

**BILL OF MATERIALS FOR 3 SPANS OVER**

ITEM	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	TOP CHORD	100	FT	
2	BOTTOM CHORD	100	FT	
3	DIAGONAL BRACING	100	FT	
4	VERTICAL BRACING	100	FT	
5	TRANSVERSE BRACING	100	FT	
6	POSTS	100	FT	
7	CONNECTORS	100	FT	
8	PLATES	100	FT	
9	ROD END PLATES	100	FT	
10	ROD END PLATES	100	FT	
11	ROD END PLATES	100	FT	
12	ROD END PLATES	100	FT	
13	ROD END PLATES	100	FT	
14	ROD END PLATES	100	FT	
15	ROD END PLATES	100	FT	
16	ROD END PLATES	100	FT	
17	ROD END PLATES	100	FT	
18	ROD END PLATES	100	FT	
19	ROD END PLATES	100	FT	
20	ROD END PLATES	100	FT	

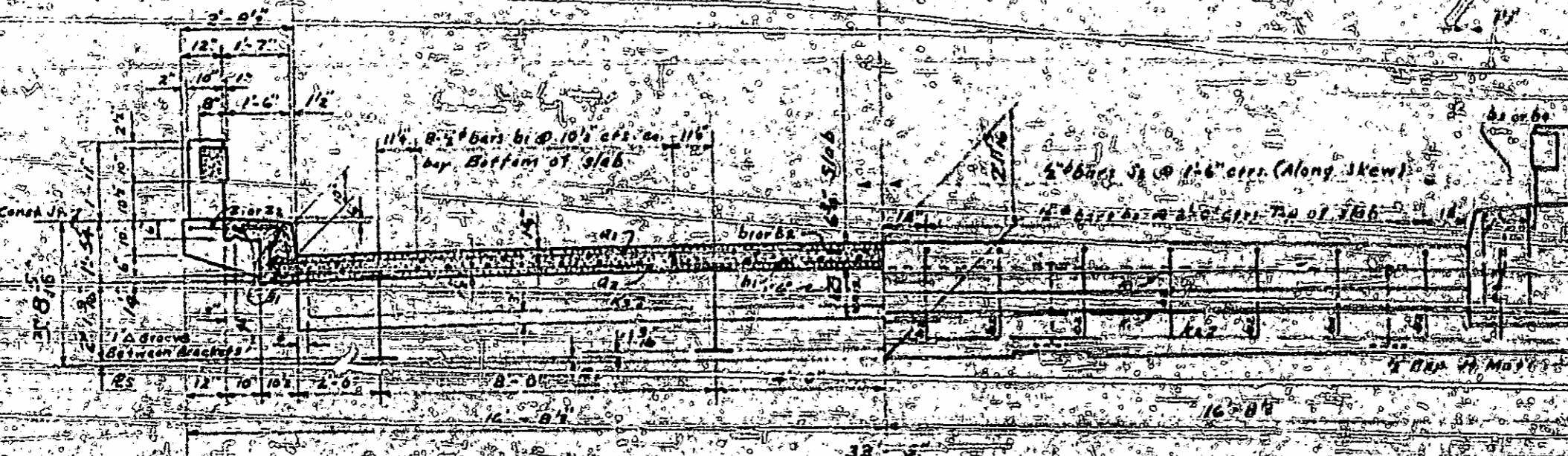
#38 PITT  
 PROJECT NO. 122  
 DIST. COUNTY  
 STATION 2012  
 SPAN 100 FT  
 STATEWORKS COMMISSION  
 STANDARD  
 STEAM SUPERSTURCURE  
 WITH REEFOR GRILL  
 28 ROADWAY - PITT  
 OCT. 1900

**DRAIN DETAIL**  
REQUIRED: 96

NOTE: Drains may be either cast iron, standard weight galvanized steel, or on-site pipe.

**COPPER FLASHING**  
REQUIRED: 0 PCS. 10' x 30'

7 spaces @ 2'-0" = 14'-0"  
28'-0" Clear Roadway



**HALF TYPICAL SECTION**

**HALF END VIEW**

NOTE: All dimensions which are given in section and are affected by dead load deflections are dimensions at a bearing depth of slab between bearings shall be increased to compensate for Dead Load Deflection. Maximum Dead Load Deflection =  $\frac{E \cdot I \cdot \Delta}{100}$

Method A Notarproaling shall be placed on the fill face of the joints between substructure and superstructure. See Splice.

NOTE: At the contractor's option shop connection of 10" W. channels may be either welded or riveted. Using rivets field connection of diaphragms to beams shall be bolted using 1/2" turned bolts.

**SECTION C-C**

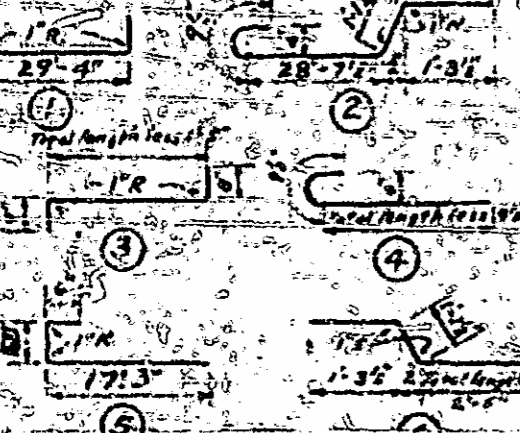
**SECT X-X**

**DETAIL DIAPHRAGMS CONNECTION**

**BILL OF MATERIAL FOR 8 SPANS @ 35'**

Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight
01	3/8"	4"	30.7'	2,958	0116	3/8"	4"	31.0'	3,000	0117	3/8"	4"	31.0'	3,000
02	3/4"	6"	31.10'	14,001	0118	3/4"	6"	31.10'	14,001	0119	3/4"	6"	31.10'	14,001
03	3/8"	4"	25.0'	925	0120	3/8"	4"	25.0'	925	0121	3/8"	4"	25.0'	925
04	3/8"	4"	20.5'	835	0122	3/8"	4"	20.5'	835	0123	3/8"	4"	20.5'	835
05	3/8"	4"	21.7'	820	0124	3/8"	4"	21.7'	820	0125	3/8"	4"	21.7'	820
06	3/8"	4"	23.0'	763	0126	3/8"	4"	23.0'	763	0127	3/8"	4"	23.0'	763
07	3/8"	4"	21.1'	704	0128	3/8"	4"	21.1'	704	0129	3/8"	4"	21.1'	704
08	3/8"	4"	19.4'	645	0130	3/8"	4"	19.4'	645	0131	3/8"	4"	19.4'	645
09	3/8"	4"	17.0'	596	0132	3/8"	4"	17.0'	596	0133	3/8"	4"	17.0'	596
10	3/8"	4"	15.5'	530	0134	3/8"	4"	15.5'	530	0135	3/8"	4"	15.5'	530
11	3/8"	4"	14.0'	471	0136	3/8"	4"	14.0'	471	0137	3/8"	4"	14.0'	471
12	3/8"	4"	12.0'	356	0138	3/8"	4"	12.0'	356	0139	3/8"	4"	12.0'	356
13	3/8"	4"	9.0'	300	0140	3/8"	4"	9.0'	300	0141	3/8"	4"	9.0'	300
14	3/8"	4"	7.0'	242	0142	3/8"	4"	7.0'	242	0143	3/8"	4"	7.0'	242
15	3/8"	4"	5.6'	184	0144	3/8"	4"	5.6'	184	0145	3/8"	4"	5.6'	184
16	3/8"	4"	3.9'	125	0146	3/8"	4"	3.9'	125	0147	3/8"	4"	3.9'	125

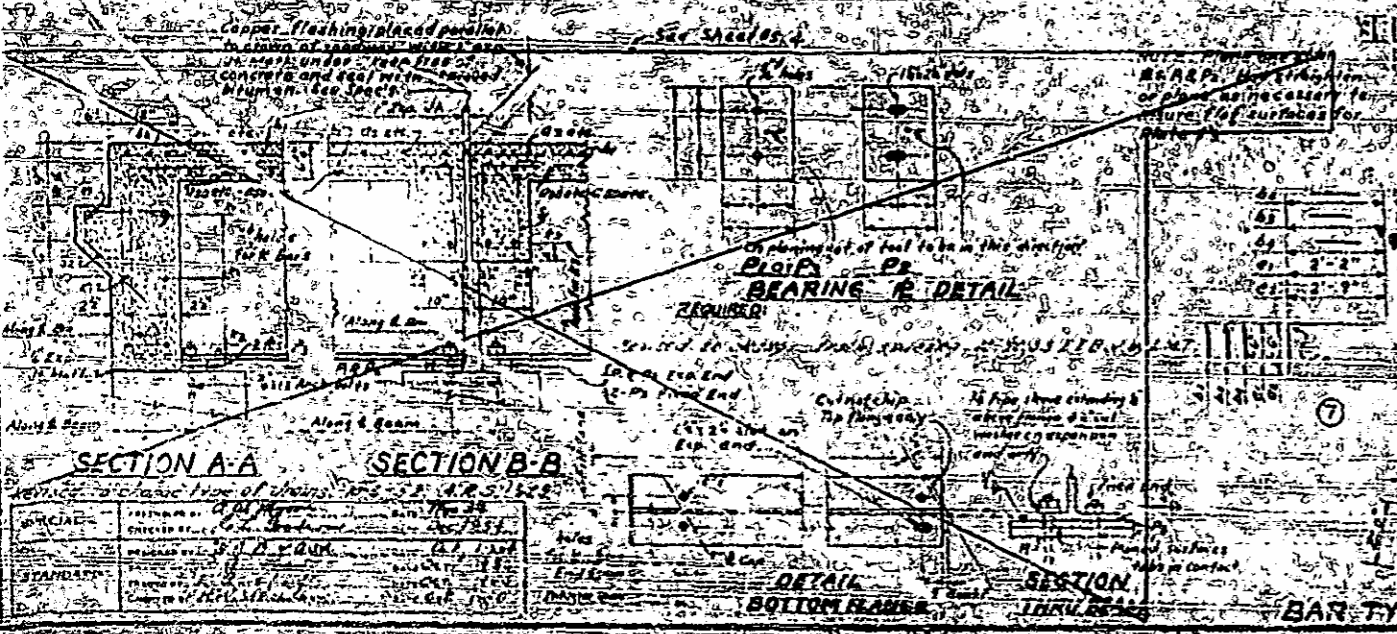
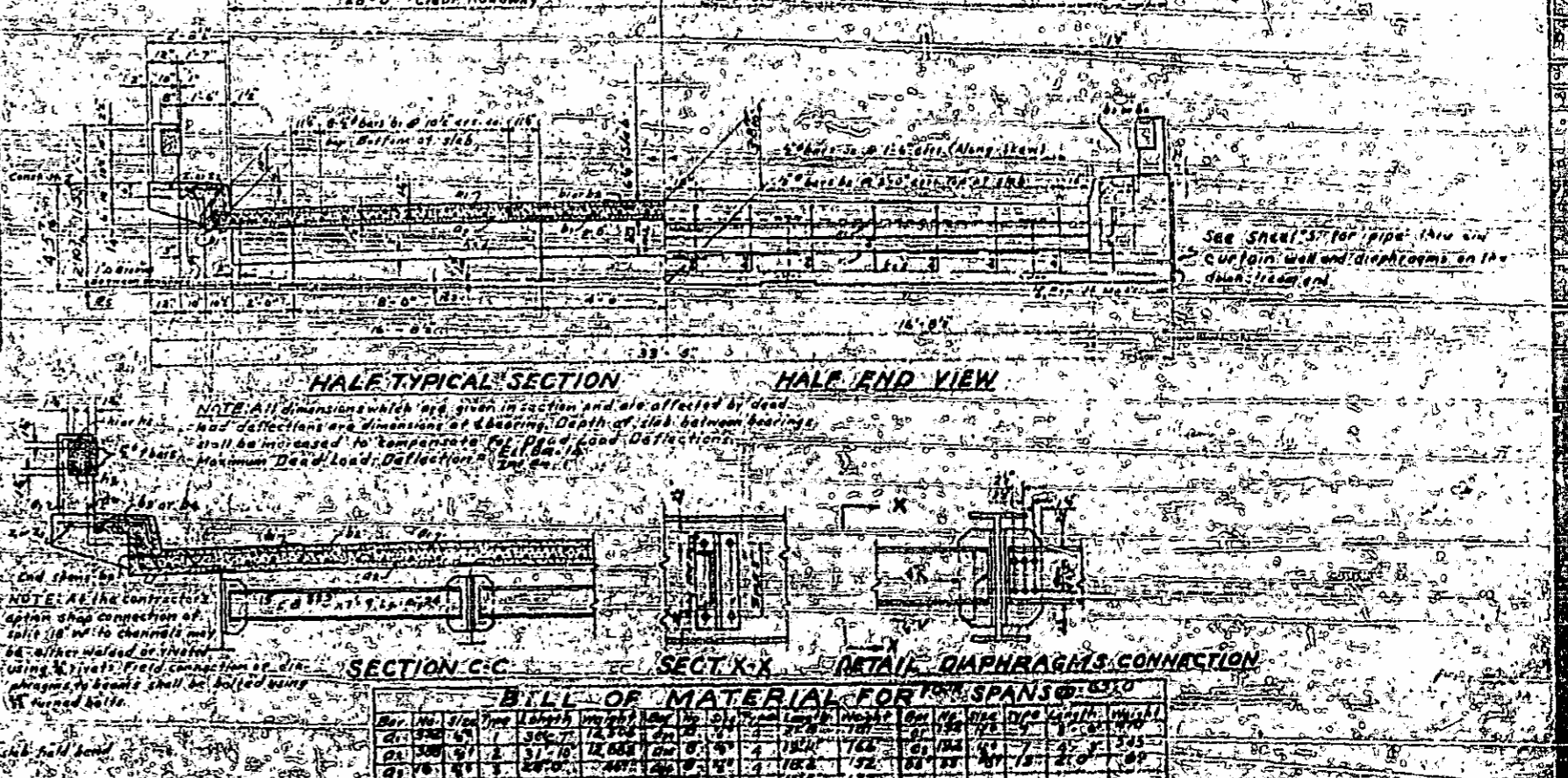
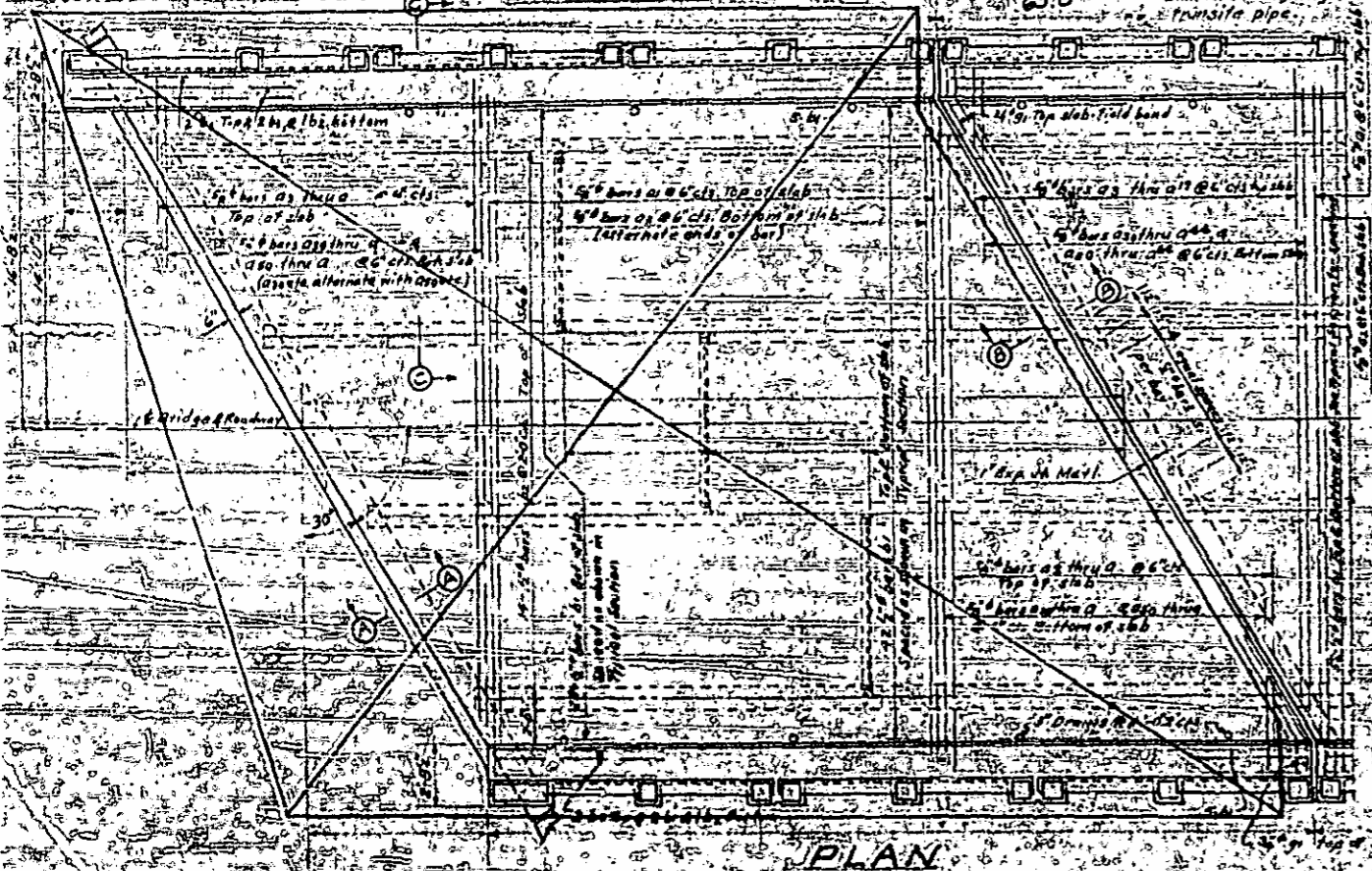
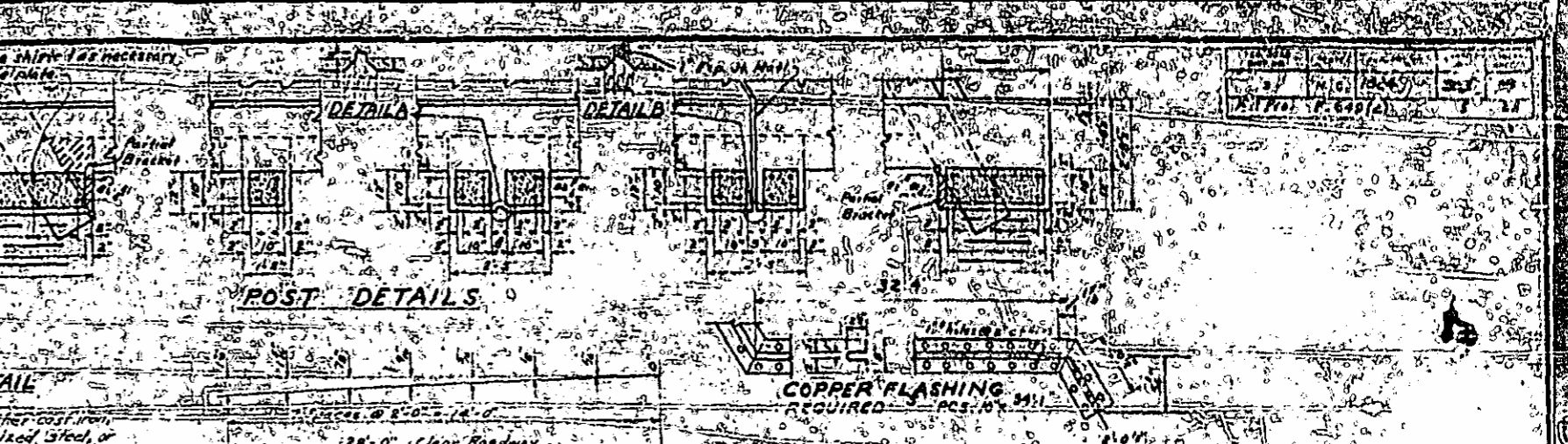
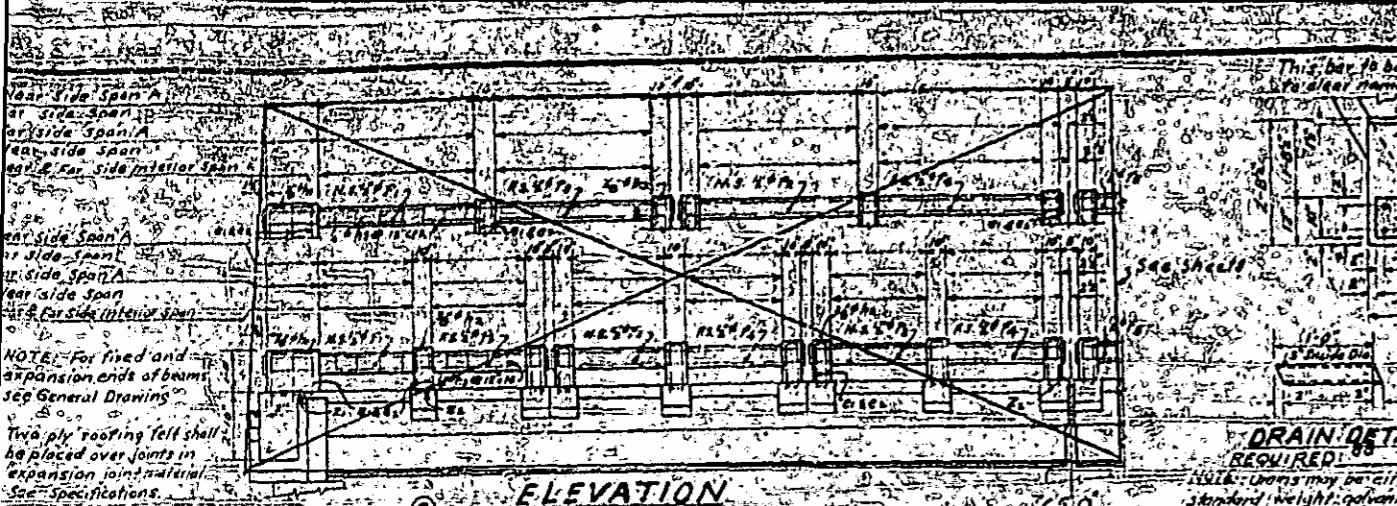
Plane one side  
Not straight  
if necessary to  
flat surfaces for



**PROJECT NO 157A**

**PITTSBURGH COUNTY**

**STATION: 28+76.2**  
**SPANS A B C D I J K L**



**BILL OF MATERIAL FOR 3 SPANS @ 63'0"**

Bar No.	Size	Type	Length (ft)	Weight (lb)	Qty	Total Weight (lb)	Notes
Q1	3/8"	1	306.7	12,368	2	24,736	
Q2	3/8"	2	31.70	12,688	2	25,376	
Q3	3/8"	3	207.0	4074	2	8,148	
Q4	3/8"	4	26.3	488	2	976	
Q5	3/8"	5	247.8	348	2	696	
Q6	3/8"	6	212.0	318	2	636	
Q7	3/8"	7	194.0	271	2	542	
Q8	3/8"	8	178.0	238	2	476	
Q9	3/8"	9	162.0	207	2	414	
Q10	3/8"	10	148.0	178	2	356	
Q11	3/8"	11	132.0	158	2	316	
Q12	3/8"	12	118.0	142	2	284	
Q13	3/8"	13	104.0	121	2	242	
Q14	3/8"	14	92.0	92	2	184	
Q15	3/8"	15	82.0	83	2	166	
Q16	3/8"	16	74.0	77	2	154	
Q17	3/8"	17	68.0	71	2	142	
Q18	3/8"	18	64.0	67	2	134	
Q19	3/8"	19	61.0	64	2	128	
Q20	3/8"	20	59.0	62	2	124	
Q21	3/8"	21	57.0	61	2	122	
Q22	3/8"	22	56.0	60	2	120	
Q23	3/8"	23	55.0	59	2	118	
Q24	3/8"	24	54.0	58	2	116	
Q25	3/8"	25	53.0	57	2	114	
Q26	3/8"	26	52.0	56	2	112	
Q27	3/8"	27	51.0	55	2	110	
Q28	3/8"	28	50.0	54	2	108	
Q29	3/8"	29	49.0	53	2	106	
Q30	3/8"	30	48.0	52	2	104	
Q31	3/8"	31	47.0	51	2	102	
Q32	3/8"	32	46.0	50	2	100	
Q33	3/8"	33	45.0	49	2	98	
Q34	3/8"	34	44.0	48	2	96	
Q35	3/8"	35	43.0	47	2	94	
Q36	3/8"	36	42.0	46	2	92	
Q37	3/8"	37	41.0	45	2	90	
Q38	3/8"	38	40.0	44	2	88	
Q39	3/8"	39	39.0	43	2	86	
Q40	3/8"	40	38.0	42	2	84	
Q41	3/8"	41	37.0	41	2	82	
Q42	3/8"	42	36.0	40	2	80	
Q43	3/8"	43	35.0	39	2	78	
Q44	3/8"	44	34.0	38	2	76	
Q45	3/8"	45	33.0	37	2	74	
Q46	3/8"	46	32.0	36	2	72	
Q47	3/8"	47	31.0	35	2	70	
Q48	3/8"	48	30.0	34	2	68	
Q49	3/8"	49	29.0	33	2	66	
Q50	3/8"	50	28.0	32	2	64	
Q51	3/8"	51	27.0	31	2	62	
Q52	3/8"	52	26.0	30	2	60	
Q53	3/8"	53	25.0	29	2	58	
Q54	3/8"	54	24.0	28	2	56	
Q55	3/8"	55	23.0	27	2	54	
Q56	3/8"	56	22.0	26	2	52	
Q57	3/8"	57	21.0	25	2	50	
Q58	3/8"	58	20.0	24	2	48	
Q59	3/8"	59	19.0	23	2	46	
Q60	3/8"	60	18.0	22	2	44	
Q61	3/8"	61	17.0	21	2	42	
Q62	3/8"	62	16.0	20	2	40	
Q63	3/8"	63	15.0	19	2	38	
Q64	3/8"	64	14.0	18	2	36	
Q65	3/8"	65	13.0	17	2	34	
Q66	3/8"	66	12.0	16	2	32	
Q67	3/8"	67	11.0	15	2	30	
Q68	3/8"	68	10.0	14	2	28	
Q69	3/8"	69	9.0	13	2	26	
Q70	3/8"	70	8.0	12	2	24	
Q71	3/8"	71	7.0	11	2	22	
Q72	3/8"	72	6.0	10	2	20	
Q73	3/8"	73	5.0	9	2	18	
Q74	3/8"	74	4.0	8	2	16	
Q75	3/8"	75	3.0	7	2	14	
Q76	3/8"	76	2.0	6	2	12	
Q77	3/8"	77	1.0	5	2	10	
Q78	3/8"	78	0.0	4	2	8	
Q79	3/8"	79	0.0	3	2	6	
Q80	3/8"	80	0.0	2	2	4	
Q81	3/8"	81	0.0	1	2	2	
Q82	3/8"	82	0.0	0	2	0	

**PROJECT No. 1024**

**COUNTY**

**STATION 28+76.8**

**SPANS 3 @ 63'**

For Details of bridge see Specifications.

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

**STANDARD  
 T-BEAM SUPERSTRUCTURE  
 WITH R.C. FLOOR & RAIL**

**28 ROADWAY 30' R.H. SKEW**

**OCT. 1950**

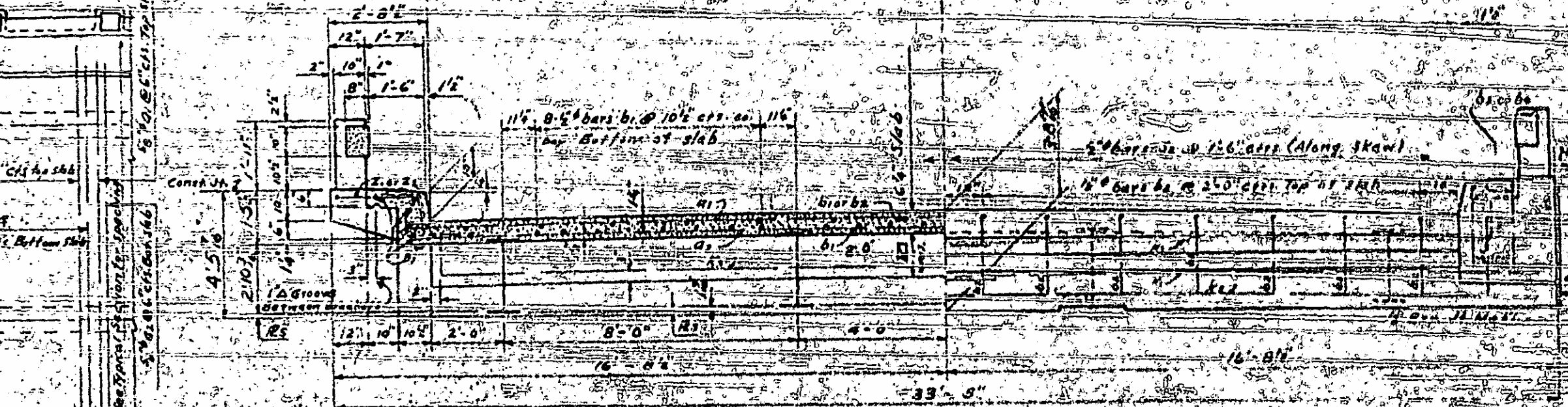
**DRAIN DETAIL**

REQUIRED: 88  
 Drains may be either cast iron, hard weight galvanized steel, or vitreous pipe.

**COPPER FLASHING**

REQUIRED PCS. BY 34.1

28'-0" Clear Roadway

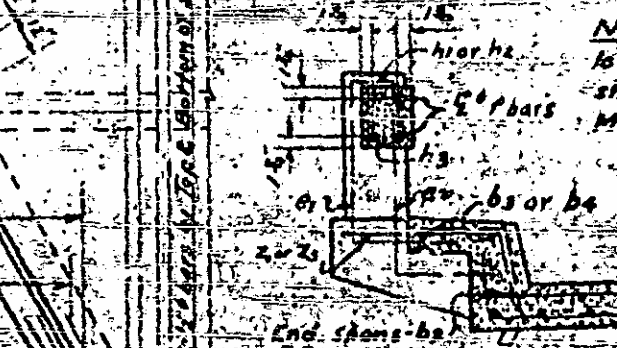


**HALF TYPICAL SECTION**

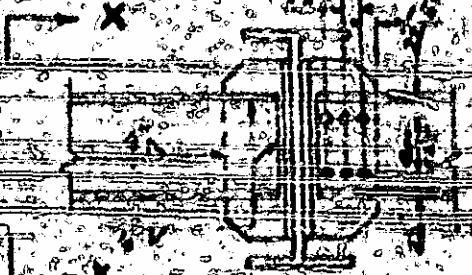
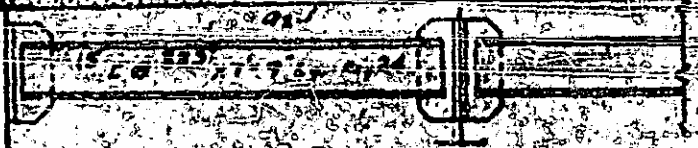
**HALF END VIEW**

NOTE: All dimensions which are given in section and are affected by dead load deflections are dimensions at bearing. Depth of slab between bearings shall be increased to compensate for dead load deflections.  
 Maximum Dead Load Deflection =  $\frac{El. 84.14}{211.8} = 0.397$

See sheets for pipe layout and curtain wall and diaphragms on the down stream end



NOTE: At the contractor's option shop connection of split 18" W channels may be either welded or riveted using 4 rivets. Field connection of diaphragms to beams shall be bolted using 4 turned bolts.



**BILL OF MATERIAL FOR FOUR SPANS @ 33'-0"**

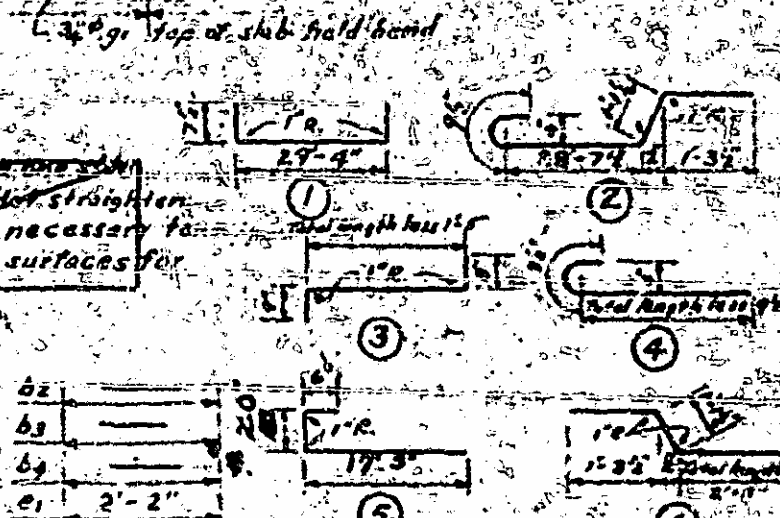
Bar No.	Size	Type	Length	Weight	Qty	Weight	Bar No.	Size	Type	Length	Weight	Qty	Weight
Q1	3/8"	1	306.7	16.34	1	16.34	Q1	3/8"	1	306.7	16.34	1	16.34
Q2	3/8"	2	31.10	12.862	1	12.862	Q2	3/8"	2	31.10	12.862	1	12.862
Q3	1/2"	3	28.0	447	1	447	Q3	1/2"	3	28.0	447	1	447
Q4	1/2"	3	26.5	436	1	436	Q4	1/2"	3	26.5	436	1	436
Q5	1/2"	3	24.9	412	1	412	Q5	1/2"	3	24.9	412	1	412
Q6	1/2"	3	22.70	381	1	381	Q6	1/2"	3	22.70	381	1	381
Q7	1/2"	3	21.2	358	1	358	Q7	1/2"	3	21.2	358	1	358
Q8	1/2"	3	19.4	321	1	321	Q8	1/2"	3	19.4	321	1	321
Q9	1/2"	3	17.8	283	1	283	Q9	1/2"	3	17.8	283	1	283
Q10	1/2"	3	15.1	244	1	244	Q10	1/2"	3	15.1	244	1	244
Q11	1/2"	3	14.2	236	1	236	Q11	1/2"	3	14.2	236	1	236
Q12	1/2"	3	12.5	207	1	207	Q12	1/2"	3	12.5	207	1	207
Q13	1/2"	3	10.8	178	1	178	Q13	1/2"	3	10.8	178	1	178
Q14	1/2"	3	9.0	150	1	150	Q14	1/2"	3	9.0	150	1	150
Q15	1/2"	3	7.5	121	1	121	Q15	1/2"	3	7.5	121	1	121
Q16	1/2"	3	5.8	92	1	92	Q16	1/2"	3	5.8	92	1	92
Q17	1/2"	3	3.9	63	1	63	Q17	1/2"	3	3.9	63	1	63

PROJECT NO. 1024

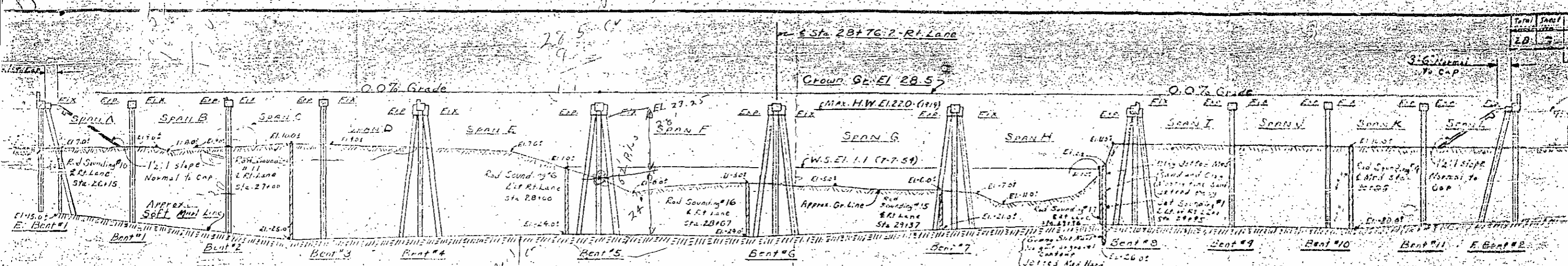
MTT COUNTY

STATION: 28+76.2  
 SPANS L.F. GEN.

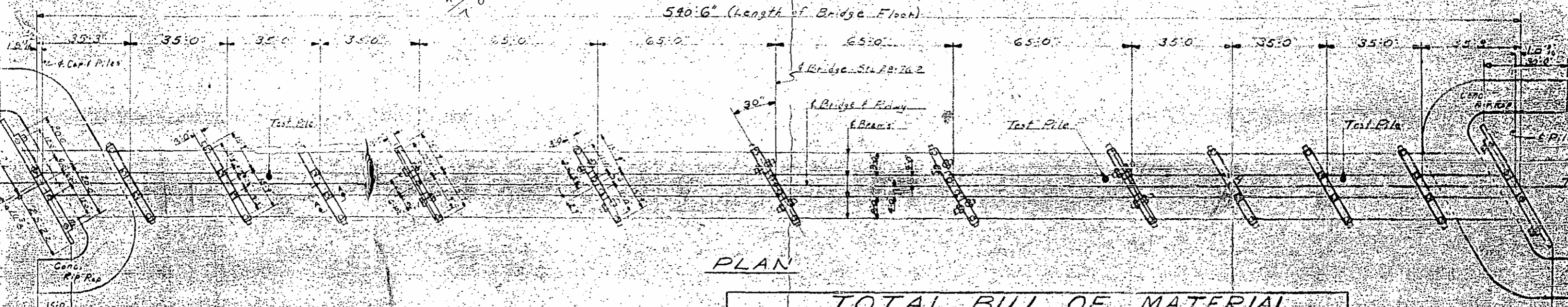
For details of br. exc. see sheets 4



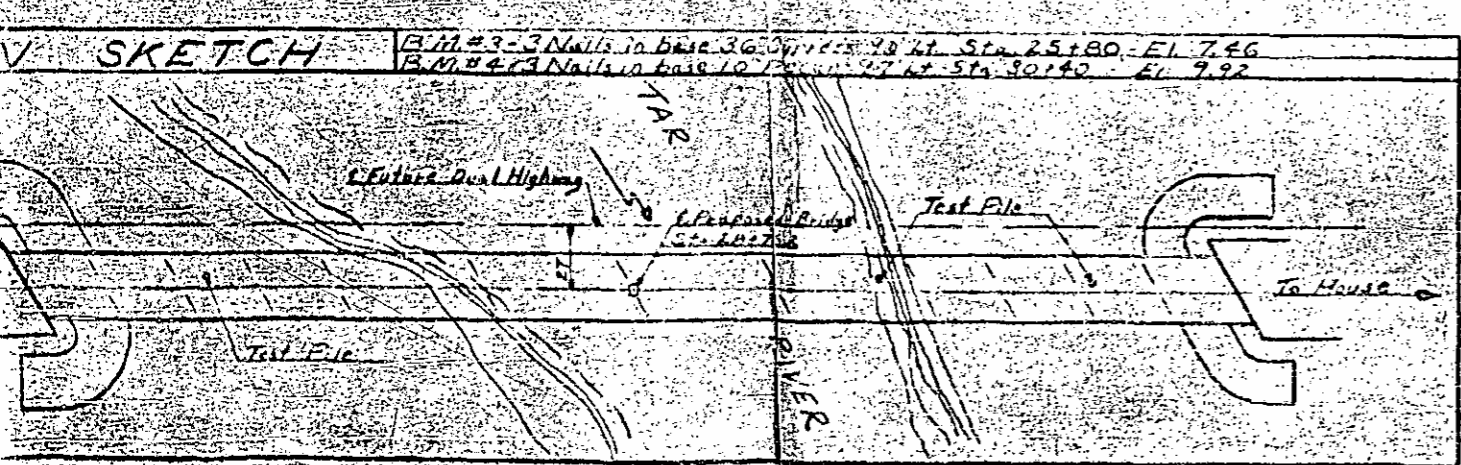




SECTION ALONG 2 BRIDGE  
BENTS ON SECTION A-A  
540'6" (Length of Bridge Floor)



PLAN



Notes

1. Live Load (15-512-59) 2. For surface finish requirements, see Special Provisions.  
 3. Other Design Data and General 4. See Sheet S-1  
 5. End Bent piles shall be driven thru the roadway fill. The Contractor will be required to excavate to Elev. 1.0 for the End Bent #1 and Elev. 1.90 for End Bent #2 before driving the piles and as required to pour concrete for the roadway fill. The Contractor shall be responsible for the location of the roadway fill.

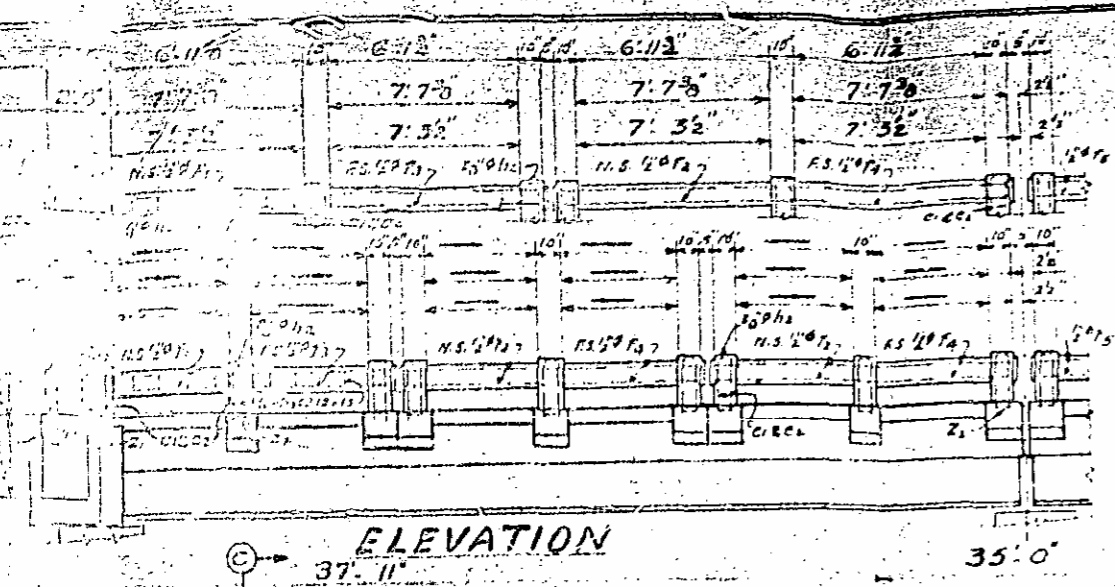
TOTAL BILL OF MATERIAL							
	Class A Concrete	Reinf. Steel	Struct. Steel	Concrete Rip Rap	20' Pile Conc. Piles	Unloaded Test Piles	Method A Water-pipe
Struct. Steel	249.5	53,525	122,900				
Concrete	232.7	48,188	193,300				
E Bent #1	14.1	2,578		635	6,202	228'	
Bent #1	8.4	1792		663.34	4,788	160'	
Bent #2	8.4	1792			4,788	172'	
Bent #3	8.4	1792			4,788	172'	
Bent #4	11.4	2275			7,364	196'	
Bent #5	10.2	2017			8,416		
Bent #6	10.2	2017			8,416		
Bent #7	10.2	2017			8,416		
Bent #8	11.4	2275			7,364		
Bent #9	8.4	1792			4,788	192'	
Bent #10	8.4	1792			4,788	180'	
Bent #11	8.4	1792			4,788	160'	
E Bent #2	14.1	2,578		635	6,202	228'	
Conc. Piles					58205		
Asph. Coat	3.2	30476					
<b>TOTAL</b>	<b>517.2</b>	<b>101,711</b>	<b>116,200</b>	<b>58205</b>	<b>71,200</b>	<b>3</b>	

I hereby certify that this work was built according to plans.  
Signed [Signature]

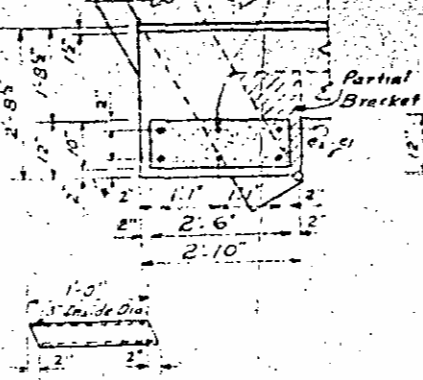
# 38, Pitt Co.

1824 PROJECT  
P.I.T. 28+76.2 STATION

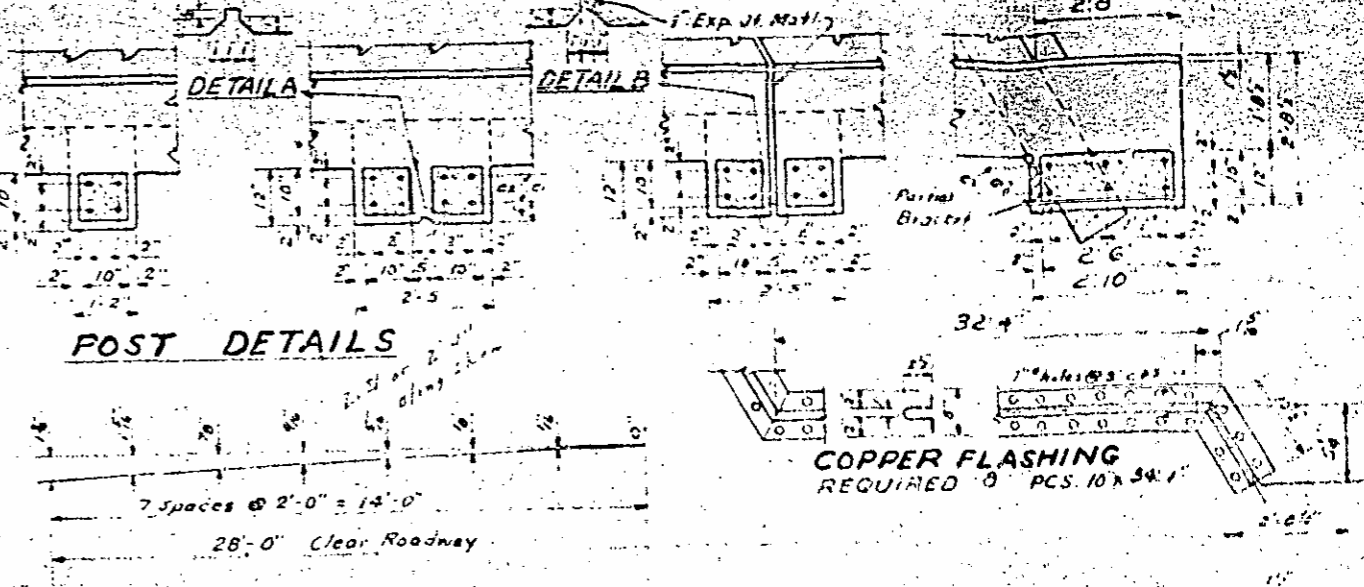
STATE OF NC STATE #



This bar to be shifted as necessary to clear name plate.

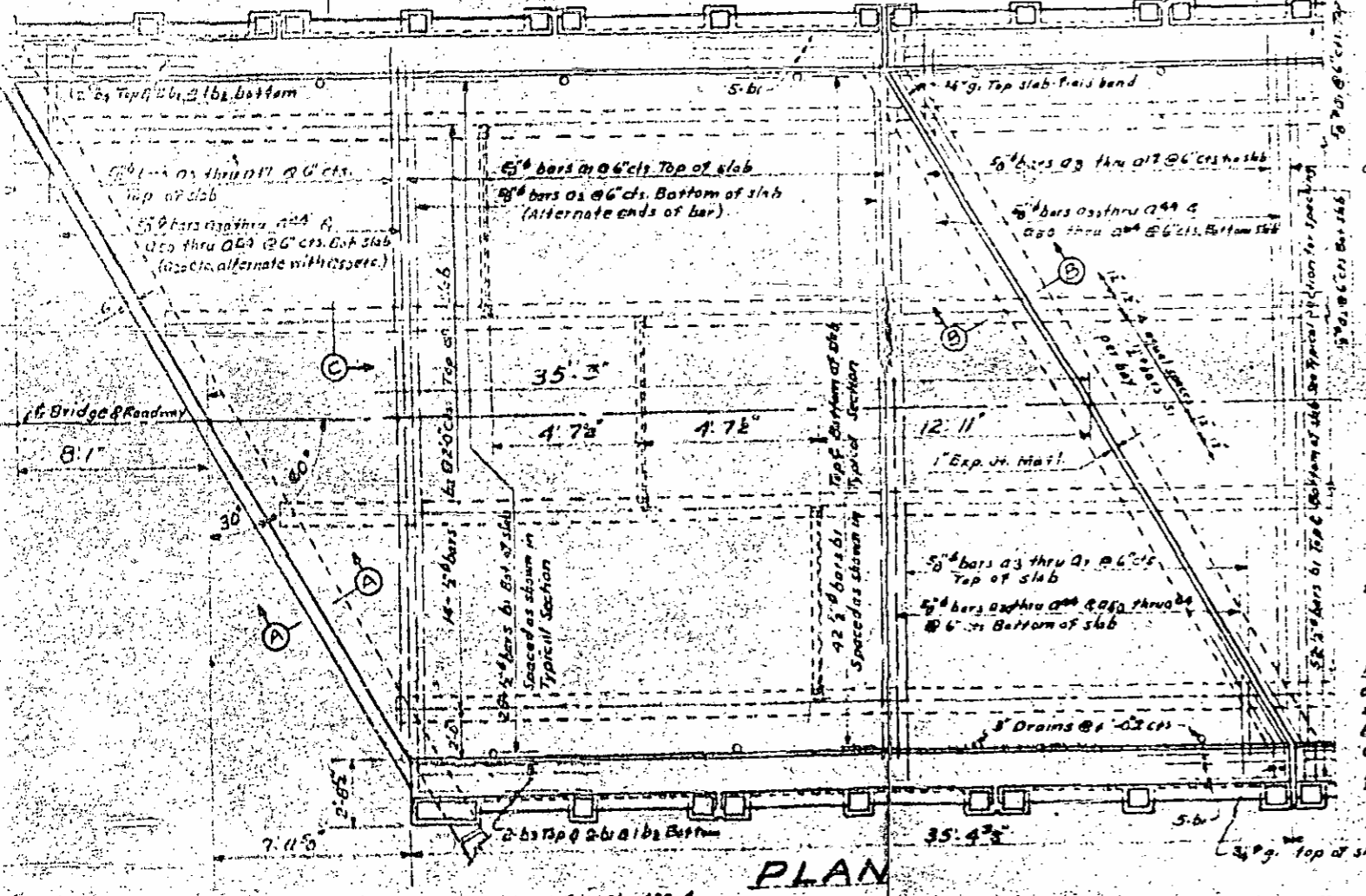


**DRAIN DETAIL**  
REQUIRED: 90  
NOTE: Drains may be either cast iron, standard weight galvanized steel, or transite pipe.

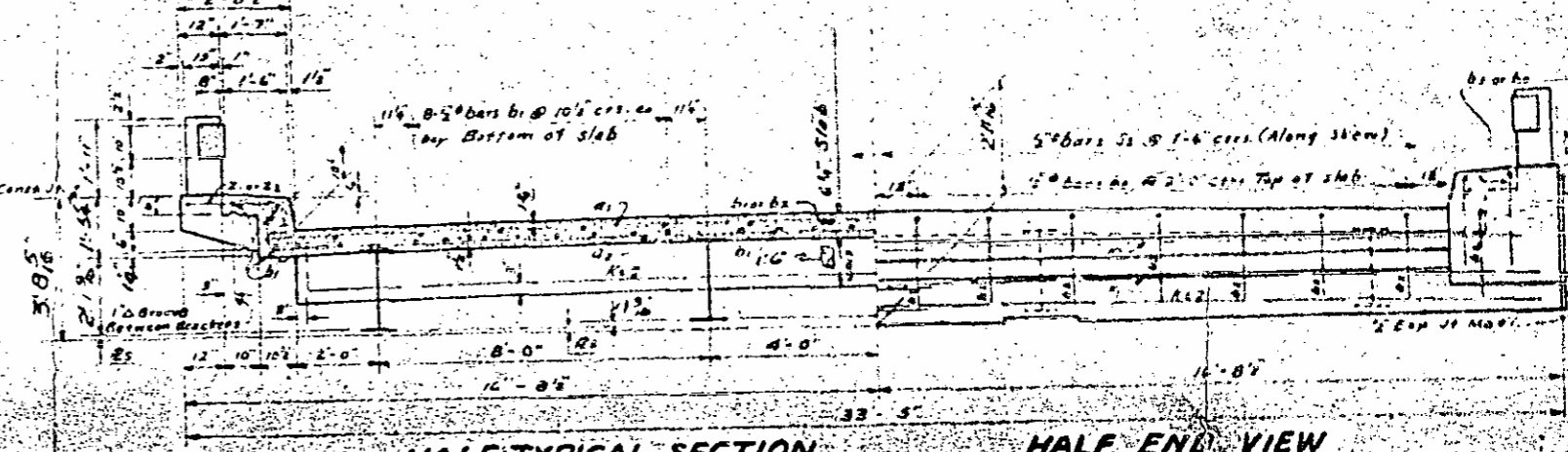


**POST DETAILS**

**COPPER FLASHING**  
REQUIRED: 8 PCS. 10" x 34"



**PLAN**

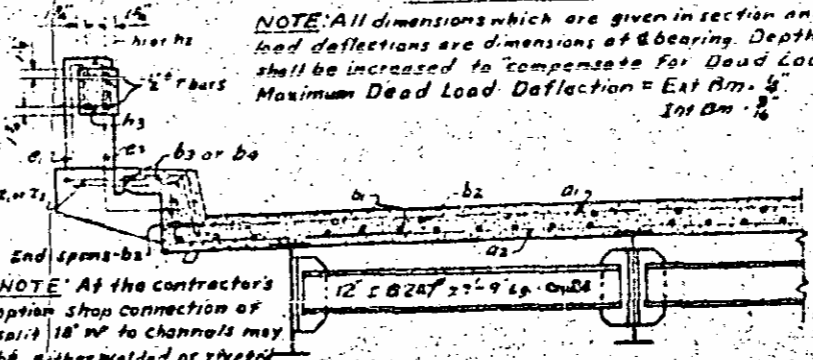


**HALF TYPICAL SECTION**

**HALF END VIEW**

NOTE: All dimensions which are given in section and are affected by dead load deflections are dimensions at bearing. Depth of slab between bearings shall be increased to compensate for Dead Load Deflections.  
Maximum Dead Load Deflection =  $Eat Am \cdot \frac{1}{2}$   
In Am  $\cdot \frac{1}{2}$

Method A Water on the fill face substructure.



**SECTION C-C**

**SECT. X-X**

**DETAIL DIAPHRAGMS CONNECT**

NOTE: At the contractor's option shop connection of split 18" W" channels may be either welded or riveted using 3/4" rivets. Field connection of diaphragms to beams shall be bolted using 3/4" turned bolts.

**SPANS A, B, C, D, E, J, K & L**

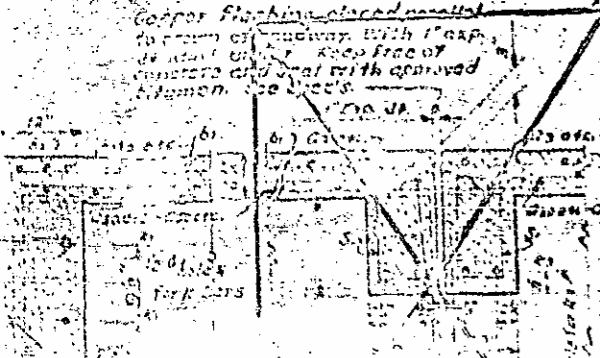
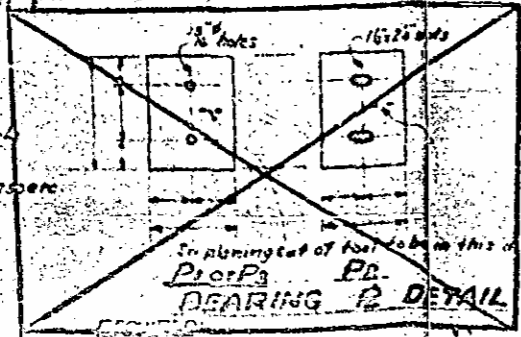
**BILL OF MATERIAL FOR 6 SPANS @ 35'-0"**

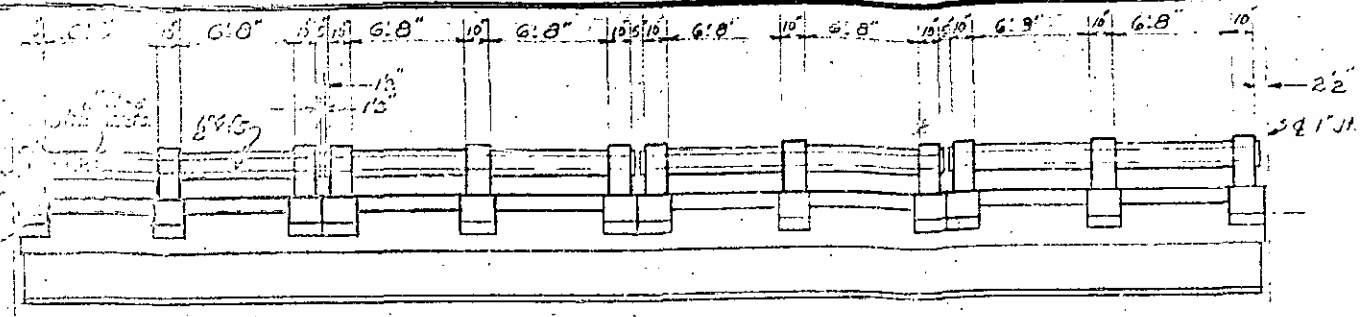
Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight
G1	3/8"	5#	30'-7"	952	G116	5/8"	4#	2'-0"	362	G1	3/8"	5#	4'-5"	656
G2	3/8"	5#	31'-10"	1005	G117	5/8"	4#	1'-11"	332	G2	3/8"	5#	4'-5"	656
G3	3/8"	5#	29'-0"	935	G118	5/8"	4#	1'-0"	309	G3	3/8"	5#	4'-5"	656
G4	3/8"	5#	26'-5"	876	G119	5/8"	4#	18'-5"	271	G4	3/8"	5#	4'-5"	656
G5	3/8"	5#	24'-5"	820	G120	5/8"	4#	18'-9"	266	G5	3/8"	5#	4'-5"	656
G6	3/8"	5#	22'-10"	768	G121	5/8"	4#	13'-0"	217	G6	3/8"	5#	4'-5"	656
G7	3/8"	5#	21'-7"	760	G122	5/8"	4#	11'-5"	200	G7	3/8"	5#	4'-5"	656
G8	3/8"	5#	19'-4"	685	G123	5/8"	4#	9'-5"	189	G8	3/8"	5#	4'-5"	656
G9	3/8"	5#	17'-0"	530	G124	5/8"	4#	7'-0"	162	G9	3/8"	5#	4'-5"	656
G10	3/8"	5#	15'-0"	52	G125	5/8"	4#	6'-1"	162	G10	3/8"	5#	4'-5"	656
G11	3/8"	5#	13'-0"	418	G126	5/8"	4#	4'-4"	12	G11	3/8"	5#	4'-5"	656
G12	3/8"	5#	10'-8"	356	G127	5/8"	4#	4'-0"	12	G12	3/8"	5#	4'-5"	656
G13	3/8"	5#	7'-0"	300	G128	5/8"	4#	6'-20"	40	G13	3/8"	5#	4'-5"	656
G14	3/8"	5#	7'-0"	242	G129	5/8"	4#	6'-27"	11	G14	3/8"	5#	4'-5"	656
G15	3/8"	5#	5'-4"	104	G130	5/8"	4#	6'-35"	120	G15	3/8"	5#	4'-5"	656
G16	3/8"	5#	5'-0"	125	G131	5/8"	4#	6'-25"	53	G16	3/8"	5#	4'-5"	656
G17	3/8"	5#	6'-11"	268	G132	5/8"	4#	6'-21"	268	G17	3/8"	5#	4'-5"	656
G18	3/8"	5#	6'-02"	217	G133	5/8"	4#	6'-02"	217	G18	3/8"	5#	4'-5"	656
G19	3/8"	5#	6'-10"	300	G134	5/8"	4#	6'-10"	300	G19	3/8"	5#	4'-5"	656
G20	3/8"	5#	6'-14"	357	G135	5/8"	4#	6'-14"	357	G20	3/8"	5#	4'-5"	656

NOTE: Plane one side R's R's. No. 10 lighter or plane as necessary to insure flat surfaces for plate.

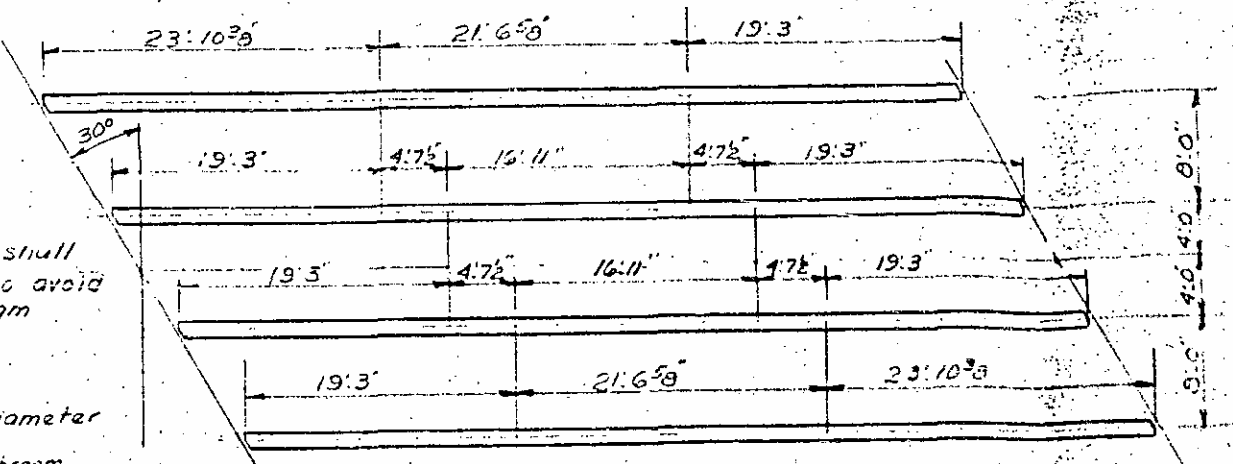
- b1 18'-0"
- b2 18'-0"
- b3 20'-8"
- b4 2'-2"
- b5 2'-9"

**BEARING PLATE DETAIL**



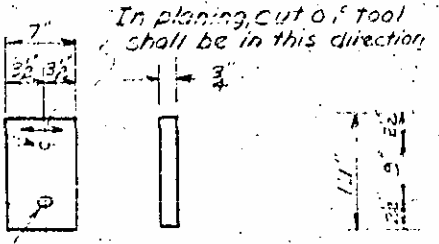


ELEVATION. SPANS E-F-G-H

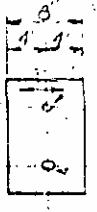


DIAPHRAGMS SPACING. SPANS E-F-G-H

1 1/2" holes in plates, P<sub>1</sub>, P<sub>2</sub>  
Plane one side plate P<sub>2</sub>  
Not straighten or plane  
as necessary, to insure  
flat surfaces for  
plate P<sub>1</sub>



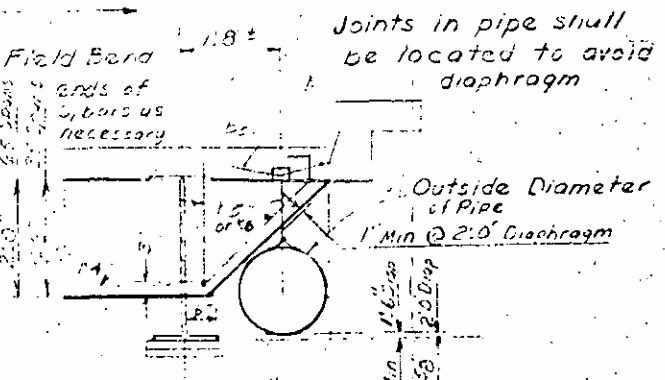
1 1/2" holes in plates P<sub>1</sub>, P<sub>2</sub>  
Plane one side plate P<sub>2</sub>  
Not straighten or plane  
as necessary, to insure flat sur-  
faces for plate P<sub>1</sub>



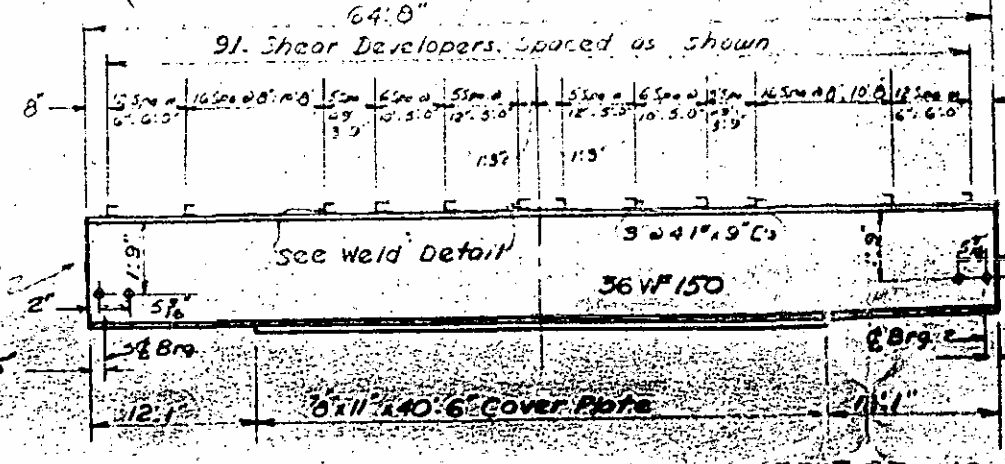
1 1/2 x 2 1/2 slots in plates P<sub>1</sub>  
Plane one side plate P<sub>1</sub>  
Plane surfaces of plates  
shall be in contact.

No polishing reqd on plates  
**BEARING PLATES DETAILS**  
Required:

- 32 P<sub>1</sub>. 7" x 3/4" x 11"
- 32 P<sub>2</sub>. 7" x 3/4" x 11"
- 64 P<sub>3</sub>. 7" x 3/4" x 11"
- 32 P<sub>4</sub>. 8" x 1" x 13"
- 16 P<sub>5</sub>. 8" x 1" x 13"
- 16 P<sub>6</sub>. 8" x 1" x 13"

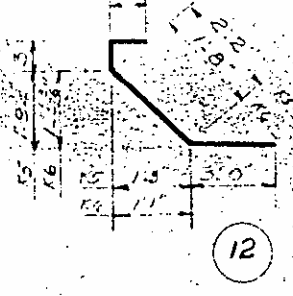


SECTION SHOWING PIPE AT DIAPHRAGM

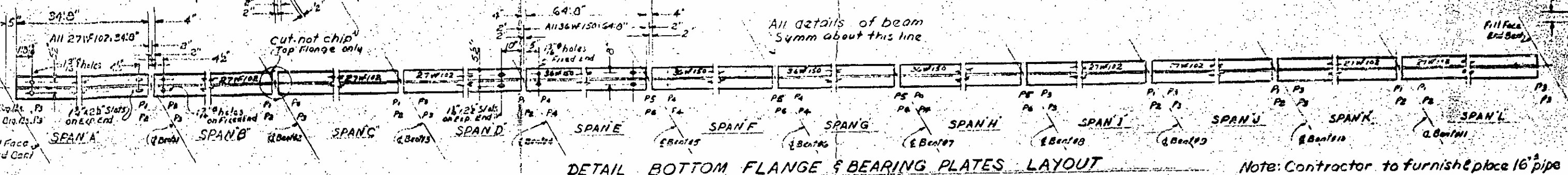


SPACING OF CHANNELS FOR INT. EXT. BEAMS SPAN E-F-G-H

Note: Shear Developers and top of top beam flange shall not be painted.

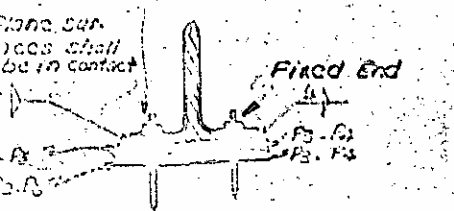


All details of beam symm about this line



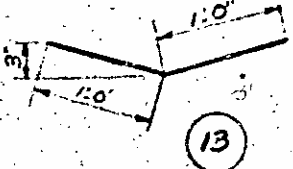
DETAIL BOTTOM FLANGE & BEARING PLATES LAYOUT

1" Pipe Sleeve extending 3" above flange & cut washer on expansion end only.



SECTION THRU BEAM

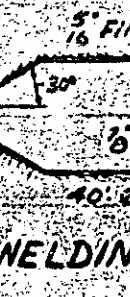
Copper flashing placed parallel to crown of roadway with 1" Exp. Jt. Matl. under. Keep free of concrete and seal with AP-5 asphalt cement. See Specs



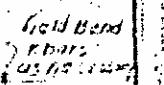
13

Note: Contractor to furnish & place 16" pipe sleeve cast in concrete where 12" I.D. Water Main passes thru end curtain wall. Grinnel Concrete inserts or approved equal shall be furnished by contractor and installed at each hanger. Owner will furnish and install Grinnel Adjustable hangers or equal of 3/8" rod. See Special Provision 117.

Note: The to the req plates and cover plate of weldable workman AWS spe



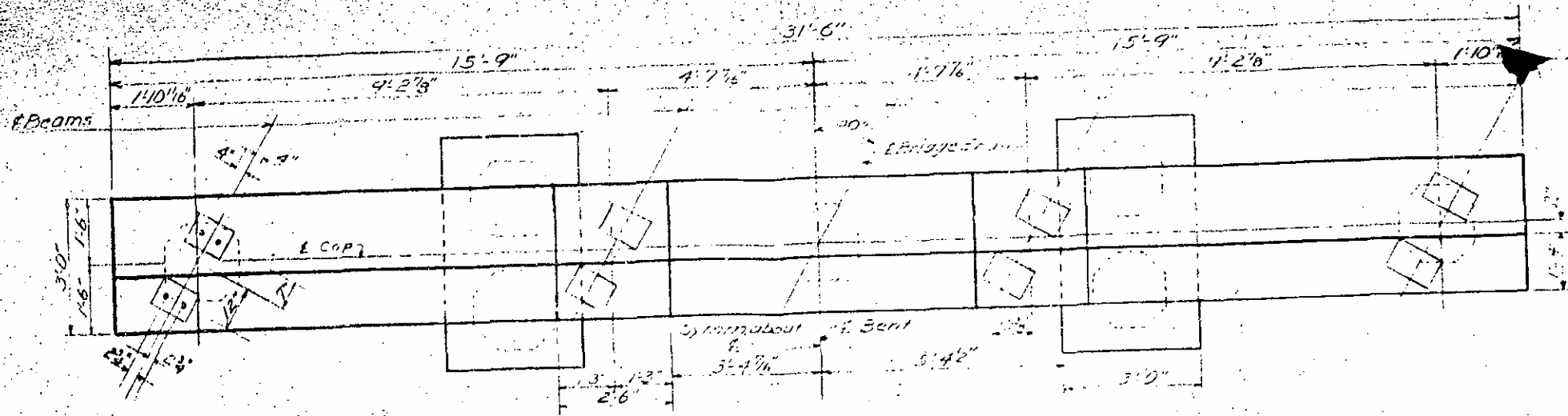
WELDING



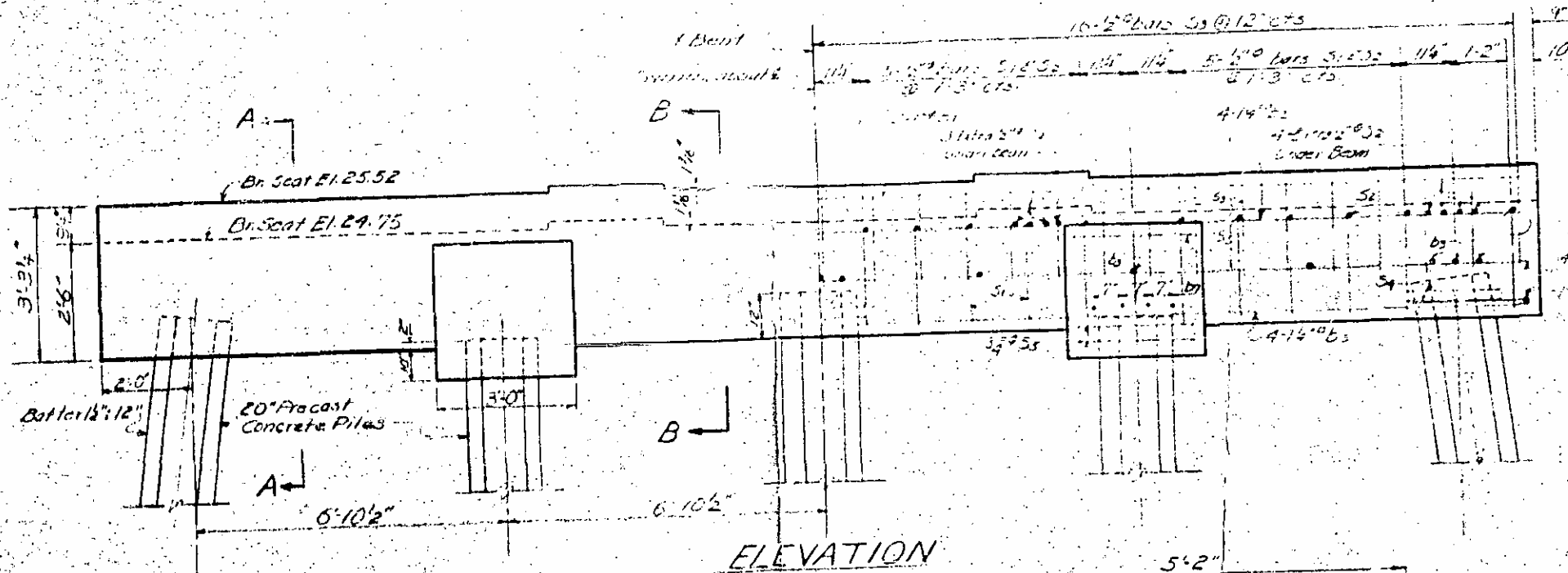
Field Bond 1/2" gap 1/2" dia bar



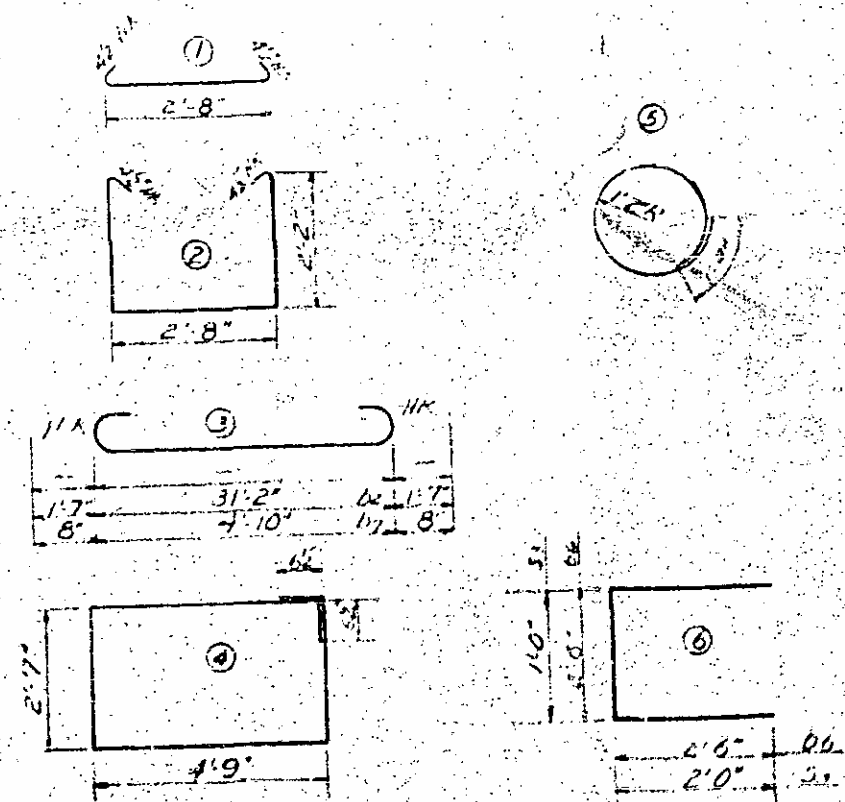
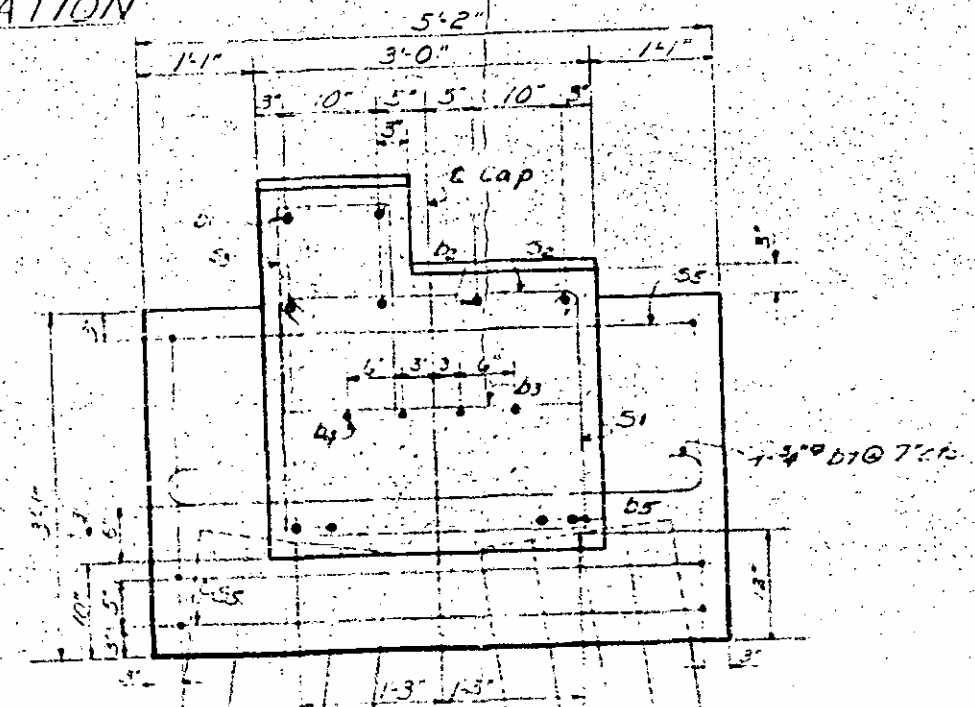
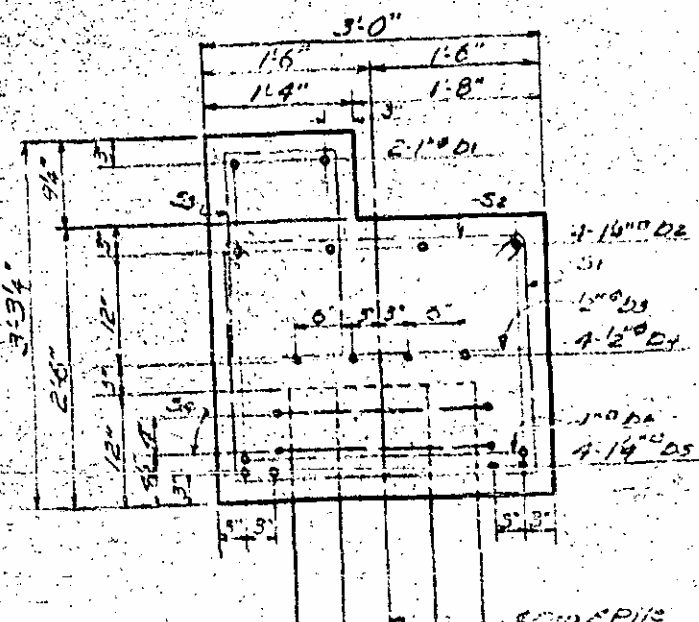




PLAN OF BENT # 4  
BENT #5 SIMILAR BY ROTATION



ELEVATION



Note: All dimensions in Bar Bending Data is 6" out to out of bar.

Interior Bent 4 & B