battered

755.2 ✓ Lin. Ft. Total for Bent 1

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26	35.1 ✓	150.3 ✓	
27	30.7 ✓	138.3 ✓	Battered 3/12
28	36.0 ✓	138.3 ✓	Battered 3/12
29	29.6 ✓	168.0 ✓	
30	30.6 ✓	131.4 ✓	Battered 3/12
31	30.7 ✓	138.3 ✓	Battered 3/12
32	29.9 ✓	129.8 ✓	Battered 3/12
33	30.9 ✓	138.3 ✓	Battered 3/12
34	30.6 ✓	131.4 ✓	Battered 3/12
35	29.7 ✓	158.7 ✓	
36	33.2 ✓	138.3 ✓	Battered 3/12
37	30.8 ✓	146.0 ✓	Battered 3/12
38	29.7	150.3 ✓	
39	30.7 ✓	146.0 ✓	Battered 3/12
40	30.6 ✓	131.4 ✓	Battered 3/12
41	29.6 ✓	158.7 ✓	
42	30.7 ✓	138.3 ✓	Battered 3/12
43	30.5	131.4 ✓	Battered
44	30.0 ✓	150.3 ✓	
45	33.8 ✓	95.2 ✓	
46	34.1 ✓	79.3 ✓	
47	34.1 ✓	95.2 ✓	
48	34.2 ✓	102.0 ✓	
49	34.8 ✓	109.9 ✓	
50	34.5 ✓	142.8 ✓	
51	34.4 ✓	109.9 ✓	
52	34.6 ✓	158.7 ✓	
53	34.7 ✓	124.2 ✓	
54	34.6 ✓	136.0 ✓	

933.2 ✓ Lin. Ft. total for Bent 3

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C) TYPE OF PILING USED.

Note: All piling were driven to practical refusal

3-27-95

BWR BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

AS-BUILT PILE DATA

SHEET NO. 50 OF 50

A-5180

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		114

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:

CLASS B CONCRETE (SUBSTRUCTURE)	f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS)	f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60)	fy=60,000 PSI.
STEEL PILE	fb= 9,000 PSI.
STRUCTURAL CARBON STEEL	fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50)	fy=50,000 PSI.

FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	669		669
STRUCTURAL STEEL PILE (12")	LIN. FT.	1956		1956
PREBORE FOR PILING	LIN. FT.	327		327
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,570		67,570
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21

2190 △

ESTIMATED QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

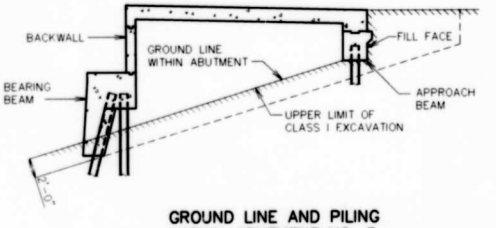
ESTIMATED QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM	BRG. BM	COLUMNS	BRG. BM	APPR. BM
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	37	34		37	41
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10–27–95

JACKSON COUNTY

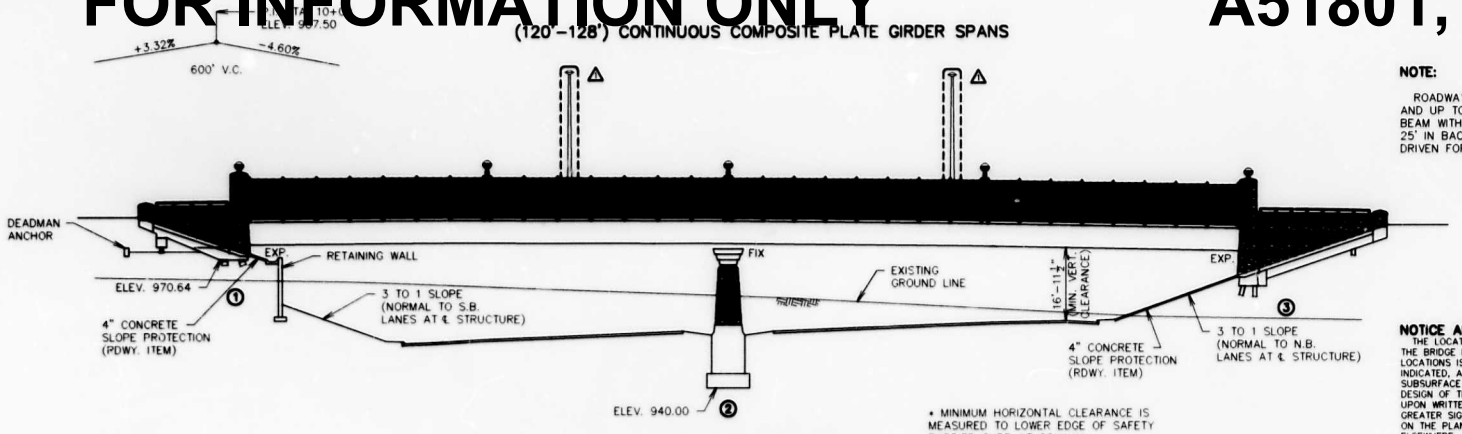
GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

STATE	FED. NO.	SHEET NO.
MO.		

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



GENERAL ELEVATION

* MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

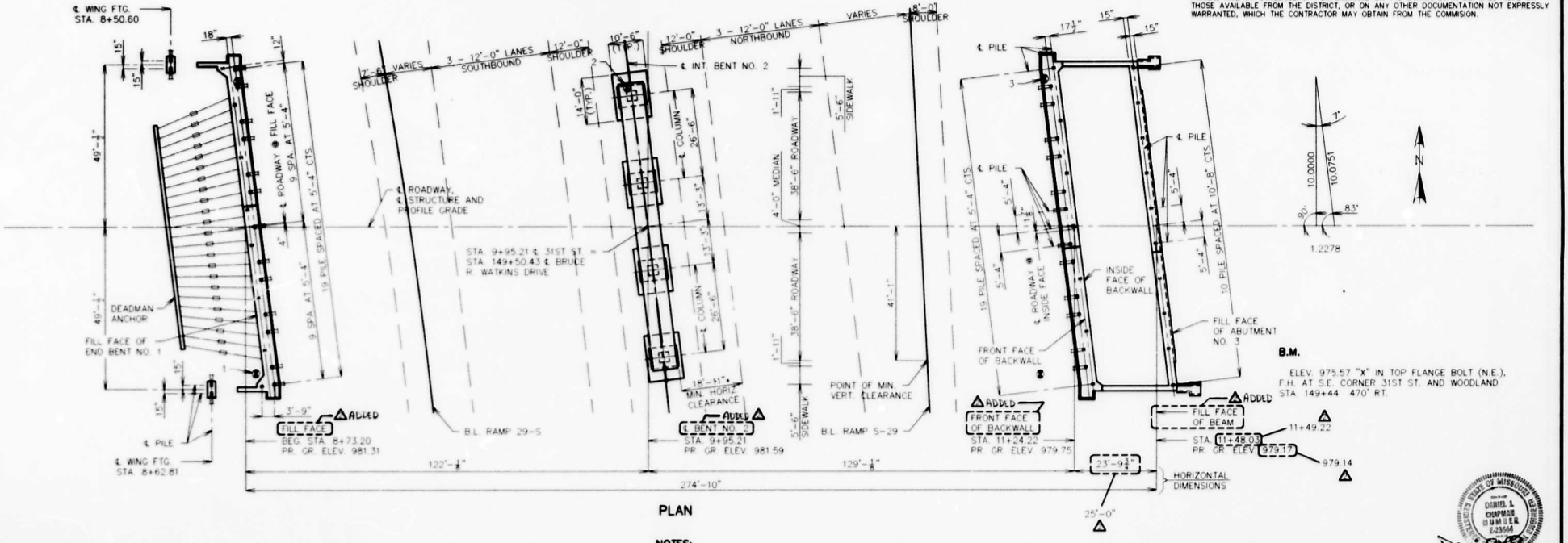
NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DANIEL L. CHAPMAN NUMBER E-23666 STATE OF MISSOURI

4-26-96

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95 △ REVISED 4-25-96

JACKSON COUNTY

GENERAL PLAN AND ELEVATION

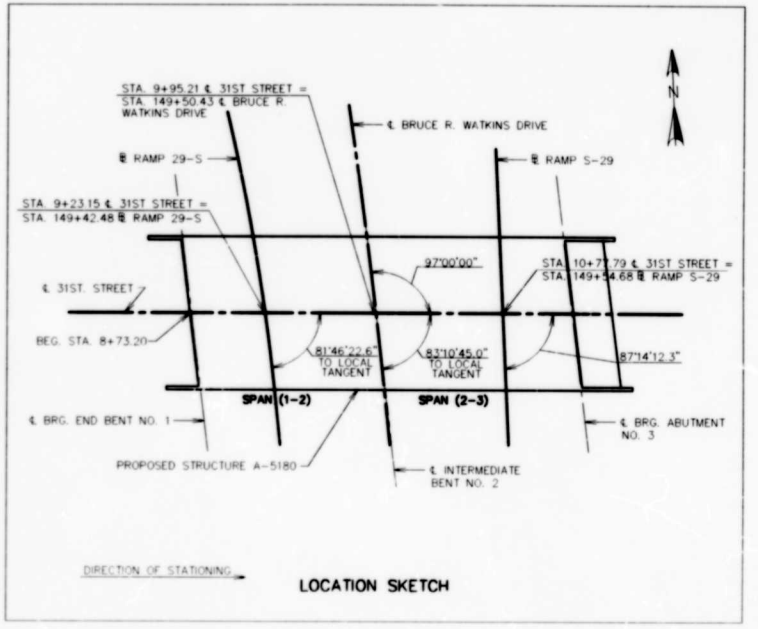
SHEET NO. 2 OF 50

A-5180

24 to 1

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.		112
SEC. 15	TWP. 49 N.	RGE. 33 W



BRIDGE: 31ST. STREET OVER RELOCATED ROUTE 71, BRUCE R. WATKINS DRIVE

STATE ROAD N. OF 31ST. STREET TO SWOPE PARKWAY
IN KANSAS CITY
PROJECT NO.
JOB NO. J4U0011B
JACKSON COUNTY

STA. 9+95.21 (℄ 31ST. STREET)=
STA. 149+50.43 (℄ BRUCE R. WATKINS DR.)
RTE. 71

3-27-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

Date 4/17/95 SHEET NO. 1 OF 50

STD. 708.35
STD. 903.03AQ
A-5180

STATE	PROJ. NO.	SHEET NO.
M		115

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	2/4/6	3.0
10'	5/10/14	4.5 +
15'	12/35/49	4.5 +
20'	22/50	4.5 +

ELEV. 964.3
DARK GREEN FAT CLAY, MOIST, VERY STIFF
ELEV. 954.3
TAN BROWN FAT CLAY, MOIST, HARD
ELEV. 949.3
GRAY SHALE, HARD
ELEV. 941.6
THIN TO MEDIUM BEDDED LIMESTONE, MODERATELY HARD
ELEV. 930.4

① (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	9/18/25	3.5
10'	10/22/34	4.5 +
15'	8/26/42	4.5 +
20'	50/4"	4.5 +

ELEV. 961.2
TAN BROWN FAT CLAY, MOIST, SOFT TO VERY STIFF
ELEV. 951.8
OLIVE BROWN FAT CLAY, SLIGHTLY MOIST, HARD
ELEV. 945.2
GRAY WEATHERED SHALE, HARD
ELEV. 941.6
GRAY, THICK BEDDED LIMESTONE, HARD
ELEV. 931.9

② (CORE)

STANDARD PENETRATION TESTS

DEPTH	BLOWS/6"	POCKET PEN. TSF
5'	6/6/7	1.5
10'	5/12/17	4.5 +
15'	5/12/15	4.5 +
20'	2/2/2	0.5

ELEV. 959.5
DARK BROWN FAT CLAY, MOIST, STIFF
ELEV. 950.5
TAN BROWN FAT CLAY, MOIST, VERY STIFF
ELEV. 944.5
OLIVE TAN BROWN SHALE, HARD
ELEV. 940.1
REDDISH BROWN FAT CLAY, MOIST, SOFT
ELEV. 935.9
GRAY WEATHERED LIMESTONE, BROWN CLAY ALONG BEDDING PLANES, MODERATELY HARD, THIN TO MEDIUM BEDDING
ELEV. 920.3

③ (CORE)

NOTE: FOR LOCATION OF BORINGS, SEE SHEET NO. 2. BORING DATA FOR ALL LOCATIONS IS AVAILABLE UPON REQUEST FROM THE DISTRICT OFFICE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR 4/93
TRACED BY:	KAM 5/93
CHECKED BY:	DJM 5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

BORING DATA

SHEET NO. 4 OF 50

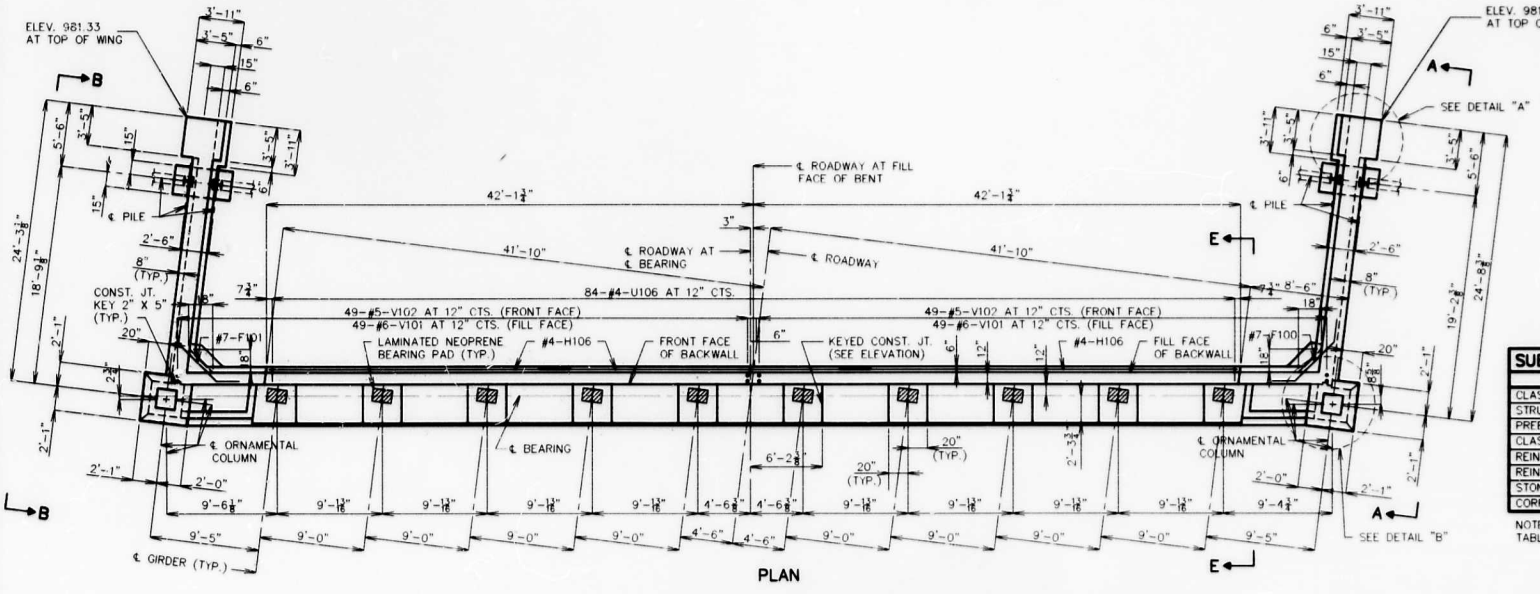
A-5180

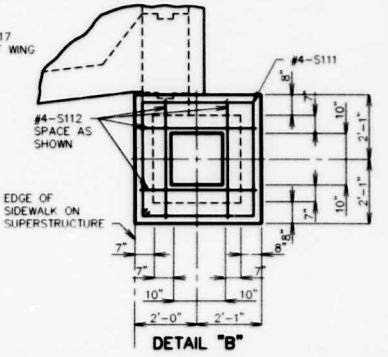
[redacted] 24 to 1

FOR INFORMATION ONLY

A51801, Sht. 224

PROJ. NO.	SHEET NO.

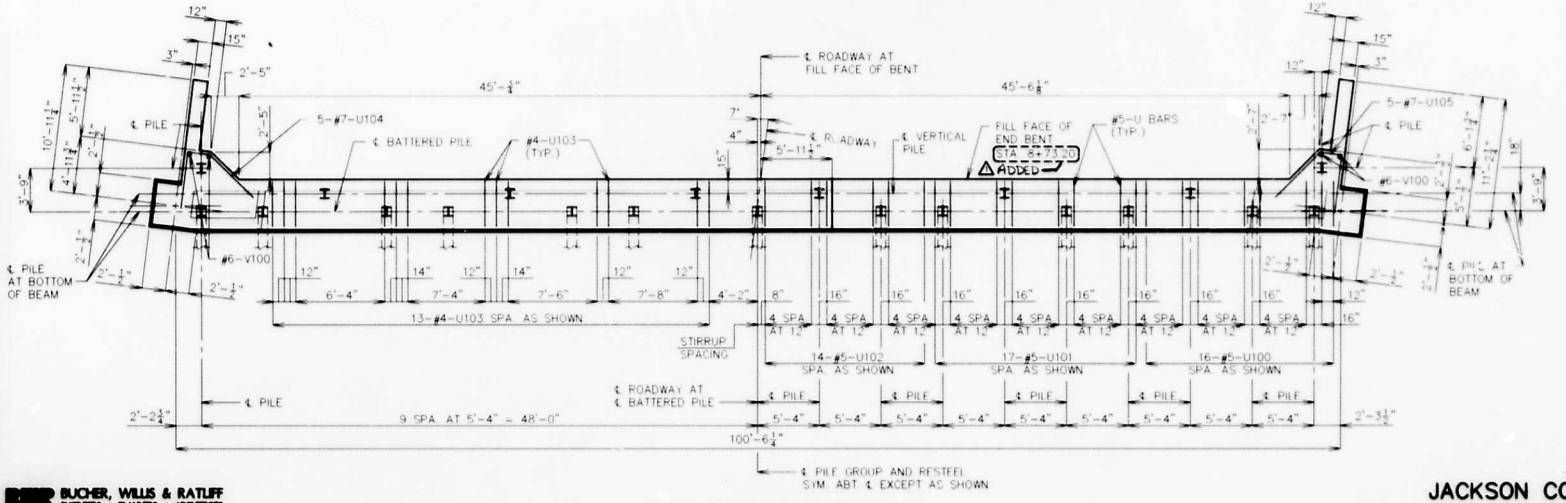




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITIY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.8 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITIY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 8.

FOR SECTION E-E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WNGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

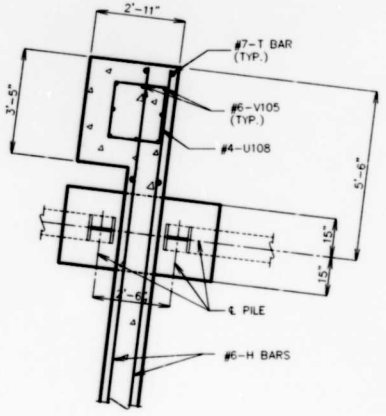
DETAILS OF END BENT NO. 1 PLAN

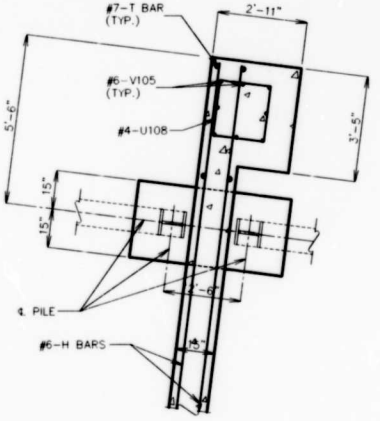
SHEET NO. 5 OF 50

A-5180

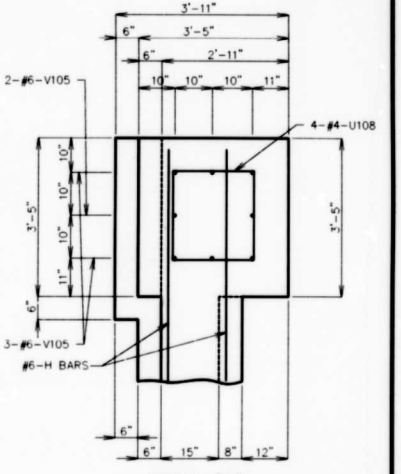
24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		

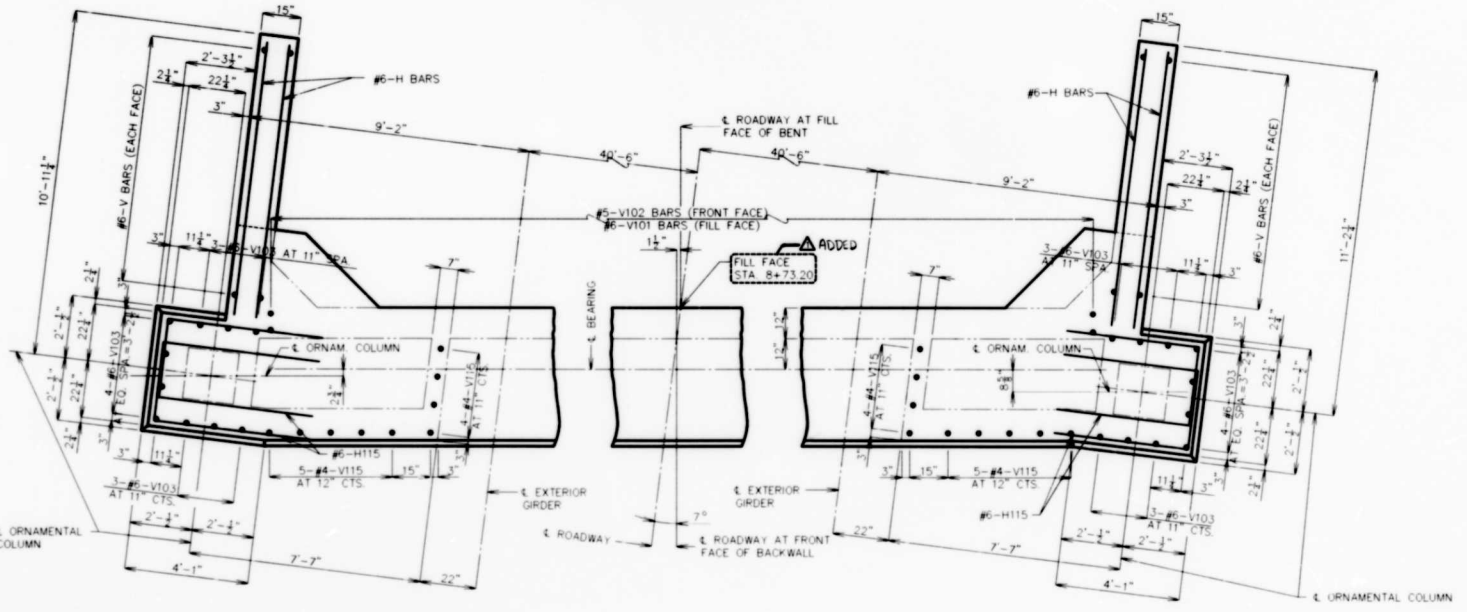




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

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△ REVISED 4-25-96

DANIEL A. CHAPMAN NUMBER E-23548 4-26-96

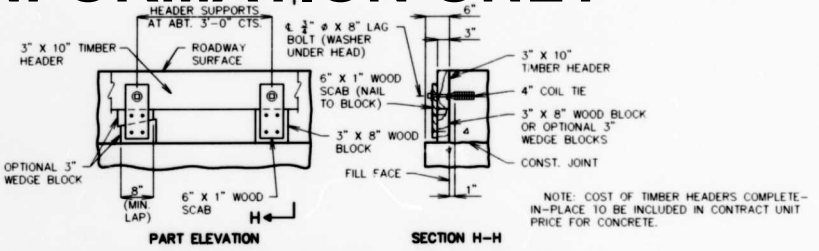
JACKSON COUNTY

DETAILS OF END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

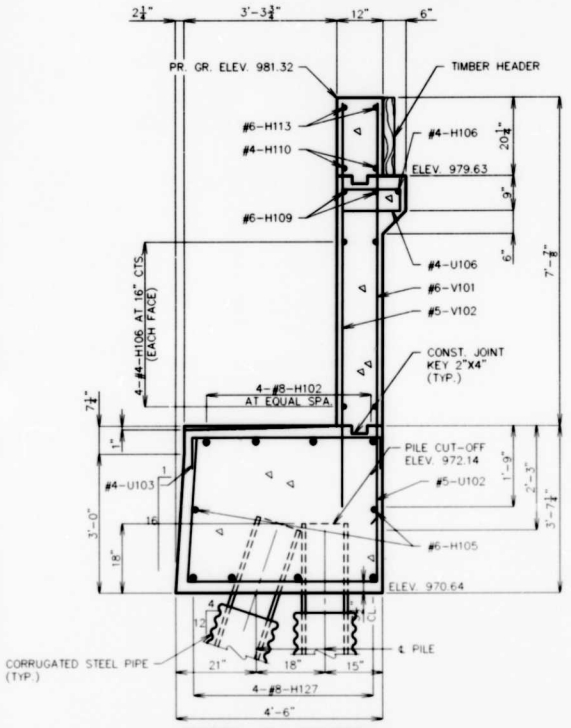
A-5180

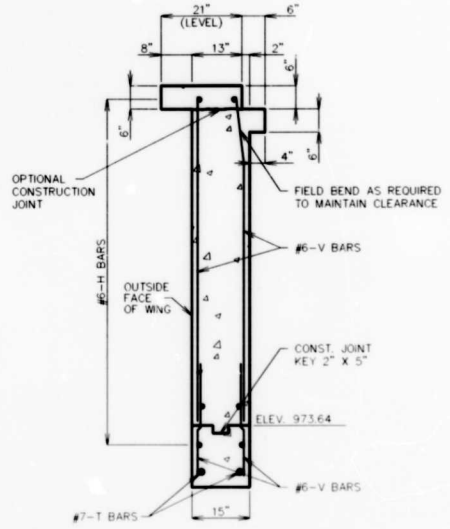
STA. NO.	PROJ. NO.	SHEET NO.
MO.		120

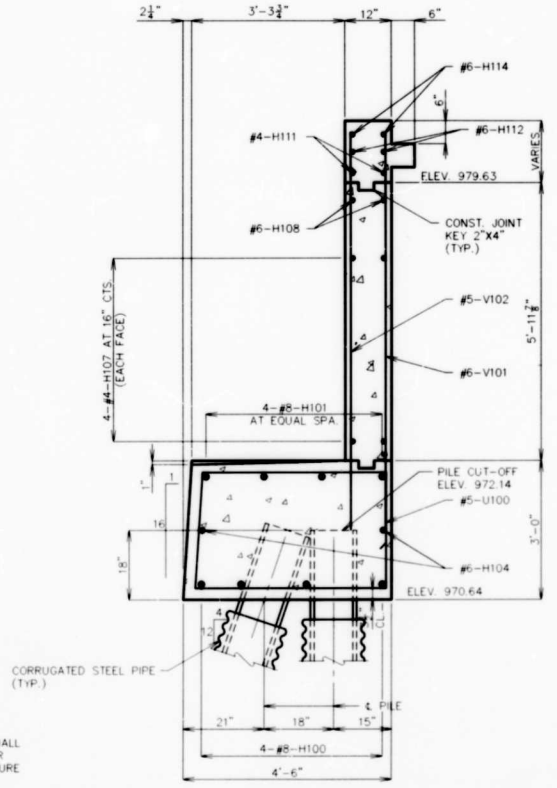


NOTE: COST OF TIMBER HEADERS COMPLETE-IN-PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR CONCRETE.

DETAILS OF TIMBER HEADER AT END BENT NO. 1 AND ABUTMENT NO. 3







NOTES:

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO THE CROWN OF ROADWAY SLAB. BACKWALL ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR LOCATION OF SECTION E-E, SEE SHEET NO. 5 & 7.

FOR LOCATION OF SECTION G-G, SEE SHEET NO. 8.

FOR DETAILS OF VERTICAL DRAIN CORE, SEE SHEET NO. 12.

3-27-95

BUCHER, WILLIS & RATLIFF
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JACKSON COUNTY

DETAILS OF END BENT NO. 1 MISCELLANEOUS

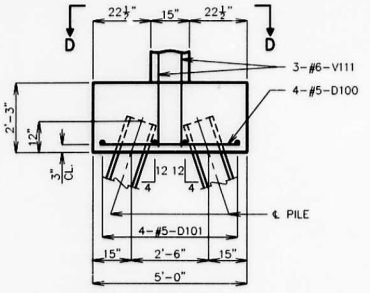
SHEET NO. 9 OF 50

A-5180

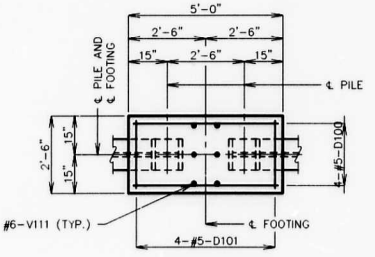
FOR INFORMATION ONLY

A51801, Sht. 227

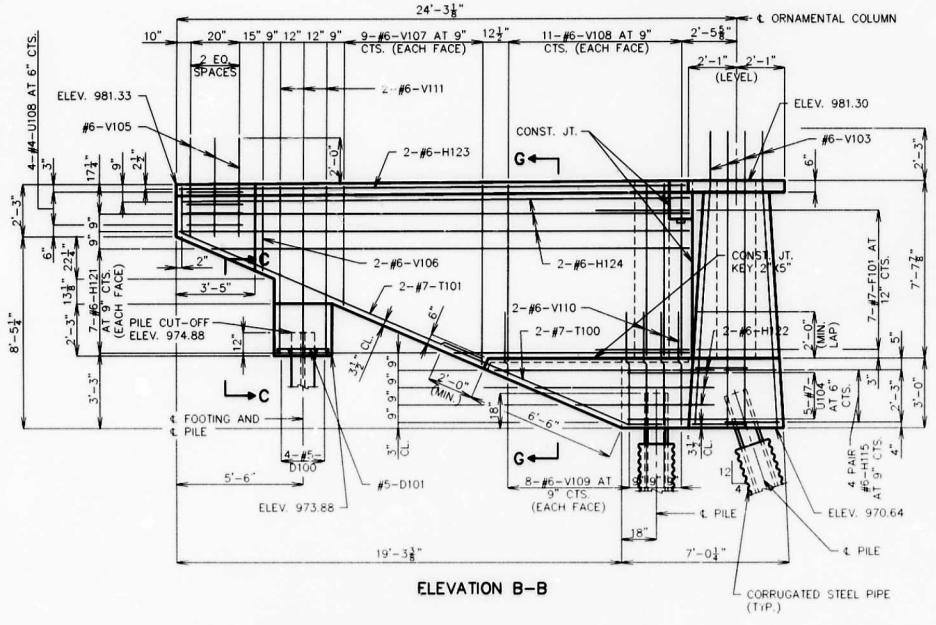
STATE	PROJ. NO.	SHEET NO.
MO.		179



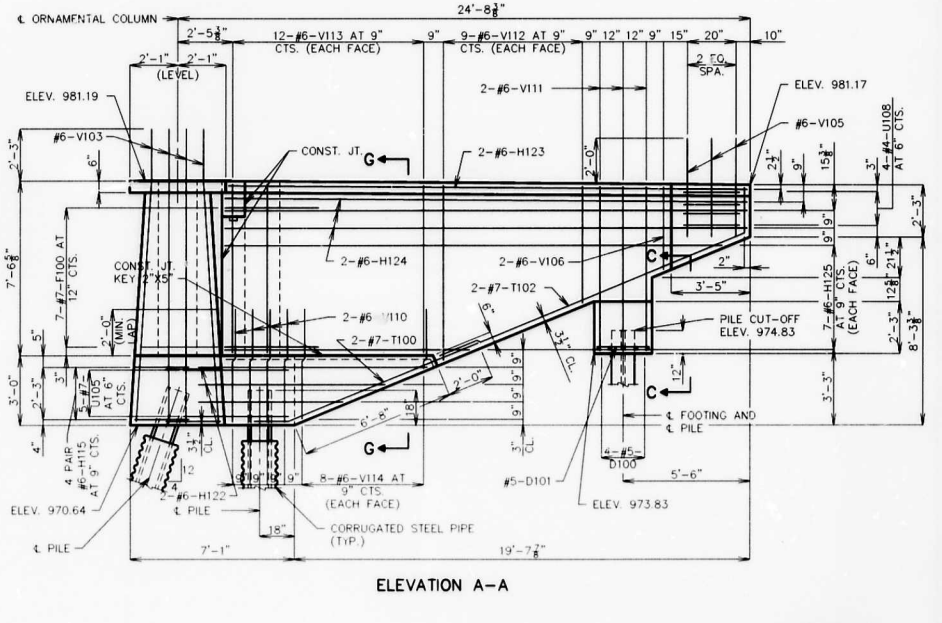
PART ELEVATION C-C



PLAN D-D



ELEVATION B-B



ELEVATION A-A

NOTE:

FOR LOCATION OF ELEVATIONS A-A AND ELEVATION B-B SEE SHEET NO. 5.

FOR SECTION G-G, SEE SHEET NO. 9.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 10.

3-27-95

BUCHER, WILLIS & RATLIFF
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CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

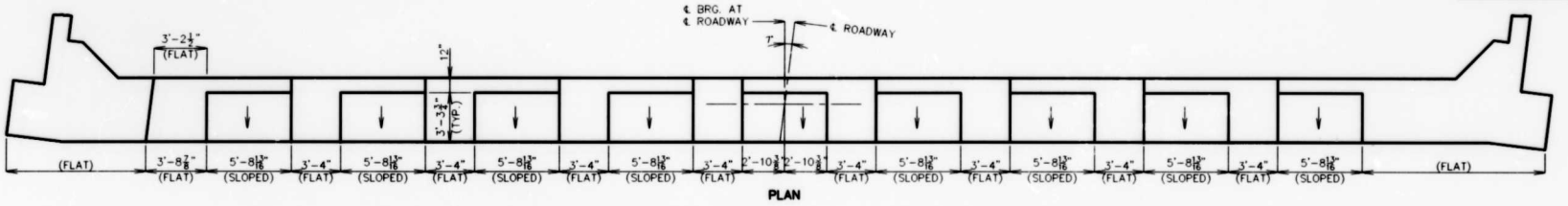
DETAILS OF END BENT NO. 1 WINGS

SHEET NO. 8 OF 50

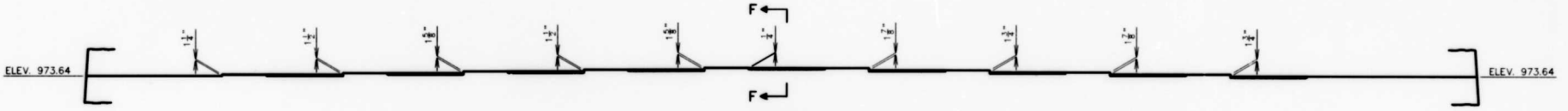
A-5180

FOR INFORMATION ONLY A51801, Sht. 228

STATE	PROJ. NO.	SHEET NO.
MO.		118

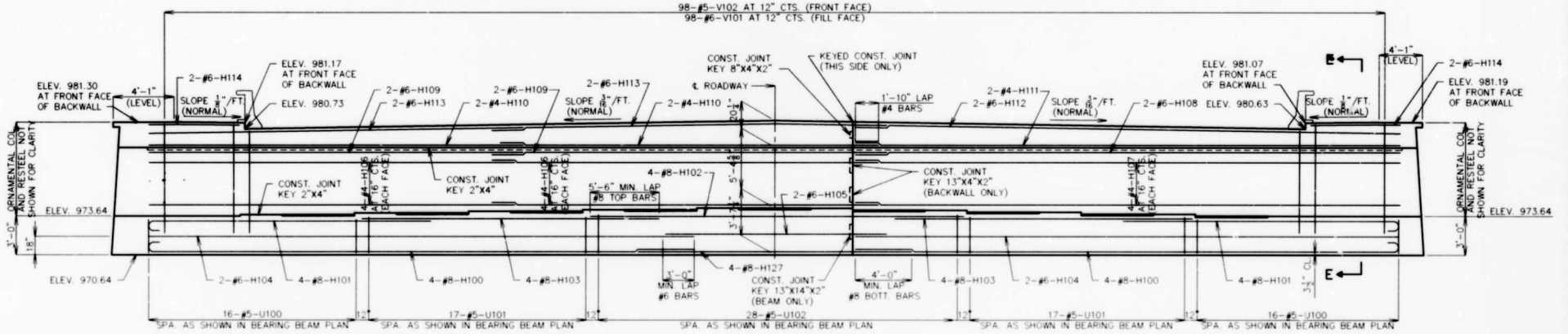


PLAN

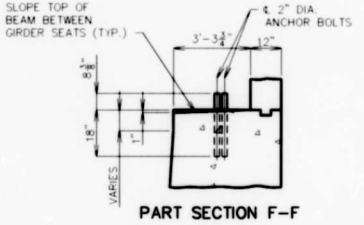


ELEVATION

BEARING SEAT DETAIL



ELEVATION



PART SECTION F-F

NOTES:

FOR SECTION E-E, SEE SHEET NO. 9.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

TOP OF BACKWALL AND EXPANSION DEVICE FOR END BENT NO. 1 SHALL CONFORM TO CROWN OF ROADWAY SLAB.

BACKWALL ABOVE THE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST ½".

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 10.

3-27-95

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JACKSON COUNTY

DETAILS OF END BENT NO. 1 ELEVATION

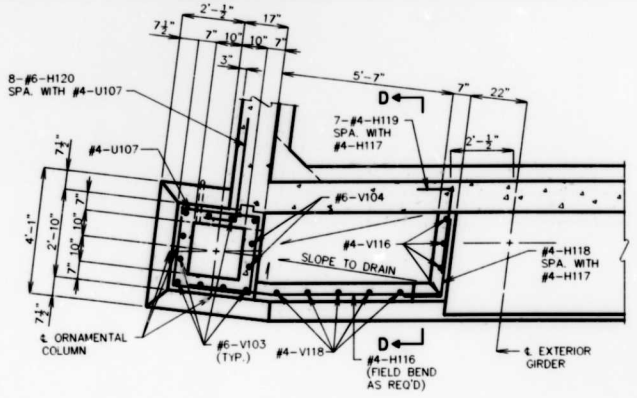
SHEET NO. 7 OF 50

A-5180

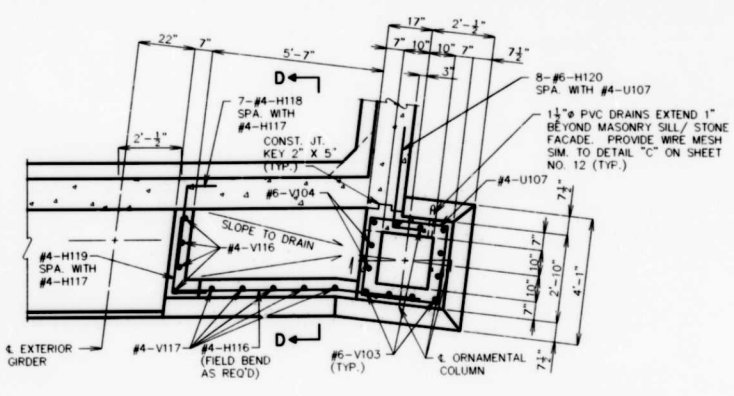
FOR INFORMATION ONLY

A51801, Sht. 229

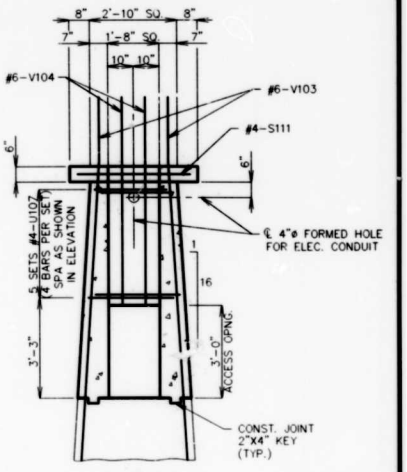
STATE	PROJ. NO.	SHEET NO.
MO.		121



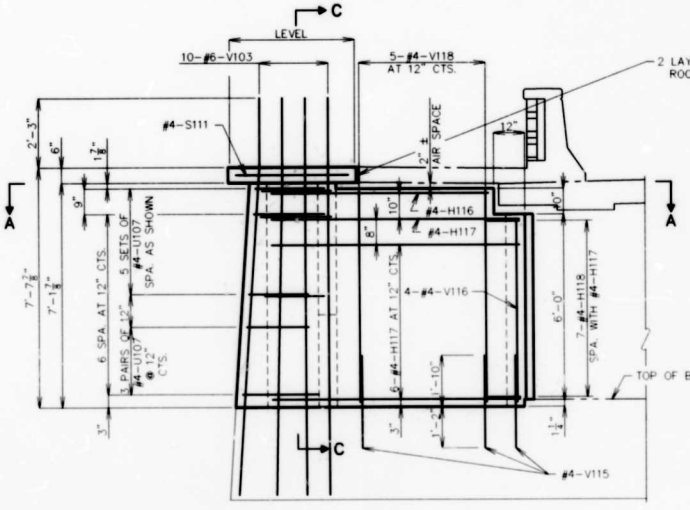
SECTION A-A



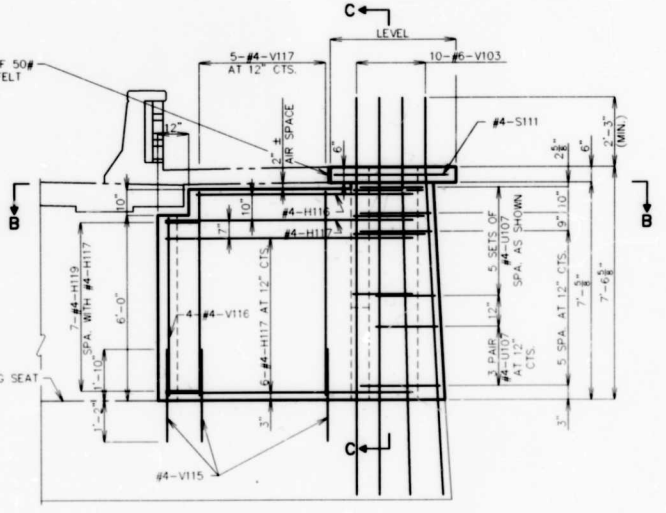
SECTION B-B



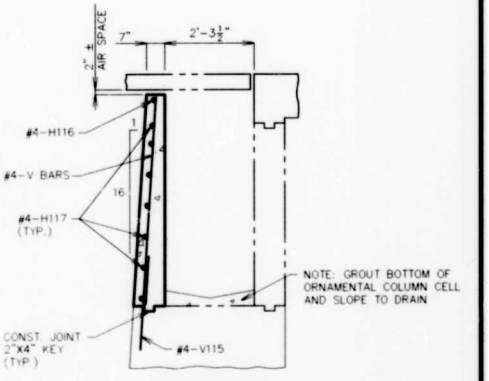
SECTION C-C



ELEVATION SOUTH WING



ELEVATION NORTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF
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CHECKED BY:	DMA	3/95

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JACKSON COUNTY

DETAILS OF END BENT NO. 1
ORNAMENTAL COLUMN

SHEET NO. 10 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 230

STATE	PROJ. NO.	SHEET NO.
MO.		122

BILL OF REINFORCING STEEL EACH DEADMAN		
NUMBER	SIZE & MARK	LENGTH
272	#4–V150	21"
16	#4–H150	35'–0"

NOTES:

CONSTRUCTION SEQUENCE:

CONSTRUCT END BENT NO. 1 WITH ANCHOR TEES IN PLACE.

MACHINE COMPACT FILL UP TO ELEVATION OF $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

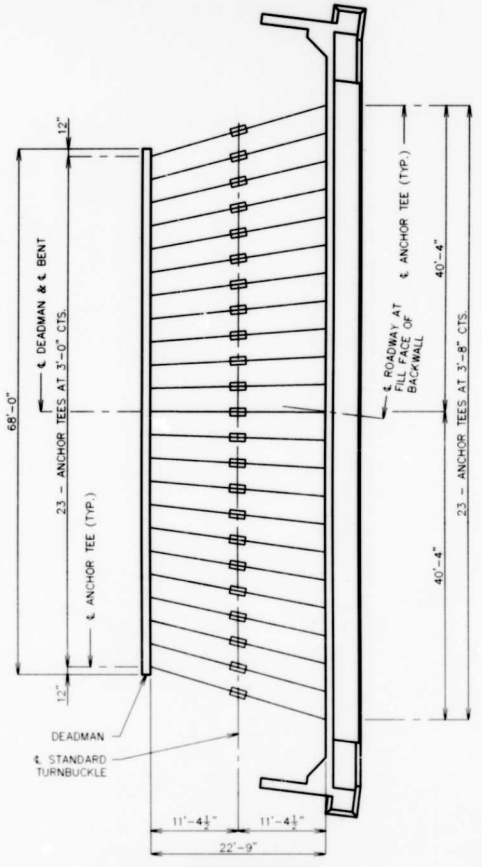
CONSTRUCT DEADMAN WITH ANCHOR TEES IN PLACE.

INSTALL $\frac{7}{8}$" ø ROD, CLEVIS AND TURNBUCKLE ASSEMBLY.

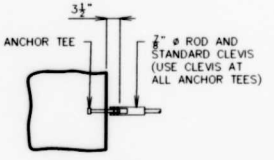
TIGHTEN TURNBUCKLE UNTIL SNUG.

HAND COMPACT FILL FOR 12" (MIN.) OVER $\frac{7}{8}$" ø ROD AND TURNBUCKLE.

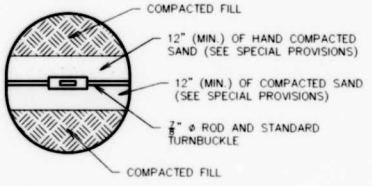
MACHINE COMPACT REMAINING FILL.



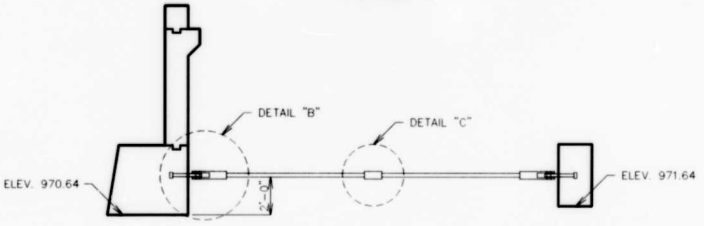
DEADMAN PLAN AT END BENT NO. 1



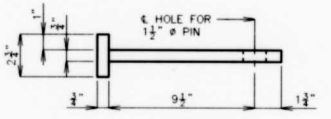
DETAIL "B"



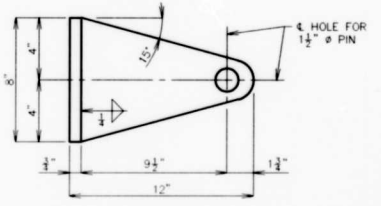
DETAIL "C"



LOCATION OF ANCHOR TEE

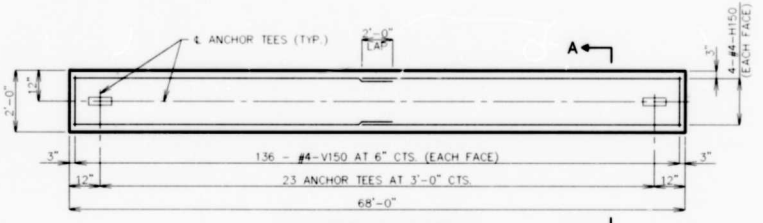


ELEVATION

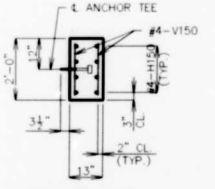


PLAN

DETAIL OF ANCHOR TEE



ELEVATION OF DEADMAN



SECTION A–A

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC 5/93
TRACED BY:	TWM 5/93
CHECKED BY:	DJM 5/93

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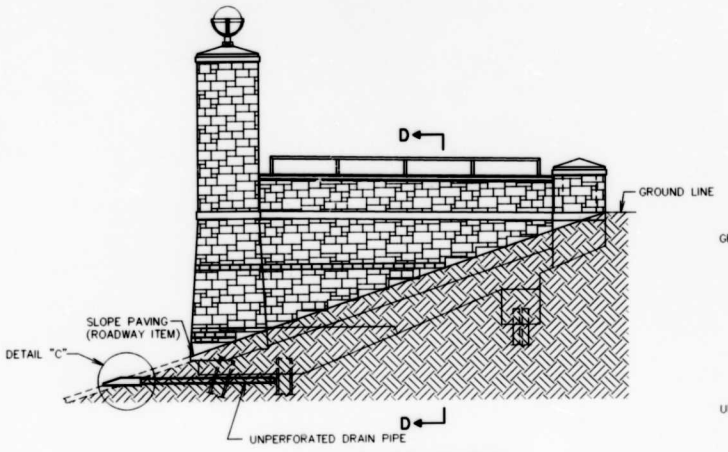
JACKSON COUNTY

DETAILS OF DEADMAN ANCHORAGE SYSTEM

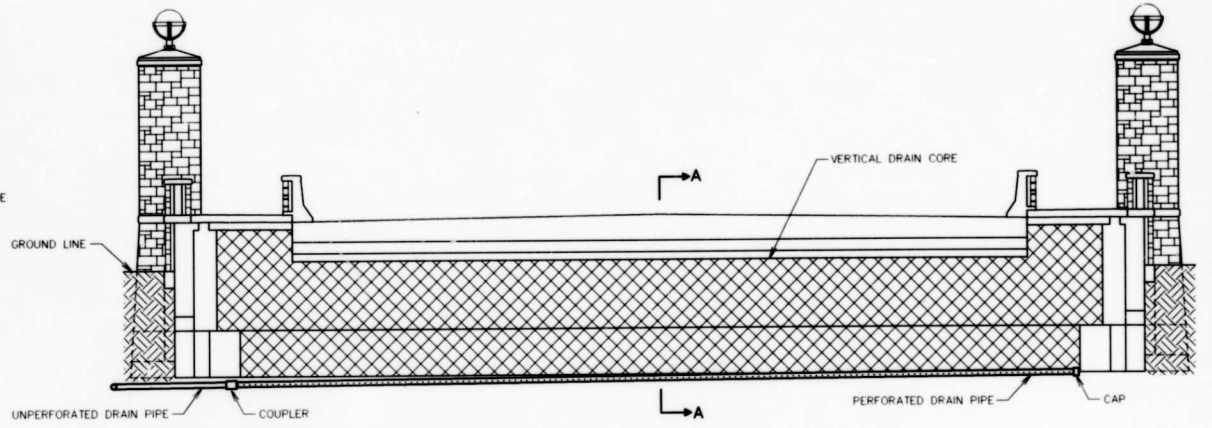
SHEET NO. 11 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.		123

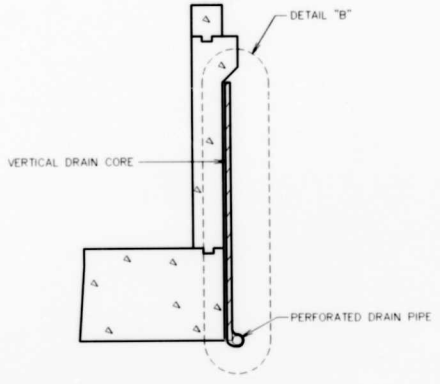


ELEVATION OF WING

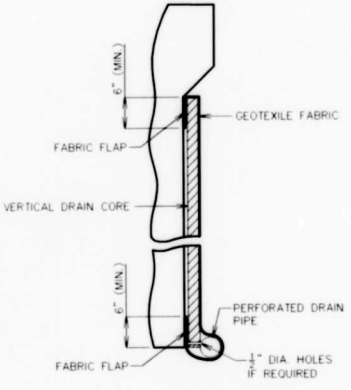


SECTION D–D
ELEVATION AT END BENT

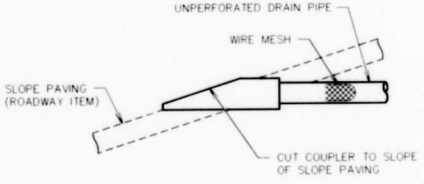
VERTICAL DRAIN AT END BENT NO. 1



SECTION A–A



DETAIL "B"



DETAIL "C"

NOTES:

DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½". (SEE ELEVATION AT END BENT)

PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

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TRACED BY:	RCC	5/93
CHECKED BY:	DMA	6/93

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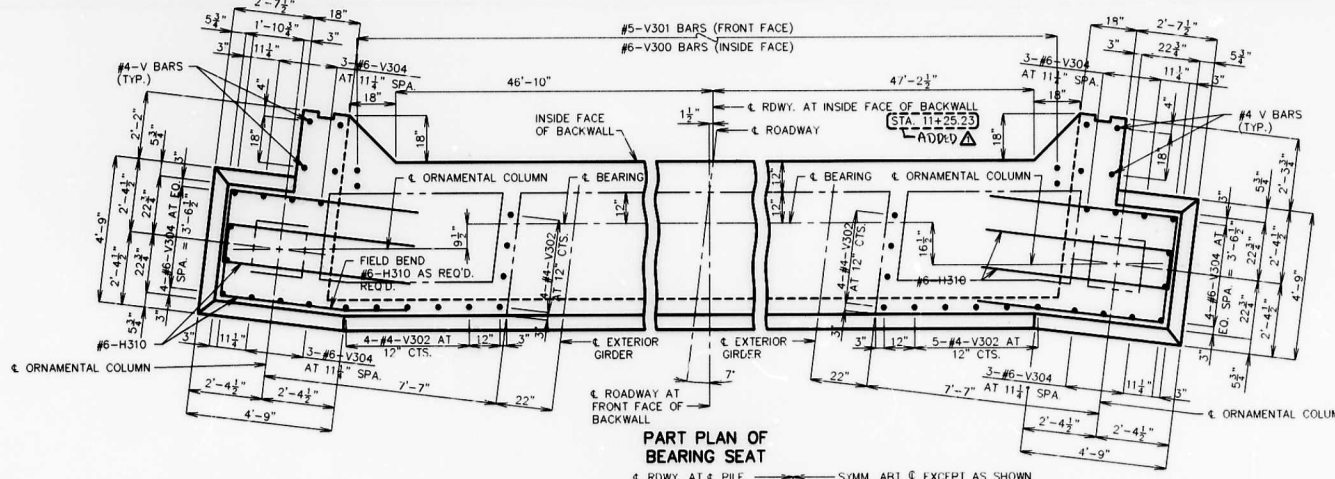
JACKSON COUNTY

DETAILS OF VERTICAL DRAIN AT END BENT NO. 1

SHEET NO. 12 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



PART PLAN OF BEARING SEAT

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

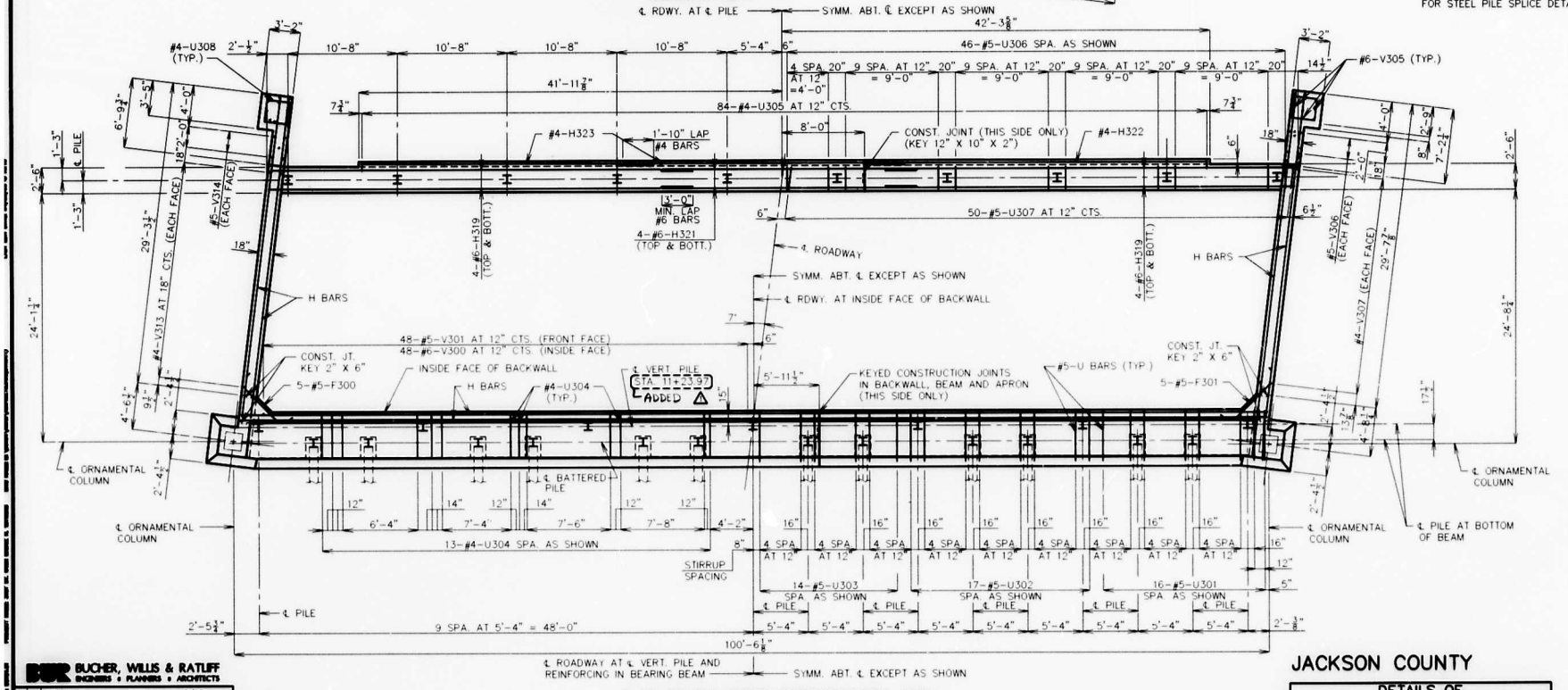
TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.



PLAN BELOW UPPER CONSTRUCTION JOINT

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

DANIEL L. CHAPMAN NUMBER E-23644 STATE OF MISSOURI REGISTERED ENGINEER

4-26-96

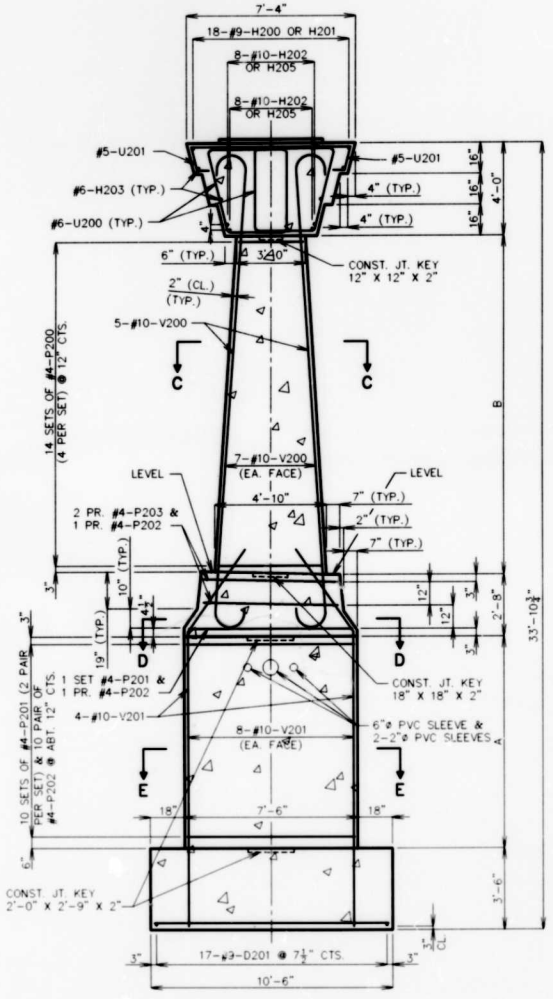
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

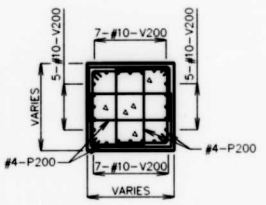
SHEET NO. 15 OF 50

A-5180

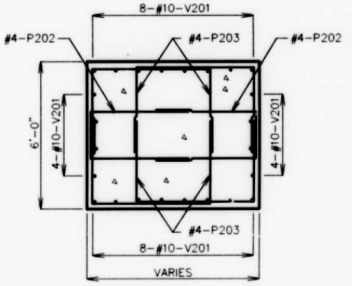
STA.	CJ. NO.	SHEET NO.
MO.		125



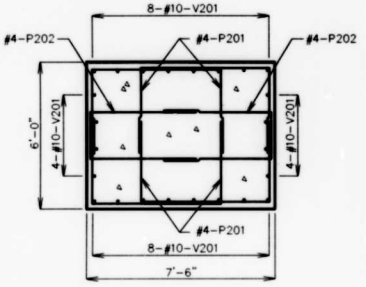
TYPICAL SECTION THRU COLUMN



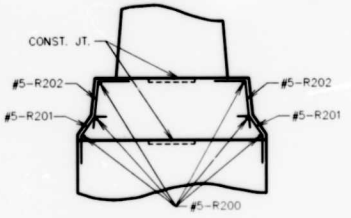
SECTION C-C



SECTION D-D

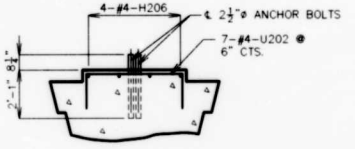


SECTION E-E



PART ELEVATION F-F
(SHOWING R BARS)

FOR LOCATION OF ELEVATION F-F, SEE SHEET NO. 12.



SECTION B-B

NOTE: USE #4-H206 & #4-U202 BARS IN MONOLITHIC BEARING BASES 4" AND OVER IN HEIGHT.

FOR LOCATION OF SECTION B-B, SEE SHEET NO. 12.

TABLE OF DIMENSIONS		
COLUMN NO.	A	B
1	9'-9½"	13'-11½"
2	9'-10½"	13'-10½"
3	10'-1½"	13'-8½"
4	10'-2½"	13'-6½"

SUBSTRUCTURE QUANTITY TABLE FOR INT. BENT NO. 2		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	437
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS.	263.3
REINFORCING STEEL (BRIDGE)	LBS.	45,500
REINFORCING STEEL (EPOXY COATED)	LBS.	520
STONE FACADE ON INT. BENT	SQ. FT.	1074

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB 5/93
TRACED BY:	RCC 5/93
CHECKED BY:	SAC 6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2

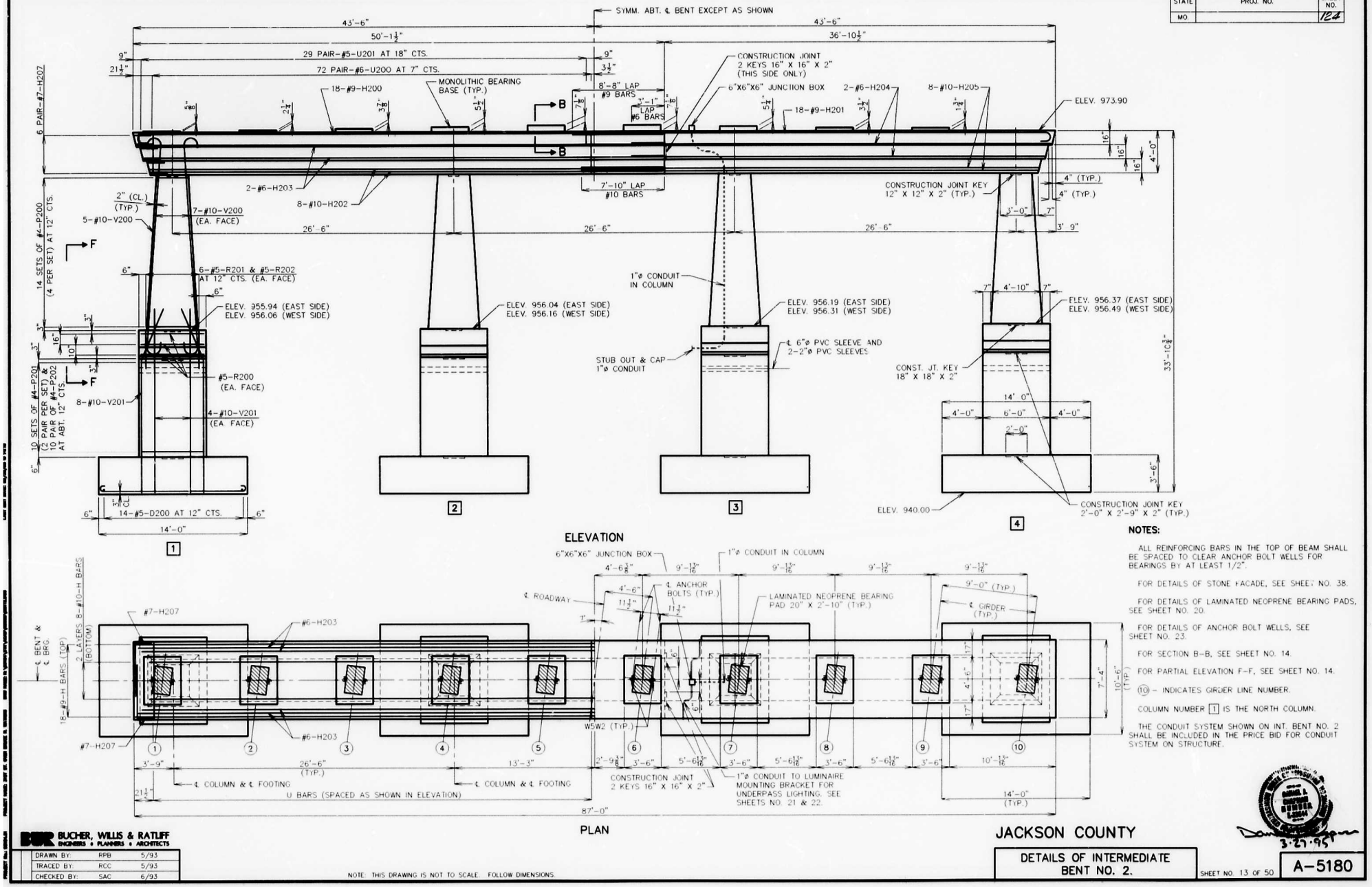
SHEET NO. 14 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 234

STATE	PROJ. NO.	SHEET NO.
MO.		124



ELEVATION

PLAN

NOTES:

ALL REINFORCING BARS IN THE TOP OF BEAM SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 38.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR SECTION B-B, SEE SHEET NO. 14.

FOR PARTIAL ELEVATION F-F, SEE SHEET NO. 14.

(10) - INDICATES GIRDER LINE NUMBER.

COLUMN NUMBER 1 IS THE NORTH COLUMN.

THE CONDUIT SYSTEM SHOWN ON INT. BENT NO. 2 SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	RPB	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

JACKSON COUNTY

DETAILS OF INTERMEDIATE BENT NO. 2.

SHEET NO. 13 OF 50

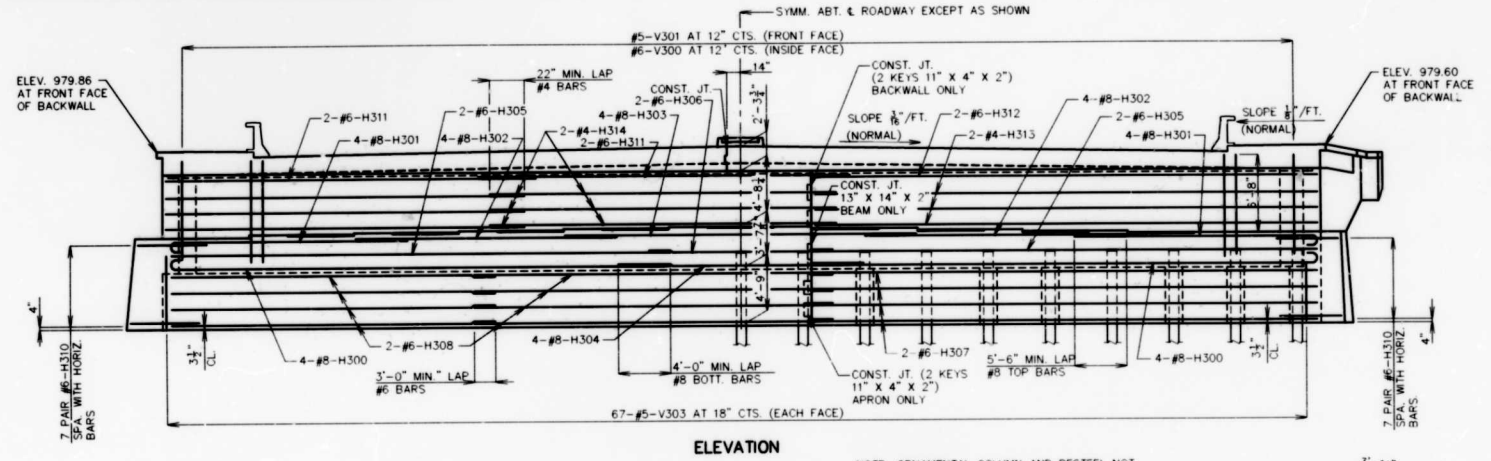
A-5180

3-27-95

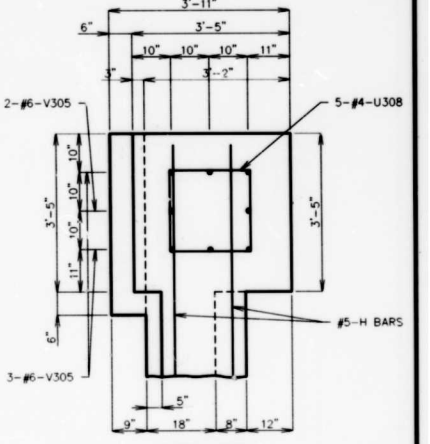
FOR INFORMATION ONLY

A51801, Sht. 235

STATE	PROJ. NO.	SHEET NO.
MO.		

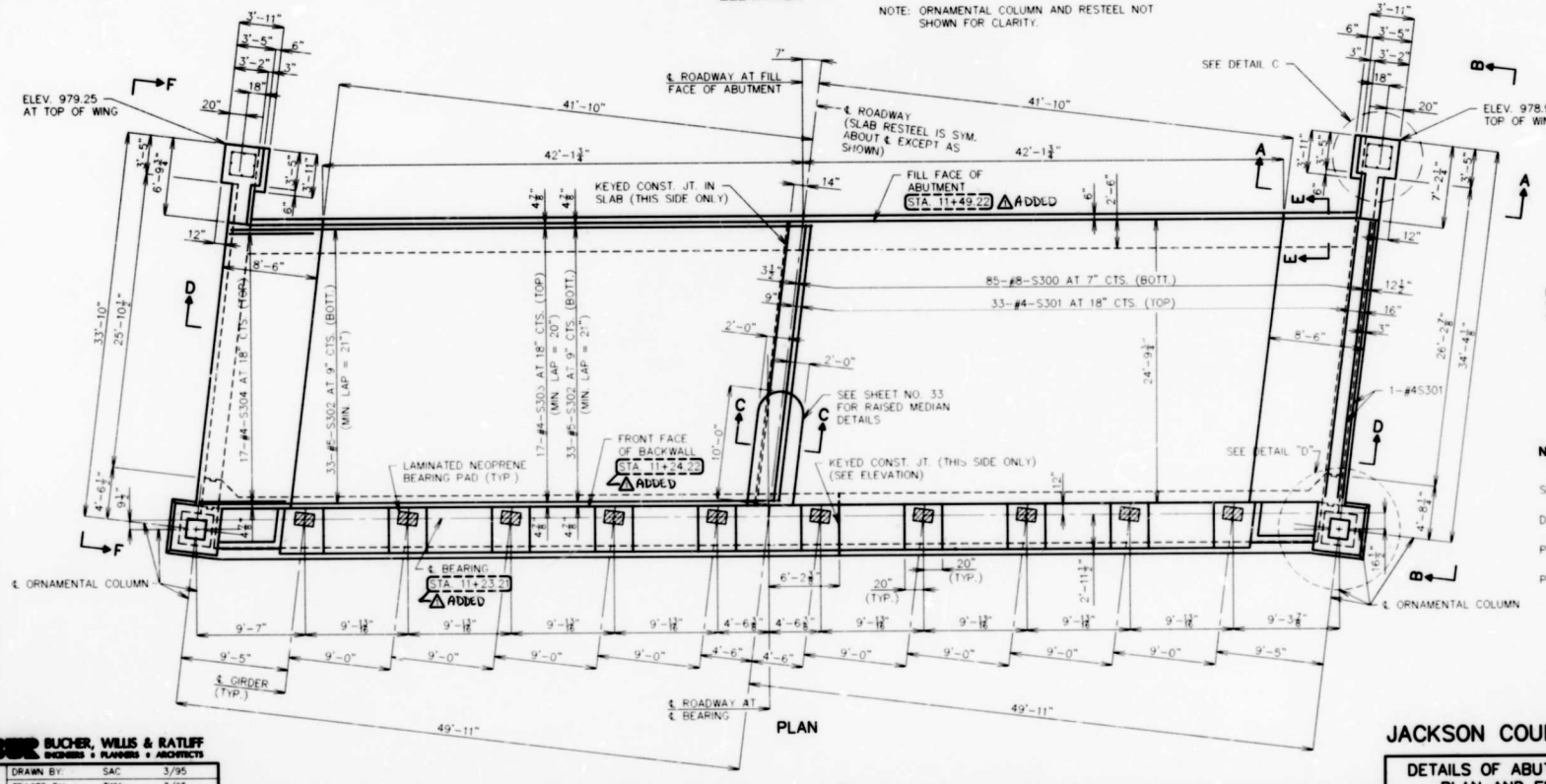


ELEVATION

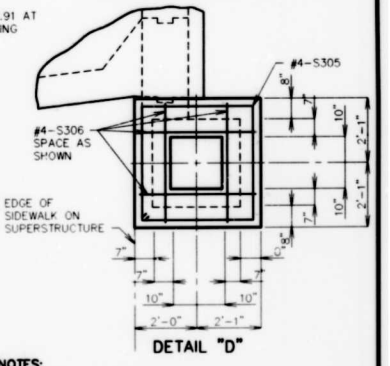


DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

△ REVISED 4-25-96

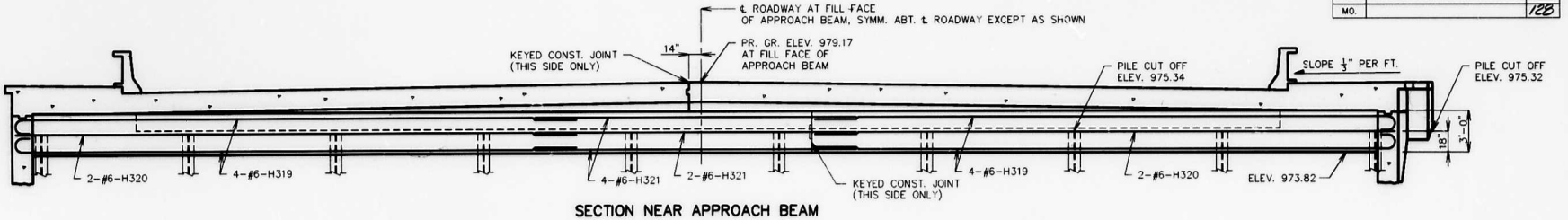
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

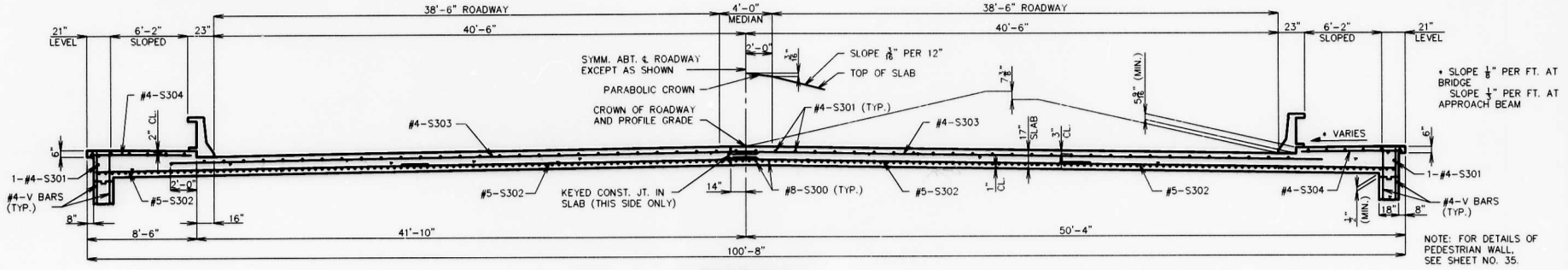
SHEET NO. 16 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		128

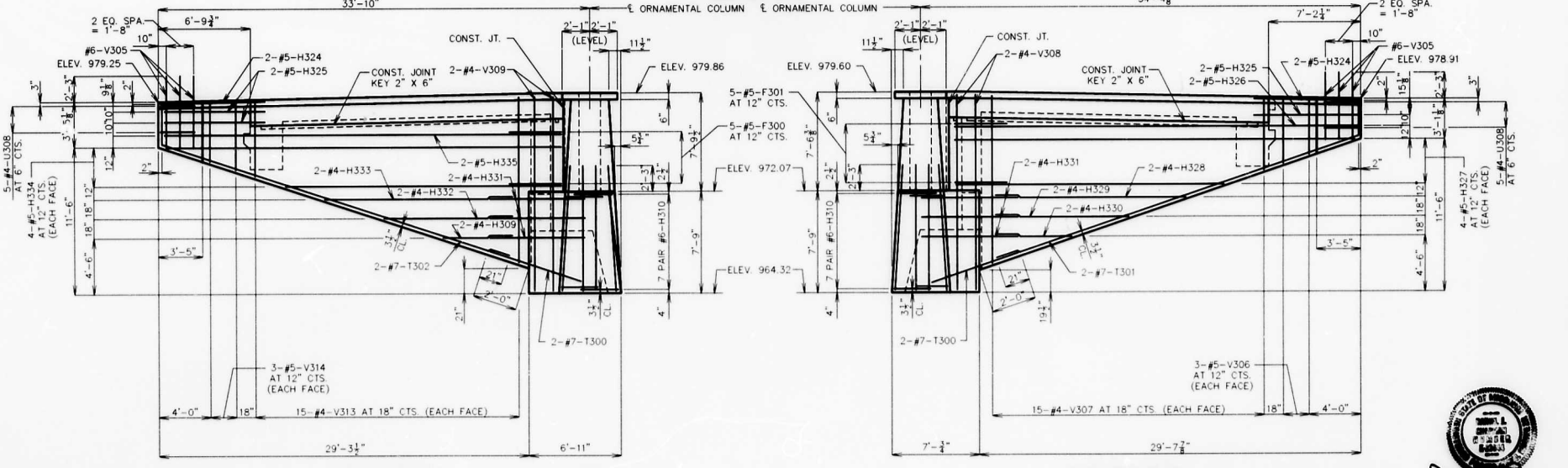


SECTION NEAR APPROACH BEAM



NOTE: FOR DETAILS OF PEDESTRIAN WALL, SEE SHEET NO. 35.

SECTION D-D



ELEVATION F-F

ELEVATION B-B

NOTE:

FOR LOCATION OF ELEVATIONS B-B, D-D AND SECTION F-F, SEE SHEET NO. 16.

FOR DETAILS OF ORNAMENTAL COLUMN, SEE SHEET NO. 19

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

7-27-95

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 WING ELEVATIONS AND SLAB SECTIONS

SHEET NO. 17 OF 50

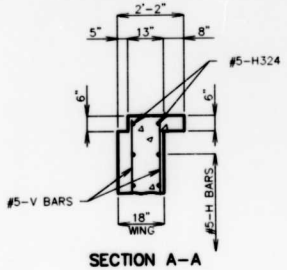
A-5180

[redacted] 24 to 1

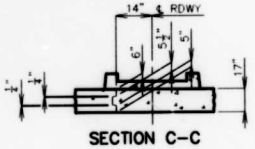
FOR INFORMATION ONLY

A51801, Sht. 237

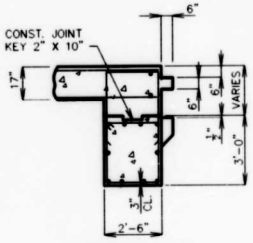
STATE	PROJ. NO.	SHEET NO.
MO.		



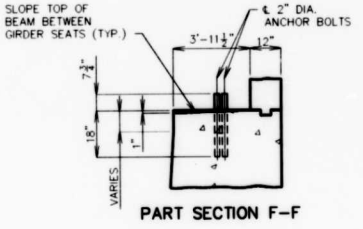
SECTION A-A



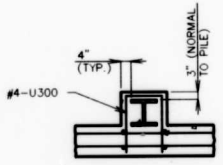
SECTION C-C



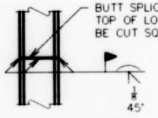
SECTION E-E



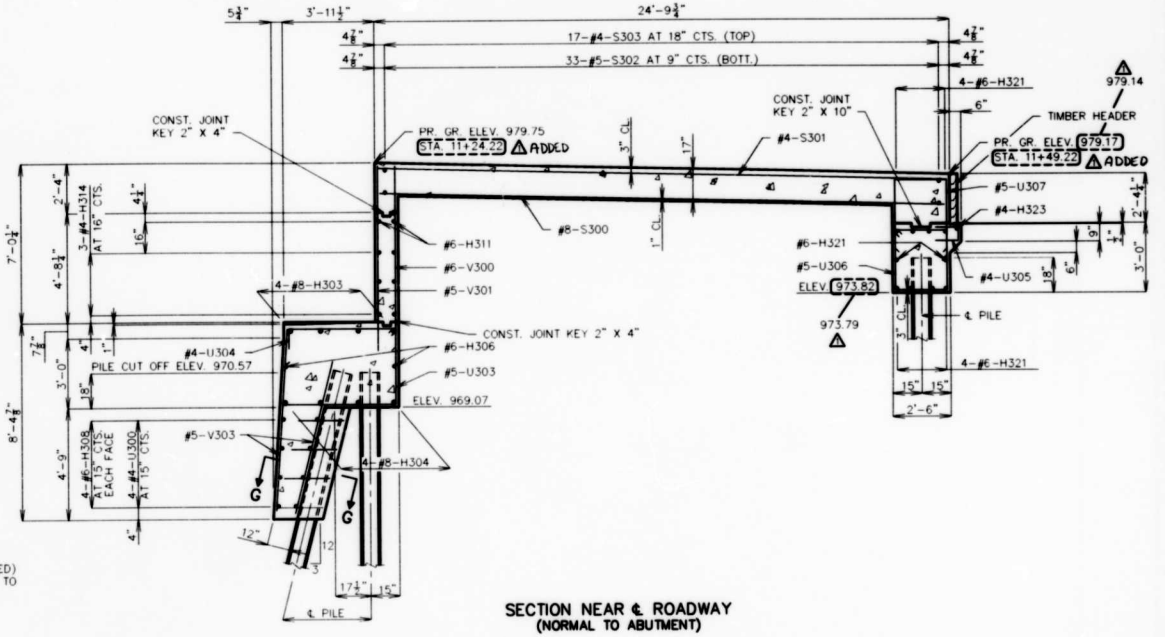
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE

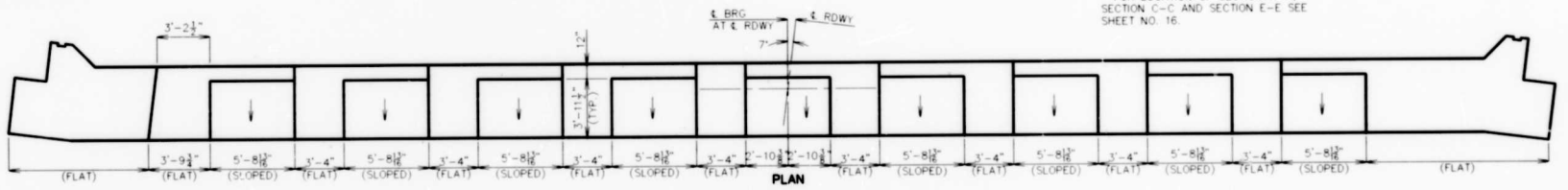


SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

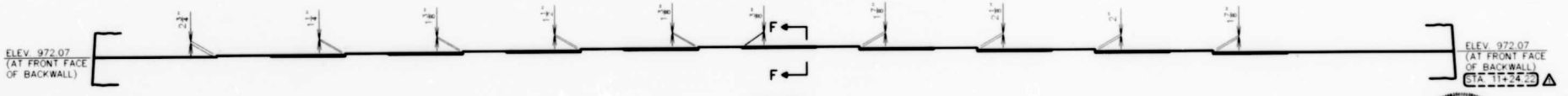
NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.



PLAN



ELEVATION

BEARING SEAT DETAIL

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

DANIEL A. CHAPMAN NUMBER E-23544 STATE OF MISSOURI

4-26-96

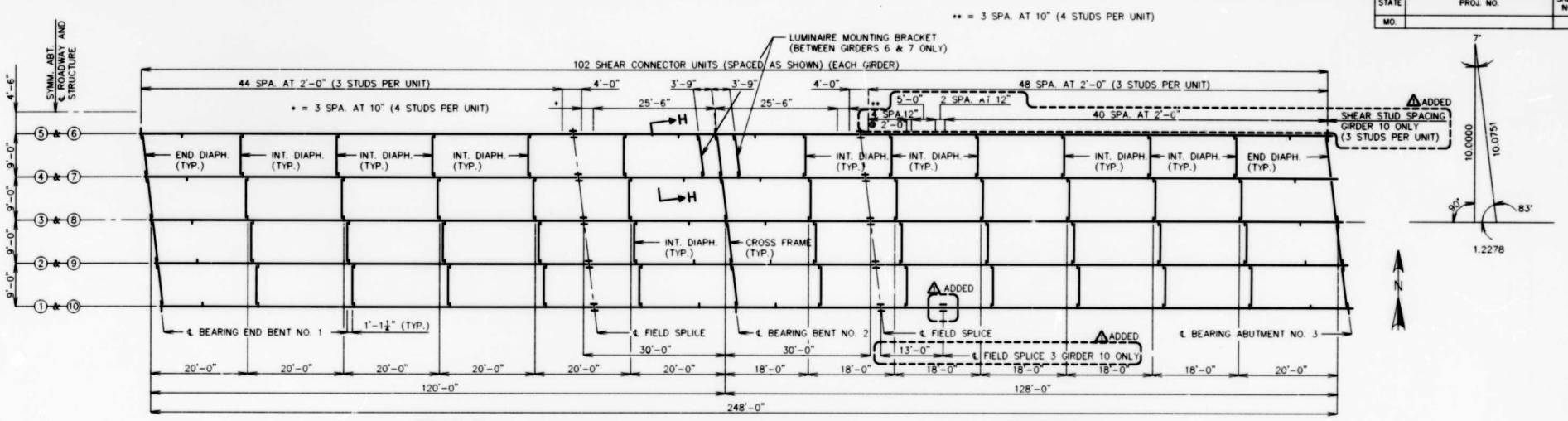
JACKSON COUNTY

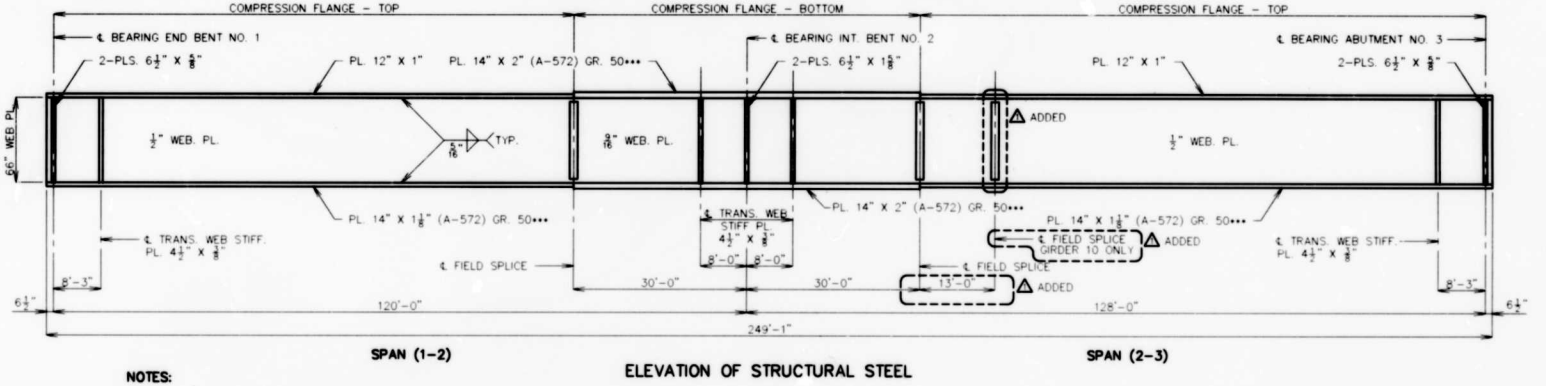
DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

SHEET NO. 18 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		





NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

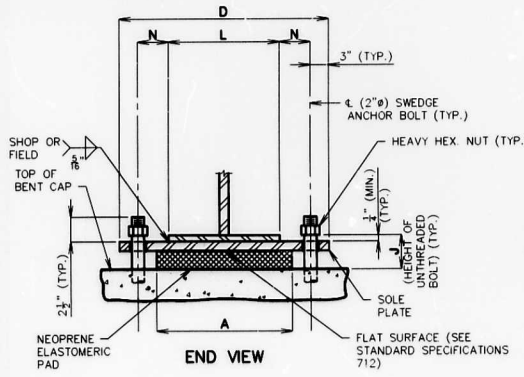
JACKSON COUNTY

PLAN AND ELEVATION OF STRUCTURAL STEEL

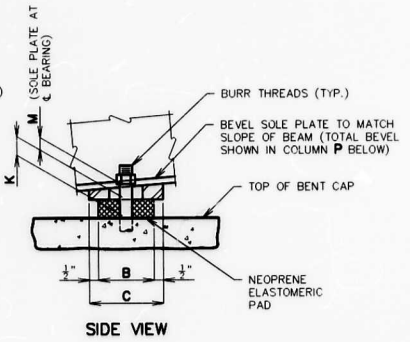
SHEET NO. 21 OF 50

A-5180

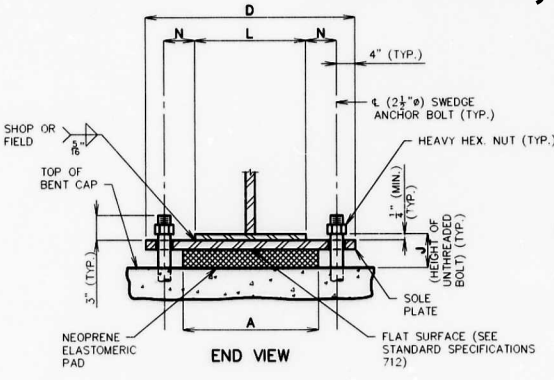
ST.	PROJ. NO.	SHEET NO.
MO.		



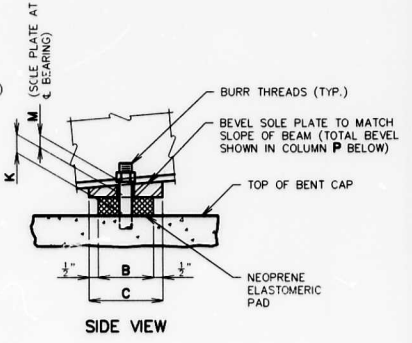
END VIEW



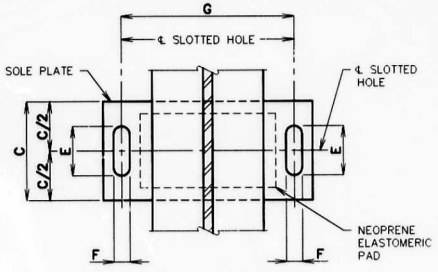
SIDE VIEW



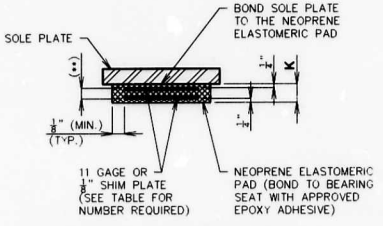
END VIEW



SIDE VIEW

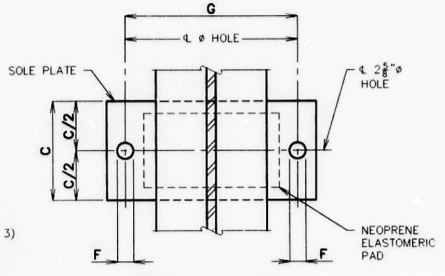


PART PLAN VIEW

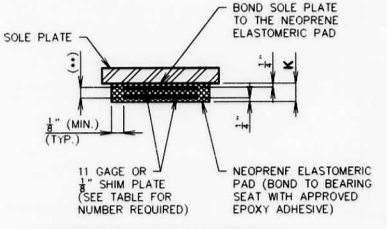


NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(••) LAYERS OF ½" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	6⅛"	4⅛"	14"	1½"	4½"	0"	⚠1 7-⑥	10
ALL	3	20"	13"	14"	2'-5"	4¾"	2⅛"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¾"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

DANIEL L. CHAPMAN NUMBER E-22048 REGISTERED PROFESSIONAL ENGINEER STATE OF MISSOURI

9-12-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠1 REVISED AUGUST 10, 1995

JACKSON COUNTY

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

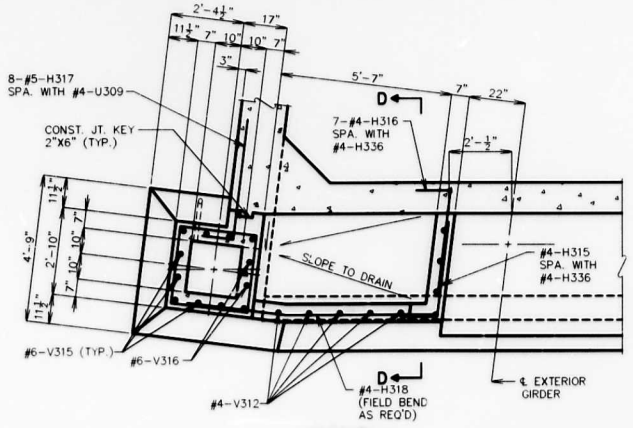
SHEET NO. 20 OF 50

A-5180

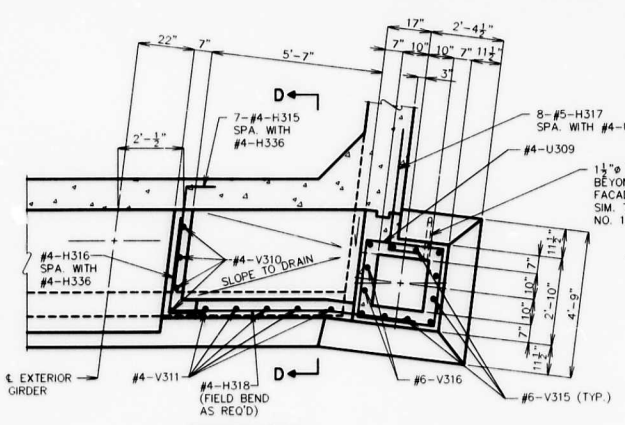
FOR INFORMATION ONLY

A51801, Sht. 240

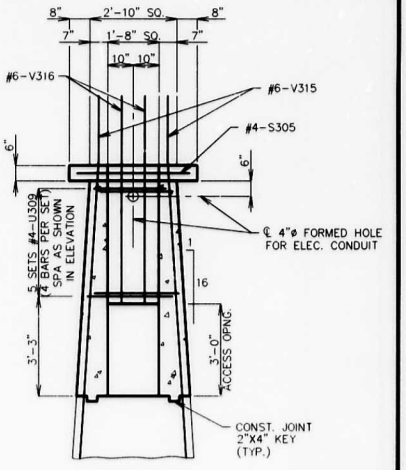
STATE	PROJ. NO.	SHEET NO.
MO.		130



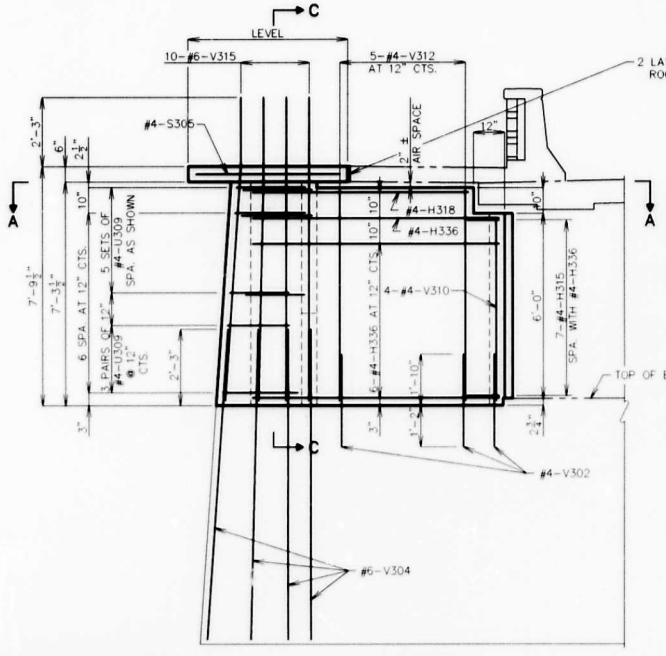
SECTION A-A



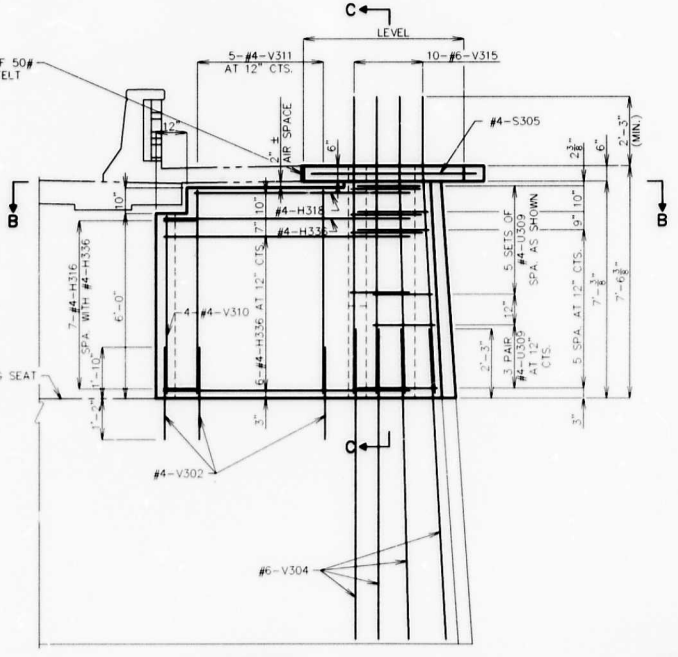
SECTION B-B



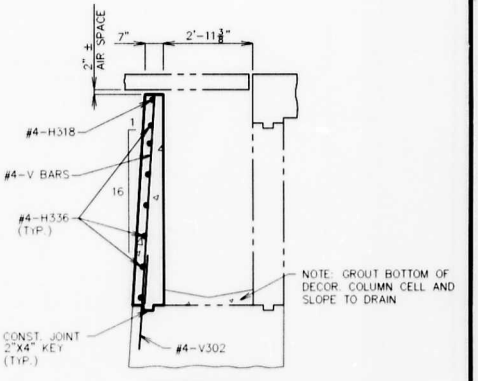
SECTION C-C



ELEVATION NORTH WING



ELEVATION SOUTH WING



SECTION D-D

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

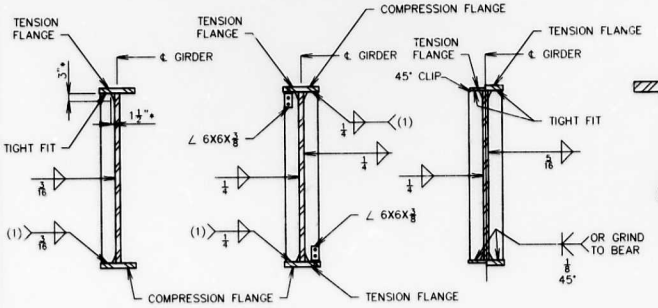
JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3 ORNAMENTAL COLUMN

SHEET NO. 19 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		133

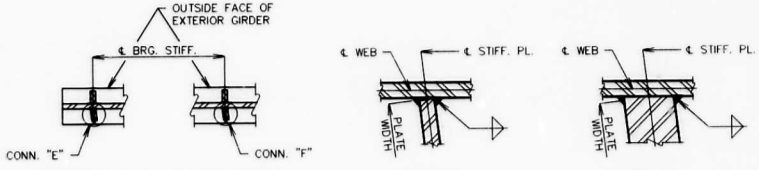


INT. WEB STIFF. (ONE SIDE ONLY) | INT. DIAPH. CONN. PLATE | END BRG. STIFF. | INT. BRG. STIFF.

BRG. STIFF. BEVEL DETAIL

(1) WELD TO COMPRESSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.

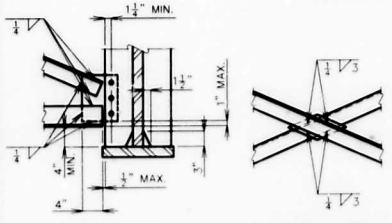
* TYPICAL FOR ALL INT. WEB STIFF., INT. DIAPH. CONN. PL. AND BRG. STIFF.



END BRG. STIFF. | INT. BRG. STIFF. | CONN. "E" | CONN. "F"

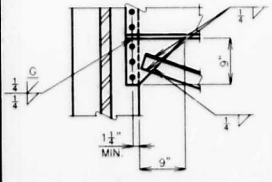
TYPICAL LOCATION DETAILS

WELDING DETAILS

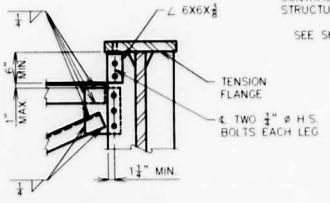


DETAIL "A"

DETAIL "B"



DETAIL "C"



DETAIL "D"

NOTES:

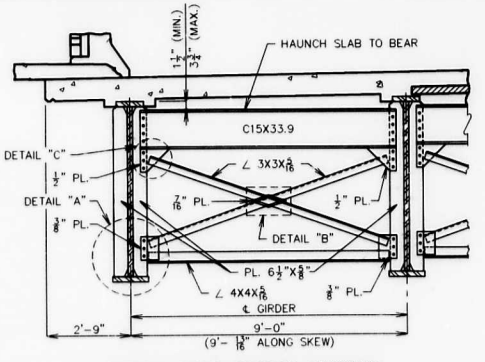
END DIAPHRAGMS, CROSS FRAMES AND INTERMEDIATE DIAPHRAGMS USE ¾" HIGH STRENGTH BOLTS.

PAYMENT FOR LUMINAIRE MOUNTING BRACKETS AND MOUNTING PLATE IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

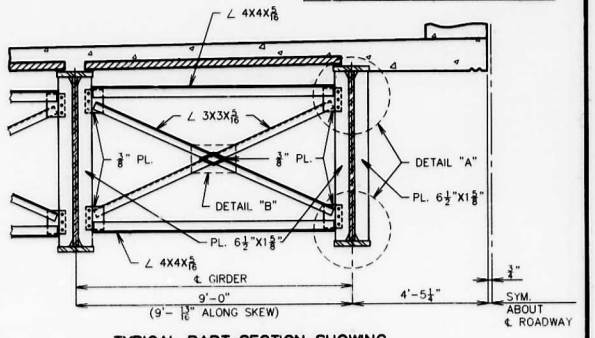
AT THE CONTRACTORS OPTION, HOLES IN THE DIAPHRAGM PLATE OF NON SLAB BEARING DIAPHRAGMS MAY BE MADE 3/16" LARGER THAN THE NOMINAL DIAMETER OF THE BOLT. A HARDENED WASHER MAY BE USED UNDER THE BOLT HEAD AND NUT WHEN THIS OPTION IS USED. HOLES IN THE GIRDER DIAPHRAGM CONNECTION PLATE OR TRANSVERSE WEB STIFFENER SHALL BE STANDARD SIZE.

THE COST OF FURNISHING, FABRICATING AND INNSTALLING THE LUMINAIRE MOUNTING BRACKET, COMPLETE-IN-PLACE, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR CONDUIT SYSTEM ON STRUCTURE.

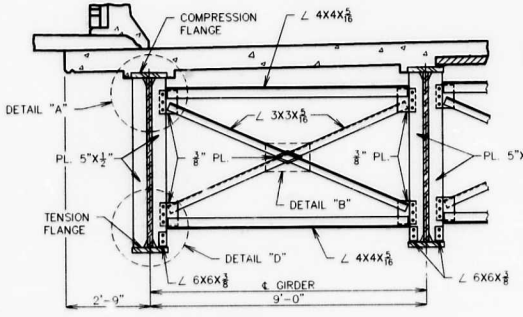
SEE SHEET NO. 21 FOR LOCATION OF SECTION H-H.



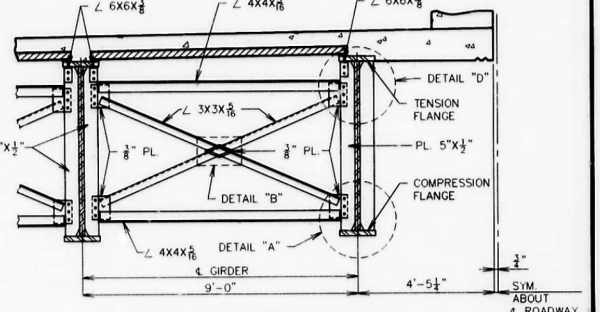
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



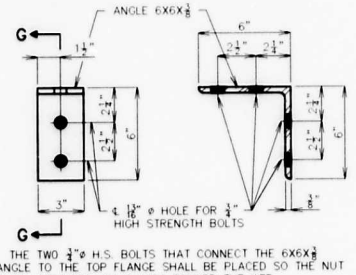
TYPICAL PART SECTION SHOWING CROSS FRAMES



TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS BOTTOM FLANGE IN TENSION

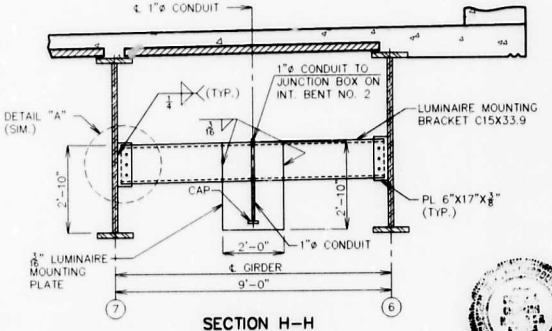


TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS TOP FLANGE IN TENSION



THE TWO ¾"ø H.S. BOLTS THAT CONNECT THE 6X6X⅜ ANGLE TO THE TOP FLANGE SHALL BE PLACED SO THE NUT IS ON THE INSIDE OF FLANGE TOWARD THE WEB.

DETAIL OF FLANGE CONNECTION ANGLE | SECTION G-G



SECTION H-H

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	4/93
TRACED BY:	TWM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF CROSS FRAMES AND DIAPHRAGMS

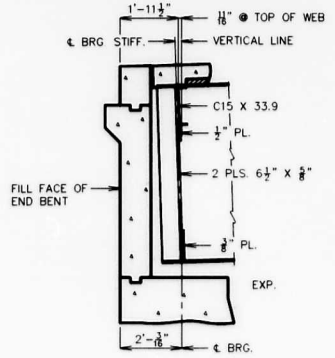
SHEET NO. 22 OF 50

A-5180

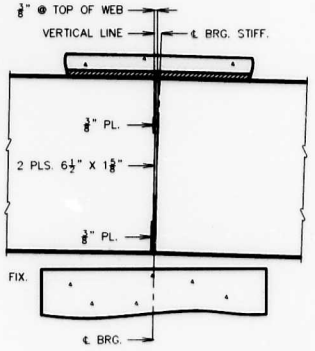
FOR INFORMATION ONLY

A51801, Sht. 242

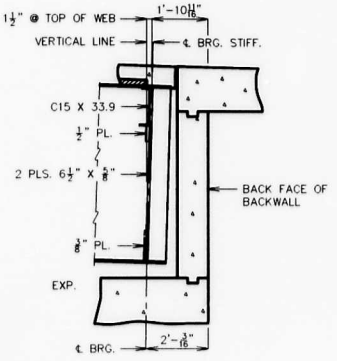
STATE	PROJ. NO.	SHEET NO.
MO.		134



①

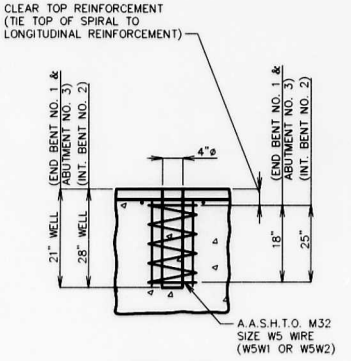


②

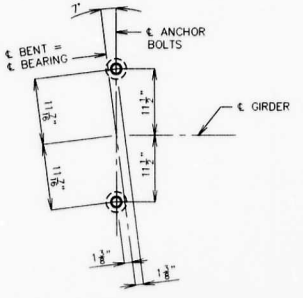


③

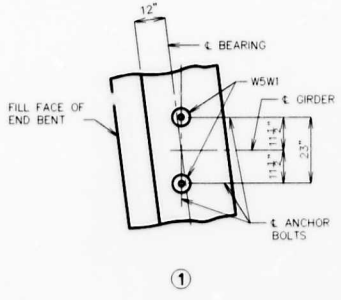
PART LONGITUDINAL SECTION
(NEAR INTERIOR GIRDER)



DETAIL OF ANCHOR BOLT WELLS



ANCHOR BOLT LOCATION DETAIL



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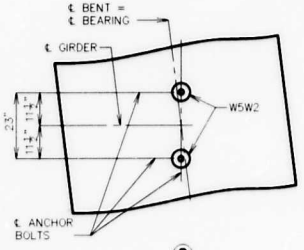

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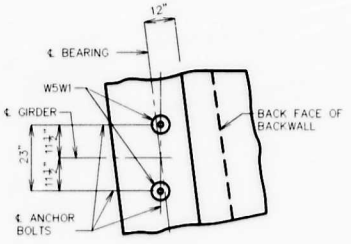


③

PART PLAN OF ANCHOR BOLTS

3·27·95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

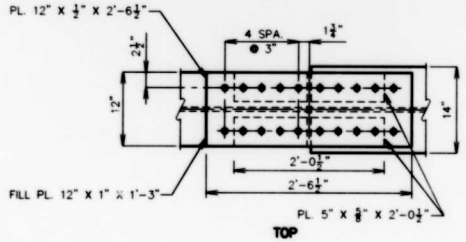
JACKSON COUNTY

MISCELLANEOUS DETAILS OF STRUCTURAL STEEL

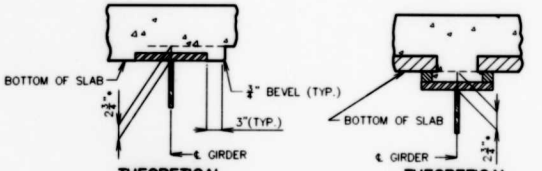
SHEET NO. 23 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		



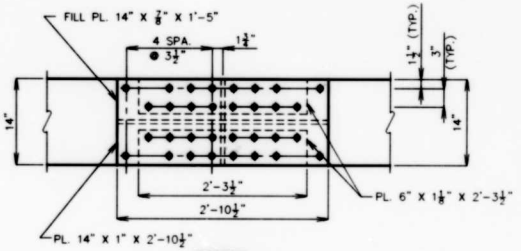
TOP



THEORETICAL SLAB HAUNCH (C.I.P. SECTION)

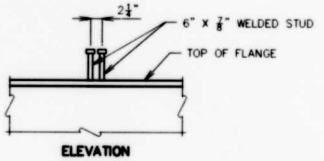
THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

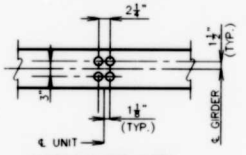


BOTTOM

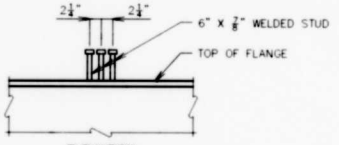
PLAN OF FLANGE



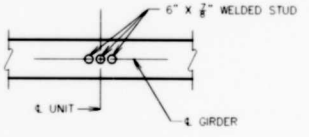
ELEVATION



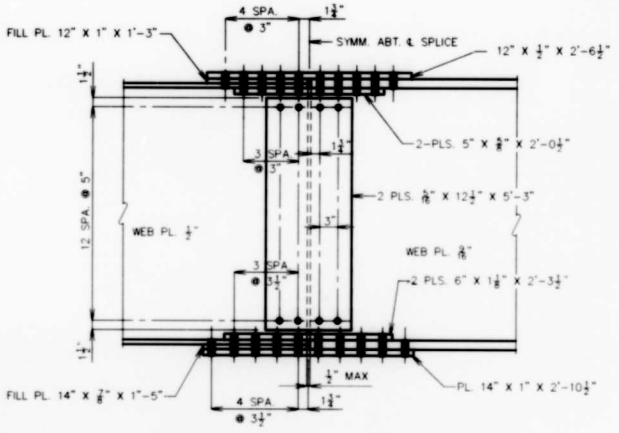
PLAN OF STUD CONN. (4 STUDS PER UNIT)



ELEVATION

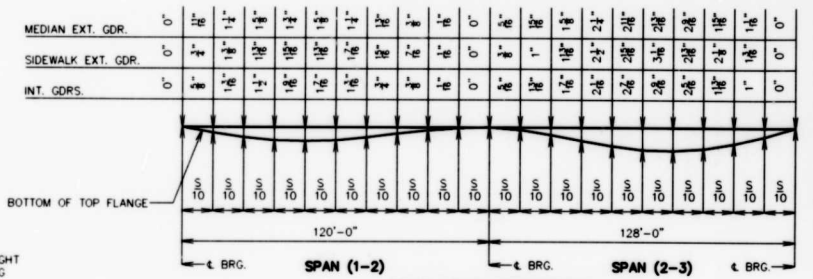


PLAN OF STUD CONN. (3 STUDS PER UNIT)



DETAIL OF BOLTED FIELD SPLICE

NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 15/16"ø REAMED HOLES



DEAD LOAD DEFLECTION

NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL.

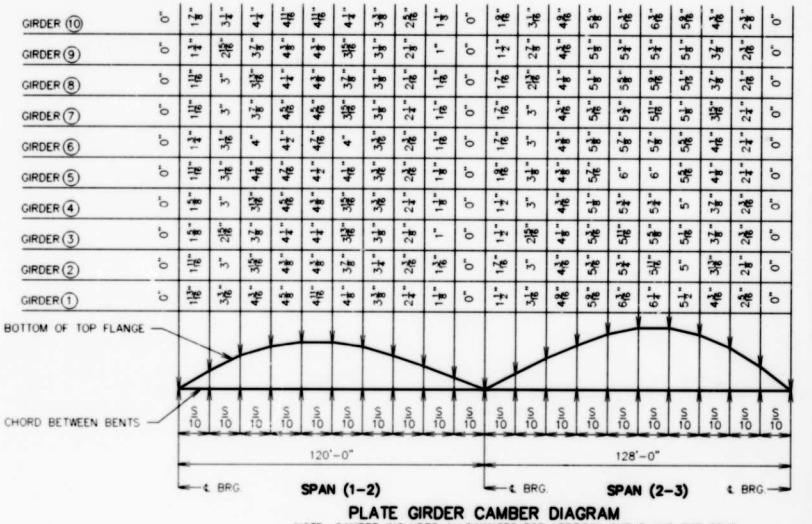


PLATE GIRDER CAMBER DIAGRAM

NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)

A ADDED FIELD SPLICE 3 GIRDER TO IS SIMILAR. NO FILL PLATES REQUIRED

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

A REVISED 8-12-96

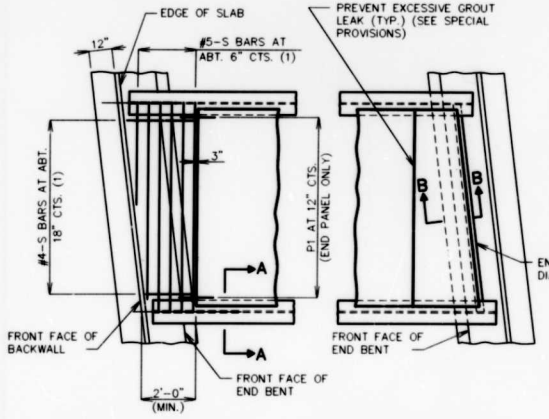
JACKSON COUNTY

CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

SHEET NO. 24 OF 50

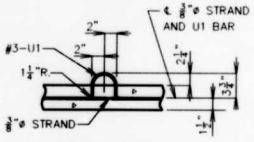
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		138

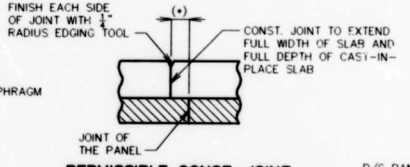


PANELS – SQUARED ENDS **PANELS – SKEWED ENDS**

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

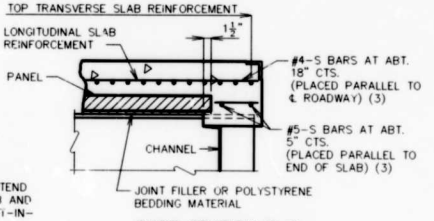


DETAIL "A"

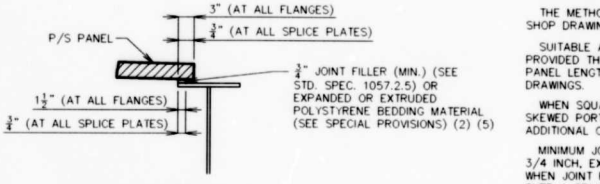


PERMISSIBLE CONST. JOINT

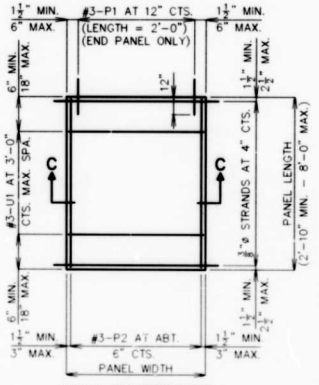
(•) ADJUST THE PERMISSIBLE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE JOINTS OF THE PANELS.



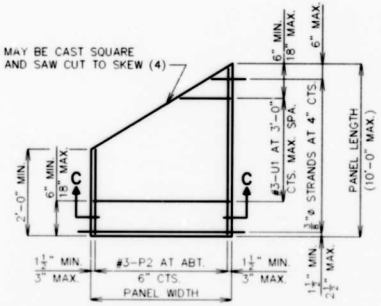
PART SECTION B–B



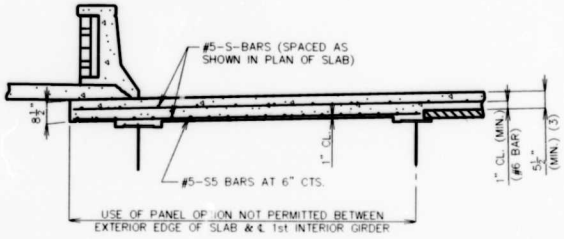
SECTION A–A



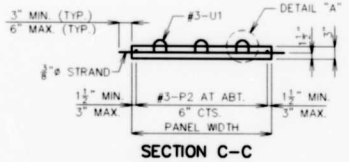
PLAN OF PRECAST PRESTRESSED PANEL



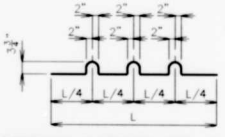
PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END OPTIONAL)



SECTION THRU CANTILEVER AND EXTERIOR GIRDER BAY



SECTION C–C



BENDING DIAGRAM FOR U1 BAR

(U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.)

NOTES:

(1) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY. COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(2) ADJUSTMENT IN T'E SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE % OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

(3) S-BARS SHOWN ARE USED WITH SKEWED END PANELS ONLY. THE #5-S-BARS SHALL EXTEND THE WIDTH OF SLAB (21 INCHES LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES. S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD AND ARE NOT LISTED IN THE BILL OF REINFORCING.

(4) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATOR'S OPTION.

(5) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1-1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 24 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'C = 5,000 PSI, F'CI = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7), LOW-RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMAL ULTIMATE STRENGTH = 22,950 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE 1/4 INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN 1/2 INCH THICK OVER A SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT THE SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH TO CORRECT FOR VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

IF UI BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, UI LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P3 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2FT.

THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8"ø STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
#3-P2 BARS AT 16 INCHES.
WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 INCHES.

TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR TO THE WELDED DEFORMED BAR MATS AT ABOUT 3'-0" CENTERS.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

3-27-95

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DRAWN BY:	DMA	4/93
TRACED BY:	RCC	4/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

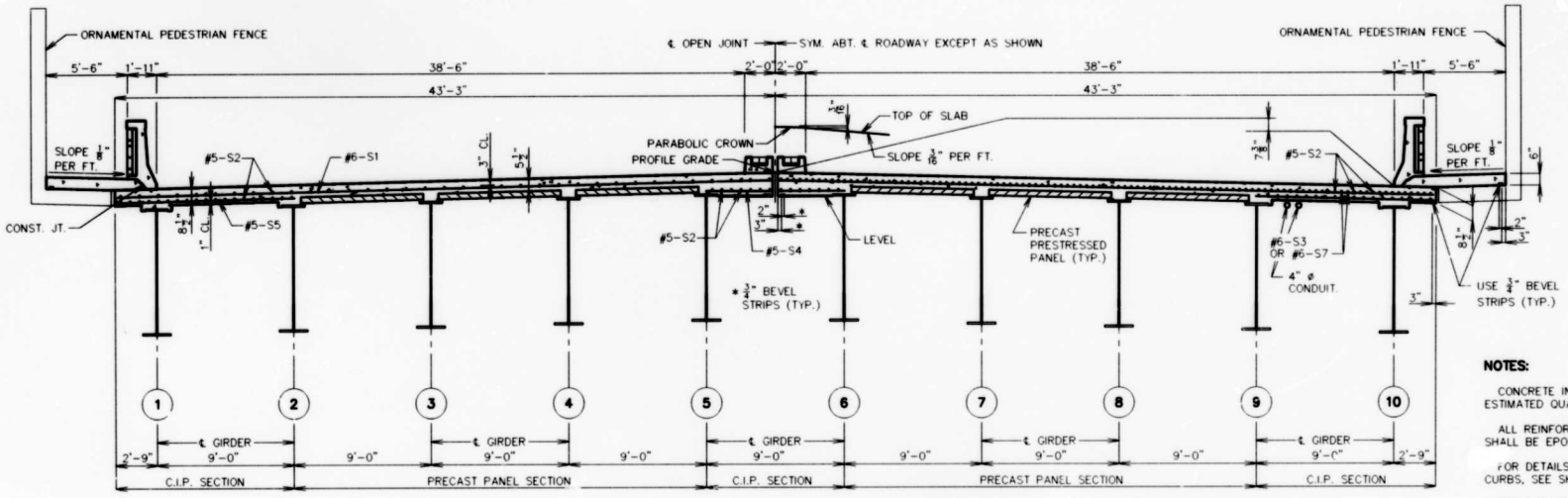
JACKSON COUNTY

DETAILS OF PRECAST PRESTRESSED PANELS

SHEET NO. 27 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		157



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INTERMEDIATE BENT

NOTES:

CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON STEEL.

ALL REINFORCEMENT OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.

FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURBS, SEE SHEET NO. 34.

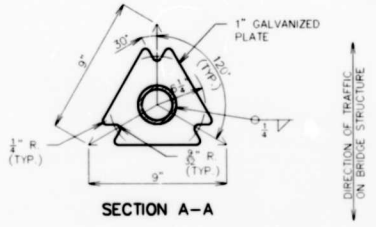
FOR THEORETICAL SLAB HAUNCH AND DEAD LOAD DEFLECTION DIAGRAM, SEE SHEET NO. 24.

FOR DETAILS OF BRIDGE SIDEWALK SEE SHEETS NO. 31 & 32.

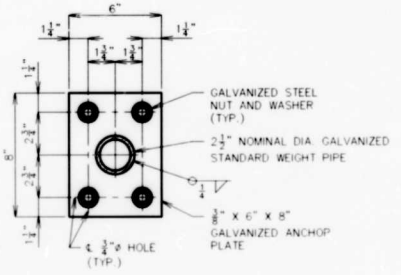
FOR DETAILS OF PRECAST PRESTRESSED PANELS, SEE SHEET NO. 27.

FOR DETAILS AND REINFORCEMENT OF RAISED MEDIAN SEE SHEET NO. 33.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE, SEE SHEETS NO. 42-45.



SECTION A-A



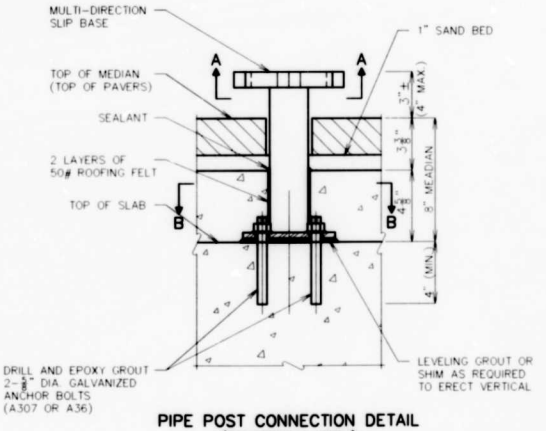
SECTION B-B

NOTES:

SEE MISSOURI STANDARD PLANS DRAWING 903.03AQ FOR GENERAL NOTES AND DETAILS OF PIPE POST CONNECTION FOR HIGHWAY SIGNING.

WRAP PORTION OF POST TO BE EMBEDDED IN CONCRETE MEDIAN WITH 2 LAYERS OF 50# ROOFING FELT. CAULK PERIMETER OF POST AT INTERFACE BETWEEN C.I.P. CONCRETE MEDIAN AND SAND BED.

SEE SHEET NO. 33 FOR PIPE POST CONNECTION LOCATIONS.



PIPE POST CONNECTION DETAIL (ROADWAY ITEM)

3-27-95

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CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

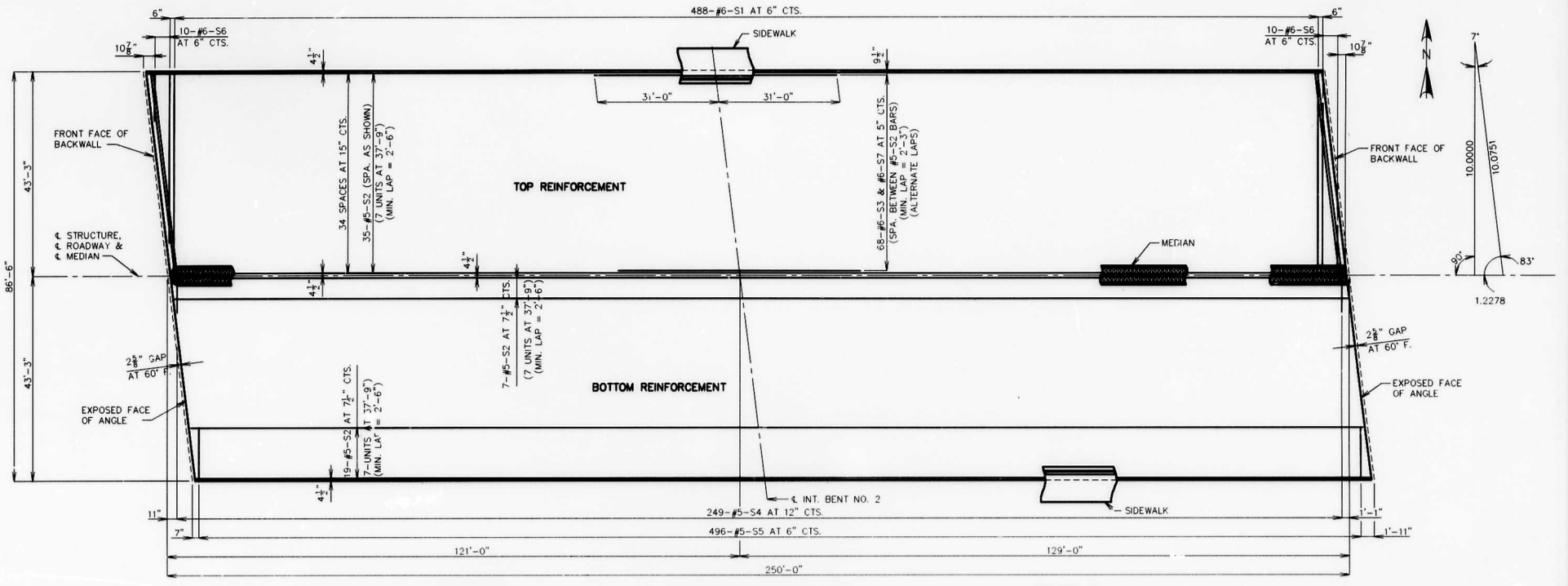
DETAILS OF SLAB CROSS SECTION

SHEET NO. 26 OF 50

A-5180

[redacted] 24 to 1

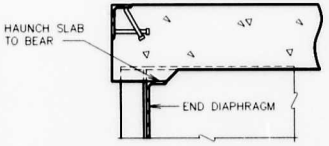
MO.	PROJ. NO.	SHEET NO.
		130



SPAN (1-2) PLAN OF SLAB SHOWING REINFORCEMENT SPAN (2-3)

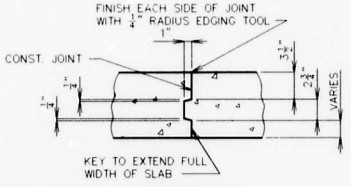
NOTE: LONGITUDINAL DIMENSIONS ARE HORIZONTAL.

LONGITUDINAL REINFORCING STEEL SHALL BE PLACED SO THAT ENDS SHALL NOT BE MORE THAN 1"± FROM VERTICAL LEG OF ANGLE AT EXPANSION DEVICE.

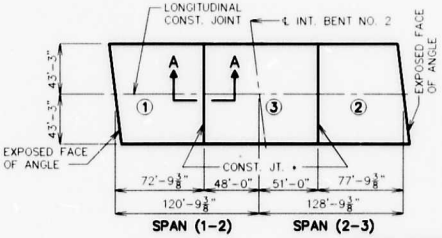


PART LONGITUDINAL SECTION AT END OF SLAB

SECTION CUT THROUGH CAST-IN-PLACE SLAB FOR PART LONGITUDINAL SECTION THROUGH PRECAST PANEL SEE SHEET NO. 27.



SECTION A-A



	SEQUENCE OF POURS			MIN. RATE OF POUR CU. YDS./HR.
	DIRECTION			WITH RETARDER
BASIC SEQUENCE	1	2	3	25
	EITHER DIRECTION			
ALTERNATE POURS TO THE BASIC SKIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 703.3.12.4 OF MISSOURI STANDARD SPECIFICATIONS.				
ALTERNATE "A" POURS	1		3 + 2	45
	END TO 3		1 TO END	
ALTERNATE "B" POURS	1 + 3 + 2			45
	END TO END			

SLAB POURING SEQUENCE

THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN ABOVE.

• FOR DETAIL OF CONSTRUCTION JOINT AT PRESTRESSED PANELS SEE SHEET NO. 27.

3-27-95

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CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

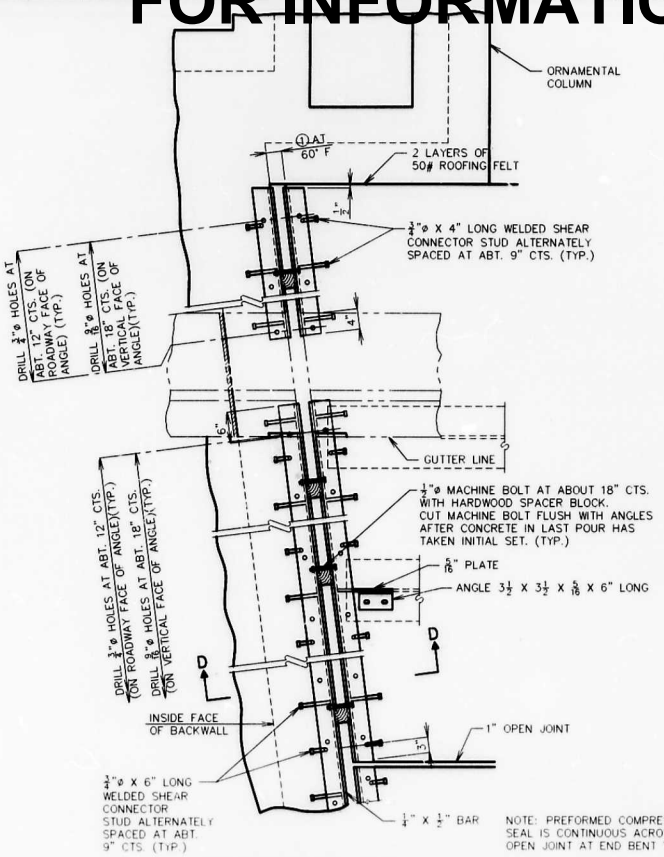
JACKSON COUNTY

DETAILS OF SLAB PLAN

SHEET NO. 25 OF 50

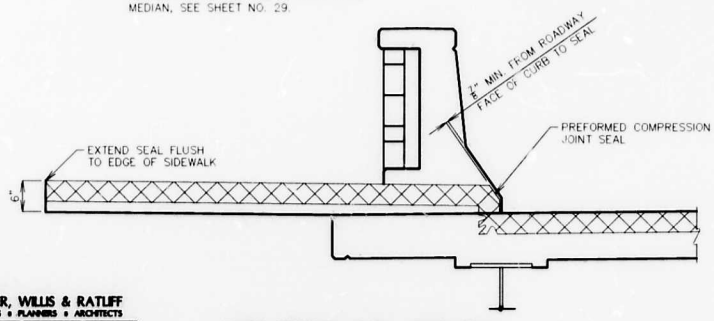
A-5180

STA.	PROJ. NO.	SHEET NO.
I.D.		139

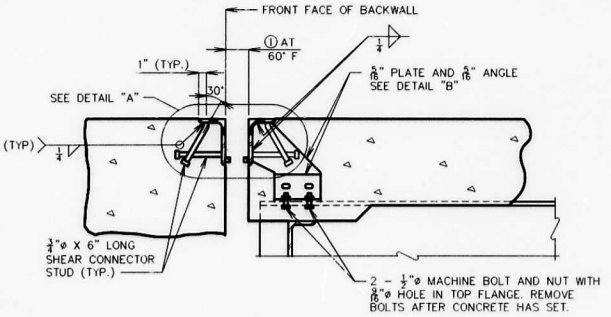


PART PLAN AT END BENT NO. 1
(ABUTMENT NO. 3 SIMILAR)

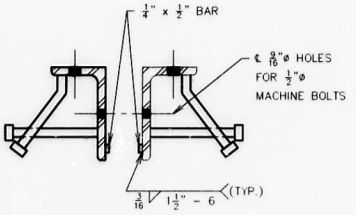
FOR DETAILS OF EXPANSION JOINT THRU MEDIAN, SEE SHEET NO. 29.



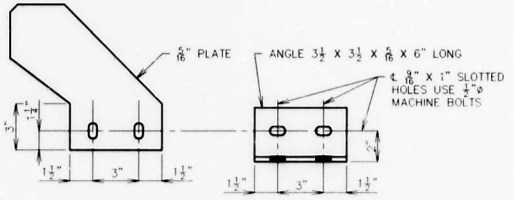
PART SECTION THRU JOINT SEAL



PART SECTION D-D



DETAIL "A"



DETAIL "B"

GENERAL NOTES:

STRUCTURAL STEEL FOR EXPANSION DEVICE SHALL BE FABRICATED IN ONE SECTION, EXCEPT THAT WHEN THE LENGTH IS OVER 50', SPLICING IS PERMISSABLE.

THE EXPANSION DEVICE SHALL BE BENT TO CONFORM TO CROWN AND GRADE OF ROADWAY.

STRUCTURAL STEEL FOR THE ARMORED JOINT SHALL BE GRADE A36.

ANCHORS FOR COMPRESSION SEAL ARMOR SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

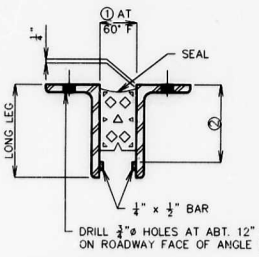
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60° F.

DIMENSION ① SHALL BE INCREASED $\frac{1}{8}$" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED $\frac{1}{8}$" FOR EACH 10° RISE IN TEMPERATURE AT INSTALLATION.

SEE SPECIAL PROVISIONS FOR THE REQUIREMENTS OF COMPRESSION JOINT SEAL.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PREFORMED EXPANSION JOINT SEAL.

NEOPRENE EXTRUSIONS SHALL MEET A.S.T.M. D3542-83.



PART CROSS SECTION THRU EXPANSION JOINT

TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS

LOCATION	SEAL WIDTH	①	②	REQUIRED MOVEMENT RANGE
BENT NO. 1	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"
ABUTMENT NO. 3	4.0"	2⅝"	SEAL DEPTH + ¾"	1.6"

NOTE: DEPTH OF SEAL SHALL NOT BE LESS THAN WIDTH OF SEAL.

SIZE OF ARMOR JOINT

VERTICAL LEG OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL +1½". VERTICAL LEG OF ANGLE IN SIDEWALK SHALL BE A MAXIMUM OF 6" HORIZONTAL LEG OF ANGLE SHALL BE A MINIMUM OF 3". MINIMUM THICKNESS OF ANGLE SHALL BE ½".

IF A SEAL SIZE LARGER THAN THAT INDICATED ON THE PLANS IS USED, THE MOVEMENT RANGE, THE OPENING AT 60° F AND ALL DIMENSIONS FOR THE ARMOR ANGLES SHALL BE SHOWN ON THE SHOP DRAWINGS.

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TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

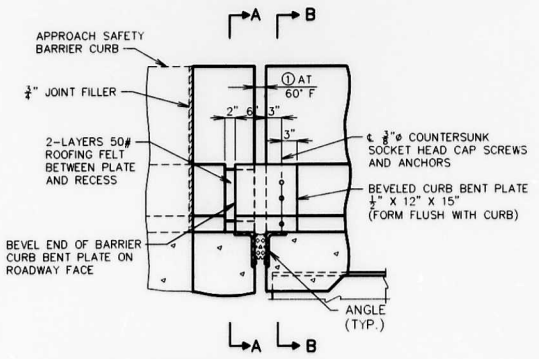
JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL

SHEET NO. 28 OF 50

A-5180

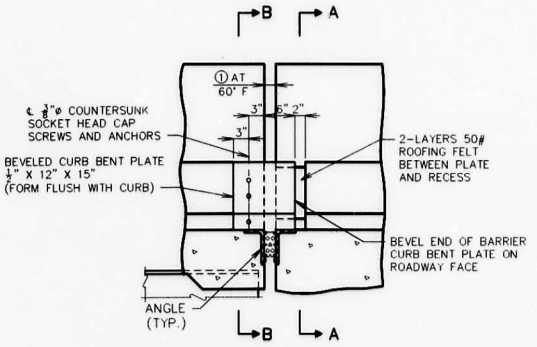
STATE	PROJ. NO.	SHEET NO.
MO.		140



PART ELEVATION OF BARRIER CURB AT END BENT NO. 1

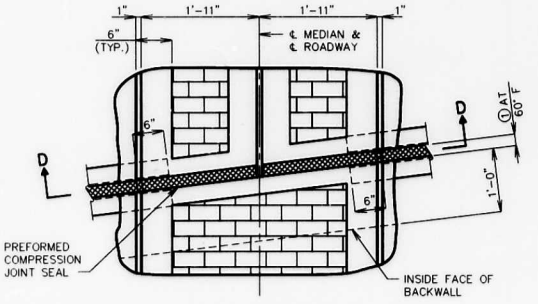
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR

SEE SHEET NO. 26 FOR DIMENSION ①.

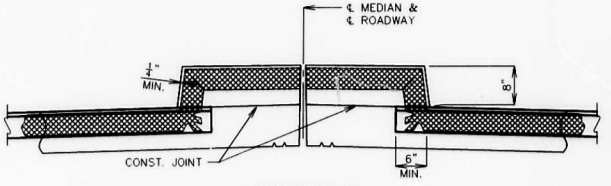


PART ELEVATION OF BARRIER CURB AT ABUTMENT NO. 3

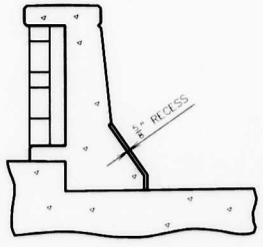
LEFT BARRIER SHOWN, RIGHT BARRIER SIMILAR



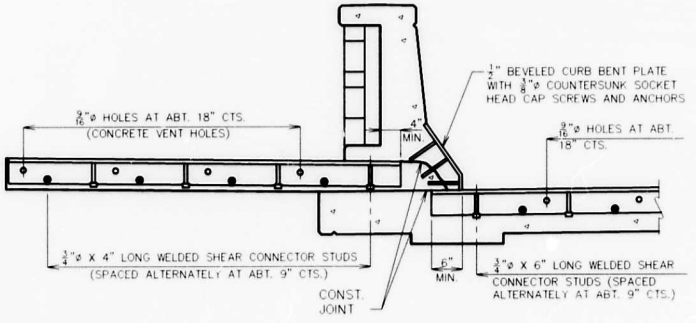
PART PLAN OF JOINT SEAL THRU MEDIAN AT ABUTMENT NO. 3



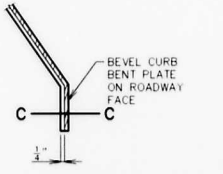
SECTION D-D



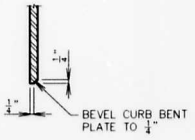
PART SECTION A-A



PART SECTION B-B



PART ELEVATION AT END OF BEVELED CURB BENT PLATE



SECTION C-C

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DRAWN BY:	DMA	5/93
TRACED BY:	RCC	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AND BENT CURB PLATES

SHEET NO. 29 OF 50

A-5180

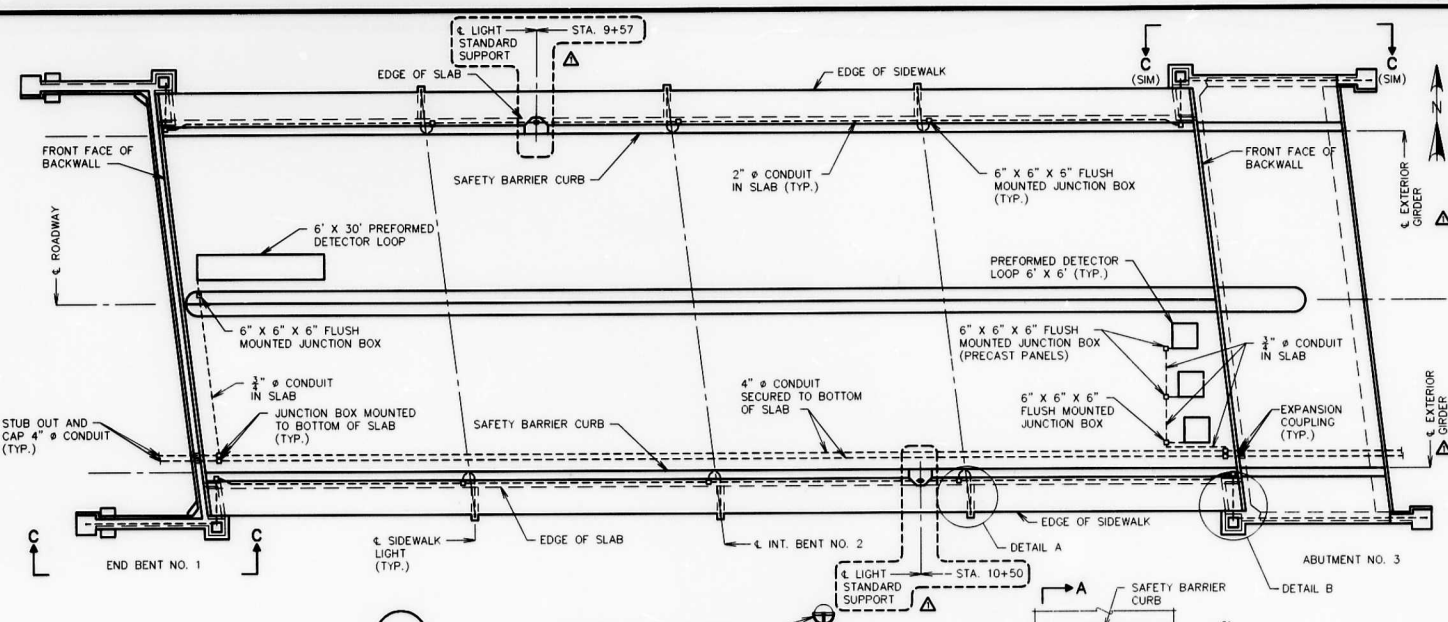
3-27-95

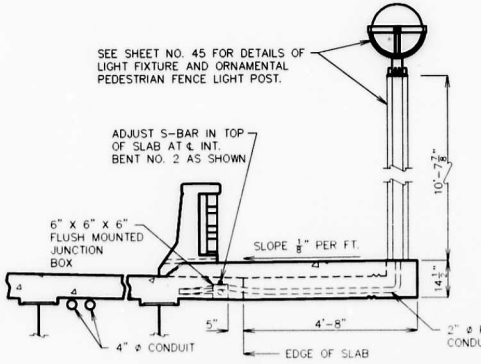
24 to 1

FOR INFORMATION ONLY

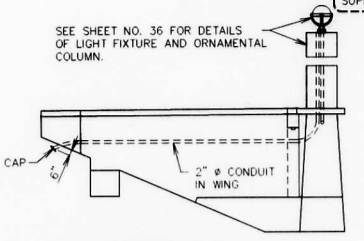
A51801, Sht. 249

STATE	PROJ. NO.	SHEET NO.
MO.		141

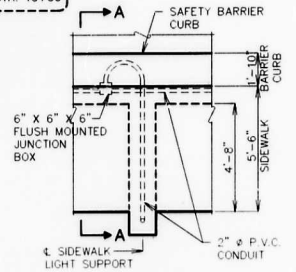




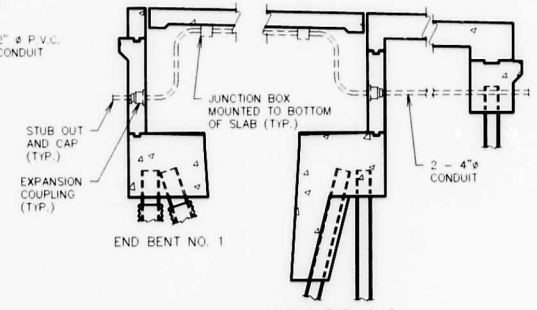
SECTION A-A



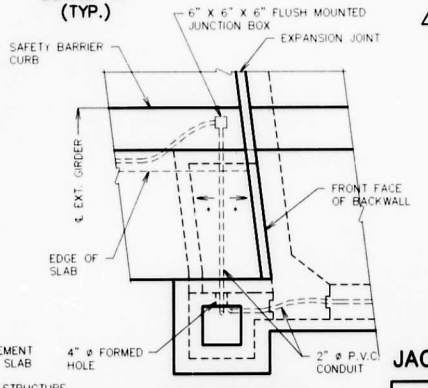
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN ETHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS.

⚠ CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

DANIEL L. CHAPMAN NUMBER E-23064 — 11-2-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

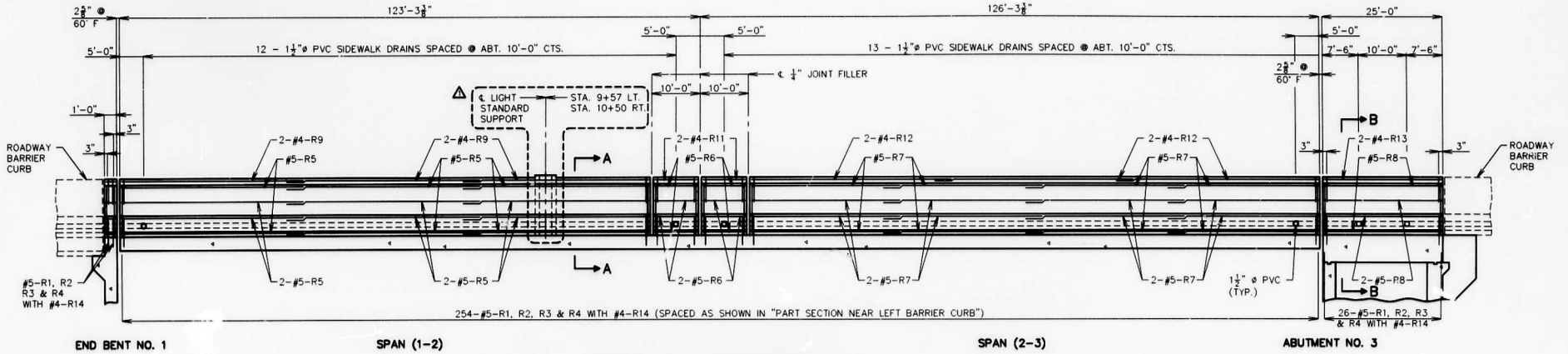
JACKSON COUNTY

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

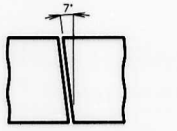
STATE	PROJ. NO.	SHEET NO.
MO.		165



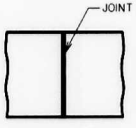
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

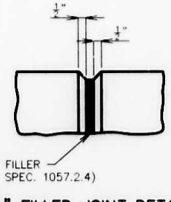


AT 2⅝" EXPANSION JOINT

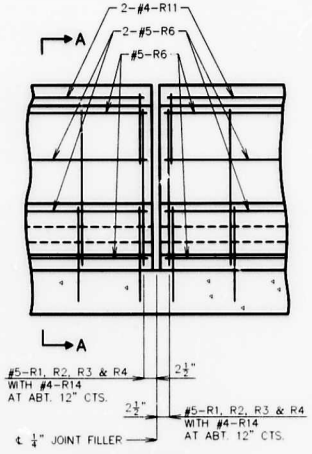


AT ¼" JOINT

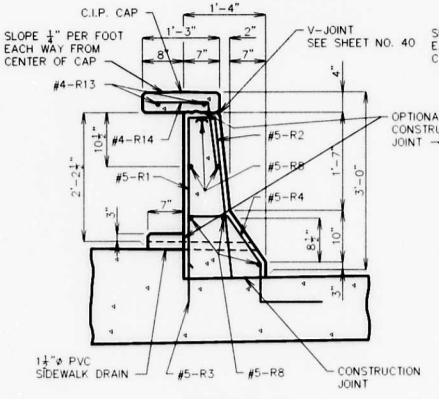
PART PLAN VIEW



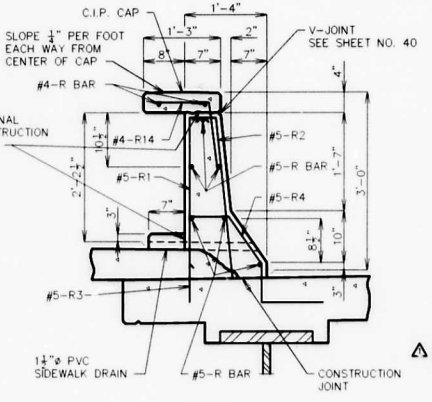
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

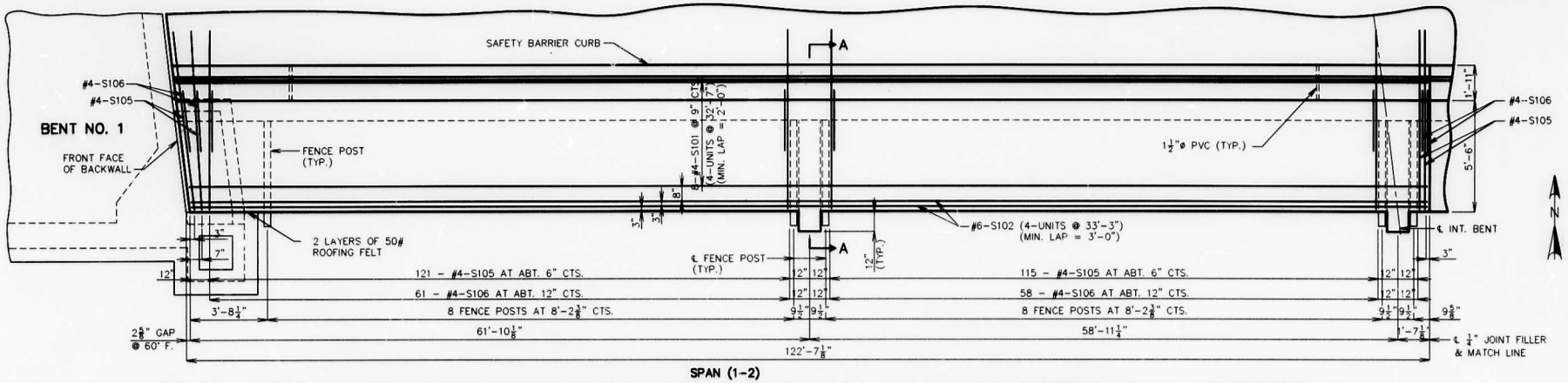
JACKSON COUNTY

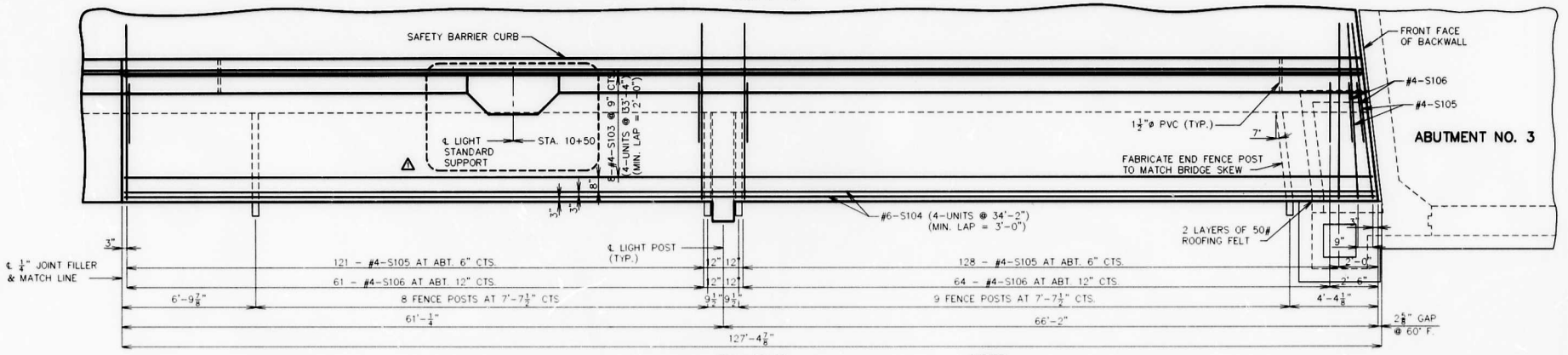
DETAILS OF SAFETY BARRIER CURB

SHEET NO. 34 OF 50

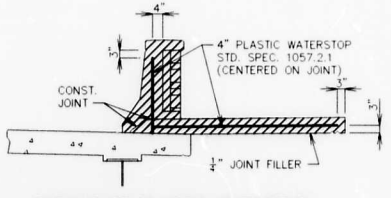
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		143





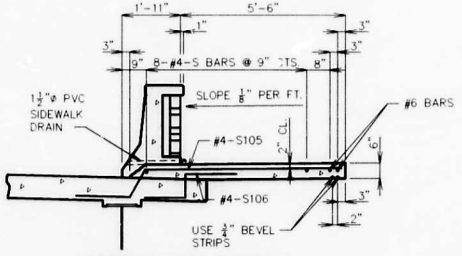
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

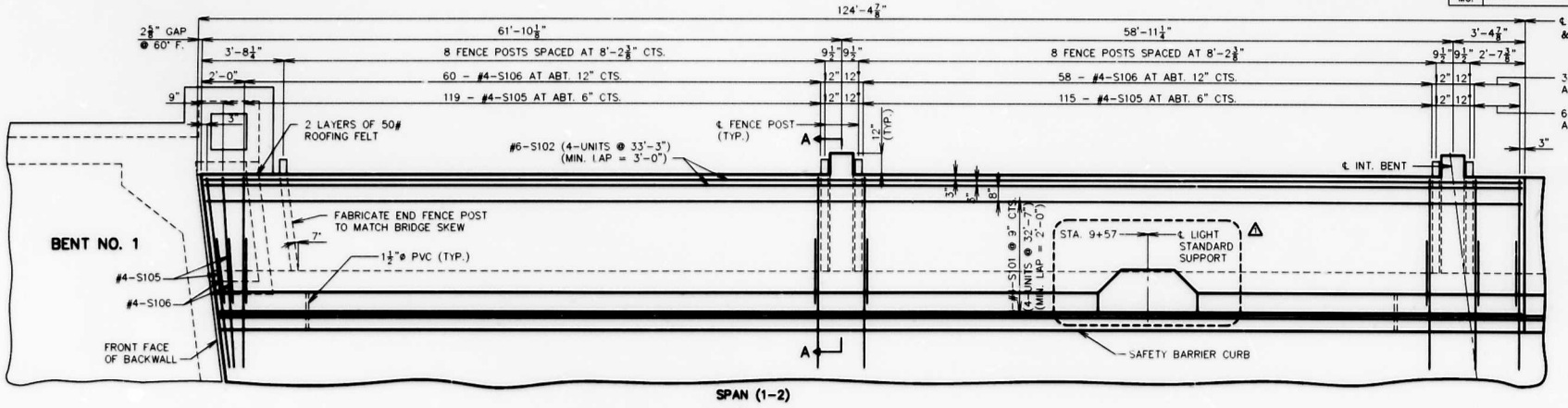
DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

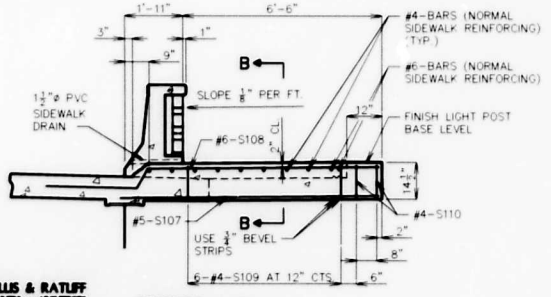
SHEET NO. 32 OF 50

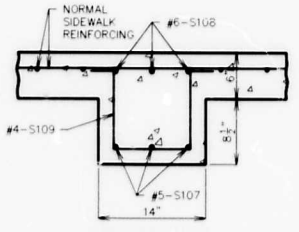
A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		142







NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A 1/4" RADIUS OR A 3/4" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95	
TRACED BY:	RCC 3/95	
CHECKED BY:	DJM 3/95	

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

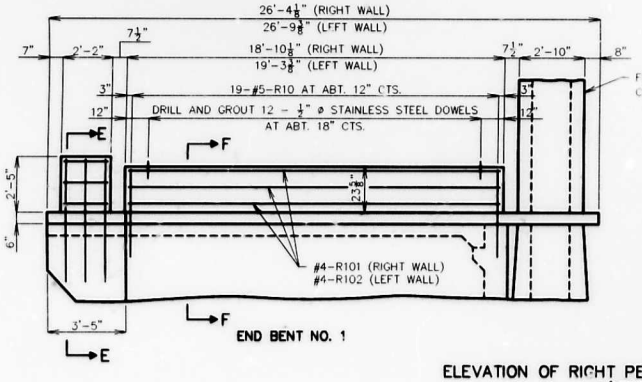
SHEET NO. 31 OF 50

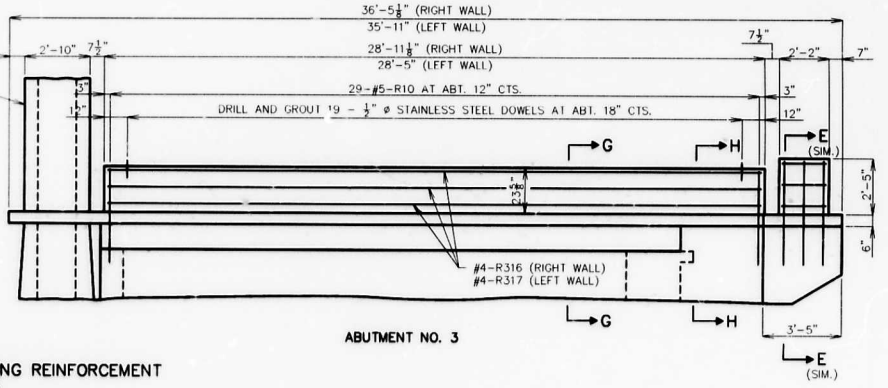
A-5180

FOR INFORMATION ONLY

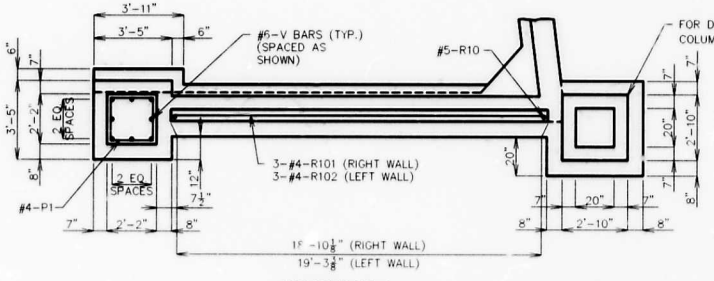
A51801, Sht. 253

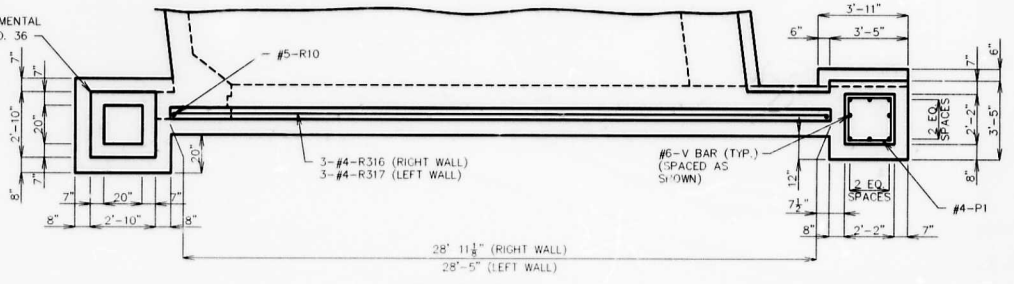
STATE	PROJ. NO.	SHEET NO.
MO.		146



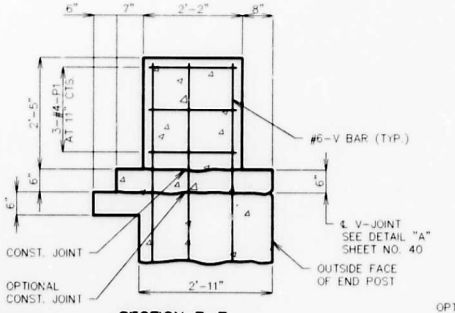


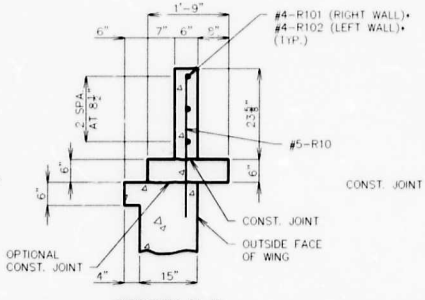
ELEVATION OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)

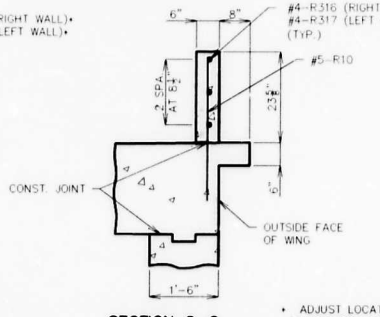


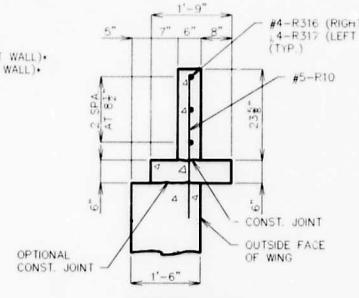


PLAN OF RIGHT PEDESTRIAN WALL SHOWING REINFORCEMENT
(LEFT PEDESTRIAN WALL SIMILAR)









NOTES:

FOR DETAILS OF PRECAST CONCRETE CAP, STONE VENEER AND HANDRAIL, SEE SHEET NO. 41.

CONCRETE FOR PEDESTRIAN WALLS AND END POSTS SHALL BE INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

REINFORCING STEEL IN PEDESTRIAN WALLS AND END POSTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

* ADJUST LOCATION OF HORIZONTAL RESTEEL AS REQUIRED TO CLEAR SLEEVE FOR HANDRAIL POST, SEE SHEET NO. 41.

3-27-95

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

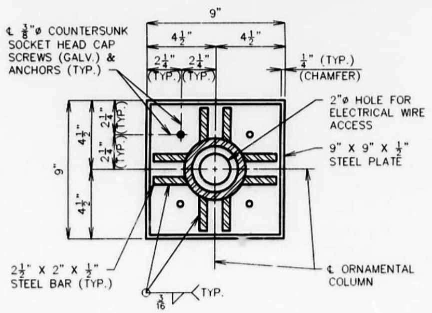
JACKSON COUNTY

DETAILS OF PEDESTRIAN WALLS AND END POST

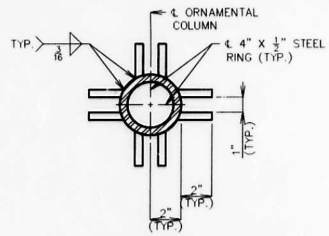
SHEET NO. 35 OF 50

A-5180

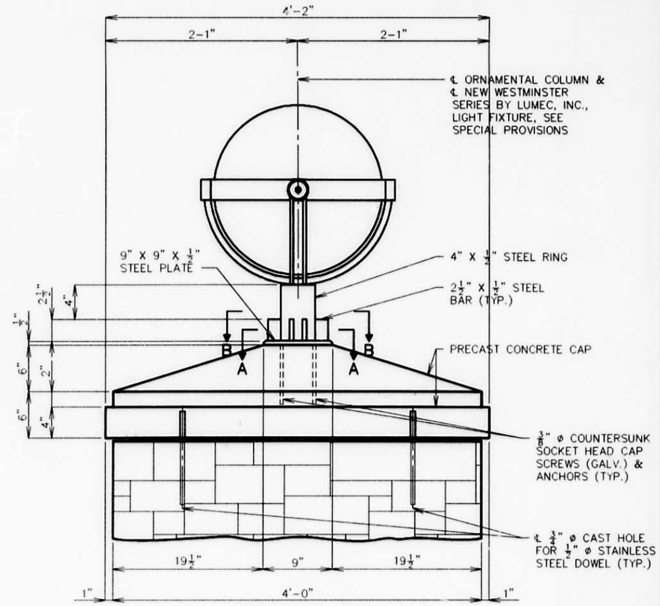
STATE	PROJ. NO.	SHEET NO.
MO.		147



SECTION A–A

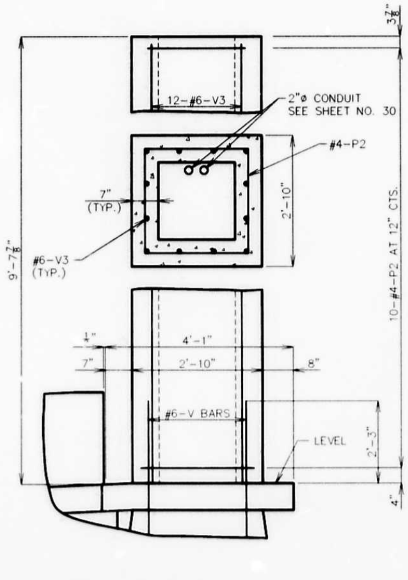


SECTION B–B

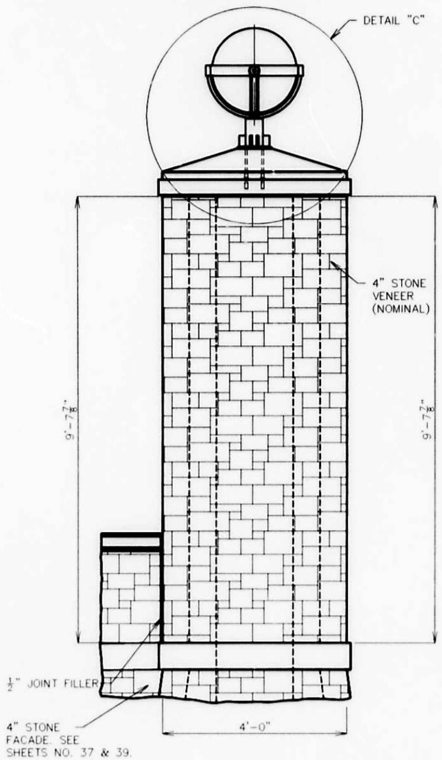


DETAIL "C"

PROVIDE FOR ELECTRICAL WIRE THROUGH PRECAST CONCRETE CAP.



ELEVATION OF ORNAMENTAL COLUMN SHOWING REINFORCEMENT



ELEVATION OF ORNAMENTAL COLUMN SHOWING STONE VENEER

NOTE:

RIGHT COLUMN ON END BENT NO. 1 SHOWN, LEFT COLUMN AND COLUMNS ON ABUTMENT NO. 3 SIMILAR.

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI–GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

STRUCTURAL STEEL SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

THE $\frac{3}{8}$" ø COUNTERSUNK SOCKET HEAD CAP SCREWS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

ANCHORS SHALL BE CAST IN PLACE AND SHALL HAVE A CONCRETE PULL OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 4,000 LBS. IN 4,000 PSI CONCRETE.

CONCRETE FOR THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPSTR.).

REINFORCING STEEL IN THE ORNAMENTAL COLUMNS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR FURNISHING AND INSTALLING THE PRECAST CONCRETE CAP AND OTHER ACCESSORIES SHALL BE INCLUDED IN THE UNIT PRICE FOR PRECAST CAP ON ORNAMENTAL COLUMN.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE–IN–PLACE.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL COLUMN

SHEET NO. 36 OF 50

A–5180

3·27·95

STATE	PROJ. NO.	SHEET NO.
MO.		125

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{1}{8}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

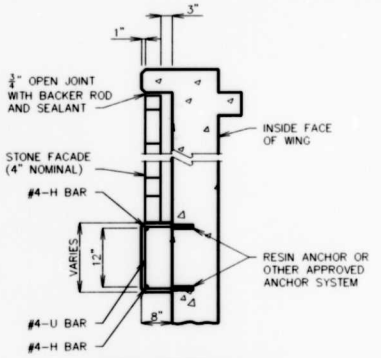
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

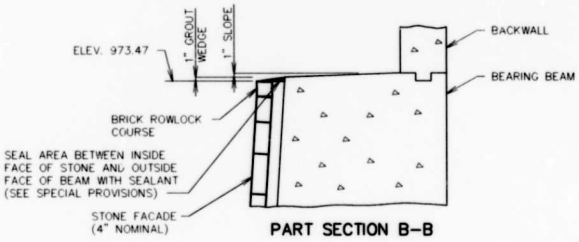
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

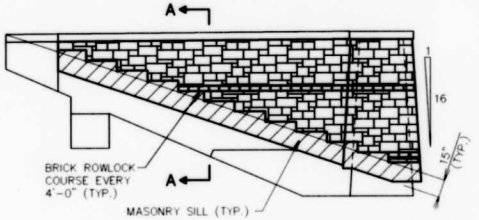


PART SECTION A-A

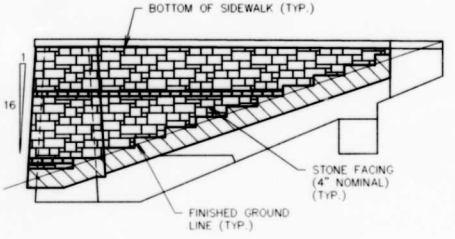
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



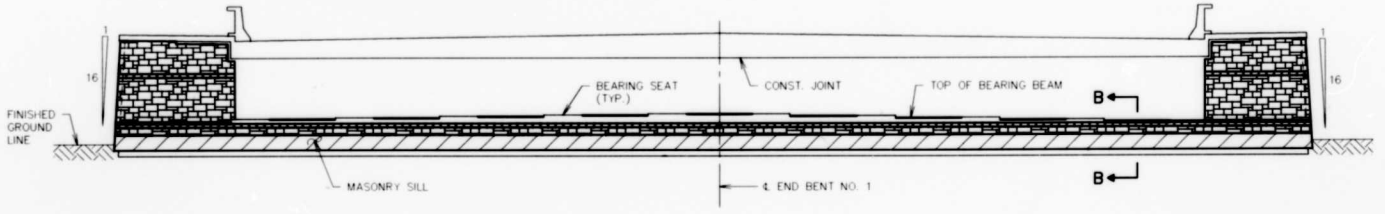
PART SECTION B-B



ELEVATION SOUTH WING



ELEVATION NORTH WING



ELEVATION

7-27-95

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

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NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

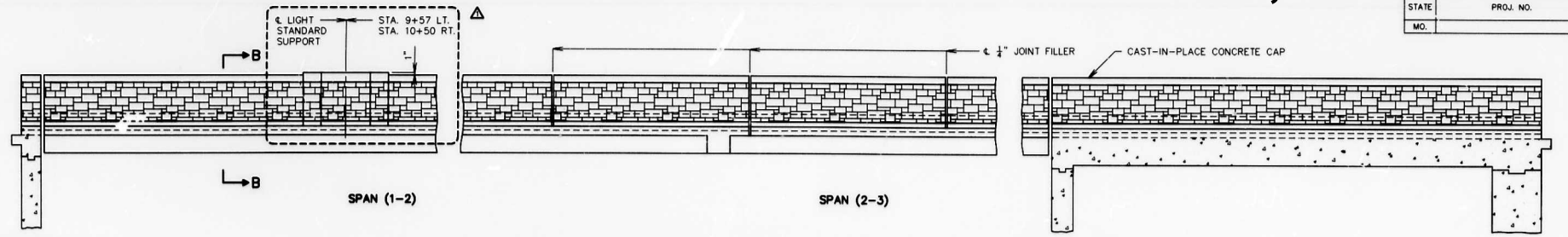
JACKSON COUNTY

DETAILS OF STONE FACADE ON END BENT NO. 1

SHEET NO. 37 OF 50

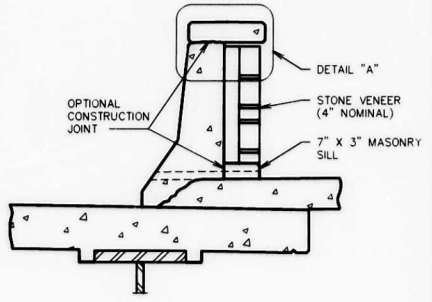
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		151

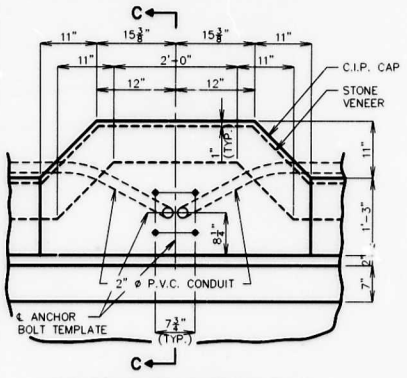


ELEVATION OF RIGHT SAFETY BARRIER CURB

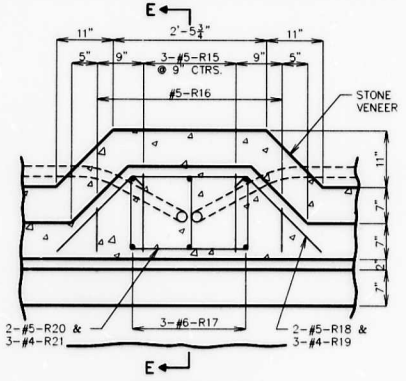
(LEFT CURB IS SIMILAR)



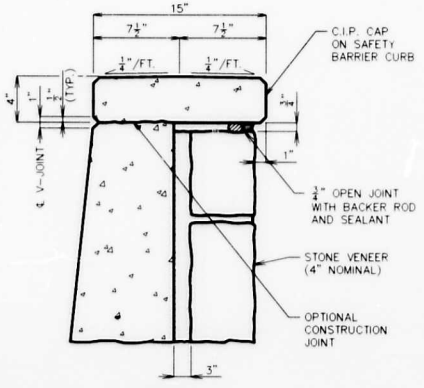
PART SECTION B-B



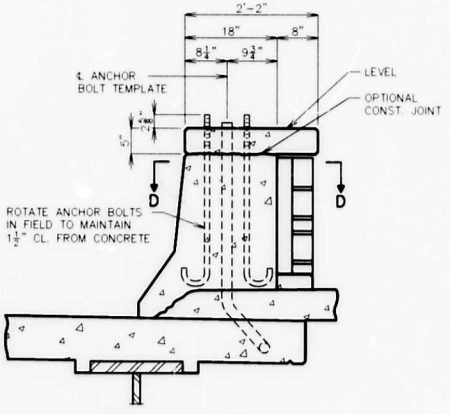
LIGHT STANDARD SUPPORT PLAN



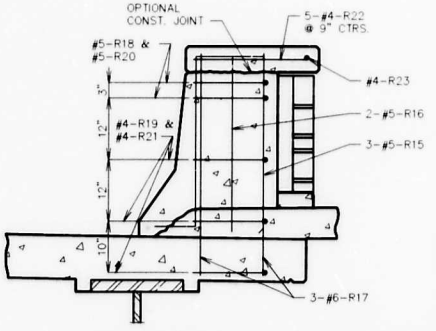
SECTION D-D



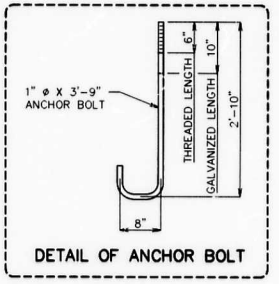
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

STATE	PROJ. NO.	SHEET NO.
MO.		150

NOTE:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN $\frac{3}{16}$" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

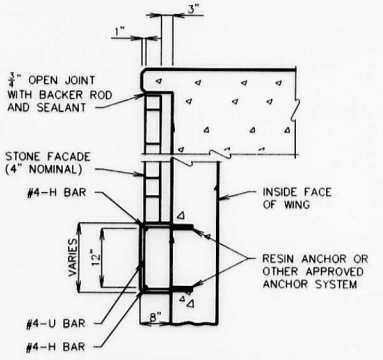
MASONRY SILLS FOR SUPPORT OF STONE FACADE SHALL BE STEPPED IN ORDER TO MINIMIZE THE AMOUNT OF EXPOSED MASONRY SILL ABOVE FINISHED GRADE. MAXIMUM HEIGHT OF VERTICAL STEP IS 8".

PROVIDE EXPANSION, CONTROL AND ISOLATION JOINTS TO ACCOMMODATE MOVEMENT IN STONE WORK. (SEE SPECIAL PROVISIONS)

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, BRICK AND MORTAR. (SEE SPECIAL PROVISIONS)

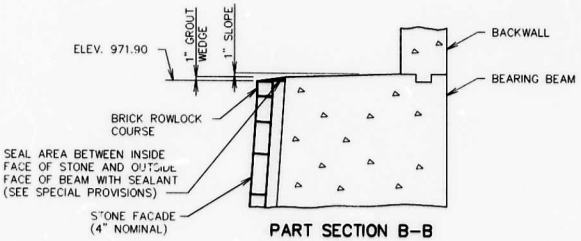
COST OF CONCRETE, REINFORCING STEEL AND ANCHORS, COMPLETE-IN-PLACE, FOR MASONRY SILLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STONE FACADE ON END BENTS.

THE UNIT PRICE BID PER SQUARE FOOT FOR STONE FACADE ON END BENTS SHALL INCLUDE THE BRICK ROWLOCK COURSES, MASONRY SILLS, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

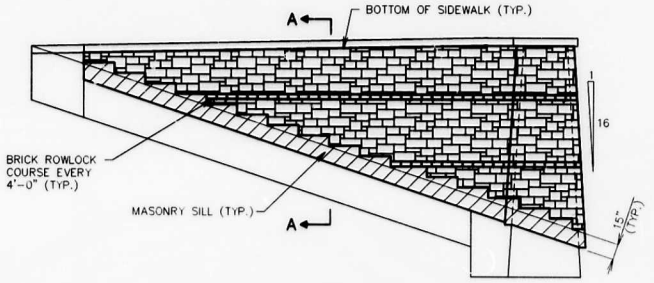


PART SECTION A-A

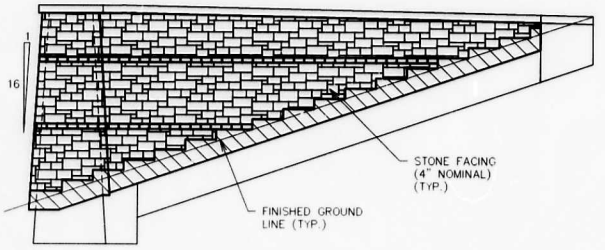
NOTE: SPACE #4-U BARS AND EPOXY ANCHORS AT ABT. 12" CTS. ALONG BLOCK SILL.



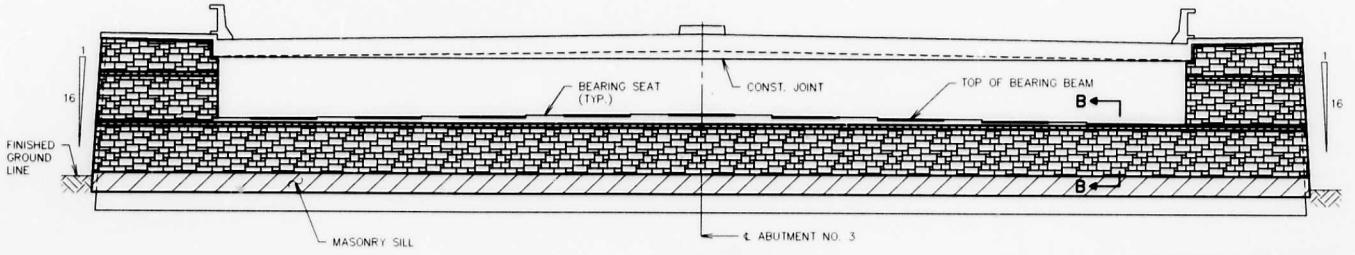
PART SECTION B-B



ELEVATION NORTH WING



ELEVATION SOUTH WING



ELEVATION

3-21-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

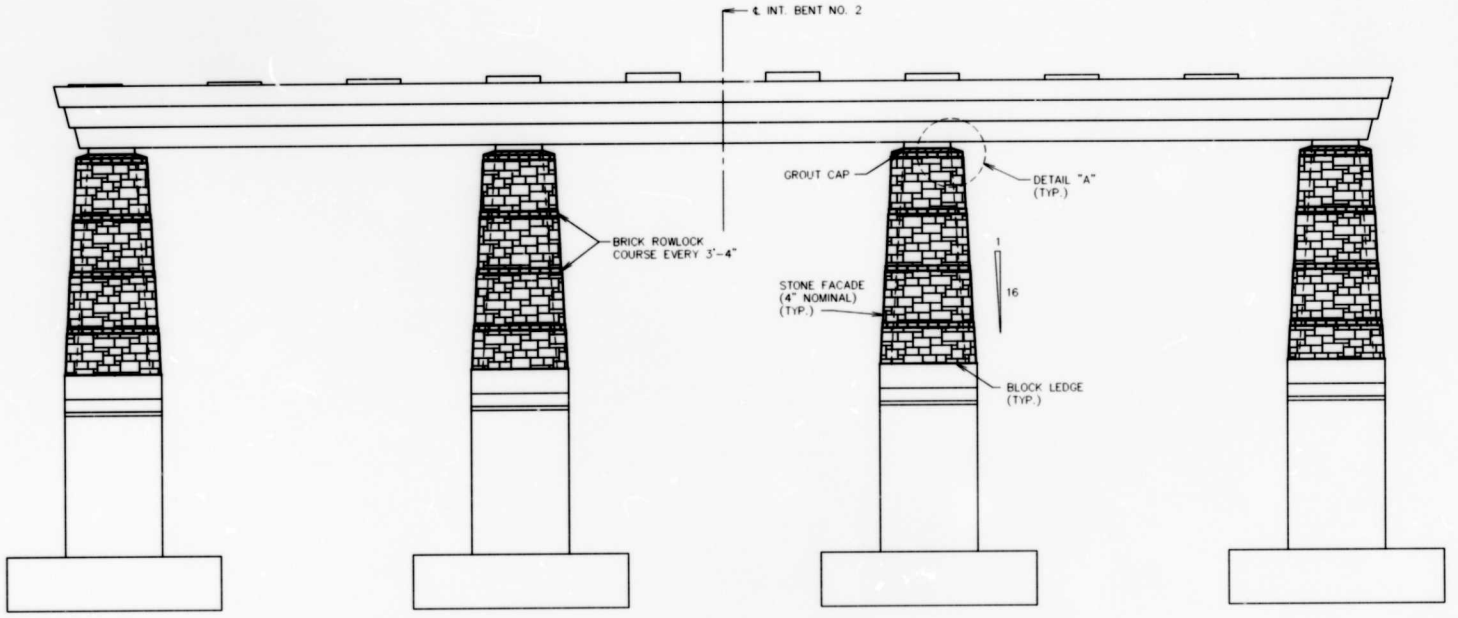
DETAILS OF STONE FACADE ON ABUTMENT NO. 3

SHEET NO. 39 OF 50

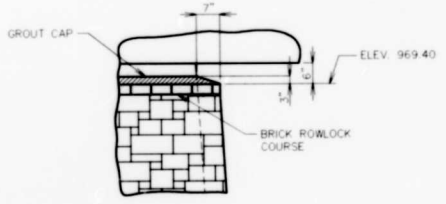
A-5180

[redacted] 24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		129



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

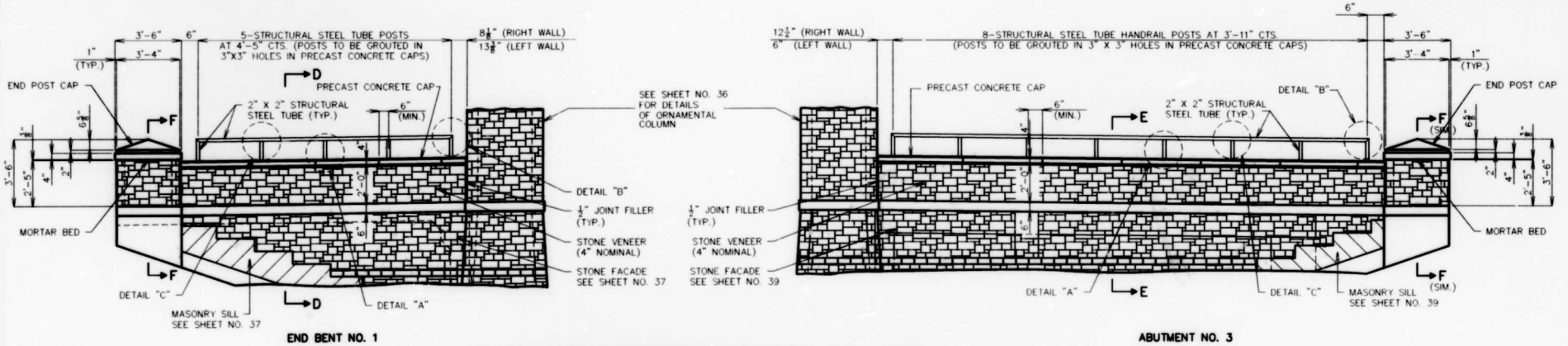
JACKSON COUNTY

DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

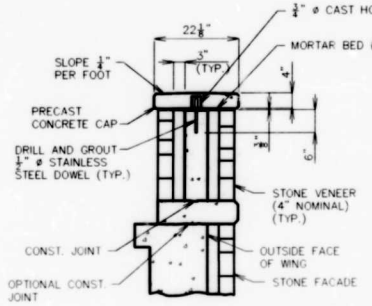
SHEET NO. 38 OF 50

A-5180

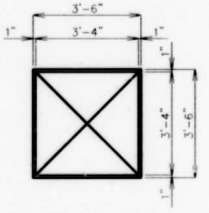
STATE	PROJ. NO.	SHEET NO.
		152



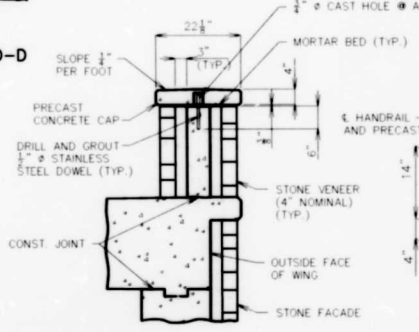
ELEVATION OF RIGHT PEDESTRIAN WALLS SHOWING STONE VENEER
(LEFT PEDESTRIAN WALLS SIMILAR)



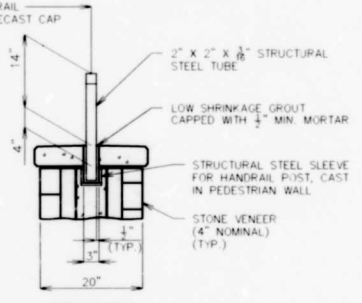
SECTION D-D



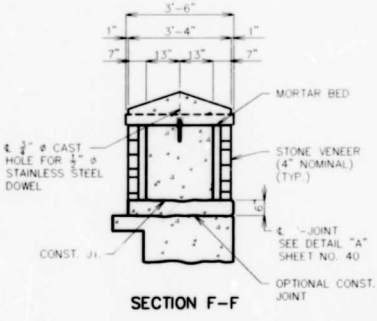
PLAN OF PRECAST END POST CAP



SECTION E-E



DETAIL "A"



SECTION F-F

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND PRECAST CONCRETE. (SEE SPECIAL PROVISIONS).

2" X 2" STRUCTURAL STEEL TUBING FOR PEDESTRIAN HANDRAIL SHALL BE A.S.T.M. A500 OR A501.

STRUCTURAL STEEL SLEEVE SHALL BE A36 AND GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.

SEE SPECIAL PROVISIONS FOR PAINTING REQUIREMENTS OF PEDESTRIAN HANDRAILS.

THE STRUCTURAL STEEL TUBE COMPLETE-IN-PLACE SHALL BE PAID FOR AS TUBE HANDRAIL ON PEDESTRIAN WALLS, PER LIN. FT.

THE UNIT PRICE BID PER LINEAR FOOT OF PRECAST CONCRETE CAP SHALL INCLUDE THE COST OF THE PRECAST CAP, STAINLESS STEEL DOWELS, AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER EACH FOR PRECAST CAP ON END POST SHALL INCLUDE THE COST OF THE PRECAST CAP AND OTHER ACCESSORIES, COMPLETE-IN-PLACE.

THE UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF PEDESTRIAN WALL AND END POST ARCHITECTURAL TREATMENT

SHEET NO. 41 OF 50

A-5180

8-27-95

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		153

NOTES:

ALL FENCE POSTS SHALL BE PLACED VERTICAL. SHIM PLATES MAY BE REQUIRED BETWEEN FENCE POSTS AND SIDEWALK FOR ALIGNMENT.

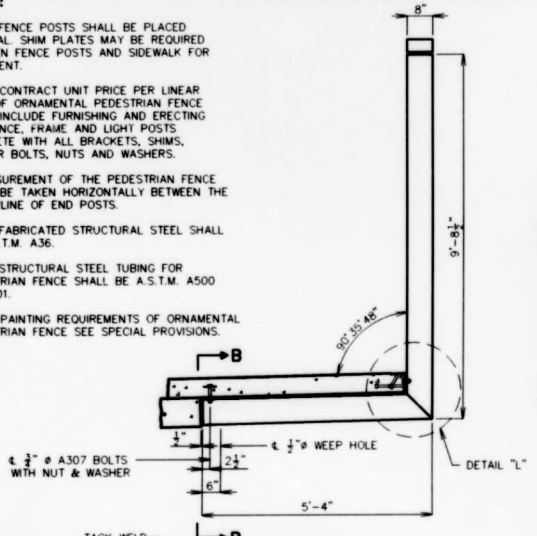
THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ORNAMENTAL PEDESTRIAN FENCE SHALL INCLUDE FURNISHING AND ERECTING THE FENCE, FRAME AND LIGHT POSTS COMPLETE WITH ALL BRACKETS, SHIMS, ANCHOR BOLTS, NUTS AND WASHERS.

MEASUREMENT OF THE PEDESTRIAN FENCE SHALL BE TAKEN HORIZONTALLY BETWEEN THE CENTERLINE OF END POSTS.

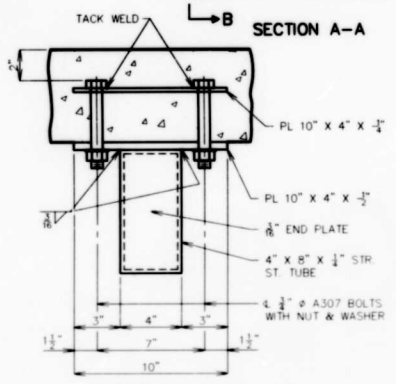
ALL FABRICATED STRUCTURAL STEEL SHALL BE A.S.T.M. A36.

ALL STRUCTURAL STEEL TUBING FOR PEDESTRIAN FENCE SHALL BE A.S.T.M. A500 OR A501.

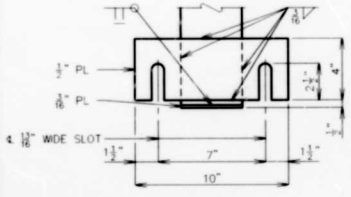
FOR PAINTING REQUIREMENTS OF ORNAMENTAL PEDESTRIAN FENCE SEE SPECIAL PROVISIONS.



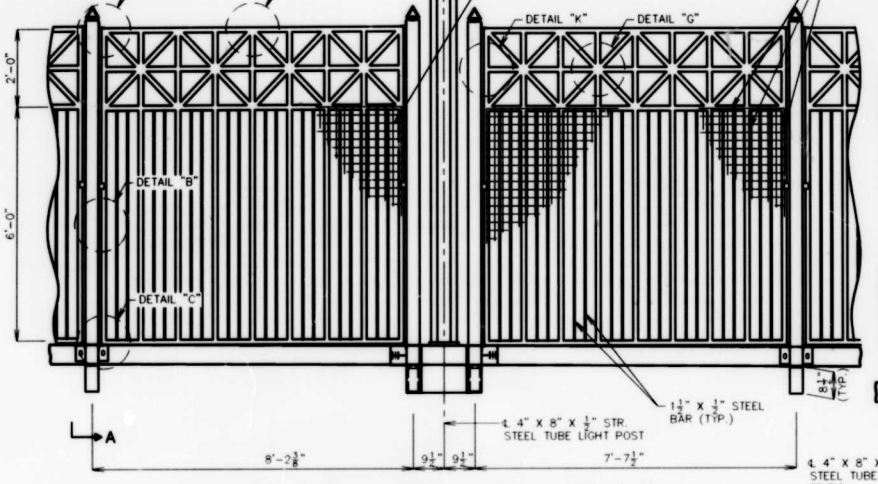
SECTION A-A



SECTION B-B



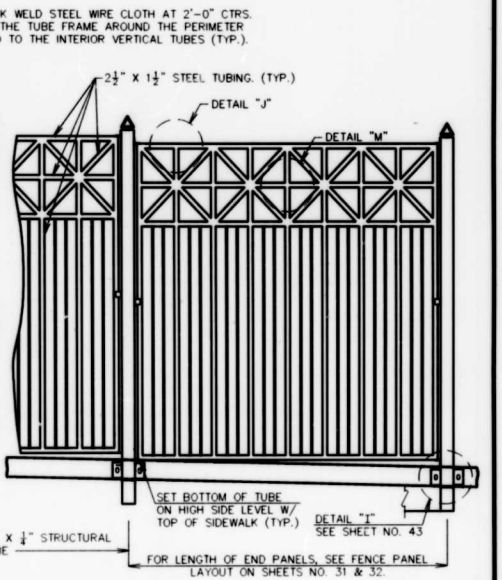
PLAN



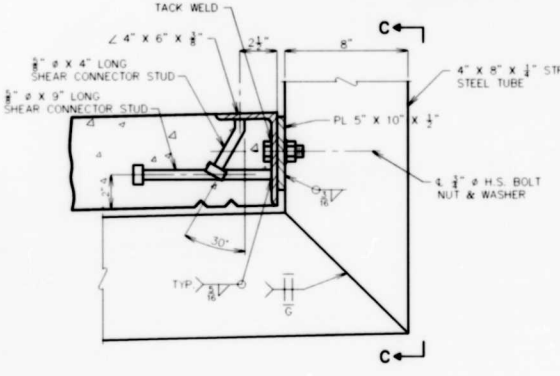
SPAN (1-2) SPAN (2-3)

NOTE: FOR DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 40.

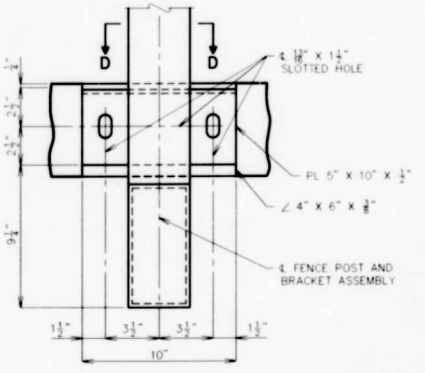
SEE SHEETS NO. 31 & 32 FOR FENCE POST SPACING.



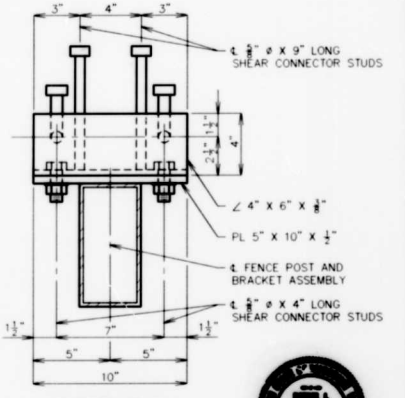
TYPICAL ELEVATION



DETAIL "L"



ELEVATION C-C
(TYPICAL EXCEPT AS NOTED)



SECTION D-D

3-27-95

BUCHER, WILLS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:		3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 42 OF 50

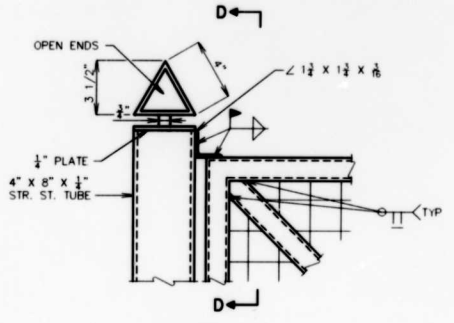
A-5180

[redacted] 24 to 1

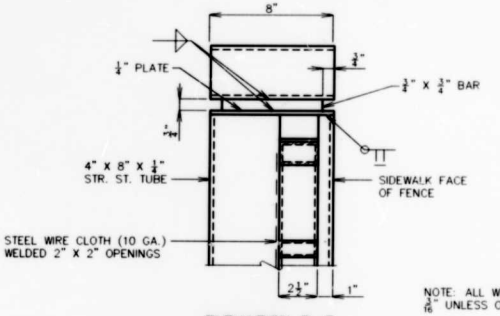
FOR INFORMATION ONLY

A51801, Sht. 261

STATE	PROJ. NO.	SHEET NO.
MO.		

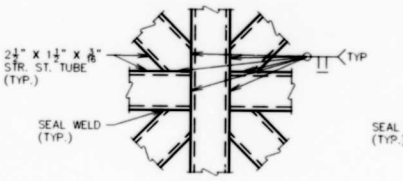


DETAIL "A"

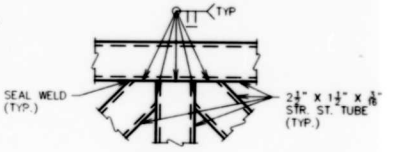


ELEVATION D-D

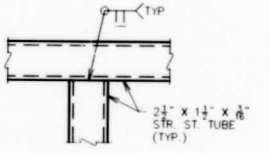
NOTE: ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.



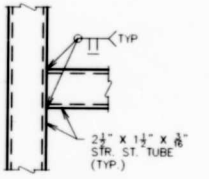
DETAIL "G"



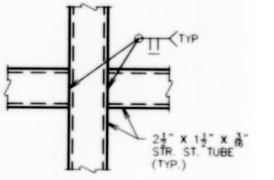
DETAIL "H"



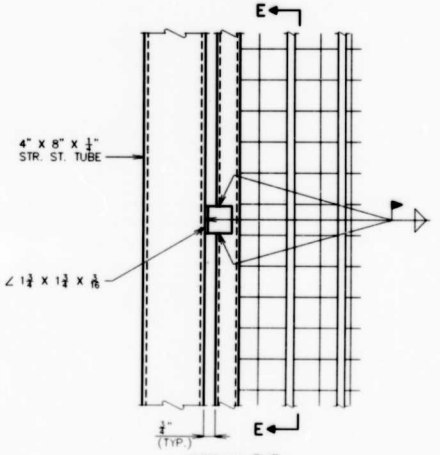
DETAIL "J"



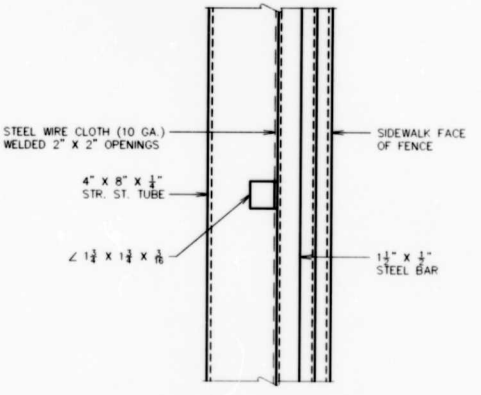
DETAIL "K"



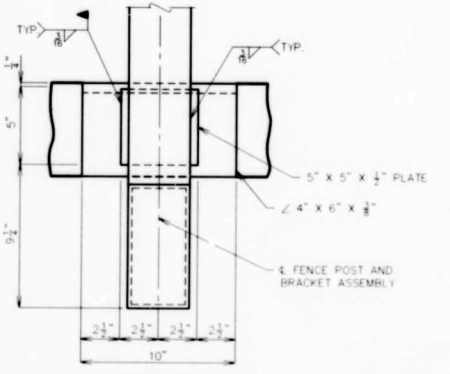
DETAIL "M"



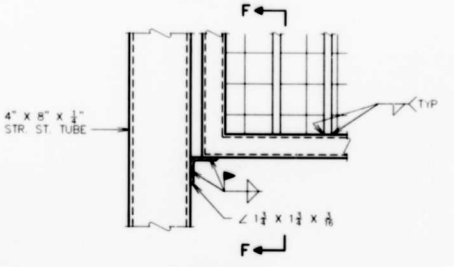
DETAIL "B"



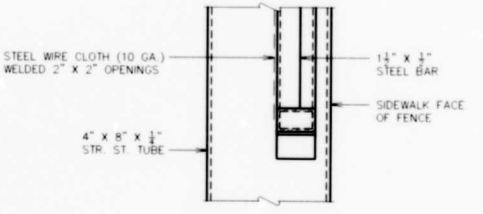
ELEVATION E-E



DETAIL "I"
(POSTS AT END BENT NO. 1 AND ABUTMENT NO. 3 ONLY)



DETAIL "C"



ELEVATION F-F

NOTE:

ALL WELDS TO BE 3/16" UNLESS OTHERWISE NOTED.

FOR ADDITIONAL PEDESTRIAN FENCE DETAILS AND LOCATION OF DETAILS "A", "B", "C", "G", "H", "I", "J", "K" AND "M" SEE SHEET NO. 42.

3-27-95

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE

SHEET NO. 43 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 262

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	DIMENSIONS EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
END BENT NO. 1																												
8	5	D100	WING FOOTING		20		X		4	6.000														4	6	4	6	38
8	5	D101	WING FOOTING		20		X		2	0.000														2	0	2	0	17
7	7	F100	WING BRACE		15		X			15.000	4	10.000		15.000		10.625		10.625		9.250		11.750		7	4	7	3	104
7	7	F101	WING BRACE		15		X			15.000	4	5.000		15.000		10.625		10.625		11.750		9.250		6	11	6	10	98
8	8	H100	BEAM		17		X		43	6.000														44	5	44	5	949
8	8	H101	BEAM		17		X		22	4.500														23	4	23	4	498
4	8	H102	BEAM		20		X		30	2.000														30	2	30	2	322
8	8	H103	BEAM		20		X		23	8.000														23	8	23	8	506
4	6	H104	BEAM		20		X		43	6.000														43	6	43	6	281
2	6	H105	BEAM		20		X		19	3.000														19	3	19	3	58
19	4	H108	BACKWALL		20		X		30	0.000														30	0	30	0	381
8	4	H107	BACKWALL		20		X		43	6.000														43	6	43	6	232
2	6	H108	BACKWALL		20		X		43	6.000														43	6	43	6	131
4	6	H109	BACKWALL		20		X		31	0.000														31	0	31	0	186
4	4	H110	BACKWALL	E	20		X		30	0.000														30	0	30	0	80
2	4	H111	BACKWALL	E	20		X		43	6.000														43	6	43	6	58
2	6	H112	BACKWALL	E	20		X		43	6.000														43	6	43	6	131
4	6	H113	BACKWALL	E	20		X		31	0.000														31	0	31	0	186
4	4	H114	BACKWALL	E	20		X		7	6.000														7	6	7	6	20
16	8	H115	BEAM		10	S	X				5	0.000	2	6.000										12	6	12	2	292
2	4	H116	ORN. COLUMN	E	20		X		6	6.000														6	6	6	6	9
14	4	H117	ORN. COLUMN	E	20		X		7	6.000														7	6	7	6	70
14	4	H118	ORN. COLUMN	E	21		X		2	6.000				12.000						2	5.750	3.625		3	6	3	5	32
14	4	H119	ORN. COLUMN	E	21		X		2	6.000		12.000								2	5.750	3.625		3	6	3	5	32
16	6	H120	ORN. COLUMN	E	19		X		4	0.000		16.000												5	4	5	2	124
14	6	H121	WING		20		X	V 2	10	0.000														10	0	10	0	
			INCREMENT =						20	3.000														20	3	20	3	321
			20.500 INCH																									
12	6	H122	WING		20		X	V 2	7	2.000														7	2	7	2	
			INCREMENT =						10	1.000														10	1	10	1	156
			17.500 INCH																									
4	6	H123	WING	E	20		X		21	10.000														21	10	21	10	131
12	6	H124	WING		20		X		21	10.000														21	10	21	10	393
14	6	H125	WING		20		X	V 2	10	6.000														10	6	10	6	
			INCREMENT =						21	3.000														21	3	21	3	334
			21.500 INCH																									
4	8	H127	BEAM		20		X		21	3.000														21	3	21	3	227
2	4	S111	ORN. COLUMN	E	13	S	X		3	9.000	3	10.000	3	9.000	3	10.000								15	11	15	8	21
8	4	S112	ORN.COLUMN	E	20		X		3	9.000														3	9	3	9	20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES NO.	DIMENSIONS EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7	T100	WING		14		X				6	8.000	1	6.000						7.250		16.500		10	2	10	2	83
2	7	T101	WING		14		X				14	3.000	1	11.000						21.000		9.250		16	2	16	1	66
2	7	T102	WING		14		X				14	6.000	1	11.000						21.250		8.875		16	5	16	4	67
32	5	U100	BEAM		13	S	X		4	0.875	2	6.000	4	2.750	2	2.000								14	3	13	11	485
34	5	U101	BEAM		13	S	X		4	0.750	2	7.750	4	2.750	2	7.750								14	6	14	2	502
28	5	U102	BEAM		13	S	X		4	0.500	2	11.500	4	2.750	2	11.375								15	1	14	9	431
26	4	U103	BEAM		10	S	X					6.000	4	0.000										5	0	4	10	84
5	7	U104	BEAM		14		X		5	0.000		23.000	4	6.000						2	9.250	3	6.500	11	5	11	2	114
5	7	U105	BEAM		14		X		5	0.000		23.000	4	6.000						3	6.500	2	9.250	11	5	11	2	114
84	4	U106	BACKWALL		10	S	X				1	2.000		6.000										2	10	2	8	150
52	4	U107	ORN. COLUMN	E	19	S	X		2	6.000	2	6.000												5	0	4	11	171
8	4	U108	WING		13	S	X			23.000		23.000		23.000		23.000								8	5	8	2	44
4	6	V100	BEAM		20		X		2	7.000														2	7	2	7	16
98	6	V101	BACKWALL	E	20		X		9	2.000														9	2	9	2	1350
98	5	V102	BACKWALL	E	20		X		8	8.000														8	8	8	8	886
20	6	V103	ORN. COLUMN	E	20		X		2	6.000														12	8	12	8	381
4	6	V104	ORN. COLUMN	E	20		X		6	9.000														6	9	6	9	41
16	6	V105	WING	E	20		X		4	2.000														4	2	4	2	100
4	6	V106	WING		20		X		3	6.000														3	6	3	6	21
16	6	V107	WING		20		X	V 2	5	1.000														5	1	5	1	
			INCREMENT =						7	8.000														7	8	7	8	172
			3.875 INCH																									
22	6	V108	WING		20		X		7	5.000														7	5	7	5	245
16	6	V109	WING		20		X	V 2	2	8.000														2	8	2	8	
			INCREMENT =						5	0.000														5	0	5	0	92
			3.500 INCH																									
14	6	V110	WING		20		X		5	0.000														5	0	5	0	105
12	6	V111	WING FOOTING		20		X		6	11.000														6	11	6	11	125
18	6	V112	WING		20		X	V 2	4	11.000														4	11	4	11	
			INCREMENT =						7	8.000														7	8	7	8	168
			3.875 INCH																									
24	6	V113	WING		20		X		7	3.000														7	3	7	3	261
16	6	V114	WING		20		X	V 2	2	7.000														2	7	2	7	
			INCREMENT =						4	8.000														4	8	4	8	87
			3.625 INCH																									
18	4	V115	ORN.COLUMN	E	20		X		3	0.000														3	0	3	0	36
8	4	V116	ORN.COLUMN	E	20		X		5	10.000														5	10	5	10	31
5	4	V117	ORN.COLUMN	E	20		X		6	8.000														6	8	6	8	22
5	4	V118	ORN.COLUMN	E	20		X		6	9.000														6	9	6	9	23
20	WSW1		A B WELLS		22		X			18.000		9.125												26	1	26	1	88

STATE	PROJ. NO.	SHEET NO.
MO.		157

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 (VERTICAL LEG) SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION, HOOK A or G, 4d or 2-1/2" MIN., 180°, 90°, 12d

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

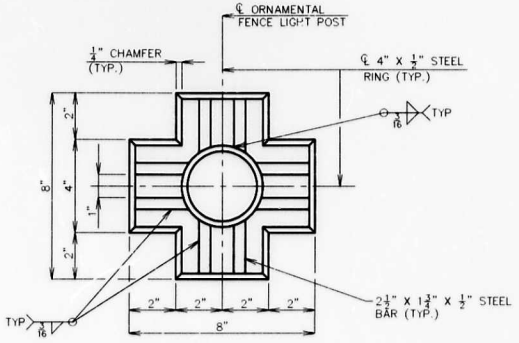
BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

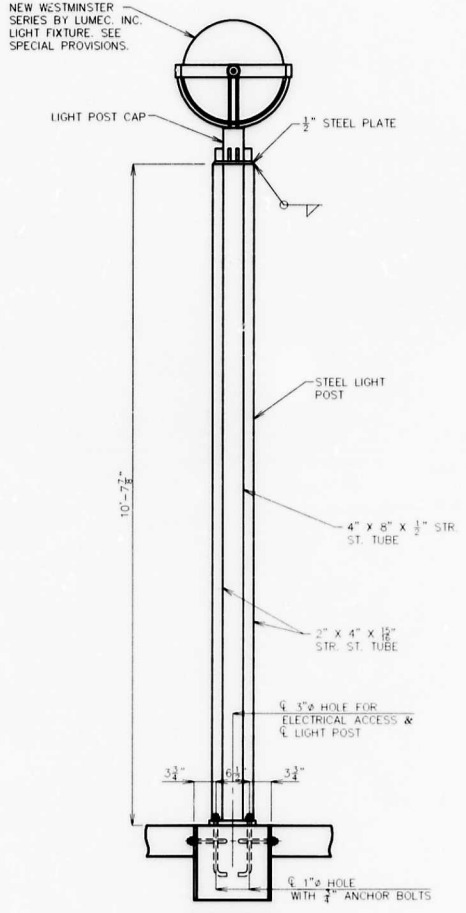
SHEET NO. 46 OF 50

A-5180

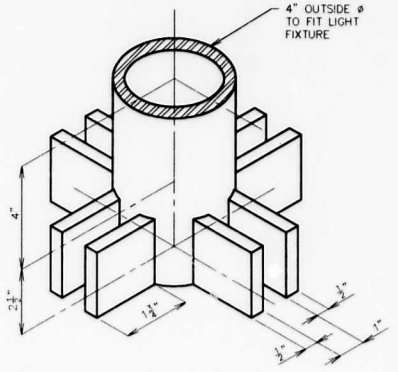
DATE	PROJ. NO.	SHEET NO.
MO.		156



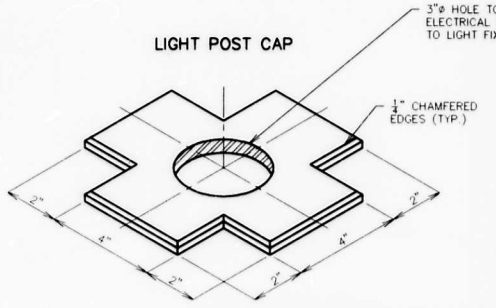
LIGHT POST CAP PLATE



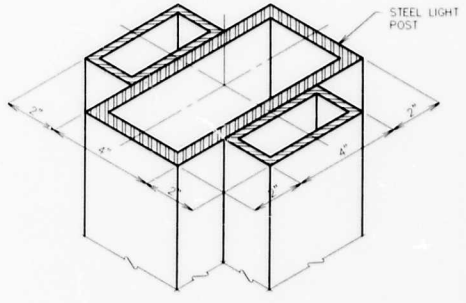
ELEVATION



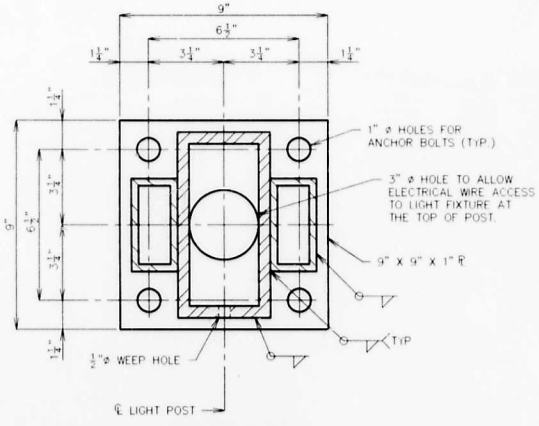
LIGHT POST CAP



½" STEEL PLATE



STEEL LIGHT POLE



LIGHT POST BASE

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	KAM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

3-27-98

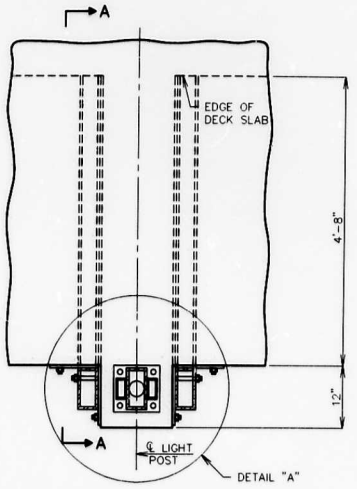
JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

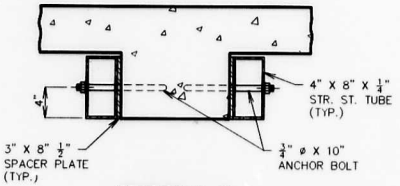
SHEET NO. 45 OF 50

A-5180

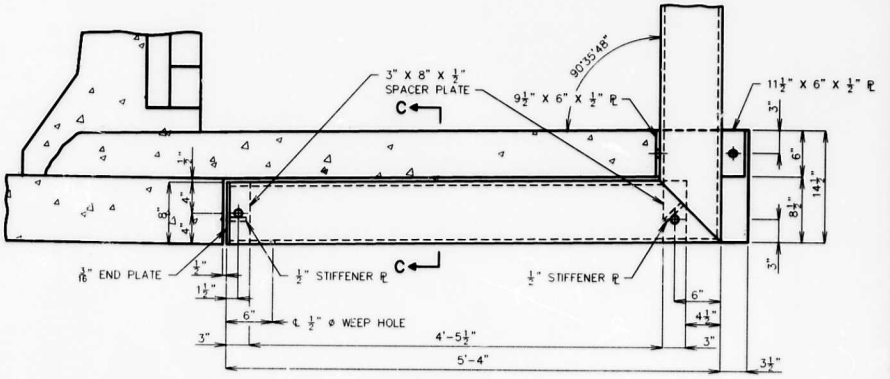
STATE	PROJ. NO.	SHEET NO.
MO.		155



PLAN VIEW OF SIDEWALK LIGHT SUPPORT



SECTION C-C



SECTION A-A

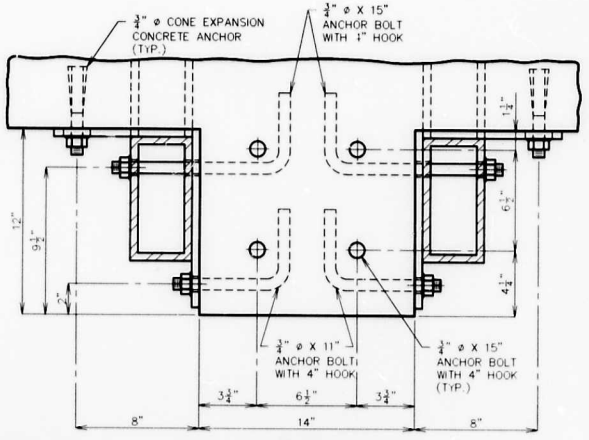
NOTE:

CONCRETE ANCHORS SHALL BE THE CONE EXPANSION TYPE FOR HOT DIP GALVANIZED BOLTS.

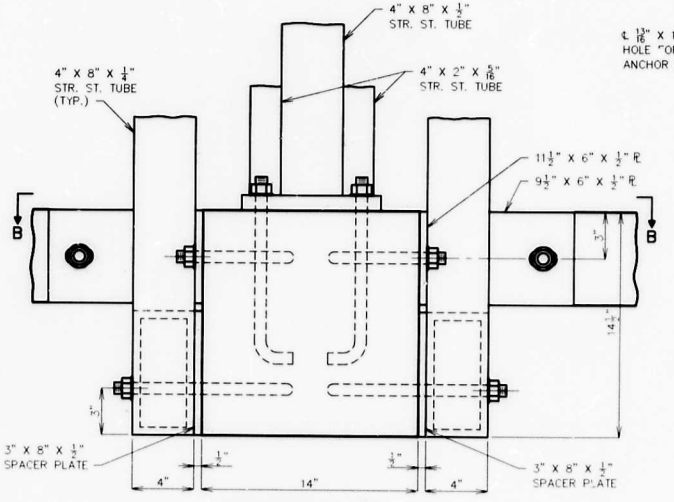
CONCRETE ANCHORS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 10,000 LBS. IN 4,000 PSI CONCRETE.

ALL WELDS TO BE ⅜" UNLESS OTHERWISE NOTED.

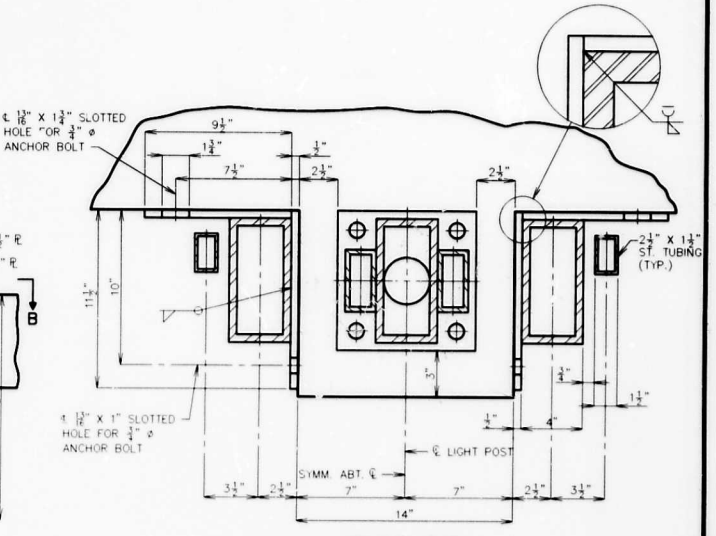
ALL ANCHOR BOLTS SHALL BE GALVANIZED, AND SHALL INCLUDE HEX NUT AND H.S. WASHERS.



DETAIL "A"
SHOWING ANCHOR BOLTS ONLY



ELEVATION OF BEAM
UNDER LIGHT POST



SECTION B-B

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

DETAILS OF ORNAMENTAL PEDESTRIAN FENCE LIGHT POST

SHEET NO. 44 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
INTERMEDIATE BENT NO. 2																		
56	5-D200	FOOTING		20		X			10 2.000							10 2	10 2	594
68	9-D201	FOOTING		18		X			13 8.000							16 2	16 2	3736
18	9-H200	BEAM		17		X			49 7.500							50 10	50 10	3111
18	9-H201	BEAM		17		X			45 5.000							46 8	46 8	2856
16	10-H202	BEAM		20		X			48 2.000							48 2	48 2	3316
4	6-H203	BEAM		20		X			48 10.000							48 10	48 10	293
4	6-H204	BEAM		20		X			40 4.000							40 4	40 4	242
16	10-H205	BEAM		20		X			43 3.000							43 3	43 3	2978
16	4-H206	BRG. BASE		20		X			3 3.000							3 3	3 3	35
24	7-H207	BEAM		19		X	V	4	3 9.000	2 6.000						6 3	6 1	
		INCREMENT =							5 5.000	2 6.000						7 11	7 9	339
		4.00 INCH																
224	4-P200	COLUMN		13	S	X	V	16	2 0.000	2 9.500	2 0.000	2 9.500				10 4	10 1	
									3 1.000	4 6.625	3 1.000	4 6.625				16 0	15 9	1932
		INCREMENT =							1.000	1.625	1.000	1.625						
176	4-P201	COLUMN		10	S	X				3 9.000	5 3.000					12 9	12 7	1479
104	4-P202	COLUMN		10	S	X				4 6.000	1 4.000					10 4	10 2	707
32	4-P203	COLUMN		10	S	X				3 9.000	4 6.000					12 0	11 10	253
24	5-R200	COLUMN	E	20		X			5 8.000							5 8	5 8	142
48	5-R201	COLUMN	E	15		X			12.000	12.250	1 8.250	11.625	16.625	9.875	6.875	3 9	3 8	184
48	5-R202	COLUMN	E	15		X				2 0.000	2 0.000	23.875	2.500			4 0	3 11	196
288	6-U200	BEAM		13	S	X			2 5.750	3 10.375	3 5.000	3 9.000				14 10	14 5	6238
116	5-U201	BEAM		21	S	X			13.375	4 9.000	12.000			13.000	3.250	6 10	6 8	807
28	4-U202	BRG. BASE		10	S	X				12.000	4 3.000					6 3	6 1	114
96	10-V200	COLUMN		36		X			19 4.000							22 2	22 2	9158
96	10-V201	COLUMN		15		X			4 2.000	13 3.000				2 4.750	3 5.000	17 5	17 3	7196
20	W5W1	A B WELLS		22		X			2 1.000	9.125						33 2	33 2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.

STATE MO. | PROJ. NO. | SHEET NO. 15B

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

SHAPE 19 SHAPE 20

SHAPE 21

SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

6d FOR #4 AND #5, 12d FOR #6

90° STIRRUP 135° STIRRUP

4d or 2-1/2" MIN. 180° 90°

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 47 OF 50

A-5180

24 to 1

FOR INFORMATION ONLY

A51801, Sht. 266

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X					6 0.000		2 7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X			23.000		23.000		23.000		23.000								8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X			18.000		9.125												26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18

VERTICAL LEG

SHAPE 19 SHAPE 20

SHAPE 21

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

3" PITCH 1½ TURNS

SHAPE 22

SHAPE 23 SHAPE 24

6d FOR #4 AND #5, 12d FOR #6

DETAILING DIMENSION

90° STIRRUP 135° STIRRUP

DETAILING DIMENSION HOOK A or G

4d or 2-1/2" MIN. 180°

90° 12d

STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32

SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36

135° HOOK

3" PITCH 1½ TURNS

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 267

BILL OF REINFORCING STEEL

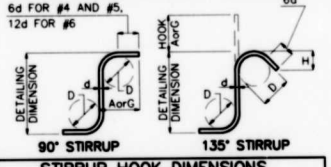
NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X				6	0.000	2	7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

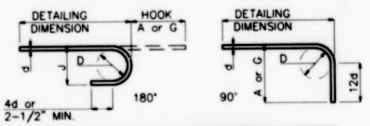
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X			23.000		23.000		23.000		23.000								8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X			18.000		9.125												26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9 · SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13 · SHAPE 14 · SHAPE 15 · SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20 · SHAPE 21 · SHAPE 22 · SHAPE 23 · SHAPE 24





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 · SHAPE 26 · SHAPE 27 · SHAPE 28 · SHAPE 29 · SHAPE 30 · SHAPE 31 · SHAPE 32 · SHAPE 33 · SHAPE 34 · SHAPE 35 · SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

FOR INFORMATION ONLY

A51801, Sht. 268

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X					6 0.000		2 7.000										14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
28	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X				23.000		23.000		23.000		23.000							8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X					18.000		9.125										26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9 · SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13 · SHAPE 14 · SHAPE 15 · SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20 · SHAPE 21 · SHAPE 22 · SHAPE 23 · SHAPE 24

SHAPE 25 · SHAPE 26 · SHAPE 27 · SHAPE 28 · SHAPE 29 · SHAPE 30 · SHAPE 31 · SHAPE 32 · SHAPE 33 · SHAPE 34 · SHAPE 35 · SHAPE 36

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP

135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. · 180° · 90° · 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS
JACKSON COUNTY
REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 269

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
ABUTMENT NO. 3																											
5	5-F300	BACKWALL		15		X			15.000		4 8.000		15.000		10.625		10.625		11.750		9.250		7 2		7 1		37
5	5-F301	BACKWALL		15		X			15.000		5 2.000		15.000		10.625		10.625		9.250		11.750		7 8		7 7		40
8	6-H300	BEAM		17		X			43 10.000														44 9		44 9		656
8	6-H301	BEAM		17		X			22 5.000														23 4		23 4		468
8	6-H302	BEAM		20		X			23 8.000														23 8		23 8		506
8	6-H303	BEAM		20		X			30 2.000														30 2		30 2		322
4	6-H304	BEAM		20		X			21 3.000														21 3		21 3		227
4	6-H305	BEAM		20		X			43 10.000														43 10		43 10		263
2	6-H306	BEAM		20		X			18 9.000														18 9		18 9		56
8	6-H307	APRON		20		X			43 10.000														43 10		43 10		527
16	6-H308	APRON		20		X			31 4.000														31 4		31 4		753
2	4-H309	WING		20		X			7 8.000														7 8		7 8		10
28	6-H310	APRON		10		X				6 0.000	2 7.000												14 7		14 3		569
4	6-H311	BACKWALL		20		X			31 0.000														31 0		31 0		186
2	6-H312	BACKWALL		20		X			43 9.000														43 9		43 9		131
6	4-H313	BACKWALL		20		X			43 9.000														43 9		43 9		175
12	4-H314	BACKWALL		20		X			29 10.000														29 10		29 10		239
14	4-H315	ORN. COLUMN	E	21		X			3 6.000				12.000						3 5.625		5.125		4 8		4 5		41
14	4-H316	ORN. COLUMN	E	21		X			3 6.000		12.000								3 5.625		5.125		4 8		4 5		41
16	5-H317	ORN. COLUMN	E	19		X			4 1.000		12.000												5 1		5 0		83
2	4-H318	ORN. COLUMN	E	20		X			7 0.000														7 0		7 0		9
16	6-H319	APPR. BEAM		17		X			41 7.000														42 3		42 3		1015
4	6-H320	APPR. BEAM		20		X			41 7.000														41 7		41 7		250
10	6-H321	APPR. BEAM		20		X			22 8.000														22 8		22 8		341
1	4-H322	PVMT. REST		20		X			34 0.000														34 0		34 0		23
2	4-H323	PVMT. REST		20		X			28 8.000														28 8		28 8		38
4	5-H324	WING	E	20		X			9 0.000														9 0		9 0		38
6	5-H325	WING		20		X			9 0.000														9 0		9 0		56
2	5-H326	WING		20		X			31 10.000														31 10		31 10		66
8	5-H327	WING		20		X	V	2	22 10.000														22 10		22 10		
		INCREMENT =							31 10.000														31 10		31 10		228
		36.000 INCH																									
2	4-H328	WING		20		X			17 1.000														17 1		17 1		23
2	4-H329	WING		20		X			12 7.000														12 7		12 7		17
2	4-H330	WING		20		X			8 1.000														8 1		8 1		11
12	4-H331	WING		20		X			5 6.000														5 6		5 6		44
2	4-H332	WING		20		X			12 2.000														12 2		12 2		16
2	4-H333	WING		20		X			16 8.000														16 8		16 8		22
8	5-H334	WING		20		X	V	2	22 4.000														22 4		22 4		
		INCREMENT =							31 4.000														31 4		31 4		224
		36.000 INCH																									
2	5-H335	WING		20		X			31 4.000														31 4		31 4		65
14	4-H336	ORN. COLUMN	E	20		X			8 0.000														8 0		8 0		75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7-T300	WING		20		X			6 0.000														6 0		6 0		48
2	7-T301	WING		14		X					29 7.875		2 8.000								2 6.375		10.125		33 7		33 8		7
2	7-T302	WING		14		X					30 7.000		3 0.000								2 10.125		11.375		33 7		33 8		7
48	4-U300	APRON		10	S	X					2 0.000		1 5.000										5 5		5 3		168
32	5-U301	BEAM		13	S	X			4 8.500		2 8.000		4 10.500		2 8.000								15 10		15 8		517
34	5-U302	BEAM		13	S	X			4 8.375		2 10.000		4 10.500		2 10.000								16 2		15 10		561
28	5-U303	BEAM		13	S	X			4 8.125		3 2.125		4 10.500		3 2.000								16 10		16 8		483
26	4-U304	BEAM		10	S	X					6.000		4 8.500										5 9		5 7		97
84	4-U305	PVMT. REST		10	S	X					17.500		6.000										3 5		3 3		182
92	5-U306	APPR. BEAM		13	S	X			2 3.000		2 6.000		3 3.000		2 6.000								10 5		10 1		967
100	5-U307	APPR. BEAM	E	10	S	X					3 6.000		2 3.250										9 3		9 1		947
10	4-U308	END POST		13	S	X				23.000		23.000		23.000		23.000							8 5		8 2		55
52	4-U309	ORN. COLUMN	E	19	S	X			2 6.500		2 6.500												5 1		5 0		174
96	6-V300	BACKWALL		20		X			8 11.000														8 11		8 11		1288
96	5-V301	BACKWALL	E	20		X			8 6.000														8 6		8 6		801
18	4-V302	ORN. COLUMN	E	20		X			3 0.000														3 0		3 0		36
134	5-V303	APRON		20		X			6 3.000														6 3		6 3		874
20	6-V304	ORN. COLUMN		20		X			9 9.000														9 9		9 9		283
16	6-V305	END POST	E	20		X			5 3.000														5 3		5 3		126
6	5-V306	WING		20		X	V	2	4 0.000														4 0		4 0		
		INCREMENT =							4 9.000														4 9		4 9		40
		4.500 INCH																									
30	4-V307	WING		20		X	V	2	5 4.000														5 4		5 4		
		INCREMENT =							12 8.000														12 8		12 8		180
		6.250 INCH																									
4	4-V308	WING		20		X			14 10.000														14 10		14 10		40
4	4-V309	WING		20		X			15 1.000														15 1		15 1		40
8	4-V310	ORN. COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4-V311	ORN. COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4-V312	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		23
30	4-V313	WING		20		X	V	2	5 7.500														5 8		5 8		
		INCREMENT =							12 11.000														12 11		12 11		186
		6.250 INCH																									
6	5-V314	WING		20		X	V	2	4 5.000														4 5		4 5		
		INCREMENT =							5 1.000														5 1		5 1		30
		4.000 INCH																									
20	6-V315	ORN. COLUMN	E	20		X			10 1.000														10 1		10 1		303
4	6-V316	ORN. COLUMN	E	20		X			6 11.000														6 11		6 11		42
20	W5W1	A.B. WELLS		22		X					18.000		9.125										26 1		26 1		88

STATE	PROJ. NO.	SHEET NO.
MO.		139

SHAPE 6 · SHAPE 7 · SHAPE 8 · SHAPE 9 · SHAPE 10 · SHAPE 11 · SHAPE 12 · SHAPE 13 · SHAPE 14 · SHAPE 15 · SHAPE 16 · SHAPE 17 · SHAPE 18 · SHAPE 19 · SHAPE 20 · SHAPE 21 · SHAPE 22 · SHAPE 23 · SHAPE 24

SHAPE 25 · SHAPE 26 · SHAPE 27 · SHAPE 28 · SHAPE 29 · SHAPE 30 · SHAPE 31 · SHAPE 32 · SHAPE 33 · SHAPE 34 · SHAPE 35 · SHAPE 36

6d FOR #4 AND #5,
12d FOR #6

90° STIRRUP

135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

4d or 2-1/2" MIN. · 180° · 90° · 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

FOR INFORMATION ONLY

A51801, Sht. 270

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
564	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
564	5-R2	BARRIER CURB	E	15				2	6.125	3.500				2 6.000	3.000	2 10	2 8	1571
564	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
564	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20				38	8.000							38 8	38 8	1452
24	5-R6	BARRIER CURB	E	20				9	8.000							9 8	9 8	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	8.000							24 8	24 8	309
12	4-R9	C.I.P CAP	E	20				38	5.000							38 5	38 5	308
96	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
8	4-R11	C.I.P CAP	E	20				9	8.000							9 8	9 8	52
12	4-R12	C.I.P CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P CAP	E	20				24	8.000							24 8	24 8	66
564	4-R14	C.I.P CAP	E	20					15.000	11.000				1.500	15.000	2 2	2 1	784
6	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					6 10	6 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
6	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
6	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	8.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 8	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	56
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	8171
498	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20		V	4	4	0.000							4 0	4 0	
		INCREMENT = 49.000 INCH						40	9.000							40 9	40 9	1344
138	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	968
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
6	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
1024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	684
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	684
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1393
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1425
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
982	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	8 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000				3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	6.000				9.375	6.500	11 6	11 4	306
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500				3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000				4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000							9 6	9 6	457
SLAB ON ABUTMENT																		
172	8-S300	SLAB	E	20				24	8.000							24 8	24 8	11329
72	4-S301	SLAB	E	20				24	8.000							24 8	24 8	1187
132	5-S302	SLAB	E	20				26	3.000							26 3	26 3	3614
34	4-S303	SLAB	E	20				44	8.000							44 8	44 8	1015
34	4-S304	SLAB	E	20				8	2.000							8 2	8 2	186
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000							3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS

STATE	PROJ. NO.	SHEET NO.
MO.		1GO

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

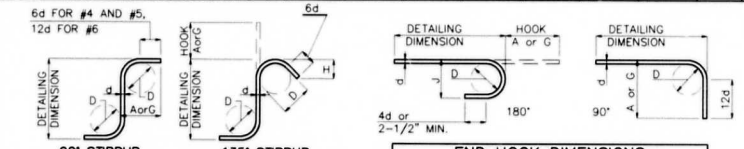
SHAPE 17 SHAPE 18 SHAPE 19 SHAPE 20

SHAPE 21 SHAPE 22

SHAPE 23 SHAPE 24

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 SHAPE 35 SHAPE 36



STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTES:
- ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
- E = EPOXY COATED REINFORCEMENT
- S = STIRRUP
- X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
- V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
- NO. EA. = NUMBER OF BARS OF EACH LENGTH.
- NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
- ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
- PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
- FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
- REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.)

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-27-95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

STATE | PROJ. NO. | SHEET NO.
MO. | J4J0611E | 114

FINAL PLANS

GENERAL NOTES:

DESIGN SPECIFICATIONS:
A.A.S.H.T.O.–1992 LOAD FACTOR DESIGN
SEISMIC PERFORMANCE CATEGORY A

DESIGN LOADING:
HS20–44, MODIFIED 24,000# TANDEM AXLE
35#/SQ. FT. FUTURE WEARING SURFACE
EARTH 120#/CU. FT. , EQUIVALENT FLUID PRESSURE 47#/CU. FT.
FATIGUE STRESS – CASE II

DESIGN UNIT STRESSES:
CLASS B CONCRETE (SUBSTRUCTURE) f'c=3,000 PSI.
CLASS B1 CONCRETE (SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
CLASS B2 CONCRETE (SUPERSTRUCTURE, EXCEPT SAFETY BARRIER CURB, RAISED MEDIAN, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS) f'c=4,000 PSI.
REINFORCING STEEL (GRADE 60) fy=60,000 PSI.
STEEL PILE fb= 9,000 PSI.
STRUCTURAL CARBON STEEL fy=36,000 PSI.
STRUCTURAL STEEL (A.S.T.M. A572) (GRADE 50) fy=50,000 PSI.
FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 25.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1–1/2", UNLESS OTHERWISE SHOWN.

ALL REINFORCING BARS IN THE TOPS OF SUBSTRUCTURE BEAMS OR CAPS SHALL BE SPACED TO CLEAR ANCHOR BOLT WELLS FOR BEARINGS BY AT LEAST 1/2".

JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

NEOPRENE BEARINGS:
NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

FABRICATED STEEL CONNECTIONS:
FIELD CONNECTIONS, HIGH STRENGTH BOLTS 7/8"ø, HOLES 15/16"ø, EXCEPT AS NOTED.

HIGH STRENGTH BOLTS, NUTS AND WASHERS WILL BE SAMPLED FOR QUALITY ASSURANCE AS SPECIFIED IN STD. SPEC. 106 AND FIELD SECTION (FS–712).

PAINTING:
PAINT, SYSTEM F BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

FINAL ~ QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
CLASS I EXCAVATION	CU. YD.	681		681
STRUCTURAL STEEL PILE (12")	LIN. FT.	1688		1688
PREBORE FOR PILING	LIN. FT.	487		487
CLASS B CONCRETE (SUBSTR.)	CU. YD.	555.3		555.3
DEADMAN ANCHORAGE ASSEMBLY	EACH	1		1
CLASS B1 CONCRETE (SUPERSTRUCTURE)	CU. YD.	15.7		15.7
SLAB ON STEEL	SQ. YD.		2399	2399
SAFETY BARRIER CURB	LIN. FT.		552	552
SLAB ON SEMI–DEEP ABUTMENT	SQ. YD.		276	276
RAISED MEDIAN	SQ. FT.		1034	1034
SIDEWALK (BRIDGES)	SQ. FT.		2745	2745
LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH		30	30
PREFORMED COMPRESSION EXPANSION JOINT SEAL (4.0 IN.)	LIN. FT.		193	193
REINFORCING STEEL (BRIDGES)	LB.	67,461		67,461
CONDUIT SYSTEM ON STRUCTURE	LUMP SUM		1	1
REINFORCING STEEL (EPOXY COATED)	LB.	8600	1320	9920
FABRICATED STRUCTURAL STEEL (PLATE GIRDER)	LB.		431,180	431,180
FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A572	LB.		215,670	215,670
VERTICAL DRAIN AT END BENTS	EACH	1		1
ORNAMENTAL PAINTING	LUMP SUM		1	1
ORNAMENTAL PEDESTRIAN FENCE	LIN. FT.		483	483
TUBE HANDRAIL ON PEDESTRIAN WALL	LIN. FT.		90	90
STONE FACADE ON END BENTS	SQ. FT.		1852	1852
STONE FACADE ON INTERMEDIATE BENT	SQ. FT.		1074	1074
STONE VENEER	SQ. FT.		2187	2187
UNI–STONE PAVERS ON RAISED MEDIAN	SQ. FT.		647	647
MASONRY PROTECTION SYSTEM	LUMP SUM			1
GRAFFITI PROTECTION SYSTEM	LUMP SUM			1
C.I.P. CAP ON SAFETY BARRIER CURB	LIN. FT.		552	552
PRECAST CAP ON PEDESTRIAN WALL	LIN. FT.		96	96
PRECAST CAP ON ORNAMENTAL COLUMN	EACH		4	4
PRECAST CAP ON END POST	EACH		4	4
LIGHT FIXTURES	EACH		10	10
CORRUGATED METAL PIPE PILE SPACERS	EACH	21		21
TEST HOLES	LIN. FT.	12		12
ADDITIONAL MOBILIZATION	LUMP SUM	1		1

2190 △

FINAL QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
REINFORCING STEEL (EPOXY COATED)	LB.	125,260
CLASS B2 CONCRETE	CU. YDS.	474.2

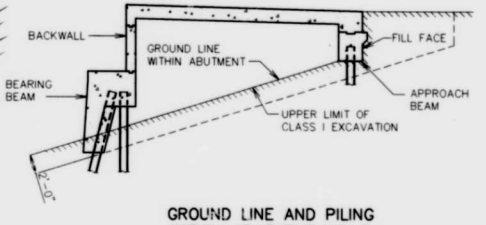
FINAL QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT

REINFORCING STEEL (EPOXY COATED)	LB.	17,370
CLASS B2 CONCRETE	CU. YDS.	146.8

THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL REPRESENTS THE QUANTITIES USED BY THE STATE IN PREPARING THE COST ESTIMATE FOR CONCRETE SLABS. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON STEEL.

SEE SPECIAL PROVISIONS FOR METHOD OF FORMING SLAB.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON STEEL.



GROUND LINE AND PILING WITHIN ABUTMENT NO. 3

PILE & FOOTING DATA

BENT NO.		1		2	ABUTMENT NO. 3	
LOCATION		WING BM.	BRG. BM.	COLUMNS	BRG. BM.	APPR. BM.
BEARING PILE	PILE TYPE AND SIZE	HP12 X 53			HP12 X 53	
	NUMBER	4	21		19	10
	APPROXIMATE LENGTH FT.	29	30		31	34
	DESIGN BEARING TONS	11	67		65	41
	HAMMER ENERGY REQUIRED FT.–LBS.	7,000	17,400		13,800	9,000
SPREAD FOOTINGS	FOUNDATION MATERIAL			ROCK		
	DESIGN BEARING TONS/SQ. FT.			13		

NOTES:

MINIMUM ENERGY REQUIREMENT OF HAMMER IS BASED ON PLAN LENGTH AND DESIGN BEARING VALUES OF PILES.

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

PREBORE FOR PILES AT END BENT NO. 1 WINGS AND ABUTMENT NO. 3 TO ELEVATIONS 963.0 AND AND 958.0 RESPECTIVELY.

NOTES:

ALL CONCRETE AND REINFORCING STEEL BELOW TOP OF SLAB AND ABOVE CONST. JOINT IN SEMI–DEEP ABUTMENT ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES FOR SLAB ON SEMI–DEEP ABUTMENT.

CONCRETE ABOVE UPPER CONSTRUCTION JOINT IN BACKWALL AT END BENT NO. 1 IS INCLUDED WITH CLASS B (SUBSTRUCTURE) QUANTITIES.

ALL CONCRETE AND REINFORCING STEEL IN THE SIDEWALK ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES FOR SIDEWALKS.

ALL CONCRETE IN THE ORNAMENTAL COLUMNS AND END POSTS BELOW THE UPPER SILL ON THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B CONCRETE (SUBSTR.).

ALL CONCRETE IN THE MASONRY SILL ON THE SAFETY BARRIER CURBS, PEDESTRIAN WALLS, ORNAMENTAL COLUMNS AND END POSTS ABOVE THE UPPER SILL OF THE STONE FACADE IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

ALL REINFORCING STEEL IN THE ORNAMENTAL COLUMNS, END POSTS AND PEDESTRIAN WALLS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REINFORCING STEEL (EPOXY COATED).

PAYMENT FOR THE STONE VENEER, DOVETAIL ANCHOR SLOTS AND DRAINAGE SYSTEM, COMPLETE–IN–PLACE, FOR THE PEDESTRIAN WALL, SAFETY BARRIER CURB, ORNAMENTAL COLUMN AND END POST SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES FOR STONE VENEER PER SQ. FT.

NOTES:

IN NO CASE SHALL THE EARTH WITHIN ABUTMENT NO. 3 BE ABOVE THE GROUND LINE SHOWN. FORMS SUPPORTING THE ABUTMENT SLAB MAY BE LEFT IN PLACE.

THE MAXIMUM VARIATION OF THE HEAD OF THE PILE AND THE BATTERED FACE OF THE PILE FROM THE POSITION SHOWN ON THE PLANS SHALL BE NOT MORE THAN 2 INCHES FOR PILE UNDER ABUTMENT NO. 3.

EXPOSED STEEL PILES WITHIN THE ABUTMENT SHALL BE COATED WITH A HEAVY COATING OF AN APPROVED BITUMINOUS PAINT.

STATE OF MISSOURI DANIEL L. CHAPMAN NUMBER E-23644 REGISTERED PROFESSIONAL ENGINEER
11-2-95

BUCHER, WILLIS & RATLIFF ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	DJC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. △ REVISED 10–27–95

JACKSON COUNTY

GENERAL NOTES AND SUMMARY OF ESTIMATED QUANTITIES

SHEET NO. 3 OF 50

A–5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4UC011B	113

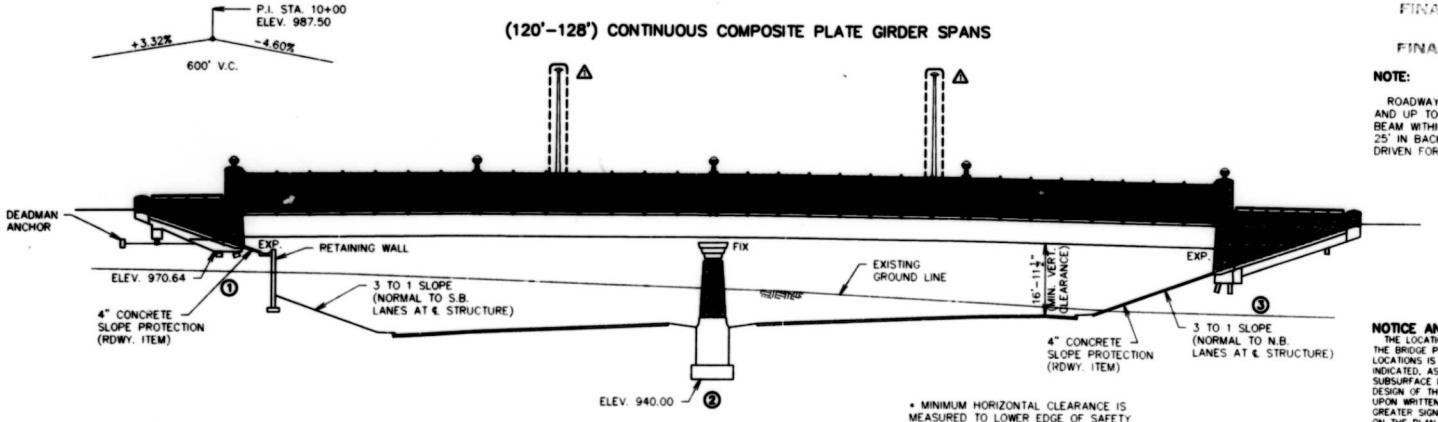
FINAL PLANS

FINAL PLANS

NOTE:

ROADWAY FILL SHALL BE COMPLETED TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE APPROACH BEAM WITHIN THE LIMITS OF THE STRUCTURE AND FOR NOT LESS THAN 25' IN BACK OF THE FILL FACE OF THE ABUTMENT BEFORE PILES ARE DRIVEN FOR ANY BENTS FALLING WITHIN THE EMBANKMENT SECTION.

(120'-128') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



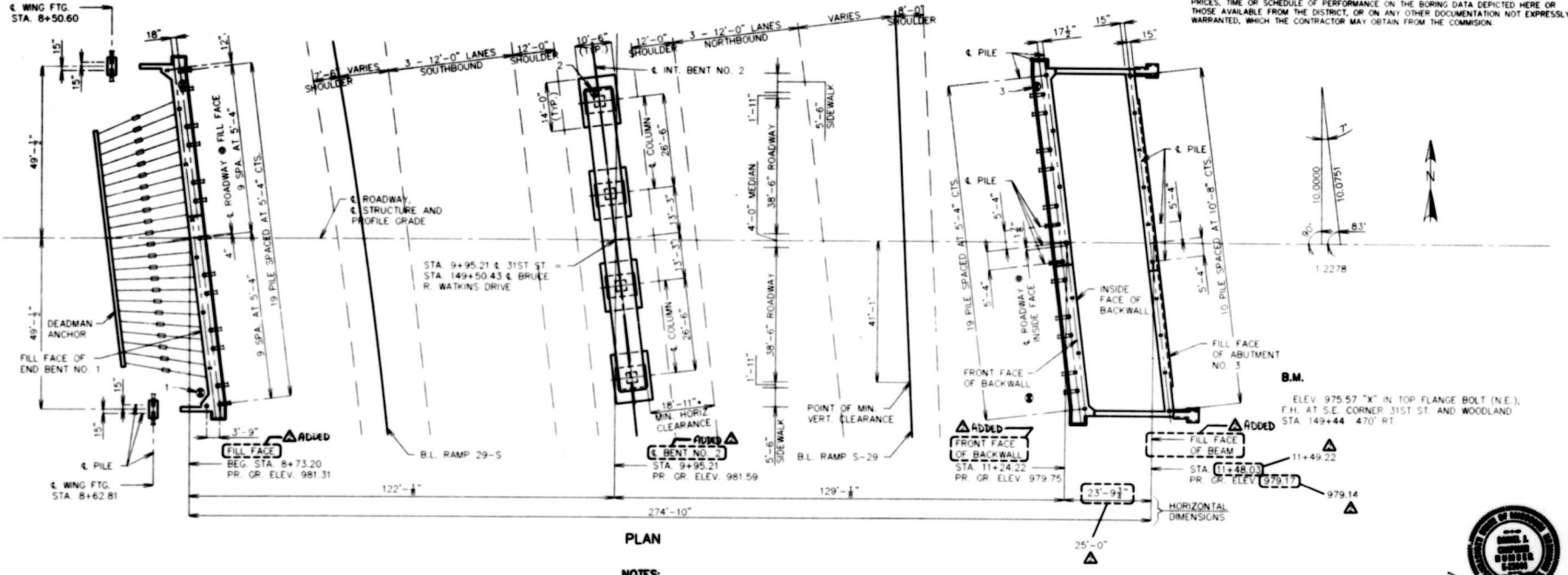
• MINIMUM HORIZONTAL CLEARANCE IS MEASURED TO LOWER EDGE OF SAFETY BARRIER CURB AT COLUMN.

GENERAL ELEVATION

NOTICE AND DISCLAMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORING FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET FOR THIS STRUCTURE. BORING DATA FOR THE NUMBERED LOCATIONS IS SHOWN ON SHEET NO. 4. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTURAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE DEPARTMENT FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE DISTRICT MATERIALS ENGINEER UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN TO SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OFFICE OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISION.



B.M.

ELEV. 975.57 "X" IN TOP FLANGE BOLT (N.E.), F.H. AT S.E. CORNER 31ST ST. AND WOODLAND STA. 149+44 470' RT.

PLAN

NOTES:

● INDICATES LOCATION OF BORINGS.

FOR GENERAL NOTES, PILE FOOTING DATA AND ESTIMATED QUANTITIES, SEE SHEET NO. 3.

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

SUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

△ REVISED 4-25-96

JACKSON COUNTY

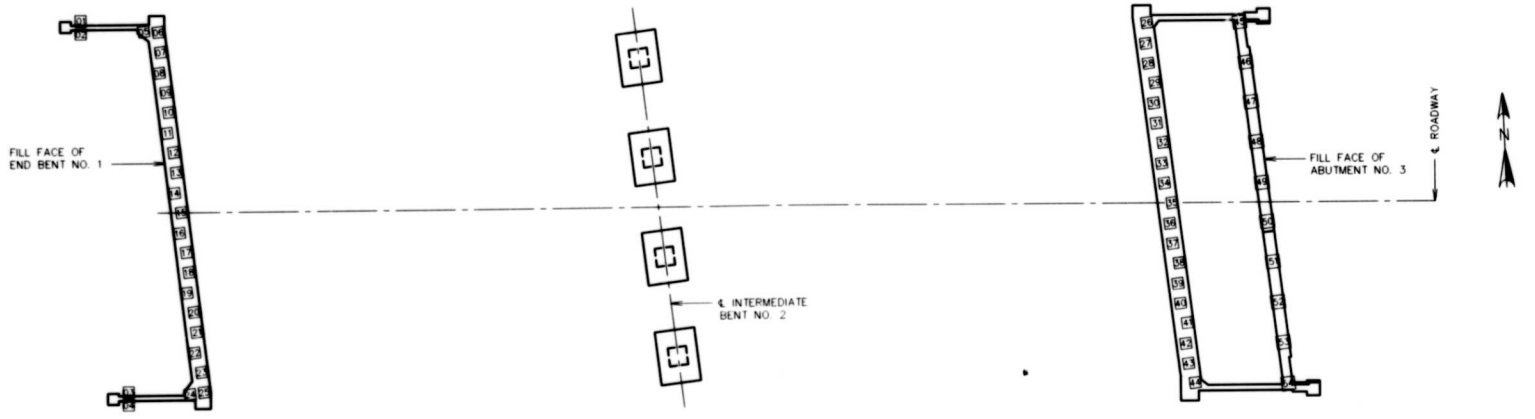
GENERAL PLAN AND ELEVATION

SHEET NO. 2 OF 50

A-5180

24 to 1

STATE	PROJ. NO.	SHEET NO.
MO.		161



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

"AS BUILT" PILE DATA			
PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

3-27-95

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

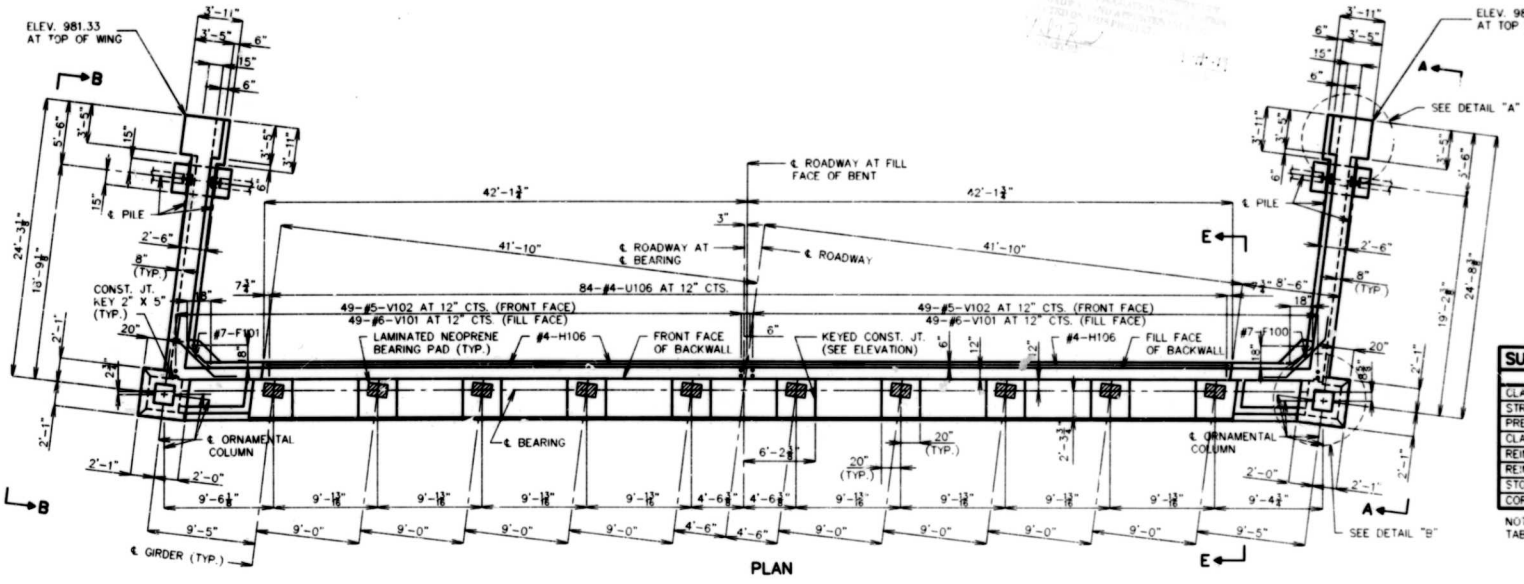
AS-BUILT PILE DATA

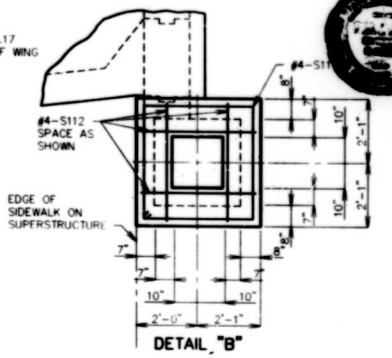
SHEET NO. 50 OF 50

A-5180

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4uec11P	H4

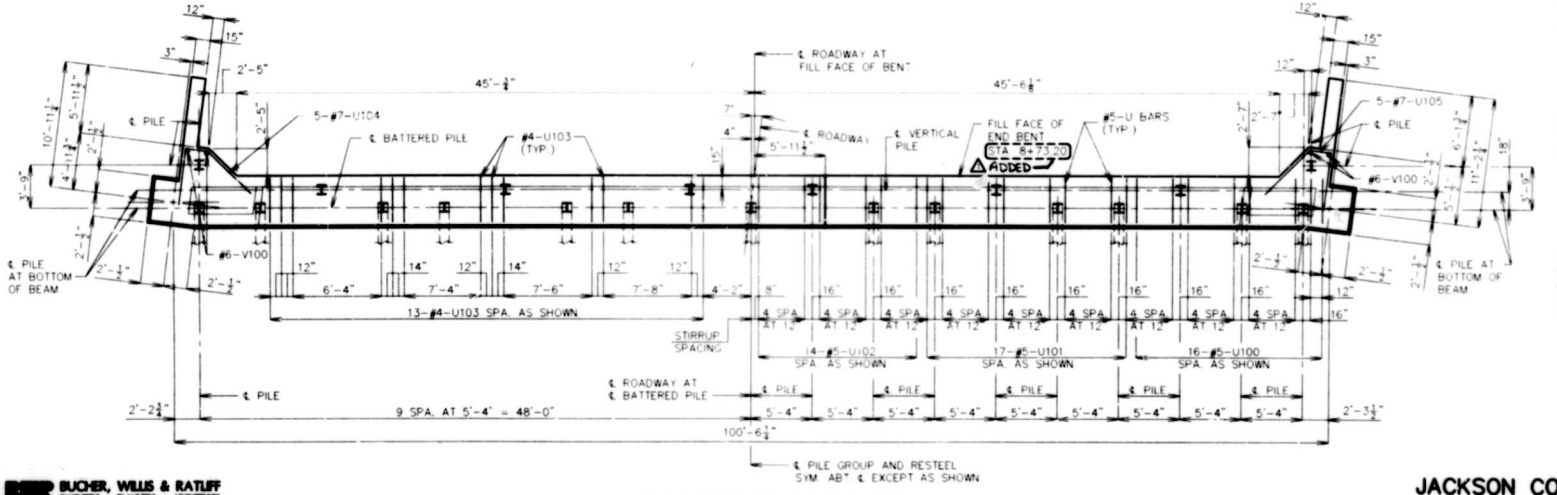




SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1

ITEM		QUANTITY
CLASS I EXCAVATION	CU. YDS.	160
STRUCTURAL STEEL PILE (12")	LIN. FT	850
PREBORE FOR PILING	LIN. FT	46
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YDS	109.6
REINFORCING STEEL (BRIDGES)	LBS.	9000
REINFORCING STEEL (EPOXY COATED)	LBS.	3950
STONE FACADE	SQ. FT	522
CORRUGATED METAL PIPE PILE SPACERS	EA	21

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.



NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 9.6 CU. YDS. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

FOR ELEVATIONS A–A AND B–B, SEE SHEET NO. 8.

FOR SECTION E–E SEE SHEET NO. 9.

FOR DETAILS OF STONE FACADE, SEE SHEET NO. 37.

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20.

FOR LOCATION AND SPACING OF ANCHOR TEES OF DEADMAN ANCHORAGE SYSTEM, SEE SHEET NO. 11.

FOR DETAILS OF STEEL PILE SPLICE, SEE SHEET NO. 18.

FOR SECTION THRU WINGS AND BACKWALL AND DETAIL A, SEE SHEET NO. 6.

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23.

THE COST OF FURNISHING AND INSTALLING GALVANIZED CORRUGATED STEEL PIPE, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR CORRUGATED METAL PIPE PILE SPACERS, PER EACH. FOR INFORMATION ONLY, THE APPROXIMATE TOTAL LENGTH OF CORREGUATED STEEL PIPE IS 330 LIN. FT., SEE SPECIAL PROVISIONS.

BUCHER, WILLIS & RATLIFF
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DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 4-25-96

JACKSON COUNTY

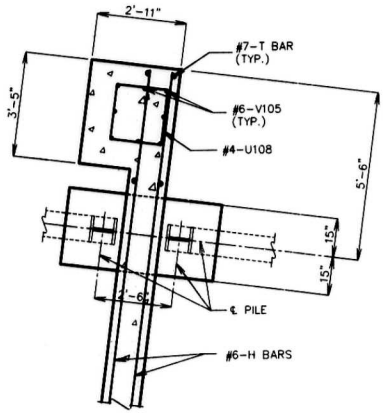
DETAILS OF
END BENT NO. 1 PLAN

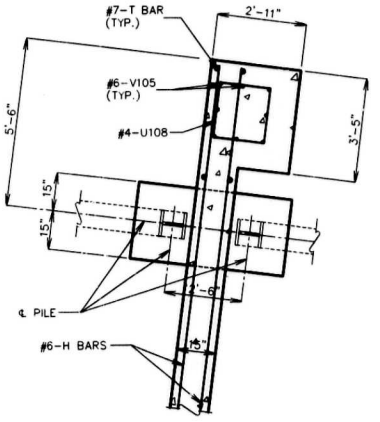
SHEET NO. 5 OF 50

A-5180

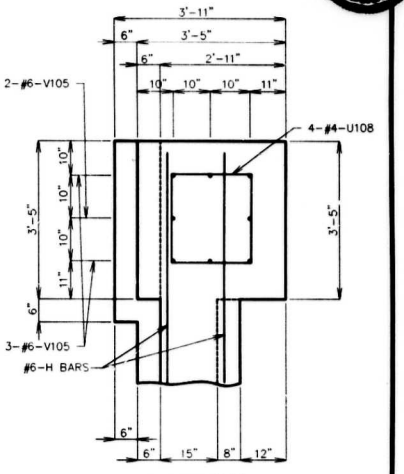
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	117

FINAL PLANS

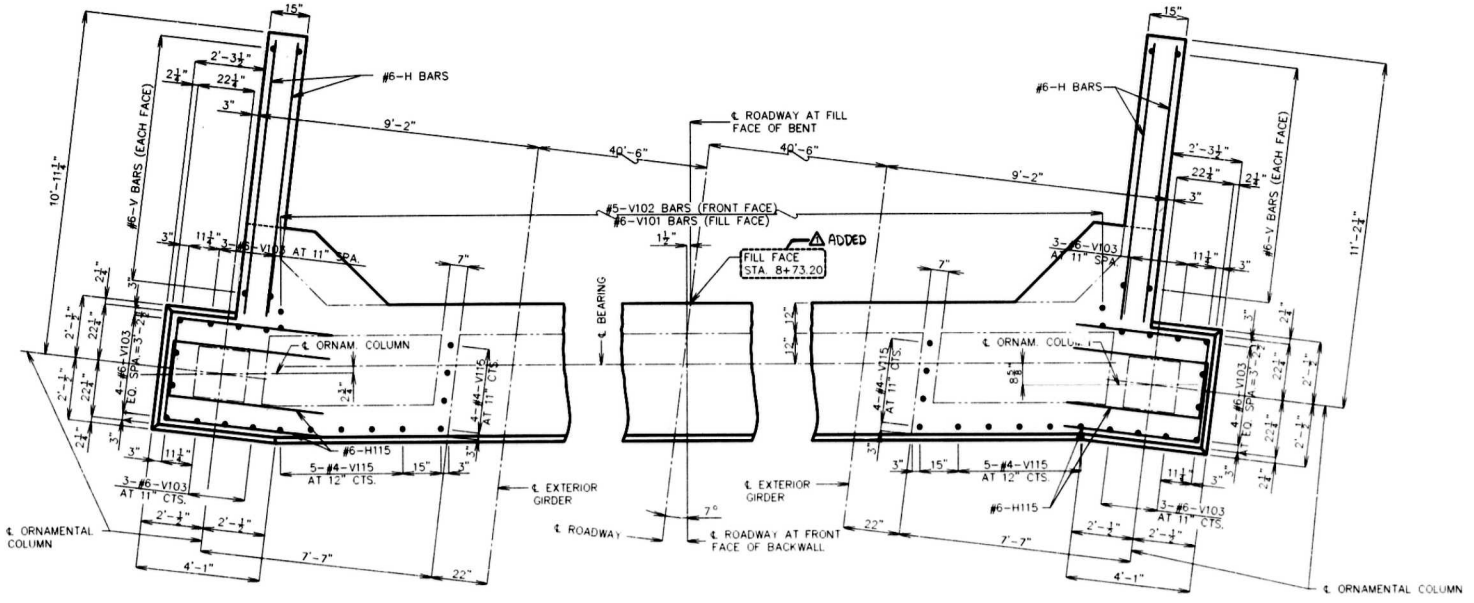




PART SECTION THRU WINGS
(BELOW PAVEMENT REST)



DETAIL "A"
NORTH WING SHOWN
SOUTH WING OPP. HAND



PART PLAN OF BEARING SEAT

NOTE:

FOR LOCATION OF DETAIL A SEE SHEET NO. 5.

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	SAC 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DMA 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF
END BENT NO. 1 PART PLAN

SHEET NO. 6 OF 50

A-5180

4-26-96

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	126

SUBSTRUCTURE QUANTITY TABLE FOR ABUTMENT NO. 3		
ITEM		QUANTITY
CLASS I EXCAVATION	CU. YD.	72
STRUCTURAL STEEL PILE (12")	LIN. FT.	1106
PREBORE FOR PILING	LIN. FT.	281
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	182.4
REINFORCING STEEL (BRIDGES)	LB.	13,070
REINFORCING STEEL (EPOXY COATED)	LB.	4130
STONE FACADE	SQ. FT.	1330

NOTE: THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 3.

NOTES:

THE ESTIMATED QUANTITY SHOWN FOR CLASS B CONCRETE (SUBSTR.) INCLUDES 13.9 CU. YD. FOR THE ORNAMENTAL COLUMNS.

THE ESTIMATED QUANTITY SHOWN FOR REINFORCING STEEL (EPOXY COATED) INCLUDES 1010 LB. FOR THE ORNAMENTAL COLUMNS.

TOP OF ABUTMENT SLAB AND EXPANSION DEVICE FOR ABUTMENT NO. 3 SHALL CONFORM TO CROWN OF ROADWAY SLAB. ABUTMENT SLAB ABOVE UPPER CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL THE SUPERSTRUCTURE SLAB HAS BEEN POURED IN THE ADJACENT SPAN.

FOR DETAILS OF EXPANSION DEVICE, SEE SHEETS NO. 28 & 29.

FOR DETAILS OF ANCHOR BOLT WELLS, SEE SHEET NO. 23.

FOR DETAILS OF STONE MASONRY FACADE, SEE SHEET NO. 39.

FOR STEEL PILE SPLICE DETAIL, SEE SHEET NO. 18.

PART PLAN OF BEARING SEAT

PLAN BELOW UPPER CONSTRUCTION JOINT

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

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⚠ REVISED 4-25-96

JACKSON COUNTY

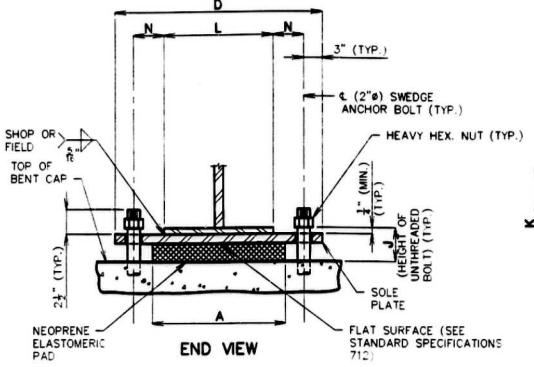
DETAILS OF ABUTMENT NO. 3 PLAN BELOW UPPER CONSTRUCTION JOINT

SHEET NO. 15 OF 50

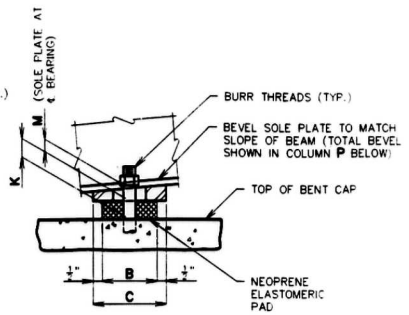
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	137

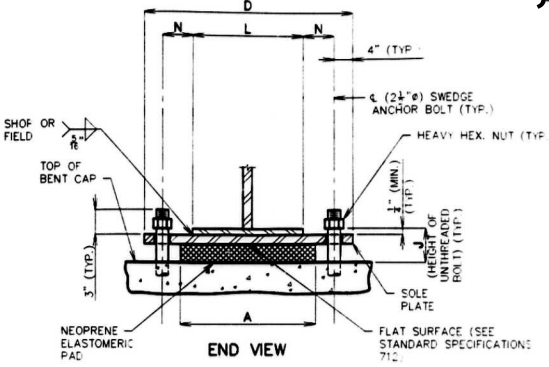
FINAL PLANS



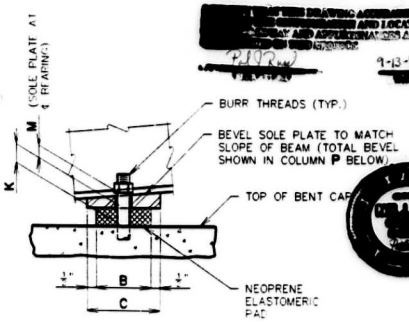
END VIEW



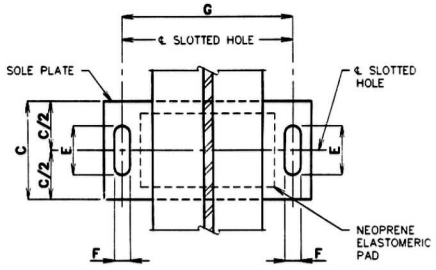
SIDE VIEW



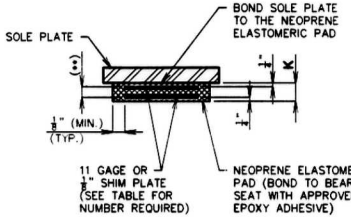
END VIEW



SIDE VIEW



PART PLAN VIEW

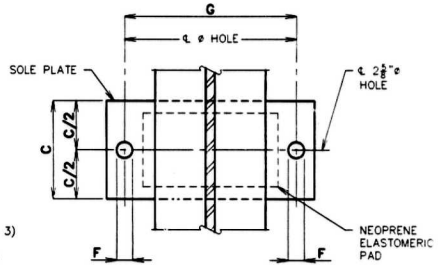


NEOPRENE ELASTOMERIC PAD

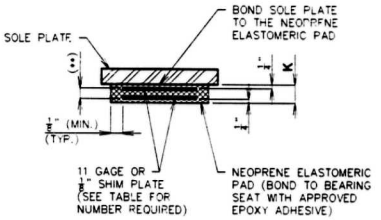
(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

① 2" (BT. #1 & 3)
2½" (BT. #2)

② 18" (BT. #1 & 3)
2'-1" (BT. #2)



PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

(**) LAYERS OF ¼" ELASTOMER ALTERNATING WITH 11 GAGE OR ⅛" STEEL SHIM PLATE.

NOTE:

THE LOCATION OF THE ANCHOR BOLTS IN RELATION TO THE SLOTTED HOLES IN THE SOLE PLATE SHALL CORRESPOND WITH THE TEMPERATURE AT THE TIME OF ERECTION. AT 60° F. THE SLOTTED HOLES SHOULD CENTER ON THE ANCHOR BOLTS.

EXPANSION BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	1	20"	13"	14"	2'-5"	4½"	2⅛"	23"	6½"	4⅛"	14"	1½"	4½"	0"	① 7 – ② 6	10
ALL	3	20"	13"	14"	2'-5"	4½"	2⅛"	23"	6½"	3¾"	14"	1½"	4½"	¼"	6	10
															TOTAL BEARINGS	20

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

GENERAL NOTES:

ANCHOR BOLTS SHALL BE ① ø A588 STEEL SWEDGED BOLTS AND SHALL EXTEND ② INTO THE CONCRETE WITH A194-2, 2H OR A563-C, C3 D, DH, DH3 HEAVY HEXAGON NUTS. ACTUAL MANUFACTURER'S CERTIFIED MILL TEST REPORTS (CHEMICAL AND MECHANICAL) SHALL BE PROVIDED. (SWEDGING SHALL BE 1" LESS THAN THE EXTENSION INTO THE CONCRETE.)

ALL STRUCTURAL STEEL FOR THE SOLE PLATE, ANCHOR BOLTS AND THE HEAVY HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MIN.) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE GIRDERS.

STRUCTURAL STEEL FOR THE SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE, ANCHOR BOLTS AND HEAVY HEXAGON NUTS SHALL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

THE ACCEPTED QUANTITY OF THE ELASTOMERIC BEARING ASSEMBLIES, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

FIXED BEARINGS

GDR. NO.	BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (•)	NUMBER REQUIRED
ALL	2	20"	2'-10"	2'-11"	2'-7"	2⅝"	23"	5½"	3¼"	14"	1½"	4½"	¼"	6	10
														TOTAL BEARINGS	10

(•) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT.

DANIEL A. CHIPMAN NUMBER E-22604 REGISTERED STATE OF MISSOURI ENGINEER

9-10-95

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	MLJ	4/93
TRACED BY:	KAM	4/93
CHECKED BY:	RPB	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED AUGUST 10, 1995

JACKSON COUNTY

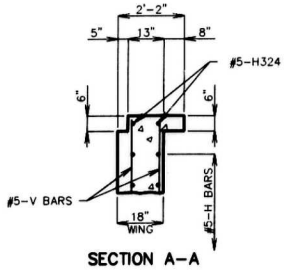
DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

SHEET NO. 20 OF 50

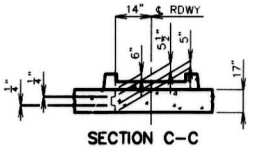
A-5180

FINAL PLANS

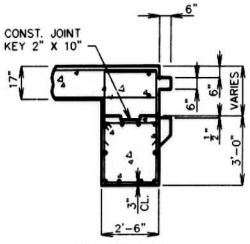
STATE	PROJ. NO.	SHEET NO.
MO.	J4U0U11B	129



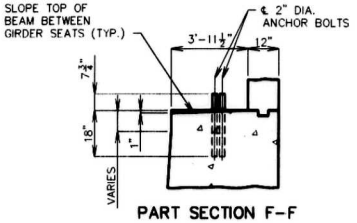
SECTION A-A



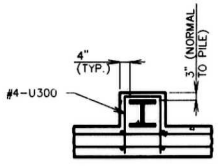
SECTION C-C



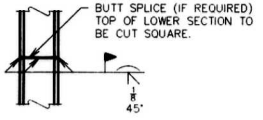
SECTION E-E



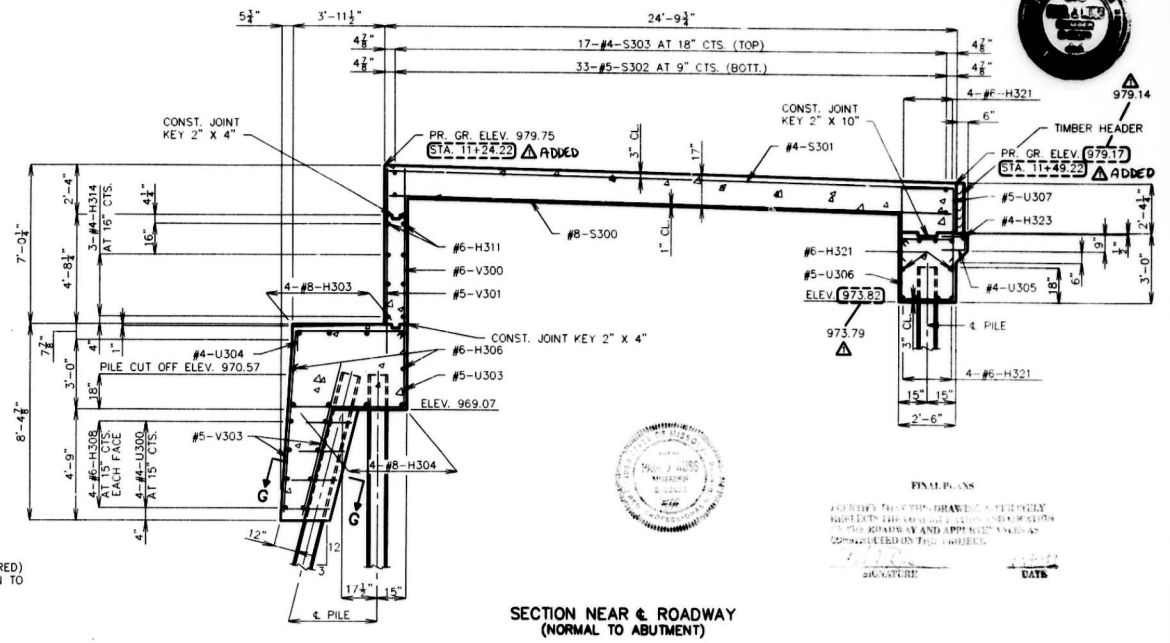
PART SECTION F-F



SECTION G-G



STEEL PILE SPLICE



SECTION NEAR ℄ ROADWAY
(NORMAL TO ABUTMENT)

NOTES:

FOR DETAILS OF TIMBER HEADER SEE SHEET NO. 9.

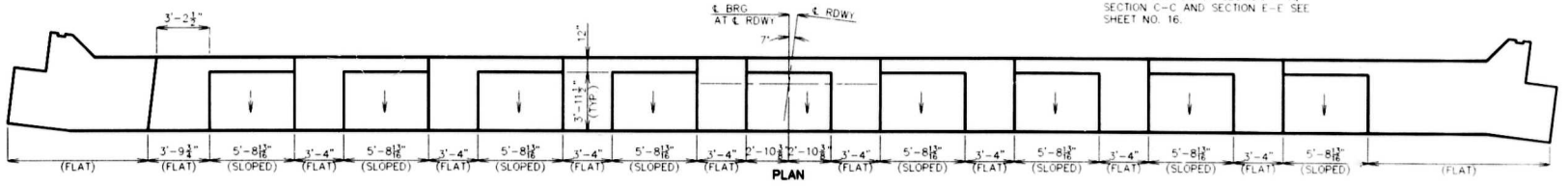
FOR LOCATION OF SECTION A-A, SECTION C-C AND SECTION E-E SEE SHEET NO. 16.

FINAL PLANS

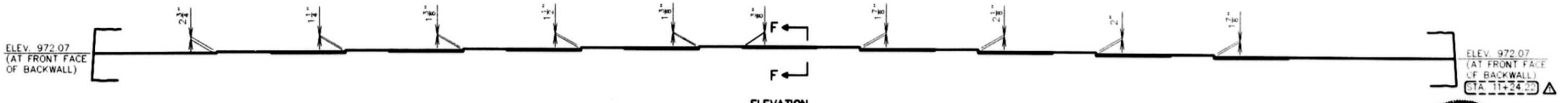
I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CORRECTLY REPRESENTS THE WORK AS DESIGNED BY ME OR UNDER MY DIRECT SUPERVISION AND APPROVED UNDER MY SUPERVISION AS CONSTRUCTED ON THIS PROJECT.

SIGNATURE

DATE



PLAN



ELEVATION

BEARING SEAT DETAIL

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS
ABUTMENT NO. 3 MISCELLANEOUS

SHEET NO. 18 OF 50

A-5180

4-26-96

24 to 1

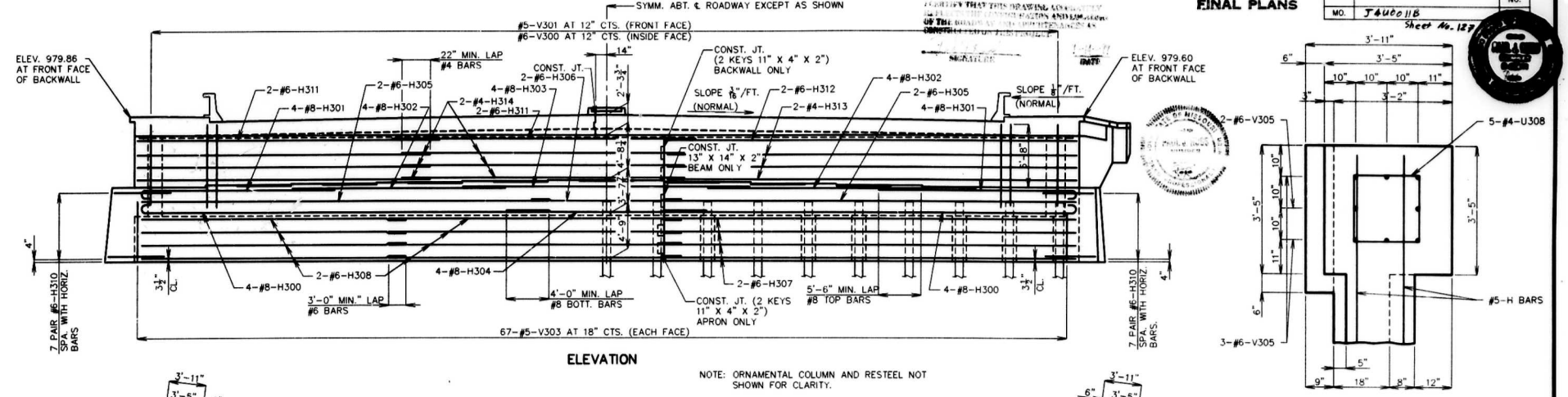
FOR INFORMATION ONLY

A51801, Sht. 279

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	Sheet No. 127

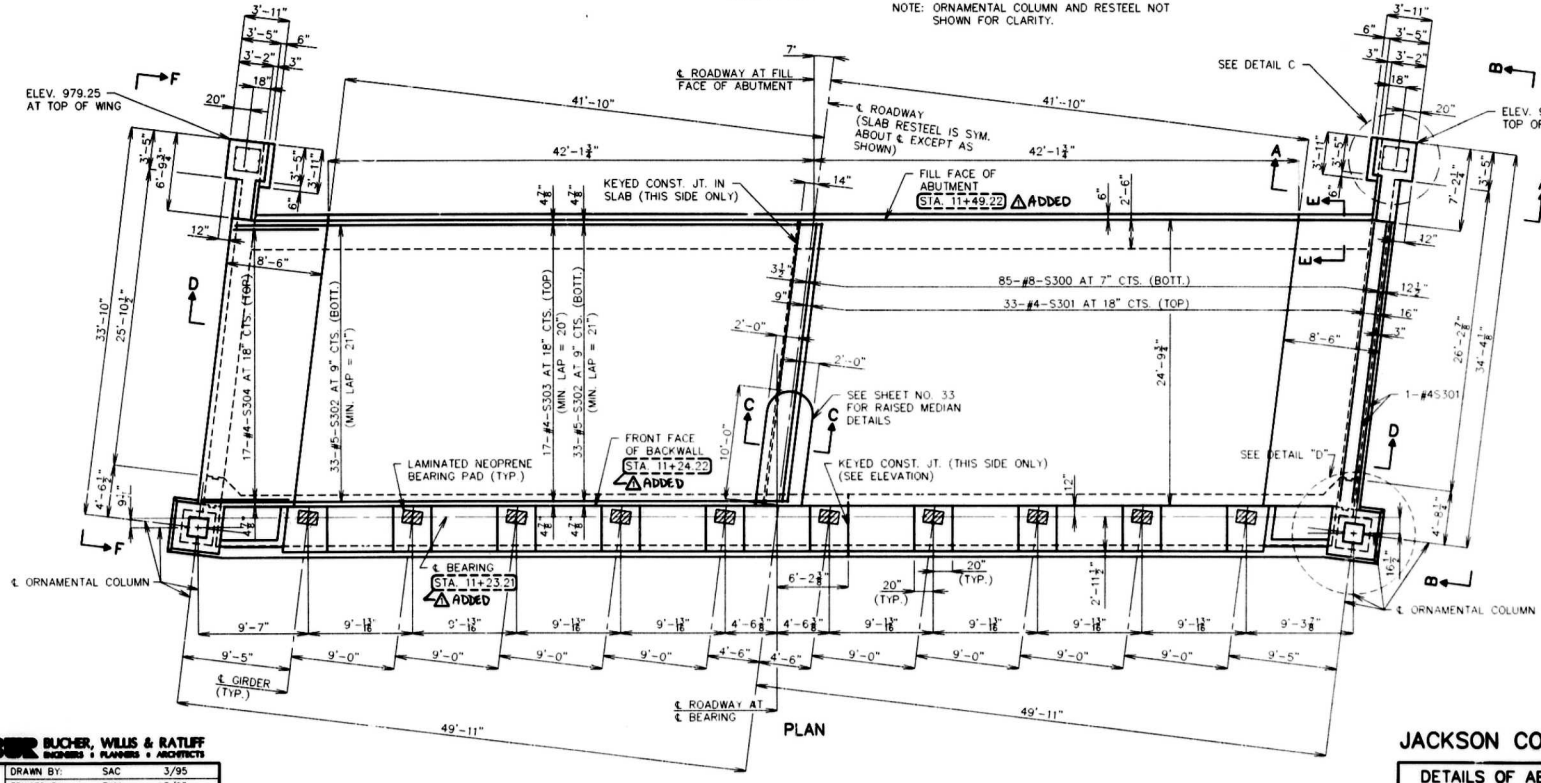
FINAL PLANS



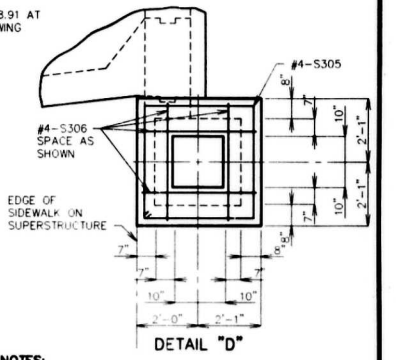
ELEVATION

DETAIL "C"
SOUTH WING SHOWN
NORTH WING OPP. HAND

NOTE: ORNAMENTAL COLUMN AND RESTEEL NOT SHOWN FOR CLARITY.



PLAN



DETAIL "D"

NOTES:

FOR DETAILS OF SECTION A-A, SECTION C-C AND SECTION E-E, SEE SHEET NO. 18

FOR ELEVATION B-B, ELEVATION F-F AND SECTION D-D, SEE SHEET NO. 17

FOR DETAILS OF LAMINATED NEOPRENE BEARING PADS, SEE SHEET NO. 20

FOR DETAILS OF ANCHOR BOLT WELLS AND PART PLAN OF ANCHOR BOLTS, SEE SHEET NO. 23

FOR ORNAMENTAL COLUMN DETAILS, SEE SHEET NO. 19.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	SAC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

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⚠ REVISED 4-25-96

JACKSON COUNTY

DETAILS OF ABUTMENT NO. 3
PLAN AND ELEVATION

SHEET NO. 16 OF 50

A-5180

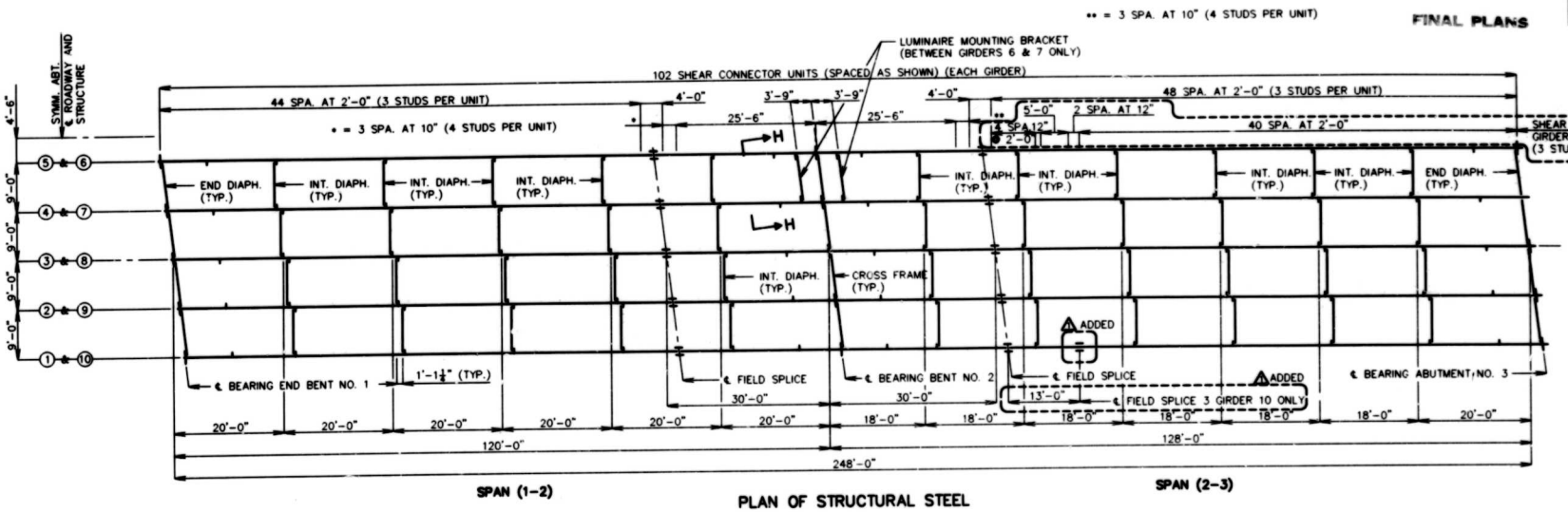
4-2-96

124 to 1

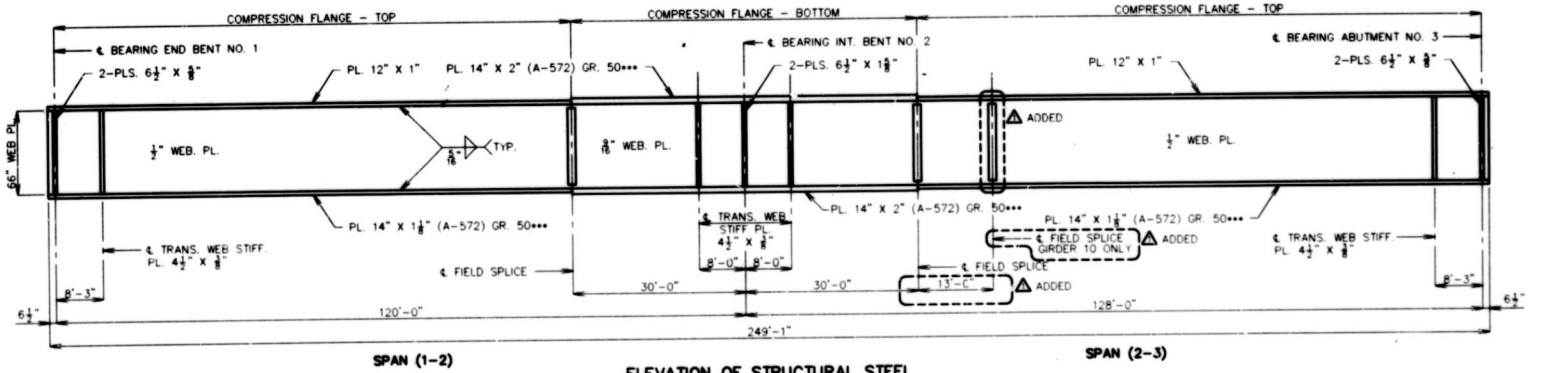
FOR INFORMATION ONLY A51801, Sht. 280

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	132

FINAL PLANS



PLAN OF STRUCTURAL STEEL



ELEVATION OF STRUCTURAL STEEL

NOTES:

GIRDER ① SHALL BE THE NORTH GIRDER.

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL FROM ℄ BEARING TO ℄ BEARING.

TRANSVERSE WEB STIFFENERS SHALL BE LOCATED AS SHOWN IN PLAN OF STRUCTURAL STEEL.

*** INDICATES FLANGE PLATES SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

ALL WEB PLATES SHALL BE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PLATE GIRDERS SHALL BE FABRICATED TO CONFORM WITH CAMBER DIAGRAM AS SHOWN ON SHEET NO. 21.

FOR DETAILS OF BOLTED FIELD SPLICES AND SHEAR CONNECTORS, SEE SHEET NO. 21.

FOR DETAILS OF DIAPHRAGMS, CROSS FRAMES AND WELDING DETAILS, SEE SHEET NO. 22.

FOR PART LONGITUDINAL SECTION, SEE SHEET NO. 23.

FOR SOLE BEARING PLATE DETAILS, SEE SHEET NO. 20.

FOR SECTION H-H, SEE SHEET NO. 22.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

BUCKER, WILLS & RATLIFF ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	KLW	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

JACKSON COUNTY

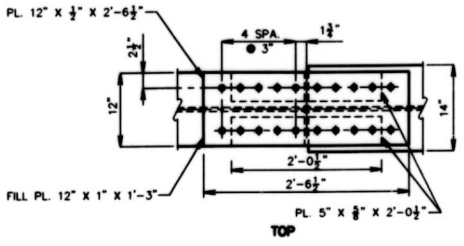
PLAN AND ELEVATION OF STRUCTURAL STEEL

SHEET NO. 21 OF 50

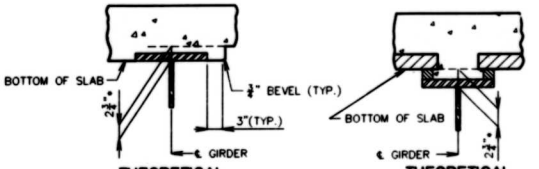
A-5180

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	135



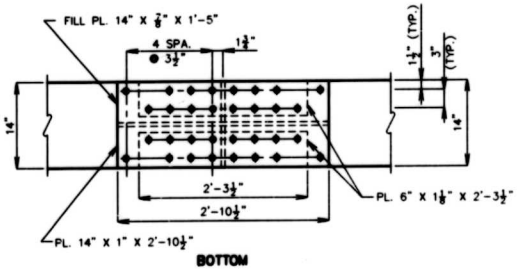
TOP



THEORETICAL SLAB HAUNCH (C.I.P. SECTION)

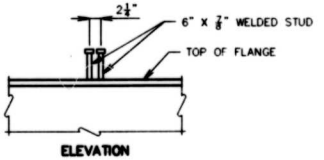
THEORETICAL SLAB HAUNCH (P/C P/S PANEL SECTION)

* DIMENSIONS MAY VARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE OR LESS THAN THE % OF D.L. DEFLECTION DUE TO WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ANY ADJUSTMENT IN FORMING OR ADDITIONAL CONCRETE REQUIRED FOR VARIATION IN HAUNCHING.

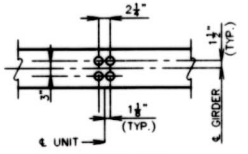


BOTTOM

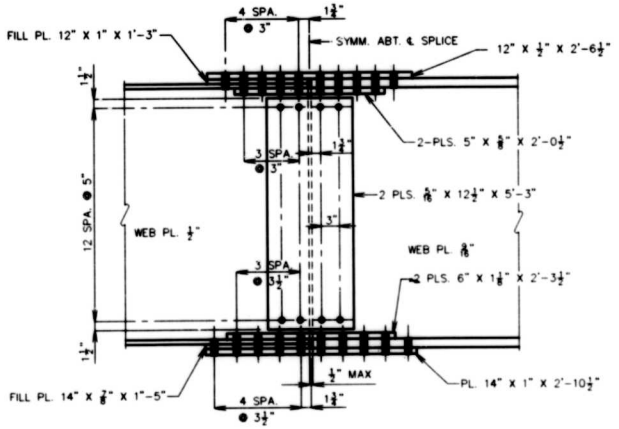
PLAN OF FLANGE



ELEVATION

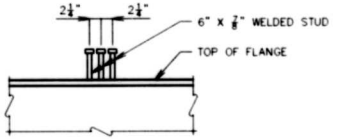


PLAN OF STUD CONN. (4 STUDS PER UNIT)

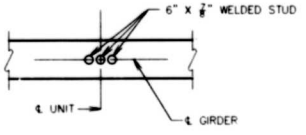


DETAIL OF BOLTED FIELD SPLICE

NOTE: FOR BOLTED FIELD SPLICE PLATES USE ⅞"ø H.S. BOLTS W/ 1⅛"ø REAMED HOLES



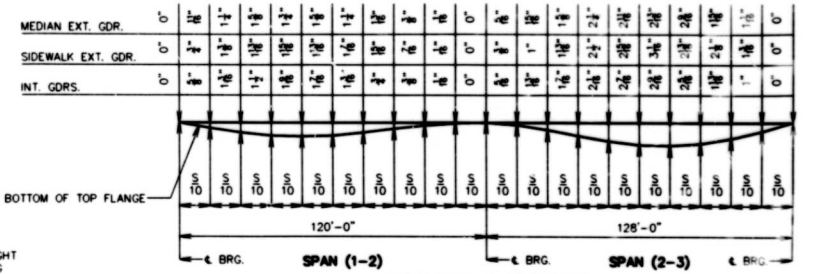
ELEVATION



PLAN OF STUD CONN. (3 STUDS PER UNIT)

DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 3,606 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL (PLATE GIRDER)



DEAD LOAD DEFLECTION

NOTE: 15% OF D.L. DEFLECTION IS DUE TO WEIGHT OF STRUCTURAL STEEL

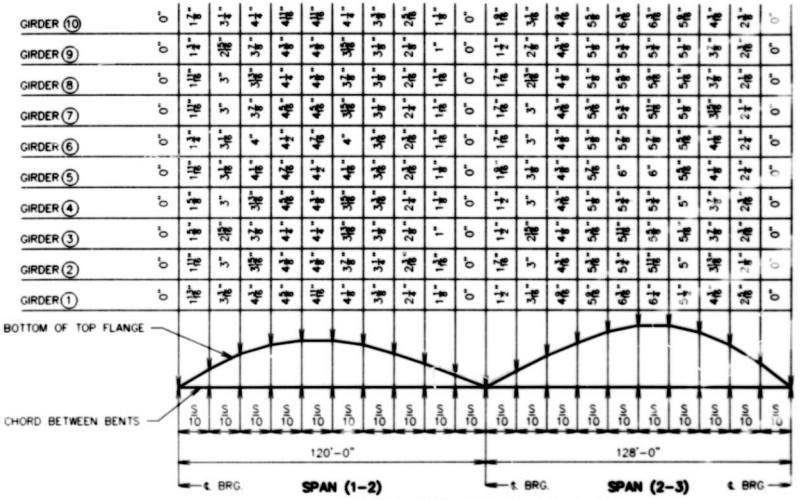
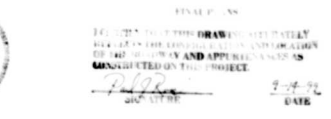


PLATE GIRDER CAMBER DIAGRAM

NOTE: CAMBER INCLUDES ALLOWANCES FOR VERTICAL CURVE AND FOR DEAD LOAD DEFLECTION DUE TO CONCRETE SLAB, CURB, SIDEWALK AND STRUCTURAL STEEL.



⚠ ADDED FIELD SPLICE 3 GIRDER TO 15 SIMILAR. NO FILL PLATES REQUIRED.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	KLW	5/93
TRACED BY:	KAM	5/93
CHECKED BY:	DJM	5/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 8-12-96

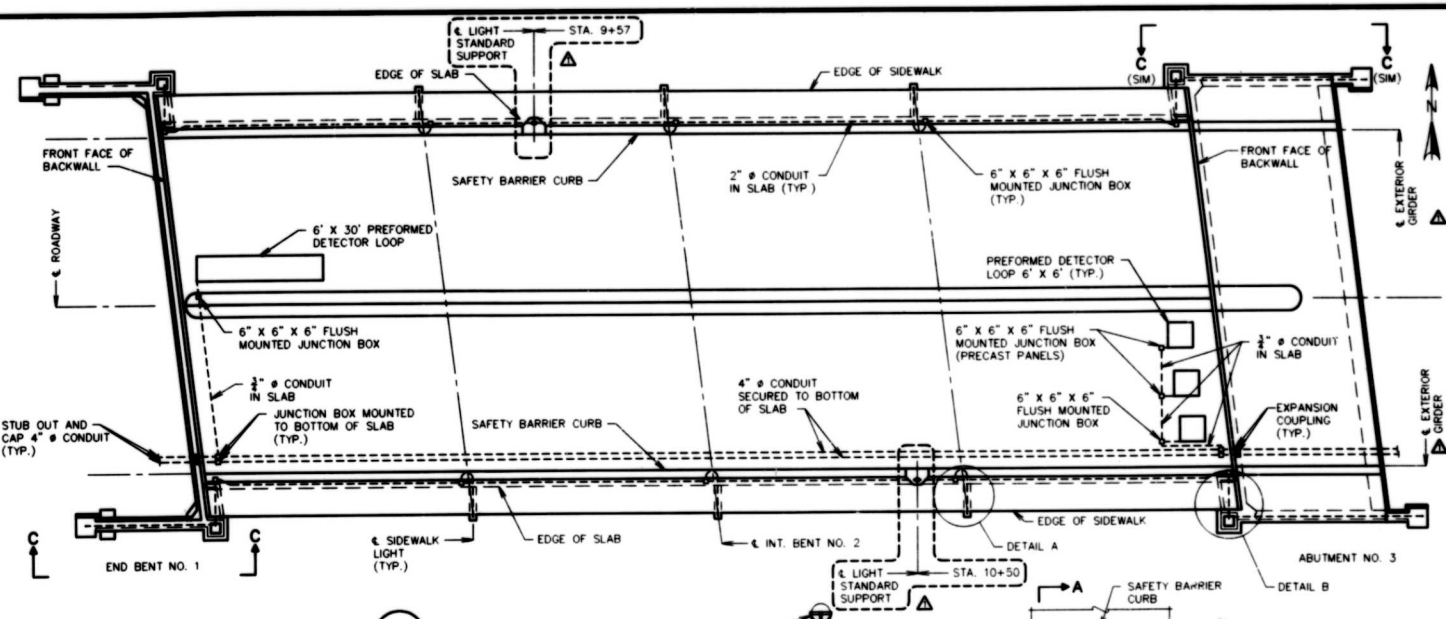
JACKSON COUNTY

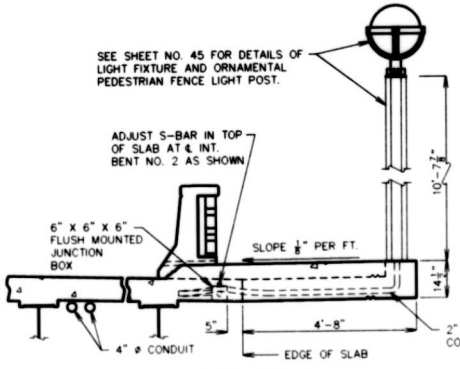
CAMBER DIAGRAM, FIELD SPLICE AND SHEAR CONNECTORS

SHEET NO. 24 OF 50

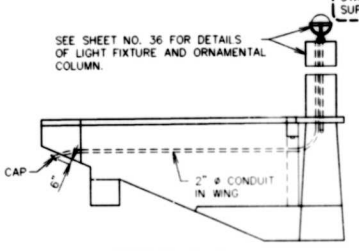
A-5180

FOR INFORMATION ONLY A51801, Sht. 282

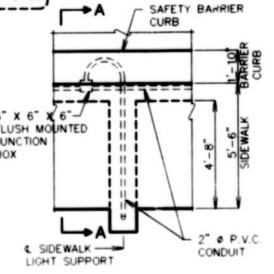




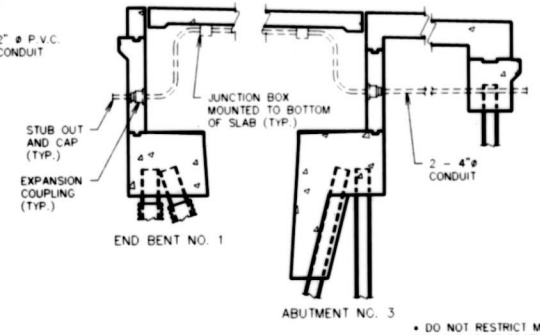
SECTION A-A



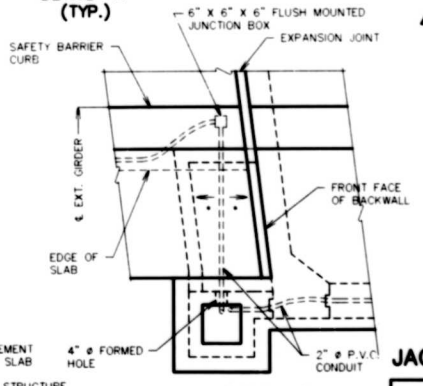
SECTION C-C



DETAIL "A" (TYP.)



PART ELEVATION SHOWING 4" ø CONDUIT



DETAIL "B" (TYP.)

• DO NOT RESTRICT MOVEMENT OF CONDUIT AT EDGE OF SLAB DUE TO EXPANSION AND CONTRACTION OF BRIDGE STRUCTURE

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	141

NOTES:

⚠ COST OF FURNISHING AND INSTALLING CONCRETE AND REINFORCEMENT IN SIDEWALK LIGHT SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SIDEWALK (BRIDGES). SEE SHEETS NO. 31 AND NO. 32 FOR LOCATIONS AND DETAILS OF SIDEWALK LIGHT SUPPORT.

⚠ COST OF FURNISHING AND INSTALLING ANCHOR BOLTS, REINFORCEMENT AND CONCRETE IN LIGHT STANDARD SUPPORTS SHALL BE INCLUDED IN PRICE BID FOR SAFETY BARRIER CURB. FOR DETAILS OF LIGHT STANDARD SUPPORTS, SEE SHEET NO. 40.

ALL CONDUIT SHALL BE RIGID NON-METALLIC SCHEDULE 40 HEAVY WALL PVC (POLYVINYL CHLORIDE PLASTIC). EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS' LABORATORIES, INC., (UL) LABEL.

EXPANSION FITTINGS SHALL PROVIDE A MINIMUM MOVEMENT IN EITHER DIRECTION OF 3" AT OPEN JOINTS. EXPANSION FITTINGS SHALL BE EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR CONDUIT AND JUNCTION BOXES.

TOP OF LIGHT STANDARD SUPPORTS SHALL BE MADE HORIZONTAL; ANCHOR BOLTS SHALL BE PLACED VERTICALLY.

⚠ ALL JUNCTION BOXES SHALL BE PVC MOLDED, FLUSH MOUNTED (UNLESS OTHERWISE NOTED) AND EQUAL TO CARLON ELECTRICAL CONSTRUCTION PRODUCTS OR TRIANGLE CONDUIT AND CABLE COMPANY, INC. THE CONDUIT TERMINALS SHALL BE PERMANENT OR SEPARABLE. THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION

CONTRACTOR SHALL DETERMINE METHOD, AS APPROVED BY THE ENGINEER, FOR FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS. ANY ADDITIONAL COSTS ASSOCIATED WITH FLUSH MOUNTING JUNCTION BOXES AT PRECAST PRESTRESSED PANEL LOCATIONS SHALL BE INCLUDED IN THE PRICE BID FOR CONDUIT SYSTEM ON STRUCTURE.

WEEPHOLES SHALL BE PROVIDED AT APPROPIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

⚠ 4" CONDUIT SHALL BE SECURED TO THE BOTTOM OF THE SLAB WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL BE IN ACCORDANCE WITH FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

4" CONDUIT WITHIN ABUTMENT NO. 3 SHALL BE SUPPORTED FROM THE ABUTMENT SLAB BY A HANGER SYSTEM EQUIVALENT TO "CONDUX" SUSPENDED TYPE UNDERBRIDGE HANGER SYSTEM AND SPACED AT ABOUT 5'-0" CTS.

⚠ LIGHT STANDARDS AND WIRING TO BE FURNISHED AND INSTALLED BY OTHERS.

THE CONDUIT SYSTEM, COMPLETE IN PLACE, SHALL BE PAID FOR AS CONDUIT SYSTEM ON STRUCTURE, PER LUMP SUM.

FOR DETAILS OF LUMINAIRE MOUNTING BRACKET AND CONDUIT ON INTERMEDIATE BENT 2, SEE SHEETS NO. 13, 21 & 22.

⚠ FOR DETAILS OF LIGHT STANDARD AND WIRING, SEE ELECTRICAL PLANS.

BUCKER, WILLS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJC	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

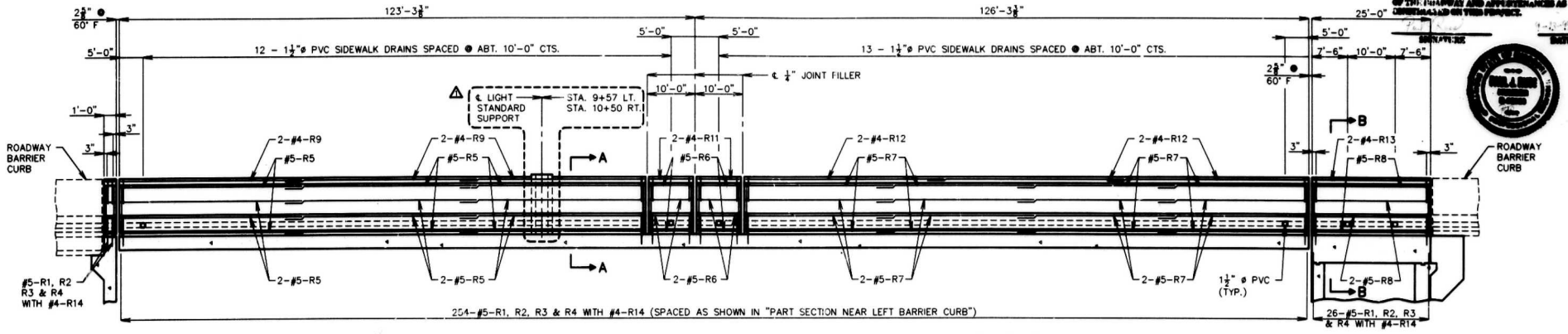
DETAILS OF CONDUIT SYSTEM ON STRUCTURE

SHEET NO. 30 OF 50

A-5180

FINAL PLANS

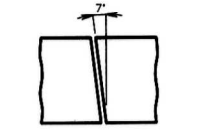
STATE	PROJ. NO.	SHEET NO.
MO.	J4M0118	145



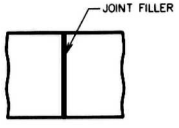
SECTION NEAR LEFT BARRIER CURB
(RIGHT BARRIER CURB SIMILAR)

NOTE:

LONGITUDINAL DIMENSIONS SHOWN ARE HORIZONTAL AT GUTTERLINE.

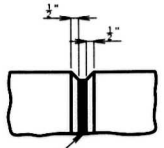


AT 2⅜" EXPANSION JOINT

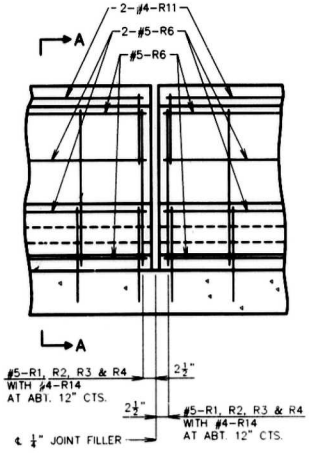


AT ¼" JOINT

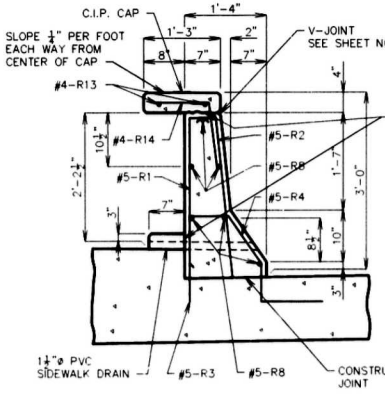
PART PLAN VIEW



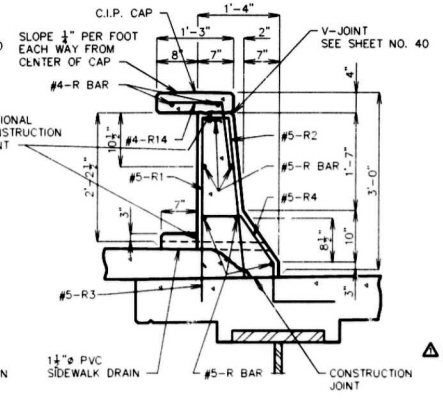
¼" FILLED JOINT DETAIL



PART SECTION NEAR NEAR LEFT SAFETY BARRIER CURB



SECTION B-B



SECTION A-A

NOTES:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A ½" RADIUS OR A ½" BEVEL, UNLESS OTHERWISE NOTED.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL ANCHOR BOLTS, CONCRETE AND REINFORCEMENT COMPLETE-IN-PLACE. ⚠

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE 7" X 3" MASONRY SILL ON THE SIDEWALK SIDE OF THE SAFETY BARRIER CURB IS INCLUDED IN THE ESTIMATED QUANTITIES FOR CLASS B1 CONCRETE (SUPERSTRUCTURE).

MEASUREMENT OF THE SAFETY BARRIER CURB AND THE C.I.P. CAP ON SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE ROADWAY FACE OF CURB FROM FILL FACE OF END BENT NO. 1 TO FILL FACE OF ABUTMENT NO. 3.

FOR DETAILS OF THE C.I.P. CAP AND STONE FACING ON SIDEWALK FACE OF BARRIER CURB, SEE SHEET NO. 40.

FOR DETAILS OF PLASTIC WATERSTOP SEE SHEET NO. 32.

USE A MINIMUM LAP OF 17" FOR #5 HORIZONTAL SAFETY BARRIER CURB BARS. USE A MINIMUM LAP OF 13" FOR #4 HORIZONTAL SAFETY BARRIER CURB BARS.

THE CROSS-SECTIONAL AREA OF THE SAFETY BARRIER CURB ABOVE THE SLAB = 2.27 SQ. FT. THE CROSS-SECTIONAL AREA OF THE C.I.P. CAP = 0.51 SQ. FT.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB

SHEET NO. 34 OF 50

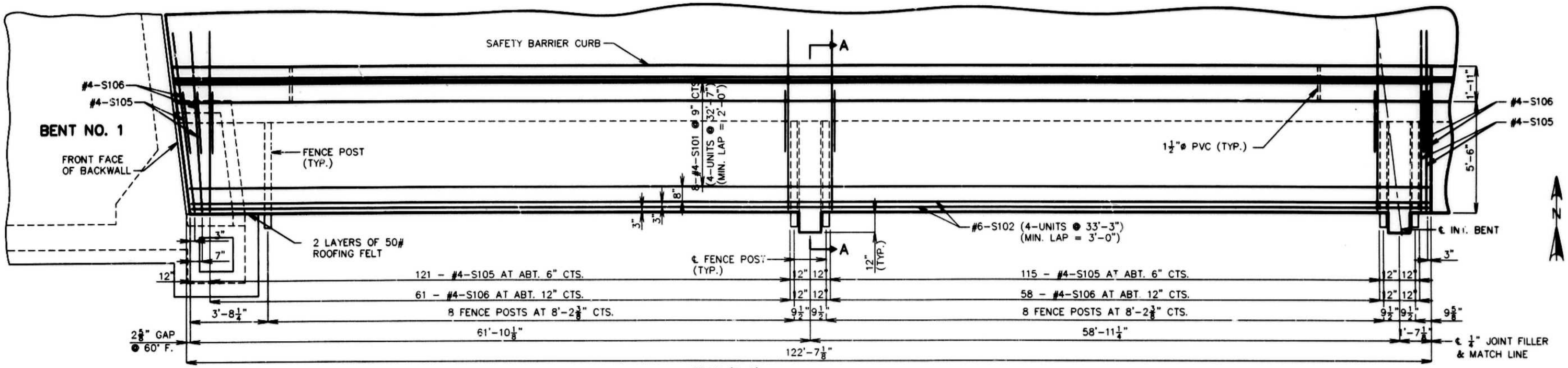
A-5180

FOR INFORMATION ONLY

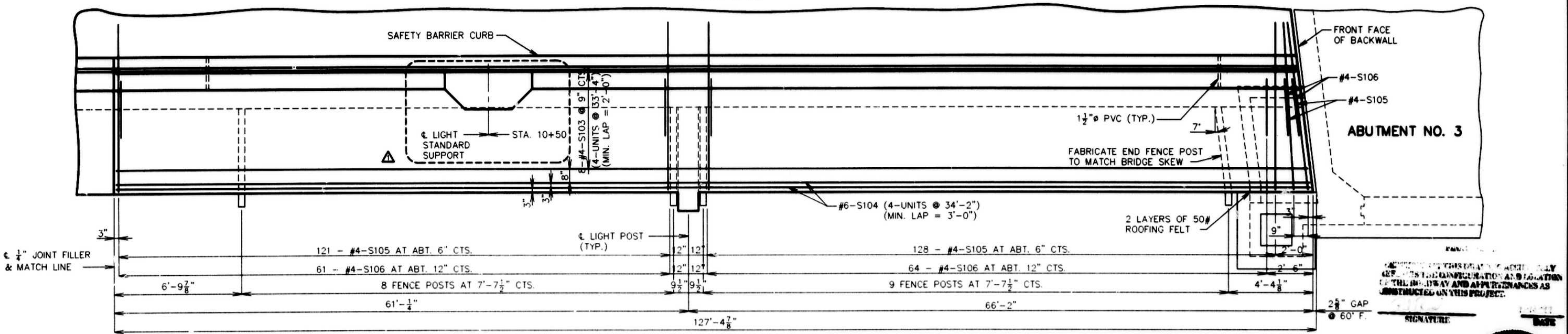
A51801, Sht. 284

FINAL PLANS

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	163

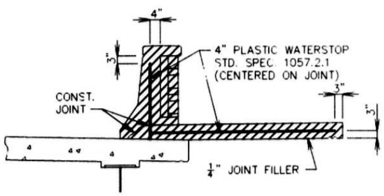


SPAN (1-2)



SPAN (2-3)

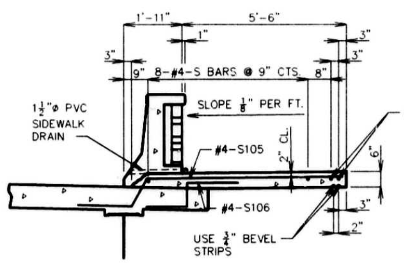
PLAN OF RIGHT SIDEWALK



DETAILS OF PLASTIC WATERSTOP

NOTE: PLASTIC WATERSTOP SHALL BE PLACED IN ALL SAFETY BARRIER CURB AND SIDEWALK FILLED JOINTS.

COST OF PLASTIC WATERSTOP COMPLETE IN PLACE TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB AND SIDEWALKS RESPECTIVELY.



SECTION THRU SIDEWALK IN SPANS (1-2) & (2-3)

NOTES:

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONC... REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR SECTION THRU LIGHT POST SUPPORT, SEE SHEET NO. 31.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

FOR SECTION A-A SEE SHEET. NO. 31.

△ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

SIGNATURE — DATE

BUCHER, WILLIS & RATLIFF — ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	TWM	3/95
CHECKED BY:	DJM	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

△ REVISED 10-26-95

JACKSON COUNTY

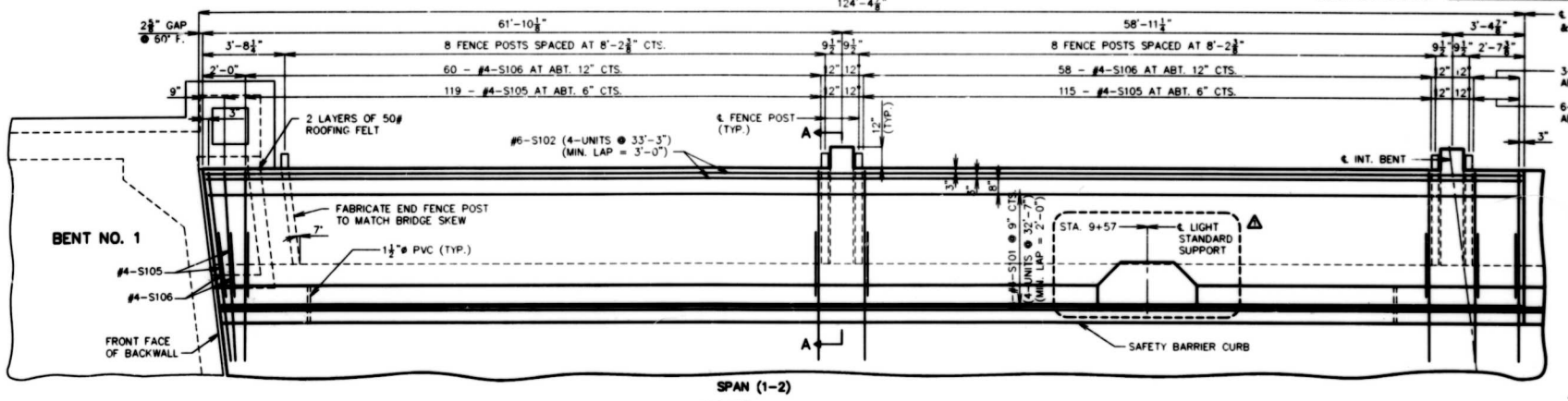
DETAILS OF RIGHT BRIDGE SIDEWALK AND FENCE POST SPACING

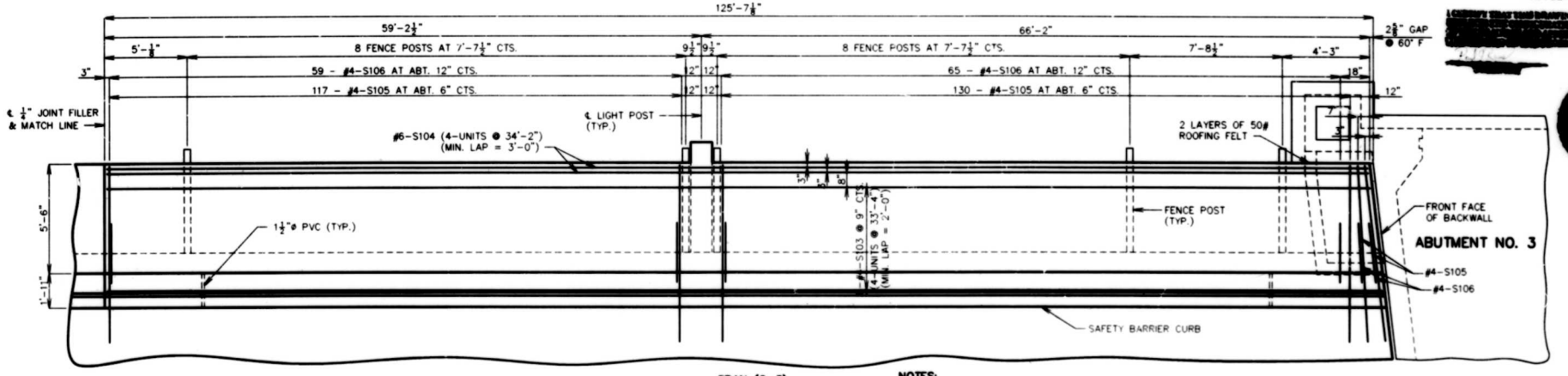
SHEET NO. 32 OF 50

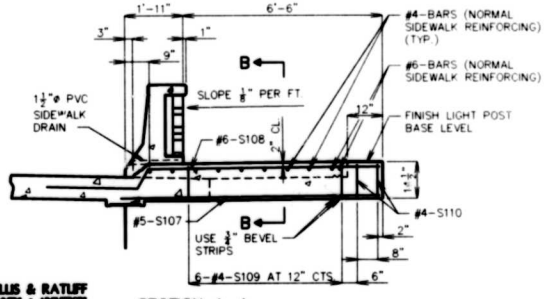
A-5180

STATE	PROJ. NO.	SHEET NO.
MO.	J4U60118	162

FINAL PLANS

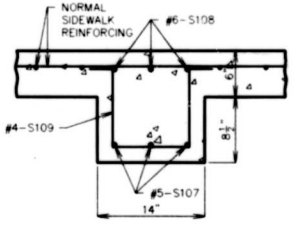






SECTION A-A

PLAN OF LEFT SIDEWALK



SECTION B-B

NOTES:

FOR TYPICAL SECTION THRU SIDEWALK SEE SHEET NO. 32.

FOR DETAILS OF ORNAMENTAL PEDESTRIAN FENCE AND FENCE LIGHT POST ON SIDEWALK, SEE SHEETS NO. 42 THRU 45.

ALL EXPOSED EDGES OF SIDEWALK SHALL HAVE EITHER A ½" RADIUS OR A ¾" BEVEL STRIP.

WHEN THE SIDEWALK IS BID BY SQUARE FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE, REINFORCEMENT AND SIDEWALK DRAINS, COMPLETE-IN-PLACE.

CONCRETE IN THE SIDEWALK SHALL BE CLASS B2.

MEASUREMENT OF THE SIDEWALK IS TO THE NEAREST SQUARE FOOT FOR EACH STRUCTURE, MEASURED FROM THE OUTSIDE FACE OF SAFETY BARRIER CURB TO THE OUTSIDE EDGE OF SIDEWALK AND FROM EXPANSION JOINT TO EXPANSION JOINT.

ALL REINFORCEMENT SHOWN SHALL BE EPOXY COATED.

FOR DETAILS OF EXPANSION DEVICE IN SIDEWALK, SEE SHEETS NO. 28 & 29.

FOR SPACING OF SIDEWALK DRAINS IN SAFETY BARRIER CURB, SEE SHEET NO. 34.

FOR LOCATIONS OF ANCHOR BOLTS IN LIGHT POST SUPPORT, SEE SHEET NO. 44.

⚠ FOR DETAILS OF LIGHT STANDARD SUPPORT, SEE SHEET NO. 40.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	RCC 3/95
CHECKED BY:	DJM 3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF LEFT BRIDGE SIDEWALK AND FENCE POST SPACING

SHEET NO. 31 OF 50

A-5180

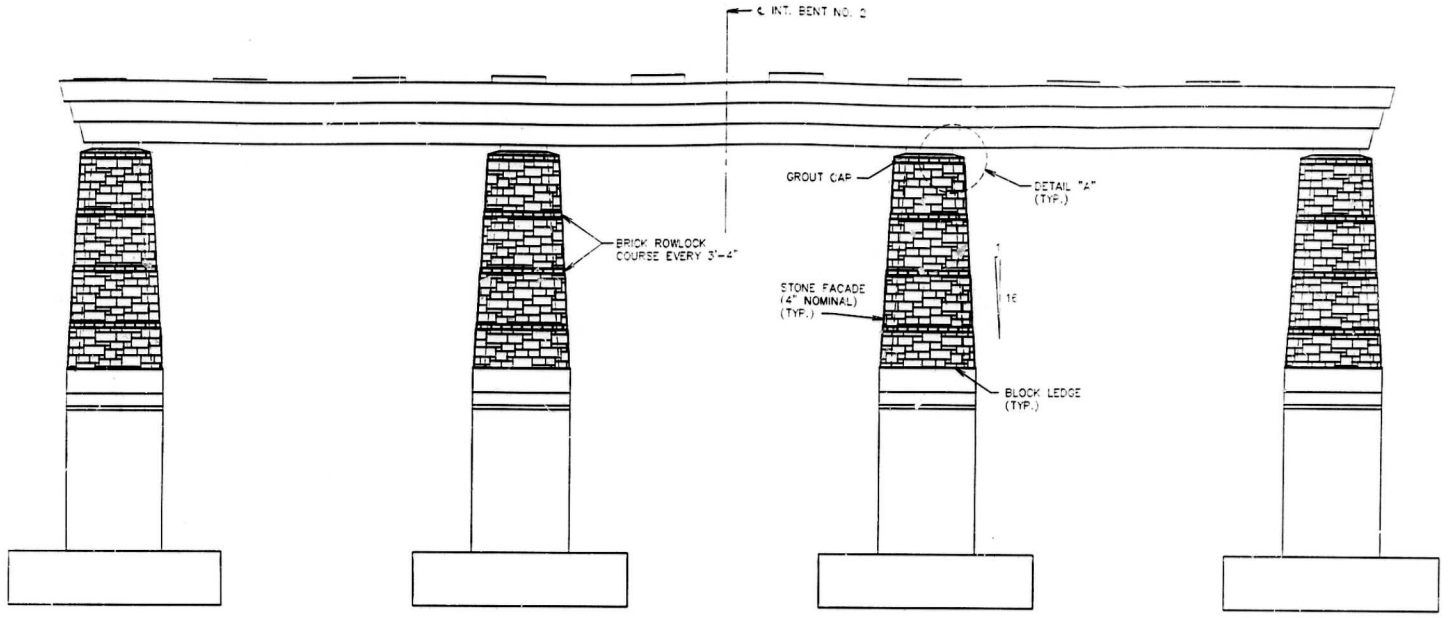
STATE	PROJ. NO.	SHEET NO.
MO.	J3400118	129

FINAL PLANS

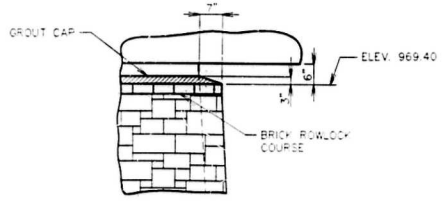
FINAL PLANS

I CERTIFY THAT THIS DRAWING ACCURATELY REFLECTS THE CONFIGURATION AND DIMENSIONS OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

7-18-97



ELEVATION



DETAIL "A"

NOTES:

PROVIDE WEEP HOLES AT BLOCK LEDGE, NOT TO EXCEED 16" O.C.

SECURE STONE FACADE TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED AT NOT MORE THAN 16" O.C. VERTICALLY AND 2'-0" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS)

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE FACADE.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NO LESS THAN 3/16" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITTI COATING ON ALL STONE, BRICK, MORTAR AND ON ALL EXPOSED CONCRETE, INCLUDING BEARING BEAM (SEE SPECIAL PROVISIONS).

THE UNIT PRICE BID PER SQUARE FOOT OF STONE FACADE ON INTERMEDIATE BENT SHALL INCLUDE THE BRICK ROWLOCK COURSES, ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

3-27-98

BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	3/95
TRACED BY:	RCC	3/95
CHECKED BY:	SAC	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

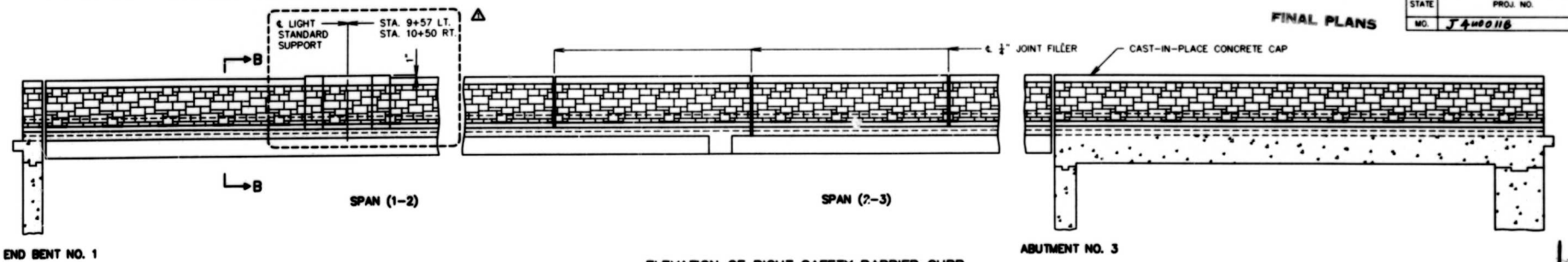
DETAILS OF STONE FACADE ON INTERMEDIATE BENT NO. 2

SHEET NO. 38 OF 50

A-5180

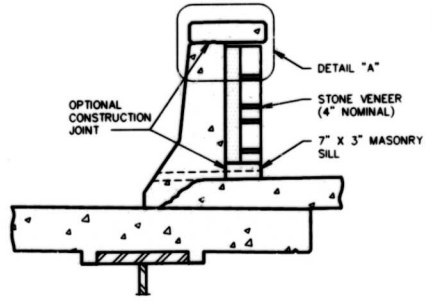
STATE	PROJ. NO.	SHEET NO.
MO.	J4H0116	151

FINAL PLANS

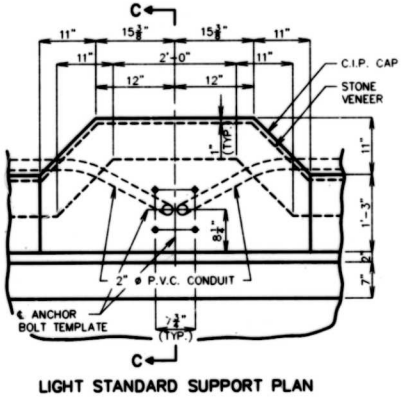


ELEVATION OF RIGHT SAFETY BARRIER CURB

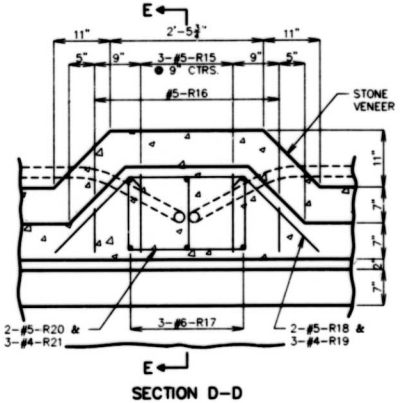
(LEFT CURB IS SIMILAR)



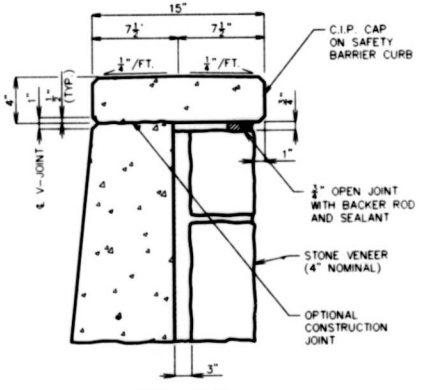
PART SECTION B-B



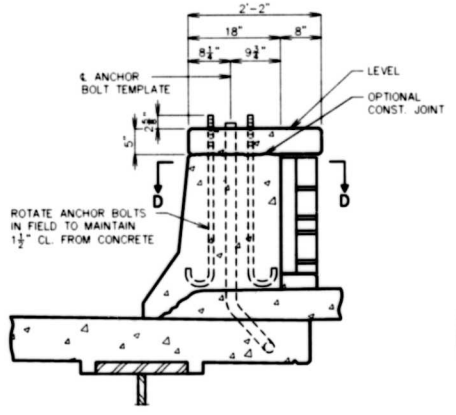
LIGHT STANDARD SUPPORT PLAN



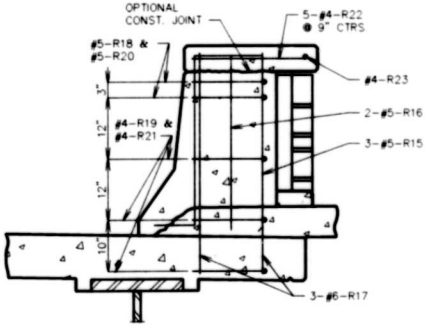
SECTION D-D



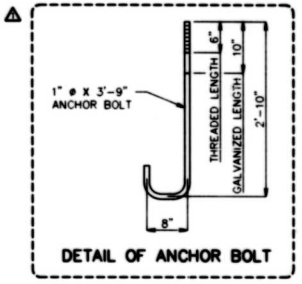
DETAIL "A"



PART SECTION C-C



PART SECTION E-E



DETAIL OF ANCHOR BOLT

NOTES:

PROVIDE WEEP HOLES AT SILLS NOT TO EXCEED 16" O.C.

SECURE STONE VENEER TO CONCRETE BACKING WITH FLEXIBLE ANCHORS SPACED NOT MORE THAN 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY.

ANCHORS SHALL BE DOVETAIL ANCHOR SLOTS. (SEE SPECIAL PROVISIONS).

PROVIDE TWO PIECE ANCHORS WHICH PERMIT VERTICAL AND HORIZONTAL MOVEMENT BUT PROVIDE LATERAL RESTRAINT OF STONE VENEER.

TIES SHALL BE CORRUGATED STRAPS NOT LESS THAN 12 GAGE OR TRIANGULAR WIRE TIES NOT LESS THAN ¼" DIAMETER AS DETERMINED BY THE ENGINEER. LENGTH OF TIES SHALL BE AS REQUIRED FOR EMBEDMENT IN WYTHES OF STONE.

PROVIDE SEALER AND ANTI-GRAFFITI COATING ON ALL STONE, MORTAR AND CAST-IN-PLACE CONCRETE CAP (SEE SPECIAL PROVISIONS).

THE CONTRACT UNIT PRICE BID PER SQUARE FOOT OF STONE VENEER SHALL INCLUDE ANCHORAGE AND DRAINAGE SYSTEM BEHIND THE STONE, COMPLETE-IN-PLACE.

THE CONTRACT UNIT PRICE FOR C.I.P. CAP ON SAFETY BARRIER CURB SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.

CONCRETE IN THE MASONRY SILL FOR THE SAFETY BARRIER CURB IS INCLUDED IN THE PRICE BID FOR CLASS B1 CONCRETE (SUPSTR.).

⚠ FOR DETAILS OF CONDUIT SYSTEM AND LIGHT STANDARD LOCATION ON STRUCTURE, SEE SHEET NO. 30.

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DJM	4/93
TRACED BY:	TWM	4/93
CHECKED BY:	SAC	6/93

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

⚠ REVISED 10-26-95

JACKSON COUNTY

DETAILS OF SAFETY BARRIER CURB ARCHITECTURAL TREATMENTS

SHEET NO. 40 OF 50

A-5180

24 to 1

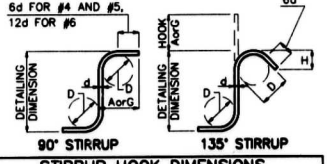
STATE	PROJ. NO.	SHEET NO.
MO.	J4L0011B	157

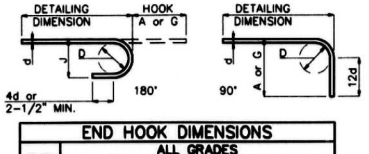
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
END BENT NO. 1																												
8	5	D100	WING FOOTING		20		X			4 6.000														4 6		4 6		38
8	5	D101	WING FOOTING		20		X			2 0.000														2 0		2 0		17
7	7	F100	WING BRACE		15		X			15.000	4 10.000		15.000		10.625		10.625		9.250		11.750			7 4		7 3		104
7	7	F101	WING BRACE		15		X			15.000	4 5.000		15.000		10.625		10.625		11.750		9.250			6 11		6 10		98
8	6	H100	BEAM		17		X			43 6.000														44 5		44 5		949
8	6	H101	BEAM		17		X			22 4.500														23 4		23 4		498
4	6	H102	BEAM		20		X			30 2.000														30 2		30 2		322
8	6	H103	BEAM		20		X			23 8.000														23 8		23 8		506
4	6	H104	BEAM		20		X			43 6.000														43 6		43 6		261
2	6	H105	BEAM		20		X			19 3.000														19 3		19 3		58
19	4	H106	BACKWALL		20		X			30 0.000														30 0		30 0		381
8	4	H107	BACKWALL		20		X			43 6.000														43 6		43 6		232
2	6	H108	BACKWALL		20		X			43 6.000														43 6		43 6		131
4	6	H109	BACKWALL		20		X			31 0.000														31 0		31 0		186
4	4	H110	BACKWALL	E	20		X			30 0.000														30 0		30 0		80
2	4	H111	BACKWALL	E	20		X			43 6.000														43 6		43 6		58
2	6	H112	BACKWALL	E	20		X			43 6.000														43 6		43 6		131
4	6	H113	BACKWALL	E	20		X			31 0.000														31 0		31 0		186
4	4	H114	BACKWALL	E	20		X			7 6.000														7 6		7 6		20
16	6	H115	BEAM		10	S	X				5 0.000	2 6.000												12 6		12 2		292
2	4	H116	ORN. COLUMN	E	20		X			6 6.000														6 6		6 6		9
14	4	H117	ORN. COLUMN	E	20		X			7 6.000														7 6		7 6		70
14	4	H118	ORN. COLUMN	E	21		X			2 6.000				12.000						2 5.750		3.625		3 6		3 5		32
14	4	H119	ORN. COLUMN	E	21		X			2 6.000		12.000								2 5.750		3.625		3 6		3 5		32
16	6	H120	ORN. COLUMN	E	19		X			4 0.000		16.000												5 4		5 2		124
14	6	H121	WING		20		X	V	2	10 0.000														10 0		10 0		
			INCREMENT =							20 3.000														20 3		20 3		321
			20.500 INCH																									
12	6	H122	WING		20		X	V	2	7 2.000														7 2		7 2		
			INCREMENT =							10 1.000														10 1		10 1		156
			17.500 INCH																									
4	6	H123	WING	E	20		X			21 10.000														21 10		21 10		131
12	6	H124	WING		20		X			21 10.000														21 10		21 10		393
14	6	H125	WING		20		X	V	2	10 6.000														10 6		10 6		
			INCREMENT =							21 3.000														21 3		21 3		334
			21.500 INCH																									
4	8	H127	BEAM		20		X			21 3.000														21 3		21 3		227
2	4	S111	ORN. COLUMN	E	13	S	X			3 9.000	3 10.000		3 9.000	3 10.000										15 11		15 8		21
8	4	S112	ORN.COLUMN	E	20		X			3 9.000														3 9		3 9		20

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	B IN.	C FT. IN.	C IN.	D FT. IN.	D IN.	E FT. IN.	E IN.	F FT. IN.	F IN.	H FT. IN.	H IN.	K FT. IN.	K IN.	NOMINAL LENGTH FT. IN.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT. IN.	ACTUAL LENGTH IN.	WEIGHT LBS.
4	7	T100	WING		14		X					8 6.000		1 6.000						7.250		16.500		10 2		10 2		83
2	7	T101	WING		14		X					14 3.000		1 11.000						21.000		9.250		16 2		16 1		66
2	7	T102	WING		14		X					14 6.000		1 11.000						21.250		8.875		16 5		16 4		67
32	5	U100	BEAM		13	S	X			4 0.875		2 6.000		4 2.750		2 2.000								14 3		13 11		485
34	5	U101	BEAM		13	S	X			4 0.750		2 7.750		4 2.750		2 7.750								14 8		14 2		502
28	5	U102	BEAM		13	S	X			4 0.500		2 11.500		4 2.750		2 11.375								15 1		14 9		431
26	4	U103	BEAM		10	S	X					6.000		4 0.000										5 0		4 10		84
5	7	U104	BEAM		14		X			5 0.000		23.000		4 6.000						2 9.250		3 6.500		11 5		11 2		114
5	7	U105	BEAM		14		X			5 0.000		23.000		4 6.000						3 6.500		2 9.250		11 5		11 2		114
84	4	U106	BACKWALL		10	S	X					1 2.000		6.000										2 10		2 8		150
32	4	U107	ORN. COLUMN	E	19	S	X			2 6.000		2 6.000												5 0		4 11		171
8	4	U108	WING		13	S	X			23.000		23.000		23.000		23.000								8 5		8 2		44
4	6	V100	BEAM		20		X			2 7.000														2 7		2 7		18
98	6	V101	BACKWALL	E	20		X			9 2.000														9 2		9 2		1350
98	5	V102	BACKWALL	E	20		X			8 8.000														8 8		8 8		885
20	6	V103	ORN. COLUMN	E	20		X			2 8.000														12 8		12 8		381
4	6	V104	ORN. COLUMN	E	20		X			6 9.000														6 9		6 9		41
16	6	V105	WING	E	20		X			4 2.000														4 2		4 2		100
4	6	V106	WING		20		X			3 6.000														3 6		3 6		21
18	6	V107	WING		20		X	V	2	5 1.000														5 1		5 1		
			INCREMENT =							7 8.000														7 8		7 8		172
			3.875 INCH																									
22	6	V108	WING		20		X			7 5.000														7 5		7 5		245
16	6	V109	WING		20		X	V	2	2 8.000														2 8		2 8		
			INCREMENT =							5 0.000														5 0		5 0		92
			3.500 INCH																									
14	6	V110	WING		20		X			5 0.000														5 0		5 0		105
12	6	V111	WING FOOTING		20		X			6 11.000														6 11		6 11		125
18	6	V112	WING		20		X	V	2	4 11.000														4 11		4 11		
			INCREMENT =							7 6.000														7 6		7 6		168
			3.875 INCH																									
24	6	V113	WING		20		X			7 3.000														7 3		7 3		261
16	6	V114	WING		20		X	V	2	2 7.000														2 7		2 7		
			INCREMENT =							4 8.000														4 8		4 8		87
			3.625 INCH																									
18	4	V115	ORN.COLUMN	E	20		X			3 0.000														3 0		3 0		36
8	4	V116	ORN.COLUMN	E	20		X			5 10.000														5 10		5 10		31
5	4	V117	ORN.COLUMN	E	20		X			6 8.000														6 8		6 8		22
5	4	V118	ORN.COLUMN	E	20		X			6 9.000														6 9		6 9		23
20		W5W1	A B WELLS		22		X			18.000		9.125												26 1		26 1		88





STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

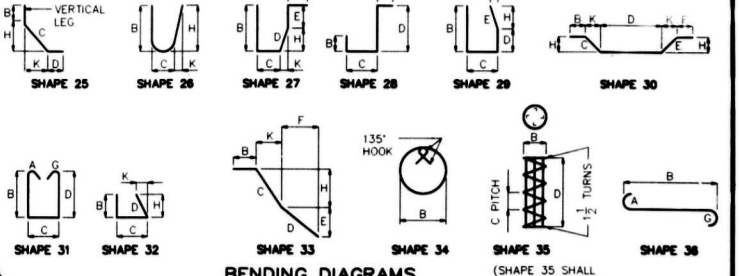
END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

3-27-95



(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BENDING DIAGRAMS
JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 46 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

FOR INFORMATION ONLY

A51801, Sht. 289

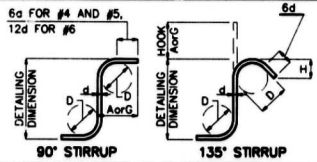
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
SUPERSTRUCTURE																		
12	4-P1	END POST	E	13	S			1	11.000	1 11.000	1 11.000	1 11.000				8 5	8 2	65
40	4-P2	ORN. COLUMN	E	13	S			2	7.000	2 7.000	2 7.000	2 7.000				11 1	10 10	289
864	5-R1	BARRIER CURB	E	19				2	6.000	3.500						2 10	2 8	1571
864	5-R2	BARRIER CURB	E	19				2	6.125	3.500				6.000	3.000	2 10	2 8	1571
864	5-R3	BARRIER CURB	E	19					17.000	6.000						1 11	1 9	1029
864	5-R4	BARRIER CURB	E	27						6.000	11.125	7.000	12.000	9.125	6.375	3 0	2 10	1665
36	5-R5	BARRIER CURB	E	20				36	6.000							36 6	36 6	1452
24	5-R6	BARRIER CURB	E	20				9	6.000							9 6	9 6	242
48	5-R7	BARRIER CURB	E	20				30	5.000							30 5	30 5	1523
12	5-R8	BARRIER CURB	E	20				24	6.000							24 6	24 6	309
12	4-R9	C.I.P. CAP	E	20				36	5.000							36 5	36 5	308
99	5-R10	PED. WALL	E	20				3	2.000							3 2	3 2	317
8	4-R11	C.I.P. CAP	E	20				9	6.000							9 6	9 6	52
12	4-R12	C.I.P. CAP	E	20				39	11.000							39 11	39 11	320
4	4-R13	C.I.P. CAP	E	20				24	6.000							24 6	24 6	66
864	4-R14	C.I.P. CAP	E	15					15.000	11.000				15.00	1.500	2 2	2 1	784
8	5-R15	LIGHT STD.	E	10					8.000	2 9.500	14.000					7 5	7 0	44
4	5-R16	LIGHT STD.	E	10					8.000	2 9.500	7.250					9 10	9 6	27
12	6-R17	LIGHT STD.	E	20				3	5.000							3 5	3 5	62
4	5-R18	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	22
8	4-R19	LIGHT STD.	E	15					20.500	22.500	20.500	14.500	14.500	14.500	14.500	5 4	5 3	21
4	5-R20	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 11	5 8	24
8	4-R21	LIGHT STD.	E	31	S				18.500	22.500	18.500					5 9	5 7	22
10	4-R22	LIGHT STD.	E	20				1	7.000							1 7	1 7	11
2	4-R23	LIGHT STD.	E	15				2	6.500	2 5.000	2 6.500	21.500	21.500	21.500	21.500	7 6	7 6	10
3	4-R101	PED. WALL	E	20				18	6.000							18 6	18 6	37
3	4-R102	PED. WALL	E	20				18	11.000							18 11	18 11	38
3	4-R316	PED. WALL	E	20				28	7.000							28 7	28 7	57
3	4-R317	PED. WALL	E	20				28	1.000							28 1	28 1	5
976	6-S1	SLAB	E	20				42	10.000							42 10	42 10	62787
856	5-S2	SLAB	E	20				37	9.000							37 9	37 9	33704
136	6-S3	SLAB	E	20				40	0.000							40 0	40 0	817
468	5-S4	SLAB	E	20				4	4.000							4 4	4 4	2249
992	5-S5	SLAB	E	20				11	7.000							11 7	11 7	11981
40	6-S6	SLAB	E	20			V	4	4 0.000							4 0	4 0	
		INCREMENT = 49.000 INCH						40	9.000							40 9	40 9	1344
136	6-S7	SLAB	E	20				24	3.000							24 3	24 3	5026
512	4-S30	MEDIAN	E	10						9.000	18.000					3 0	2 10	966
1	4-S31	MEDIAN	E	7				3	7.000	3 8.000						9 3	9 2	6
24	4-S32	MEDIAN	E	20				31	5.000							31 5	31 5	504
2	4-S33	MEDIAN	E	15						1 6.000	2 6.000	1 8.000	1 10.00			4 0	4 0	5
24	4-S34	MEDIAN	E	20				33	4.000							33 4	33 4	534
8	4-S35	MEDIAN	E	20				7	7.000							7 7	7 7	30

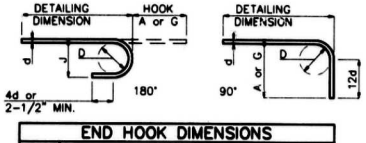
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
OPTIONAL MEDIAN ANCHORING SYSTEM																		
2024	4-S36	MEDIAN	E	19					6.000	7.000						13	12	984
512	4-S37	MEDIAN	E	10						4.000	18.000					2 2	2 0	984
64	4-S101	SIDEWALK	E	20				32	7.000							32 7	32 7	1363
16	6-S102	SIDEWALK	E	20				33	3.000							33 3	33 3	799
64	4-S103	SIDEWALK	E	20				33	4.000							33 4	33 4	1428
16	6-S104	SIDEWALK	E	20				34	2.000							34 2	34 2	821
992	4-S105	SIDEWALK	E	30					14.000	12.250	6 6.000				10.000	7.000	6 8	8 7	5628
499	4-S106	SIDEWALK	E	28						14.000	12.000	14.000				3 4	3 2	1057
18	5-S107	LT. POLE BEAM	E	20				8	2.000							8 2	8 2	153
18	6-S108	LT. POLE BEAM	E	30				3	0.000	11.500	7 5.000				9.375	6.500	11 6	11 4	497
36	4-S109	LT. POLE BEAM	E	10	S				4.500	11.000	11.000	4.500				3 6	3 2	76
12	4-S110	LT. POLE BEAM	E	13	S				11.000	11.000	11.000	11.000				4 5	4 2	33
32	6-V3	ORN. COLUMN	E	20				9	6.000							9 6	9 6	457
SLAB ON ABUTMENT																		
172	6-S300	SLAB	E	20				24	6.000							24 6	24 6	11329
72	4-S301	SLAB	E	20				24	6.000							24 6	24 6	1187
132	5-S302	SLAB	E	20				26	3.000							26 3	26 3	3614
34	4-S303	SLAB	E	20				44	6.000							44 6	44 6	1015
34	4-S304	SLAB	E	20				8	2.000							8 2	8 2	188
2	4-S305	ORN. COLUMN	E	13	S			3	9.000	3 10.000	3 9.000	3 10.000				15 11	15 8	21
8	4-S306	ORN. COLUMN	E	20				3	9.000							3 9	3 9	20
		END OF LIST																

TWO ADDITIONAL S2, S7, S300 AND S301 ARE INCLUDED IN THE BAR BILL FOR TESTING THE OPTIONAL MEDIAN ANCHORING SYSTEM REPLACES S30 BARS



90° STIRRUP 135° STIRRUP



STIRRUP HOOK DIMENSIONS GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

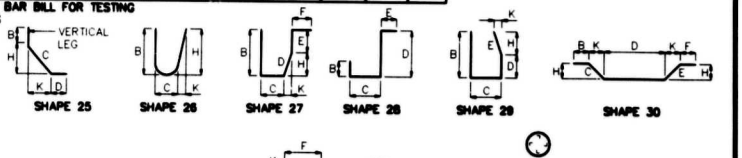
NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

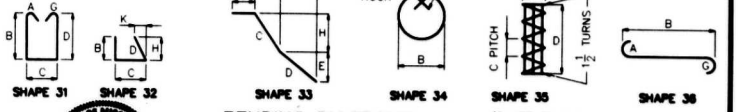
END HOOK DIMENSIONS				
BAR SIZE	D	ALL GRADES 180° HOOKS		90° HOOKS
	(IN.)	A OR G	J	A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

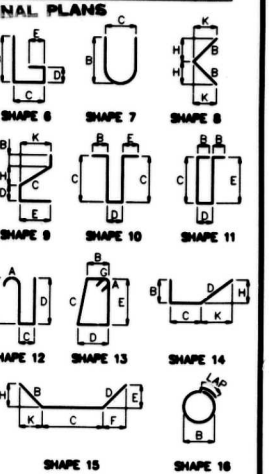
NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

REVISED 10-27-95





(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)



STATE	PROJ. NO.	SHEET NO.
MO.	J4U0118	160

FINAL PLANS

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 49 OF 50

A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

24 to 1

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
ABUTMENT NO. 3																		
5	5-F300	BACKWALL		15	X				15.000	4 6.000	15.000	10.625	10.625	11.750	9.250	7 2	7 1	37
5	5-F301	BACKWALL		15	X				15.000	5 2.000	15.000	10.625	10.625	9.250	11.750	7 8	7 7	40
8	8-H300	BEAM		17	X				43 10.000							44 9	44 9	956
8	8-H301	BEAM		17	X				22 5.000							23 4	23 4	496
8	8-H302	BEAM		20	X				23 8.000							23 8	23 8	506
4	8-H303	BEAM		20	X				30 2.000							30 2	30 2	322
4	8-H304	BEAM		20	X				21 3.000							21 3	21 3	227
4	8-H306	BEAM		20	X				43 10.000							43 10	43 10	263
2	8-H308	BEAM		20	X				18 9.000							18 9	18 9	56
8	8-H307	APRON		20	X				43 10.000							43 10	43 10	527
16	8-H308	APRON		20	X				31 4.000							31 4	31 4	753
2	4-H309	WING		20	X				7 8.000							7 8	7 8	10
28	8-H310	APRON		10	X					6 0.000	2 7.000					14 7	14 3	599
4	8-H311	BACKWALL		20	X				31 0.000							31 0	31 0	186
2	8-H312	BACKWALL		20	X				43 9.000							43 9	43 9	131
8	4-H313	BACKWALL		20	X				43 9.000							43 9	43 9	175
12	4-H314	BACKWALL		20	X				29 10.000							29 10	29 10	239
14	4-H315	ORN. COLUMN	E	21	X				3 6.000		12.000			3 5.625	5.125	4 6	4 5	41
14	4-H316	ORN. COLUMN	E	21	X				3 6.000	12.000				3 5.625	5.125	4 6	4 5	41
16	5-H317	ORN. COLUMN	E	19	X				4 1.000	12.000						5 1	5 0	83
2	4-H318	ORN. COLUMN	E	20	X				7 0.000							7 0	7 0	9
16	8-H319	APPR. BEAM		17	X				41 7.000							42 3	42 3	1015
4	8-H320	APPR. BEAM		20	X				41 7.000							41 7	41 7	250
10	8-H321	APPR. BEAM		20	X				22 8.000							22 8	22 8	341
1	4-H322	PVMT. REST		20	X				34 0.000							34 0	34 0	23
2	4-H323	PVMT. REST		20	X				26 8.000							26 8	26 8	36
4	5-H324	WING	E	20	X				9 0.000							9 0	9 0	36
6	5-H325	WING		20	X				9 0.000							9 0	9 0	56
2	5-H326	WING		20	X				31 10.000							31 10	31 10	66
8	5-H327	WING		20	X	V	2		22 10.000							22 10	22 10	
		INCREMENT =							31 10.000							31 10	31 10	228
		36.000 INCH																
2	4-H328	WING		20	X				17 1.000							17 1	17 1	23
2	4-H329	WING		20	X				12 7.000							12 7	12 7	17
2	4-H330	WING		20	X				8 1.000							8 1	8 1	11
12	4-H331	WING		20	X				5 6.000							5 6	5 6	44
2	4-H332	WING		20	X				12 2.000							12 2	12 2	16
2	4-H333	WING		20	X				16 8.000							16 8	16 8	22
8	5-H334	WING		20	X	V	2		22 4.000							22 4	22 4	
		INCREMENT =							31 4.000							31 4	31 4	224
		36.000 INCH																
2	5-H335	WING		20	X				31 4.000							31 4	31 4	65
14	4-H336	ORN. COLUMN	E	20	X				8 0.000							8 0	8 0	75

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
4	7-T300	WING		20		X			6 0.000							6 0	6 0	48
2	7-T301	WING		14		X				29 7.875	2 6.000				2 6.375	10.125	33 7	33 6	7
2	7-T302	WING		14		X				30 7.000	3 0.000				2 10.125	11.375	33 7	33 6	7
48	4-U300	APRON		10	S	X					2 0.000	1 5.000					5 5	5 3	168
32	8-U301	BEAM		13	S	X				4 8.500	2 8.000	4 10.500	2 8.000				15 10	15 6	517
34	8-U302	BEAM		13	S	X				4 8.375	2 10.000	4 10.500	2 10.000				16 2	15 10	591
28	8-U303	BEAM		13	S	X				4 8.125	3 2.125	4 10.500	3 2.000				16 10	16 6	462
28	4-U304	BEAM		10	S	X						6.000	4 8.500				5 9	5 7	97
84	4-U305	PVMT. REST		10	S	X						17.500	6.000				3 5	3 3	182
92	8-U306	APPR. BEAM		13	S	X				2 3.000	2 8.000	2 3.000	2 6.000				10 5	10 1	677
109	8-U307	APPR. BEAM	E	10	S	X					3 6.000	2 3.250					9 3	9 1	947
10	4-U308	END POST		13	S	X				23.000	23.000	23.000	23.000				8 5	8 2	56
52	4-U309	ORN. COLUMN	E	19	S	X				2 6.500	2 6.500						5 1	5 0	174
96	6-V300	BACKWALL	E	20		X				8 11.000							8 11	8 11	1286
98	5-V301	BACKWALL	E	20		X				8 6.000							8 6	8 6	851
18	4-V302	ORN. COLUMN	E	20		X				3 0.000							3 0	3 0	38
134	5-V303	APRON		20		X				6 3.000							6 3	6 3	874
20	8-V304	ORN. COLUMN		20		X				9 9.000							9 9	9 9	293
16	8-V305	END POST	E	20		X				5 3.000							5 3	5 3	126
6	5-V306	WING		20		X	V	2		4 0.000							4 0	4 0	
		INCREMENT =								4 9.000							4 9	4 9	40
		4.500 INCH																	
30	4-V307	WING		20		X	V	2		5 4.000							5 4	5 4	
		INCREMENT =								12 8.000							12 8	12 8	180
		6.250 INCH																	
4	4-V308	WING		20		X				14 10.000							14 10	14 10	40
4	4-V309	WING		20		X				15 1.000							15 1	15 1	40
8	4-V310	ORN. COLUMN	E	20		X				5 10.000							5 10	5 10	31
5	4-V311	ORN. COLUMN	E	20		X				6 8.000							6 8	6 8	22
5	4-V312	ORN. COLUMN	E	20		X				6 11.000							6 11	6 11	23
30	4-V313	WING		20		X	V	2		5 7.500							5 8	5 8	
		INCREMENT =								12 11.000							12 11	12 11	186
		6.250 INCH																	
6	5-V314	WING		20		X	V	2		4 5.000							4 5	4 5	
		INCREMENT =								5 1.000							5 1	5 1	30
		4.000 INCH																	
20	6-V315	ORN. COLUMN	E	20		X				10 1.000							10 1	10 1	303
4	6-V316	ORN. COLUMN	E	20		X				6 11.000							6 11	6 11	42
20	W5W1	A.B. WELLS		22		X				18.000	9.125						26 1	26 1	88

STATE	PROJ. NO.	SHEET NO.
MO.	J4400118	199

FINAL PLANS

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

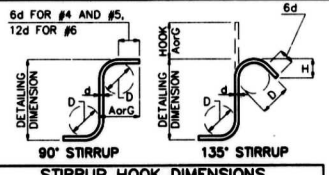
SHAPE 12 SHAPE 13 SHAPE 14

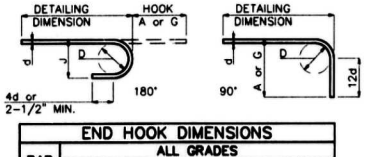
SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 (VERTICAL LEG) SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24





STIRRUP HOOK DIMENSIONS

GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

END HOOK DIMENSIONS

ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 (135° HOOK) SHAPE 35 (3" PITCH, 1½ TURNS) SHAPE 36

(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA	3/95
TRACED BY:	JTC	3/95
CHECKED BY:	DJM	3/95

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 48 OF 50

A-5180

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
INTERMEDIATE BENT NO. 2																												
86	5	D200	FOOTING		20		X			10	2.000													10	2	10	2	564
66	9	D201	FOOTING		18		X			13	8.000													18	2	18	2	3739
18	9	H200	BEAM		17		X			49	7.500													50	10	50	10	3111
18	9	H201	BEAM		17		X			45	5.000													46	8	46	8	2856
18	10	H202	BEAM		20		X			48	2.000													48	2	48	2	3316
4	8	H203	BEAM		20		X			48	10.000													48	10	48	10	293
4	8	H204	BEAM		20		X			40	4.000													40	4	40	4	242
16	10	H205	BEAM		20		X			43	3.000													43	3	43	3	2976
12	4	H206	BRG. BASE		20		X			3	3.000													3	3	3	3	36
24	7	H207	BEAM		19		X	V	4	3	9.000	2	6.000											6	3	6	1	
			INCREMENT =							5	5.000	2	6.000											7	11	7	9	339
			4.00 INCH																									
224	4	P200	COLUMN		13	S	X	V	16	2	0.000	2	9.500	2	0.000	2	9.500							10	4	10	1	
										3	1.000	4	6.625	3	1.000	4	6.625							16	0	15	9	1932
			INCREMENT =								1.000		1.625		1.000		1.625											
178	4	P201	COLUMN		10	S	X					3	9.000	5	3.000									12	9	12	7	1479
104	4	P202	COLUMN		10	S	X					4	9.000	1	4.000									10	4	10	2	707
32	4	P203	COLUMN		10	S	X					3	9.000	4	6.000									12	0	11	10	253
24	5	R200	COLUMN	E	20		X			5	8.000													5	8	5	8	142
48	5	R201	COLUMN	E	15		X				12.000		12.250	1	8.250		11.625		16.625		9.875		6.875	3	9	3	8	184
48	5	R202	COLUMN	E	15		X					2	0.000	2	0.000		23.875		2.500					4	0	3	11	196
288	6	U200	BEAM		13	S	X			2	5.750	3	10.375	3	5.000	3	9.000							14	10	14	5	6238
116	5	U201	BEAM		21	S	X				13.375	4	9.000		12.000						13.000		3.250	8	10	8	8	807
28	4	U202	BRG. BASE		10	S	X						12.000	4	3.000									8	3	8	1	114
96	10	V200	COLUMN		36		X			19	4.000													22	2	22	2	9158
96	10	V201	COLUMN		15		X			4	2.000	13	3.000							2	4.750	3	5.000	17	5	17	5	7196
20	W	W1	A B WELLS		22		X			2	1.000		9.125											33	2	33	2	110

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	(E) EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.

STATE | PROJ. NO. | SHEET NO.
MO. J4400118 | 15B

FINAL PLANS

SHAPE 6 SHAPE 7 SHAPE 8

SHAPE 9 SHAPE 10 SHAPE 11

SHAPE 12 SHAPE 13 SHAPE 14

SHAPE 15 SHAPE 16

SHAPE 17 SHAPE 18 SHAPE 19 (VERTICAL LEG) SHAPE 20

SHAPE 21 SHAPE 22 (SPOT WELD AASHTO M32 SIZE W5 WIRE (TYP.), 3" PITCH, 1½ TURNS)

SHAPE 23 SHAPE 24

6d FOR #4 AND #5.
12d FOR #6

90° STIRRUP 135° STIRRUP

STIRRUP HOOK DIMENSIONS
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

DETAILING DIMENSION, HOOK A or G, 4d or 2-1/2" MIN., 180°, 90°, 12d

END HOOK DIMENSIONS
ALL GRADES

BAR SIZE	D (IN.)	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

SHAPE 25 (VERTICAL LEG) SHAPE 26 SHAPE 27 SHAPE 28 SHAPE 29 SHAPE 30

SHAPE 31 SHAPE 32 SHAPE 33 SHAPE 34 (135° HOOK) SHAPE 35 (SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.) SHAPE 36

BENDING DIAGRAMS

JACKSON COUNTY

REINFORCING SCHEDULE

SHEET NO. 47 OF 50

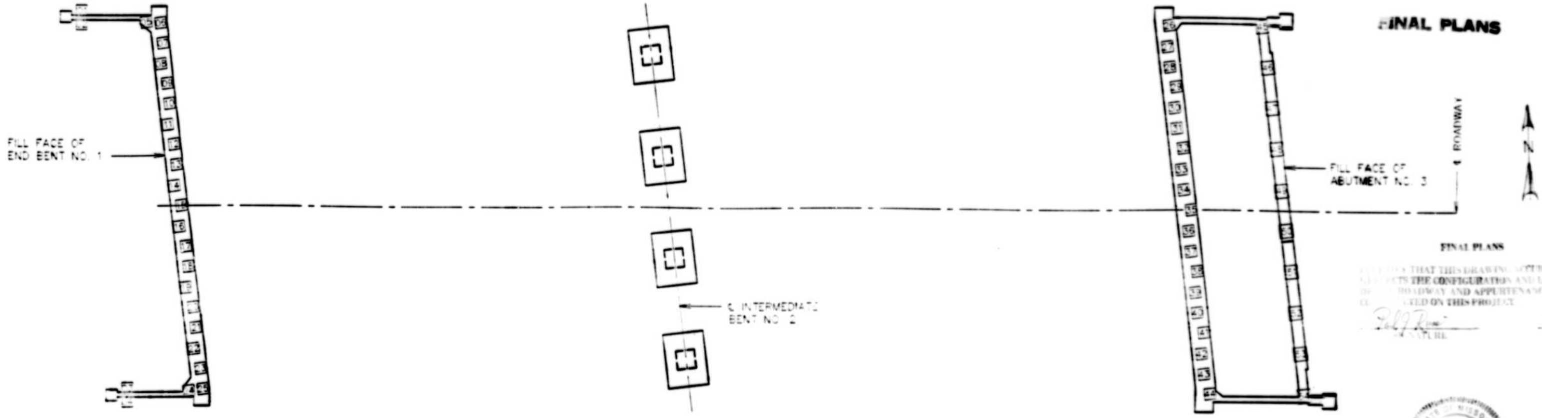
A-5180

BUCHER, WILLIS & RATLIFF ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	DMA 3/95
TRACED BY:	JTC 3/95
CHECKED BY:	DJM 3/95

STATE	PROJ. NO.	SHEET NO.
MO.	J4U0011B	161

FINAL PLANS



PART PLAN SHOWING
PILE NUMBERING FOR RECORDING
"AS-BUILT" PILE DATA

FINAL PLANS
[illegible] THAT THIS DRAWING ACCURATELY [illegible] THE CONFIGURATION AND LOCATION [illegible] ROADWAY AND APPURTENANCES [illegible] ON THIS PROJECT
[signature] 9-14-99
SIGNATURE DATE

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			END BENT NO. 1
1	30.4	29.6	Wingwall, All Piles driven to practical refusal
2	32.4	82.8	" Used HP 12 x 53 piles
3	26.0	47.8	"
4	25.8	51.0	"
5	28.6	158.7	
6	31.3	138.1	Battered
7	31.7	138.1	Battered
8	28.7	150.3	
9	30.7	130.8	Battered 4/12
10	31.1	130.8	Battered 4/12
11	28.7	142.8	
12	31.0	130.8	Battered 4/12
13	31.1	138.1	Battered 4/12
14	28.9	142.8	
15	31.0	146.1	Battered
16	29.3	142.8	
17	31.3	130.8	Battered 4/12
18	31.2	138.1	Battered 4/12
19	29.6	136.0	
20	31.4	130.8	Battered 4/12
21	31.6	138.1	Battered 4/12
22	29.8	158.7	
23	31.6	130.8	Battered 4/12
24	30.2	142.8	
25	31.8	130.8	Battered

755.2 Lin. Ft. Total for Bent 1

"AS BUILT" PILE DATA

PILE NO.	LENGTH IN PLACE (FT.)	COMPUTED BEARING (TONS)	REMARKS
			ABUTMENT NO. 3
26	35.1	150.3	
27	30.7	138.3	Battered 3/12
28	36.0	138.3	Battered 3/12
29	29.6	168.0	
30	30.6	131.4	Battered 3/12
31	30.7	138.3	Battered 3/12
32	29.7	129.8	Battered 3/12
33	30.9	138.3	Battered 3/12
34	30.6	131.4	Battered 3/12
35	29.7	158.7	
36	33.2	138.3	Battered 3/12
37	30.8	146.0	Battered 3/12
38	29.7	150.3	
39	30.7	146.0	Battered 3/12
40	30.6	131.4	Battered 3/12
41	29.6	158.7	
42	30.7	138.3	Battered 3/12
43	30.5	131.4	Battered
44	30.0	150.3	
45	33.8	95.2	
46	34.1	79.3	
47	34.1	95.2	
48	34.2	102.0	
49	34.8	109.9	
50	34.5	142.8	
51	34.4	109.9	
52	34.6	158.7	
53	34.7	124.2	
54	34.6	136.0	

933.2 Lin. Ft. total for Bent 3

NOTE: THIS SHEET TO BE COMPLETED BY MHTD CONSTRUCTION PERSONNEL.

NOTE: INDICATE IN REMARK COLUMN:
A.) IF PILING WERE DRIVEN TO PRACTICAL REFUSAL.
B.) PILE BATTER IF OTHER THAN SHOWN ON BENT DETAIL SHEET.
C.) TYPE OF PILING USED.

Note: All piling were driven to practical refusal

[signature] 3-27-95

BWR BUCHER, WILLIS & RATLIFF
ENGINEERS • PLANNERS • ARCHITECTS

DRAWN BY:	AFR	4/93
TRACED BY:	TWM	3/95
CHECKED BY:	DMA	3/95

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

JACKSON COUNTY

AS-BUILT PILE DATA

SHEET NO. 50 OF 50 A-5180

24 to 1