

# INDEX OF SHEETS

- SHEET NO. 1- TITLE SHEET  
 2- TRAFFIC BARRICADE  
 3- FLARED CURB & GUTTER  
 4- SLOPE DRAINS  
 5- WELDING STANDARD  
 6- STANDARD NOTES  
 7- STANDARD DETAILS  
 8- ROAD PLAN & PROFILE  
 9-10- BRIDGE PLAN & PROFILE  
 11- END BENTS  
 12- 12" SQ. PRESTRESSED CONCRETE PILES  
 13-19- INTERIOR BENTS  
 20-21- 50' & 55' SPANS - 30° SKEW  
 22- 50' & 55' SPANS  
 23- 50' & 55' SPANS - SECTIONS  
 24- 50' & 55' SPANS - SECTIONS AND MEDIAN DETAILS  
 25-26- 50' & 55' PRESTRESSED BEAMS  
 27- 89' SPAN  
 28- 61' SPAN  
 29-30- 61' & 89' SPAN & SECTIONS & DETAILS  
 31- BOOSTER LAYOUT  
 32- HANDRAIL AND LIGHT BRACKETS

## SOUTH CAROLINA STATE HIGHWAY DEPARTMENT COLUMBIA

# PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

F.A.P. NO. I-IG-26-4(25)

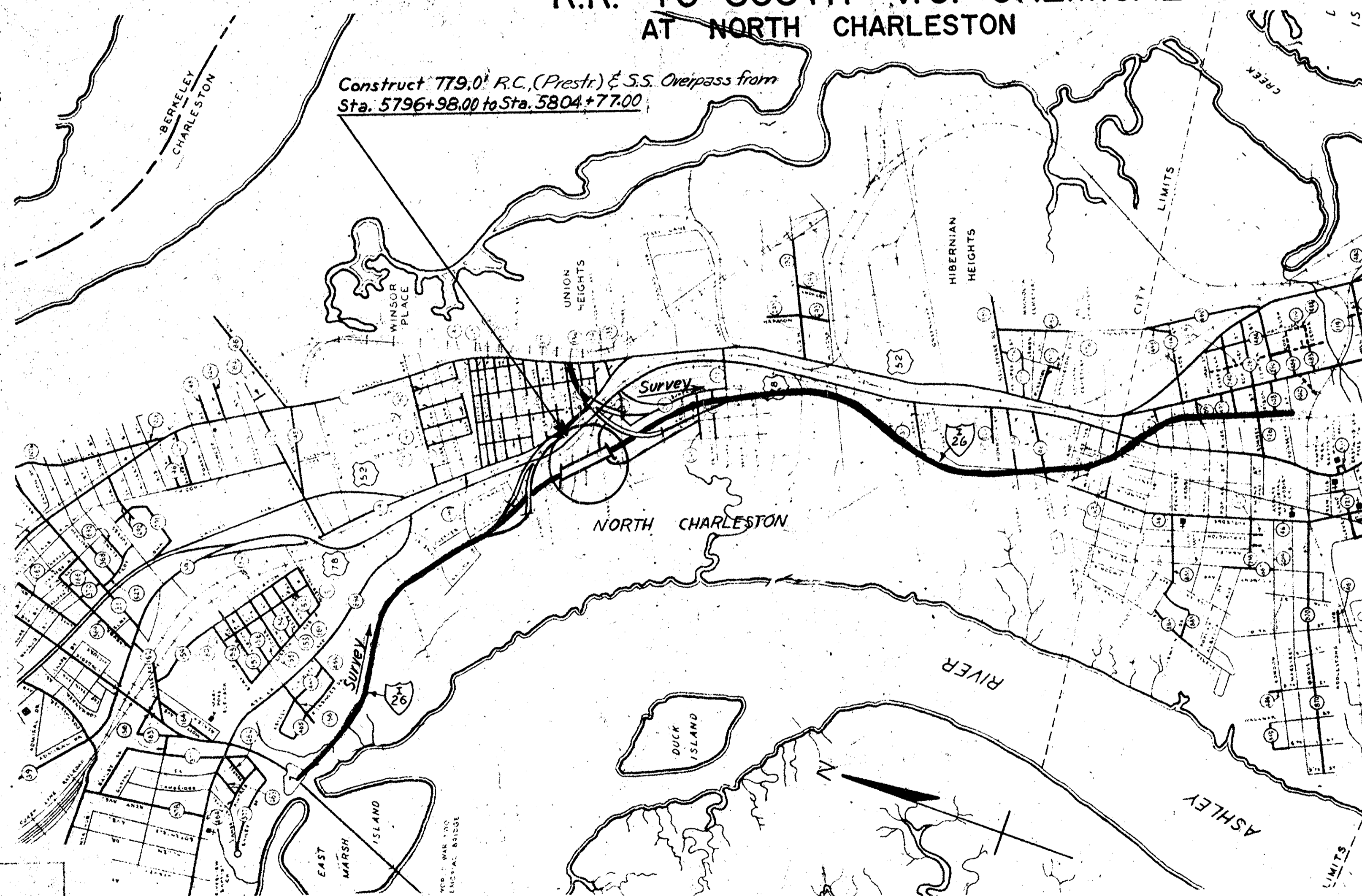
DOCKET NO. 10.521.1

CHARLESTON COUNTY

ROUTE NO. I-26

OVERPASS OVER  
 R.R. TO SOUTH V.C. CHEMICAL CO.  
 AT NORTH CHARLESTON

Construct 779.0' R.C. (Prest.) & S.S. Overpass from  
 Sta. 5796+98.00 to Sta. 5804+77.00



### CONVENTIONAL SIGNS

State Line	-----	Trolley Poles	--->--->---
County Line	-----	Power Poles	--->--->---
City or Town Limits	-----	Telephone or Telegraph Poles	--->--->---
Property Line	-----	Marsh	--->--->---
Fence	-----	Trees	--->--->---
Retaining Wall	-----	Brush	--->--->---
Existing Road	-----	Stumps	--->--->---
Proposed Road	-----	Buildings	--->--->---
Railroad	-----	Bridge	--->--->---
Levee or Embankment	-----	Concrete Box Culvert	--->--->---
Guard Rail	-----	Pipe Culvert	--->--->---
Point of Intersection (P.I.)	-----	Drop Inlet and Culvert	--->--->---
		Hub on Center Line	--->--->---

### LEGEND

PROPOSED PROJECT  
 OTHER ROADS

Net Length of Roadway	0.000	Miles
Net Length of Bridges	0.147	Miles
Net Length of Project	0.147	Miles
Length of Erection	0.000	Miles
Gross Length of Project	0.147	Miles

### SUMMARY OF ESTIMATED QUANTITIES

WET & DRY EXCAVATION	2,700	C.Y.
CONCRETE CLASS A"	4,099.4	C.Y.
REINFORCING STEEL	742,044	LBS.
STEEL SUPERSTRUCTURES	*NECESSARY	L.S.
CREOSOTED TIMBER PILING	32,640	L.F.
8" PIPE SLOPE DRAINS	190	L.F.
INTAKE SPILLWAY ASSEMBLY	4	EA.
12" SQUARE PRESTRESSED CONCRETE PILING	1,870	L.F.
FABRICATED METAL HANDRAIL (ALUMINUM)	1,558	L.F.
50' PRESTRESSED CONCRETE BEAMS	30	EA.
55' PRESTRESSED CONCRETE BEAMS	152	EA.

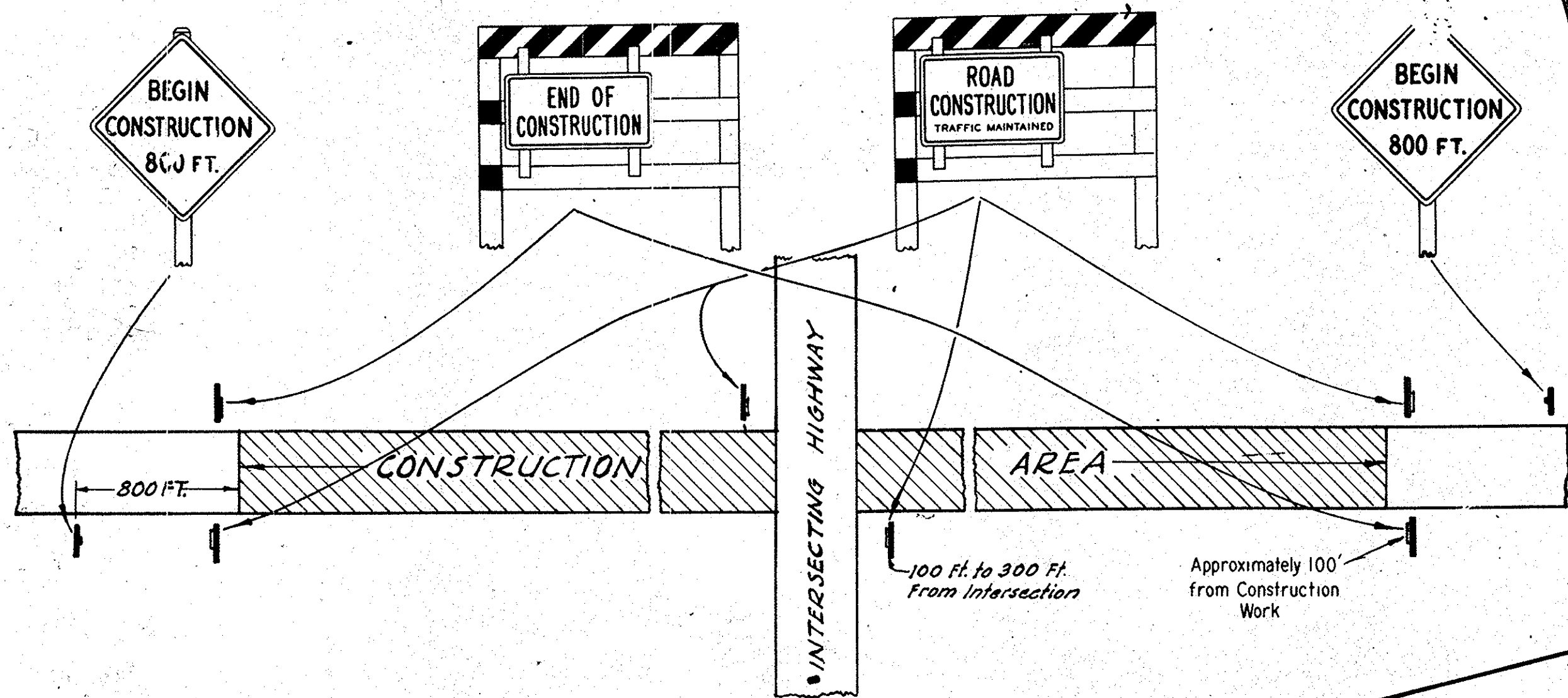
\*APPROXIMATELY 832,000 LBS.

NOTE:  
 ALL STRUCTURAL STEEL FOR BEAMS AND COVER PLATES SHALL COMPLY WITH THE LATEST A.S.T.M. SPECIFICATION A-36. BEARING ASSEMBLIES, DIAPHRAGMS AND OTHER SECONDARY MEMBERS MAY BE A-7 OR A-373.

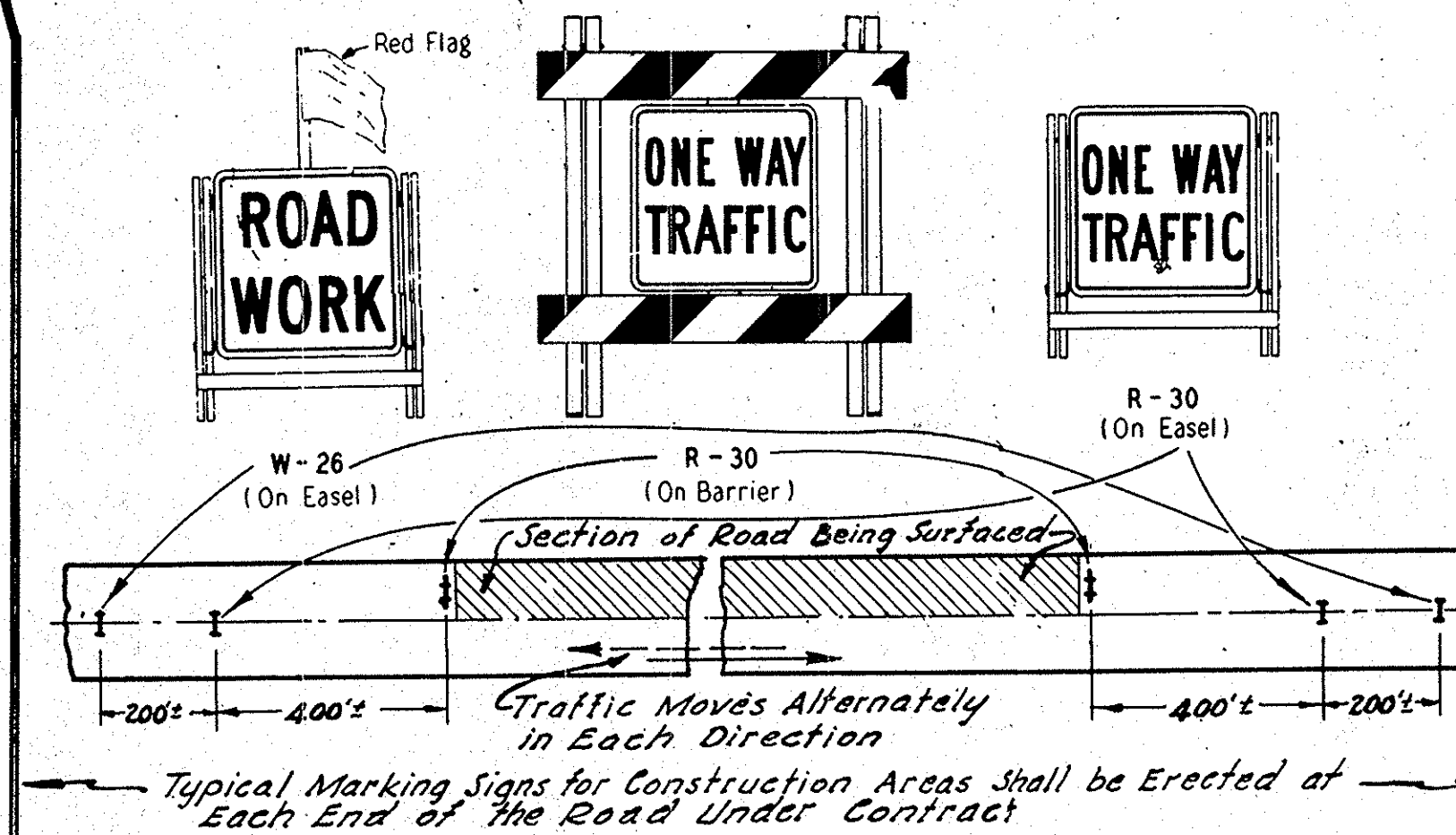
APPROVED: *[Signature]* 8/30/63  
 STATE HIGHWAY ENGINEER DATE

DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS  
 APPROVED: *[Signature]*  
 DISTRICT ENGINEER DATE

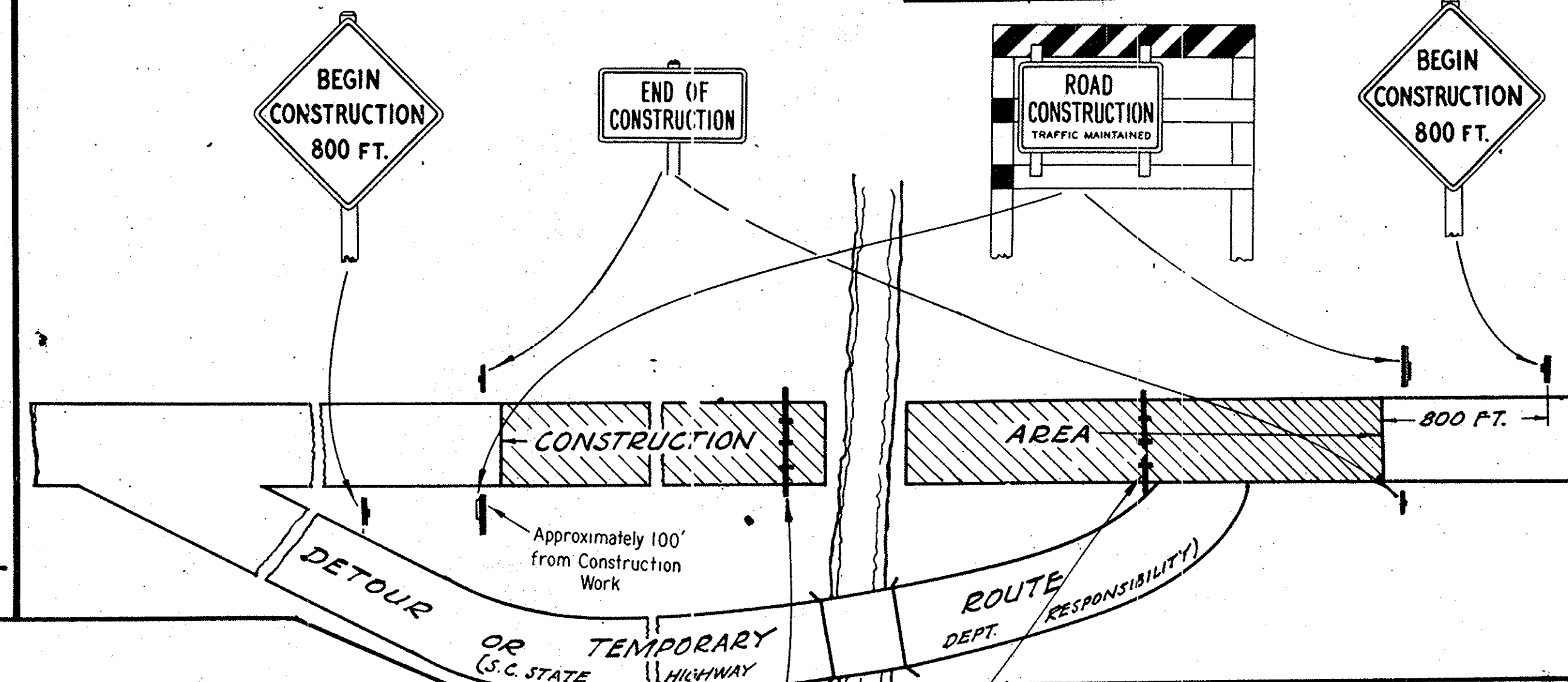
# TYPICAL MARKING FOR CONSTRUCTION AREAS



# APPLICATION OF STANDARD SIGNS WHEN ROADWAY IS BEING SURFACED



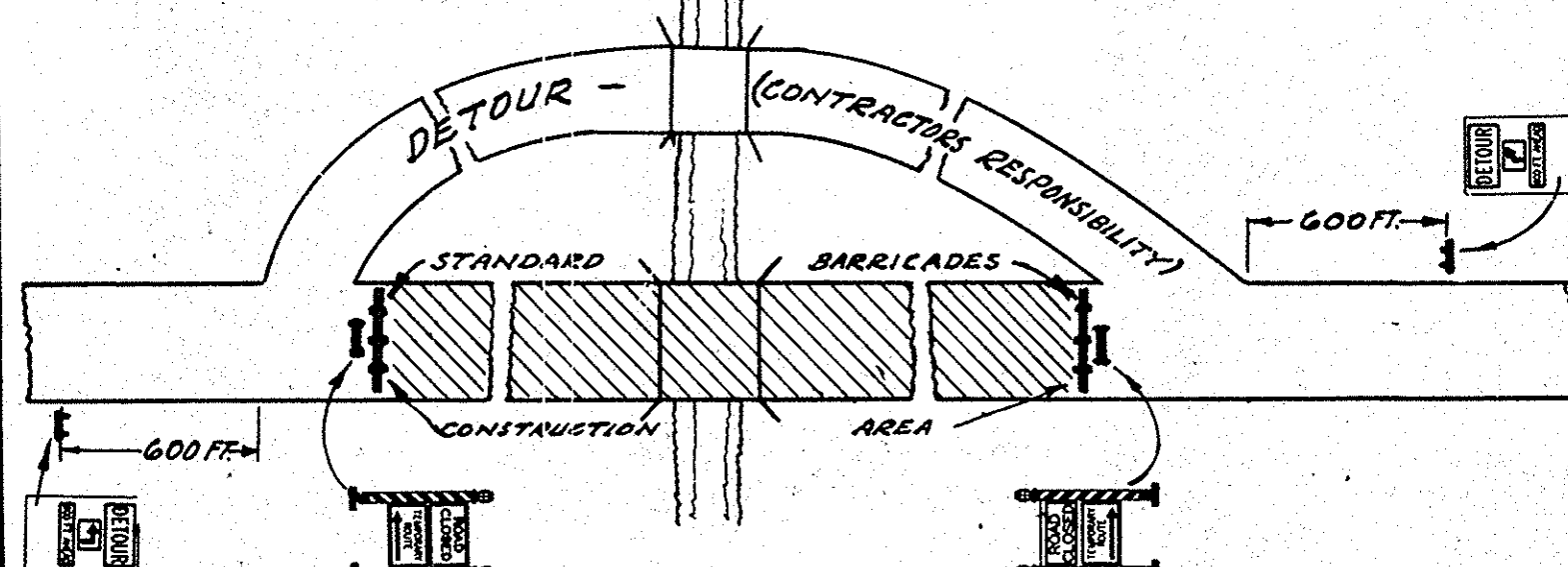
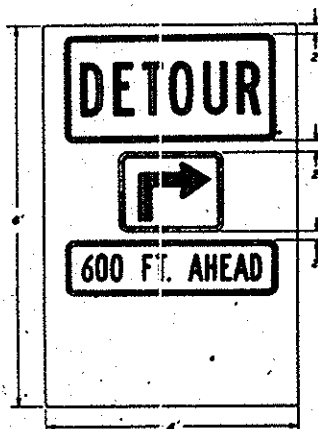
# TYPICAL MARKING FOR CONSTRUCTION AREAS



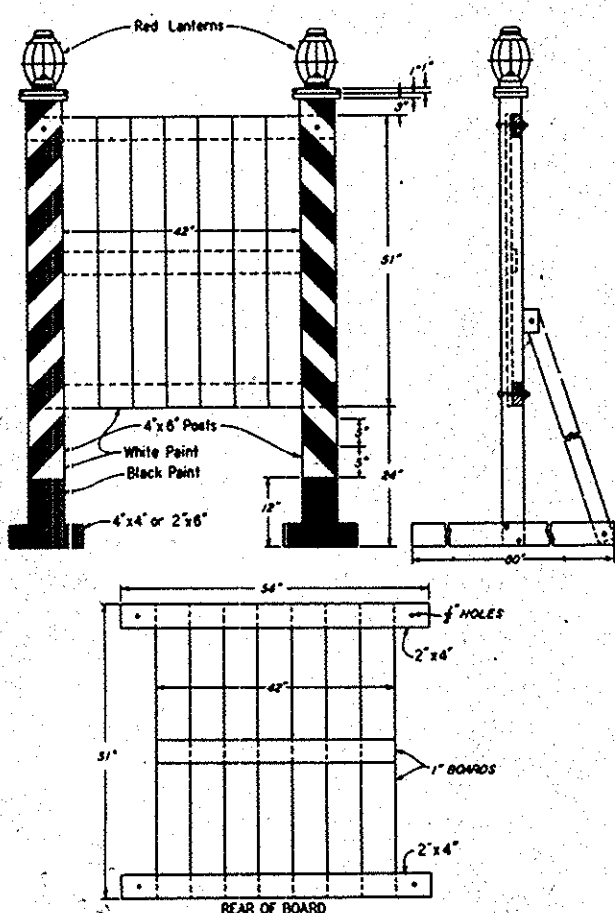
Red Band Div. No.	State	County	Docket No.	Road No.	Sheet No.	Total Sheets
3	S.C.	CHARLESTON	10.521.1	I-26	2	32

# TYPICAL MARKING FOR CONSTRUCTION AREAS

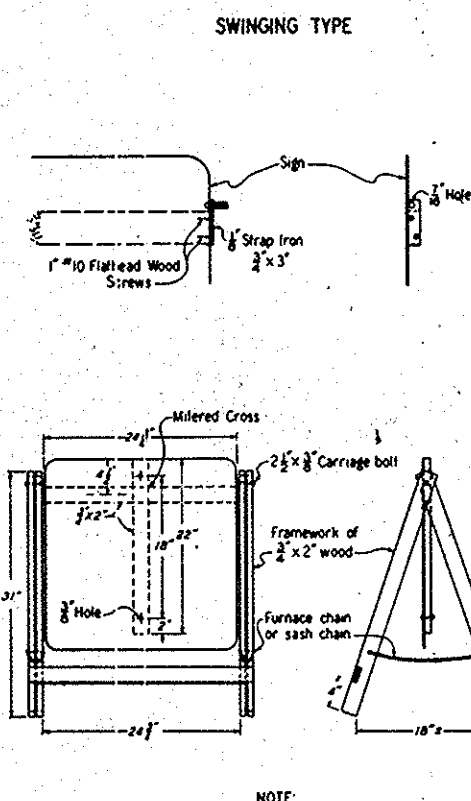
DETOUR 600 FT. AHEAD ASSEMBLY



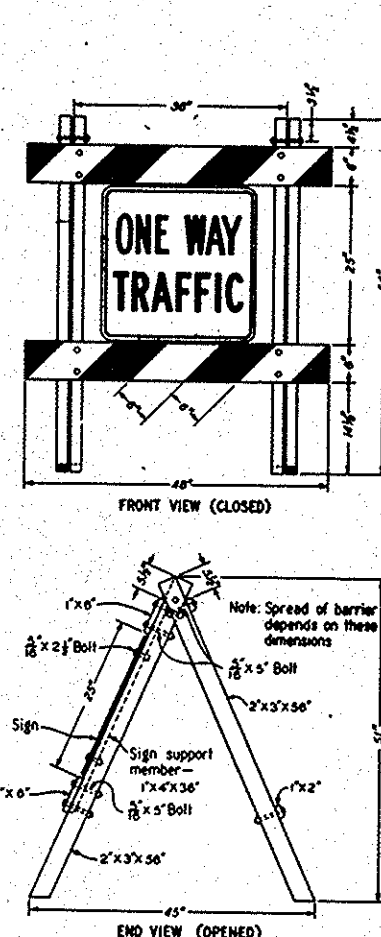
# ROAD CLOSED STANDARD



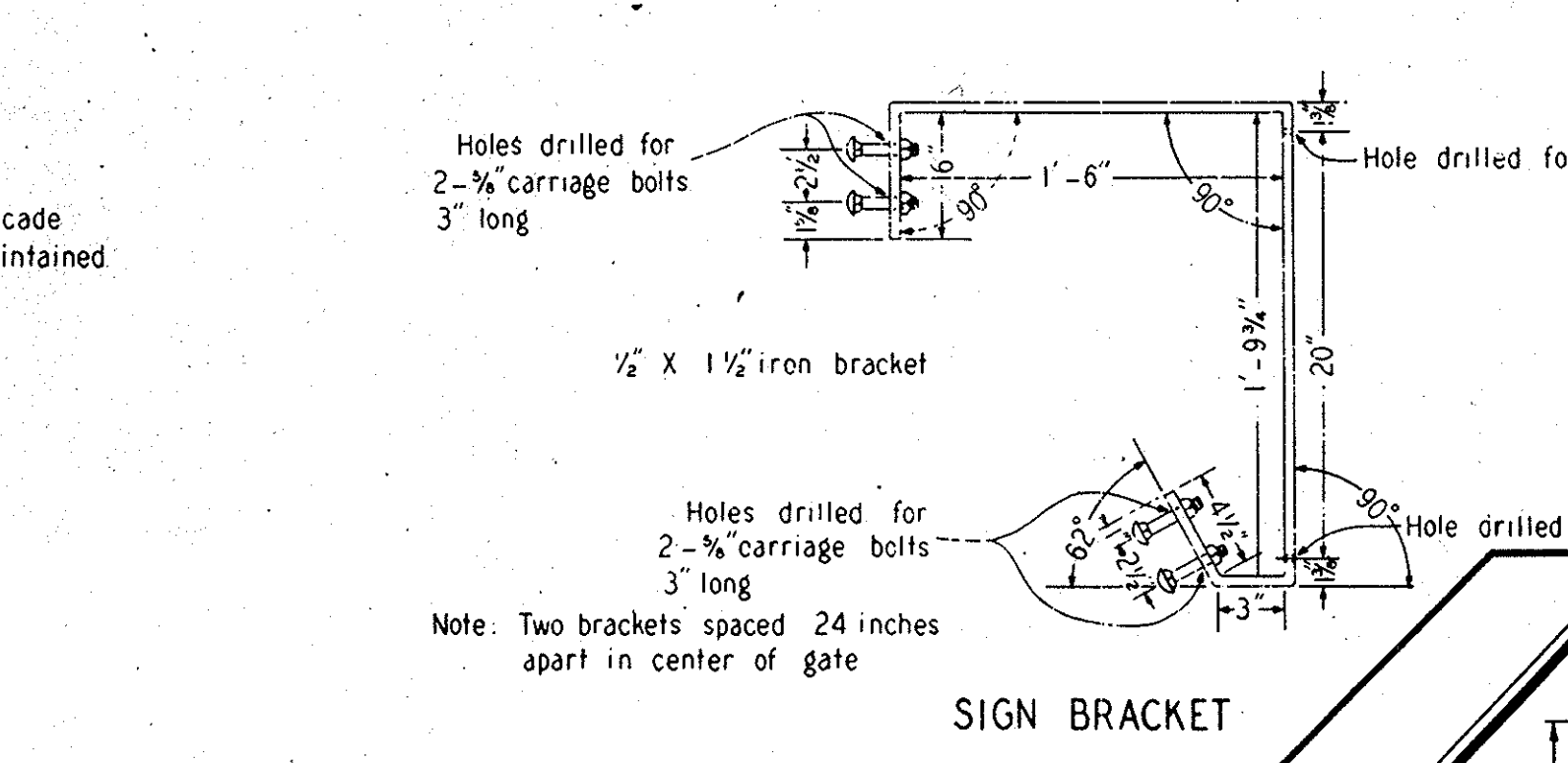
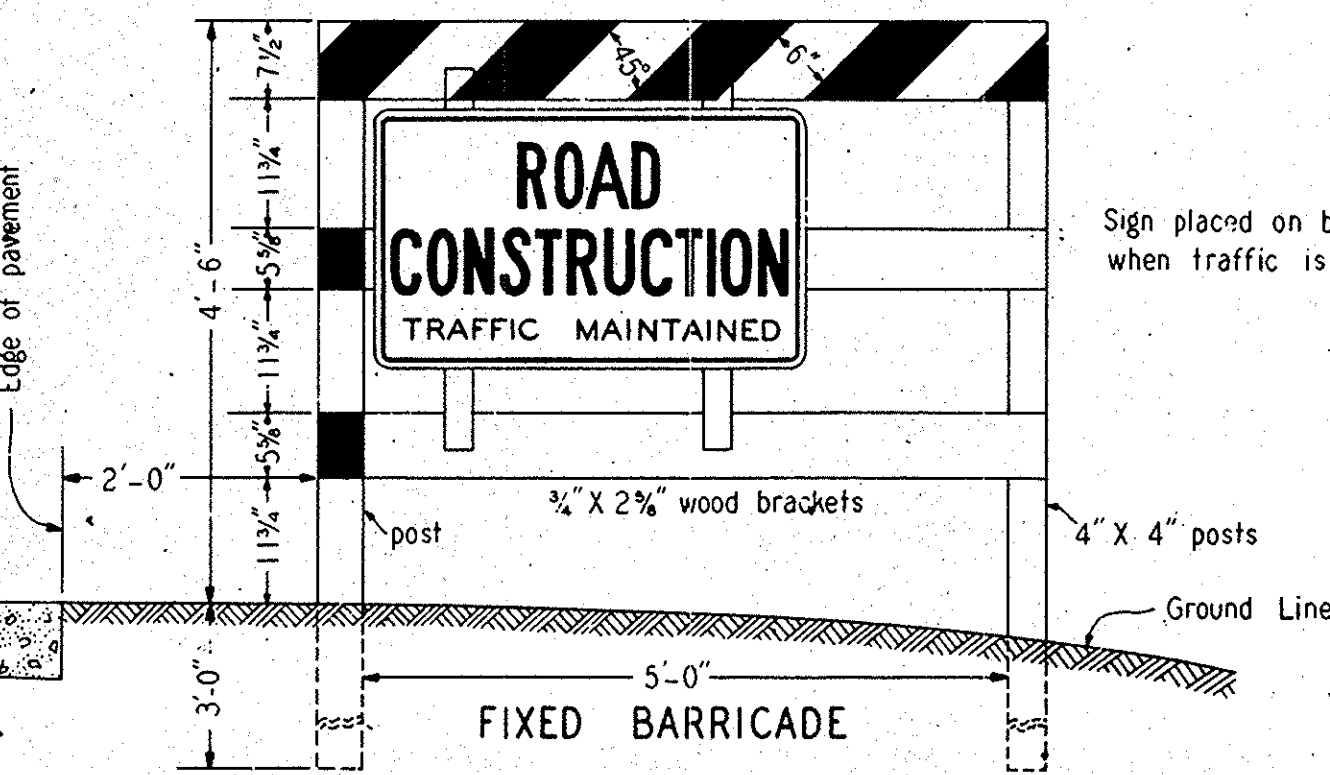
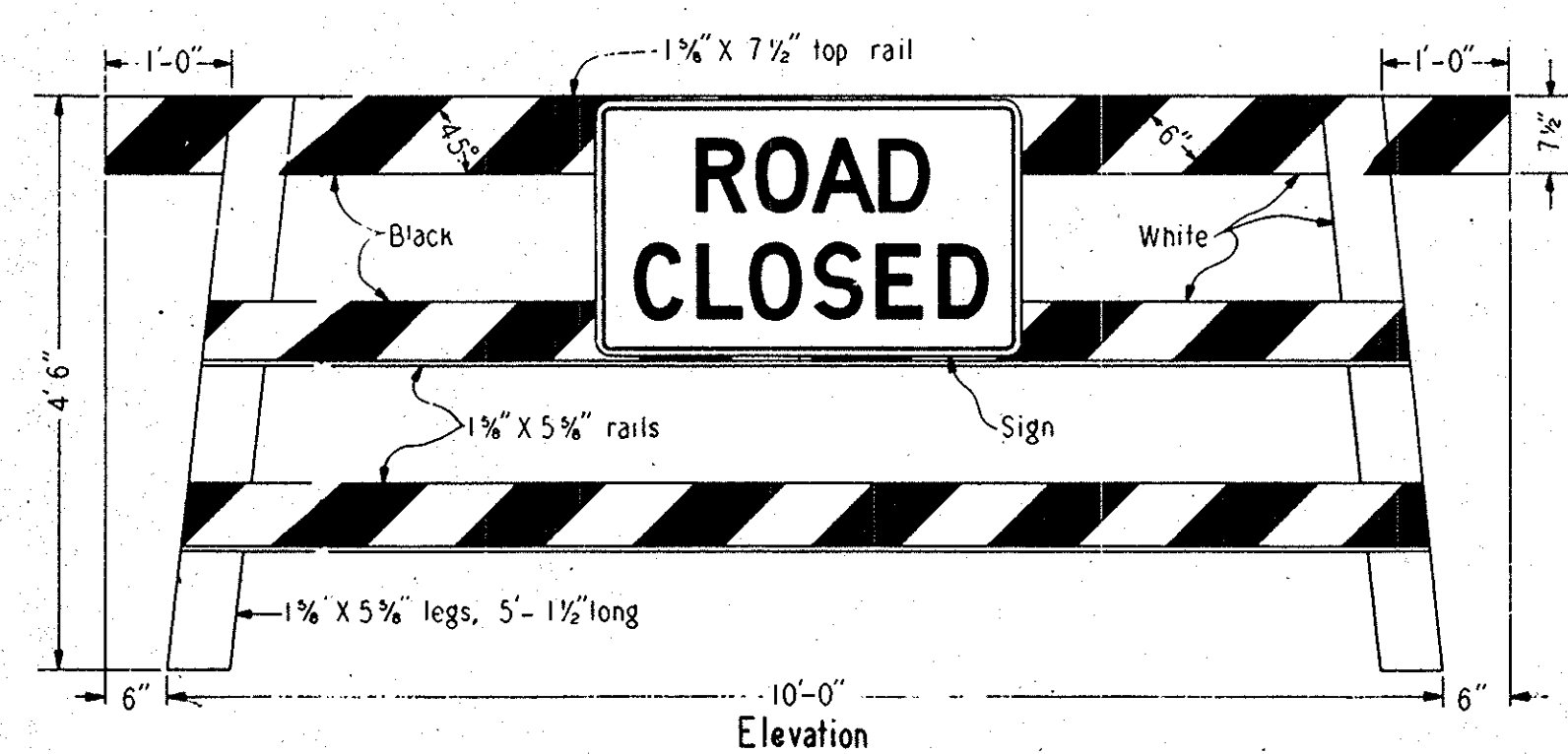
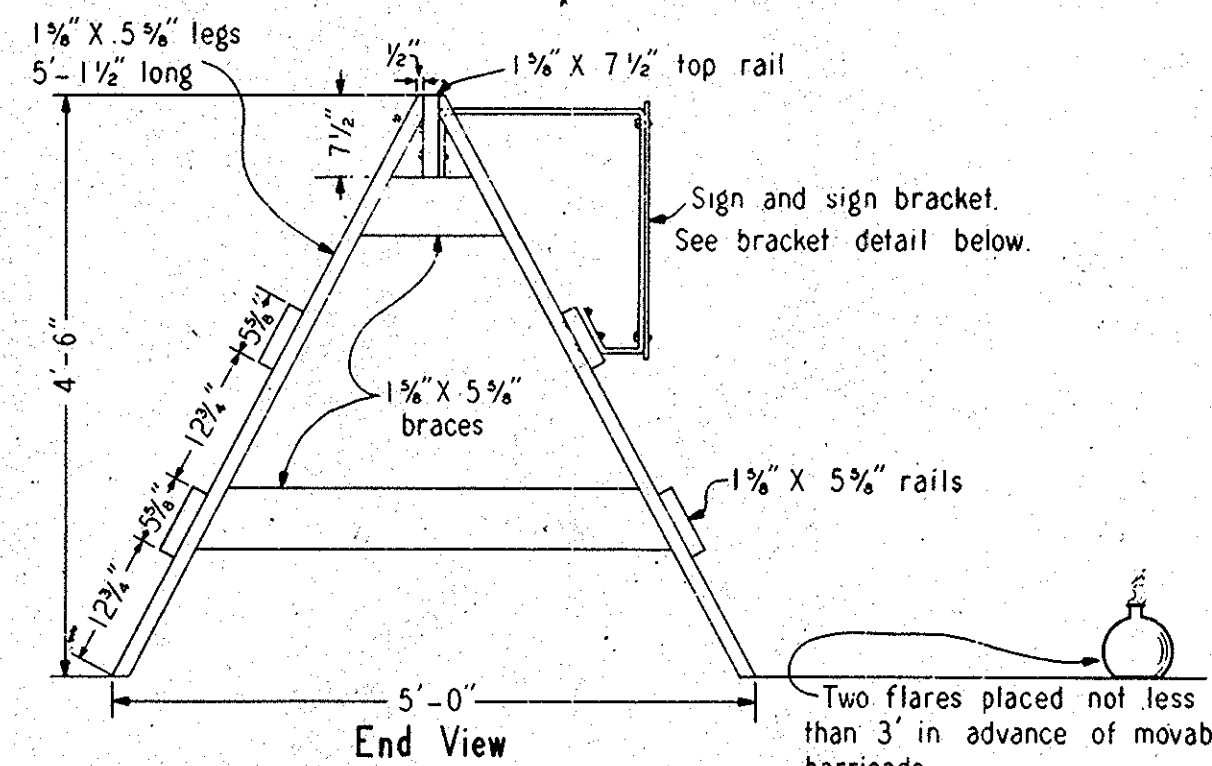
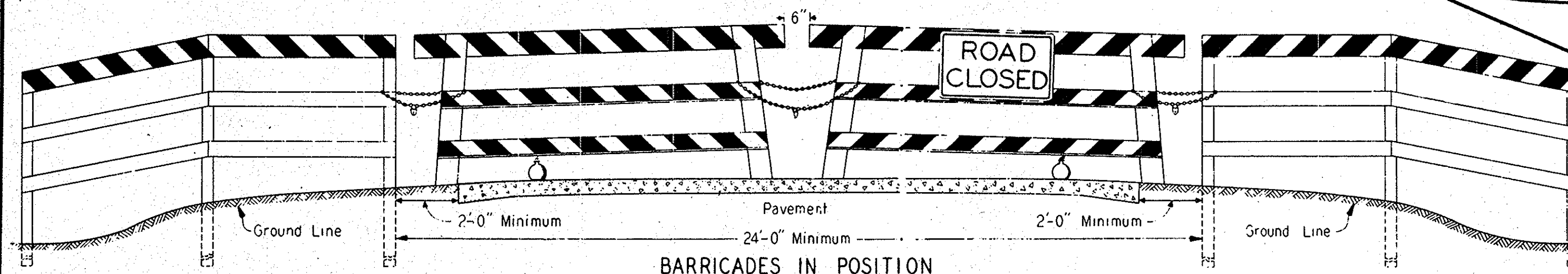
# STANDARD SIGN EASEL SWINGING TYPE



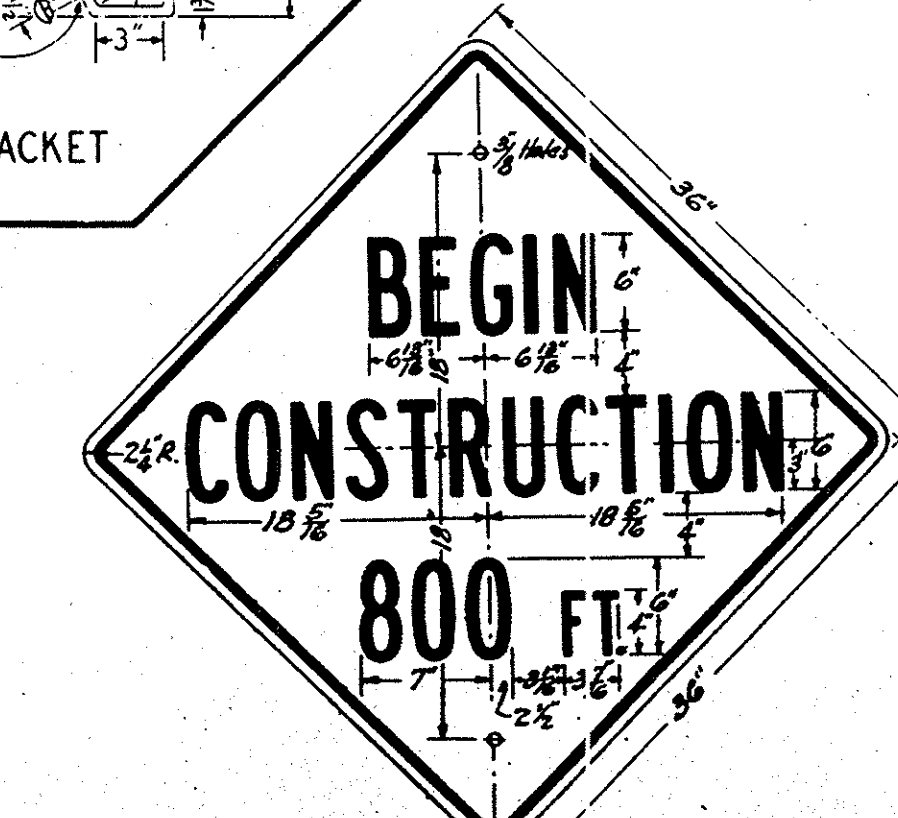
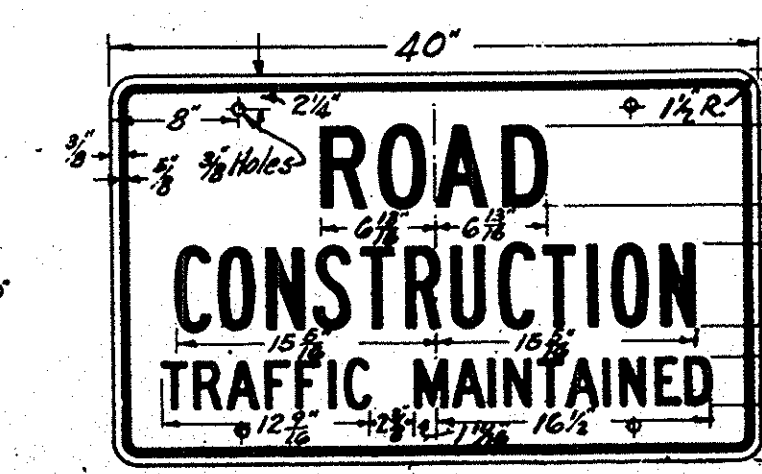
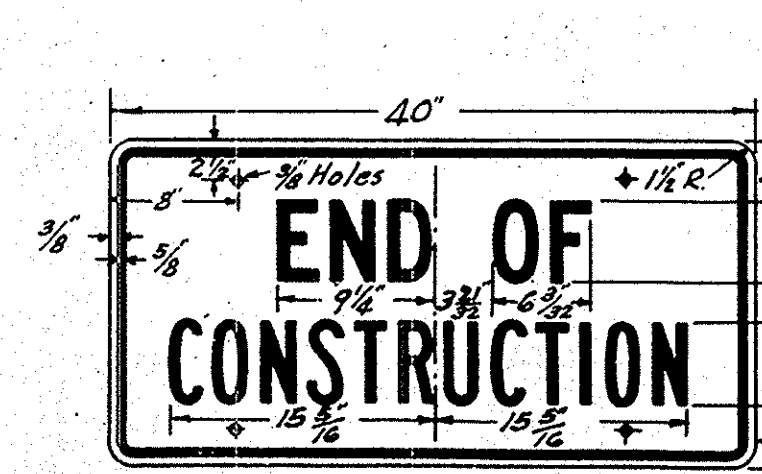
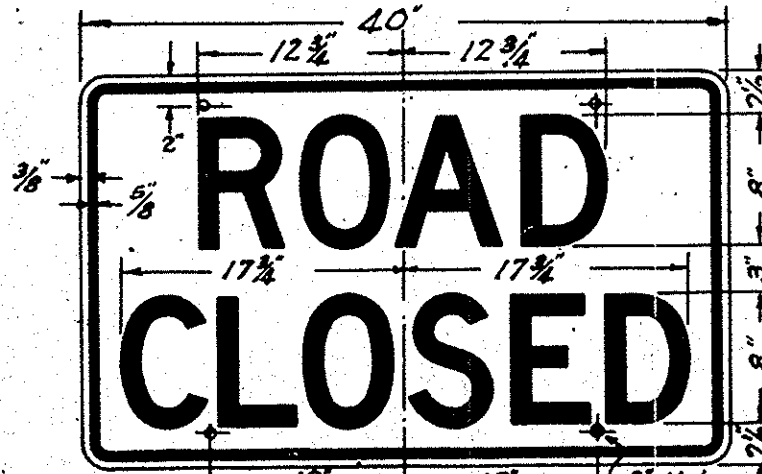
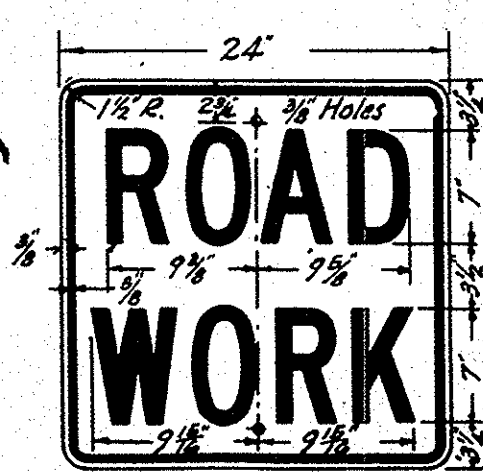
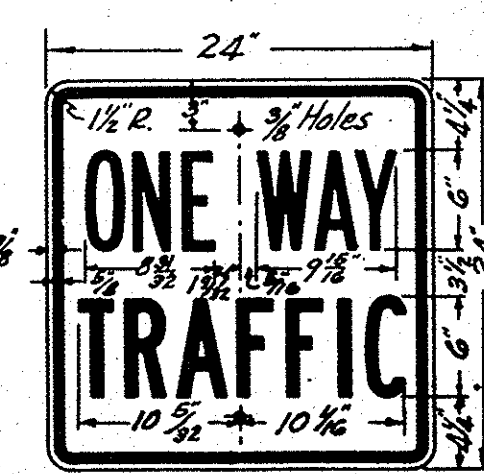
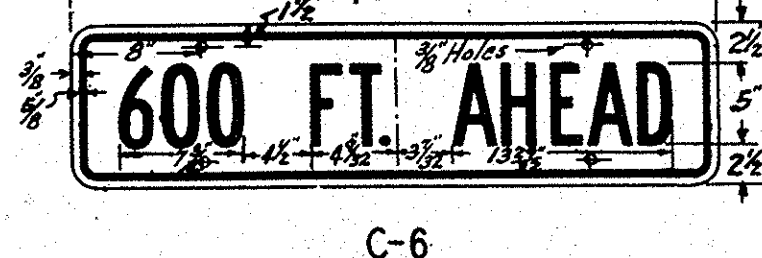
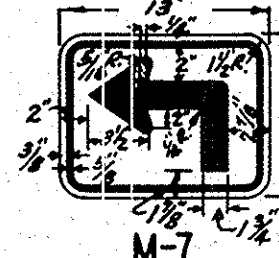
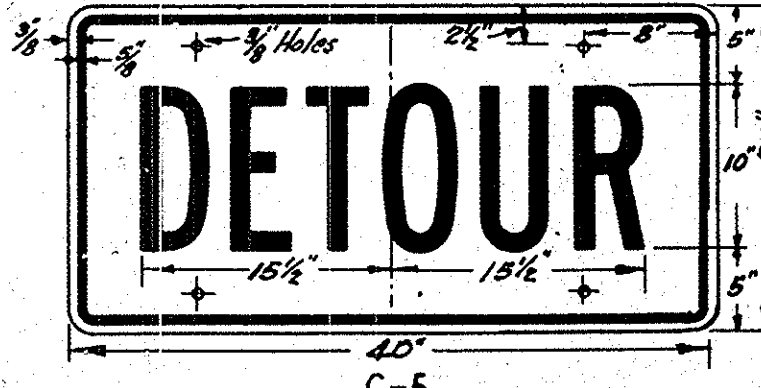
# STANDARD PORTABLE SIGN BARRIER



# STANDARD BARRICADES



# DRAWINGS SHOWING DIMENSIONS OF SIGNS

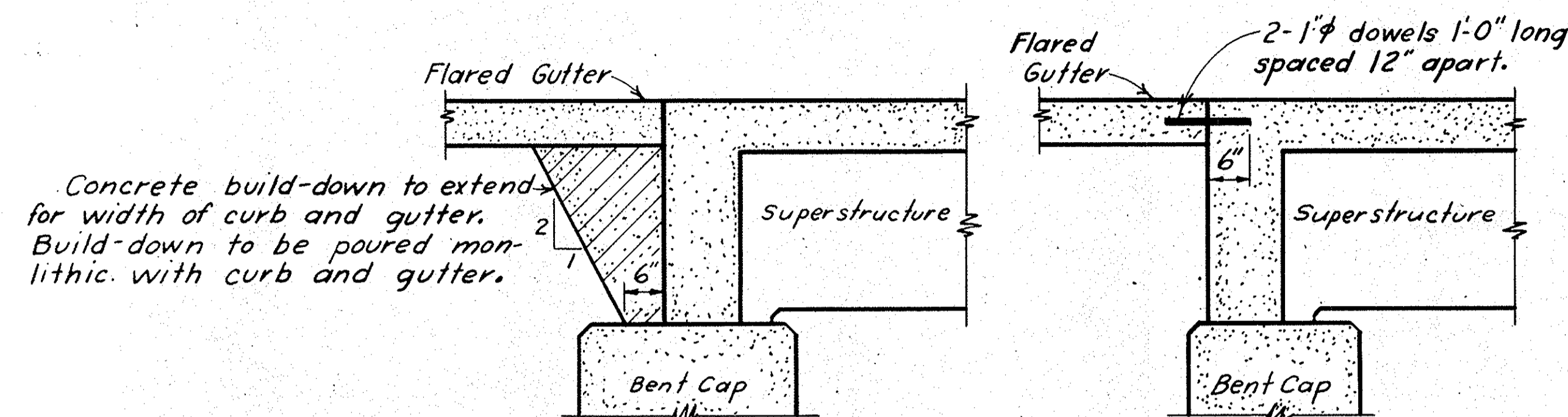


DETAILS SHOWING STANDARD SIGNS, BARRIERS, LIGHTS, AND BARRICADES TO BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR WHERE APPLICABLE ON ALL ROAD OR BRIDGE CONTRACTS

APPROVED *S. J. Pearson* STATE HIGHWAY ENGINEER DATE *2/4/63*

NOTES  
ANY CONDITIONS NOT COVERED BY DETAILS AND SIGNS ON THIS DRAWING SHALL CONFORM TO THE LATEST S. C. STANDARD SPECIFICATIONS AND TO THE LATEST S. C. STANDARDS AND SPECIFICATIONS FOR UNIFORM TRAFFIC CONTROL DEVICES. THE LOCATION OF TYPICAL MARKINGS SHOWN HEREON MAY BE VARIED TO CONFORM TO FIELD CONDITIONS.  
THE CONTRACTOR SHALL PROVIDE AND MAINTAIN PROPER SIGNS AND BARRICADES THE FIRST DAY ANY WORK IS PERFORMED OR AT THE TIME HE NOTES ANY MATERIAL OR EQUIPMENT ON THE PROJECT, WHATEVER IS FIRST. HE SHALL MAINTAIN THESE SIGNS THROUGHOUT THE LIFE OF THE PROJECT UNTIL FINAL ACCEPTANCE OF THE CONTRACT, AT WHICH TIME THEY SHALL BE REMOVED.  
WHEREVER SURFACING WORK IS BEING PERFORMED ON THE ROADWAY AND ONE-WAY TRAFFIC IS BEING MAINTAINED THROUGH THE SECTION BEING SURFACED, THE STANDARD SIGNS SHALL BE PLACED AND, ALSO, FLAGMEN SHALL BE POSTED AT EACH END OF THE SECTION OF ROAD BEING SURFACED EXCEPT IN CASES WHERE TRAFFIC VOLUME IS LIGHT AND HIGH SPEEDS DO NOT PREVAIL; OR IN CASES WHERE THE SECTION OF ROAD BEING SURFACED IS NOT MORE THAN 100 FEET IN LENGTH AND THE SIGNS ARE CLEARLY VISIBLE FOR A DISTANCE OF 500 FEET.  
THE CONTRACTOR WILL ERECT AND MAINTAIN PROPER SIGNS IN ACCORDANCE WITH THE MANUAL FOR UNIFORM CONTROL DEVICES ON ALL DETOURS OR TEMPORARY ROUTES THAT THE CONTRACTOR IS NOT REQUIRED TO MAINTAIN. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE AND MAINTAIN PROPER DETOUR SIGNS AT AND ALONG ALL DETOURS FOR WHICH HE IS RESPONSIBLE.  
THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AND RELOCATE, WHERE NECESSARY, ALL REGULATORY, WARNING AND GUIDE SIGNS IN PLACE, OR THOSE THAT MAY BE ERECTED BY THE DEPARTMENT, WITHIN THE LIMITS OF HIS CONTRACT.  
BETWEEN THE HOURS OF SUNSET AND SUNRISE, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TWO FLARES OR RED LANTERNS AT EACH BARRICADE, "ROAD CLOSING" SIGN, OBSTRUCTION OR AT SUCH OTHER POINTS AS ARE NECESSARY TO PROTECT THE TRAVELING PUBLIC.  
ALL SIGNS SHALL BE REPLACED EXCEPT THOSE TEMPORARY SIGNS THAT ARE USED ONLY DURING DAYLIGHT HOURS. DRAWINGS SHOWING SIZES OF SIGNS, LETTERS AND MINERALS ARE DETAILED HEREON. ALL SIGNS SHALL HAVE BLACK LETTERS OR MINERALS ON A WHITE BACKGROUND EXCEPT THE "ROAD WORK" (W-26), "BEGIN CONSTRUCTION" - 800 FT. (C-9) AND "DETOUR" (C-5) SIGNS WHICH SHALL HAVE A YELLOW BACKGROUND.  
THE "ROAD CONSTRUCTION - TRAFFIC MAINTAINED" (C-7) SIGN SHALL BE MOUNTED ON A BARRICADE ON EACH SIDE OF THE INTERSECTION FACING TRAFFIC AT ALL IMPROVED ROAD INTERSECTIONS. ON MAJOR ROUTES BEING CONSTRUCTED, THE BARRICADE SHALL BE ON BOTH SIDES OF THE ROAD AT THE EXTREME LIMITS OF THE PROJECT BUT THE SIGN MAY BE OMITTED ON THE BARRICADE ON THE LEFT SIDE OF ROAD FACING TRAFFIC. THE "END OF CONSTRUCTION" (C-8) SIGN MAY BE PLACED ON THE BACK OF THIS BARRICADE INSTEAD OF ON A POST.  
WHEN A BRIDGE IS UNDER CONSTRUCTION AND TRAFFIC IS MAINTAINED, THE WORD "BRIDGE" SHALL BE SUBSTITUTED FOR "ROAD" ON THE "ROAD CONSTRUCTION - TRAFFIC MAINTAINED" SIGN AND THE SIGN ERECTED IN A LIKE MANNER.

FED. ROAD DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	10.521.1	I-26	3	32



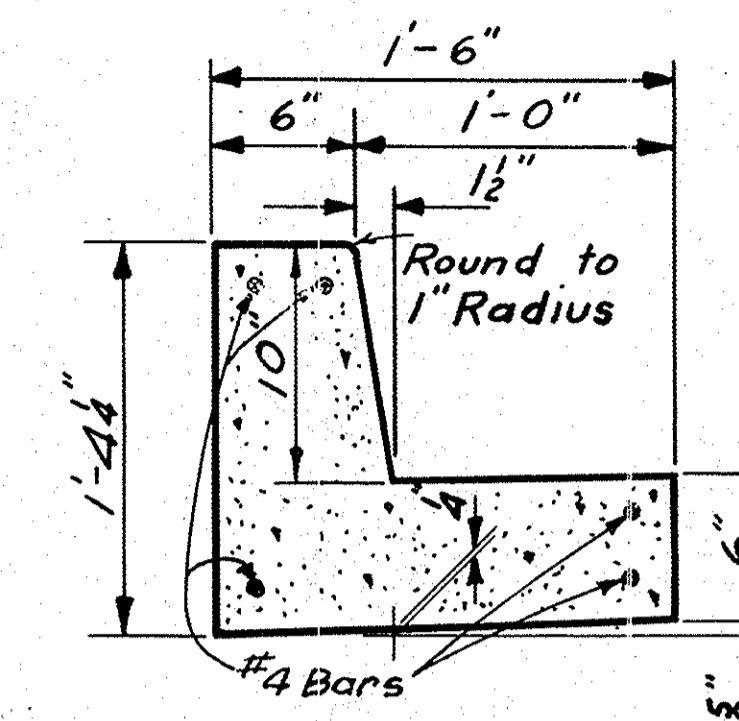
METHOD "A"

METHOD "B"

NOTE: Ends of curb and gutter adjacent to bridge to be supported by one of the methods shown above. Use method "A" when there is sufficient width and length of bent cap to support concrete build-down. Otherwise use Method "B".  
The quantity of concrete or reinforcing steel involved shall be computed by the Engineer and added to the quantities shown on this sheet.

### CURB AND GUTTER SUPPORT

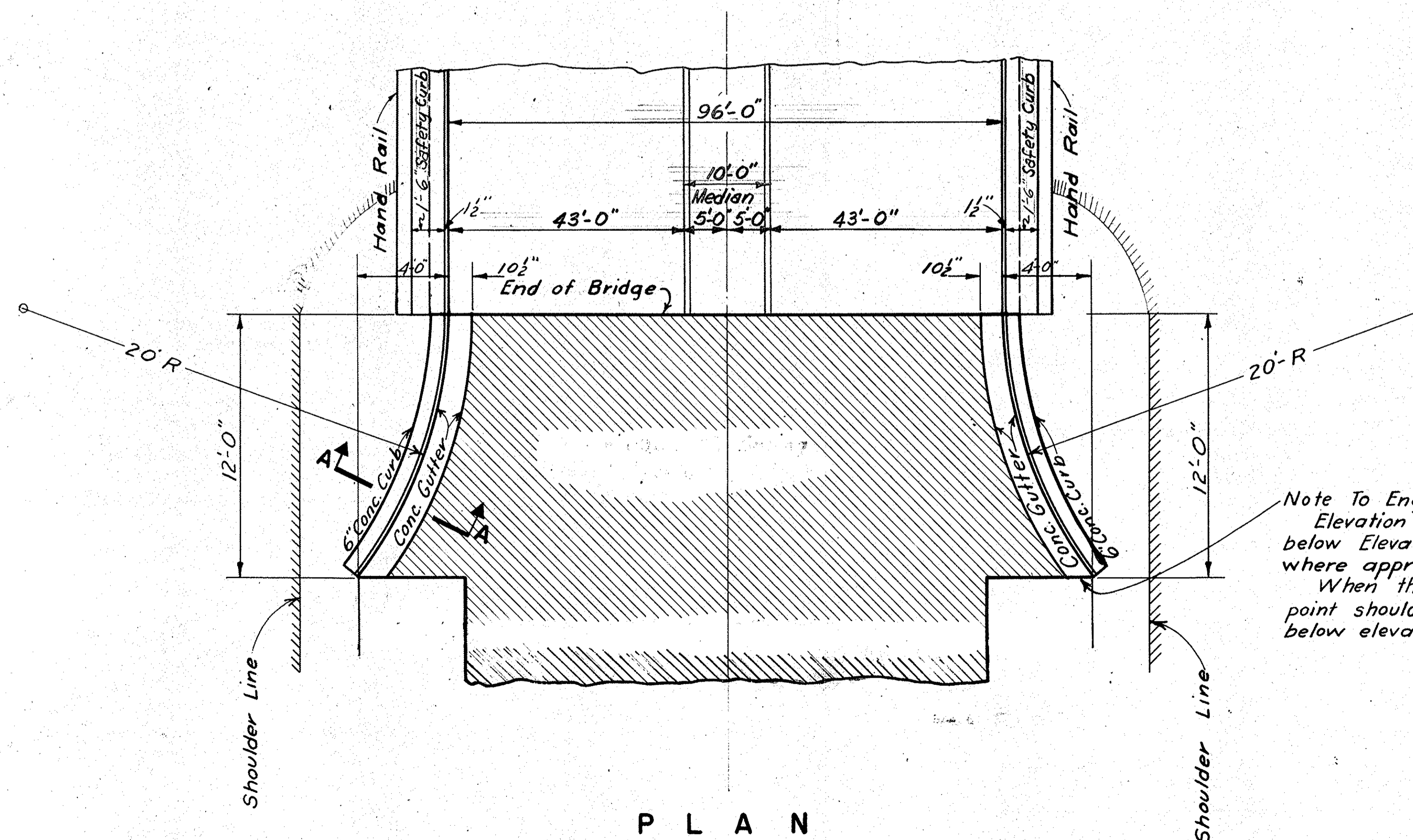
SCALE  $\frac{3}{4}$ "=1'-0"



SECTION A-A

SCALE  $\frac{1}{2}$ "=1'-0"

All costs of constructing the concrete curb and gutter at the ends of the bridge will be included in payment for the concrete and steel involved at the Unit Price Bid for those items.



P L A N

SCALE  $\frac{1}{4}$ "=1'-0"

*QUANTITIES	
ONE END OF BRIDGE	
Class "A" Concrete	1.2 CY.
*Reinf. Steel	79 LBS.

\*Does not include quantities for Curb & Gutter Support. (See note above)  
\*Reinf. consists of 10 #4 Bars 11'-9" long.

Note To Engineer:  
Elevation of this point to be set 6" below Elevation of gutter at end of Bridge where approach is on 0.0% grade.  
When the approach is on a grade this point should be set (6"  $\pm$  % of grade  $\times$  12') below elevation of gutter at end of bridge.

S. C. STATE HIGHWAY DEPARTMENT  
COLUMBIA

### DETAILS OF FLARED CURB AND GUTTER

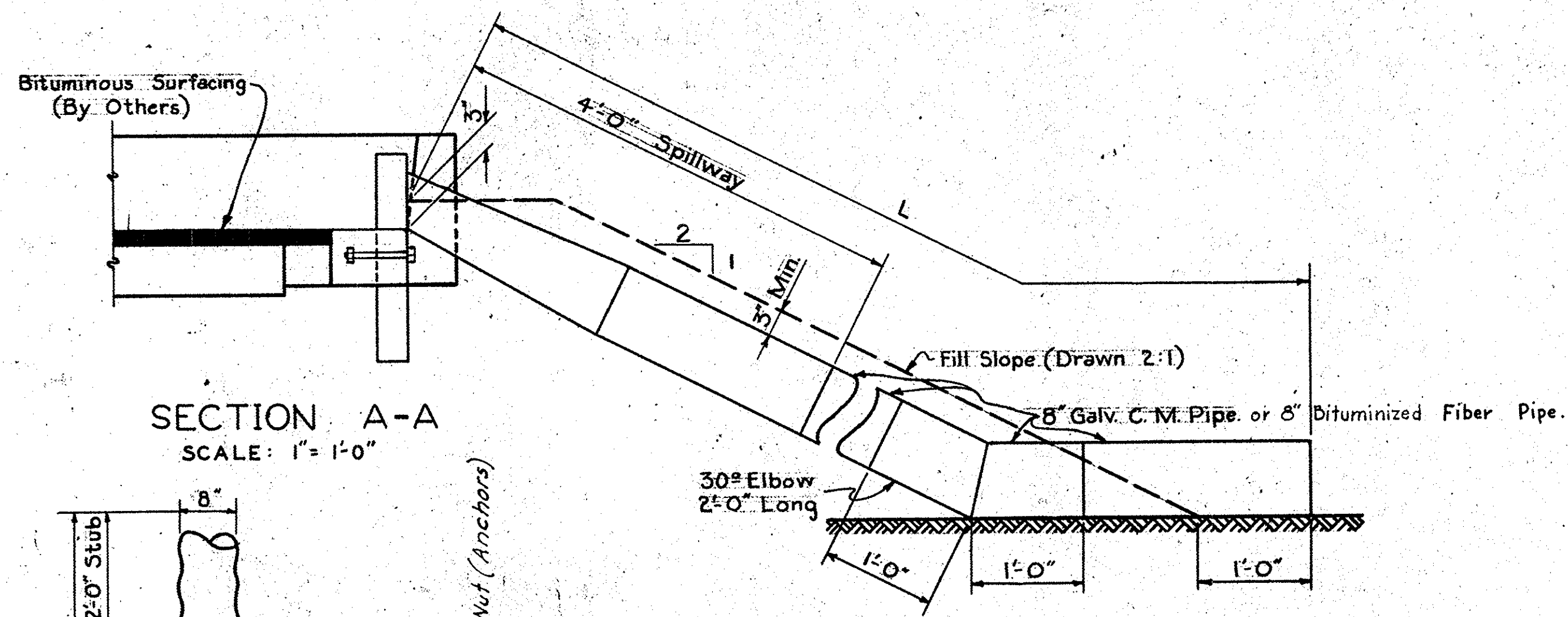
#### AT ENDS OF BRIDGE

DOCKET NO. 10.521.1 ROUTE NO. I-26

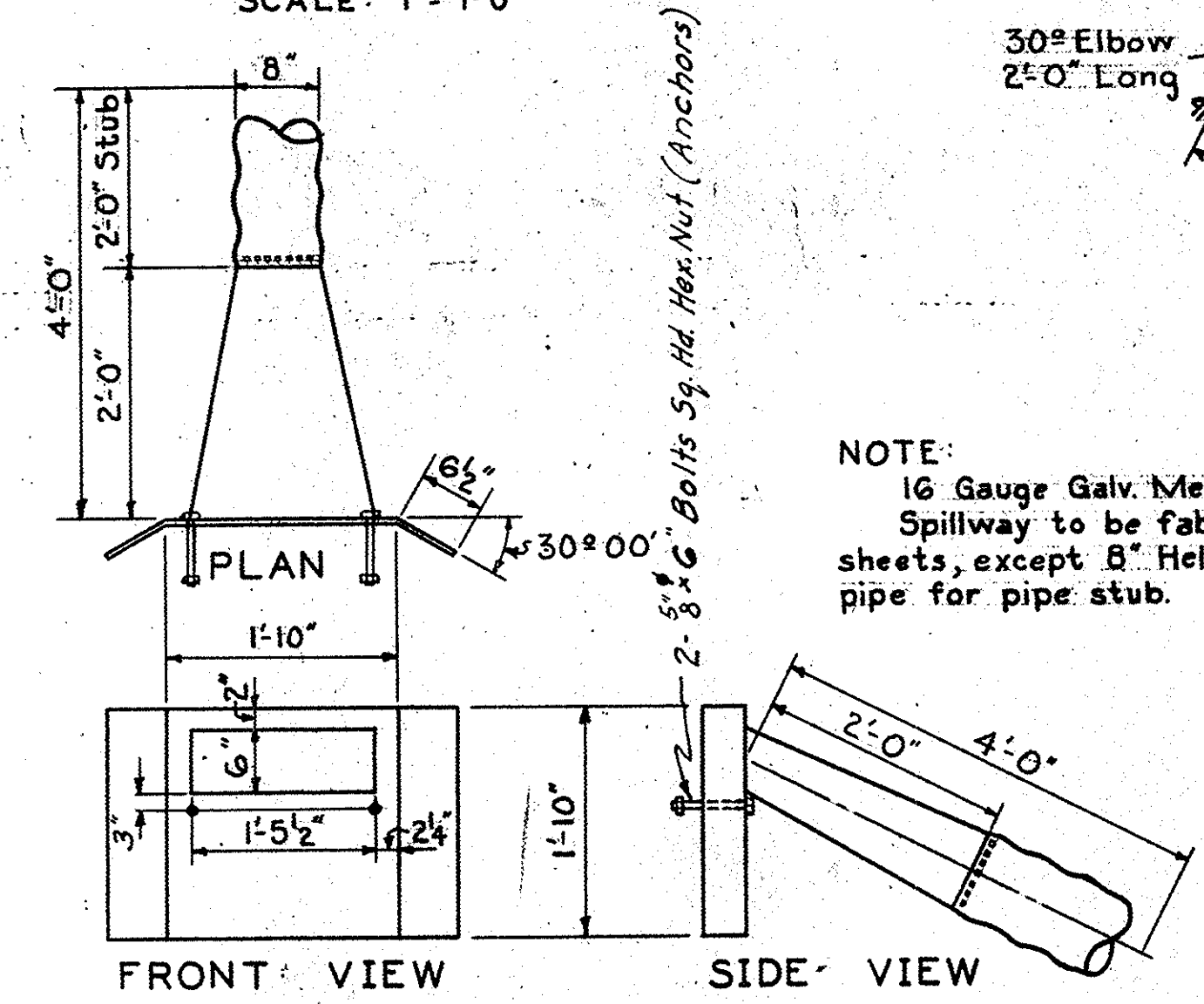
COUNTY CHARLESTON DATE 6-63

SCALE AS NOTED

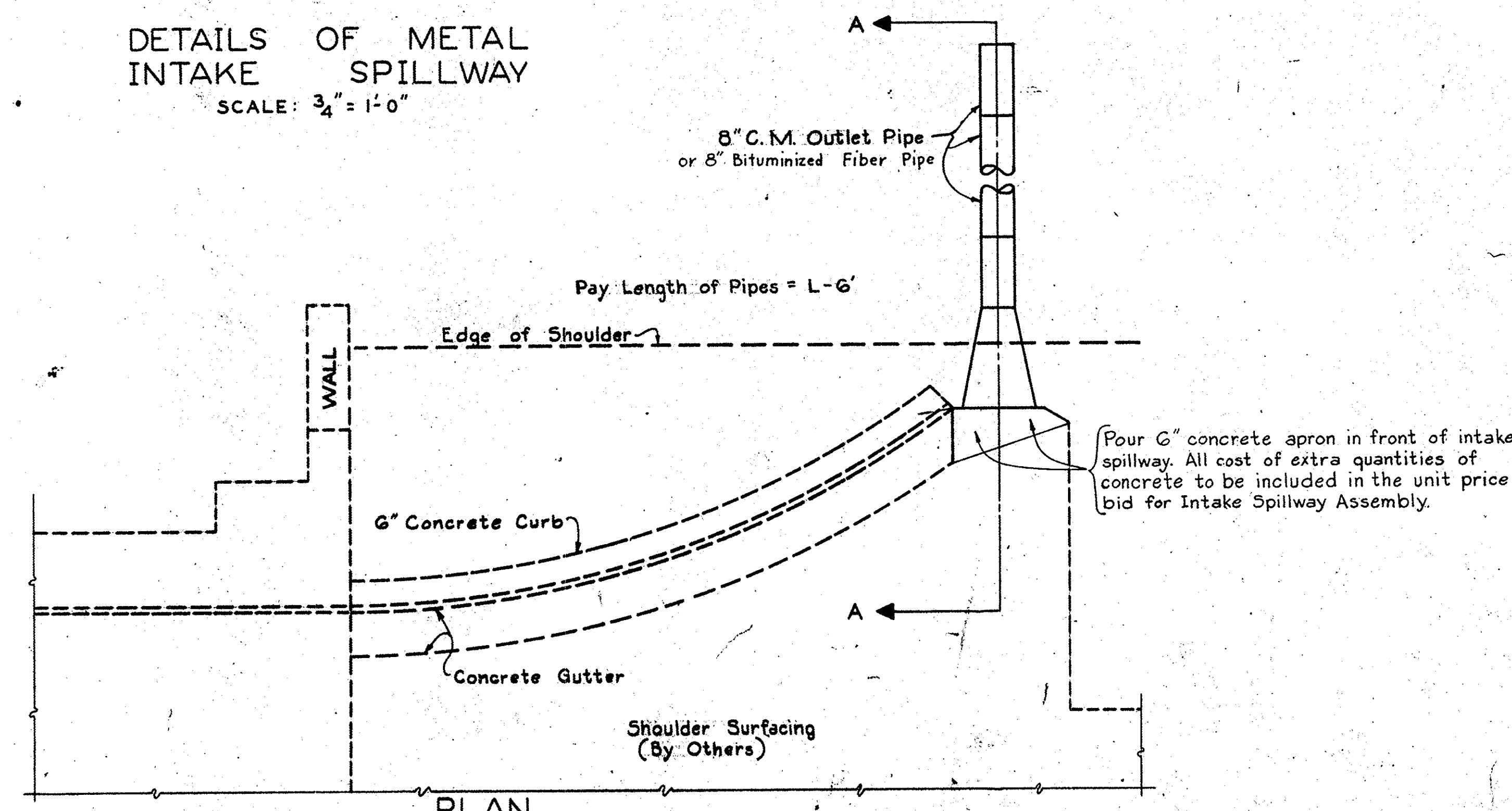
Rev.	WEBB, R. B.	6-5
	Revised for Reinf.	
REV.	T.M. EMQ.	2-51
	Traced	
BY	C.K.D.	DATE



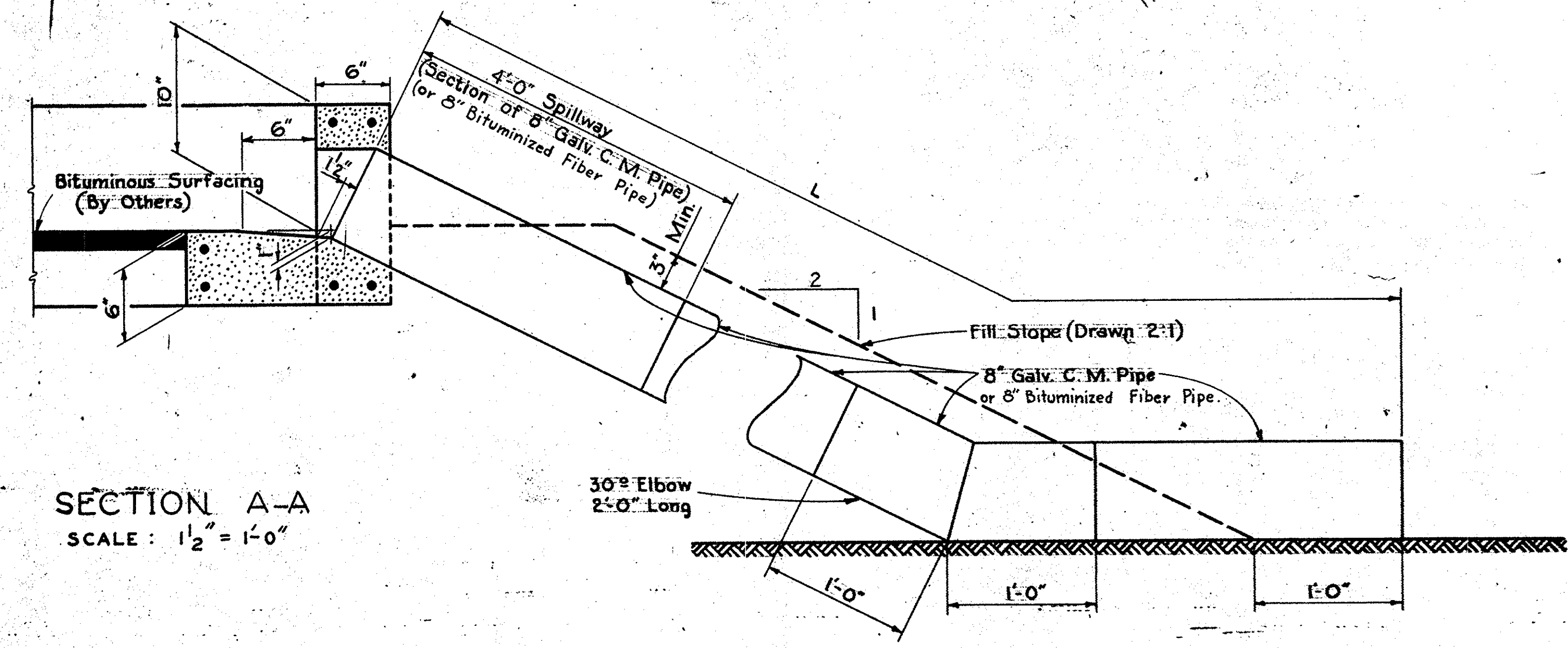
SECTION A-A  
SCALE: 1" = 1'-0"



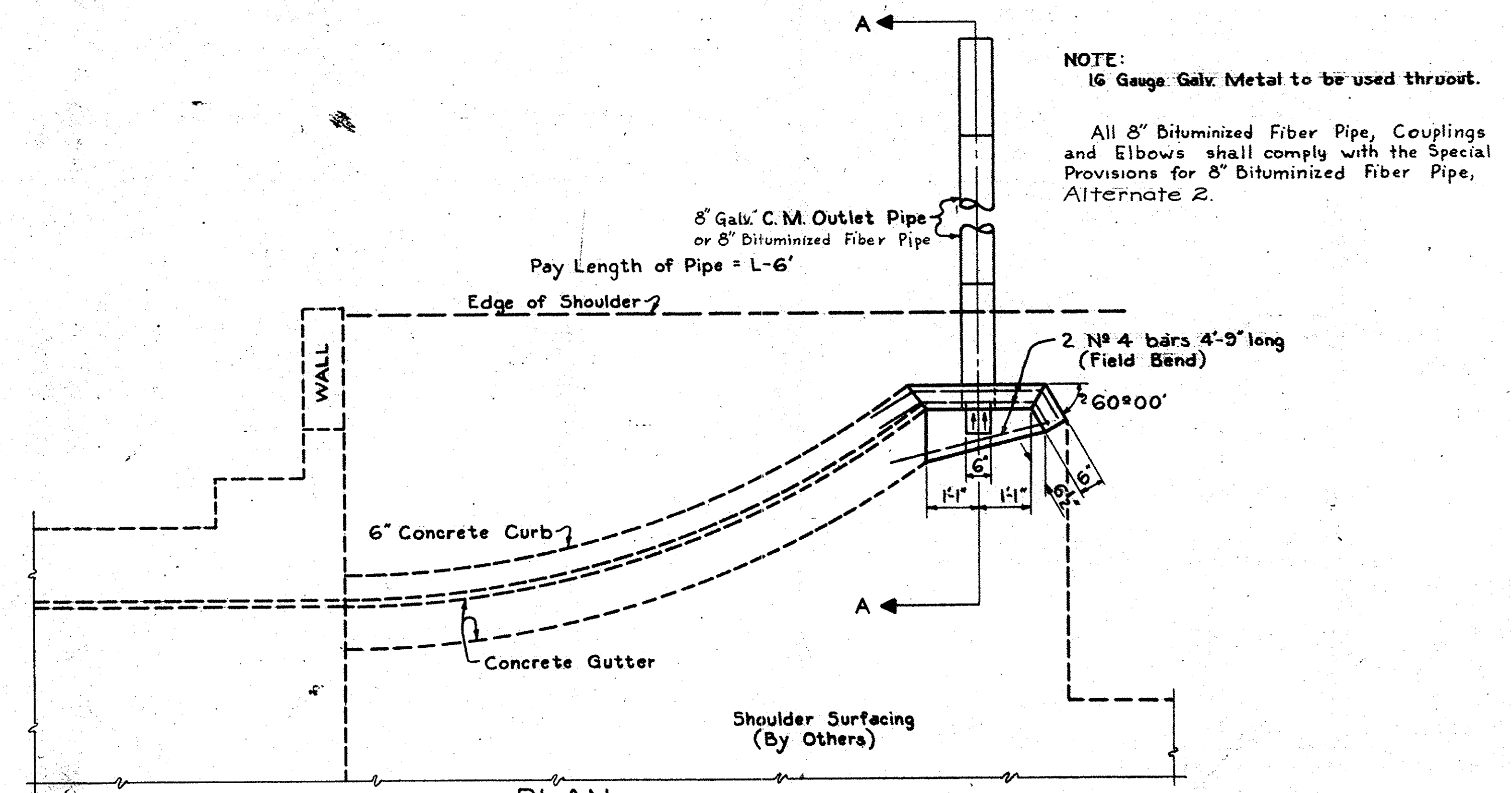
DETAILS OF METAL INTAKE SPILLWAY  
SCALE: 3/4" = 1'-0"



PLAN  
SCALE: 1/2" = 1'-0"  
METAL INTAKE OPTION



SECTION A-A  
SCALE: 1 1/2" = 1'-0"



PLAN  
SCALE: 1/2" = 1'-0"  
CONCRETE INTAKE OPTION

BID ITEMS	
Intake Spillway Assembly (Includes one 4'-0" Spillway Intake and one 30° Elbow 2'-0" long)	4 Each
8" Galv. C. M. Pipe Slope Drain - Alternate 1	100 L.F.
8" Bituminized Fiber Pipe Slope Drain - Alternate 2	100 L.F.

REV.		S. C. STATE HIGHWAY DEPARTMENT	
REV. BAM WHM 7-63		BRIDGE DIVISION	
REV. WFL LEW 11-62		COLUMBIA, S.C.	
REV. WAE WFL 17-62		DETAILS OF	
REV. WAE WFL 12-80		METAL PIPE SLOPE DRAINS	
REVIEWED IN CHARGE		DOCKET NO.	COUNTY
QUAN.		10.521.1	CHARLESTON
TR.		APPROVED BY	ROUTE NO. DATE
DES.		W.E. Egan	I-26 7-
BY CK'D DATE		BR. DESIGN & PLANS ENGR.	APPROVED BY
			BRIDGE ENGINEER



## WIDENING EXISTING CONCRETE STRUCTURES

Existing structure is indicated on the plans by light lines, new structure by heavy lines. All dimensions of new construction are subject to existing conditions.

Connecting surfaces of the old concrete shall be thoroughly roughened, cleaned of loose material, wetted and flushed with 1:2 cement mortar immediately before pouring new concrete, except as noted on other sheets of these plans.

All reinforcing steel protruding beyond surface after chipping shall be left in place and imbedded in new concrete if feasible. Reinforcing steel which can not be imbedded in new concrete shall be cut off flush with surface of concrete where asphalt surfacing will cover. Where exposed the old reinforcing shall be cut off 12" below the exposed concrete surface and the hole patched with dry 1:3 mortar to the satisfaction of the Engineer.

The Contractor shall repair or replace at his own expense, and in a manner satisfactory to the Engineer, any portion of the existing structure damaged as a result of his carelessness or negligence.

The entire cost of the above work including all drilling and chipping, and removing and disposing of portions of old structure necessary to construct new structure, shall be included in the unit price bid for Class "A" Concrete.

If expansion anchor bolts are called for they shall be similar and equal to Rawl's Multi-Park Anchor or American Exp. Bolt and shall be installed in accordance with the manufacturer's directions.

Expansion anchor bolts will be paid for at unit price bid for reinforcing steel.

Unless otherwise specified in these plans or Special Provisions the Contractor shall provide necessary temporary supports for utilities attached to the bridge to maintain service during construction.

The owner will make all necessary changes in alignment and elevation of the utility and furnish permanent supports which shall be placed in the concrete by the Contractor.

All costs of the work to be performed by the Contractor shall be included in the unit price bid for Class "A" Concrete.

## SPECIAL NOTE

Generally, in case of discrepancy, this standard sheet of notes shall govern over the Specifications, but the remainder of the plans shall govern over notes hereon, and Special Provisions shall govern over all. See Standard Specifications paragraph 504.

## EXCAVATION FOR PILE TYPE END BENT

All cost of excavation necessary to construct end bents and to remove material under superstructure to an elevation 1'-0" below tops of end bent caps shall be included in the unit price bid for Class "A" Concrete.

## EXCAVATION FOR CONCRETE FTG END BENT

If concrete footing is used for the end bent, the excavation below that included for the cap and bent in the above paragraph will be paid for at the unit price bid for excavation. Excavation above this shall be included in the unit price bid for Class "A" Concrete.

## DRIVING PILES THROUGH FILL

Where piles occur in fill exceeding 10 ft in height, the fill shall be in place before piles are driven.

## HAMMER FOR STEEL PILES

Steel piles where required bearing exceeds 37 Tons shall be driven with a diesel steam or air hammer having a minimum energy of 14,000 ft.-lbs.

## HAMMER FOR CONCRETE PILES

Concrete Piles shall be driven with steam or air single-acting hammer or Diesel hammer of suitable size. The drop hammer allowed in Parag. 101.05 of the Standard Specifications may not be used.

## ALLOWANCE FOR DEAD LOAD DEFLECTION AND SETTLEMENT

Bridges shall be built on the grade or vertical curve shown on plans. Handrails, slabs and curbs shall conform to the grade or curve.

In setting forms for structural steel or prestressed concrete beam bridges, an allowance shall be made for dead load deflections in addition to the elevations shown.

In setting falsework and forms for reinforced concrete spans an allowance shall be made for dead load deflections, settlement of falsework and permanent camber which shall be provided for in addition to the elevations shown. After removal of the falsework the finished structure shall conform to the elevations shown plus the allowance for permanent camber specified by the Engineer.

## BRONZE EXPANSION PLATES

Bronze P's to be self-lubricating Exp. P's Manufactured from rolled bronze alloy complying with A.S.T.M. B100 - Alloy 1, or A.S.T.M. B22 - Gc B casting, and to have special inserts consisting of graphite and metallic substances with a lubricating binder in top face only. Installation of P's to be in accord with manufacture's directions. The Coef. of friction shall not exceed 0.1. The Bronze P's shall be similar to those manufactured by Merriman Bros., Inc., 183 Amory St., Boston 30, Mass., or Spadone - Alfa Corp., South Norwalk, Conn., or an approved equal.

## STRUCTURAL STEEL

Beams shall be cambered for vertical curve and dead load deflection either in mill or shop.

Layout dimensions and standard lengths of beams shown are horizontal dimensions and must have the additional lengths added for lengths along grade.

All rivets shall be 7/8"  $\phi$  unless noted.

All high-tensile-strength bolts shall be 7/8"  $\phi$  unless noted.

All holes shall be 1 1/8"  $\phi$  unless noted.

Holes in all main member splices shall be sub-punched, the connecting members shop assembled in their proper positions, and the holes reamed to full size while assembled.

Floor beam connections shall be reamed to a metal template.

All stiffeners at floor beams and at pier reactions shall have fills. All interior stiffeners between floor beams shall be crimped or filled.

Shims shall be placed between beam flange and rocker plate where required and shall be adjusted to bring top of beam to theoretical grade.

Bearing plates and rocker plates to be rolled steel.

Nuts on Anchor Bolts at Expansion Ends to be tightened 1/8" clear to allow for movement.

Anchor bolt assemblies will be paid for as reinforcing steel and are included in the bent quantities unless specifically stated elsewhere as included in the structural steel quantities.

Mill and shop inspection of the structural steel will be performed by Froehling & Robertson, Inc., 814 West Cory St., Richmond, Virginia. The contractor shall notify that company of the name and address of the fabricator of the structural steel as soon as the fabricator has been given the contract to fabricate so that the inspection procedure can be set up. The contractor shall also stipulate in his order to the fabricator that Froehling & Robertson, Inc., will perform the mill and shop inspection of the structural steel.

## COMPOSITE BEAMS

A 5 day interval shall be allowed between time of pouring slab and sidewalk.

Tops of beam flanges shall not be painted.

All equipment, materials and workmanship for electric arc welded stud shear connectors shall be in accordance with the recommendations of the manufacturer and Special Provisions.

Alternate for welded studs: an approved alternate method of securing composite action between beams and slab may be used, at no additional cost to the Dept. Details must be submitted for approval in advance of making the change.

7/8"  $\phi$  studs may be substituted for 3/4"  $\phi$  studs. The 7/8"  $\phi$  studs shall be placed with the same number in each transverse row as the 3/4"  $\phi$  studs. The pitch of the 7/8"  $\phi$  studs shall be equal to 1.36 times the pitch of the 3/4"  $\phi$  studs. The 7/8"  $\phi$  studs must be welded within the recommended area of an approved arc stabilizer cart.

## PRESTRESSED BEAMS

Tops of beams shall be rough floated. At the approximate time of initial set, entire top of beam shall be scrubbed with a coarse wire brush to remove all laitance, and to produce a roughened surface for bonding slab.

Membrane curing compound shall not be used on tops or ends of beams.

Concrete in prestressed beams shall be class "X" as described in the Special Provisions.

The prestressing strands, wire or bars, must be thoroughly cleaned of any loose rust, dirt, grease, form lubricant, or other deleterious substances, to the satisfaction of the Engineer, before the concrete is placed.

Beams shall not be transported to the bridge site until concrete has cured for at least 6 days.

## CONCRETE

All concrete shall be Class "A" unless noted below or on other sheets of these plans.

Build-ups on bent caps shall be cast monolithic with cap unless shown or noted elsewhere on these plans.

Top of each build-up shall be level.

Payment for Concrete in slab will be based on theoretical plan quantity.

Any necessary adjustment for Camber shall be at the Contractor's expense.

All exposed edges shall be chamfered 3/4" unless otherwise noted.

For simple spans over 70 Ft. in length, the center portion (approximately 2/3 of the length) of the slab shall be poured first and allowed to cure for not less than 4 days before the remaining end sections are poured. However, when the temperature permits (in the opinion of the engineer) the entire slab may be poured provided a suitable retarding agent is used in such amounts that the slab concrete shall not have had its initial set prior to the completion of the casting of the slab concrete.

## BEARINGS

For concrete beams bearing on concrete, the top of caps, or tops of build-ups, under bearing areas of beams shall receive a steel bearing finish to insure a smooth and level bearing surface. See Standard Specifications paragraph 710.22.

## DESIGN DATA

SPECIFICATIONS: A.A.S.H.O. 61 with rev. thru 62

LIVE LOAD: H20-S16-4.4 Includes provision for alternate loading of 2 axles 4' apart with each axle weighing 75% of rear loading for spans under 40'.

## UNIT STRESSES

STRUCTURAL STEEL & REINFORCED CONCRETE:

\* $f_s$  (struct) = 20,000 psi - For A-36

$f_s$  (reinf) = 20,000 psi

CLASS "A" CONCRETE:

$f_c$  = 1200 psi;  $n$  = 10;  $v$  = 225 psi;  $u$  = 300 psi

CLASS "X" CONCRETE:

$f_c$  = 2,000 psi;  $n$  = 8;  $v$  = 325 psi;  $u$  = 350 psi

PRESTRESSED CONCRETE:

$f_c$  = 5,000 psi;  $f_{ci}$  = 4,000 psi;  $f_c$  = 2,000 psi

PRESTRESSING STEEL:

$f_s$  = 250,000 psi;  $f_{si}$  = 175,000 psi

\* 18,000 psi - For A-7 or A-373

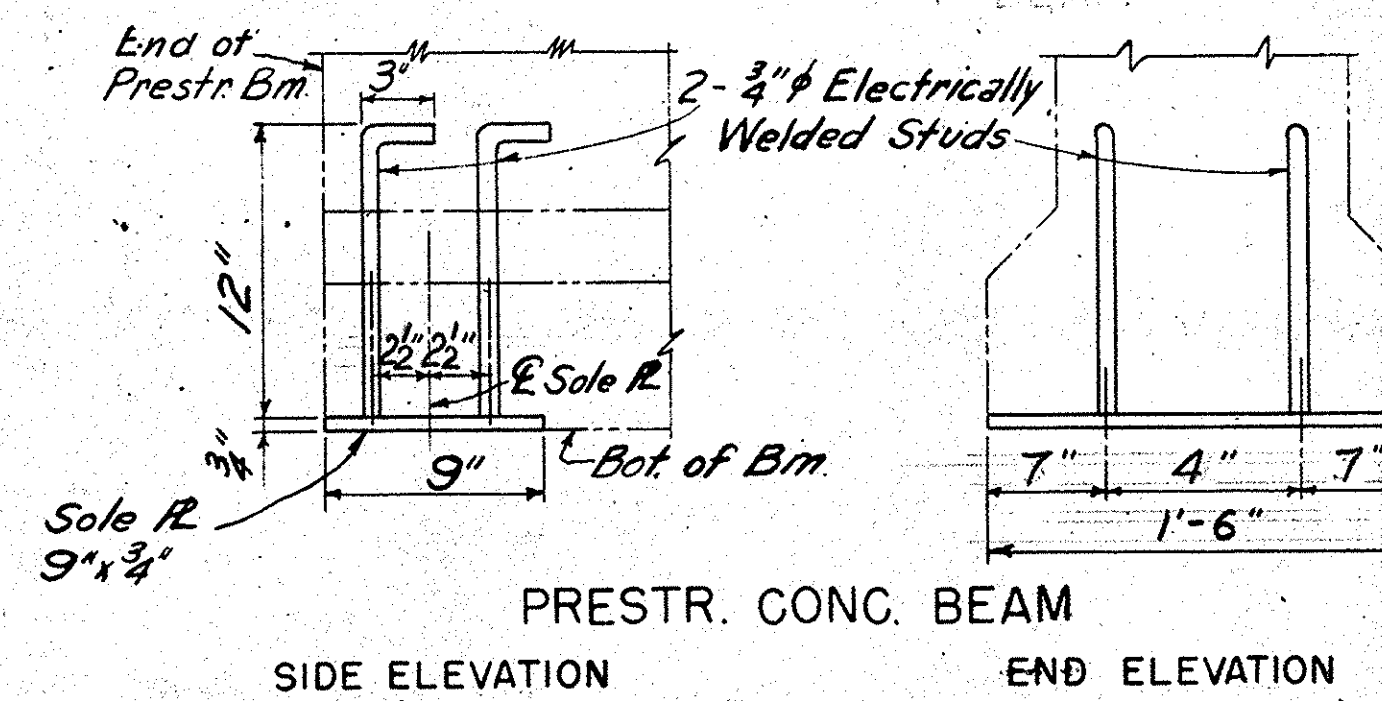
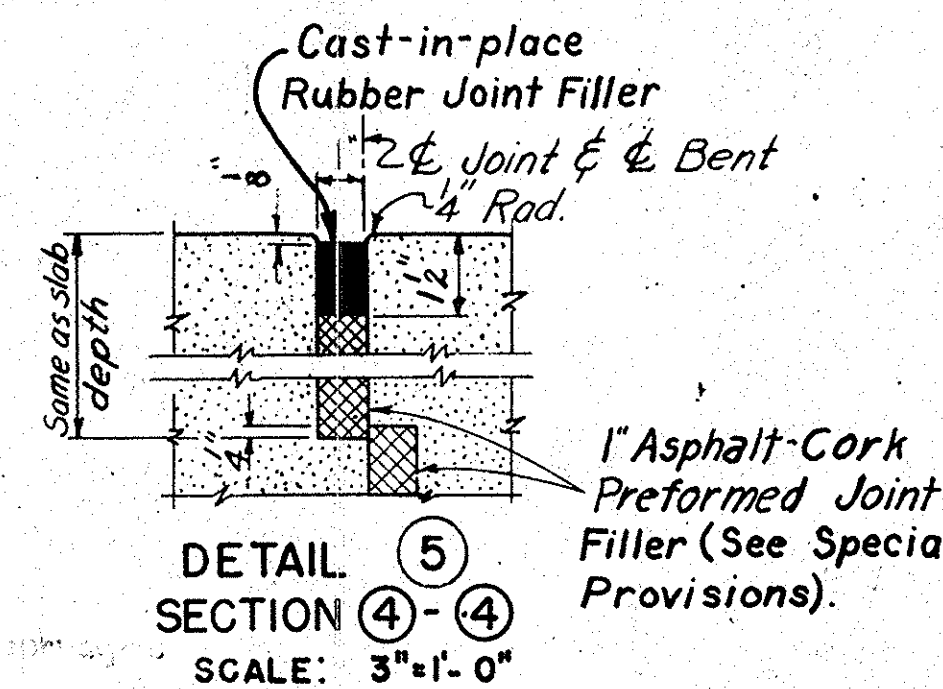
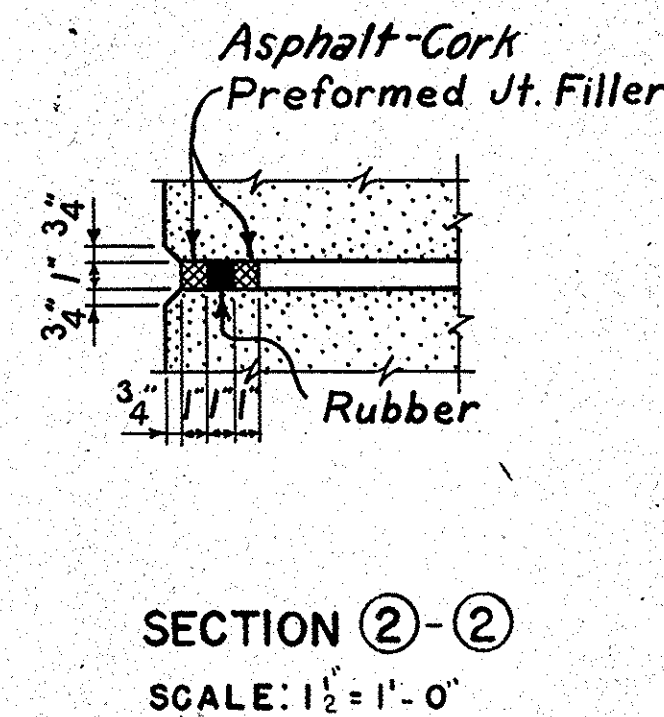
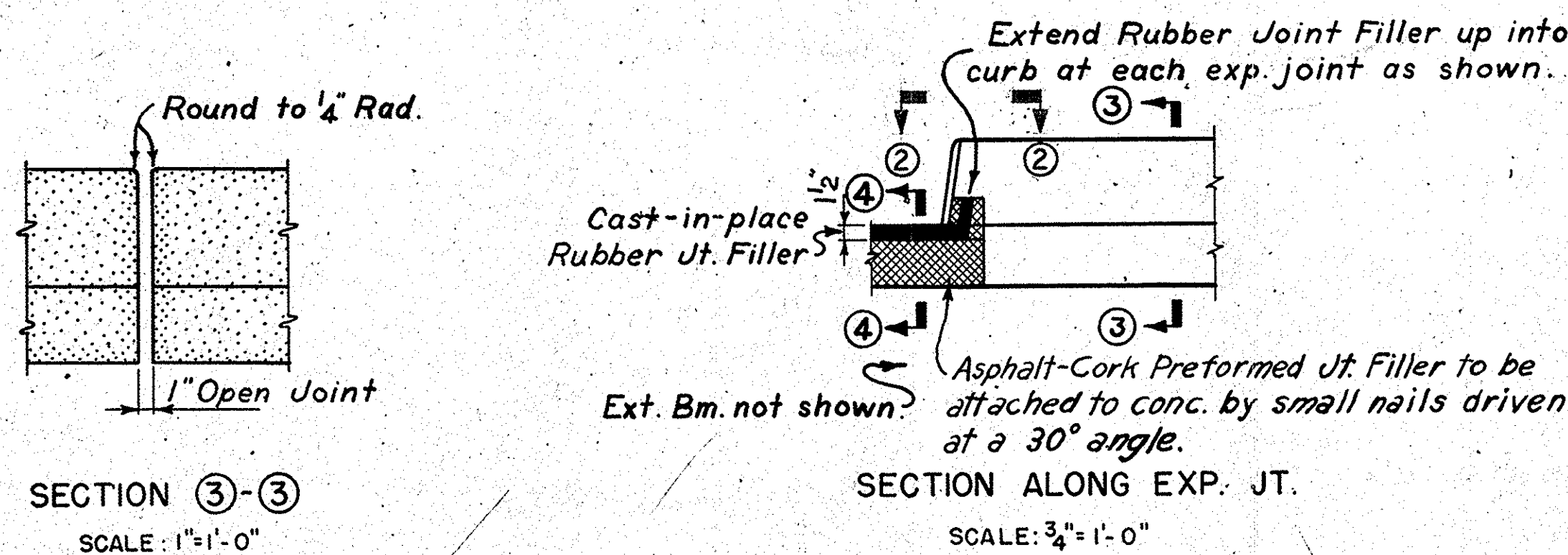
## MATERIAL AND WORKMANSHIP

Except as may otherwise be specified on plans or in the Special Provisions, all material and workmanship shall be in accordance with the South Carolina Highway Department Standard Specifications for Highway Construction dated November 1, 1955.

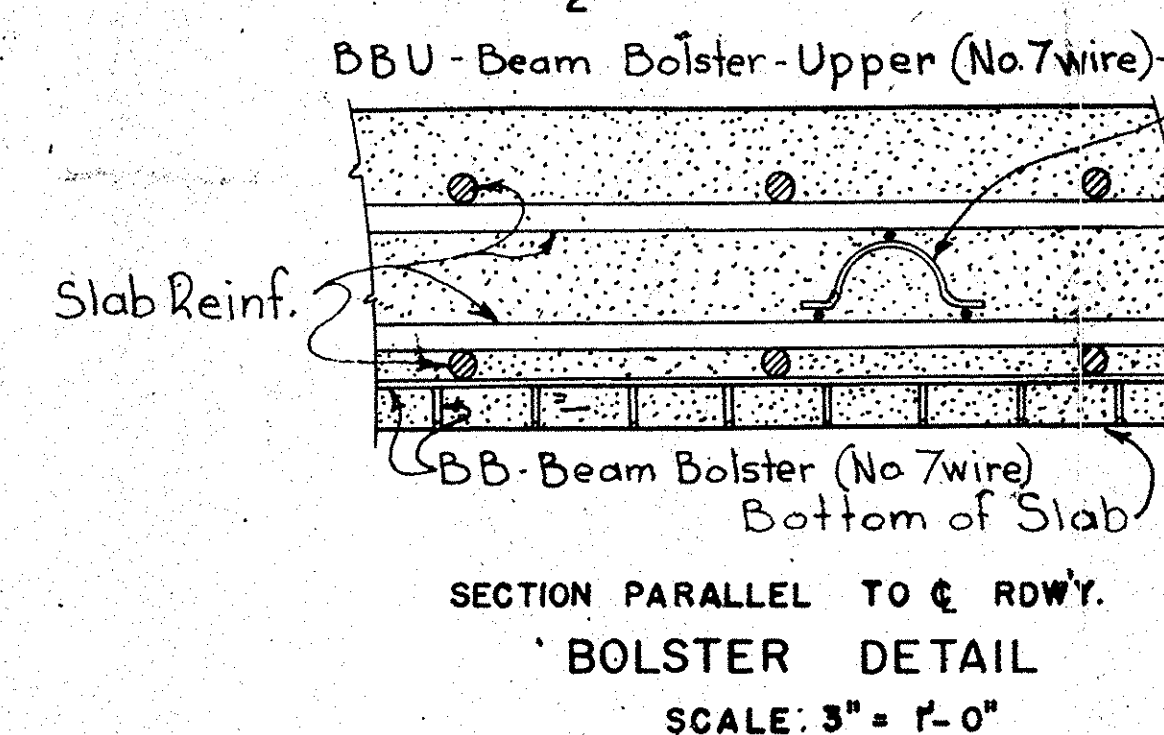
S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA, S. C.

## STANDARD NOTES

REV.		DOCKET NO.	COUNTY	ROUTE NO.	DATE
REV.		10.521.1	CHARLESTON	I-26	4-63
REV.					
REV.					
REV.	WHM/BAM/6-63 FOR DK.10.521.1				
REVIEWED:	IN CHARGE				
QUAN.	TR. APO RWH4-61				
DR.	APD RWH4-61				
DES.					
BY	CHODATE				



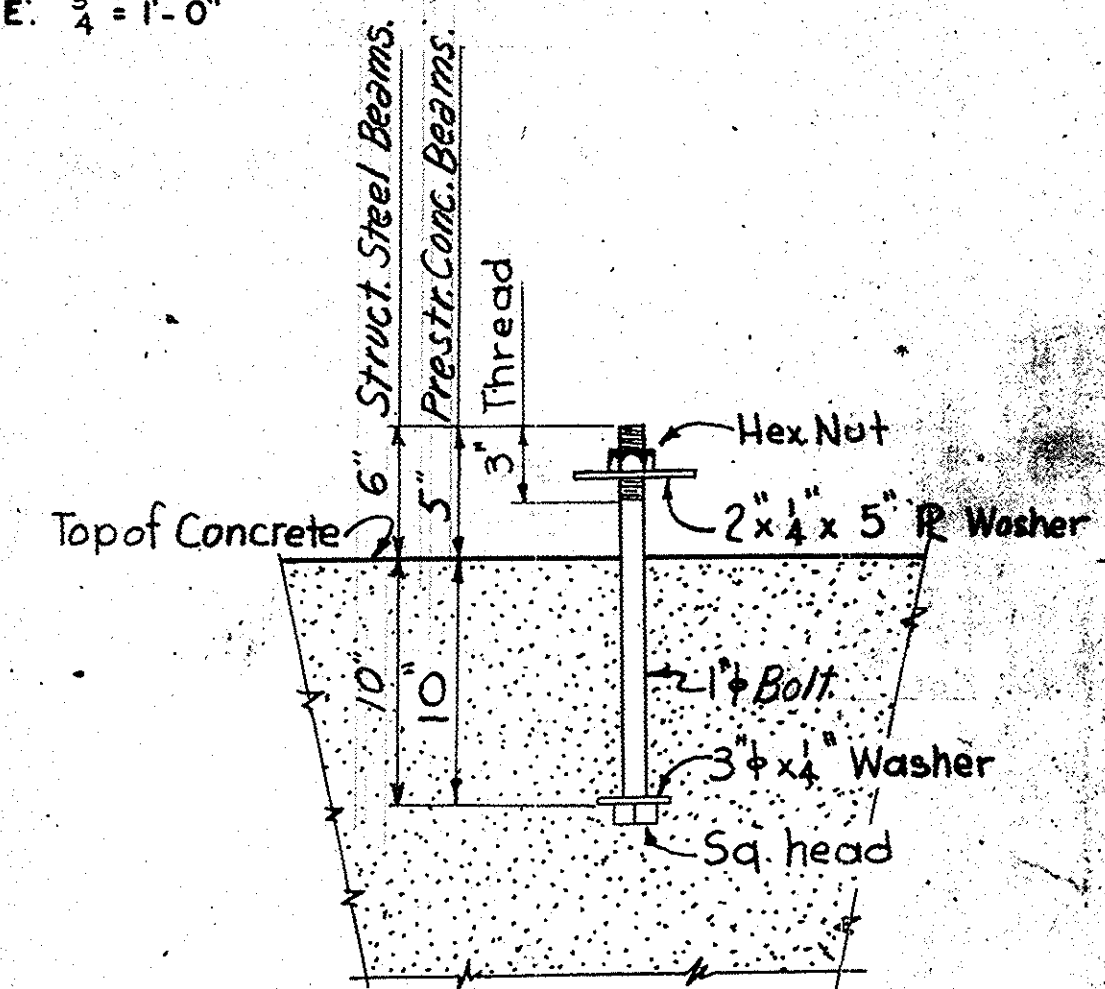
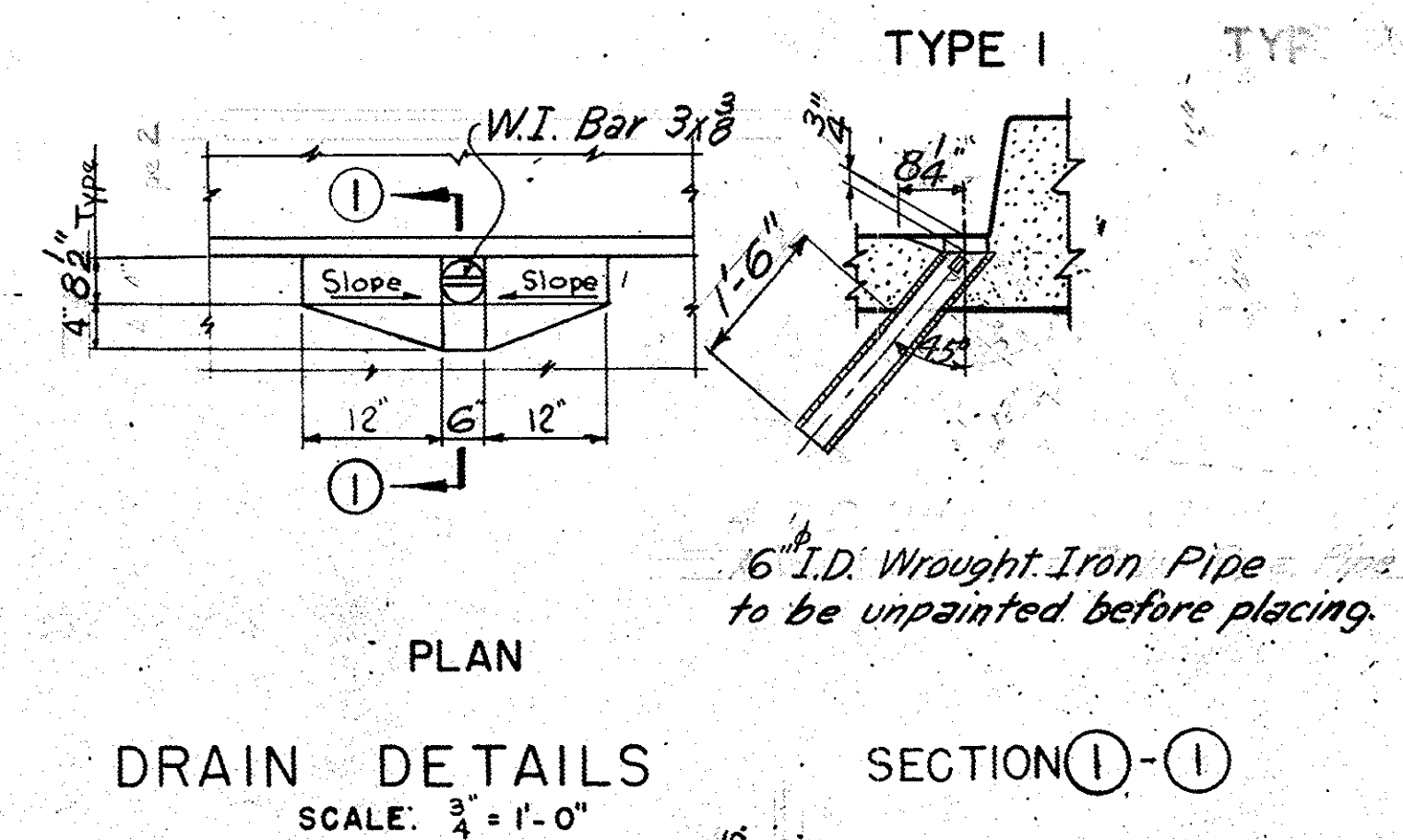
BEARING DETAILS  
ELECTRICALLY WELDED STUD ALTERNATE  
SCALE: 1 1/2" = 1'-0"



Note: For Bolster Heights See Sh. No. 21, 22, 27, & 28.  
Bolsters shall be spaced so that they provide adequate support for the slab reinforcing steel. The BBU bolsters shall be spaced at approx. 3'-0" ctrs. The BB bolsters shall be placed with one row near each edge of slab & with a max. spacing of approx. 3'-0" between.  
Bolsters shall be equal to beam bolsters BB and BBU as Mfgd. by Meadow Steel Co. or Richmond Screw Anchor Co.  
The lengths of bolsters shown in reinforcing steel schedules are approximate. Weights are included in the reinforcing steel quantities and payment will be made at the unit price bid for Reinforcing Steel.

1 1/2"	2 3/4"	For No. 4 and Smaller add 6" per hook
2"	3 3/4"	For No. 5 and No. 6 add 8" per hook
3 1/2"	4 1/2"	For No. 7 and larger add 12" per hook

HOOK DETAILS  
FOR STEEL REINFORCING BARS



DETAIL OF ANCHOR BOLT  
SCALE: 1 1/2" = 1'-0"

ANCHOR BOLT SCHEDULE				
Bent No.	No. per Bent	Size	Length	*Wt. per Bent Lbs.
1	30	1" φ	1'-3"	154
2	30	1" φ	1'-3"	154
2	26	1" φ	1'-4"	139
3	26	1" φ	1'-4"	139
3	38	1" φ	1'-3"	195
4, 8, 9, 10, or 13	76	1" φ	1'-3"	389
5	38	1" φ	1'-3"	195
5	26	1" φ	1'-4"	139
6	52	1" φ	1'-4"	278
7	26	1" φ	1'-4"	139
7	38	1" φ	1'-3"	195
11 or 12	68	1" φ	1'-3"	348
14	38	1" φ	1'-3"	195

\*Complete Assembly

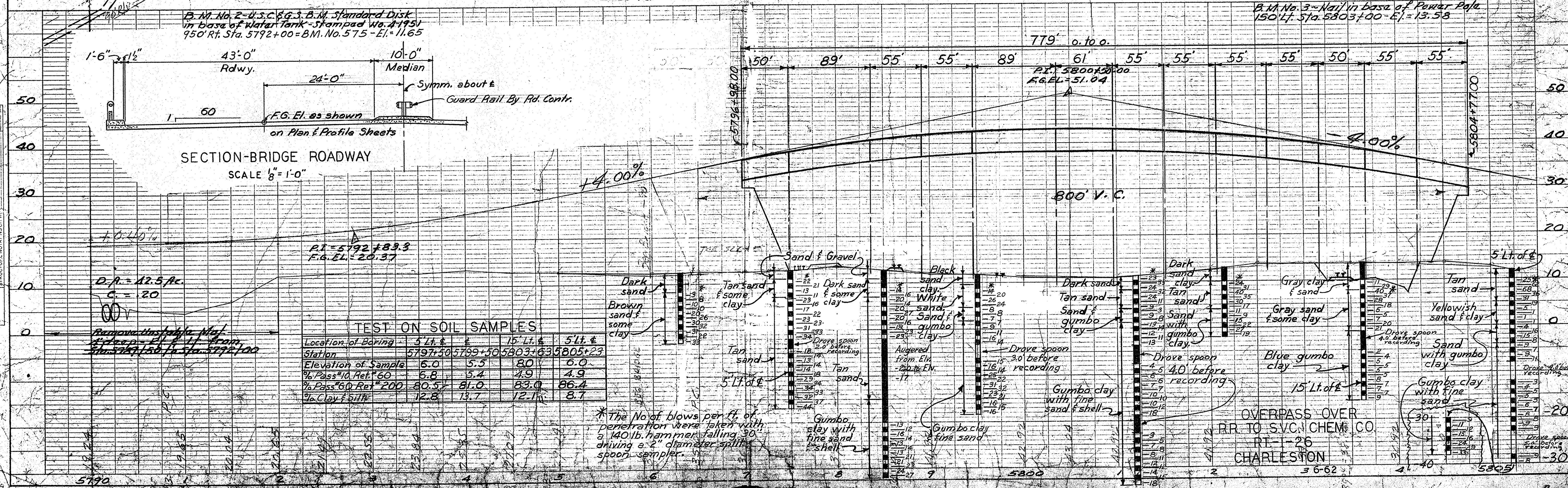
Note: Anchor bolt assemblies will be paid for as reinforcing steel and are included in the bent quantities, unless specifically stated elsewhere as included in the structural steel quantities.

REV	AMZ	H.D.	4-59	Bearing Detail
REV	WEB	MDS	12-58	Drain Detail
REV	AMZ	RWH	1-58	Build-down Detail
REV	RWH	VEH	7-57	Add Detail
REV	ADD	DETAIL		
REVIEWED	DATE	IN CHARGE		
REV	WHM	8AM	6-63	For Dr. 10.521.1
REV	C.D.K.	E.A.S.	4-62	For Details & New Form
REV	C.D.K.	MDS	4-60	Exp. Anchor Detail
				QUAN
				TR. WCF
				DR. JCW
				DES. DES.
				BY: CHK
				DATE
				BRIDGE DESIGN & PLANS ENG
				BRIDGE ENGINEER

S. C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA, S.C.

STANDARD DETAILS

DOCKET NO.	COUNTY	ROUTE NO.	DATE
10.521.1	CHARLESTON	I-26	4-63

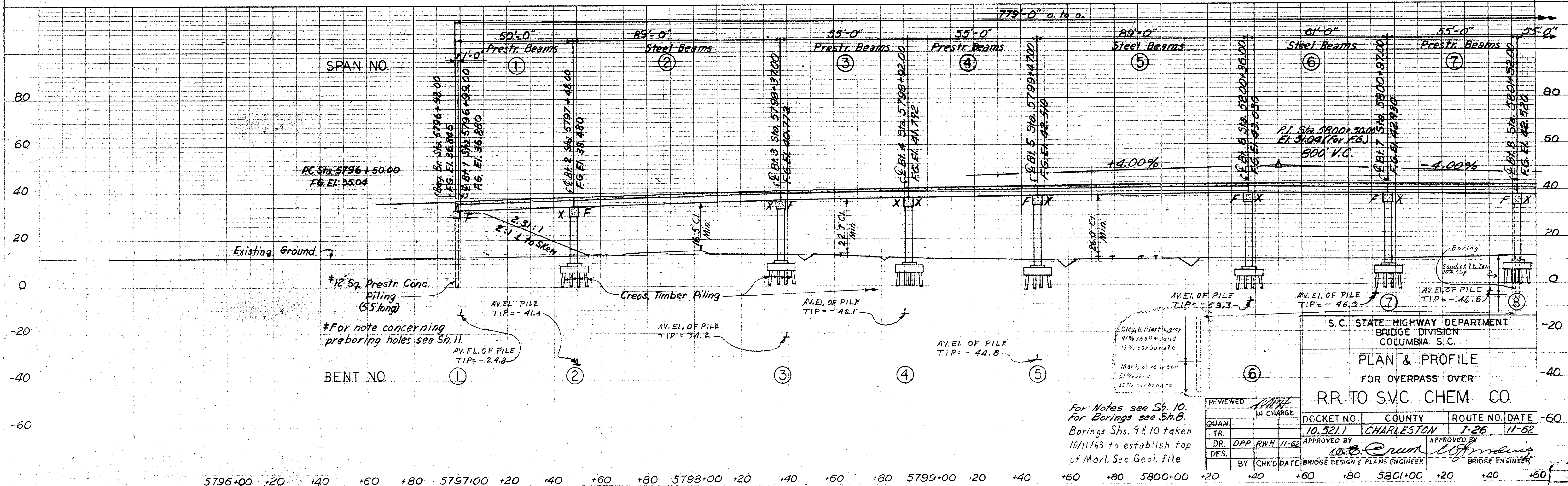
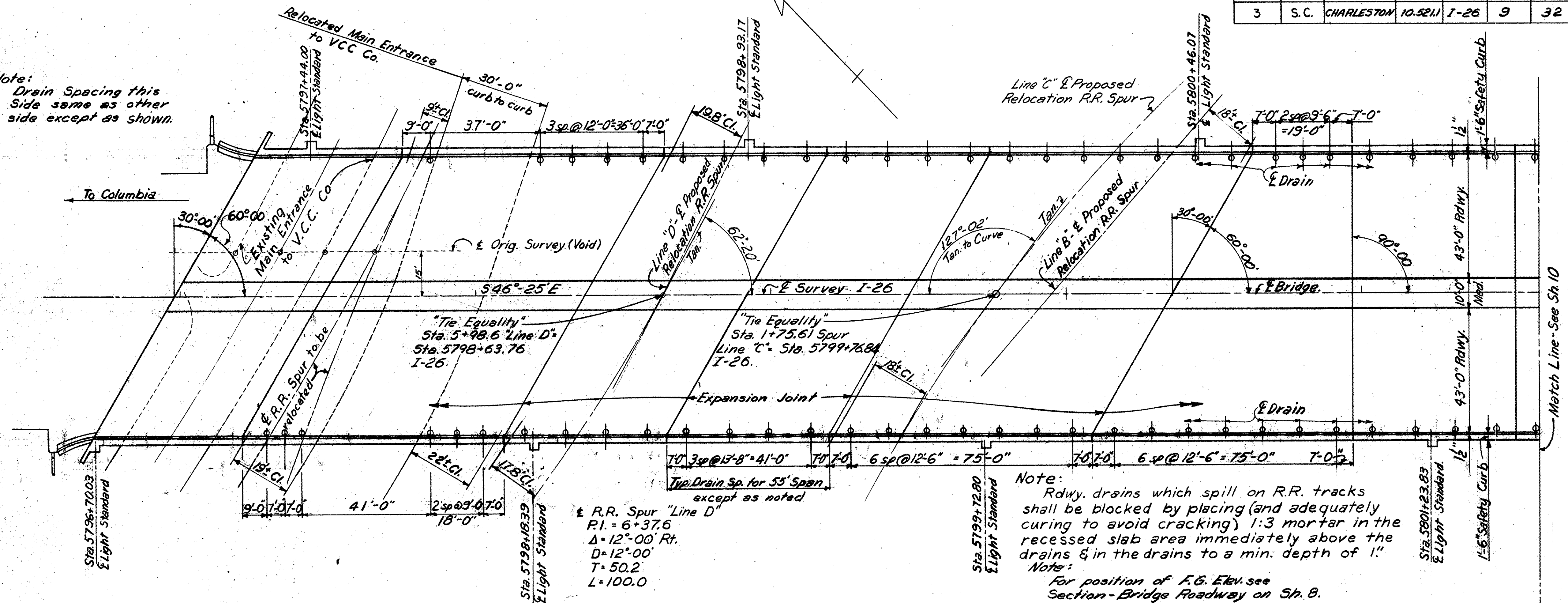


④ Chas. Co.  
OK FINE A

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHARLESTON	10.521.1	1-26	9	32

PLAN  
SURVEYED  
PLATTED  
NOTE BOOK ALIGNMENT CHECKED  
BY  
NO.

Note:  
Drain Spacing this  
Side same as other  
side except as shown.



S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA S.C.

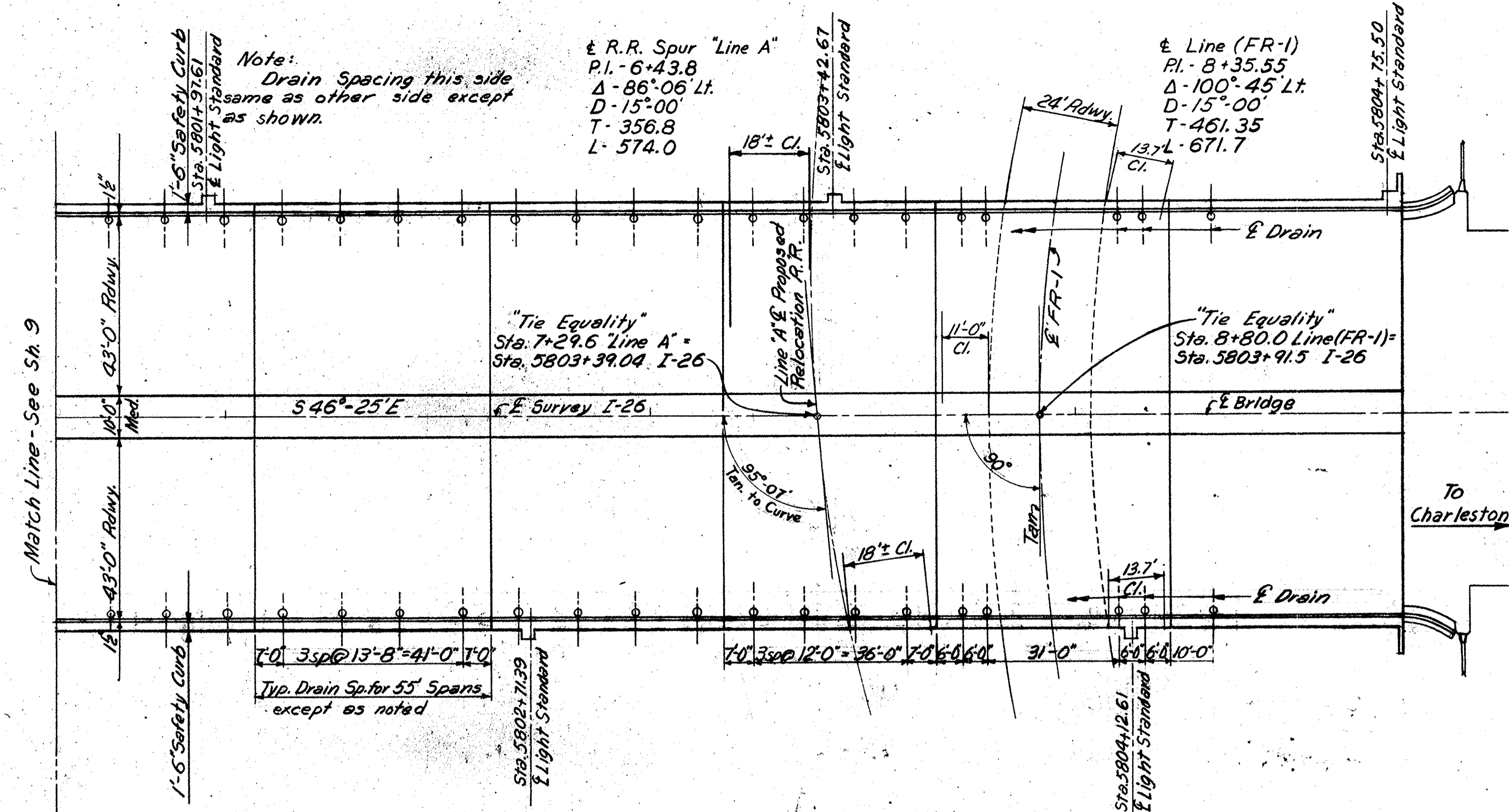
PLAN & PROFILE  
FOR OVERPASS OVER  
RR TO S.V.C. CHEM. CO.

REVIEWED	IN CHARGE	DOCKET NO.	COUNTY	ROUTE NO.	DATE
QUAN.	TR.	10.521.1	CHARLESTON	1-26	11-62
DR.	DPP	APPROVED BY	APPROVED BY		
DES.	BY	CHK'D DATE	BRIDGE DESIGN & PLANS ENGINEER	BRIDGE ENGINEER	

PLAN  
SURVEYED  
NOTED  
NOTE BOOK, ALIGNMENT CHECKED  
NO.

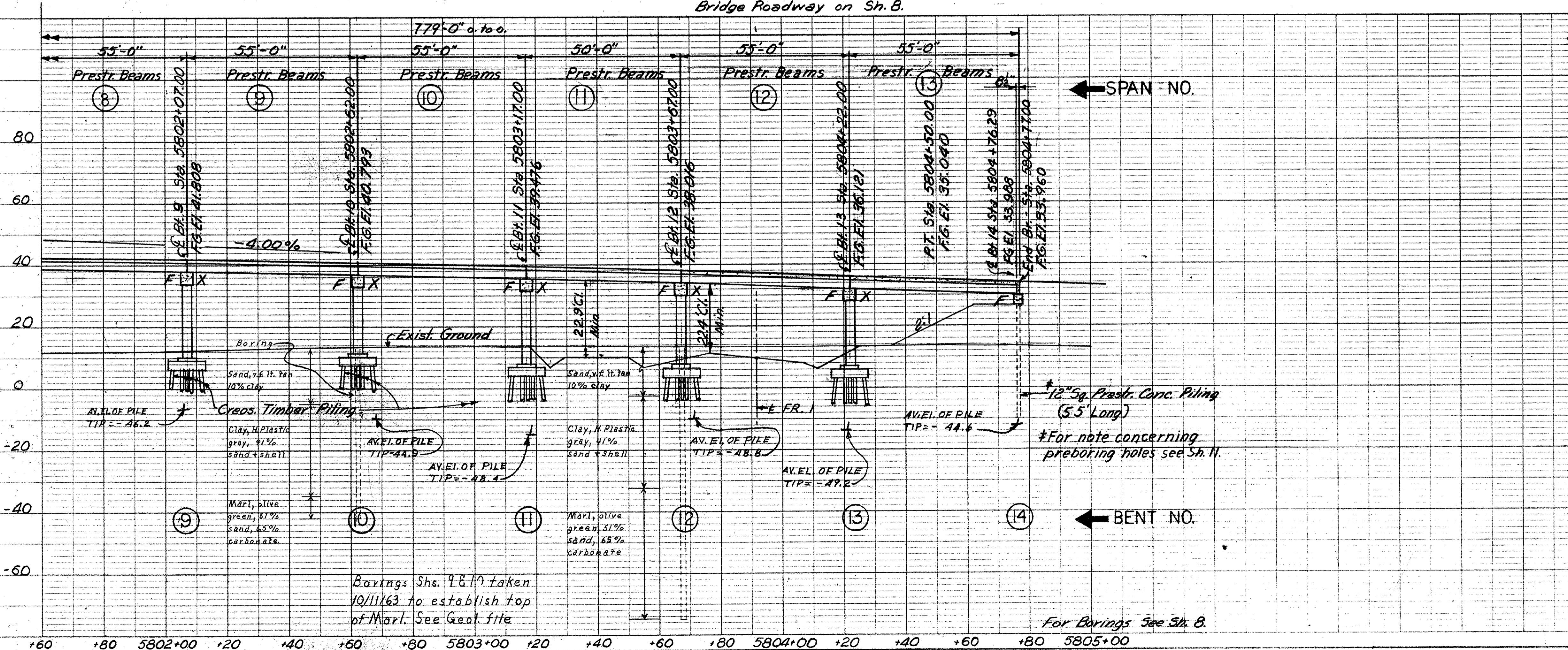
PROFILE  
SURVEYED  
NOTED  
NOTE BOOK, GRADES CHECKED  
NO.

Quantity of Quantities  
Sh. 11-49162



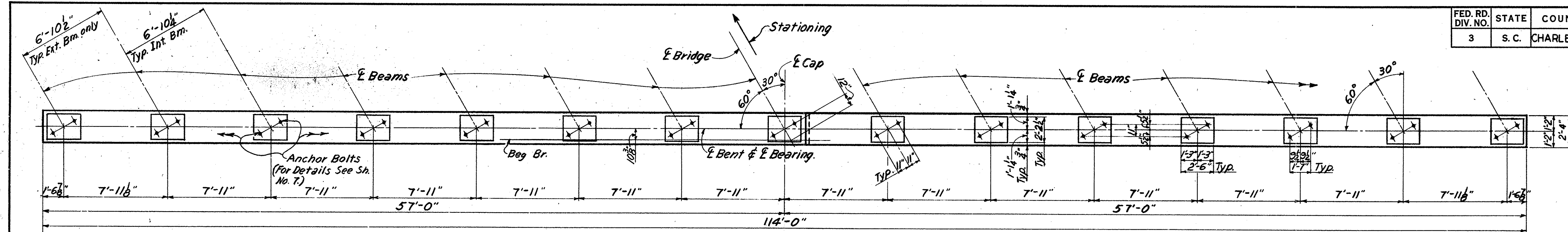
SUMMARY OF QUANTITIES											
	Wet & Dry Excavation C.Y.	Concrete Class "A" C.Y.	Reinforcing Steel Lbs.	Structural Steel Lbs.	Creosoted Timber Piling L.F.	8" Pipe Slope Dr. L.F.	Intake Spillway Ass. Ea.	12" Sq. Prest. Conc. Piling L.F.	Fabr. Metal Handrailing (Alum.) L.F.	50' Prest. Conc. Bms. Ea.	55' Prest. Conc. Bms. Ea.
End Bent 1	1	26.1	3,642					825			
End Bent 14	1	22.7	3,350					1,045			
Int Bt's 2-13	12	2,700	1,834.3	216,659	32,640						
50' End Span-30° Skew	1	157.6	36,919						100	15	
50' Int. Span	1	144.9	35,649						100	15	
55' End Span	1	165.0	33,763						110		19
55' Int. Span-30° Skew	2	320.7	66,656						220		38
55' Int. Span	5	785.1	165,507						550		95
89' Int. Span-30° Skew	2	478.1	133,638	661,800					356		
61' Int. Span	1	162.5	46,103	170,200					122		
Flared Curb & Gutter	2	2.4	158			190	4				
Totals	2,700	4,099.4	742,044	832,000	32,640	190	4	1,870	1,558	30	152

- ① Includes 0.3 C.Y. for Light Brackets.
- ② Includes 0.2 C.Y. for Light Brackets.
- ③ Includes 0.1 C.Y. for Light Brackets.
- ④ Includes 0.6 C.Y. for Light Brackets.
- ⑤ Includes 216 Lbs. for Light Brackets.
- ⑥ Includes 108 Lbs. for Light Brackets.
- ⑦ Includes 432 Lbs. for Light Brackets.

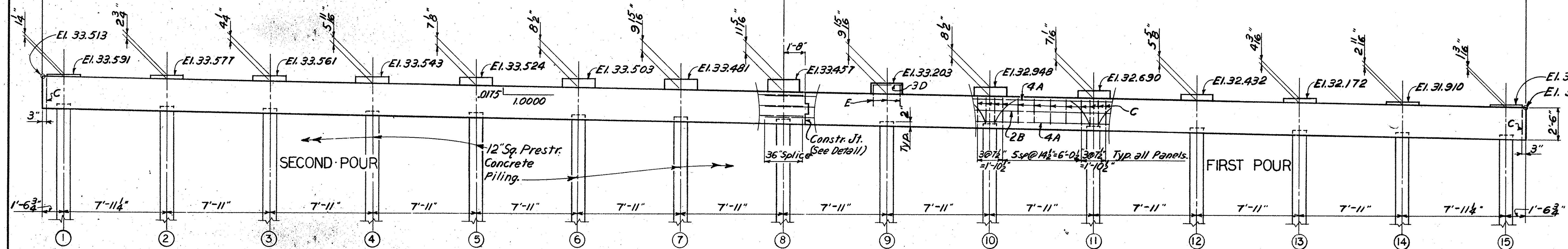


Notes:  
For Standard Notes see Sh. 6.  
All excavation shall be classified as "Wet & Dry" re-  
gardless of the elevation of water.  
Construct Flared Curb & Gutter on both sides of  
roadway at each end of bridge.  
Place Pipe Slope Drains on both sides of  
roadway at each end of bridge.  
During construction of portions of bridge adjacent  
to R.R. track, the Minimum vertical clearance shall  
be 20.0 ft. above the highest rail, and the Minimum  
horizontal clearance shall be 8.0 ft. from E. of track.  
Excavation for footings adjacent to tracks  
shall not encroach on a theoretical slope line of  
1:1, beginning at an elevation of the top of adja-  
cent cross ties at a distance 5 ft. from the E. of  
tracks. Otherwise a cofferdam satisfactory to  
the Engineer shall be used in order to safe-  
guard safety of trains.

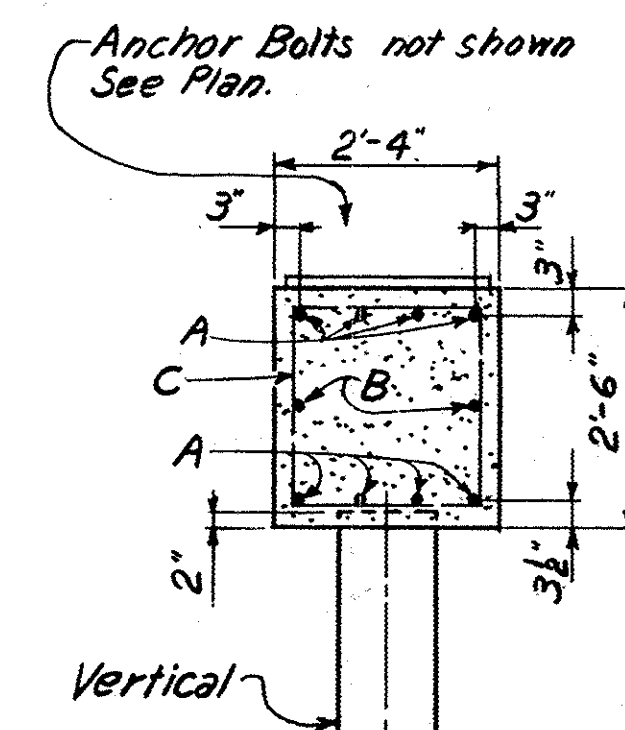
REV		S.C. STATE HIGHWAY DEPARTMENT	
REV		BRIDGE DIVISION	
REV		COLUMBIA, S.C.	
REV		PLAN & PROFILE	
REV		FOR OVERPASS OVER	
REV		R.R. TO S.V.C. CHEM. CO.	
QUAN		DOCKET NO. 10.521.1	ROUTE NO. I-26
TR.		CHARLESTON	DATE 11-62
DES.		APPROVED BY [Signature]	APPROVED BY [Signature]
		BY CHK'D DATE [ ]	BRIDGE DESIGN & PLANS ENG. BRIDGE ENGINEER



PLAN OF CAP-BENT-1



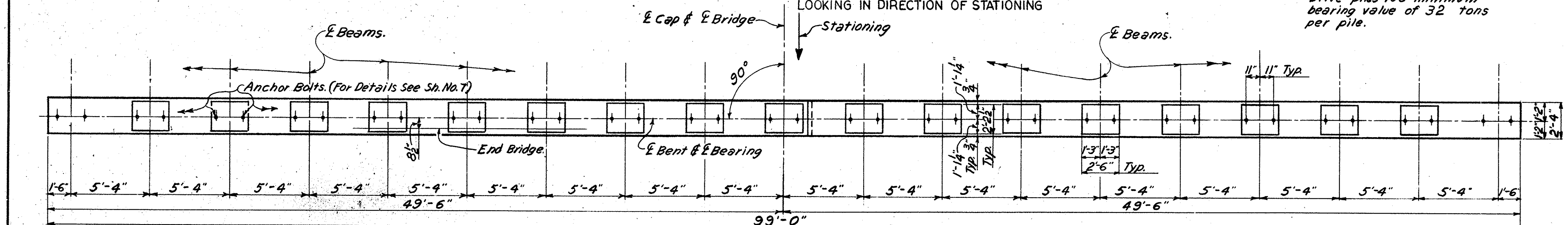
ELEVATION BENT-1  
LOOKING IN DIRECTION OF STATIONING



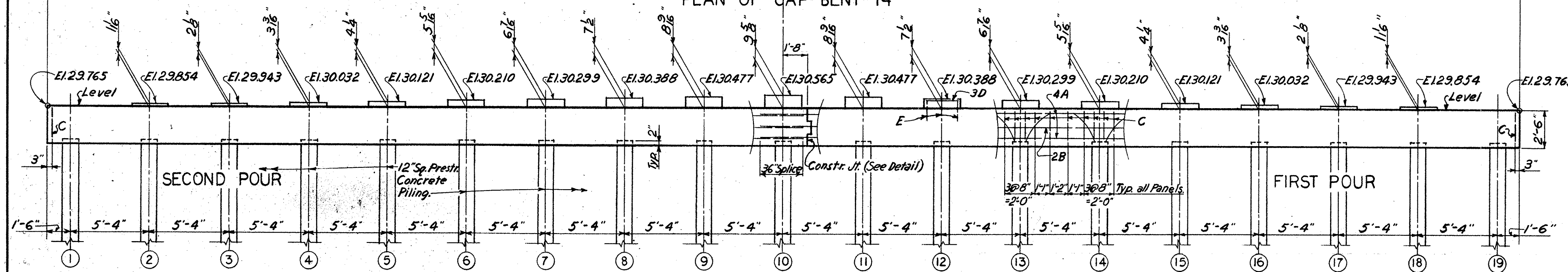
SECTION THRU CAP  
SCALE 1/2"=1'-0"

Note:  
14" round holes for End Bent Piles to be prebored for full depth of embankment. Cost of pre-boring to be included in unit price bid for 12" Sq. Prestressed Concrete Piling.

Drive piles to a minimum bearing value of 32 tons per pile.



PLAN OF CAP-BENT-14



ELEVATION BENT-14  
LOOKING IN OPPOSITE DIRECTION TO STATIONING

Drive piles to a minimum bearing value of 28 tons per pile.

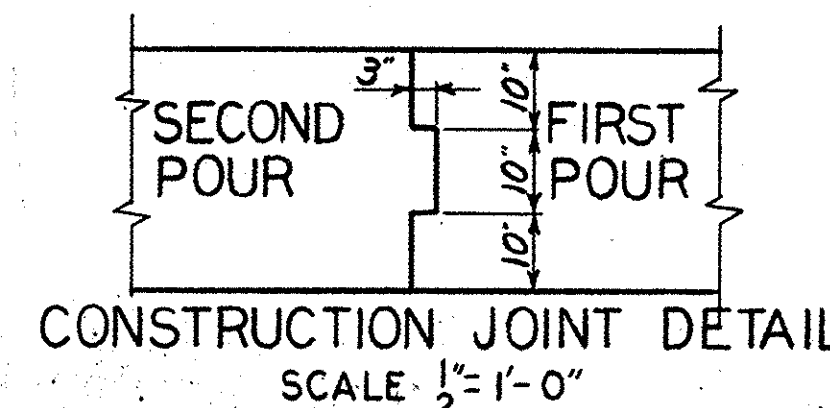
BEINDING DETAIL		REINFORCING STEEL SCHEDULE					
MARK NO	SIZE NO	BENT-1		BENT-14		NO REQD	LENGTH
		NO REQD	LENGTH	NO REQD	LENGTH		
A	8	16	58'-3"	16	50'-9"		
B	4	4	58'-3"	4	50'-9"		
C	4	118	8'-7"	114	8'-7"		
D	4	33	2'-2"	39	2'-2"		
E	4	33	5'-5"	39	5'-5"		

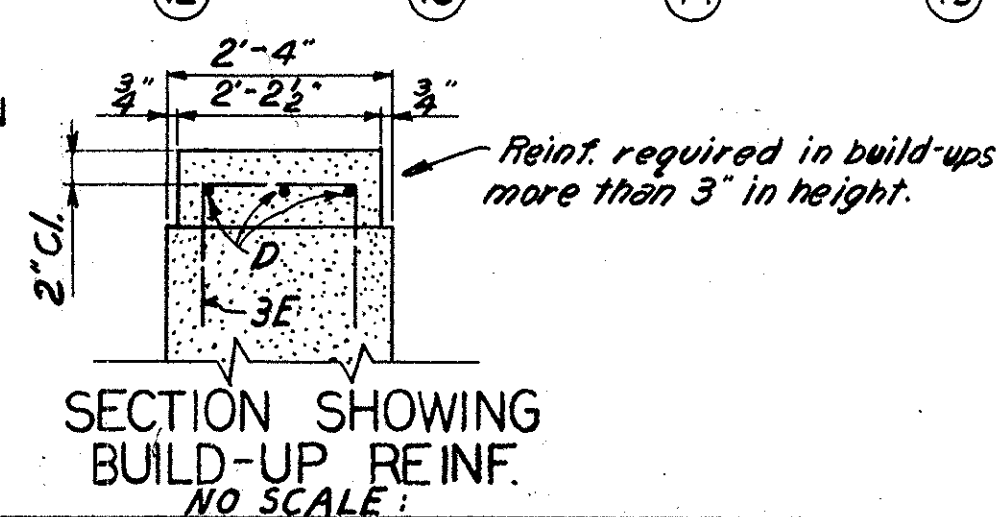
QUANTITIES	
ITEM	UNIT
CONCRETE CLASS "A"	CY. 26.1
REINFORCING STEEL	LBS. 3,642
12" SQ. PRESTR. CONC. PILING	LF. 825

①Includes 154 lbs. for Anchor Bolt Assemblies.  
②Includes 195 lbs. for Anchor Bolt Assemblies.

Notes:  
For Details of Prestressed Pile See Sh. No. 12.  
For Standard Notes See Sh. No. 6.  
For Standard Details See Sh. No. 7.  
Build-ups to be poured monolithic with cap.



CONSTRUCTION JOINT DETAIL  
SCALE 1/2"=1'-0"

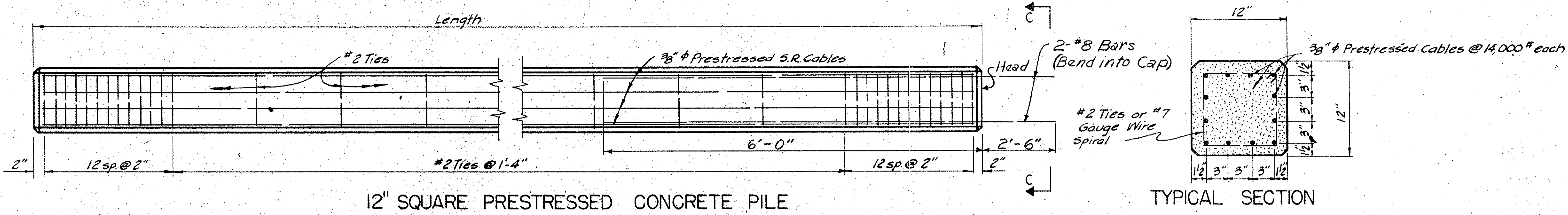


SECTION SHOWING BUILD-UP REINF.  
NO SCALE

Scale: 1/4"=1'-0", or as shown.

REV.		S.C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.
REV.		
REV.		
REV.		
REVIEWED	IN CHARGE	END BENTS 1&14 FOR OVERPASS OVER R.R. TO SVC. CHEM. CO
QUAN. WHM JOM 6-63	DOCKET NO. 10.521.1	
TR. DR. WHM BAM 6-63	COUNTY CHARLESTON	
DES. RWH BAM 2-63	ROUTE NO. I-26	
BY CHK'D DATE	APPROVED BY	DATE 5-63
	BRIDGE DESIGN & PLANS ENGINEER	BRIDGE ENGINEER

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHARLESTON	10.521.1	I-26	12	32



NOTES:

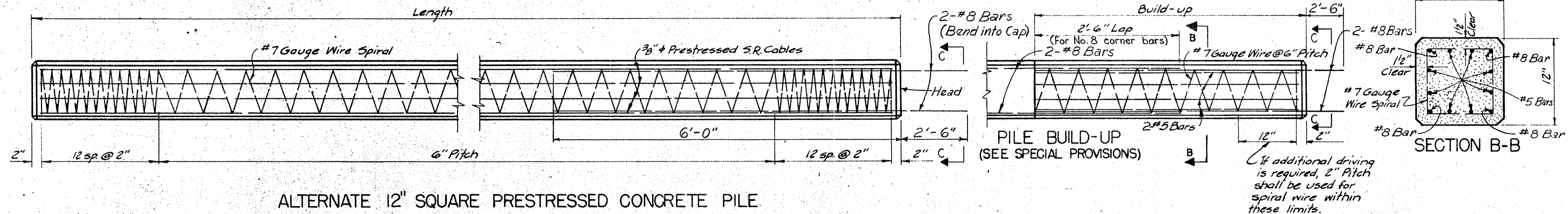
In driving piles, a method approved by the Engineer shall be used, whereby the head of the pile is not damaged. The contractor may use either #2 ties or #7 Gauge Wire Spiral as shown.

Chamfer all exposed edges 3/4".

All concrete shall be Class "X". See Special Provisions.

Prestressed piles shall not be transported to the bridge site or driven until the concrete has cured for at least 6 days.

Spirals or ties shall be tied to all corner cables and reinforcing bars.



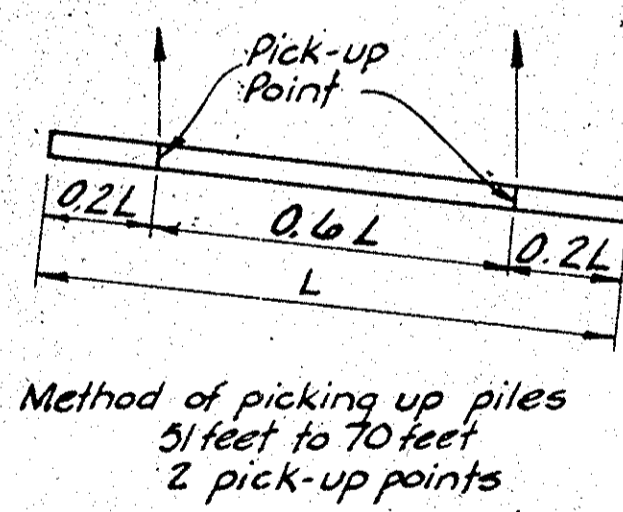
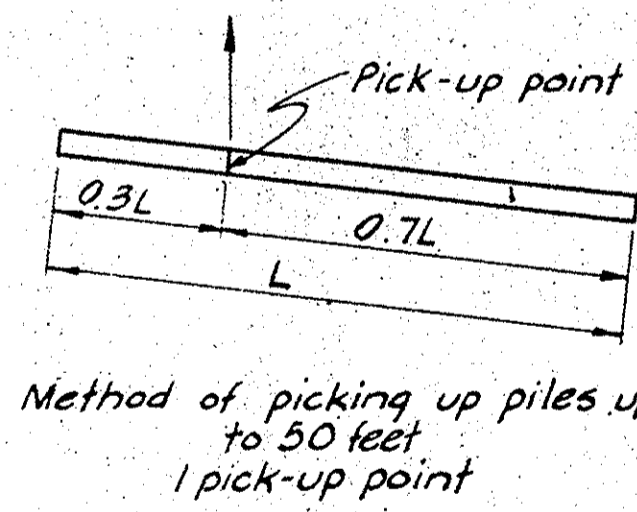
Design Data:

Concrete:  $f'_c = 5000$  p.s.i.  
 $f_c = 2000$  p.s.i.  
Tension = None

Cables: Tensile (Ultimate) 250,000 p.s.i.  
(Applied) = 175,000 p.s.i.  
(Design) = 140,000 p.s.i.

Impact in handling = 100%

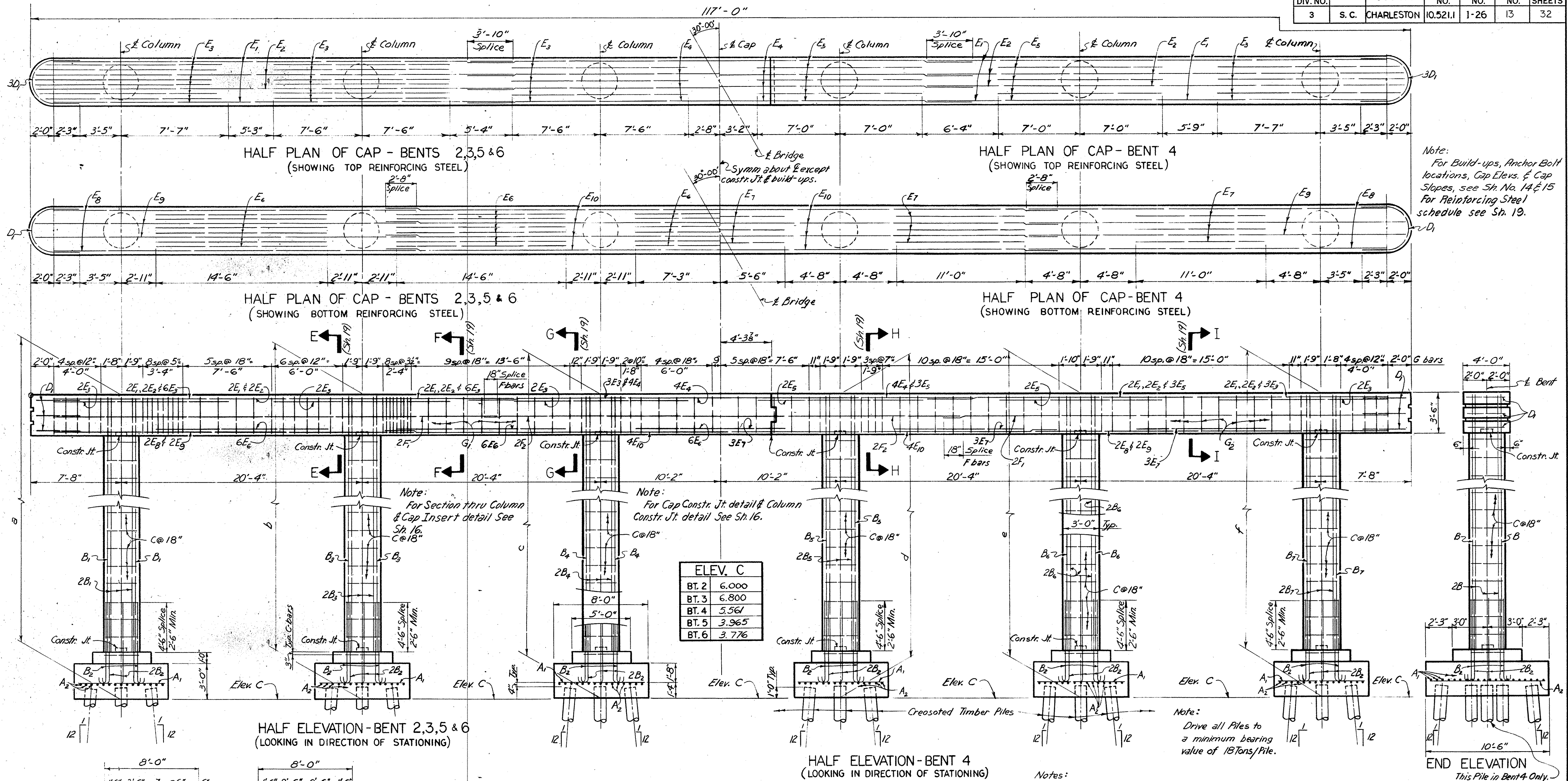
Concrete Quantity Per Pile = .0370 c.y./lin.ft.



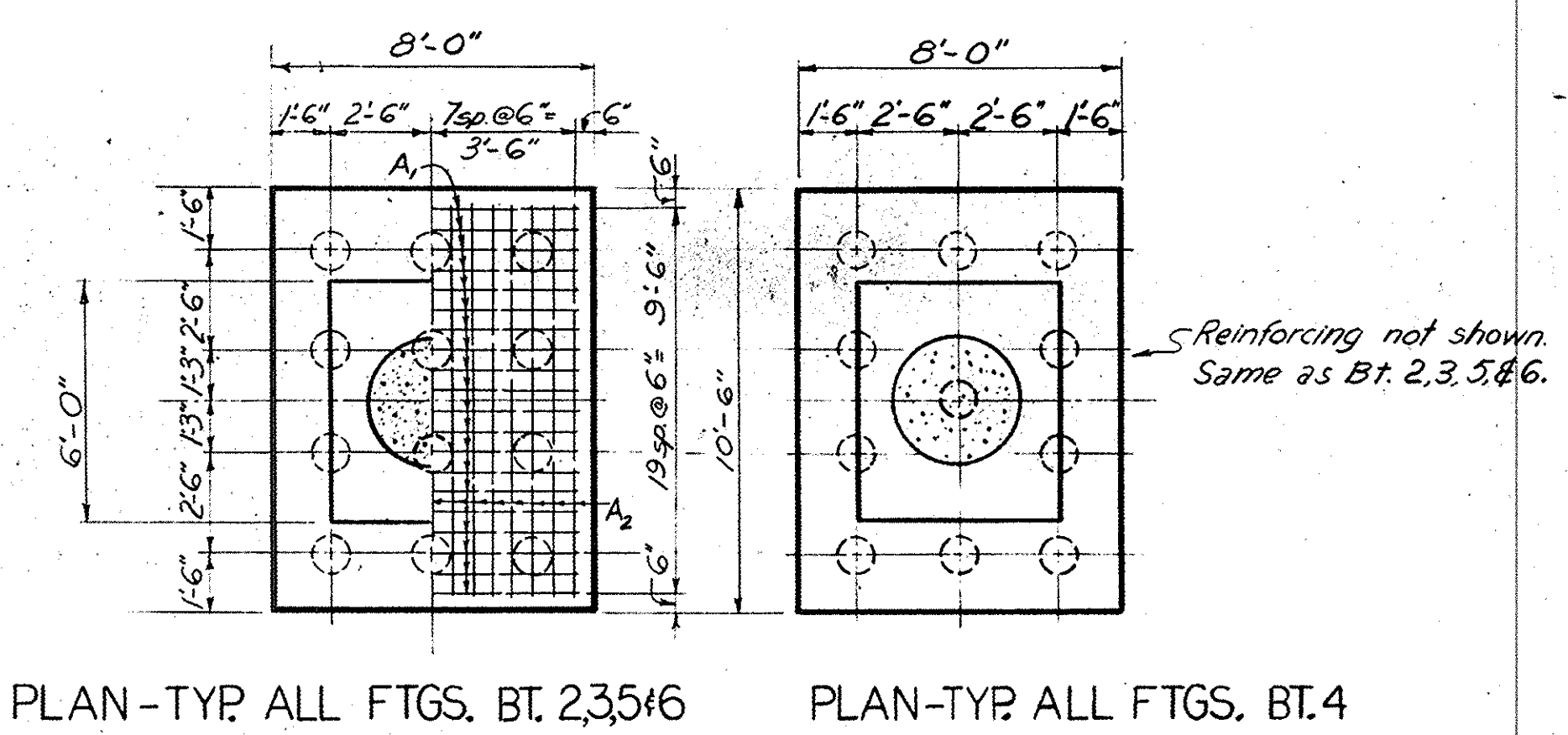
Piles shall be marked at pick-up points to indicate proper points for attaching handling lines.

This sheet to accompany Sh.No.11.

REV.		S.C. STATE HIGHWAY DEPARTMENT
REV.		BRIDGE DIVISION
REV.		COLUMBIA S.C.
REV.	WHM/2AM/5-63	12" SQUARE PRESTRESSED
REV.	For Dkt. 10.521.1	CONCRETE PILING
REVIEWED		FOR OVERPASS OVER
IN CHARGE		R.R. TO S.V.C. CHEM. CO.
QUAN.		DOCKET NO. COUNTY ROUTE NO. DATE
TR. WAH W.E.M. 8-60	10.521.1	CHARLESTON I-26 5-63
DR. WAH RSC 8-60	APPROVED BY:	APPROVED BY:
DES. From FAP 5-1400(1)	BY CHK/DAT	BRIDGE DESIGN & PLANS ENGINEER
		BRIDGE ENGINEER



ELEV. C	
BT. 2	6.000
BT. 3	6.800
BT. 4	5.561
BT. 5	3.965
BT. 6	3.776



	MAXIMUM PILE REACTIONS		EXT. FTG.		INT. FTG.	
	BT. 2, 3, 5 & 6	BT. 4	BT. 2, 3, 5 & 6	BT. 4	BT. 2, 3, 5 & 6	BT. 4
Live Load, Superstructure	105*	81*	127*	106*		
Dead Load, Superstructure	235*	209*	233*	188*		
Dead Load, Bent	107*	107*	116*	114*		
Backfill (3 ft)	26*	26*	26*	26*		
Total of Above	473*	423*	502*	434*		
Average Bearing	19.7/pile	19.2/pile	20.9/pile	19.7/pile		
MAXIMUM PILE BEARING DUE TO WIND						
Wind	4.37/pile	3.37/pile	4.37/pile	3.37/pile		
MAX. CONDITION	19.7/pile	19.2/pile	20.9/pile	19.7/pile		
Average Bearing	4.37/pile	3.37/pile	4.37/pile	3.37/pile		
Wind	4.37/pile	3.37/pile	4.37/pile	3.37/pile		
Total (125% of Normal Bearing)	24.0/pile	22.5/pile	25.2/pile	23.0/pile		
Normal Bearing	19.2/pile	18.0/pile	20.2/pile	18.4/pile		

TABLE OF DIMENSIONS					
	BT. 2	BT. 3	BT. 4	BT. 5	BT. 6
a	28'-8"	29'-10"	32'-3"	34'-2"	34'-8"
b	28'-4 1/2"	29'-7 1/2"	32'-1 1/2"	34'-0 3/4"	34'-8"
c	28'-0 1/2"	29'-4 1/2"	31'-11 1/2"	33'-11 1/2"	34'-8"
d	27'-9"	29'-2 1/2"	31'-9 1/4"	33'-10 1/4"	34'-8"
e	27'-5 1/2"	28'-11 1/2"	31'-7 1/4"	33'-9"	34'-8"
f	27'-1 1/2"	28'-8 1/2"	31'-5 1/2"	33'-7 1/2"	34'-8"

Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
Footings may be lowered a maximum of 2'-0" without providing additional vertical column steel by reducing length of splices.

Note:  
Drive all Piles to a minimum bearing value of 18 Tons/Pile.

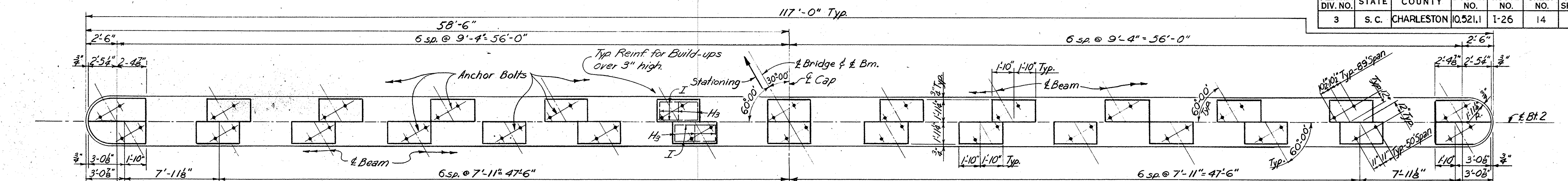
Notes:  
For Quantities see Sh. No. 19  
This Sheet to accompany Sh. No. 14, 15 & 19

SCALE 1/4"=1'-0"

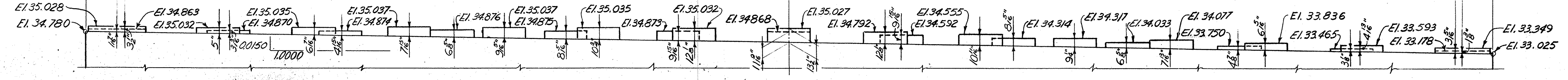
S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA S.C.

INTERIOR BENTS 2-6  
FOR OVERPASS OVER  
R.R. TO S.V.C. CHEM. CO.

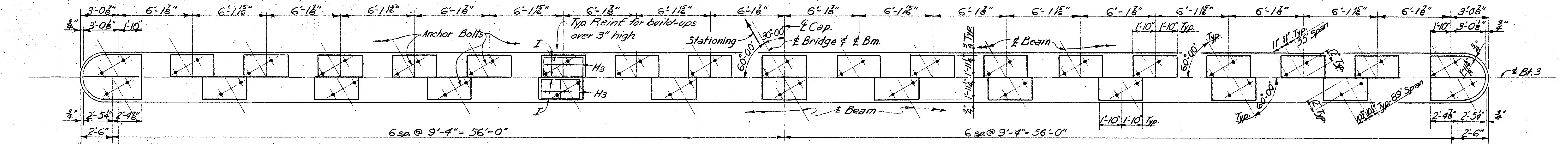
REV.	BY	DATE	DOCKET NO.	COUNTY	ROUTE NO.	DATE
REV.			10.521.1	CHARLESTON	1-26	4-63
REV.						
REV.						
QUAN.						
TR.						
DR.	RAC	BAM	4-63	APPROVED BY		APPROVED BY
DES.	RWH	BAM	4-63	BRIDGE DESIGN & PLANS ENGINEER		BRIDGE ENGINEER
BY	CHK'D	DATE				



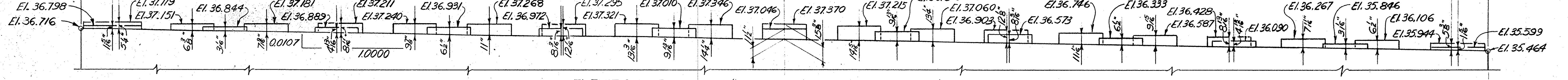
PLAN - BENT 2



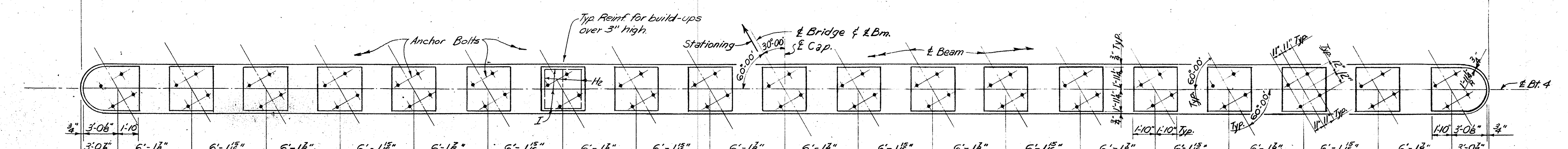
ELEVATION BENT 2 (LOOKING IN DIRECTION OF STATIONING)



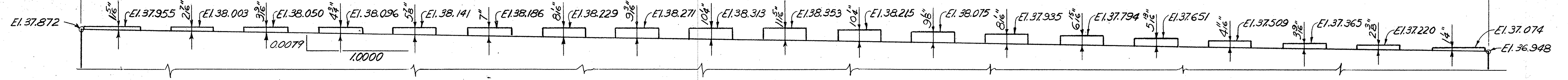
PLAN - BENT 3



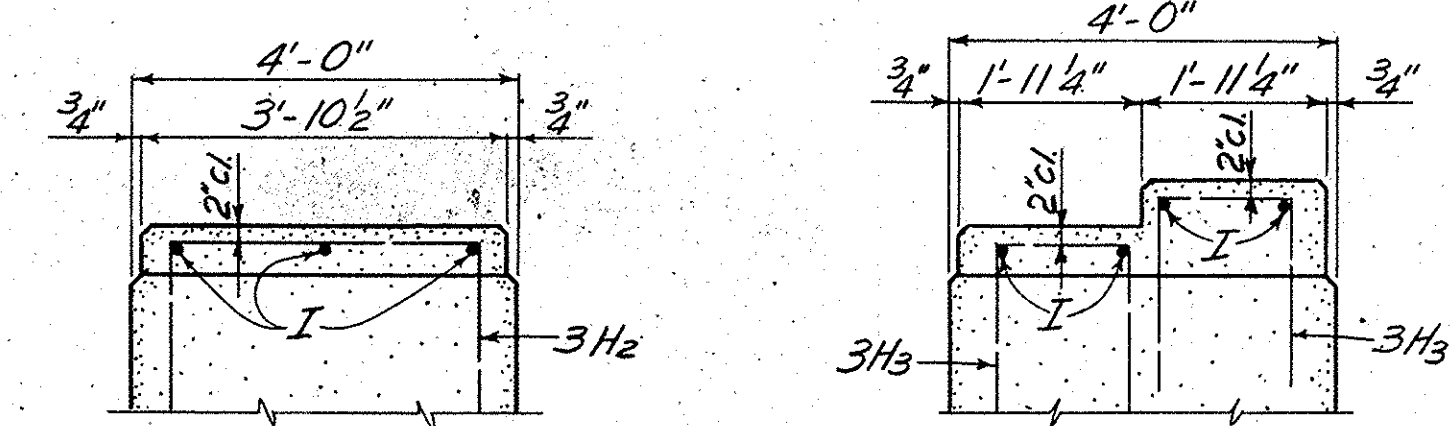
ELEVATION BENT 3 (LOOKING IN DIRECTION OF STATIONING)



PLAN BENT 4



ELEVATION BENT 4 (LOOKING IN DIRECTION OF STATIONING)



SECTIONS SHOWING BUILD-UP REINF.  
SCALE: 1/2" = 1'-0"

Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
For Anchor Bolt Details see Sh. No. 7  
This sheet to accompany Sh. Nos. 13, 15 & 19

SCALE 1/4" = 1'-0"

S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA S.C.

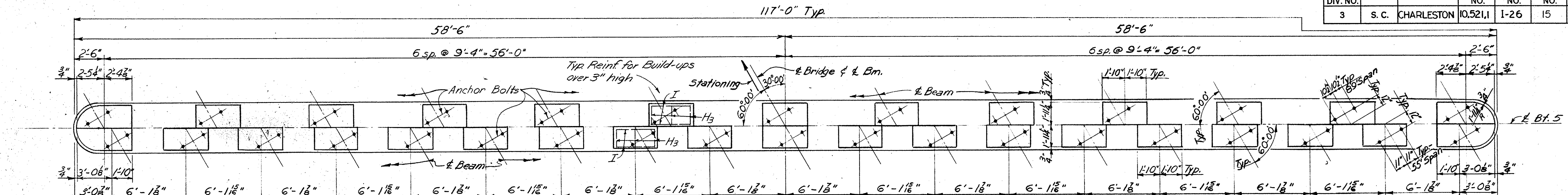
INTERIOR BENTS 2-4  
FOR OVERPASS OVER  
R.R. TO S.V.C. CHEM. CO.

REV.	QUAN.	DOCKET NO.	COUNTY	ROUTE NO.	DATE
1	1	10.521.1	CHARLESTON	1-26	3-63

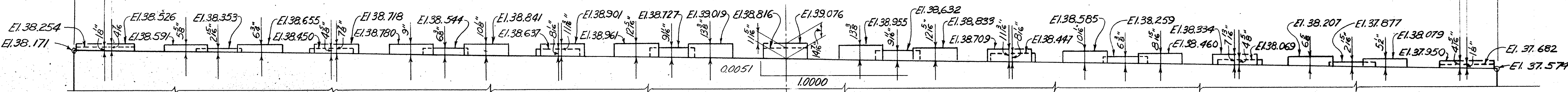
APPROVED BY: *[Signature]* BRIDGE DESIGN & PLANS ENGINEER

APPROVED BY: *[Signature]* BRIDGE ENGINEER

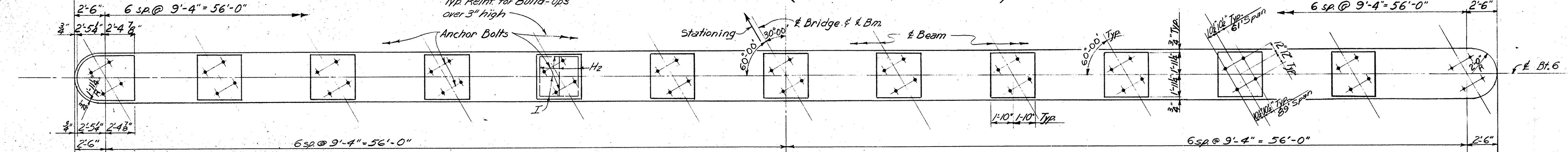
FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	10,521,1	1-26	15	32



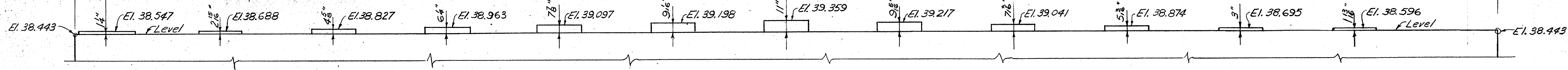
PLAN - BENT 5



ELEVATION BENT 5 (LOOKING IN DIRECTION OF STATIONING)



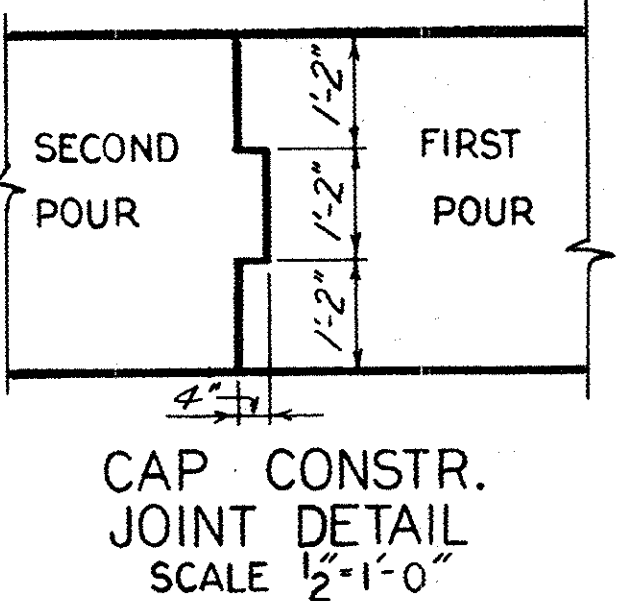
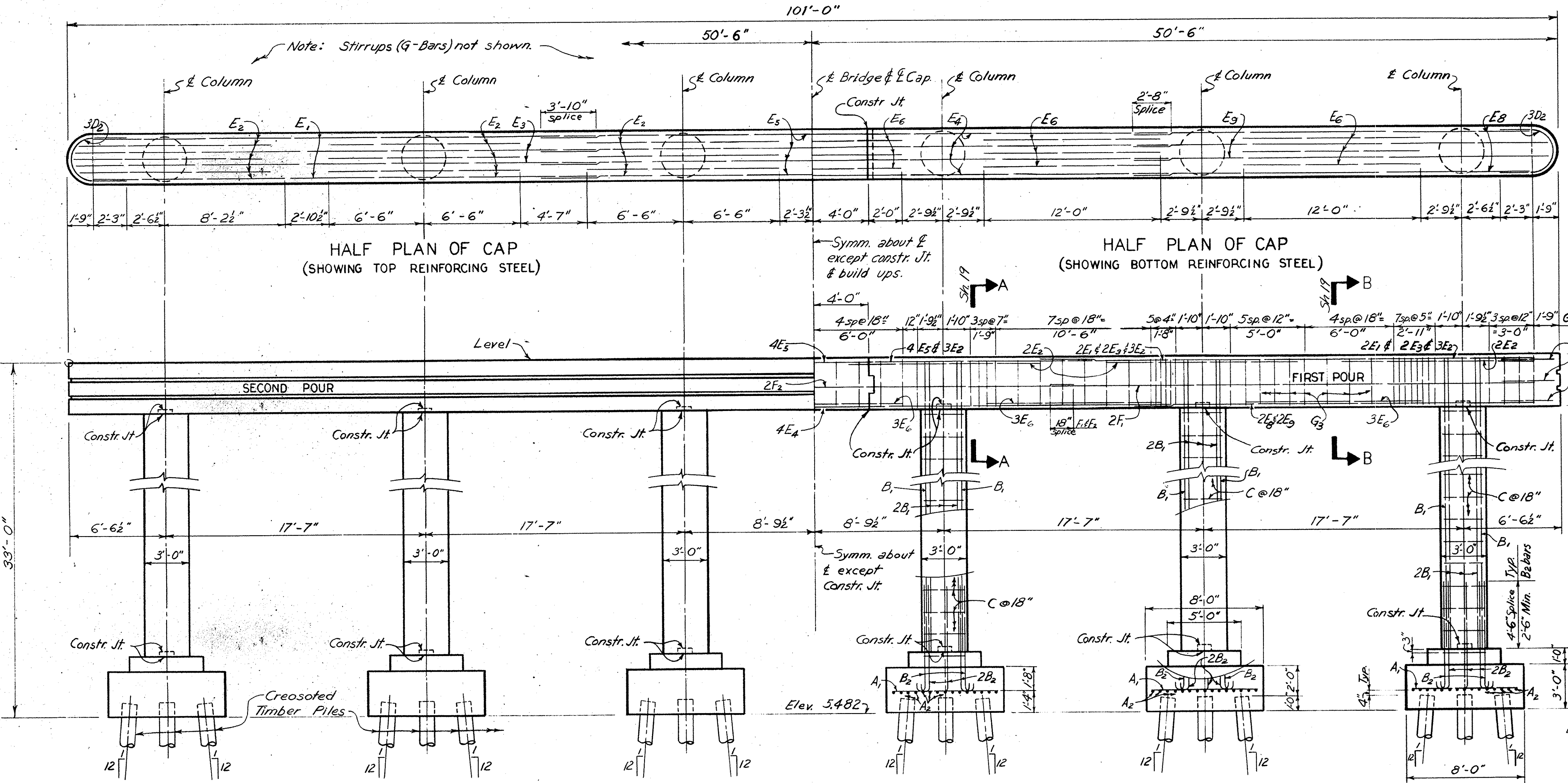
PLAN - BENT 6



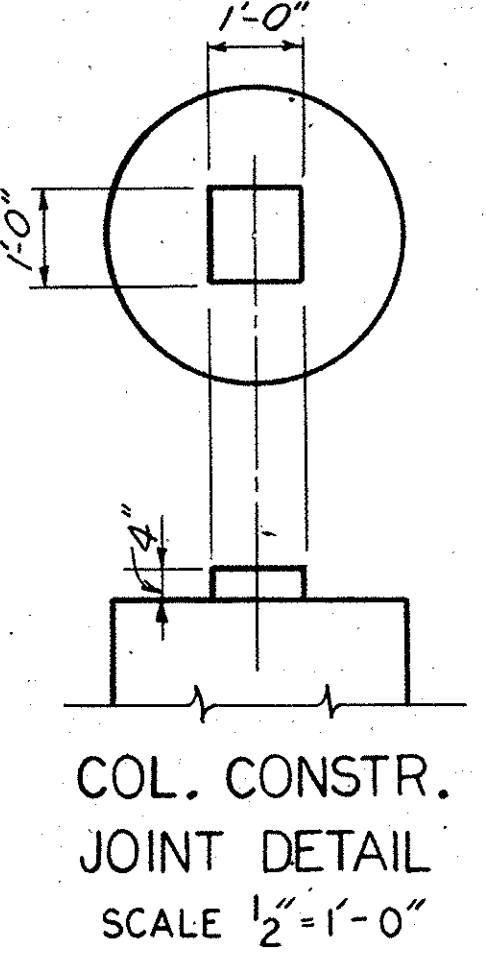
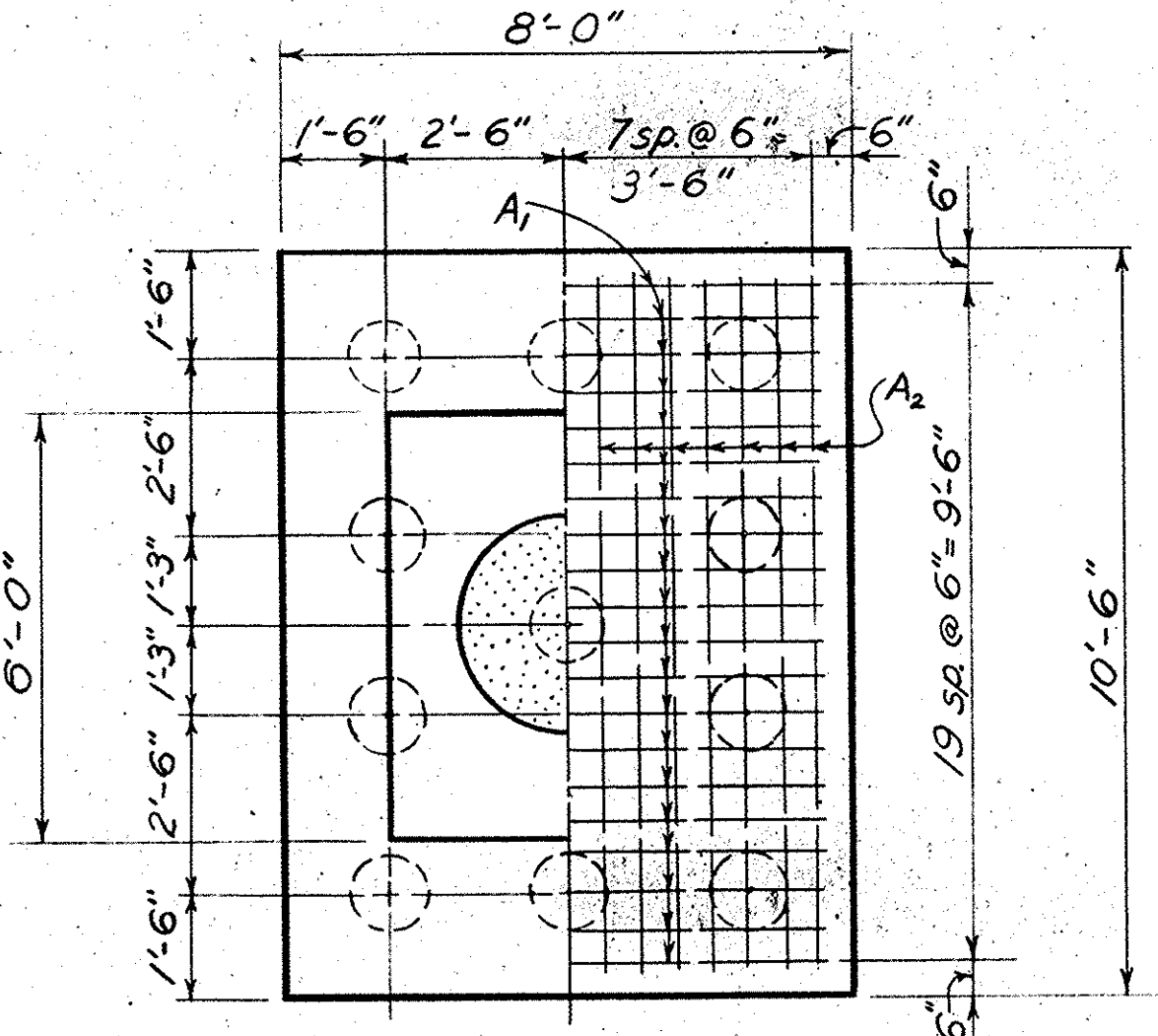
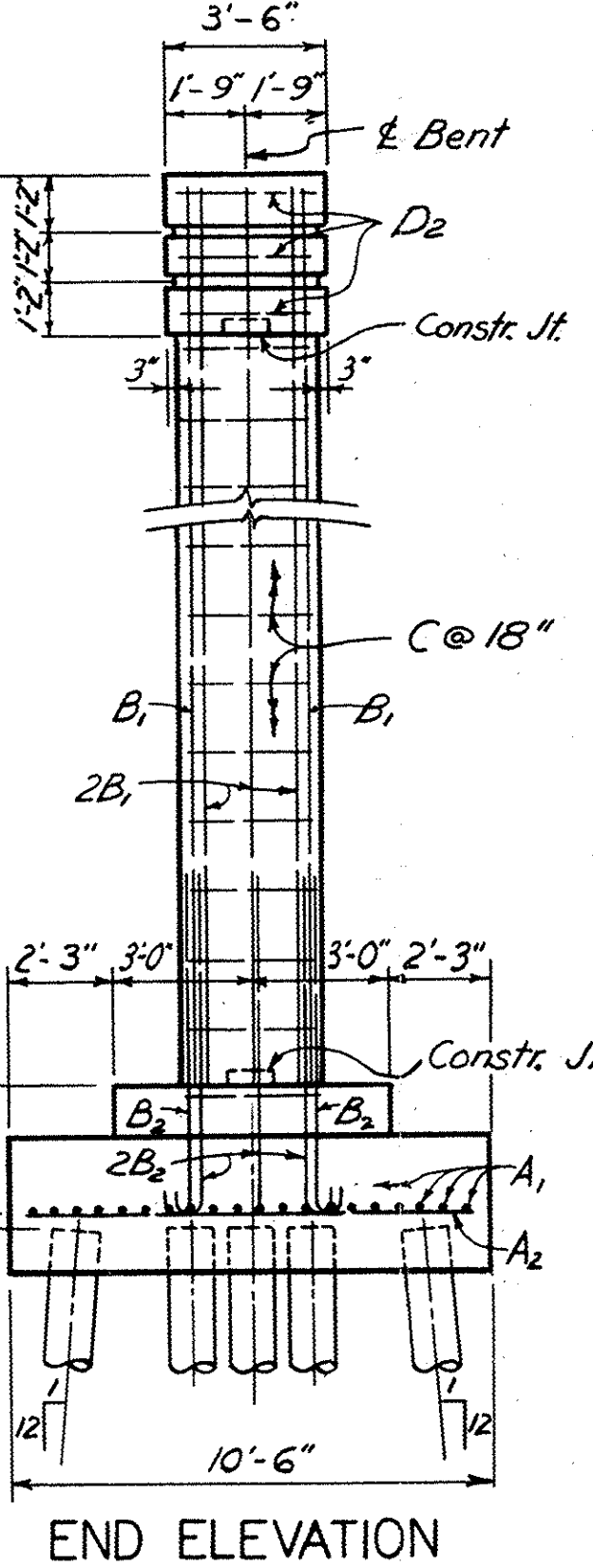
ELEVATION BENT 6 (LOOKING IN DIRECTION OF STATIONING)

Notes:  
 For Standard Notes see Sh. No. 6  
 For Standard Details see Sh. No. 7  
 For Sections showing Build-up Reinf. see Sh. No. 14  
 For Anchor Bolt Detail see Sh. No. 7  
 This sheet to accompany Sh. No's 13, 14 & 19

SCALE 1/4"=1'-0"			
S.C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.			
INTERIOR BENT 5 & 6 FOR OVERPASS OVER R.R. TO S.V.C. CHEM. CO.			
REV.		DOCKET NO.	ROUTE NO.
REV.		10,521,1	1-26
REV.		CHARLESTON	4-63
REV.			
REVIEWED	IN CHARGE	APPROVED BY	APPROVED BY
QUAN.		DR. RAC	DES. RWB
TR.		BY CHK'D	DATE



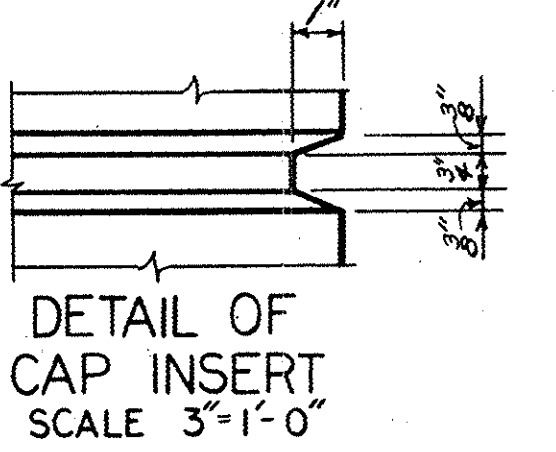
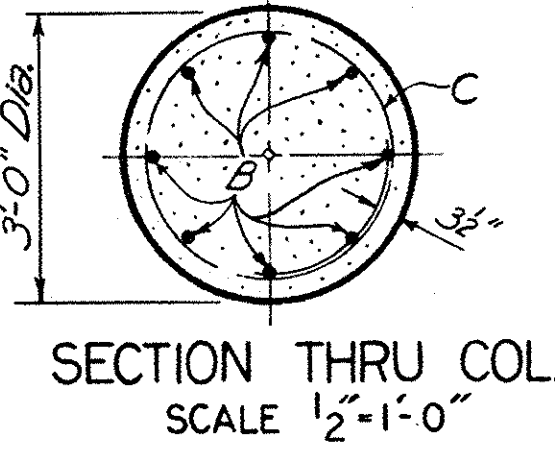
Notes:  
For Build-ups, Anchor Bolt Locations, & Cap Elev. see Sh. No. 18  
For Reinforcing Steel Schedule See Sh. 19.



MAXIMUM PILE REACTIONS		EXT. FTG.		INT. FTG.	
		BT. 7	BT. 8-13	BT. 7	BT. 8-13
Live Load, Superstructure		93 <sup>k</sup>	81 <sup>k</sup>	117 <sup>k</sup>	106 <sup>k</sup>
Dead Load, Superstructure		222 <sup>k</sup>	209 <sup>k</sup>	202 <sup>k</sup>	188 <sup>k</sup>
Dead Load, Bent		99 <sup>k</sup>	107 <sup>k</sup>	105 <sup>k</sup>	114 <sup>k</sup>
Backfill (3 ft.)		26 <sup>k</sup>	26 <sup>k</sup>	26 <sup>k</sup>	26 <sup>k</sup>
Total of above		440 <sup>k</sup>	423 <sup>k</sup>	450 <sup>k</sup>	434 <sup>k</sup>
Average Bearing		20.0 <sup>7/pile</sup>	19.2 <sup>7/pile</sup>	20.4 <sup>7/pile</sup>	19.7 <sup>7/pile</sup>
MAXIMUM PILE BEARING DUE TO WIND		EXT. FTG.		INT. FTG.	
		BT. 7	BT. 8-13	BT. 7	BT. 8-13
Wind		3.8 <sup>7/pile</sup>	3.3 <sup>7/pile</sup>	3.8 <sup>7/pile</sup>	3.3 <sup>7/pile</sup>
Average Bearing		20.0 <sup>7/pile</sup>	19.2 <sup>7/pile</sup>	20.4 <sup>7/pile</sup>	19.7 <sup>7/pile</sup>
MAX. CONDITION		EXT. FTG.		INT. FTG.	
		BT. 7	BT. 8-13	BT. 7	BT. 8-13
Wind		3.8 <sup>7/pile</sup>	3.3 <sup>7/pile</sup>	3.8 <sup>7/pile</sup>	3.3 <sup>7/pile</sup>
Average Bearing		20.0 <sup>7/pile</sup>	19.2 <sup>7/pile</sup>	20.4 <sup>7/pile</sup>	19.7 <sup>7/pile</sup>
Total (125% of Normal Bearing)		23.8 <sup>7/pile</sup>	22.5 <sup>7/pile</sup>	24.2 <sup>7/pile</sup>	23.0 <sup>7/pile</sup>
Normal Bearing		19.0 <sup>7/pile</sup>	18.0 <sup>7/pile</sup>	19.4 <sup>7/pile</sup>	18.4 <sup>7/pile</sup>

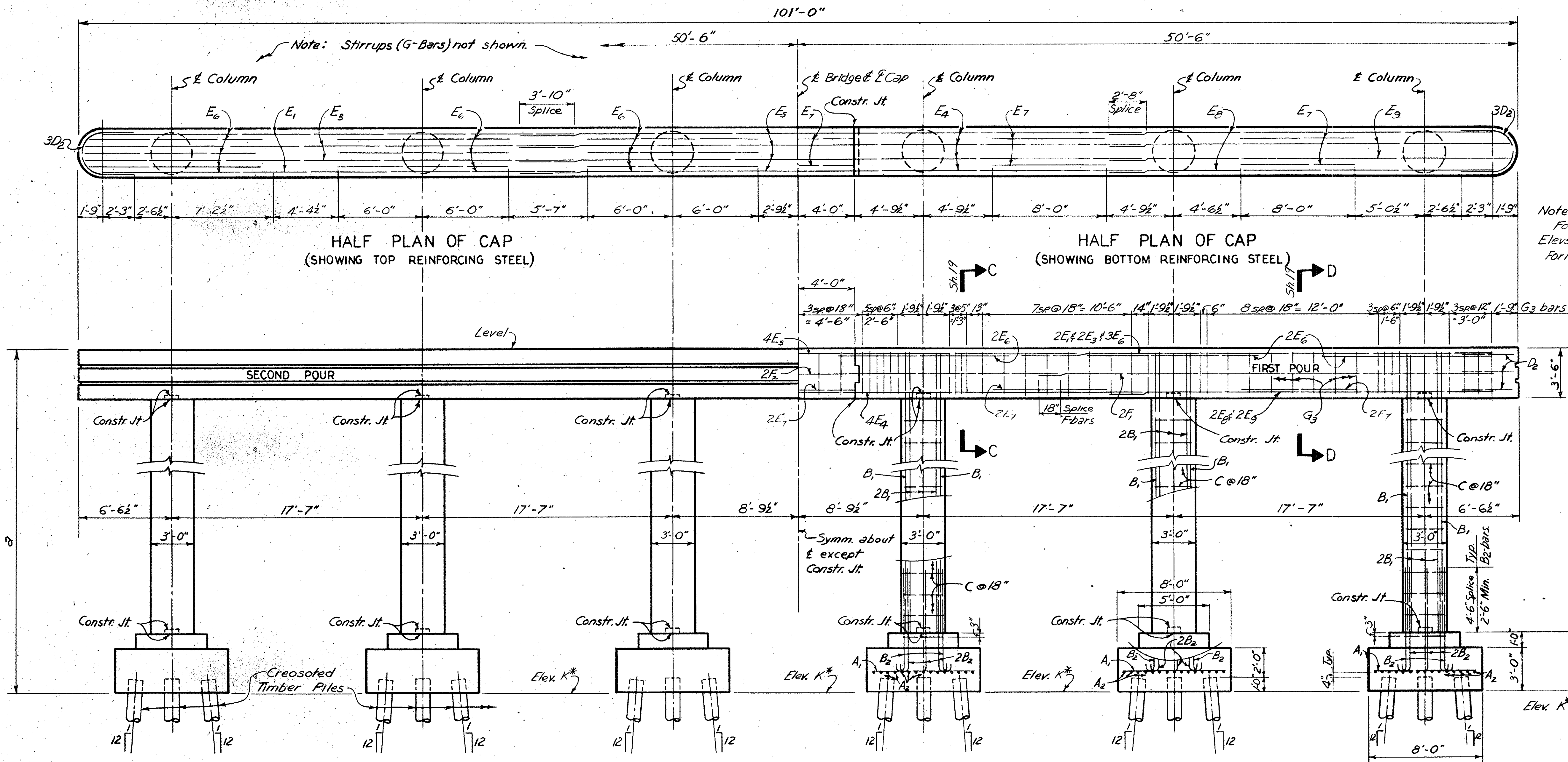
Note:  
Drive all Piles to a minimum bearing value of 18 Tons / Pile.

Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
Footings may be lowered a maximum of 2'-0" without providing additional vertical column steel by reducing length of splices.  
For Quantities see Sh. No. 19



SCALE 1/4"=1'-0" OR AS NOTED.			
S. C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S. C.			
INTERIOR BENT 7 FOR OVERPASS OVER R.R. TO S.V.C. CHEM. CO.			
REV.		DOCKET NO.	ROUTE NO. DATE
REV.		10,521.1	CHARLESTON I-26 2-63
REV.		APPROVED BY	
REV.		APPROVED BY	
QUAN.		BRIDGE DESIGN & PLANS ENGINEER	BRIDGE ENGINEER
TR.			
DR.	RAC 8AM 2-63		
DES.	RWH 8AM 2-63		
BY	CHK'D DATE		

This sheet to accompany Sh. No. 18 & 19.



Note:  
For Build-ups, Anchor Bolt Locations, & Cap Elev. See Sh. 18.  
For Reinforcing Steel Schedule See Sh. 19.

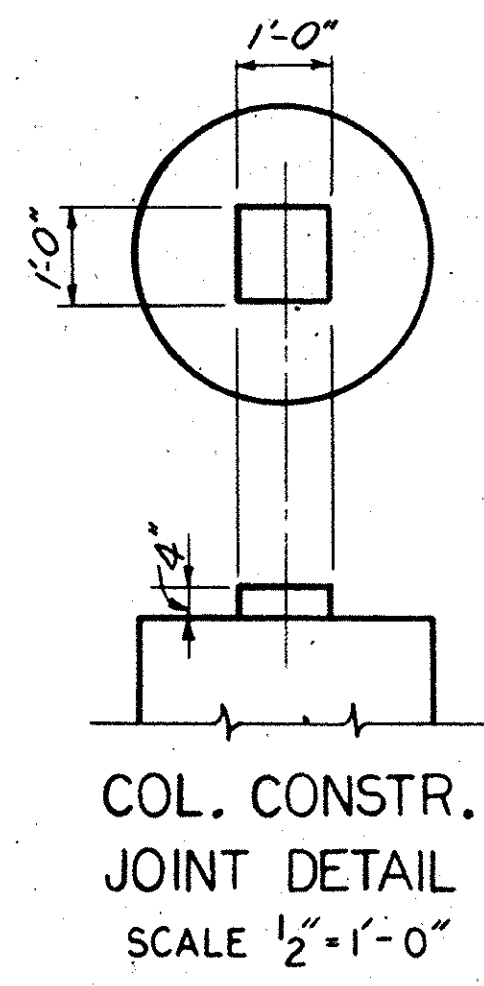
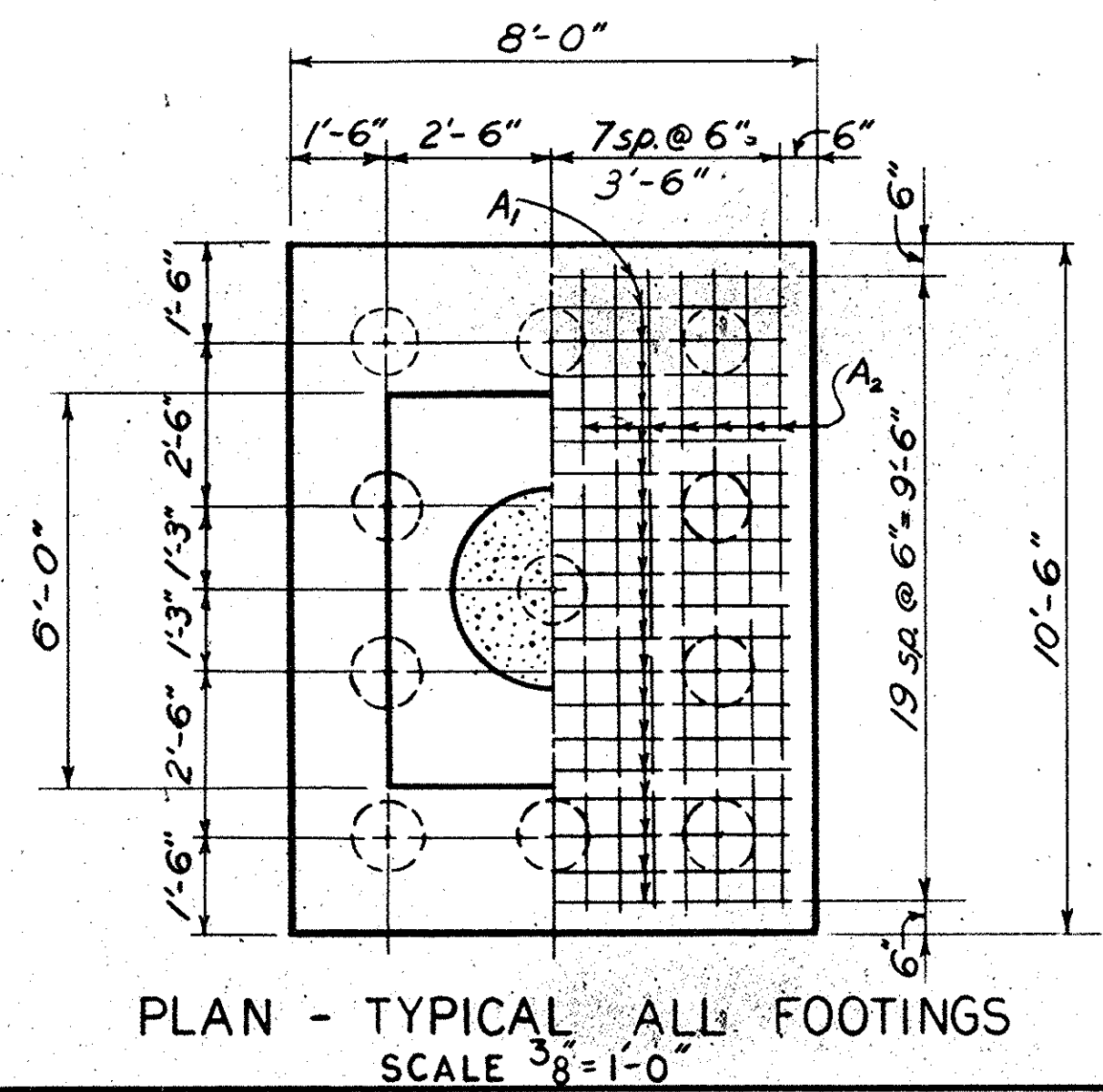
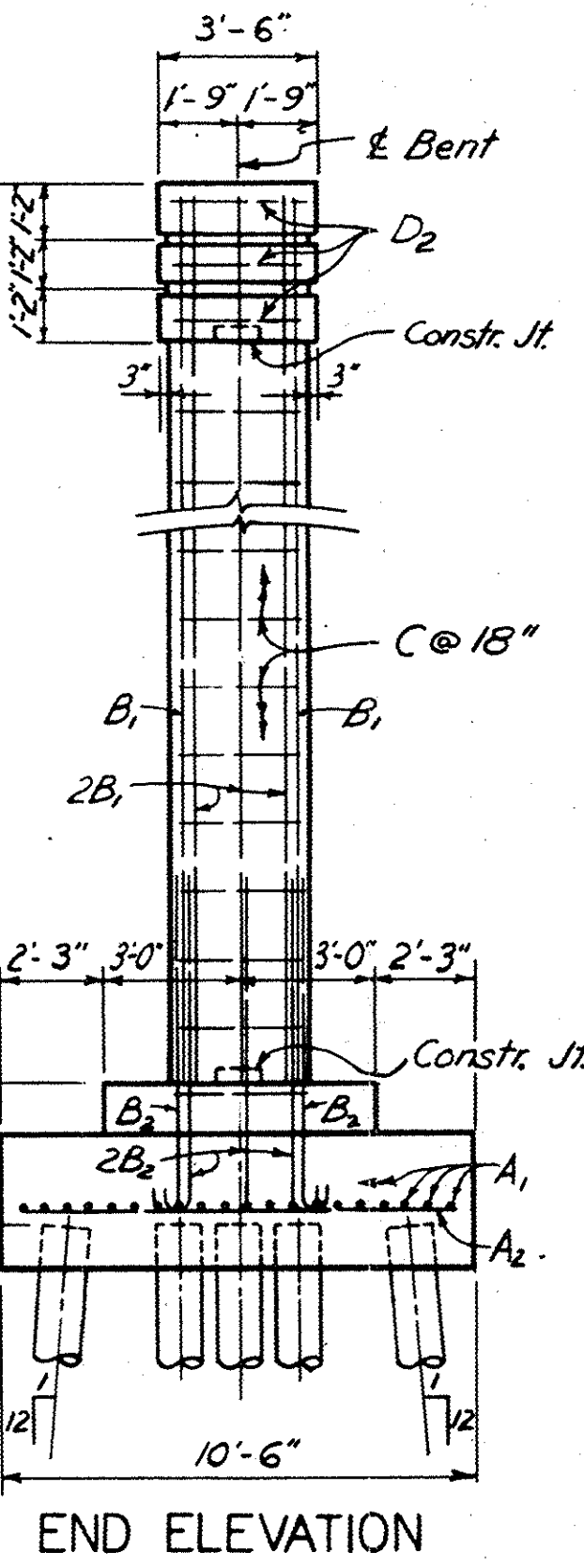
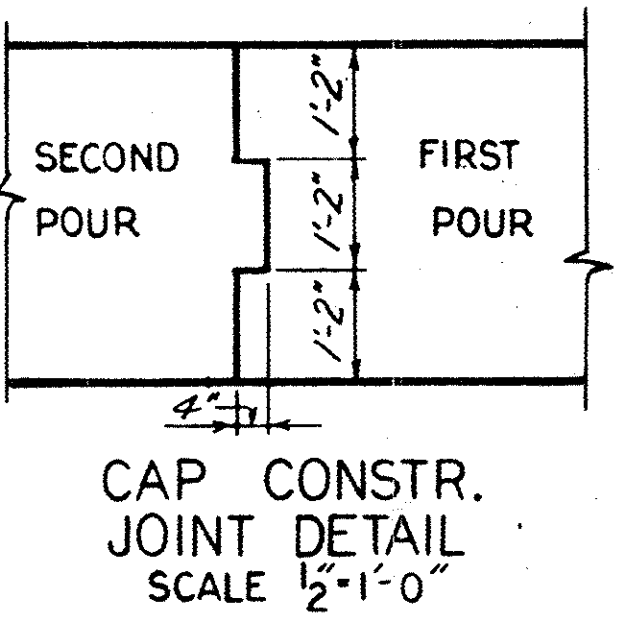
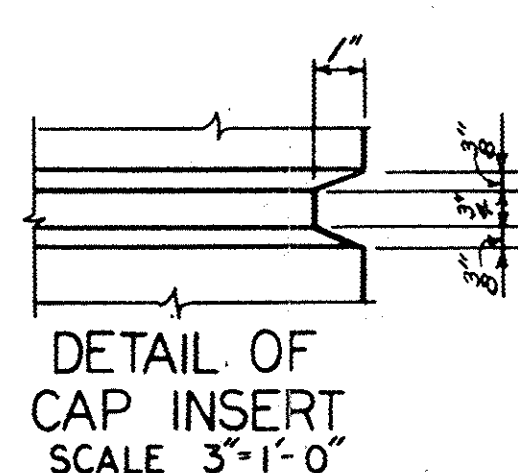
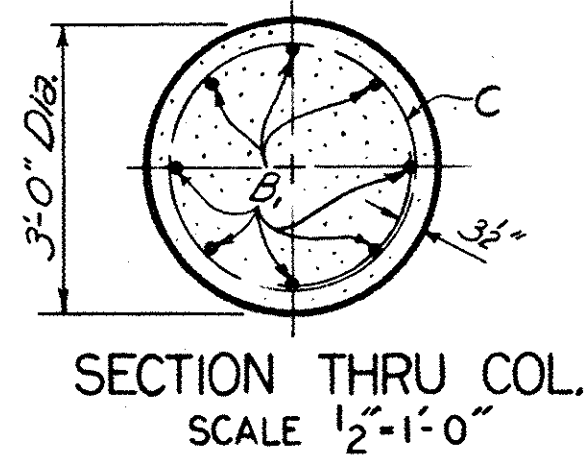


TABLE OF DIMENSIONS						
BENT NO.	8	9	10	11	12	13
a	32'-6"	31'-6"	29'-0"	31'-6"	30'-6"	29'-0"

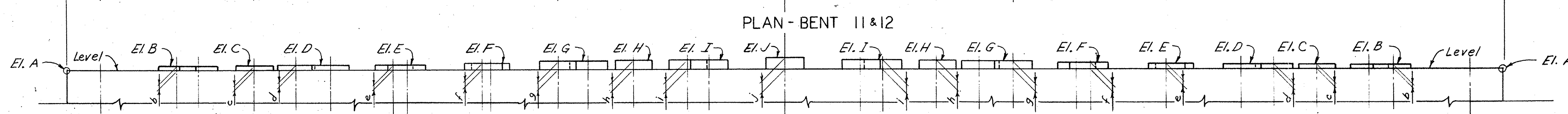
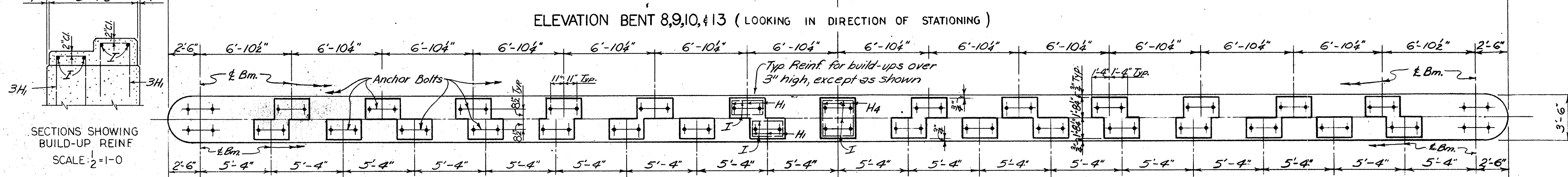
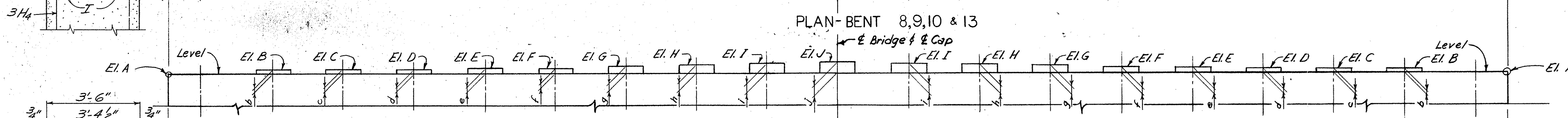
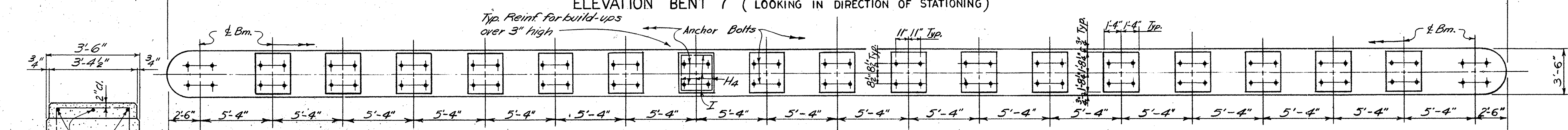
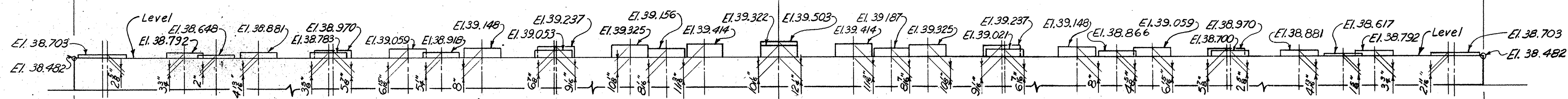
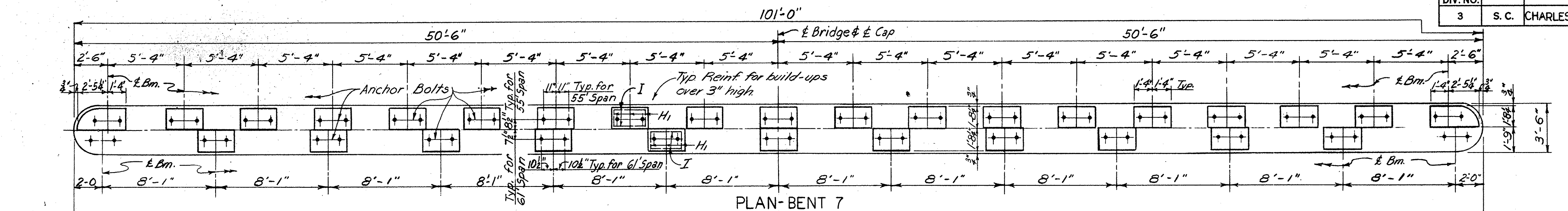
MAXIMUM PILE REACTIONS		EXT. FTG.		INT. FTG.	
		BT. 7	BT. 8-13	BT. 7	BT. 8-13
Live Load, Superstructure		93*	81*	117*	106*
Dead Load, Superstructure		222*	209*	202*	188*
Dead Load, Bent		99*	107*	105*	114*
Backfill (3 ft.)		26*	26*	26*	26*
Total of above		440*	423*	450*	434*
Average Bearing		20.0*/pile	19.2*/pile	20.4*/pile	19.7*/pile
MAXIMUM PILE BEARING DUE TO WIND		3.8*/pile	3.3*/pile	3.8*/pile	3.3*/pile
Wind --		3.8*/pile	3.3*/pile	3.8*/pile	3.3*/pile
Average Bearing		20.0*/pile	19.2*/pile	20.4*/pile	19.7*/pile
Wind --		3.8*/pile	3.3*/pile	3.8*/pile	3.3*/pile
Total (125% of Normal Bearing)		23.8*/pile	22.5*/pile	24.2*/pile	23.0*/pile
Normal Bearing		19.0*/pile	18.0*/pile	19.4*/pile	18.4*/pile

Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
Footings may be lowered a maximum of 2'-0" without providing additional vertical column steel by reducing length of splices.  
For Quantities see Sh. No. 19  
For Anchor Bolt Details See Sh. 7.



REV.		SCALE 1/4"=1'-0" OR AS NOTED	
REV.		S.C. STATE HIGHWAY DEPARTMENT	
REV.		BRIDGE DIVISION	
REV.		COLUMBIA S.C.	
REV.		INTERIOR BENTS 8-13	
REV.		FOR OVERPASS OVER	
REV.		R.R. TO S.V.C. CHEM. CO.	
REVIEWED		DOCKET NO.	
IN CHARGE		COUNTY	
QUAN.		ROUTE NO.	
TR.		DATE	
DR. RAC		APPROVED BY	
DES. RWHEAM		APPROVED BY	
BY CHK'D DATE		BRIDGE DESIGN & PLANS ENGINEER	
		BRIDGE ENGINEER	

This sheet to accompany Sh. No. 18 & 19



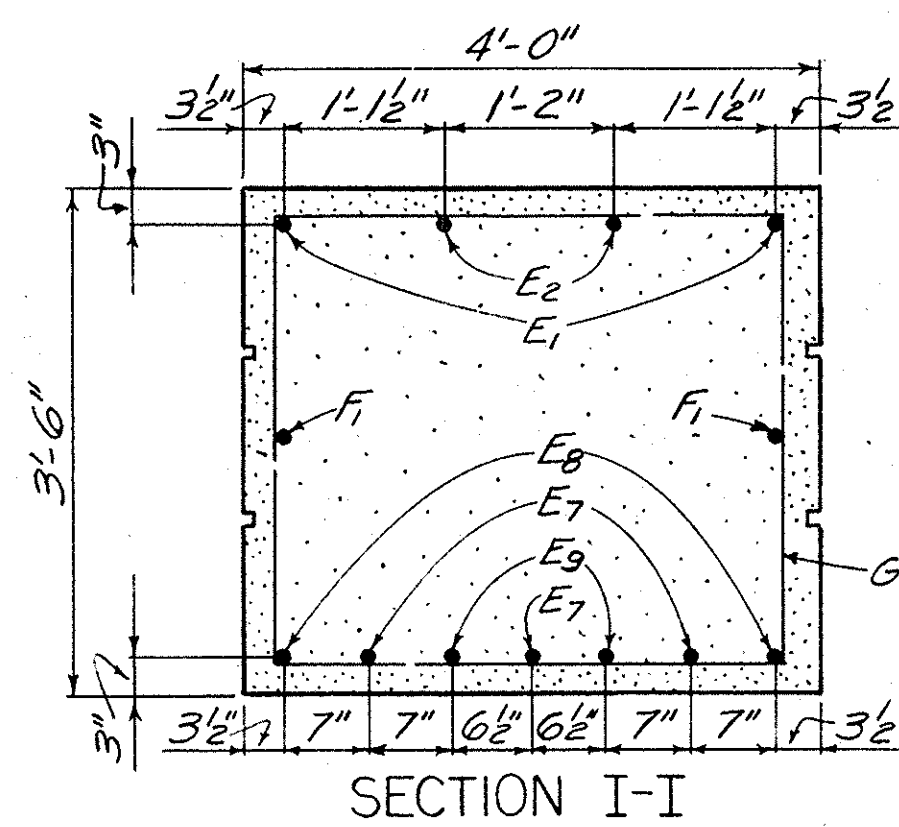
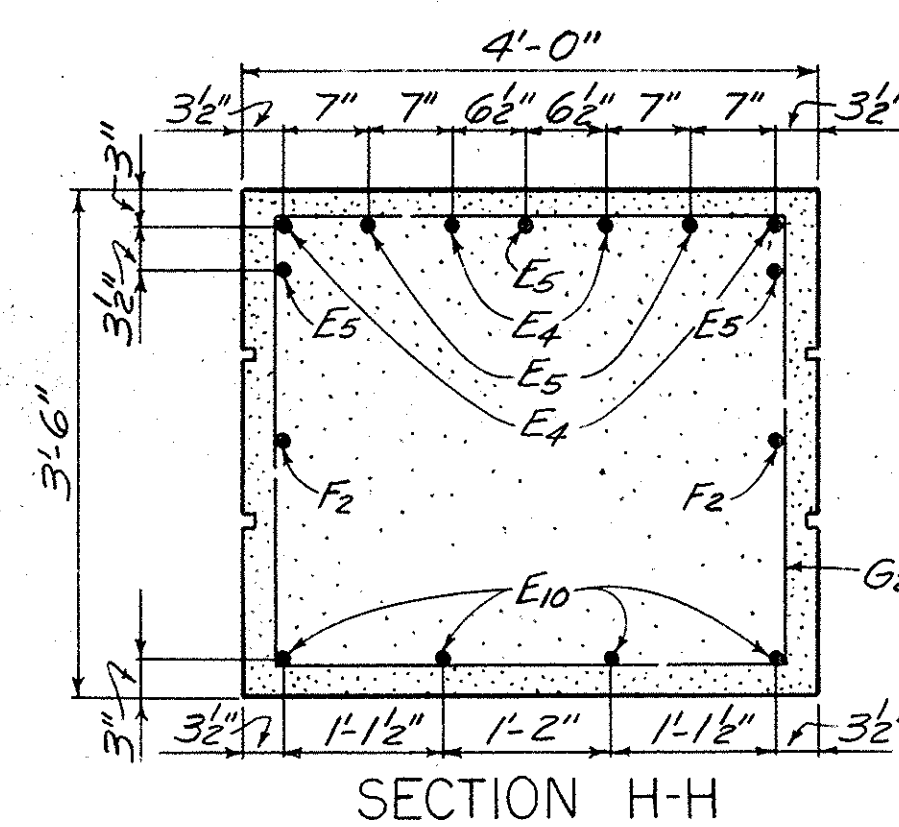
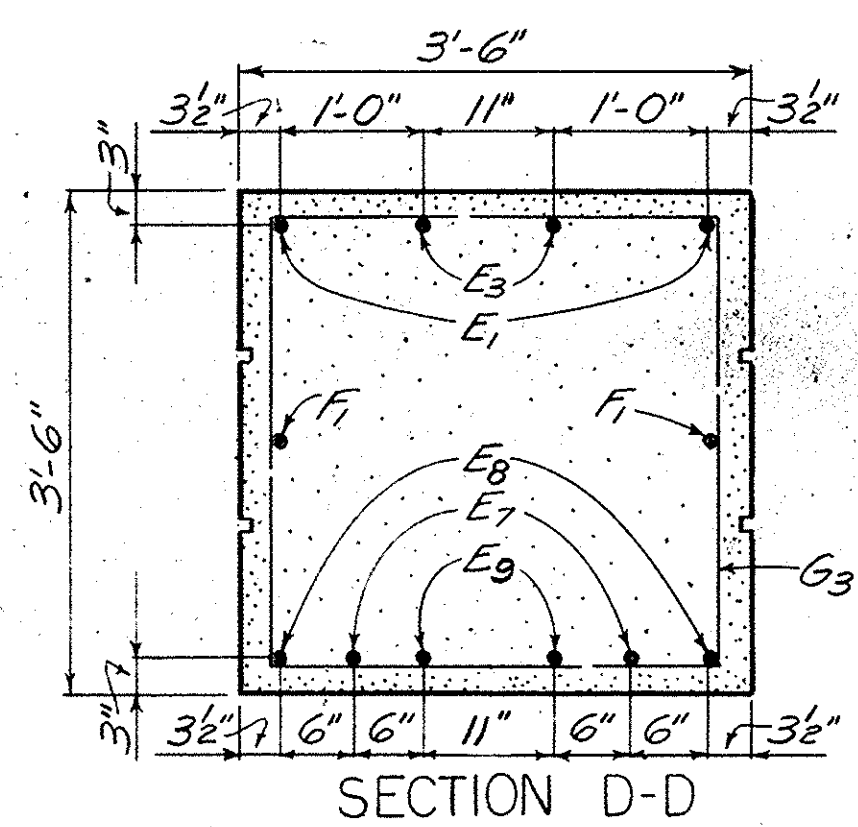
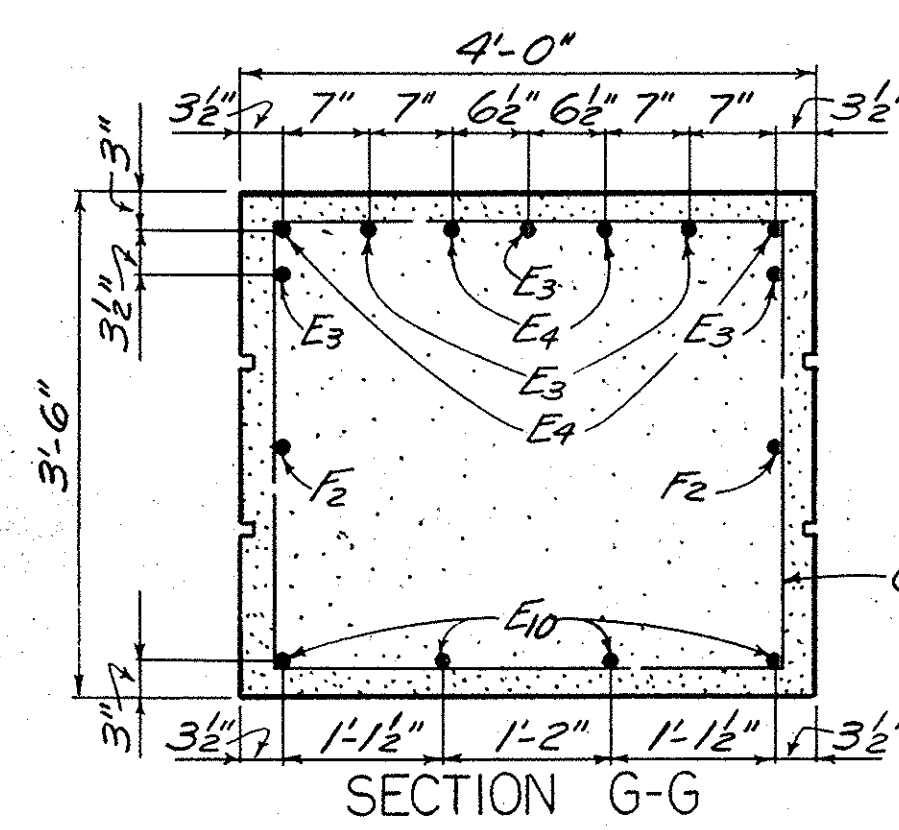
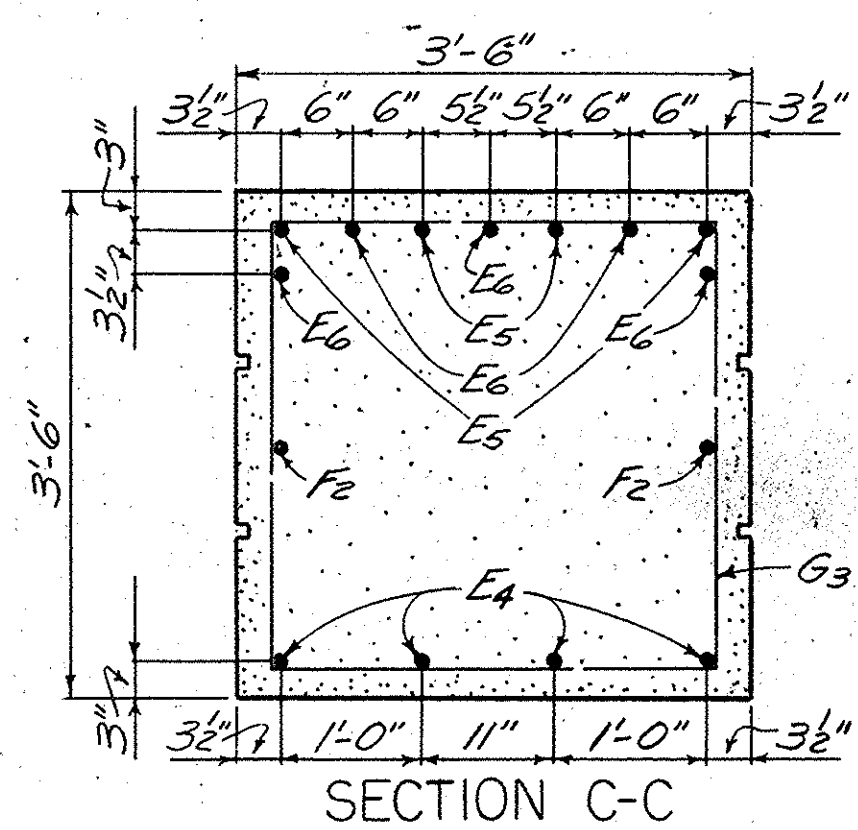
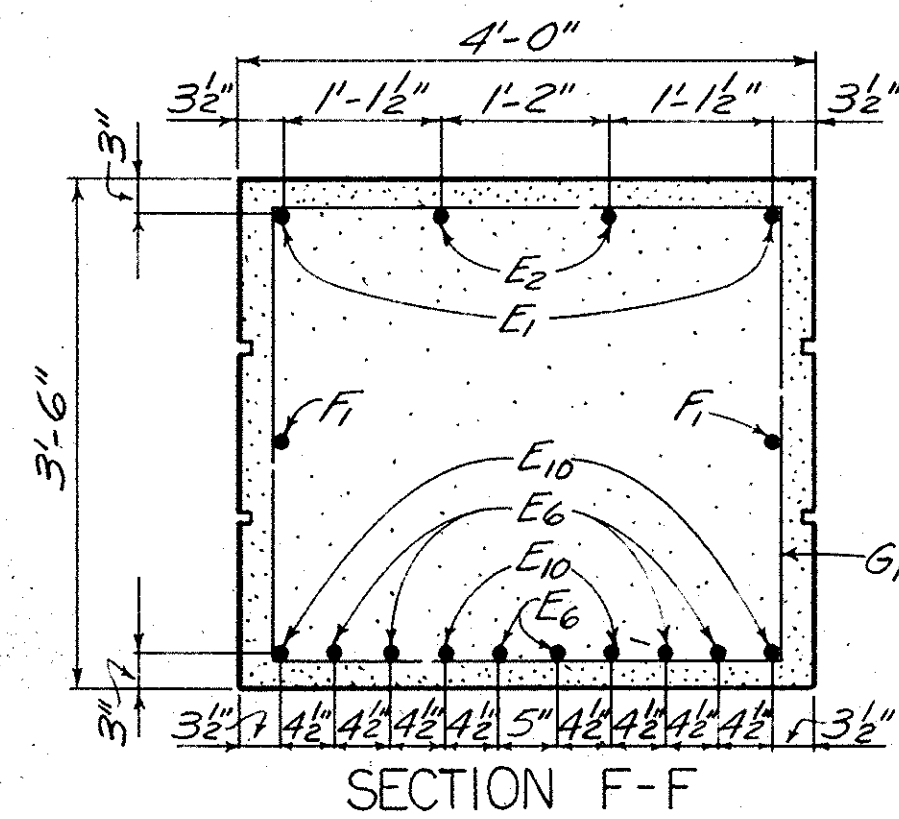
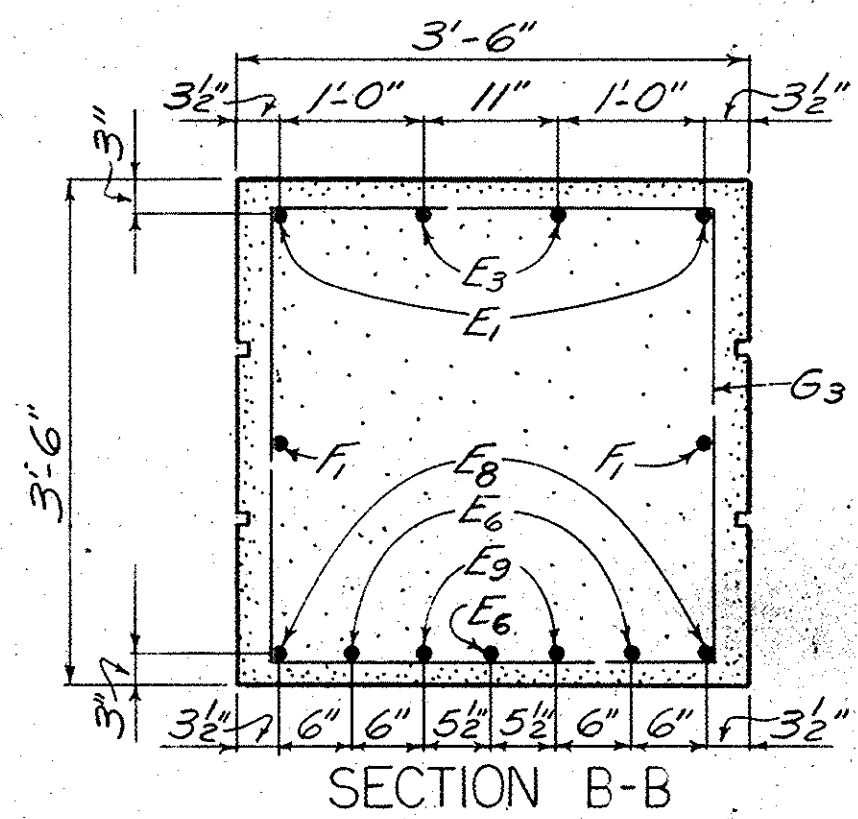
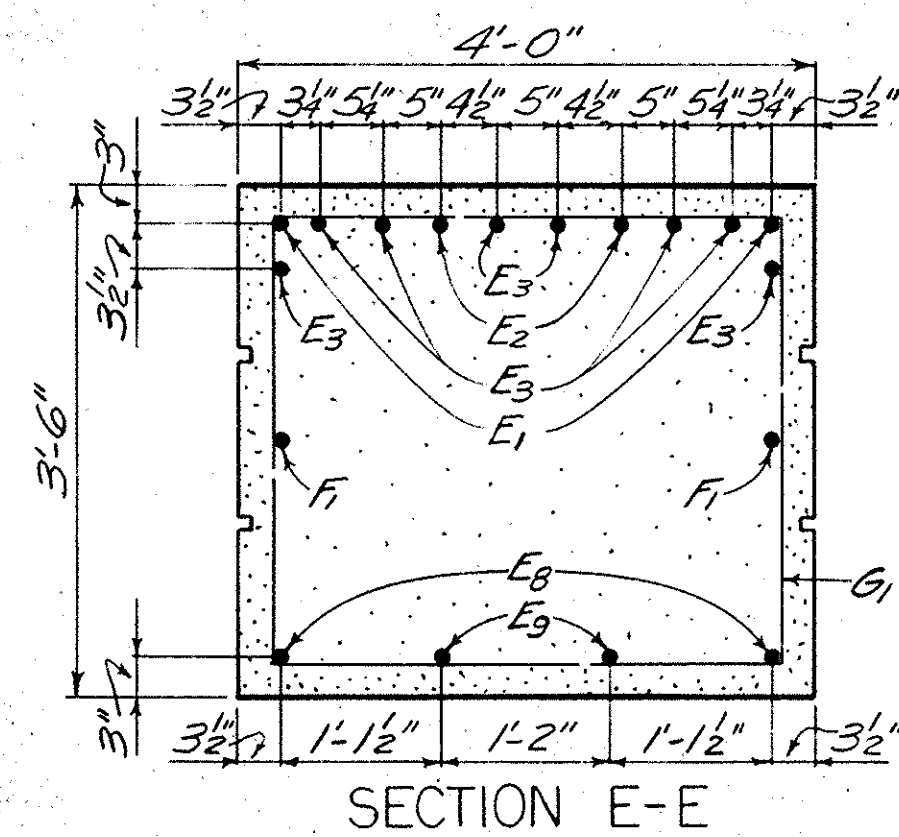
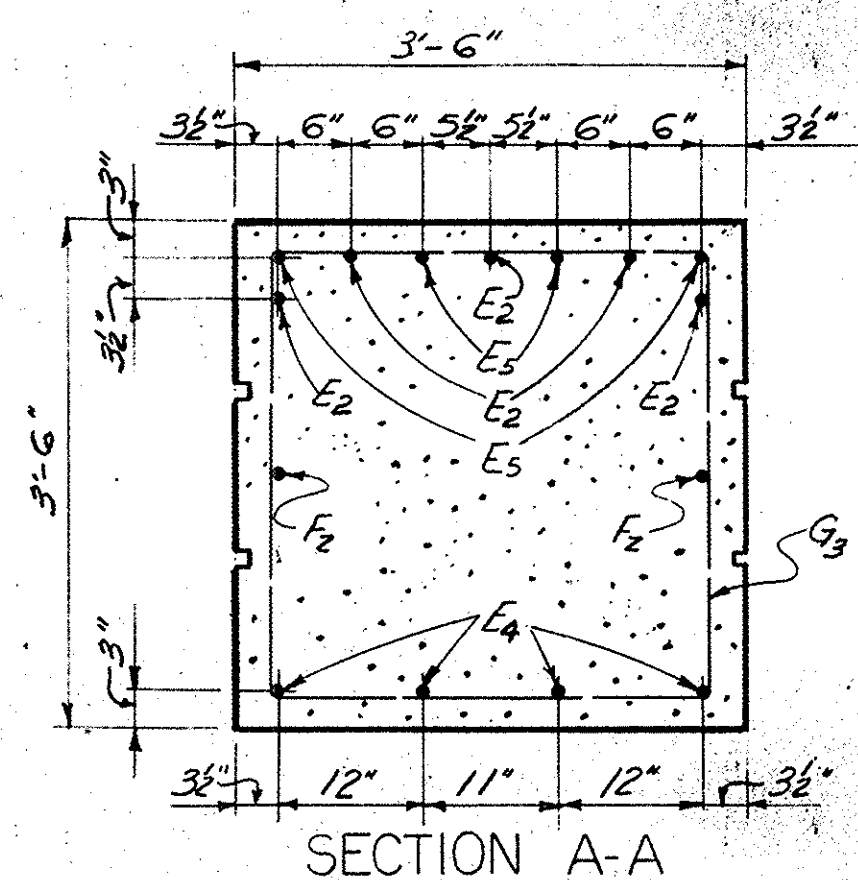
Notes:  
 For Standard Notes see Sh. No. 6.  
 For Standard Details see Sh. No. 7.  
 For Anchor Bolt Details see Sh. No. 7.  
 This sheet to accompany Sh. No's. 16, 17 & 19

DIMENSIONS										
	a	b	c	d	e	f	g	h	i	j
BENT 8	0	1/16"	2/8"	3/8"	4/4"	5/16"	6/8"	7/16"	8/16"	9/8"
BENT 9	0	1/16"	2/8"	3/8"	4/4"	5/16"	6/8"	7/16"	8/16"	9/8"
BENT 10	0	1/16"	2/8"	3/8"	4/4"	5/16"	6/8"	7/16"	8/16"	9/8"
BENT 11	0	1/8"	2/16"	2/8"	4/8"	5/8"	6/8"	7/16"	8/16"	9/8"
BENT 12	0	1/16"	2/8"	3/8"	4/4"	5/16"	6/8"	7/16"	8/16"	9/8"
BENT 13	0	1/16"	2/8"	3/8"	4/4"	5/16"	6/8"	7/16"	8/16"	9/8"

ELEVATIONS										
	El. A	El. B	El. C	El. D	El. E	El. F	El. G	El. H	El. I	El. K *
BENT 8	38.289	38.378	38.467	38.556	38.645	38.734	38.823	38.912	39.001	39.090
BENT 9	37.573	37.662	37.751	37.840	37.929	38.018	38.107	38.196	38.285	38.374
BENT 10	36.555	36.644	36.733	36.821	36.910	36.999	37.088	37.177	37.266	37.355
BENT 11	35.234	35.348	35.450	35.462	35.576	35.691	35.805	35.894	35.919	36.034
BENT 12	33.770	33.859	33.948	34.037	34.126	34.215	34.303	34.392	34.481	34.570
BENT 13	31.871	31.960	32.049	32.138	32.227	32.316	32.405	32.494	32.583	32.672

\* El. K - Bottom of Footing

REV.		S.C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.
REV.		
REV.		
REV.		
REVIEWED	W.H.H.	INTERIOR BENTS 7-13 FOR OVERPASS OVER R.R. TO S.V.C. CHEM. CO.
IN CHARGE		
QUAN.		DOCKET NO. 10.521.1
TR.		COUNTY CHARLESTON
DES.	RAC 3-63	ROUTE NO. 1-26
BY	CHK'D DATE	DATE 3-63
APPROVED BY		APPROVED BY
BRIDGE DESIGN & PLANS ENGINEER		BRIDGE ENGINEER



SCALE:  $\frac{3''}{4} = 1'-0''$

## REINFORCING STEEL SCHEDULE

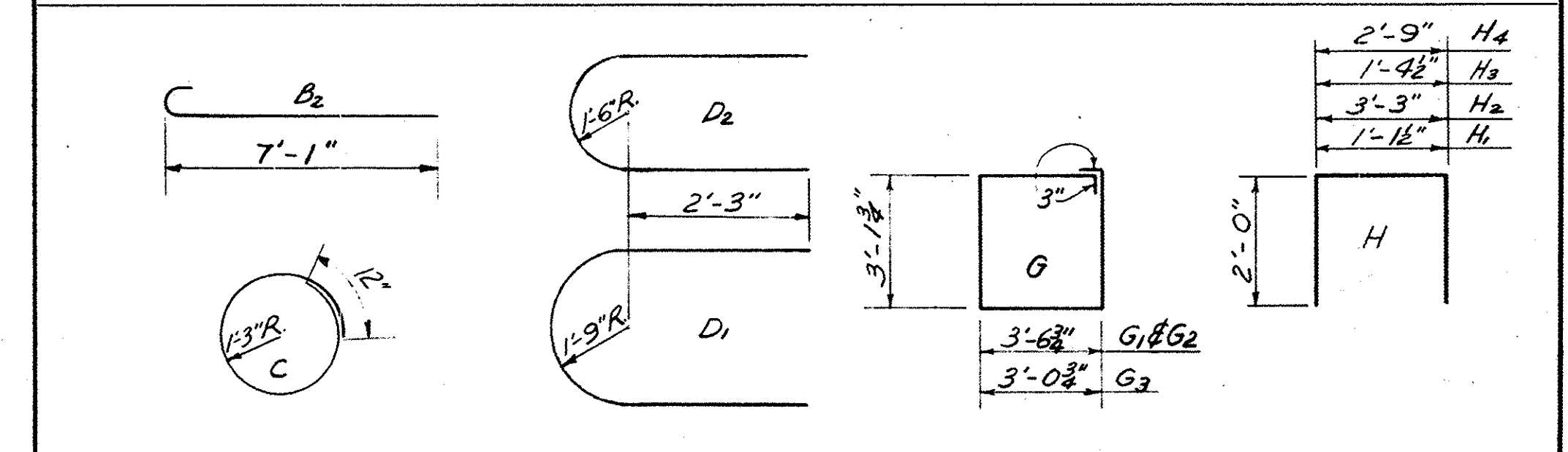
MARK	SIZE	D	BENT 2		BENT 3		BENT 4		BENT 5		BENT 6		BENT 7		BENT 8		BENT 9		BENT 10		BENT 11		BENT 12		BENT 13		
			NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	NO. REQD.	LENGTH	
A <sub>1</sub>	5	S	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	120	7'-0"	
A <sub>2</sub>	6	S	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	90	9'-6"	
B <sub>1</sub>	10	S	8	24'-5"	8	25'-7"	8	28'-0"	8	29'-11"	8	30'-5"	48	28'-9"	48	28'-3"	48	27'-3"	48	24'-9"	48	27'-3"	48	26'-3"	48	24'-9"	
B <sub>2</sub>	10	B	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	48	8'-1"	
B <sub>3</sub>	10	S	8	24'-2"	8	25'-4"	8	27'-9"	8	29'-9"	8	30'-5"															
B <sub>4</sub>	10	S	8	23'-9"	8	25'-2"	8	27'-8"	8	29'-8"	8	30'-5"															
B <sub>5</sub>	10	S	8	23'-6"	8	24'-11"	8	27'-6"	8	29'-7"	8	30'-5"															
B <sub>6</sub>	10	S	8	23'-2"	8	24'-8"	8	27'-4"	8	29'-6"	8	30'-5"															
B <sub>7</sub>	10	S	8	22'-11"	8	24'-6"	8	27'-1"	8	29'-4"	8	30'-5"															
C	3	B	84	8'-10"	90	8'-10"	102	8'-10"	108	8'-10"	108	8'-10"	108	8'-10"	102	8'-10"	102	8'-10"	90	8'-10"	102	8'-10"	96	8'-10"	90	8'-10"	
D <sub>1</sub>	6	B	6	10'-0"	6	10'-0"	6	10'-0"	6	10'-0"	6	10'-0"															
D <sub>2</sub>	6	B											6	9'-3"	6	9'-3"	6	9'-3"	6	9'-3"	6	9'-3"	6	9'-3"	6	9'-3"	
E <sub>1</sub>	10	S	4	38'-11"	4	38'-11"	4	38'-11"	4	38'-11"	4	38'-11"	4	34'-5"	4	34'-5"	4	34'-5"	4	34'-5"	4	34'-5"	4	34'-5"	4	34'-5"	
E <sub>2</sub>	10	S	4	40'-8"	4	40'-8"	4	40'-8"	4	40'-8"	4	40'-8"	30	13'-0"													
E <sub>3</sub>	10	S	42	15'-0"	42	15'-0"	10	15'-0"	42	15'-0"	42	15'-0"	4	35'-10"	4	35'-10"	4	35'-10"	4	35'-10"	4	35'-10"	4	35'-10"	4	35'-10"	
E <sub>4</sub>	10	S	4	42'-10"	4	42'-10"	4	42'-10"	4	42'-10"	4	42'-10"	4	47'-10"	4	47'-10"	4	47'-10"	4	47'-10"	4	47'-10"	4	47'-10"	4	47'-10"	
E <sub>5</sub>	10	S					20	14'-0"					4	36'-4"	4	36'-4"	4	36'-4"	4	36'-4"	4	36'-4"	4	36'-4"	4	36'-4"	
E <sub>6</sub>	9	S	30	14'-6"	30	14'-6"			30	14'-6"	30	14'-6"	15	12'-0"	30	12'-0"	30	12'-0"	30	12'-0"	30	12'-0"	30	12'-0"	30	12'-0"	
E <sub>7</sub>	7	S				15	11'-0"							10	8'-0"	10	8'-0"	10	8'-0"	10	8'-0"	10	8'-0"	10	8'-0"	10	8'-0"
F <sub>1</sub>	6	S	4	39'-2"	4	39'-2"	4	39'-2"	4	39'-2"	4	39'-2"	4	33'-3"	4	33'-3"	4	33'-3"	4	33'-3"	4	33'-3"	4	33'-3"	4	33'-3"	
F <sub>2</sub>	6	S	2	37'-8"	2	37'-8"	2	37'-8"	2	37'-8"	2	37'-8"	2	34'-0"	2	34'-0"	2	34'-0"	2	34'-0"	2	34'-0"	2	34'-0"	2	34'-0"	
G <sub>1</sub>	5	B	102	13'-11"	102	13'-11"			102	13'-11"	102	13'-11"															
G <sub>2</sub>	4	B					77	13'-11"																			
G <sub>3</sub>	4	B											85	12'-11"	77	12'-11"	77	12'-11"	77	12'-11"	77	12'-11"	77	12'-11"	77	12'-11"	
H <sub>1</sub>	4	B											78	5'-2"													
H <sub>2</sub>	4	B				45	7'-3"				24	7'-3"															
H <sub>3</sub>	4	B	78	5'-5"	90	5'-5"			84	5'-5"																	
H <sub>4</sub>	4	B																									
I	4	S	52	3'-4"	60	3'-4"	45	3'-4"	56	3'-4"	24	3'-4"	52	2'-4"	39	2'-4"	39	2'-4"	39	2'-4"	39	2'-4"	39	2'-4"	47	2'-4"	
E <sub>8</sub>	10	S	4	30'-8"	4	30'-8"	4	30'-8"	4	30'-8"	4	30'-8"	4	27'-6"	4	27'-6"	4	27'-6"	4	27'-6"	4	27'-6"	4	27'-6"	4	27'-6"	
E <sub>9</sub>	10	S	4	32'-5"	4	32'-5"	4	32'-5"	4	32'-5"	4	32'-5"	4	29'-0"	4	29'-0"	4	29'-0"	4	29'-0"	4	29'-0"	4	29'-0"	4	29'-0"	
E <sub>10</sub>	10	S	4	57'-0"	4	57'-0"	4	57'-0"	4	57'-0"	4	57'-0"	4	57'-0"													

SUMMARY		OF		QUANTITIES	
---------	--	----	--	------------	--

[illegible]

- ① Includes 293'Lbs. for Anchor Bolt Assemblies.
- ② Includes 334'Lbs. for Anchor Bolt Assemblies.
- ③ Includes 389'Lbs. for Anchor Bolt Assemblies.
- ④ Includes 278'Lbs. for Anchor Bolt Assemblies.
- ⑤ Includes 348'Lbs. for Anchor Bolt Assemblies.

BENDING	DETAILS
---------	---------



Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
This sheet to accompany Sh. No's. 13, 14, 15, 16, 17 & 18

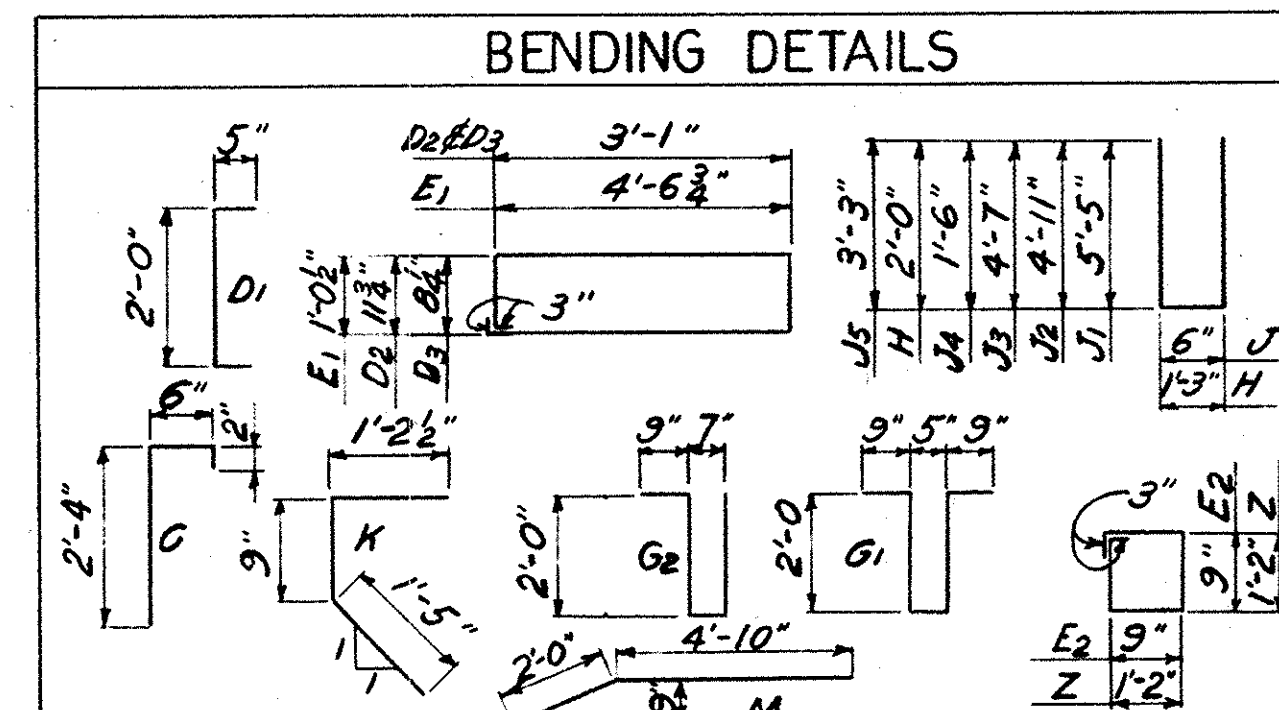
REV.		S.C. STATE HIGHWAY DEPARTMENT
REV.		BRIDGE DIVISION
REV.		COLUMBIA S.C.
REV.		INTERIOR BENTS 2-13
REV.		SECTIONS, REINF STEEL & QUANT.
REV.		FOR OVERPASS OVER
REVIEWED	<i>[Signature]</i>	R.P.R. TO SVC. CHEM. CO.
	IN CHARGE	
QUANTITY	<i>[Handwritten: 100 AMZ 6-67]</i>	DOCKET NO.
TR.		COUNTY
DR.	<i>[Handwritten: RWB BAM 5-63]</i>	CHARLESTON
DES.	<i>[Handwritten: RWB BAM 5-63]</i>	I-26
RY	CHK'D DATE	DATE
		APPROVED BY
		<i>[Handwritten: W.B. Cram]</i>
		APPROVED BY
		<i>[Handwritten: J. G. [unclear]]</i>
		BRIDGE DESIGN & PLANS ENGINEER
		BRIDGE ENGINEER



FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHARLESTON	105211	I-26	21	32

REINFORCING STEEL SCHEDULE									
MARK	SIZE	D	NO REQ	55' INT SPAN LENGTH	NO REQ	50' END SPAN LENGTH			
A1	5	S	82	53'-10"	82	53'-10"			
A2	5	S	90	48'-9"	90	48'-9"			
A3	5	S	4ea	48'-11"					
A4	5	S	2ea	49'-2"					
A44	5	S	2ea	50'-7"					
A48	5	S	2ea	50'-7"					
A90	5	S	2ea	45'-6"					
A91	5	S	2ea	45'-6"					
A128	5	S	2ea	45'-6"					
A129	5	S	12	3'-8"					
A160	5	S			12	3'-8"			
A161	5	S			2	52'-11"			
B1	4	S	220	54'-8"	246	49'-8"			
B2	4	S	36	7'-4"	18	5'-3"			
B3	4	S			18	6'-6"			
C	4	B	84	3'-0"	76	3'-0"			
P1	5	S	2	61'-10"	1	61'-10"			
P2	5	S	2	56'-4"	1	56'-4"			
D1	4	B	84	2'-10"	66	2'-10"			
D2	4	B	32	8'-1"	28	8'-1"			
D2	4	B			14	8'-8"			
E1	2	B	64	3'-6"	56	3'-6"			
E1	2	B			8	11'-9"			
F1	4	S	144	4'-6"	112	6'-1"			
F2	4	S	6	59'-1"	3	59'-1"			
G1	4	B	144	5'-11"	168	5'-11"			
G2	4	B	180	5'-4"	98	5'-4"			
H	4	B	38	5'-3"	30	5'-3"			
I	4	S	152	2'-4"	120	2'-4"			
J1	4	B			10	11'-4"			
J2	4	B			2	10'-4"			
J3	4	B			2	9'-8"			
J4	4	B			60	3'-6"			
J5	4	B			100	7'-0"			
K	4	B			38	3'-5"			
L1	5	S			2	66'-0"			
L2	4	S			3	66'-0"			
L3	4	S			42	6'-0"			
L4	4	S			3	61'-3"			
L5	4	S			1	53'-3"			
L6	5	S			2	61'-3"			
L7	4	S			1	58'-10"			
L8	4	S			20	5'-0"			
L9	4	S			4	5'-10"			
L10	4	S			6	6'-1"			
M	6	B			4	6'-10"			
N	5	S	110	0'-10"	100	0'-10"			
Y1	14	Φ	4	22'-4"					
Y2	14	Φ	4	27'-8"					
X1	14	Φ			4	21'-7"			
X2	14	Φ			4	28'-5"			
Z	5	B	18	5'-2"	16	5'-2"			

Note:  
Light Brackets not shown.  
For location see Sh. No. 9&10.  
For details see Sh. No. 32.



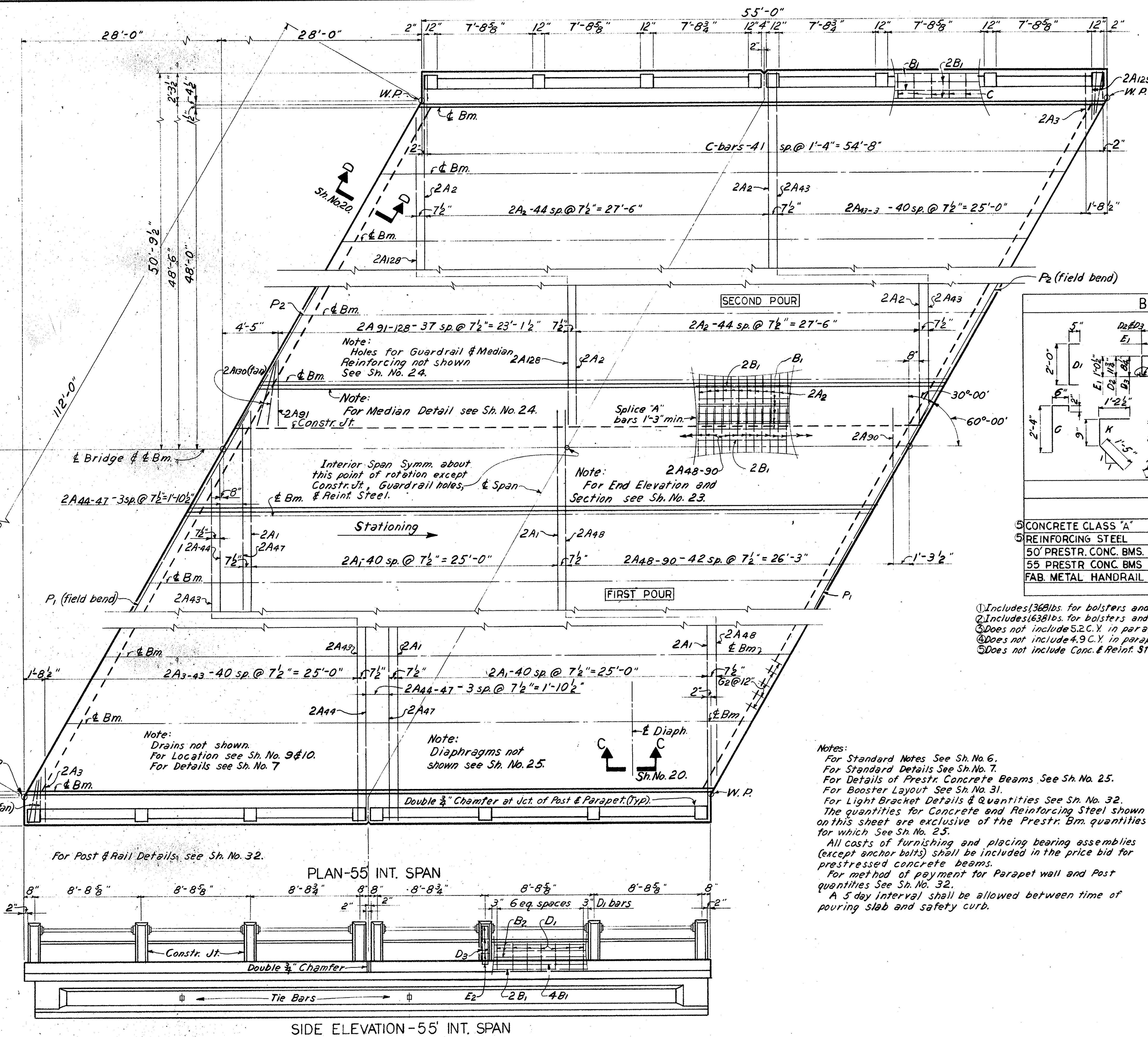
QUANTITIES			
	ONE 50' END SPAN	ONE 55' INT. SPAN	
CONCRETE CLASS "A"	C.Y. 157.3	160.2	
REINFORCING STEEL	LBS. 36,703	233,220	
50' PRESTR. CONC. BMS.	EA. 15		
55' PRESTR. CONC. BMS.	EA. 19		
FAB. METAL HANDRAIL	L.F. 100	110	

- ① Includes 360 lbs. for bolsters and 853 lbs. for tie bar assemblies.
- ② Includes 638 lbs. for bolsters and 853 lbs. for tie bar assemblies.
- ③ Does not include 5.2 C.Y. in parapet wall and posts.
- ④ Does not include 4.9 C.Y. in parapet wall and posts.
- ⑤ Does not include Conc. & Reinf. Steel for Light Brackets.

MARK	SIZE	D	NO REQ	55' INT SPAN LENGTH	NO REQ	50' END SPAN LENGTH
Wire mesh			Reqd	55'-0"	Reqd	50'-0"
BB	1" Ht.		Reqd	3190'	Reqd	2300'
BBU	2 1/2" Ht.		Reqd	1960'	Reqd	1790'
Y1	14	Φ	4	22'-4"		
Y2	14	Φ	4	27'-8"		
X1	14	Φ			4	21'-7"
X2	14	Φ			4	28'-5"
Z	5	B	18	5'-2"	16	5'-2"

This sheet to accompany Sh. No. 20, 23, 24, 25 & 32.

Notes:  
For Standard Notes See Sh. No. 6.  
For Standard Details See Sh. No. 7.  
For Details of Prestr. Concrete Beams See Sh. No. 25.  
For Booster Layout See Sh. No. 31.  
For Light Bracket Details & Quantities See Sh. No. 32.  
The quantities for Concrete and Reinforcing Steel shown on this sheet are exclusive of the Prestr. Bm. quantities for which See Sh. No. 25.  
All costs of furnishing and placing bearing assemblies (except anchor bolts) shall be included in the price bid for prestressed concrete beams.  
For method of payment for Parapet wall and Post quantities See Sh. No. 32.  
A 5 day interval shall be allowed between time of pouring slab and safety curb.



SCALE 1/4"=1'-0"

S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA S.C.

55' INT SPAN-30° SKEW  
SUPERSTRUCTURE  
FOR OVERPASS OVER  
R.R. TO SVC. CHEM. CO.

REV.			
REV.			
REV.			
REV.			
REVIEWED	W.H.M.	DATE	6-63
QUANTITIES	W.H.M.	DATE	6-63
TR.	W.H.M.	DATE	6-63
DES.	W.H.M.	DATE	6-63
BY	CHK'D	DATE	

DOCKET NO. 105211 COUNTY CHARLESTON ROUTE NO. I-26 DATE 4-63

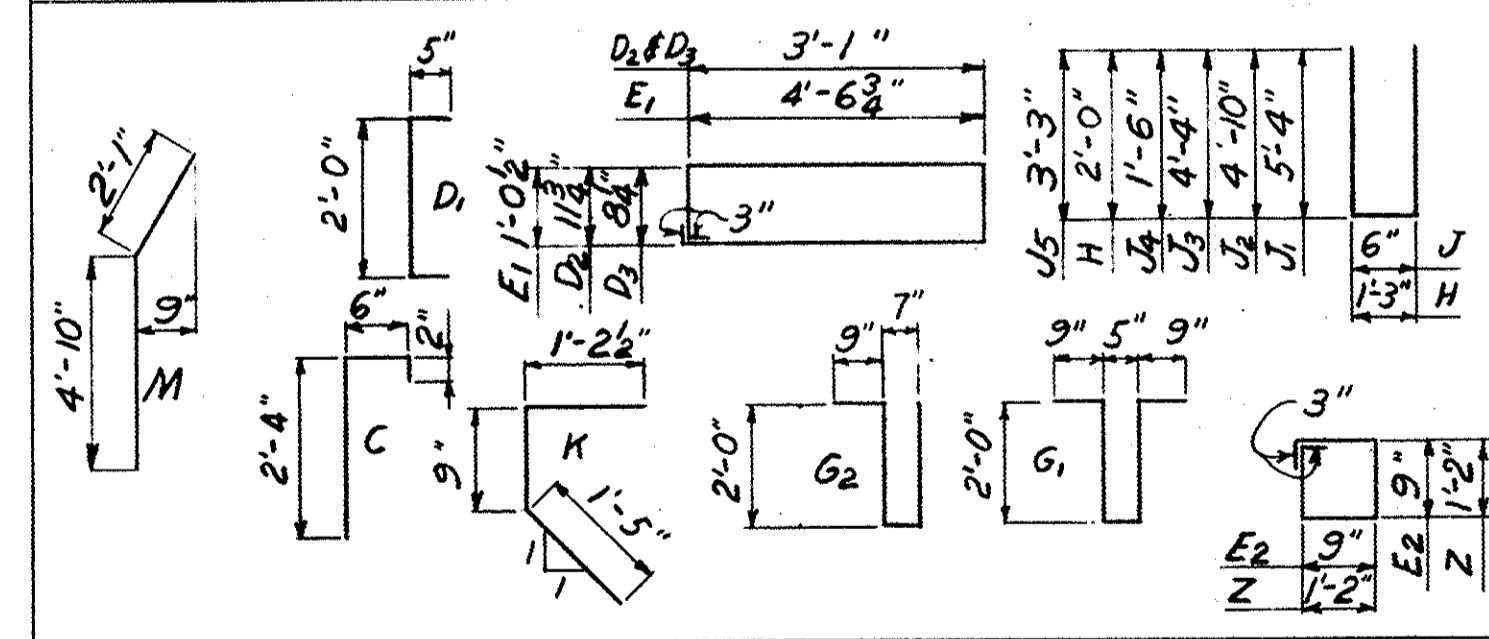
APPROVED BY *[Signature]* BRIDGE DESIGN & PLANS ENGINEER

APPROVED BY *[Signature]* BRIDGE ENGINEER

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHARLESTON	Q521.1	I-26	22	32

REINFORCING STEEL SCHEDULE									
MARK	SIZE NO.	D	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	
A <sub>1</sub>	5	S	176	48'-10"	178	48'-10"	202	48'-10"	
A <sub>2</sub>	5	S	176	53'-10"	178	53'-10"	202	53'-10"	
B <sub>1</sub>	4	S	220	54'-8"	220	54'-8"	246	49'-8"	
B <sub>2</sub>	4	S	18	7'-4"	36	7'-4"	36	6'-6"	
B <sub>3</sub>	4	S	18	6'-0"					
C	4	B	88	3'-0"	88	3'-0"	80	3'-0"	
D <sub>1</sub>	4	B	78	2'-10"	84	2'-10"	84	2'-10"	
D <sub>2</sub>	4	B	14	8'-8"					
D <sub>3</sub>	4	B	28	8'-1"	32	8'-1"	32	8'-1"	
E <sub>1</sub>	2	B	8	11'-9"					
E <sub>2</sub>	2	B	36	3'-6"	64	3'-6"	64	3'-6"	
F	4	S	198	4'-6"	252	4'-6"	196	6'-1"	
F <sub>2</sub>	4	S	3	51'-2"	6	51'-2"	6	51'-2"	
G <sub>1</sub>	4	B	144	5'-11"	144	5'-11"	168	5'-11"	
G <sub>2</sub>	4	B	72	5'-4"	144	5'-4"	168	5'-4"	
H	4	B	38	5'-3"	38	5'-3"	30	5'-3"	
I	4	S	114	2'-4"	114	2'-4"	90	2'-4"	
J <sub>1</sub>	4	B	8	11'-2"					
J <sub>2</sub>	4	B	2	10'-2"					
J <sub>3</sub>	4	B	2	9'-2"					
J <sub>4</sub>	4	B	30	3'-6"					
J <sub>5</sub>	4	B	74	7'-0"					
K	4	B	72	3'-5"					
L <sub>1</sub>	5	S	2	58'-2"					
L <sub>2</sub>	4	S	3	53'-1"					
L <sub>3</sub>	4	S	54	3'-6"					
L <sub>4</sub>	4	S	3	58'-2"					
L <sub>5</sub>	4	S	1	50'-9"					
L <sub>6</sub>	5	S	2	53'-1"					
L <sub>7</sub>	4	S	1	45'-11"					
L <sub>8</sub>	4	S	20	2'-6"					
L <sub>9</sub>	4	S	4	5'-4"					
L <sub>10</sub>	4	S	6	6'-2"					
M	6	B	4	6'-11"					
N	5	S	110	0'-10"	110	0'-10"	100	0'-10"	
F <sub>4</sub>	4	S	3	46'-4"	6	46'-4"	6	46'-4"	
Z	5	B	18	5'-2"	18	5'-2"	16	5'-2"	
Wire Mesh	Req'd		55'-0"	Req'd	55'-0"	Req'd	50'-0"		
1/4" Tie Bar Assemblies	4		49'-0"	4	49'-0"	4	49'-0"		
BB 1" HT	Req'd		3190'	Req'd	3190'	Req'd	2300'		
BBU 2 1/2" HT	Req'd		1960'	Req'd	1960'	Req'd	1790'		

### BENDING DETAILS



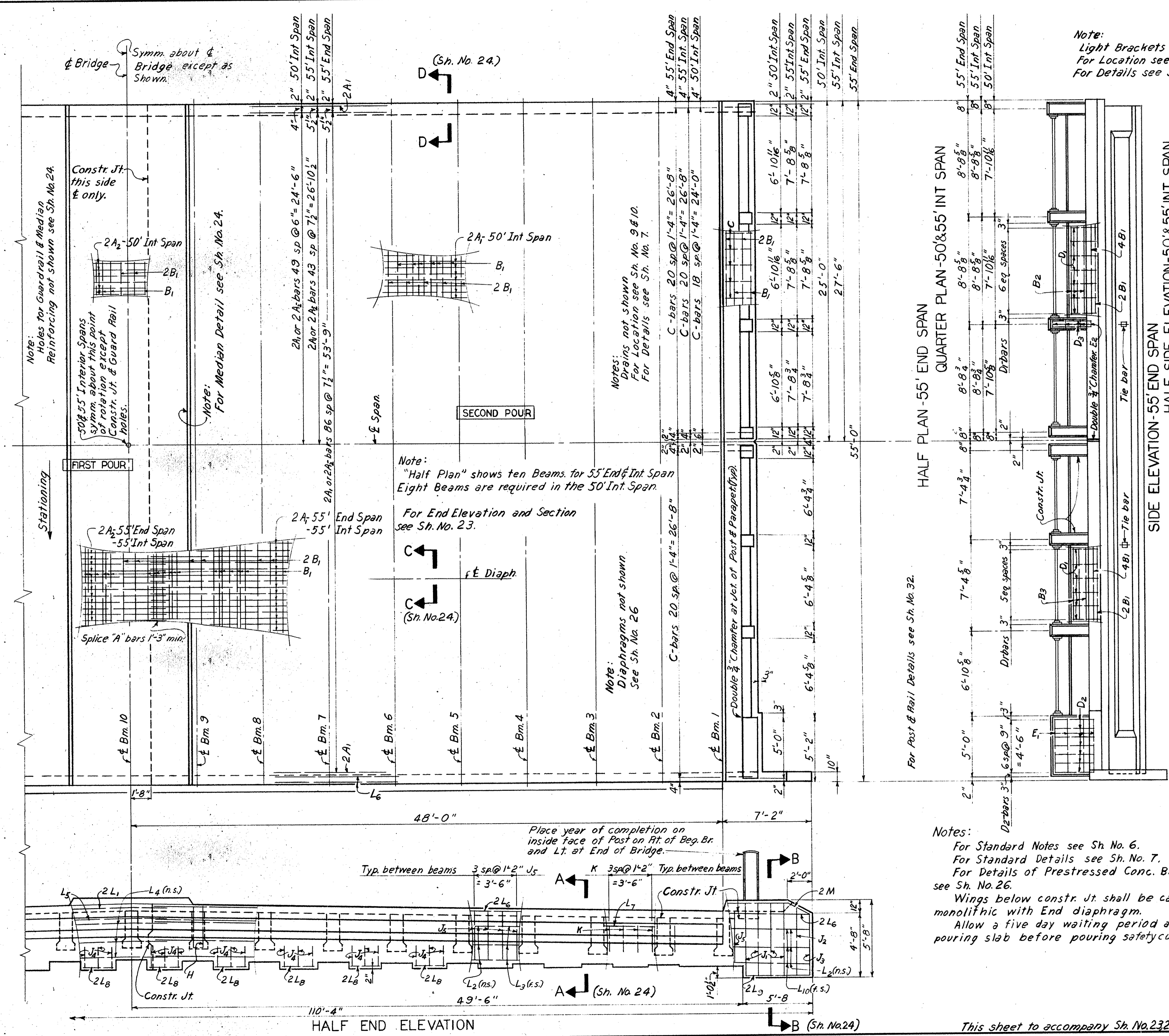
NOTE:  
For Quantities see Sh. No. 24.

SCALE 1" = 1'-0"

S.C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.			
55' END & INT. SPANS- 50' INT. SPAN SUPERSTRUCTURE FOR OVERPASS OVER RR. TO SVC. CHEM. CO.			
REV.			
REV.			
REV.			
REV.			
REVIEWED	IN CHARGE		
QUAN.			
TR.			
DR. WHM	BAM 5-63	APPROVED BY	
DES. WHM	BAM 2-63	APPROVED BY	
BY	CHK'D DATE	BRIDGE DESIGN & PLANS ENGINEER	BRIDGE ENGINEER

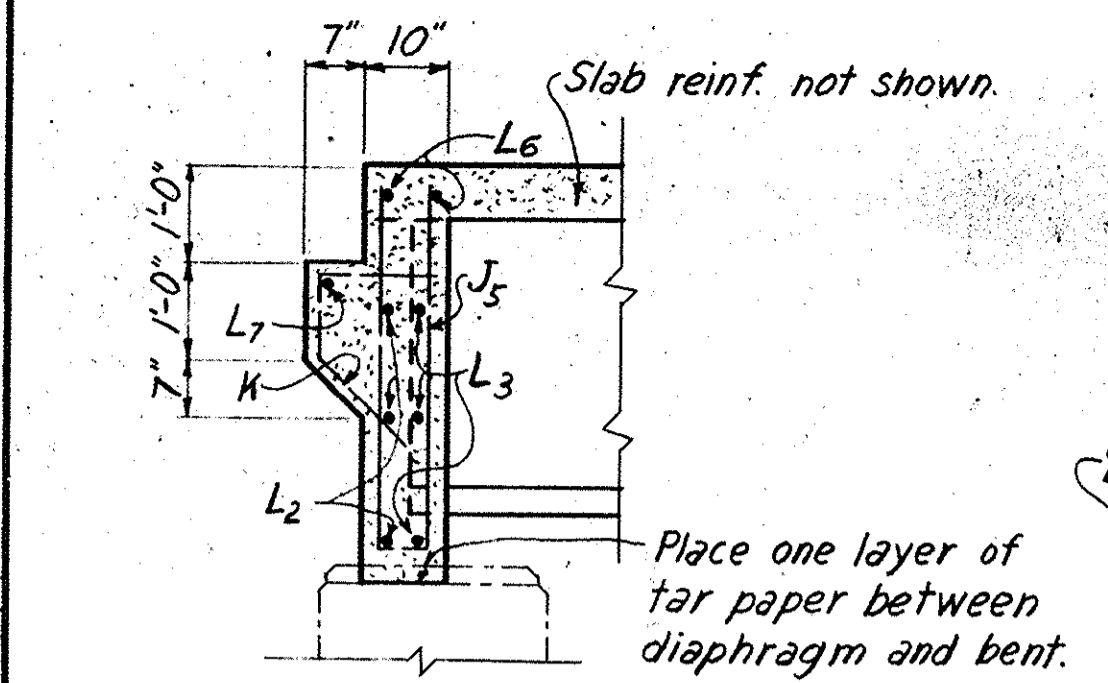
Notes:  
For Standard Notes see Sh. No. 6.  
For Standard Details see Sh. No. 7.  
For Details of Prestressed Conc. Bm. see Sh. No. 26.  
Wings below constr. jt. shall be cast monolithic with End diaphragm.  
Allow a five day waiting period after pouring slab before pouring safety curb.

This sheet to accompany Sh. No. 23, 24, 26, & 32.

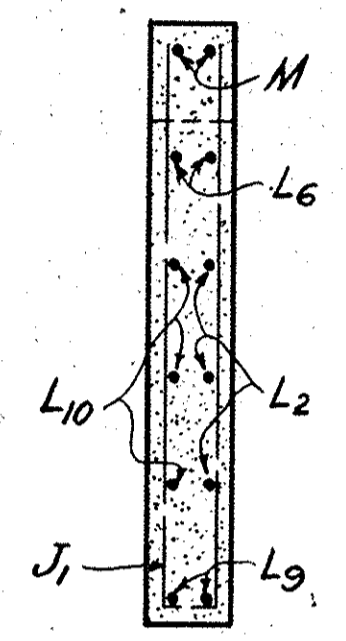




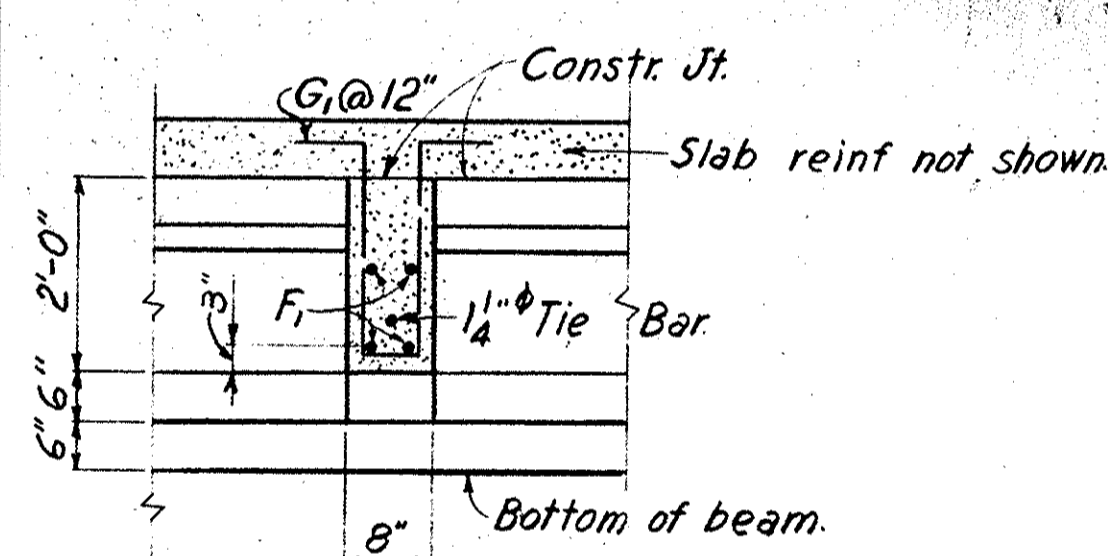
FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	10.521.1	I-26	24	32



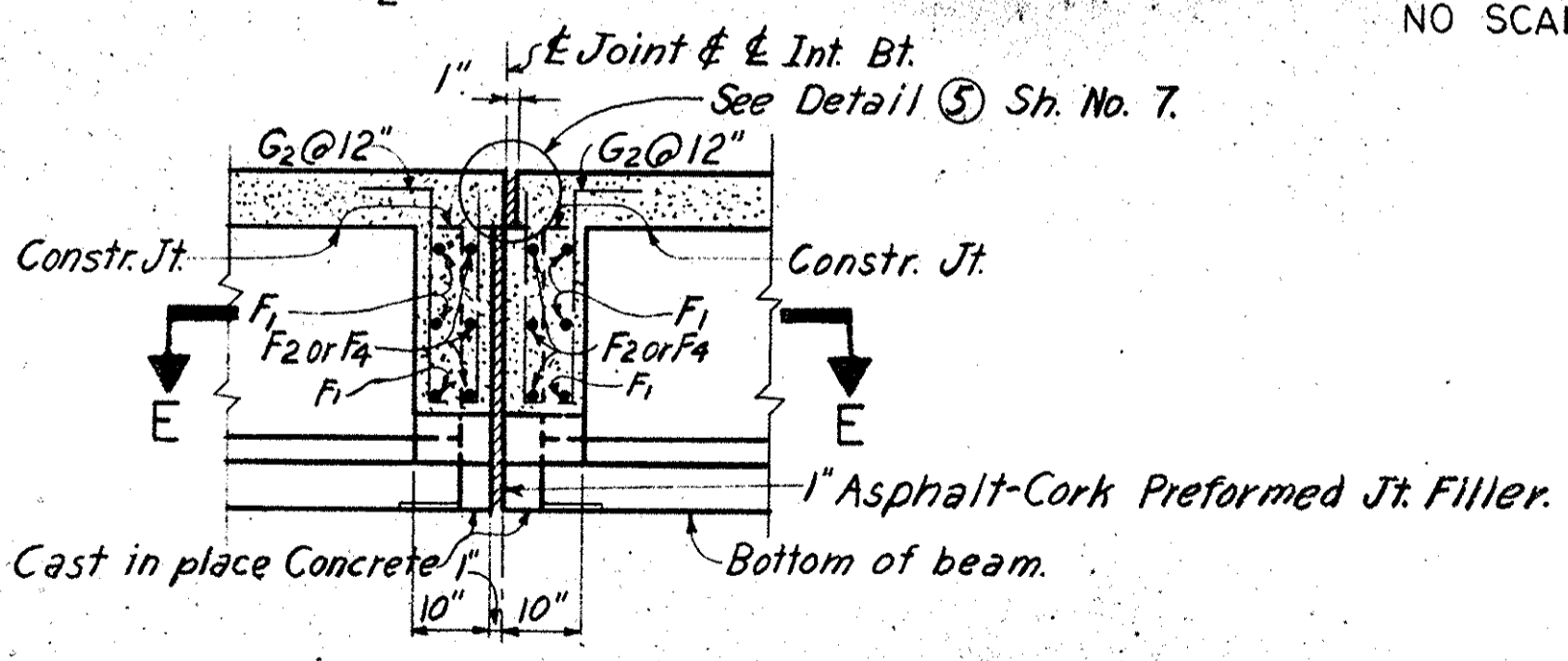
SECTION A-A  
SCALE 1/2" = 1'-0"



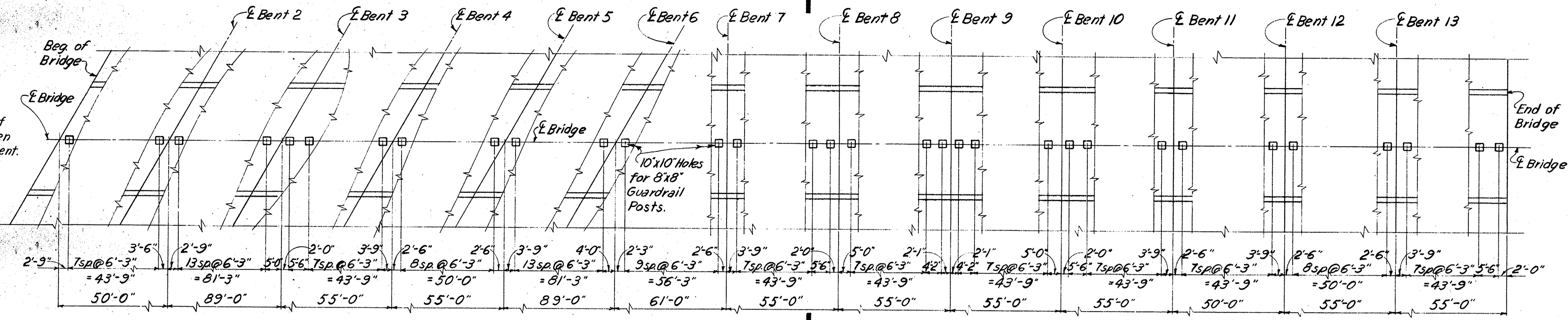
SECTION B-B  
SCALE 1/2" = 1'-0"



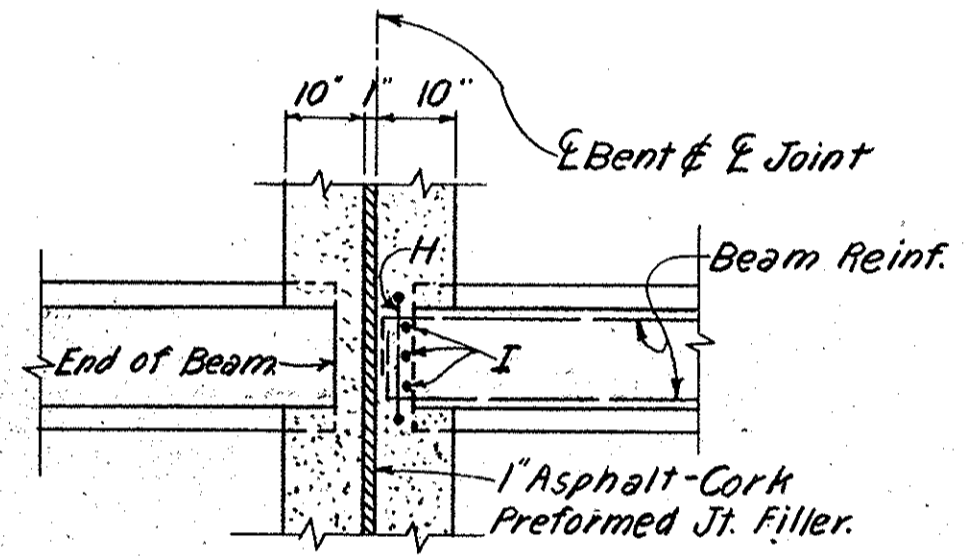
SECTION C-C  
SCALE 1/2" = 1'-0"



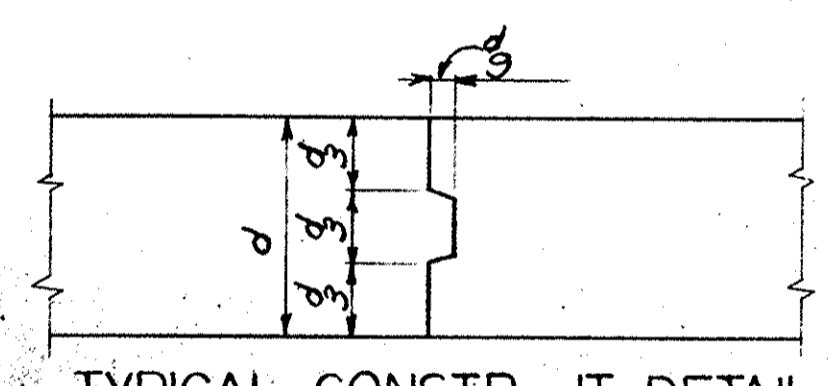
SECTION D-D  
SCALE 1/2" = 1'-0"



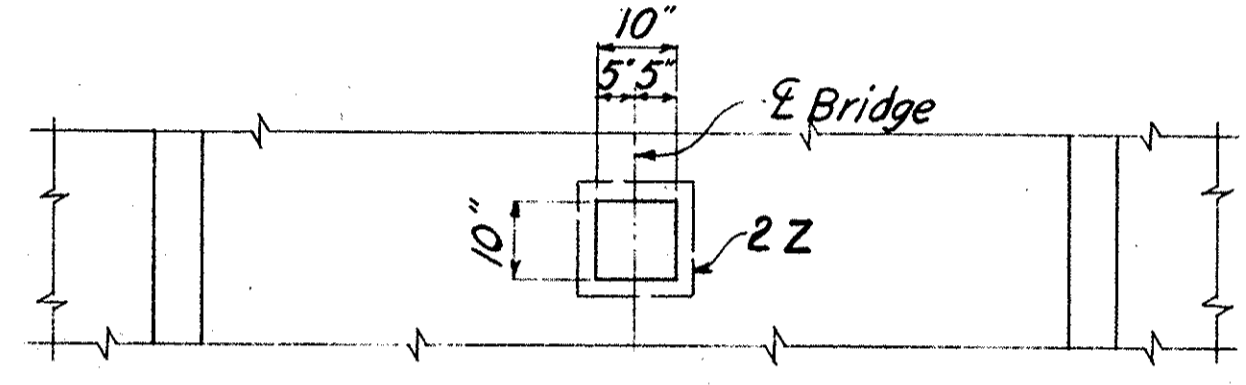
PLAN OF MEDIAN  
NO SCALE



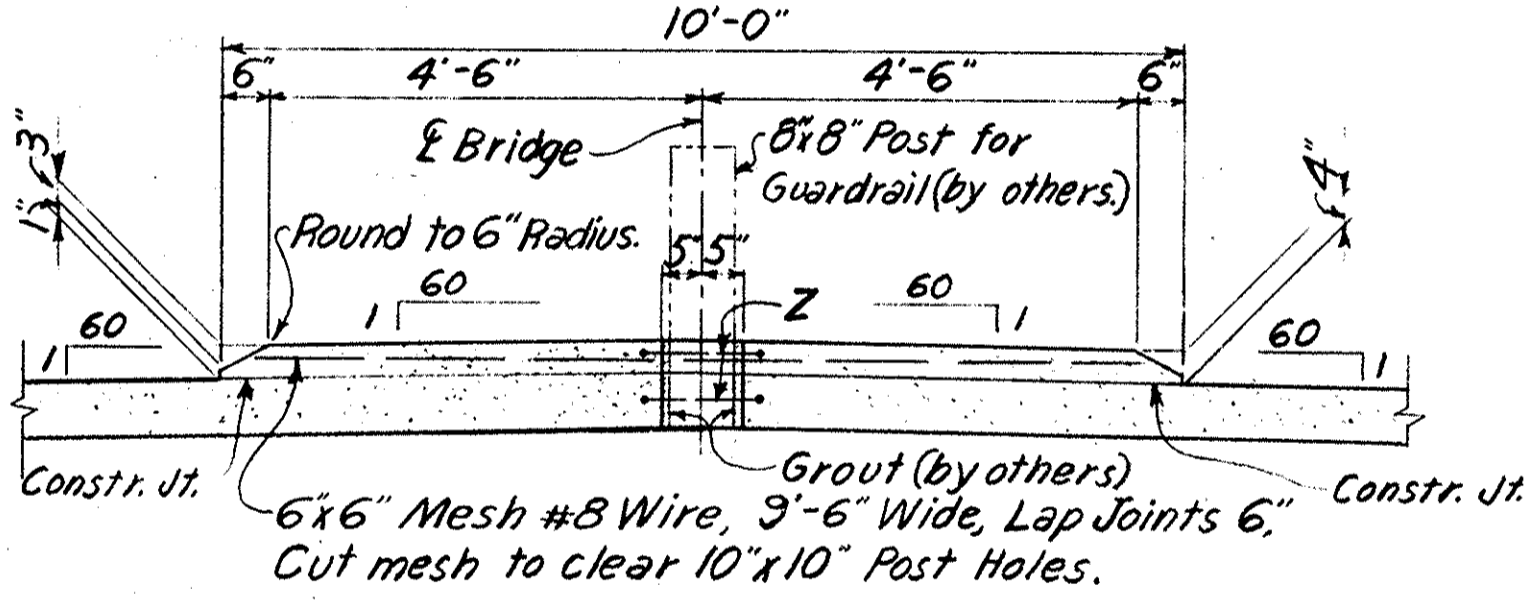
SECTION E-E  
SCALE 1/2" = 1'-0"



TYPICAL CONSTR. JT. DETAIL  
NO SCALE



PLAN OF POST HOLE  
SCALE 1/2" = 1'-0"



SECTION F-F  
SCALE 1/2" = 1'-0"

Notes:  
Shear connectors on WF Beam are to be omitted or shifted slightly to clear 10"x10" post holes.  
Reinf. steel bars projecting from top of prestressed concrete beams are to be shifted to clear 10"x10" post holes.  
Slab steel to be cut or bent in field to clear 10"x10" post holes.

Notes:  
For Standard Notes see Sh. No. 6.  
For Standard Details see Sh. No. 7.  
For Method of payment for Parapet wall and Post quantities see Sh. No. 32.  
The quantities for Concrete and Reinforcing Steel shown on this sheet are exclusive of the Prestr. Beam quantities for which see Sh. No. 25.  
For Booster Layout see Sh. No. 31.  
All costs of furnishing and placing bearing assemblies (except anchor bolts) shall be included in the price bid for prestressed concrete beams.

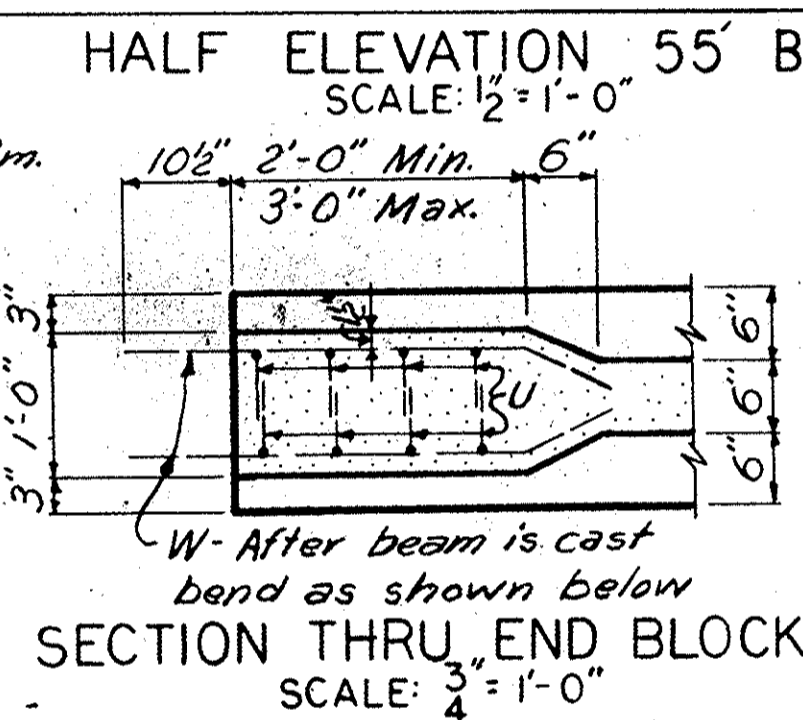
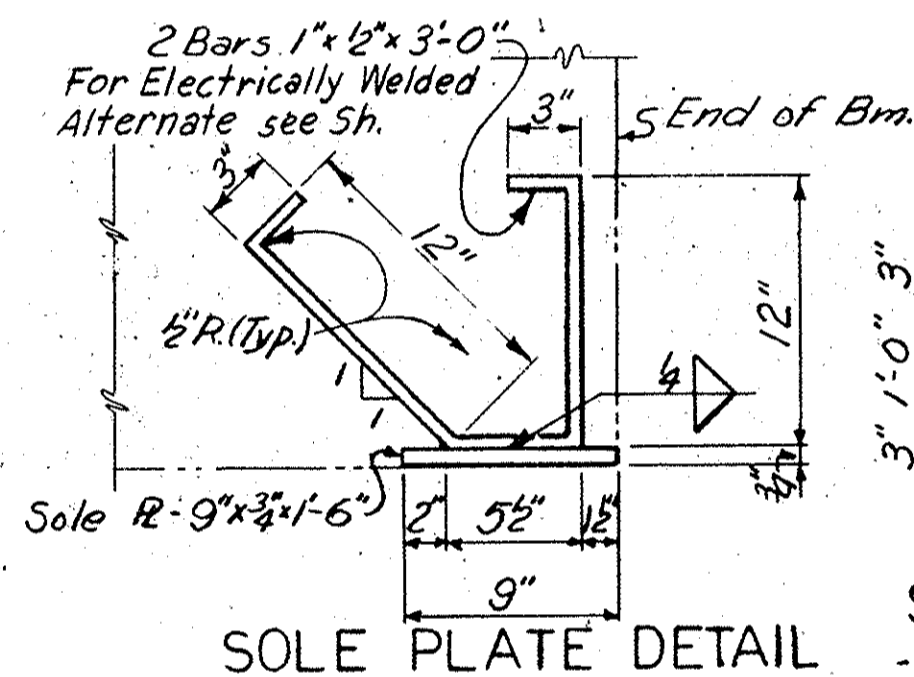
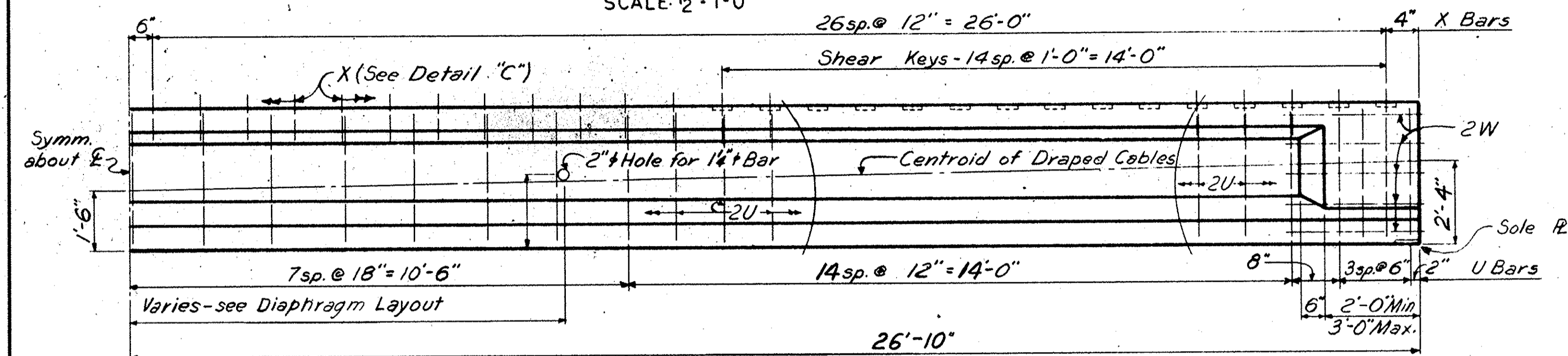
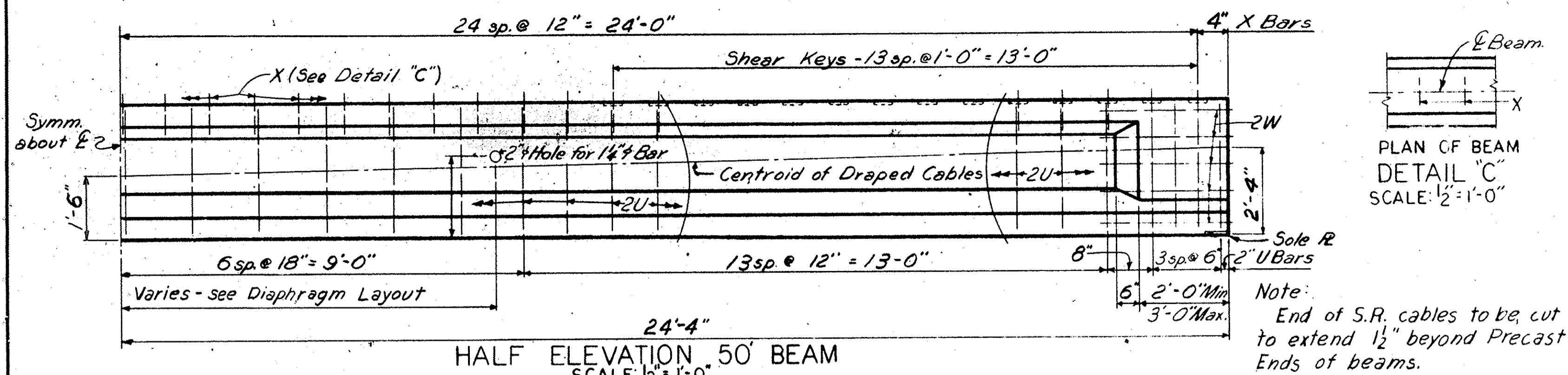
*QUANTITIES			
	ONE 50' INT SPAN	ONE 55' INT SPAN	ONE 55' END SPAN
① CONCRETE CLASS 'A'	C.Y. 144.7	⑤ 156.9	⑥ 164.9
② REINFORCING STEEL	LBS. 35,541	② 33,015	③ 33,655
50' PRESTR. CONC. BMS.	EA. 15		
55' PRESTR. CONC. BMS.	EA. —	19	19
FAB. METAL HANDRAIL	LF. 100	110	110

① Includes 368 lbs. for bolsters and 827 lbs. for tie bar assemblies.  
② Includes 638 lbs. for bolsters and 827 lbs. for tie bar assemblies.  
③ Includes 638 lbs. for bolsters and 827 lbs. for tie bar assemblies.  
④ Does not include 4.5 C.Y. in parapet wall and posts.  
⑤ Does not include 4.9 C.Y. in parapet wall and posts.  
⑥ Does not include 5.6 C.Y. in parapet wall and posts.  
⑦ Does not include Conc. & Reinf. Steel for Light Brackets.  
\* For Non-skewed spans only.

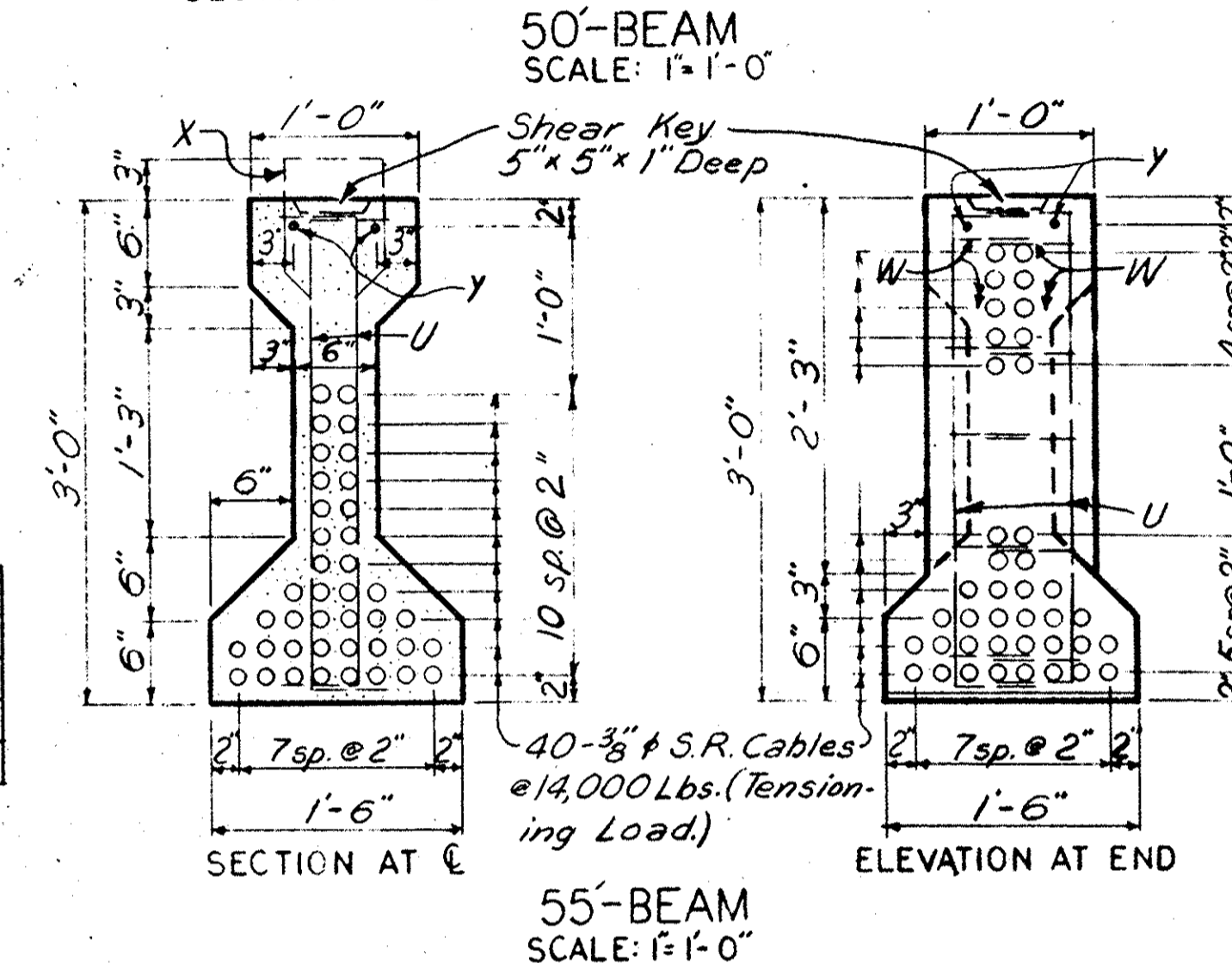
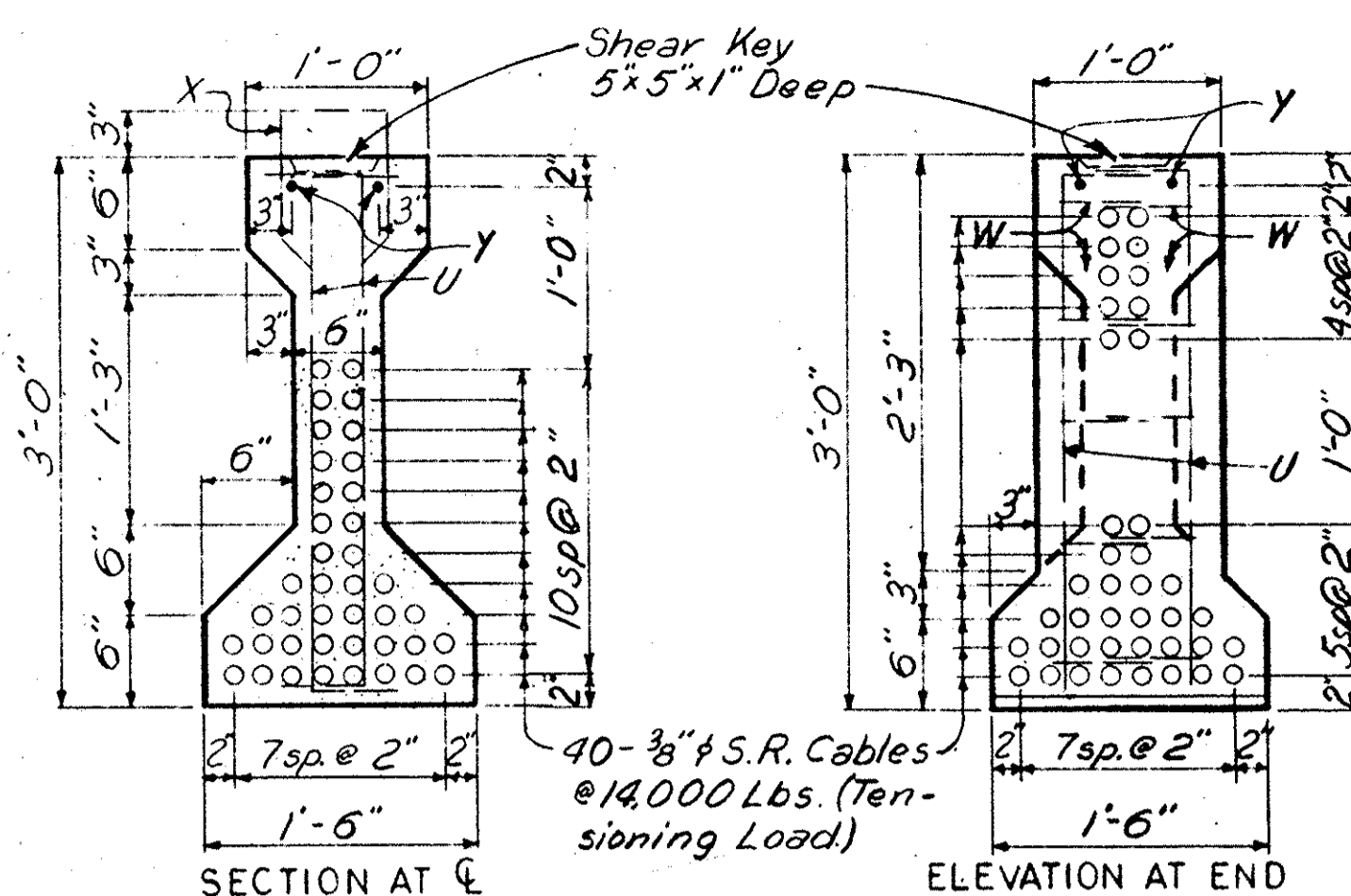
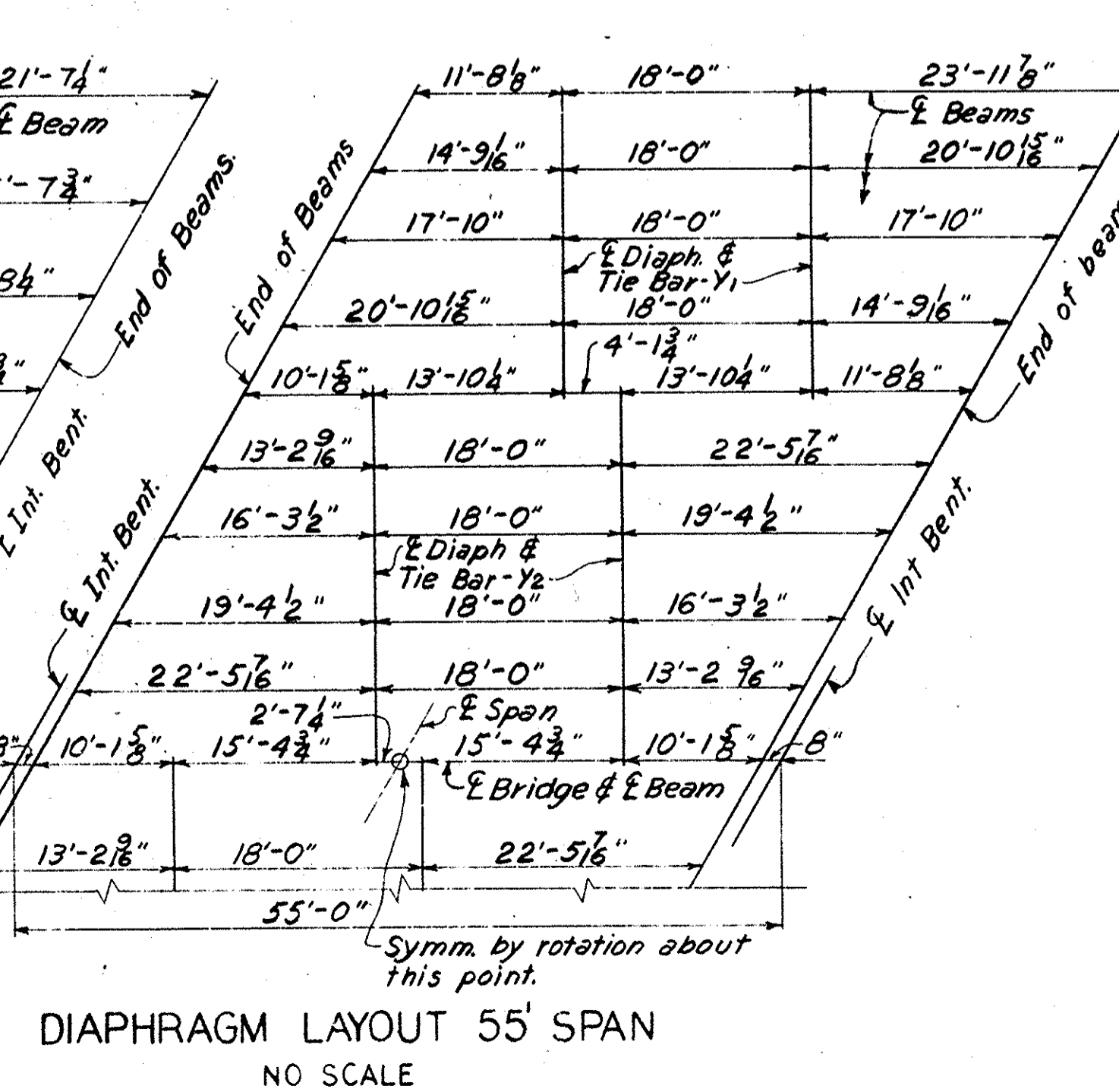
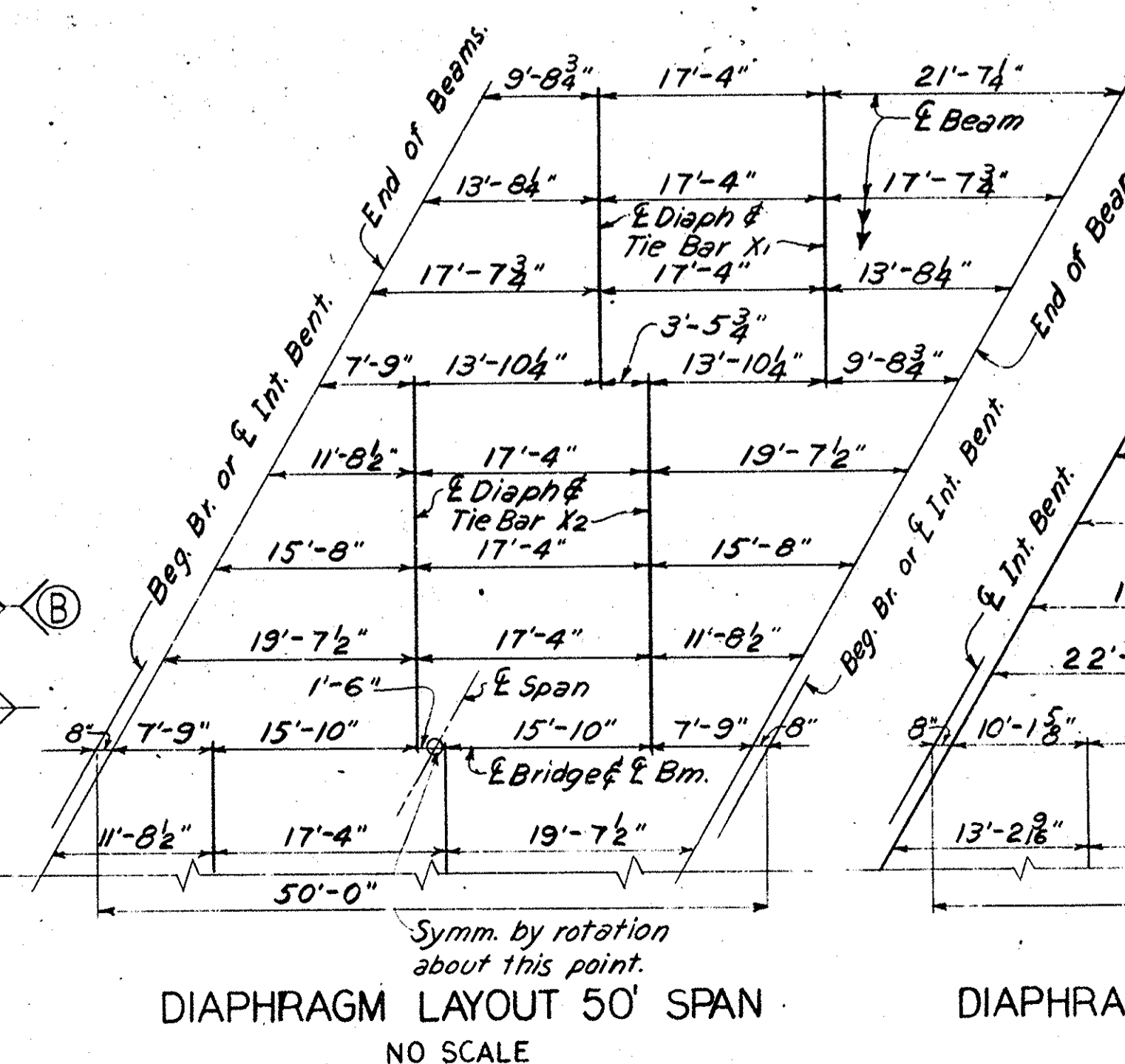
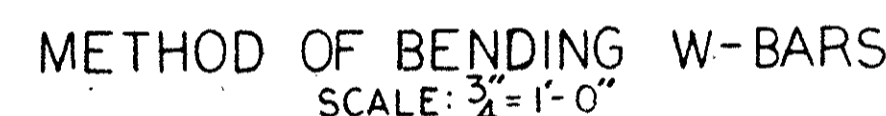
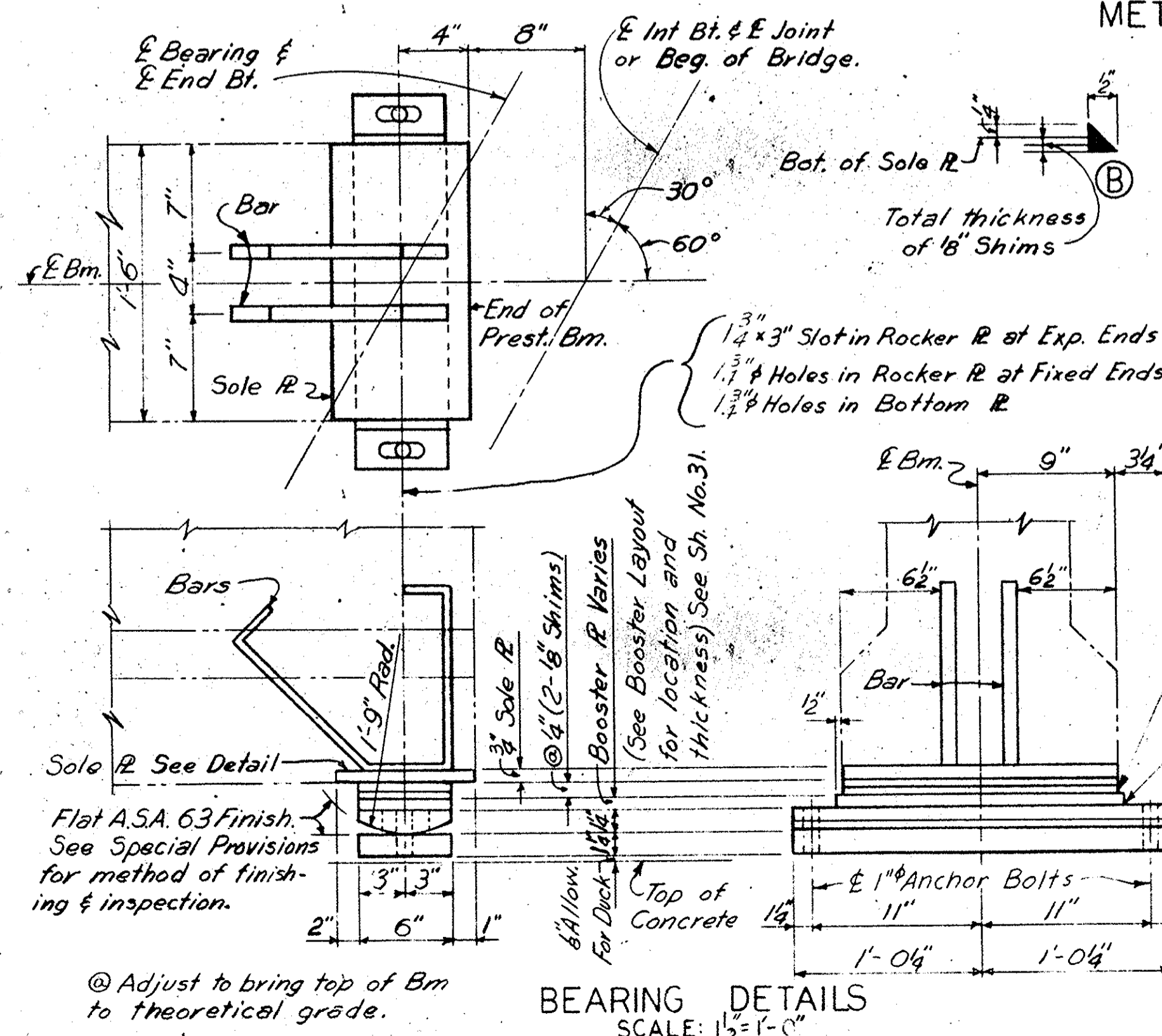
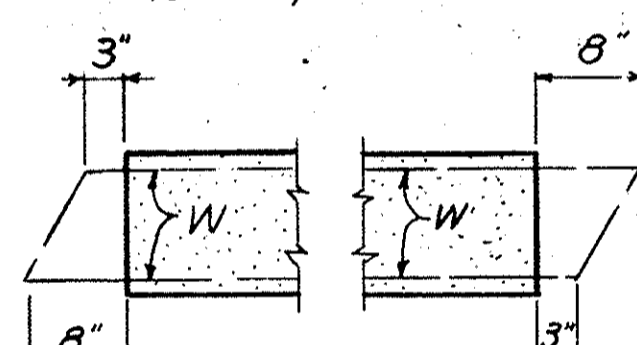
This sheet to accompany Sh. No. 20-23; 25-30.  
Scale as Noted

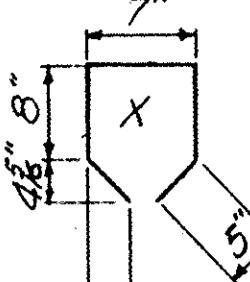
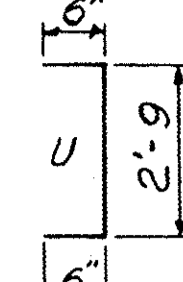
REV.		S.C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.			
REV.		MEDIAN AND SECTION SHEET FOR OVERPASS OVER R.R. TO SVC. CHEM. CO.			
REV.					
REV.					
REVIEWED	AMH	IN CHARGE			
QUAN.	AMH	DOCKET NO.	COUNTY	ROUTE NO.	DATE
TR.	AMH	10.521.1	CHARLESTON	I-26	4-63
DR.	WHM	APPROVED BY			
DES.	AMH	APPROVED BY			
BY	CHK'D	BRIDGE DESIGN & PLANS ENGINEER			
		BRIDGE ENGINEER			

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	105211	E-26	25	32



BEAM DEFLECTION AND CAMBER		
	50' Span	55' Span
Est. Defl. top surface of Bm when cables are released	$\frac{1}{2}"$ up	$\frac{3}{4}"$ up
Est. Defl. top surface of Bm. due to slab Wt. when poured	$\frac{1}{16}"$ dn.	$\frac{1}{8}"$ dn.
Required camber to top of Bm. at $\frac{1}{2}$ span.	0"	0"
Note: Top surface of Bm. to be finished, off level.		



REINFORCING STEEL SCHEDULE FOR PREST. BEAMS									
MARK	SIZE NO.	50'-BEAM		55'-BEAM		D	BENDING DETAILS		
		NO.	LENGTH	NO.	LENGTH				
X	5	49	2'-9"	54	2'-9"	B			
U	4	94	3'-9"	102	3'-9"	B			
W	4	20	3'-5"	20	3'-5"	B			
Y	6	2	48'-4"	2	53'-4"	S			
QUANTITIES - ONE BEAM									
			50' BM		55' BM				
Concrete, Class "X"			4.7		5.2	C.Y.			
Reinforcing Steel			567		616	lbs.			
Prestressing Cables			2,000		2,200	L.F.			
Struct. Steel			3300		306	lbs.			

① Includes Sole Plate Assemblies & Bearing Assemblies  
② Includes 0 Lbs. for Boosters (Approx. Ave. Wt. per Bm.)  
③ Includes 6 Lbs. for Boosters (Approx. Ave. Wt. per Bm.)  
Notes:

The price bid for Prestressed Concrete Beams shall include S.R. Cables, sole plate assemblies, bearing assemblies (including shims & booster (R's) reinforcing steel, Lifting devices, and all other material (except anchor bolt assemblies) complete in place.

*Partial Payment for Prestressed Concrete Beams:*  
When prestressed concrete beams are delivered to the bridge site, the Engineer will enter 80% of the contract unit price on the current estimate, and after erection 100% of the contract unit price. Such percentages shall be subject to the usual 10% retainage.

The prestressed beams must be always maintained in original position. When beams are handled they shall be lifted by devices provided at ends of beams. A suggested lifting device may utilize a 2" dia. pipe with a 1 1/2" Dia. mild steel pin through the end block located approximately 1/3 to 1/4 the depth of the beam below the top. Other types of lifting devices may be used provided they meet with the approval of the Engineer. Pick-up points must be within the extent of the end blocks. When being stored, care must be taken to eliminate interior supports which would cause negative moments.

Note that a total force of 14" is required in each cable at the time of casting. Therefore if the draped cables are made to assume the draped position by first anchoring the ends at their final location and then depressing the midpoint to its final location, the tensioning load required on the cable in the initial (horizontal) position will be (3,570 lbs) for the 50' Beam and (3,640 lbs) for the 55' Beam. The vertical load required to depress each cable to its final location will be 660 lbs. for the 50' Beam and 610 lbs for the 55' Beam. All cables which are to remain horizontal must be tensioned to 14" each.

Required draping forces shown above are for single, isolated beam pulls. For longer length setups adjustments must be made for the additional cable lengths.

The initial stress in all cables after draping shall be 10,000 lbs. The hold-down device shall be rounded to a min. radius of  $\frac{1}{2}$ ". If a plate is used it shall have a minimum thickness of  $\frac{3}{8}$ ".

Note that the holes for diaphragm drains must be located as shown on plans. The holes shall be formed with a 2" inside dia. pipe. It may be necessary to spread the strands slightly in order to locate the pipe in the correct position. Pipes to be wired securely to strands.

Concrete in Prestressed Beams shall be class "X" as described in the Special Provisions.

Reinf. steel bars projecting from top of prestressed concrete beam are to be shifted to clear 10"x10" post holes. See Sh. No. 24.  
Slab steel to be cut or bent in field to clear 10"x10" post holes.

*This sheet to accompany Sh. No. 20, 21, 23.*

REV.		S. C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.  50' & 55' PRESTRESSED BEAMS FOR SPANS 1, 3, AND 4 FOR OVERPASS OVER R.R. TO S.V.C. CHEM. CO.			
REV.					
REV.	8AM WHM 12-63 Cable Depr. Force				
REV.	WHM 8AM 5-63 FOR DK. 1052U				
REVIEWED	<i>[Signature]</i> IN CHARGE				
QUAN.	WHM RWH T-63	DOCKET NO.	COUNTY	ROUTE NO.	DATE
TR.		1052U	CHARLESTON	I-26	4-63
DR.	DDP RWH 10-62	APPROVED BY <i>[Signature]</i> BRIDGE DESIGN & PLANS ENGINEER		APPROVED BY <i>[Signature]</i> BRIDGE ENGINEER	
DES.	Form For 232B				
	BY CHARTER				

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	10-5211	I-26	26	32

## REINFORCING STEEL SCHEDULE FOR PREST. BEAMS

MARK	SIZE	50' BEAM		55' BEAM		D	BENDING DETAILS	
		NO	REG LENGTH	NO	REG LENGTH			
X	5	49	2'-9"	54	2'-9"	B		
U	4	94	3'-9"	102	3'-9"	B		
W	4	20	3'-5"	20	3'-5"	B		
Y	6	2	49'-0"	2	54'-0"	S		

QUANTITIES - ONE BEAM

	50' BM	55' BM	
Concrete, Class "X"	4.8	5.3	CY
Reinforcing Steel	569	618	Lbs.
Prestressing Cables	2,000	2,200	L.F.
Struct. Steel	2 3/17	3 3/10	Lbs.

① Includes Sole Plate Assemblies & Bearing Assemblies  
 ② Includes 17 Lbs. for Boosters (Approx. Ave. Wt. per Bm.)  
 ③ Includes 10 Lbs. for Boosters (Approx. Ave. Wt. per Bm.)  
 Notes:

The price bid for Prestressed Concrete Beams shall include S.R. Cables, sole plate assemblies, bearing assemblies (including shims & booster B's) reinforcing steel, lifting devices, and all other material (except anchor bolt assemblies) complete in place.

*Partial Payment for Prestressed Concrete Beams:*  
When prestressed concrete beams are delivered to the bridge site, the Engineer will enter 80% of the contract unit price on the current estimate, and after erection 100% of the contract unit price. Such percentages shall be subject to the usual 10% retainage.

The prestressed beams must be always maintained in an upright position. When beams are handled they shall be lifted by devices provided at ends of beams. A suggested lifting device may utilize a 2" dia. pipe with a 1/2" Dia. mild steel pin through the end block located approximately  $\frac{1}{3}$  to  $\frac{2}{3}$  the depth of the beam below the top. Other types of lifting devices may be used provided they meet with the approval of the Engineer. Pick-up points must be within the extent of the end blocks. When being stored, care must be taken to eliminate interior supports which would cause negative moments.

Note that a total force of 14" is required in each cable at the time of casting. Therefore if the draped cables are made to assume the draped position by first anchoring the ends at their final location and then depressing the midpoint to its final location, the tensioning load required on the cable in the initial (horizontal) position will be 12,726 lbs. for the 50' Beam and 12,956 lbs. for the 55' Beam. The vertical load required to depress each cable to its final location will be 960 lbs. for the 50' Beam and 870 lbs. for the 55' Beam. All cables which are to remain horizontal must be tensioned to 14" each.

Required draping forces shown above are for single, isolated beam pulls. For longer length setups adjustments must be made for the additional cable lengths.

The initial stress in all cables after draping shall be 14,000 lbs. The hold-down device shall be rounded to a min. radius of  $\frac{1}{2}$ ". If a plate is used it shall have a minimum thickness of  $\frac{3}{8}$ ".

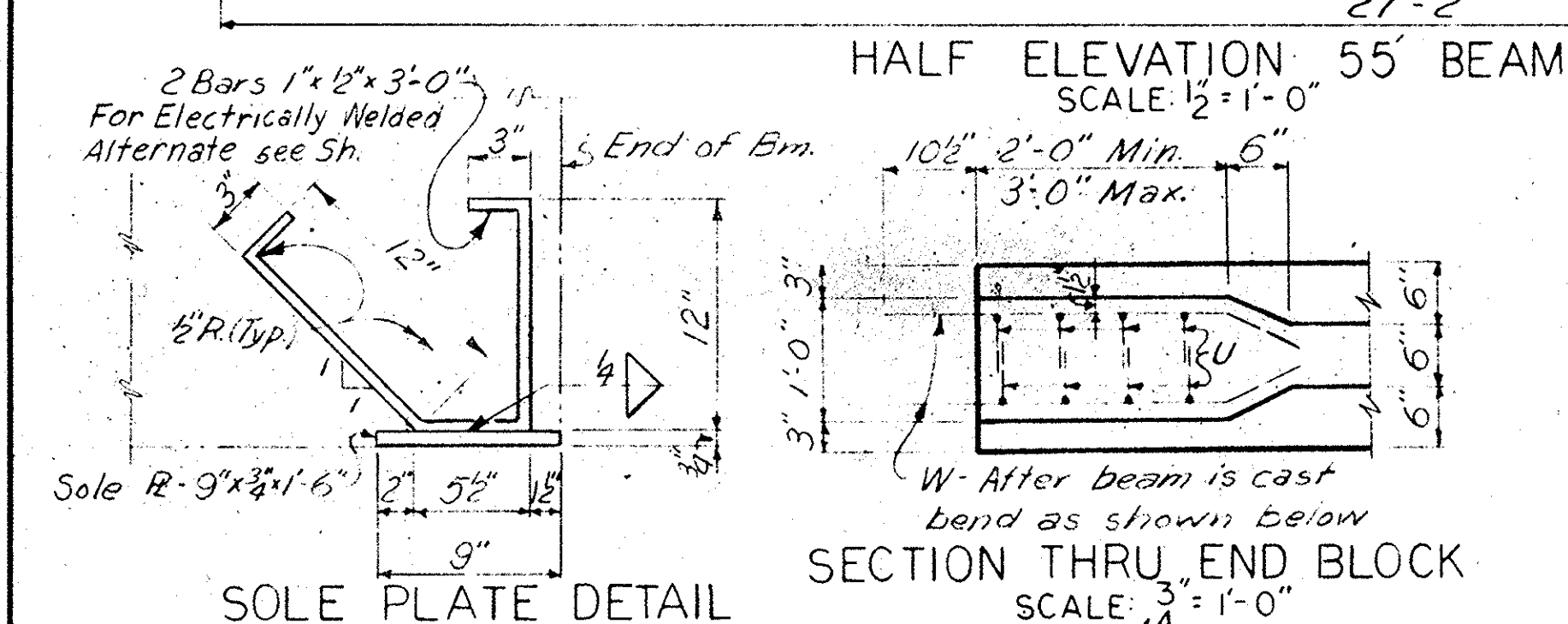
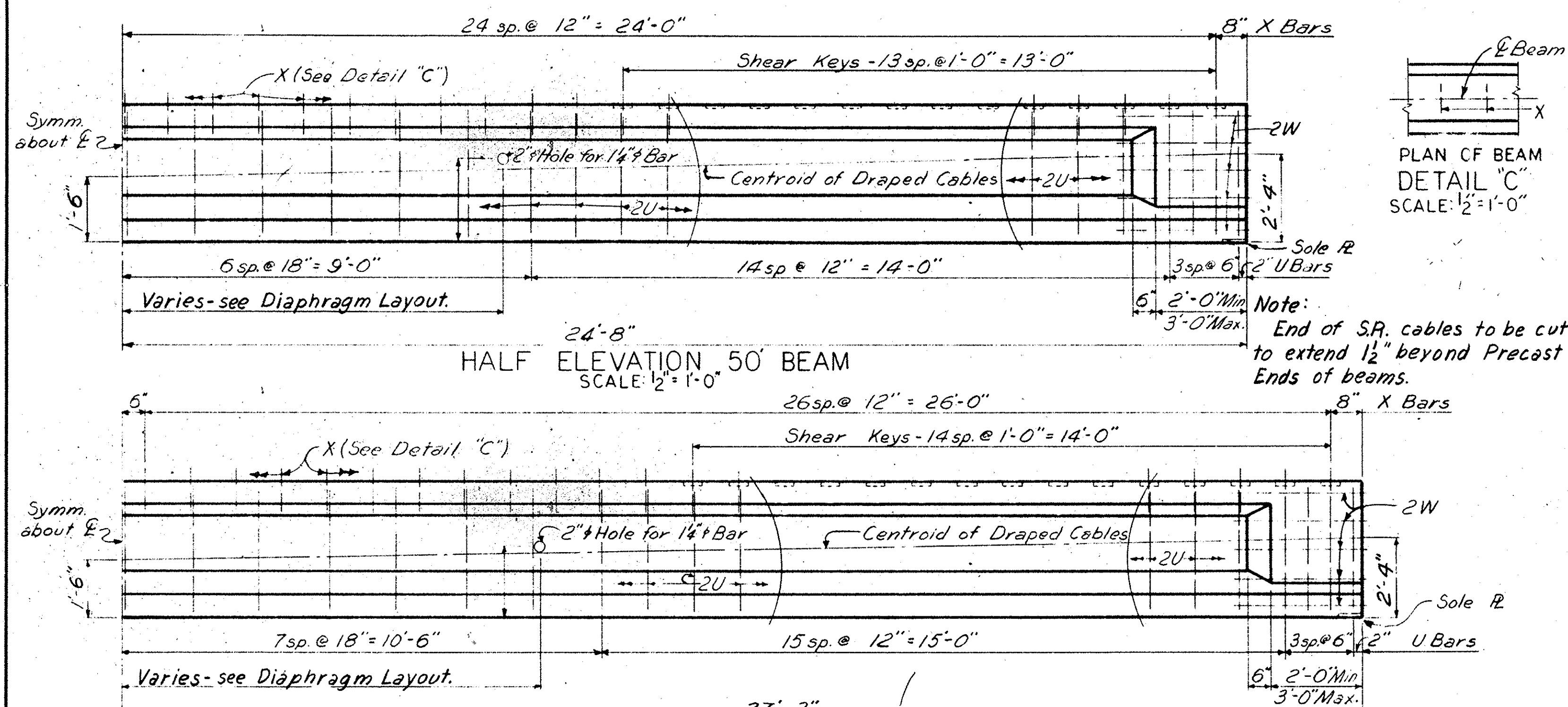
Note that the holes for diaphragm rods must be located as shown on plans. The holes shall be formed with a 2" inside dia. pipe. It may be necessary to spread the strands slightly in order to locate the pipe in the correct position. Pipe to be wired securely to strands.

Concrete in Prestressed Beams shall be class "X" as described in the Special Provisions.

Reinf. steel bars projecting from top of prestressed concrete beam are to be shifted to clear 10"x10" post holes. See Sp. No 24.  
Slab steel to be cut or bent in field to clear 10"x10" post holes.

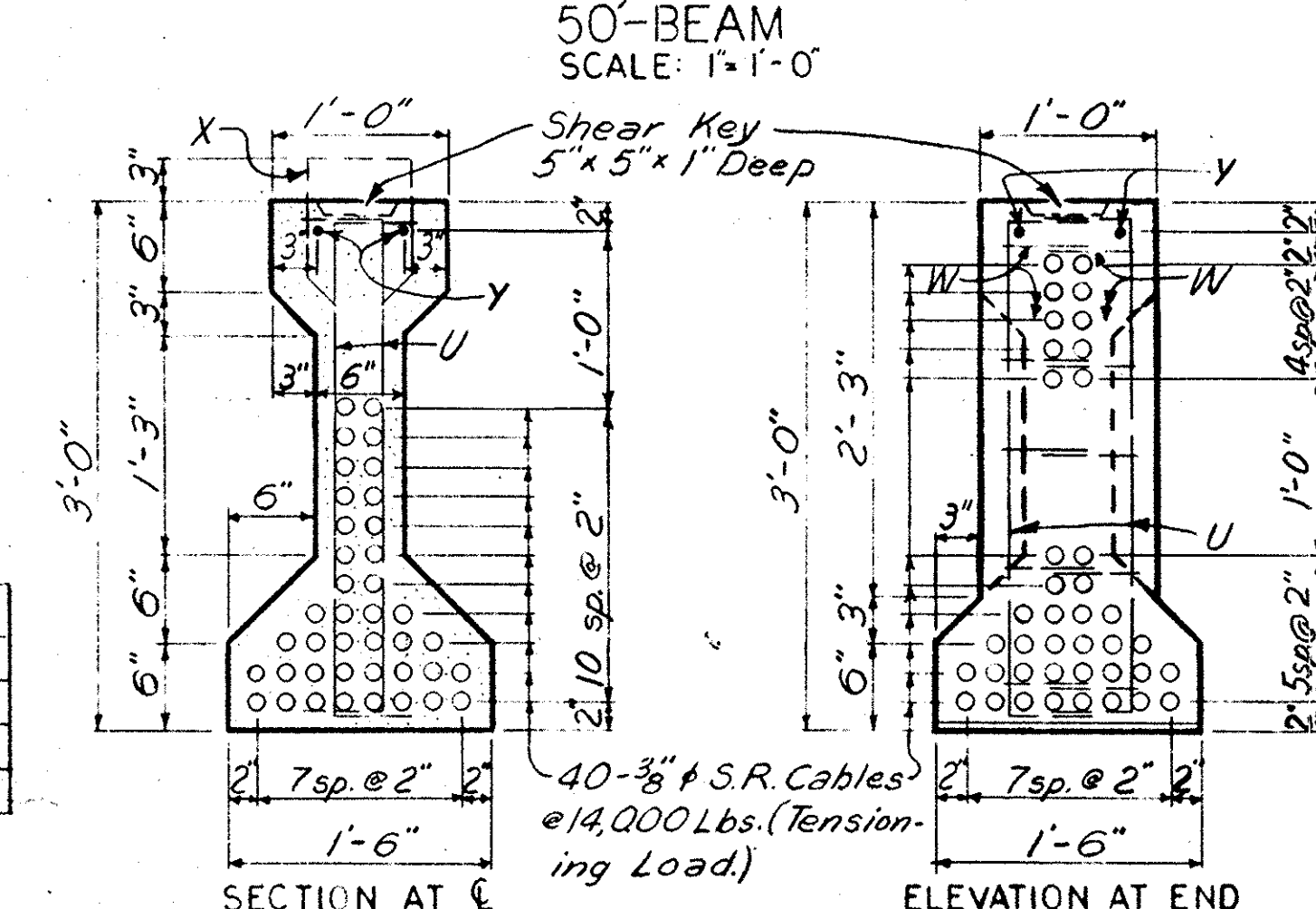
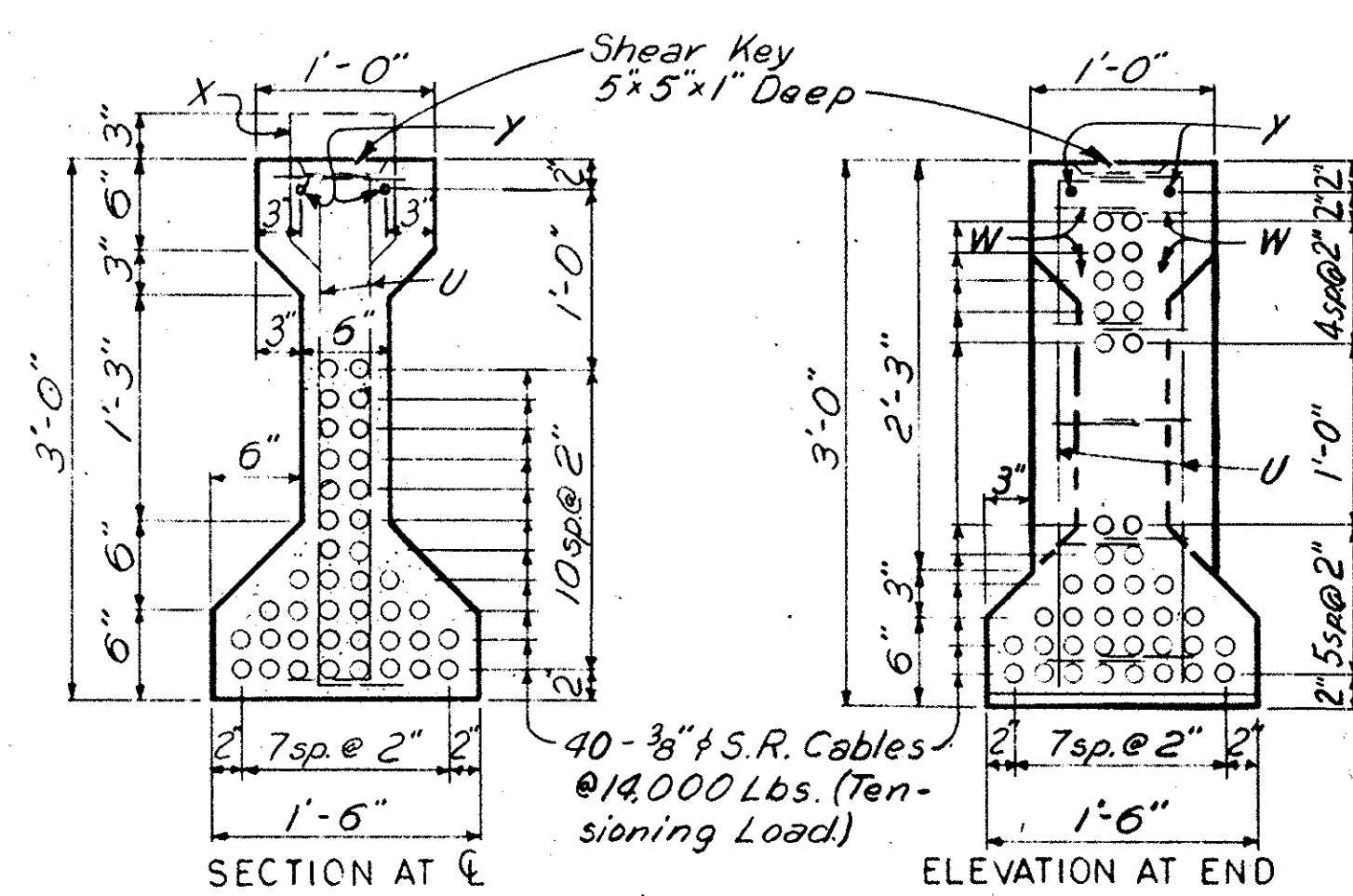
*This sheet to accompany Sh. No. 22, 23, & 24.*

REV.			S.C. STATE HIGHWAY DEPARTMENT			
REV.			BRIDGE DIVISION			
REV.			COLUMBIA S.C.			
REV.			50' & 55' PRESTRESSED BEAMS			
REV.			FOR SPANS 7 THRU 13			
REV.	WHM	BAM	FOR OVERPASS OVER			
REV.			R.R. TO S.V.C. CHEM. CO.			
REVIEWED			IN CHARGE			
QUAN.	WHM	RW	DOCKET NO.	COUNTY	ROUTE NO.	DATE
DR.			10.52.1	CHARLESTON	I-26	4-63
DES.	DDP	RWH	APPROVED BY		APPROVED BY	
	From	For	[Signature]		[Signature]	
	BY	CHKD	BRIDGE DESIGN & PLANS ENGINEER		BRIDGE ENGINEER	

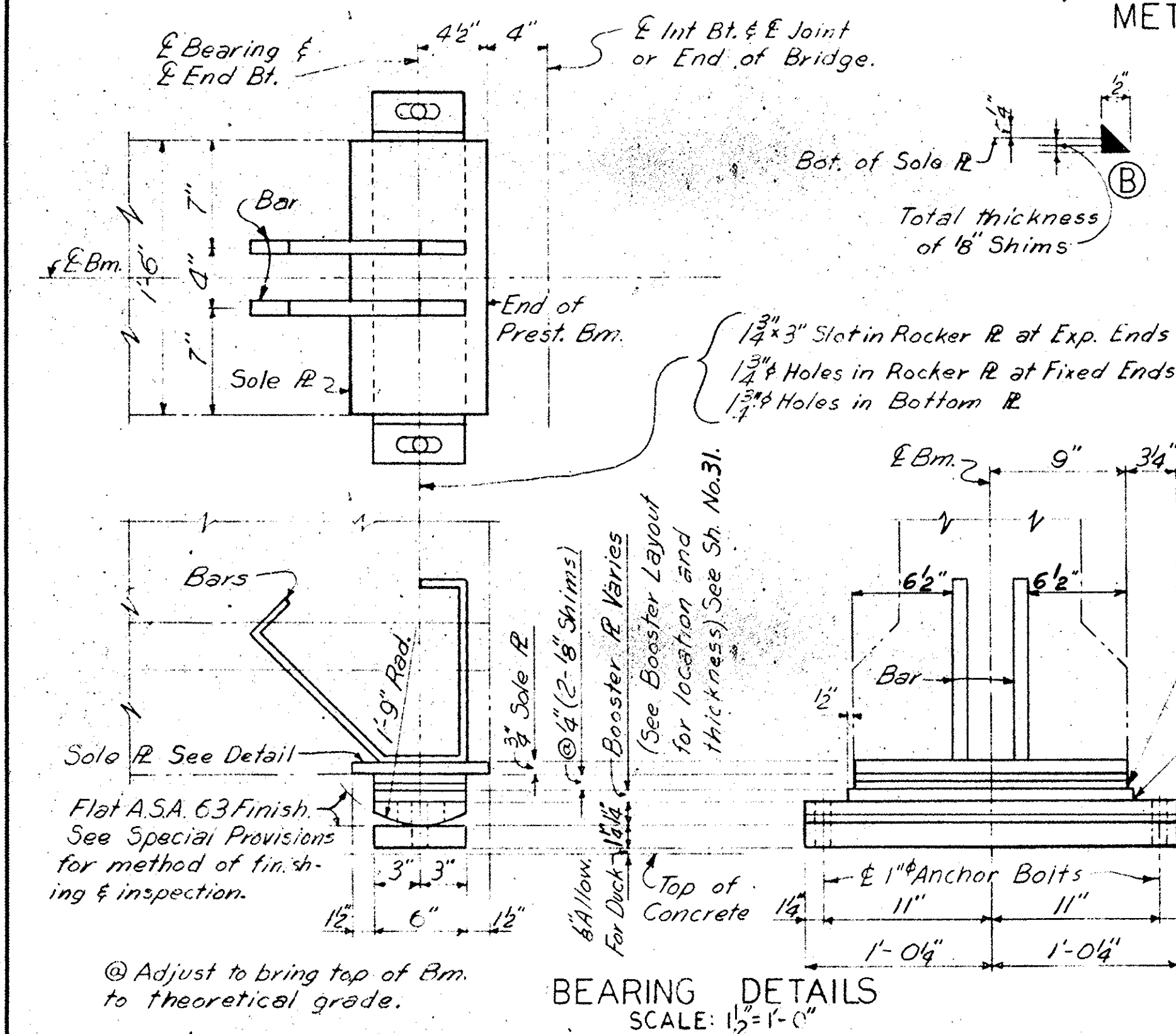


BEAM DEFLECTION AND CAMBER		
	50' Span	55' Span
Est. Defl. top surface of Bm. when cables are released	2" up	2" up
Est. Defl. top surface of Bm. due to slab Wt. when poured	16 in.	12 in.
Required camber to top of Bm. at $\frac{1}{2}$ span.	0	0

Note: Top surface of Brm. to be finished off level.



FOR UN-SKEWED SPANS  
METHOD OF BENDING W-BARS  
SCALE:  $\frac{3}{4}'' = 1'-0''$



Hand-drawn structural layout of a bridge deck. The drawing shows a plan view with three spans: 50' Span, 55' Span, and 50' Span. Dimensions for each span are given in feet and inches. Reinforcement details include beams (Bm.), diaphragms (Diaph.), and tie bars. Notes specify the placement of reinforcement and the use of bent-up bars.

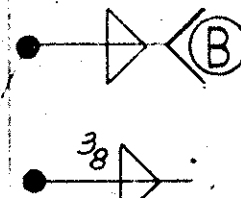
Span	Dimensions	Notes
50' Span	16'-3"	Typ. all beams this side &
55' Span	18'-3"	
50' Span	16'-0"	Typ. all beams this side &
55' Span	17'-0"	
50' Span	16'-3"	Typ. all beams this side &
55' Span	19'-9"	

Reinforcement details and notes:

- $\pm$  Bm.
- $\pm$  Bm.
- ridge & Bm. on holes for
- 1'-6"
- 1'-6"
- $\pm$  Diaph. & Tie Bars. -  $1\frac{1}{4}" \phi \times 49'-0"$
- $\pm$  Diaph. & Tie Bars. -  $1\frac{1}{4}" \phi \times 49'-0"$
- $\pm$  Bm.
- $\pm$  Bm.
- $\pm$  Bent.
- $\pm$  Bent.

Span	Dimensions	Notes
50' Span	17'-9"	Typ. all beams this side &
55' Span	19'-9"	
50' Span	16'-0"	Typ. all beams this side &
55' Span	17'-0"	
50' Span	16'-3"	Typ. all beams this side &
55' Span	18'-3"	

INTERIOR DIAPHRAGM LAYOUT  
TYP ALL 50' & 55' UN-SKEWED SPANS



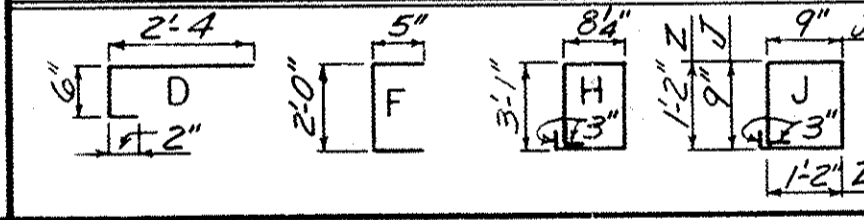


REINFORCING STEEL SCHEDULE

MARK	SIZE	D	NO. REQD.	6'-0" SPAN LENGTH	NO. REQD.	LENGTH
A <sub>1</sub>	5	S	282	54'-1"		
A <sub>2</sub>	5	S	158	48'-4"		
A <sub>3-55</sub>	5	S	2 Ea	45'-6 1/2"		
A <sub>56</sub>	5	S	6	Varies 8 1/2"		
A <sub>57-122</sub>	5	S	2 Ea	to 6'-7"		
A <sub>123</sub>	5	S	6	Varies 8 1/2"		
B <sub>1</sub>	5	S	4	6'-0"		
B <sub>2-13</sub>	5	S	28 Ea	32'-6"		
B <sub>14</sub>	5	S	8	18'-11" to 44'-7"		
C	5	S	122	Varies 2'-4"		
D	4	B	92	44'-10"		
E <sub>1</sub>	4	S	6	0'-10"		
E <sub>2</sub>	4	S	12	3'-0"		
F	4	B	108	32'-6"		
G <sub>1</sub>	4	S	12	44'-3"		
G <sub>2</sub>	4	S	30	2'-10"		
H	4	B	34	6'-6"		
I	2	B	68	7'-3"		
K <sub>1</sub>	5	S	2	3'-6"		
K <sub>2</sub>	5	S	2	60'-1"		
K <sub>3</sub>	5	S	1	53'-5"		
K <sub>4</sub>	5	S	1	52'-0"		
Z	5	B	20	46'-3"		
Z	5	B	20	5'-2"		

Wire Mesh	6'-0"
BB 1" H	Reqd 2,440'
BBU 1 1/2" H	Reqd 2,135'

BENDING DETAILS



QUANTITIES

ITEM	6' Span
Concrete - Class "A" ④	C.Y. 162.5
Reinforcing Steel ④	Lbs. 46,103
Structural Steel	Lbs. 170,200
Fabricated Metal Handrail	L.F. 122

- ① Does not include 5.4 CY for Post & Parapet  
② Includes 1,570 Lbs. for Bolsters.  
③ Includes 2,866 Lbs. for Stud Shear Connectors  
④ 520 Lbs for Bronze Exp. Plates  
⑤ Does not include Conc. & Reinf. Steel for Light Brackets

SCALE: 3/16" = 1'-0", OR AS NOTED

S.C. STATE HIGHWAY DEPARTMENT  
BRIDGE DIVISION  
COLUMBIA S.C.

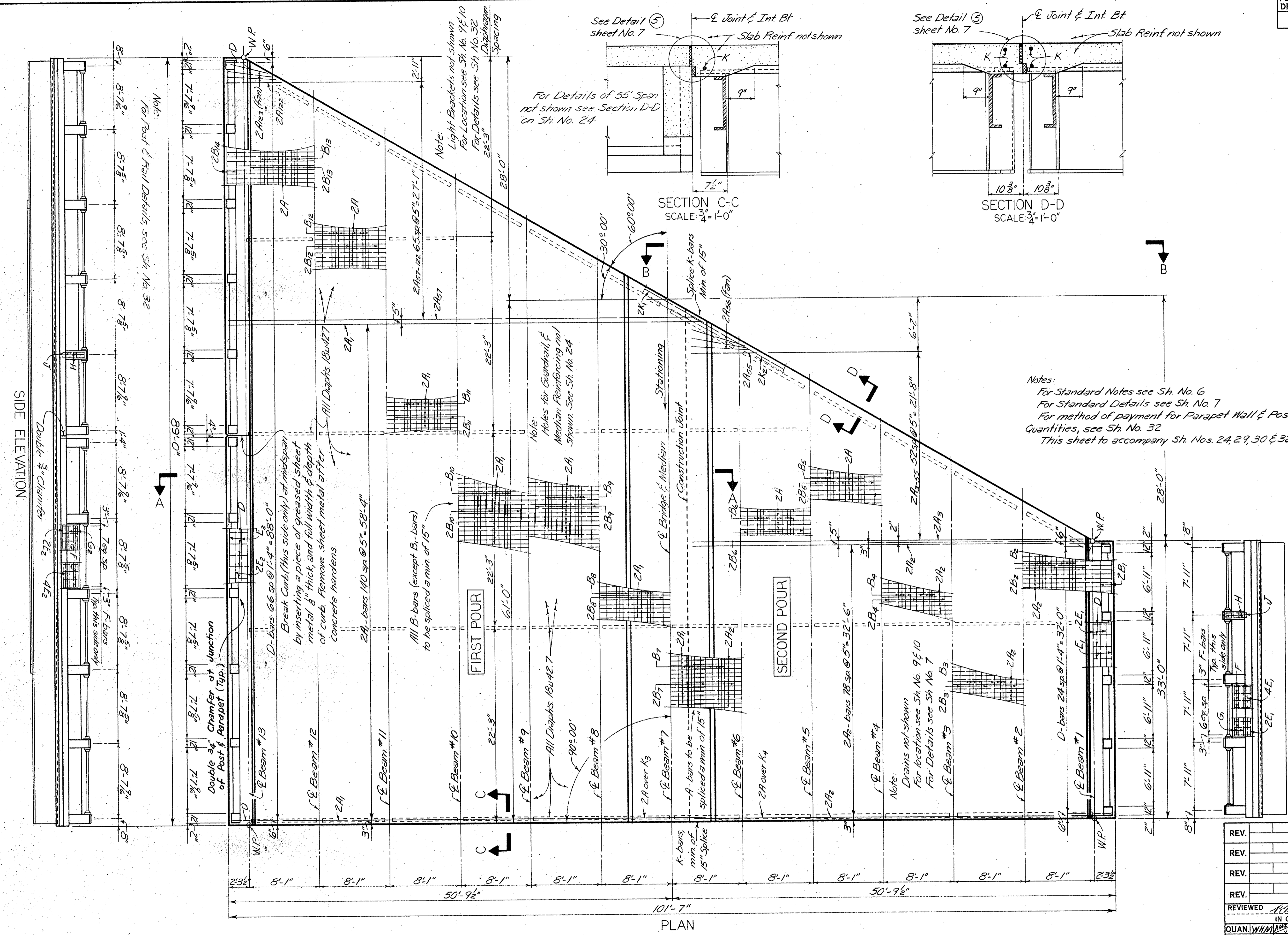
6'-0" SPAN SUPERSTRUCTURE  
FOR OVERPASS OVER

R.R. TO SVC. CHEM. CO.

DOCKET NO.	COUNTY	ROUTE NO.	DATE
10521.1	CHARLESTON	I-26	4-63

APPROVED BY [Signature] BRIDGE DESIGN & PLANS ENGINEER

APPROVED BY [Signature] BRIDGE ENGINEER



SIDE ELEVATION

SIDE ELEVATION

PLAN

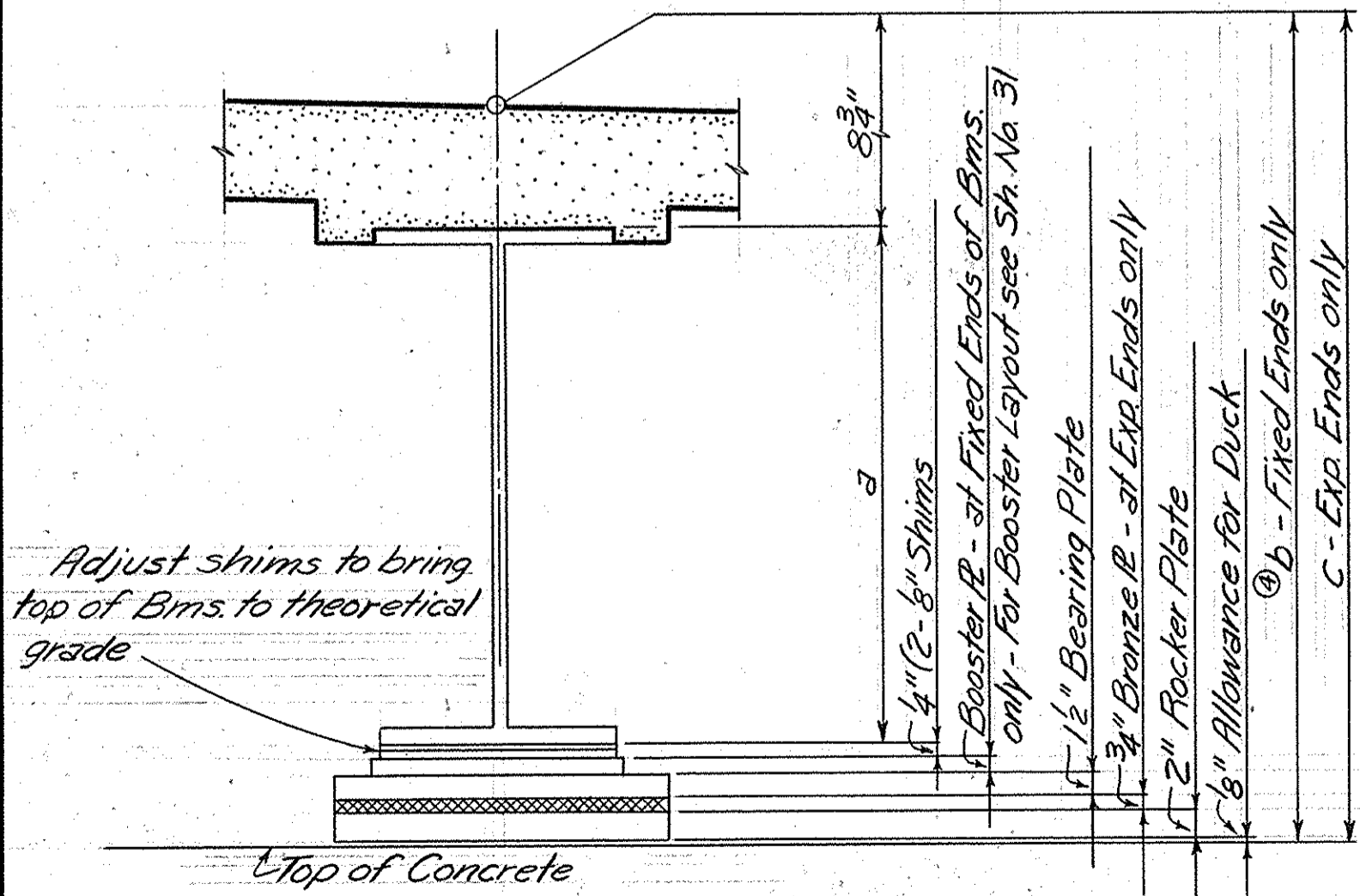
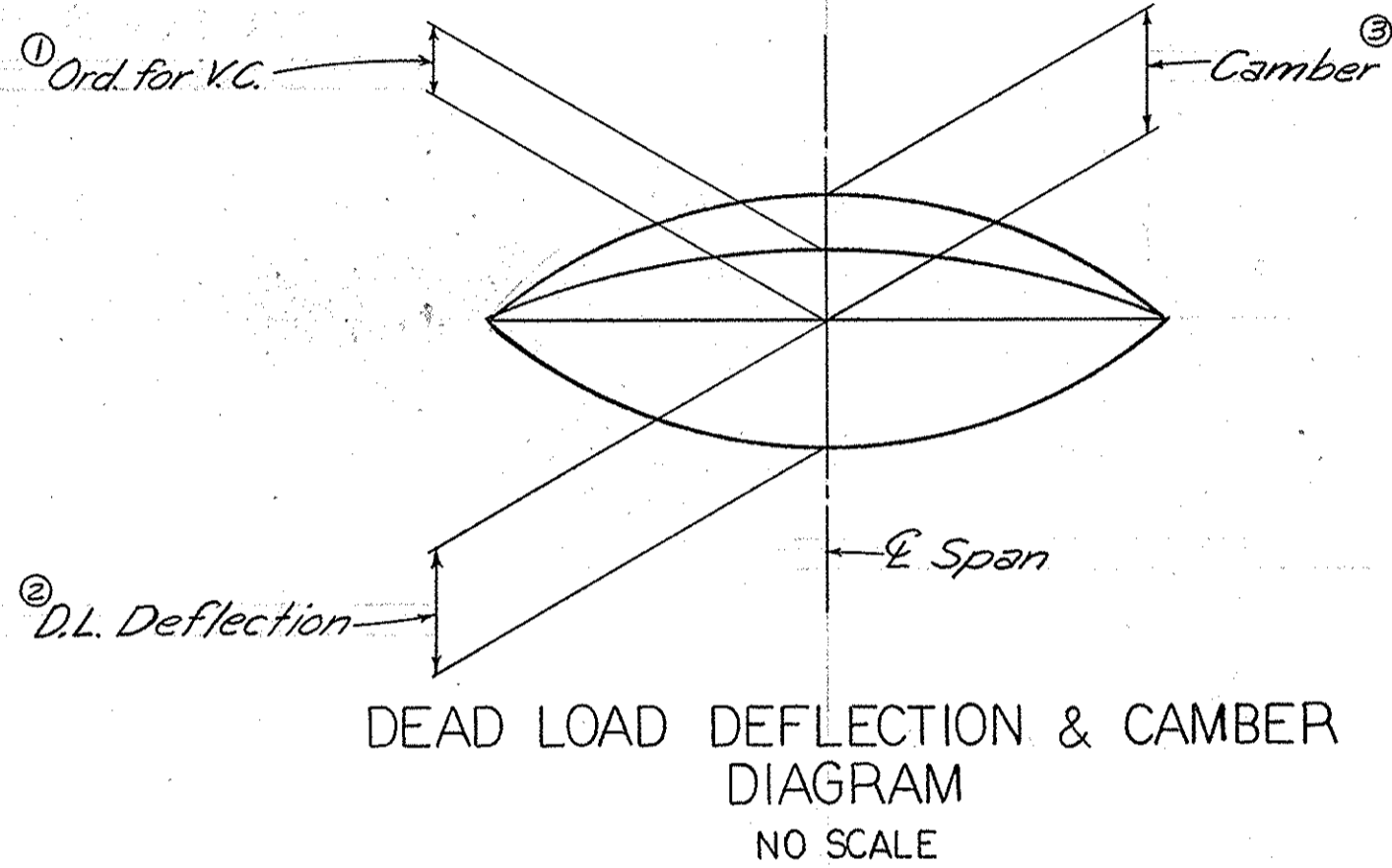


① Ord. for V.C.	
61'-0" Span	
Beam No.	Ord.
1	3/16"
2	3/16"
3	1/4"
4	5/16"
5	3/8"
6	1/2"
7	9/16"
8	5/8"
9	3/4"
10	7/8"
11	1 1/16"
12	1 1/8"
13	1 3/16"
89'-0" Span	
1-13	1 3/16"

② Camber	
Max total = ± 1/4"	
61'-0" Span	
Beam No.	Camber
1	1/4"
2	5/16"
3	9/16"
4	3/4"
5	1"
6	1 1/4"
7	1 5/8"
8	1 7/8"
9	2 1/4"
10	2 3/8"
11	3"
12	3 5/16"
13	3 3/4"
89'-0" Span	
Ext Bms.	3 5/8"
Int Bms.	3 15/16"

② D.L. Deflection															
61'-0" Span															
Beam Nos.	Bm. No. 1		Bm. No. 2		Bm. No. 3		Bm. No. 4		Bm. No. 5		Bm. No. 6		Bm. No. 7		
	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	
Bm. Diaph, etc.	0.14 1/4"	0"	0.15 1/4"	0"	0.15 1/4"	1/16"	0.15 1/4"	1/16"	0.15 1/4"	3/8"	0.16 1/4"	3/8"	0.17 1/4"	3/16"	
Slab	0.60 1/4"	1/16"	0.75 1/4"	1/8"	0.75 1/4"	3/16"	0.75 1/4"	5/16"	0.75 1/4"	7/16"	0.75 1/4"	9/16"	0.75 1/4"	3/4"	
Curb, Rail, etc.	0.22 1/4"	0"	0.22 1/4"	0"	0.22 1/4"	1/16"	0.22 1/4"	1/16"	0.22 1/4"	1/16"	0.22 1/4"	1/16"	0.22 1/4"	5/8"	
Totals	0.96 1/4"	1/16"	1.12 1/4"	1/8"	1.12 1/4"	5/16"	1.12 1/4"	7/16"	1.12 1/4"	3/8"	1.13 1/4"	3/4"	1.14 1/4"	1 1/16"	
Beam Nos.	Bm. No. 8		Bm. No. 9		Bm. No. 10		Bm. No. 11		Bm. No. 12		Bm. No. 13				
	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.	D.L.	D.L. Defl.			
Bm. Diaph, etc.	0.17 1/4"	3/16"	0.18 1/4"	1/4"	0.21 1/4"	3/8"	0.23 1/4"	7/16"	0.27 1/4"	1/2"	0.27 1/4"	5/8"			
Slab	0.75 1/4"	15/16"	0.75 1/4"	1 1/16"	0.75 1/4"	1 3/16"	0.75 1/4"	1 5/8"	0.75 1/4"	1 7/8"	0.60 1/4"	1 7/16"			
Curb, Rail, etc.	0.22 1/4"	1/8"	0.22 1/4"	3/16"	0.22 1/4"	3/16"	0.22 1/4"	1/4"	0.22 1/4"	1/4"	0.22 1/4"	3/8"			
Totals	1.14 1/4"	1 1/4"	1.15 1/4"	1 1/2"	1.18 1/4"	1 3/4"	1.20 1/4"	2 1/16"	1.24 1/4"	2 1/4"	1.09 1/4"	2 7/16"			

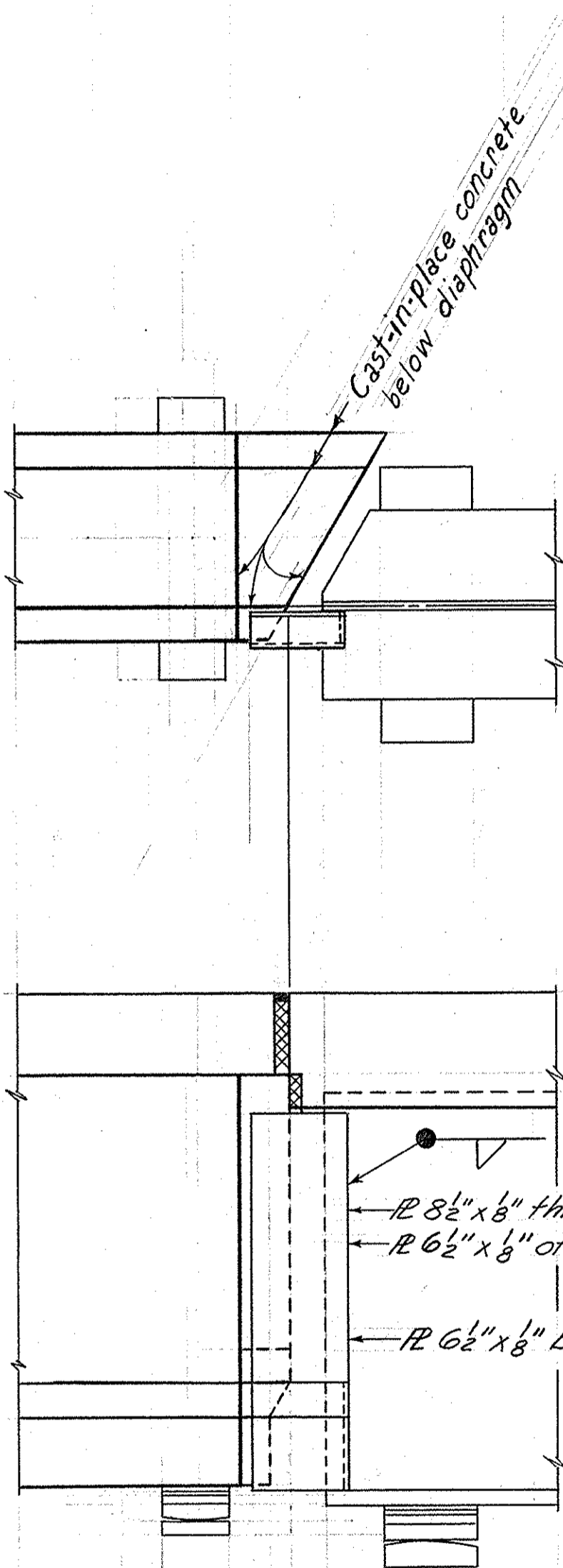
② D.L. Deflection			
89'-0" Span			
	D.L.	D.L. Defl.	
Ext Bm.	Bm. Diaph, etc.	0.27 1/4"	5/8"
	Slab	0.60 1/4"	1 7/16"
	Curb, Rail, etc.	0.22 1/4"	3/8"
	Total	1.09 1/4"	2 7/16"
Int Bm.	Bm. Diaph, etc.	0.28 1/4"	1 1/16"
	Slab	0.75 1/4"	1 3/4"
	Curb, Rail, etc.	0.22 1/4"	5/16"
	Total	1.25 1/4"	2 3/4"



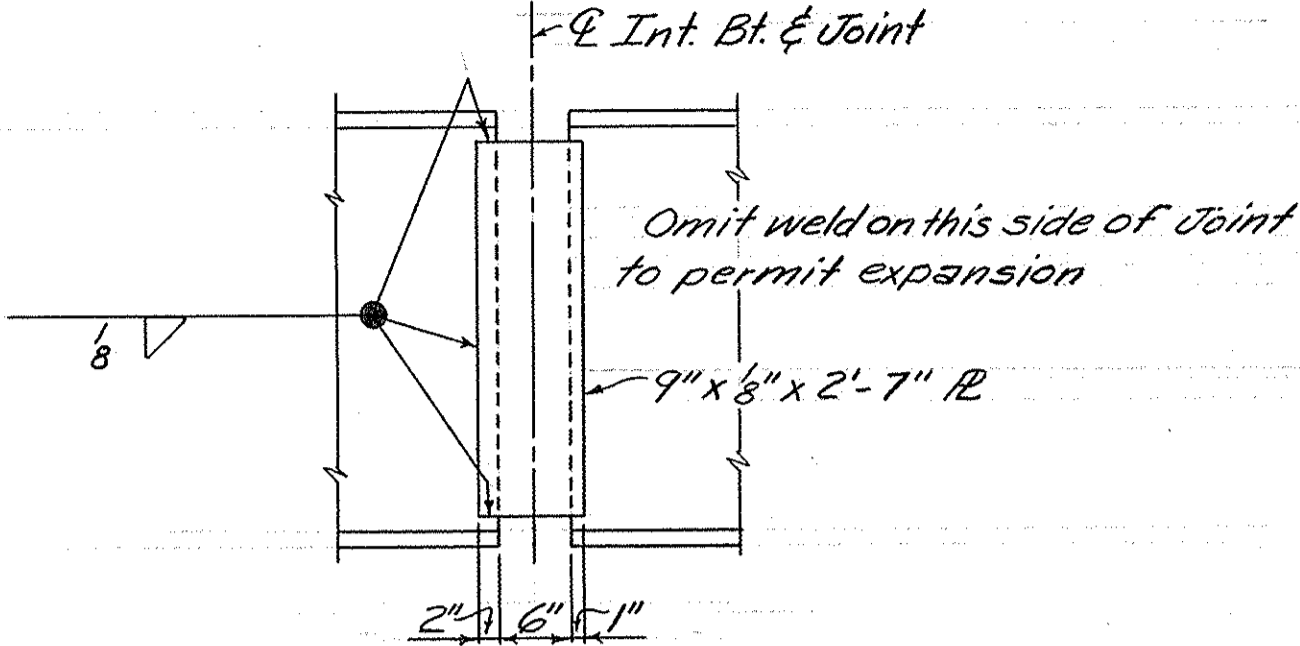
SKETCH FOR COMPUTING BEAM SEAT ELEVATIONS AT  $\frac{1}{4}$  BEARING  
SCALE: 1" = 1'-0"

DIMENSIONS			
61'-0" Span			
Beam Nos.	a	b	c
1 thru 5, 7 & 8	2'-11 1/2"	4'-0 1/8"	4'-0 3/8"
6, 9, 12 & 13	2'-11 3/8"	4'-0 1/2"	4'-1 1/4"
10	3'-0 1/8"	4'-0 3/4"	4'-1 1/2"
11	3'-0 1/2"	4'-1 1/8"	4'-1 3/8"
89'-0" Span			
Beam Nos.	a	b	c
1-13	2'-11 3/8"	4'-0 1/2"	4'-1 1/4"

④ Does not include Booster Plate thickness



DETAILS OF PLATE LOCATED ON OUTSIDE OF EXTERIOR BEAMS AT INTERIOR BENT NO. 2, 3, 5 & 7  
SCALE: 1" = 1'-0"

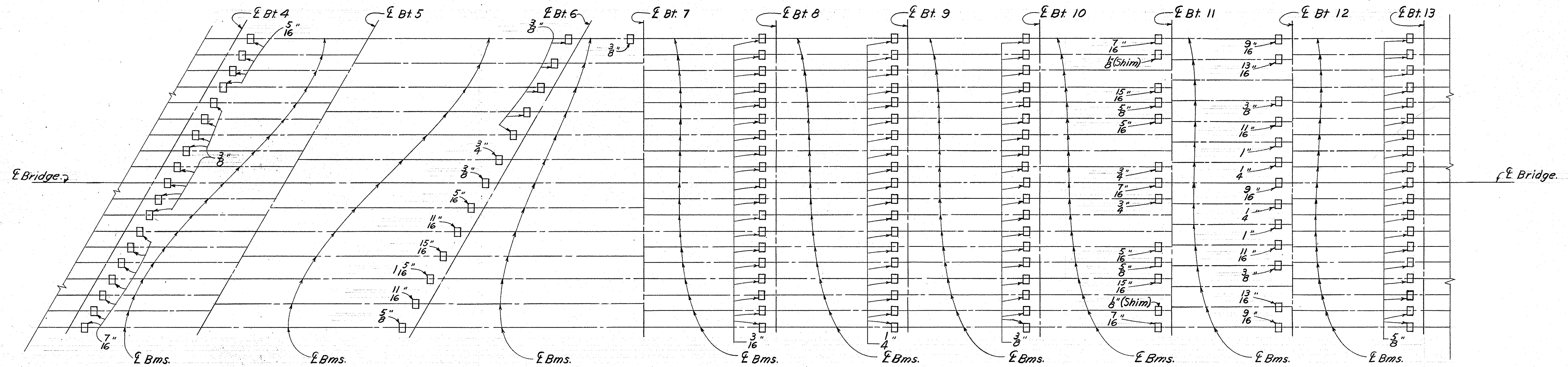


DETAILS OF PLATE LOCATED ON OUTSIDE OF EXTERIOR BEAMS AT INTERIOR BENT NO. 6  
SCALE: 3/4" = 1'-0"

Notes:  
For Standard Notes see Sh. No. 6  
For Standard Details see Sh. No. 7  
This sheet to accompany Sh. Nos. 27, 28 & 29

REV.		Scale as noted	
REV.		S. C. STATE HIGHWAY DEPARTMENT	
REV.		BRIDGE DIVISION	
REV.		COLUMBIA S. C.	
REVIEWED		61'-0" & 89'-0" SPAN	
QUAN.		SUPERSTRUCTURE DETAILS	
TR.		FOR OVERPASS OVER	
DES.		R.P. TO SVC. CHEM. CO.	
BY		DOCKET NO. COUNTY ROUTE NO. DATE	
		10521.1 CHARLESTON I-26 5-63	
		APPROVED BY	
		BRIDGE DESIGN & PLANS ENGINEER	
		APPROVED BY	
		BRIDGE ENGINEER	

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	CHARLESTON	105211	F-26	31	32



BOOSTER LAYOUT  
NO SCALE

REV.			S. C. STATE HIGHWAY DEPARTMENT			
			BRIDGE DIVISION			
REV.			COLUMBIA S. C.			
REV.			BOOSTER LAYOUT			
REV.			FOR OVERPASS OVER			
REVIEWED	<i>RMH</i>		R. R. TO SVC. CHEM. CO.			
	IN CHARGE					
QUAN.			DOCKET NO.	COUNTY	ROUTE NO.	DATE
TR.			10. 52.11	CHARLESTON	I-26	6-63
DR.	WHM	BAM 663	APPROVED BY		APPROVED BY	
DES.			<i>W. C. Crum</i>		<i>W. G. Crum</i>	
	BY	CHK'D DATE	BRIDGE DESIGN & PLANS ENGINEER		BRIDGE ENGINEER	

FED. RD. DIV. NO.	STATE	COUNTY	DOCKET NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHARLESTON	10.521.1	I-26	32	32

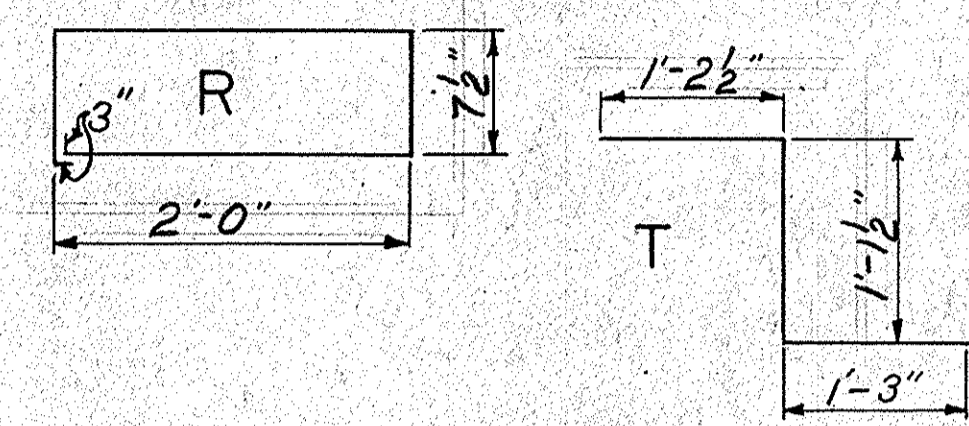
FOR USE WITH SAFETY CURBS

Parapet = 0.03704 C.Y./ft  
1-End Post = 0.584 C.Y.  
1-Int. Post = 0.093 C.Y.

### LIGHT BRACKET REINFORCING STEEL SCHEDULE

MARK		ONE BRACKET					
		NO.	REQD. LENGTH	NO.	REQD. LENGTH	NO.	REQD. LENGTH
R	5	B	7	5'-9"			
S	6	S	8	4'-3"			
T	5	B	4	3'-7"			

### BENDING DETAILS

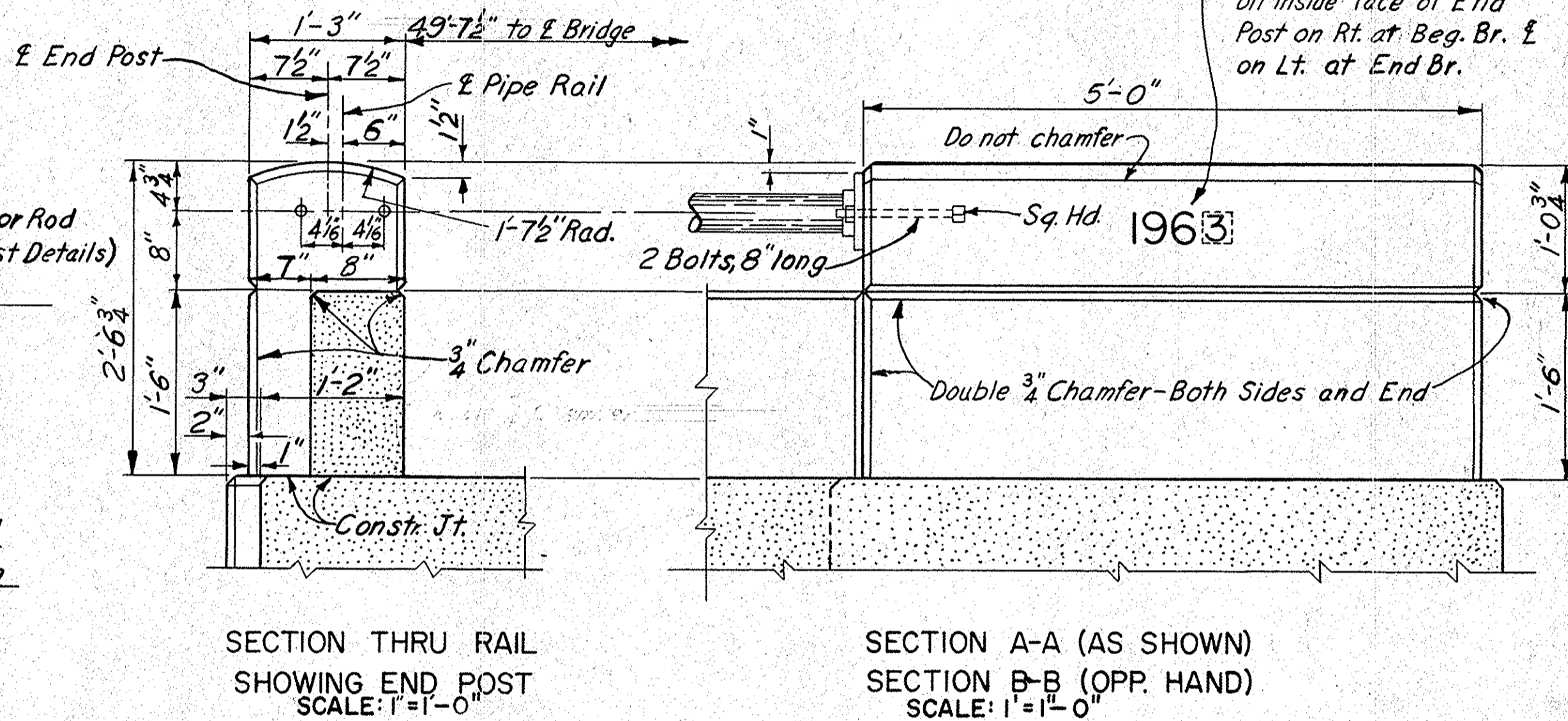
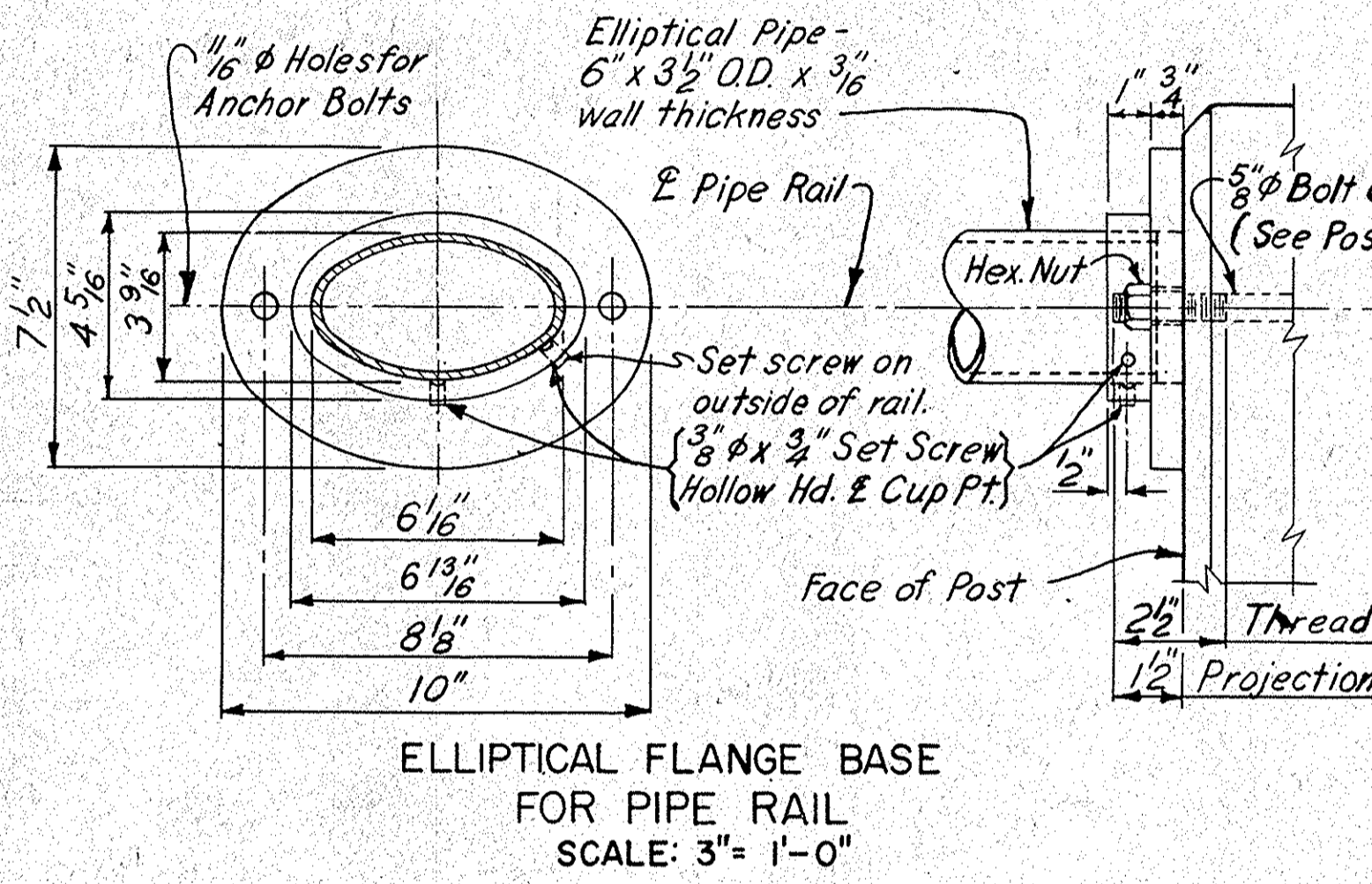
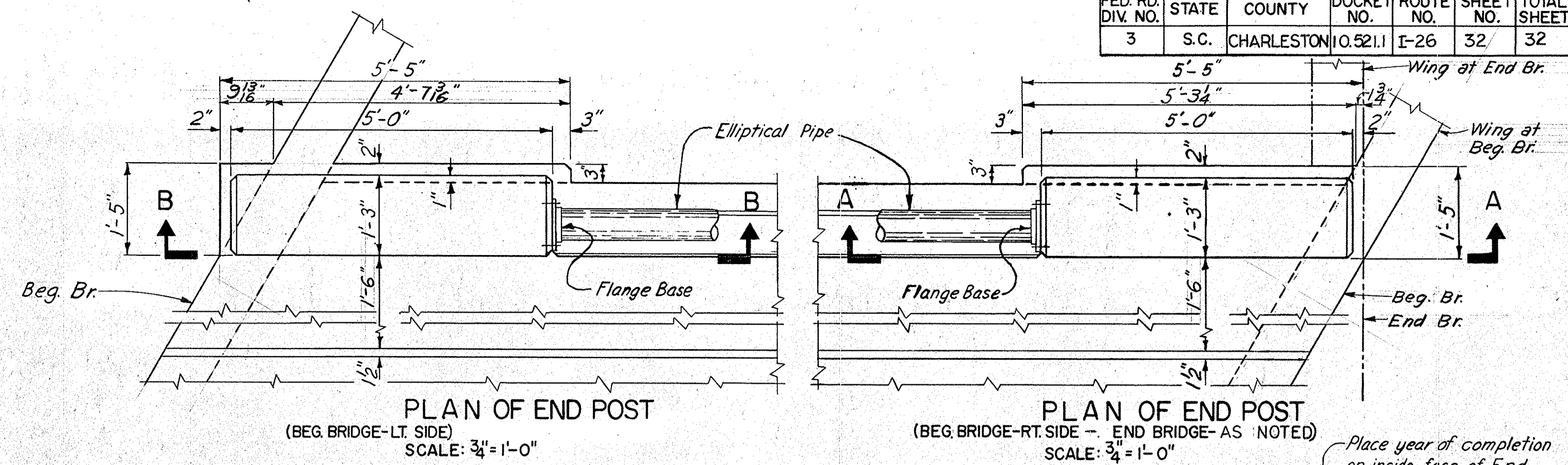


### ESTIMATED QUANTITIES (ONE BRACKET)

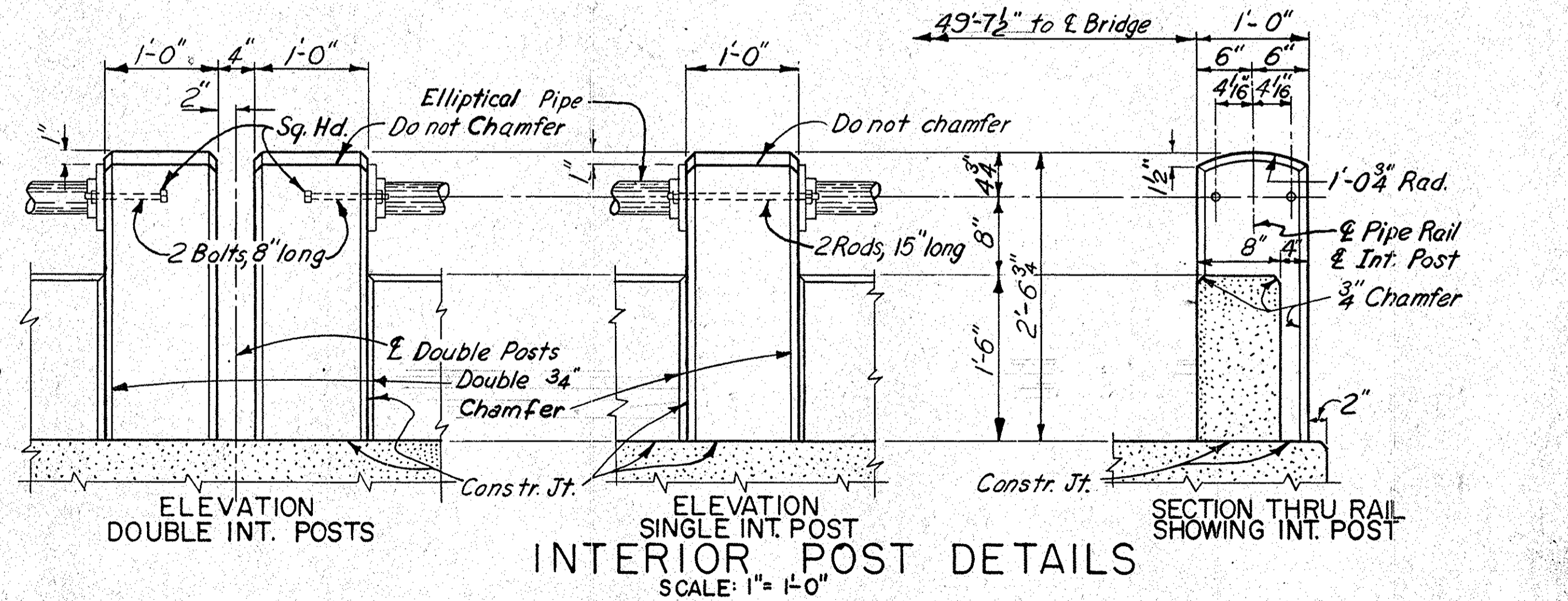
	AT BEG. BR.	INTERIOR	AT END BR.
CONCRETE - CL. "A", C.Y.	0.10	0.15	0.08
REINF. STEEL, LBS.	108.0	108.0	108.0

NOTE:  
For location of Light Brackets see Sh. No. 9 & 10.

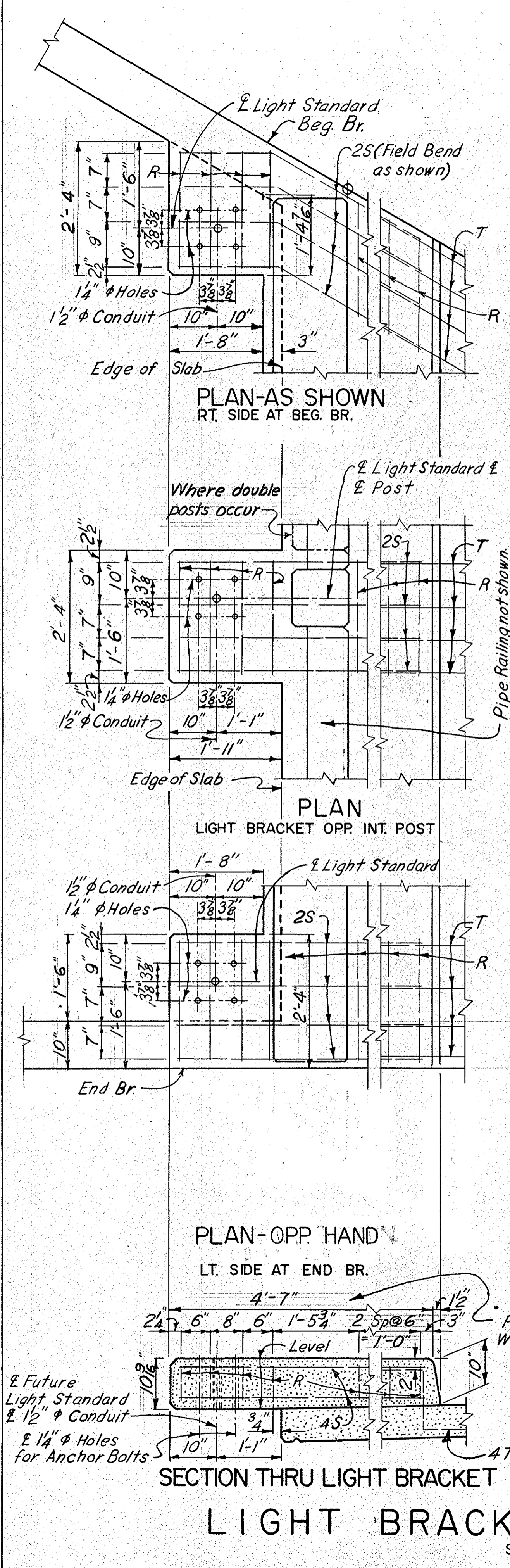
NOTES:  
For Standard Notes see Sh. No. 6.  
No construction joints other than those shown shall be permitted.  
All castings, extruded tube and shims shall be aluminum alloy and all bolts, nuts and set screws shall be stainless steel. See "Special Provisions" for Fabricated Metal Handrailing (Aluminum).  
The unit price for Fabricated Metal Handrailing shall include all that portion of the Railing above the top of Safety Curb or Sidewalk except that all reinforcing steel shall be measured and paid for at the unit price bid for that item.



### END POST DETAILS



### HANDRAIL DETAILS



### LIGHT BRACKET DETAILS

SCALE: 3/4" = 1'-0"

SCALE AS NOTED

REV.			S. C. STATE HIGHWAY DEPARTMENT			
REV.			BRIDGE DIVISION			
REV.			COLUMBIA, S. C.			
REV.	WHM	BAM 5-63	DETAILS OF HANDRAIL AND LIGHT BRACKETS			
	FOR	DK 10.521.1				
REV.	DR. R. R. W. R.	4-63	OVERPASS OVER R.R. TO S.V.C. CHEM. CO.			
	FROM	SDWK RAIL				
REVIEWED	[Signature]					
	IN CHARGE					
QUAN.	WHM	R. WH 7-63	DOCKET NO.	COUNTY	ROUTE NO.	DATE
TR.	DR. R. R. W. R.	3-63	10.521.1	CHARLESTON	I-26	5-63
DES.	DR. APD.	EAS 1-61	APPROVED BY	APPROVED BY		
	BY	CHK'D	DATE	DATE		
			BRIDGE DESIGN & PLANS ENGINEER		BRIDGE ENGINEER	