

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
5	MO.		19	63	

U.S. Survey TW 43N RGE. 5E
1974

Design Specifications: A.A.S.H.T.O.-1983 and Interim 1984 and 1985 Load Factor Design. Load Factor Design Substructure.

Design Loading:
H920-44, 35%_{sq.ft.} Future Wearing Surface
Earth 120_{cuft.} Equivalent Fluid Pressure 30%_{cuft.}
Fatigue Stress - Case II

Design Unit Stresses:

Class B Concrete (substructure) $f'_c = 3,000$ psi
Class B2 Concrete (superstructure) $f'_c = 4,000$ psi
Reinforcing Steel (substructure) Grade 60 $f_y = 60,000$ p.s.i.
Reinforcing Steel (superstructure) Grade 60 $f_y = 60,000$ p.s.i.
Structural Carbon Steel $f_y = 36,000$ psi.
Structural Steel (A.S.T.M. A572) Grade 50 $f_y = 50,000$ p.s.i.
Steel Pile $f_b = 30,000$ p.s.i.

Fabricated Steel:

Field connections, High Strength Bolts $\frac{3}{4}"$, holes $\frac{13}{16}"$ & except as noted. Turn of Nut Method of tensioning high strength bolts will be permitted.

Paint Item:

System B by contractor in accordance with Std. Spec. 712.12.
(Color of the final field coat for System B shall be green).

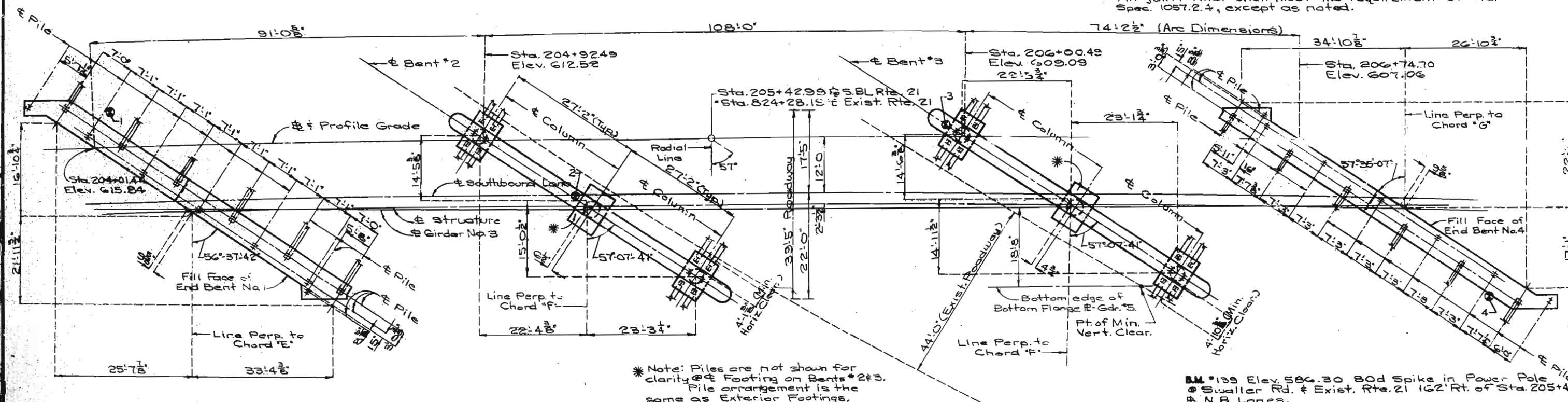
Reinforcing Steel:

Minimum clearance to reinforcing steel shall be $1\frac{1}{2}"$ unless otherwise shown.
All reinforcing bars in tops of substructure beams or caps shall be spaced to clear anchor bolts for bearings by at least $\frac{1}{2}"$.
All joint filler shall meet the requirement of Std. Spec. 1057.2.4, except as noted.



Note: For passive pressure fill requirements, see special provisions.
Roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25' in back of the fill face of the end bents before piles are driven for any bents falling within the embankment section.

Construction Clearance:
A minimum vertical clearance of 13'6"
from crown of existing lanes and a
minimum lateral clearance of 28'0"
centered on existing lanes shall be maintained
during construction.



Note: For Boring Data see sheet N. 3.
 * Indicates location of boring.
 For Estimated Quantities and Pile
 Data see sheet No. 2.
 All bents are parallel to a line skewed 37° RA
 from a radial line at Sta 203+42.99
 For location of Chords F and G, see sheet No. 4

PLAN

Curve Data (S.E. Lanes)
P.I. Sta. 210+73.85
 $\Delta = 10^{\circ}38'$ Rt.
D = $0^{\circ}30'$
T = 1,066.39'
L = 2,126.67'
R = 11,459.16'
S.E. = None
W. = None

B.M. #139 Elev. 586.30 80d Spike in Power Pole
 @ Swaller Rd. & Exist. Rte. 21 162' Rt. of Sta. 205+48
 @ N.B. Lanes.

BRIDGE: S.B. LANE OVER EXISTING RTE. 21

STATE ROAD FROM ROUTE 141 TO ROUTE M

ABOUT 4.2 MILES NORTH OF OTTO

PROJECT NO.

JOB NO. 6-U-21-256C

JEFFERSON

STA. 204+01.44

RTE. 21

COUNTY

STD. 611.60**STD. 706.35**

A-2957

DESIGNED SEPT. 1980
 DETAILED OCT. 1980
 CHECKED AUG. 1986

Note This drawing is not to scale. Follow dimensions.

SEE FINAL PLANS

Sheet No. 1 of 28.

ESTIMATED QUANTITIES				
ITEM		SUBSTR	SUPERSR	TOTAL
Class I Excavation	Cu.Yd.	250		250
Structural Steel Pile (HP10x42)	Lin. Ft.	1976		1976
Class B Concrete	Cu.Yd.	2425		2425
() Slab On Steel, See Special Provisions	Sq.Yd.		1272	1272
Type "N" PTFE Bearings	Each	20		20
Elastomeric Expansion Joint Seal (3.0 in.)	Lin.Ft.		72	72
Reinforcing Steel	Lb.	39290		39290
Fabricated Structural Carbon Steel	Lb.		211550	211550
Fabricated Structural Low Alloy Steel, A-572	Lb.		67500	67500
Painting (System B) Green	Ton.		138.7	138.7
Safety Barrier Curb	Lin.Ft.		608	608
Pile Point Reinforcement	Each	50		50
Abutment Vertical Drain	Lump Sum	1		1
Reinforcing Steel Epoxy Coated	Lb.	2540		2540

Note: Concrete above upper construction joint in backwall at end Bent No. 1 is included with Class B (Substructure) quantities.
The prestressed panels quantities are not included in the table of estimated quantities for alternate slabs.

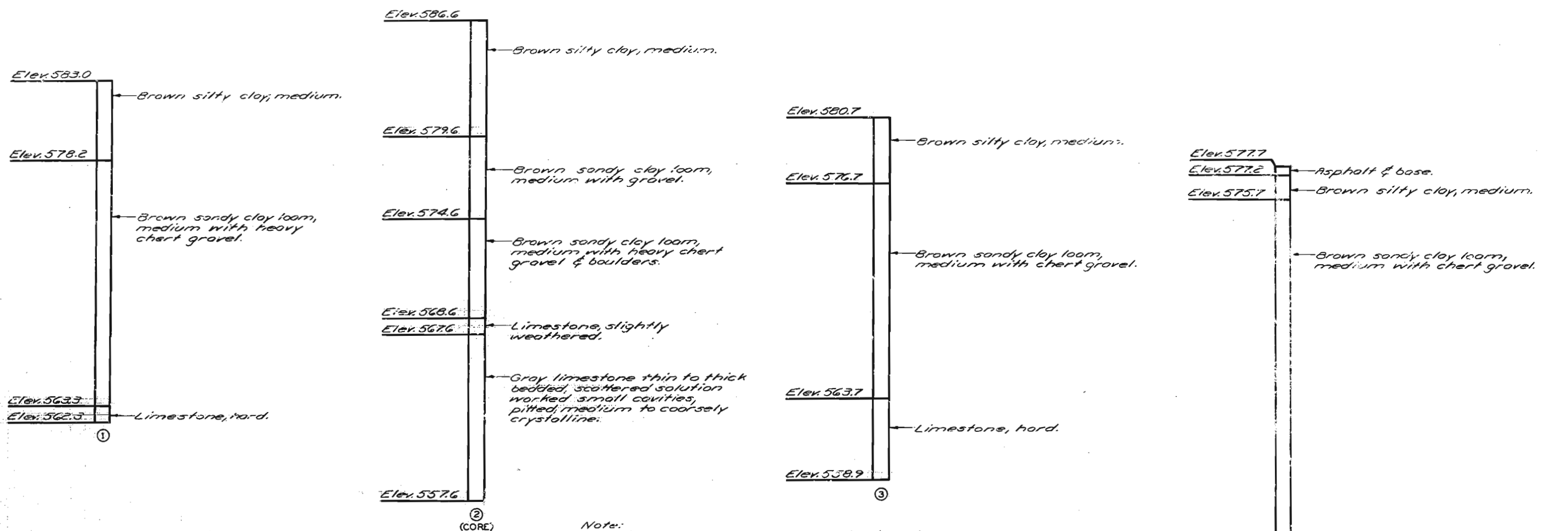
ESTIMATED QUANTITIES FOR ALTERNATE SLABS			
TYPE OF SLABS	SLAB ON STEEL		
	REINF. LBS.		CONC.
	EPOXY	PLAIN	CU. YD.
Cast In-Place Conventional Forms	90550	—	313.4
Precast Panel Forms	59770	—	224.7
Stay-In-Place Forms	30590	—	293.9

The table of Estimated Quantities for Alternate Slabs 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 Alternate Slab used.
Corrugation of S.I.P. slabs,
** Does not include reinforcing bars used as bar supports.
Precast panel quantities are based on skewed and panels.
See Special Provisions for alternate methods of forming slabs.

PILE DATA										
BENT NO.	1		2		3		4			
LOCATION	BRG.	WING	LT.	RT.	LT.	RT.	LT.	RT.	BRG.	WING
Pile Type and Size	HP10x42									
Number	13	1	6	6	6	6	6	6	13	1
Approximate Length Ft.	45	50	28	15	20	18	22	22	42	45
Design Bearing Tons	46	6	43	45	45	51	51	51	46	6
Hammer Energy Required Ft.Lbs.	12500	1000	10,500	10,500	10,300	11,900	11,900	11,900	12,500	1,000

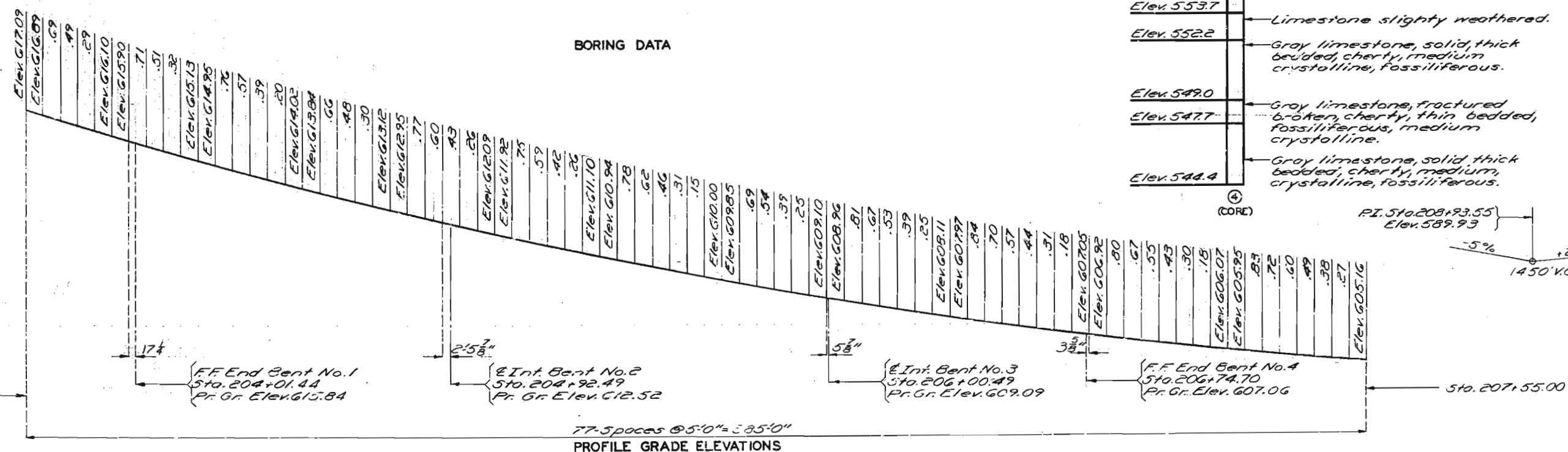
Minimum energy requirement of hammer based on plan length and design bearing value of piles.
All pile to be driven to practical refusal.
Manufactured pile point reinforcement shall be used on piles at bents No. 2, 3 & 4. See Special Provisions.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		79	65	



Note: For location of borings see sheet No. 1.

BORING DATA



DETAILED SEPT. 1980
CHECKED MAY 1985

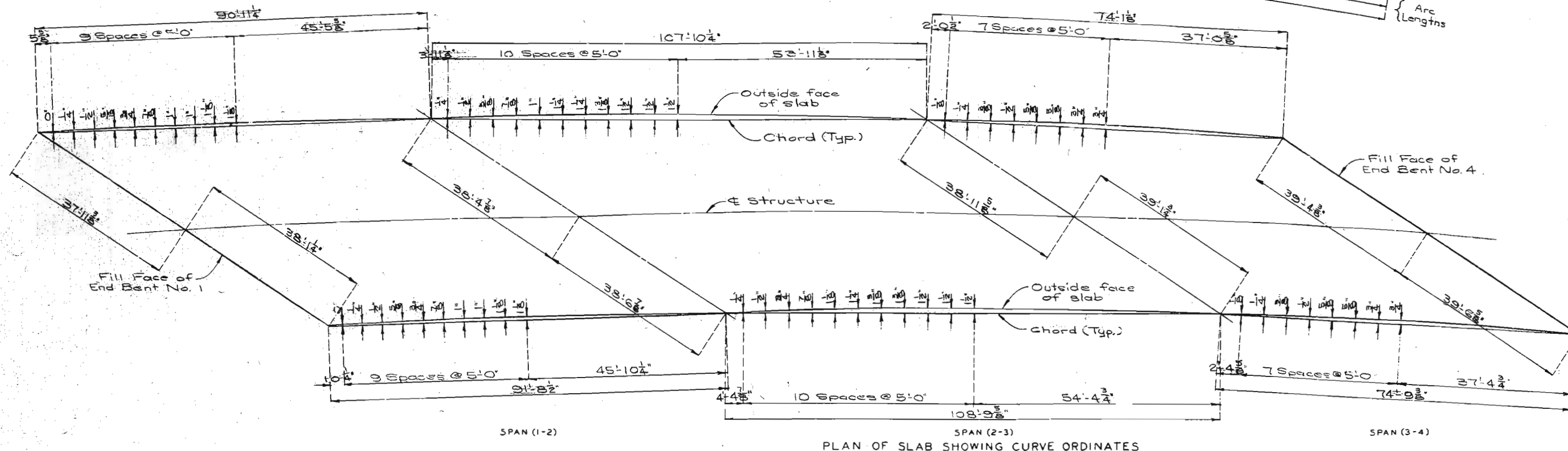
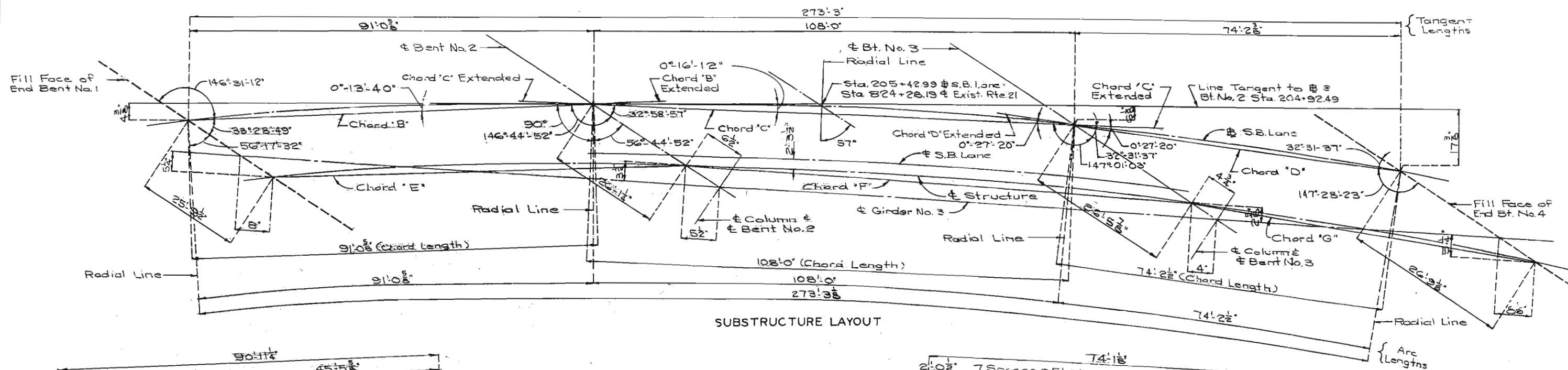
Note: This drawing is not to scale. Follow dimensions.

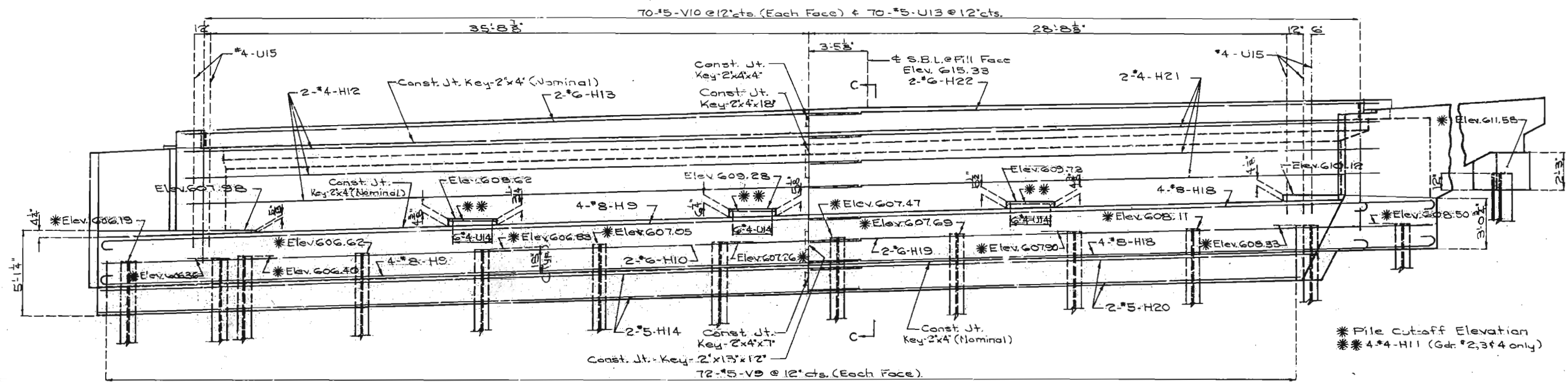
Sheet No. 3 of 28.

JEFFERSON COUNTY

A-2957

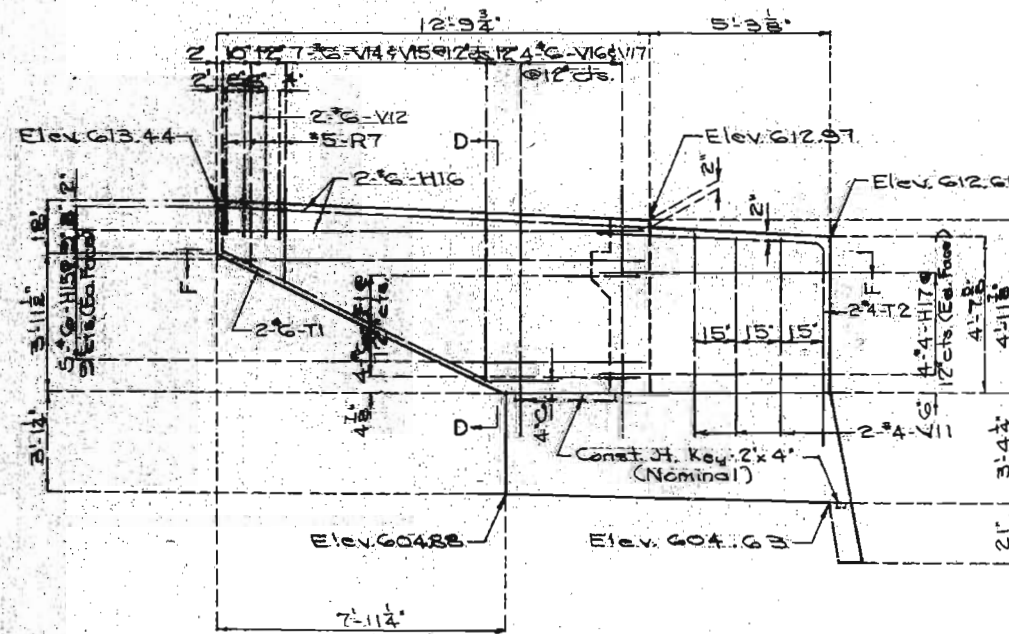
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	66	



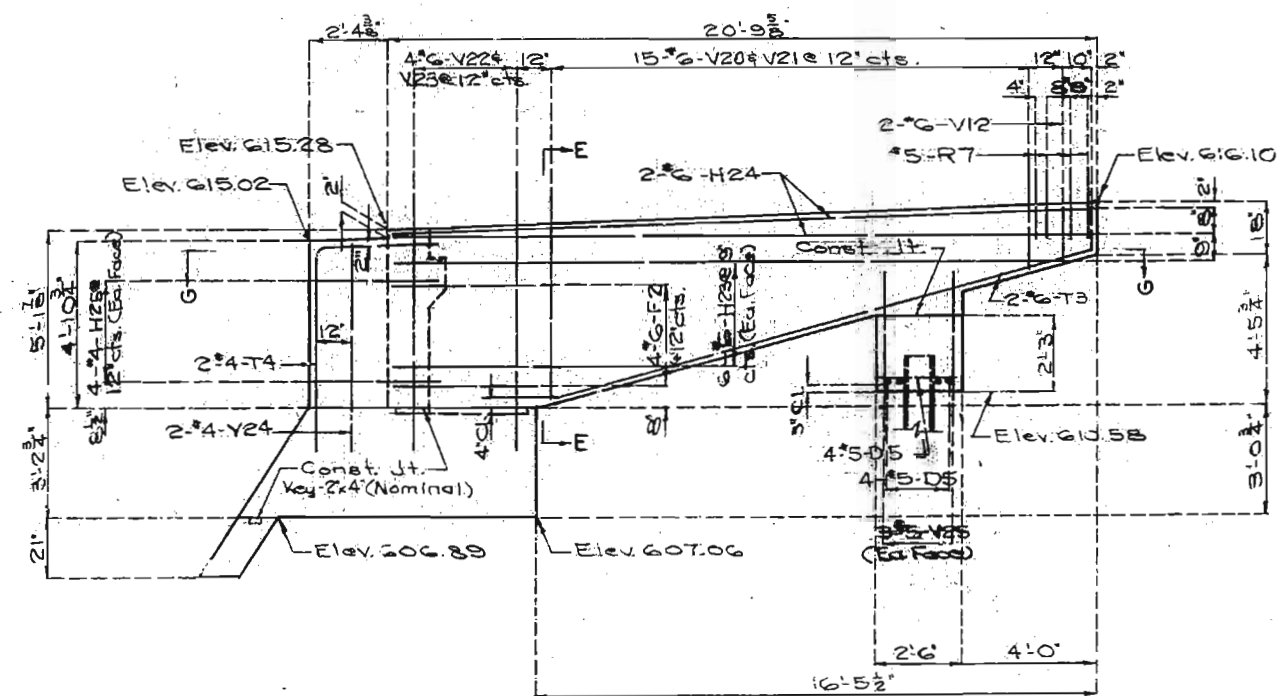


ELEVATION

Note: For Section C-C, D-D, E-E, F-F & G-G see sheet No. 7.
For location of Elevation A-A & B-B see sheet No. 5.
For Detail of Steel Pile Splice see sheet No. 7.

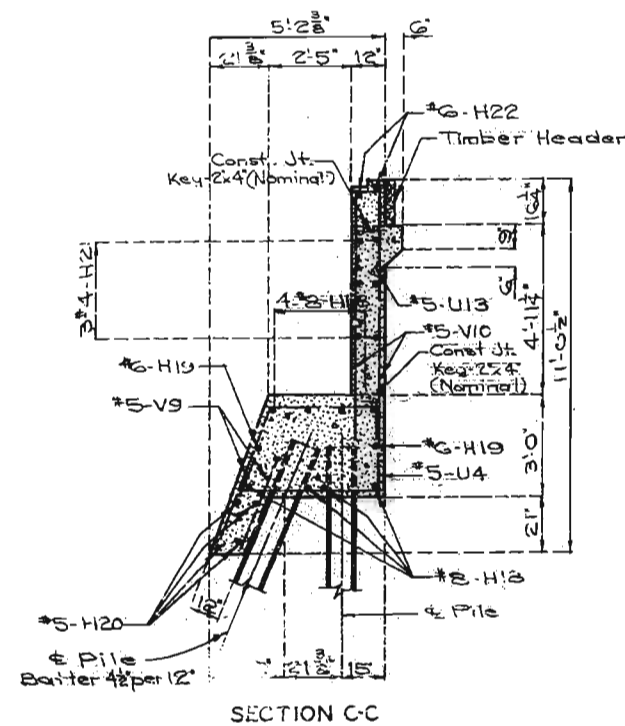


ELEVATION A-A

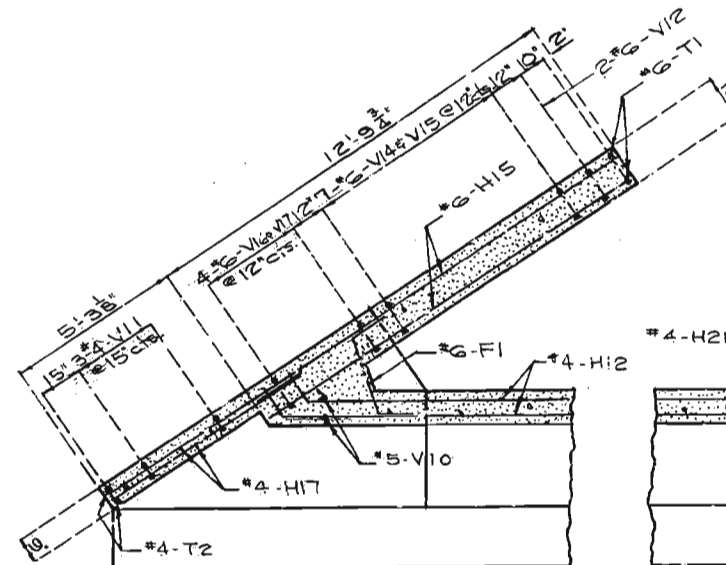


ELEVATION B-B

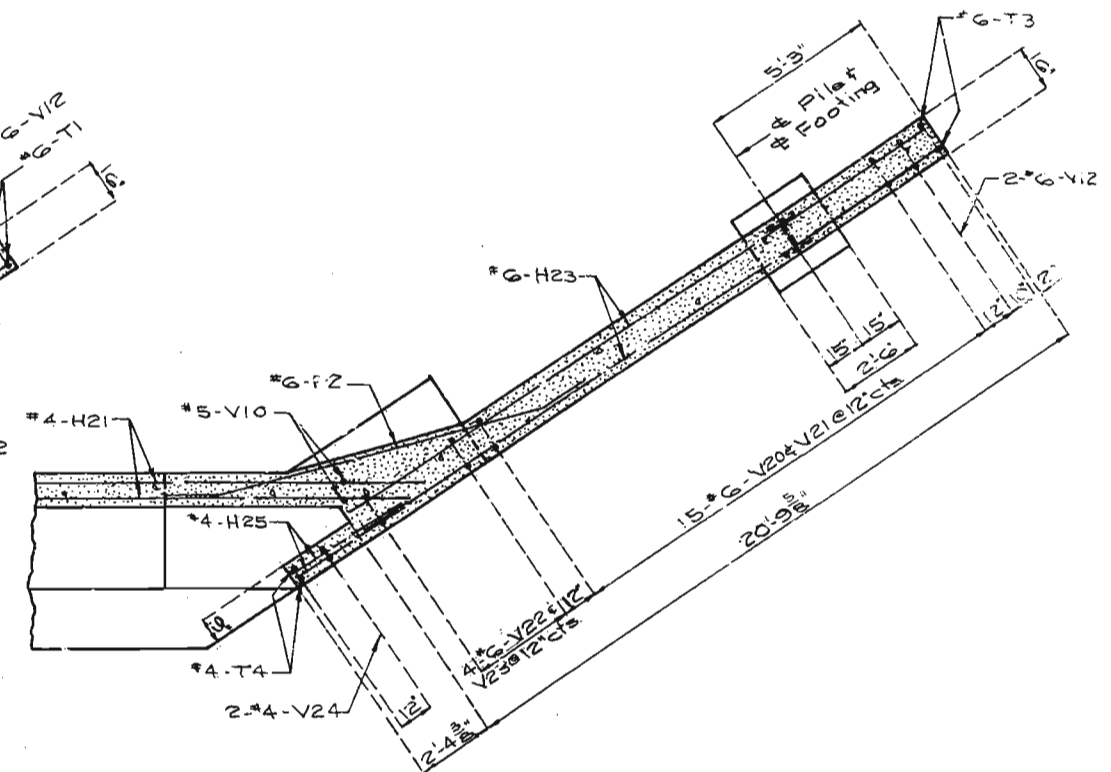
DETAILS OF END BENT NO. 1



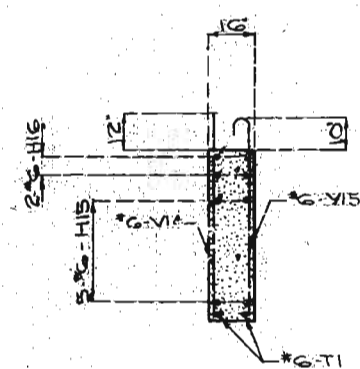
SECTION C-C



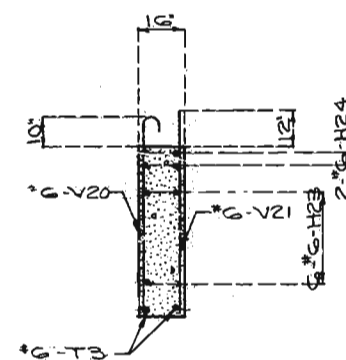
SECTION F-F



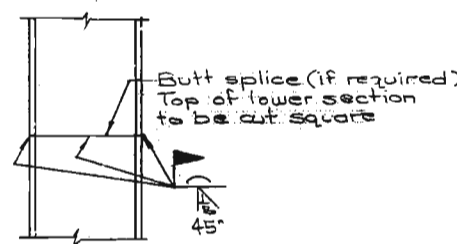
SECTION G-G



SECTION D-D



SECTION E-E



DETAIL OF STEEL PILE SPLICE

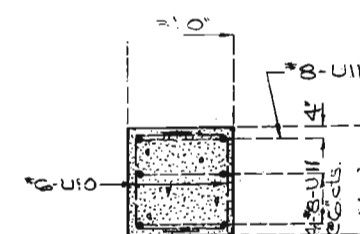
Note: Top of backwall and expansion device for end bent No. 1 to conform to crown of roadway slab. Backwall above upper construction joint shall not be poured until the superstructure slab has been poured in the adjacent span.

Field bending shall be required at wings for H12 and H13 bars in back walls for skewed structures and for F1 and F2 bars when necessary to conform to slope of wings.

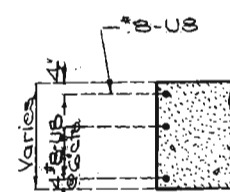
See sheet No. 2 & 25 for reinforcement of safety barrier curbs.

For location of Section C-C, D-D, E-E, F-F & G-G see sheet No. 6.

For location of Section H-H & Part Section J-J see sheet No. 5.



SECTION H-H

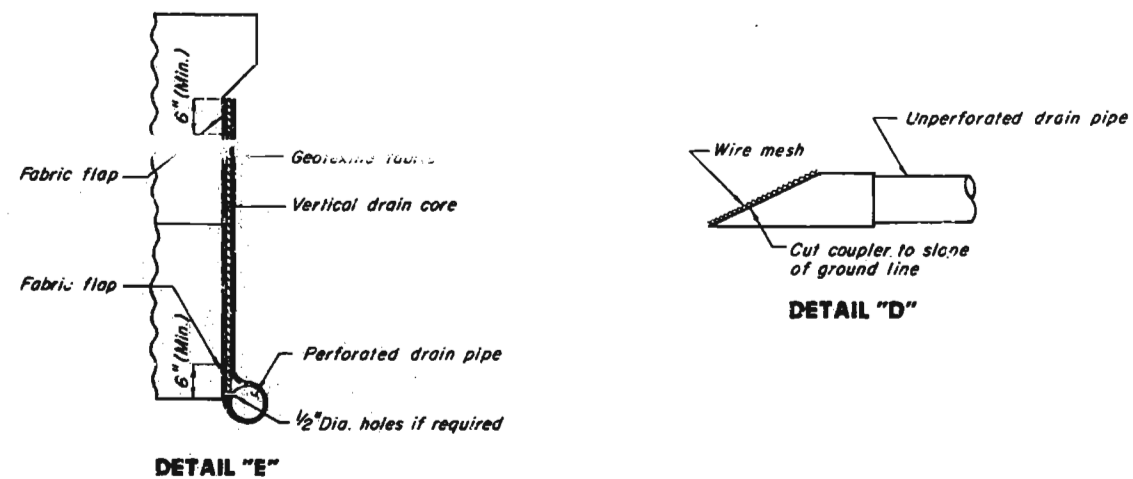
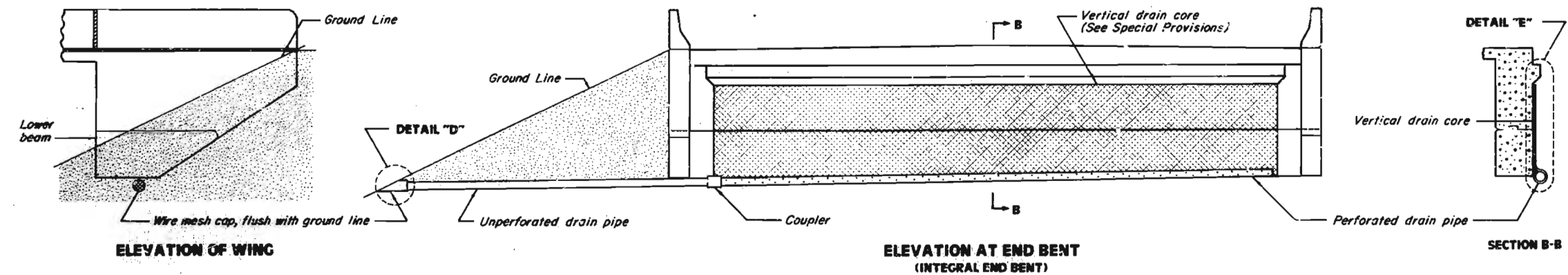
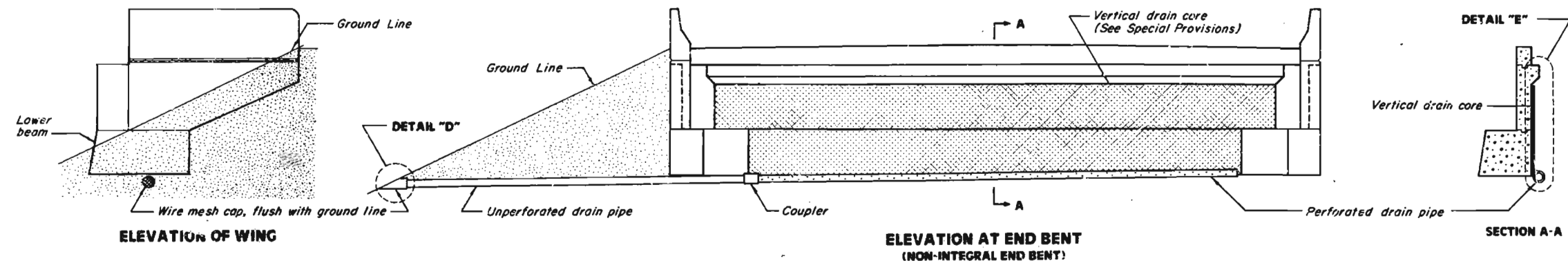


PART SECTION J-J

DETAILS OF END BENT NO. 1

442 3/8

Abut. Vert. Drain	Revised	319
MARCH 1966	SEPT. 1966	



ABUTMENT VERTICAL DRAIN

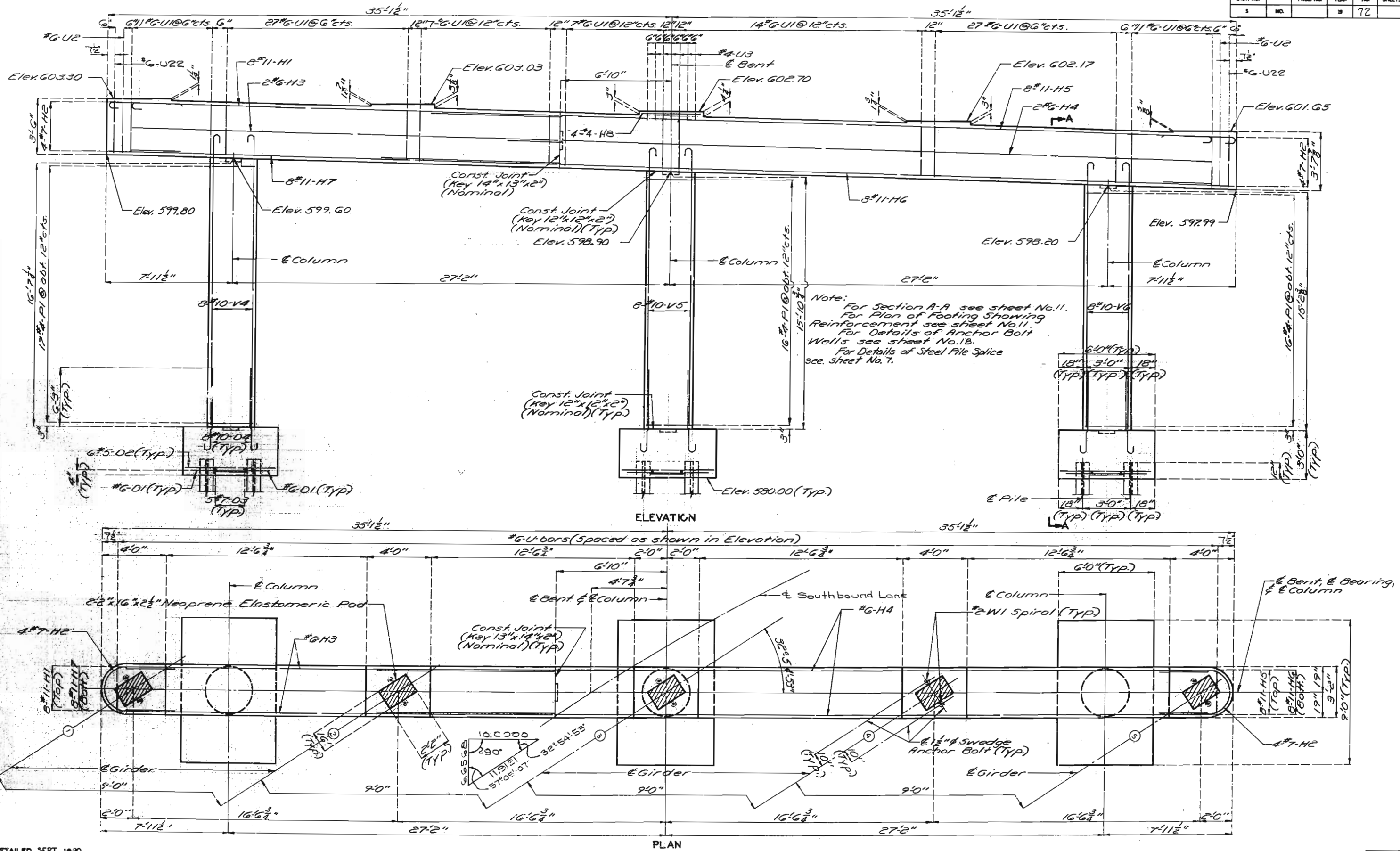
GENERAL NOTES:

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.

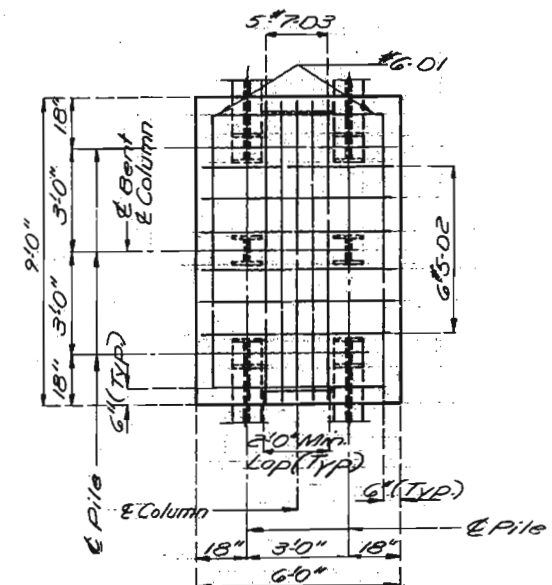
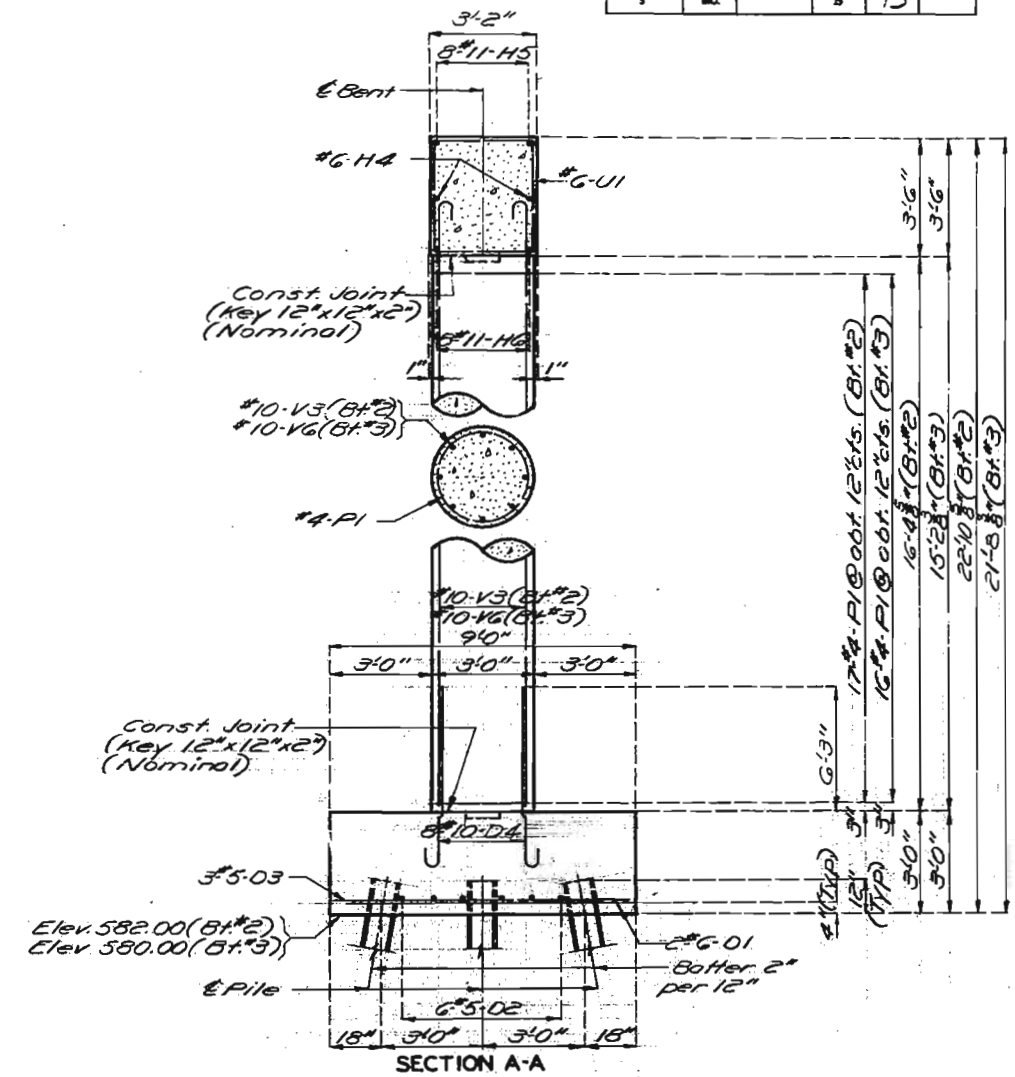
PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1 1/2".
(SEE ELEVATION AT END BENT)

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.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	72	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		73	73	



PLAN OF FOOTING
SHOWING REINFORCEMENT
INTERMEDIATE BENTS NO. 2 & 3
JEFFERSON COUNTY

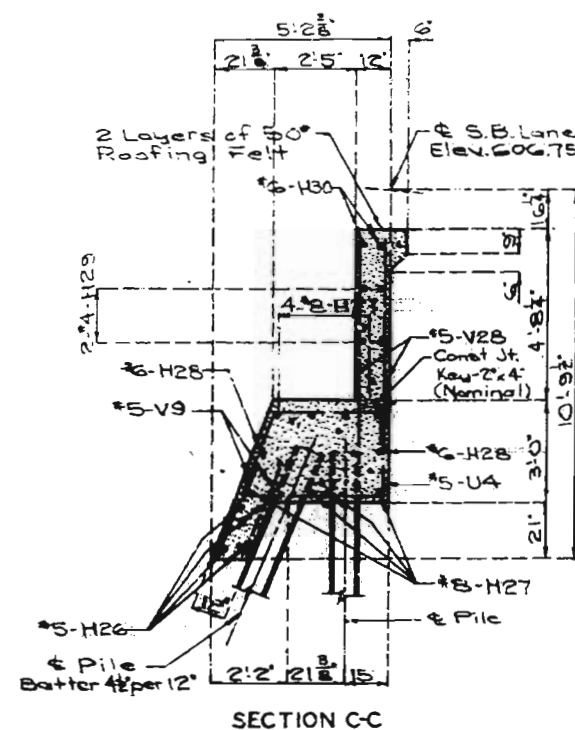
Note: For location of Section A-A see sheets No. 9 & 10.

Note: This drawing is not to scale. Follow dimensions.

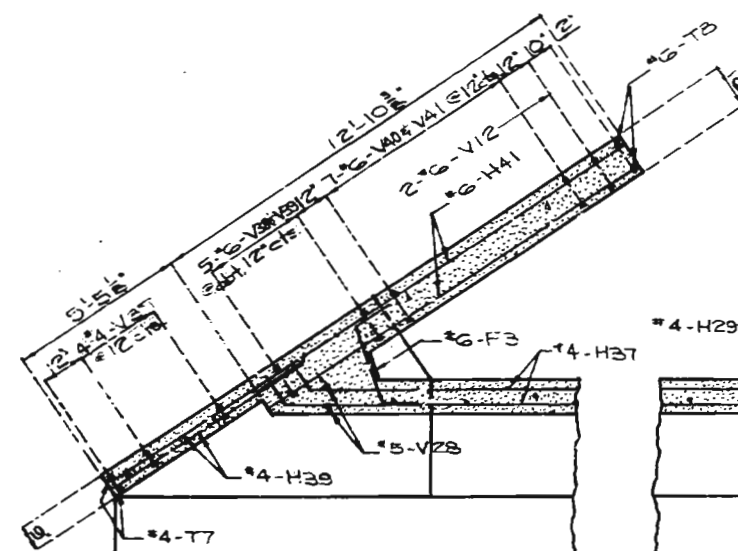
Sheet No. 11 of 28.

DETAILED SEPT. 1980
CHECKED MAY 1985

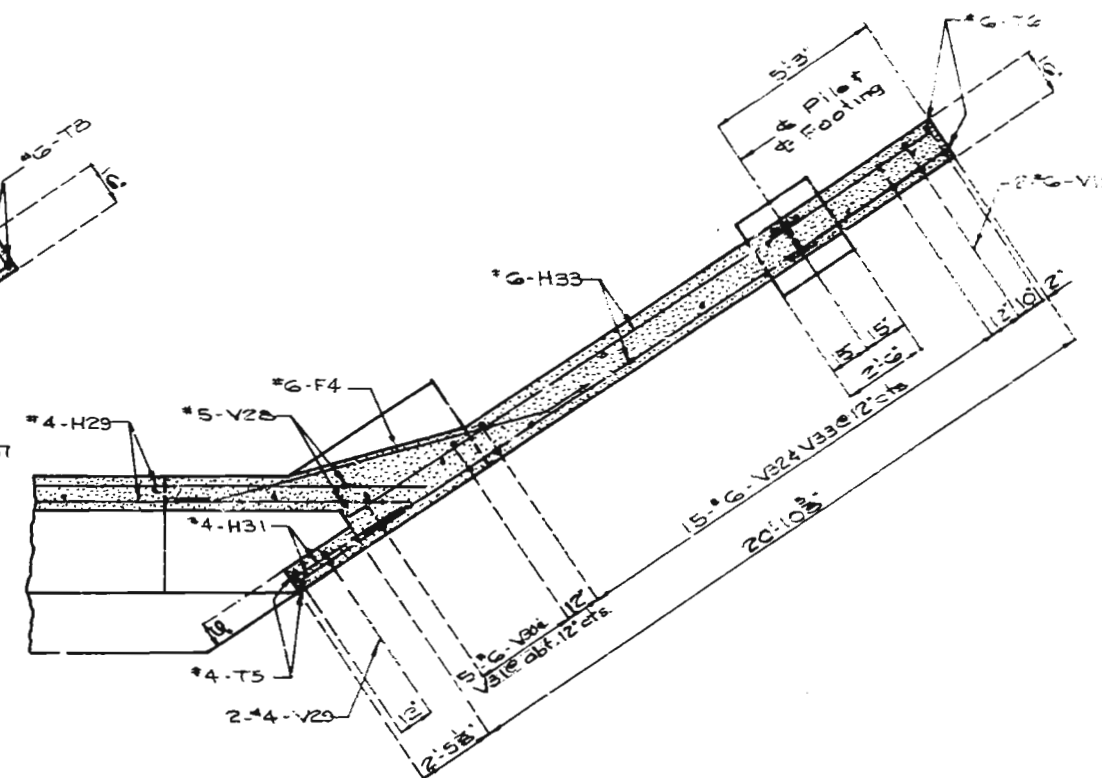
A-2957



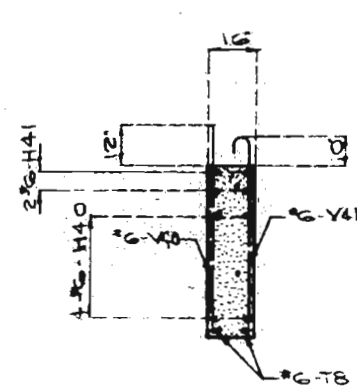
SECTION C-C



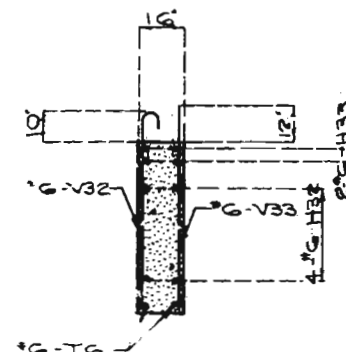
SECTION F-F



SECTION G-G

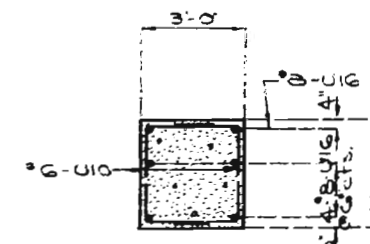


SECTION D-D

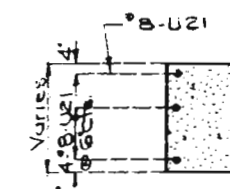


SECTION E-E

DETAILS OF END BENT NO. 4



SECTION H-H

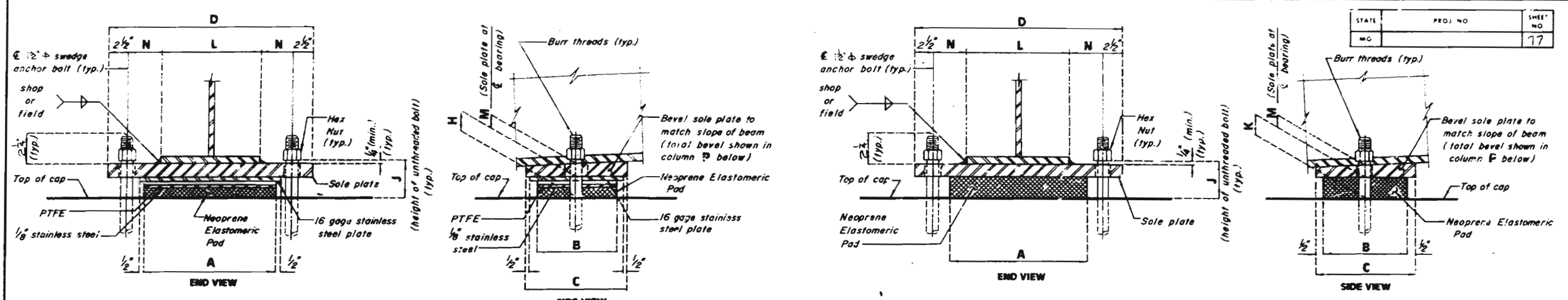


PART SECTION J-J

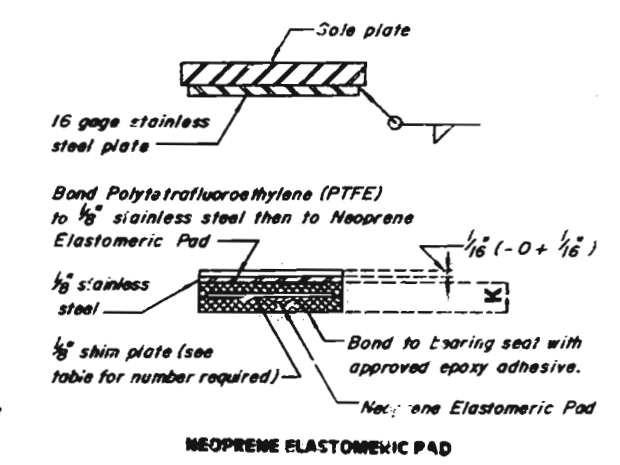
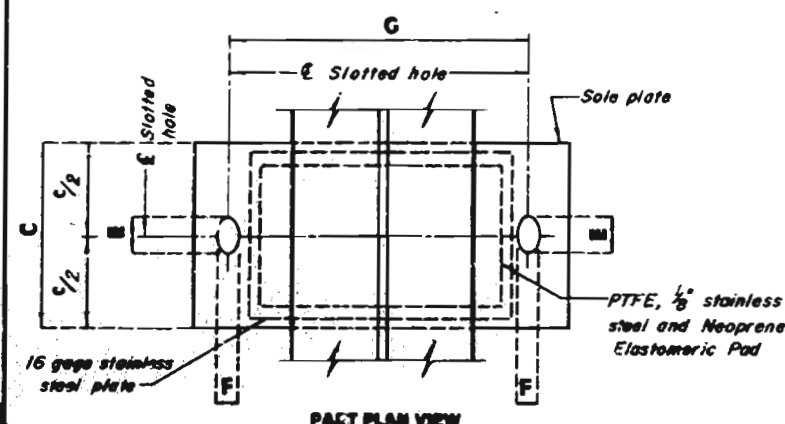
Note: Field bending shall be required at wings for H37 bars in back walls for skewed structures for F3 and F4 bars when necessary to conform to slope of wings.
See handrail sheet for reinforcement of safety barrier curbs.
For location of Section C-C, D-D, E-E, F-F & G-G see sheet No. 13.
For location of Section H-H & J-J see sheet No. 12.

STEEL
TYPE 'N' BEARINGS
REVISED
JANUARY 1980
OCT. 1983

326
457



Note: The location of 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.



PTFE SLIDING BEARINGS

NUMBER REQUIRED = 5 @ Bt. No. 1
5 @ Bt. No. 2
5 @ Bt. No. 4

BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	NUMBER OF SHIM PLATES
1	14"	10"	15"	23"	6"	18"	18"	18"	2 1/2"	1 1/2"	14"	1 1/4"	2"	1 1/2"	1
2	16"	26"	30"	25"	4 3/8"	1 1/2"	20"	2 1/4"	5 1/2"	2 1/2"	16"	2 1/2"	2"	1 1/2"	2
4	14"	10"	13 1/2"	23"	4 3/8"	1 1/2"	18"	1 1/2"	3 1/2"	1 1/2"	10"	1 1/2"	4"	3"	1

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

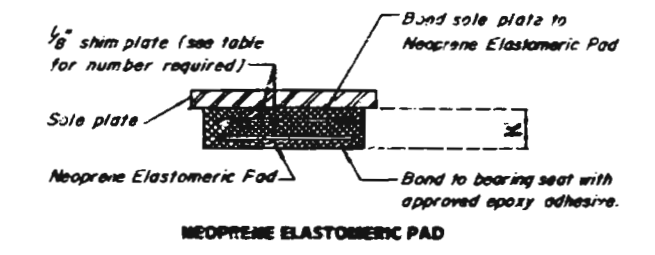
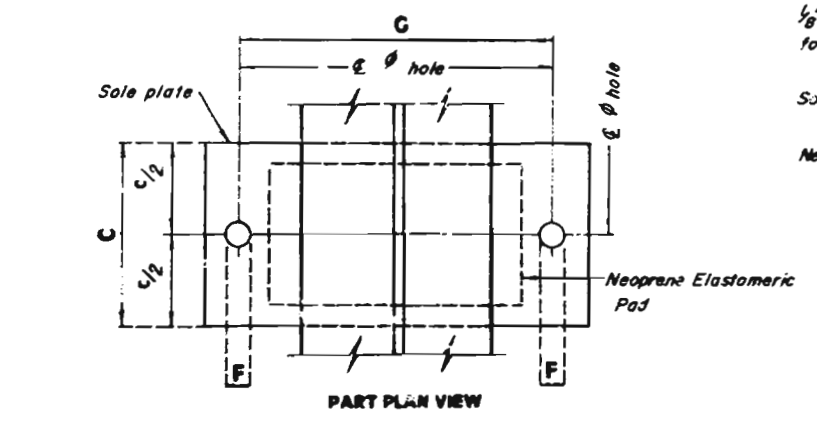
GENERAL NOTES:
ANCHOR BOLTS SHALL BE 1/2" SWEDGED BOLTS AND SHALL EXTEND 5" INTO CONCRETE WITH HEXAGON NUTS. (SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO CONCRETE.)
WEIGHT OF ANCHOR BOLTS AND HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF FABRICATED STRUCTURAL STEEL.
NEOPRENE ELASTOMERIC PADS SHALL BE 70 DUROMETER.
THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.
STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.
PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.
ALL ANCHOR BOLTS SHALL BE A-588 STEEL WITH A-563 (GRADE 50) HEXAGON NUTS.
THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR TYPE "N" PTFE BEARINGS, EACH.
ALL STRUCTURAL STEEL FOR SOLE PLATES, ANCHOR BOLTS AND HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MINIMUM) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

DETAILS OF TYPE 'N' PTFE BEARINGS

DETAILED MARCH 1986
CHECKED AUG. 1986

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 15 of 28



FIXED BEARINGS

NUMBER REQUIRED = 5 @ Bt. No. 3

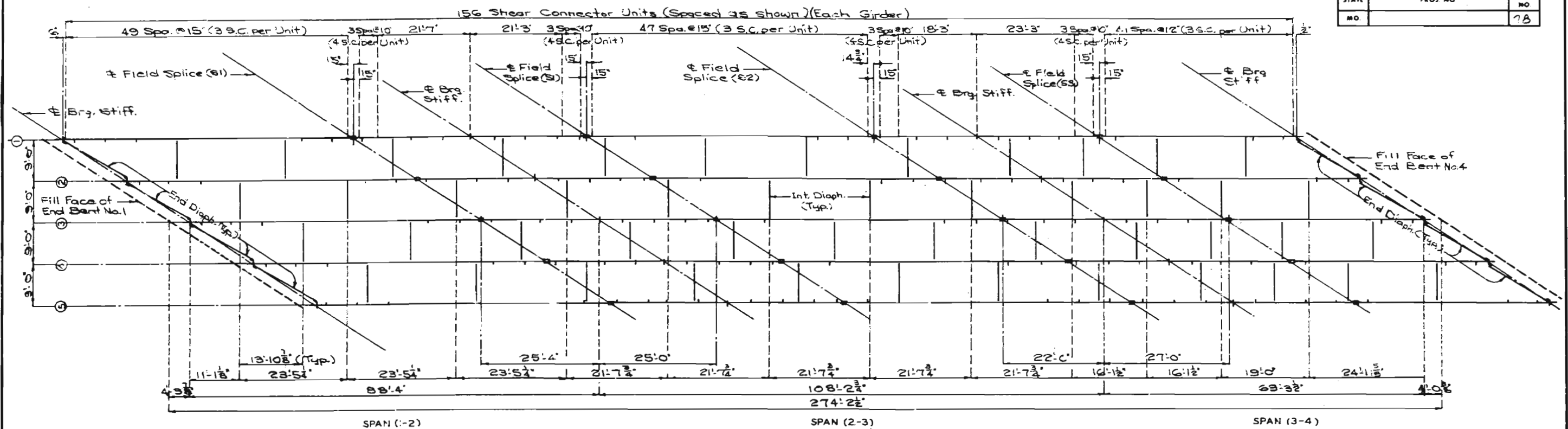
BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES
3	16"	26"	27"	25"	1 1/2"	20"	4 1/2"	2 1/2"	16"	2 1/2"	2"	1 1/2"	2

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

JEFFERSON COUNTY

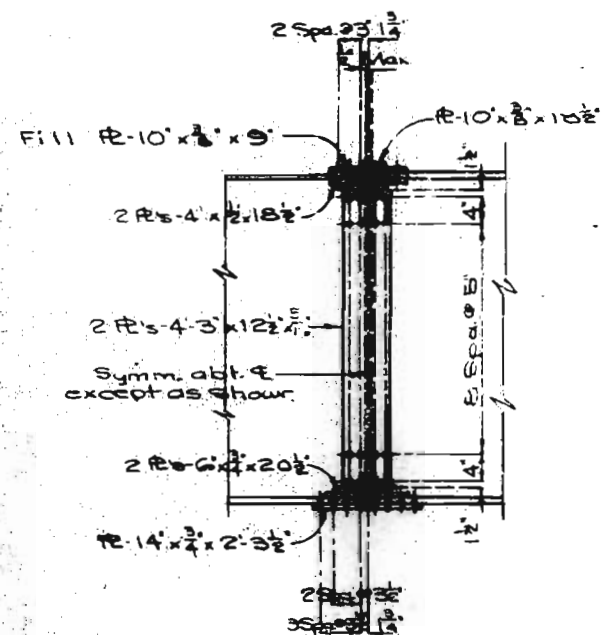
A-2957

458 327

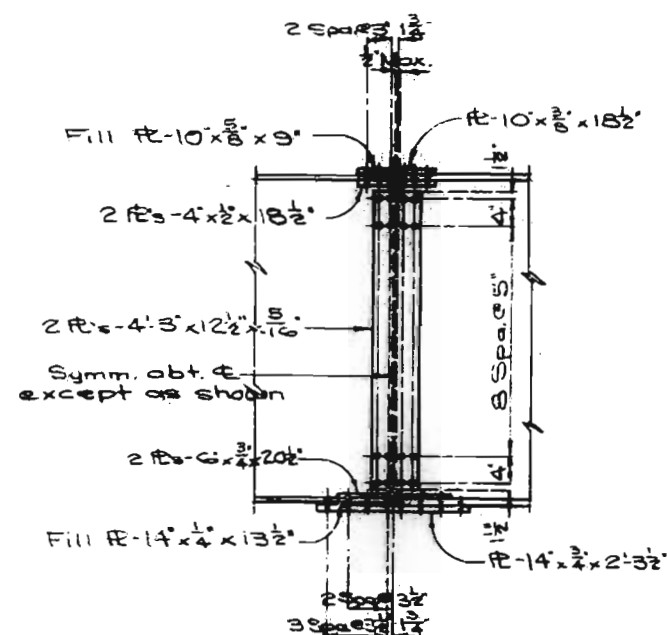


Note: Longitudinal dimensions are along top c" web.
For additional notes see sheet No. 17.

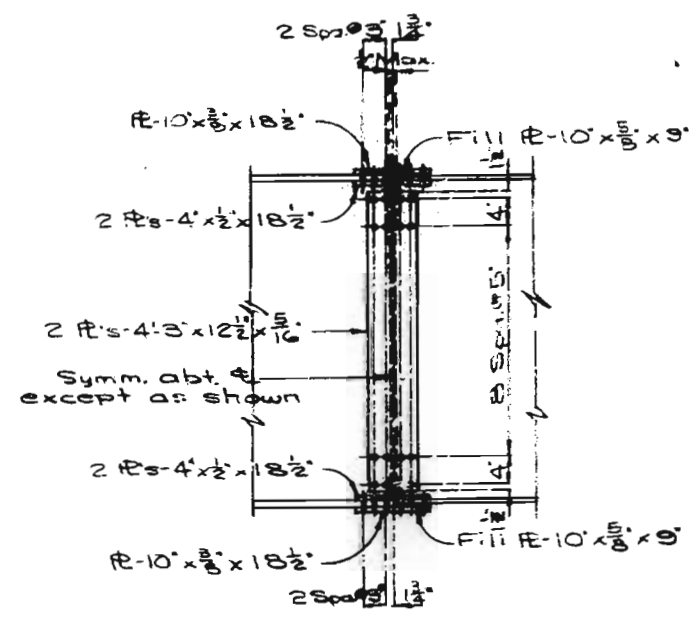
PLAN OF STRUCTURAL STEEL



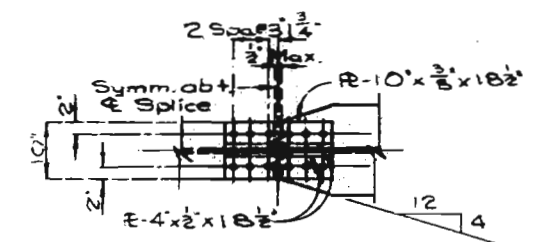
ELEVATION (SI)



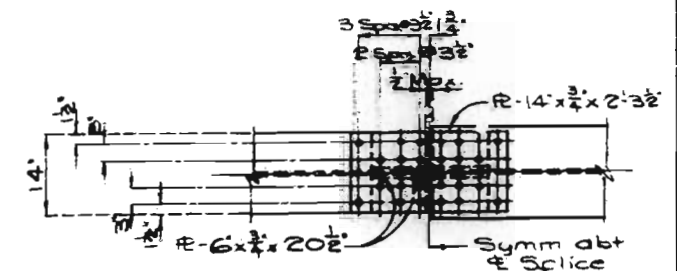
ELEVATION (S2')



ELEVATION (S3)



PLAN OF TOP FLANGE (S1)(S2)&(S3)
& BOTTOM FLANGE (S3)



PLAN OF BOTTOM FLANGE
(S1)&(S2)

△ 2 Use $\frac{7}{8}$ " High Strength Bolts with $\frac{15}{16}$ " ϕ reamed holes.

DETAIL OF BOLTED FIELD SPLICES

2 Revised 8-3-87

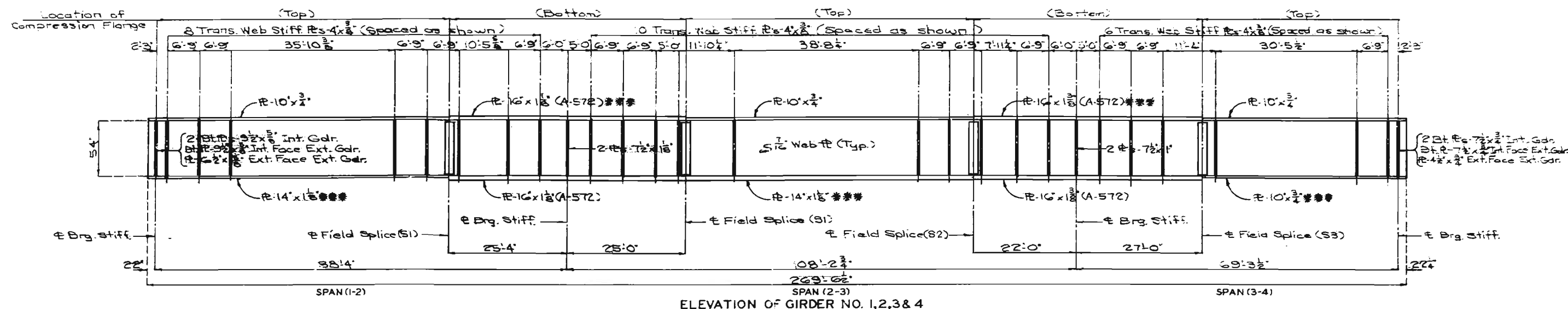
DETAILED MARCH 1966
CHECKED AUG 1966

Note: This drawing is not to scale. Follow dimensions

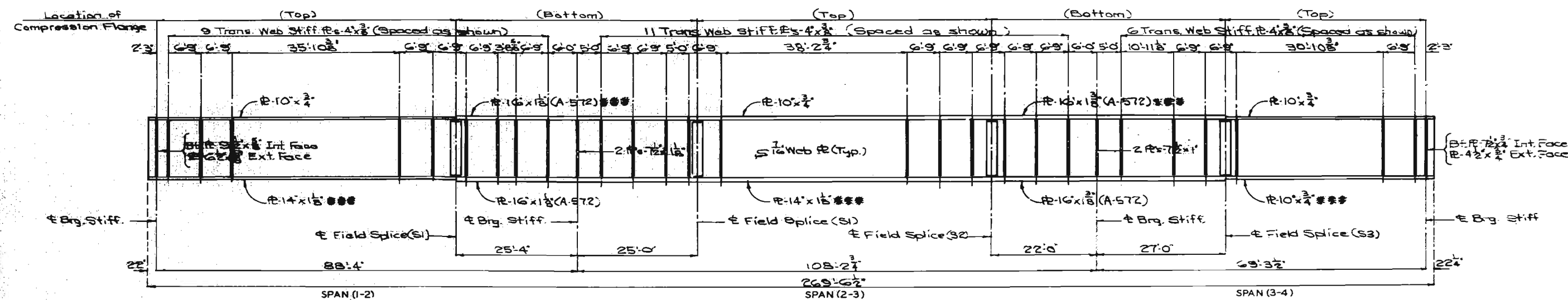
Sheet No. 10 of 28.

JEFFERSON COUNTY

A-2957



ELEVATION OF GIRDER NO. 1, 2, 3 & 4

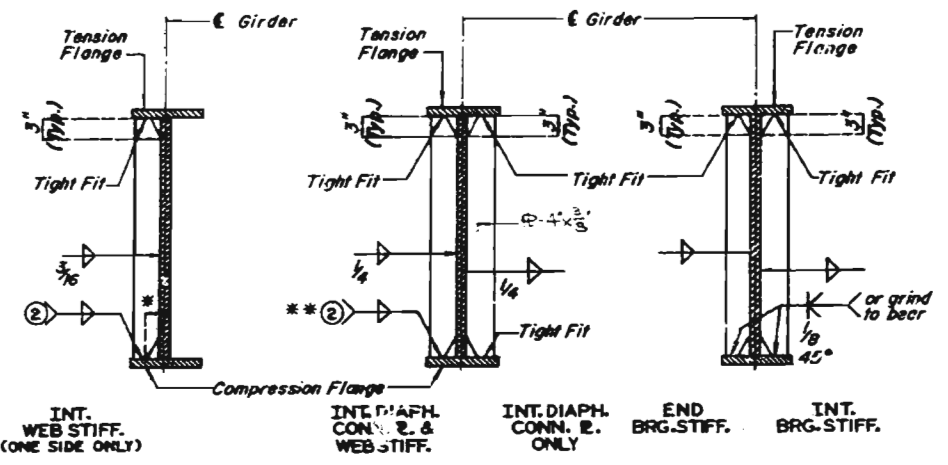


ELEVATION OF GIRDER NO. 5

Note: Longitudinal dimensions are along top of web.
 ■■■ Indicates Flange Plates subject to notch toughness requirements.
 All web plates, web splice plates and flange splice plates shall be subject to notch toughness requirements.
 Fabricated structural steel to be A-36 except as noted.
 Plate girders shall be fabricated to conform with Camber Diagram shown on sheet No. 19.
 Transverse web stiffeners shall be oriented as shown in plan of structural steel.
 Intermediate web stiffener plate and diaphragm spacings may vary from plan dimensions by a maximum of 3' for diaphragm to connect to intermediate web stiffener plate.
 For location of shear connectors see sheet No. 16.
 For Part Longitudinal Section, see sheet No. 19.

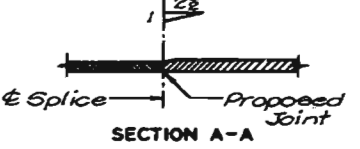
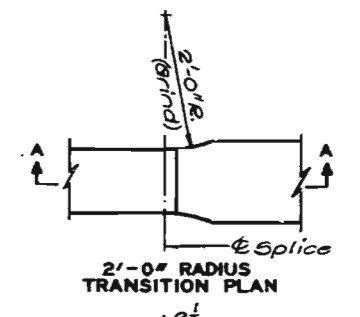
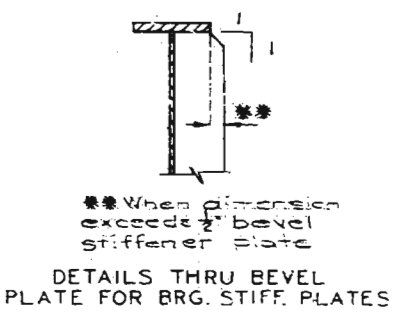
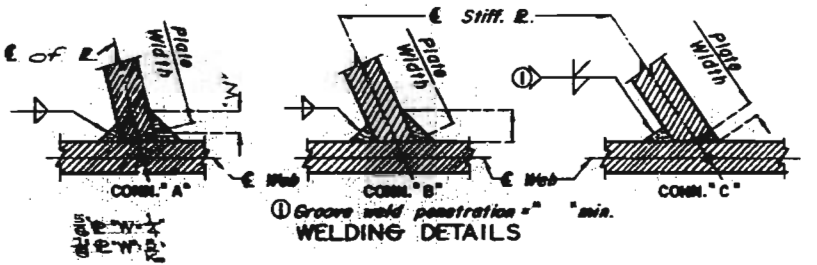
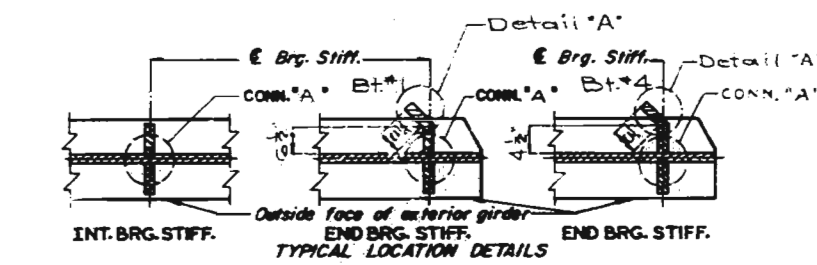
452 328

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	80	

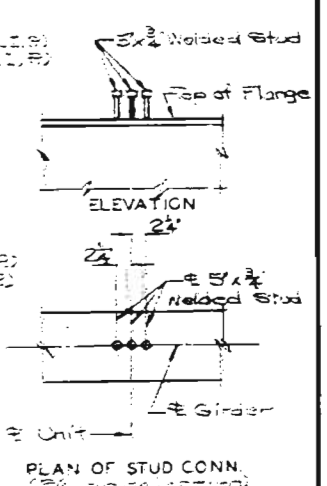
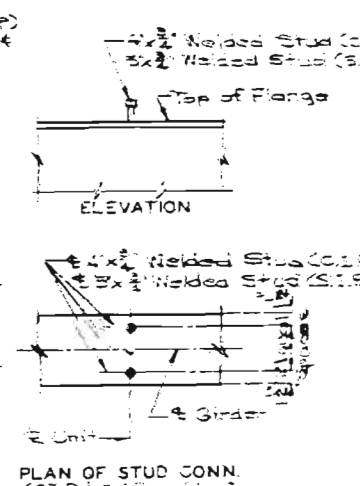
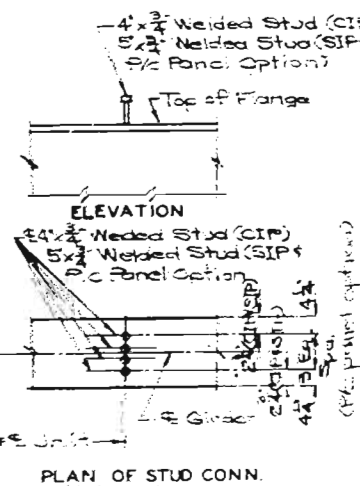
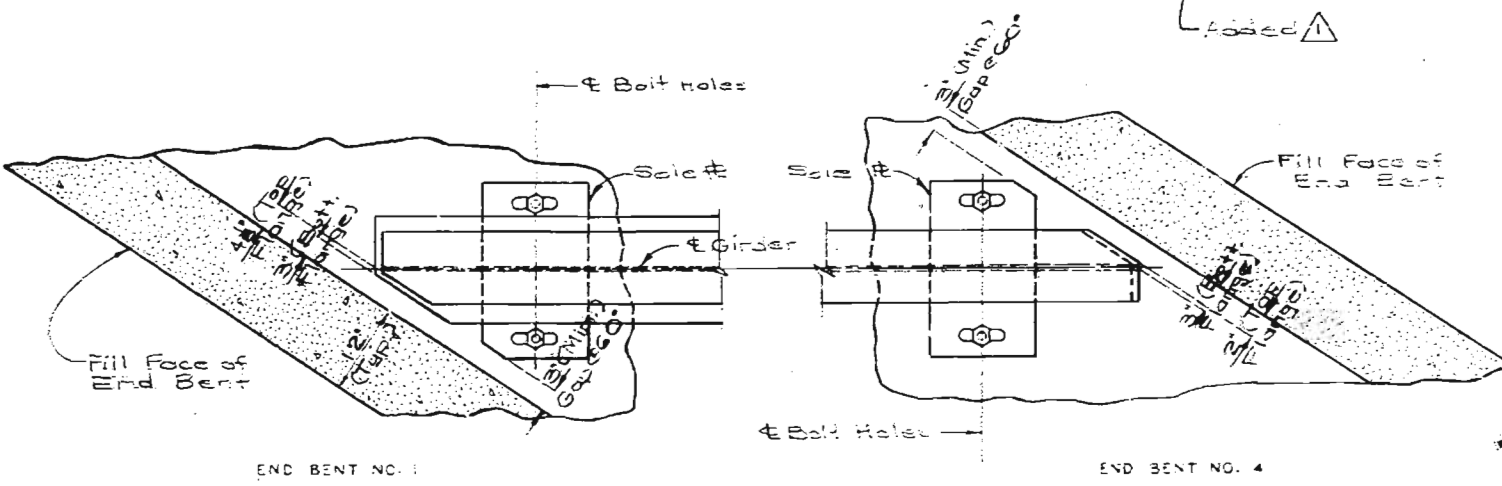
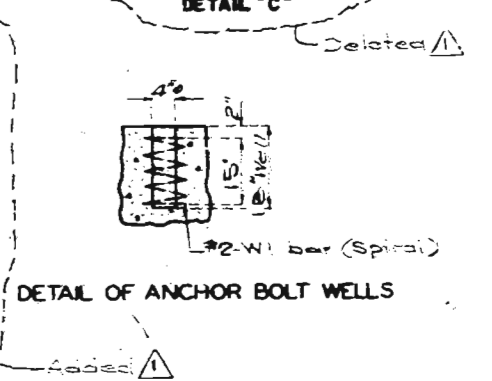
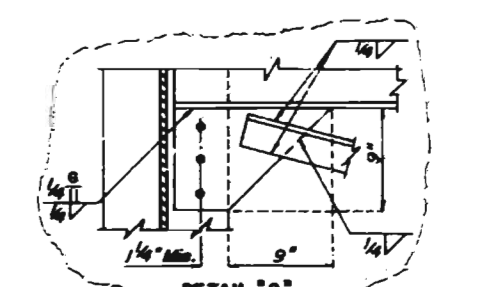
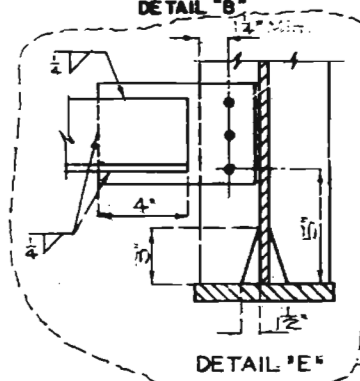
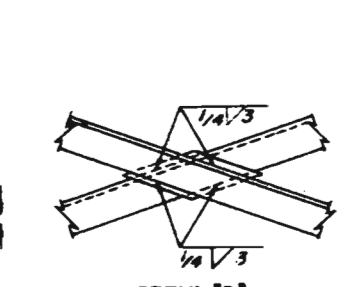
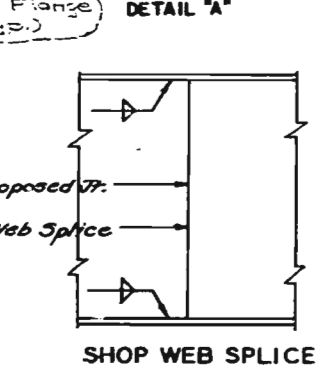
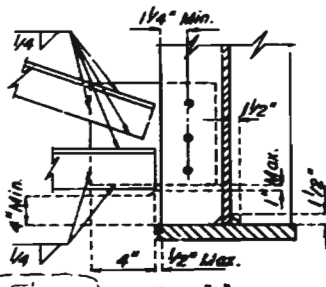
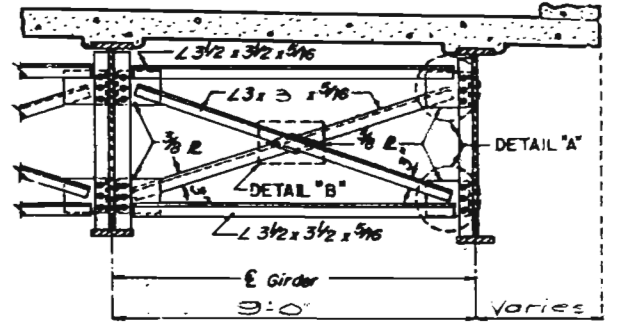
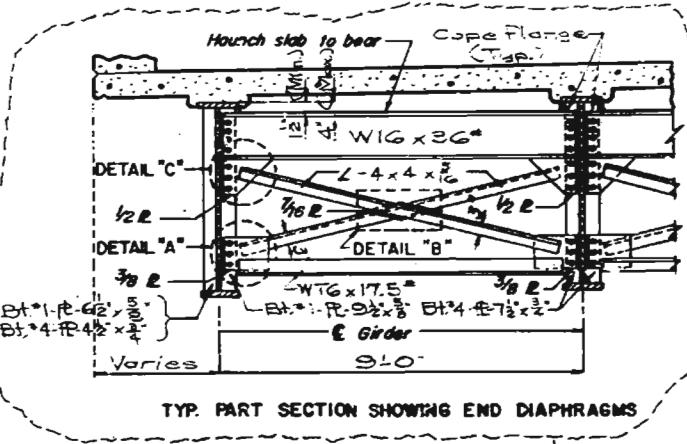
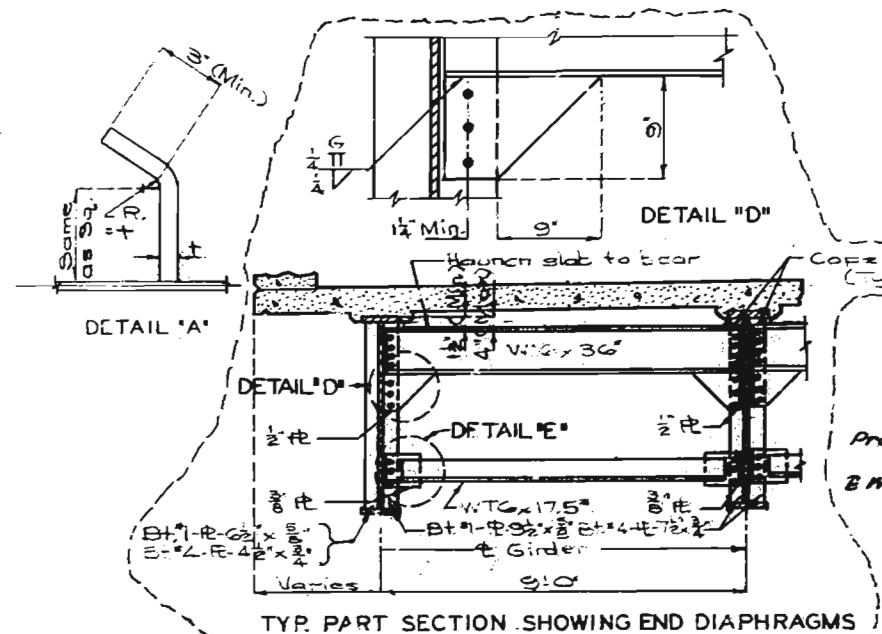


② Weld to compression flange as located on ELEVATION OF GIRDER.
 * 1/2" typical for all Int. Web Stiff., Int. Diaph. Conn. R. and Brg. Stiff..
 ** Weld may be omitted on interior girders, and Tight Fit used when Int. Diaph. Conn. R. is required on both sides.

WELDING DETAILS

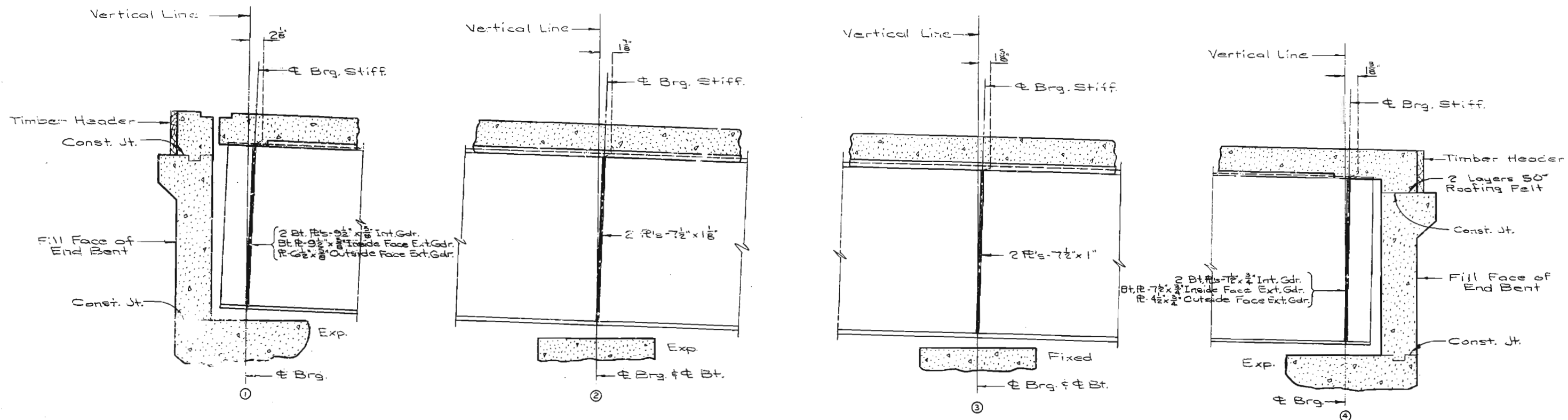


WELDED SHOP FLANGE SPLICE



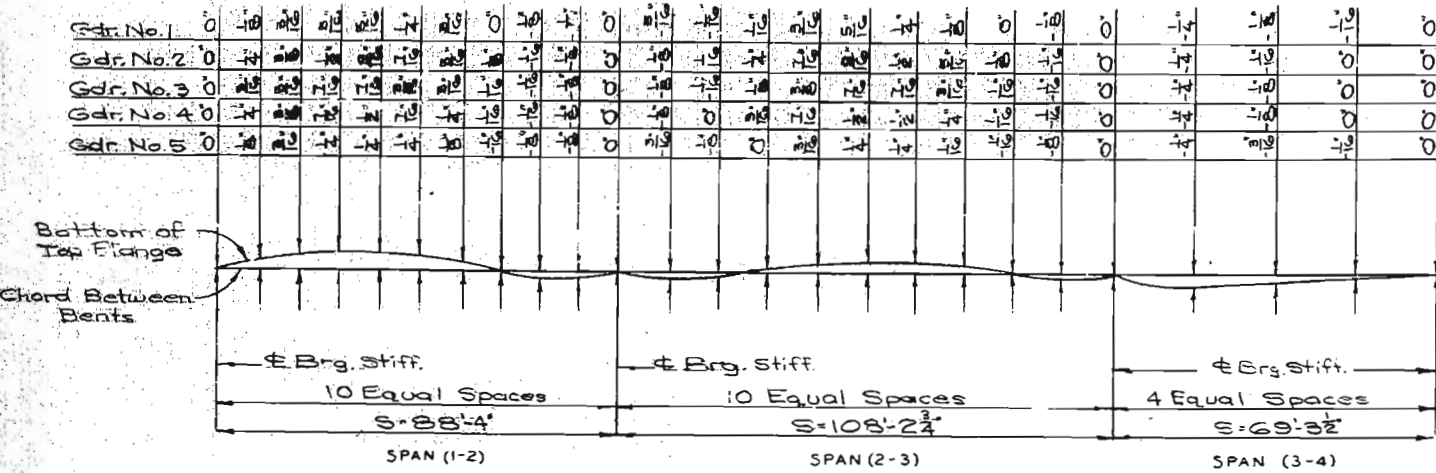
DETAILS OF SHEAR CONNECTORS

**** See sheet No. 6 for 4\"/>

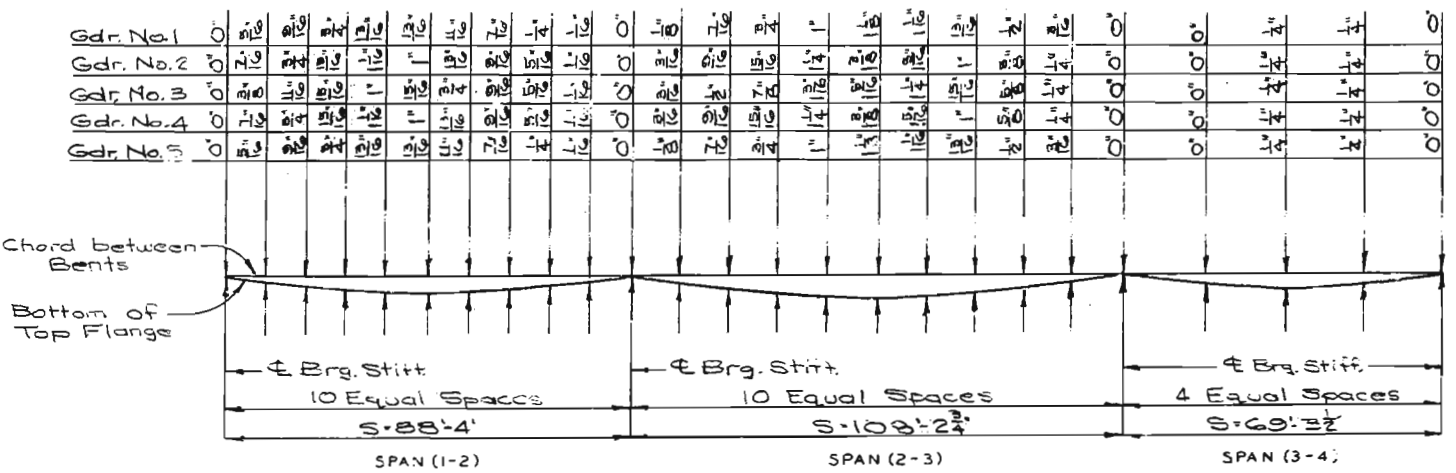


PART LONGITUDINAL SECTION

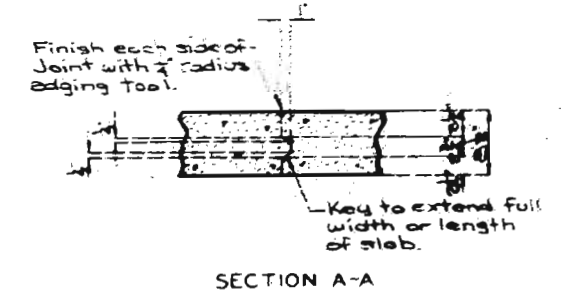
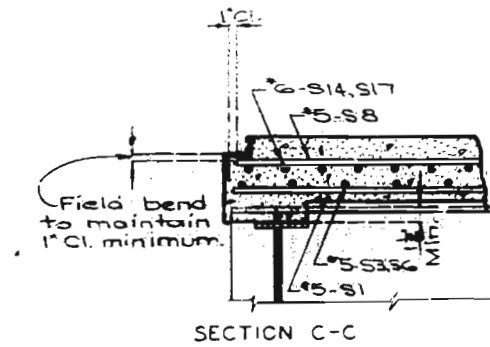
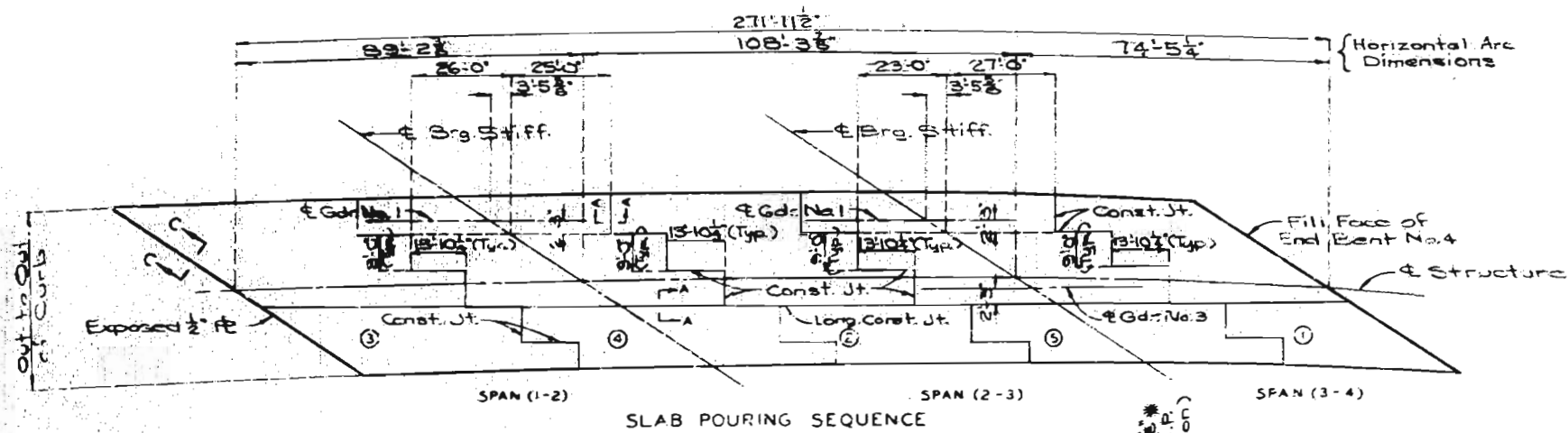
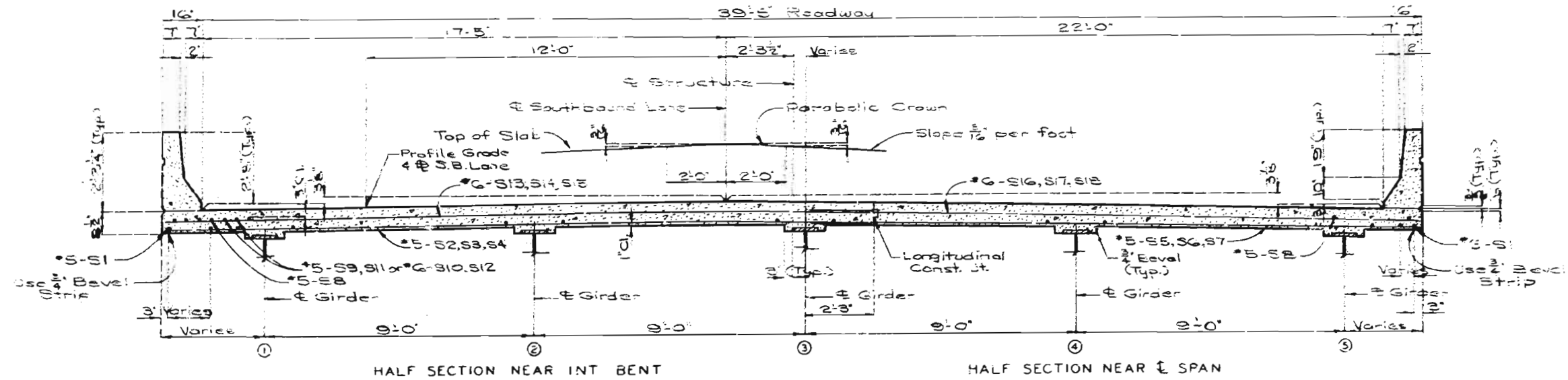
Note: Details shown are for Girder No. 3, unless noted.



Note: Camber includes allowance for vertical curve, and for dead load deflection, due to concrete slab, curb, and structural steel.



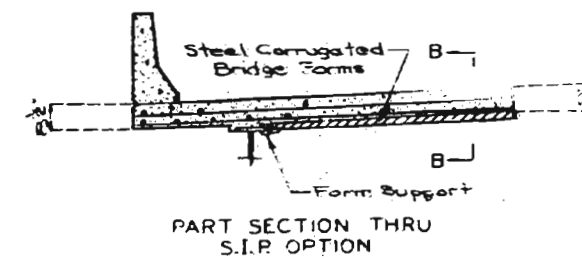
Note: 16% of dead load deflection due to weight of structural steel.



	DIRECTION					RATE OF POUR CU. YDS./HR.	
	1	2	3	4	5	WITH RETARDER	NO RETARDER
BASIC SEQUENCE	1	2	3	4	5	25	25
ALTERNATE POURS TO THE BASIC SHIP SEQUENCE ARE SUBJECT TO THE APPROVAL OF THE ENGINEER IN ACCORDANCE WITH SECTION 702.3.2.4 OF MISSOURI STANDARD SPECIFICATIONS							
ALTERNATE 'A' POURS	1	5+2	4+3			36	60
ALTERNATE 'B' POURS	1+5+2	1 TO 4	2 TO END			35	60
ALTERNATE 'C' POURS	1+5+2+4+3	2 TO END				36	60

Note: The contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of the concrete to 2.5 hours.

*Dimension may vary if girder camber after erection differs from plan camber by more than the 3/4" of D.C. deflection due to weight of structural steel. No payment will be made for additional forming or concrete required for variable haunching.

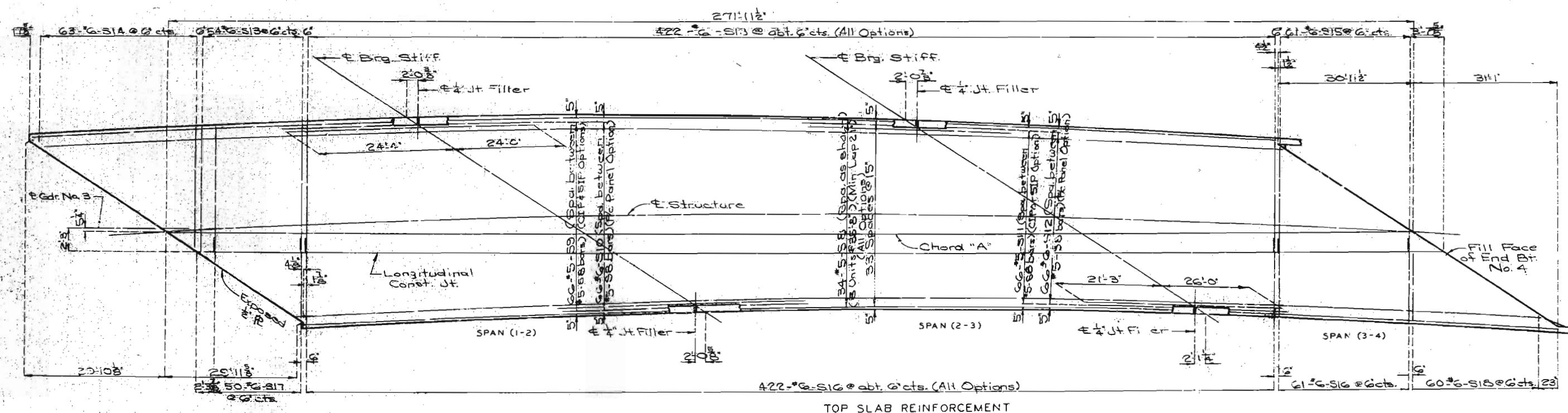
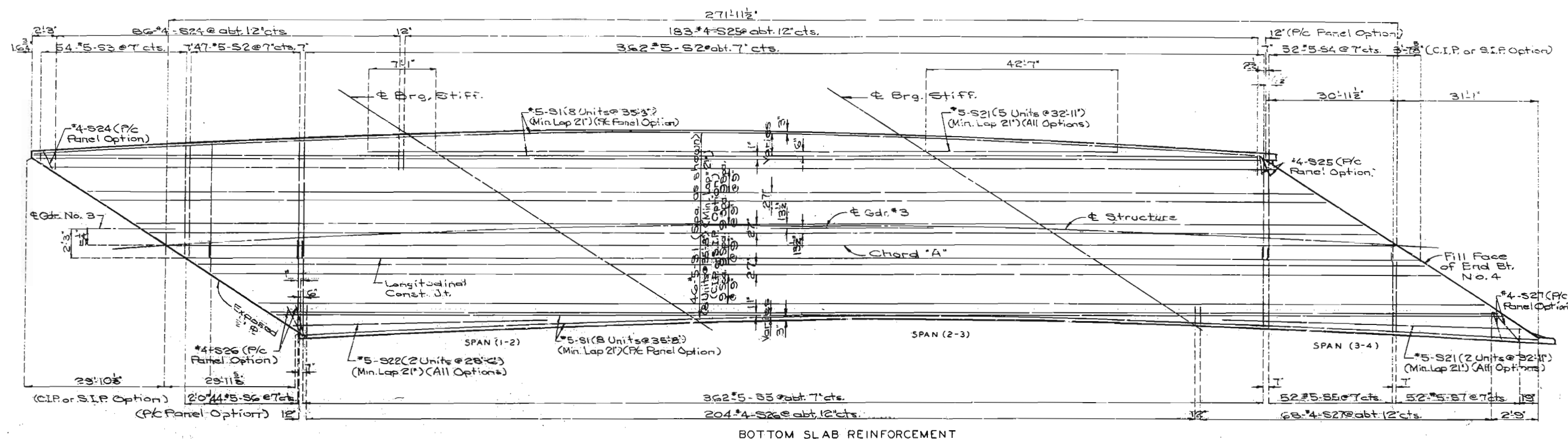


Note: To determine the haunch, for stay-in-place alternate, add 3/4" to the haunch for the cast-in-place alternate.



Note: Bottom transverse reinforcing steel shall be placed to match the corrugations valleys of forms.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	83	



Note: Longitudinal dimensions shown are taken along top of slab and along chord "A".
Position of slab reinforcement adjacent to joints that are to be protected by
Elastomeric Expansion Joint Seal shall be adjusted to the minimum extent necessary to provide
2" clear distance from anchor bolt positions shown on approved shop drawings.
All transverse bars are placed perpendicular to chord "A".
Top longitudinal reinforcement shall be spaced radially.
Bottom longitudinal reinforcement shall be placed parallel to \$ Girder #3.

DETAILED OCT. 1980
CHECKED AUG. 1986

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 21 of 28.

JEFFERSON COUNTY

A-2957

The diagrams illustrate various bent reinforcement details:

- END BENT (SEMI-INTEGRAL):** Shows a bent with reinforcement bars (#5-S-bars) at 12" cts. (End Panel only) and 18" cts. (Fill Face of End Bent). Dimensions include 12" and 18".
- END BENT:** Shows a bent with reinforcement bars (#5-S-bars) at 12" cts. (End Panel only) and 18" cts. (Fill Face of End Bent). Dimensions include 12" and 18".
- INT. BENT (EXP. GAP):** Shows an interior bent with reinforcement bars (#5-S-bars) at 12" cts. (min.) and 18" cts. (min.). Dimensions include 12" and 18".
- INT. BENT (EXP. GAP):** Shows an interior bent with reinforcement bars (#5-S-bars) at 12" cts. (min.) and 18" cts. (min.). Dimensions include 12" and 18".
- END BENT:** Shows a bent with reinforcement bars (#5-S-bars) at 12" cts. (End Panel only) and 18" cts. (Fill Face of End Bent). Dimensions include 12" and 18".

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

Diagram illustrating the reinforcement details for a panel, showing dimensions and reinforcement specifications:

- Top Edge:**
 - Reinforcement: #3 - P1 at 12" cts. (Length = 2'-0" (End Panel only))
 - Dimensions: 1 1/2" min. / 6" max.
- Bottom Edge:**
 - Reinforcement: #3 - P2 at abt. 6" cts.
 - Dimensions: 1 1/2" min. / 3" max.
- Left Edge:**
 - Reinforcement: #3 - U1 at 3'-0" cts. (max. spacing)
 - Dimensions: 6" min. / 18" max.
- Right Edge:**
 - Reinforcement: 3" #3 Strands at 4 1/2" cts.
 - Dimensions: 1 1/2" min. / 3" max.
- Panel Dimensions:**
 - Panel Width
 - Panel Length

Technical drawing of a trapezoidal panel with the following dimensions and annotations:

- Panel Width:** Indicated at the bottom.
- Panel Length:** Indicated on the right side, with a note $(10'-0'' \text{ max.})$.
- Top Left Corner:** Dimensions of $6'' \text{ min.}$ and $18'' \text{ max.}$. An annotation points to this corner: "May be cast square and sawn to skew ⑤".
- Top Right Corner:** Dimensions of $6'' \text{ min.}$ and $18'' \text{ max.}$.
- Right Side:** A dimension of $6'' \text{ max.}$ is shown.
- Internal Reinforcement:**
 - Top: $\#3 - U1 \text{ at } 3'-0'' \text{ cts. (max. spacing)}$
 - Bottom: $\#3 - P2 \text{ at abt. } 6'' \text{ cts.}$
 - Right Side: $\#3 \varnothing \text{ Strands at } 4 \frac{1}{2}' \text{ cts.}$
- Other Dimensions:**
 - Left side vertical dimension: $2'-0'' \text{ min.}$
 - Bottom left corner: $1 \frac{1}{2}'' \text{ min.}$ and $3'' \text{ max.}$
 - Bottom right corner: $1 \frac{1}{2}'' \text{ min.}$ and $3'' \text{ max.}$
 - Horizontal dimension near bottom left: $6'' \text{ min.}$ and $18'' \text{ max.}$

PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

Diagram illustrating the joint filler and bedding material for a panel joint. The joint is shown with dimensions and material specifications:

- Joint Filler (See Std. Spec. 1057.2.5) or Expanded or Extruded Polystyrene Bedding Material (See Special Provisions)
- Panel
- Dimensions:
 - 3" (at all flange)
 - 4" (at all splice plate)
 - 1/2" (at all flange)
 - 3/4" (at all splice plate)

PLAN OF PRECAST PRESTRESSED PANEL

3" min. (Typ.)
6" max. (Typ.)
(***)

#3-U1

DETAIL "A"

3/8" Strand

1 1/2" min.
3" max.

#3-P2 at obl. 6° cts.

1/2" min.
3" max.

Panel Width

(***)

SECTION C-C

Prestressing strands to extend 6" or to within 1" of adjacent panel.

The diagram shows a cross-section of a concrete slab divided into four equal panels, each labeled $L/4$. The total length is labeled L . Above the slab, there are four groups of prestressing strands, each labeled $2''$. The strands are shown extending from the right side of one panel into the left side of the next panel. A dimension line on the left indicates a distance of $5/8$ from the left edge to the first group of strands.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½ INCH UNLESS OTHERWISE SHOWN.

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

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST CH.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF TYPICAL QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE CUT 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. FT. WITH 'SPACING' PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER LAPPING MAY BE USED IN LIEU OF THE #3-#2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. #3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN #1 BARS.

PRESTRESSED PANEL:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH $f'_c = 5,000$ PSI, $f'_d = 3,500$ PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF $\frac{1}{4}$ INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANEL (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON SHALL BE HIGH-TENSION STEEL UNCOATED SEVEN-WIRE (7) LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203 EXCEPT THAT NOMINAL DIAMETER OF STRAND = $\frac{3}{8}$ INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULMIMATE STRENGTH = $23,000$ LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 17.2 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 $\frac{1}{4}$ INCH EXCEPT OVER SPUCE PLATES WHERE MINIMUM THICKNESS SHALL BE $\frac{1}{4}$ INCH. WHEN JOINT FILLER IS LESS THAN $\frac{1}{4}$ " THICK OVER SPUCE PLATE, MAKE THE WIDTH OF JOINT FILLER AT SPUCE THE SAME WIDTH AS PANEL ON SPUCE. THICKER JOINT FILLER OR POLYSTYRENE BEDDING 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 SPICES, AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE $\frac{1}{4}$ 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 REQUIRED UNDER OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED $3,000$ PSI COMPRESSIVE STRENGTH.

- ① END PANEL TO BE DIMENSIONED 1½ INCH INSIDE FACE OF DIAPHRAGM.
- ② S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.
- ③ ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR EXPANDED POLYSTYRENE BEDDING MATERIAL THICKNESS OR GRADE WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE ½ OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.
- ④ S-BARS SHOWN ARE USED WITH SKEWED END PANELS OR SQUARE END PANELS OF SQUARE STRUCTURES ONLY. #5 S-BARS SHALL EXTEND THE WIDTH OF SLAB ± 21 INCHES (LAP IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES.

COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

SLAB EXTERIOR GIRDER HAUNCH TO BE THE SAME AS CAST-IN-PLACE.

- ⑤ 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 FABRICATORS OPTION.
- ⑥ ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1½ INCH THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

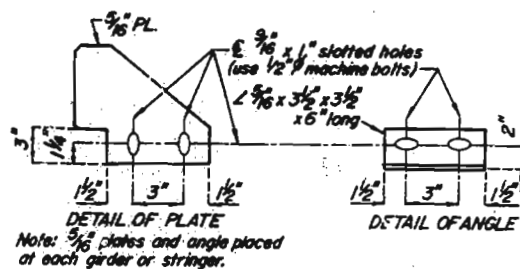
Top transverse slab reinforcement
 #4-S bars at abt. 18" cts. (Placed parallel to & Roadway) ④
 Longitudinal slab reinforcement
 Panel
 Joint Filler or Polystyrene Bedding Material
 W16 x 36
 #5-S bars at abt. 5" cts. (Placed parallel to end of slab) ④

(3) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN. FROM THE JOINTS OF THE PRESTRESSED PANELS.

DETAILS OF PRECAST PRESTRESSED PANELS

JEFFERSON COUNTY

A-2957

[illegible]

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES.
EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED $\frac{1}{8}"$ FOR EACH 10° FALL IN TEMPERATURE AND DECREASED $\frac{1}{8}"$ FOR EACH 10° RISE IN TEMPERATURE.

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE- EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD

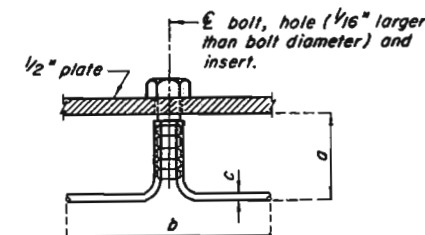
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

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

BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.

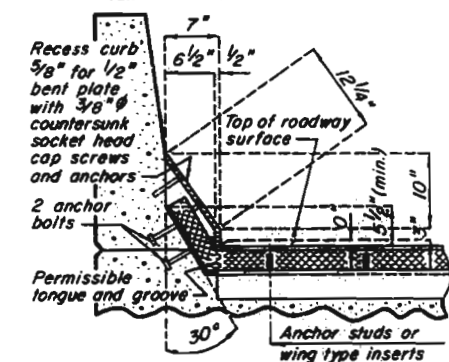
PLATES SHALL BE FIELD ADJUSTED BY ADDING OR REMOVING METAL SHIMS (2" x 3"), AS REQUIRED FOR TEMPERATURE CORRECTION. THE EXPANSION GAP SHALL BE ADJUSTED FOR ANY TEMPERATURE CORRECTION PRIOR TO POURING TOP OF END BENT BACKWALL.



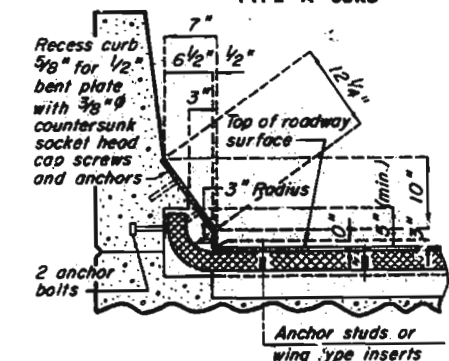
BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MIN.)	APPROX. U.L.T. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS		
			a (INCH.)	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.261"
3/4"	1,800	13,200	2-1/4"	6"	.262"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT

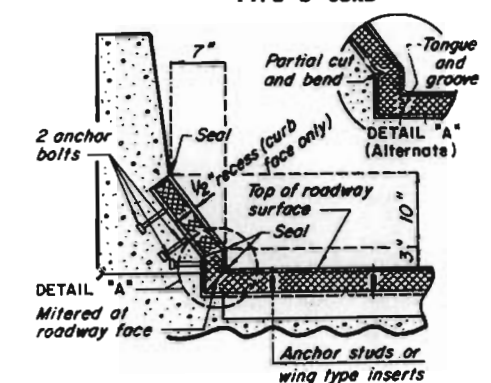
(MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 p.s.i.)



TYPE "A" CURB



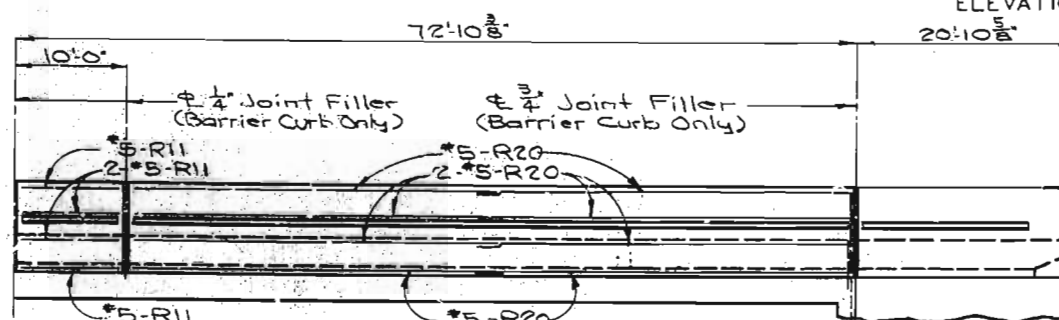
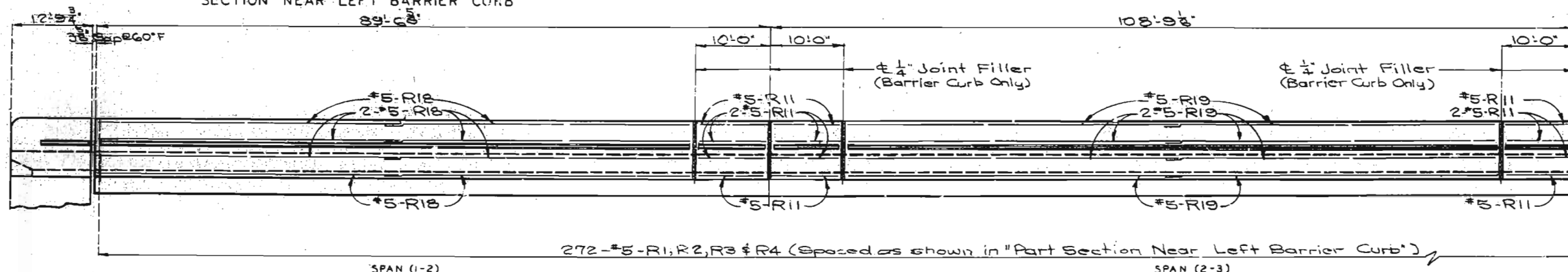
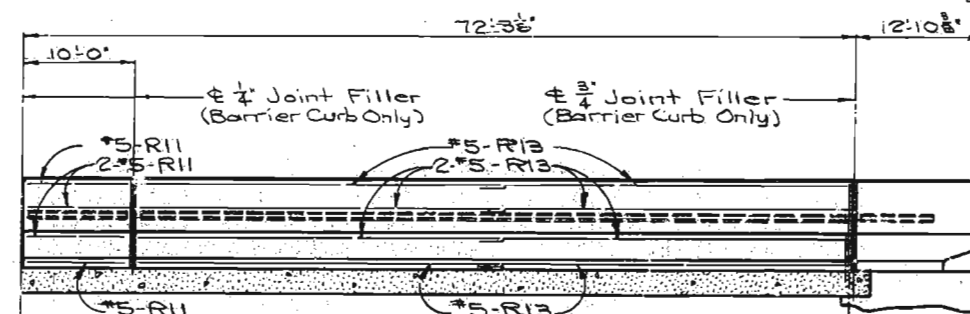
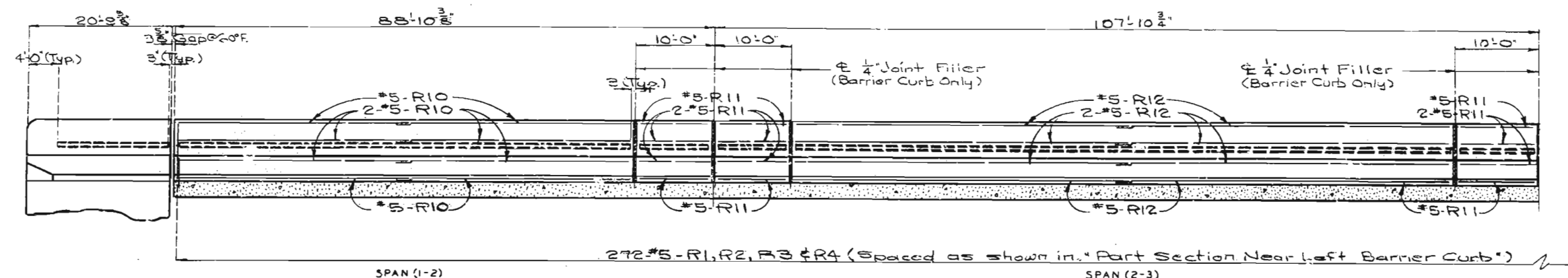
TYPE "B" CURB



TYPE "C" CURB

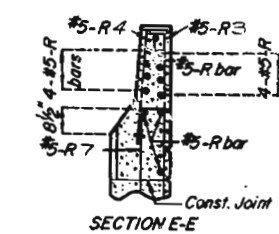
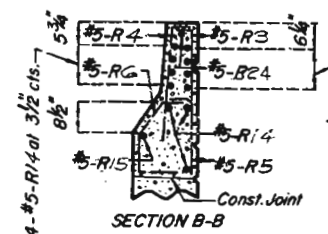
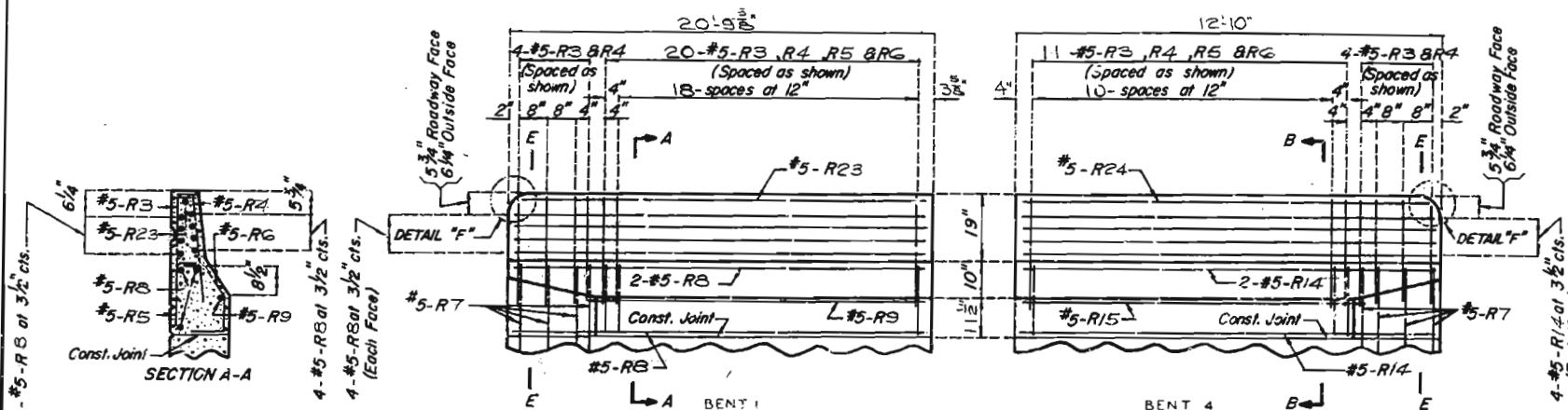
ALTERNATE CURB TREATMENTS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	86	

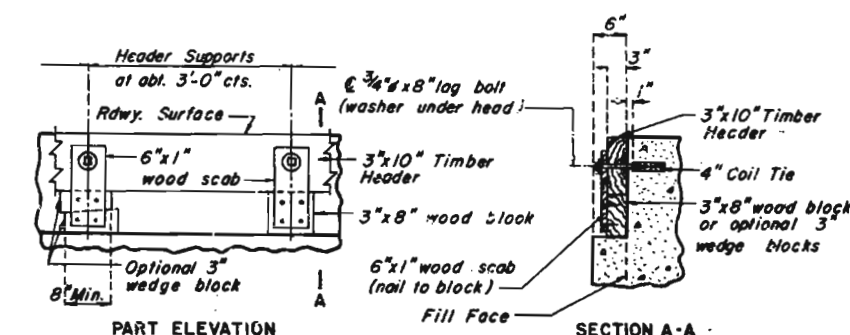
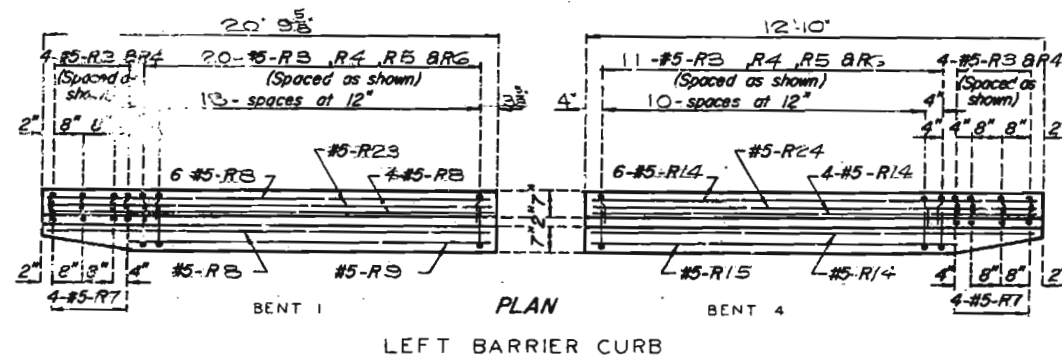


Note: Longitudinal dimensions shown are arc dimensions along top outside edge of slab parallel to grade.
 For details of Barrier Curb not shown see Sheet No. 25.
 See Sheet No. 25 for "Part Section Near Left Barrier Curb".
 Use a min. lap of 17' for #5 horizontal bars.
 When the barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete in place.
 Concrete in the safety barrier curb shall be Class B1.
 Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	87	

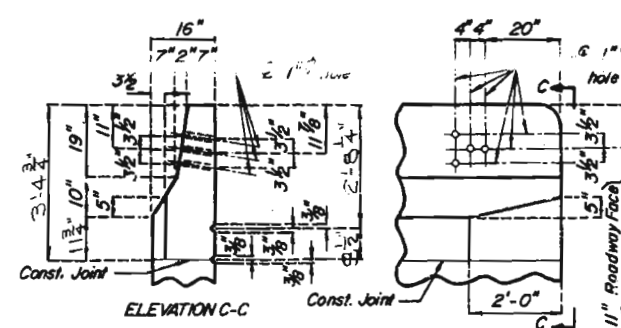
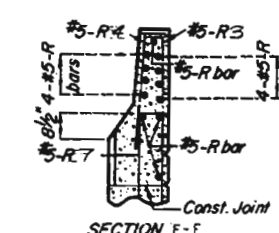
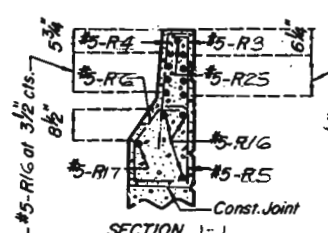
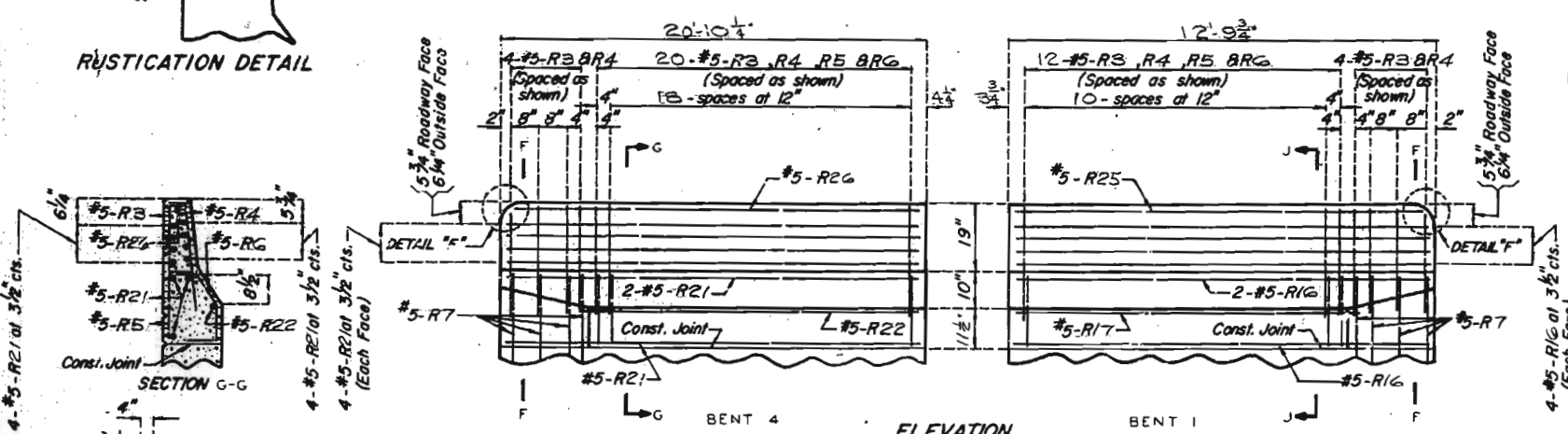
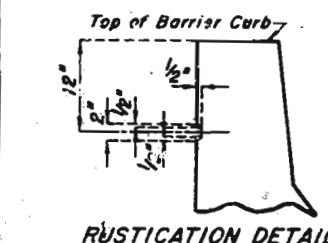


Note: For Elevation of Barrier Curb see sheet No. 24.

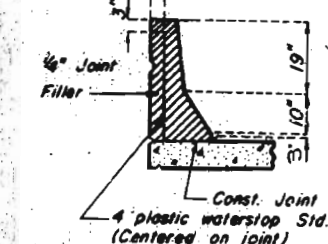


Note: Cost of timber headers complete in place to be included in price bid for concrete.
DETAILS OF TIMBER HEADER AT END BENTS

NOTES:
TOP OF BARRIER CURB TO BE BUILT PARALLEL TO GRADE WITH BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.
ALL EXPOSED EDGES OF BARRIER CURB SHALL HAVE 1/2" RADIUS OR 3/8" BEVEL UNLESS OTHERWISE NOTED.

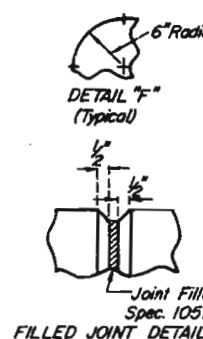
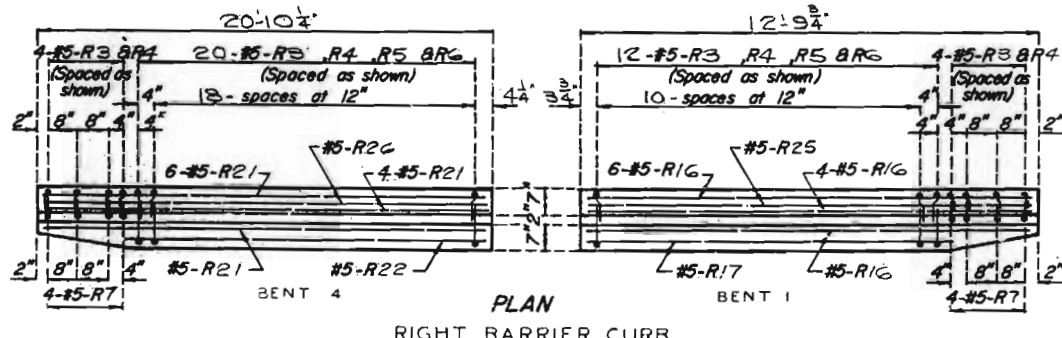


DETAILS OF GUARD RAIL ATTACHMENT

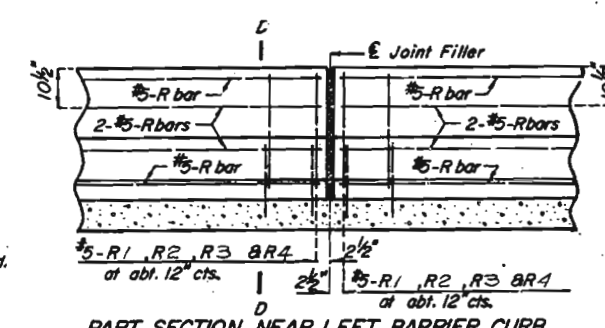


4 plastic waterstop Std. Spec. 10572.1 (Centered on joint)
Note: Plastic waterstop shall be placed in all safety barrier curb filled joints.
Cost of plastic waterstop complete in place to be included in unit price bid for concrete.

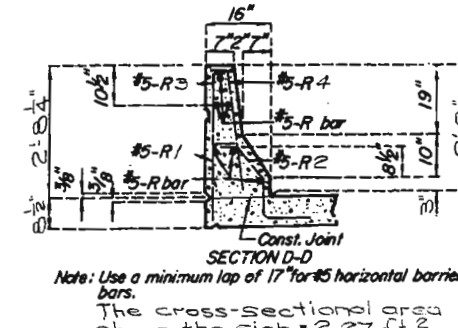
DETAILS OF PLASTIC WATERSTOP



Joint Filler (Std. Spec. 10572.4)



PART SECTION NEAR LEFT BARRIER CURB



Note: Use a minimum lap of 17' for #5 horizontal barrier bars.
The cross-sectional area above the slab = 2.27 ft.²

DETAILS OF BARRIER CURB AT END BENTS

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 25 of 28.

JEFFERSON COUNTY

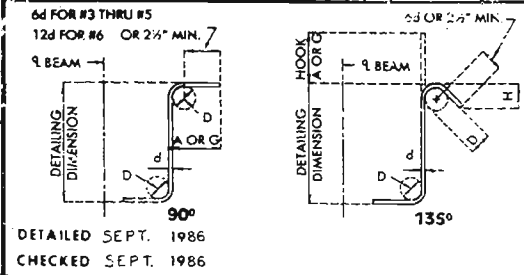
A-2957

467 336
SPS 127(N) REVISED APRIL 1980
AUG. 1979
CHECKED AUG. 1986

STD. 908
MAY 1974
REVISED
JUNE 1986

COMPLETE BILL OF REINFORCING STEEL

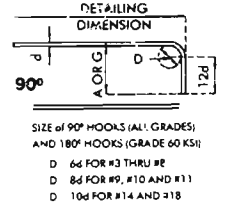
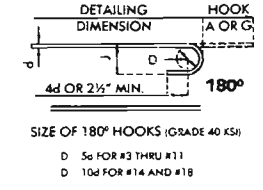
NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
									B		C		D		E		F		H					K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		SUBSTRUCTURE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														



STIRRUP HOOK DIMENSIONS				
GRADES 40-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A.O.R.G.	135° HOOK A.O.R.G.	APPROX. H
#3	1 1/8"	4"	4"	2 1/2"
#4	2"	4 1/4"	4 1/4"	3"
#5	2 1/4"	6"	5 1/4"	3 1/4"
#6	4 1/8"	12"	7 1/4"	4 1/8"

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

Note: This drawing is not to scale. Follow dimensions.

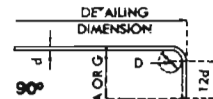
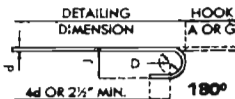
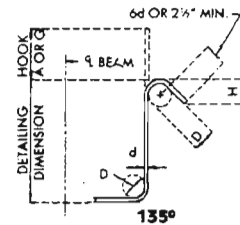
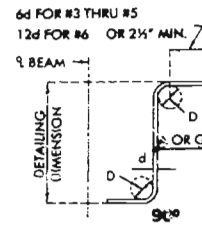


COMPLETE BILL OF REINFORCING STEEL

NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
15	6V21	WING	E	20	X	V		1	2	10.000									2	10	2	10			
		INCR = 2.750 IN							6	1.000									6	1	6	1			100
4	6V22	WING	E	17	X				7	5.000									8	1	8	1			49
4	6V23	WING	E	20	X				7	7.000									7	7	7	7			46
2	4V24	MUDWALL		20	X				6	1.000									6	1	6	1			8
6	5V25	WING FOOTING		20	X				3	9.000									3	9	3	9			23
10	2W1	BEAM		22	X				15.000	9.125									23	0	23	0			38
		INT. BENT NO 2																							
6	6D1	FOOTING		10	X					3	7.000	8	0.000						15	2	14	10			134
18	5D2	FOOTING		20	X				5	9.000									5	9	5	9			108
15	7D3	FOOTING		20	X				8	9.000									8	9	8	9			268
24	10D4	FOOTING & COLUMN		17	X				8	11.000									10	4	10	4			1047
8	11H1	BEAM		17	X	V		2	26	7.000									28	2	28	2			1227
		INCR = 5.625 IN							28	0.000									29	7	29	7			1227
8	7H2	BEAM ENDS		7	X				3	11.500	2	9.500							9	5	9	5			154
2	6H3	BEAM		20	X				26	8.000									26	8	26	8			80
2	6H4	BEAM		20	X				42	8.000									42	8	42	8			128
8	11H5	BEAM		17	X	V		2	53	11.500									55	7	55	7			2396
		INCR = 6.375 IN							55	6.500									57	2	57	2			2396
8	11H6	BEAM		20	X	V		2	50	1.000									50	1	50	1			2157
		INCR = 5.375 IN							51	5.000									51	5	51	5			2157
8	11H7	BEAM		20	X	V		2	26	7.000									26	7	26	7			1160
		INCR = 5.625 IN							26	0.000									28	0	28	0			1160
4	4H8	BEAM PAD GDR 3		20	X				3	9.000									3	9	3	9			10
54	4P1	COLUMNS		16	X				2	9.000									9	6	9	6			345
104	6U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000			13	8	13	2			2057
2	6U2	BEAM		13	S	X			2	9.000	3	3.000	2	9.000	3	3.000			13	4	12	10			3
7	4U3	BEAM PAD GDR 3		10	S	X				9.000	2	11.000							4	5	4	3			2
2	6U22	BEAM		13	S	X			2	2.000	3	3.000	2	2.000	3	3.000			12	2	11	8			3
8	10V1	COLUMN		17	X				20	4.000									21	9	21	9			74
8	10V2	COLUMN		17	X				19	6.000									20	11	20	11			72
8	10V3	COLUMN		17	X				18	9.000									20	2	20	2			69
10	2W1	BEAM		22	X				15.000	9.125									23	0	23	0			38
		INT. BENT NO 3																							
6	6D1	FOOTING		10	X					3	7.000	8	0.000						15	2	14	10			134
18	5D2	FOOTING		20	X				5	9.000									5	9	5	9			108
15	7D3	FOOTING		20	X				8	9.000									8	9	8	9			268
24	10D4	FOOTING & COLUMN		17	X				8	11.000									10	4	10	4			1047
8	11H1	BEAM		17	X	V		2	26	7.000									28	2	28	2			1227
		INCR = 5.625 IN							28	0.000									29	7	29	7			1227
8	7H2	BEAM ENDS		7	X				3	11.500	2	9.500							9	5	9	5			154
2	6H3	BEAM		20	X				26	8.000									26	8	26	8			80
2	6H4	BEAM		20	X				42	8.000									42	8	42	8			128
8	11H5	BEAM		17	X	V		2	53	11.500									55	7	55	7			2396
		INCR = 5.375 IN							55	6.500									56	11	56	11			2396
8	11H6	BEAM		20	X	V		2	50	1.000									50	1	50	1			2157
		INCR = 5.375 IN							51	5.000									51	5	51	5			2157
8	11H7	BEAM		20	X	V		2	26	7.000									26	7	26	7			1160
		INCR = 5.625 IN							28	0.000									28	0	28	0			1160

COMPLETE BILL OF REINFORCING STEEL																
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS							
									B	C	D	E	F	H	K	NOMINAL
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
4	4H8	BEAM PAD GOR 3		20	X				3	9.000						3 9 3 9
49	4P1	COLUMNS		16	X				2	9.000						9 6 9 6
104	6U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.000	3	3.000
2	6U2	BEAM		13	S	X			2	9.000	3	3.000	2	9.000	3	3.000
7	6U3	BEAM PAD GOR 3		10	S	X				9.000	2	11.000				4 5 4 3
2	6U22	BEAM		13	S	X			2	2.000	3	3.000	2	2.000	3	3.000
8	10V4	COLUMN		17	X				10	11.000						20 6 20 4
8	10V5	COLUMN		17	X				13	3.000						19 8 19 8
8	10V6	COLUMN		17	X				17	6.000						18 11 18 11
10	2W1	BEAM		22	X				15.000	9.125						23 0 23 0
END BENT NO 4																
8	505	WING FOOTING		20	X				2	3.000						2 3 2 3
4	6F3	WING & BACKWALL		15	X				16.125	3	0.000	14.125	13.500	4.000	13.500	4.000
4	6F4	WING & BACKWALL		15	X				16.125	11	7.000	14.125	3.500	13.625	3.500	13.625
12	4H11	BEAM PADS		20	X				2	7.000						2 7 2 7
4	5H26	PRESSURE WALL		20	X				41	11.000						41 11 41 11
8	6H27	BEAM		17	X				49	9.000						50 6 50 8
2	6H28	BEAM		20	X				47	11.000						47 11 47 11
8	4H29	BACKWALL		20	X				24	10.000						24 10 24 10
2	6H30	TOP OF BACKWALL		20	X				49	0.000						49 0 49 0
8	4H31	MUDWALL		20	X				3	5.000						3 5 3 5
8	6H32	WING		20	X	V			19	6.500						19 7 19 7
4	6H33	WING		20	X				20	7.000						20 7 20 7
4	5H34	PRESSURE WALL		20	X				36	6.000						36 6 36 6
8	6H35	BEAM		20	X				32	8.000						32 8 32 8
2	6H36	BEAM		20	X				32	8.000						32 8 32 8
4	4H37	BACKWALL		20	X				32	4.000						32 4 32 4
2	6H38	TOP OF BACKWALL		20	X				32	4.000						32 4 32 4
3	6H39	MUDWALL		20	X				6	4.000						6 4 6 4
8	6H40	WING		20	X	V			6	7.000						6 7 6 7
4	6H41	WING		20	X				12	2.000						12 2 12 2
2	4T5	MUDWALL		19	X				6	0.875	3	9.000				9 10 9 9
2	6T6	WING		25	S	X			15.000	15	9.375	2	3.000		2	9.000
2	6T7	MUDWALL		19	X				6	4.250	6	9.000				13 1 13 0
2	6T8	WING		25	S	X			15.000	7	10.875	22.000				11 0 10 11
68	5H4	BEAM		13	S	X			3	2.000	2	10.750	4	3.500	2	8.000
11	6H10	BEAM		10	S	X				21.000	2	9.000				6 3 5 11
18	4H14	BEAM PAD		10	S	X				12.000	3	2.000				5 2 5 0
4	4H15	BEAM		10	S	X				6.000	3	2.000				4 2 4 0
5	6H16	BEAM		10	X				6	9.000	2	9.000				16 3 15 11
2	9H9	BEAM		13	S	X			3	2.000	2	8.000	3	2.000	2	8.000
1	9H18	BEAM		13	S	X			2	9.500	2	10.750	3	11.000	2	8.000
1	9H19	BEAM		13	S	X			2	3.250	2	10.625	3	4.500	2	9.000
1	9H20	BEAM		13	S	X				17.000	2	10.750	2	6.500	2	6.000
5	6H21	BEAM		19	X				10	2.000	4	11.000				15 1 14 11
150	9H9	PRESSURE WALL		20	X				2	10.000						2 10 2 10
2	6V26	BEAM		20	X				3	1.000						3 1 3 1
1	6V27	BEAM		20	X				2	11.000						2 11 2 11
146	9V28	BACKWALL		20	X				5	9.000						5 9 5 9
2	4V29	MUDWALL		20	X				6	0.000						6 0 6 0
5	6V30	WING		17	X				7	1.000						7 9 7 9
5	6V31	WING		20	X				7	3.000						7 3 7 3

COMPLETE BILL OF REINFORCING STEEL																																												
NO. REQD.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	(S) STIRRUP	(X) SUBSTR.	(V) VARIES	NO. EACH	DIMENSIONS												NOMINAL		ACTUAL		WEIGHT																			
									B		C		D		E		F		H		K		LENGTH			LENGTH																		
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.		FT.	IN.	LBS.																
15	6V32	WING	E	17	X	V		1	2	6.000									3	2	3	2																						
		INCR = 2.375 IN							5	4.000									6	0	6	0					103																	
15	6V33	WING	E	20	X	V		1	2	8.000									2	8	2	6																						
		INCR = 2.375 IN							5	6.000									5	6	5	4					92																	
4	6V12	WING		20	X					17.000										17		17																						
6	5V25	WING FOOTING		20	X				3	9.600									3	9	3	9					23																	
8	4V37	MUDWALL		20	X				6	2.000									6	2	6	2					31																	
5	6V38	WING	E	20	X				7	4.000									7	4	7	4					95																	
5	6V39	WING	E	17	X				7	2.000									7	10	7	10					94																	
7	6V40	WING	E	20	X	V		1	3	3.000									3	3	3	3																						
		INCR = 4.875 IN							5	8.000									5	8	5	8					47																	
7	6V41	WING	E	17	X	V		1	3	1.000									3	9	3	9																						
		INCR = 4.875 IN							5	6.000									6	2	6	2					51																	
10	2W1	BEAM		22	X				15.000	9.125									23	0	23	0					30																	
SUPERSTRUCTURE																																												
CIP ON SIP																																												
OPTION																																												
360	551	BOTTOM SLAB	E	20					35	8.000									35	8	35	8					1369																	
409	552	BOTTOM SLAB	E	20					22	4.000									22	4	22	4					952																	
44	553	BOTTOM SLAB	E	20		V		1	2	1.000									2	1	2	1																						
		INCR = 4.500 IN							21	11.000									21	11	21	11					670																	
52	554	BOTTOM SLAB	E	20		V		1	2	2.000									2	2	2	2																						
		INCR = 4.500 IN							21	5.000									21	5	21	5					640																	
414	555	BOTTOM SLAB	E	20					23	8.000									23	8	23	8					1021																	
44	556	BOTTOM SLAB	E	20		V		1	2	11.000									2	11	2	11																						
		INCR = 4.500 IN							19	2.000									19	2	19	2					501																	
52	557	BOTTOM SLAB	E	20		V		1	2	1.000									2	1	2	1																						
		INCR = 4.500 IN							21	4.000									21	4	21	4					435																	
272	558	TOP SLAB	E	20					35	8.000									35	8	35	8					1011																	
66	559	TOP SLAB	E	20					48	4.000									48	4	48	4					332																	
66	5511	TOP SLAB	E	20					47	3.000									47	3	47	3					325																	
478	6513	TOP SLAB	E	20					22	4.000									22	4	22	4					1603																	
63	6514	TOP SLAB	E	20		V		1	2	0.000									2	0	2	0																						
		INCR = 3.875 IN							22	1.000									22	1	22	1					115																	
61	6515	TOP SLAB	E	20		V		1	2	1.000									2	1	2	1																						
		INCR = 3.875 IN							21	6.000									21	6	21	6					1080																	
483	6516	TOP SLAB	E	20					24	1.000									24	1	24	1					167																	
50	6517	TOP SLAB	E	20		V		1	3	8.000									3	8	3	8																						
		INCR = 3.875 IN							19	6.000									19	6	19	6					870																	
60	6518	TOP SLAB	E	20		V		1	2	3.000									2	3	2	3																						
		INCR = 3.875 IN							21	5.000									21	5	21	5					1060																	
7	5521	BOTTOM SLAB	E	20					32	11.000									32	11	32	11					240																	
2	5522	BOTTOM SLAB	E	20					28	6.000									28	6	28	6					51																	
P/C PANEL OPTION																																												
32	551	BOTTOM SLAB	E	20					35	8.000									35	8	35	8					1190																	
272	558	TOP SLAB	E	20					35	8.000									35	8	35	8					1011																	
66	6510	TOP SLAB	E	20					48	4.000									48	4	48	4					470																	
66	6512	TOP SLAB	E	20					47	3.000									47	3	47	3					468																	
476	6513	TOP SLAB	E	20					22	4.000									22	4	22	4					1596																	



SIZE OF 180° HOOKS (GRADE 40 KSI)
D = 5d FOR #3 THRU #11
D = 10d FOR #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES)
AND 180° HOOKS (GRADE 60 KSI)
D = 6d FOR #3 THRU #8
D = 8d FOR #9, #10 AND #11
D = 10d FOR #14 AND #18

STIRRUP HOOK DIMENSIONS				
BAR SIZE	D (IN.)	GRADES 40-50-60 KSI		
		90° HOOK		135° HOOK
		HOOK A OR G	HOOK A OR G	APPROX H
#3	1 1/4"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 1/2"
#6	4 1/2"	12"	7 1/2"	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.)	180° HOOKS		90° HOOKS
		ALL GRADES		ALL GRADES
		A OR G	J	A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 1/2"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/2"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/4"	15"	11 1/2"	19"
#10	10 1/2"	17"	13 1/2"	22"
#11	12"	19"	14 1/2"	2'-0"
#14	18 1/2"	2'-3"	21 1/2"	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 FABRICATORS USE (NEAREST INCH).

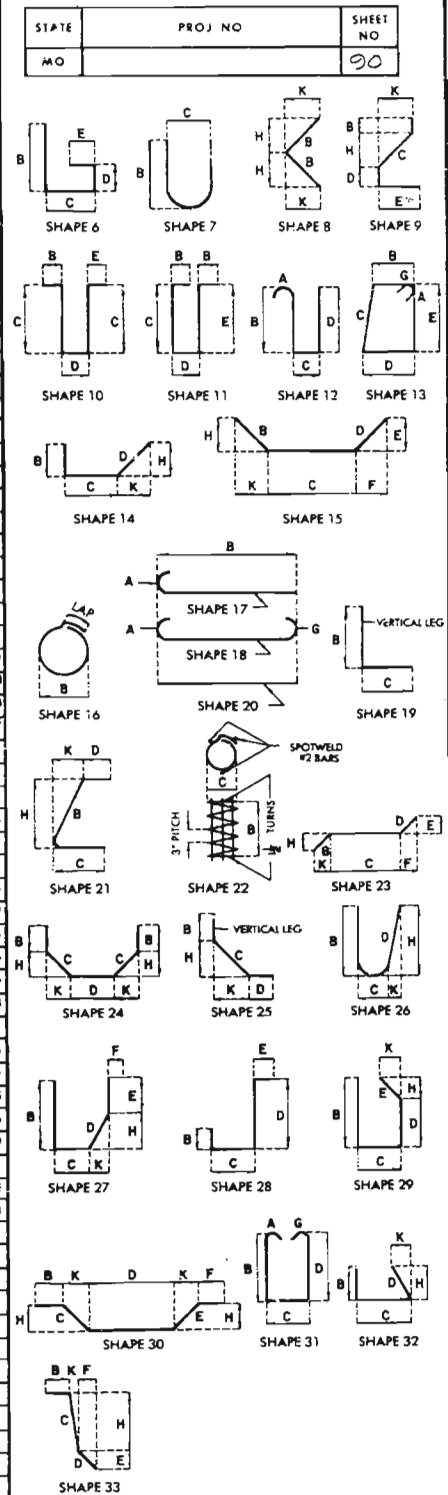
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

COMPLETE BILL OF REINFORCING STEEL

NO. REQ.	MARK NO.	LOCATION	(E)	SHAPE NO.	(S)	(X)	(V)	NO. EACH	DIMENSIONS																NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B		C		D		E		F		H		K						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.					
63	6S14	TOP SLAB	E	20				1	2	0.000										2	0	2	0				
		INCR = 3.875 IN							22	0.000										22	0	22	0	1134			
61	6S15	TOP SLAB	E	20				1	2	1.000										2	1	2	1				
		INCR = 3.875 IN							21	6.000										21	6	21	6	1080			
483	6S16	TOP SLAB	E	20					24	1.000										24	1	24	1	17472			
50	6S17	TOP SLAB	E	20				1	3	8.000										3	8	3	8				
		INCR = 3.875 IN							19	6.000										19	6	19	6	870			
60	6S18	TOP SLAB	E	20				1	2	3.000										2	3	2	3				
		INCR = 3.875 IN							21	5.000										21	5	21	5	1066			
7	5S21	BOTTOM SLAB	E	20					32	11.000										32	11	32	11	240			
2	5S22	BOTTOM SLAB	E	20					28	6.000										28	6	28	6	59			
87	4S24	BOTTOM SLAB	E	20				1	2	2.000										2	2	2	2				
		INCR = 0.125 IN							3	1.000										3	1	3	1	153			
185	4S25	BOTTOM SLAB	E	20					3	2.000										3	2	3	2	391			
206	4S26	BOTTOM SLAB	E	20					2	11.000										2	11	2	11	401			
70	4S27	BOTTOM SLAB	E	20					3	4.000										3	4	3	4	151			
		FOLLOWING BARS ARE NOT INCLUDED IN QUANTITIES																									
544	SR1	BARRIER CURB	E	19	S				17.000	6.000										23	22			104			
544	SR2	BARRIER CURB	E	27	S					6.000	11.125	7.000	12.000	9.125	6.375	3	0	2	10					160			
623	SR3	BARRIER CURB	E	19	S				2	6.000	3.500									2	10	2	8	173			
623	SR4	BARRIER CURB	E	15	S				2	6.125	3.500				2	6.000	3.000	2	10	2	9		178				
63	SR5	BARRIER CURB	E	19	S					18.500	3.500									22	21			11			
63	SR6	BARRIER CURB	E	27	S				12.000	8.500	11.125	6.000			6.375	9.125	3	2	3	0				19			
16	SR7	BARRIER CURB	E	10						21.000	6.000									4	0	3	9	6			
11	SR8	BARRIER CURB	E	20					20	6.000										20	6	20	6	23			
1	SR9	BARRIER CURB	E	20					18	10.000										18	10	18	10	2			
12	SR10	BARRIER CURB	E	20					40	2.000										40	2	40	2	50			
48	SR11	BARRIER CURB	E	20					9	9.000										9	9	9	9	48			
12	SR12	BARRIER CURB	E	20					44	8.000										44	8	44	8	59			
12	SR13	BARRIER CURB	E	20					31	10.000										31	10	31	10	39			
11	SR14	BARRIER CURB	E	20					12	7.000										12	7	12	7	14			
3	SR15	BARRIER CURB	E	20					10	11.000										10	11	10	11	3			
11	SR16	BARRIER CURB	E	20					12	6.000										12	6	12	6	14			
1	SR17	BARRIER CURB	E	20					10	10.000										10	10	10	10	1			
12	SR18	BARRIER CURB	E	20					40	7.000										40	7	40	7	50			
12	SR19	BARRIER CURB	E	20					45	1.000										45	1	45	1	56			
12	SR20	BARRIER CURB	E	20					32	2.000										32	2	32	2	40			
11	SR21	BARRIER CURB	E	20					20	7.000										20	7	20	7	23			
1	SR22	BARRIER CURB	E	20					18	11.000										18	11	18	11	2			
1	SR23	BARRIER CURB	E	20					20	2.000										20	2	20	2	2			
1	SR24	BARRIER CURB	E	20					12	3.000										12	3	12	3	1			
1	SR25	BARRIER CURB	E	20					12	2.000										12	2	12	2	1			
1	SR26	BARRIER CURB	E	20					20	2.000										20	2	20	2	2			
		END OF BAR LIST																									

NOTE: Two (2) additional #5-R15 #G-S13 are included in bar bill for testing.



BENDING DIAGRAMS

478 339

STD. 90.5
REVISED
JUNE 1986

DETAILED SEPT. 1986
CHECKED SEPT. 1986

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 28 of 28

JEFFERSON

COUNTY

A-2957

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	F-11-2(24)	20	35	

U.S. Survey TWP. 43N RGE. 5E

Design Specifications: A.A.S.H.T.O.-1983 and Interim 1984 and 1985 Load Factor Design. Load Factor Design Substructure.

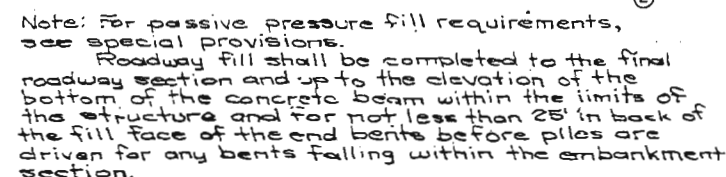
Design Loading:
H920-44, 35³/sq. ft. Future Wearing Surface
Earth 120³/cu ft. Equivalent Fluid Pressure 30³/cu. ft.
Fatigue Stress - Case II

Design Unit Stresses:
 Class B Concrete (substructure) $f'_c = 3,000$ psi
 Class B2 Concrete (superstructure) $f'_c = 4,000$ psi
 Reinforcing Steel (substructure) Grade 60 $f_y = 60,000$ p.s.i.
 Reinforcing Steel (superstructure) Grade 60 $f_y = 60,000$ p.s.i.
 Structural Carbon Steel $f_y = 36,000$ psi.
 Structural Steel (A.S.T.M. A572) Grade 50 $f_y = 50,000$ p.s.i.
 Steel Pile $f_b = 9000$ p.s.i.

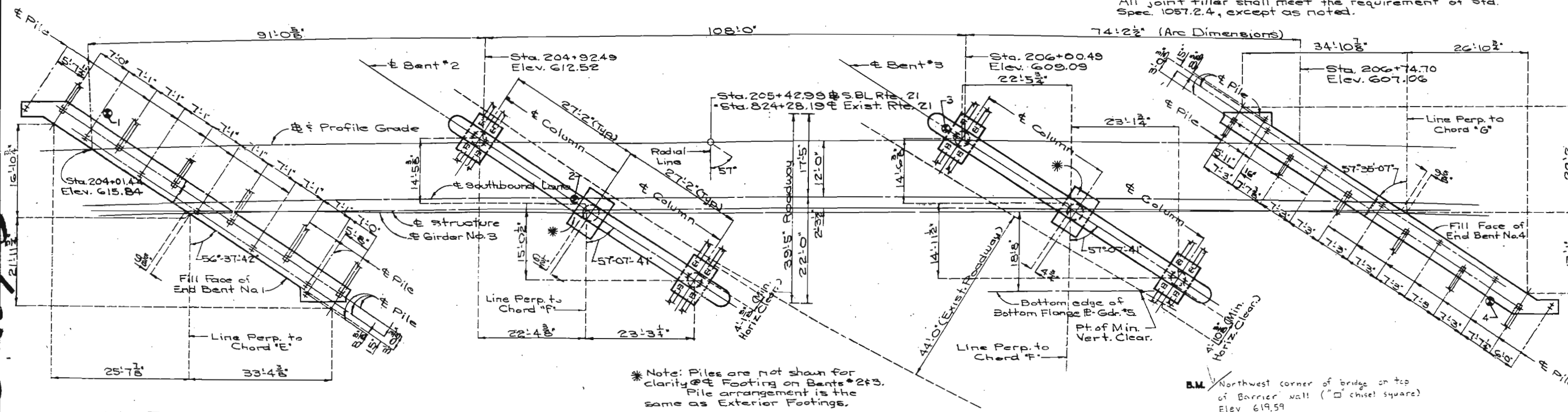
Fabricated Steel:
Field connections, High Strength Bolts $\frac{3}{4}" \phi$, holes $1\frac{3}{16}" \phi$
except as noted. Turn of Nut Method of tensioning high
strength bolts will be permitted.

Paint Item:
System B by contractor in accordance with Std. Spec. 712.12.
(Color of the final field coat for System B shall be order.)

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2" unless
unless otherwise shown.
All reinforcing bars in tops of substructure beams or caps
shall be spaced to clear anchor bolts for bearings by
at least 1/2".
All joint filler shall meet the requirement of Std.
Spec. 1057.2.4, except as noted.



GENERAL ELEVATION



* Note: Piles are not shown for clarity @ & Footing on Bents * 2 & 3.
Pile arrangement is the same as Exterior Footings.

PLAN

Curve Data (S.B. Lanes)
P.I. Sta. 210+79.85
 $\Delta = 10^\circ 38'$ Rt.
 $D = 0^\circ 30'$
 $T = 1,066.33'$
 $L = 2,126.67'$
 $R = 11,459.16'$
S.E. = None
W. = None

Note: For Boring Data see sheet No. 3.
 10. Indicates location of boring.
 Data see sheet No. 2.
 All bents are parallel to a line skewed 57° RA
 from a radial line at Sta. 203+42.99
 For location of Chords E, F and G, see sheet No. 4.

Elastomeric Expansion Joint Seal at Bent 1 - On-Flx 35

BRIDGE: S.B. LANE OVER EXISTING RTE. 21

STATE ROAD FROM ROUTE 141 TO ROUTE M

ABOUT 4.2 MILES NORTH OF OTTO

PROJECT NO. F-21-2(24) STA. 204+01.44

JOB NO. 6-U-21-256C

RTE. 21

JEFFERSON

COUNTY

STD. 611.60

STD. 706.35

A-2957

DESIGNED SEPT. 1980
 DETAILED OCT. 1980
 CHECKED AUG 1986

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 A of 28.

DATE 3/11/87

QUANTITIES				
ITEM		SUBSTR	SUPERSTR	TOTAL
Class I Excavation	Cu.Yd.	81.5		81.5
Structural Steel Pile (HP10x42)	Lin.Ft.	2336		2336
Class B Concrete	Cu.Yd.	242.5		242.5
(-) Slab On Steel, See Special Provisions	Sq.Yd.		1272	1272
Type N PTFE Bearings	Each	20		20
Elastomeric Expansion Joint Seal (3.0 in.)	Lin.Ft.		72	72
Reinforcing Steel	Lb.	39290		39290
Fabricated Structural Carbon Steel	Lb.		207500	207500
Fabricated Structural Low Alloy Steel A-572	Lb.		67260	67260
Painting (System B) Green	Ton		36.5	36.5
Safety Barrier Curb	Lin.Ft.		0	0
Pile Point Reinforcement	Each	50		50
Abutment Vertical Drain	Lump Sum	1		1
Reinforcing Steel Epoxy Coated	Lb.	2540		2540
Pre-boring for Piling (Cont.)		1		1
Slipform Safety Barrier Curb (Cont.)			608	608

Note: Concrete above upper construction joint in backwall at end bent No.1 is included with Class B (Substructure) quantities.

The prestressed panels quantities are not included in the table of estimated quantities for alternate slabs.

QUANTITIES FOR SLAB			
TYPE OF SLABS	SLAB ON STEEL		
	REINF. LBS.		CONC.
	EPOXY	PLAIN	CU. YD.
Precast Panel Forms	59770		224.7

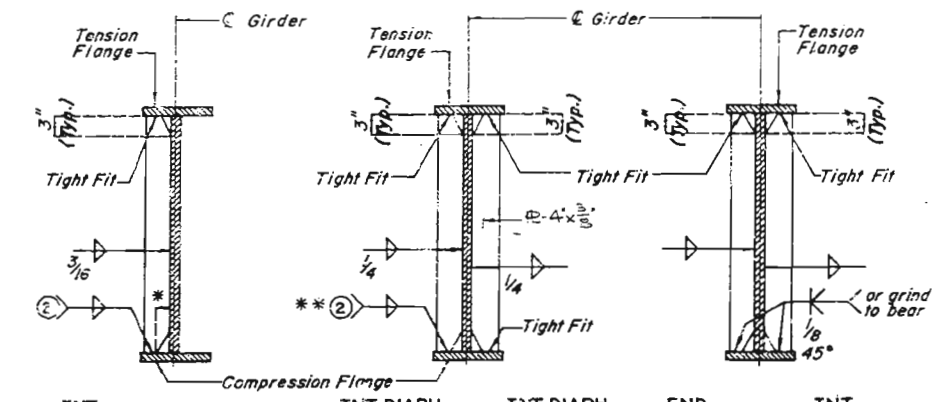
The table of Estimated Quantities for Alternate Slabs represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of Alternate Slab used.

Precast panel quantities are based on skewed end panels. See Special Provisions for alternate methods of forming slabs.

PILE DATA										
BENT NO.										
LOCATION	BRG.	WING	LT.	RT.	LT.	RT.	BRG.	WING	LT.	RT.
Pile Type and Size	HP10x42									
Number	13	1	6	6	6	6	6	6	13	1
Average Length Ft.	45	46	26	23	23	19	22	46	45	45
Design Bearing Tons	46	6	45	45	45	51	51	51	46	6
Hammer Energy Required Ft.Lbs.	12,500	7,000	10,500	10,500	10,500	11,700	11,900	11,900	12,500	7,000

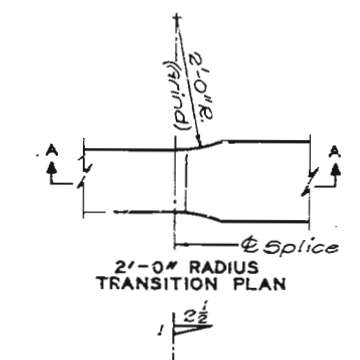
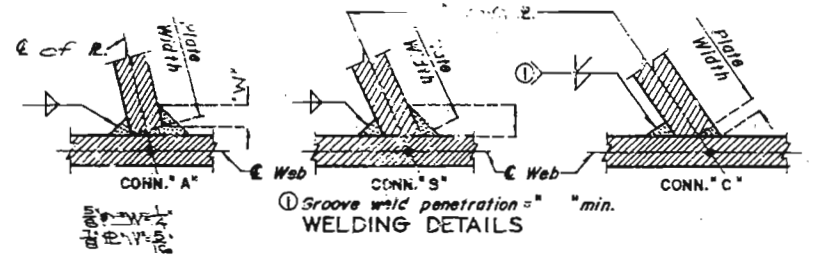
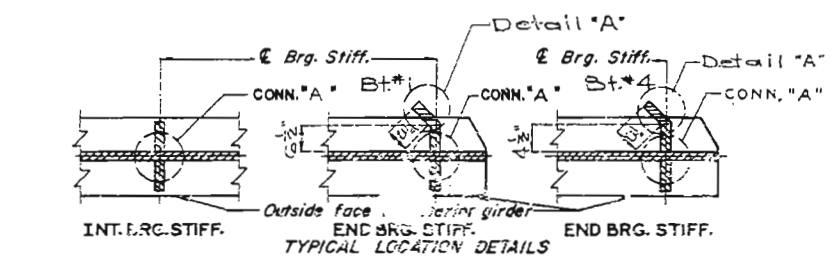
Minimum energy requirement of hammer based on plan length and design bearing value of piles. All pile to be driven to practical refusal. Manufactured pile point reinforcement were used on piles at bents No.2,3 & 4. See Special Provisions.

TED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	5-31-20(1-1)	22	37	

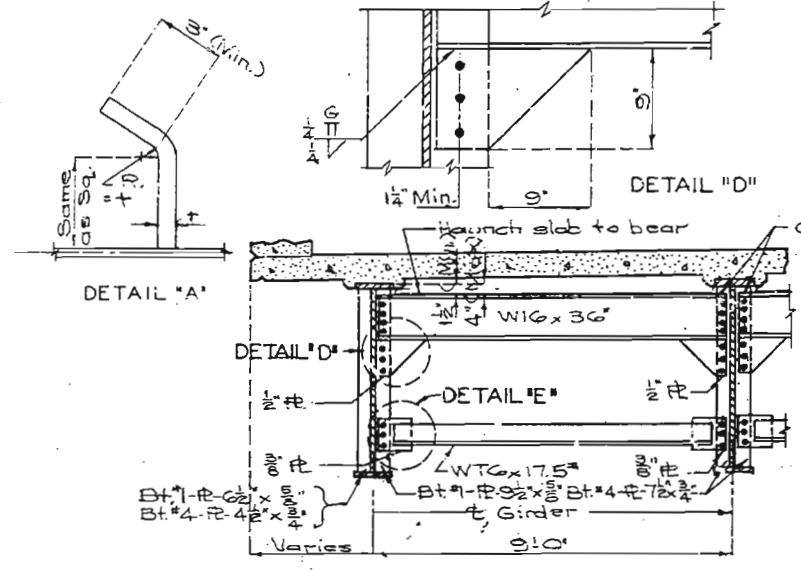


INT. WEB STIFF. (ONE SIDE ONLY)
 INT. DIAPH. CONN. R. & WEB STIFF.
 INT. DIAPH. CONN. R. ONLY
 END BRG. STIFF.
 INT. BRG. STIFF.
 (2) Weld to compression flange as located on ELEVATION OF GIRDER.
 * 1/2" typical for all Int. Web Stiff., Int. Diaph. Conn. R. and Brg. Stiff.,
 ** Weld may be omitted on interior girders, and Tight Fit used when Int. Diaph. Conn. R. is required on both sides.

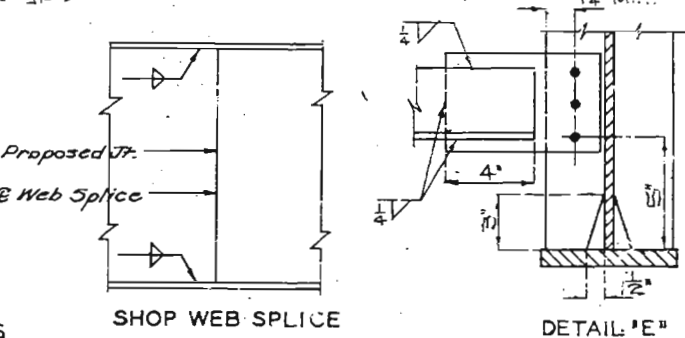
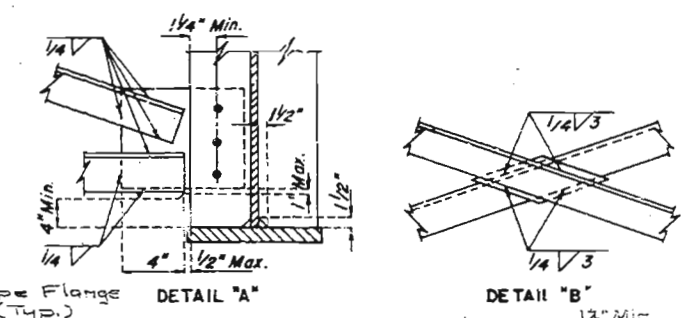
WELDING DETAILS



SECTION A-A
 WELDED SHOP FLANGE SPLICE

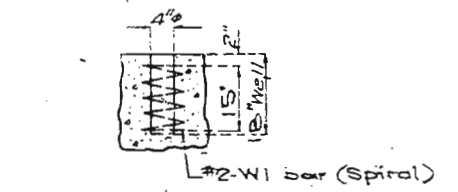


TYP. PART SECTION SHOWING END DIAPHRAGMS

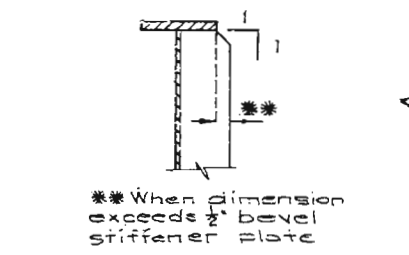


SHOP WEB SPLICE

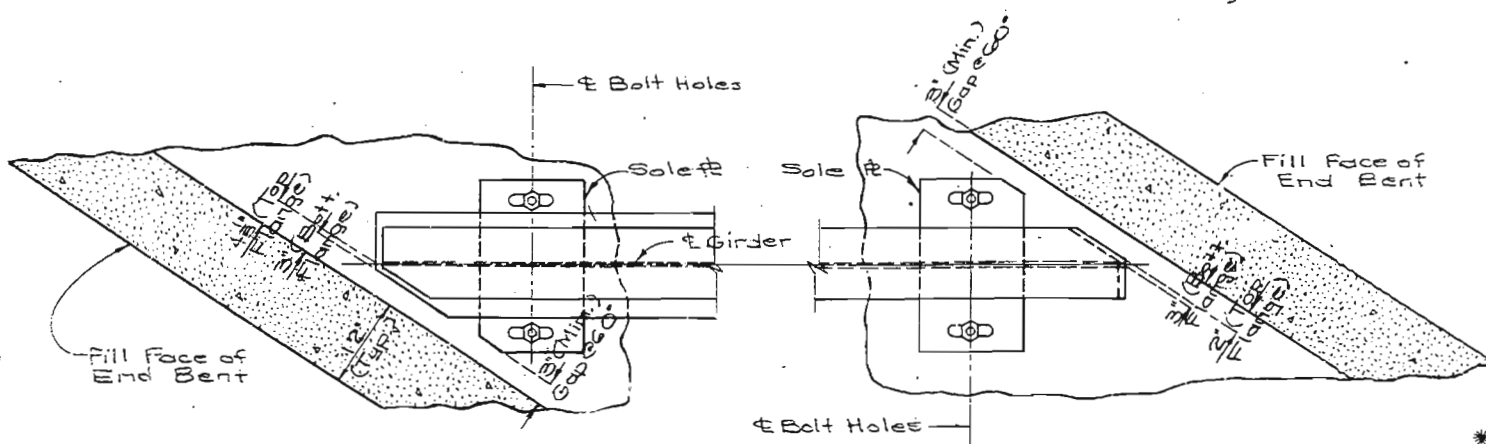
DETAIL E



DETAIL OF ANCHOR BOLT WELLS



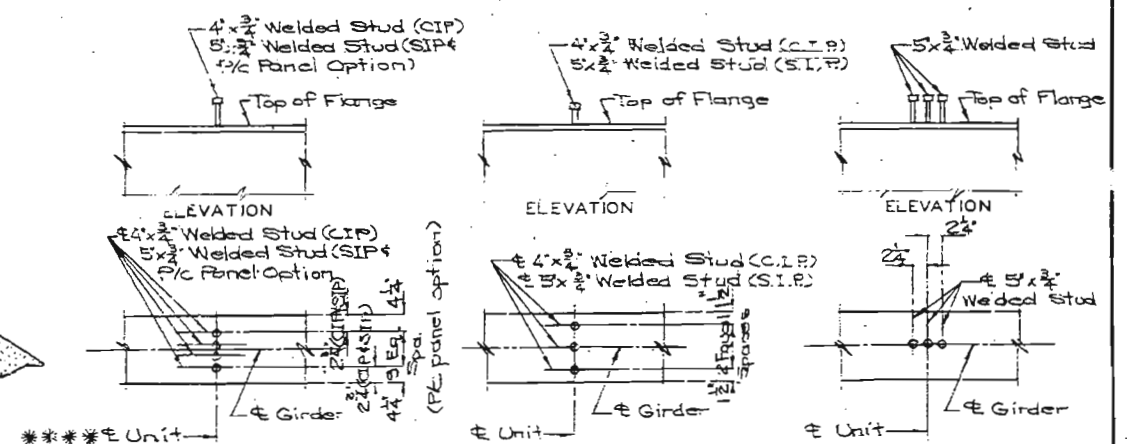
DETAILS THRU BEVEL PLATE FOR BRG. STIFF. PLATES



END BENT NO. 1

END BENT NO. 4

DETAIL SHOWING BEARING SOLE PLATE & FLANGE CLIPS



PLAN OF STUD CONN. (All options)

PLAN OF STUD CONN. (CIP & S.I.P. option)

PLAN OF STUD CONN. (P/C panel option)

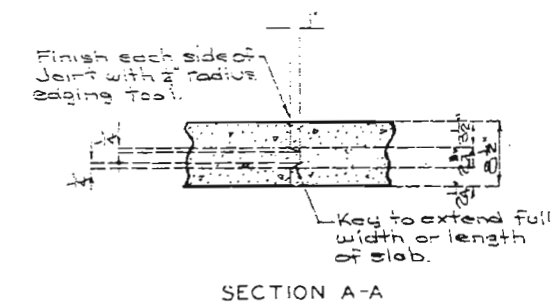
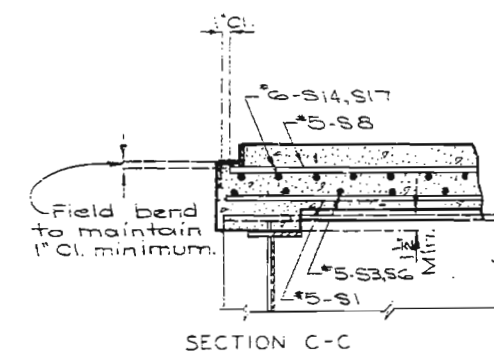
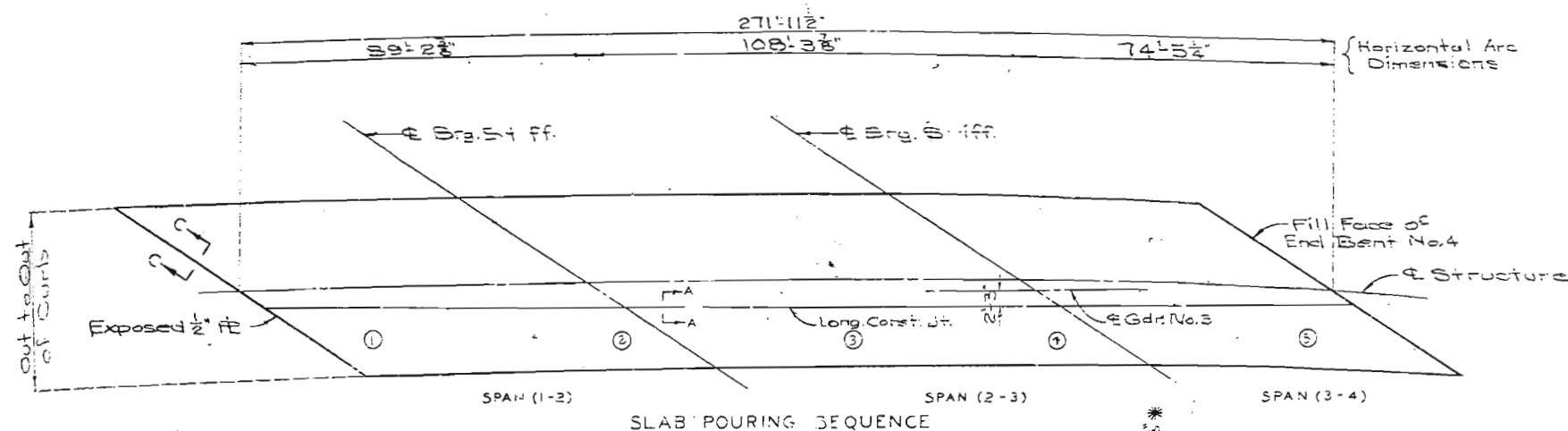
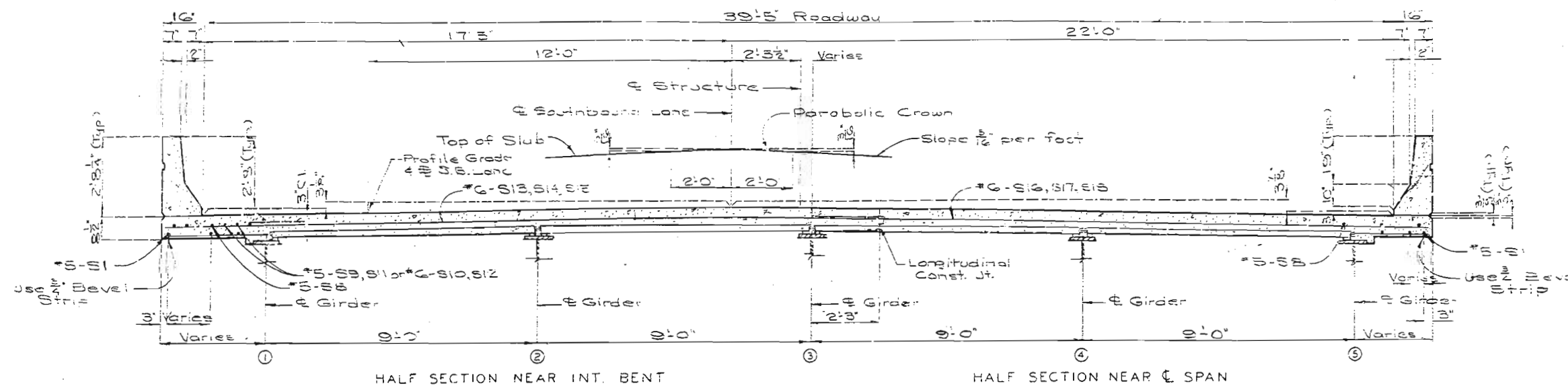
DETAILS OF SHEAR CONNECTORS

**** See sheet No. 16 for 4/unit shear connectors. Weight of 1525 lbs of shear connectors is included in weight of Fabricated Structural Carbon Steel

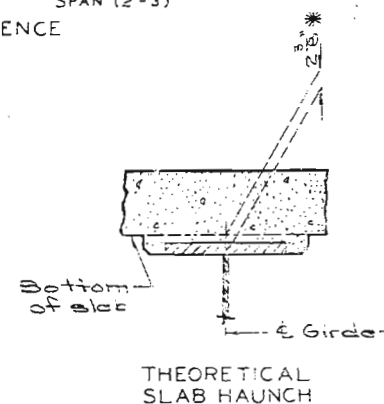
△ Revised 7-16-87

460 342

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	102-1-104	53	38	



BASIC SEQUENCE	SEQUENCE OF POURS					MIN. RATE OF POUR CU. YDS./HR.	
	DIRECTION					WITH RETARDER	NO RETARDER
	1	2	3	4	5		
	1	2	3	4	5	25	25



Note: The contractor shall pour and satisfactorily finish the slab pours at the rate given. Retarder, if used, shall be an approved type and retard the set of the concrete to 2.5 hours.

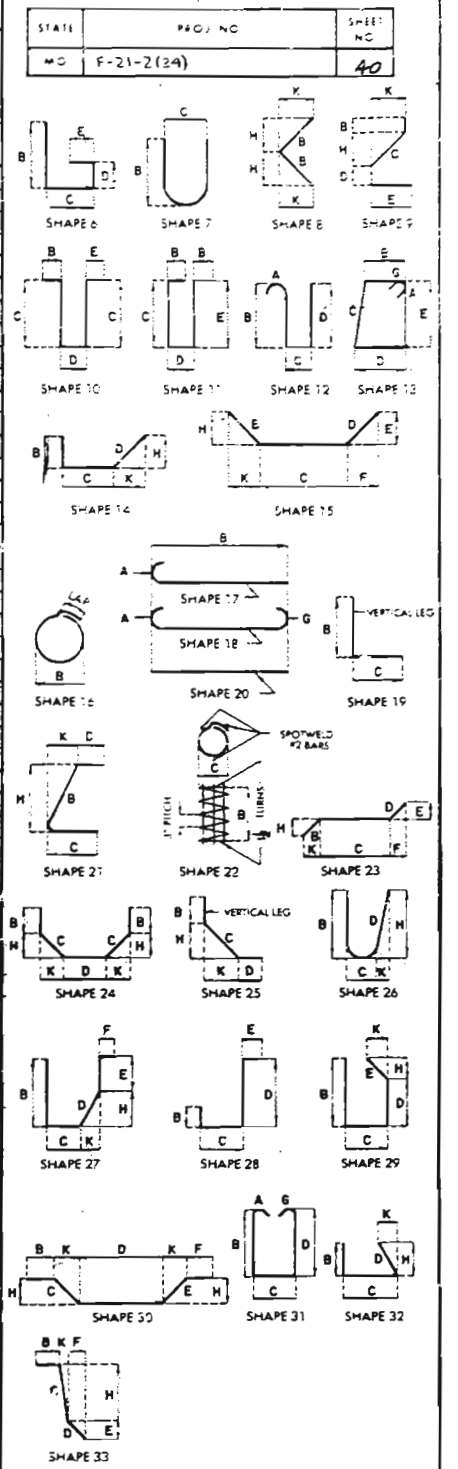
*Dimension may vary if girder camber after erection differs from plan camber by more than the % of D.L. deflection due to weight of structural steel. No payment will be made for additional forming or concrete required for variable haunching.

COMPLETE BILL OF REINFORCING STEEL

COMPLETE BILL OF REINFORCING STEEL

NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO	STIRRUP	SUBSTR.	VARIES	NO EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT			
									B	C	D	E	F	H	K							
									SIZE	MARK	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
4	4M8	BEAM PAD GDR 3		20	X				3	9.000								3	9	3	9	10
49	4P1	COLUMNS		16	X				2	9.000								9	6	9	6	311
104	6U1	BEAM		13	S	X			2	11.000	3	3.000	2	11.300	3	3.000		13	8	13	2	2057
2	6U2	BEAM		13	S	X			2	9.000	3	3.000	2	9.000	3	3.000		13	4	12	10	39
7	4U3	BEAM PAD GDR 3		10	S	X				9.000	2	11.000						4	5	4	3	20
2	6U22	BEAM		13	S	X			2	2.000	3	3.000	2	2.000	3	3.000		12	2	11	8	35
8	10V4	COLUMN		17	X					18	11.000							20	4	20	4	700
8	10V5	COLUMN		17	X					18	3.000							19	8	19	8	677
8	10V6	COLUMN		17	X					17	6.000							18	11	18	11	651
10	2W1	BEAM		22	X					15.000	9	125						3	0	23	0	38
		END BENT NO 4																				
8	505	WING FOOTING		20	X				2	3.000								2	3	2	3	19
4	6F3	WING & BACKWALL		15	X					14.125	3	0.000	14.125	13.500	4.000	13.500	4.000	4	4	5	2	31
4	6F4	WING & BACKWALL		15	X					14.125	11	7.000	14.125	3.500	13.625	3.500	13.625	13	11	13	11	84
12	4H11	BEAM PADS		20	X				2	1.300								2	7	2	7	21
4	5H26	PRESSURE WALL		20	X				41	11.000								41	11	41	11	175
8	6M27	BEAM		17	X				49	9.000								50	8	50	8	1082
2	6M28	BEAM		20	X				47	11.000								47	11	47	11	144
8	6M29	BACKWALL		20	X				24	10.000								24	10	24	10	133
2	6M30	TOP OF BACKWALL		20	X				49	0.000								49	0	49	0	147
8	4H31	MUDWALL		20	X				3	5.000								3	5	3	5	18
8	6M32	WING		20	X	V		2	6	8.500								6	9	6	9	
		INCR = 51.375 IN							19	6.500								19	7	19	7	158
4	6M33	WING		20	X				20	7.000								20	7	20	7	124
4	5H34	PRESSURE WALL		20	X				36	6.000								36	6	36	6	152
8	6H35	BEAM		20	X				32	8.000								32	8	32	8	698
2	6H36	BEAM		20	X				32	8.000								32	8	32	8	98
4	4H37	BACKWALL		20	X				32	4.000								32	4	32	4	86
2	6H38	TOP OF BACKWALL		20	X				32	4.000								32	4	32	4	97
8	4H39	MUDWALL		20	X				6	4.000								6	4	6	4	34
8	6M40	WING		20	X	V		2	6	7.000								6	7	6	7	
		INCR = 22.375 IN							12	2.000								12	2	12	2	113
4	6M41	WING		20	X				12	7.000								12	7	12	7	76
2	4T5	MUDWALL		19	X				6	8.875	5	9.000						9	10	9	9	13
2	6T6	WING		25	S	X			15	9.000	15	9.375	2	3.000				2	9.000	15	6.500	58
2	6T7	MUDWALL		19	X				6	4.250	6	9.000						13	1	13	1	17
2	6T8	WING		25	S	X			15	9.000	7	10.875	22.000					2	11.000	7	4.250	33
68	5M4	BEAM		13	S	X			3	2.000	2	10.750	4	3.500	2	8.000		13	11	13	7	963
11	6U10	BEAM		10	S	X				21.000	2	9.000						6	3	5	11	98
18	6U14	BEAM PADS		10	S	X				12.000	3	2.000						5	2	5	0	60
4	4U15	BEAM		10	S	X				6.000	3	2.000						4	2	4	0	11
5	6U16	BEAM		10	X					6	9.000	2	9.000					16	3	15	11	212
2	5U4	BEAM		13	S	X			3	2.000	2	8.000	3	2.000	2	8.000		12	7	12	3	26
1	5U18	BEAM		13	S	X			2	9.500	2	10.750	3	11.000	2	8.000		13	2	12	10	13
1	5U19	BEAM		13	S	X			2	3.250	2	10.625	3	4.500	2	8.600		12	1	11	9	12
1	5U20	BEAM		13	S	X				17.000	2	10.750	2	6.500	2	8.000		10	5	10	1	11
5	6U21	BEAM		19	X				10	2.000	4	11.000						15	1	14	11	199
150	5V9	PRESSURE WALL		20	X				2	10.000								2	10	2	10	443
2	6V26	BEAM		20	X				3	1.000								3	1	3	1	9
1	6V27	BEAM		20	X					2	11.000							2	11	2	11	4
146	5V28	BACKWALL		20	X				5	9.000								5	9	5	9	876
2	6V29	MUDWALL		20	X				6	0.000								6	0	6	0	8
5	6V30	WING		17	X				7	1.000								7	9	7	9	58
5	6V31	WING		17	X				7	3.000								7	3	7	3	54

NO. REQ.	MARK NO.	LOCATION	EPOXY	SHAPE NO.	STIRRUP	SUBSTR.	VARIES	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K								
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.
15	6V32	WING	E	17	X	V		1	2	6.000								3	2	3	2		
		INCR = 2.375 IN							5	4.000								6	0	6	0	103	
15	6V33	WING	E	20	X	V		1	2	8.000								2	8	2	8		
		INCR = 2.375 IN							5	6.000								5	6	5	6	92	
4	6V12	WING		20	X				17.000									17	17			9	
6	5V25	WING FOOTING		20	X			3	9.000									3	9	3	9	23	
8	4V37	MUDWALL		20	X			6	2.000									6	2	6	2	33	
5	6V38	WING	E	20	X			7	4.000									7	4	7	4	55	
5	4V39	WING	E	17	X			7	2.000									7	10	7	10	59	
7	6V40	WING	E	20	X	V		1	3	3.000								3	3	3	3		
		INCR = 4.875 IN							5	8.000								5	8	5	8	47	
7	6V41	WING	E	17	X	V		1	3	1.000								3	9	3	9		
		INCR = 4.875 IN							5	6.000								6	2	6	2	52	
10	2W1	BEAM		22	X				15.000	9.125								23	0	23	0	38	
		SUPERSTRUCTURE																					
		P/C PANEL OPTION																					
32	5S1	BOTTOM SLAB	E	20					35	8.000								35	8	35	8	1190	
272	5S8	TOP SLAB	E	20					35	8.000								35	8	35	8	10118	
66	6S10	TOP SLAB	E	20					48	4.000								48	4	48	4	4791	
66	6S12	TOP SLAB	E	20					47	3.000								47	3	47	3	4684	
476	6S13	TOP SLAB	E	20					22	4.000								22	4	22	4	15967	



BENDING DIAGRAMS

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.

BAR SIZE	D (IN.)	END HOOK DIMENSIONS			
		180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	J
#3	2 1/8"	5"	3"	6"	
#4	3"	6"	4"	8"	
#5	3 1/8"	7"	5"	10"	
#6	4 1/8"	8"	6"	12"	