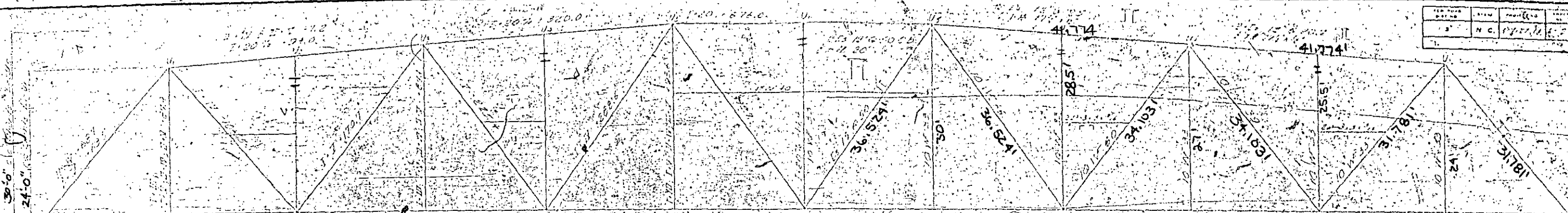
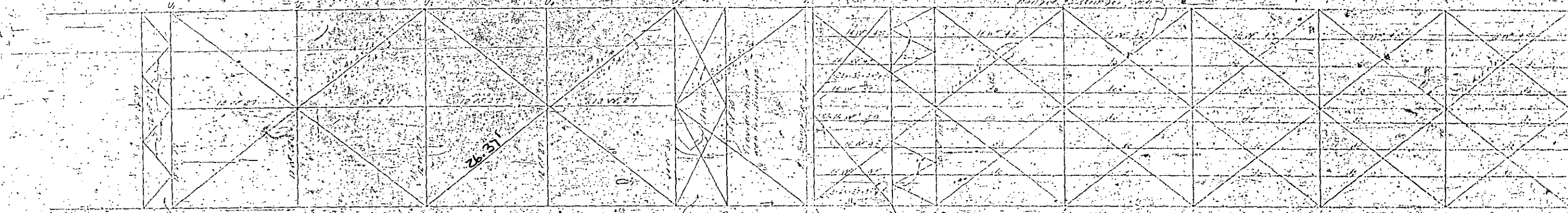


REV.	DATE	BY	CHKD.	APP'D.
1	11/20/25	J.C.		



STRESS DIAGRAM



HALF-PLAN TOP LATERALS

HALF-PLAN BOTTOM LATERALS

GENERAL NOTE

STRUCTURAL STEEL: All structural steel shall meet all the requirements of the AISC Specification for Structural Steel and shall be carbon bearing steel, containing not less than 0.25% carbon. All field connections shall be riveted unless otherwise noted. Rivets shall be 5/8" except that 3/4" rivets shall be used in end connections. General painting, where required, all members shall be submitted to the Bridge Engineer for approval. No checkered drawings will be accepted. Note: PAINT FOR STRUCTURAL STEEL: Structural steel shall be given one shop coat and three field coats of paint. At the contractor's option the shop and first field coat may both be of red lead or both may be of zinc. The final two field coats shall be of aluminum paint. See Special Provisions for additional details and General Note see Sheet No. 5-1 & 5-2.



GALE AND DEFLECTION DIAGRAM

BRACING U, U, U, U

BRACING U, U, U, U  
 45° steel bracing  
 517 700 lbs  
 4 1100 lbs  
 720 lbs  
 492 sq ft  
 375 sq ft

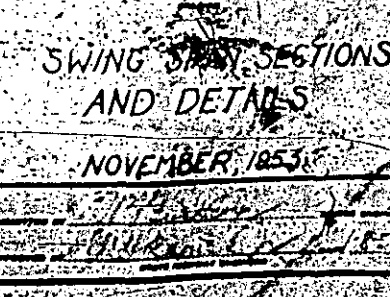
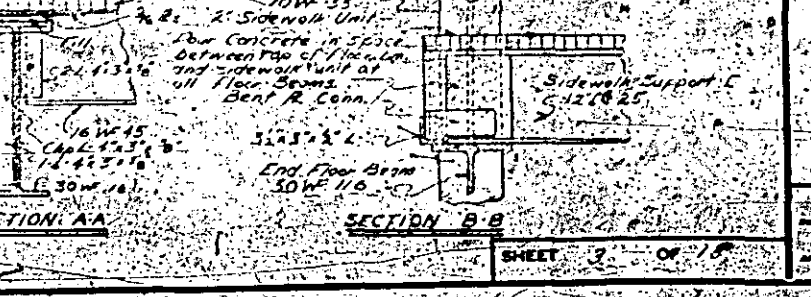
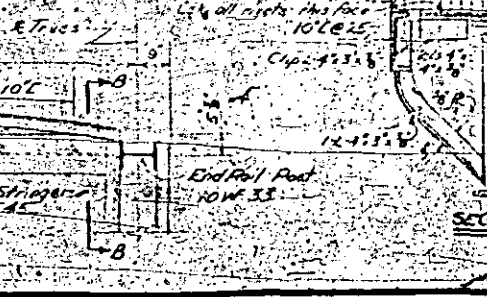
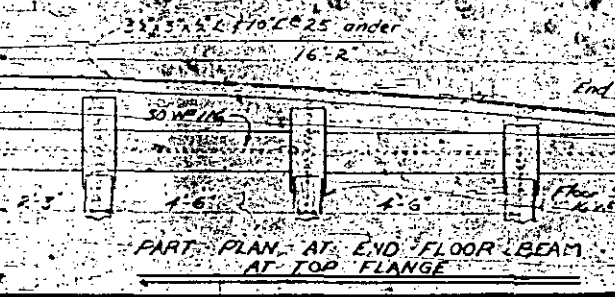
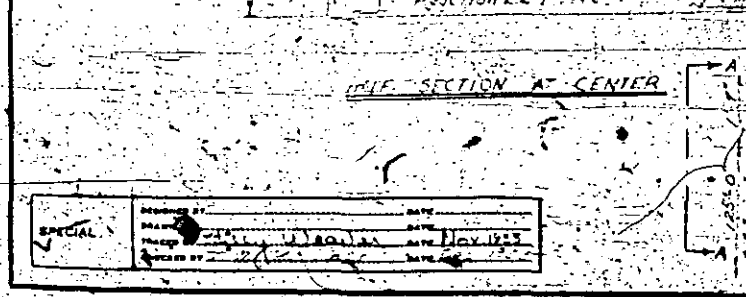
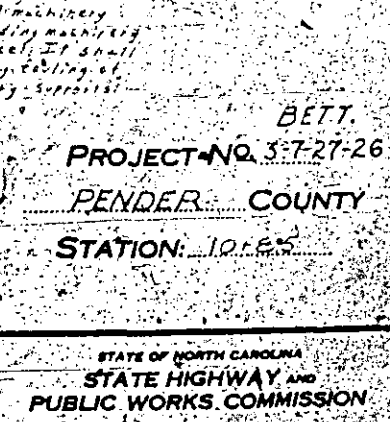
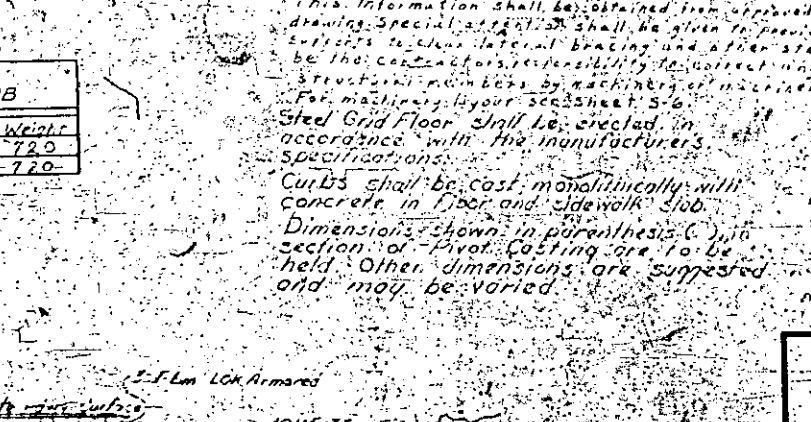
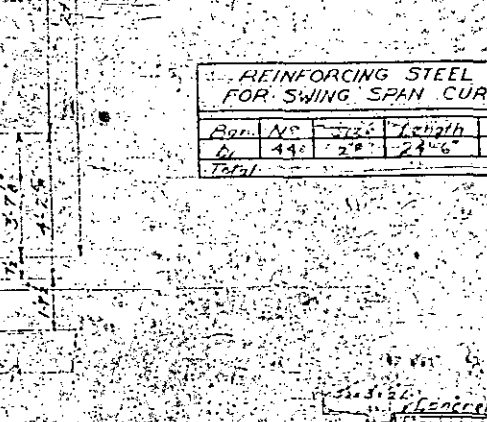
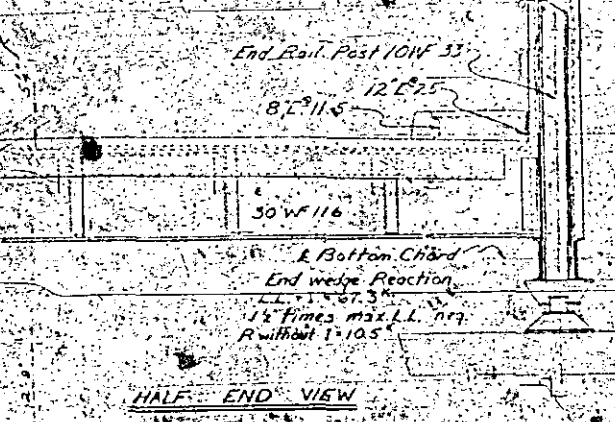
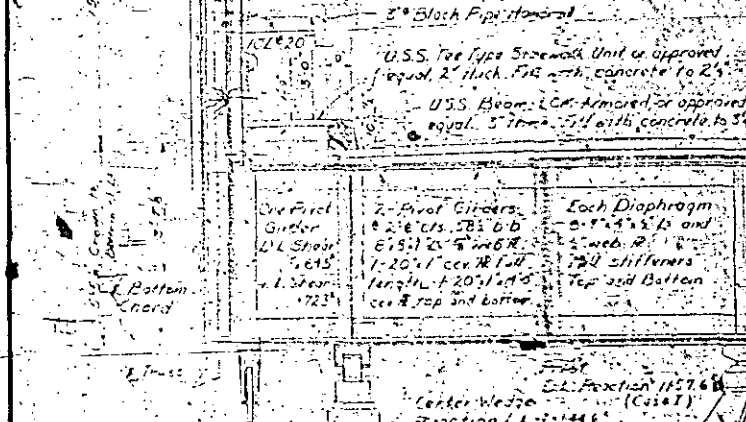
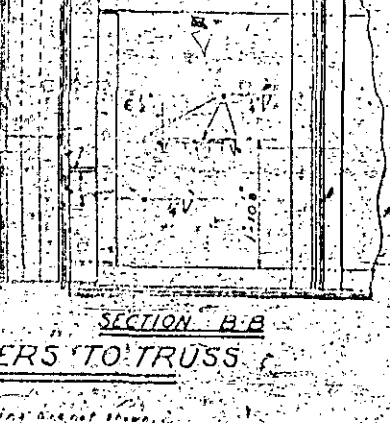
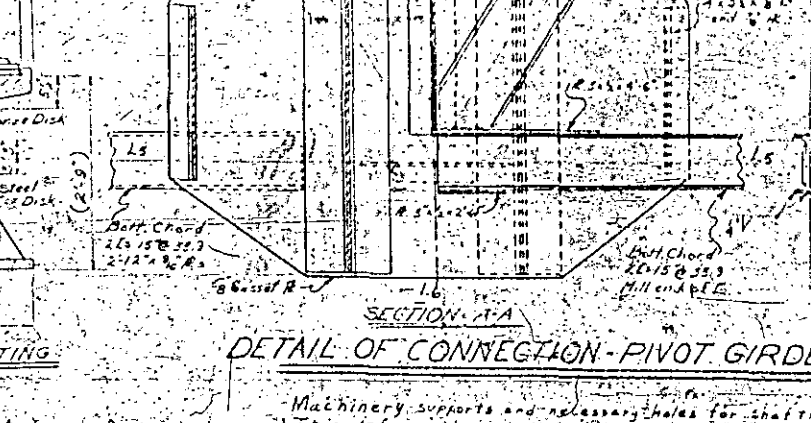
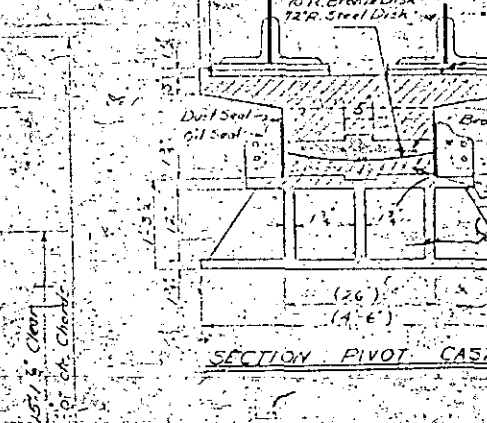
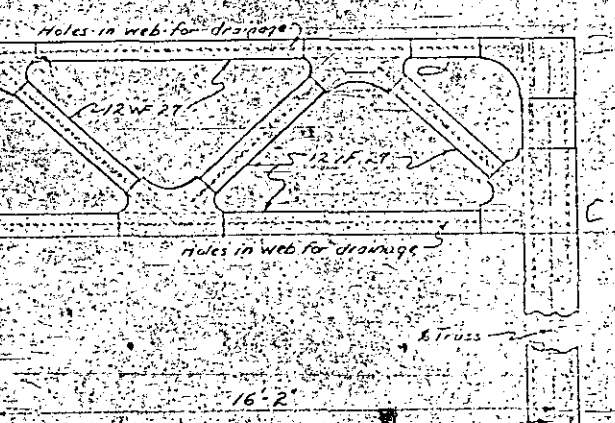
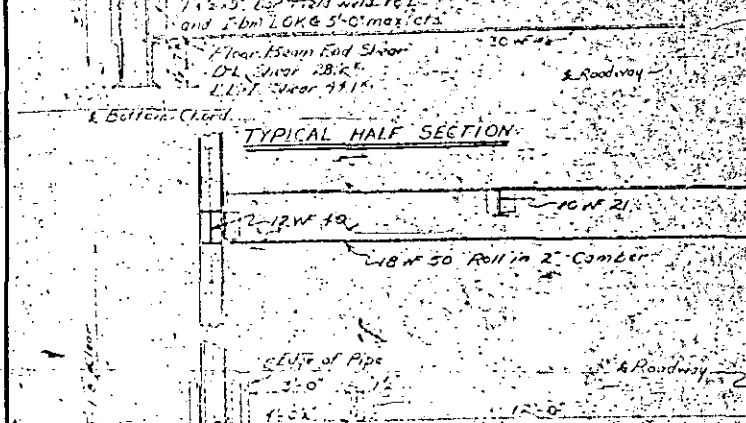
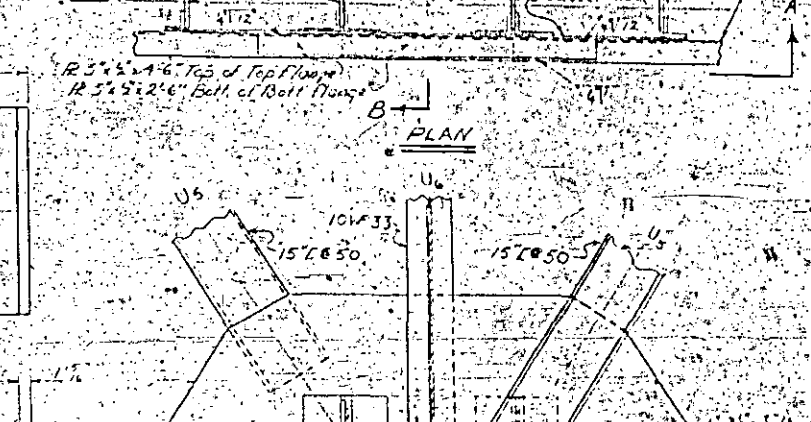
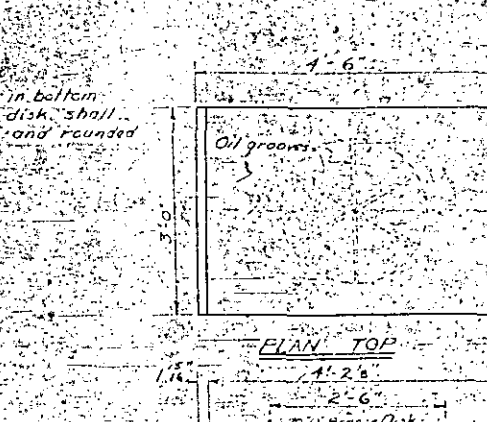
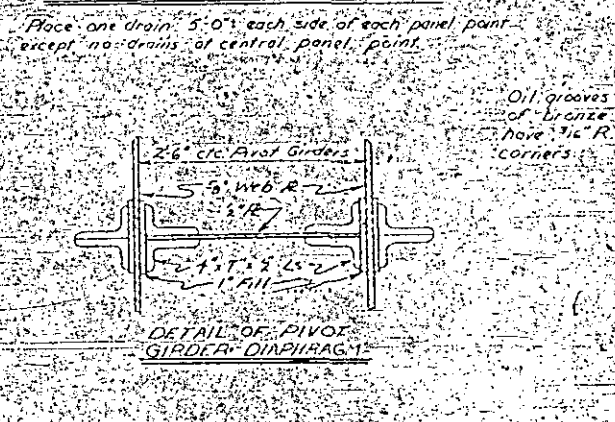
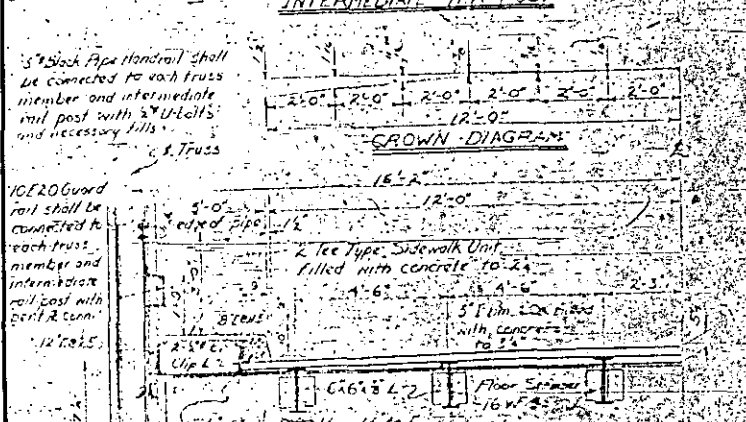
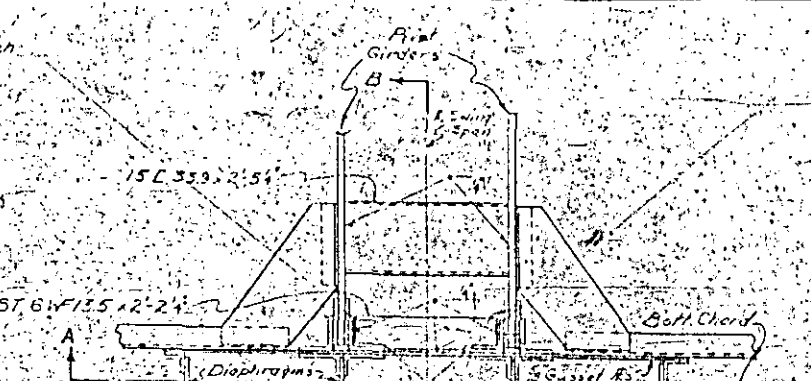
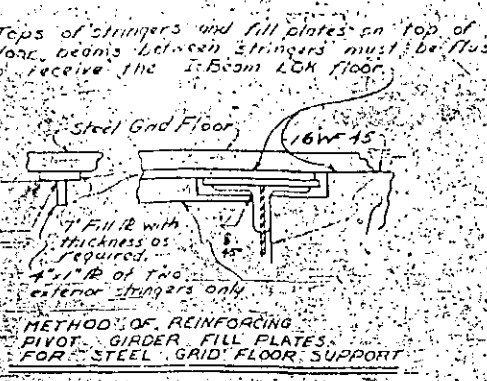
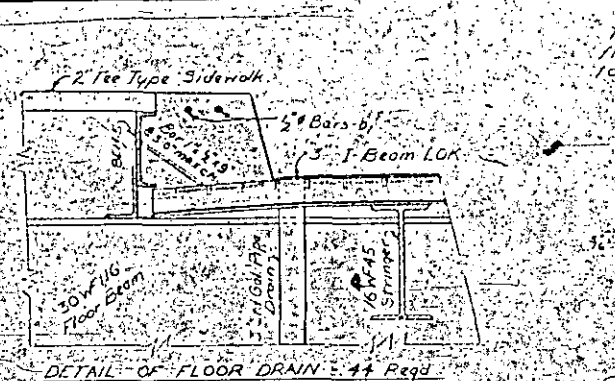
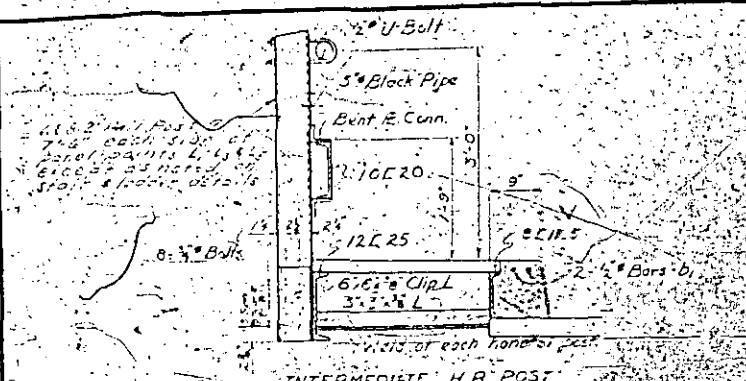
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1-1	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107
1-2	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107
1-3	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107
1-4	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107
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PROJECT NO. 10185  
 PINDER COUNTY  
 STATION: 10185

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

NOV 1925

PER PAGE	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	5-7-27-26	17	75



DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

Bar No.	Size	Length	Weight
Bar 1	4#	2'	7.20
Total			7.20

Machinery supports and necessary holes for shafting are not shown. This information shall be obtained from approved machinery drawings. Special attention shall be given to providing machinery supports to secure internal bracing and other steel. It shall be the contractor's responsibility to correct any loading of structural members by machinery or machinery supports. For machinery layout see sheet 5-6.

Steel Grid Floor shall be erected in accordance with the manufacturer's specifications.

Curbs shall be cast monolithically with concrete in fiber and sidewalk slab.

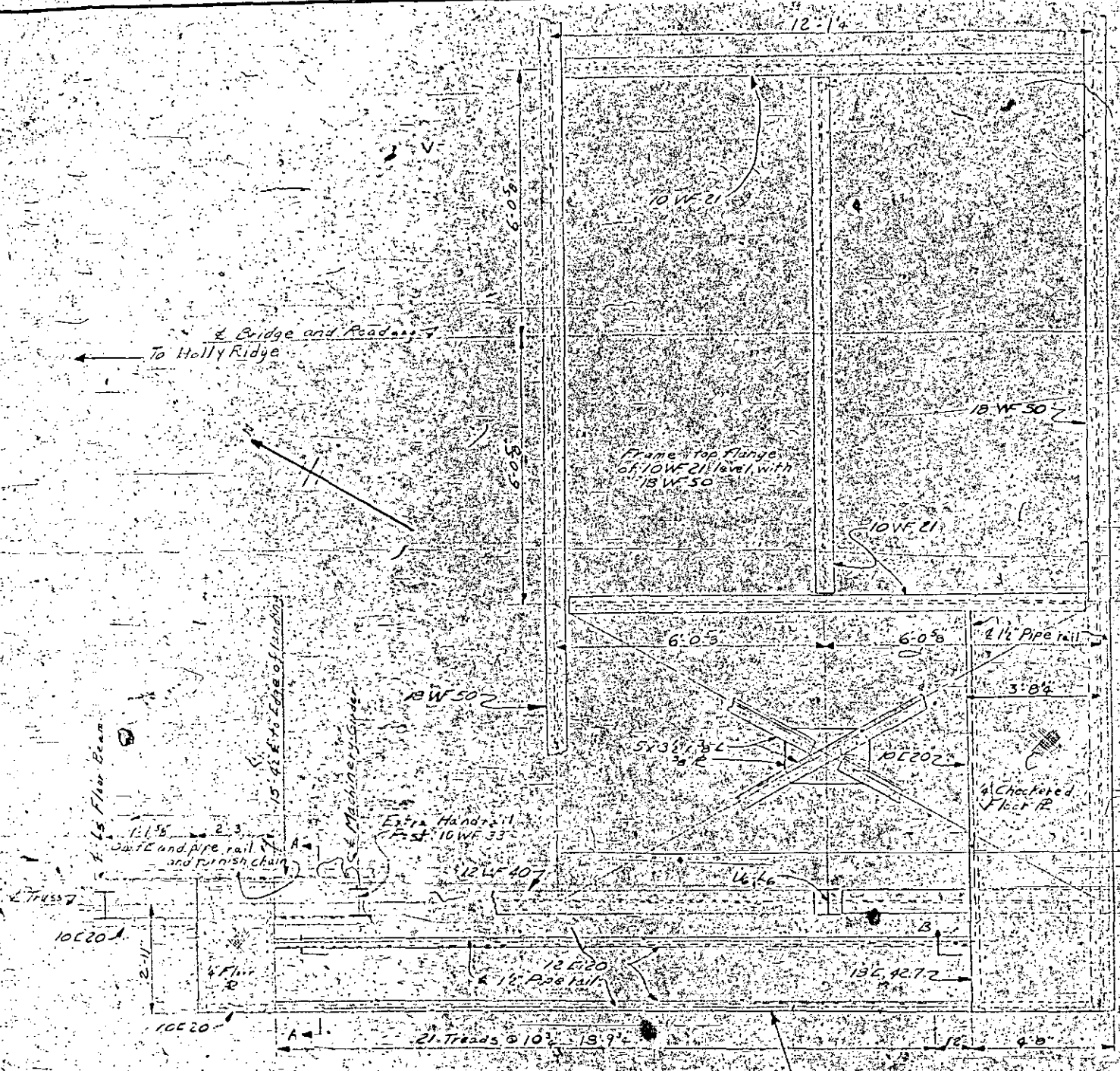
Dimensions shown in parenthesis in this section of Pivot Casting are to be held. Other dimensions are suggested and may be varied.

BETT.  
PROJECT NO. 5-7-27-26  
PENDER COUNTY  
STATION: 10.125

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
SWING SPAN SECTIONS  
AND DETAILS  
NOVEMBER, 1953

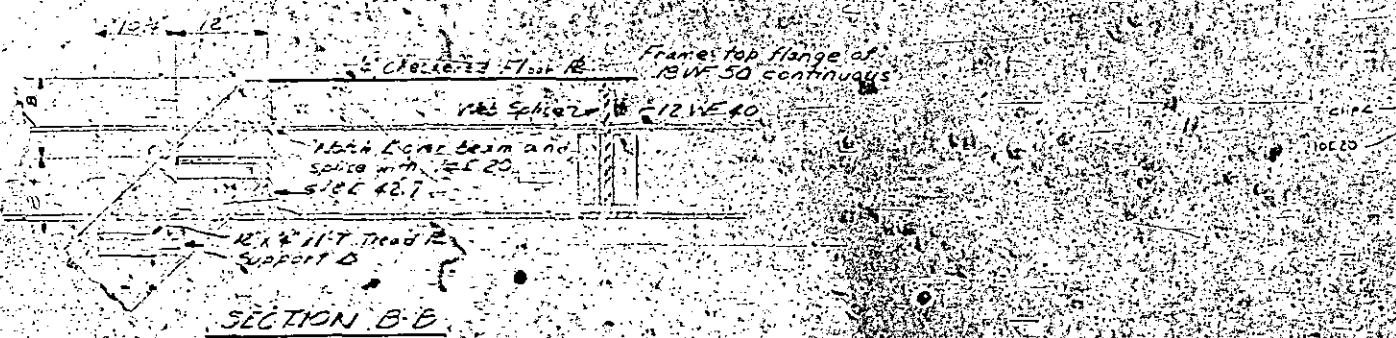


FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	BETT SECT 3.22726	4	10

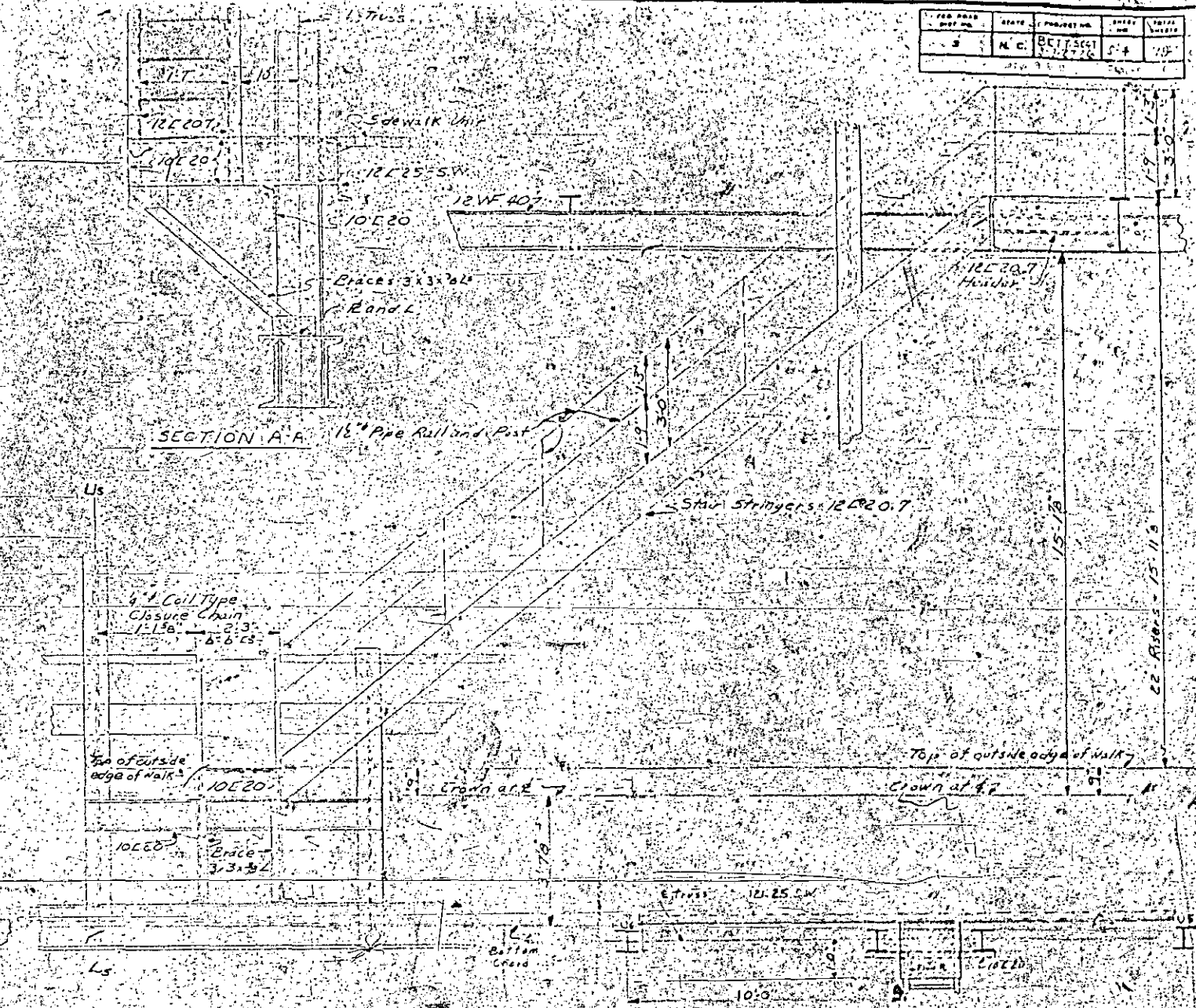


STAIRWAY AND FRAMING PLAN

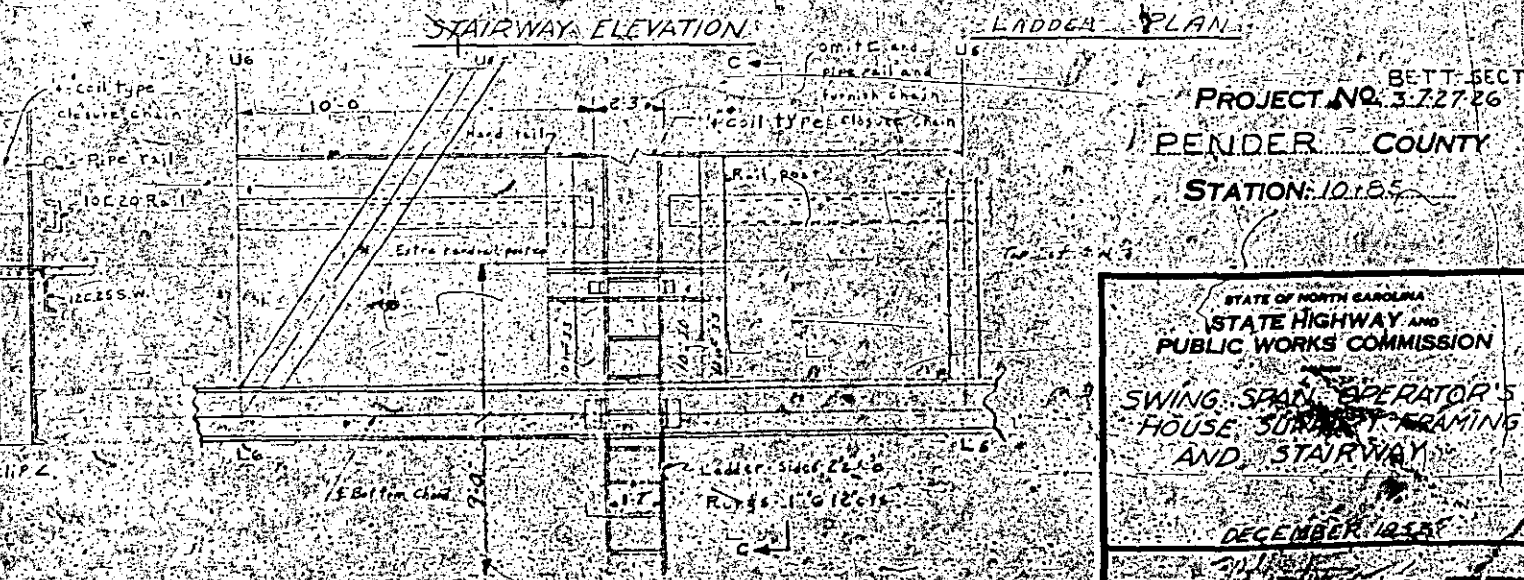
Note: This is West side of Bridge



SECTION B-B



SECTION A-A



LADDER ELEVATION

SECTION C-C

BETT SECT  
PROJECT NO. 3.22726  
PENDER COUNTY  
STATION: 10.185

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
SWING SPAN OPERATOR'S  
HOUSE SURVEY, FRAMING  
AND STAIRWAY  
DECEMBER, 1935

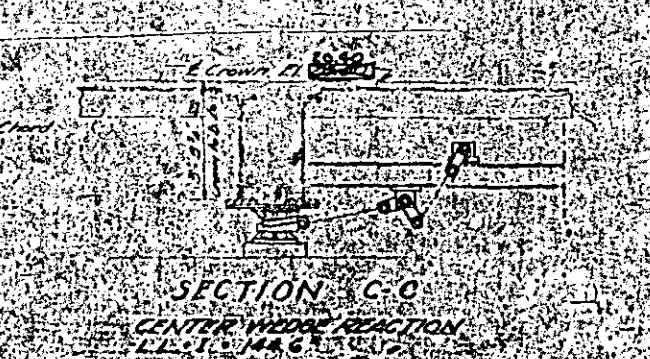
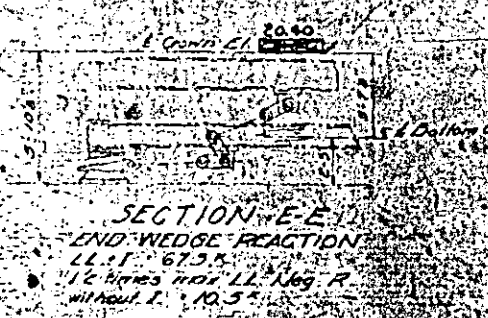
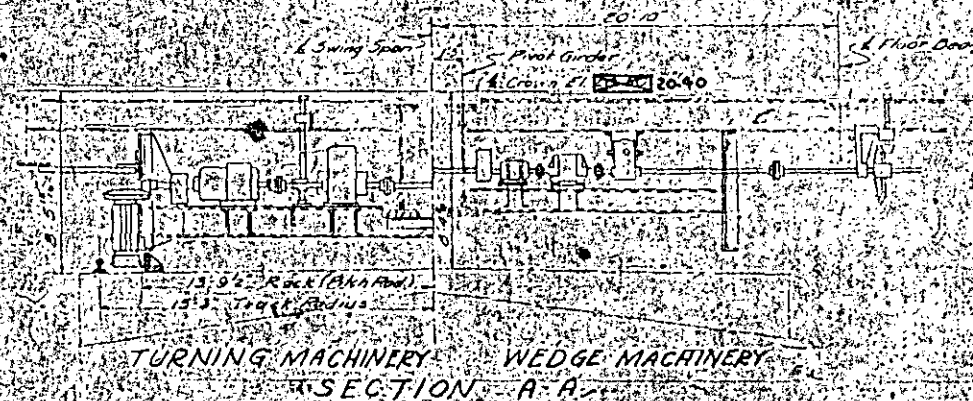
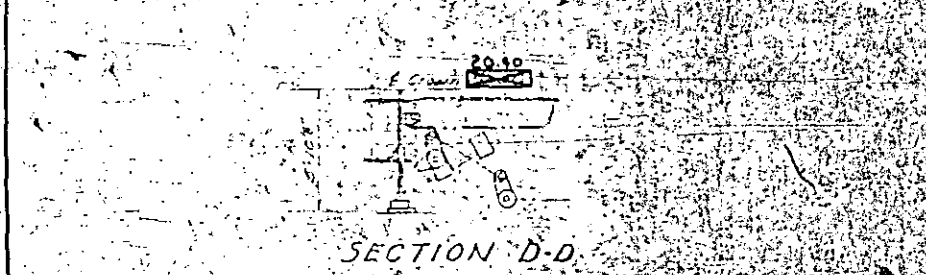
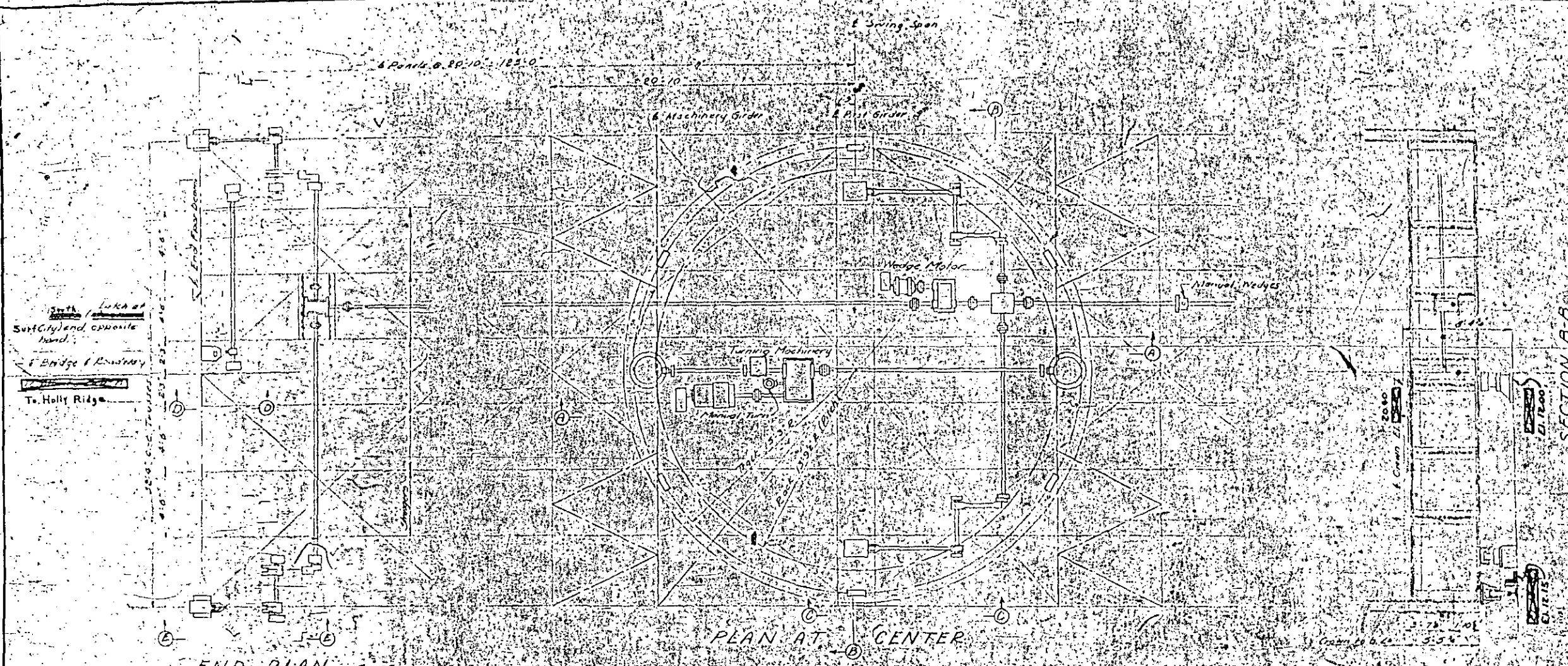
SPECIAL	DATE	BY
	Dec. 1935	
CHECKED BY	DATE	BY
	Dec. 1935	

*[Faint, illegible text at the top of the page, possibly a header or title.]*



PROJ. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
100-10-10	N.C.	100-10-10	10	10

**NOTE**  
 Turning Motor shall be 20 HP. Speed reducer shall have differential.  
 The bridge shall have counter clockwise.  
 Wedge and latch linkage shall be designed so that failure of latch catches will not cause any damage by overdriving.  
 Rock shall be made in 12 equal sections. Each section shall be of set back starting and stopping position of pinion.  
 For detail of truss and floor system see sheet No. 100-10-10-5.  
 The wedge motor shall be 12 HP.



SECTION B-B  
 Plan Detail 100-10-10-1576

PROJECT NO. 100-10-10  
 PENDER COUNTY  
 STATION: 10+85

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION  
 LAYOUT PLAN  
 SWING SPAN MACHINERY  
 JANUARY 1964

Approved by: B.F. [Signature] Date: May 1964  
 Checked by: [Signature] Date: May 1964  
 Drawn by: [Signature] Date: May 1964  
 Engineer: [Signature] Date: May 1964



FOR WORK SHEET NO.	DATE	AMOUNT	SHEET NO.	TOTAL SHEETS
B. I. N. C.	11/17/53	17.7	7	13

### BILL OF MATERIAL - FOUR SPANS

BAR	ONE END SPAN	ONE INTERIOR SPAN	ONE SAFETY GATE SPAN	ONE SPAN ADJACENT TO SWING SPAN	BAR	TOTAL No.	SIZE	TYPE	LENGTH	WEIGHT
a1	64	64	64	64	a1	256	8	1	27.4	7298
a2	63	63	63	63	a2	252	8	2	27.8	7272
b1	85	106	106	106	b1	403	2	STR.	18.6	4980
b2	13				b2	13	2		20.6	178
b3	8				b3	8	2		21.3	114
c1	4	4	4		c1	12	1/2	4	26.1	2301
c2	2	2	2	2	c2	8	1/2	5	33.1	1406
c3	4	4	4	4	c3	16	1/2	5	27.6	2508
c4	2	2	2	2	c4	8	1/2	5	22.6	956
c5	4	4	4	4	c5	16	1/2	5	36.9	2531
c6	2	2	2	2	c6	8	1/2	5	26.7	921
c10				4	c10	4	1/2	4	35.8	758
d1	6	6	6		d1	18	1/2	1	37.2	3554
d2	16	16	16	16	d2	64	1/2	6	8.5	769
d3	6	6	6		d3	18	1/2	1	36.10	2853
d7				6	d7	6	1/2	1	36.7	1166
db				6	db	6	1/2	1	36.10	951
e1	12	16	16	16	e1	60	2	3	4.3	170
e2	216	200	200	200	e2	816	3/8	3	3.11	1202
f12	4				f12	4	2	STR.	1.9	5
f13	4				f13	4	2	STR.	2.3	6
f14	4				f14	4	2	STR.	2.11	8
f2		8		8	f2	16	2	STR.	14.5	154
f3			8		f3	16	2	STR.	13.10	148
f4	4	4	4	4	f4	16	2	STR.	1.9	14
f5	12				f5	12	2	STR.	3.8	29
f6	4				f6	4	2	STR.	7.3	44
f6		8		8	f6	16	2	STR.	14.5	87
f7	8				f7	16	2	STR.	13.10	83
f8	4	4	4	4	f8	16	2	STR.	1.9	11
f10	4				f10	4	2	STR.	6.0	36
f10				4	f10	4	2	STR.	7.3	44
f10		8		8	f10	16	2	STR.	16.4	98
f11	8				f11	16	2	STR.	15.9	95
k1	2				k1	2	2	STR.	17.0	23
k2	2				k2	2	2	STR.	32.0	96
k3	2	4	4	4	k3	14	2	STR.	26.5	555
p1	140	140	140	140	p1	560	2	7	6.2	2307
p2	36	36	36	36	p2	144	2	STR.	4.0	385
s1	64	64	64	64	s1	256	2	8	5.7	983
s2	56	56	56	56	s2	224	2	10	7.4	1097
s3	27	54	54	27	s3	162	2	9	5.10	415
s4	2			27	s4	27	2	STR.	3.5	66
s4				27	s4	27	2	STR.	3.10	62
Reinforcing Steel										1828
Class A Concrete										1828

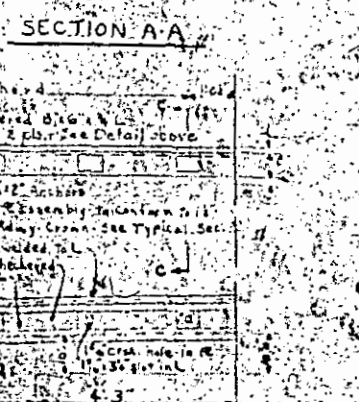
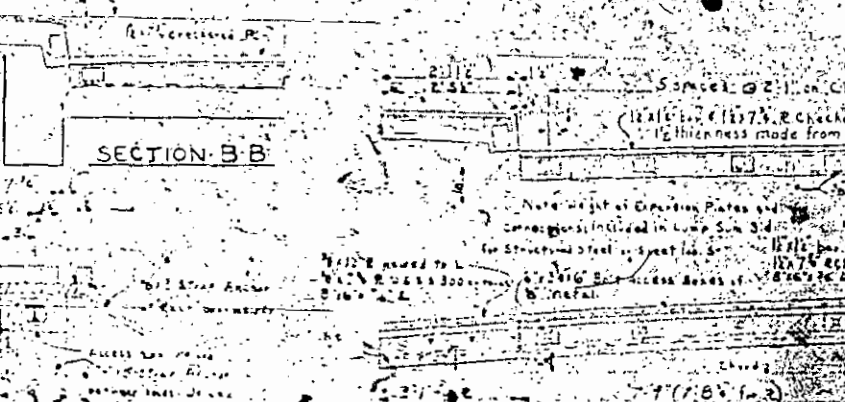
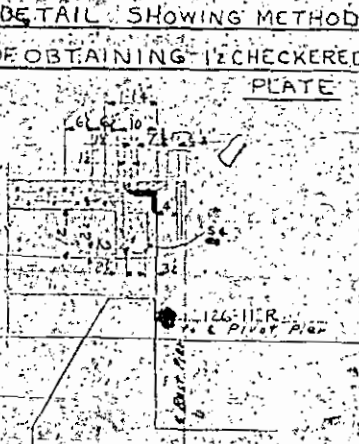
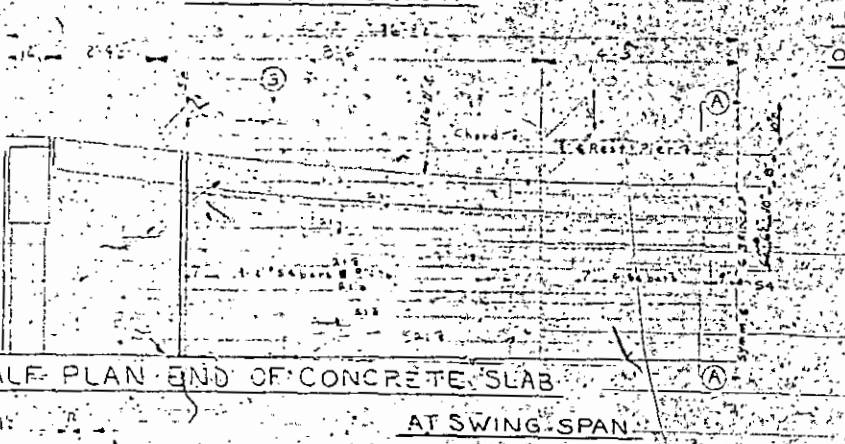
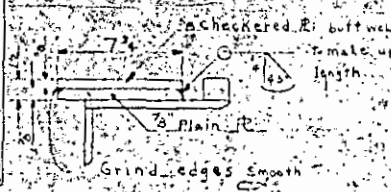
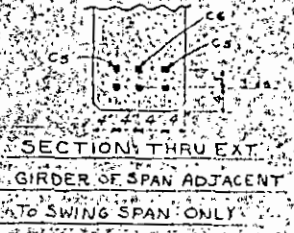
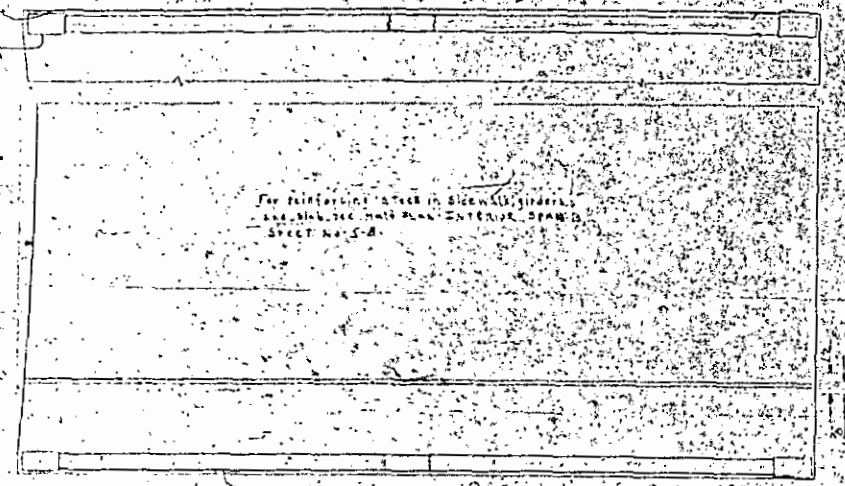
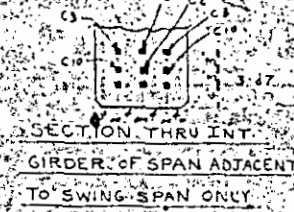
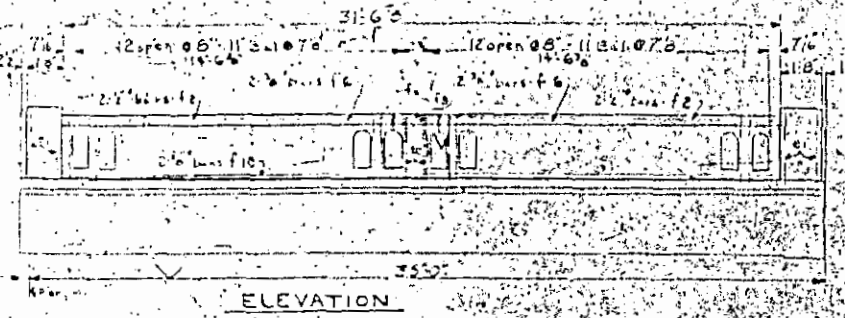
#### DIVISION OF CLASS A CONCRETE

Std. size No. 3 Aggregate	169.2 cu. yds.
Std. size No. 4 Aggregate	136 cu. yds.
<b>TOTAL CLASS A CONCRETE</b>	<b>1828 cu. yds.</b>

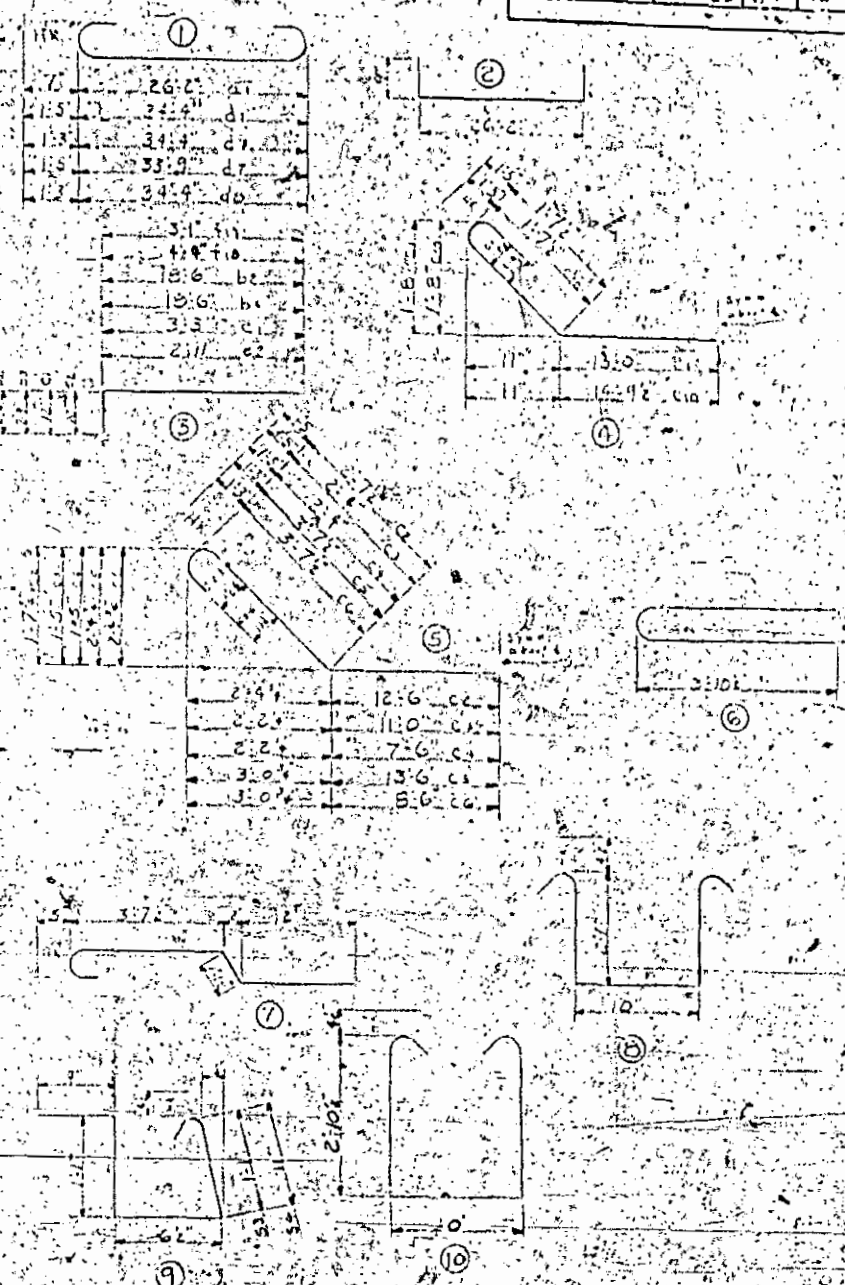
#### DIVISION OF CONCRETE BY SPANS

SPAN	REQ'D	No. 3 Agg.	No. 4 Agg.	TOTAL
End Span	1	4.1	43.3	47.4
Int. Span	1	3.2	42.1	45.3
S.G. Span	1	3.1	42.1	45.2
Swing Span	1	3.2	41.7	44.9
<b>TOTALS</b>	<b>4</b>	<b>13.6</b>	<b>169.2</b>	<b>182.8</b>

NOTE: Class A Concrete using 1 1/2" size max. aggregate. Aggregate shall be used in the ratio and proportions shown.



EXPANSION PLATE AT SWING SPAN (2 Required)  
 See for interior section and details not shown on this sheet see sheet 3-B.



BELT SECT. 372726  
**PENDER COUNTY**  
 STATION 101.25  
 SPAN A ADJACENT TO SWING SPAN

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

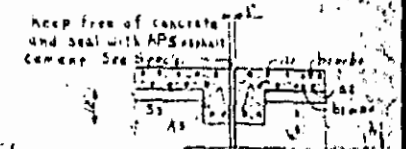
**SUPERSTRUCTURE**  
 NOVEMBER 1953

SHEET 7 OF 18

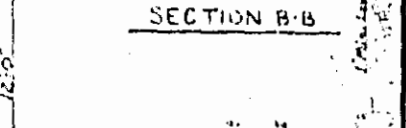


DESIGN NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	3727	7	17

NOTE: Two ply felt shall be placed over joints in expansion joint material. See Specifications.  
 NOTE: For location of fixed and expansion ends of girders see General Drawing.

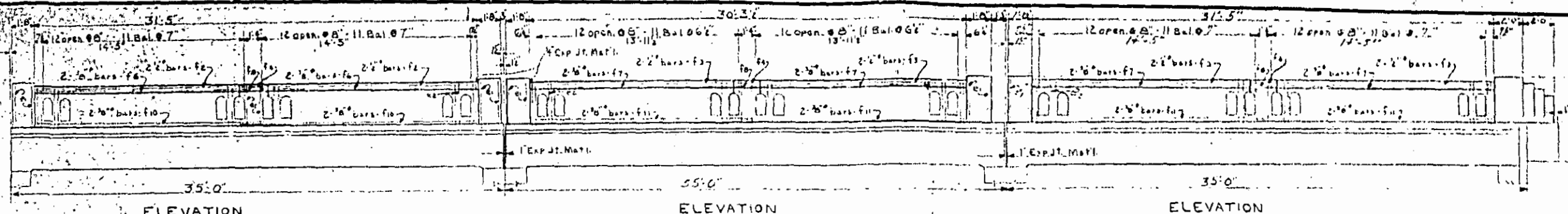


SECTION B-B



SECTION A-A

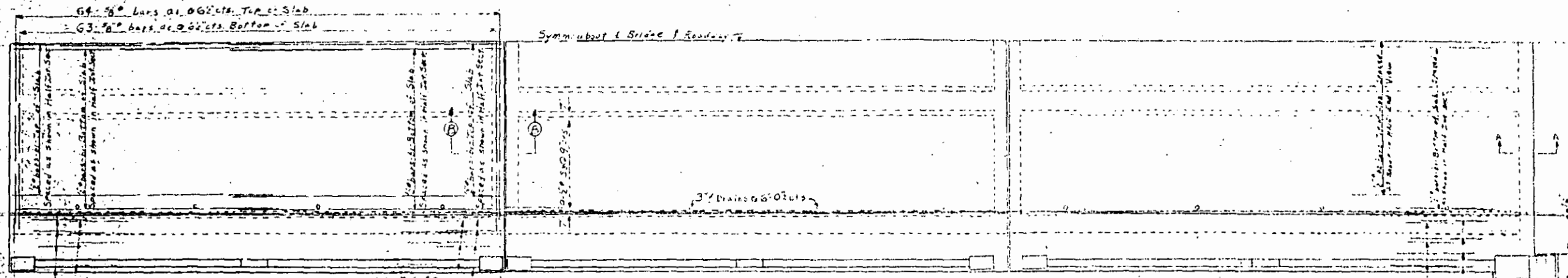
REVISED DRAWING  
 DESTROY OLD COPIES  
 NOV 1 1953



ELEVATION

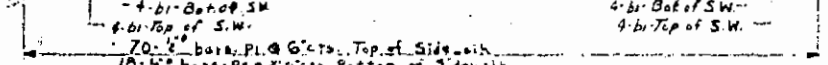
ELEVATION

ELEVATION

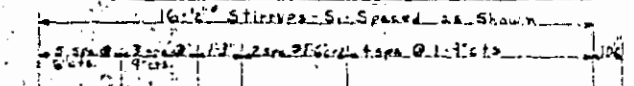


HALF PLAN SAFETY GATE SPAN C

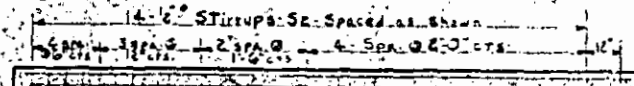
HALF PLAN END SPAN F



HALF PLAN INTERIOR SPAN B or E



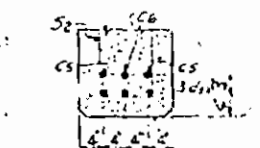
DETAIL OF INTERIOR GIRDER



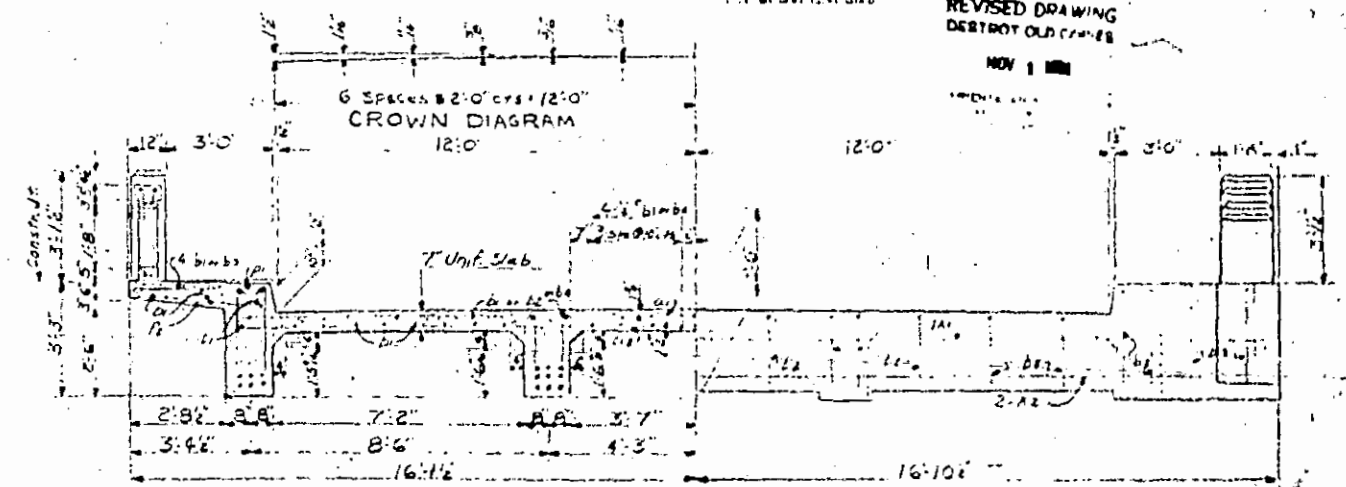
DETAIL OF EXTERIOR GIRDER



SECTION THRU INTERIOR GIRDER



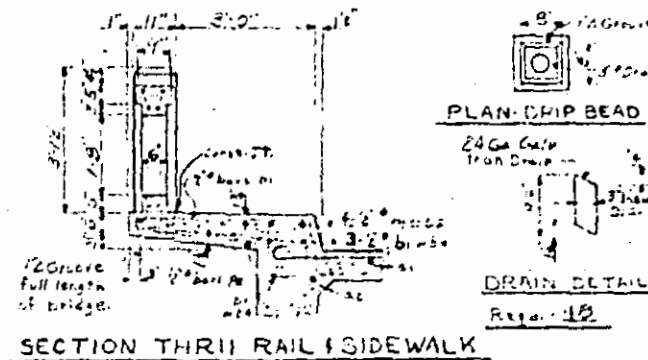
SECTION THRU EXTERIOR GIRDER



6 SPACES @ 2'-0" c/c @ 12'-0" CROWN DIAGRAM

HALF INTERIOR SECTION

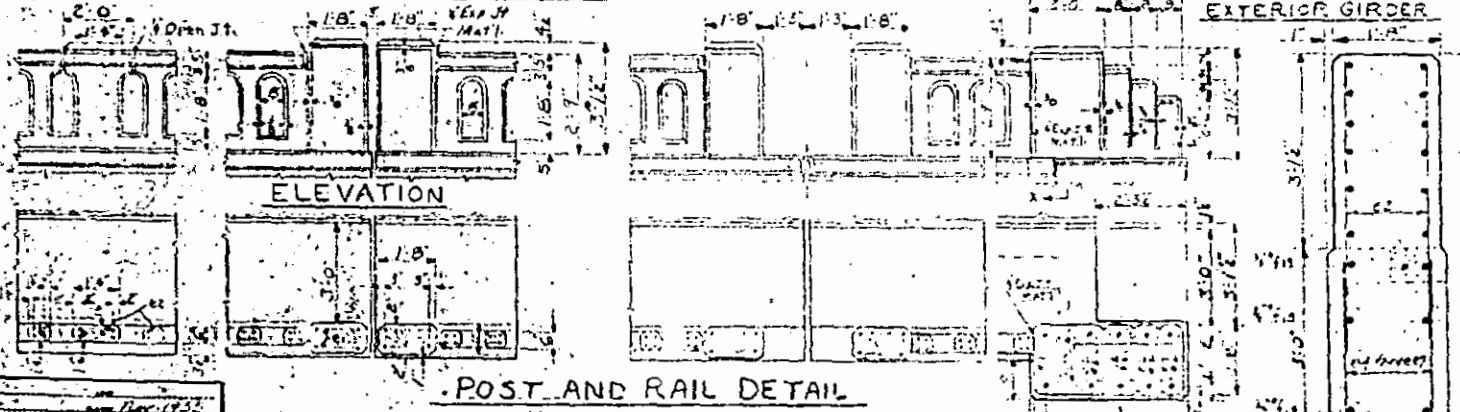
HALF END VIEW



SECTION THRU RAIL & SIDEWALK

PLAN DRIP BEAD

DRAIN DETAIL



ELEVATION

POST AND RAIL DETAIL

SECTION XX

PROJECT NO. 3727-26  
 PENDER COUNTY  
 STATION: 10+65  
 END SPAN F - SAFETY GATE  
 SPAN C - INTERIOR SPAN B, E

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

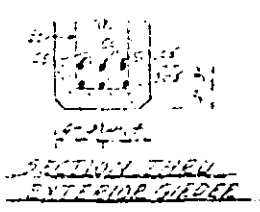
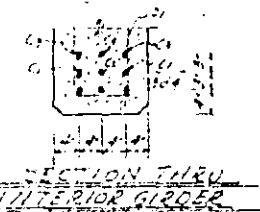
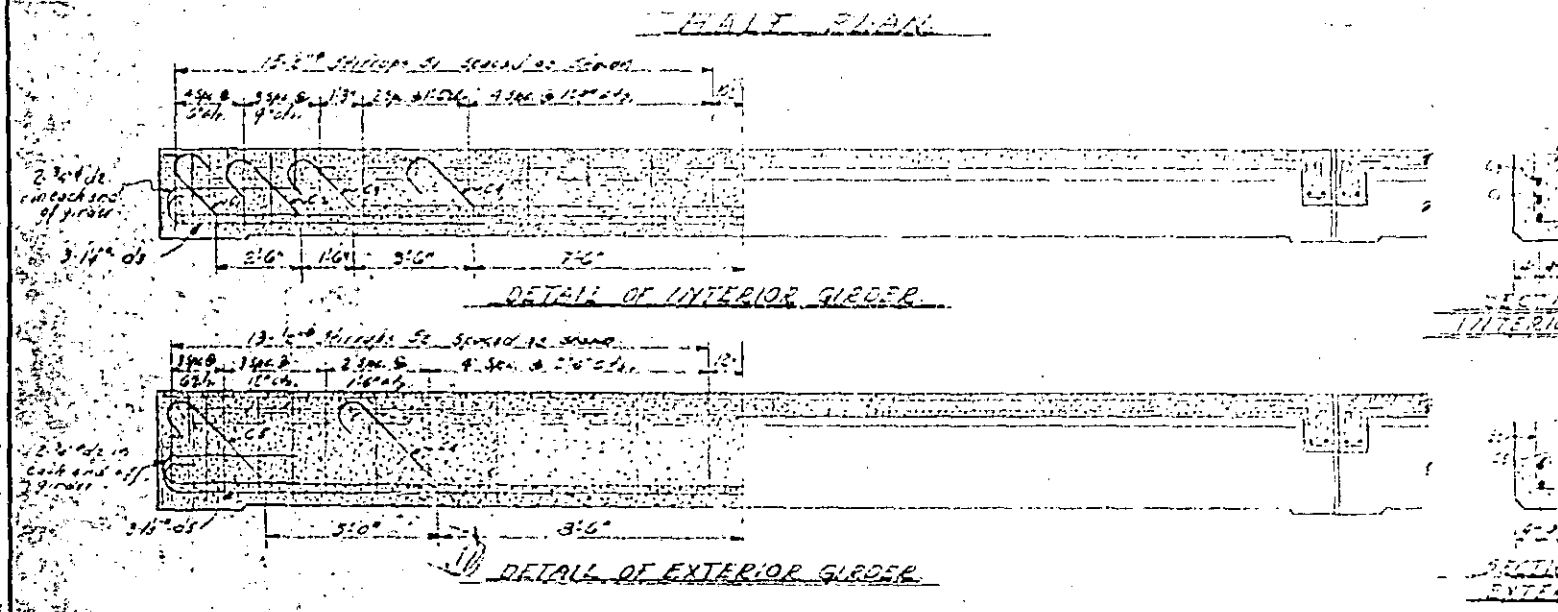
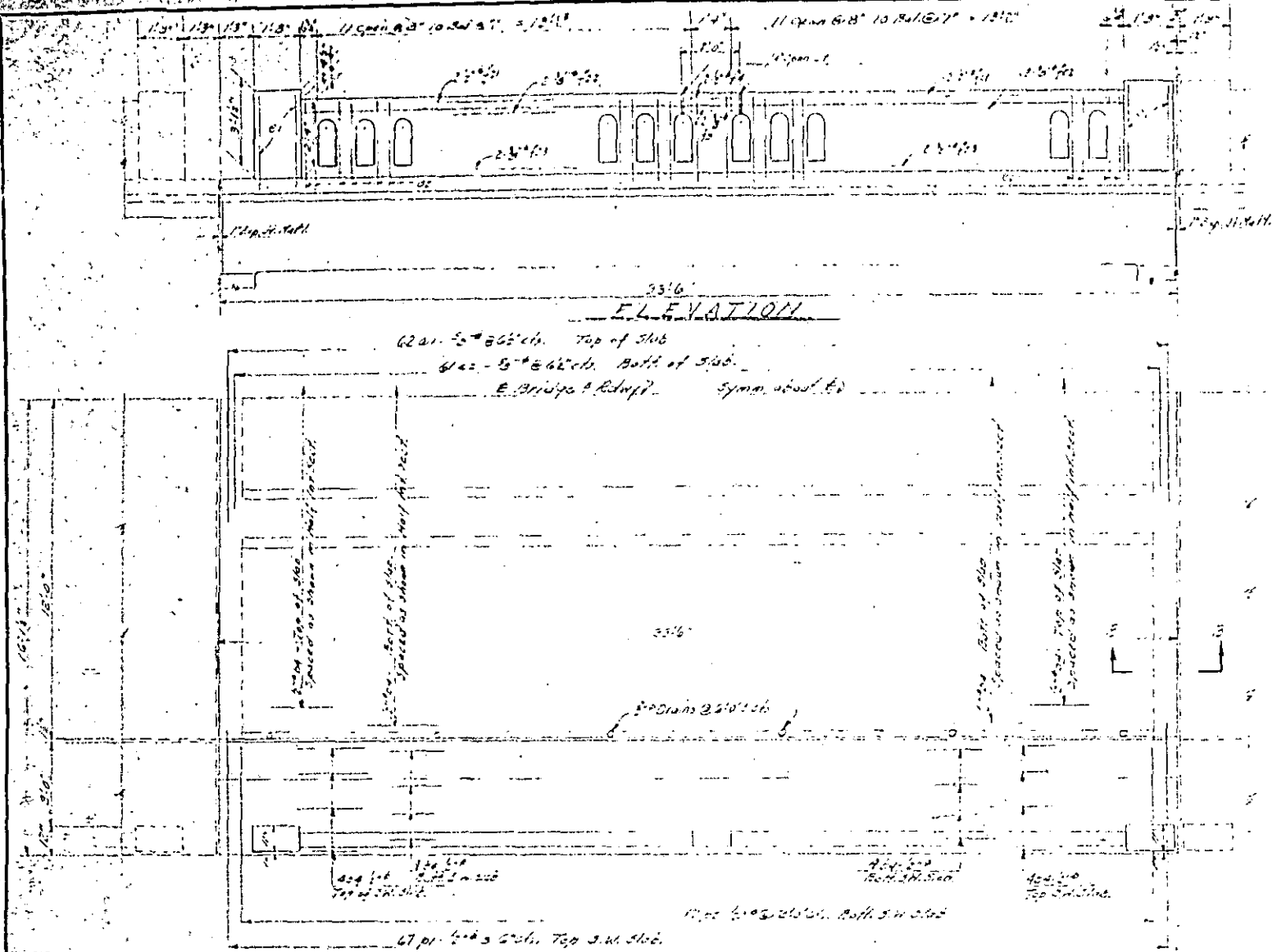
SUPERSTRUCTURE

NOVEMBER - 1953

NOTE: Revised 11-24-54 for addition of 24-GS-66 of Rein. Bars. Also Revised to call for Span E, B, F A to correct location of rail. Span F. Gen. L. 1954 by R.P.F.

Revised to show detail, Edges Top of Piers (12-8-54) by A.S.S. & M.F.

REVISIONS  
 BY: [Signature]  
 DATE: [Date]  
 CHECKED BY: [Signature]  
 DATE: [Date]



### BILL OF MATERIAL

REVISED SPAN 'D'				SPAN 'E'			
Sur	Qty	Size	Weight	Sur	Qty	Size	Weight
10	2	5/8"	1707	11	24	5/8"	1814
11	51	5/8"	1700	12	23	5/8"	1815
14	106	3/4"	1234	15	106	3/4"	1310
16	4	1/2"	767	16	4	1/2"	767
17	2	1/2"	352	17	2	1/2"	352
18	4	1/2"	627	18	4	1/2"	627
19	5	1/2"	239	19	2	1/2"	239
20	4	1/2"	332	20	4	1/2"	332
21	2	1/2"	230	21	2	1/2"	230
22	15	3/4"	192	22	6	1/2"	718
23	6	1/2"	1142	23	16	3/4"	192
24	6	1/2"	917	24	6	1/2"	951
25	16	3/4"	45	25	16	3/4"	45
26	124	3/4"	271	26	200	3/4"	275
27	4	3/4"	5	27	5	3/4"	77
28	7	3/4"	8	28	4	3/4"	5
29	8	3/4"	71	29	8	3/4"	43
30	9	3/4"	40	30	4	3/4"	9
31	9	3/4"	45	31	8	3/4"	49
32	4	3/4"	159	32	4	3/4"	159
33	134	3/4"	552	33	140	3/4"	577
34	54	3/4"	91	34	36	3/4"	96
35	50	3/4"	230	35	64	3/4"	266
36	52	3/4"	255	36	56	3/4"	274
37	54	3/4"	155	37	54	3/4"	159

Reinforcing Steel 25# 21,169 Replacing Steel 25# 21,149  
 Cast in Concrete 25# 2,234 Cast in Concrete 25# 2,451

See Book No. 1 Page No. 39

NOTE: See Sheet 5-B for Post & Rail Details Half Int. Section Section B-B Grain Detail

NOTE: For Bar type see sheet 5-7

NOTE: Grains Required - 20

NOTE: For Design Data and General Note see Sheet 5-11

NOTE: Class of Concrete using Std. Spec. No. 4 unless aggregate shall be used in the table below.

DIVISION OF CONCRETE				
Span	Qty	3/4" dia.	1 1/2" dia.	Total
Span 1	1	3.0	4.9	7.9
Span 2	1	1.2	4.1	5.3
Total	2	4.2	9.0	13.2

PROJECT NO. 3-7-27-26  
 PENDER COUNTY  
 STATION: 10+55  
 REVISIONS AND BILL OF MATERIAL SPAN 'E'

REVISED DRAWING  
 DESTROYED  
 1915

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

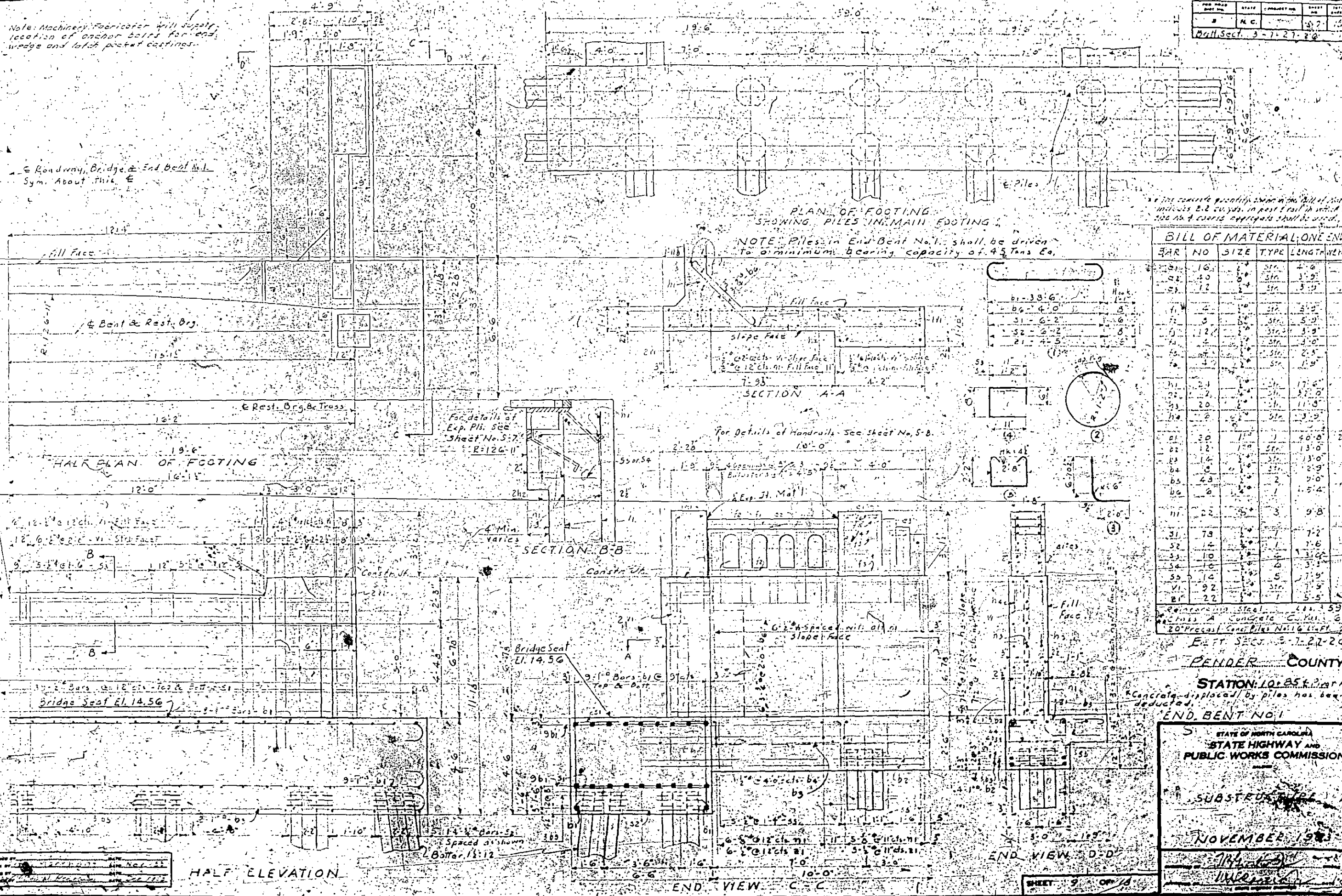
SUPERSTRUCTURE

5-BA  
15



Note: Machinery Fabricator will supply location of anchor bolts for end wedge and left post castings.

± Roadway, Bridge & End Bent No. 1 Sym. About This ±



PLAN OF FOOTING SHOWING PILES IN MAIN FOOTING

NOTE: Piles in End Bent No. 1 shall be driven to a minimum bearing capacity of 45 Tons Ea.

Concrete quantities shown in this Bill of Materials include B. & C. quantities in post & rail in which case the No. 4 series aggregate shall be used.

BILL OF MATERIAL - ONE END BENT

BAR NO	SIZE	TYPE	LENGTH	WEIGHT
1	16	Str.	4'-6"	45
2	10	Str.	3'-9"	58
3	12	Str.	3'-9"	36
4	4	Str.	3'-9"	15
5	8	Str.	5'-2"	17
6	12	Str.	3'-9"	33
7	4	Str.	3'-0"	5
8	4	Str.	2'-5"	6
9	4	Str.	1'-9"	3
10	2 1/2	Str.	17'-6"	250
11	2	Str.	17'-6"	96
12	20	Str.	11'-8"	156
13	8	Str.	3'-9"	17
14	20	Str.	9'-0"	271 1/2
15	12	Str.	13'-6"	630
16	14	Str.	13'-0"	122
17	8	Str.	2'-9"	15
18	4 1/2	Str.	9'-0"	286
19	6	Str.	5'-4"	40
20	22	Str.	9'-8"	322
21	7 1/2	Str.	7'-2"	373
22	12	Str.	7'-6"	158
23	10	Str.	3'-9"	50
24	16	Str.	3'-9"	72
25	14	Str.	7'-9"	72
26	9 1/2	Str.	7'-9"	476
27	22	Str.	5'-5"	80

Reinforcing Steel - 40,000 psi  
 Concrete - 2800 psi  
 20' Precast Concrete Piles No. 16 4 1/2" Dia. 20'

E. FT. SECT. 3-7-27-26

PENDER COUNTY

STATION: 10+85.1 P.M.P. 10+85.1

Concrete displaced by piles has been deducted.

END BENT NO. 1

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

SUBSTRUCTURE

NOVEMBER 1983

W. H. HARRIS

W. H. HARRIS

W. H. HARRIS

W. H. HARRIS

W. H. HARRIS

W. H. HARRIS

W. H. HARRIS

SPECIAL

HALF ELEVATION

END VIEW C-C

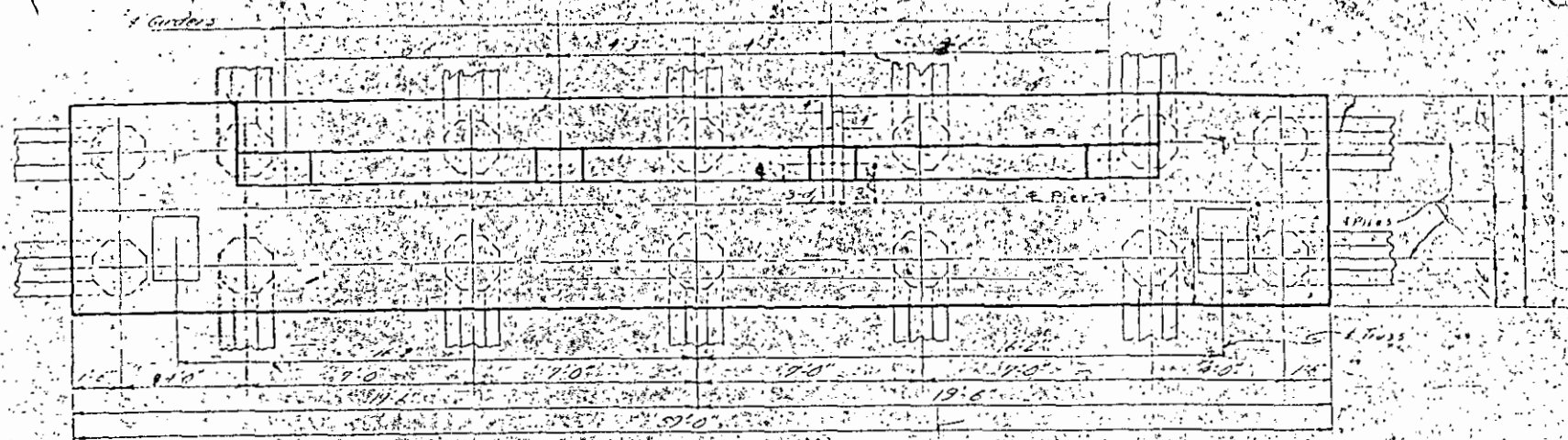
END VIEW D-D

SHEET 9 OF 15

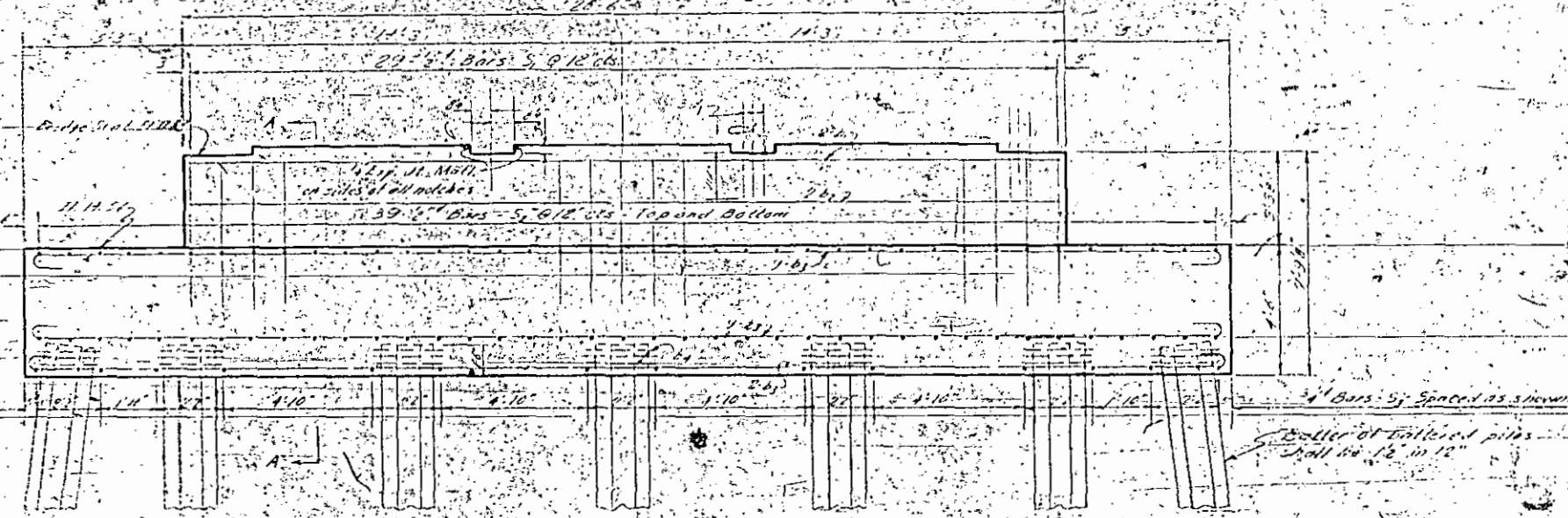




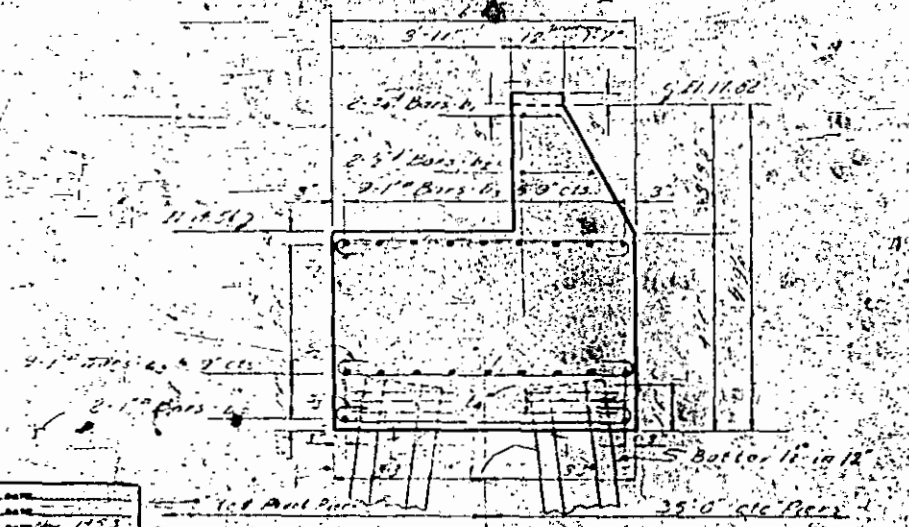




PLAN



ELEVATION



SECTION A-A



NOTE  
 Machinery furnished will supply location of anchor bolts for end brigs and latch pocket castings.  
 All piles shall be driven to a minimum bearing capacity of 45 tons each.  
 For Design Data and General Note see Sheet No. 511

Rec'd One

Bar No.	Size	Length	Height
1	2"	20'-0"	84"
2	4"	12'-0"	110"
3	10"	10'-05"	2150"
4	12"	7'-0"	253"
5	20"	11'-5"	221"
6	18"	7'-5"	386"
7	14"	7'-2"	465"
8	6"	5'-0"	964"
9	2"		
Auxiliary Steel 1656 3797'			
Class A Concrete 14 WS 46.8'			
10' Small Grade Bars (No. 14)			
1/2" in 12"			

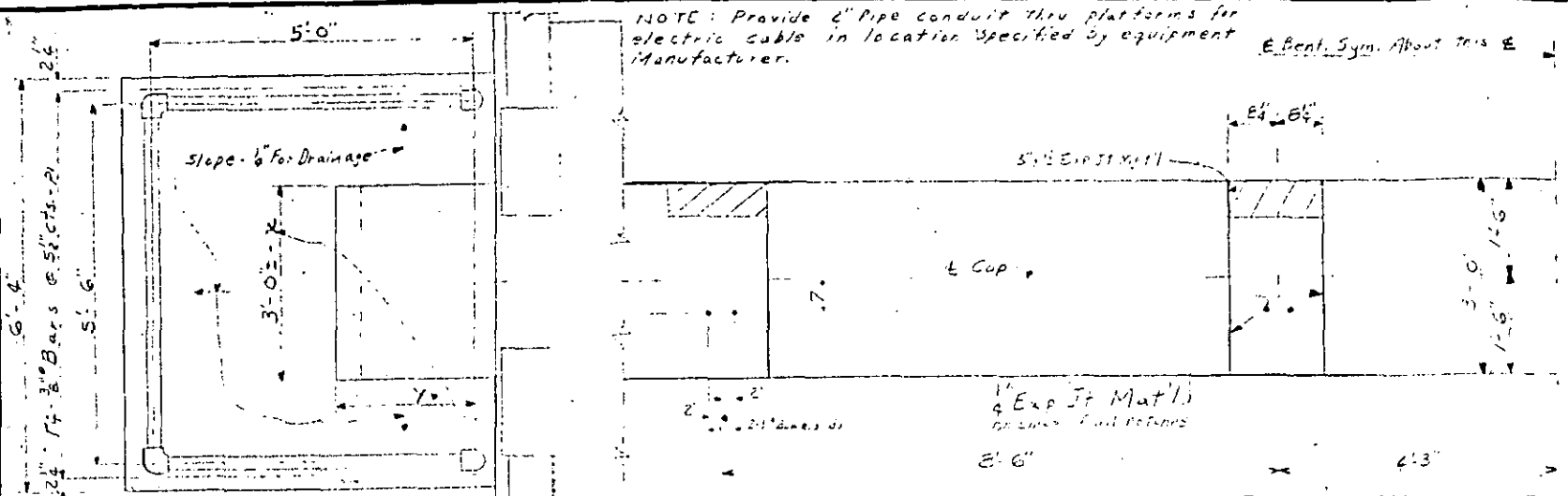
PROJECT NO. 3-7-27-28  
 PENDER COUNTY  
 STATION: 10+85

Rest Pier No. 2  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION  
 SUBSTRUCTURE  
 NOVEMBER 1933  
 W. H. R. [Signature]  
 [Signature]

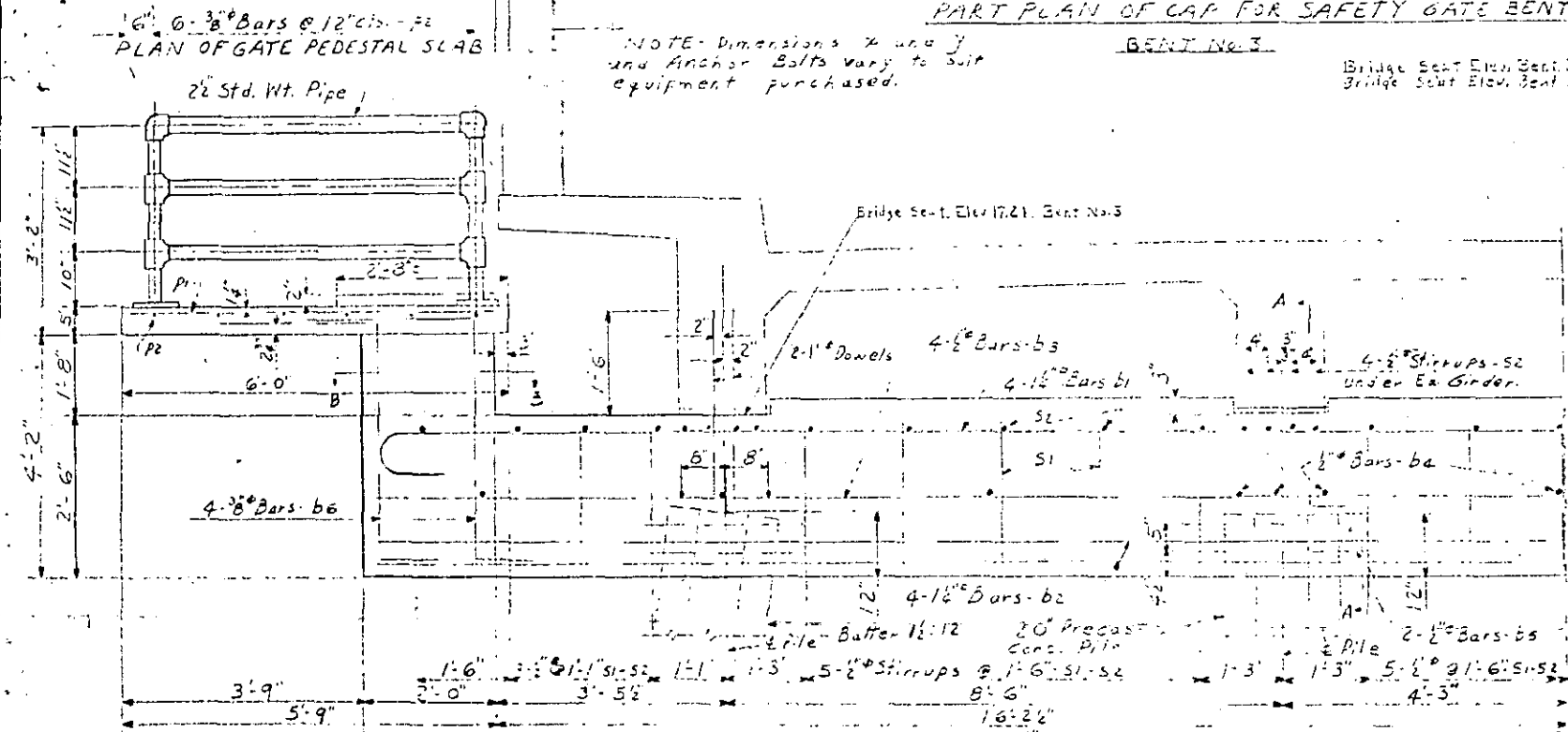
SPECIAL  
 APPROVED  
 DRAWN BY  
 CHECKED BY  
 DATE

Sheet No. 11 of 18

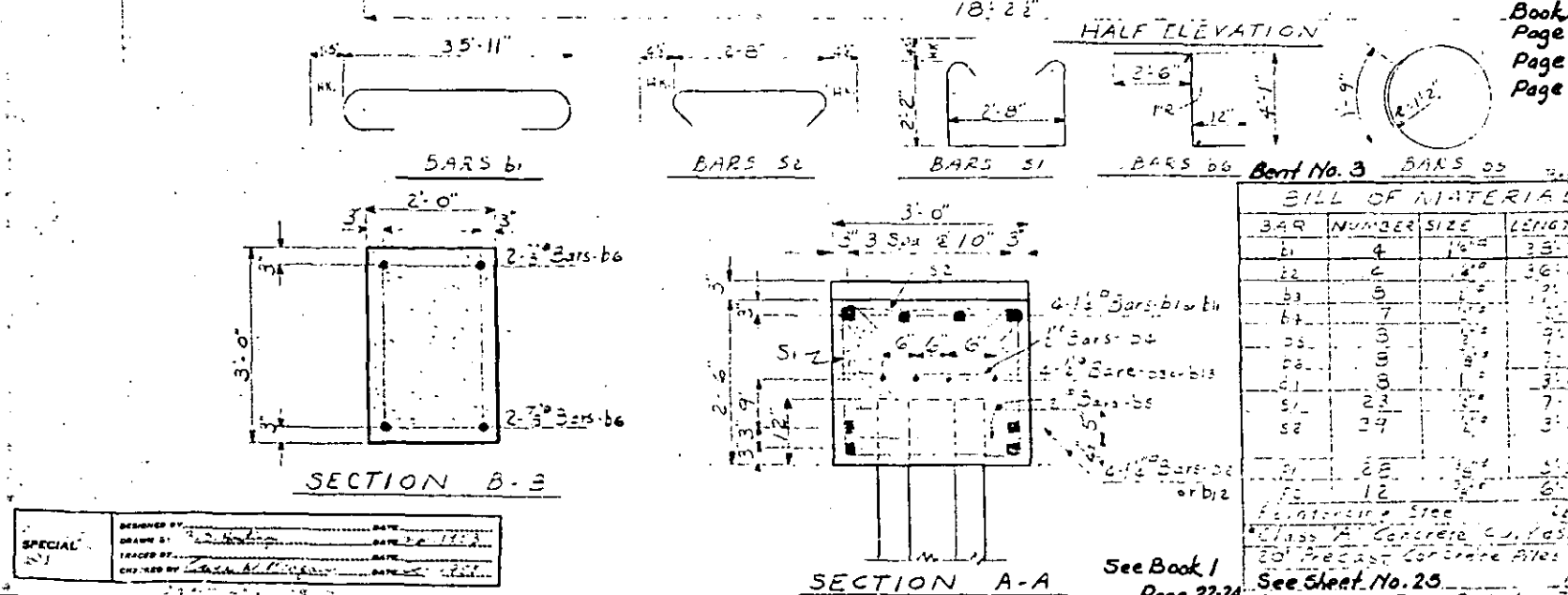
NOTE: Provide 2" Pipe Conduit thru platforms for electric cables in location specified by equipment Manufacturer.



PART PLAN OF CAP FOR SAFETY GATE BENT BENT No. 3

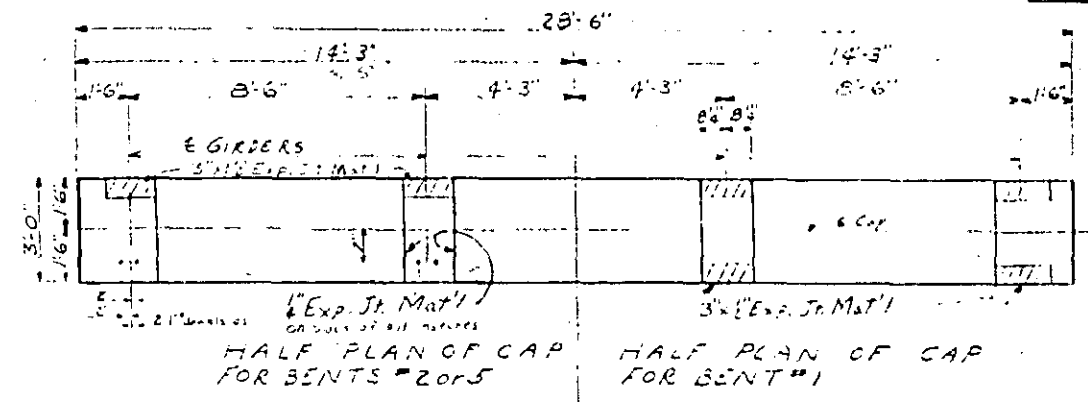


PLAN OF GATE PEDESTAL SLAB

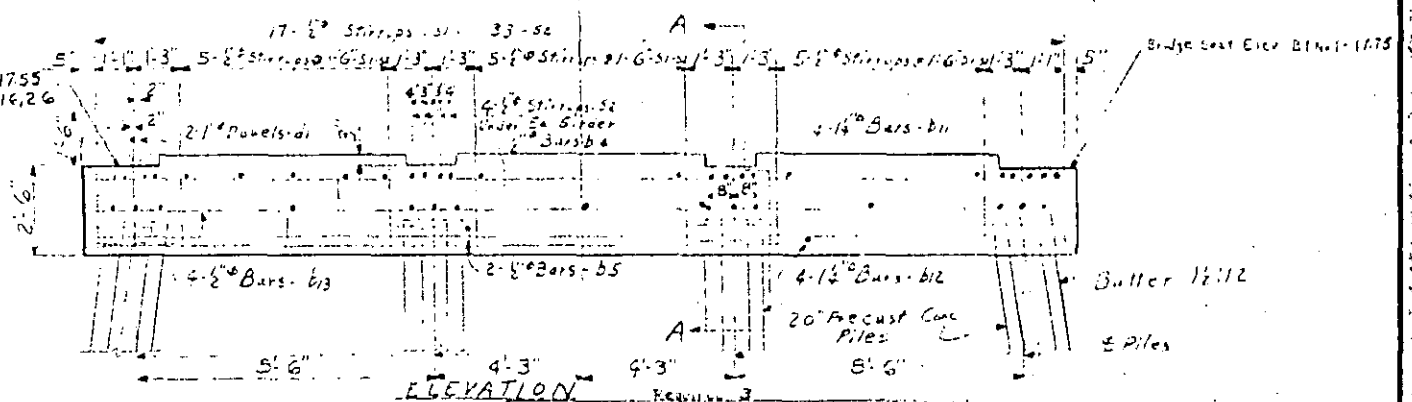


SECTION B-B

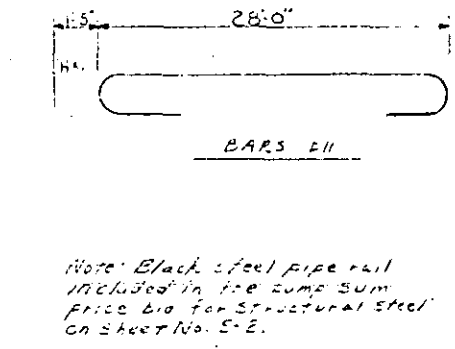
SECTION A-A



HALF PLAN OF CAP FOR BENTS #2 OR 5 and #1



ELEVATION



Note: Black steel pipe rail included in the sum price bid for structural steel on sheet No. 5-2.

Book No 1  
 Page 16-Reinf. Steel in piles 2972/lbs. Total 4,598/lbs. Bent #1  
 Page 19-Reinf. Steel in piles 2840/lbs. Total 4,466/lbs. Bent #2  
 Page 28-Reinf. Steel in piles 1708/lbs. Total 3,334/lbs. Bent #5  
 Method 'D' Damp-proofing - Bent No. 1 - 64.29 Sq. Yds.  
 Bent No. 2 - 50.60 Sq. Yds.  
 Bent No. 5 - 34.22 Sq. Yds.

BAR	NUMBER	SIZE	LENGTH	WEIGHT
b1	4	1 1/2"	33'-7"	824
b2	4	1 1/2"	36'-0"	765
b3	5	1 1/2"	27'-0"	102
b4	7	1 1/2"	9'-0"	30
b5	10	1 1/2"	9'-0"	58
b6	10	1 1/2"	7'-7"	124
b7	10	1 1/2"	3'-0"	84
b8	10	1 1/2"	7'-7"	115
b9	24	1 1/2"	3'-8"	84
b10	24	1 1/2"	3'-8"	84
b11	12	1 1/2"	6'-0"	21
b12	12	1 1/2"	6'-0"	21
Reinforcing Steel				2252
Class 'A' Concrete Curbs				12.44
20" Precast Concrete Piles				460
Steel Pipe				316

BAR	NUMBER	SIZE	LENGTH	WEIGHT
b11	4	1 1/2"	36'-10"	655
b12	4	1 1/2"	28'-0"	545
b13	4	1 1/2"	28'-0"	75
b14	15	1 1/2"	2'-8"	37
b15	5	1 1/2"	9'-0"	48
b16	2	1 1/2"	3'-0"	10
b17	17	1 1/2"	7'-8"	57
b18	33	1 1/2"	3'-5"	75

REQUIREMENT	QUANTITY
Reinforcing Steel	2252 Lbs.
Class 'A' Concrete Curbs	8.2 Lbs.
20" Precast Concrete Piles	4 Ea.
20" Precast Concrete Piles	180
20" Precast Concrete Piles	172
20" Precast Concrete Piles	140

Note: All piles to be driven to a minimum bearing capacity of 40 tons.  
 Note: Caps of these bents to be constructed without use of tie rod or bolts passing thru caps.

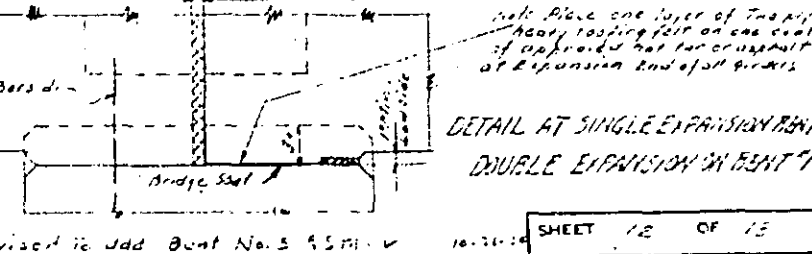
REVISED DRAWING  
 DETROY OLD COPIES  
 NOV 1 1955

See Sheet No. 25  
 See Sheet No. 25  
 See Sheet No. 25

BETT SECT.  
 PROJECT NO. 3:1:27-26  
 PENDER COUNTY  
 STATION: 10+05

BENTS 1-2-3-5  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION  
 SUBSTRUCTURE  
 DETAILS  
 NOVEMBER, 1955

Note: Height of pedestals on safety gate platform to be adjusted so as to make the center of the gate air not less than 3'-0" nor more than 3'-6" above the bridge top at E of roadway.  
 Location of pedestals with respect to back of curb to be adjusted so as to permit ample room for manual operation of gate and maintenance.  
 Gate air to be of detail to operate with ample clearance between the bridge rail post.



DETAIL AT SINGLE EXPANSION BENT  
 DOUBLE EXPANSION BENT

DESIGNED BY  
 DRAWN BY  
 CHECKED BY

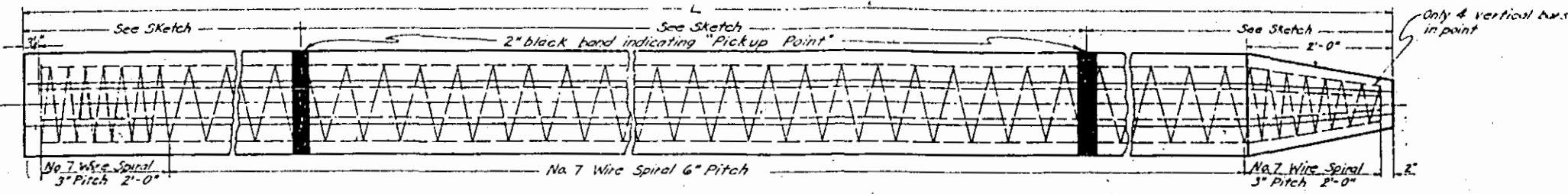
See Book 1  
 Page 22-24

See Sheet No. 25

SHEET 12 OF 15



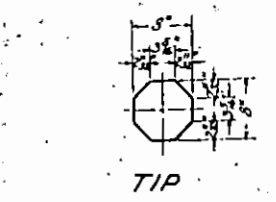




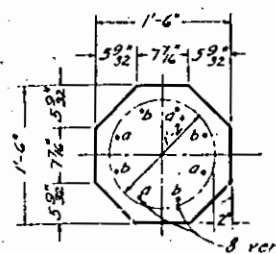
**GENERAL NOTE**

Class A concrete using standard size No. 3 coarse aggregate shall be used. Concrete shall be compacted by mechanical vibration. All reinforcing steel shall be deformed bars. No splices of bars will be permitted. The spiral hoops shall be wired to the vertical bars at intervals of not more than 2'-0". In driving piles, a method approved by the Engineer shall be used whereby the head of the pile is not damaged.

All material and workmanship as per the Specifications of the North Carolina State Highway and Public Works Commission.



TIP



BUTT

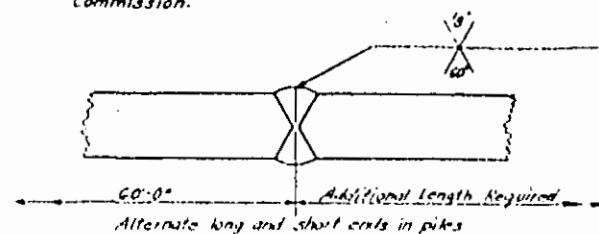
FOR 1'-6" PILE

Concrete per lin. ft. of pile = 0.069 Cu. Yds.  
Concrete in point = 0.076 Cu. Yds.  
Wire per lin. ft. of pile @ 6" pitch = 0.618 lbs.  
Wire per lin. ft. of pile @ 3" pitch = 1.228 lbs.  
Wire in Tip = 1.6 lbs.

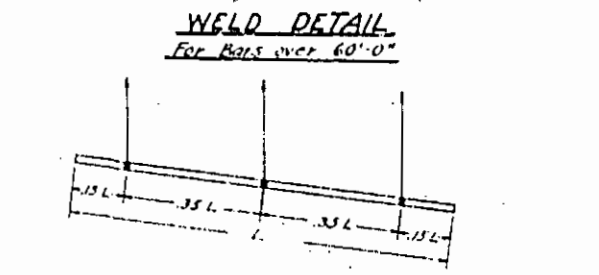
3/4" steel = 1502 lbs./L.F.  
7/8" = 2044 "

**QUANTITIES FOR ONE 1'-6" OCTAGONAL PILE**

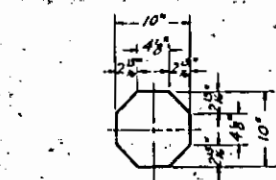
Length "L"	Vertical Reinforcing Bars			Total Rein. Steel Lbs.	Concrete Cu. Yds.	Pile Wt. Tons	Two Pickup Points		Three Pickup Points		
	Bar	No.	Size				.207 L	.586 L	.15 L	.35 L	
25'-0"	a	2	5/8"	22'-9"	214	1.66	3.37	5'-2"	14'-8"		
28'-0"	a	2	3/4"	28'-9"	339	1.87	3.79	5'-9 1/2"	16'-5"		
30'-0"	a	2	3/4"	27'-9"	365	2.01	4.07	6'-2 1/2"	17'-7"		
32'-0"	a	2	3/4"	28'-9"	390	2.15	4.35	6'-7 1/2"	18'-9"		
35'-0"	a	2	3/4"	31'-9"	428	2.35	4.76	7'-3"	20'-6"		
40'-0"	a	2	7/8"	35'-9"	659	2.70	5.47	8'-3"	23'-6"		
45'-0"	a	2	7/8"	41'-9"	743	3.04	6.16	9'-4"	26'-4"		
47'-0"	a	2	1"	41'-9"	1006	3.18	6.44	9'-9"	27'-6"		
50'-0"	a	2	1"	47'-9"	1072	3.39	6.84	10'-4"	29'-4"		
55'-0"	a	2	1"	53'-9"	1495	3.73	7.55	11'-4 1/2"	32'-3"		
60'-0"	a	2	1 1/8"	57'-9"	2058	4.08	8.26		9'-0"	21'-0"	
65'-0"	a	2	1 1/8"	63'-9"	2748	4.42	8.95		9'-9"	22'-9"	



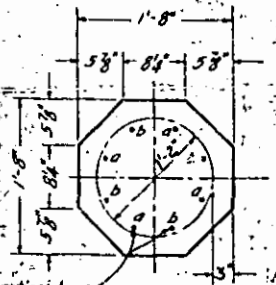
METHOD OF PICKING UP PILES UNDER 60 FEET 2 PICKUP POINTS



METHOD OF PICKING UP PILES 60 FEET AND OVER 3 PICKUP POINTS



TIP



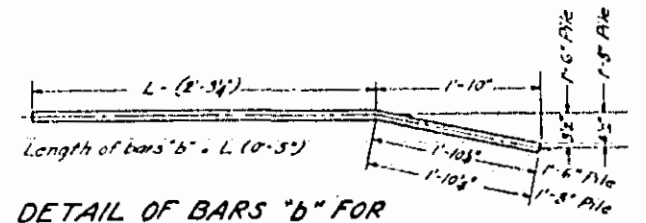
BUTT

FOR 1'-8" PILE

Concrete per lin. ft. of pile = 0.0851 Cu. Yds.  
Concrete in point = 0.15 Cu. Yds.  
Wire per lin. ft. of pile @ 6" pitch = 0.618 lbs.  
Wire per lin. ft. of pile @ 3" pitch = 1.228 lbs.  
Wire in Tip = 1.6 lbs.

**QUANTITIES FOR ONE 1'-8" OCTAGONAL PILE**

Length "L"	Vertical Reinforcing Bars			Total Rein. Steel Lbs.	Concrete Cu. Yds.	Pile Wt. Tons	Two Pickup Points		Three Pickup Points		
	Bar	No.	Size				.207 L	.586 L	.15 L	.35 L	
25'-0"	a	2	5/8"	22'-9"	214	2.11	4.27	5'-2"	14'-8"		
30'-0"	a	2	3/4"	28'-9"	365	2.53	5.12	6'-2 1/2"	17'-7"		
35'-0"	a	2	3/4"	31'-9"	427	2.96	5.99	7'-3"	20'-6"		
37'-0"	a	2	7/8"	34'-9"	607	3.13	6.33	7'-8"	21'-8"		
40'-0"	a	2	7/8"	36'-9"	658	3.38	6.84	8'-3"	23'-6"		
45'-0"	a	2	7/8"	41'-9"	743	3.81	7.72	9'-4"	26'-4"		
47'-0"	a	2	1"	41'-9"	1005	3.98	8.06	9'-9"	27'-6"		
50'-0"	a	2	1"	47'-9"	1072	4.23	8.57	10'-4"	29'-4"		
55'-0"	a	2	1"	53'-9"	1495	4.66	9.44	11'-4 1/2"	32'-3"		
58'-0"	a	2	1 1/8"	57'-9"	1987	4.92	9.96	12'-0"	34'-0"		
60'-0"	a	2	1 1/8"	57'-9"	2058	5.09	10.31		9'-0"	21'-0"	
63'-0"	a	2	1 1/8"	63'-9"	2661	5.34	10.81		9'-5 1/2"	22'-0 1/2"	
65'-0"	a	2	1 1/8"	63'-9"	2748	5.51	11.16		9'-9"	22'-9"	
70'-0"	a	2	1 1/8"	68'-9"	2963	5.94	12.03		10'-6"	24'-6"	



DETAIL OF BARS "b" FOR 1'-6" AND 1'-8" PILES

REVISED DRAWING DESTROY OLD COPIES  
NOV 1 1953  
BRIDGE ENGINEERING

**SUMMARY OF PILES**

No.	Length	Diameter	Conc. Cu. Yds.	Rein. Steel Lbs.
20	30'-0"	1'-8"	50.6	7300
12	35'-0"	1'-8"	35.5	5164
47	40'-0"	1'-8"	158.4	30926
18	45'-0"	1'-8"	68.6	13374

See Book 1 Page 63  
See Sheet No. 30

Reinforcing Steel Lbs.	56,727
Class A Concrete, Cu. Yds.	513.8
Linear Feet 1'-6" Piles	
Linear Feet 1'-8" Piles	3910
Method of Dampproofing System	1000
Total Piles, No.	97

Lengths of piles are subject to variations to suit conditions as found.

BETT. SECT. PROJECT NO. 3-7-27-26  
PENDER COUNTY  
STATION: 10+85

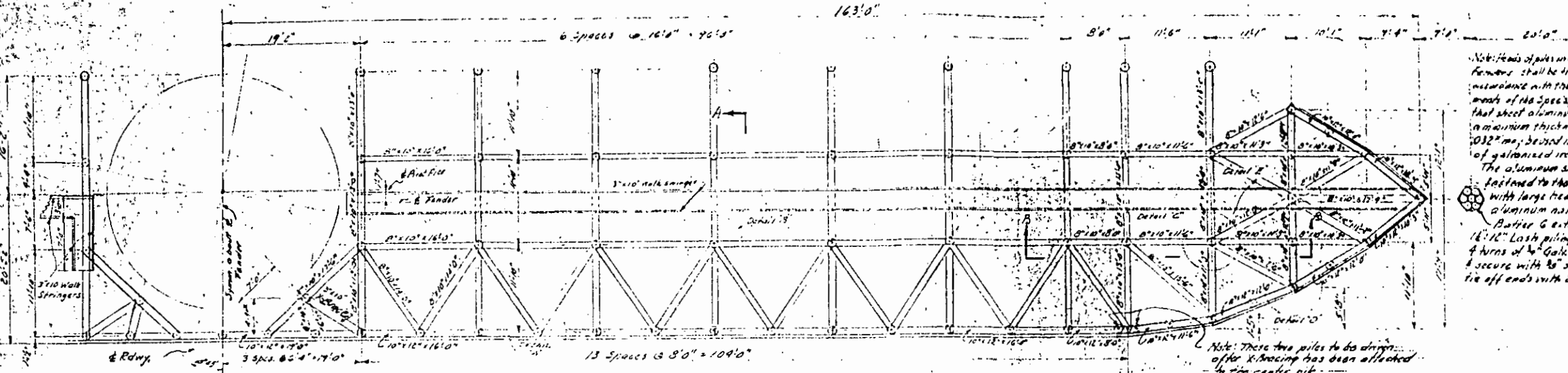
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
**STANDARD PRE-CAST R.C. PILES**  
JUNE, 1953  
W. S. Roper

SPECIAL APPROVED BY B. S. Hester DATE June, 1953  
DESIGNED BY H. J. ... DATE Jan., 1954  
STANDARD TRACED BY Anna Ruth Sugg DATE June, 1953  
CHECKED BY H. J. ... DATE Aug., 1953

Method "D" Dampproofing: Method "D" dampproofing shall be applied to the 20" diameter piles from the top of the pile to bed of stream.  
Note: Revised to add eight 35'-0" X 1'-8" piles (Var. 1, 1954) by HRP



FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	3-7-27-26	15	35



HALF PLAN

Note: Heads of piles in fenders shall be treated in accordance with the requirements of the Specs, except that sheet aluminum having a maximum thickness of 0.032" may be used instead of galvanized iron. The aluminum shall be fastened to the piles with large headed aluminum nails. Batter & exterior piles 1 1/2" Lash piling with 4 turns of 3/4" Galv. Cable & secure with 8" staples, tie off ends with 2 clamps.

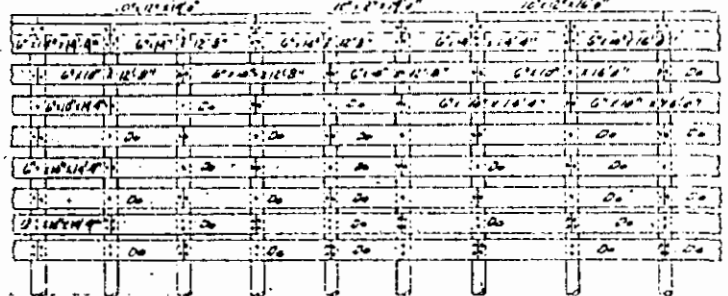
Note: All piles to be driven to a minimum bearing capacity of 15 tons each.

Note: Length of bolts are based on a pile 15" in dia., and are approximate only. The contractor shall determine the exact length in the field. All vertical bolts require 1-0.6 washer each, other bolts require 2-0.6 washers each. Staples to be square in section and bent on a diagonal.

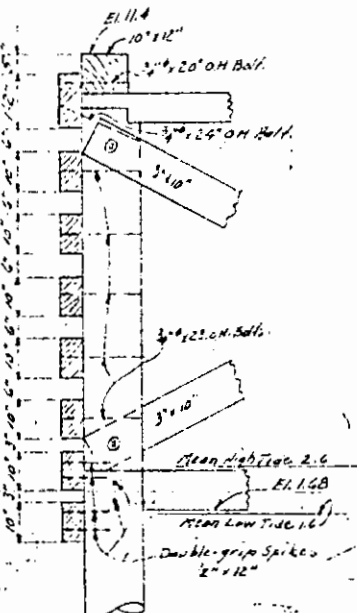
**BILL OF MATERIAL - CROSETT TIMBER**

Item	No.	Size	Surface ft.	Length	Weight
Waling	2	6" x 10"	343.54 x 74'	8'0"	310
Do	28	6" x 10"	116'	15'0"	1540
Do	19	6" x 10"	Do	11'6"	863
Do	42	6" x 10"	Do	18'0"	2310
Do	18	6" x 10"	Do	18'0"	1190
Do	8	6" x 10"	Do	18'0"	612
Do	2	6" x 10"	343.54 x 74'	12'0"	2280
Do	2	6" x 10"	Do	12'0"	168
Do	2	6" x 10"	Do	18'0"	252
Do	2	6" x 10"	Do	18'0"	171
Do	18	6" x 10"	Do	7'6"	1512
Do	2	6" x 10"	191.74 x 74'	8'0"	160
Do	2	6" x 10"	Do	18'0"	410
Do	2	6" x 10"	Do	12'0"	230
Do	2	6" x 10"	Do	12'0"	720
Do	12	6" x 10"	Do	15'0"	1920
Do	2	6" x 10"	Do	19'0"	310
Do	2	6" x 10"	343.54 x 74'	5'0"	10
Do	4	6" x 10"	Do	8'0"	218
Do	2	6" x 10"	Do	12'0"	173
Do	2	6" x 10"	Do	7'6"	146
Do	4	6" x 10"	Do	11'3"	300
Do	4	6" x 10"	Do	11'6"	306
Do	4	6" x 10"	Do	11'9"	313
Do	6	6" x 10"	Do	12'6"	647
Do	4	6" x 10"	Do	12'9"	390
Do	52	6" x 10"	Do	13'0"	4560
Do	26	6" x 10"	Do	14'0"	2326
Do	2	6" x 10"	Do	15'0"	206
Do	2	6" x 10"	Do	17'6"	218
Do	2	6" x 10"	Do	17'9"	236
Do	2	6" x 10"	Do	18'0"	250
Do	2	6" x 10"	343.54 x 74'	10'0"	80
Do	2	6" x 10"	Do	18'0"	360
Do	22	6" x 10"	Do	18'0"	380
Do	8	6" x 10"	Do	18'0"	170
Do	2	6" x 10"	343.54 x 74'	2'6"	250
Do	52	6" x 10"	343.54 x 74'	8'0"	1288
Do	60	6" x 10"	181.74 x 36'	10'0"	700
Do	14	6" x 10"	43.74 x 24'	10'0"	270
Do	16	6" x 10"	Do	7'6"	170
Do	8	6" x 10"	Do	8'0"	190
Do	4	6" x 10"	Do	10'0"	160
Do	4	6" x 10"	Do	11'9"	173
Do	4	6" x 10"	Do	12'6"	180
Do	4	6" x 10"	Do	12'6"	180
Do	11	6" x 10"	Do	13'0"	340
Do	4	6" x 10"	Do	13'0"	150
Do	10	6" x 10"	Do	14'6"	377
Do	18	6" x 10"	Do	17'0"	311
Blocking	100	6" x 6"	Enough	12"	3500

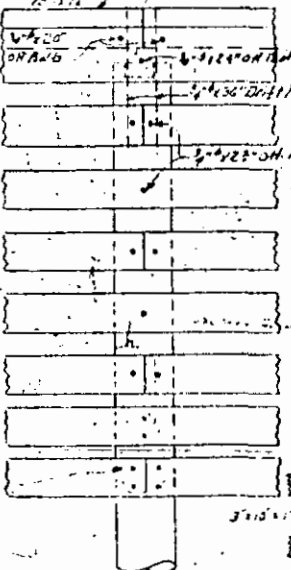
Crosstie Timber Pile Cut-off in excess 2 feet - 152.27 LF  
Greenheart Pile Cut-off in excess 2 feet - 35.17 LF



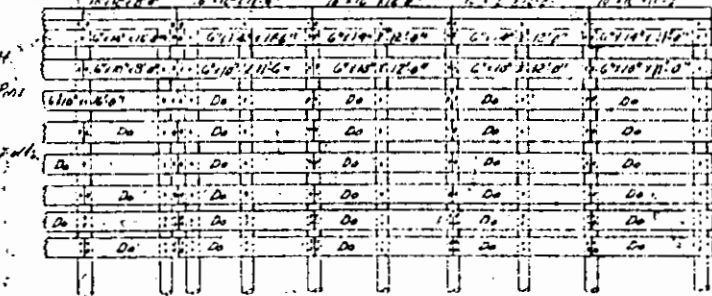
PART ELEVATION



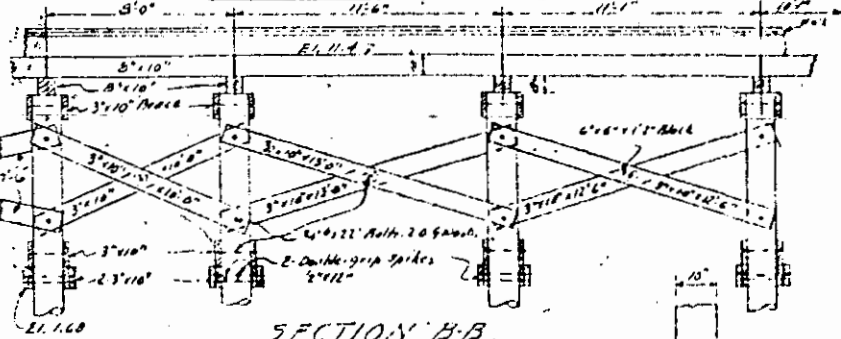
PART SECTION A



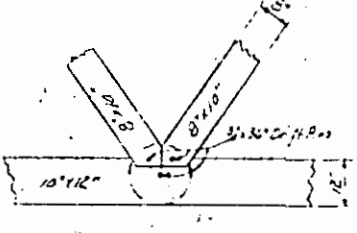
PART ELEVATION



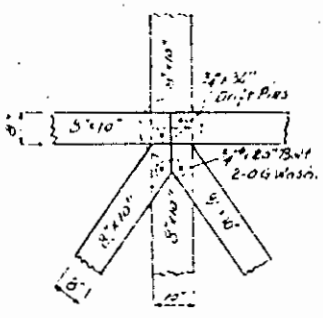
ELEVATION NOSING



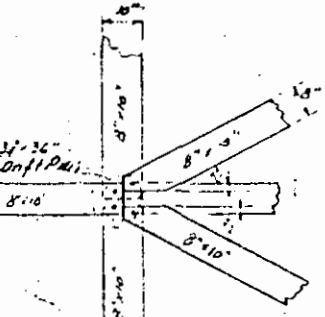
SECTION B-B



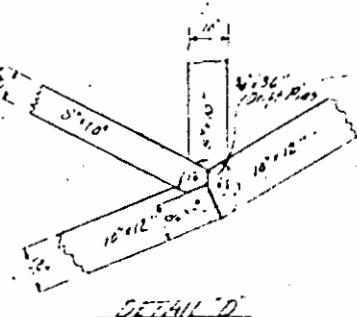
DETAIL A



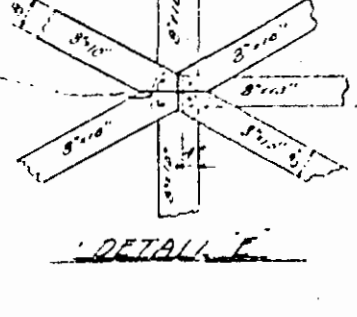
DETAIL B



DETAIL C



DETAIL D



DETAIL E

**BILL OF MATERIAL - HARDWARE**

Item	No.	Size	Length	Weight
DRILL BIT	123	3/8"	20"	370
Do	213	3/8"	23"	1407
Do	84	3/8"	24"	284
3/16" DIA. RIVET	88	3/16"	20"	261
Do	258	3/16"	22"	822
CUT WASHERS	605	3/8"		302
O.G. WASHERS	1557	3/8"		1044
DRIFT PINS	232	3/8"	96"	1058
DOUBLE GRIP SPIKES	466	3/8"	12"	331
DRILL BIT	200	3/8"		367
CABLE CLAMP	2300	3/8"		113
WIRE CABLE CLAMP	8	3/8"	200'0"	6
STAPLES	172	3/8"		75
TOTAL				6351

DESIGNED BY: J.P. WILSON  
CHECKED BY: J. WILSON  
DATE: 12-1-27

TOTAL CROSETT TIMBER PILES - 49,220  
CROSETT TIMBER PILES - 119,119 LBS  
GREENHEART PILES - 11,250 LBS  
See Sheet Nos. 26 & 28  
Note: Crosstie timber piles shall be used in the fender.  
Greenheart piles shall be used in the clusters at the ends of the fender.  
See Special Provisions.  
See Book 1 Page No. 34.

REVISED DRAWING  
DESTROYED BY  
NOV 8 1954  
BRIDGE DEPT.  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT NO. 3-7-27-26  
FENDER COUNTY  
STATION: 10+9.5

FENDER A  
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
FENDER DETAILS  
DEC 1927  
SHEET 15 OF 16

Revised to correct number of O.N. Bolts - 20 to 207  
Rich. Bolts - 2" x 20" & 2" x 22" and O.G. Washers  
and number of 3" x 10" x 14" x 6" Cros. Timber  
3-8-55 J.P.W. - O.W.R.



FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	N.C.	37-272	11	18



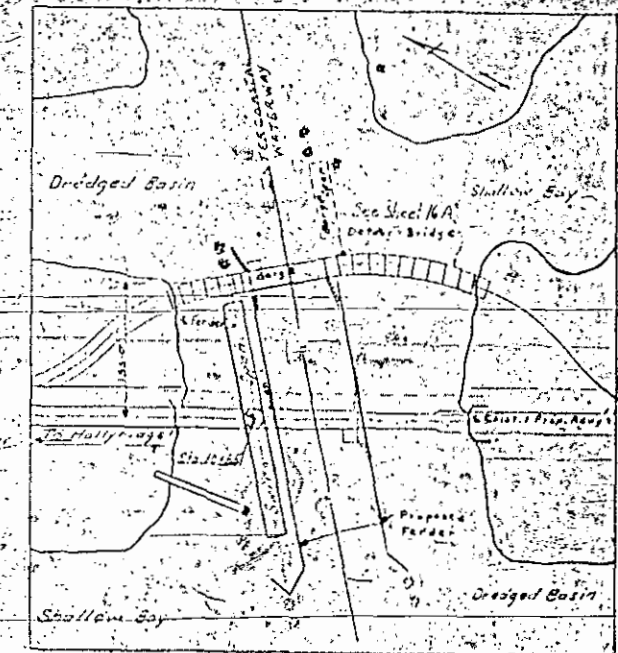
HALF PLAN OF FENDER

ITEM	QTY	UNIT	PRICE	TOTAL
1	10	10'	1.00	10.00
2	10	10'	1.00	10.00
3	10	10'	1.00	10.00
4	10	10'	1.00	10.00
5	10	10'	1.00	10.00
6	10	10'	1.00	10.00
7	10	10'	1.00	10.00
8	10	10'	1.00	10.00
9	10	10'	1.00	10.00
10	10	10'	1.00	10.00
11	10	10'	1.00	10.00
12	10	10'	1.00	10.00
13	10	10'	1.00	10.00
14	10	10'	1.00	10.00
15	10	10'	1.00	10.00
16	10	10'	1.00	10.00
17	10	10'	1.00	10.00
18	10	10'	1.00	10.00
19	10	10'	1.00	10.00
20	10	10'	1.00	10.00
21	10	10'	1.00	10.00
22	10	10'	1.00	10.00
23	10	10'	1.00	10.00
24	10	10'	1.00	10.00
25	10	10'	1.00	10.00
26	10	10'	1.00	10.00
27	10	10'	1.00	10.00
28	10	10'	1.00	10.00
29	10	10'	1.00	10.00
30	10	10'	1.00	10.00
31	10	10'	1.00	10.00
32	10	10'	1.00	10.00
33	10	10'	1.00	10.00
34	10	10'	1.00	10.00
35	10	10'	1.00	10.00
36	10	10'	1.00	10.00
37	10	10'	1.00	10.00
38	10	10'	1.00	10.00
39	10	10'	1.00	10.00
40	10	10'	1.00	10.00
41	10	10'	1.00	10.00
42	10	10'	1.00	10.00
43	10	10'	1.00	10.00
44	10	10'	1.00	10.00
45	10	10'	1.00	10.00
46	10	10'	1.00	10.00
47	10	10'	1.00	10.00
48	10	10'	1.00	10.00
49	10	10'	1.00	10.00
50	10	10'	1.00	10.00

PART SIDE ELEVATION OF FENDER



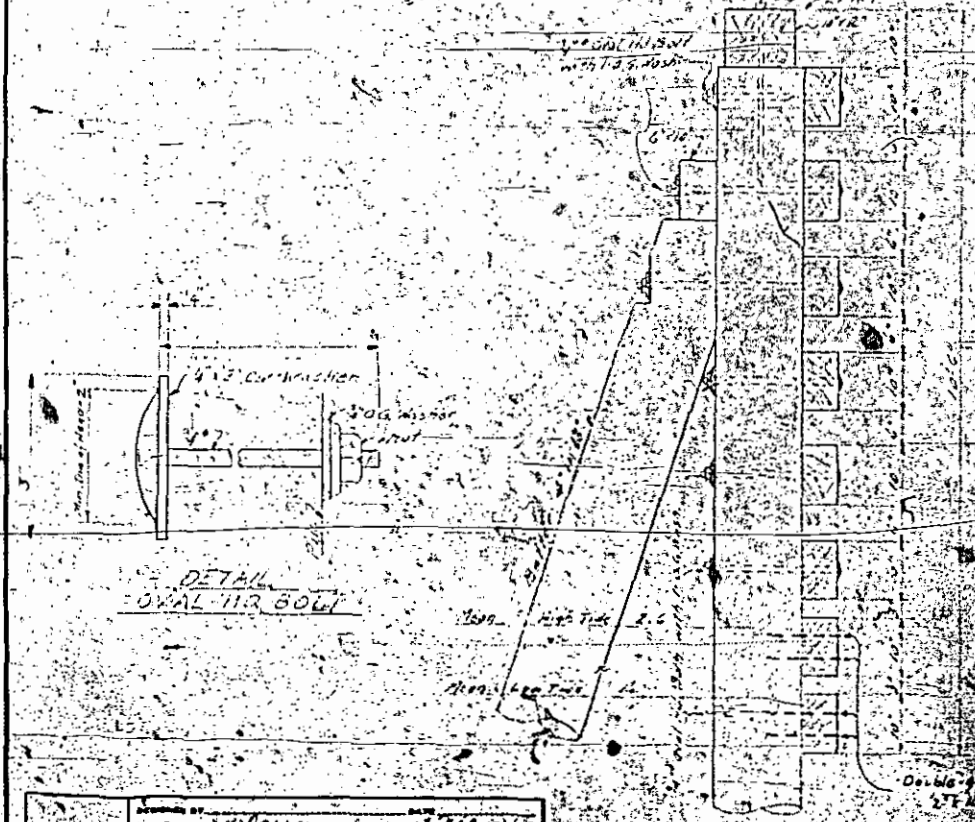
PLAN OF SWING SEAM OPEN



SKETCH SHOWING LOCATION OF DETOUR BRIDGE

Note: The contractor's attention is called to the fact that it will be necessary to delay construction of a portion of the fender until after the proposed detour bridge has been replaced.

BILL OF MATERIAL					
CREOSOTED TIMBER			GREEN HEART PILES		
ITEM	QTY	UNIT	ITEM	QTY	UNIT
1	7	10'	1	28	40.0'
2	10	10'	2	28	40.0'
3	10	10'	3	28	40.0'
4	10	10'	4	28	40.0'
5	10	10'	5	28	40.0'
6	10	10'	6	28	40.0'
7	10	10'	7	28	40.0'
8	10	10'	8	28	40.0'
9	10	10'	9	28	40.0'
10	10	10'	10	28	40.0'
11	10	10'	11	28	40.0'
12	10	10'	12	28	40.0'
13	10	10'	13	28	40.0'
14	10	10'	14	28	40.0'
15	10	10'	15	28	40.0'
16	10	10'	16	28	40.0'
17	10	10'	17	28	40.0'
18	10	10'	18	28	40.0'
19	10	10'	19	28	40.0'
20	10	10'	20	28	40.0'
21	10	10'	21	28	40.0'
22	10	10'	22	28	40.0'
23	10	10'	23	28	40.0'
24	10	10'	24	28	40.0'
25	10	10'	25	28	40.0'
26	10	10'	26	28	40.0'
27	10	10'	27	28	40.0'
28	10	10'	28	28	40.0'
29	10	10'	29	28	40.0'
30	10	10'	30	28	40.0'
31	10	10'	31	28	40.0'
32	10	10'	32	28	40.0'
33	10	10'	33	28	40.0'
34	10	10'	34	28	40.0'
35	10	10'	35	28	40.0'
36	10	10'	36	28	40.0'
37	10	10'	37	28	40.0'
38	10	10'	38	28	40.0'
39	10	10'	39	28	40.0'
40	10	10'	40	28	40.0'
41	10	10'	41	28	40.0'
42	10	10'	42	28	40.0'
43	10	10'	43	28	40.0'
44	10	10'	44	28	40.0'
45	10	10'	45	28	40.0'
46	10	10'	46	28	40.0'
47	10	10'	47	28	40.0'
48	10	10'	48	28	40.0'
49	10	10'	49	28	40.0'
50	10	10'	50	28	40.0'
51	10	10'	51	28	40.0'
52	10	10'	52	28	40.0'
53	10	10'	53	28	40.0'
54	10	10'	54	28	40.0'
55	10	10'	55	28	40.0'
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57	10	10'	57	28	40.0'
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59	10	10'	59	28	40.0'
60	10	10'	60	28	40.0'
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62	10	10'	62	28	40.0'
63	10	10'	63	28	40.0'
64	10	10'	64	28	40.0'
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67	10	10'	67	28	40.0'
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69	10	10'	69	28	40.0'
70	10	10'	70	28	40.0'
71	10	10'	71	28	40.0'
72	10	10'	72	28	40.0'
73	10	10'	73	28	40.0'
74	10	10'	74	28	40.0'
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76	10	10'	76	28	40.0'
77	10	10'	77	28	40.0'
78	10	10'	78	28	40.0'
79	10	10'	79	28	40.0'
80	10	10'	80	28	40.0'
81	10	10'	81	28	40.0'
82	10	10'	82	28	40.0'
83	10	10'	83	28	40.0'
84	10	10'	84	28	40.0'
85	10	10'	85	28	40.0'
86	10	10'	86	28	40.0'
87	10	10'	87	28	40.0'
88	10	10'	88	28	40.0'
89	10	10'	89	28	40.0'
90	10	10'	90	28	40.0'
91	10	10'	91	28	40.0'
92	10	10'	92	28	40.0'
93	10	10'	93	28	40.0'
94	10	10'	94	28	40.0'
95	10	10'	95	28	40.0'
96	10	10'	96	28	40.0'
97	10	10'	97	28	40.0'
98	10	10'	98	28	40.0'
99	10	10'	99	28	40.0'
100	10	10'	100	28	40.0'



SECTION AA

Note: 1/2 holes shall be bored in the two bottom run of wales and 4x12 double grip spikes shall be driven into the piles.

Note: Creosoted timber piles shall be used in fender. Greenheart piles shall be used in the clusters at the ends of the fender.

All hardware to be galvanized. Lengths of bolts are based on pile 15" in dia. and are approximate only. The contractor shall determine the exact length in the field. Heads of piles in fenders shall be treated in accordance with the requirements of the specifications, except that sheet aluminum having a minimum thickness of .032" may be used instead of galvanized iron. The aluminum shall be fastened to the piles with large headed aluminum nuts.

PROJECT NO. 35-37-272  
FENDER COUNTY  
STATION 10+85  
FENDER B

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION

FENDER DETAILS

Nov. 1953

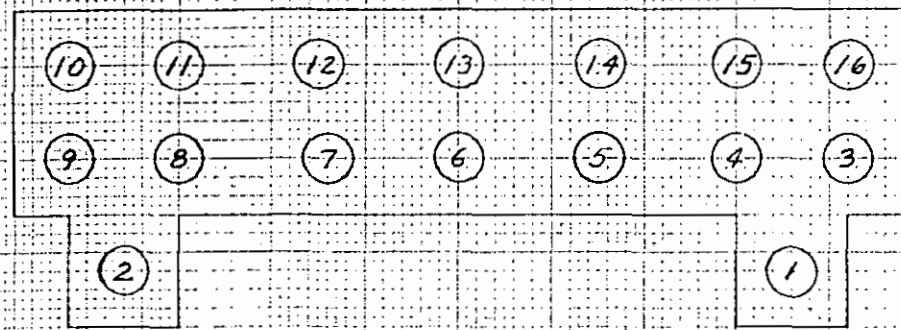
W. H. ...

Revised to change shear showing Location of Detour Br. 4/26/54 by B.S.H.V.

SHEET 116 OF 118



# CONCRETE PILES



REST PIER ENDBENT NO. 1

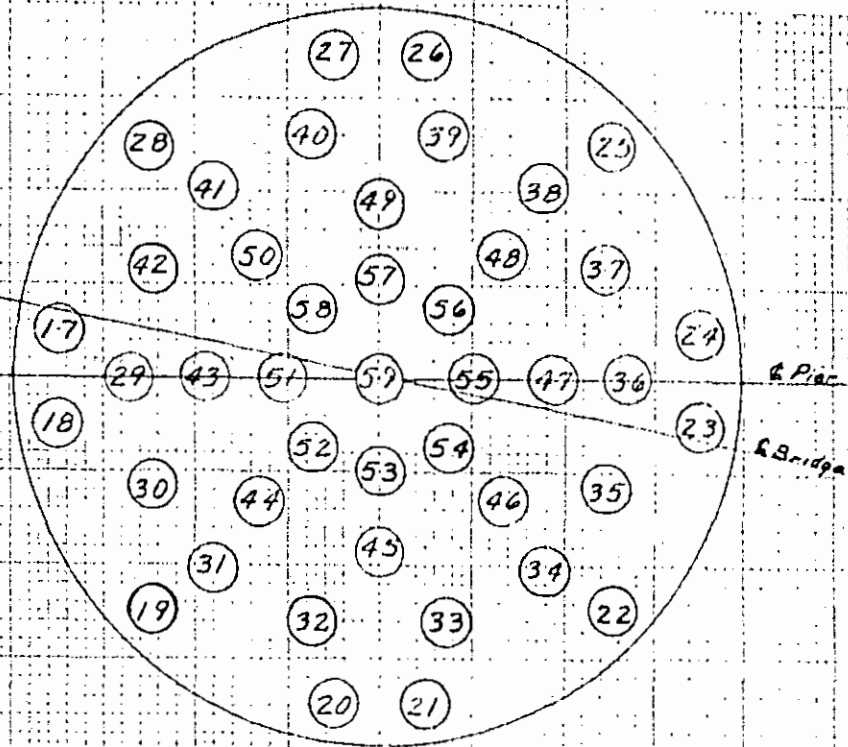
Pile No.	Order Length	Cut Off No.	Pay Length	Rein Steel Pay Length	Rein Steel In Cut Off
1	35		35	427	
2	35		35	427	
3	35		35	427	
4	35	1 34	31.6	386	41
5	35		35	427	
6	35		35	427	
7	35		35	427	
8	35		35	427	
9	35		35	427	
10	35		35	427	
11	35		35	427	
12	35		35	427	
13	35		35	427	
14	35		35	427	
15	35		35	427	
16	35		35	427	
		1 34	556.6	6791	41

SEE BOOK NO. 1  
PAGE NO. 14

## PIVOT PIER

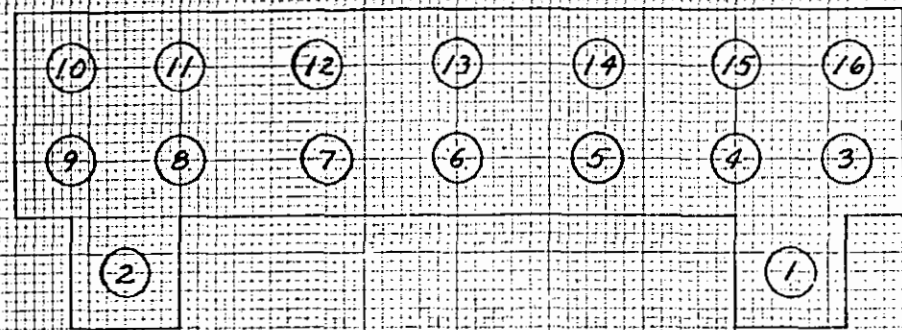
Pile No.	Order Length	Cut Off No.	Pay Length	Rein Steel Pay Length	Rein Steel In Cut Off
17	38		38	625	
18	38		38	625	
19	38		38	625	
20	38		38	625	
21	38		38	625	
22	38		38	625	
23	38		38	625	
24	38		38	625	
25	38	1 28	352	581	44
26	38		38	625	
27	38		38	625	
28	38		38	625	
29	38		38	625	
30	38		38	625	
31	38		38	625	
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33	38		38	625	
34	38		38	625	
35	38		38	625	
36	38		38	625	
37	38		38	625	
38	38		38	625	
39	38		38	625	
40	38		38	625	
41	38		38	625	
42	38		38	625	
43	38		38	625	
44	38		38	625	
45	38		38	625	
46	38		38	625	
47	38		38	625	
48	38		38	625	
49	38		38	625	
50	38		38	625	
51	38		38	625	
52	38		38	625	
53	38		38	625	
54	38		38	625	
55	38		38	625	
56	38		38	625	
57	38		38	625	
58	38		38	625	
59	38		38	625	
		1 28	1631.2	26831	44

SEE BOOK NO. 1  
PAGE NO. 9-11





# CONCRETE PILES



REST PIER ENDBENT NO. 1

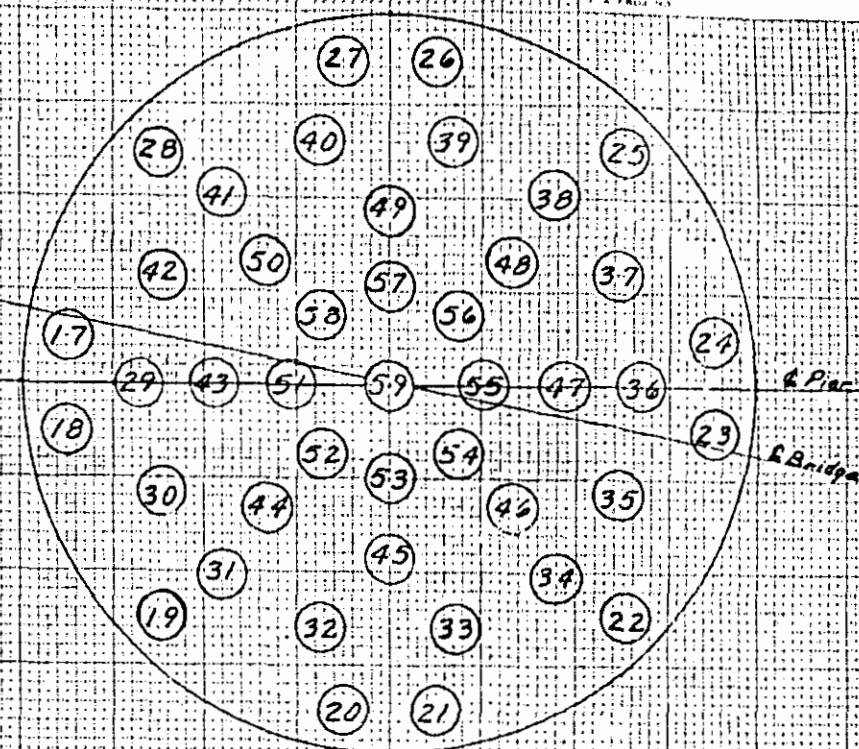
Pile No.	Order Length	Cut Off No.	Pay Length	Rein Steel Pay Length	Rein Steel In Cut Off
1	35		35	427	
2	35		35	427	
3	35		35	427	
4	35	1 34	31.6	386	41
5	35		35	427	
6	35		35	427	
7	35		35	427	
8	35		35	427	
9	35		35	427	
10	35		35	427	
11	35		35	427	
12	35		35	427	
13	35		35	427	
14	35		35	427	
15	35		35	427	
16	35		35	427	
		1 34	556.6	6791	41

SEE BOOK NO. 1  
PAGE NO. 14

## PIVOT PIER

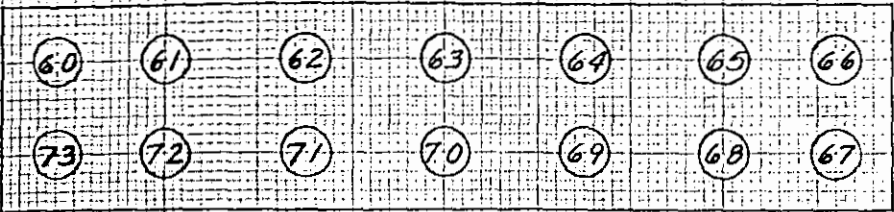
Pile No.	Order Length	Cut Off No.	Pay Length	Rein Steel Pay Length	Rein Steel In Cut Off
17	38		38	625	
18	38		38	625	
19	38		38	625	
20	38		38	625	
21	38		38	625	
22	38		38	625	
23	38		38	625	
24	38		38	625	
25	38	1 28	35.2	581	44
26	38		38	625	
27	38		38	625	
28	38		38	625	
29	38		38	625	
30	38		38	625	
31	38		38	625	
32	38		38	625	
33	38		38	625	
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35	38		38	625	
36	38		38	625	
37	38		38	625	
38	38		38	625	
39	38		38	625	
40	38		38	625	
41	38		38	625	
42	38		38	625	
43	38		38	625	
44	38		38	625	
45	38		38	625	
46	38		38	625	
47	38		38	625	
48	38		38	625	
49	38		38	625	
50	38		38	625	
51	38		38	625	
52	38		38	625	
53	38		38	625	
54	38		38	625	
55	38		38	625	
56	38		38	625	
57	38		38	625	
58	38		38	625	
59	38		38	625	
		1 28	1631.2	24831	44

SEE BOOK NO. 1  
PAGE NO. 9-11





# CONCRETE PILES



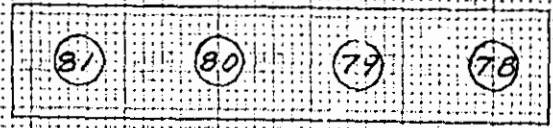
REST PIER NO. 2

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
60	43			43	710	
61	43			43	710	
62	43			43	710	
63	43			43	710	
64	43			43	710	
65	43			43	710	
66	43			43	710	
67	43			43	710	
68	43			43	710	
69	43			43	710	
70	43			43	710	
71	43			43	710	
72	43			43	710	
73	43	1	14	416	690	20
Totals		1	14	600.6	9920	20



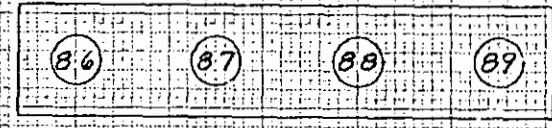
BENT NO. 1

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
74	45			45	743	
75	45			45	743	
76	45			45	743	
77	45			45	743	
Totals				180	2972	



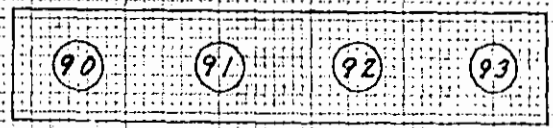
BENT NO. 2

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
78	43			43	710	
79	43			43	710	
80	43			43	710	
81	43			43	710	
Totals				172	2840	



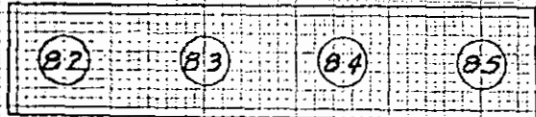
BENT NO. 4

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
86	38	1	44	336	554	71
87	38	1	47	333	549	76
88	38	1	49	331	545	80
89	38	1	49	331	545	80
Totals		4	189	1331	2193	307



BENT NO. 5

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
90	35			35	427	
91	35			35	427	
92	35			35	427	
93	35			35	427	
Totals				140	1708	



BENT NO. 3

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
82	40			40	658	
83	40			40	658	
84	40			40	658	
85	40			40	658	
Totals				160	2632	



END BENT NO. 2

Pile No.	Order Length	Cut Off No.	Length	Pay Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
94	35			35	427	
95	35			35	427	
96	35			35	427	
97	35			35	427	
Totals				140	1708	

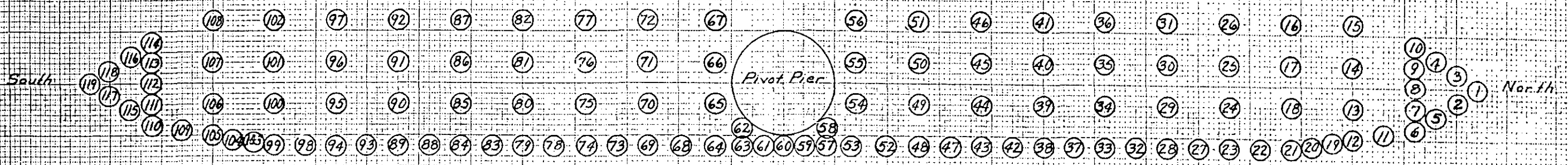
## SUMMARY

Bent No.	Pay Length	Cut Off No.	Length	Rein Steel Pay Length	Rein Steel Length in Cut Off
Rest Pier No. 1	556.6	1	34	6791	41
Pivot Pier	1631.2	1	28	26831	44
Rest Pier No. 2	600.6	1	14	9920	20
Bent No. 1	1800			2972	
Bent No. 2	1720			2840	
Bent No. 3	1600			2632	
Bent No. 4	1331	4	189	2193	307
Bent No. 5	1400			1708	
End Bent No. 2	1400			1708	
Totals	3713.5	7	265	57595	412

SEE BOOK NO. 1  
PAGE NO. 14-32



# CREO. TIMBER PILES FENDER 'A'



Pile No. 1 - 24				Pile No. 25 - 48				Pile No. 49 - 72				Pile No. 73 - 96				Pile No. 97 - 119								
Pile No.	Order Length	Total Cut Off	Pay in Excess Length	Pile No.	Order Length	Total Cut Off	Pay in Excess Length	Pile No.	Order Length	Total Cut Off	Pay in Excess Length	Pile No.	Order Length	Total Cut Off	Pay in Excess Length	Pile No.	Order Length	Total Cut Off	Pay in Excess Length					
1	40	400	200	3600	25	40	300	1.00	3700	49	40	425	225	3575	73	40	233	033	3767	97	40	375	115	3625
2	40	358	158	3642	26	40	183		3817	50	40	200		3800	74	40	333	133	3667	98	40	200		3800
3	40	467	267	3533	27	40	217	017	3783	51	40	150		3850	75	40	183		3817	99	40	300	100	3700
4	40	512	342	3458	28	40	242	042	3758	52	40	758	558	3242	76	40	625	425	3375	100	40	317	117	3683
5	40	125		3875	29	40	092		3908	53	40	708	508	3292	77	40	317	117	3683	101	40	133		3867
6	40	550	350	3450	30	40	225	025	3775	54	40	125		3875	78	40	142		3858	102	40	233	033	3767
7	40	317	117	3683	31	40	600	400	3400	55	40	083		3917	79	40	179		3821	103	40	175		3825
8	40	442	242	3558	32	40	217	017	3783	56	40	125		3875	80	40	300	100	3700	104	40	267	067	3733
9	40	550	350	3450	33	40	142		3858	57	40	167		3833	81	40	325	125	3675	105	40	200		3800
10	40	367	167	3633	34	40	167		3833	58	40	242	042	3758	82	40	400	200	3600	106	40	1000	800	3000
11	40	433	233	3567	35	40	225	025	3775	59	40	208	08	3792	83	40	067		3933	107	40	342	142	3658
12	40	400	200	3600	36	40	200		3800	60	40	175		3825	84	40	183		3817	108	40	250	050	3750
13	40	175		3825	37	40	758	558	3242	61	40	175		3825	85	40	258	058	3742	109	40	233	033	3767
14	40	808	608	3192	38	40	383	183	3617	62	40	125		3875	86	40	183		3817	110	40	200		3800
15	40	400	200	3600	39	40	200		3800	63	40	300	100	3700	87	40	408	208	3592	111	40	700	500	3300
16	40	083		3917	40	40	867	667	3133	64	40	125		3875	88	40	208	008	3792	112	40	375	175	3625
17	40	317	117	3683	41	40	158		3842	65	40	100		3900	89	40	192		3808	113	40	525	325	3475
18	40	400	200	3600	42	40	317	117	3683	66	40	125		3875	90	40	192		3808	114	40	192		3808
19	40	275	075	3725	43	40	192		3808	67	40	192		3808	91	40	392	192	3608	115	40	425	225	3575
20	40	433	233	3567	44	40	100	500	3300	68	40	175		3825	92	40	425	225	3575	116	40	133		3867
21	40	467	267	3533	45	40	300	100	3700	69	40	225	025	3775	93	40	225	025	3775	117	40	342	142	3658
22	40	867	667	3133	46	40	083		3917	70	40	358	158	3642	94	40	292	092	3708	118	40	200		3800
23	40	117		3893	47	40	233	033	3767	71	40	117		3883	95	40	217	017	3783	119	40	617	417	3383
24	40	275	075	3725	48	40	167		3833	72	40	250	050	3750	96	40	642	442	3358					

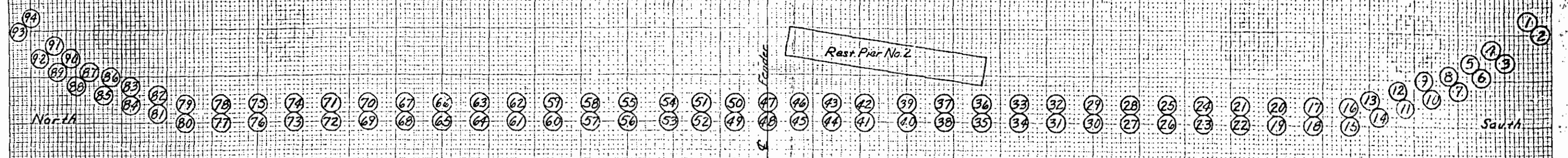
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SEE BOOK NO. 1  
PAGE NO. 34-41



# CREO TIMBER PILES FENDER "B"

SHEET NO. 27  
31

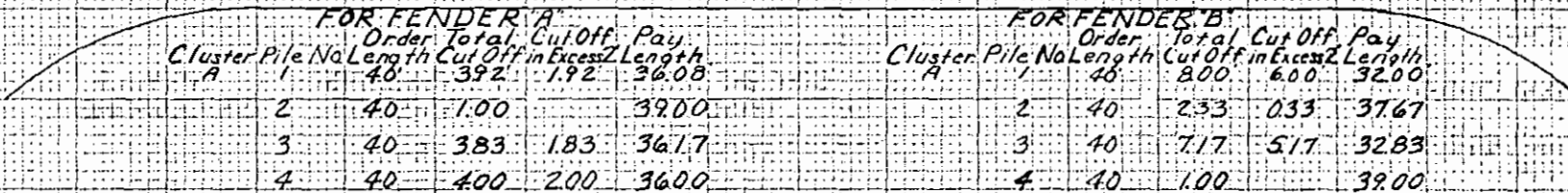
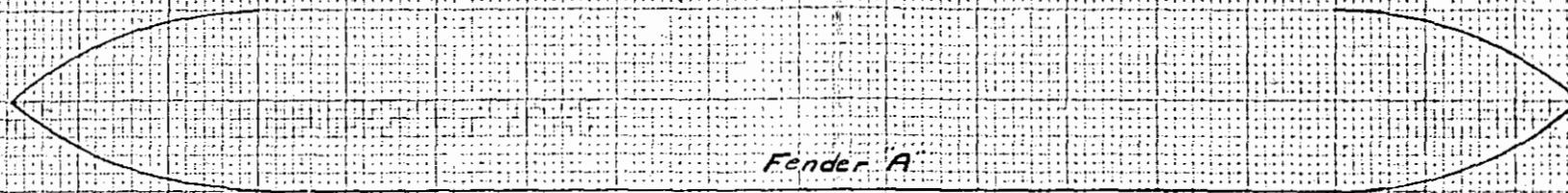


Pile No.	Order Length	Total Cut Off	Cut Off in Excess	Pay Length	Remarks	Pile No.	Order Length	Total Cut Off	Cut Off in Excess	Pay Length	Remarks	Pile No.	Order Length	Total Cut Off	Cut Off in Excess	Pay Length	Remarks	Pile No.	Order Length	Total Cut Off	Cut Off in Excess	Pay Length	Remarks
1	40	692	492	3308		25	40	717	517	3285		46	40	292	092	3708		71	40	367	167	3633	
2	40	117		3883		26	40	333	133	3667		47	40	392	192	3608		72	40	133		3867	
3	40	083		3911		27	40	267	067	3733		48	40	042		3958		73	40	250	050	3750	
4	40	858	658	3142		28	40	325	125	3675		49	40	273	073	3727		74	40	325	125	3675	
5	40	750	550	3250		29	40	192		3808	Pile broke off by Hurricane	50	40	242	042	3758		75	40	375	175	3625	
6	40	083		3917		29A	40	192		3808		51	40	325	125	3675		76	40	250	050	3750	
7	40	092		3908	Pile broke off by Hurricane	30	40	167		3833		52	40	142		3858		77	40	250	050	3750	
7A	40	092		3908		30A	40	167		3833		53	40	183		3817		78	40	483	283	3517	
8	40	117		3883		31	40	192		3808		54	40	217	017	3783		79	40	442	242	3558	
9	40	367	167	3633		31A	40	192		3808		55	40	183		3817		80	40	350	150	3650	
10	40	242	042	3758		32	40	367	167	3633		56	40	075		3925		81	40	300	100	3700	
11	40	225	025	3775		32A	40	367	167	3633		57	40	192		3808		82	40	650	450	3350	
12	40	758	558	3242		33	40	283	083	3717		58	40	292	092	3708		83	40	633	433	3367	
13	40	092		3908		34	40	175		3825		59	40	408	208	3592		84	40	100		3900	
14	40	117		3883		35	40	50		3950		60	40	150		3850		85	40	208	008	3792	
15	40	142		3858		36	40	175		3825		61	40	225	025	3775		86	40	500	300	3500	
16	40	458	258	3542		37	40	117		3883		62	40	350	150	3650		87	40	617	417	3383	
17	40	750	550	3250		38	40	092		3908		63	40	583	383	3417		88	40	250	050	3750	
18	40	500	300	3500		39	40	342	142	3658		64	40	192		3808		89	40	408	208	3592	
19	40	425	225	3575		40	40	125		3875		65	40	150		3850		90	40	742	542	3058	
20	40	708	508	3292		41	40	133		3867		66	40	283	083	3717		91	40	1050	850	2950	
21	40	617	417	3383		42	40	333	133	3667		67	40	400	200	3600		92	40	467	267	3533	
22	40	308	108	3692		43	40	025		3975		68	40	133		3867		93	40	600	400	3400	
23	40	333	133	3667		44	40	373	173	3627		69	40	133		3867		94	40	850	650	3150	
24	40	450	250	3550		45	40	583	383	3417		70	40	767	567	3233							

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SEE BOOK NO. 1  
PAGE NO. 48-53



# GREENHEART CLUSTER PILES



**FOR FENDER A**

Cluster	Pile No	Order Length	Total	Cut Off in Excess	Pay Length	Pay
A	1	40	392	192	200	3600
	2	40	100			3900
	3	40	383	183		3617
	4	40	400	200		3600
	5	40	325	125		3675
	6	40	142			3858
	7	40	400	200		3600
B	8	40	142			3858
	9	40	200			3800
	10	40	175			3825
	11	40	870	600		3200
	12	40	275	075		3725
	13	40	250	050		3750
	14	40	350	150		3650
C	15	40	175			3825
	16	40	350	150		3650
	17	40	550	350		3450
	18	40	317	117		3683
	19	40	283	083		3717
	20	40	300	100		3700
	21	40	400	200		3600
D	22	40	308	108		3692
	23	40	317	117		3683
	24	40	400	200		3600
	25	40	350	150		3650
	26	40	250	050		3750
	27	40	200			3800
	28	40	317	117		3683
			<b>3517</b>			<b>103149</b>

**FOR FENDER B**

Cluster	Pile No	Order Length	Total	Cut Off in Excess	Pay Length	Pay
A	1	40	800	600		3200
	2	40	233	033		3767
	3	40	717	517		3283
	4	40	100			3900
	5	40	950	750		3050
	6	40	450	250		3550
	7	40	950	750		3050
B	8	40	742	542		3258
	9	40	950	750		3050
	10	40	525	325		3475
	11	40	800	600		3200
	12	40	850	650		3150
	13	40	500	300		3500
	14	40	967	767		3033
C	15	40	442	242		3558
	16	40	325	125		3675
	17	40	233	033		3767
	18	40	250	050		3750
	19	40	200			3800
	20	40	383	183		3617
	21	40	383	183		3617
D	22	40	317	117		3683
	23	40	325	125		3675
	24	40	225	025		3775
	25	40	417	217		3583
	26	40	200			3800
	27	40	250	050		3750
	28	40	167			3833
			<b>8184</b>			<b>98349</b>

**SUMMARY**

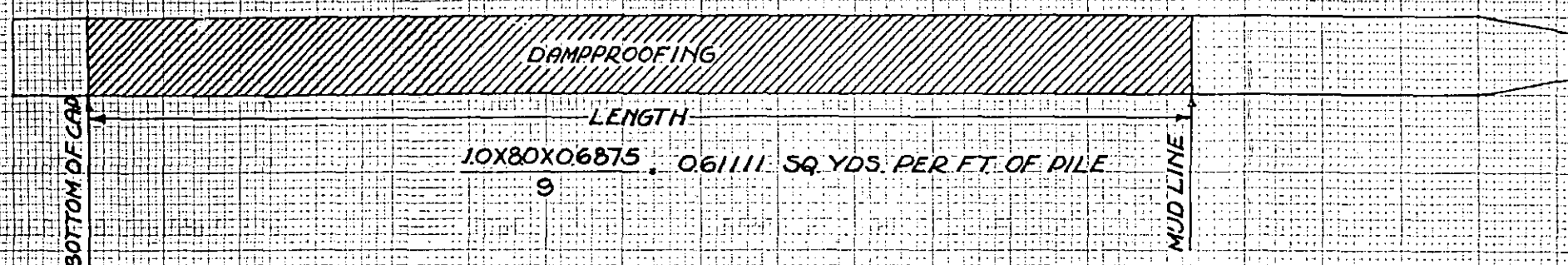
	Cut Off in Excess of 2'	Pay Length
Fender A Clusters	3517	103149
Fender B Clusters	8184	98349
<b>Totals</b>	<b>11701 Lin Ft</b>	<b>201498 Lin Ft</b>

SEE BOOK NO. 1  
PAGE NO. 42-45  
54-57



# METHOD "D" DAMPROOFING

# SUMMARY OF EXTRA WORK



BENT NUMBER	NO. PILES IN BENT	LENGTH DAMPROOFED	TOTAL LENGTH FOR BENT	TOTAL SQ. YDS. FOR BENT
PIVOT PEIR	43	179	7697	47037
REST PEIR NO.2	14	248	3472	21218
BENT NO.1	4	263	1052	6429
BENT NO.2	4	207	828	5060
BENT NO.3	4	127	508	3104
BENT NO.4	4	110	440	2689
BENT NO.5	4	140	560	3422
<b>TOTAL FOR ENTIRE PROJECT</b>			<b>14551</b>	<b>88959</b>

NO.	DESCRIPTION	AMOUNT
3-336	EXTEND EXISTING BULKHEAD AT EAST END OF BRIDGE.	\$90000
3-345	REPAIRING BARRIER GATE WASHED OUT BY STORM.	16871
3-338	1-MODIFYING OLD END BENT #2 TO BE UTILIZED AS NEW INT. BENT #4. 2-REMOVING, REBENDING AND REPLACING REINF. STEEL IN REST PIER #2.	95000
3-348	CLEANING REINFORCING STEEL	97420
3-349	FURNISHING 705 LBS. OF ADDITIONAL GALVANIZED HARDWARE FOR FENDER "A"	14160
3-350	ADDITIONAL OF RETURNING DRIVING EQUIPMENT TO JOB, CASTING AND DRIVING REINF. CONCRETE PILES DUE TO EXTENDING THE BRIDGE AND EXTRA COST OF REPLACING FALSEWORK THAT WAS DESTROYED AS A RESULT OF SCOUR CONDITIONS CREATED BY HURRICANE HAZEL ON OCT. 15, 1954.	275611
<b>TOTAL</b>		<b>\$589062</b>

SEE BOOK NO. 1 PAGE NO. 66-69

Checked after in 2 765

# SUMMARY OF QUANTITIES

	See Sheet No.	Remov. Exst. Str. LS.	Class. Conc. Cuts	Reinf. Steel Lbs.	Str. Steel LS.	Creo. Str. Timber MFBM	20" PC Conc. Piles Lin. Ft.	20" PC Conc. Pile Cut Off No.	20" PC Conc. Pile Cut Off Lin. Ft.	Reinf. Steel in Pile Cut Off Lbs.	Creo. Timber Piles Lin. Ft.	Creo. Timber Pile Cut Off in Excess 2' Lin. Ft.	Greenheart Piles Lin. Ft.	Greenheart Pile Cut Off in excess 2' Lin. Ft.	Timber Test Piles Each	Method 'D' Dampproof Sq. Yds	3" steel Grid Floor Conc. Filler Sq. Ft.	2" steel Grid Floor Conc. Filler Sq. Ft.	Machinery LS.	Elect. Equip. LS.	Operator's House LS.
Four Approach Spans	11		1825	48776																	
Span "D"	13		434	11769																	
Span "E"	13		455	12134																	
Swing Span	6			720	\$104,000												6492	1375	\$60,000	\$50,000	
Operator's House	9			582																	\$3,500
Rest Pier-End Bent No. 1	14		662	12744			5566	1	34	41											
Pivot Pier	15		2115	57589			1631.2	1	28	44											
Rest Pier No. 2	16		465	13917			600.6	1	14	20											
Bent No. 1	17		82	4598			180														
Bent No. 2	17		82	4466			172														
Bent No. 3	17		124	4884			160														
Bent No. 4	18		104	3796			133.1	4	189	307											
Bent No. 5	17		82	3334			140														
End Bent No. 2	18		104	3511			140														
Fender "A"	20					48288					438976	15227	1031.49	35.17							
Fender "B"	21					18020					362916	15747	983.49	818.4							
Temporary Crossing	22	\$7500																			
		\$7500	6541	162620	\$104,000	66308	37135	7	265	412	801892	30974	2014.98	1176.1	2	889.59	6492	1375	\$60,000	\$50,000	\$3,500
	29	Total Extra Work Order \$5890.62																			



# THE FINAL ESTIMATE

QUANTITY	UNIT	ITEM	CONTRACT PRICE	AMOUNT
7,500	LUMP SUM	REMOVAL OF EXISTING STRUCTURE	750000	750000
654.1	CU. YD.	CLASS "A" CONCRETE	6200	4055420
162,620	LB.	REINFORCING STEEL	0.11	1788820
\$ 104,000	LUMP SUM	STRUCTURAL STEEL	\$ 10400000	\$ 10400000
66,308	MFBM.	CRESOTED STRUCTURAL TIMBER	36500	2420242
3,713.5	LIN. FT.	20" P.C. CONCRETE PILES	10.15	3769203
7	EACH	20" P.C. CONCRETE PILE CUT OFF	10.15	7105
265	LIN. FT.	20" P.C. CONCRETE PILE CUT OFF	76.125	20173
412	LB.	REINF. STEEL IN P.C. PILE CUT OFF	0.0825	3399
80,189.2	LIN. FT.	CRESOTED TIMBER PILES	260	2084919
3,097.4	LIN. FT.	CRED. PILE CUT OFF IN EXCESS 2'	130	40266
20,149.8	LIN. FT.	GREENHEART PILES	360	725393
11,701	LIN. FT.	GREENHEART PILE CUT OFF IN EXCESS 2'	180	21062
2	LIN. FT.	TIMBER TEST PILES	95000	190000
889.59	SQ. YD.	METHOD "D" DAMPROOFING	500	444795
6,492	SQ. FT.	3" STEEL GRID FLOOR WITH CONC. FILLER	400	2596800
1,375	SQ. FT.	2" STEEL GRID FLOOR WITH CONC. FILLER	350	481250
\$ 60,000	LUMP SUM	MACHINERY	6000000	6000000
\$ 50,000	LUMP SUM	ELECTRICAL EQUIPMENT	5000000	5000000
\$ 3,500	LUMP SUM	OPERATOR'S HOUSE	350000	350000
		TOTAL EXTRA WORK		589062
		TOTAL AMOUNT OF FINAL ESTIMATE		41,737,909
		LESS PREVIOUS PAYMENTS (ESTS. 1 TO 25 INCL.)		40,738,019
		AMOUNT DUE THIS ESTIMATE		\$ 999,890

I HEREBY CERTIFY THAT I HAVE CHECKED THIS ESTIMATE AND THAT IT IS TRUE & CORRECT ACCORDING TO MY BEST KNOWLEDGE AND BELIEF.

SIGNED L. M. ... DATE 10/24/56  
RESIDENT ENGINEER

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS ESTIMATE IN DETAIL AND THAT IT IS TRUE AND CORRECT ACCORDING TO MY BEST KNOWLEDGE AND BELIEF.

SIGNED G. E. BROWN DATE \_\_\_\_\_  
DIVISION ENGINEER

BY R. J. ... DATE 10-23-56  
ASST. DIVISION ENGINEER







# G E N E R A L N O T E S

## SEALING COMPOUND REQUIREMENTS

GALLONS OF SEALING COMPOUND REQUIRED TO ADEQUATELY CAULK PANEL LONGITUDINAL JOINTS WITH 1/2" DIAMETER CONTINUOUS BEAD AS SHOWN IN CONDITION (A) THIS SHEET  
 ERECTOR TO GAGE COMPOUND USAGE TO 100 1/4" OF 1/2" DIAMETER BEAD PER GALLON

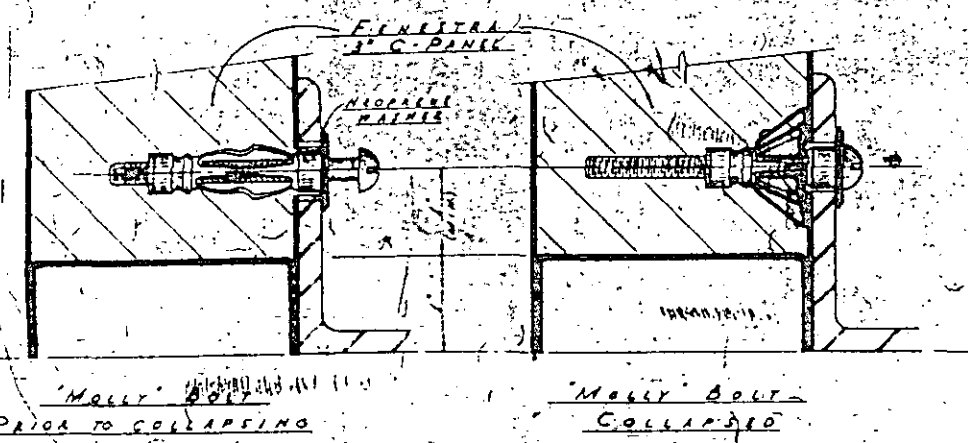
GALLONS OF SEALING COMPOUND REQUIRED TO ADEQUATELY CAULK FLASHINGS AND CLOSURES AS SHOWN IN CONDITIONS (B) (C) (D) THIS SHEET AND ALL ERECTION DRAWING DETAILS  
 ERECTOR TO GAGE COMPOUND USAGE TO 100 1/4" OF 1/2" DIAMETER BEAD PER GALLON AND 380 1/4" OF 3/4" DIAMETER BEAD PER GALLON

GALLONS OF SEALING COMPOUND REQUIRED TO ADEQUATELY CAULK FLASHINGS AND CLOSURES AT MASONRY CONSTRUCTION  
 ERECTOR TO GAGE COMPOUND USAGE TO 100 1/4" OF 1/2" DIAMETER BEAD PER GALLON AND 380 1/4" OF 3/4" DIAMETER BEAD PER GALLON

## SEALING COMPOUND REMOVAL

PANEL ERECTOR TO REMOVE EXCESS SEALING COMPOUND FROM PANEL FLASHING AND CLOSURE EXPOSED SURFACES WITH MINERAL SPIRITS OR PAINT SOLVENT (NOT BY DETROIT STEEL PRODUCTS COMPANY)

## TYPICAL MOLLY BOLT USAGE



## SYMBOLS

- DETAIL CROSS REFERENCE SYSTEM.**
- STARTING POINT SYMBOL.**  

 INDICATES STARTING POINT OF PANEL ERECTION. SEE DETAILS, ELEVATIONS OR PLANS TO DETERMINE EXACT LOCATION OF STARTING PANEL.
- PANEL LENGTH AND QUANTITY.**  

 INDICATES QUANTITY OF PANELS.  
 INDICATES LENGTH OF PANELS.
- FLASHINGS, CLOSURE, UNITS AND CONDITIONS.**  

 INDICATES QUANTITY OF FLASHING PIECES THIS LENGTH.  
 INDICATES MARK NUMBER OF FLASHING OR CLOSURE.  
 INDICATES LOCATION OF SHOP FABRICATED UNIT.  
 INDICATES SPECIFIC UNIT MARK NUMBER.

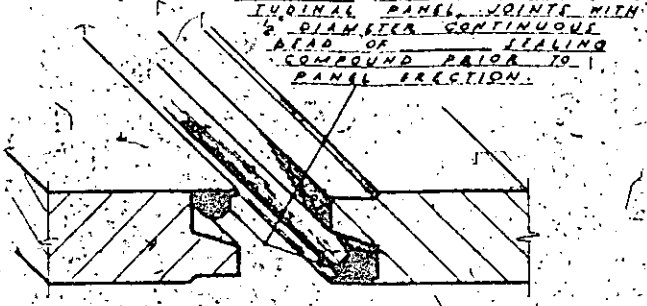
## RUBBER SEALER REQUIREMENTS

OF RUBBER SEALER REQUIRED. SEPARATE CONTAINER OF ACCELERATOR TO BE MIXED WITH SEALER. THIS 1/2 PART ACCEL. TO 100 PARTS SEALER. IF NOT IN 1 PART ACCEL. TO 8 PARTS SEALER. BY PHONE (NOT BY DETROIT STEEL PRODUCTS)

## SEALER REMOVAL

PANEL ERECTOR TO REMOVE EXCESS RUBBER SEALER FROM PANELS OR CLOSURES WITH METHYL ETHYL KETONE OR METHYL ISOBUTYL KETONE OR TOLUENE OR XYLENE (NOT BY DETROIT STEEL PRODUCTS)

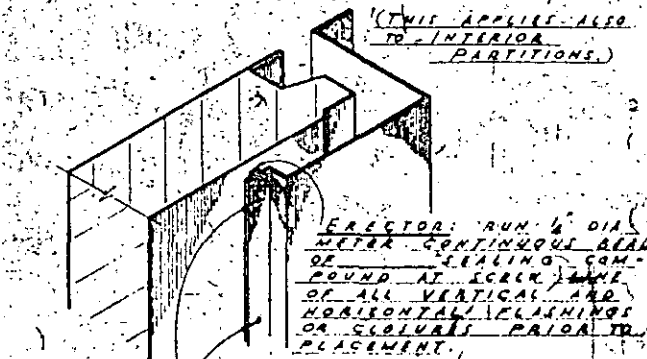
## CONDITION (A)



ERECTOR: CAULK ALL LONGITUDINAL PANEL JOINTS WITH 1/2" DIAMETER CONTINUOUS BEAD OF SEALING COMPOUND PRIOR TO PANEL ERECTION.

TYPICAL DETAIL OF PANEL JOINT (SHOWING POSITION OF LONGITUDINAL CAULKING BEAD) TO BE DONE IMMEDIATELY PRIOR TO PANEL ERECTION. (THIS APPLIES ALSO TO INTERIOR PARTITIONS)

## CONDITION (B)

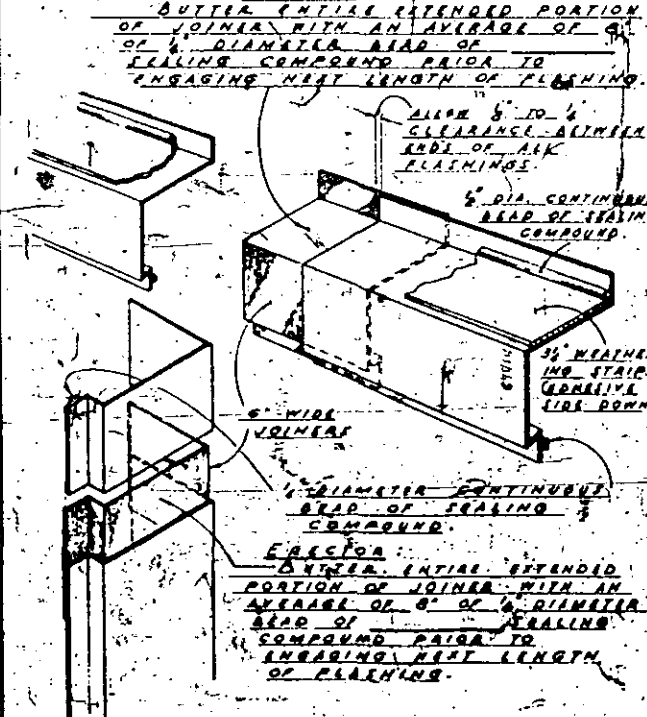


(THIS APPLIES ALSO TO INTERIOR PARTITIONS)

ERECTOR: RUN 1/2" DIA. METAL CONTINUOUS BEAD OF SEALING COMPOUND AT SCREW JOINTS OF ALL VERTICAL AND HORIZONTAL FLASHINGS OR CLOSURES PRIOR TO PLACEMENT.

TYPICAL USE OF SEALING COMPOUND TO CAULK VERTICAL CLOSURES

## CONDITION (C)



ERECTOR: BUTTER ENTIRE EXTENDED PORTION OF JOINTER WITH AN AVERAGE OF 9/16" OF 1/2" DIAMETER BEAD OF SEALING COMPOUND PRIOR TO ENGAGING NEXT LENGTH OF FLASHING.

ERECTOR: INITIAL EXTENDED PORTION OF JOINTER WITH AN AVERAGE OF 9/16" OF 1/2" DIAMETER BEAD OF SEALING COMPOUND PRIOR TO ENGAGING NEXT LENGTH OF FLASHING.

TYPICAL USE OF SEALING COMPOUND TO CAULK VERTICAL & HORIZONTAL CLOSURES & JOINT JOINER STRIPS.

## CONDITION (D)

- STEEL PANELS ARE TYPE 2 C 15.195 WITH ONE SHOP COAT OF STANDARD GRAY GREEN PAINT. SPRAYED ON & OVEN DRIED.
- ALUMINUM PANELS ARE TYPE HALF ALUM. - HALF STEEL PANELS ARE TYPE WITH STEEL SIDE SPRAYED WITH ONE SHOP COAT OF STANDARD GRAY GREEN OVEN DRIED PAINT.
- ERECTOR TO SIDE OF PANELS TO BE WELDED TO EXTERIOR.
- WELDED ERECTION: ONE 1/2" WELD PER PANEL AT EACH SUPPORT. WELDS TO BE PLACED NEAR PANEL JOINT AND TOUCHED UP WITH STANDARD PAINT FINISHED.



## CONDITION (E)

- BOLTED ERECTION: USE TWO BOLTS PER PANEL AT EACH SUPPORT. FOR BOLTING 3/4" DIAMETER HOLES TO BE PRE-PUNCHED IN STRUCTURAL STEEL & 3/4" O.C. (NOT BY DETROIT STEEL PRODUCTS COMPANY)
- NOTE: MARK THESE MINIMUM ALLOWABLE DIMENSIONS FROM JOINT TO BOLT AND REVERSE USE THE NEXT NEAREST HOLE.
- MOLLY BOLTS (SEE TYPICAL WEAATHERING STRIP SHEET)
- TYPICAL DETAIL OF BOLTED ERECTION

ERECTION (E) (NOT BY) DETROIT STEEL PRODUCTS COMPANY. HOLES AND OTHER OPENINGS SHOWN ON THESE DRAWINGS (E) (NOT BY) DETROIT STEEL PRODUCTS COMPANY.

ERECTOR MAINTAIN ALIGNMENT OF VERTICAL PANEL JOINTS THROUGHOUT HEIGHT OF BUILDING.

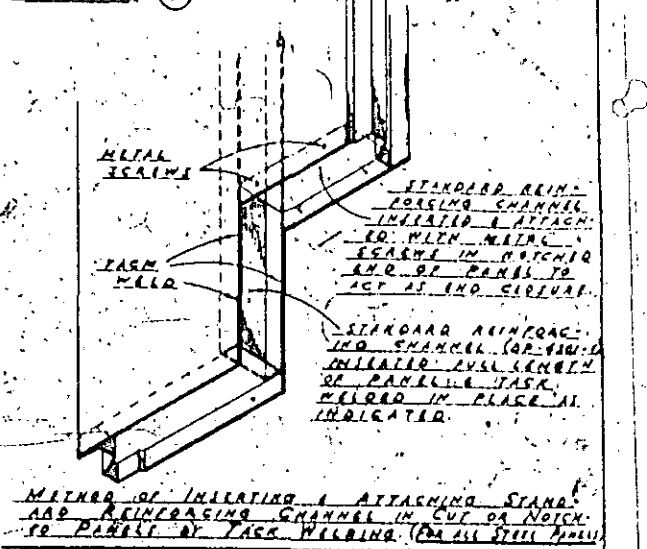
PANEL END CLOSURE WITH AID DOT INDICATES SILL END OF PANEL ERECT ACCORDINGLY.

ALL ALUMINUM & STEEL OF BOTH PANELS & CLOSURES TO BE ISOLATED FROM CONCRETE. ALL ALUMINUM OF BOTH PANELS & CLOSURES TO BE ISOLATED FROM STEEL. USE BITUMASTIC 50 FURNISHED FOR ISOLATION PURPOSES.

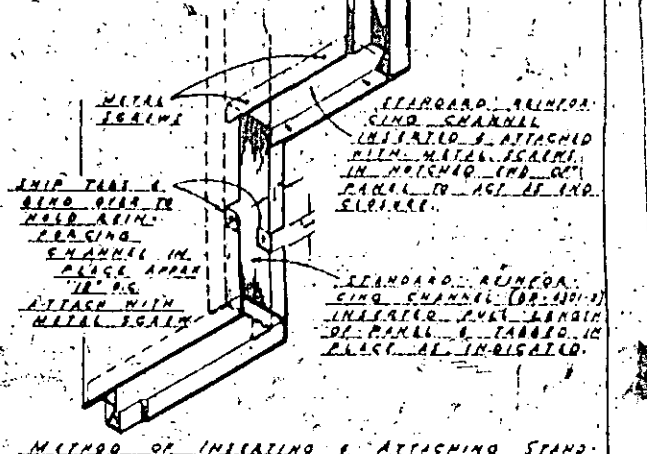
FIELD PACH ALL CLOSURE AREAS WITH GLASS FIBRE TYPE INSULATION FURNISHED.

ERECTOR TO NOTCH AND CUT PANELS FOR WIDTH COVERAGE IN FIELD (SEE CONDITIONS (C) THIS SHEET) HOLES AND OTHER OPENINGS NOT SHOWN ON THESE DRAWINGS TO BE SPECIFICALLY LOCATED AND PROVIDED BY OTHER THAN DETROIT STEEL PRODUCTS CO. FRAMING FOR SUPPORTING C PANELS AT ALL OPENINGS SUCH AS DUCTS, WINDOWS, DOORS, PIPES, ETC. AND ANY OTHER NECESSARY SUPPORTS, STRUCTURAL STEEL OR OTHERS, ARE NOT A PART OF THE C PANEL PROPER AND WHERE LACKING MUST BE FURNISHED IN PLACE BY OTHER THAN THE DETROIT STEEL PRODUCTS COMPANY.

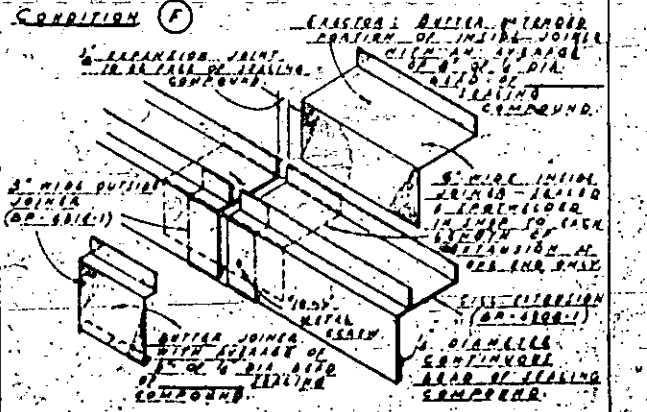
## CONDITION (F)



## CONDITION (G)

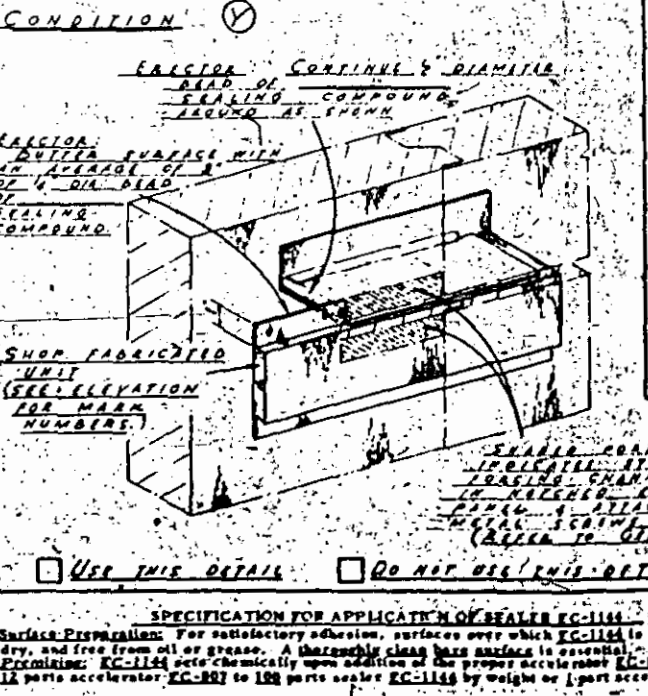
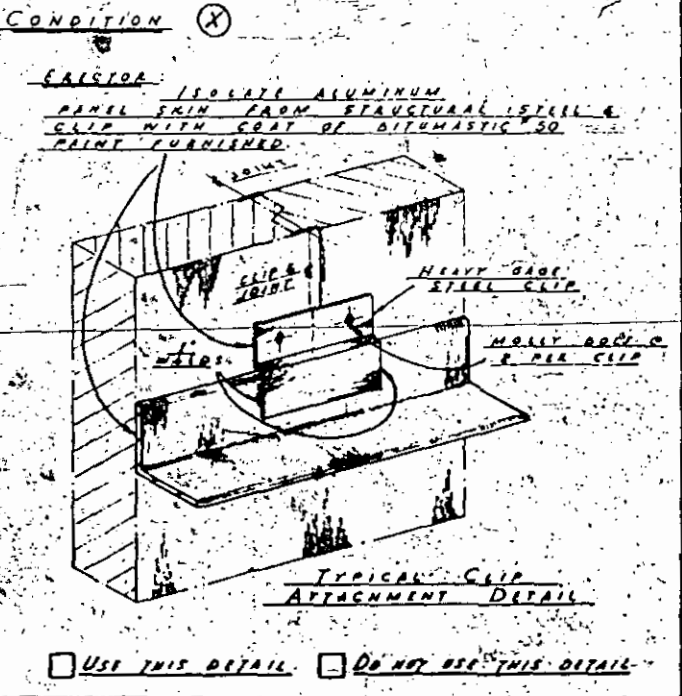
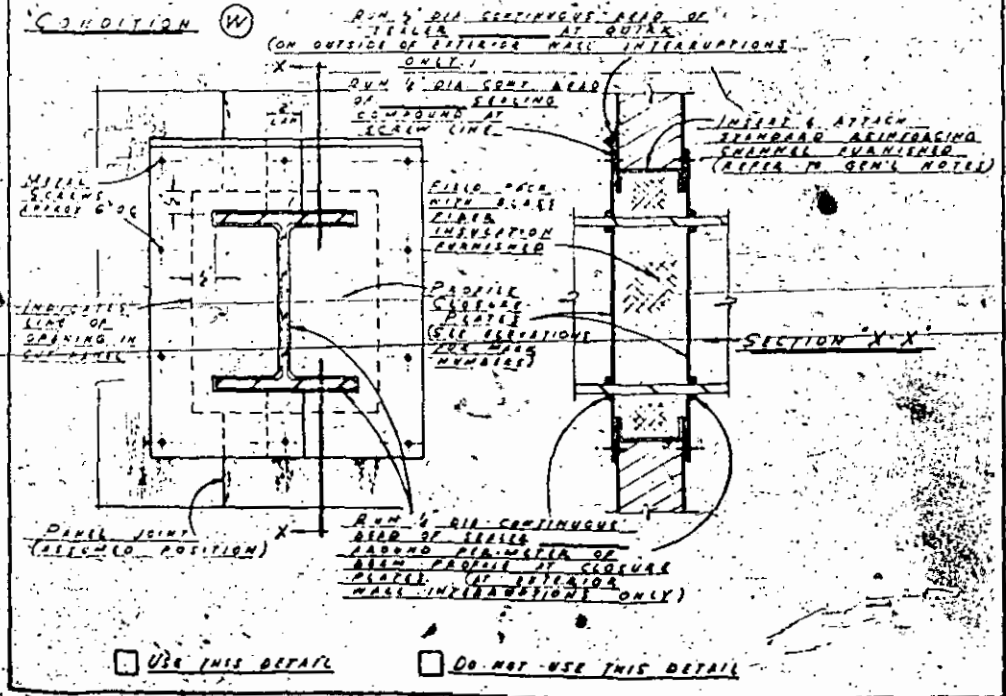
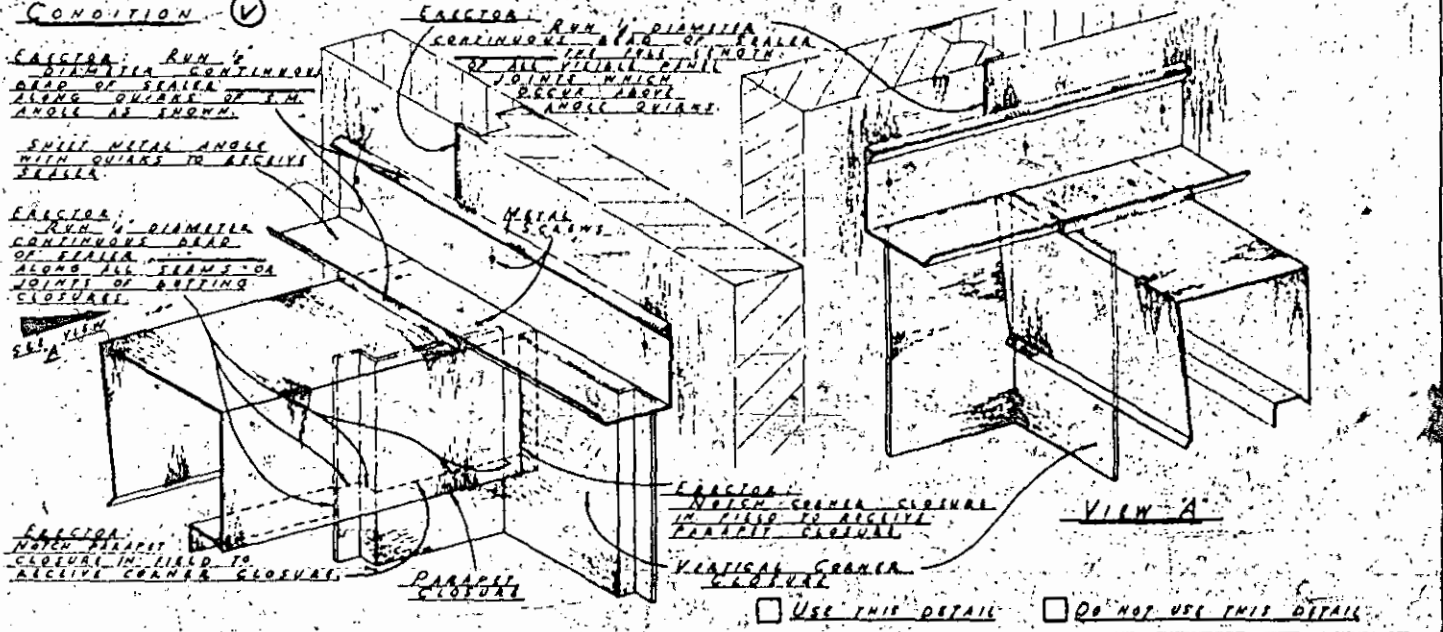
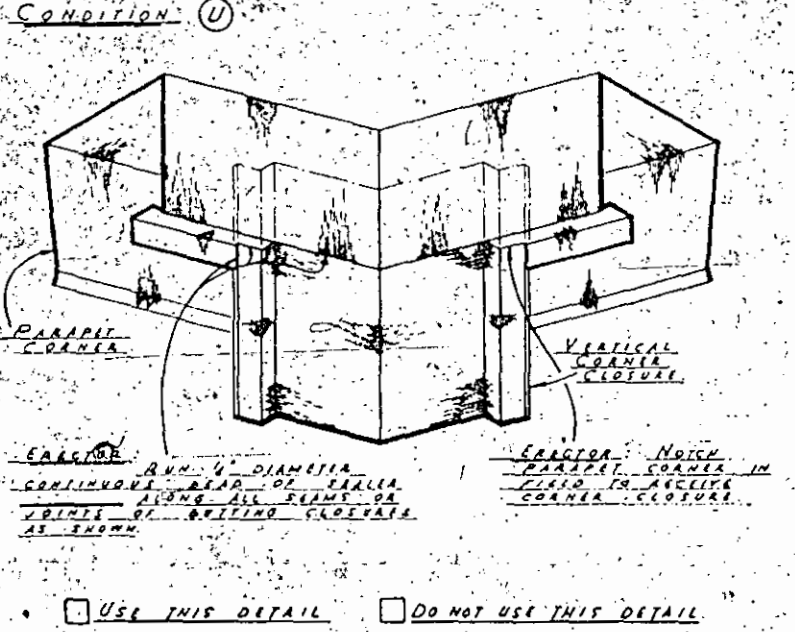
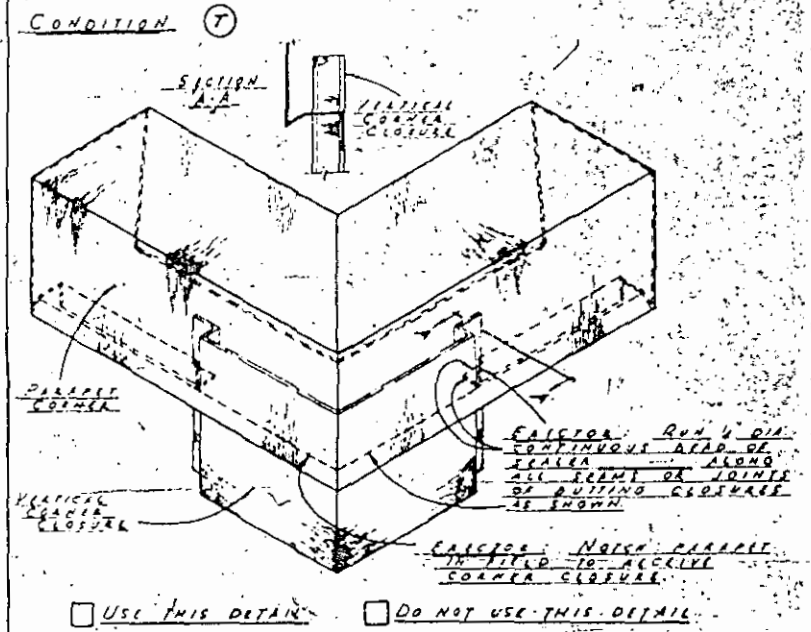
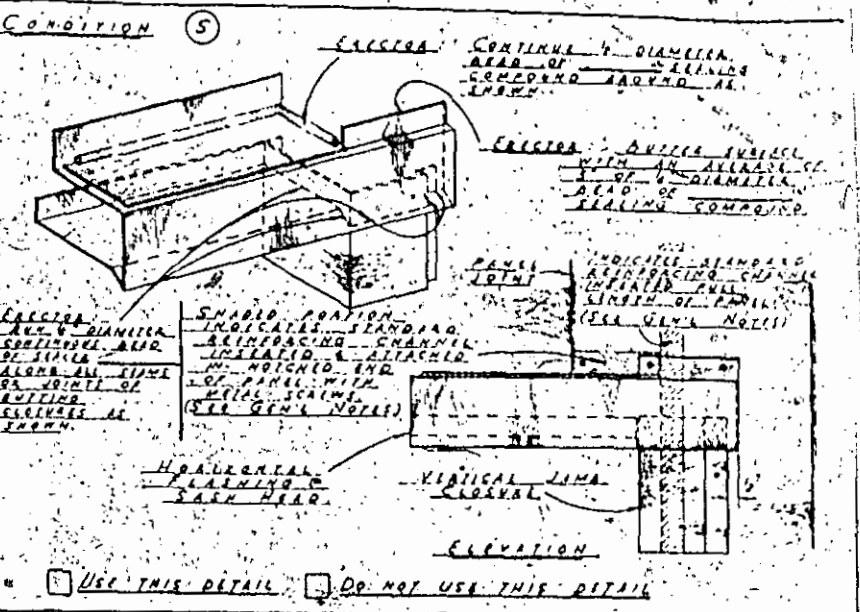
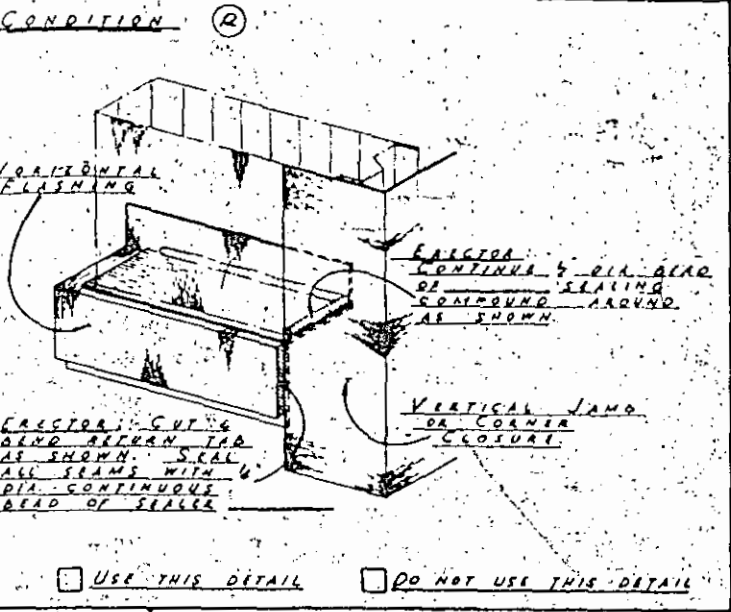
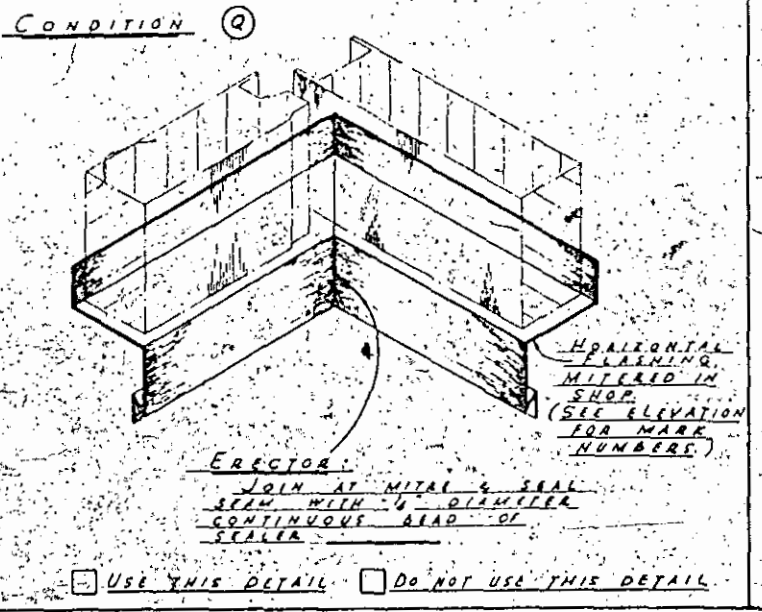
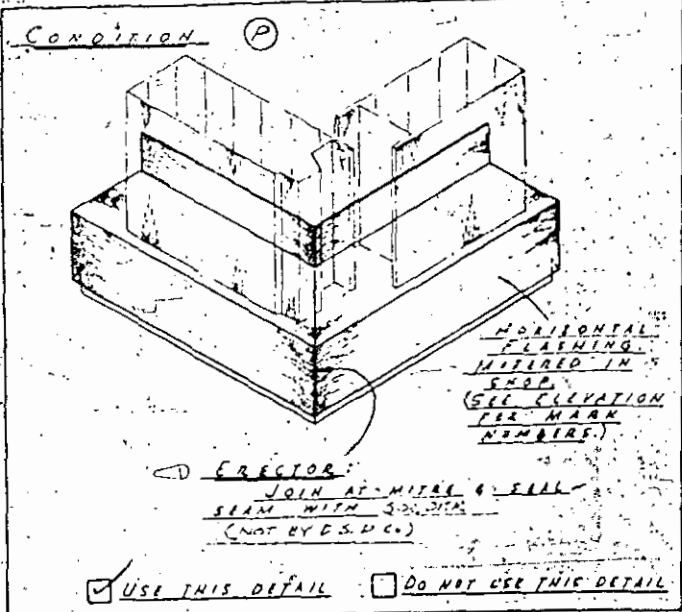


## CONDITION (H)



## TYPICAL DETAIL OF EXTRUSION BUTT JOINT

Mark	Revisions	By	Date
DISTRICT DRAW. No.			
BUILDING: JENSEN PRODUCTS			
DETROIT STEEL PRODUCTS CO.			
DETROIT 11, MICHIGAN			
3" C PANEL LAYOUT			
1150TH CLEVELAND HIGHWAY, CLEVELAND			
OPERATING HOUSE			
INDIAN EDGE, IN. CAROLINA			
DISTRICT DRAW. No.	5012-A		



**SPECIFICATION FOR APPLICATION OF SEALER EC-1145 Cont.**

parts sealer EC-1145 by volume. After mixing, it remains workable a short time before getting too viscous to handle. Its pot life and rate of cure are both greatly affected by temperature and to some extent, by humidity; curing faster as temperature and humidity are raised. The temperature relationships are approximately as follows:

Temp.	Pot Life	Cure Time	Temp.	Pot Life	Cure Time
100°	1-2 hrs.	2 Days	100°	1-2 hrs.	1 Day
100°	1-2 hrs.	2 Days	100°	1-2 hrs.	1 Day
100°	1-2 hrs.	2 Days	100°	1-2 hrs.	1 Day

It is vital that the accelerator be completely and uniformly dispersed through the EC-1145. Superficial mixing will not suffice. If possible, the material should be applied to the EC-1145 container in a flat surface or shallow pan, sufficiently large to spread the material out to a thickness of 1" to 1-1/2". (2) Mix accelerator into a smooth paste then pour it over the entire surface of EC-1145. (3) With a broad knife, cut and fold the parts together, taking about 20 minutes for a gallon of EC-1145. That all areas of the accelerator disperse and that no unmixed material is left around the edges or in the corners of the mixing vessel. Using a caulking or flow gun, apply a fill of mixed EC-1145 along cracks, seams and joints as directed in detail.

Clean-Up: It is strongly recommended that excess EC-1145 be removed from panels, then mixed with methyl alcohol or methyl isobutyl ketone or aromatic solvents such as toluene or xylene.

SEE SHEET A FOR GENERAL NOTES

Rev.	Checked in column P	By	Date
1			

EXTRACT DRWG. No. 100-34-3

BUILDING DESIGN DEPARTMENT

DETROIT STEEL PRODUCTS CO.

DETROIT 11, MICHIGAN

3" C. PANEL LAYOUT

NORTH CAROLINA HIGHWAY COMMISSION

OPERATION HOUSE

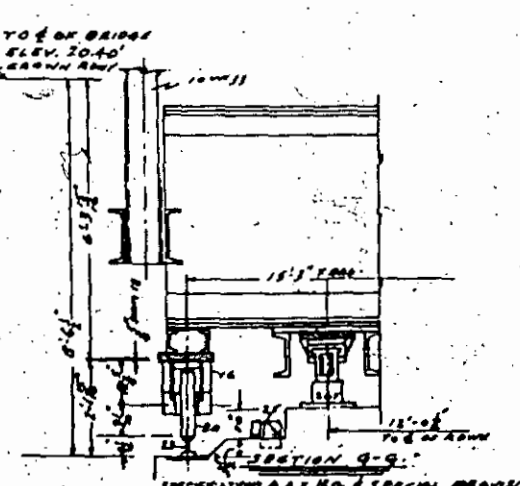
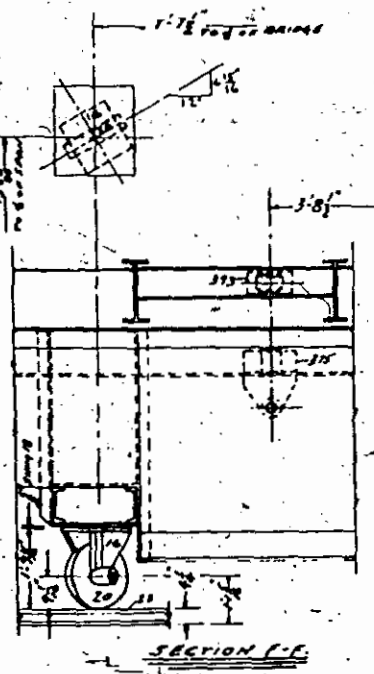
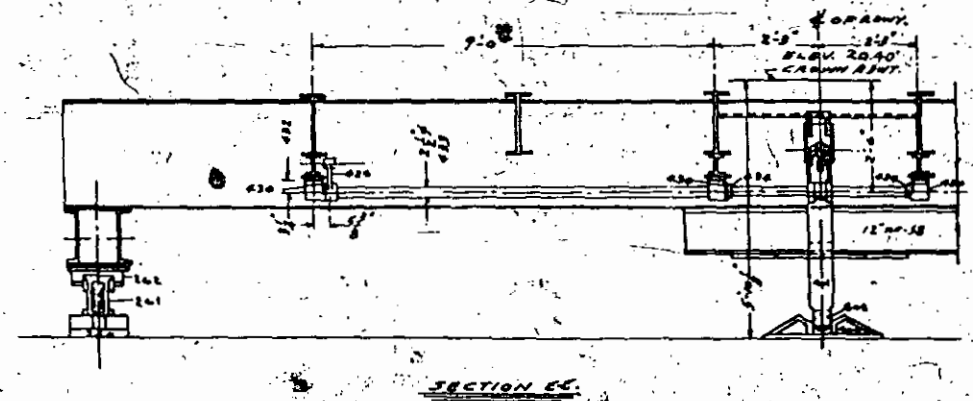
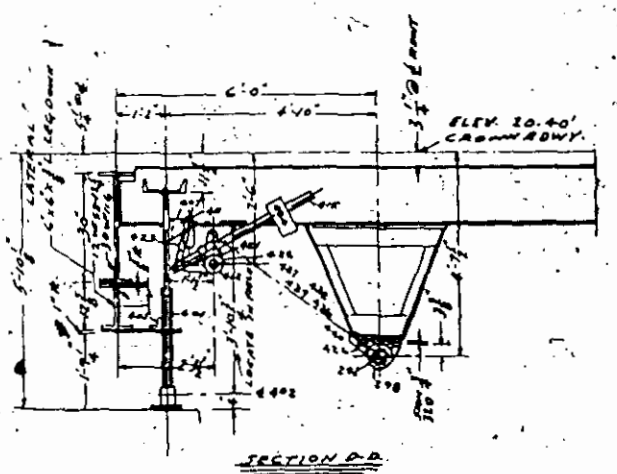
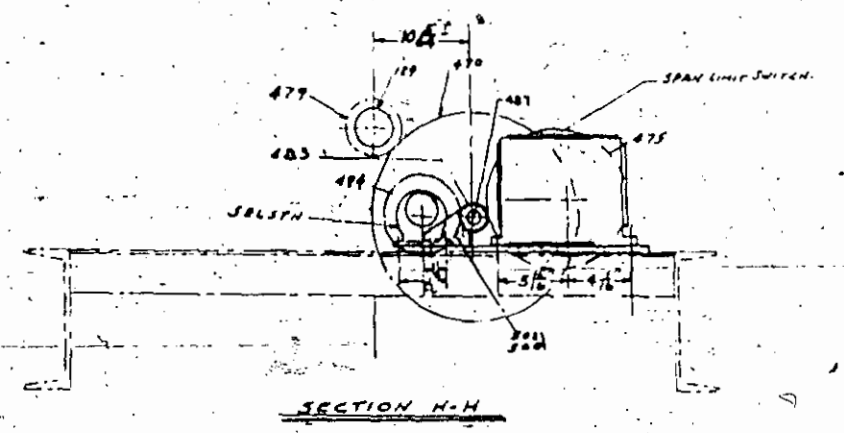
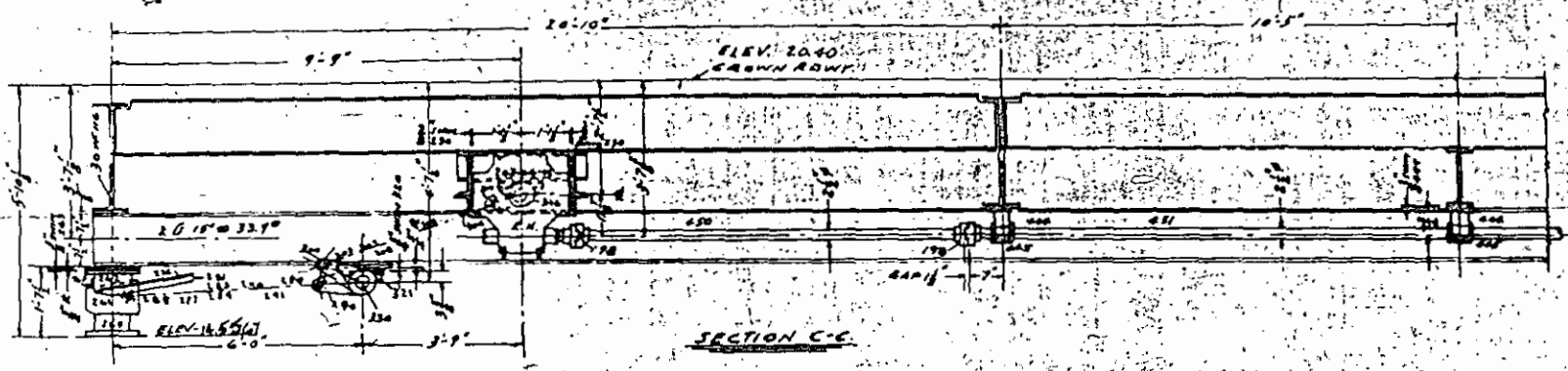
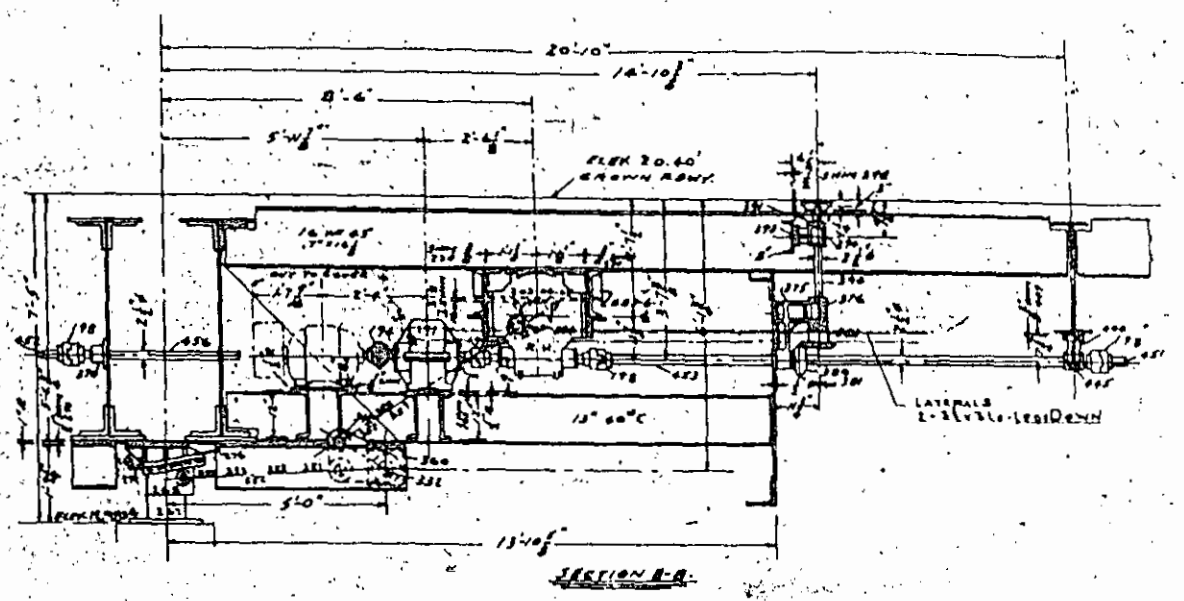
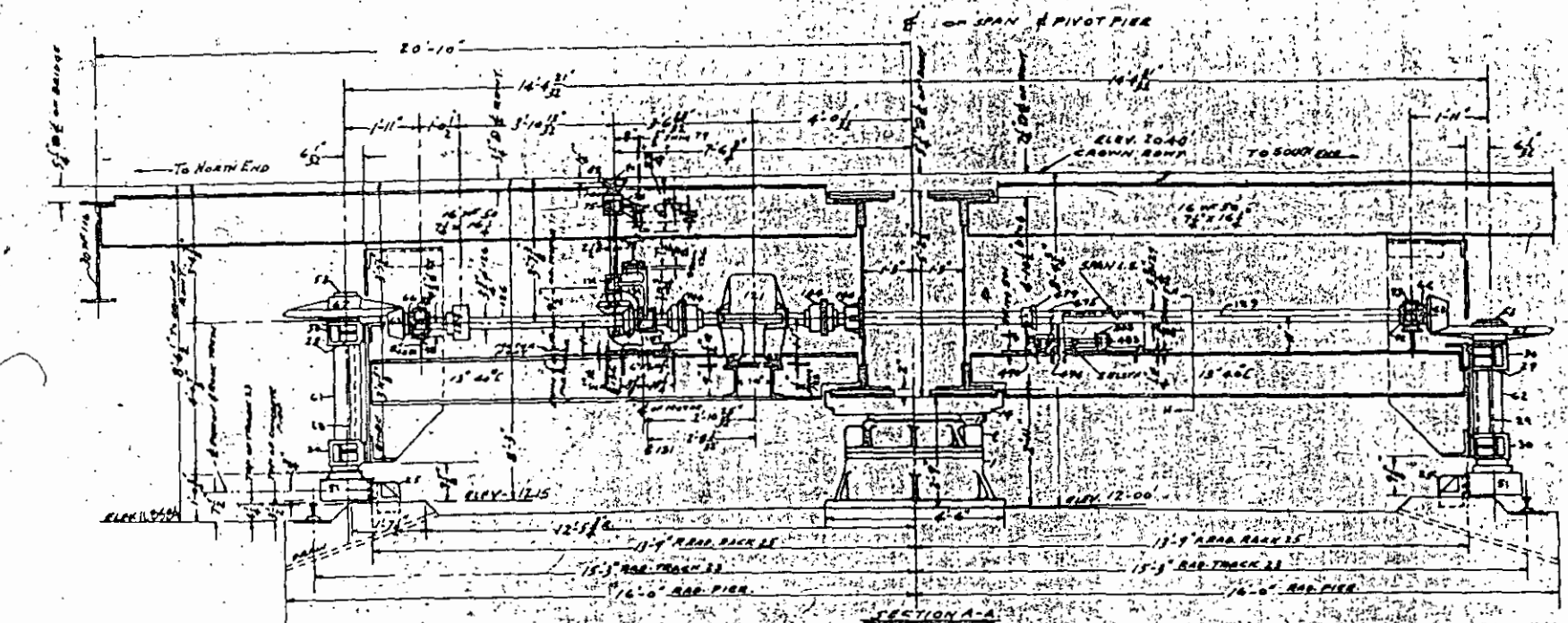
WELLY EDGE, N. CAROLINA

DETROIT DRWG. No. 100-34-3

L-503-C







6-6-58	A.A. & J.M. BYRNE & CO. INC.
5-11-54	A.P. ELECTRICAL EQUIPMENT COMPANY

**GENERAL NOTES**  
 ALL STEEL CASTINGS & FORINGS TO BE ANNEALED  
 SPOT FACE FOR ALL BOLT HEADS & NUTS  
 SCRIBE PITCH LINES ON BOTH SIDES OF ALL GEARS  
 SHOP PAINT - ONE COAT  
 FROGLED SURFACES COATED  
 CUT ON GROOVES IN ALL BEARINGS UNLESS NOTED  
 ALL SHIPS TO BE DRILLED

10 D-2856 CONTRACT  
 REARMY FOR  
 250'-0" SWAMP SPAN OVER  
 LITTLE AND WATERWAY, PENDER COUNTY  
 NORTH CAROLINA, STATE HIGH 6 P.M.C.  
 PROJECT B330011-20

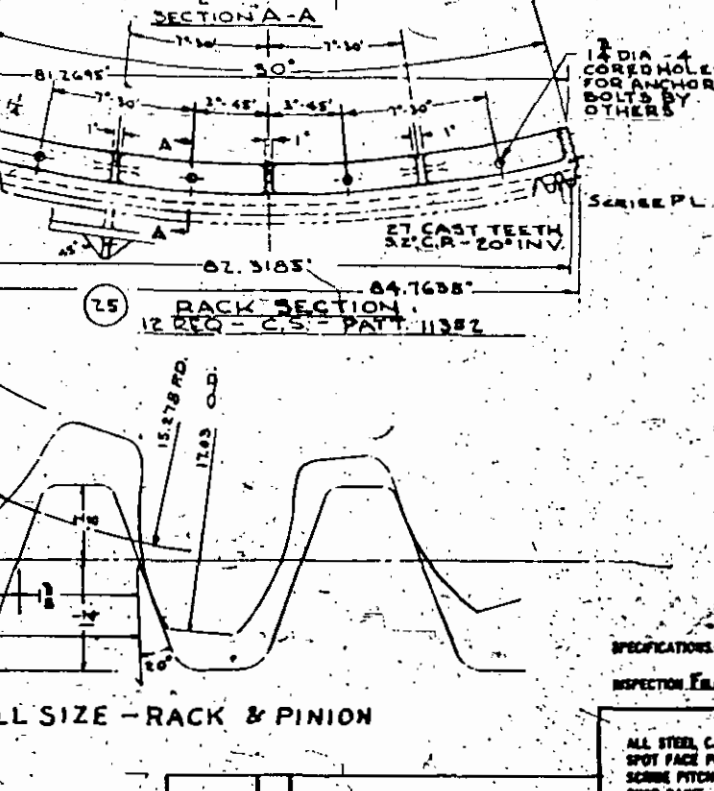
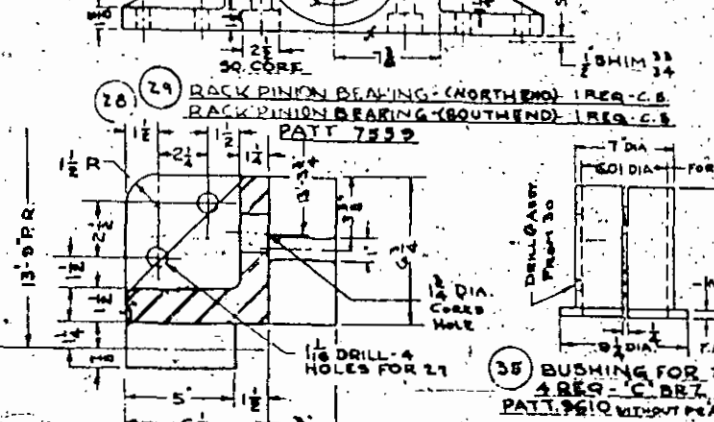
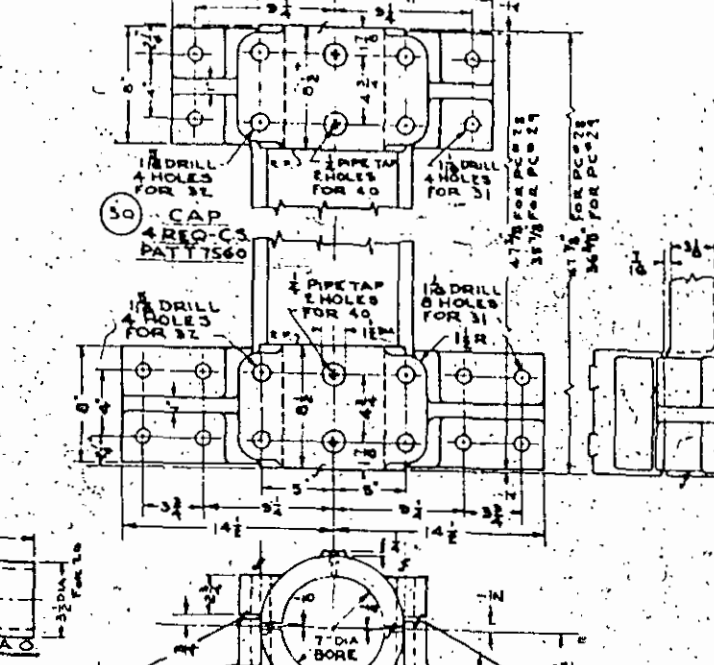
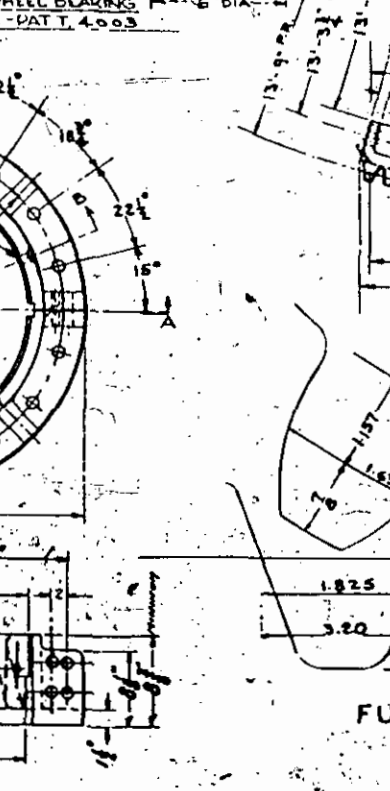
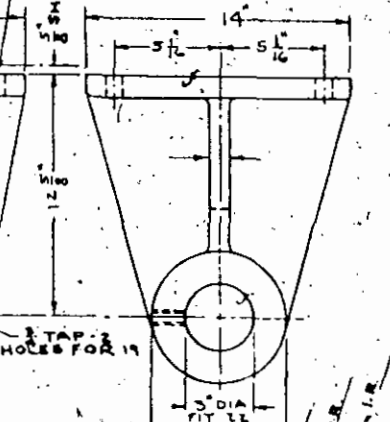
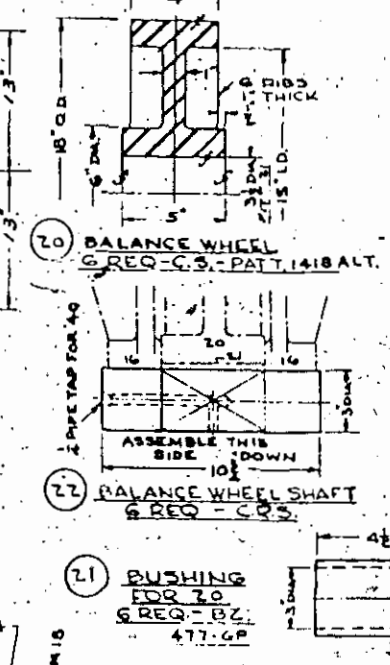
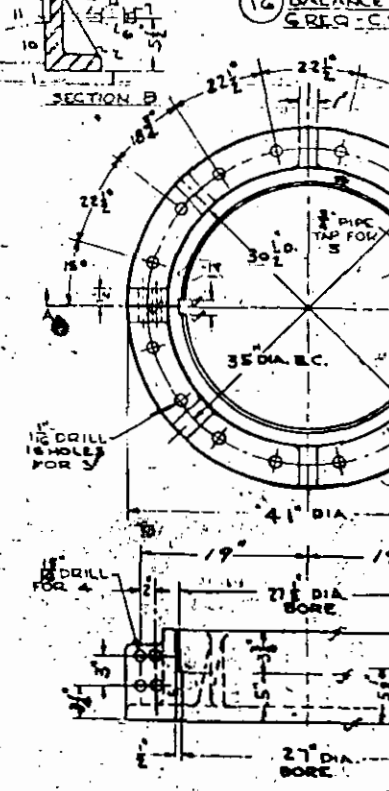
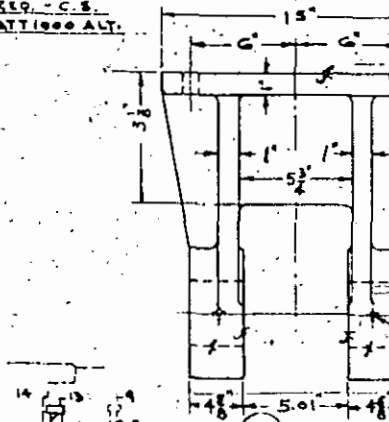
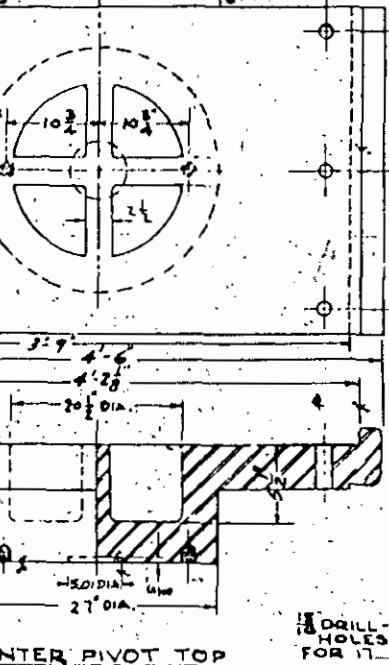
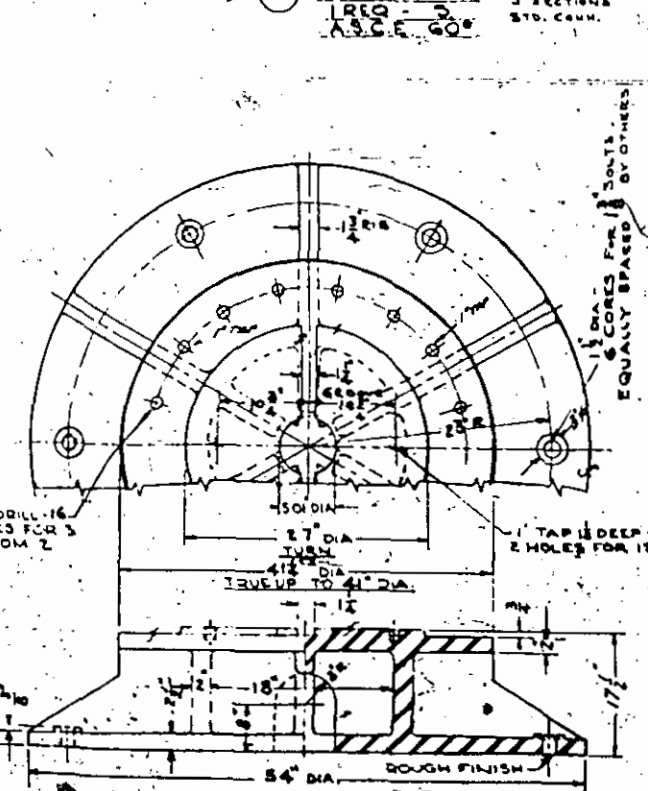
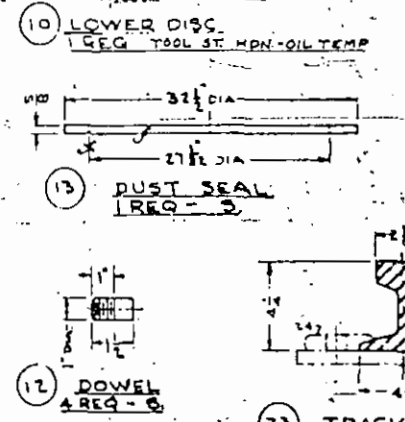
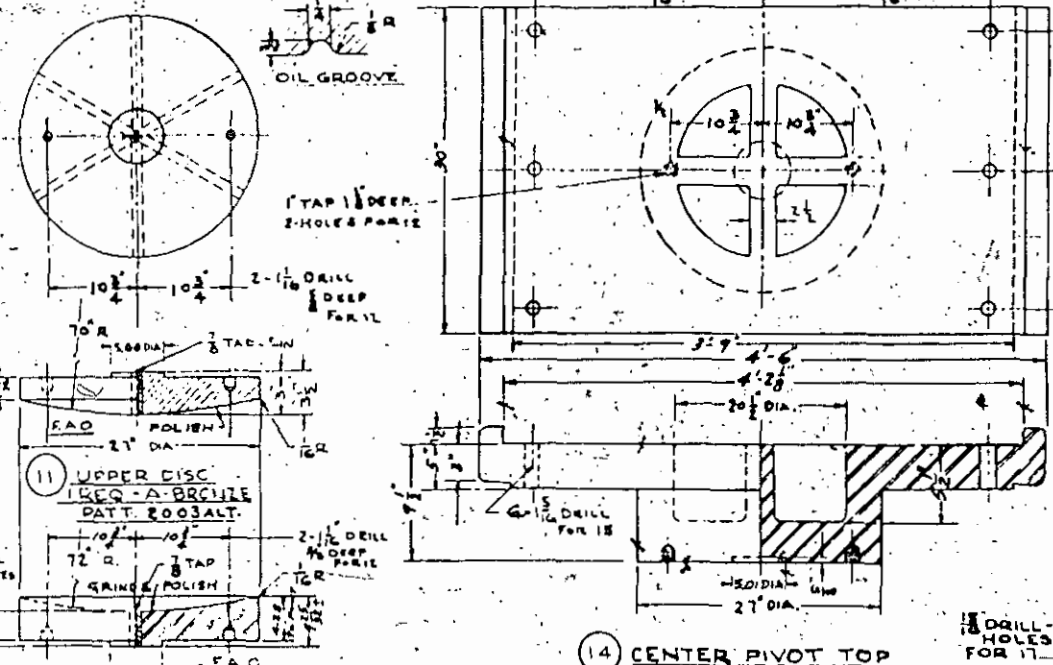
**THE EARLE GEAR AND MACHINE COMPANY**  
 4707 TO 4710 STATION AVENUE  
 PHILADELPHIA 44 PA.  
 PHONE 263-5200  
 CHANGES MADE BY: BOONIE SPAN  
 REVISION TURN

DATE: 5-11-54  
 DWG. NO. 6016 E-20



NO.	NAME	QTY.	MATL.	PATT.	REMARKS
1	CENTER PIVOT BASE	1	C.S.	1020	ALT.
2	OIL BOX HALF	2	C.S.	1020	
3	BOLT FOR 1 & 2	16	S.		T.B. LIST
4	BOLT FOR 2	8	S.		T.B. LIST
5	NIPPLE FOR 2	1	S.		1/4" A.G. STD. BLACK
6	TEE FOR 5	1	M.I.		1/4" STD.
7	PLUG FOR 6	1	M.I.		1/4" STD.
8	NIPPLE FOR 6	1	S.		1/4" A.G. STD. BLACK
9	CAP FOR 5	1	M.I.		1/4" STD.
10	LOWER DISC	1	STEEL	HARDEN	OIL TEMP.
11	UPPER DISC	1	STEEL	HARDEN	OIL TEMP.
12	DOWEL	4	S.		
13	DUST SEAL	1	S.		
14	CENTER PIVOT TOP	1	C.S.	1000	ALT.
15	BOLT FOR 14	6	S.		T.B. LIST
16	BALANCE WHEEL BRG	6	C.S.	4003	
17	BOLT FOR 16	24	S.		T.B. LIST
18	SHIM FOR 16	6	M.I.	15'	1/4" x 1/2" x 1/4" x 1/4"
19	SET SCREW FOR 16	12	S.	HOLLOW	1/4" x 1/2" CUP POINT
20	BALANCE WHEEL	6	C.S.	1418	ALT.
21	BUSHING FOR 20	6	BR.		477-GP
22	BALANCE WH. SHAFT	6	C.S.		
23	TRACK RAIL	1	S.		A.S.C.E. 60°
24	RAIL CLIP FOR 23	18	S.		CARNegie No. 103
25	RACK SECTION	12	C.S.	11352	NEW
26	BOLT FOR 25	24	S.		T.B. LIST
27	RACK PINION BRG	1	C.S.	7899	SOUTH END
28	RACK PINION BRG	1	C.S.	7899	NORTH END
29	CAP FOR 28 & 29	4	C.S.	7860	
30	BOLT FOR 28 & 29	16	S.		T.B. LIST
31	BOLT FOR 28-29	16	S.		T.B. LIST
32	SHIM FOR 28 & 29	2	M.I.	22' x 8' 1/2" x 1/4" x 1/4"	
33	SHIM FOR 28 & 29	2	M.I.	22' x 8' 1/2" x 1/4" x 1/4"	
34	BUSHING FOR 28 & 29	4	C.S.	9610	WITHOUT P.C.A.
35	LINER FOR 28-29-30-31	8	FIBER	8 1/2" x 1/4" x 7"	
36	LUB FITTING	14			ALUMITE #167A

\* SHIP TO BRIDGE SITE  
ALL OTHER MATERIAL TO AMERICAN BRIDGE CO. ROANOKE, VA.



S.O. D-3545 CONTRACT

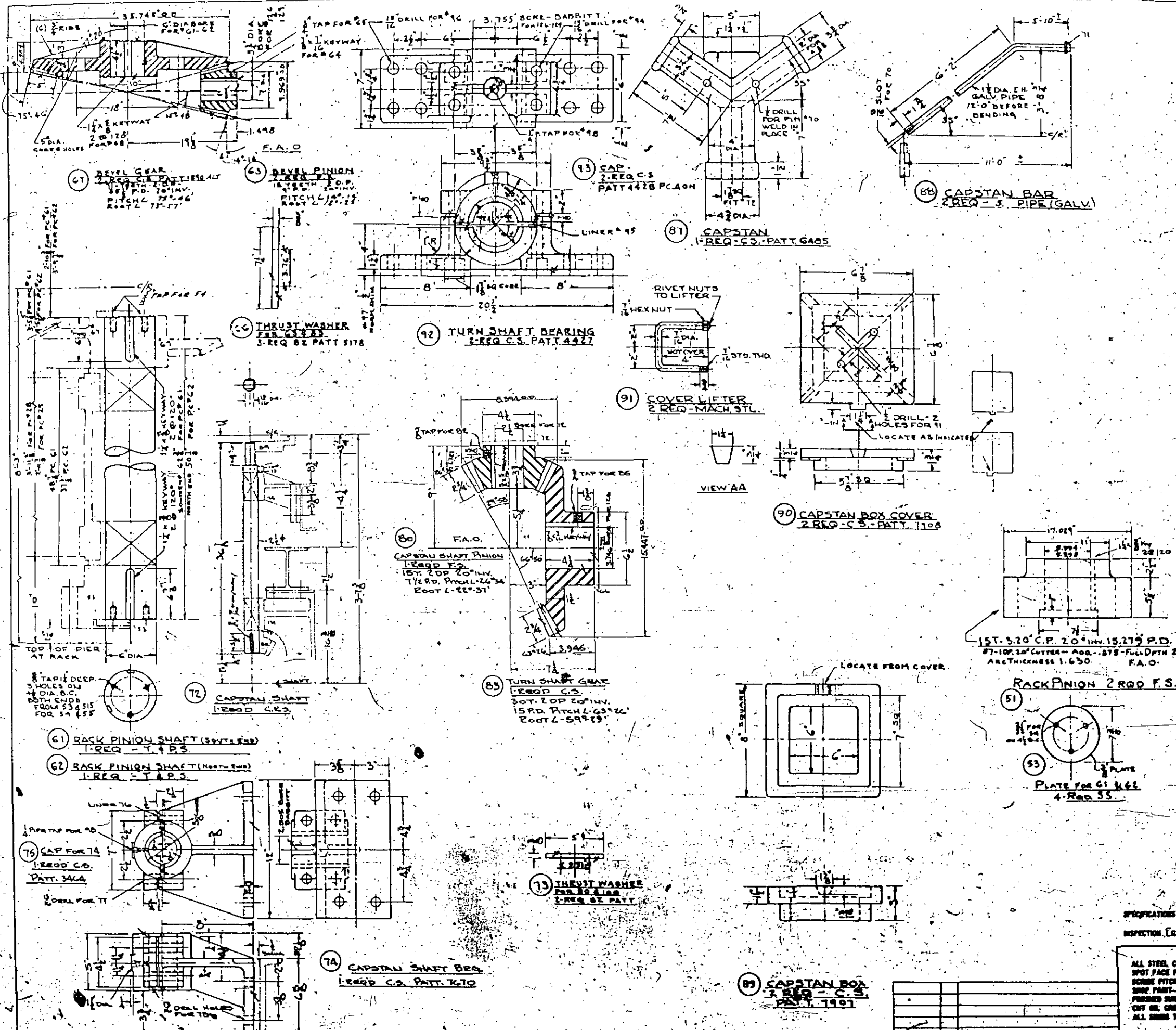
OPERATING MACHINERY FOR  
250'-0" SWING SPAN OVER  
INLAND WATERWAY - PENDER COUNTY  
NEAR CRAWFORD, GEORGIA 1917 & P.H.C.  
PROJECT NO. 51-17-25

THE EARLE GEAR AND MACHINE COMPANY  
4707, 15 4TH STREET OVERLOOK  
PHILADELPHIA, PA.

GENERAL NOTES  
ALL STEEL CASTINGS & FORGINGS TO BE ANNEALED  
SPOT FACE FOR ALL BOLT HEADS & NUTS  
SCRIBE PITCH LINES ON BOTH SIDES OF ALL GEARS  
SHIP PAINT - ONE COAT - P.R. 0-LEA 8-200 8000  
FINISHED SURFACES COATED - No. 02-10  
CUT OIL GROOVES IN ALL BEARINGS UNLESS NOTED  
ALL SHIMS TO BE DRILLED

INSPECTION FRANKLIN & ROBERTS, INC.

DATE: \_\_\_\_\_



S.O. - D-3545 BILL OF MATERIAL      DWG. No. 6018-E-30

PL.	NAME	QTY	MTL.	PART.	REMARKS
61	RACK PINION	2	F.S.		
62	KEY FOR 61	4	S.		KEY LIST
63	PLATE FOR 61 & 62	4	S.S.		
64	SCREW FOR 63	12			1/4" x 1/2" HEX. NUT
65					
66					
67					
68					
69					
70	RACK PINION SHAFT	1	T.P.S.		(SOUTH END)
71	RACK PINION SHAFT	1	T.P.S.		(NORTH END)
72	BEVEL PINION	1	F.S.		
73	KEY FOR 72	2	S.		KEY LIST
74	SET SCREW FOR 72	2	S.	SHIM	3/4" x 1/4" CUP. PT.
75	THRUST WASHER FOR 72	3	BZ.	5178	
76	BEVEL GEAR	2	C.S.	1090	ALT.
77	KEY FOR 76	4	S.		KEY LIST
78	PIN FOR 77	2	S.		1/2" x 3/4"
79	CAP FOR 78	2	M.I.	STD	1/2" PIPE CAP - GALV.
80	CAPSTAN SHAFT	1	C.S.		
81	THRUST WASHER FOR 80	2	BZ.		
82	CAPSTAN SHAFT BRG.	1	C.S.	7670	
83	CAP FOR 82	1	C.S.	3464	
84	LINER FOR 82	2	FACE	2334	
85	CAP BOLT FOR 82	4	S.		T.B. LIST
86	BASE BOLT FOR 82	4	S.		T.B. LIST
87	SHIM FOR 82	1	S.S.	1266	1/4" x 1/4" x 1/2"
88	BEV. PINION	1	C.S.		
89	KEY FOR 88	1	S.		KEY LIST
90	SET SCREW FOR 88	1	S.	SHIM	5/8" x 1/4" CUP. PT.
91	BEVEL GEAR	1	C.S.		
92	KEY FOR 91	1	S.		KEY LIST
93	SET SCREW FOR 91	1	S.		1/4" x 1/4" CUP. PT.
94	CAPSTAN	1	C.S.	6488	
95	CAPSTAN BAR	2	S.		1/2" F.W. PIPE - GALV.
96	CAPSTAN BOX	2	C.S.	7907	
97	CAPSTAN BOX COVER	2	C.S.	7908	
98	" " " " LIFTER	2	S.		
99	T.B. BEARING	2	C.S.	4427	
100	CAP FOR 92	2	C.S.	4428	WITH PEAM
101	CAP BOLT FOR 92	8	S.		T.B. LIST
102	LINER FOR 92 & 93	4	FACE		1 1/2" x 3/8" x 1"
103	BASE BOLT FOR 92	16	S.		T.B. LIST
104	SHIM FOR 92	2	S.S.	1016	1/4" x 1/4" x 1/2"
105	LUB. FITTINGS FOR 92 & 93	4			ALEMITE 1627 A
106	COLLAR FOR 72	1	S.		LD. STD. (SOLID) 1 1/2"

\* SEE SHIPPING INSTRUCTIONS SHEET 3

1 1/2" - 5.20" C.P. 20° INV. 15.275" P.D.  
 #7-10P. 20° CUTTER - ADD. .075" FULL DPTH 2.00"  
 ARC THICKNESS 1.650      F.A.O.

LOCATE FROM COVER

RACK PINION 2 ROD F.S.

51

53

PLATE FOR 61 & 62  
 4-ROD 55.

95

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CONTRACT

OPERATING MACHINERY FOR  
 260'-0" SWING SPAN OVER  
 INLAND WATERWAY, PENDER COUNTY,  
 NORTH CAROLINA STATE HIGHWAY & P.W.C.  
 PROJECT # 1957-236

SPECIAL PROVISIONS

INSPECTION (ROCKLINE & SCORBY INC.)

GENERAL NOTES

ALL STEEL CASTINGS & FORGED TO BE ANNEALED  
 SPOT FACE FOR ALL BOLT HEADS & NUTS  
 SCREW FITCH LINES ON BOTH SIDES OF ALL GEARS  
 SHIP PAINT - ONE COAT - RED LEAD - 4000  
 FINISHED SURFACES COATED - NO. 00-10  
 CUT OR GROOVES IN ALL BEARINGS UNLESS NOTED  
 ALL SHIMS TO BE DRILLED

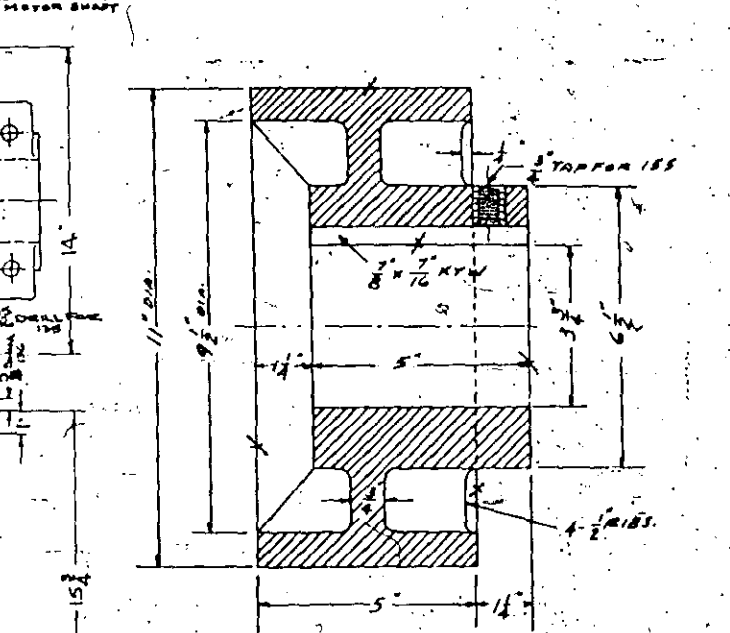
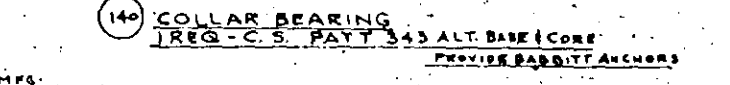
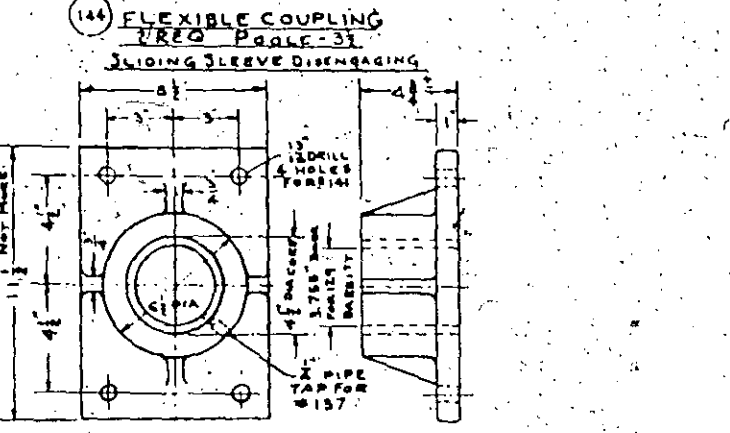
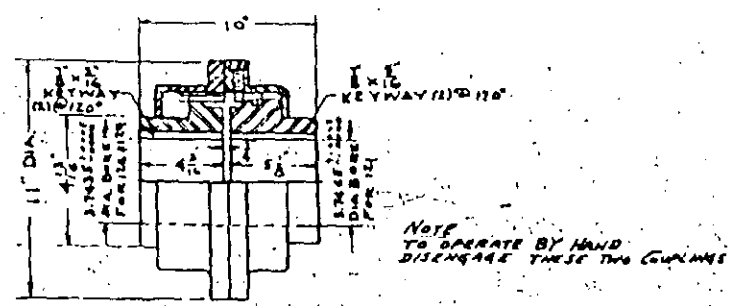
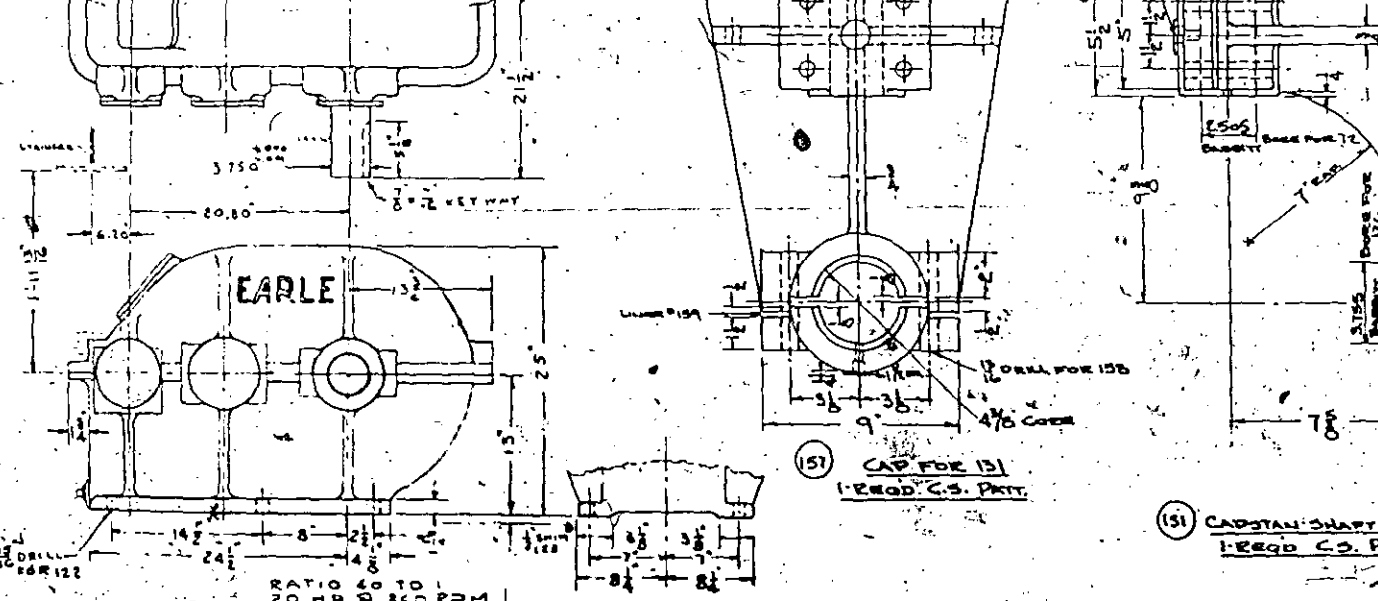
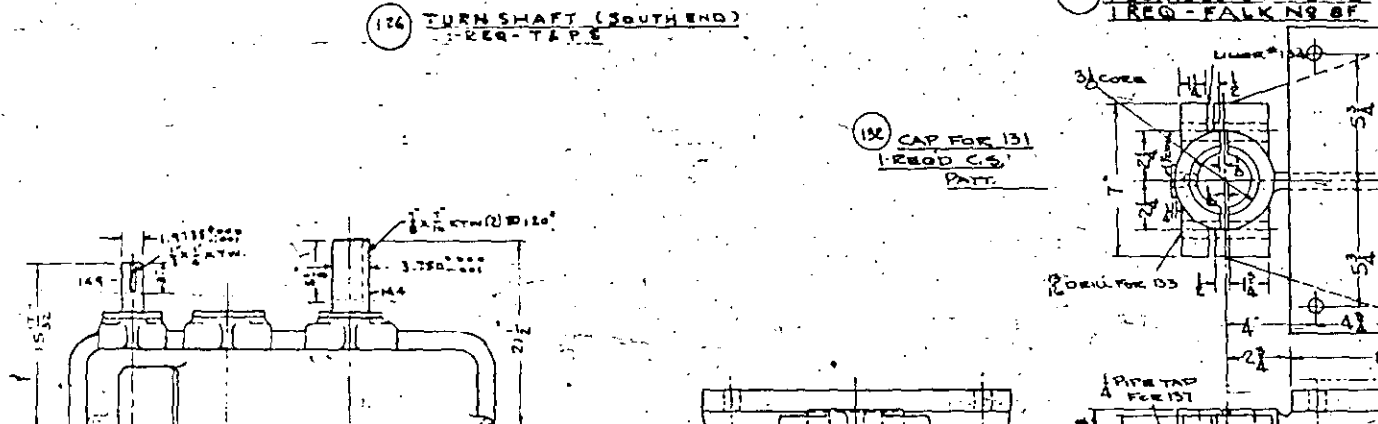
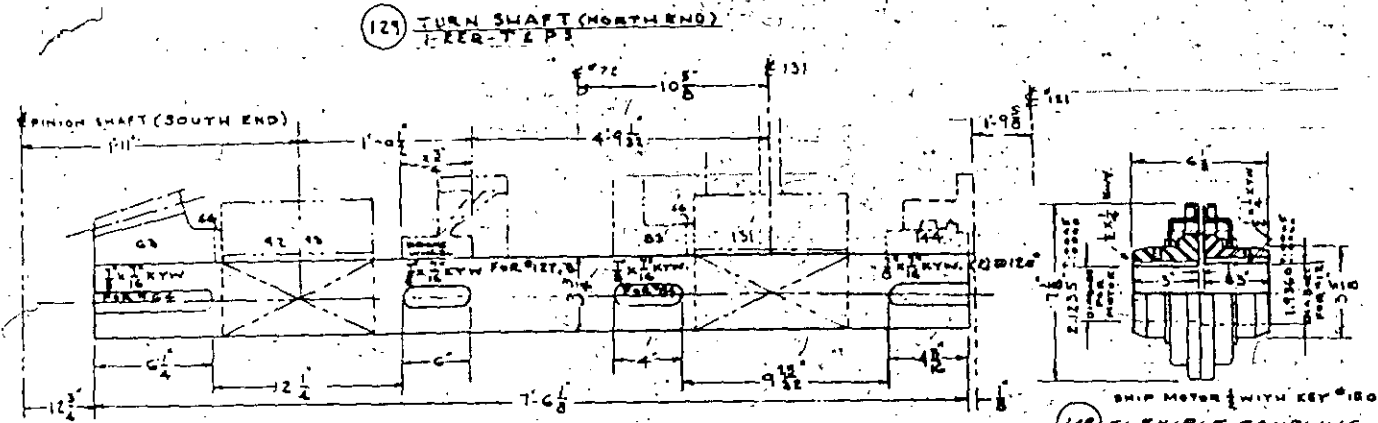
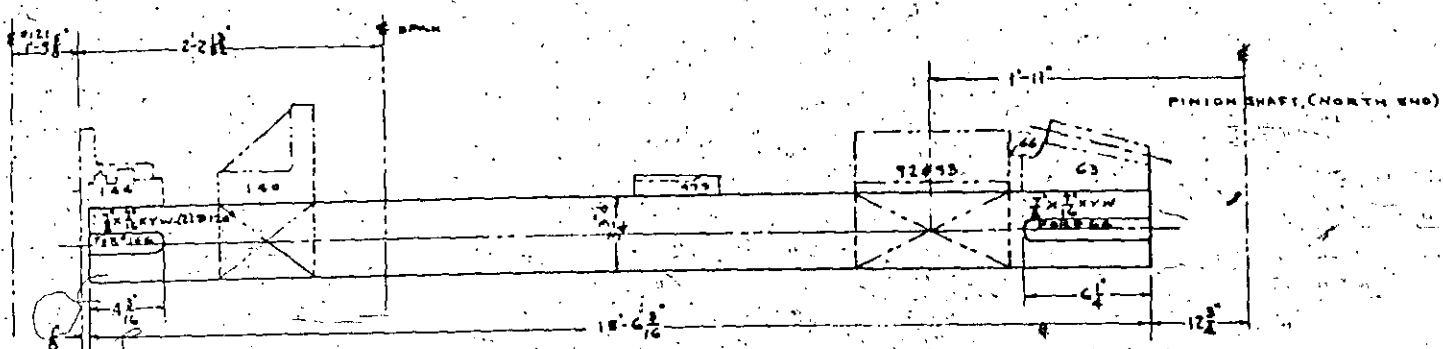
THE EARLE GEAR AND MACHINE COMPANY  
 1107 10TH STREET APT. 10  
 WILMINGTON, N.C.

BY: [Signature]

DATE: 12/27/54

4#10 DWG. NO. 6018-E-30





RATIO 60 TO 1  
20 HP @ 860 RPM  
SPEED REDUCER  
REQ. EARLE 600

D-3545 Bill of Material DWG No. 6019-E-30

PC.	NAME	Q	MTL	PATT	REMARKS
121	SPEED REDUCER	1			EARLE 600
122	BASE BOLT FOR 121	6	S		T.B. LIST
123	SHIM FOR 121	2	S		T.B. LIST
124					
125					
126	TURN SHAFT	1	TSPS		EAST END
127	KEY FOR BRAKE WHEEL	1	S		KEY LIST
128					
129	TURN SHAFT	1	TSPS		WEST END
130					
131	CAPSTAN SHAFT UNION BRG	1	C.S.		
132	CAP FOR 131	1	C.S.		
133	CAP BOLT FOR 132	4	S		T.B. LIST
134	LINER FOR 132	2	WOOD		1/4" x 1/4" x 5"
135	BASE BOLT FOR 131	4	S		T.B. LIST
136	SHIM FOR 131	1	S		1/8" x 1/4" x 1/2"
137	LUB FITTING FOR 131	2			ALEMITE F1427A
138					
139					
140	COLLAR BEARING	1	C.S.	343	ALT. BASE & CORE
141	BASE BOLT FOR 140	4	S		T.B. LIST
142					
143					
144	FLEX COUPLING	2	S	POOLE	3/4" SLIDING SLEEVE DIS-ENG
145	KEY FOR 144	2	S		KEY LIST
146	KEY FOR 144	2	S		KEY LIST
147					
148					
149	FLEX. COUPLING	1	S	FALK	NO. 47
150	KEY FOR 149	1	S		KEY LIST
151	KEY FOR 149	1	S		KEY LIST
152					
153					
154	BRAKE WHEEL	1	C.S.	409	
155	SET SCREW FOR 154	1	S		YELLOW W. ALQ. CUP POINT
156					
157	CAP FOR 131	1	C.S.		
158	CAP BOLT FOR 131	4	S		T.B. LIST
159	LINER FOR 131	2	WOOD		1/4" x 1/4" x 5"
160					
161					

\* SEE SHIPPING INSTRUCTIONS SHEET 3

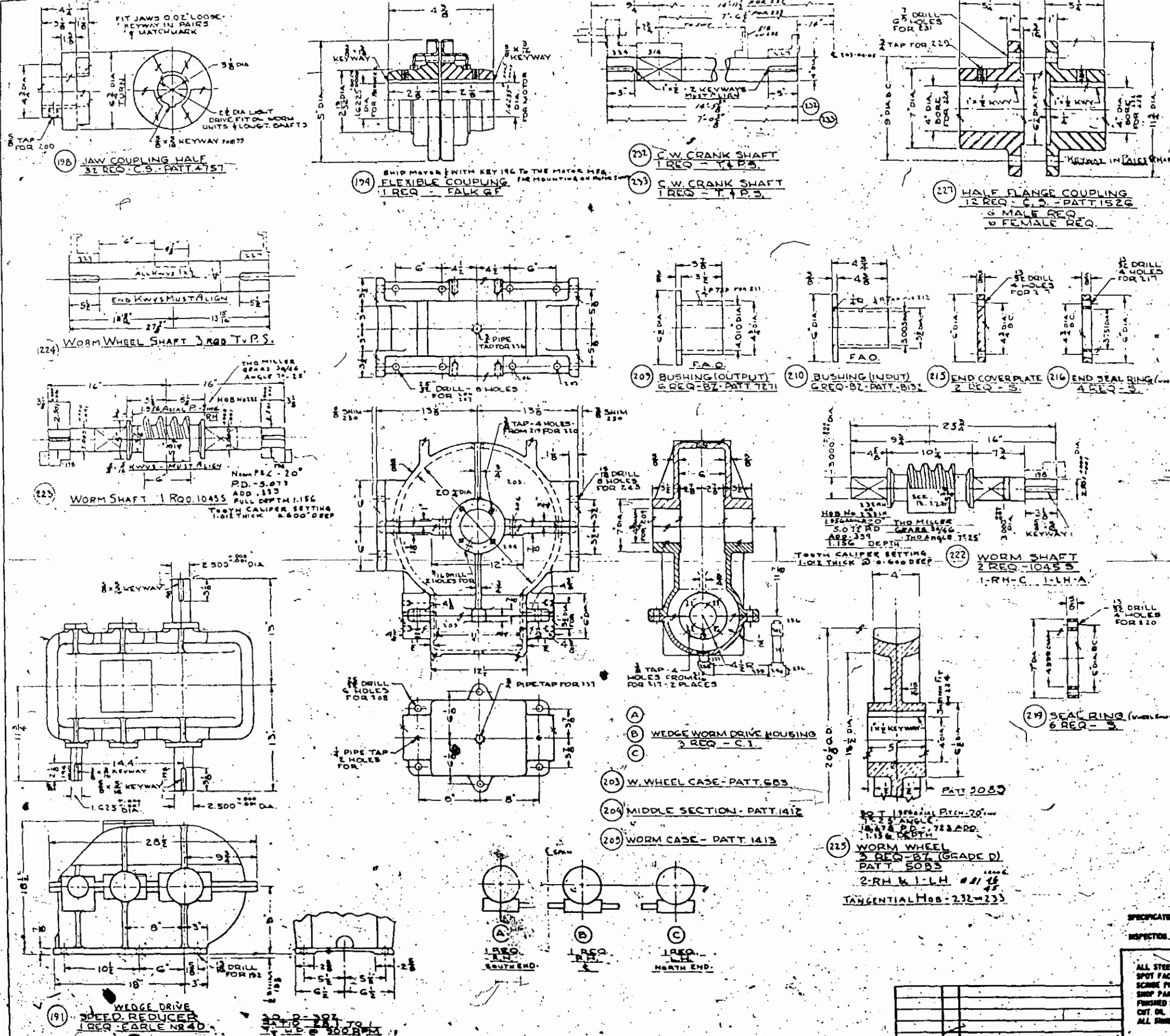
SPECIFICATIONS A 2140 & SPECIAL PROVISIONS  
INSPECTION FOR CHLINA & ROBERTSON, INC.

GENERAL NOTES  
ALL STEEL CASTINGS & FORINGS TO BE ANNEALED  
SPOT FACE FOR ALL BOLT HEADS & NUTS  
SCREW PITCH LINES ON BOTH SIDES OF ALL GEARS  
SHOY PAINT—ONE COAT—RED LEAD—AND S-P-O-C-A.  
FINISHED SURFACES COATED—No. 0x-10  
CUT OR GROOVES IN ALL BEARINGS UNLESS NOTED  
ALL SHIMS TO BE DRILLED

D-3545 CONTRACT  
OPERATING MACHINERY FOR  
250'-0" SWING SPAN OVER  
INLAND WATERWAY IN PENDER COUNTY,  
NORTH CAROLINA  
PROJECT - B.S. 15-17-16

THE EARLE GEAR AND MACHINE COMPANY  
1707 10<sup>th</sup> STENTON AVENUE  
PHILADELPHIA 44, PA.  
P. O. BOX 20  
PHILADELPHIA, PA.  
SHEET 5 OF 10 DWG. NO. 6019-E-30

5-11-54 PC. 154



QTY	NAME	UNIT	PATT.	REMARKS
1	IN A MG			
181	SPEED RED. (WEDGES)	1	C.I.	EARLE 40
192	BASE BOLT FOR 191	6	S	T.B. LIST
193	SHIM FOR 191	2	S	2 1/2" x 1 1/2" x 1/8"
194	COUPLING FOR 191	1	S	FALK 2F
195	KEY FOR 194	1	S	KEY LIST
196	KEY FOR 194	1	S	KEY LIST 2
197				
198	JAW COUPLG (HALF)	32	C.S.	4757
199	KEY FOR 198	32	S	KEY LIST
200	S.S. FOR 198	32	S	1/2" HOLLOW CUP PT. C
201				
202				
203	WEDGE WORM D. HUB	3	C.I.	683
204	" " " " CHURN	3	C.I.	1412
205	" " " " BOTTOM	3	C.I.	1413
206	BOLT FOR 203 & 204	12	S	1/2" x 3/4" H.H. HOMEY
207	BOLT FOR " " "	12	S	1/2" x 3/4" H.H. HOMEY
208	BOLT FOR 204-208	18	S	1/2" x 3/4" H.H. HOMEY
209	OUTPUT BUSHG (LH)	6	B7	7271
210	INPUT BUSHG (RH)	6	B7	8132
211	NIPPLE FOR 209	6	B7	1/2" x 1/2" STD PIPE
212	NIPPLE FOR 210	6	B7	1/2" x 1/2" STD PIPE
213	COUPLING FOR 211	12	M1-S	1/2" x 1/2" PIPE
214	LUB FITTING FOR 213	12	M1-S	ALUMITE 1627
215	END COVER PLATE	2	S	
216	END SEAL RING	4	S	
217	CAP SC FOR 215-16	24	S	1/2" x 1/2" H.H. HOMEY
218	OIL SEAL	4	S	CH. C. - 2753
219	SIDE SEAL RING	6	S	
220	CAP SC FOR 219	24	S	1/2" x 1/2" H.H. HOMEY
221	OIL SEAL	6	S	CH. C. - 4994
222	WORM SHAFT	2	T.P.S.	
223	WORM SHAFT	1	T.P.S.	
224	WORM WHEEL SHAFT	3	T.P.S.	
225	WORM WHEEL	3	D-B7	5083
226	KEY FOR 225	3	S	KEY LIST
227	FLANGE COUPLG (HALF)	12	C.S.	1526
228	KEY FOR 227	12	S	KEY LIST
229	S.S. FOR 227	12	S	1/2" x 1/2" HOLLOW CUP PT. C
230	SHIM FOR 229	12	S	2 1/2" x 1 1/2" x 1/8"
231	BOLTS FOR 227	36	S	1/2" x 3/4" H.H. HOMEY
232	C.W. CRANK SHAFT	1	T.P.S.	
233	C.W. " " "	1	T.P.S.	
234				
235				
236	PIPE PLUG FOR 235	9	C.I.	1/2" x 1/2"
237	NIPPLE FOR 209	3	S	1/2" x 1/2" STD PIPE GAL
238	ELL FOR 209	3	M.I.	1/2" x 1/2" GAL
239	NIPPLE FOR 209	3	S	1/2" x 1/2" GAL
240	TR 1/2" x 1/2"	3	M.I.	1/2" x 1/2" GAL
241	NIPPLE FOR 209	3	S	1/2" x 1/2" GAL
242	COUPLING FOR 241	3	M1-S	1/2" x 1/2" GAL
243	BASE BOLT FOR 242	24	S	T.B. LIST

\* SEE SHIPPING INSTRUCTIONS SHEET 3

SPECIFICATIONS AASMO & SPECIAL PROVISIONS  
INSPECTION GEORGIN & ROBERTSON, INC.

**GENERAL NOTES**  
ALL STEEL CASTINGS & FORINGS TO BE ANNEALED  
SPOT FACE FOR ALL BOLT HEADS & NUTS  
SCREW PITCH LINES ON BOTH SIDES OF ALL GEARS  
SHIM PAINT - ONE COAT - RED LEAD - SEE SPECS  
FINISHED SURFACES COATED - NO. OIL  
CUT. OIL GROOVES IN ALL BEARINGS UNLESS NOTED  
ALL DIMS TO BE DRILLED

J.D. 3545 CONTRACT  
OPERATING MACHINERY FOR  
260' 0" SWING SPAN OVER  
INLAND WATERWAY - PENDER COUNTY  
NORTH CAROLINA STATE HWY & P.W.C.  
PROJECT B-5-90-2222

THE EARLE GEAR AND MACHINE COMPANY  
4777 10 4700 STEVENSON AVENUE  
PHILADELPHIA 24 PA  
PT 0843 E-30  
DWG NO. 6020E-30  
SHEET 6 OF 10



QTY	NAME	QTY	MTL	PATT	REMARKS
260	END WEDGE SEAT	4	C.S.	1133	
261	END WEDGE	4	C.S.	1518	WITHOUT P.A.
262	END WEDGE GUIDE	4	C.S.	2874	ALT.
263	SHIM FOR 262	4	S.S.	10464	1/4" X 1/2" X 1/4"
264	BOLT FOR 262	16	S		T.D. LIST
265	END WEDGE SAND SHIELD	4	D.W.		1/2" DIA. DRILL
266	WEDGE CRANK	4	C.S.	1518	4-REQ. C.S. PATT. 1518 ENIT
267	CENTER WEDGE SEAT	2	C.S.	1518	
268	CENTER WEDGE	2	C.S.	1518	WITHOUT P.A.
269	CENTER WEDGE GUIDE	2	C.S.	3549	
270	SHIM FOR 269	2	S.S.	10414	1/4" X 1/2" X 1/4"
271	BOLT FOR 269	12	S		T.D. LIST
272					
273	PIN FOR 261	4	C.R.S.		
274	END WEDGE SAND SHIELD	4	D.		1/2" DIA. DRILL
275	WEDGE CRANK	4	C.S.	1518	4-REQ. C.S. PATT. 1518 ENIT
276	WEDGE CRANK	4	C.S.	1518	4-REQ. C.S. PATT. 1518 ENIT
277	PIN FOR 268 & 261	6	C.R.S.		
278	SET SCREW FOR 276	12	S		1/4" X 1/2" X 1/4" CUP POINT
279	WEDGE CRANK	4	C.S.	1518	4-REQ. C.S. PATT. 1518 ENIT
280	BOLT FOR 279	4	S		3/8" X 1/2" LW. NO NUT
281	WEDGE ANGLE FOR 281	6	S.S.		1/4" X 1/2" X 1/4"
282	BOLTS FOR 281	14	S		3/8" X 1/2" LW. NO NUT
283	GUIDE SPACER	8	C.R.S.		2 1/2" X 1/2" X 1/4"
284	GUIDE PLATE	8	C.R.S.		3 1/2" X 1/2" X 1/4"
285	BOLT FOR 283, 284	14	S		3/8" X 1/2" LW.
286					
287	NUT FOR 288	4	S		1/2" AMER. STD. HEAVY
288	END WEDGE EYE BAR	4	F.S.		R.H. THREAD
289	END WEDGE EYE BAR	4	F.S.		L.H. THREAD
290	E.W. SLEEVE NUT	4	S		2 1/2" A.B. STYLE
291	NUT FOR 291	4	S		1/2" AMER. STD. HEAVY
292	END WEDGE SHAFT	2	T.F.S.		1/2" DIA. DRILL
293	COLLAR FOR 292	2	M.I.		3/4" I.D. SOLID BORE 3/4" O.D.
294	LEVER PIN	8	C.R.S.		
295	COTTER PIN	16	S		3/8" X 3/4" LG.
296	END WEDGE LEVER	4	C.S.	9736	ALT. (WITH OUT HUB A)
297	KEY FOR 296	4	S		KEY LIST
298	END WEDGE SHAFT BRG.	4	C.B.	725	4 1/2" CORE WITH BARBARCORS
299	BASE BOLT FOR 298	16	S		T.D. LIST
300	END WEDGE LEVER	4	C.S.	9736	ALT. HUB A ON
301	KEY FOR 300	4	S		KEY LIST
302	SET SCREW FOR 300	4	S		3/8" X 1/2" Hollow Cup Point
303	CONNECTING ROD END	4	F.S.		
304	CONNECTING ROD END	4	F.S.		
305	BUSHING FOR 304	4	BZ.	STO	FROM 1518
306	L.V. FIT FOR 305	12			ALUMITE FIT
307	NUT FOR 307	4	S		1/2" AMER. STD. HEAVY
308	SLEEVE NUT FOR 308	4	S		2 1/2" A.B. STYLE
309	NUT FOR 304	4	S		1/2" AMER. STD. HEAVY
310	END WEDGE CRANK	4	C.S.	1518	ENIT
311	KEY FOR 310	4	S		KEY LIST
312	SET SCREW FOR 310	4	S		3/8" X 1/2" Hollow Cup Point
313	CRANK PIN FOR 310	4	C.R.S.		
314	WASHER FOR 313	4	S		1/4" X 3/4" LG.
315	COTTER PIN FOR 313	4	S		3/8" X 3/4" LG.
316	WEDGE CRANK BRG.	6	C.B.	725	3 1/2" CORE WITH BARBARCORS
317	BASE BOLT FOR 316	24	S		T.D. LIST
318	SHIM FOR 316	4	S.S.	10414	1/4" X 1/2" X 1/4"
319					
320	SHIM FOR 298 & 301	12	S.S.	10414	1/4" X 1/2" X 1/4"
321	END WEDGE SHAFT BRG.	4	C.B.	725	4 1/2" CORE
322	BUSHING FOR 321	4	BZ.	STO	FROM 1518
323	KEY FOR 321	4	S		KEY LIST
324	BASE BOLT FOR 321	16	S		T.D. LIST
325					

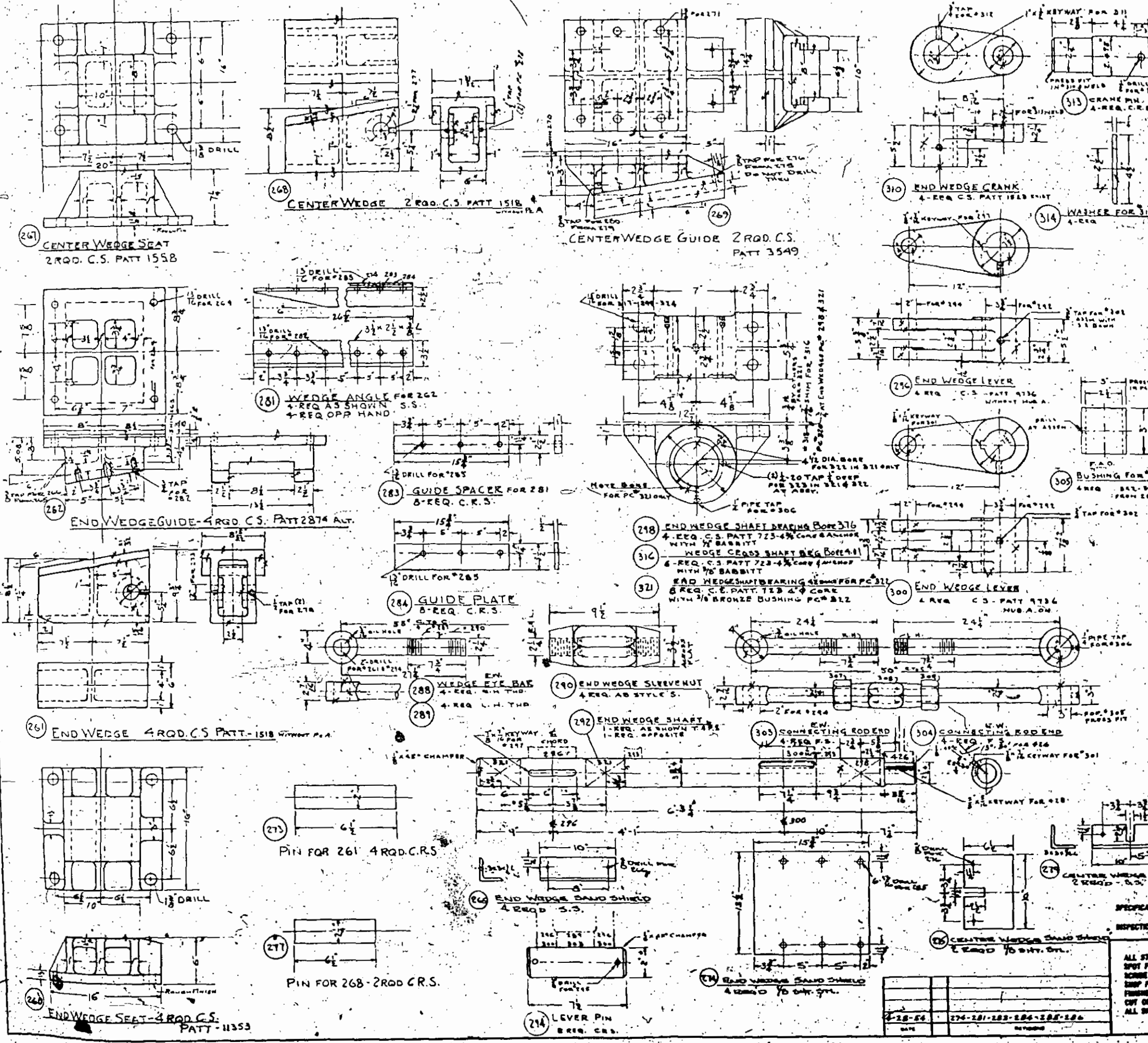
\* SEE SHIPPING INSTRUCTIONS SHEET 3

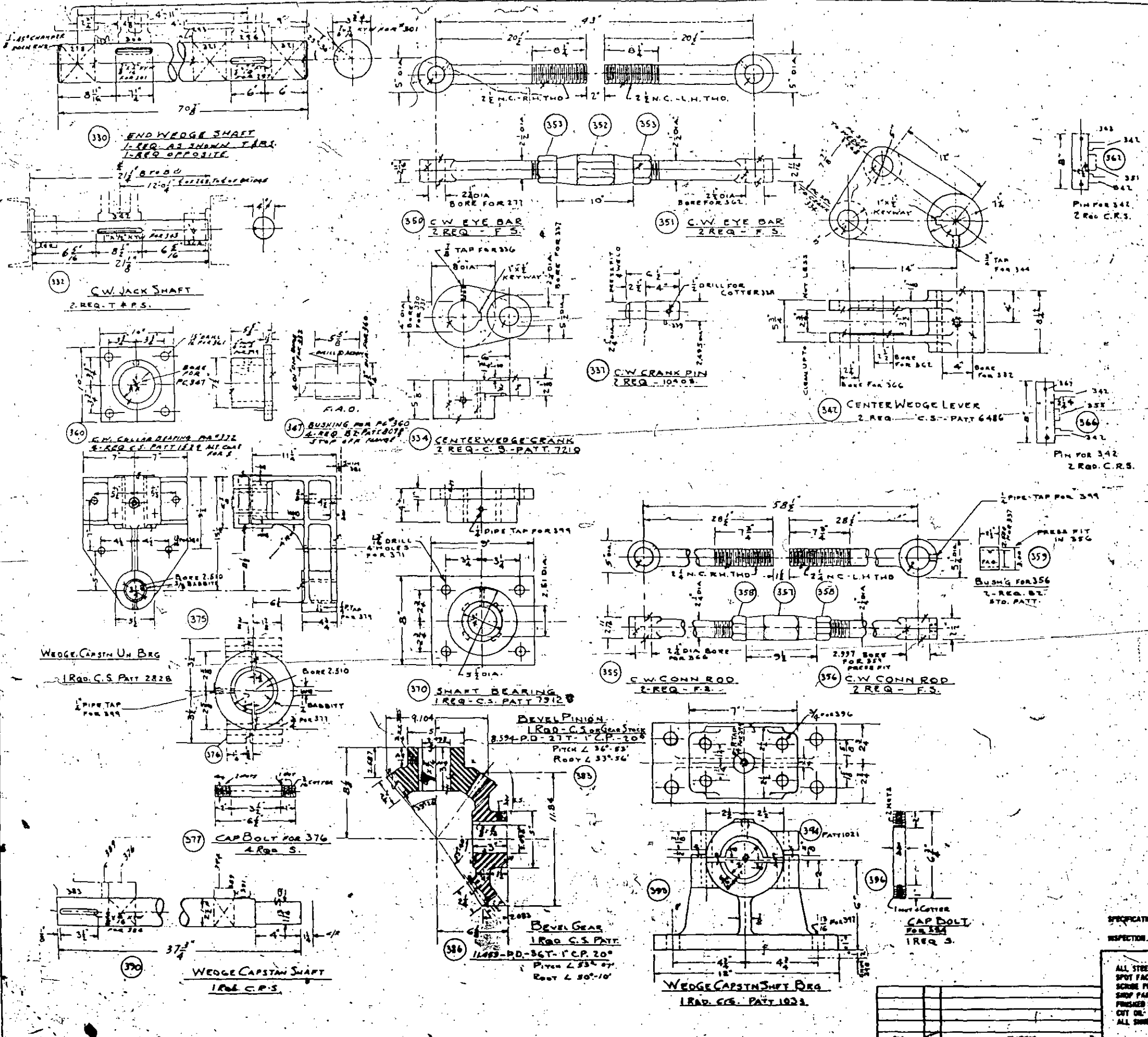
**GENERAL NOTES**

ALL STEEL CASTINGS & FORGINGS TO BE ANNEALED  
 SPOT FACE FOR ALL BOLT HEADS & NUTS  
 SCRIBE PITCH LINES ON BOTH SIDES OF ALL GEARS  
 SHIP PAINT—ONE COAT—RED LEAD NO SPEC  
 FINISHED SURFACE GRATED—NO. 60-10  
 CUT OR GROOVES IN ALL GRANNES UNLESS NOTED  
 ALL SHIMS TO BE DRILLED

**OPERATING MACHINERY FOR**  
 250'-0" SPAN OVER  
 INLAND WATERWAY, PERRY COUNTY,  
 NORTH CAROLINA STATE HIGHWAY 4  
 PROJECT B.S. 2-27-25

**THE EARLE GEAR AND MACHINE COMPANY**  
 1007 16th Street, Erie, Pa.  
 PHILADELPHIA, PA.  
 19104  
 Dwg. No. 6021E-30  
 7/10/54





PC	NAME	QTY	MTL	PATT	REMARKS
330	END WEDGE SHAFT	2	TAPS		
331	C.W. JACK SHAFT	2	TAPS		
332	C.W. EYE BAR	2	F.S.		
333	C.W. EYE BAR	2	F.S.		
334	CENTER WEDGE CRANK	2	C.S.	7210	
335	C.W. CRANK PIN	2	S.		KEY LIST
336	C.W. COLLAR BEARING	2	C.S.		KEY LIST
337	WEDGE CAPSTAN UN BRG	1	C.S.		SEE DETAIL
338	BEVEL PINION	1	C.S.		
339	WEDGE CAPSTAN SHFT BRG	1	C.S.		
340	BUSHING FOR 360	2	M.S.		SEE DETAIL
341	PIN FOR 342	2	C.R.S.		
342	CENTER WEDGE LEVER	2	C.S.	6486	
343	CAP BOLT FOR 376	4	S.		
344	CAP BOLT FOR 394	2	FERR.		
345	CAP BOLT FOR 394	4	S.		
346	CAP BOLT FOR 394	4	S.		
347	WEDGES FOR 394	4	S.		
348	SHIM FOR 393	1	S.		
349	SHIM FOR 393	1	S.		
350	C.W. CONN ROD	2	F.S.		
351	C.W. CONN ROD	2	F.S.		
352	SHIM FOR 375	1	S.		
353	BEVEL GEAR	1	C.S.		
354	BEVEL PINION	1	C.S.		
355	WEDGE CAPSTAN SHFT BRG	1	C.S.		
356	CAP BOLT FOR 394	2	FERR.		
357	CAP BOLT FOR 394	4	S.		
358	SHIM FOR 393	1	S.		
359	SHIM FOR 393	1	S.		
360	SHIM FOR 393	1	S.		
361	SHIM FOR 393	1	S.		
362	SHIM FOR 393	1	S.		
363	SHIM FOR 393	1	S.		
364	SHIM FOR 393	1	S.		
365	SHIM FOR 393	1	S.		
366	SHIM FOR 393	1	S.		
367	SHIM FOR 393	1	S.		
368	SHIM FOR 393	1	S.		
369	SHIM FOR 393	1	S.		
370	SHIM FOR 393	1	S.		
371	SHIM FOR 393	1	S.		
372	SHIM FOR 393	1	S.		
373	SHIM FOR 393	1	S.		
374	SHIM FOR 393	1	S.		
375	SHIM FOR 393	1	S.		
376	SHIM FOR 393	1	S.		
377	SHIM FOR 393	1	S.		
378	SHIM FOR 393	1	S.		
379	SHIM FOR 393	1	S.		
380	SHIM FOR 393	1	S.		
381	SHIM FOR 393	1	S.		
382	SHIM FOR 393	1	S.		
383	SHIM FOR 393	1	S.		
384	SHIM FOR 393	1	S.		
385	SHIM FOR 393	1	S.		
386	SHIM FOR 393	1	S.		
387	SHIM FOR 393	1	S.		
388	SHIM FOR 393	1	S.		
389	SHIM FOR 393	1	S.		
390	SHIM FOR 393	1	S.		
391	SHIM FOR 393	1	S.		
392	SHIM FOR 393	1	S.		
393	SHIM FOR 393	1	S.		
394	SHIM FOR 393	1	S.		
395	SHIM FOR 393	1	S.		
396	SHIM FOR 393	1	S.		
397	SHIM FOR 393	1	S.		
398	SHIM FOR 393	1	S.		
399	SHIM FOR 393	1	S.		

OPERATING MACHINERY FOR  
250" SWING SPAN OVER  
INLAND WATERWAY PENDER COUNTY  
NORTH CAROLINA

CONTRACT NO. 6022 E-30

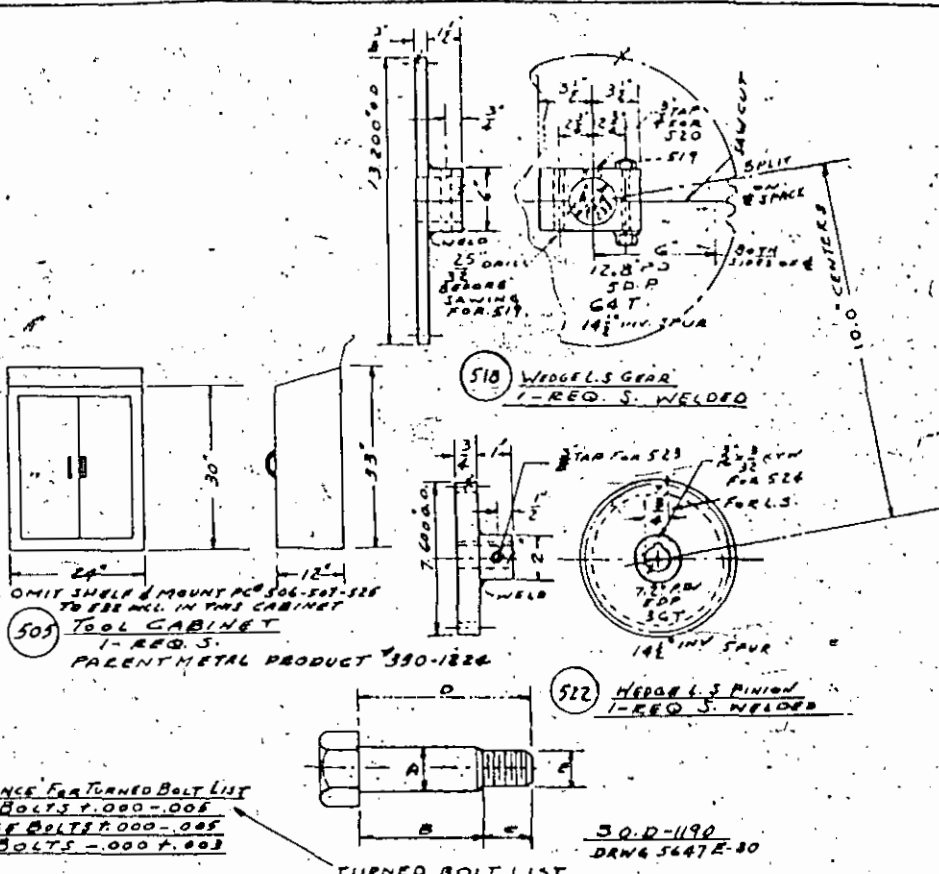
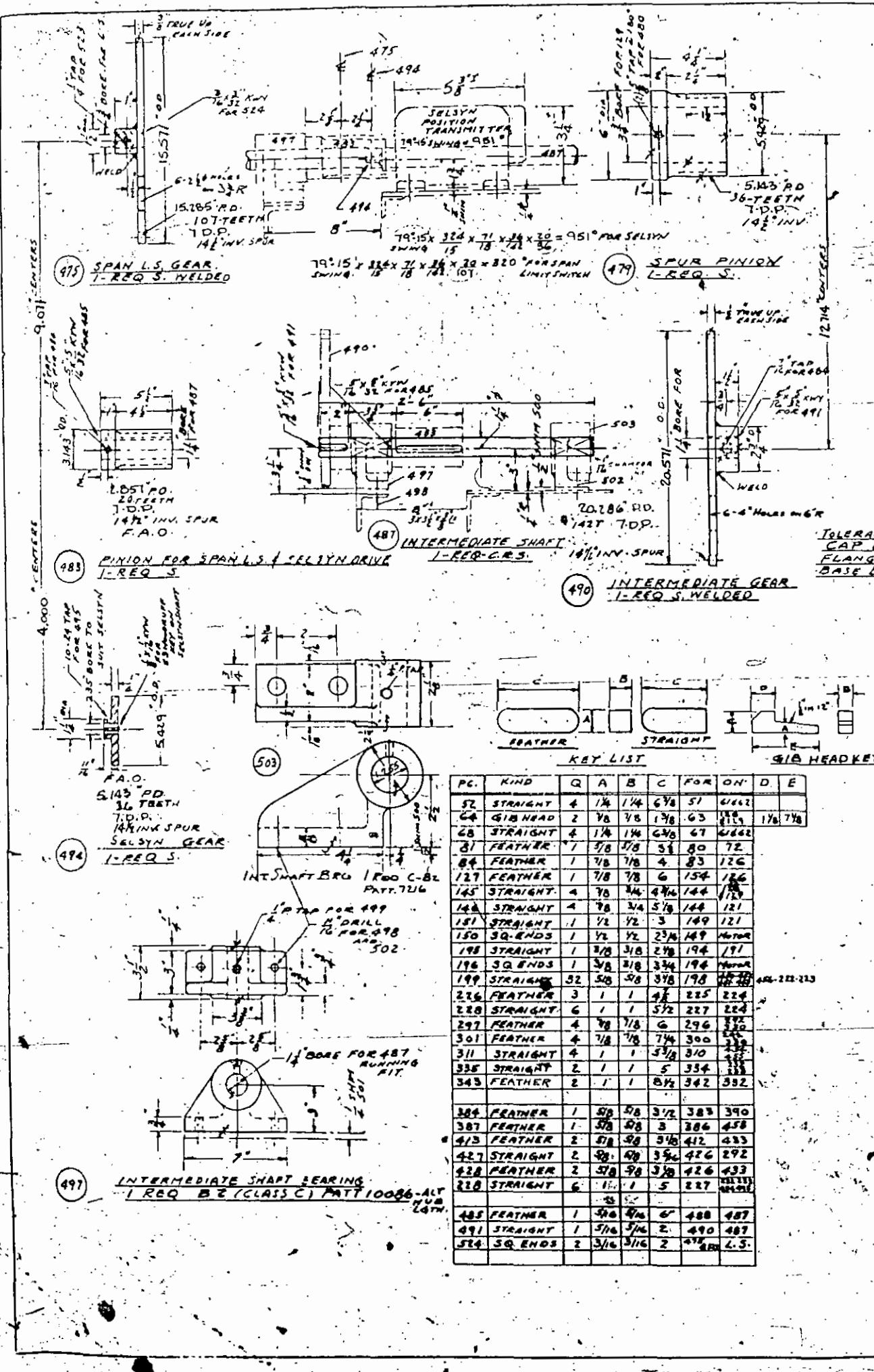
THE EARLE GEAR AND MACHINE COMPANY  
1707 10th Street, Newark, N.J.

GENERAL NOTES  
ALL STEEL CASTINGS & FORGINGS TO BE ANNEALED  
SPOT FACE FOR ALL BOLT HEADS & NUTS  
SCREW FITTED LINES ON BOTH ENDS OF ALL GEARS  
SHIM PARTS - ONE COAT - E.C. LEAD OIL SPRAY  
FINISHED SURFACES COATED - NO. 0-10  
CUT OIL GROOVES IN ALL BEARINGS UNLESS NOTED  
ALL SHIMS TO BE DRILLED

SEE SHIPPING INSTRUCTIONS SHEET 3







TOLERANCE FOR TURNED BOLT LIST  
 CAP BOLTS 1.000-0.005  
 FLANGE BOLTS 0.000-0.005  
 BASE BOLTS -0.001 P. 0.003

PC	HEAD	HT	Q	A	B	C	D	E	USE	FOR	HT	LN	CM	BW
32	SQND	J	16	1 1/2	7/8	2 1/8	1 1/2	1 1/2	CAP	22	32			
77	HEX	S	4	1/2	3/8	1 1/8	5/8	5/8	CAP	75	B			
94	SQND	J	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	CAP	93	16			
153	HEX	S	4	1/2	5/8	2	5/8	3/4	CAP	132	0			
158	HEX	S	4	1/2	5/8	2	5/8	3/4	CAP	137	B			
3	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	182	B	B		
4	HEX	S	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	FLAN	2	B	B		
15	HEX	S	6	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	14	B	B		
17	HEX	S	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	16	B	B		
17	HEX	S	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	16	B	B		B
17	HEX	S	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	16	B	B		B
27	HEX	S	24	1 1/4	5/8	2 1/8	1 1/2	1 1/2	FLAN	25	24	24		
31	HEX	S	24	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	28	24	24		
78	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	74	4	4		
96	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	92	16	16		
122	HEX	S	6	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	121	6	6		C
135	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	131	4	4		
78	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	74	4	4		
141	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	140	4	4		
192	HEX	S	6	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	191	6	6		6
264	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	262	16	16		16
271	HEX	S	8	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	269	8	8		
289	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	288	16	16		
324	HEX	S	32	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	321	32	32		32
377	HEX	S	24	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	376	24	24		
361	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	360	16	16		
265	HEX	S	24	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	264	24	24		
271	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	269	4	4		
371	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	370	4	4		
380	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	375	4	4		
397	HEX	S	4	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	393	4	4		
431	HEX	S	24	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	430	24	24		
447	HEX	S	16	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	446	16	16		
498	HEX	S	2	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	497	2	2		B
502	HEX	S	2	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	503	2	2		B
647	HEX	S	40	1 1/4	5/8	2 1/8	1 1/2	1 1/2	BASE	646	40	40		

KEY LIST

PC	KIND	Q	A	B	C	FOR ON	D	E
52	STRAIGHT	4	1 1/4	1/4	6 3/8	51	4122	
64	GIB HEAD	2	3/8	3/8	1 3/8	63	4115	1 7/8 7/8
68	STRAIGHT	4	1 1/4	1/4	6 3/8	47	4122	
81	FEATHER	1	3/8	3/8	5 1/8	80	72	
84	FEATHER	1	3/8	3/8	4	83	126	
127	FEATHER	1	3/8	3/8	6	154	126	
145	STRAIGHT	4	7/8	3/4	4 3/4	144	117	
148	STRAIGHT	4	7/8	3/4	5 1/8	144	121	
181	STRAIGHT	1	1/2	1/2	3	149	121	
150	SQ ENDS	1	1/2	1/2	2 3/8	149	120	
198	STRAIGHT	1	3/8	3/8	2 3/8	194	191	
196	SQ ENDS	1	3/8	3/8	3 3/4	194	190	
199	STRAIGHT	32	5/8	5/8	3 3/8	198	190	
226	FEATHER	3	1	1	4 1/2	225	224	
228	STRAIGHT	6	1	1	5 1/2	227	224	
297	FEATHER	4	3/8	3/8	7 1/4	296	292	
301	FEATHER	4	3/8	3/8	7 1/4	300	292	
311	STRAIGHT	4	1	1	5 3/4	310	292	
335	STRAIGHT	2	1	1	5	334	292	
343	FEATHER	2	1	1	8 1/2	342	332	
384	FEATHER	1	5/8	5/8	3 1/2	383	390	
387	FEATHER	1	5/8	5/8	3	386	458	
413	FEATHER	2	5/8	5/8	3 1/2	412	433	
427	STRAIGHT	2	5/8	5/8	3 1/2	426	292	
428	FEATHER	2	5/8	5/8	3 1/2	426	433	
428	STRAIGHT	6	1	1	5	227	4113	
485	FEATHER	1	5/8	5/8	6	488	487	
491	STRAIGHT	1	5/8	5/8	2	490	487	
524	SQ ENDS	2	3/16	3/16	2	498	495	

S. O. D-3545 BILL OF MATERIAL

PC	NAME	Q	HTL	PATT	REMARKS
475	SPAN L.S. GEAR	1	S		WELDED CONIST
479	SPUR PINION	1	S		
480	SET SCREW FOR 479	2	J	HILLMAN	5/8 X 1/4 HALF-ROD PT.
483	PINION FOR SELSYN DRIVE	1	S		
484	SET SCREW FOR 483	2	S	HILLMAN	1/4 X 1/8 CUP PT.
485	KEY FOR 483	1	S	HILLMAN	KEY LIST
487	INTERMEDIATE SHAFT	1	S		
490	INTERMEDIATE GEAR	1	S		WELDED CONIST
491	KEY FOR 490	1	S		KEY LIST
494	SELSYN GEAR	1	S		
495	SET SCREW FOR 494		HILLMAN		10-24 X 1/4 CUP PT.
497	INT. SHAFT BEARING	1	B2	INTRA	ALT. NO. 1474
498	BASE BOLTS FOR 497	2	S		T.B. LIST
499	LUB. FITTING FOR 497	2			ALUMITE # 1022A
500	SHIM FOR 503	1	S.S.	2X4	1/4 X 1/2
501	SHIM FOR 497	1	S.S.	3X7	1/4 X 1/2
502	BASE BOLT FOR 503	2	S		T.B. LIST
503	INT. SHFT. BRG.	1	B2	7216	
505	TOOL CABINET	1	S		WELDED CONIST
506	GREASE GUN	1			ALUMITE # 4017
507	WRENCH	1			ALUMITE # 6654
518	WEDGE L.S. GEAR	1	S		WELDED CONIST
519	BOLT FOR 518	2	S		WRENCH PART
520	SET SCREW FOR 518	1	S	HILLMAN	1/4 X 1/8 CUP PT.
522	PINION (WEDGED L.S.)	1	S		WELDED CONIST
523	SET SCREW FOR 522	2	S	HILLMAN	1/4 X 1/8 CUP PT.
524	KEY FOR 522	1	S		KEY LIST
525	ENGINE WRENCH 1520L	1	S		NON. OPENING 3/8 X 3/8
526	ENGINE WRENCH 1520L	1	S		NON. OPENING 3/8 X 3/8
527	ENGINE WRENCH 1520L	1	S		NON. OPENING 3/8 X 3/8
528	ENGINE WRENCH 1520L	1	S		NON. OPENING 1/2 X 1/2
529	ENGINE WRENCH 1520L	1	S		NON. OPENING 1/2 X 1/2
530	ENGINE WRENCH 1520L	1	S		NON. OPENING 1/2 X 1/2
532	WRENCH FOR H.M.S.S.				

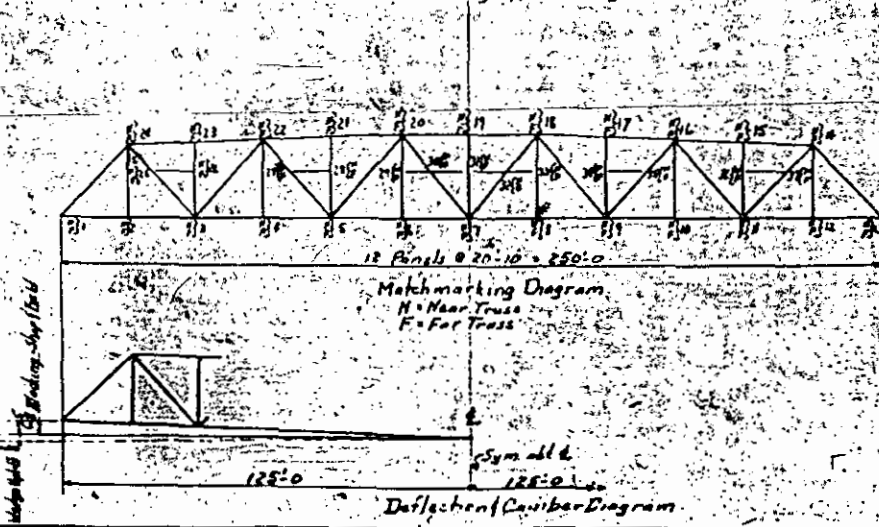
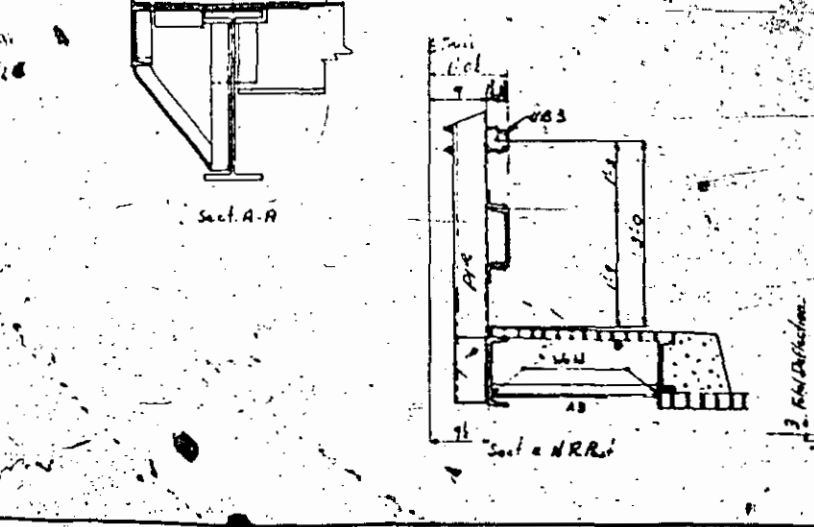
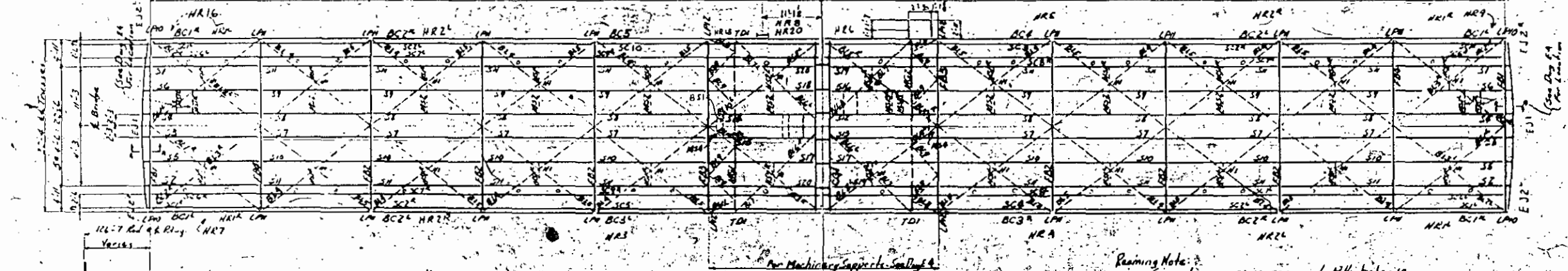
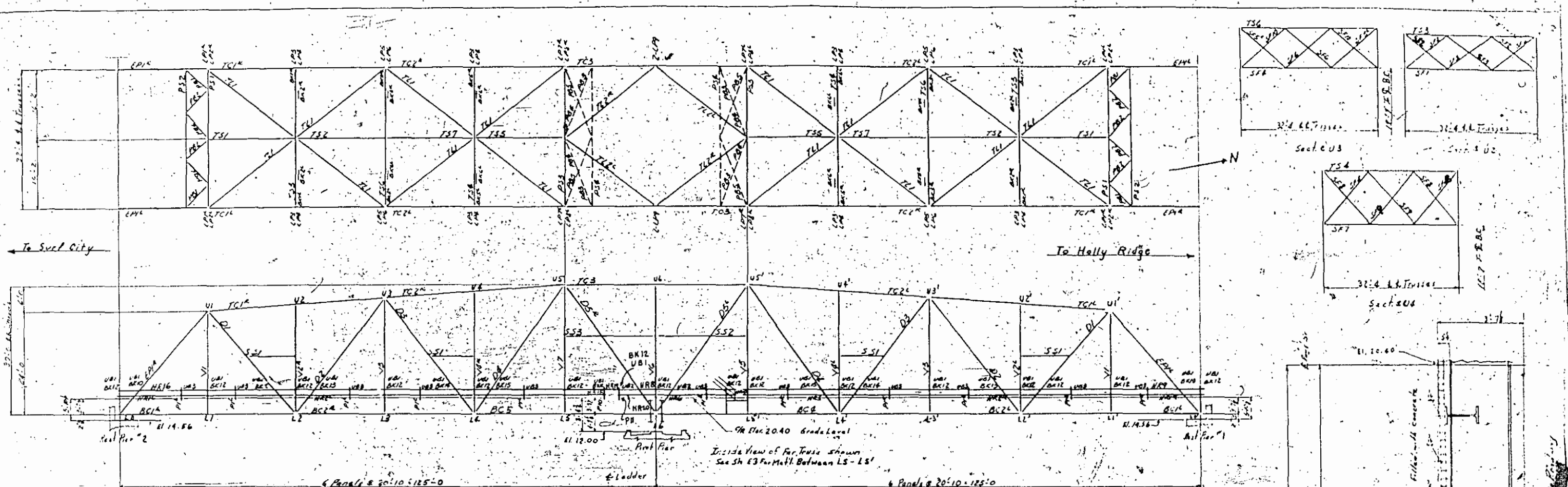
SEE SHIPPING INSTRUCTIONS SHEET 3

GENERAL NOTES  
 ALL STEEL CASTINGS & FORINGS TO BE ANNEALED  
 SPOT FACE FOR ALL BOLT HEADS & NUTS  
 1:CRANE PITCH LINES ON BOTH SIDES OF ALL GEARS  
 SHIP PAINT - ONE COAT - RED LEAD  
 FINISHED SURFACES COATED - NO. 0-10-10  
 CUT OIL CRACKS IN ALL BEARINGS UNLESS NOTED  
 ALL SHIMS TO BE DRILLED

THE EARLE GEAR AND MACHINE COMPANY  
 4701-18 510 BROADWAY  
 PHILADELPHIA 44, PA.  
 DWG. NO. 6024-E-30







**Painting Note:**  
 General painting is required, all holes in material 3/4" or less, except in lateral bracing, facing, batten plates, diaphragms and handrail, to be subpunched 6" small, rounded to size while parts are securely bolted together. Holes in material over 3/4" to be drilled. Trusses to be completely assembled in shop, primed & matchmarked.  
 Holes for floorbeam stringer connections to be reamed to a steel template 1/4" thick.

**Erector Note:**  
 Members shall be erected so that the erection marks painted on left-hand ends are in the positions shown on this drawing.

**ERECTION DIAGRAM**  
 MAIN SPAN

250'-0" Span  
 Over Intersecting Waterway  
 Holly Ridge, Surfer City  
 North Carolina  
 Dickerson Inc. Contractors  
 Project 3-T-26  
 Slusher Bridge  
 DRAWINGS MADE AT: Raleigh  
 WORK EXECUTED AT: Raleigh  
 IN CHARGE OF: Slusher  
 DRAWN BY: B.T.C. DATE: 3-18-54  
 DRAWN CHECKED BY: C.K.B. DATE: 3/18/54  
 ORDER NO. Q5279  
 SHEET NO. E2

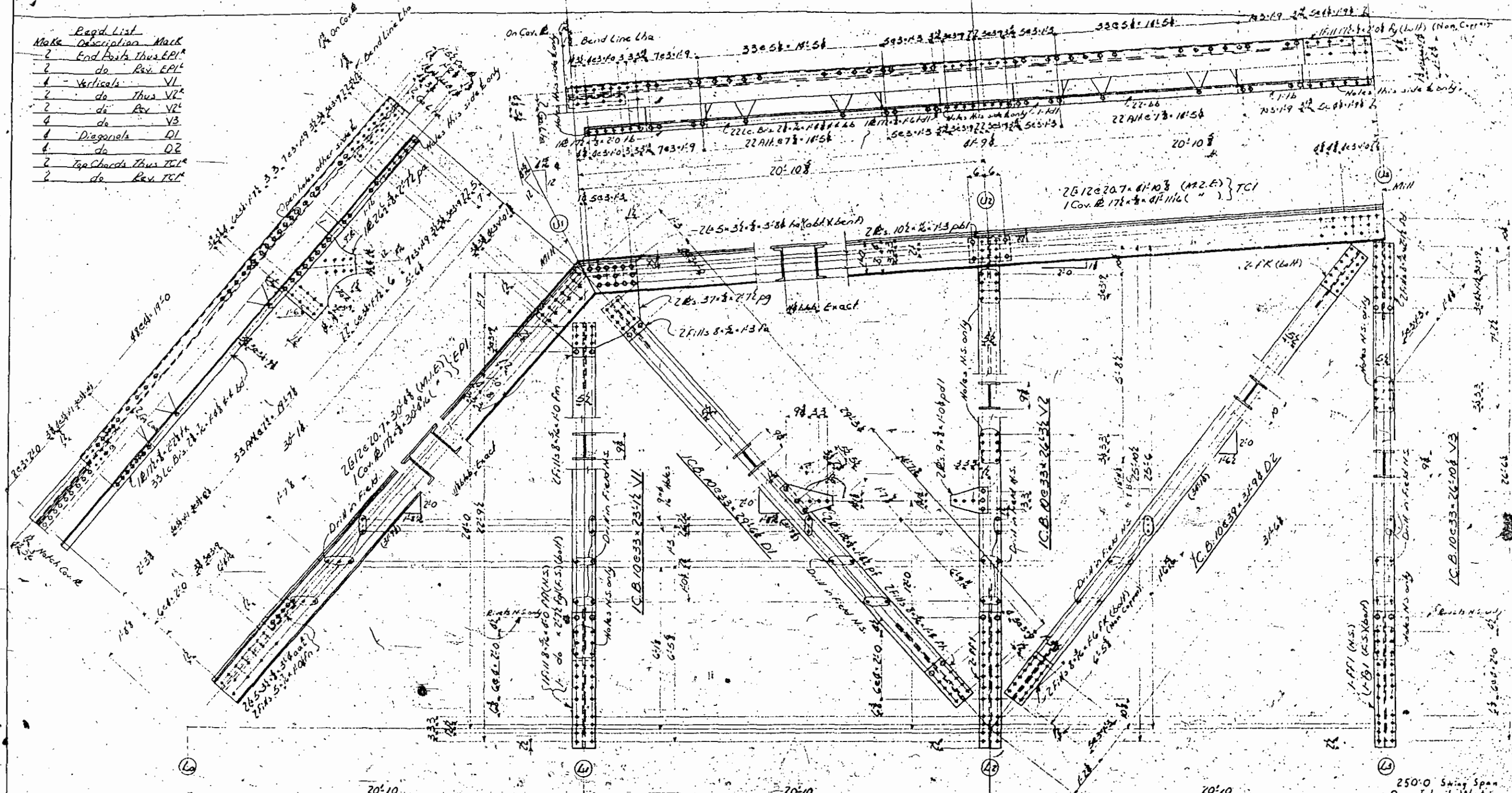








Make	Description	Mark
2	End Posts Thus EPI	
2	do Rev EPI	
4	Verticals VI	
2	do Thus VI	
2	do Rev VI	
4	do VB	
4	Diagonals DI	
4	do DZ	
2	Top Chords Thus TCI	
2	do Rev TCI	



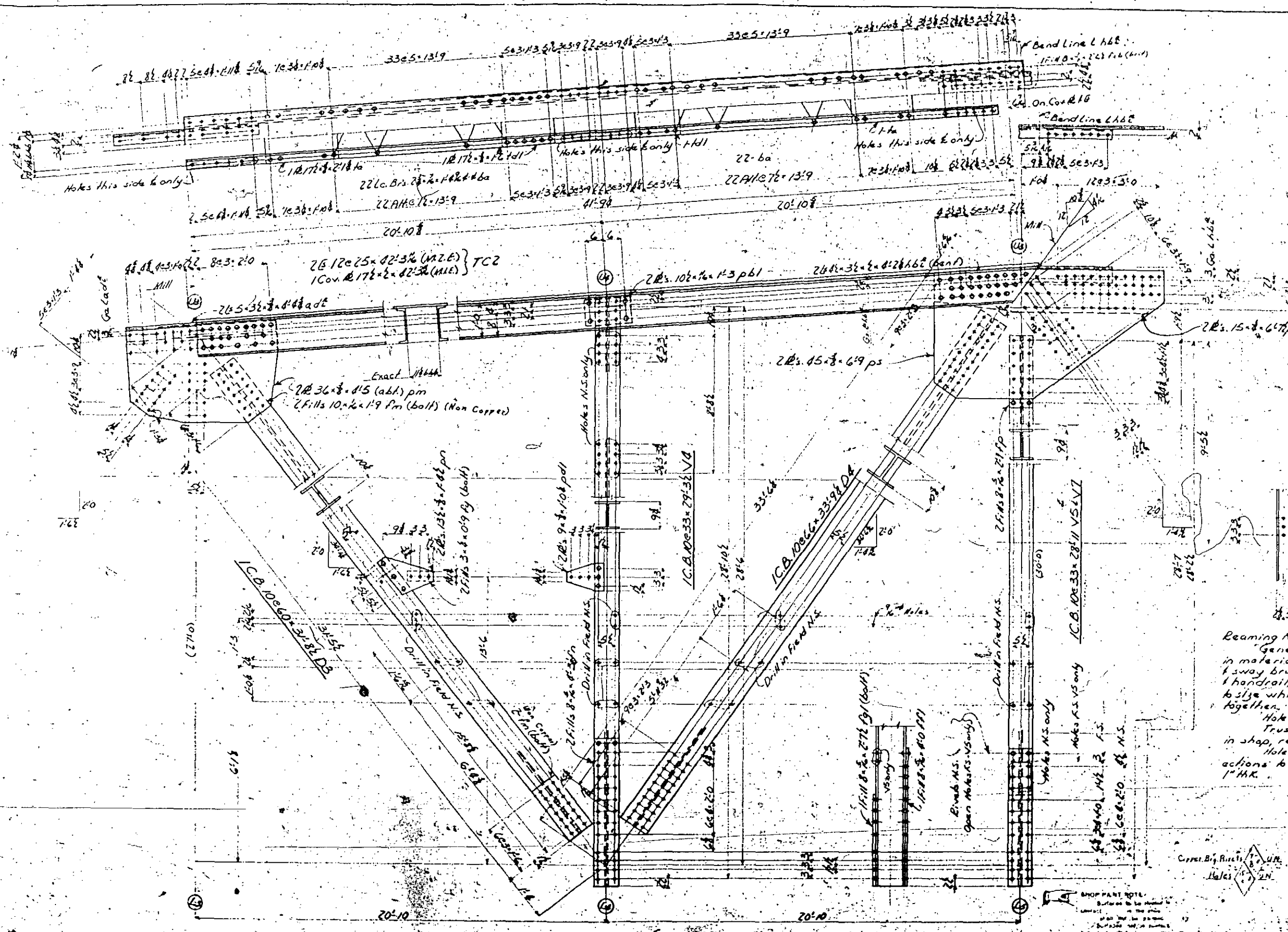
**Reaming Note:**  
 General reaming is required on all holes in material 1/2" or less, except in lateral & sway bracing, lacing, batter plates, diaphragms and handrail, to be subpunched & small reamed to size while parts are securely bolted together. Holes in material over 1/2" to be drilled. Trusses to be completely assembled in shop, reamed & matchmarked. Holes for floorbeam & stringer connections to be reamed to a steel template 1" dia.

250'-0" Swing Span  
 Over Inland Waterway  
 between  
 Holly Ridge & Surf City,  
 Pender Co., N.C.  
 Dickerson Inc. Contractor  
 Project 3-7-27-26

Copper Bearing Rivets U.S.  
 Holes 1/16" U.S.

**SHOP PART NOTE:**  
 Surfaces to be reamed to finish. All holes to be reamed to size while parts are bolted together. Holes in material over 1/2" to be drilled. Trusses to be completely assembled in shop, reamed & matchmarked. Holes for floorbeam & stringer connections to be reamed to a steel template 1" dia.

Ship Contact Surfaces: No. 1  
 All Material: Copper Bearing U.S.  
 ORDER NO. 0-5279



Requ'd List

Make	Description	Mark
2	Top Chords	TC2
2	do	TC1
2	Verticals	VS
2	do	VS
1	do	VS
4	Diagonals	D3
4	do	D4
3	Verticals	V7

**Reaming Note:**  
 General reaming is required. All holes in material 3/4" thick or less, except in lateral bracing, lacing, bottom plates, diaphragm handrail, to be subpunched & small reams to size while parts are securely bolted together.  
 Holes in material over 3/4" thick to be drilled. Trusses to be completely assembled in shop, reamed & matchmarked.  
 Holes for floor beam & stringer connections to be reamed to a sheet template 1" thick.

250'-0" Swing Span  
 Over Inland Waterway  
 between  
 Holly Ridge & Surf City  
 Pender Co., N.C.  
 Dickerson Inc. Contractors  
 Project 3-1-27-26

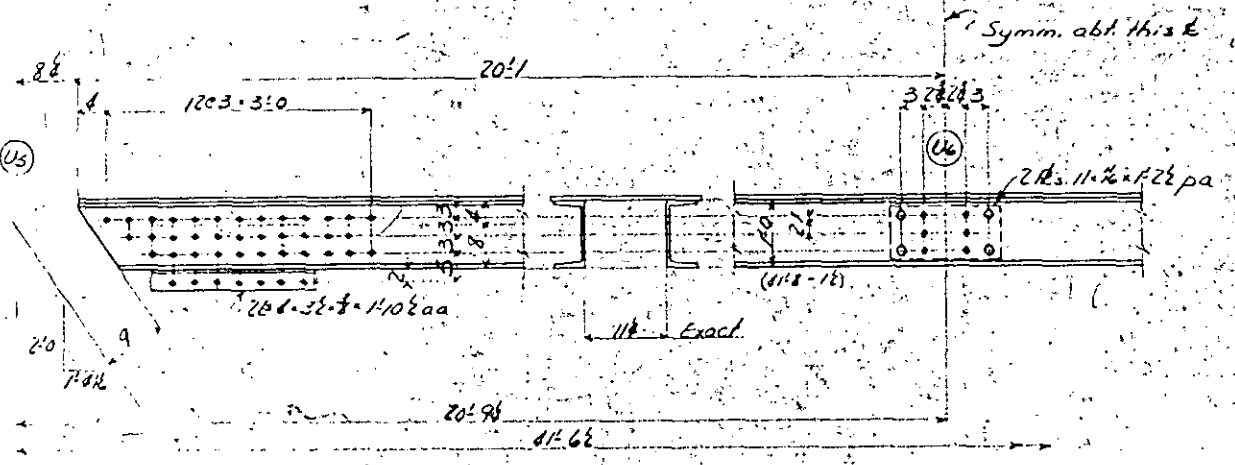
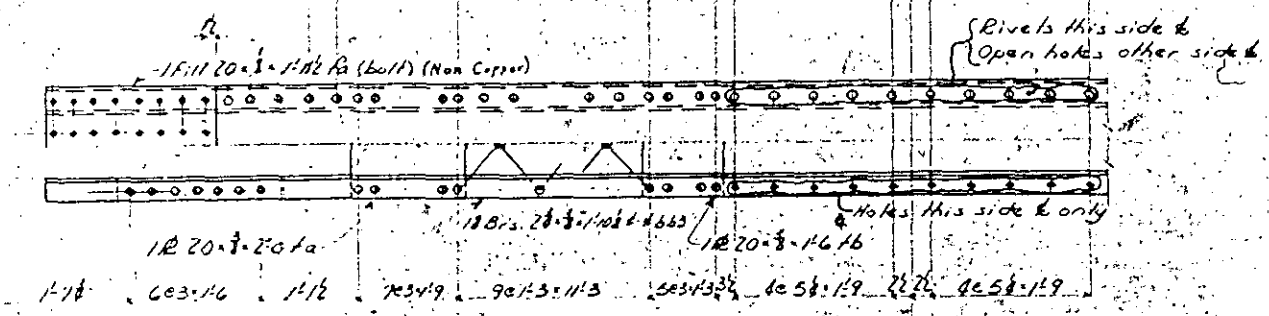
**SHOP PART NOTE:**  
 Surfaces to be finished to smoothness in the shop. All surfaces to be primed & painted. All surfaces to be inspected after assembly or erection and be painted as shown.

DRIVING NUTS  
 Radnote  
 Slushac  
 GTC  
 ORDER NO. 85279

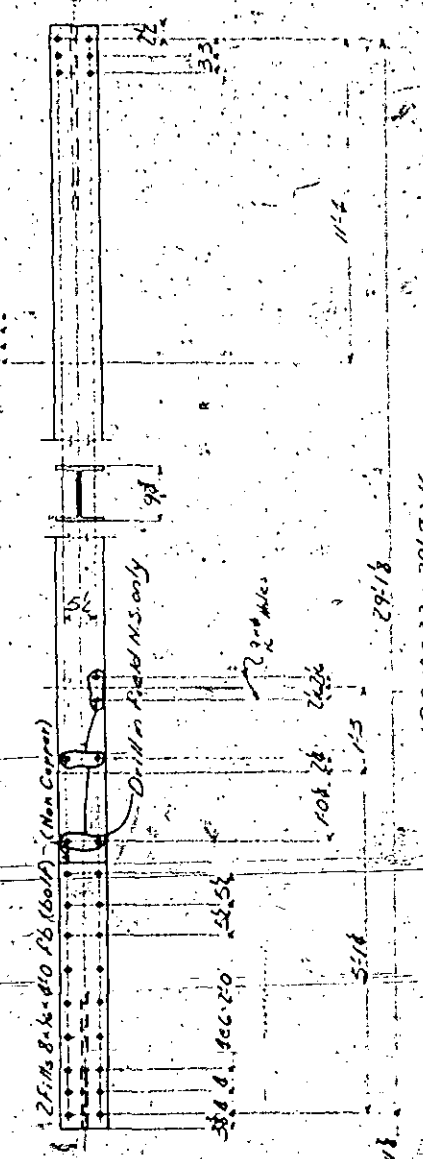
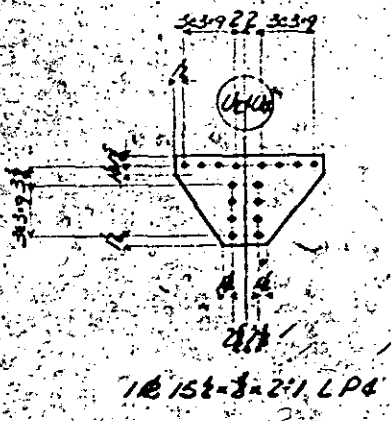
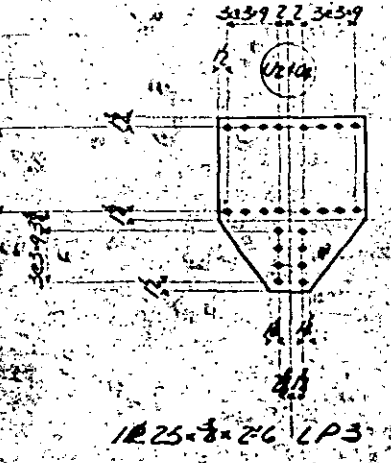
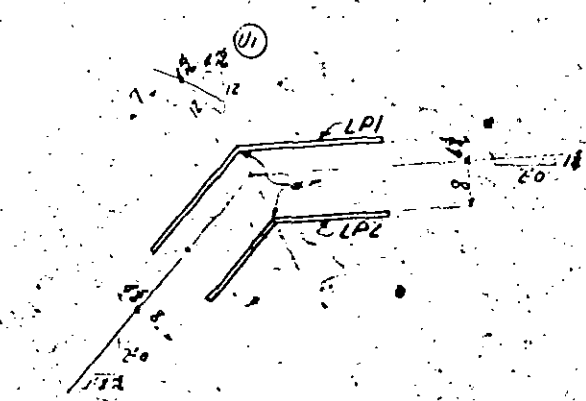
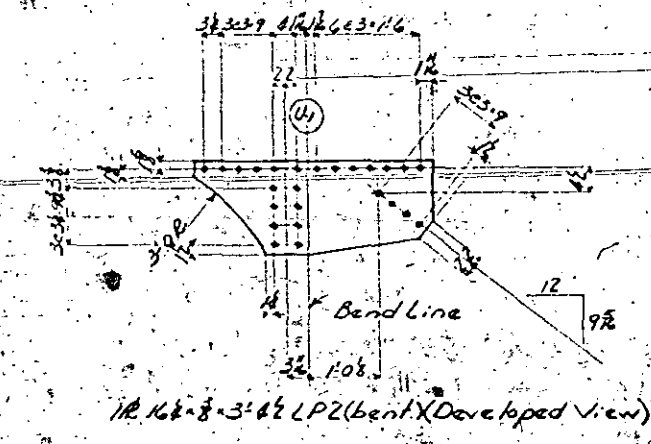
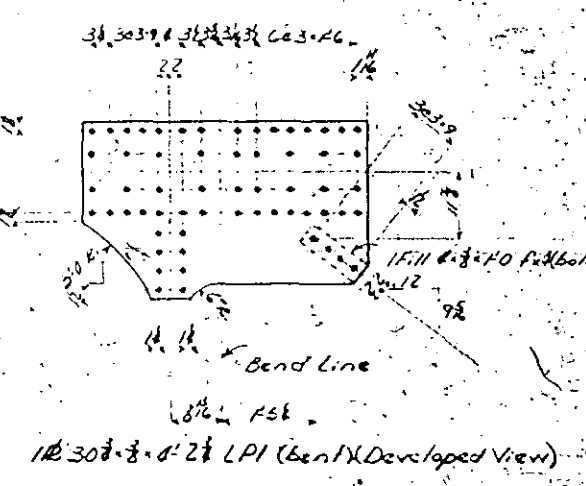




98 217 503.113 3.331 31.123.119 2705.113 503.133 2405.119 727 405.119



2 Cor B 12050 x 10' 2 } 7C3  
1 Cor B 20 x 8 x 10' 2

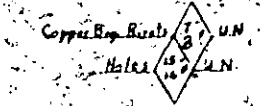


REQUIRED LIST

MARK	DESCRIPTION	MARK
2	Top Chords	TC3
2	Verticals	V1
2	Lab. R's	Thus LP1
2	do	Rev. LP1
2	do	Thus LP2
2	do	Rev. LP2
8	do	LP3
8	do	LP4

Reaming Note:  
General reaming is required. All holes in material 1/2" thick or less, except in lateral bracing, lacing, gusset plates, diaphragms and handrail, to be subpunched & small reamed to size while parts are securely bolted together. Holes in material over 1/2" thick to be drilled.  
Trusses to be completely assembled in shop, reamed & marked.  
Holes for floor beam & stringer connections to be reamed to a steel template 1/2" thick.

250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge & Surf City,  
Pender Co., N.C.  
Dickerson, Inc. Contractors  
November 3-7-27-26



SHOW PAINT NOTE:  
Surfaces to be painted or  
galvanized in the shop or  
field as the project  
progresses. All surfaces  
to be painted or galvanized  
after assembly or erection  
may be checked and  
reworked.

Point Fee  
Shop Contact Surface No  
11 Vertical Cor. Req. UN

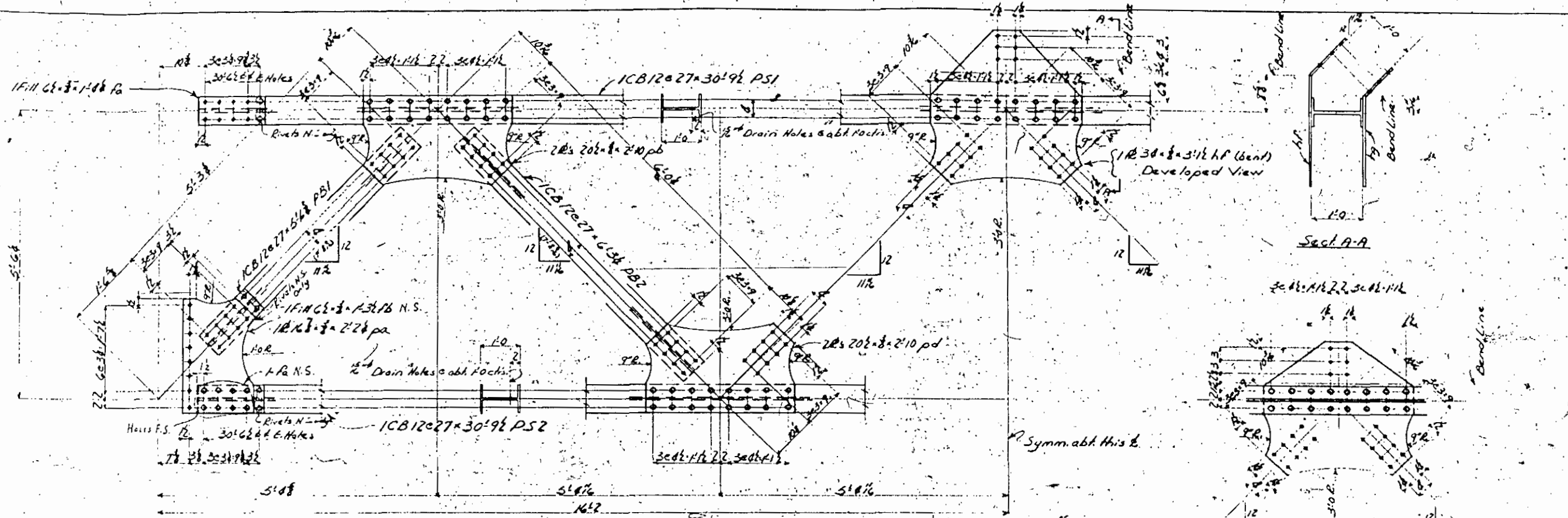
DRAWING MADE BY ROBERT  
WORK DRAWING BY ROBERT  
CHECKED BY SLUSHER  
DESIGNED BY G.T.C.  
DRAWN BY G.T.C.  
DRAWN CHECKED BY G.T.C.  
ORDER NO. Q5219







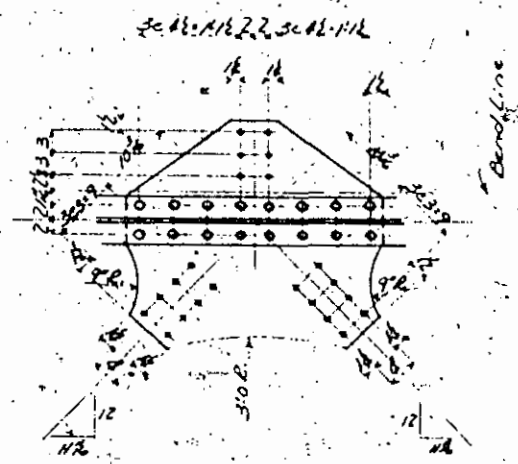




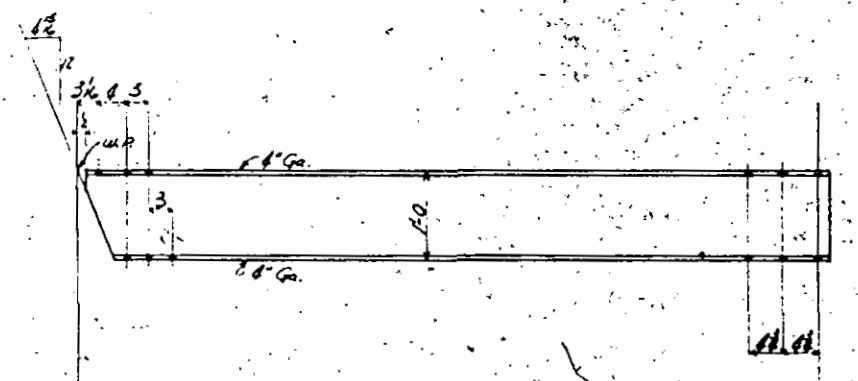
**REQUIRED LIST**

MARK	DESCRIPTION	MARK
2	Portal Steubs	PS1
2	do	PS2
4	do	PB1
8	do	PB2
2	Top Steubs	TS1
2	do	TS2
2	do	TS3
2	do	TS4
2	do	TS5

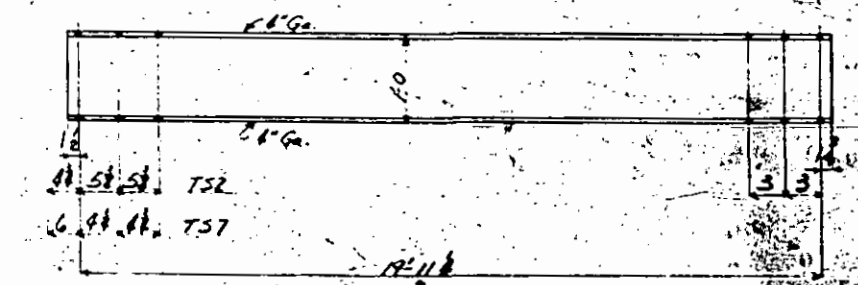
Secl. A-A



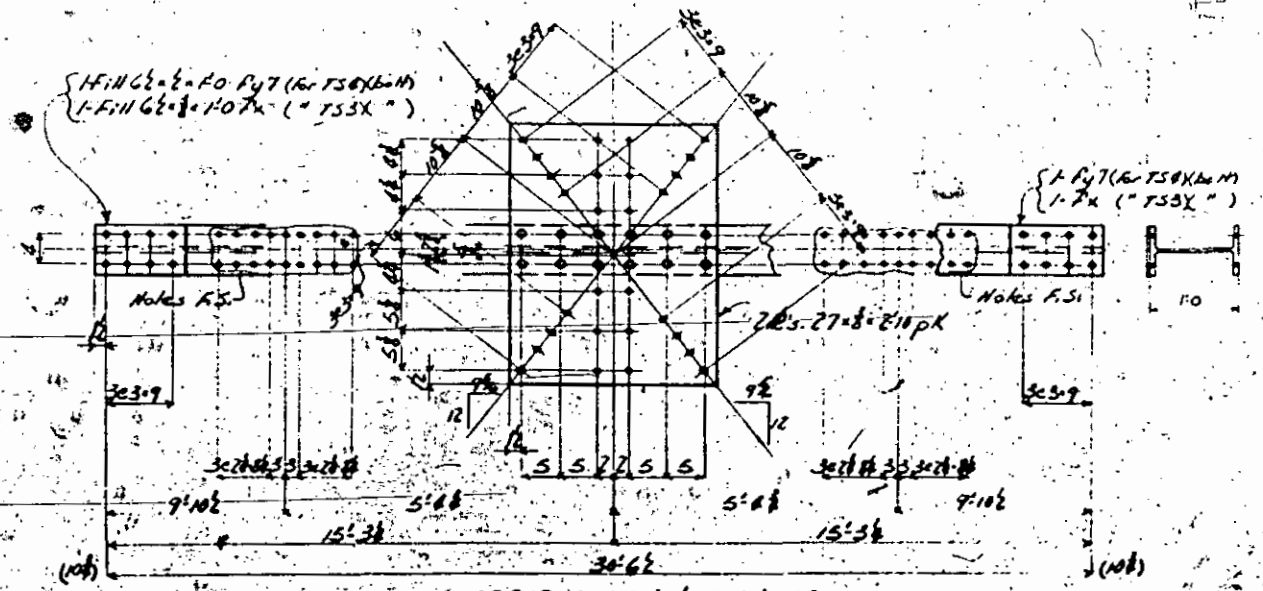
12 30x8-3'12' hf (bent) (Developed View)



ICB 12027 x 20'7 1/2 TS1



ICB 12027 x 20'2' TS2 & TS7



ICB 12027 x 30'9 1/2 TS3 & TS6

250'-0" Swing Span  
 Over Inland Waterway  
 between  
 Holly Ridge & Surf City  
 Pender Co., N.C.  
 Dickerson Inc. Contractors  
 Project 3-7-27-26

**SHOP PART NOTE:**  
 All parts to be fabricated in the shop.  
 All material to be furnished by the contractor.  
 All material to be furnished by the contractor.  
 All material to be furnished by the contractor.

Copper Bay Bridge, U.N.  
 Holes 1/2" UNF

Prepared by: R. R. Rouse  
 Checked by: R. R. Rouse  
 Drawn by: H. B. M.  
 Drawn by: H. B. M.  
 Drawn by: H. B. M.  
 ORDER NO. Q5279







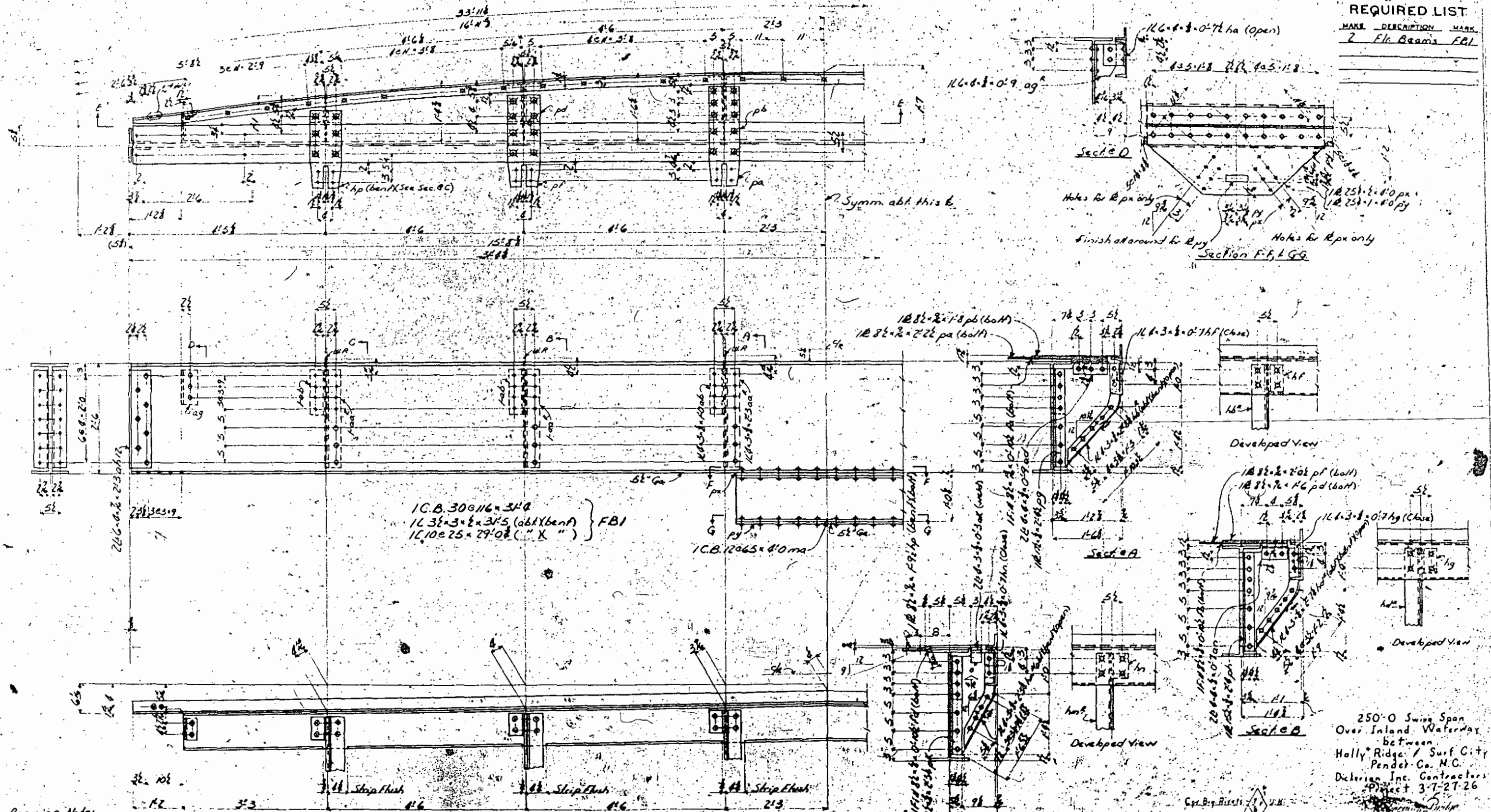






**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
7	Flt Beams FBI	



**Reaming Note:**  
 General reaming is required. All holes in material  $\frac{1}{8}$ " thick or less, except in lateral & sway bracing, lacing, bottom plates, diaphragms & handrails, to be sub-punched & shot treated to size while parts are securely bolted together. Holes in material over  $\frac{1}{8}$ " thick to be drilled. Trusses to be completely assembled in shop, reamed & match-marked. Holes for floor beam & stringer connections to be reamed to a  $\frac{1}{16}$ " tolerance.

**Shop Note:**  
 Fabricate with Natural Camber up.

250'-0" Swiss Span  
 Over Inland Waterway  
 between  
 Holly Ridge / Surf City  
 Pender Co. N.C.  
 Determan Inc. Contractors  
 Project 3-7-27-26

**SHOP PAINT NOTE:**  
 Surfaces to be painted  
 in accordance with  
 specifications of  
 the contract documents.  
 All steel to be painted  
 with a rust-inhibiting  
 primer and a protective  
 finish paint.

Paint: Yes  
 Shop Contact Surface: No  
 All Material: Cor. Brg.

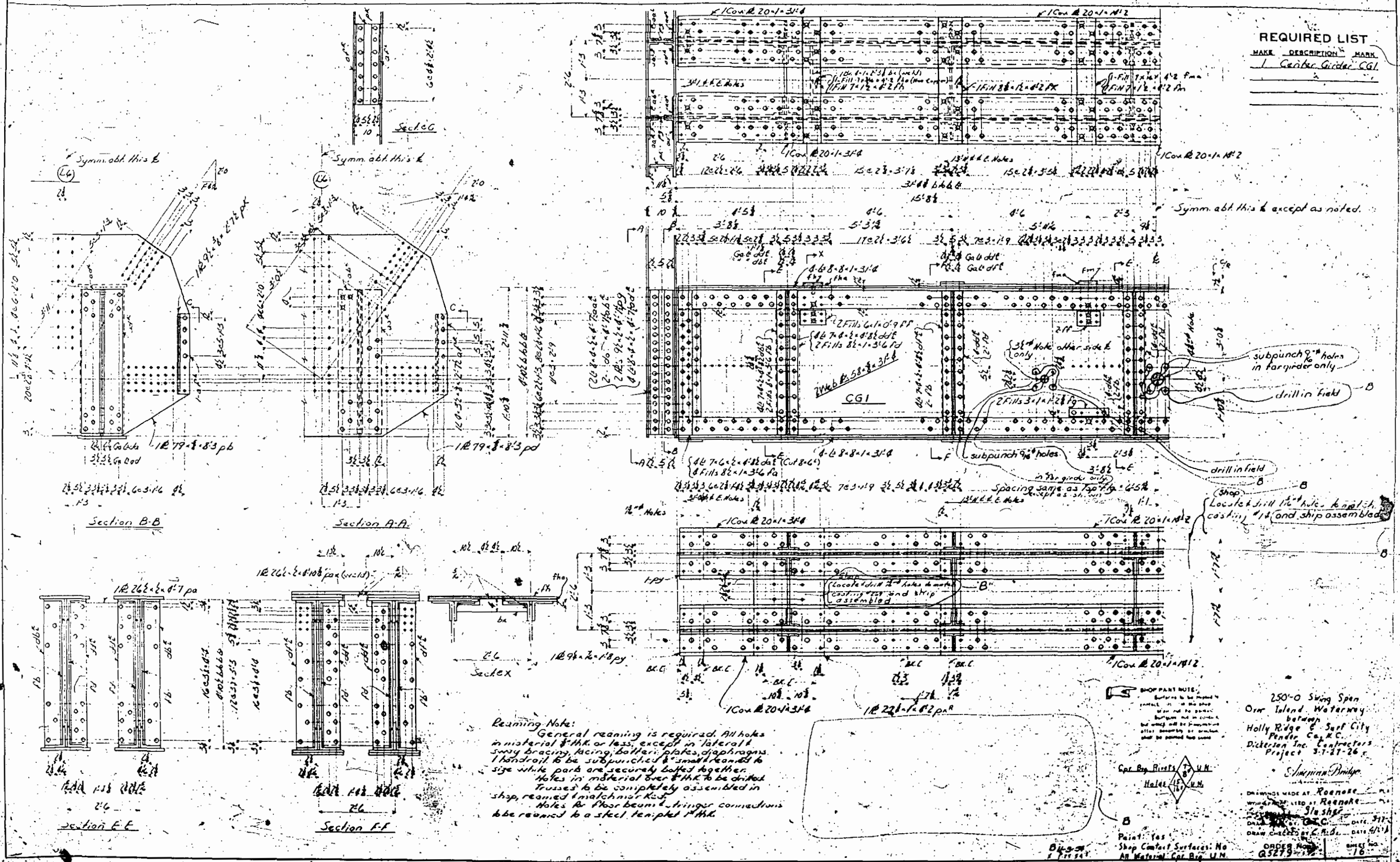
ORDER NO. 05279





**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Center Girder	CGI



Symm. abt this & except as noted.

subpunch 9/16" holes in top flange only

drill in field

drill in field

(Shop) Located drill holes to match casting and ship assembled

**Reaming Note:**  
 General reaming is required. All holes in material 1/4" or less, except in lateral swing bracing, facing, batter plates, diaphragms, handrail, to be subpunched & small reamed to size while parts are securely bolted together. Holes in material over 1/4" to be drilled. Trusses to be completely assembled in shop, reamed & matched. Holes for floor beam-tringer connections to be reamed to a steel template 1/4".

**SHOPPING NOTE:**  
 Surfaces to be painted to match that of the shop. Surfaces not to be painted. Surfaces not to be painted. Surfaces not to be painted. Surfaces not to be painted.

250'-0" Swing Span  
 Over Inland Waterway  
 between  
 Holly Ridge & Surf City  
 Pender Co., N.C.  
 Dickerson Inc. Contractors  
 Project 3-7-27-26

SHAPIRO-BRIDGES  
 DRAWINGS MADE AT ROANOKE  
 SHOPPING LIST AT ROANOKE  
 31a shop  
 DATE 3-1-27  
 DRAWN BY C.M.B. DATE 4/1/27  
 ORDER NO. G5279  
 SHEET NO. 16

Cap Rivets 7/8" U.M.  
 Holes 1/2" U.M.  
 Paint Yes  
 Shop Contact Surfaces: No  
 All Material Cap Riv. U.M.



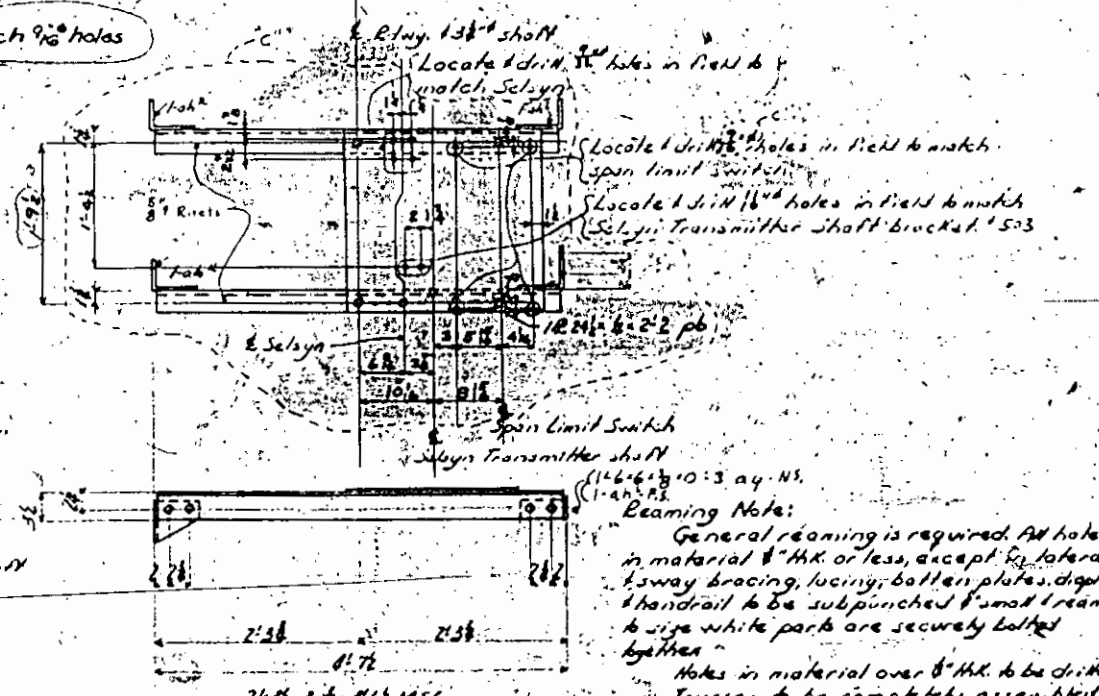
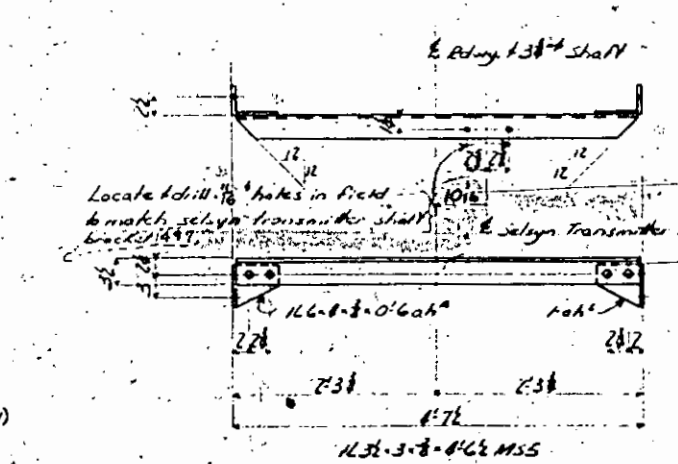
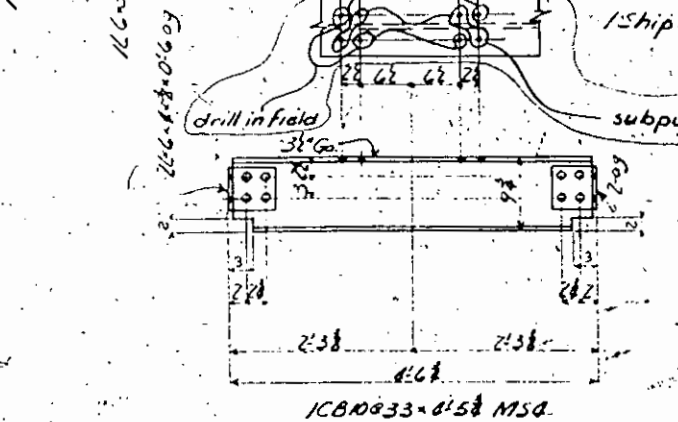
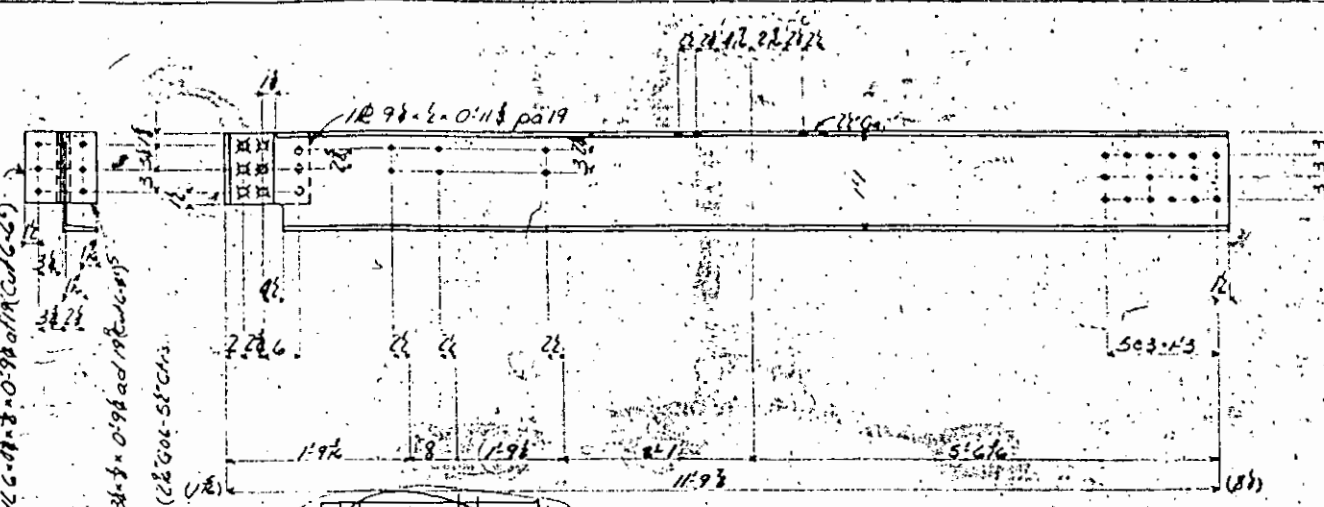
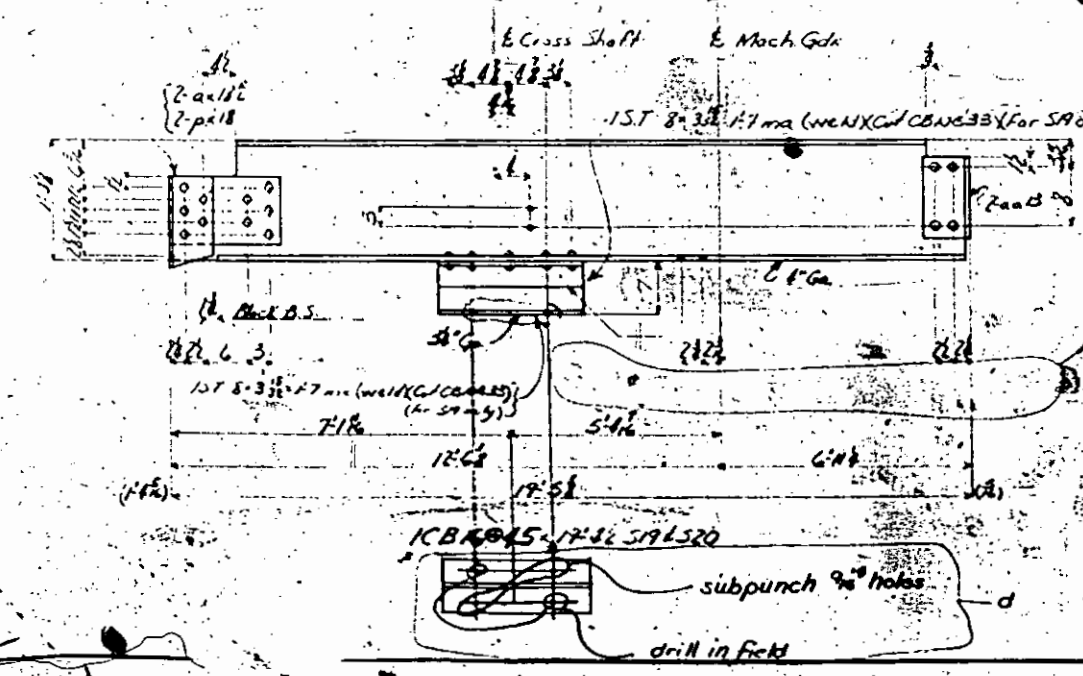
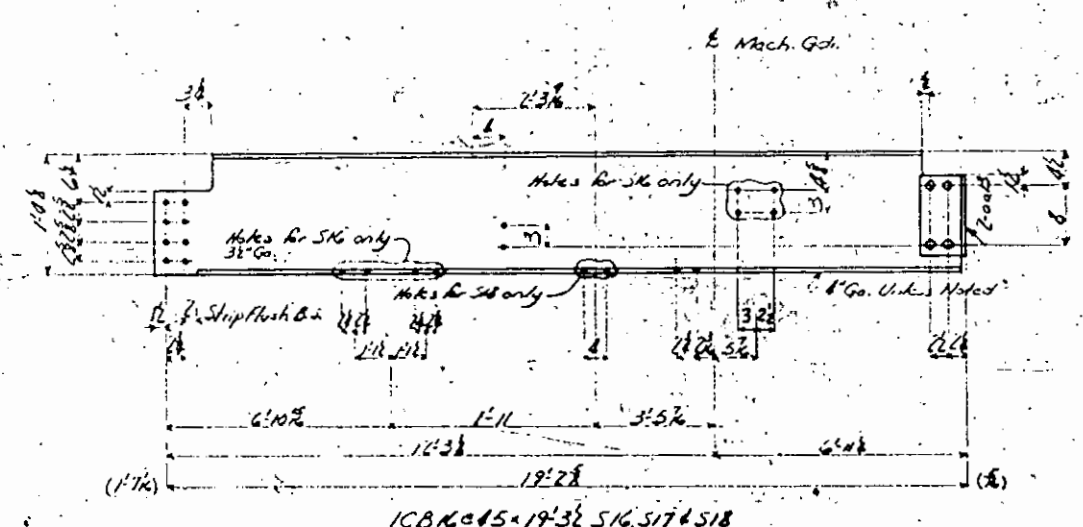
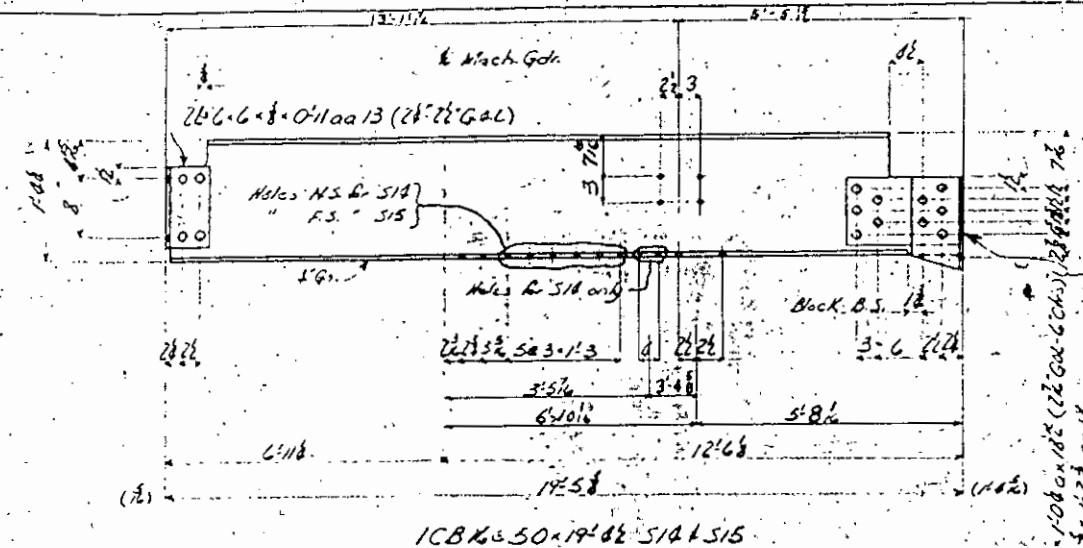






**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Slinger	S18
1	do	S16
1	do	S14
2	do	S17
1	do	S18
2	do	S19
2	do	S20
1	Mach Support	M13
2	do	M14
1	do	M15
1	do	M16

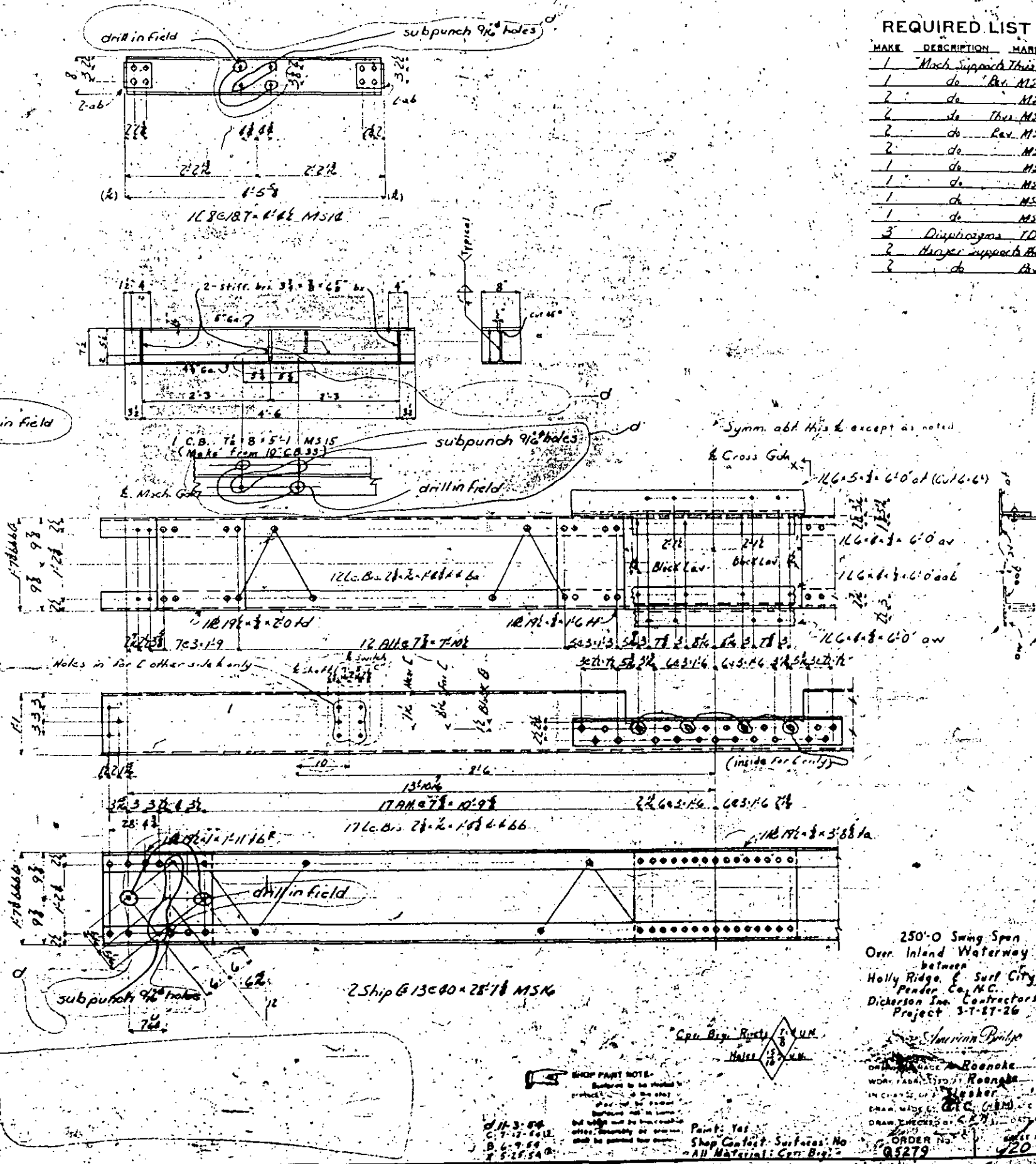
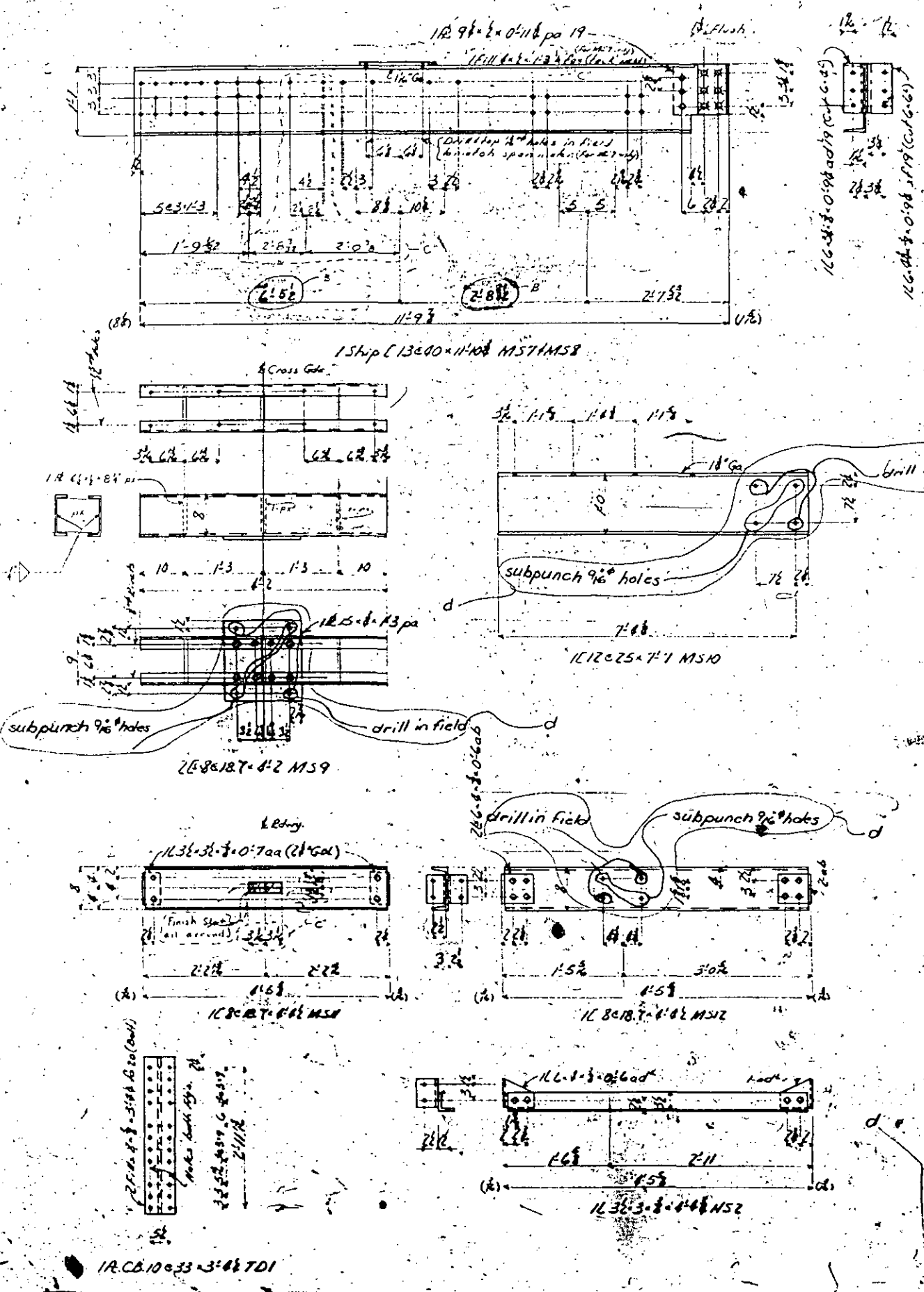


**Beaming Note:**  
 General beaming is required. All holes in material 1/2" thick or less, except for lateral trussway bracing, lacing, batten plates, diaphragms and handrail to be subpunched & smooth reamed to size while parts are securely bolted together.  
 Holes in material over 1/2" thick to be drilled. Trusses to be completely assembled in shop, reamed & marked.  
 Holes for floor beam & stringer connections to be reamed to a steel template 1/2" thick.

250'-0" Swing Span  
 Over Inland Waterway  
 between  
 Holly Ridge / Surf City  
 Pender Co. N.C.  
 Dickerson, Inc. Contractors  
 Project 3-T-27-26  
 Shipping Bridge

**SHOP PART NOTE:**  
 Surfaces to be finished in accordance with the specifications. Surfaces shall be painted with shop primer. Surfaces shall be painted with shop primer. Surfaces shall be painted with shop primer.  
 Paint: Yes  
 Shop Coat: Surfaces: No  
 All Material: Cap. Brg.

ORDER NO. Q5279



**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Misch. supports This M	
1	do Rev. MS1	
2	do do MS2	
2	do This MS3	
2	do Rev. MS4	
2	do MS4	
1	do MS5	
1	do MS6	
3	Displacement TDI	
2	Harper supports This	
2	do Rev	

250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge & Surf City,  
Pender Co., N.C.  
Dickerson Inc. Contractors  
Project 3-7-27-26

**SHOP PART NOTE:**  
Reference to be made to drawings and specifications for details of work to be done. All materials to be furnished by contractor. All materials to be furnished by contractor. All materials to be furnished by contractor.

Paint: Yes  
Shop Contact: Surfaces: No  
All Material: Con. Big

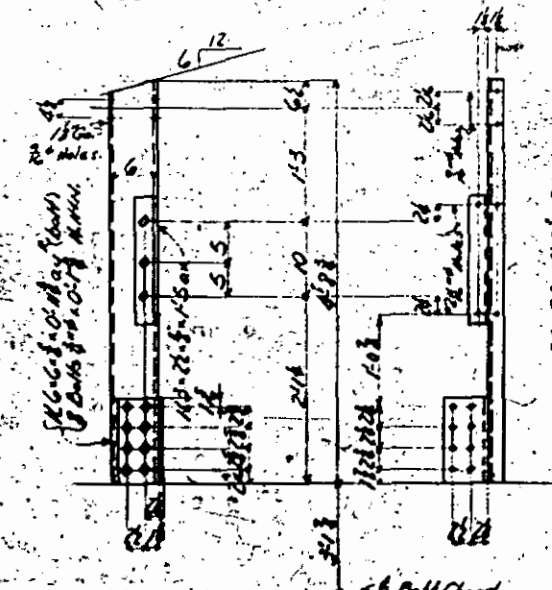
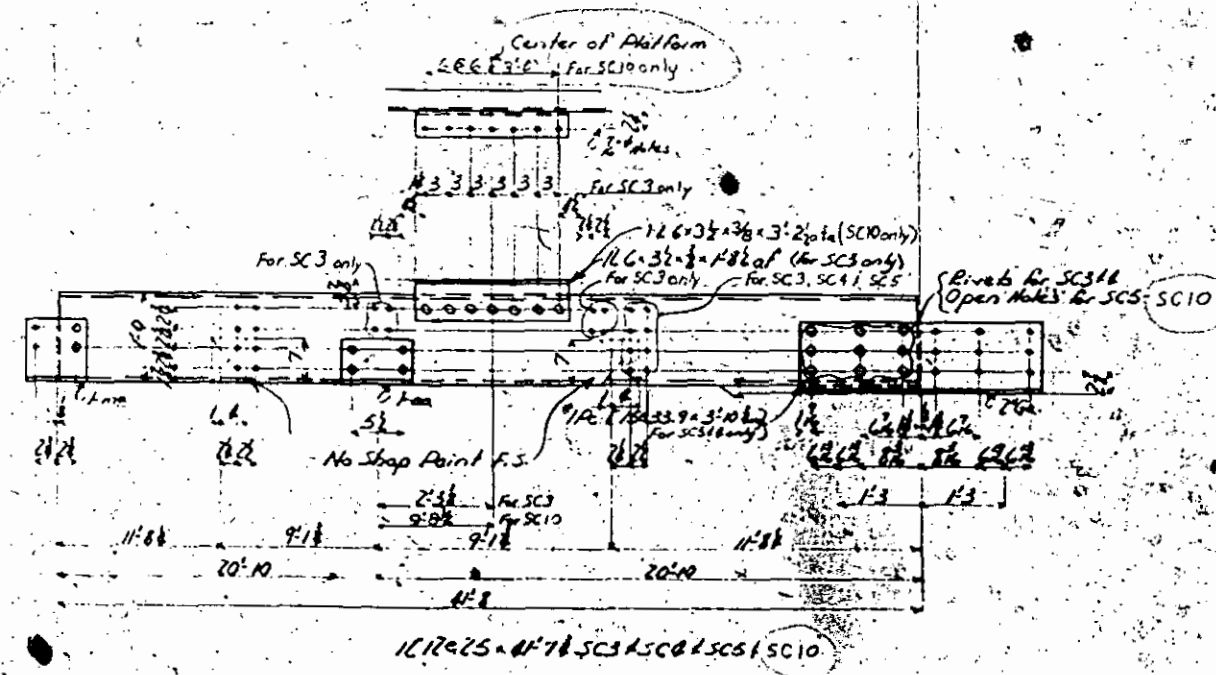
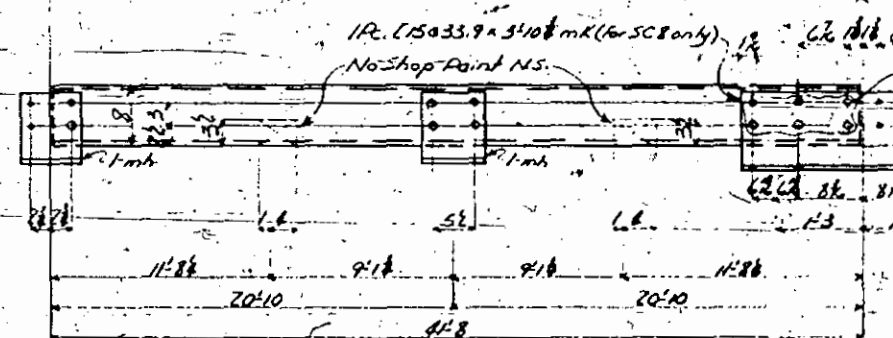
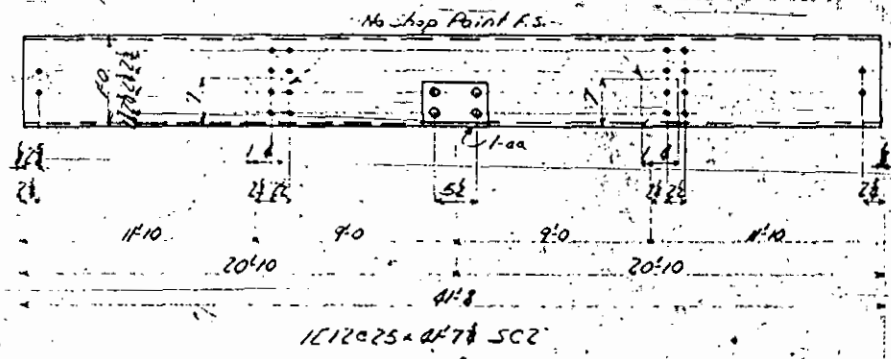
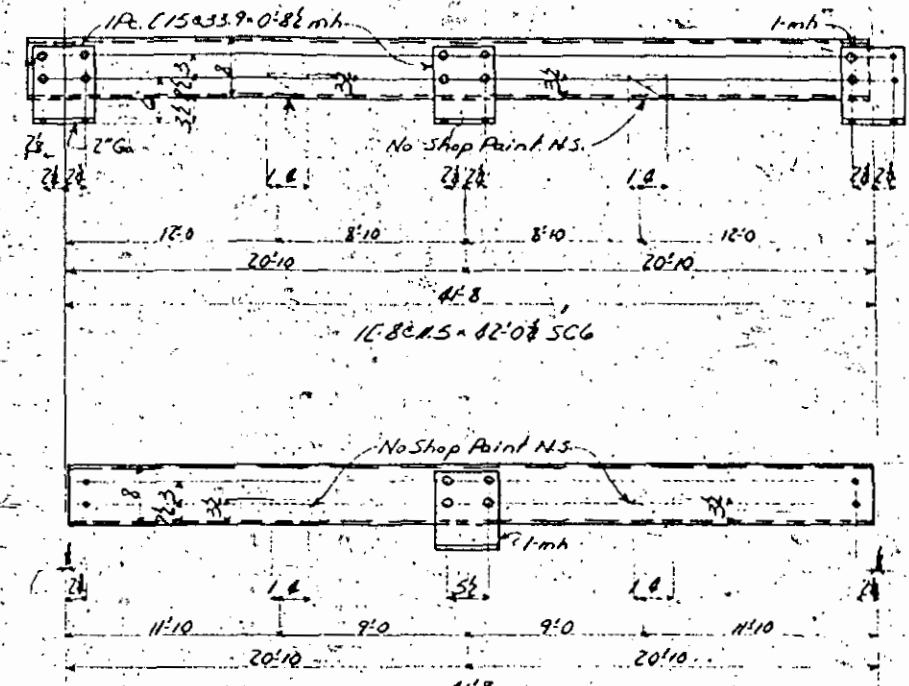
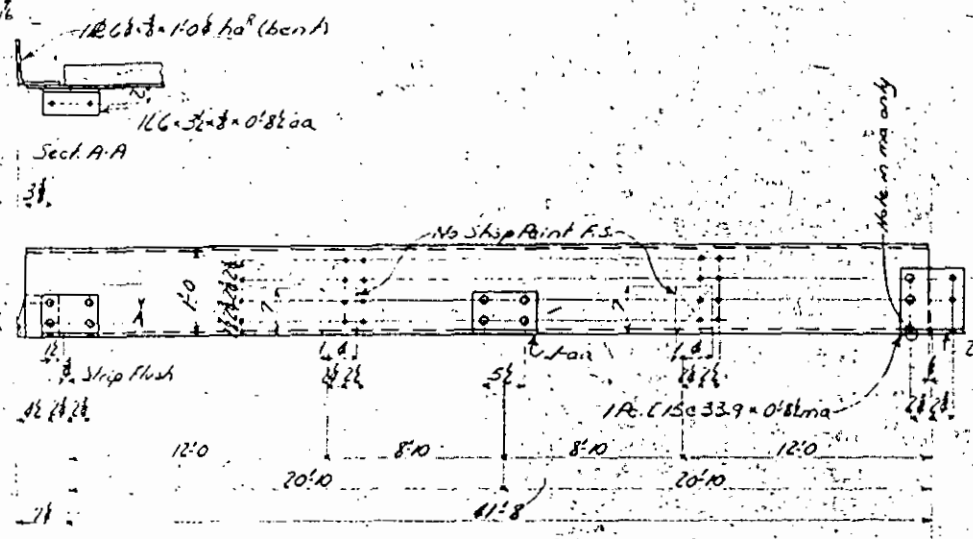
ORDER NO. 45279





**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
2	Channels thru SC1	
2	do thru SC2	
2	do thru SC3	
2	do thru SC4	
1	do thru SC5	
1	do thru SC6	
1	do thru SC7	
1	do thru SC8	
1	do thru SC9	
1	do thru SC10	
2	do thru SC11	
2	do thru SC12	
2	do thru SC13	
1	do thru SC14	
1	do thru SC15	
1	do thru SC16	
1	do thru SC17	
1	do thru SC18	
1	do thru SC19	
1	do thru SC20	
12	Posts thru P1	
11	do thru P2	
26	1/2" x 2 1/2" x 3/8" A3 (Plate)	(No Shop Paint)



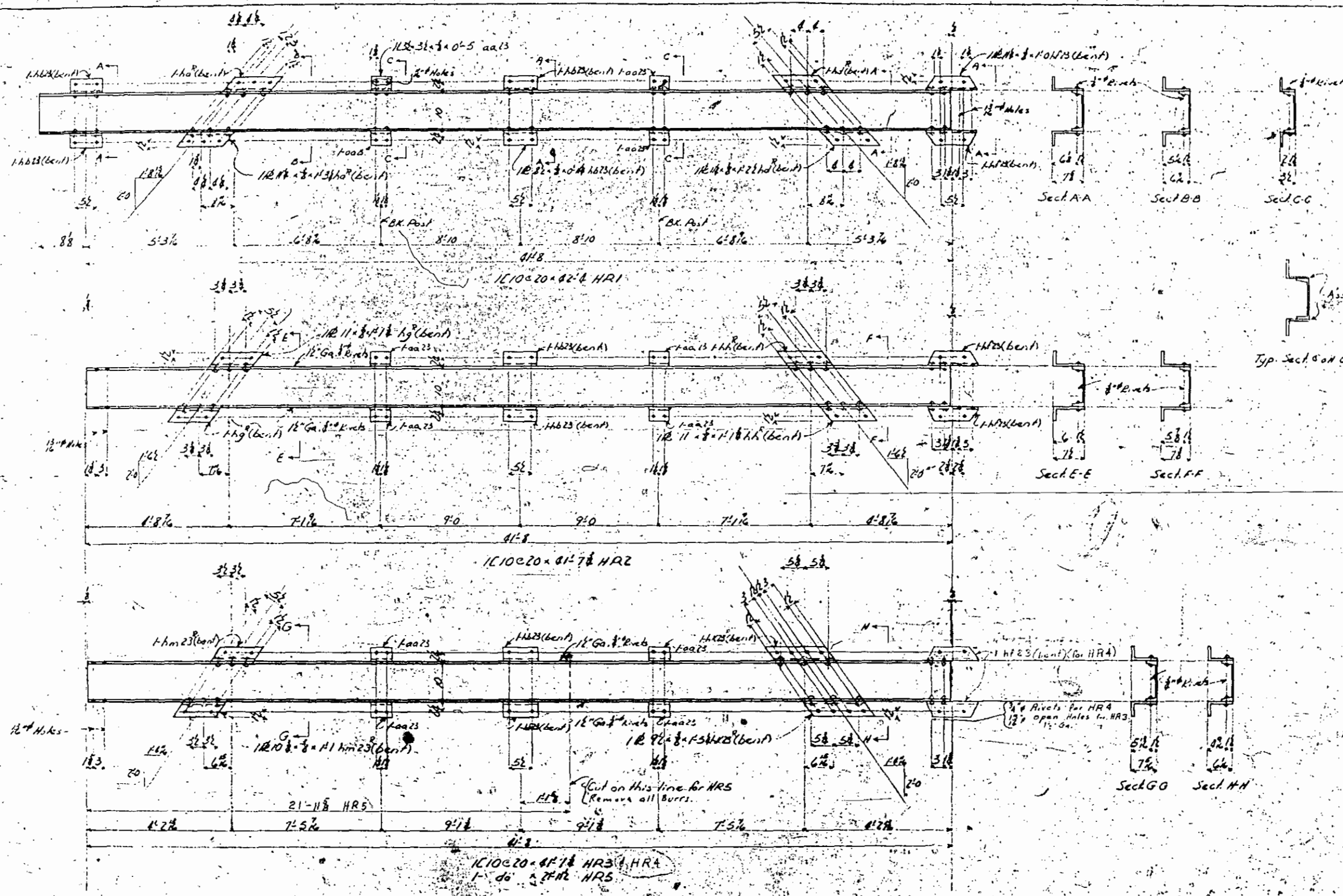
250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge & Surf City,  
Pender Co., N.C.  
Dickerson, Inc. Contractors  
Project 3-T-27-26

Cpl. By: [Signature]  
Holes 4/8"

**DRAWING NOTES:**  
Surfaces to be shop painted  
unless otherwise noted  
All steel to be painted  
Shop Contact Surfaces No. 1  
All Material: Cpr. By.

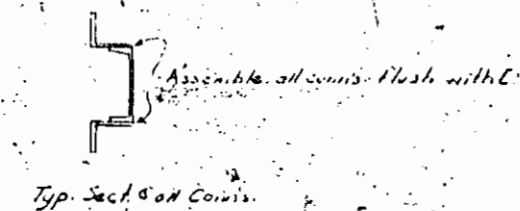
ORDER NO. 95279





**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
2	Handrails Thus HR1	
2	do Rev HR1	
2	do Thus HR2	
2	do Rev HR2	
1	do Thus HR3	
1	do Rev HR3	
1	do Thus HR5	



250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge / Surf City  
Pender Co., N.C.  
Dickerton Co. Contractors  
Project 7-27-26

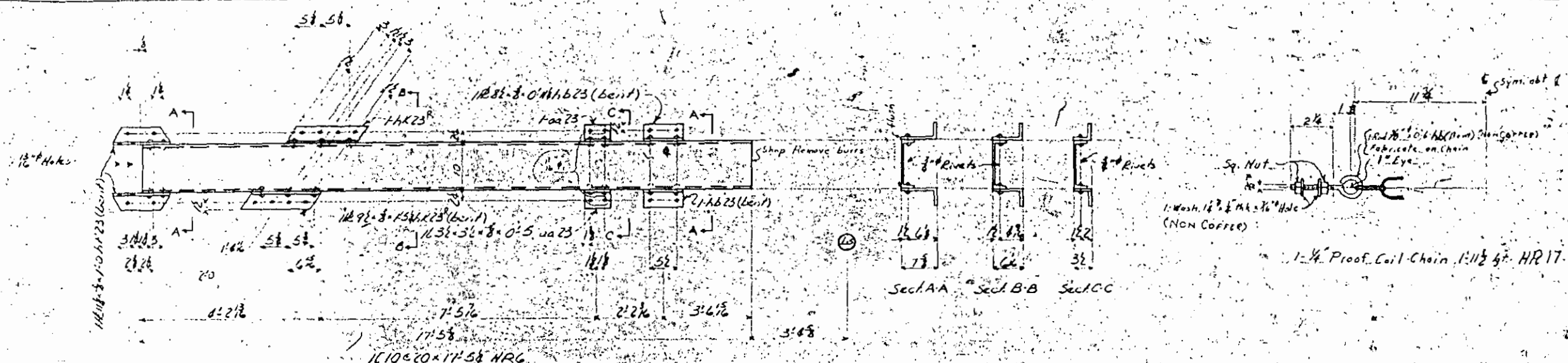
SHOP DRAWING  
Holes 15/16"  
Paint: Yes  
Sharp Contact Surfaces: No  
All Materials: Cpn. Brg.

ORDER NO. Q 5279  
DATE 11/16/26  
PAGE 23

15-25-24

**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Handrail	HR6
1	do	HR7
1	do	HR8
1	do	HR9
4	Brackets	BR10
23	do	BR12
4	do	BR13
4	do	BR14
4	do	BR15
27	U-Bolts	UB1
4	do	UB2
1	Chain	HR10
23	U-Bolts	UB3
1	Chain	HR17
1	do	HR19
1	Handrail	HR16



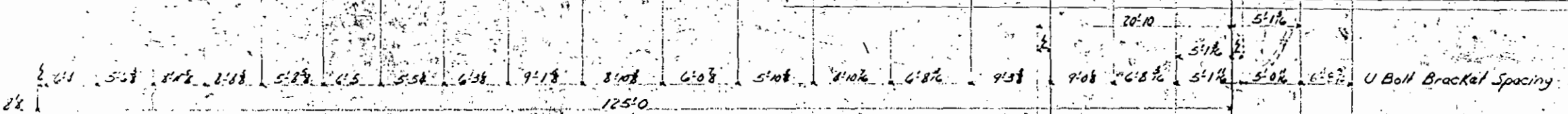
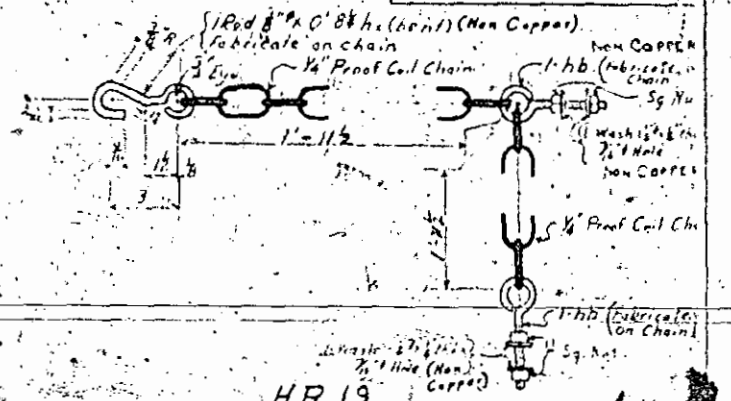
251.44 E.M.E. HR7  
105.92 E.M.E. HR9  
113.58 E.M.E. HR16

1 STD. Cop for 3" Pipe

Secl. AA Secl. B-B Secl. C-C

1 Wash. 1/2" x 1/4" x 3/4" Hole (Non Copper)

1-1/4" Proof Coil Chain 1-1/2" dia. HR17

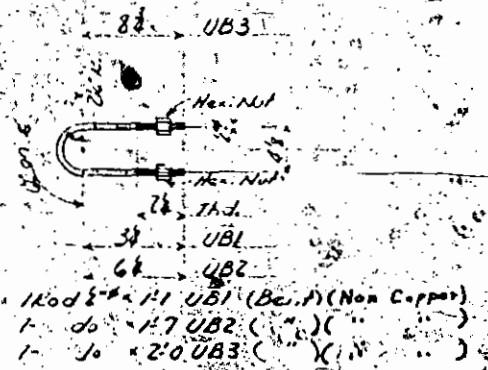


3" Std. BIK. Pipe - HR7  
Shop to ship in random lengths with couplings  
Couplings to clear U-bolt spacing by at least 1.0

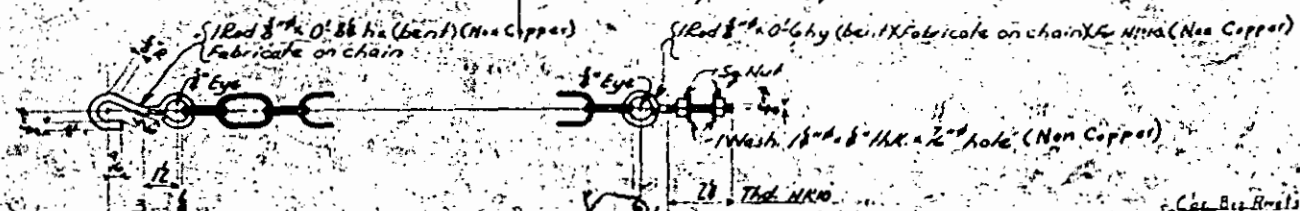
3" Std. BIK. Pipe HR8  
1 STD. Cop for 3" Pipe

- BR10
- BR11
- BR12
- BR13
- BR14
- BR15
- BR16
- BR17
- BR18
- BR19
- BR20
- BR21
- BR22
- BR23
- BR24
- BR25
- BR26
- BR27
- BR28
- BR29
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- BR31
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- BR93
- BR94
- BR95
- BR96
- BR97
- BR98
- BR99
- BR100

20 3/8 x 3/8 x 0 1/8 BR10  
20 3/8 x 3/8 x 0 1/8 BR12 BR13 BR14 BR15



3" Std. BIK. Pipe HR9 & HR16  
(Parts not shown same as HR7)



1-1/4" Proof Coil Chain HR17 by HR10

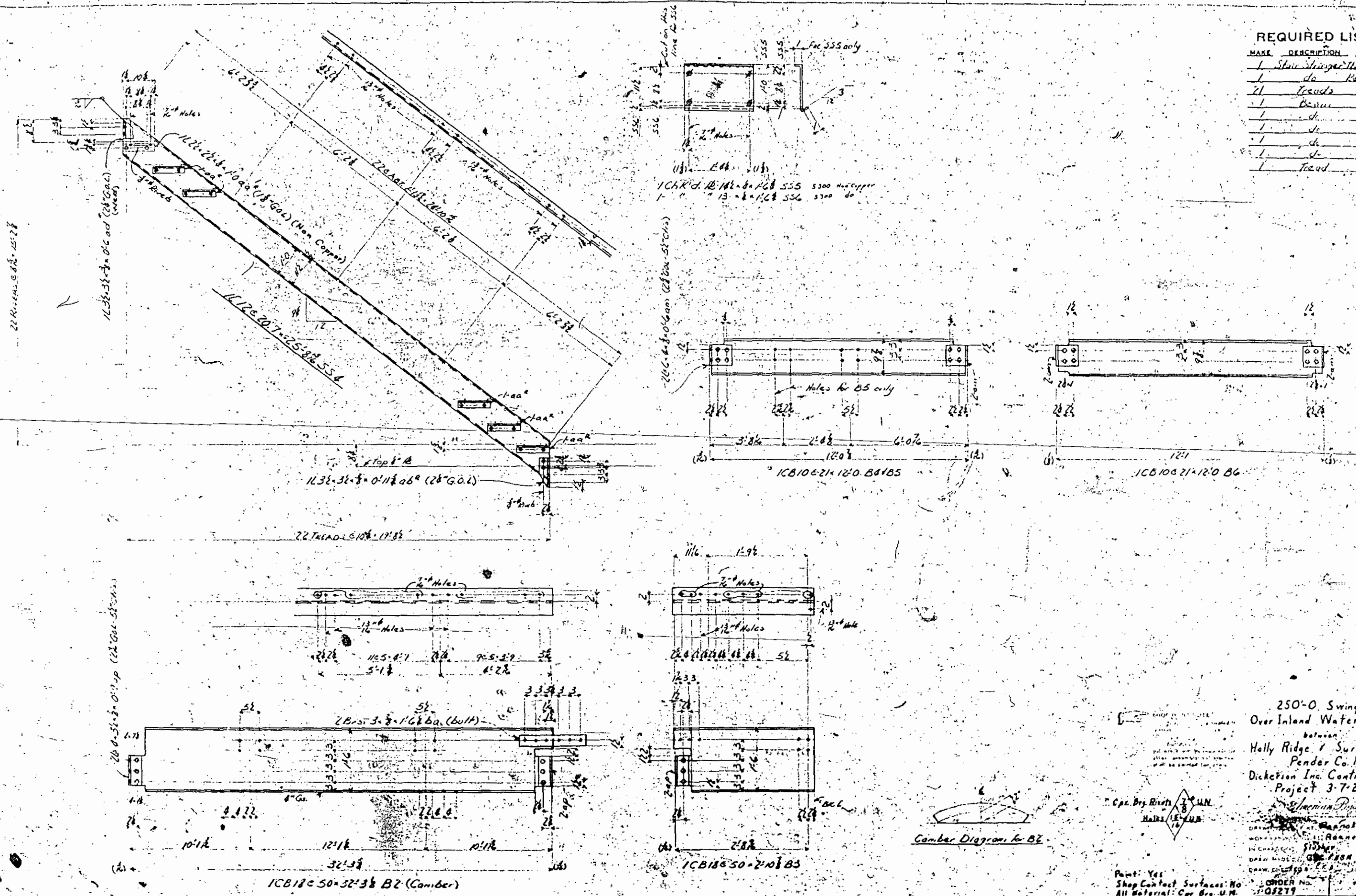
250'-0" Swing Span  
Over Island Waterway  
between  
Holly Ridge & Surf City  
Pender Co., N.C.  
Dickerson, Inc., Contractors  
DICKERSON 3-7-27-28

Shop Contact Surfaces: No. 1  
All Structural Surfaces: No. 1  
Paint: 100  
ORDER NO. Q5279

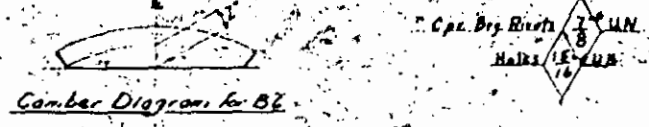


**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Steel Stringer	SS4
1	do	Rev SS4
21	Treads	SS5
1	Bolts	B2
1	do	B3
1	do	B4
1	do	B5
1	do	B6
1	Tread	SS6

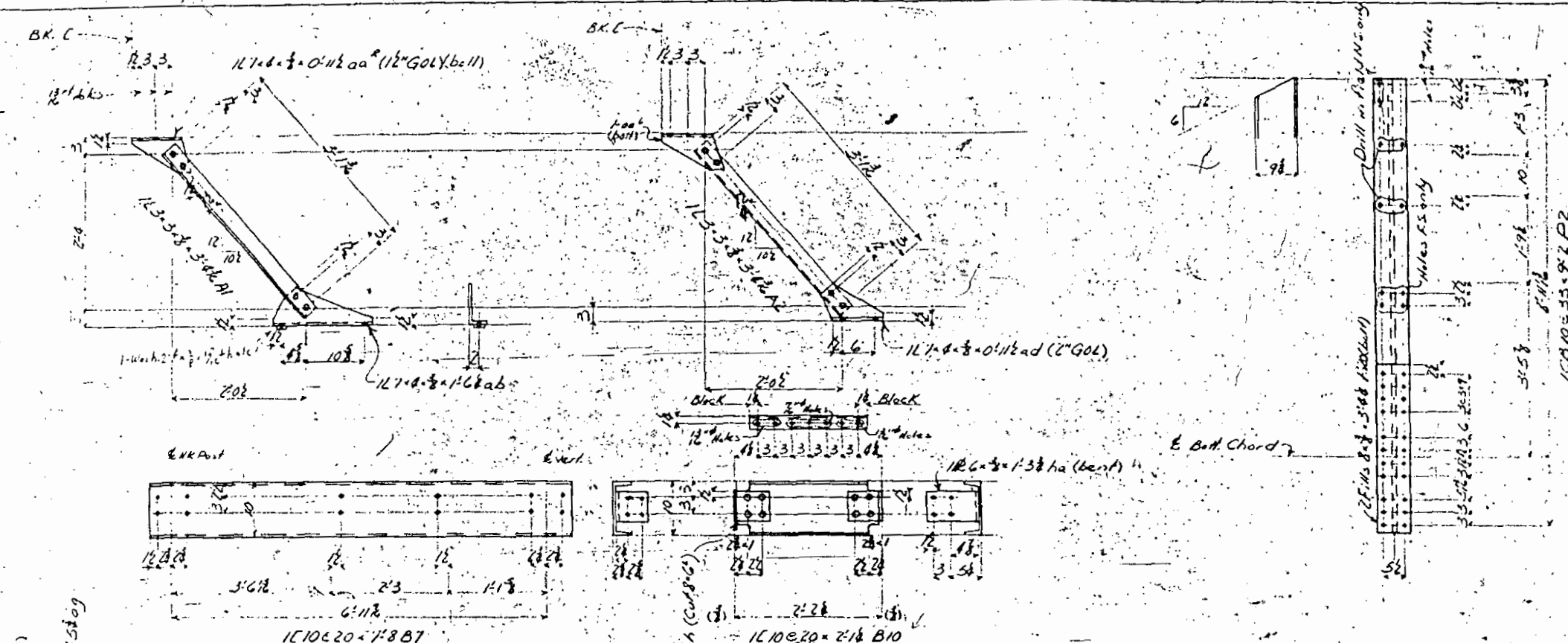


250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge & Surf City  
Pender Co. N.C.  
Dickerson Inc. Contractors  
Project 3-7-27-26



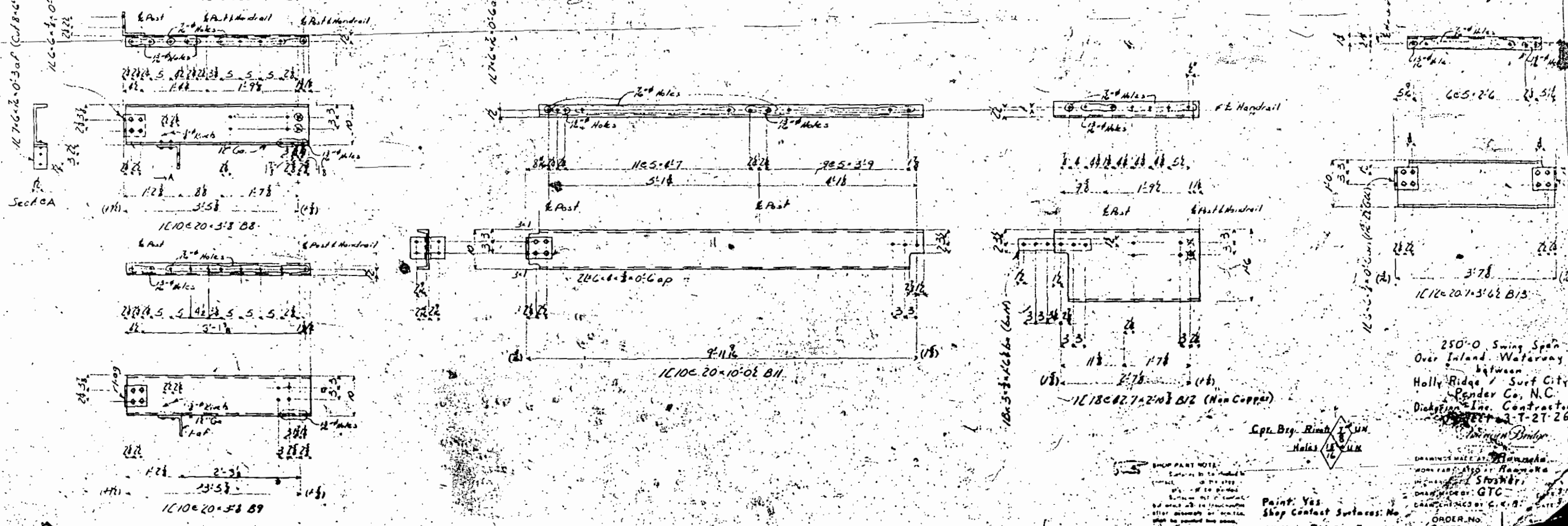
Point: Yes  
Shop Contact Surfaces: No  
All Material: Cap. Brq. U.M.  
ORDER No. 05279

(Wood)



**REQUIRED LIST**

MAKE	DESCRIPTION	QTY
	Bracket	1
	do	1
	Channel	1
	do	1
	do	1
	do	1
	do	1
	do	1
	do	1
	Post	1



250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge / Surf City  
Pender Co., N.C.  
Dickinson, Inc. Contractor  
Drawing No. 3-T-27-26  
Design by  
Cpl. Brg. Rinaldi  
Holes as shown

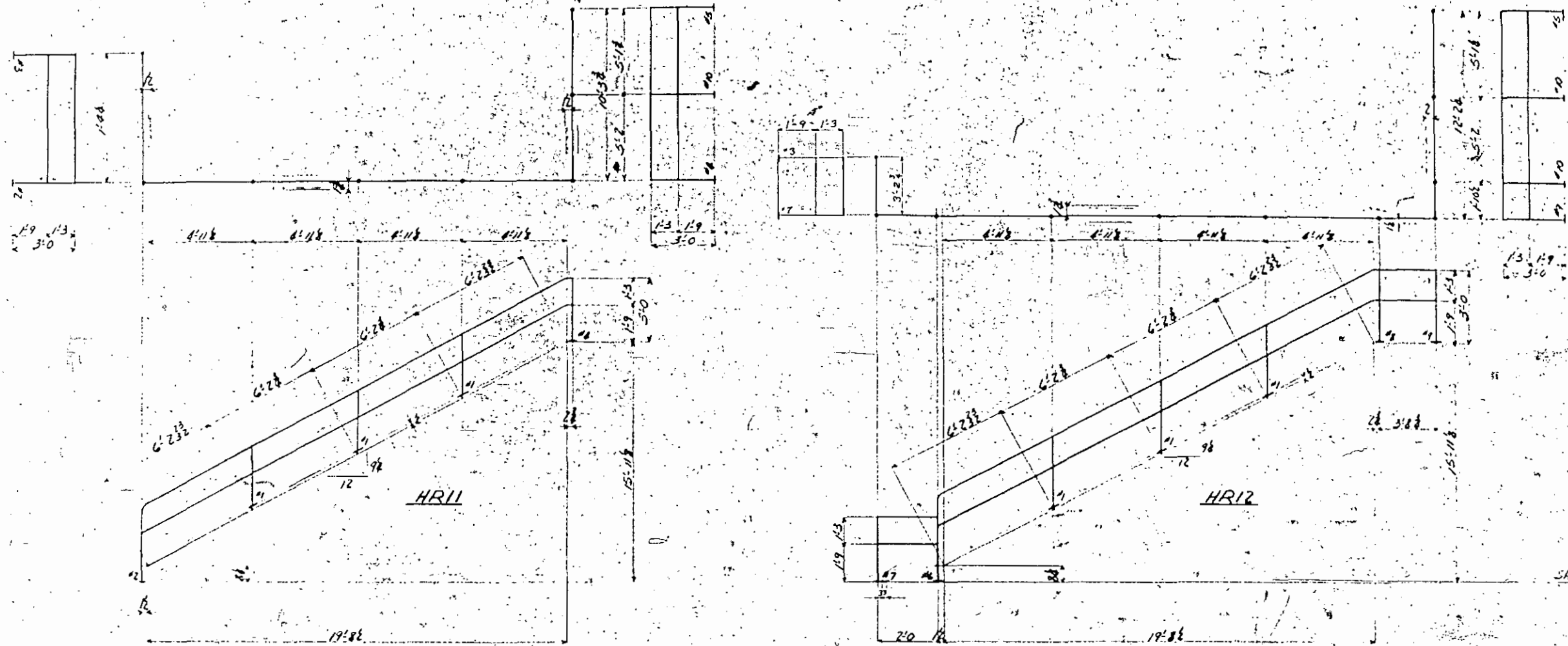
**SHOP PART NOTE:**  
Supplied to the fabricator  
as shown on this drawing  
and to be painted  
with the same paint  
as the structure.  
Paint: Yes  
Shop Contact Surfaces: No  
All Material: Cpl. Brg. U.N.

ORDER NO. Q5219

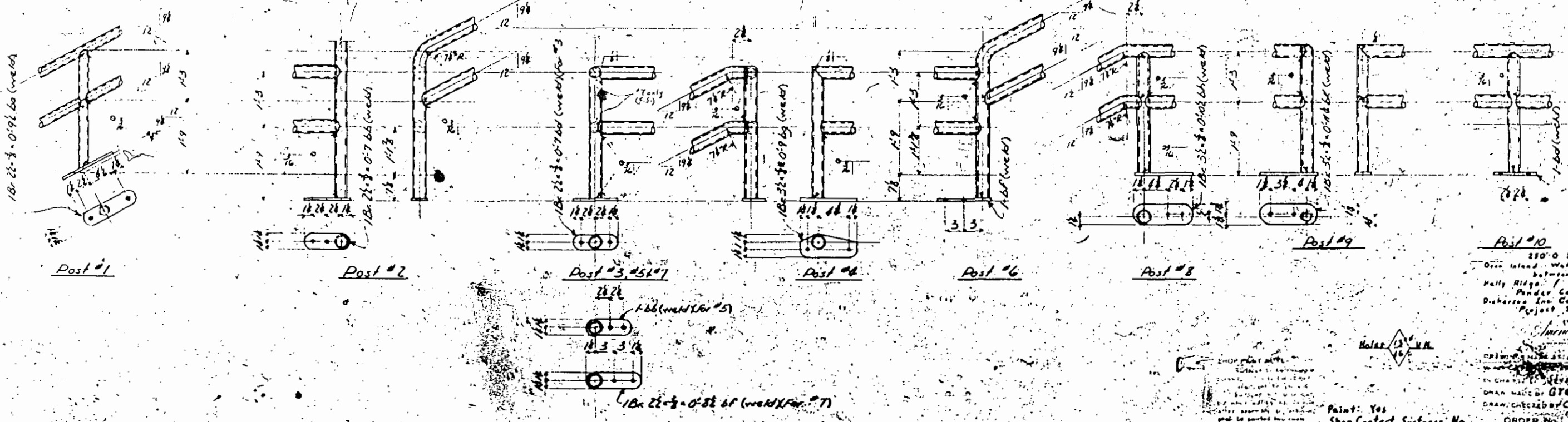


**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Handrail	HR11
1	do	HR12



Shop Note:  
 All handrail 1 1/2" STD. BK. PIPE (NIP-6-11")  
 Provide field splices where necessary, for convenient shipping.



210' 0" Swing Span  
 Over Island Waterway  
 Between  
 Holly Ridge and Salt City  
 Pender Co. N.C.  
 D. Harrison Inc. Contractors  
 Project 3-7-27-26

American Dimple  
 ORDERED BY: Rasmussen  
 DRAWN BY: G.T. [Signature]  
 DATE: 3-17-34  
 CHECKED BY: C. [Signature]  
 DATE: 3-17-34  
 ORDER NO. Q5379  
 DATE: 3-27-34

Paint: Yes  
 Shop Contact Surfaces: No  
 All Material: Cpr. B-4 (U.N.)

(Weld)

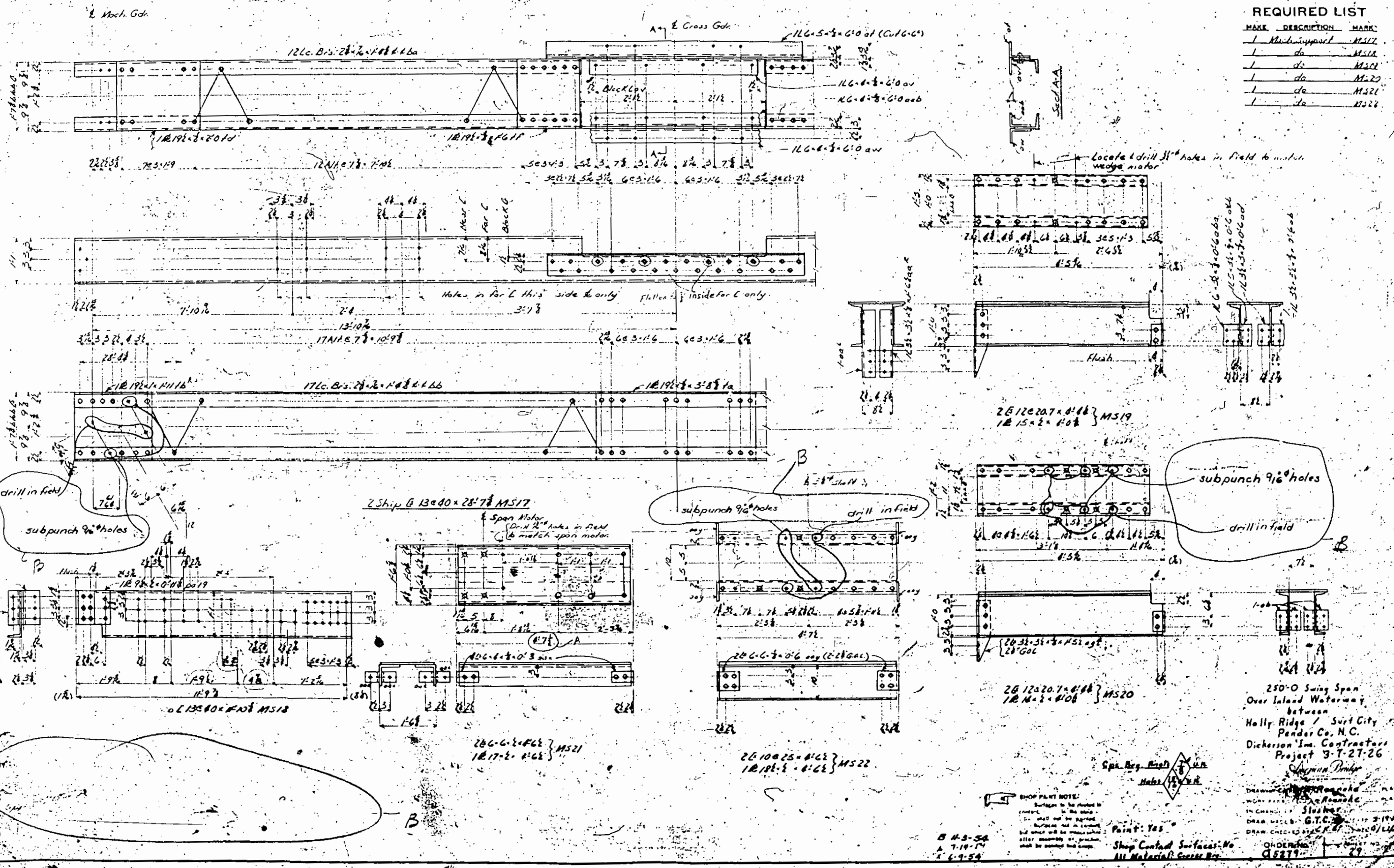




Symmetrical this & Except as noted

**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
1	Machine support	MS17
1	do	MS18
1	do	MS19
1	do	MS20
1	do	MS21
1	do	MS22



250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge / Surf City  
Pender Co., N.C.  
Dickerson Inv. Contractors  
Project 3-7-27-26  
Symann Brink

SHOP PART NOTE:  
Surfaces to be finished in  
conformity with the shop  
drawing. Surfaces not to be  
finished shall be indicated  
with a note. Surfaces to be  
finished shall be indicated  
with a note.

Spa. Req. Rinal  
Maka 1/2" x 1/2"

B 4-3-54  
A 7-19-54  
C 6-9-54

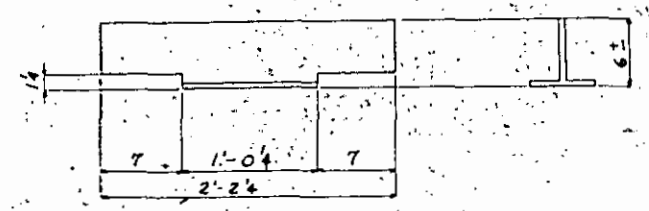
Paint: Yes  
Shop Contact Surfaces: No  
All Material: Correct Br.

ORDER NO. 65279

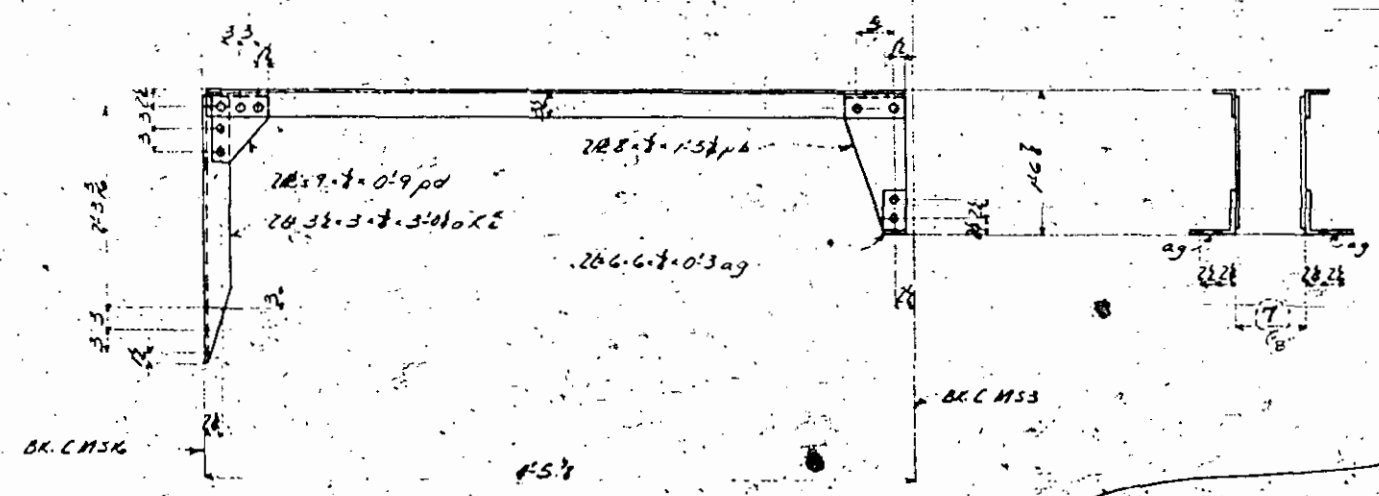
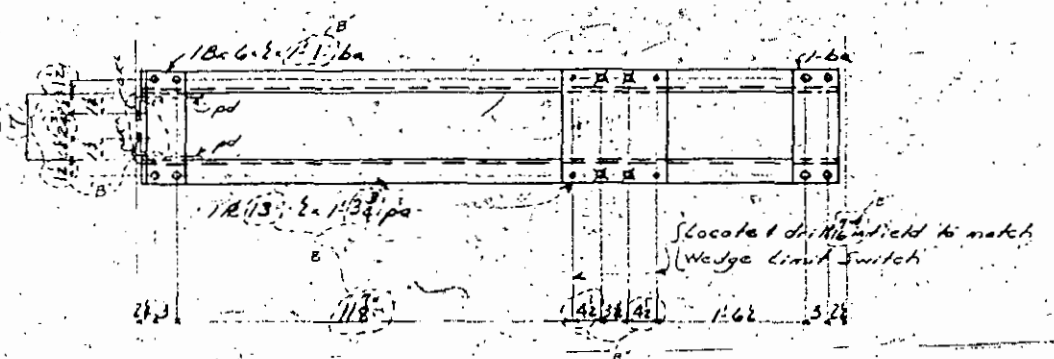
**REQUIRED LIST**

MAKE	DESCRIPTION	MARK
2	Tess	T10
1	Mech. Support	M53
2	br. 3/4" x 4-6	B20
2	br. 3/4" x 2-6	B21
2	C 150 55.9 x 2.54	C10

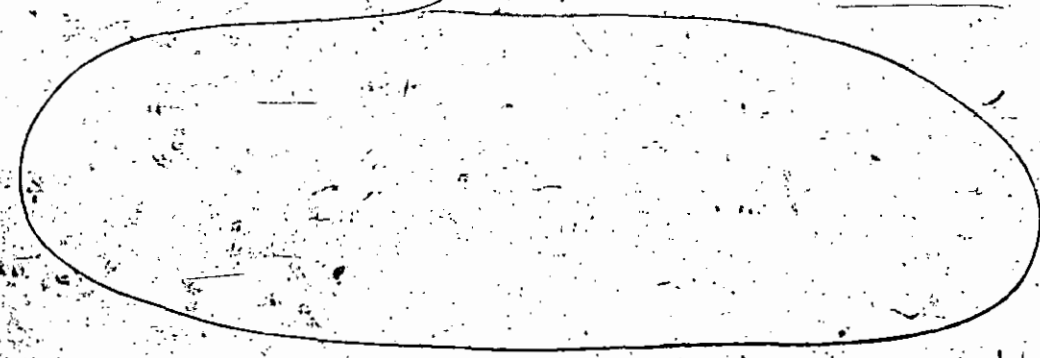
Plain  
No Shop Point



6" T 13.5 x 2.24 T10  
(Split 12 CB. 87) No Shop Point



2032-3-1/2 x 1.57 M520



250'-0" Swing Span  
Over Inland Waterway  
between  
Holly Ridge / Surf City  
Pender Co., N.C.  
Dickerson Inc. Contractors  
Project 3-7-27-26

Makes 1/4" UN  
Cpa Riv. Rivet 1/4" UN

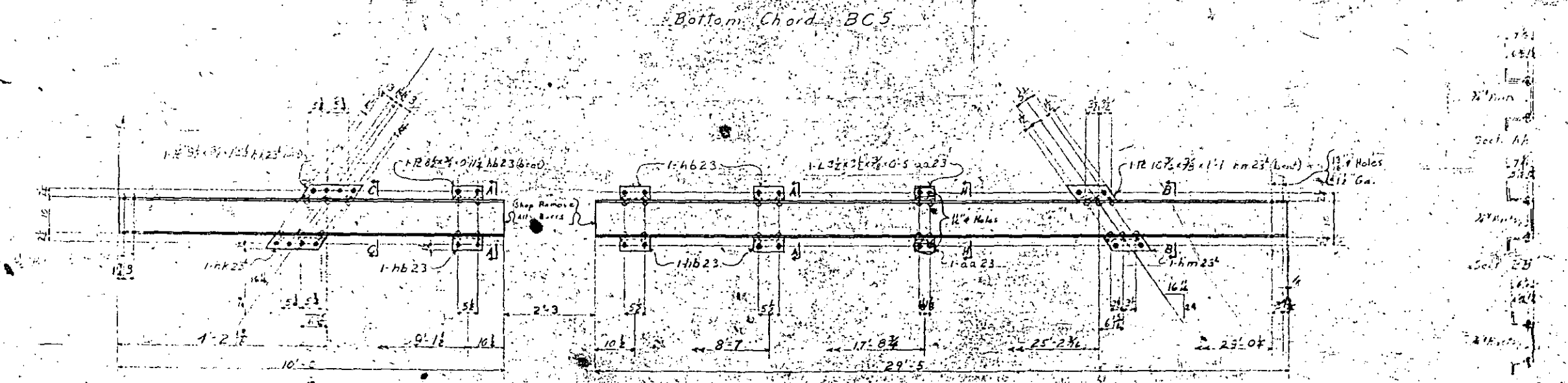
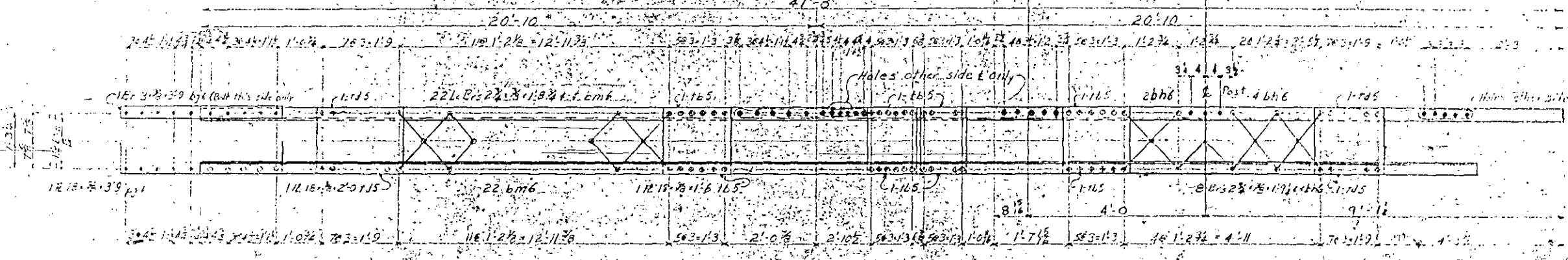
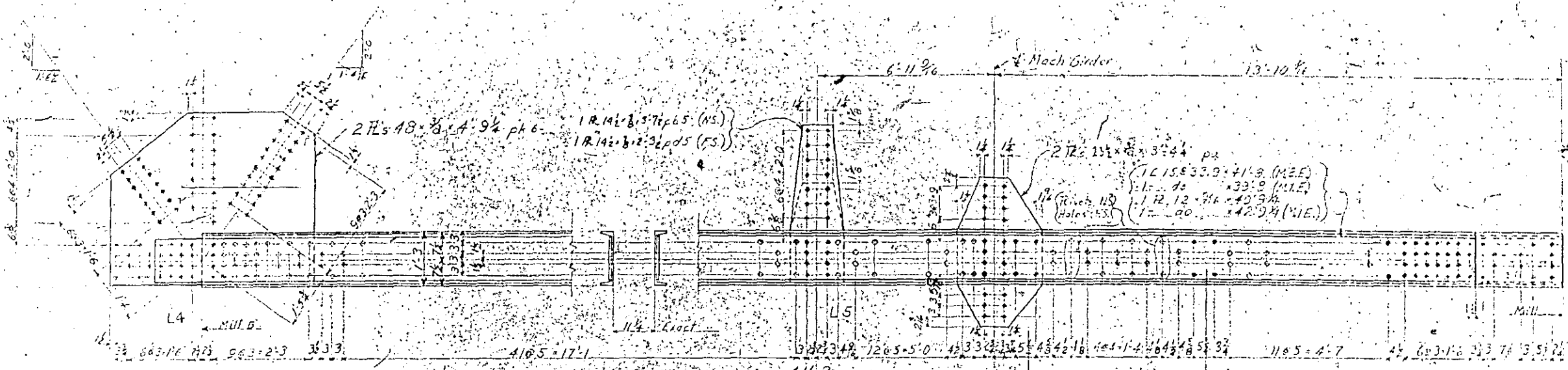
**SHOP PART NOTE:**  
Surfaces to be worked in contact, etc. in the shop. Surfaces not to contact. All dimensions are in inches unless otherwise specified. Shop to indicate any errors.

Paint: Yes  
Shop Contact Surfaces: No  
All Material: Cpa. Req.

DRUMMOND WALKER, Raleigh, N.C. DRAWN BY: GTC  
DATE: 9/1/26  
ORDER NO. 05277



REQUIRED LIST  
 MAKE \_\_\_\_\_ DESCRPTION \_\_\_\_\_ MARK \_\_\_\_\_  
 1. Handrail 11x18  
 2. Handrail 11x18



7'-0"  
 6'-0"  
 5'-0"  
 4'-0"  
 3'-0"  
 2'-0"  
 1'-0"  
 0'-0"

250'-0" SWING SPAN  
 OVER INLAND WATERWAY  
 BETWEEN  
 HOLLY RIDGE & SURF CITY  
 PENDER CO. N.C.  
 DICKERSON, INC. CONTRACTORS  
 PROJECT 3-7-27-26

AMERICAN BRIDGE

DRAWINGS MADE AT BRANCKE PLANT  
 WORK FABRICATED AT BRANCKE PLANT  
 IN CHARGE OF SLER  
 DRAW. MADE BY SLER  
 DRAW. CHECKED BY SLER

F	DESIGNED
E	ENGINEER
D	DRAWN
C	CHECKED
B	BUILT
X	REVISIONS

ORDER No. Q5279 SHEET No. 31

Holes 1/2" UN  
 PART 1/2" UN  
 SHOP CONTACT SURFACES N.

All Matl. Copper Brg.

