

**BRIDGE**  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 - NEW HANOVER COUNTY  
 FA PROJ F-183 (11)

SHEET	DESCRIPTION
1	GENERAL PICTURE & TITLE SHEET
2	GENERAL NOTES
3	ESTIMATED BRIDGE QUANTITIES
4	PLAN & ELEVATION
5	APPROACH SPANS-ROADWAY PLAN & ELEVATION
6	DO. DO. INTERMEDIATE BENTS
7	DO. DO. END BENTS
8	DO. DO. SECTIONS & DETAILS
9	DO. DO. HANDRAIL & MISC. DETAILS
10	DO. DO. PRECAST CONCRETE PILES
11	STRESS SHEET & MISC. DETAILS
12	MAIN GIRDERS
13	DO. DO.
14	COUNTERWEIGHT GIRDERS
15	DO. & TRUNNION GIRDERS
16	BEAM OVER COUNTERWEIGHT RACK FRAME & MACH. FRAME
17	FLOOR BEAMS
18	HANDRAIL & SHIP LADDER
19	ACCTS. LADDERS, PLATFORMS & HATCHES
20	MACHINERY LAYOUT & DETAILS

SHEET	DESCRIPTION
21	MACHINERY DETAILS
22	DO. DO.
23	DO. DO.
24	LOCK MACHINERY LAYOUT & DETAILS
25	DO. DO. DETAILS & RACK
26	BUFFER
27	LIMIT SWITCH & POSITION INDICATOR LAYOUT
28	FENDER
29	BASCULE PIER-PLAN & ELEVATION
30	ANCHOR BOLT PLAN
31	PIILING PLAN BASCULE PIERS
32	REINFORCING DETAILS BASCULE PIER
33	DO. DO. DO. DO.
34	DO. DO. DO. DO.
35	DO. DO. DO. DO.
36	DO. DO. DO. DO.
37	DO. DO. DO. DO.
38	REINFORCING SCHEDULE
39	CONTROL HOUSE

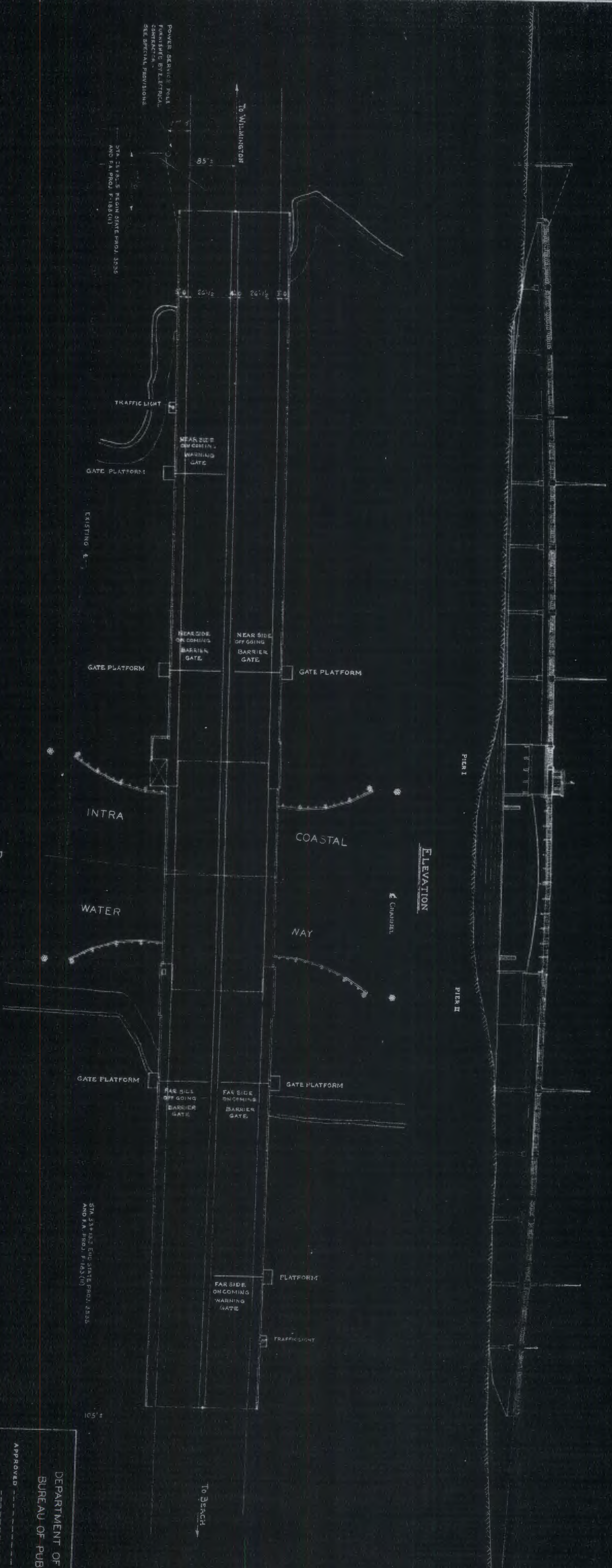
BRIDGE OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 - NEW HANOVER COUNTY  
 CONSULTING ENGINEER  
 L. O. HOPKINS  
 WASHINGTON, N.C.



INDEX OF SHEETS  
 DWG. 1 TITLE SHEET  
 DWG. 2-440 STRUCTURE PLANS

SHIPPING POINT - WILMINGTON, N.C.

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 NEW HANOVER COUNTY  
 BRIDGE OVER INTRACOASTAL WATERWAY  
 BETWEEN WILMINGTON AND WRIGHTSVILLE BEACH



LENGTH OF STRUCTURE AND  
 F.A. PROJ. F-1183(11) = 0.133 MI.

PLAN

RIGHT OF WAY ON THIS PROJECT IS 150 FT. LT. OF PROJ. F

DIST. No.	3	STATE	N.C.	PROJ. No.	3555
				F.A. PROJ. No.	F-1183(11)

DEPARTMENT OF COMMERCE  
 BUREAU OF PUBLIC ROADS

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

DISTRICT ENGR \_\_\_\_\_

CHIEF \_\_\_\_\_

DIVISION \_\_\_\_\_

DATE \_\_\_\_\_

GENERAL PICTURE & TITLE SHEET  
 HOPKINS TRUSS BRIDGE SPAN PAT. 272413  
 OVER INTRACOASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3555 NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER WILMINGTON, N.C.

SUBMITTED BY \_\_\_\_\_ BRIDGE ENGR  
 APPROVED BY \_\_\_\_\_ STATE HWY ENGR

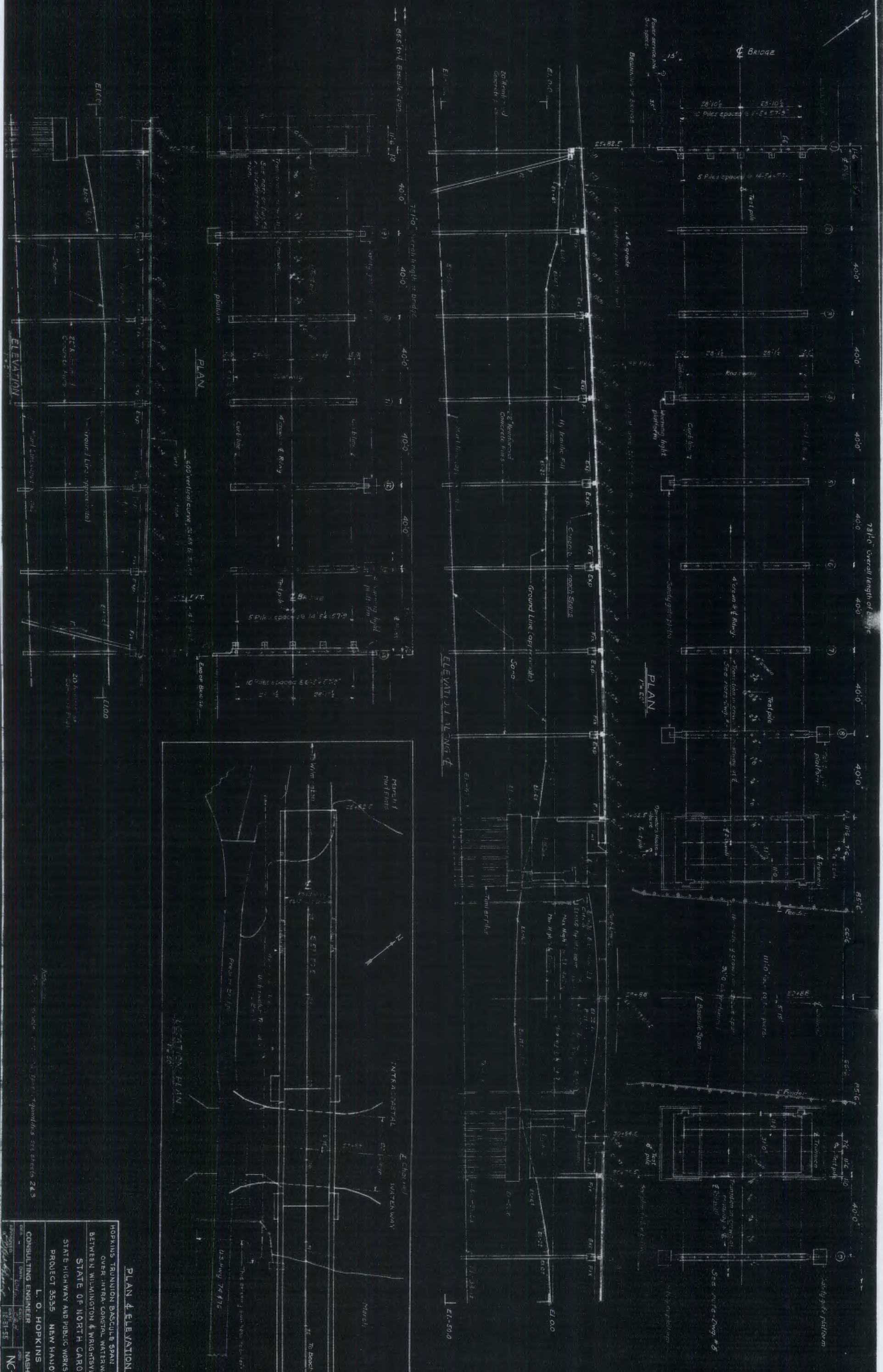


ESTIMATED BRIDGE QUANTITIES				
ITEM NO.	ITEM	NO.	UNIT	QUANTITY
210	CRESOTED STRUCTURAL TIMBER (18 LB. TREATMENT)	-	M. F. S. M.	2657
300 B	CRESOTED TIMBER PILES TREATED TO REFUSAL WITH A MIN. RETENTION OF 22 LBS.	218	LIN. FT.	11,990
300 C	UNTREATED TIMBER PILES	400	LIN. FT.	14,000
207	CONCRETE, CLASS A (APPROACH SPANS) 2,126 CU. YDS.	-	CU. YD.	4,126
	CONCRETE, CLASS A (BAScule PIERS) 2,000 CU. YDS.	-	CU. YD.	492
207 A	CONCRETE, CLASS A (COUNTERWEIGHT)	-	CU. YD.	980
207 B	CONCRETE, CLASS A (SEAL)	-	CU. YD.	1,815
300	PRECAST CONCRETE PILES 20"	30	LIN. FT.	7,670
300 A	PRECAST CONCRETE PILES 22"	180	LIN. FT.	-
208	REINFORCING STEEL (APPROACH SPANS) 105,793 LBS.	-	LBS.	-
	REINFORCING STEEL (BAScule PIERS) 105,793 LBS.	-	LBS.	-
362	CONTROL HOUSE (INCLUDING REINFORCING STEEL THEREIN)	1	LUMP SUM	ONE
358	STEEL ROADWAY FLOOR (5" DEEP)	-	SQ. FT.	6160
359	STEEL ROADWAY FLOOR (3" DEEP) CONCRETE FILLED	-	SQ. FT.	1624
361	ELECTRICAL EQUIPMENT	1	LUMP SUM	ONE
200	STRUCTURAL STEEL (APPROX. WT. 762,000 LBS.)	1	LUMP SUM	ONE
360	MACHINERY AND CASTINGS (APPROX. WT. 51,100 LBS.)	1	LUMP SUM	ONE
300 D	UNLOADED TIMBER TEST PILES FOR 22" CONCRETE PILES	4	EACH	4
300 E	UNLOADED TIMBER TEST PILES FOR CRESOTED TIMBER PILES	4	EACH	4
322	METHOD D DAMPROOFING	-	Sq. YDS.	1443
24A	WET EXCAVATION	-	CU. YDS.	1800
202	REMOVAL OF EX-SITING STRUCTURE	1	LUMP SUM	ONE

- ① INCLUDED 8925 LBS. OF GALVANIZED REINFORCING STEEL.  
 ② TO BE OF SAME SIZE AND SECTION AS 22" DIAMETER PILE.  
 ③ MINIMUM TIP DIAMETER = 5"

Revised for weight of steel in approach spans 10/12  
 Revised to increase reinf. steel in bascule piers by 100,000 lbs.  
 Revised to increase strength of parking slab 41 B.

ESTIMATED BRIDGE QUANTITIES				
HOPKINS TRUNNIT BAScule SPAN PAT 27241 OVER INTRA COASTAL WATERWAY BETWEEN WILMINGTON & WRIGHTSVILLE BEACH				
STATE OF NORTH CAROLINA				
STATE HIGHWAY AND PUBLIC WORKS COMMISSION				
PROJECT 3655 NEW HANOVER COUNTY				
L. O. HOPKINS				
CONSULTING ENGINEER NASHVILLE, TENN.				
DES.	DWN.	CHK.	JOB	DWG. NO.

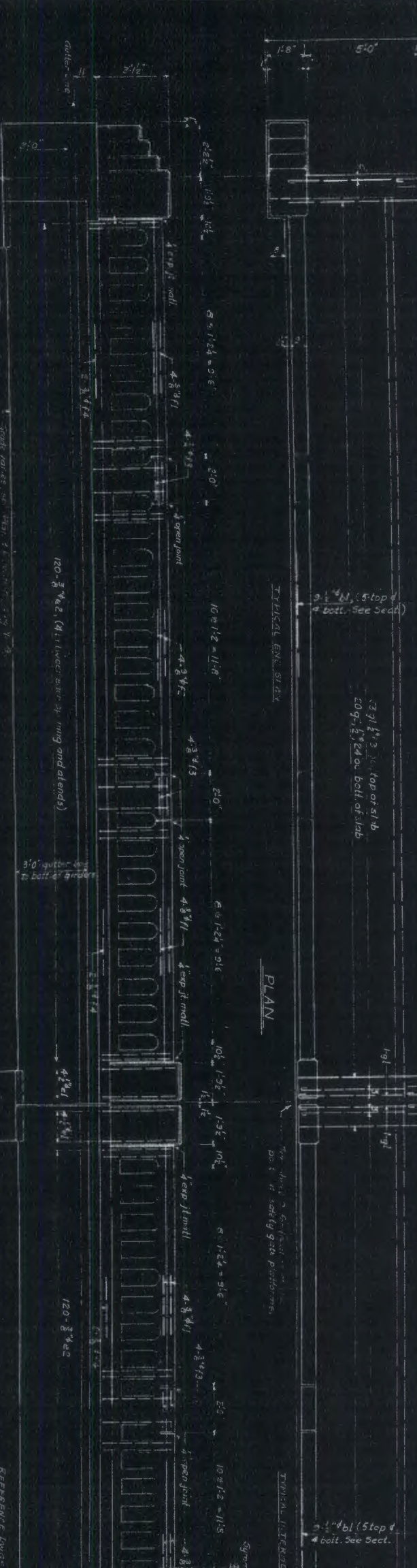


**PLAN & ELEVATION**

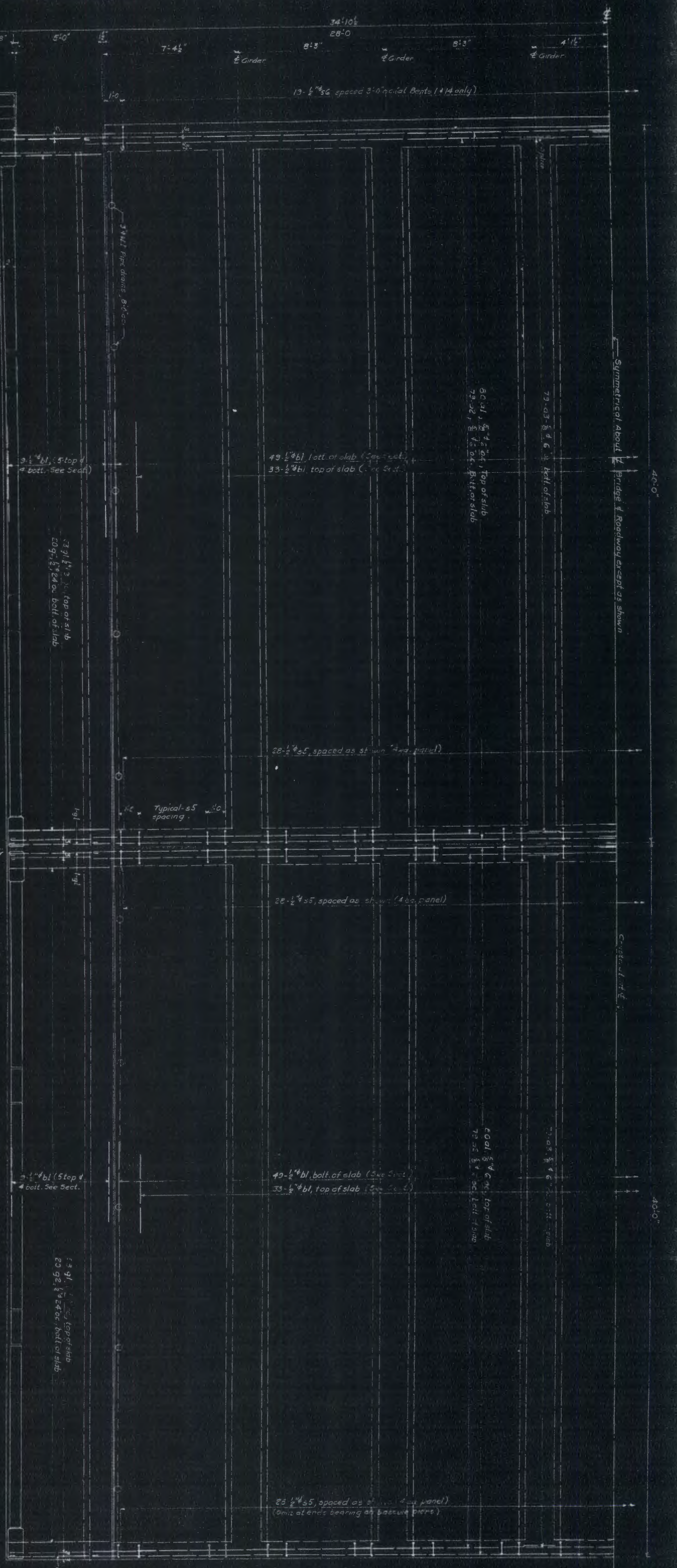
HOPKINS TUNNON BASCULE SPAN PAT. 271,112  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.

DESIGNED BY	DATE	SCALE	NO.
APPROVED BY	DATE	SCALE	NO.
PROJECT NO.	DATE	SCALE	NO.
PROJECT NO.	DATE	SCALE	NO.
PROJECT NO.	DATE	SCALE	NO.

**SIDE ELEVATION**



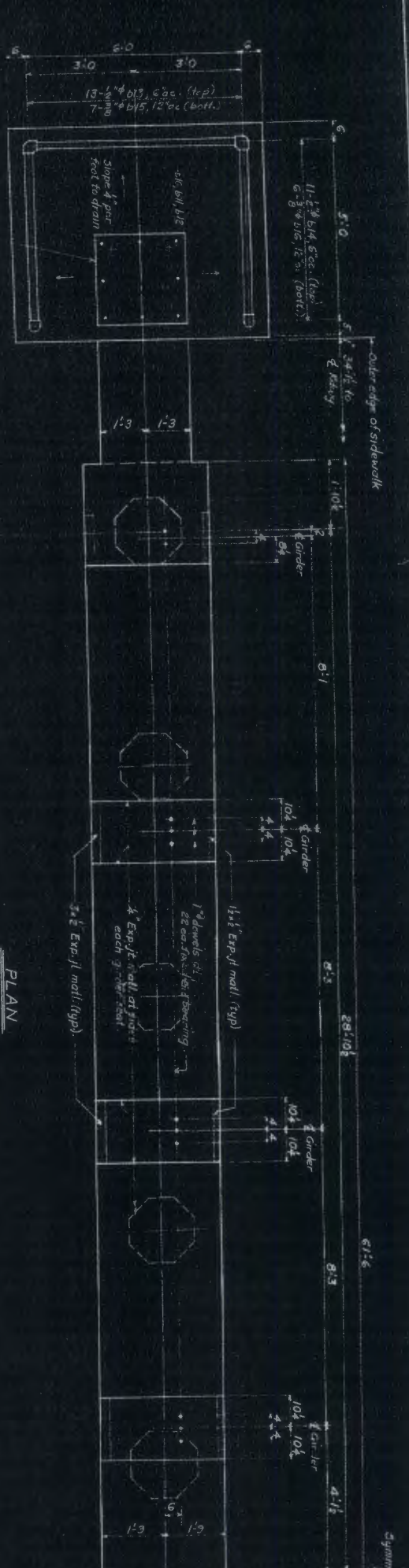
**PLAN**



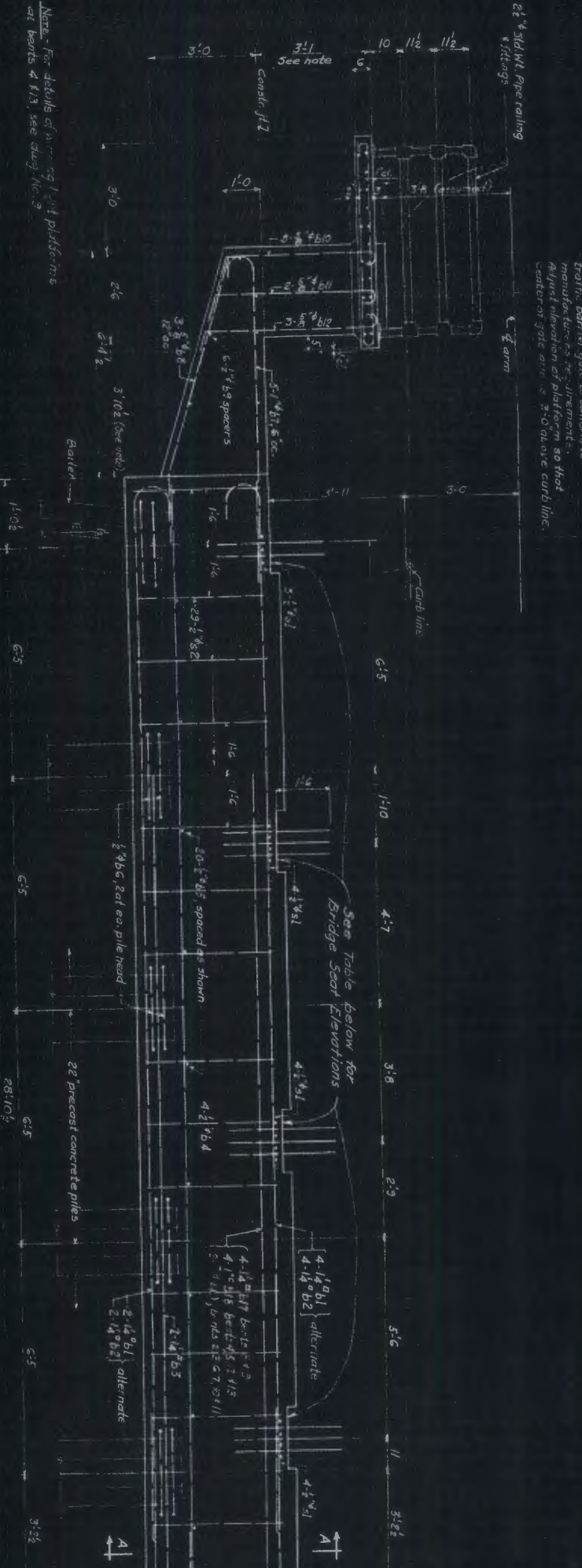
REFERENCE DWGS -  
 DWG NO. 2 - GENERAL NOTES  
 3 - ELEVATION OF BRIDGE QUANTITIES  
 4 - FINISHED ELEVATION  
 5 - DIMENSIONS  
 6 - SECTION 11-11  
 7 - 5'-0" SECTION 11-11  
 8 - SECTION 11-11  
 9 - SECTION 11-11  
 10 - SECTION 11-11

APPROACH SPANS  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 - NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER  
 NASHVILLE, TENN.  
 DATE: 11/27/57  
 SHEET NO. 5  
 OF 5

Notes:  
 1. Reinforcement shall be used for all concrete except that No. 4 shall be used in hand railing & end posts at end sidewalk level. See drawing No. 2.



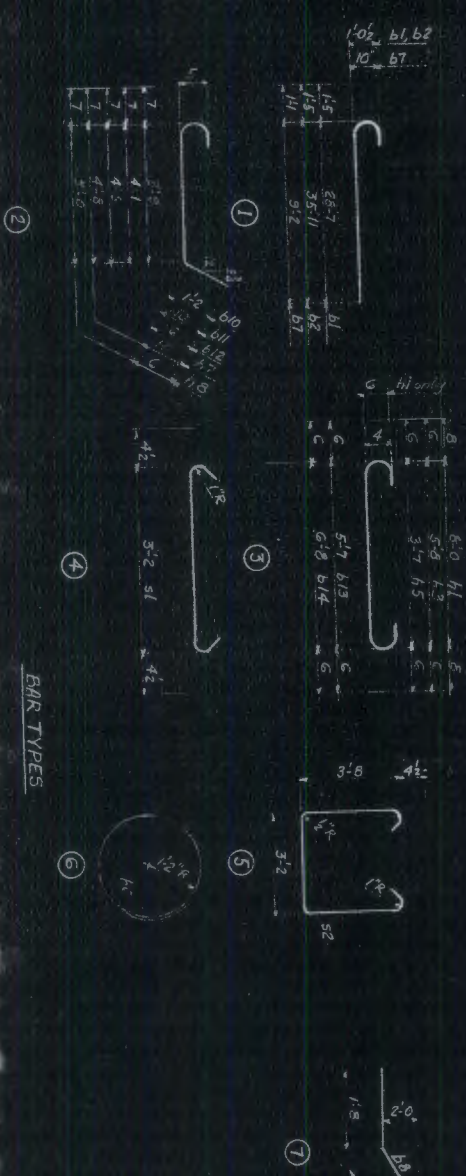
PLAN



ELEVATION

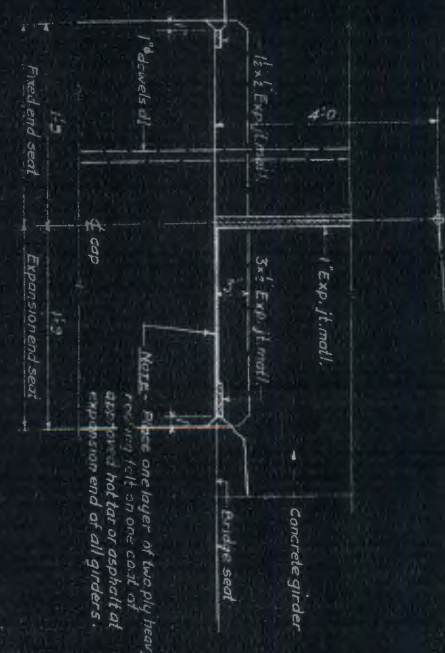
TYPICAL CAP FOR INTERMEDIATE BENTS

BARRIER GATE PLATFORM DETAILS

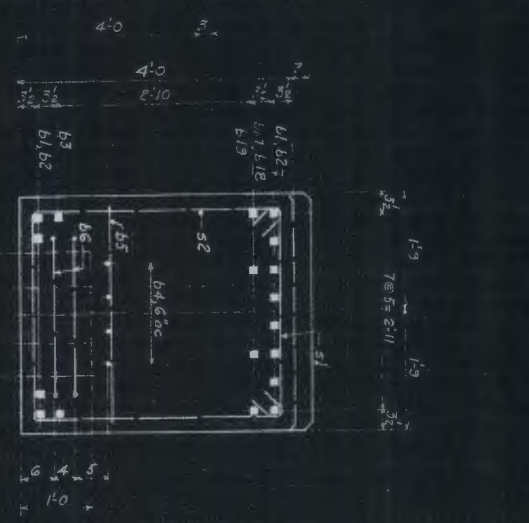


EARS TYPES

Fixed end seats shown this side of E  
Expansion end seats shown this side of E  
See sheet C for location of fixed or expansion end seats.



TYPICAL BEARING DETAIL



SECT. AA

BRIDGE SEAT ELEVATIONS

Bent No.	Elevation
Bent #1	17.92
Bent #2	16.52
Bent #3	17.92
Bent #4	19.52
Bent #5	20.55
Bent #6	21.55
Bent #7	22.33
Bent #8	22.55
Bent #9	21.55
Bent #10	20.55
Bent #11	17.92

Concrete quantities  
One cap (pile layout deducts)  
Barrier gate platform  
Warning light platform  
Total  
Reinforcement

BILL OF MATERIAL

BAR	NO REQ'D	SIZE	TYPE	LENGTH	WEIGHT
b1	12	14"	I	30.0	1913
b2	12	14"	I	37.4	2380
b3	2	14"	Sr.	45.0	478
b4	8	14"	Sr.	55.0	171
b5	20	2"	Sr.	37.2	42
b6	20	2"	Sr.	61.3	110
d1	22	1 1/2"	Sr.	31.0	115
s1	30	3"	Sr.	11.3	218
s2	22	3"	Sr.	45.0	257
s17	4	1"	Sr.	45.0	84
s18	4	1"	Sr.	40.0	164
s19	4	1"	Sr.	40.0	164

REQ'D FOR ONE WARNING LIGHT PLATFORM	REQ'D FOR ONE BARRIER GATE PLATFORM	REQ'D FOR ONE CAP
b1	2	2
b2	2	2
b3	2	2
b4	2	2
b5	2	2
b6	2	2
b7	2	2
b8	2	2
b9	2	2
b10	2	2
b11	2	2
b12	2	2
b13	2	2
b14	2	2
b15	2	2
b16	2	2
b17	2	2
b18	2	2
b19	2	2
b20	2	2
b21	2	2
b22	2	2
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b34	2	2
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b42	2	2
b43	2	2
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b46	2	2
b47	2	2
b48	2	2
b49	2	2
b50	2	2

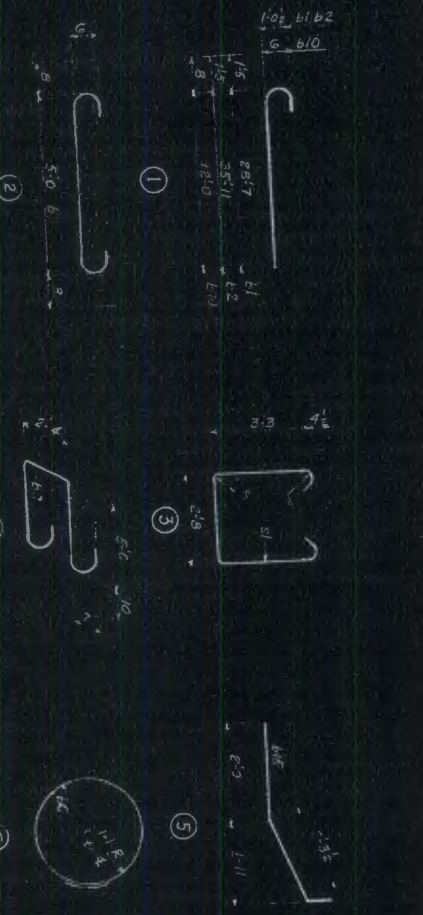
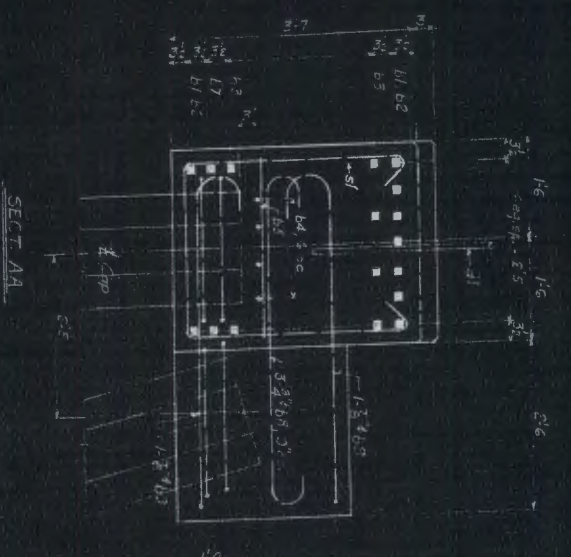
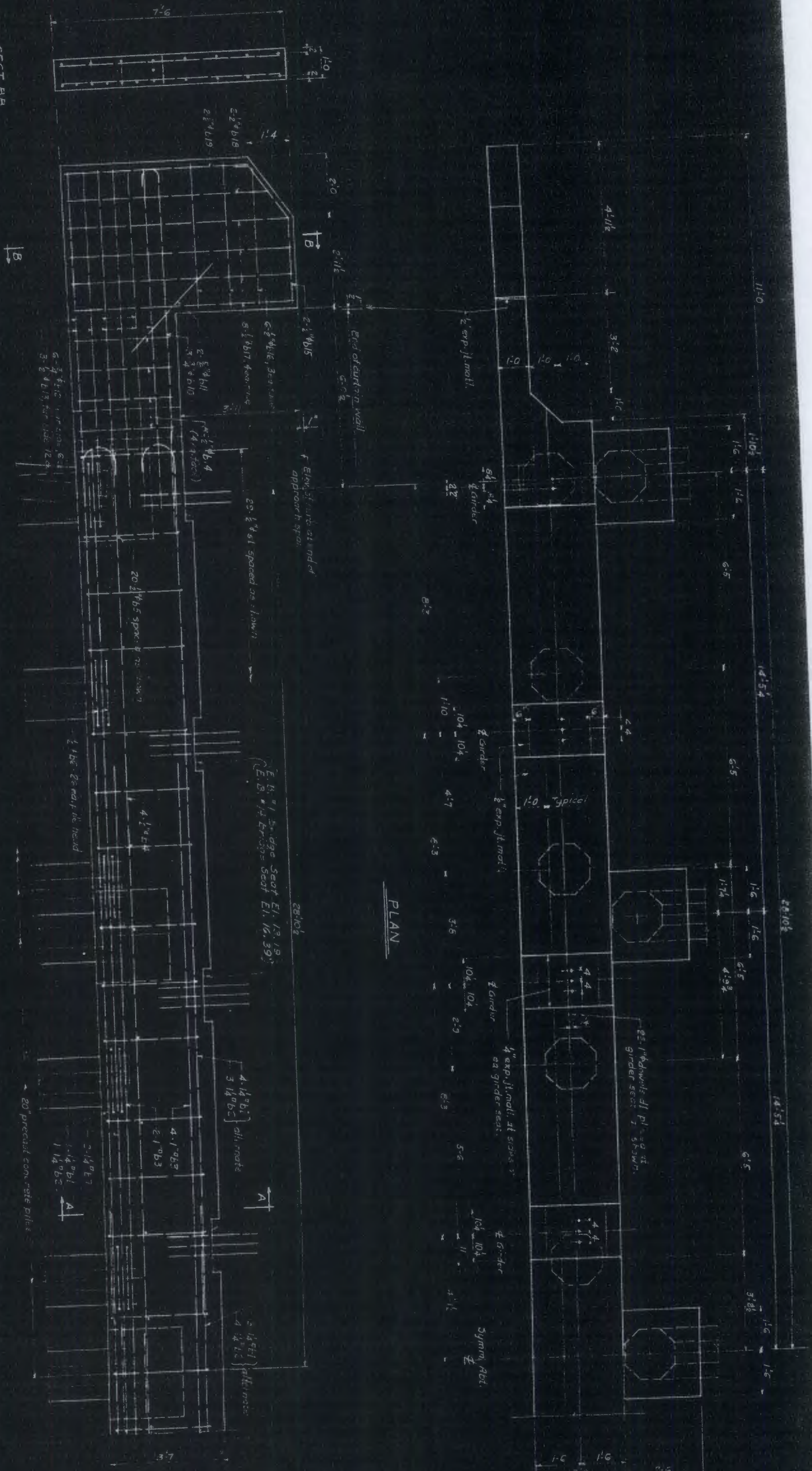
APPROACH SPANS - INTERMEDIATE BENTS  
BRIDGE OVER INTRA-COASTAL WATERWAY  
BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT 3535 NEW HANOVER COUNTY  
L. O. HOPKINS  
CONSULTING ENGINEER  
NASHVILLE, TENN.  
NCI  
6

**BILL OF MATERIAL (FOR ONE CAP)**

BAR	NO. REQ.	SIZE	TYPE	LENGTH	WEIGHT
b1	2	1/2"	I	37.0	119.6
b2	2	1/2"	I	37.4	120.2
b3	6	1/2"	Str.	40.0	81.6
b4	5	1/2"	Str.	32.0	77.1
b5	20	1/2"	Str.	21.8	36.0
b6	30	1/2"	Str.	7.5	15.0
b7	4	1/2"	Str.	6.4	12.8
b8	1/2	1/2"	Str.	14.0	28.0
b9	1/2	1/2"	Str.	12.8	11.4
b10	4	1/2"	Str.	4.0	1.7
b11	4	1/2"	Str.	11.0	19.8
b12	12	1/2"	Str.	10.4	41.1
b13	15	1/2"	Str.	3.3	3.5
b14	15	1/2"	Str.	5.11	16.6
b15	1/2	1/2"	Str.	4.8	3.7
b16	1/2	1/2"	Str.	7.2	7.7
b17	1/2	1/2"	Str.	6.7	1.8
b18	4	1/2"	Str.	6.0	16.0
b19	4	1/2"	Str.	9.11	19.2
b20	4	1/2"	Str.	3.0	17.0
b21	22	1/2"	Str.	3.0	17.0

6443 LB  
31.58 CY

Bar 14, 15, 16, 17, 18, 19, 20, 21, 22 are for concrete for one cap - pile heads excluded



**NOTE:**  
Pile caps shall be constructed without friction on bents or the soil passing through the cap.

**Reference:**  
For all materials, methods and sizes, see sheets 24. For summary of quantities, see sheet 3. For details of piles, see sheet 10.

APPROACH SPANS - END BENTS

BRIDGE OVER INTRA-COASTAL WATERWAY  
BETWEEN WILMINGTON & WRIGHTSVILLE BEACH

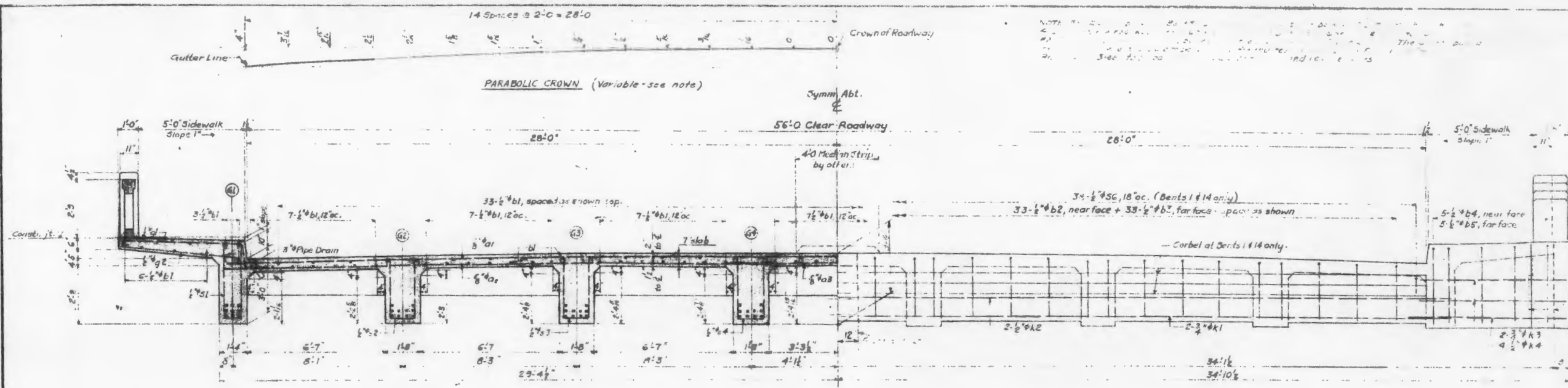
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT 3835 NEW HANOVER COUNTY

L. O. HOPKINS  
CONSULTING ENGINEER  
NASHVILLE, TENN.

DESIGNED BY  
DRAWN BY  
CHECKED BY  
APPROVED BY

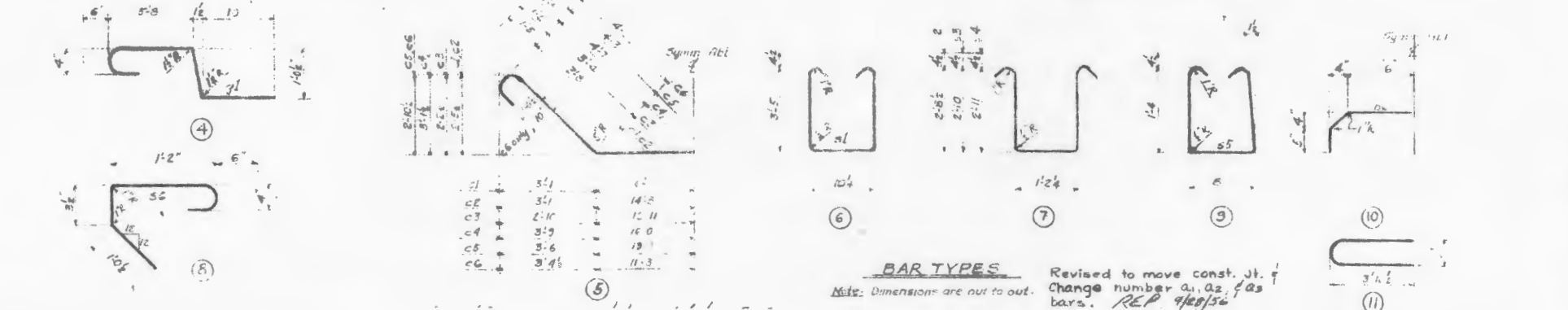
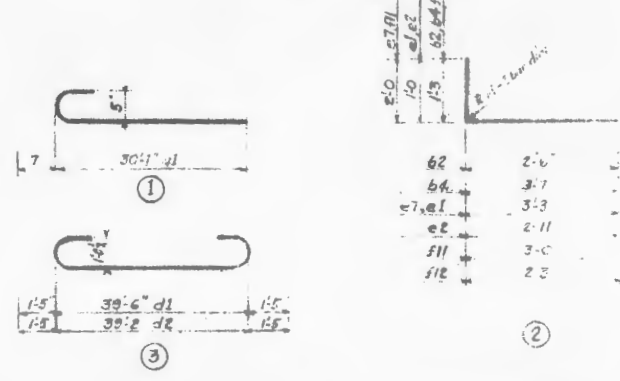
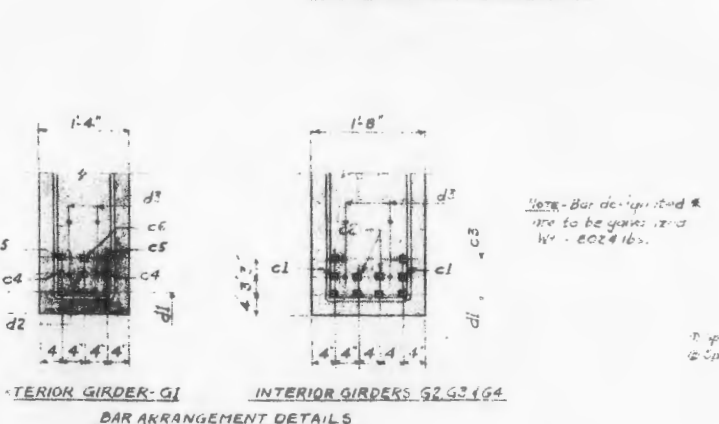
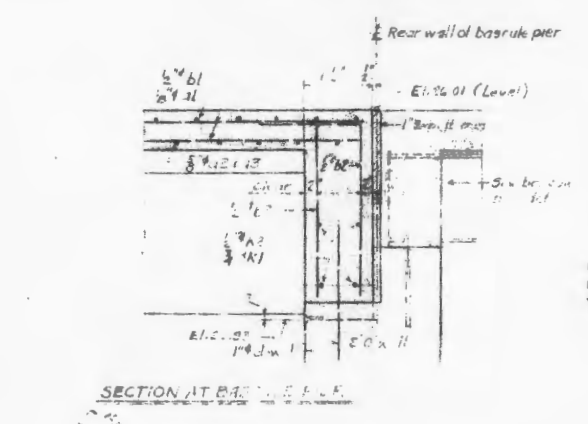
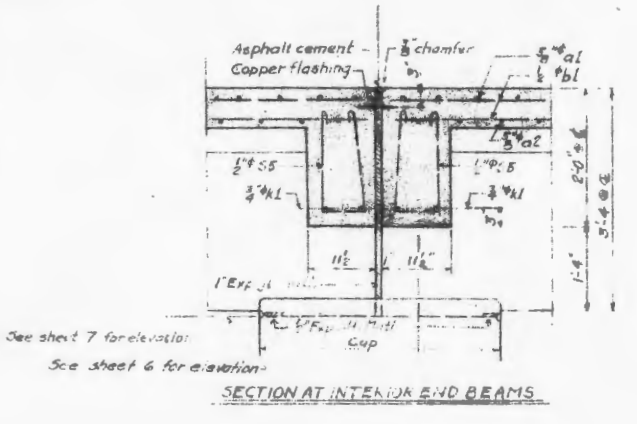
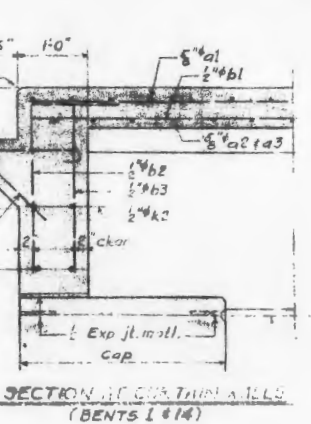
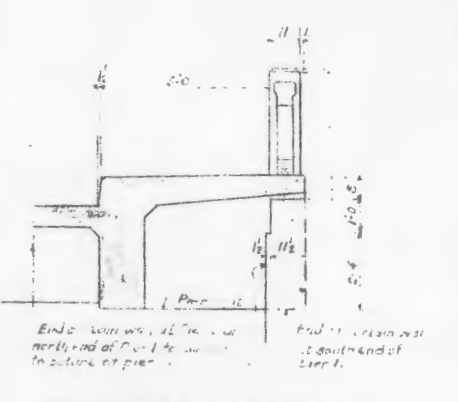
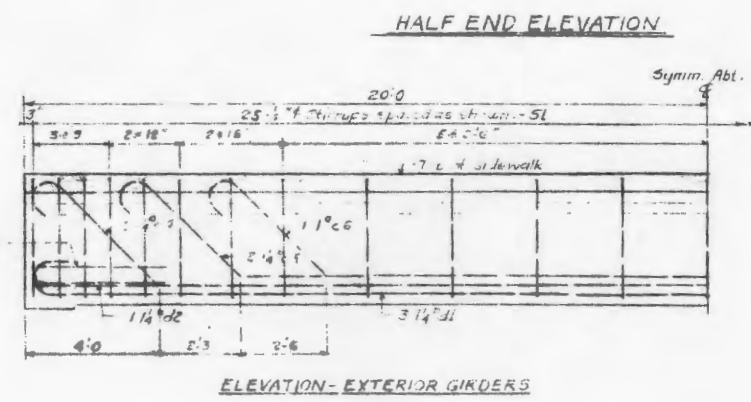
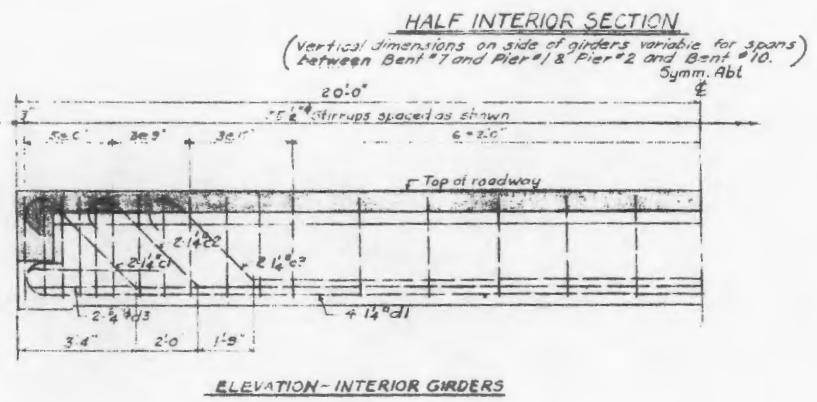
NC 117





Bill of Materials for Deck Slabs

PK	NO.	SIZE	TYPE	LENGTH	WEIGHT
bl	1	14	bl	30.0	1.0
b2	6	14	b2	30.0	6.0
b3	14	14	b3	30.0	14.0
b4	14	14	b4	30.0	14.0
b5	14	14	b5	30.0	14.0
b6	14	14	b6	30.0	14.0
b7	14	14	b7	30.0	14.0
b8	14	14	b8	30.0	14.0
b9	14	14	b9	30.0	14.0
b10	14	14	b10	30.0	14.0
b11	14	14	b11	30.0	14.0
b12	14	14	b12	30.0	14.0
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b31	14	14	b31	30.0	14.0
b32	14	14	b32	30.0	14.0
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b34	14	14	b34	30.0	14.0
b35	14	14	b35	30.0	14.0
b36	14	14	b36	30.0	14.0
b37	14	14	b37	30.0	14.0
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b47	14	14	b47	30.0	14.0
b48	14	14	b48	30.0	14.0
b49	14	14	b49	30.0	14.0
b50	14	14	b50	30.0	14.0



CONTRACT NO. 3535

DATE: 4/15/36

APPROVED: [Signature]

DATE: [Signature]

APPROACH SPANS SECTION 4, 5, 6, 7, 8, 9, 10, 11

APPROACH SPANS OVER INTRA COASTAL WATERWAY BETWEEN WILMINGTON & WYOMING BEACH

STATE OF NORTH CAROLINA

STATE HIGHWAY AND PUBLIC WORKS COMMISSION

PROJECT 3535 NEW HANOVER COUNTY

L. O. HOPKINS

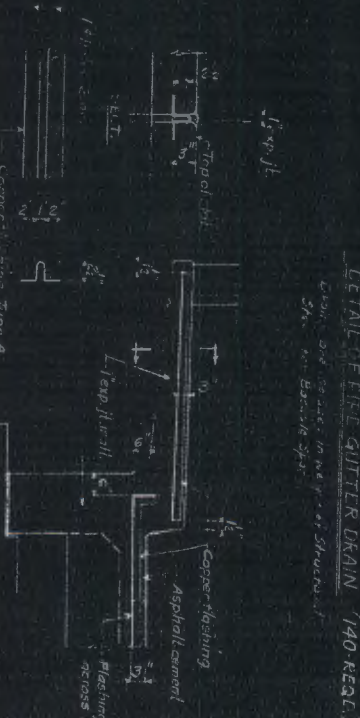
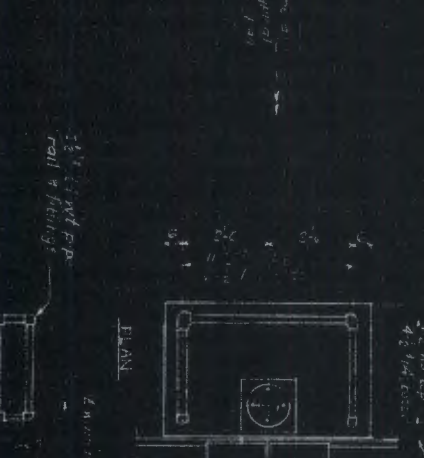
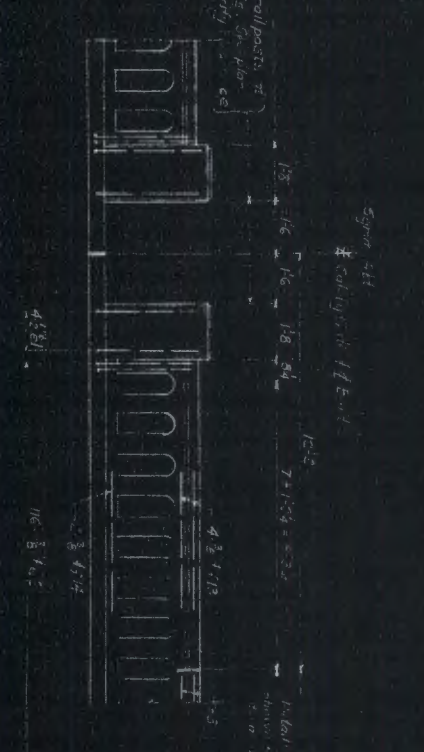
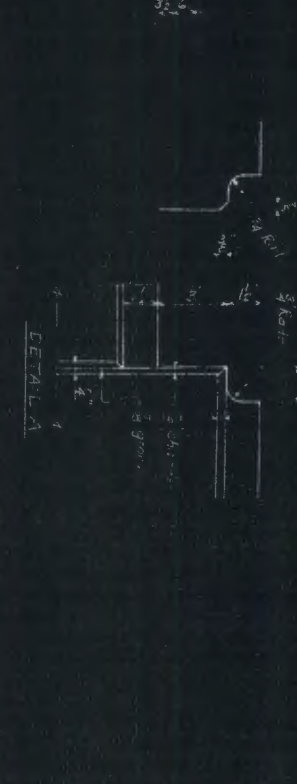
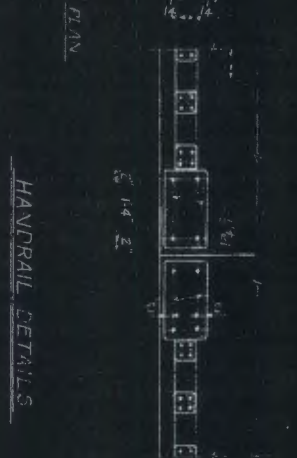
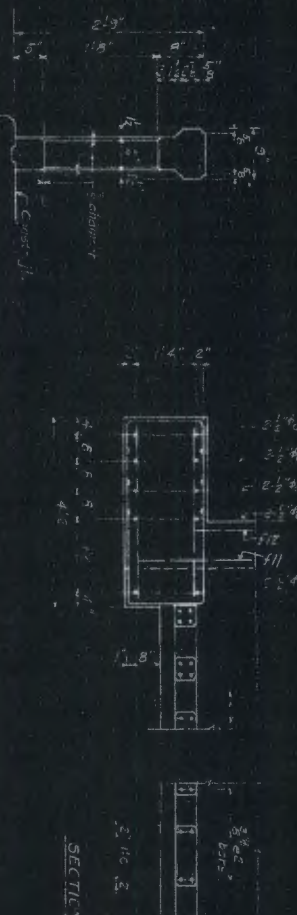
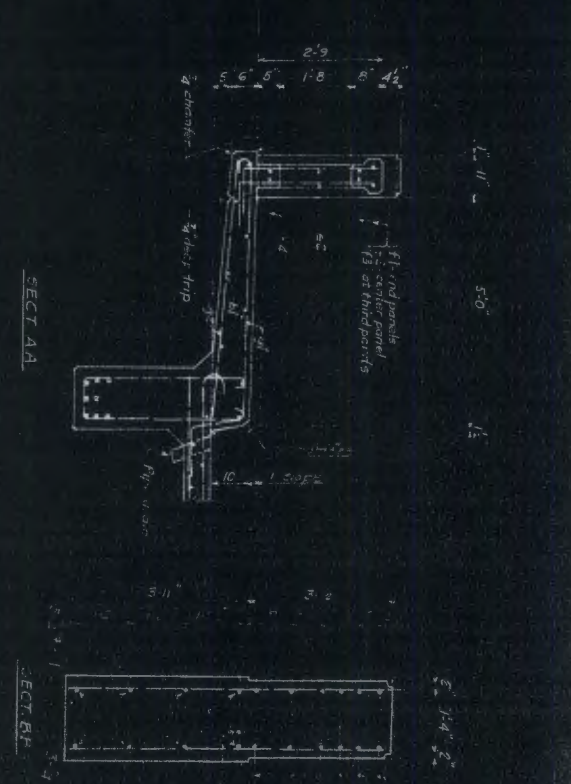
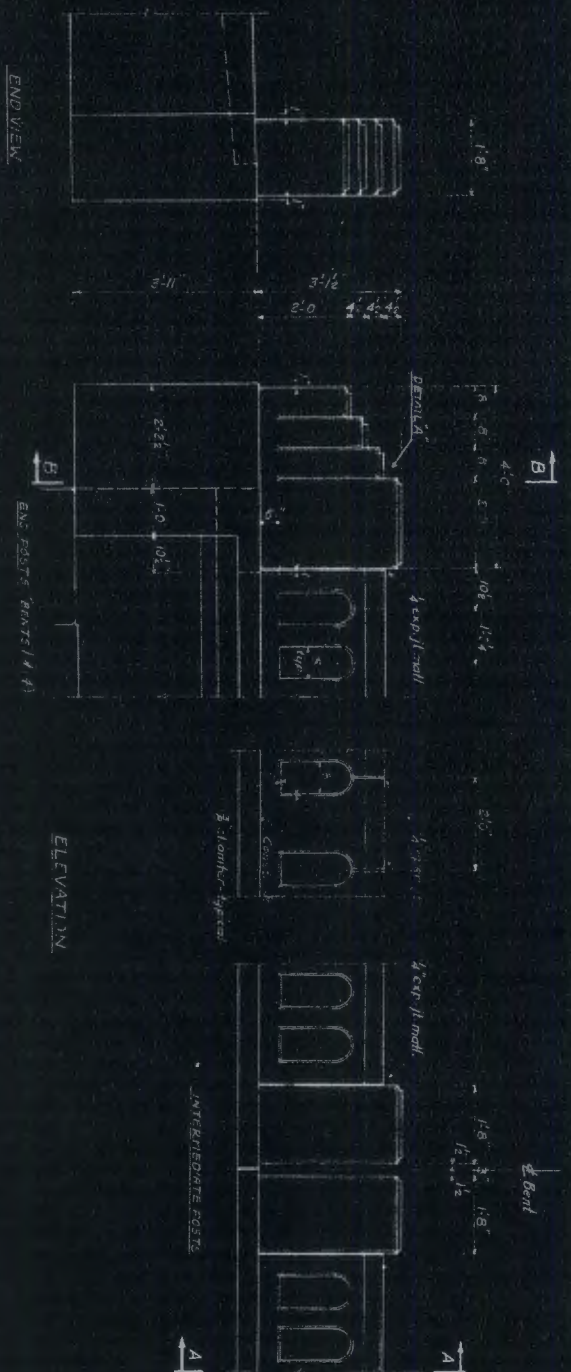
CONSULTING ENGINEER

NASHVILLE, TENN.

APPROVED: [Signature]

DATE: [Signature]

NO-1



20' apart between handrail posts. It  
all safety gate platforms. On plat-  
form & by facade. Kerby  
Panel for gates.

HANDBAIL DETAIL AT SAFETY GATE

HANDBAIL DETAILS

PLAN

ELEVATION

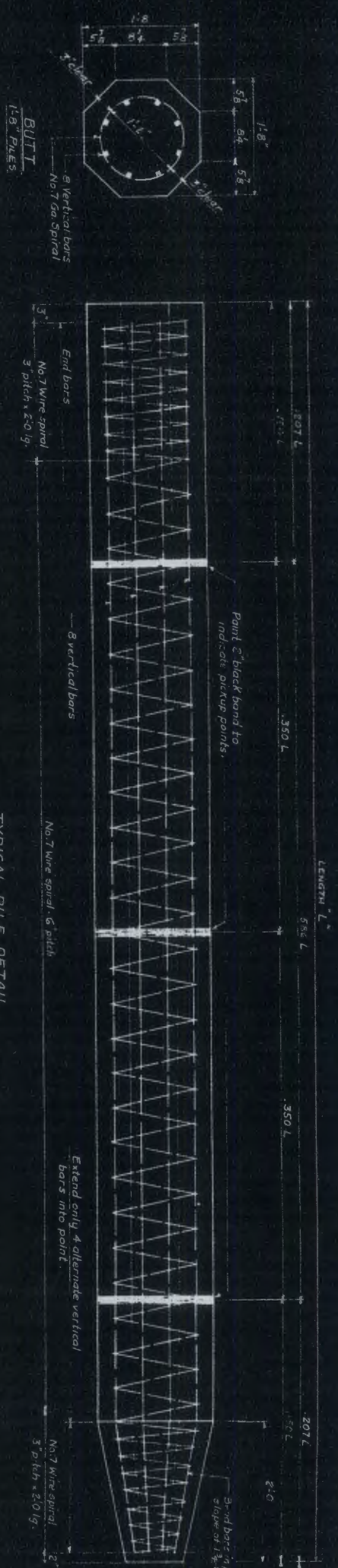
SECT AA

SECT BB

DETAIL OF FIRE GUTTER DRAIN (140-REAR)

APPROACH SPANS-HANDBAIL & MISC. DETAILS

BRIDGE OVER INTRA-COASTAL WATERWAY  
BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT 5535 NEW HANOVER COUNTY  
CONSULTING ENGINEER  
L. O. HOPKINS  
NASHVILLE, TENN.  
DRAWING NO. NC-1 9



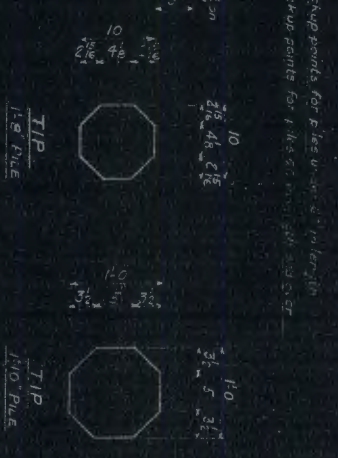
TYPICAL PILE DETAIL

QUANTITIES FOR ONE 1'-10" TYPICAL PILE

LENGTH	VERTICAL REINFORCING BARS	REINFORCING BARS	CONCRETE	PICKUP POINTS	WIRE SPIRAL
FT.	NO.	SIZE	CU YD.	NO.	NO.
60.0	24	#6	12.15	12	3
50.0	24	#6	10.15	10	3
40.0	24	#6	8.15	8	3
30.0	24	#6	6.15	6	3
20.0	24	#6	4.15	4	3
10.0	24	#6	2.15	2	3

QUANTITIES FOR ONE 1'-8" OCTAGONAL PILE

LENGTH	VERTICAL REINFORCING BARS	REINFORCING BARS	CONCRETE	PICKUP POINTS	WIRE SPIRAL
FT.	NO.	SIZE	CU YD.	NO.	NO.
60.0	24	#6	11.6	12	3
50.0	24	#6	9.6	10	3
40.0	24	#6	7.6	8	3
30.0	24	#6	5.6	6	3
20.0	24	#6	3.6	4	3
10.0	24	#6	1.6	2	3



SUMMARY OF PILES

ITEM	NO.	LENGTH	DIRECTION	CONCRETE	REINFORCING	PICKUP POINTS
		FT.		CU YD.	NO.	NO.
Bent I	10	60.0	497.0	121.5	24	12
Bent II	10	60.0	497.0	121.5	24	12
Bent III	10	60.0	497.0	121.5	24	12
Bent IV	10	60.0	497.0	121.5	24	12
Bent V	10	60.0	497.0	121.5	24	12
Bent VI	10	60.0	497.0	121.5	24	12
Bent VII	10	60.0	497.0	121.5	24	12
Bent VIII	10	60.0	497.0	121.5	24	12
Bent IX	10	60.0	497.0	121.5	24	12
Bent X	10	60.0	497.0	121.5	24	12



WELC DETAIL

**GENERAL NOTES**

Concrete shall be Class A

Reinforcing steel shall be deformed intermediate grade steel. Bar ends shall be hooked and lap splices shall be staggered. Lap splices shall be tied so as to prevent slippage.

In driving piles, a method approved by the Engineer shall be used whereby the pile head is not damaged.

Method of dampening shall be specified to all piles from the top of the pile to the stream bed or ground line as the case may be.

All material and workmanship shall be in accordance with the specifications of the North Carolina State Highway and Public Works Commission.

Four timber test piles shall be furnished and driven to determine actual lengths of concrete piles required. See sheet 4 for location.

Reference: For other general notes, materials and specs, see sheet 1.

APPROACH SPANS - PRECAST CONCRETE PILES  
 BRIDGE OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSWILE BEACH  
 STATE OF NORTH CAROLINA  
 PROJECT 3535 - NEW HANNOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER  
 NASHVILLE, TENN.

DATE	NOV 10
BY	L.O.H.
CHECKED	L.O.H.
APPROVED	L.O.H.

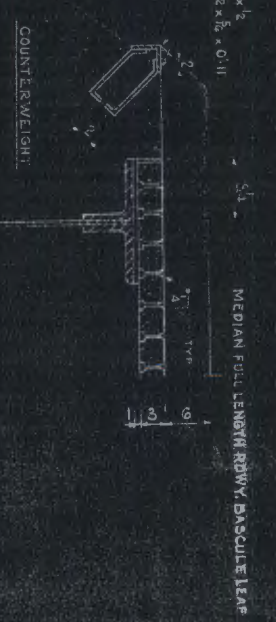
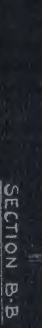
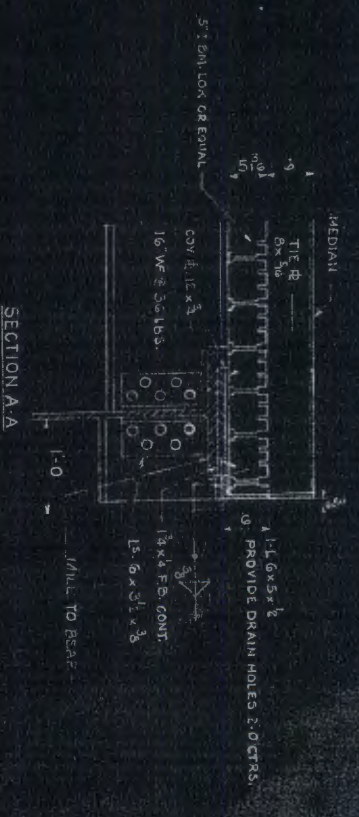


**GIRDER MOMENT TABLE FT/LBS**

POINT	D.L.	L.L.	IMP.	TOTAL
0	4654.0	9308.0	5751.8	19713.8
1S	3178.4	6356.8	8010.0	17545.2
1	3214.6	6429.2	7815.0	17458.8
2	1492.8	2985.6	3800.0	8198.4
3	34.1	68.2	511.0	615.3
4	0	0	34.8	34.8
C	1500.0	3000.0	1800.0	6300.0

**STEEL BRIDGE FLOOR**  
 STEEL BRIDGE FLOOR SHALL BE STEEL (S-OR-EQUAL) EXCEPT OVER MACHINERY AREA WHERE STEEL LOCK (OR EQUAL) SHALL BE USED. THE COST OF CONCRETE (CLASS A) FOR THE 3" AROUND FLOOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR STEEL ROADWAY FLOOR.

ALL ROADWAY STRINGERS  
 16 WF 36"  
 FOR CURB, DETAIL AND SIDE-WALK 2" X 6" FT. SEE DWG. 118



**GENERAL NOTE**  
 GENERAL REVISIONS WILL BE REQUIRED FOR THE MAIN STRUCTURE TRUSS, GIRDER, AND WEAR SURF, RAIL, AND CURB AND SIDEWALKS. SEE SHEET 118 FOR REVISIONS.

**LOADING - HAS-512 - 44**  
 SPECIFICATIONS - ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH A.A. HEDCO SPECIFICATIONS. 1955 EDITION THE NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE, AND THE A.A. HEDCO SPECIFICATION FOR MOVABLE BRIDGES. 1955 EDITION.

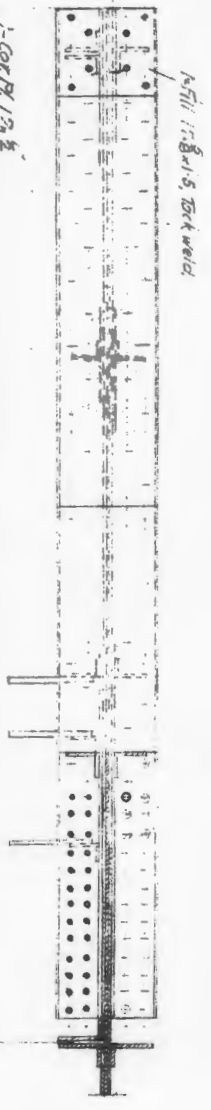
**STRESS SHEET & MISU DETAILS**

HOPKINS TRUSSON BASCULE SPAN  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WINDSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 PROJECT 3535 - NEW HANOVER COUNTY  
 CONSULTING ENGINEER  
 L. O. HOPKINS  
 NASHVILLE, TENN.

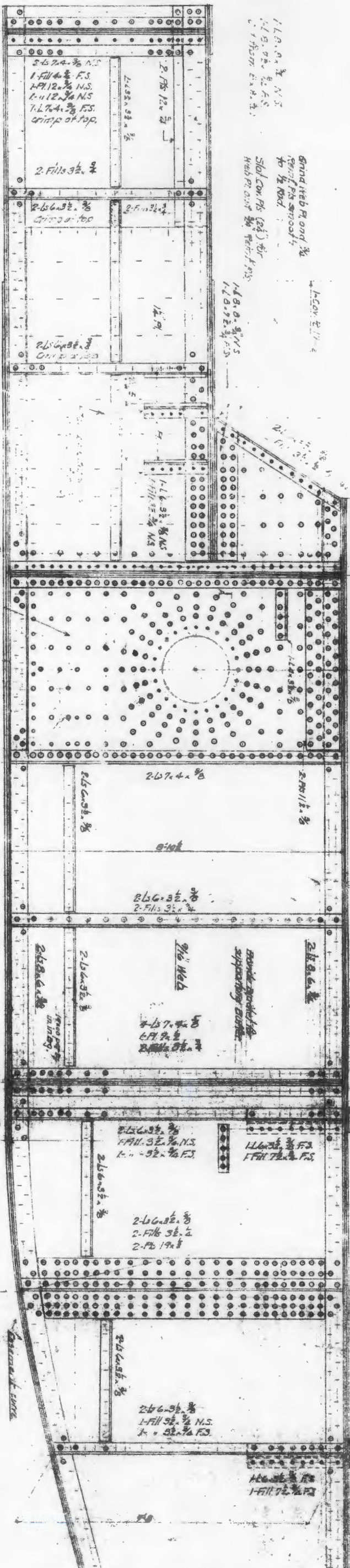
DESIGNED BY	DATE	APPROVED BY	DATE
172	10/2	11	10/2

VERTICAL SCALE  
 MOMENT 1" = 20,000 FT-LBS

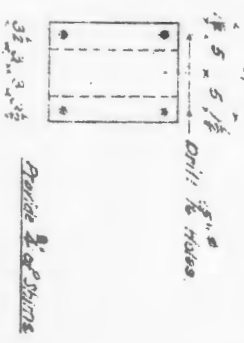
FINAL OUTLINE OF COUNTERWEIGHT AND UNIT WEIGHT OF CONCRETE TO BE DETAIL DRAWING MADE FROM THE APPROVED SHOP DETAIL DRAWINGS.



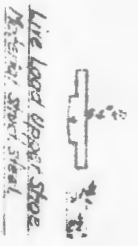
Section A-A



Slot detail  
Finish this side



Splice detail



Line load upper shoe  
Use 3/4" x 3" x 3/4" steel

Boat hole 8" x 12" x 1/2"  
At every 4 ft.  
Drill 5/8" holes for turn bolts  
to match Rivulation details.  
Dimensions to be shipped assembled  
in 4 pieces.

Revised to slot cover pl. inward of the rivet side pl. on full section.  
RFE 4-21-84 LRS

Revised to make roof RS continuous over V.L.D. L-11-82

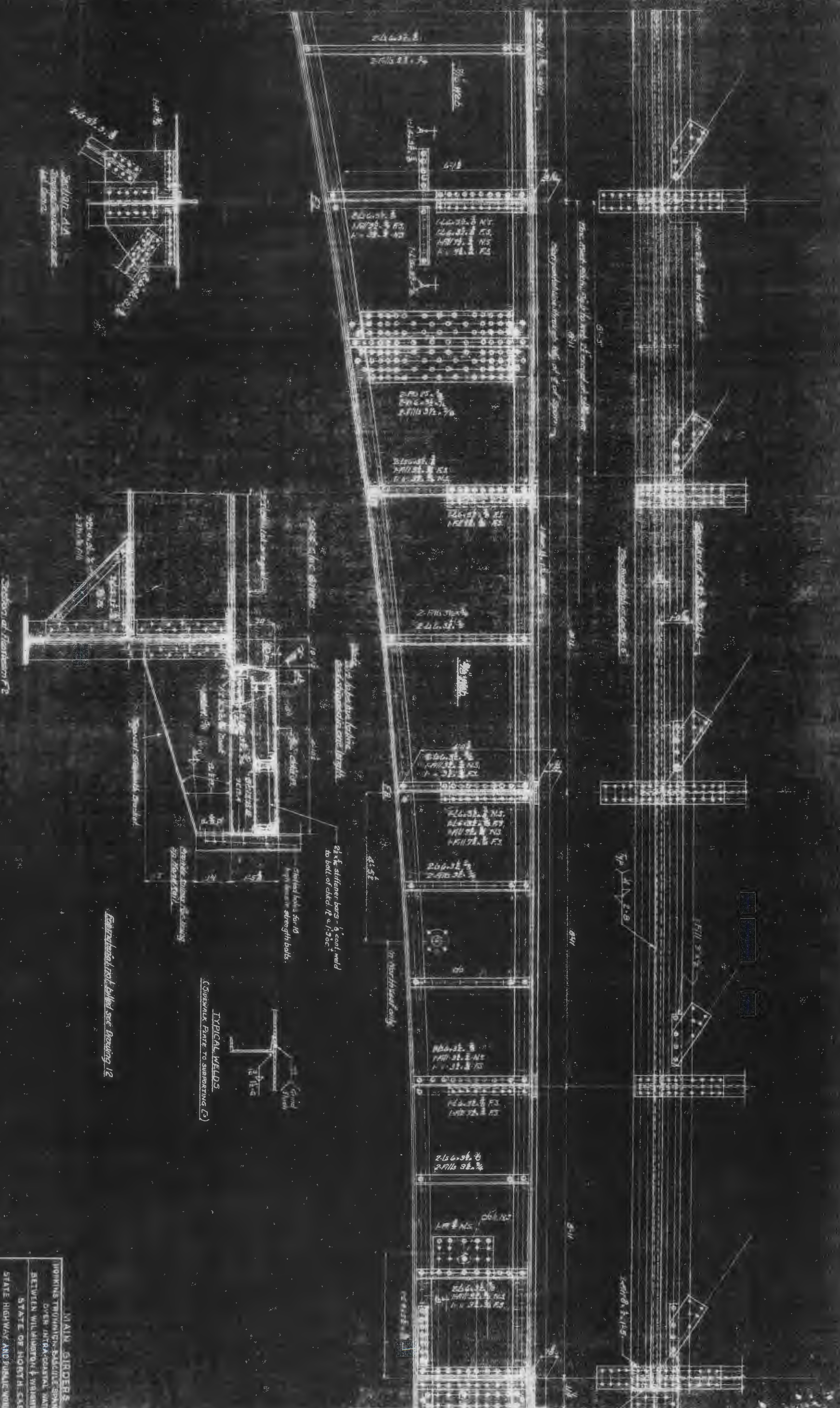
Revised to weld reinforcing plates 3' x 4' on other side of RS.

Note: Rivets should be spaced  
5' on center and ground in  
slots.

All rivets to be spaced  
5' on center. Rivets in  
slots to be spaced 45" on  
center.

For remainder of girder see Drawing 12

HO PRINCE ENGINEERING ASSOCIATES INC. 272415 OVER INTRA-COMM. WINTERWAY BETWEEN WILMINGTON & WINDYVILLE BEACH STATE OF NORTH CAROLINA	
PROJECT 8558 NEW MADONIA COUNTRY A. O. WRIGHT	
CONSULTING ENGINEER	NASHVILLE, TENN.
DATE 2/11/84	SCALE 1/8" = 1'-0"
DRW 2/11/84	NO. NC-112



**MAIN GIRDERS**

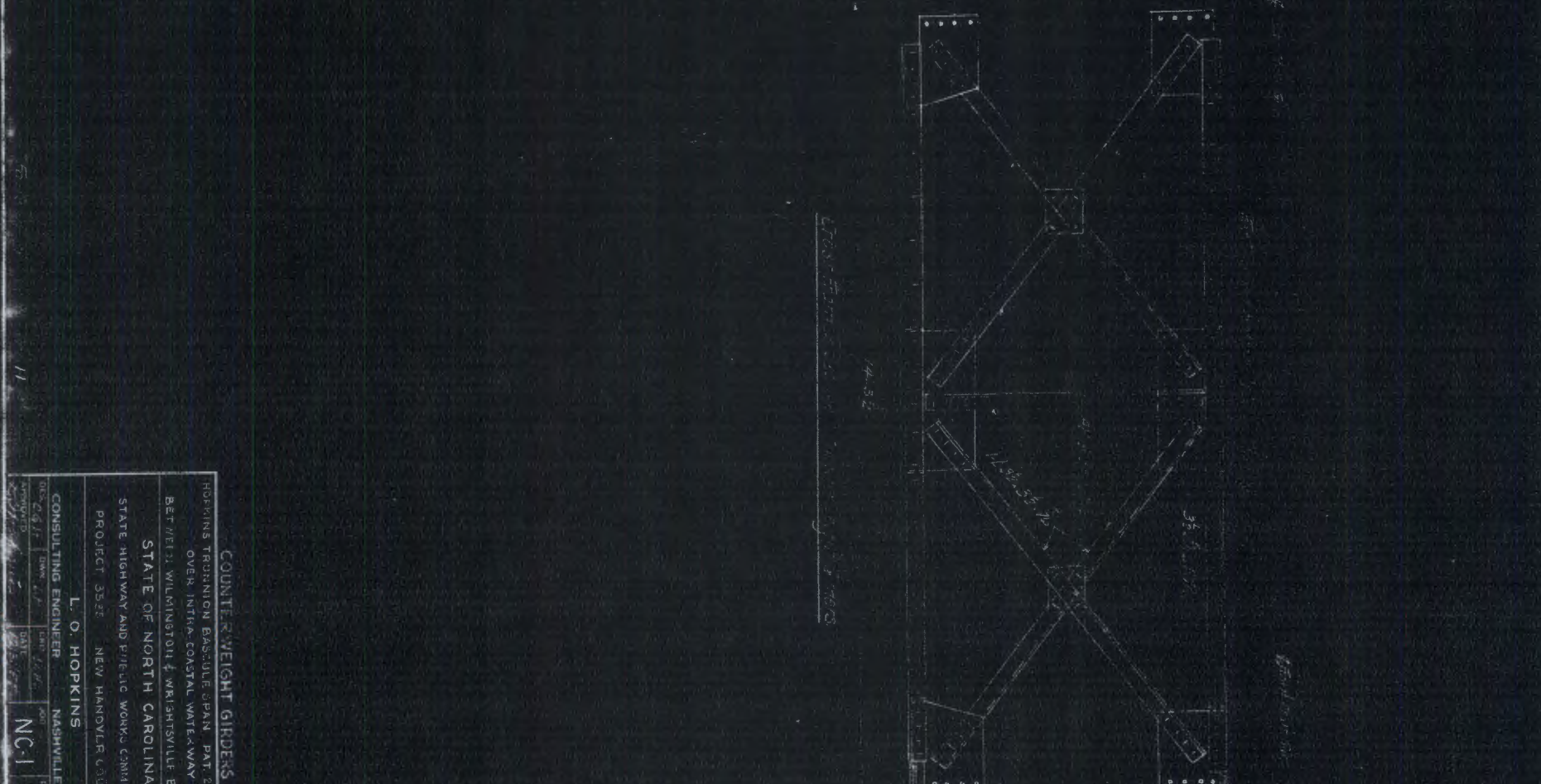
MORGAN TRUSS-BOX GIRDER SPAN 241 FT. OVER INTRA-COASTAL WATERWAY BETWEEN WILMINGTON & WASHINGTON, STATE OF NORTH CAROLINA

STATE HIGHWAY AND PUBLIC WORKS DEPARTMENT PROJECT 2333 NEW HANOVER COUNTY

L. O. HOPKINS

CONSTRUCTION ENGINEER

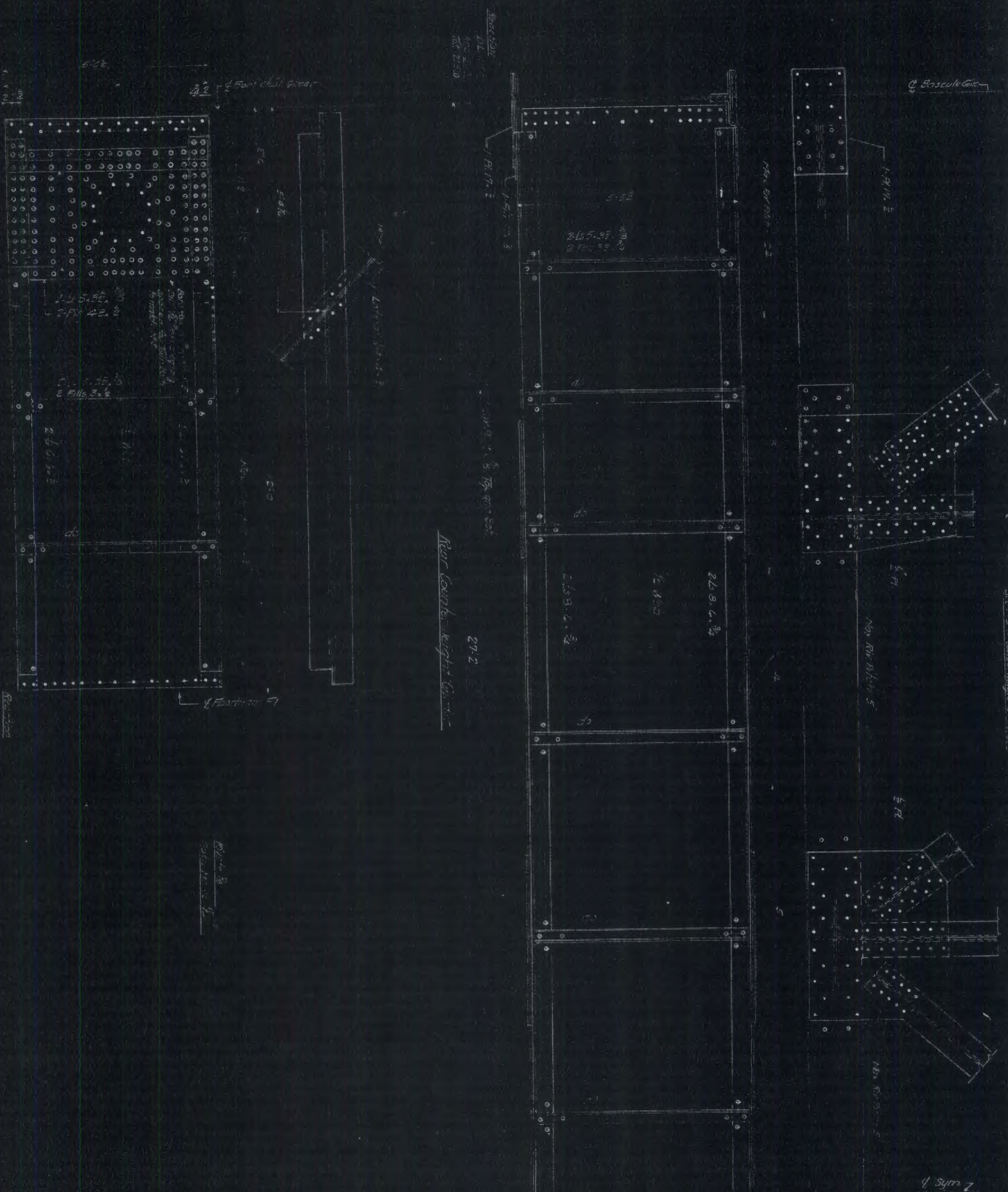
NEW HANOVER COUNTY



COUNTY WEIGHT GIRDERS  
 HOPKINS TRUSSION BAS-SULE OPEN PAT. 2721125  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 PROJECT 3532 NEW HANOVER COUNTY

**L. O. HOPKINS**  
 CONSULTING ENGINEER NASHVILLE, TENN.  
 DES. C.S.H. DRAW. C.H. DATE 1/21/34  
 APPROVED: [Signature]

NC-1 14



Revised  
DL 2/27/33  
704 2153

Revised  
DL 2/27/33  
704 2153

Revised  
DL 2/27/33  
704 2153

COUNTERWEIGHT & THRU-NION GIRDERS

BRIDGE OVER INTRA-COASTAL WATERWAY  
BETWEEN WILMINGTON & WRIGHTVILLE BEACH

STATE OF NORTH CAROLINA

STATE HIGHWAY AND PUBLIC WORKS COMMISSION

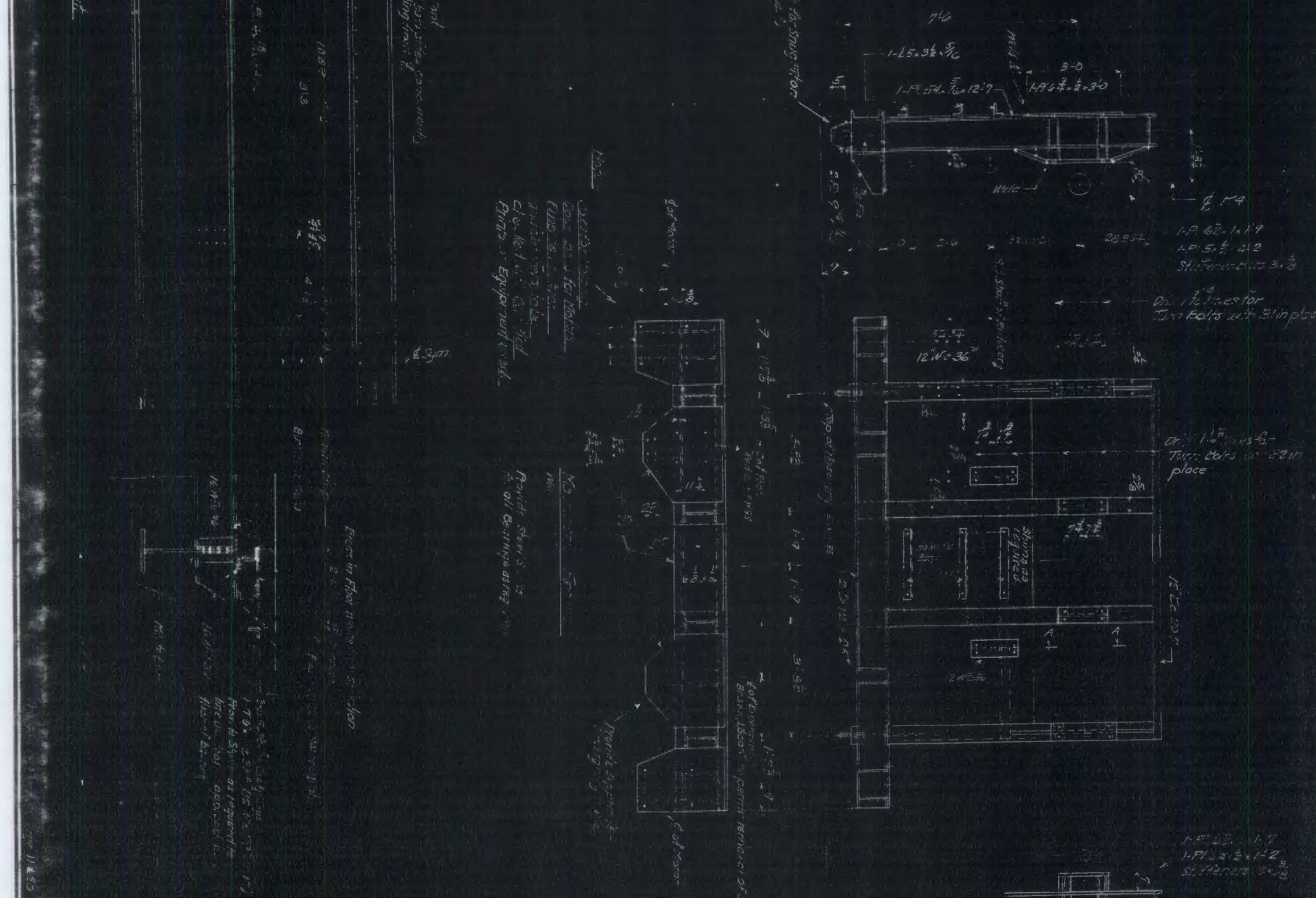
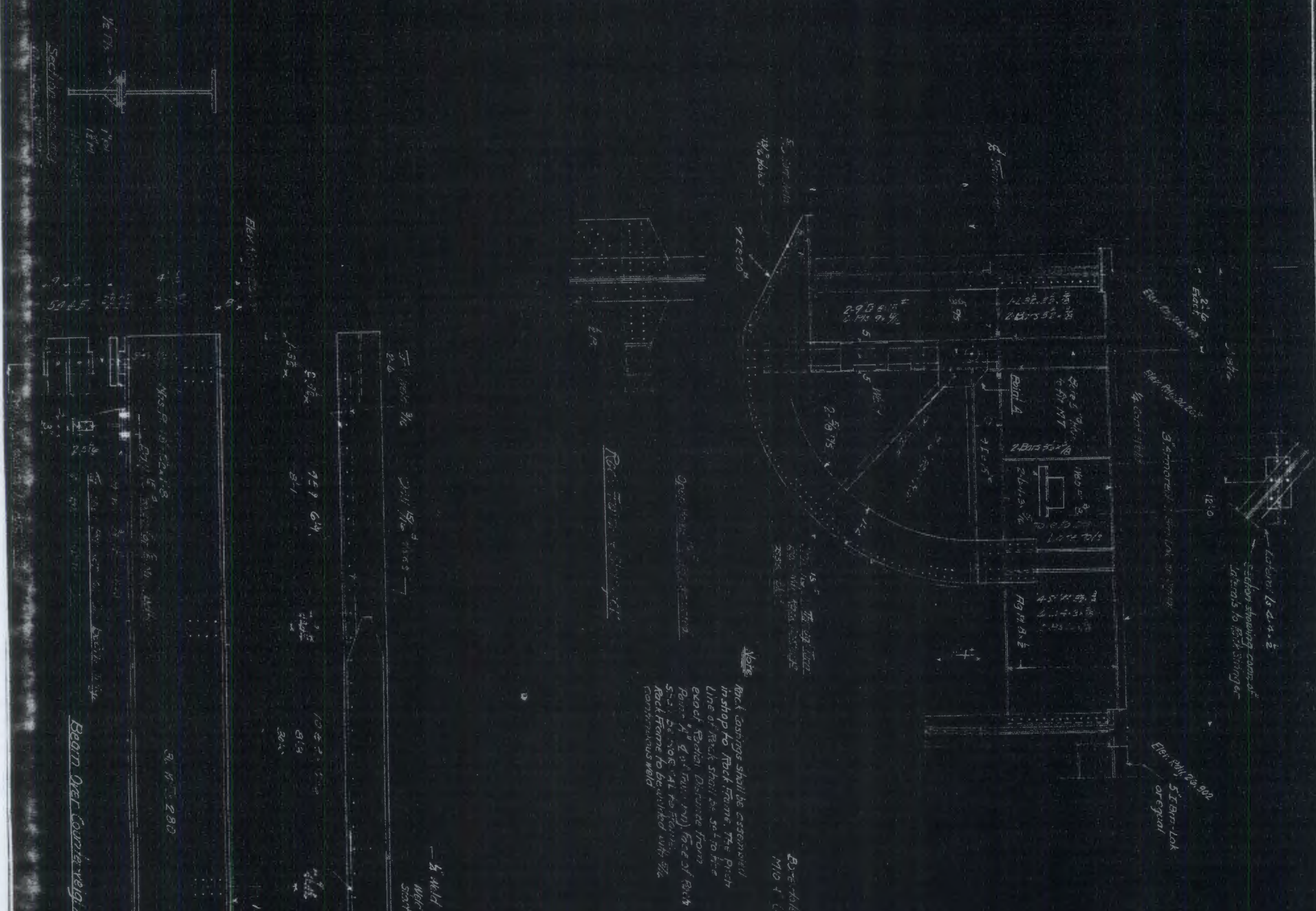
PROJECT 3595 NEW HANOVER COUNTY

CONSULTING ENGINEER  
L. O. HOPKINS  
NASHVILLE, TENN.

DATE ASSIGNED	DATE COMPLETED	DATE
1/1/33	1/1/33	1/1/33

NC-1 15



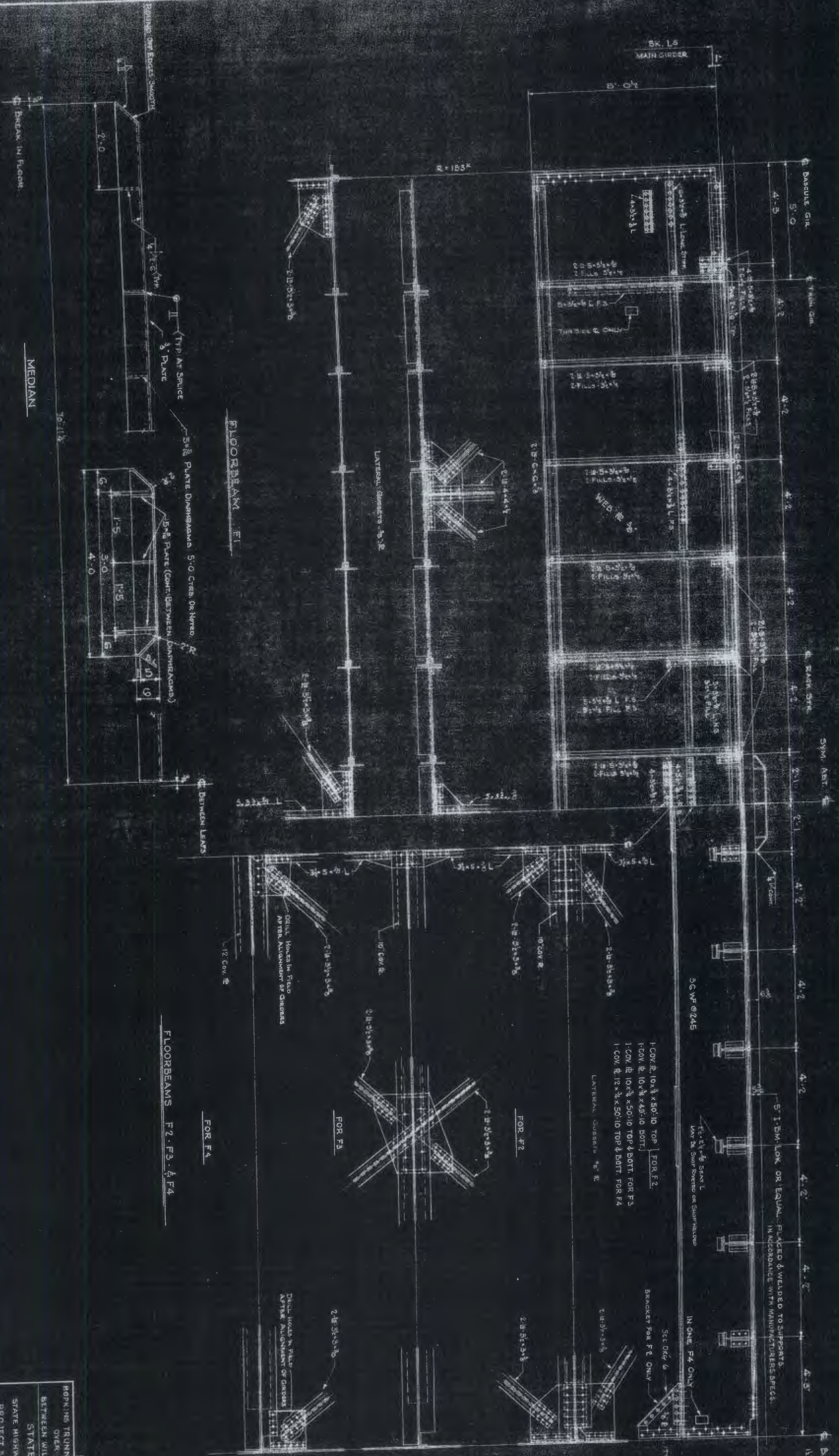


BEANS OVER COUNTERWEIGHT  
 RACK FRAME & MACH. FRAME  
 HOPKINS TUNNION SACQUEE SPAN PAT. 2724135  
 OVER INTRA COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 553E NEW HANOVER COUNTY

L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.

DATE	BY	CHKD.	APP'D.
1-17-54	L. O. H.		
1-20-54			

NC-1 16



MEDIAN

FLOORBEAM F1

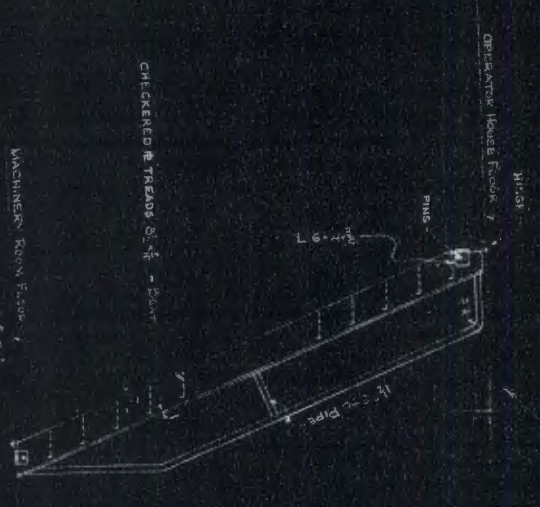
FLOORBEAMS F2, F3, & F4

FLOORBEAMS

See General Note see Dwg. II

HOPKINS TRUNNION BASCULE SPAN PAT. 27411	
OVER INTER-COASTAL WATERWAY	
BETWEEN WILKINSON & WRIGHTVILLE BRAC	
STATE OF NORTH CAROLINA	
STATE HIGHWAY AND PUBLIC WORKS COMMISSION	
PROJECT 593 NEW HANOVER COUNTY	
L. O. HOPKINS	
CONSULTING ENGINEER	ROSELAND, N.C.
DATE: 10/27/50	SCALE: AS SHOWN
DRW: C.G.H.	CHK: L.H.
APP: [Signature]	NC-1

HATCH OPENING 21' x 8' 6" CLEAR - 3' x 3' 4" L FRAME - 4" CHECKERED B. HINGED ONE END, PROVIDE LIFTING HANDLE (TO SET FLUSH WITH TOP OF CHECKERED B. WHEN NOT IN USE) AND LOCKING DEVICE TO HOLD COVER IN OPEN POSITION WHEN HATCH IS OPENED.

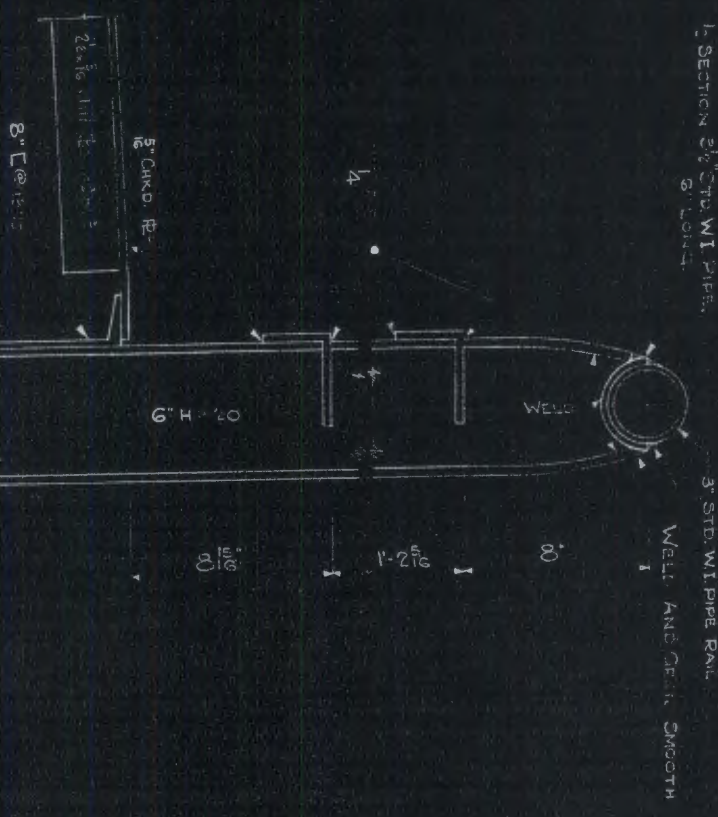
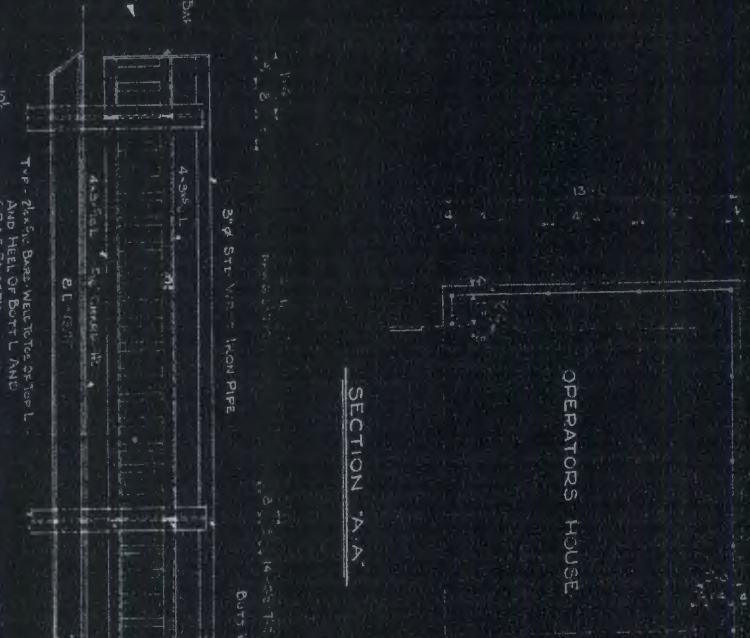
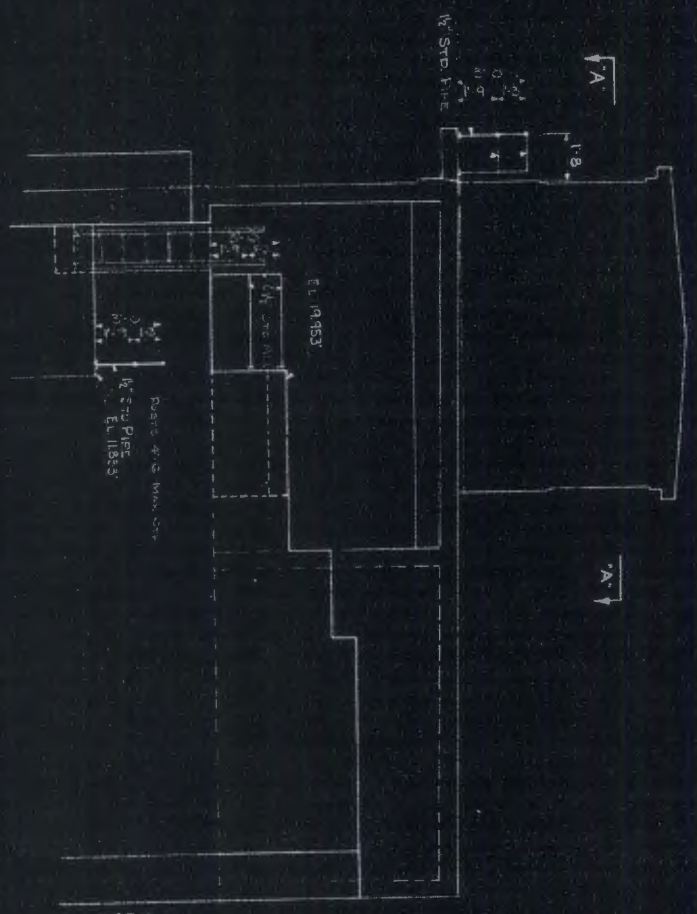


PROVIDE HINGE PIN TOP & BOTT. FOR EASY REMOVAL.

SHIP LADDER FOR MAINTENANCE ROOM, INTER OPERATORS HOUSE

(INDICATED ON DRAWING FOR EASY REMOVAL)

TYPICAL SECTION SHOWING LOCATION OF PIPE HANDRAILS



TYPICAL HANDRAIL DETAIL

FOR GENERAL NOTE: SEE DWG. 11

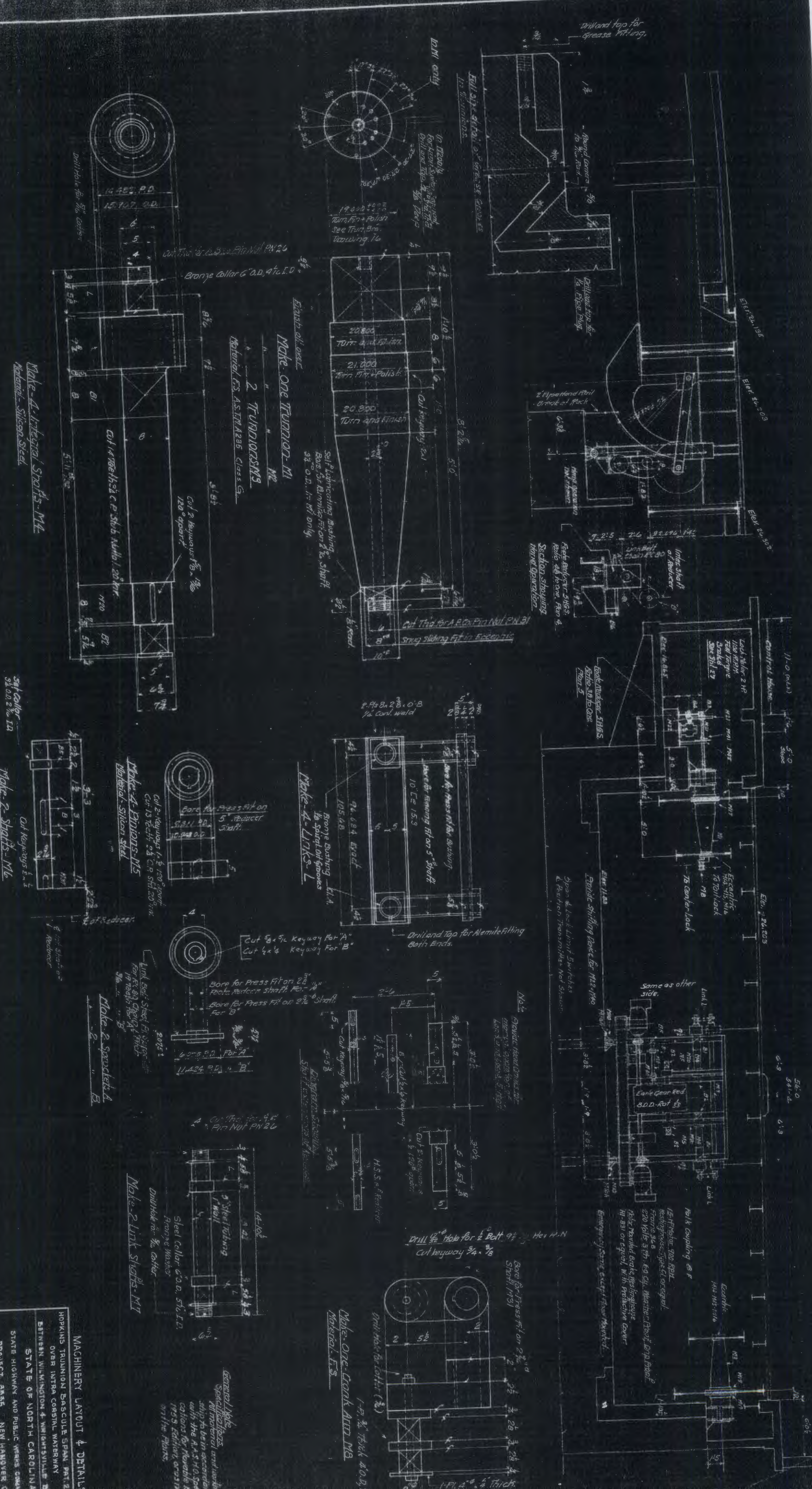
**HANDRAIL & SHIP LADDER**

HOPKINS TRUNNION BASCOLE SHAN PAT 2724135  
 OVER INTRA COASTAL WATERWAY  
 BETWEEN WILMINGTON & WASHINGTON BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER  
 NASHVILLE, TENN.

DATE: 6/24/55  
 DRAWN: E.H.H.  
 CHECKED: L.H.H.  
 APPROVED: L.O.H.

NC-118

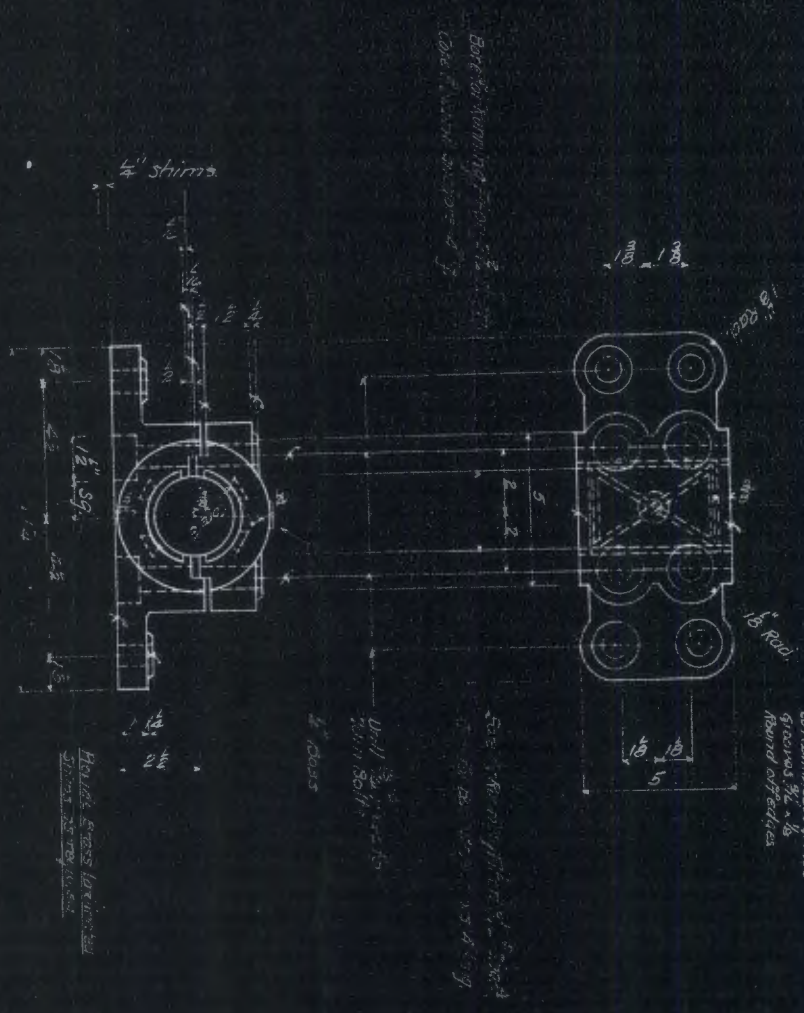




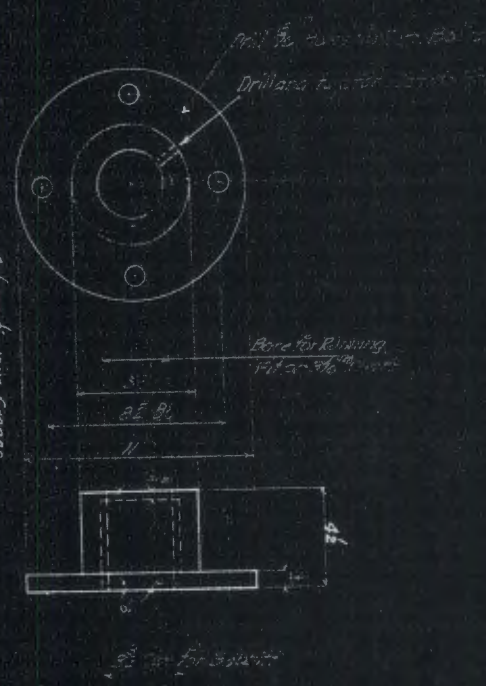
**MACHINERY LAYOUT & DETAILS**  
 HOPKINS TRIUNION BASCULE SPAN, PRT. 2724125  
 OVER INTRA COASTAL WATERWAY  
 BETWEEN WILMINGTON & WILMINGTON, DELAWARE  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.  
 DATE: 11/1/51  
 DRAWN BY: C.H.  
 CHECKED BY: N.C.I.  
 SCALE: 20

Drill and ream for diametric fitting

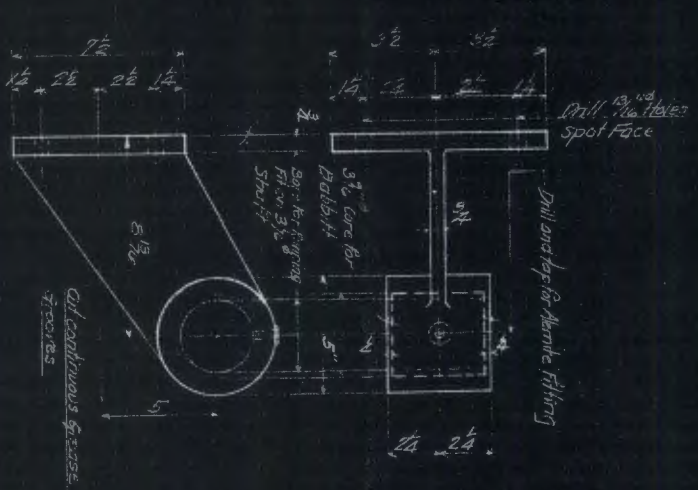
Oil continuous grease groove  $\frac{3}{16}$  Round off edges



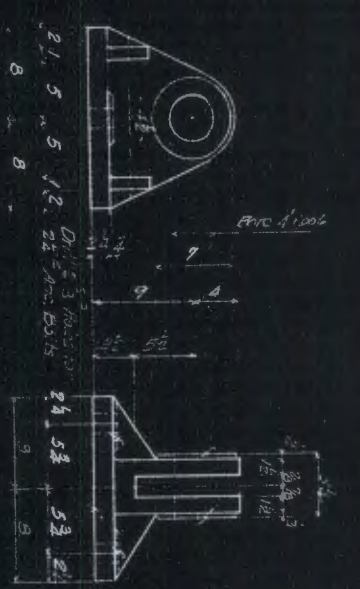
Make One Bearing B3 Material: CS Babcock Sizing



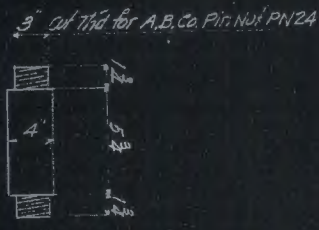
Make 8 Bushings B7 Material: CS Babcock Sizing



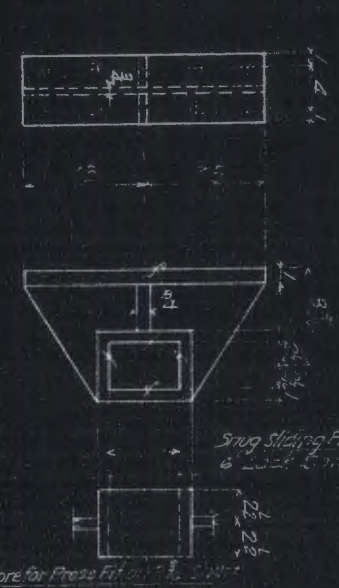
Make 9 Bearings B6 Material: CS



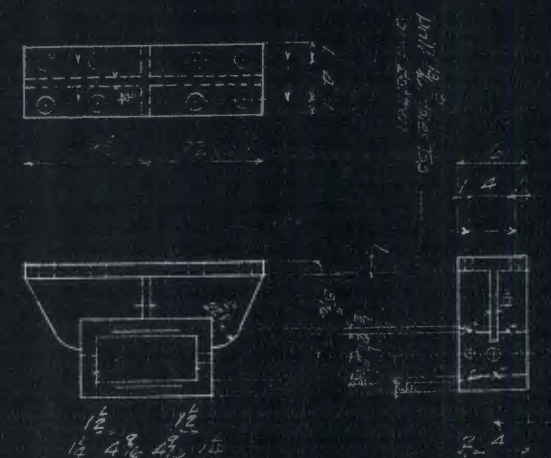
Make 4 Machinery Feet Shoes M12 Material: CS



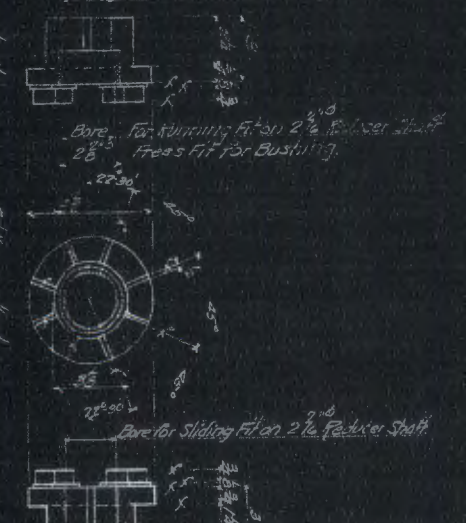
Make 4 Shoe Pins M10A Material: CS



Make 4 Center Lock Couplings M15 Material: CS



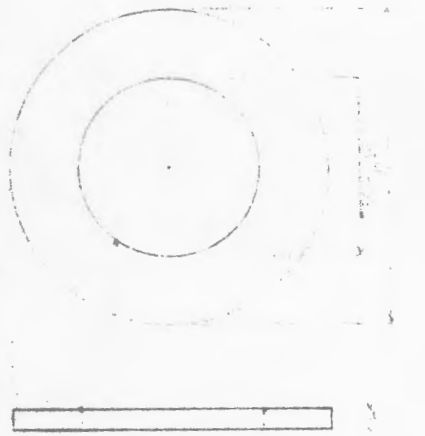
Make 2 Center Lock Couplings M12 Material: CS



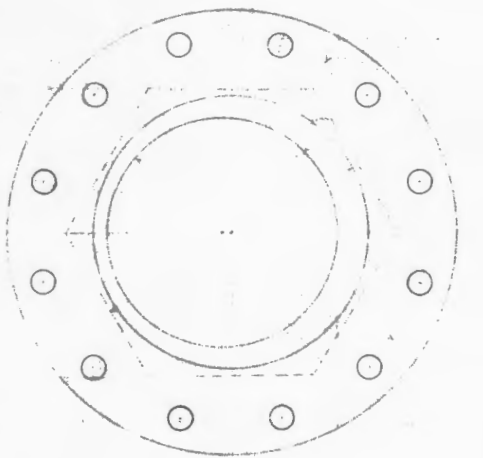
Make 2 Complete Couplings M40 Material: CS

MACHINERY DETAILS

HOPKINS TRONUNION BASQUE SPAN PAT 272413 OVER INTRA-COASTAL WATERWAY BETWEEN WILMINGTON & BRIGHTSVILLE BEACH STATE OF NORTH CAROLINA STATE HIGHWAY AND PUBLIC WORKS COMMISSION PROJECT 3535 NEW HAMOVER COUNTY L. O. HOPKINS CONSULTING ENGINEER NASHVILLE, TENN



Round off edge to 5/8" Rad.

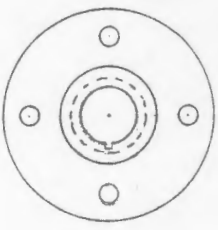
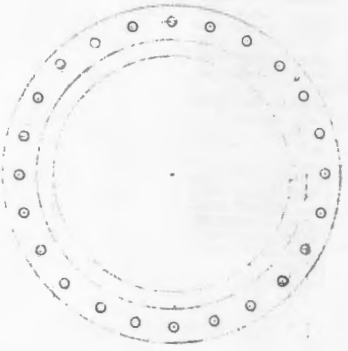


Round off edge to 5/8" Rad.

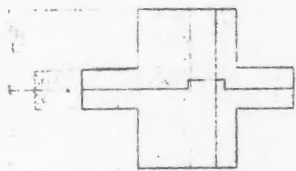


Note: ...

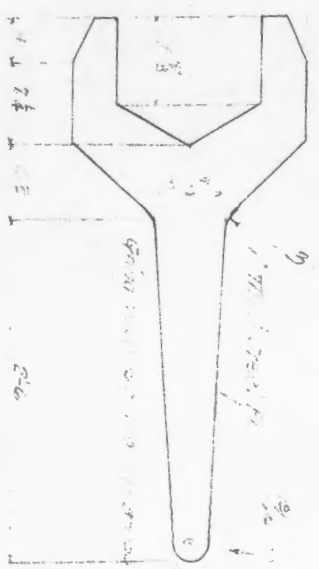
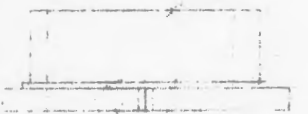
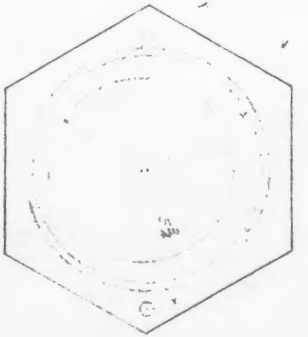
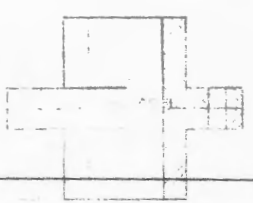
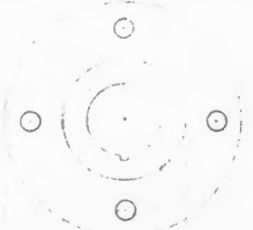
Note: ...



Note: ...



Note: ...

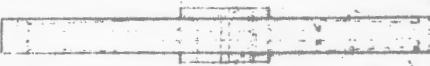


Note: ...

Note: ...

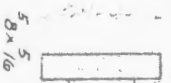


Note: ...



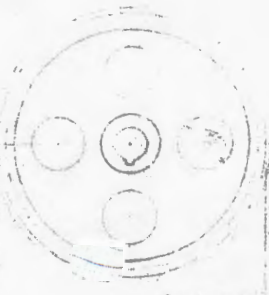
Note: ...

Note: ...



Note: ...

Note: ...



23,500 P.S.  
24,000 Q.S.



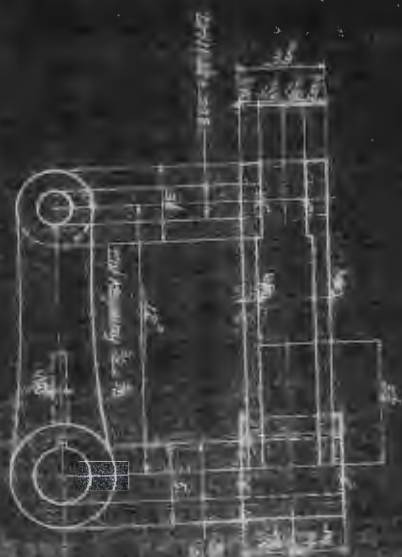
MACHINERY DETAILS

HOPKINS TRUNNION BASCULE SPAN  
OVER INTER-STATE WATERWAY  
BETWEEN WILMINGTON & WRIGHTVILLE BEACH  
STATE OF NORTH CAROLINA  
PROJECT 3535 NEW HANOVER COUNTY

DESIGNED BY	L. O. HOPKINS
CHECKED BY	NASHVILLE, TENN.
DATE	12/5/57
PROJECT NO.	NC-1
DRAWING NO.	22







Make One Shaft MS2  
Method: CS



Make One Shaft MS3  
Method: CS



Make One Shaft MS4  
Method: CS



Make One Shaft MS5  
Method: CS

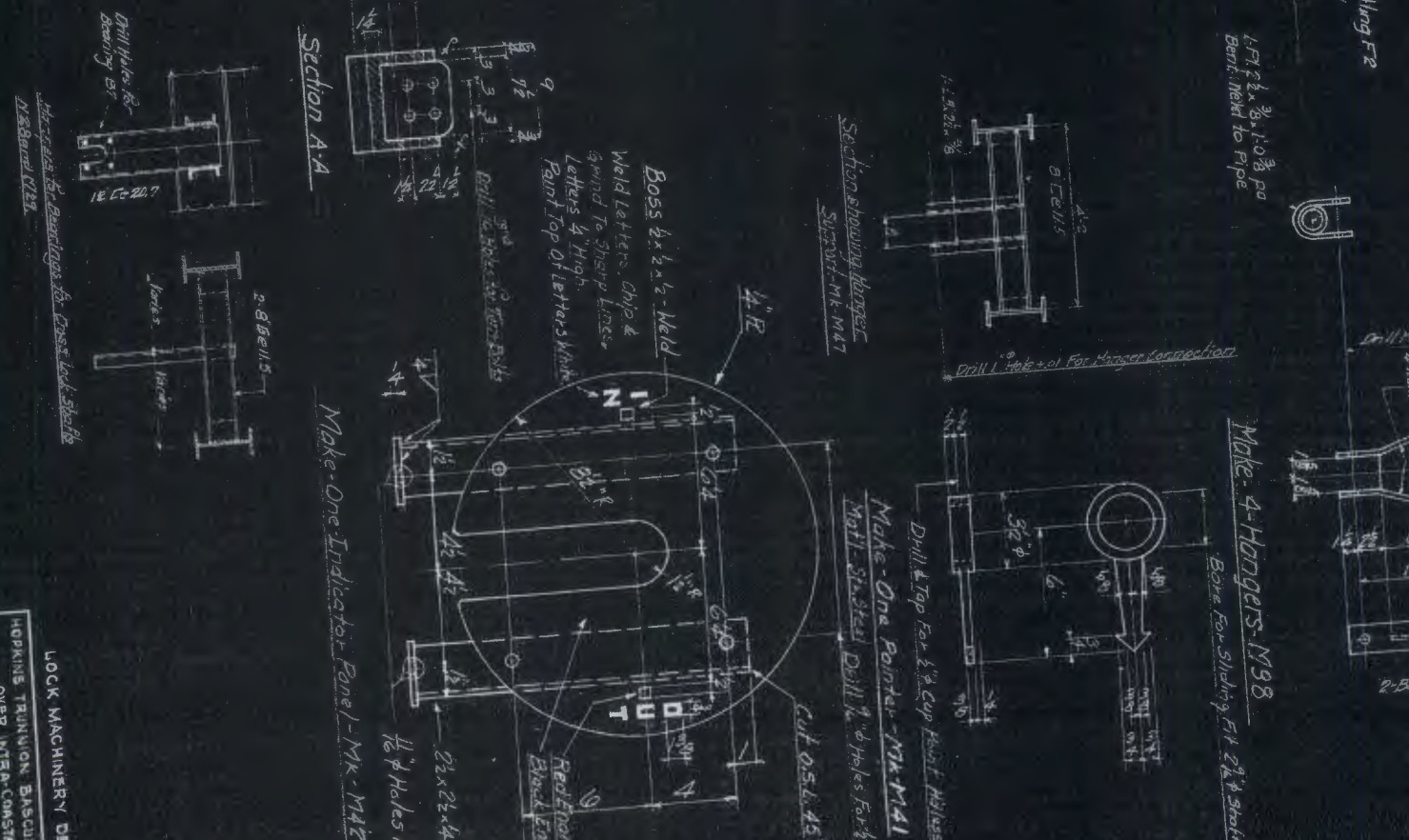
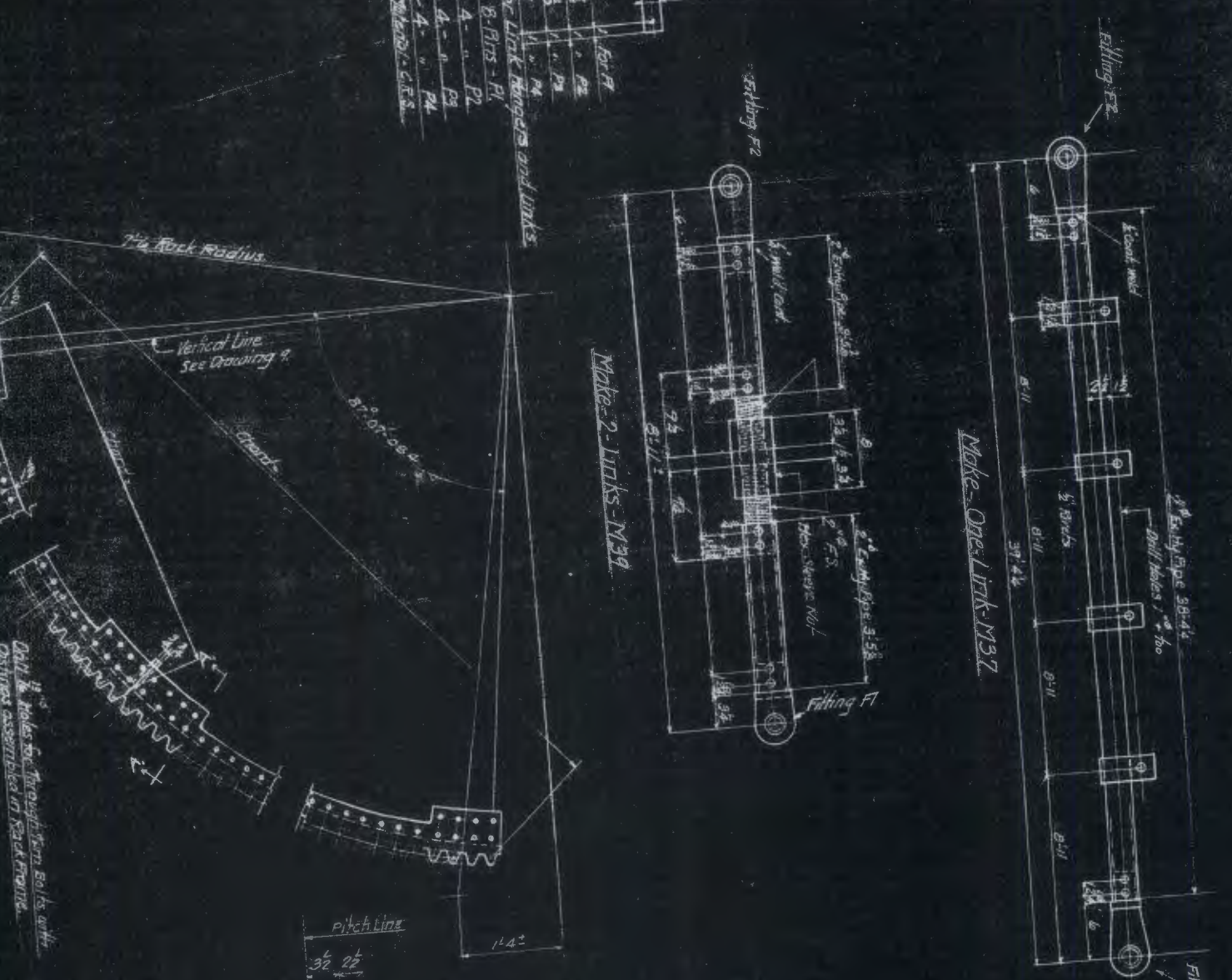
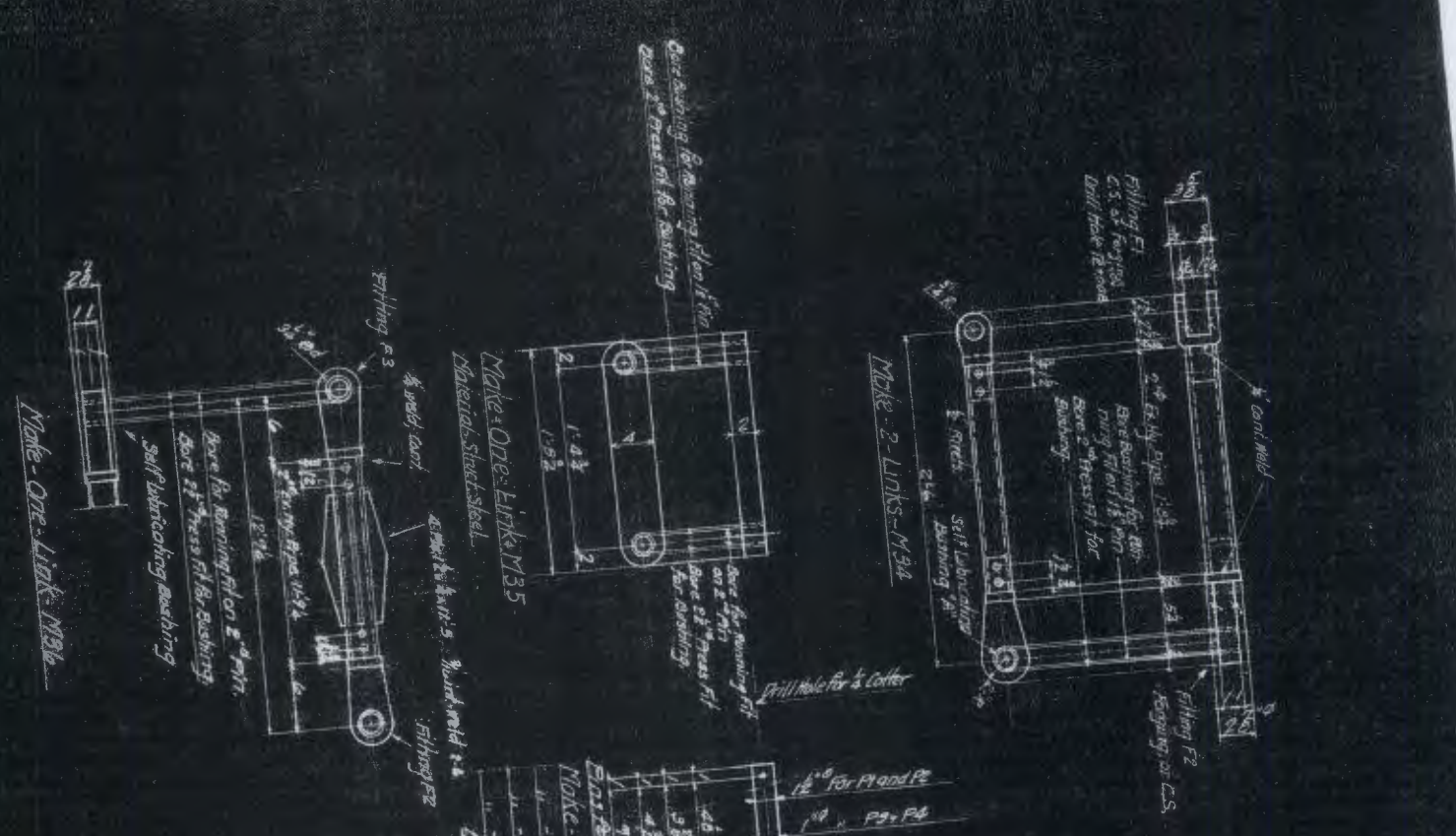


Make One Shaft MS6  
Method: CS

See drawing sheets 10/11/12/13

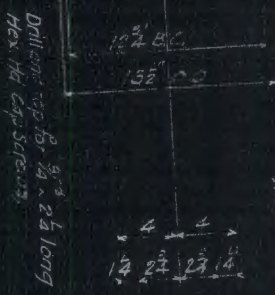
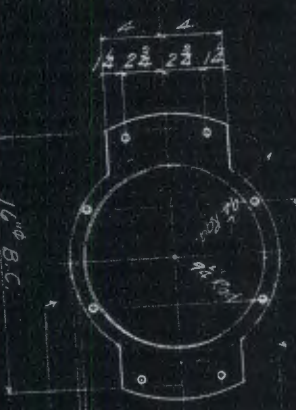
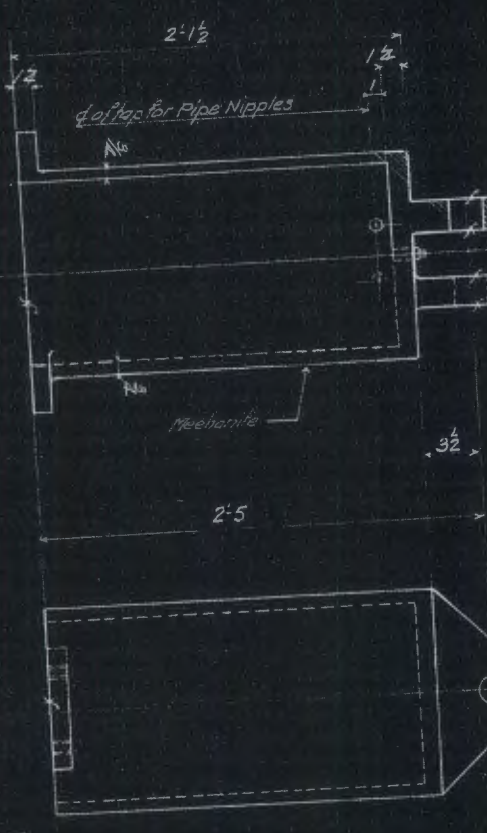
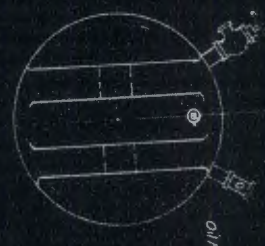
LOCK MECHANISMS: CYLINDRICAL  
OPERATING FROM THE EXTERIOR. STAY  
CLOSE TO THE LOCKING MECHANISM  
WHEN OPERATING. DO NOT ATTEMPT  
TO FORCE THE LOCK. IF THE LOCK  
DOES NOT OPERATE, CONTACT THE  
PROPERTY OFFICE FOR ASSISTANCE.  
DO NOT ATTEMPT TO REPAIR THE  
LOCK MECHANISM.

FORRELLING  
ENGINEERING  
INCORPORATED  
1155  
N. 1ST ST.  
DENVER, CO 80202

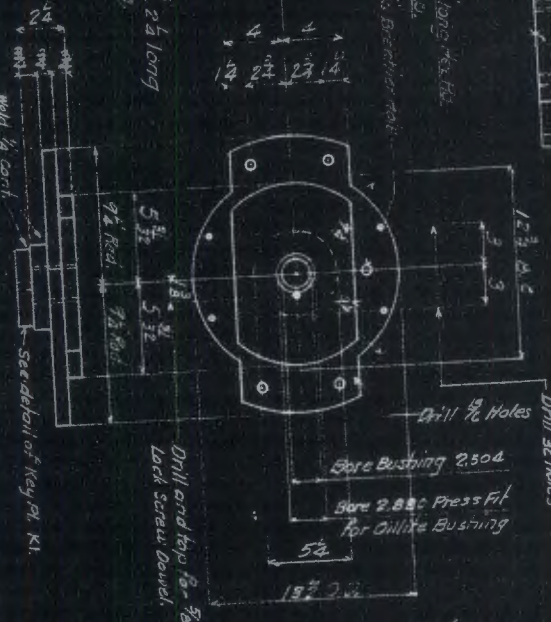


LOCK MACHINERY DETAILS & RACK  
 HOPKINS TRUNNION BASCULE SPAN, Pkt. 2172  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTVILLE SEAS  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANGERS, CON  
 L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE  
 NC-1

One Case 1/2" Check Valve - Ball Valve  
 " " Needle Point - Angle Valve  
 Drill and tap for 1/2" hole - with 3/4" High Pipe Plug  
 " " 2 3/4" Steel Pipe Nipples 2 1/2" long

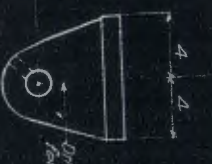
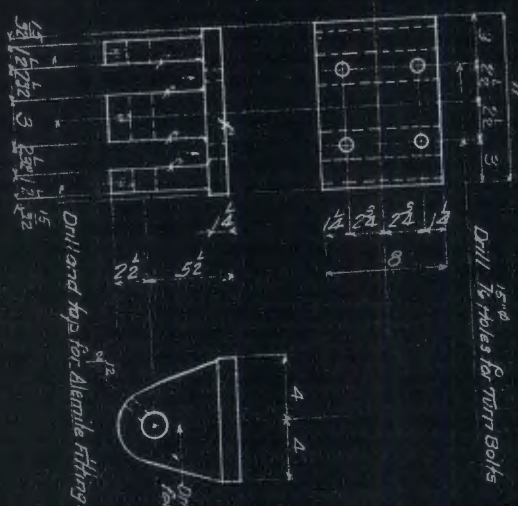


center girders and bracing

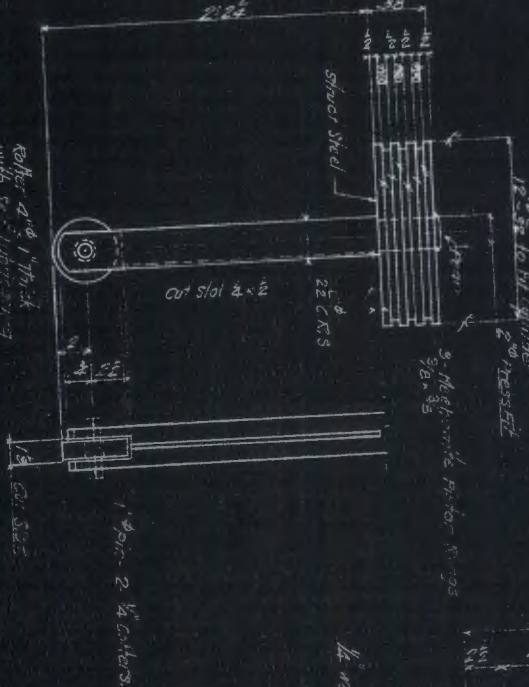


Detail of Key PL K1

spot force

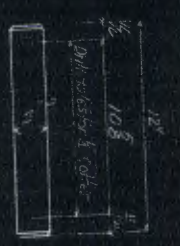
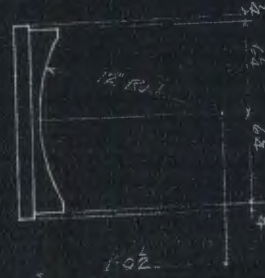
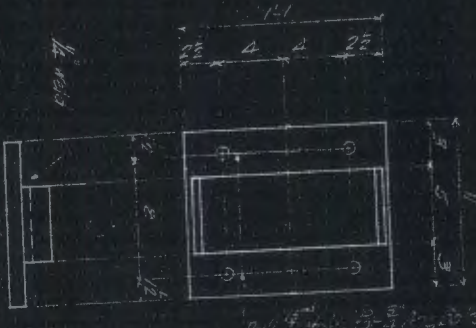


Buffer Hanger  
Material - 3/4" dia. steel  
Key PL Steel, 1/2" dia. steel



Buffer  
Material - 3/4" dia. steel

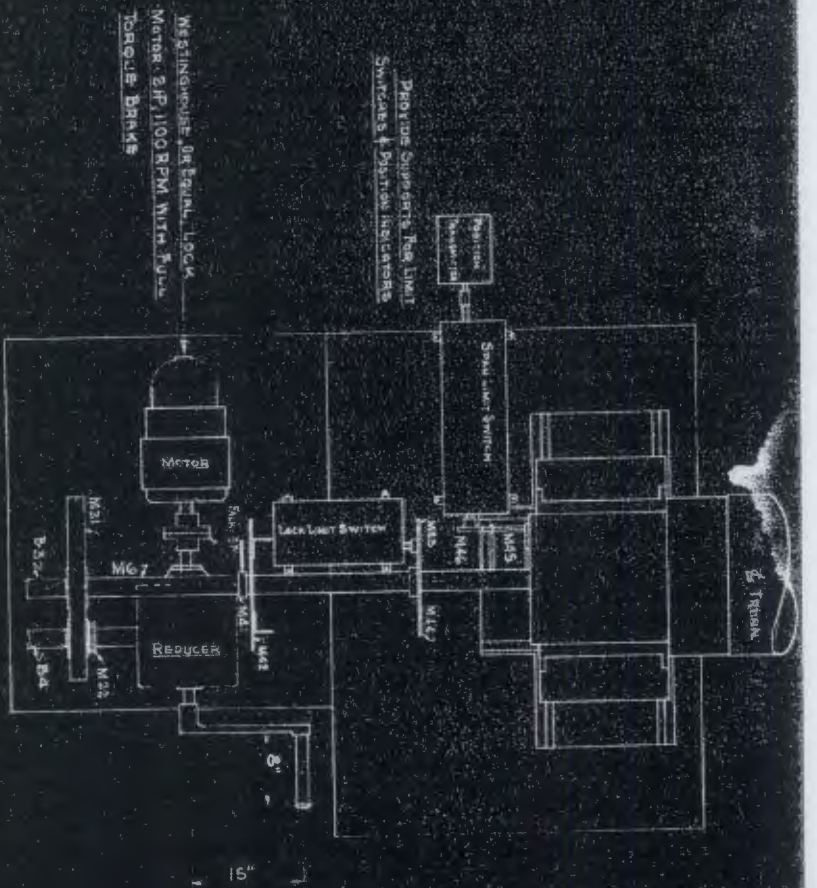
Buffer - 4. Key PL



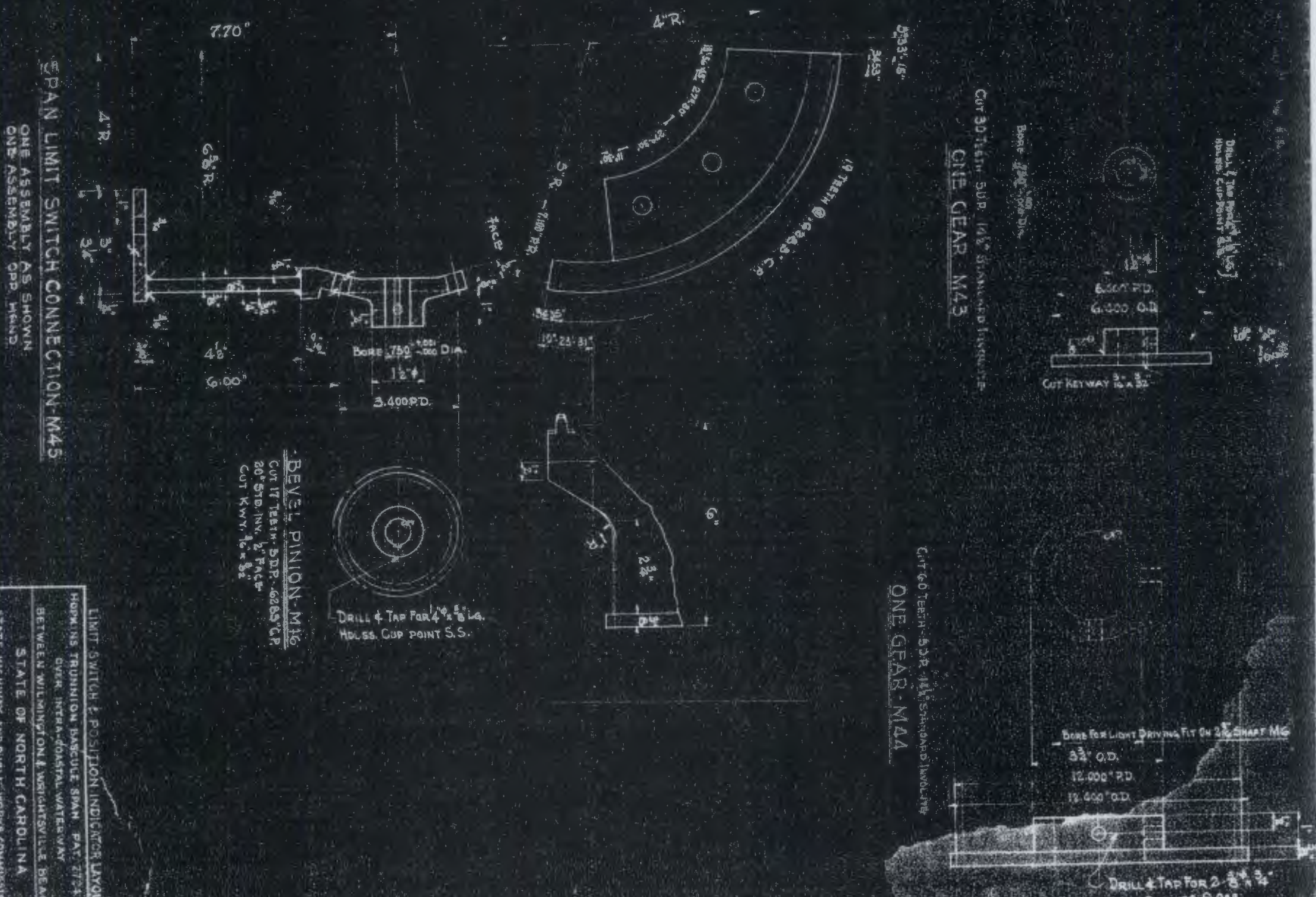
Also - See working drawings and  
 requirements see AASHTO  
 specifications for New York  
 Page 15, Art. 2.2.1.5

For general info see Page 11 & 12

L. O. HOPKINS CONSULTING ENGINEER NASHVILLE, TENN.			
HOPKINS TRUNNION BAScule SPAN PAT. 272411 OVER INTRA-COASTAL WATERWAY BETWEEN WILMINGTON & WINGFIELD BEAC STATE OF NORTH CAROLINA STATE HIGHWAY AND PUBLIC WORKS COMMISSION PROJECT 3535 NEW HANOVER COUNTY			
DATE	DRAWN	SCALE	SHEET NO.
10/21/41	L.O.H.	AS SHOWN	2
CHECKED BY (Signature)		APPROVED BY (Signature)	



PLAN SHOWING ARRANGEMENT OF LOCK MOTOR,  
LIMIT SWITCHES & POSITION INDICATORS  
AS SHOWN FOR DISK 1 - OPPOSITE HAND FOR  
PER LESS LOCKING MECHANISM



SPAN LIMIT SWITCH CONNECTION M45  
ONE ASSEMBLY AS SHOWN  
ONE ASSEMBLY OPP. HAND

CUT 30 TESTIN - SUP. 1/16" DIA. STANDARD FINISH  
ONE GEAR M43

CUT 60 TESTIN - 5 D.P. 1/16" STANDARD FINISH  
ONE GEAR M44

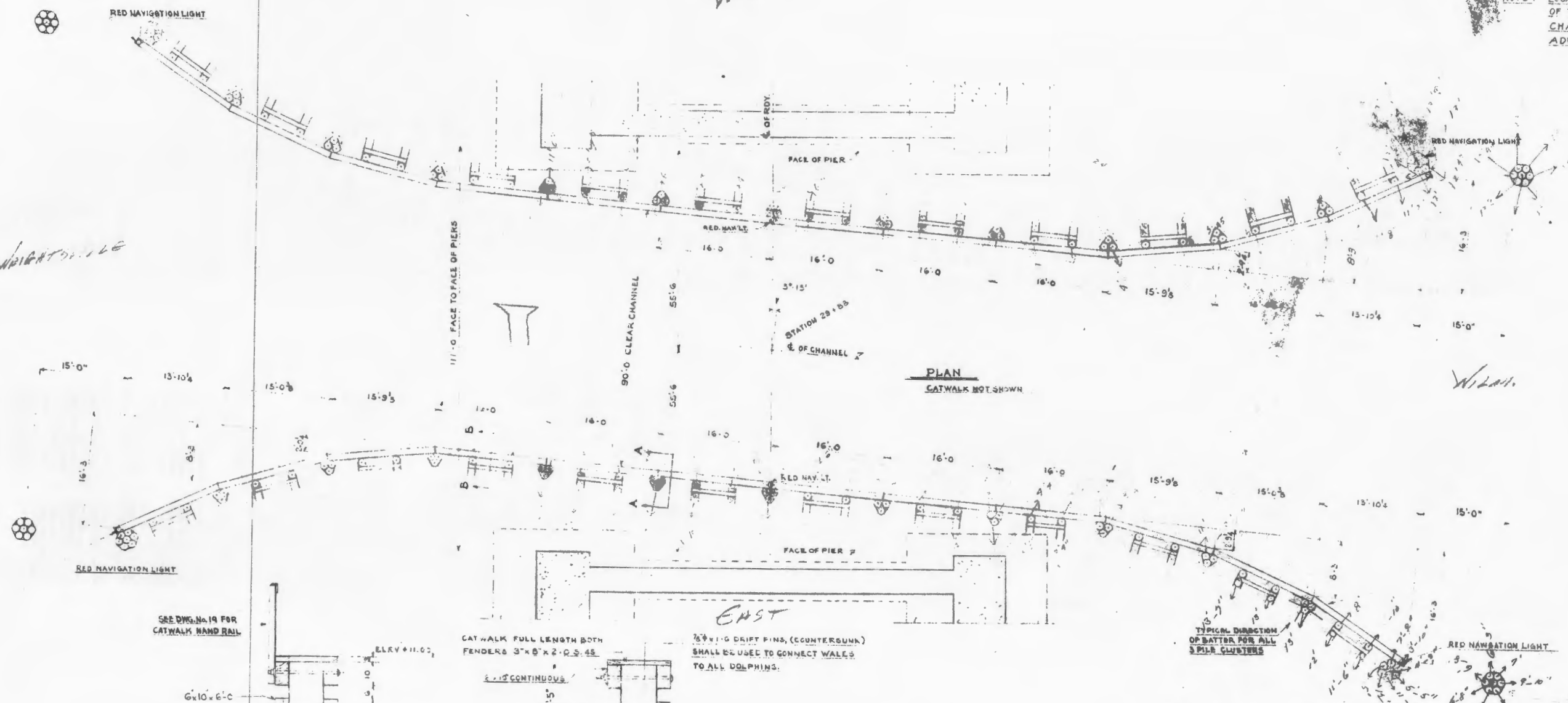
LIMIT SWITCH & POSITION INDICATOR LAYOUT  
HOPKINS TRUITION BARBULE SHAN PAT 27241  
OVER INTRA-DISTAL WATERWAY  
BETWEEN WILMINGTON WASHINGTONVILLE BEAC  
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT 3535 NEW HANOVER COUNTY  
L. O. HOPKINS  
CONSULTING ENGINEER NASHVILLE, TENN

West

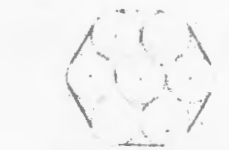
NOTE: LOCATION OF THE 4-7 PILE CLUSTERS OFF THE FENDERS, MAY BE SHIFTED AWAY FROM CHANNEL DURING CONSTRUCTION IF DEEMED ADVISABLE BY THE ENGINEER.

WRIGHTSVILLE

W.L.H.



PLAN  
CATWALK NOT SHOWN



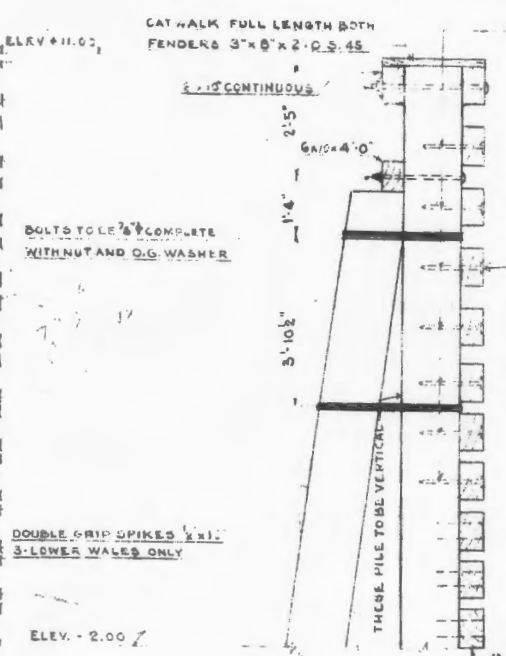
7-PILE CLUSTER, SIX OUTSIDE PILES TO BE EQUALLY SPACED ON A SIX FOOT DIAMETER CIRCLE AND DRAWN TOGETHER AT TOP AND WRAPPED WITH THREE (3) TURNS OF 6-19 1/2 # CABLE AT TWO POINTS. CABLE SHALL BE SECURED WITH 3/8" STAPLES, AND 2 CABLE CLAMPS.

3-PILE CLUSTER, SIMILAR EXCEPT PILES DRIVEN ON 2'0" CIRCLE.

SEE DWG. No. 19 FOR CATWALK HAND RAIL



SECTION B-B



SECTION A-A  
3-PILE CLUSTER & DOLPHIN

1/2\"/>

**GENERAL NOTES**  
**BOLTS:** ALL BOLTS SHALL BE LEWIS SEALTITE GUARD RAIL (DOME HEAD) BOLTS OR EQUAL, 5/8\"/>
**TIMBER:** S.4S, 18 1/2\"/>
**HARDWARE:** ALL HARDWARE TO BE GALVANIZED. SEE NORTH CAROLINA STANDARD SPECIFICATIONS SECTIONS 300 AND 411 AS APPLICABLE.

NOTE: REDUCE BATTER AS NECESSARY IN BATTERED PILES TO AVOID FOOTINGS.

NOTE: 4 UNLOADED TIMBER TEST PILES SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE DRIVEN AT LOCATIONS DESIGNATED BY THE ENGINEER FOR DETERMINING LENGTHS OF FENDER PILES.

NOTE: ALL CRIPPLED TIMBER SHALL BE CUT TO LENGTH AND SPACED WHERE REQUIRED BEFORE TREATMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING CORRECT BILL OF MATERIALS.

NOTE: CONSTRUCTION OF A PORTION OF THE PROPOSED FENDER, WHERE THEY FEEL THE EXISTING STRUCTURE, SHALL BE DELAYED UNTIL THE EXISTING STRUCTURE HAS BEEN REMOVED.

REVISION 1. MENARD, FACE T, FACE OF PIER, AND ADDED NOTE, 4-7-55

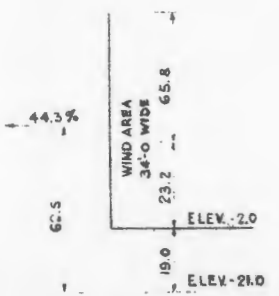
**FENDER**

HOPKINS TRUNNION BASCULE SPAN PAT. 27241  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3555 NEW HANOVER COUNTY  
 L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.

DES.	D.W.H.	JOB	DWG. NO.
APPROVED	C.K.D.	DATE	NC-1 25



TOILET SHALL BE CRANE CO. NEU-ERA 3-180 SALT WATER FITTED OR EQUAL. LAVATORY SHALL BE CRANE CO. NORWICH C.D. 754 OR EQUAL. CONNECT TOILET AND LAVATORY TO 3" WATER LINE AT END OF BRIDGE. LOCATE 4" C.I. SOIL PIPE TO SUIT. CONTRACTOR TO DETERMINE LOCATION OF FIXTURES TO SUIT AND FIT IN WITH ELECTRICAL AND MECHANICAL EQUIPMENT. SEE DWG #39 ABOVE TO BE INSTALLED IN MACHINERY ROOM.

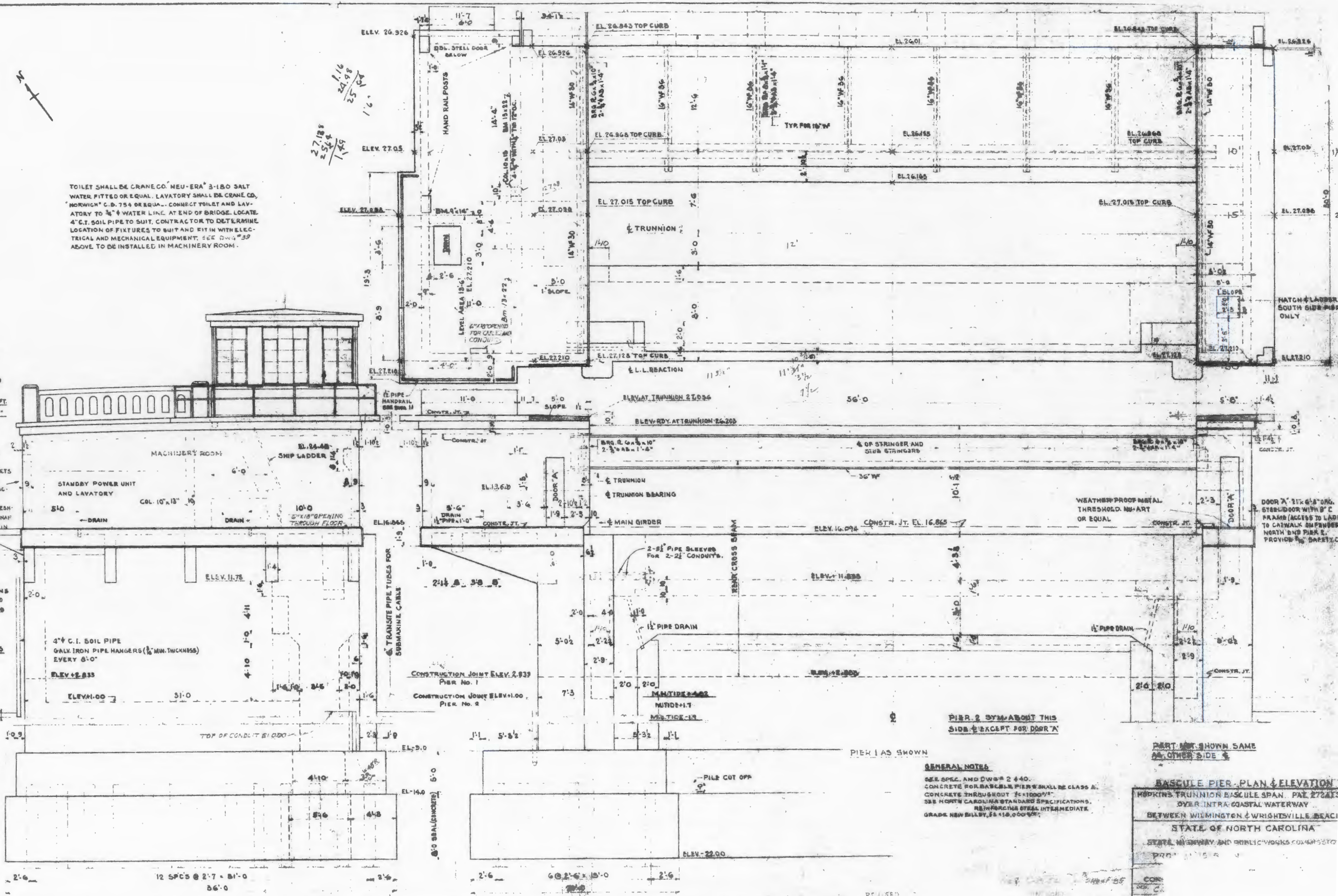


CONCRETE ABOVE EL. -2.1 146 CU. FT.  
BELOW EL. -2 = 84'

INDUSTRIAL STEEL DOUBLE DOOR #5466 (5'-4" x 8'-8") SERIES 31 WITH LEVER LATCH WITH PADLOCK BRACKETS P-5528 & STANDARD PRESSED 16 GA. STEEL DOOR FRAME, ALL AS MANUFACTURED BY TRUSCON STEEL CO. PROVIDE WEATHER PROOF METAL THRESHOLD AND 3/8" SAFETY CHAIN WITH SHAF & EYE BOLTS. EYE BOLTS TO BE SET IN MASONRY. DOORS TO SWING OUT.

D.L. ON PILING = 2,969,000  
LOAD PER PILE, D.L. ONLY = 2869.0/21 = 37.2P  
16.35 TONS  
WIND MOM. = 44.37 x 62.5 = 2775.0  
MAX. LOAD PER PILE FROM WIND = 2,775.0 x 15.5 / (607.3 x 7) = 10.1  
D.L. = 32.7  
TOTAL 42.8 = 21.4 TONS MAX.

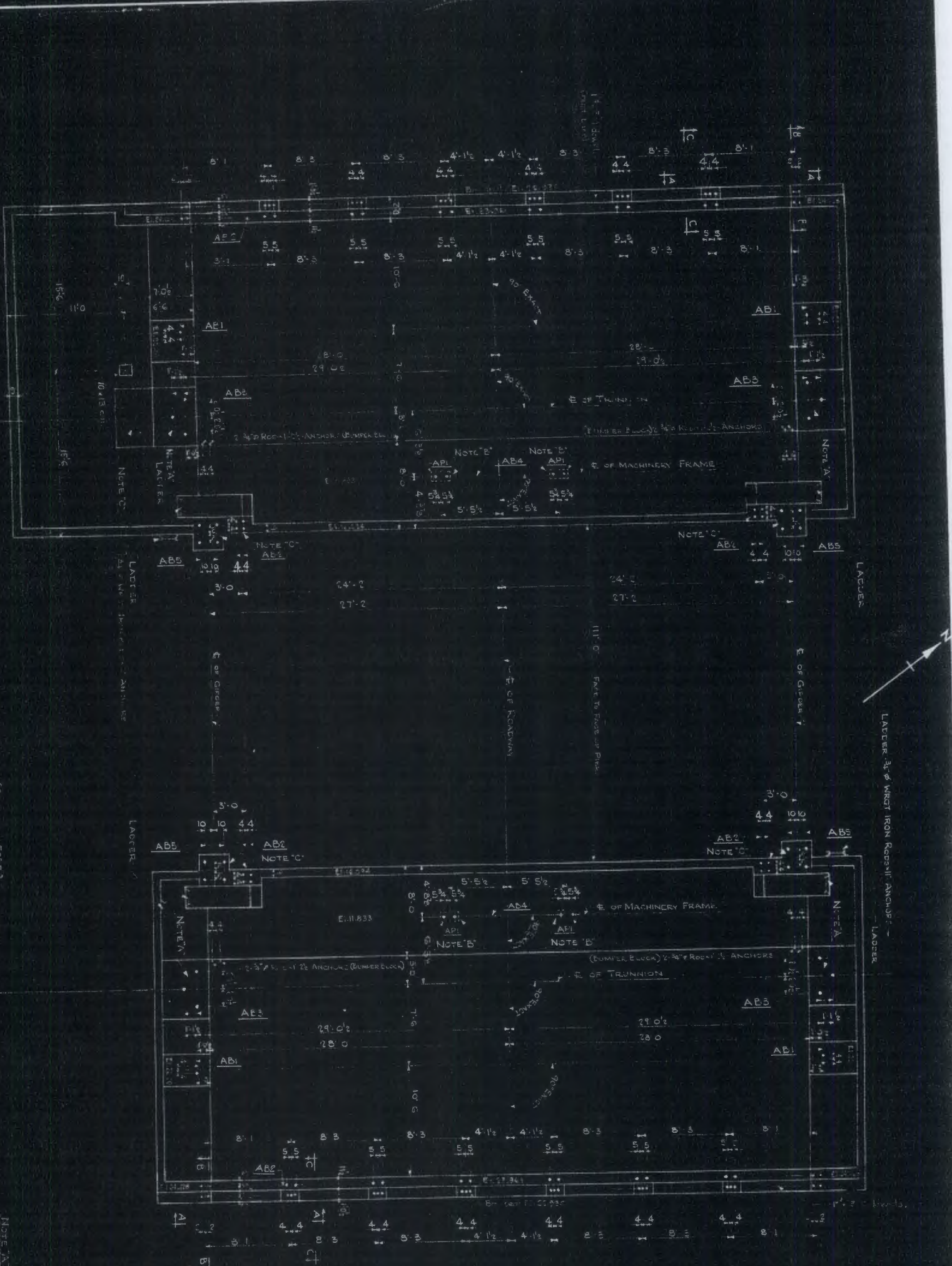
PILES UNDER BASCULE PIERS - SEE STANDARD SPECIFICATIONS SECTION 300 AND SECTION 411. PILING SHALL BE UNTREATED WITH A MINIMUM TIP DIAMETER OF 9" MEASURED UNDER THE BARK.



PIER 2 SYM ABOUT THIS SIDE EXCEPT FOR DOOR 'A'

**GENERAL NOTES**  
SEE SPEC. AND DWG # 2 440.  
CONCRETE FOR BASCULE PIERS SHALL BE CLASS A.  
CONCRETE THROUGHOUT 10,000 PSI.  
SEE NORTH CAROLINA STANDARD SPECIFICATIONS.  
REINFORCING STEEL INTERMEDIATE.  
GRADE NEW BILBY, 58-118,000 PSI.

**BASCULE PIER - PLAN & ELEVATION**  
MCKINS TRUNNION BASCULE SPAN, PAT. 272A13  
OVER INTRA-COASTAL WATERWAY  
BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION



PIER I

ANCHOR BOLT PLAN

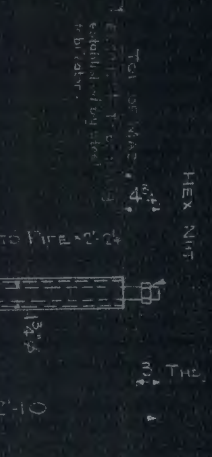
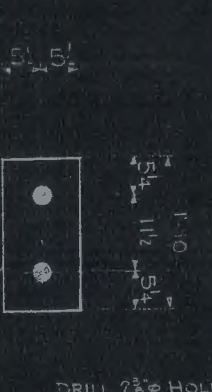
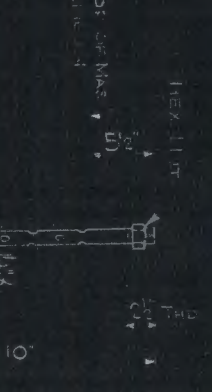
PIER II

NOTE A: Trunnion bearing should be provided to allow for a Roll and Pitch in order to facilitate movement. All Trunnions Must be provided with a Roll and Pitch. Machinery Trunnions are to be provided with a Roll and Pitch. For A.P.E. Trunnions, the Roll and Pitch should be provided for the Trunnion. Machinery Trunnions are to be provided with a Roll and Pitch. For A.P.E. Trunnions, the Roll and Pitch should be provided for the Trunnion.

NOTE B: For A.P.E. Trunnions, the Roll and Pitch should be provided for the Trunnion. Machinery Trunnions are to be provided with a Roll and Pitch. For A.P.E. Trunnions, the Roll and Pitch should be provided for the Trunnion.

NOTE C: Machinery Trunnions are to be provided with a Roll and Pitch. For A.P.E. Trunnions, the Roll and Pitch should be provided for the Trunnion.

ANCHOR BOLT PLAN



PREPARED BY: L. O. HOPKINS  
 CHECKED BY: J. H. ...  
 DATE: ...

CONSULTING ENGINEER: L. O. HOPKINS  
 NASHVILLE, TENN.

PROJECT: 3535 NEW HANOVER COUNTY

STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 BETWEEN WILMINGTON & WRIGHTSVILLE BEACH  
 OVER INTRA-COASTAL WATERWAY

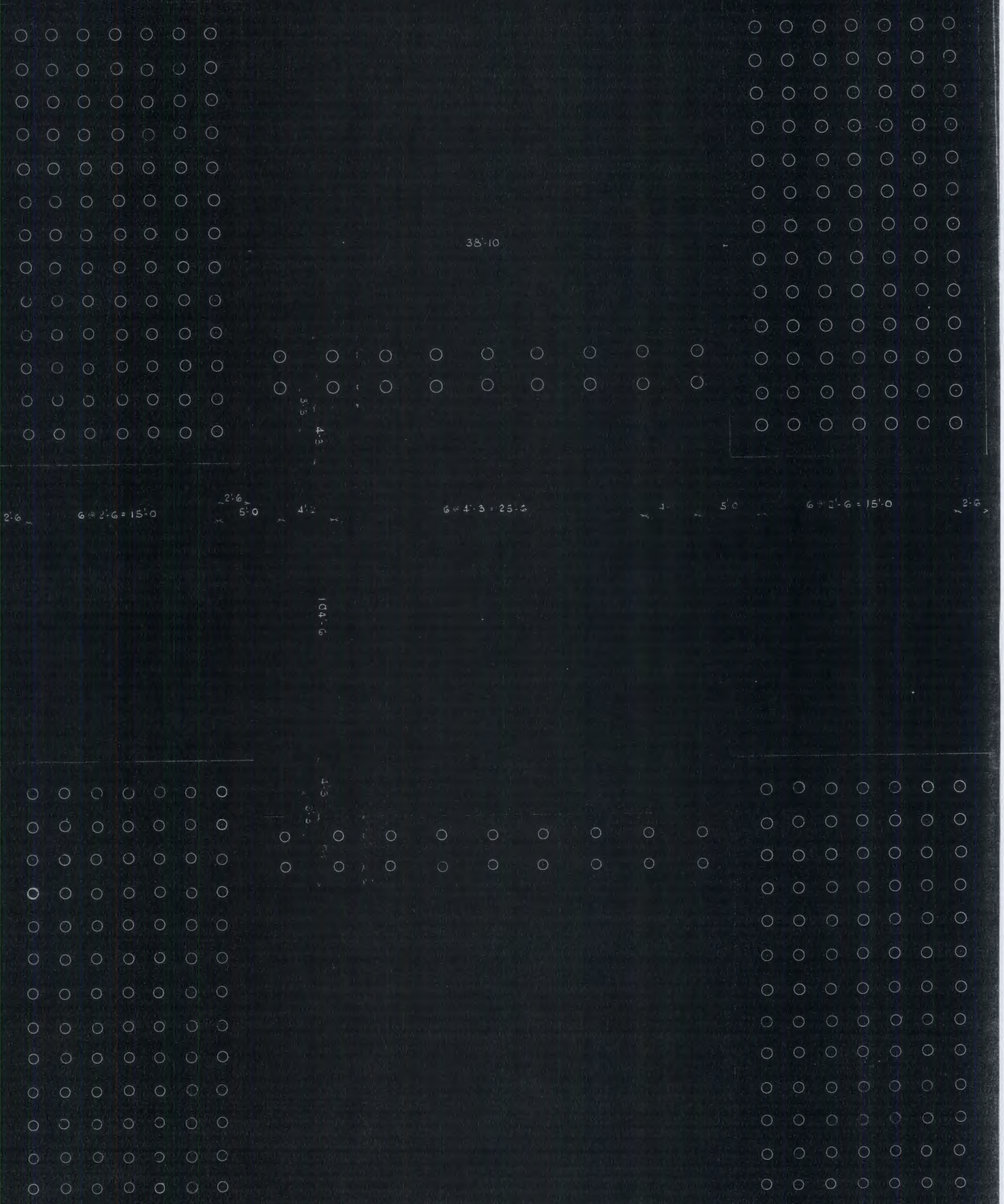
HOPKINS TRUNNION BRIDGE SPAN FAT 200 G11  
 STATE OF NORTH CAROLINA

PROJECT 3535 NEW HANOVER COUNTY

NO.	DATE	BY	CHKD.
1	...	...	...
2	...	...	...
3	...	...	...
4	...	...	...

20'-0"

38'-10"



FILES UNDER BACQUE PILES

SEE STANDARD SPECIFICATION, SECTION 800  
 AND SECTION 411. PILES SHALL BE UNTPRATED  
 WITH ABUTTING TIP DIAMETER OF 37 INCHES  
 UNLESS OTHERWISE SPECIFIED.

TEST SET SHALL BE DRIVEN AS SET OUT ON  
 DRAWING NO. 4 TO DETERMINE LENGTH, READ  
 PILE, SHALL BE DRIVEN TO A MINIMUM OF 22 TONS  
 TL. PILES TO BE REMOVED ON SUCH INSURANCE  
 TION GIVEN BY THE ENGINEER.

COEF. OF FRICTION AND LOAD TEST AND  
 REMOVAL SHALL BE INCLUDED IN THE UNIT  
 COSTS AND PRICE FOR LINEAR FOOT FOR UN-  
 TRAPPED TYPICAL PILES.

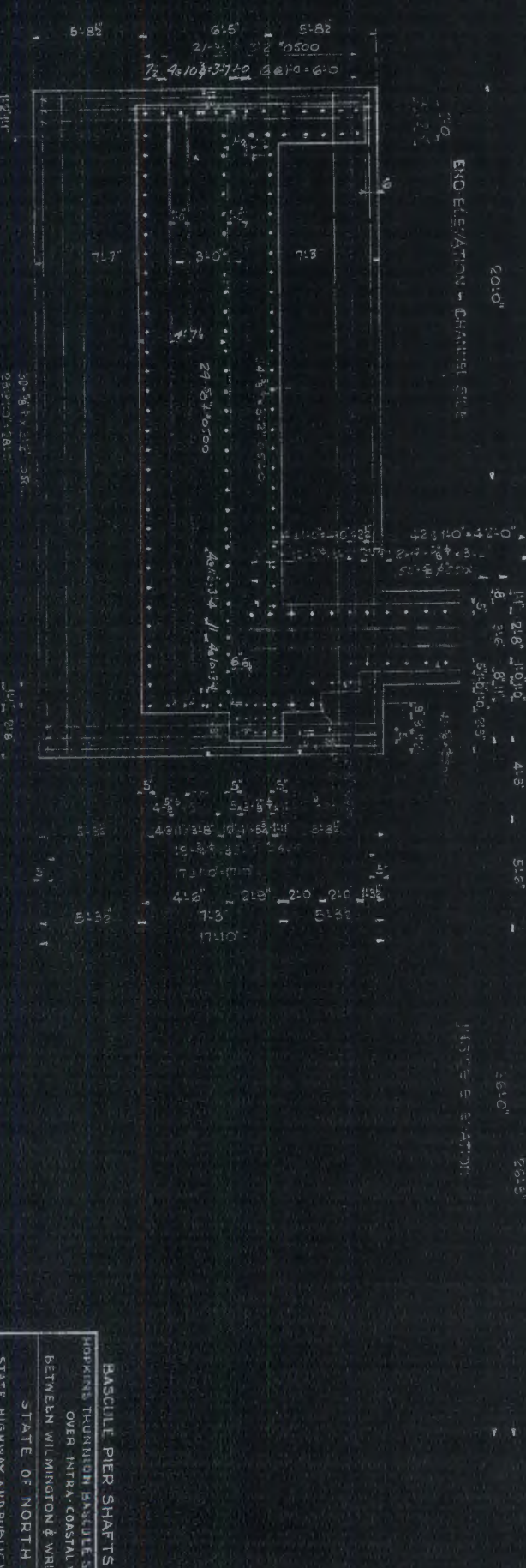
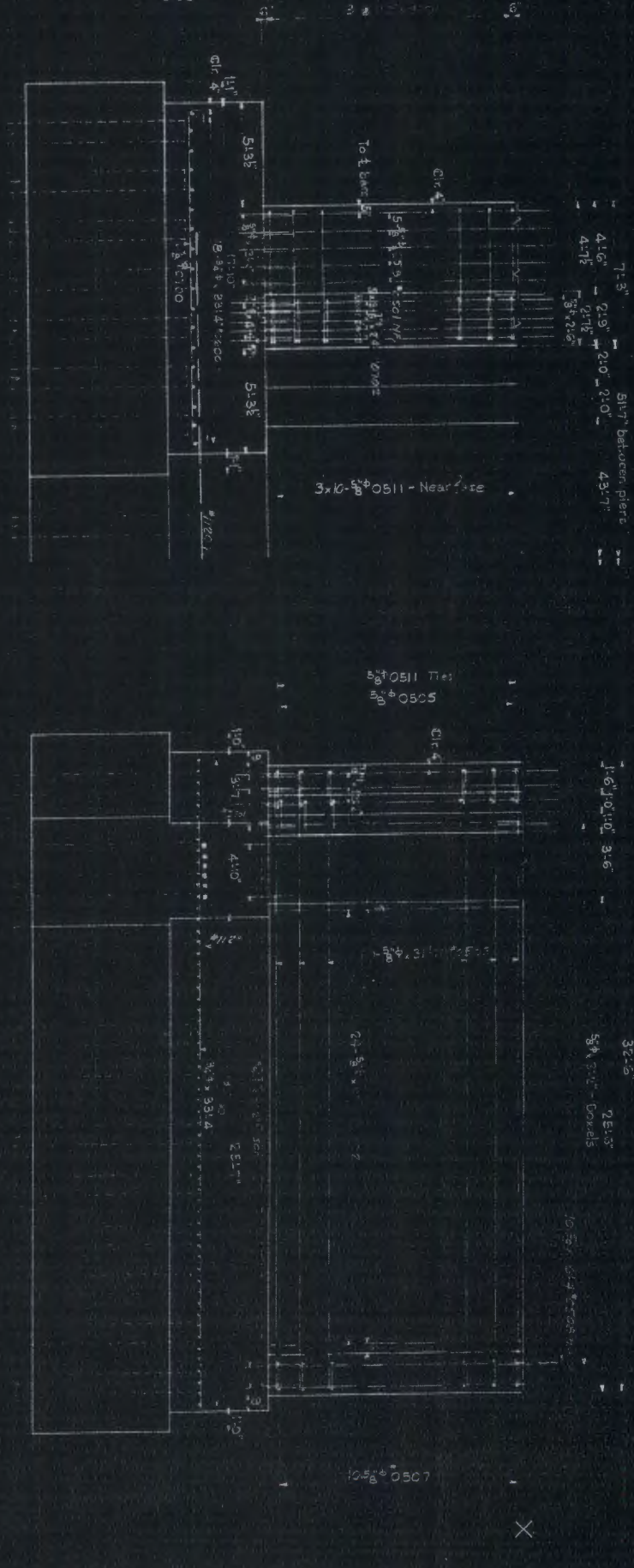
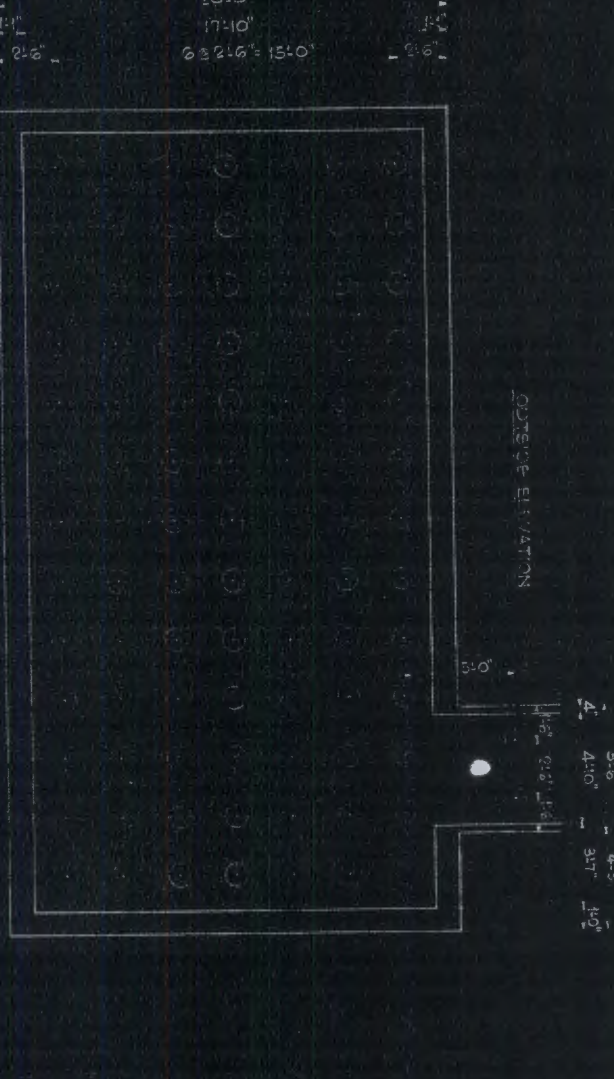
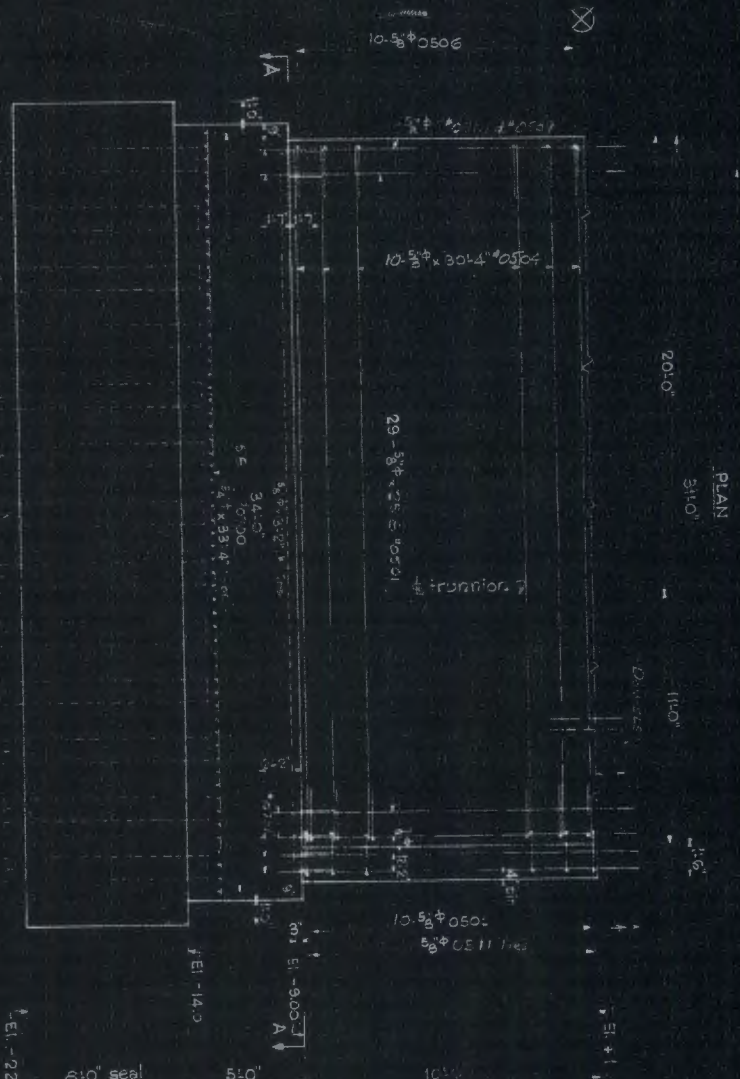
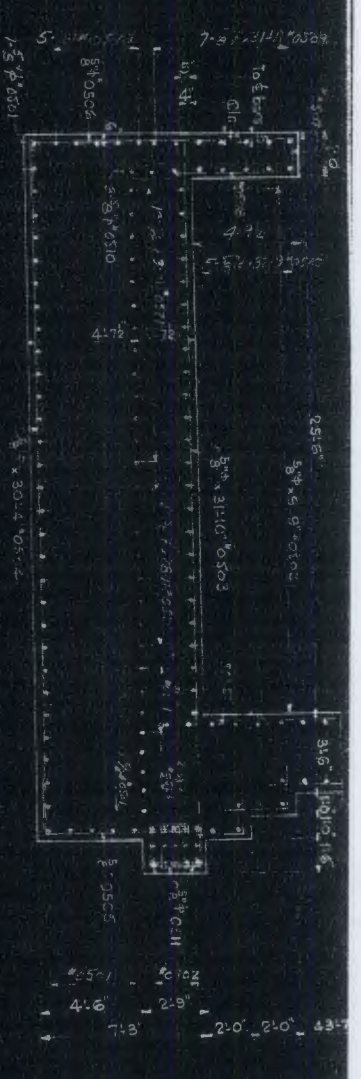
ESTIMATED LENGTH FROM PARADE AT 14140  
 LINEAL FEET OF UNTRAPPED TYPICAL PILES FOR  
 BACQUE PILES 100000 @ 4.00 PER LINEAR FEET

PILE PLAN FOR BACQUE PILES

HOPKINS TRUNDRON BACQUE SPAN, PART 27-112  
 OVER THE WINDCAST WATERWAY  
 BETWEEN WILMINGTON & NASHVILLE LEASH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 2555F NEW HANOVER COUNTY

L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.  
 DATE: 11/27/54  
 SHEET NO. 31  
 PROJECT NO. NC 11 31



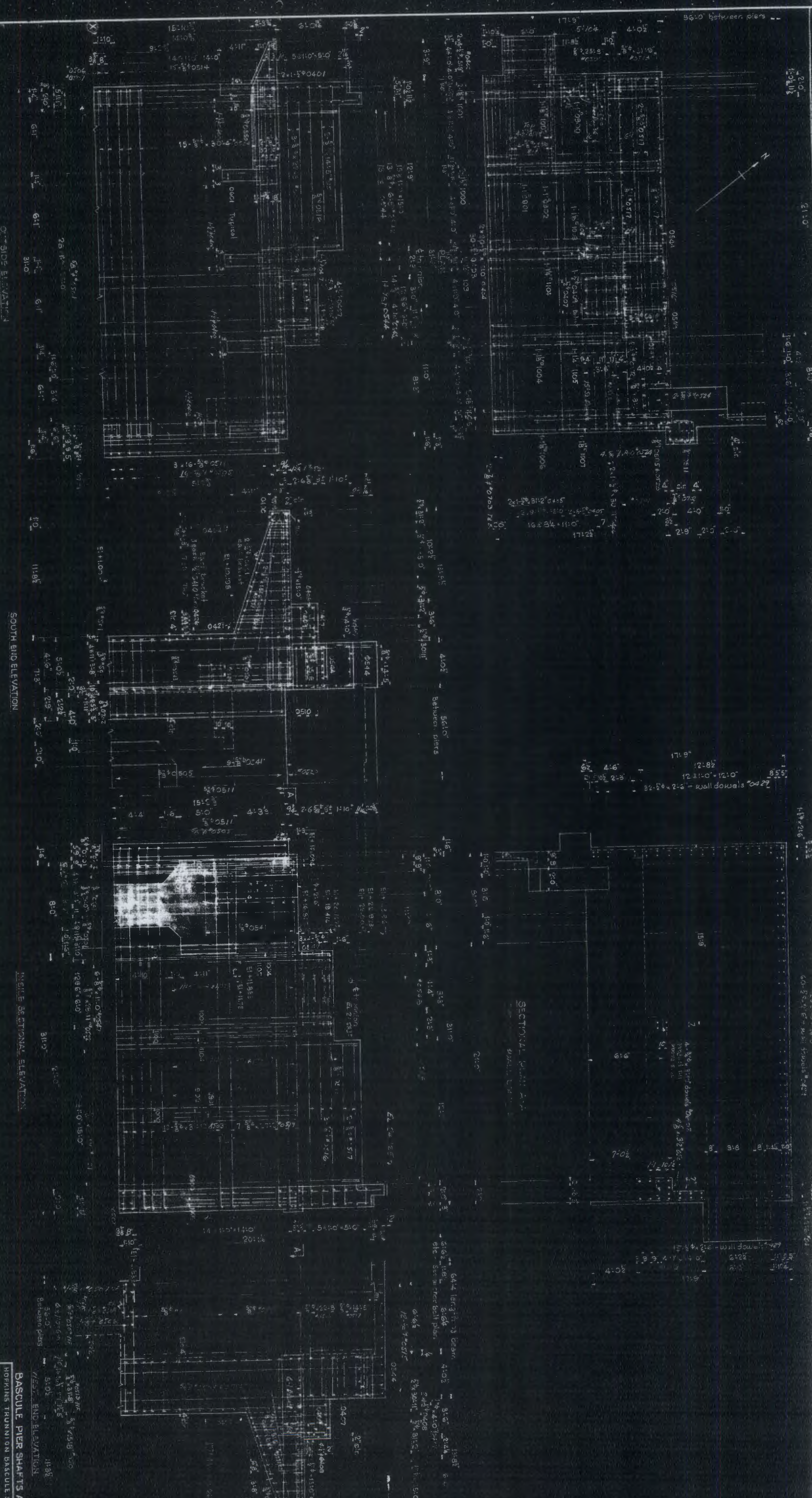


PILE LOCATION PLAN  
SCALE  
34'-0"

SECTION A-A  
SCALE  
34'-0"

REINFORCING SCHEDULE DWG. 38  
WORKS WITH DWGS. 33-34-35 & 36  
FOR GENERAL NOTES SEE DWGS. 2 & 5

BASQUE PIER SHAFTS TO ELEV. 100	
HOPKINS TURNION BASQUE SPAN PAT 2066110	
OVER INTRA-COASTAL WATERWAY	
BETWEEN WILMINGTON & WRIGHTSVILLE BEACH	
STATE OF NORTH CAROLINA	
STATE HIGHWAY AND PUBLIC WORKS COMMISSION	
PROJECT 9635 NEW HANNOVER COUNTY	
CONSULTING ENGINEER	L. O. HOPKINS
	MASHVILLE, TENN.
DATE	NOV 52
BY	NGC
CHECKED	
APPROVED	

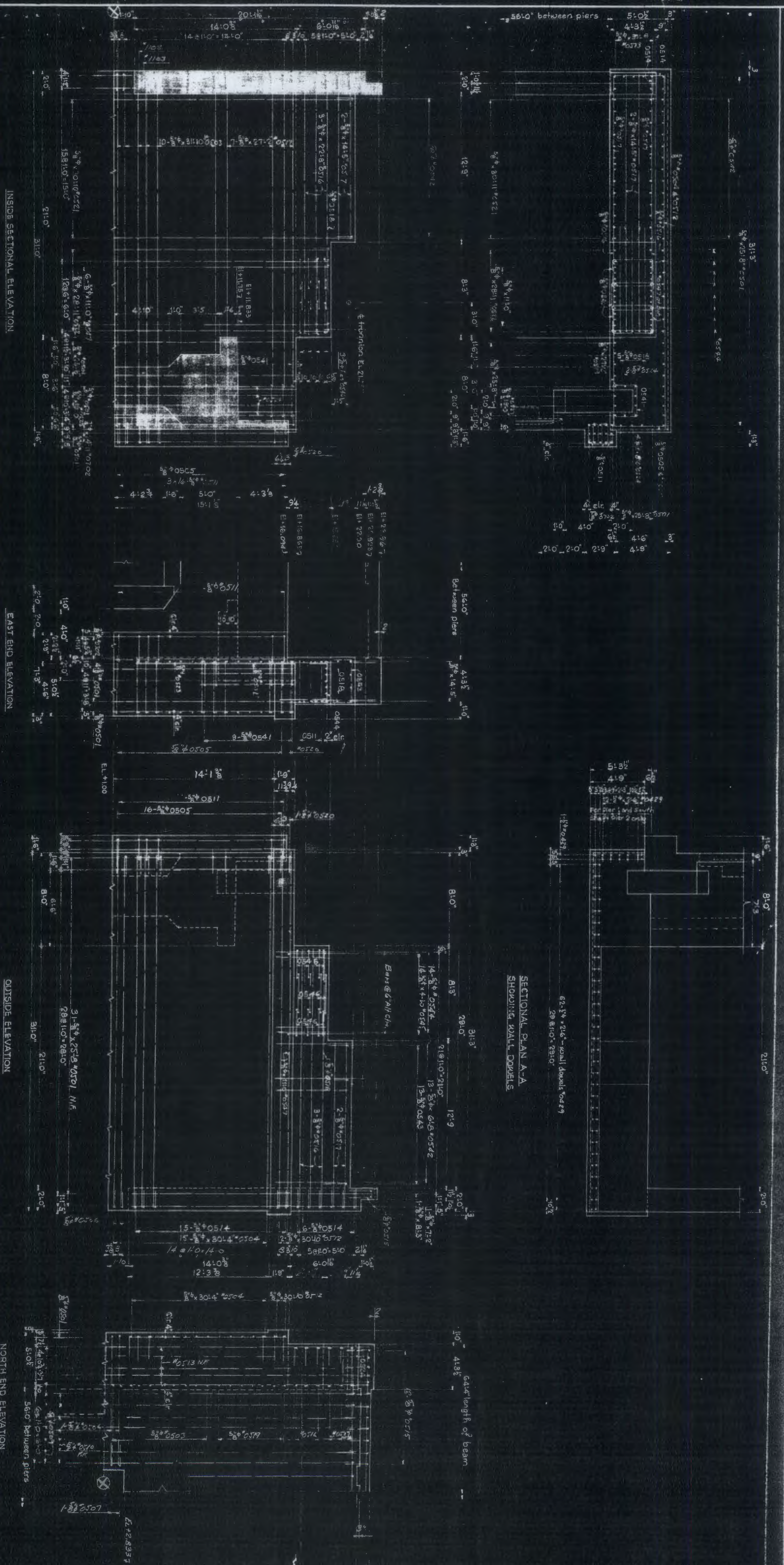


REINFORCING SCHEDULE DWG. 3B  
 WORKS WITH DWGS. 3C, 3E, 3B, 3G  
 FOR GENERAL NOTES SEE DWG. 2 & 5

**BASCULE PIER SHAFTS ABOVE ELEVATIONS**  
 HORNING TRUNNION BASCULE SPAN - PART 20  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSVILLE  
 STATE OF NORTH CAROLINA  
 PROJECT 3535 NEW HANOVER COUNTY  
 CONSULTING ENGINEER  
**L. O. HOPKINS**  
 NASHVILLE, T

NO.	DATE	BY	CHKD.	APP.
1	12-1-55			
2				
3				

JOB NO. **NC-1**  
 SHEET NO. **3**



PIER 1 - NORTH SHAFT - AS SHOWN  
 PIER 2 - SOUTH SHAFT - AS SHOWN  
 PIER 2 - NORTH SHAFT - OPPOSITE HAND

SECTIONAL PLAN A-A  
 SHOWING JOIST DOVELLS

REINFORCING SCHEDULE DWG. 38.  
 WORKS WITH DWGS. 37, 35 & 36.  
 FOR GENERAL NOTES SEE DWGS. 2 & 5.

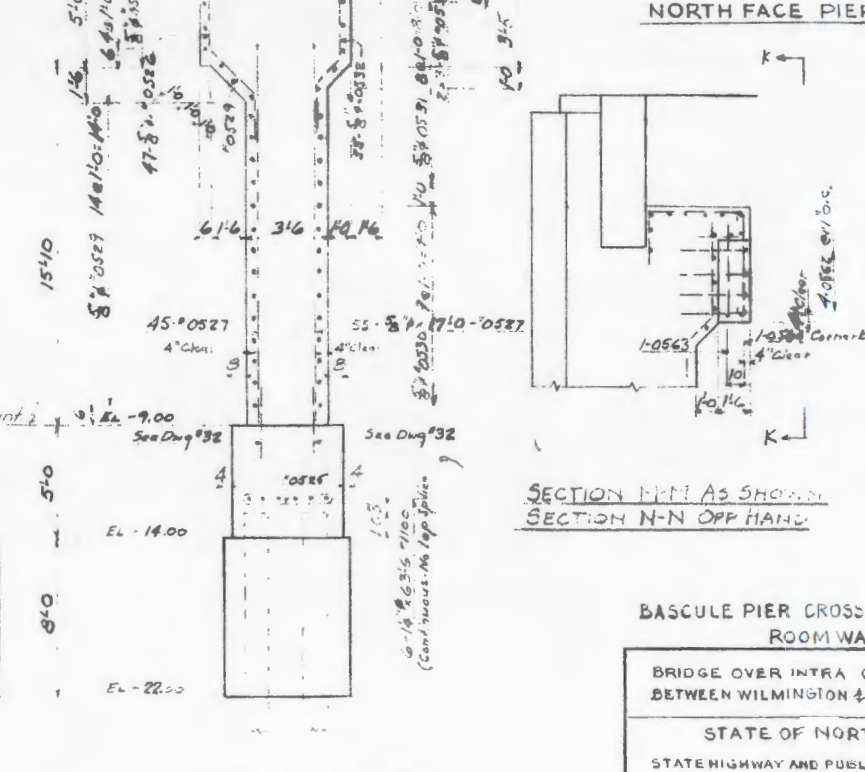
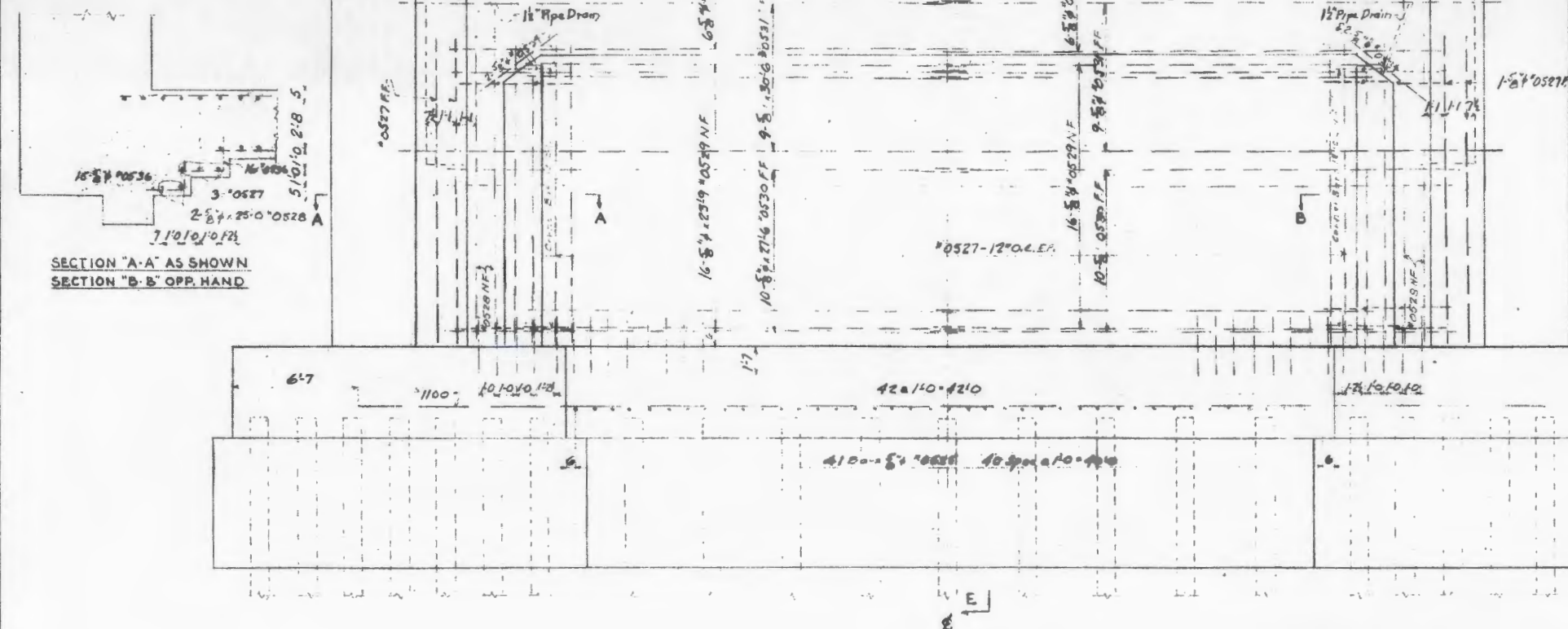
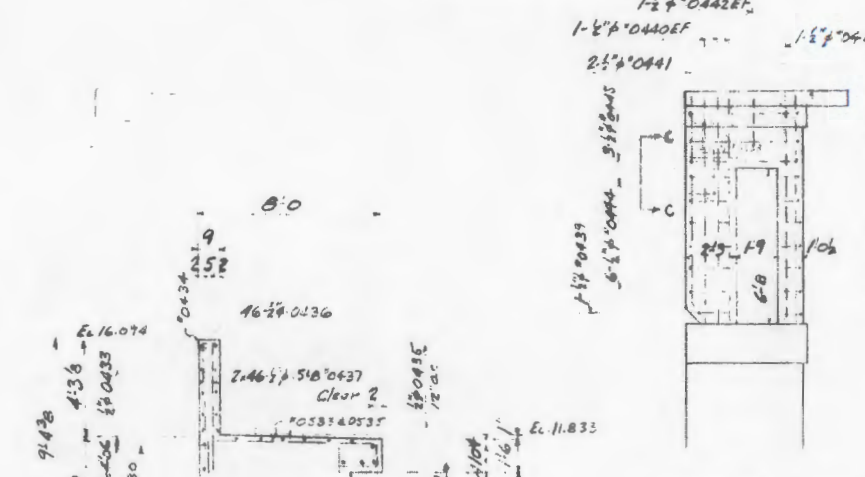
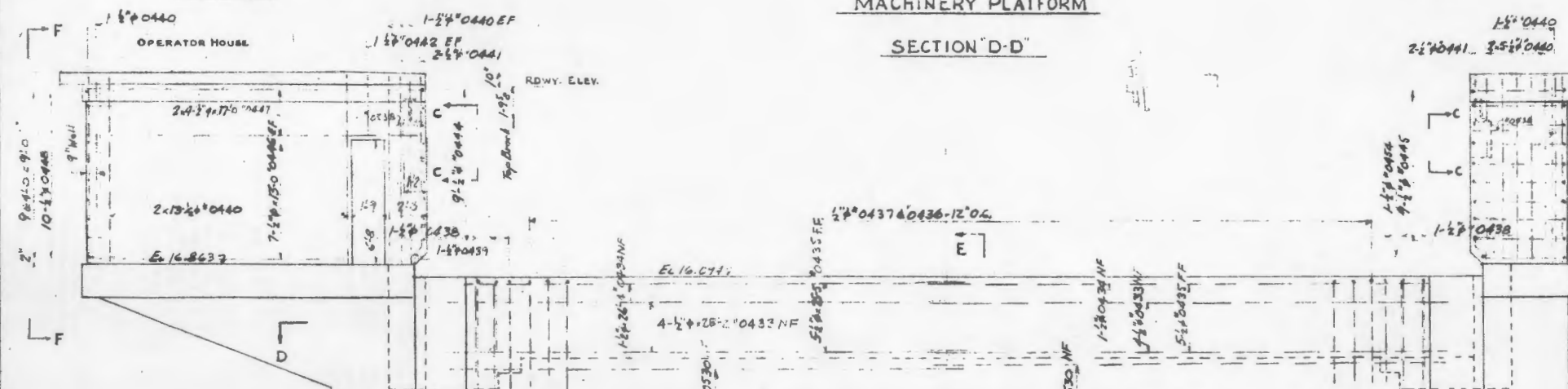
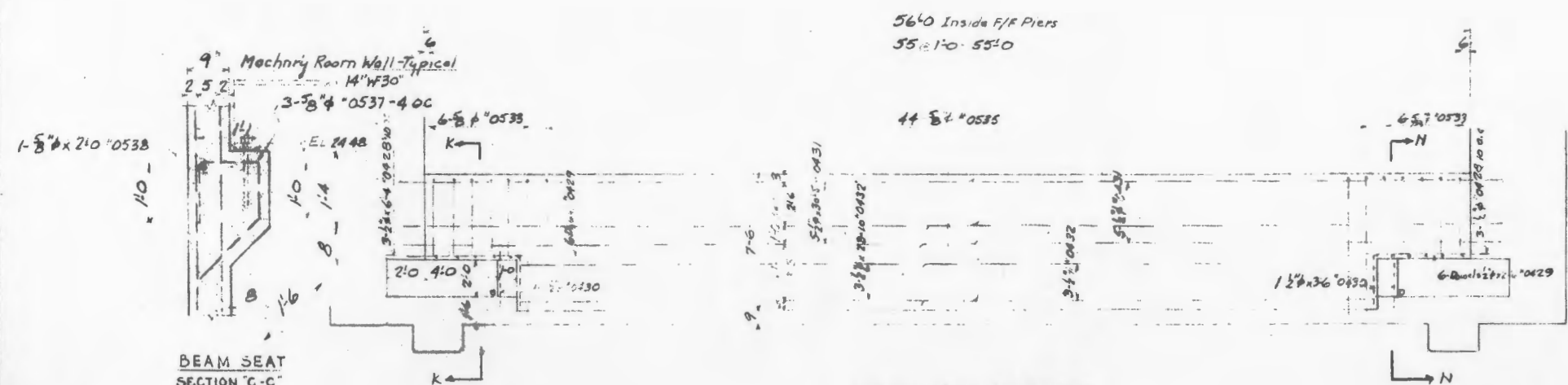
REVISED FOR RELIEF OF BRIDGE SEAT - JUNE 5, 1958. C.M.D. W.F.  
 REVISED FOR DIMENSIONS RELATIVE TO BRIDGE SEAT - JULY 19, 1958. W.H.D.

BASCULE PIER SHAFTS ABOVE EL. +100  
 HOPKINS TRUNNION BASCULE SPAN PAT. 2,066,118  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILMINGTON & WRIGHTSWILLE BEACH  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANOVER COUNTY

L. O. HOPKINS  
 CONSULTING ENGINEER NASHVILLE, TENN.

APPROVED: [Signature] DATE: 12-3-55

NC-1 34



PIER #1 AS SHOWN

PIER #2 SYM. ABT. THIS SIDE OF C  
EXCEPT FOR DETAIL FOR NORTH FACE PIER #2

CROSS SHAFT-SEC. E-E

SECTION K-K AS SHOWN  
SECTION N-N OPP. HAND

BASCULE PIER CROSS SHAFT & MACHY. ROOM WALLS

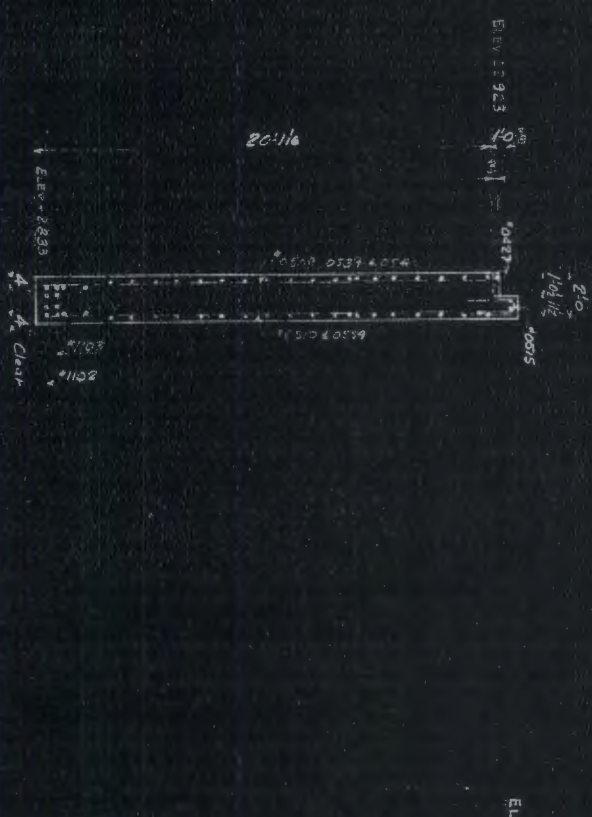
BRIDGE OVER INTRA COASTAL WATERWAY BETWEEN WILMINGTON & WRIGHTSVILLE BEACH

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
PROJECT 3535 NEW HANOVER COUNTY

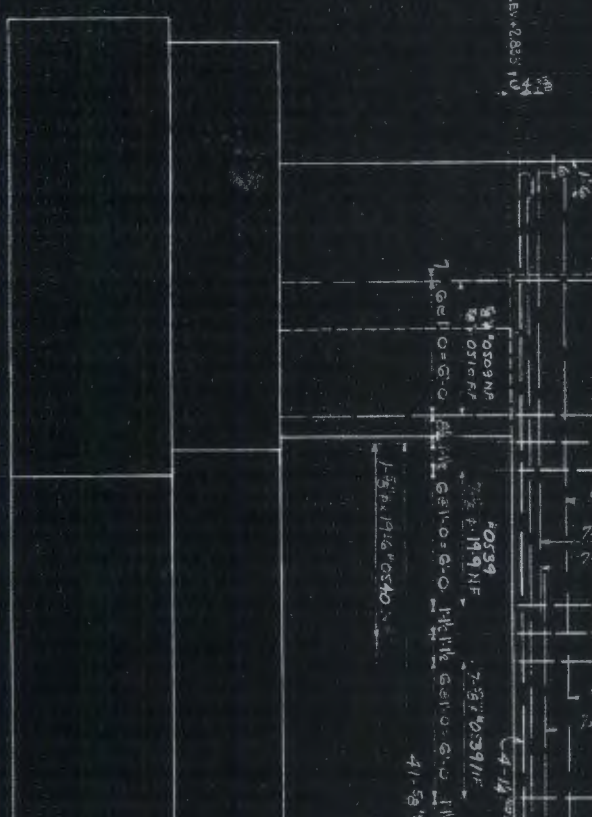
L. O. HOPKINS  
CONSULTING ENGINEER NASHVILLE, TENN.  
DES. DWG. CVD JOB DATE  
APPROVED DATE NCI 25

Revised 4-17-56. Sect. K-K, N-N & M-M Added

SECTION A-A  
 SECTION SHOWING NORTH SIDE OF PIER 2 AS SHOWN



SECTION B-B  
 SECTION SHOWING SOUTH SIDE OF PIER 2 AS SHOWN



SECTION A-A

PIER 2 SYM. AET. THIS SIDE OF B

PIER 1 AS SHOWN

REAR ELEVATION BASCULE PIERS AS NOTED  
 REINFORCING SHOWN FOR BACK BULKHEAD AND MACHINERY ROOM

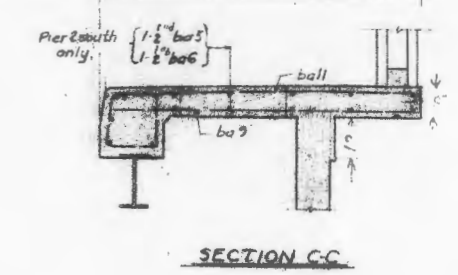
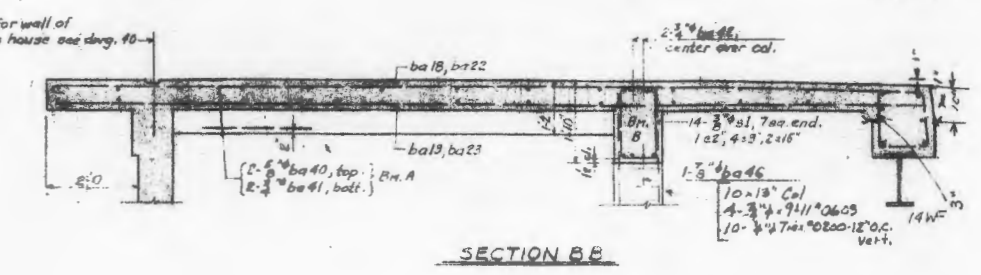
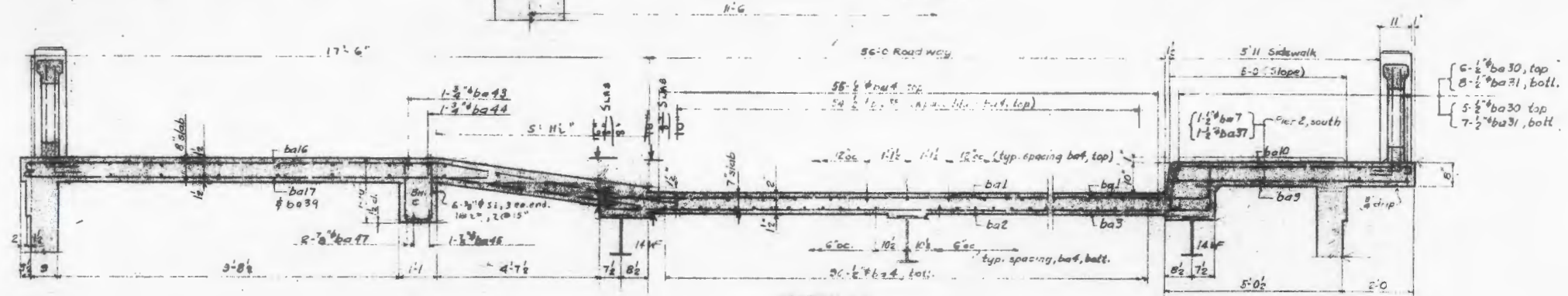
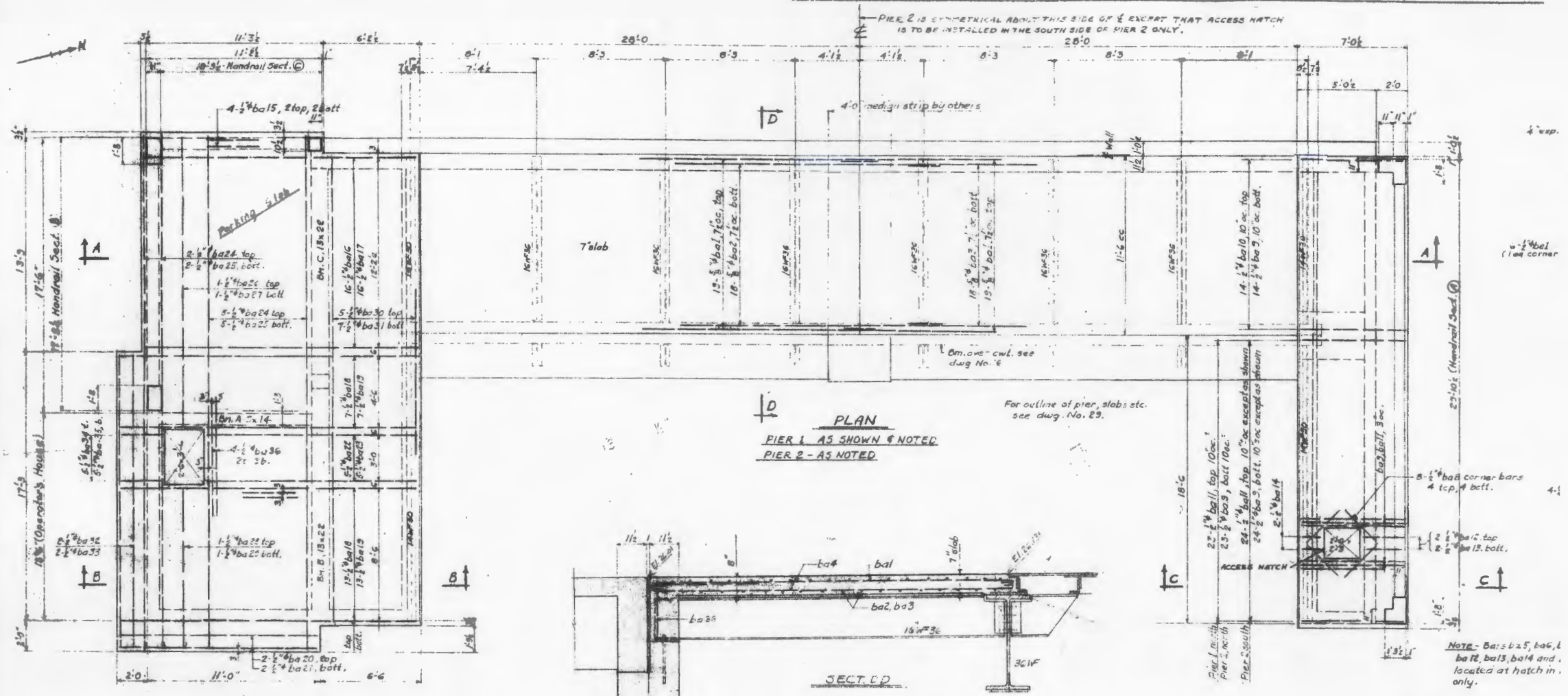
REAR ELEVATION

REINFORCING DETAILS BASCULE PIER

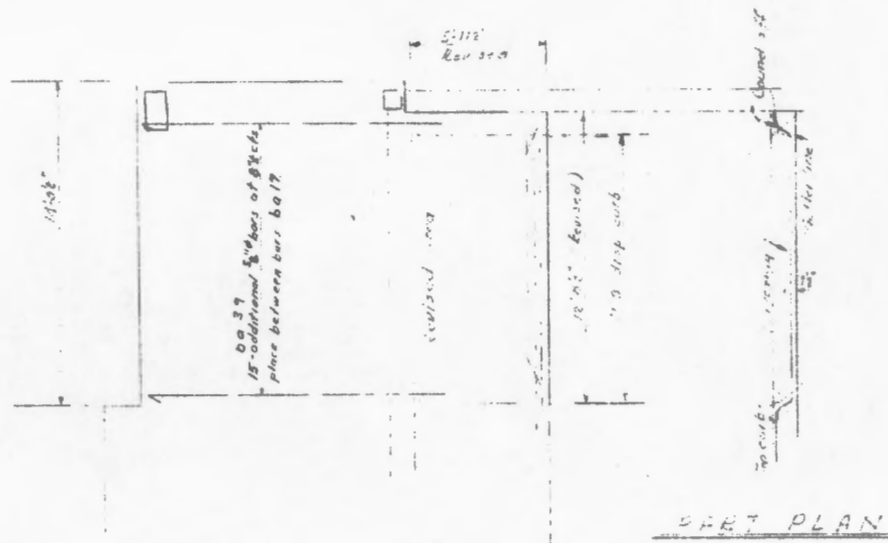
HOPKINS TRAMWAY BASCULE SPAN PART 2063110  
 OVER INTRA-COASTAL WATERWAY  
 BETWEEN WILKINSON & WRIGHTSVILLE DAMS  
 STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION  
 PROJECT 3535 NEW HANOVER COUNTY

L. O. HOPKINS  
 CONSULTING ENGINEER  
 NASHVILLE, TENN.

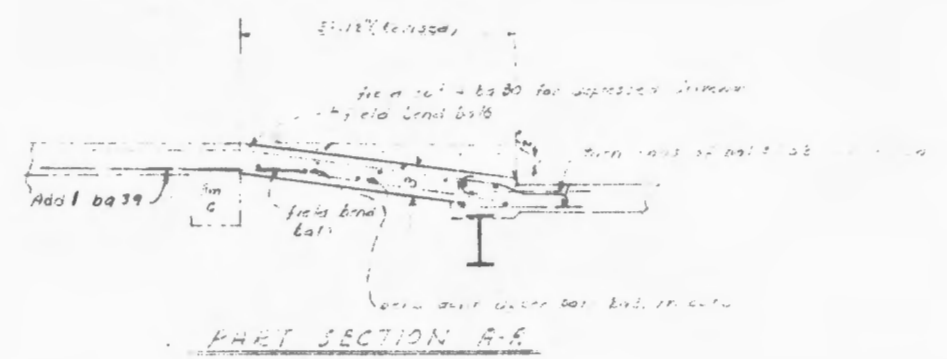
DATE: 1-1-53  
 DRAWING NO: NC 1 36







PART PLAN



PART SECTION A-A

		SCHEDULE OF ADD'L. REINFORC				
Mark	Size	No.	Length	Location		
ba 39	#10	15	14'0"	Parking Slab		
Total						

*Revision 11-20-56*

PROJECT 1  
STATION:.....

SPECIAL  
 DESIGNED BY: W.C. ... DATE: Oct 19-56  
 CHECKED BY: D.L.B. ... DATE: Dec. 14, 1956

REVISIONS		DATE	
1			
2			
3			
4			

STATE OF NORTH CAROLINA  
 STATE HIGHWAY  
 PUBLIC WORKS

APPROVED BY: \_\_\_\_\_  
 STATE HIGHWAY