NOTE: SEE SHEET No. 1-A FOR INDEX OF SHEETS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N. C.	8.7325002	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
BOARD OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

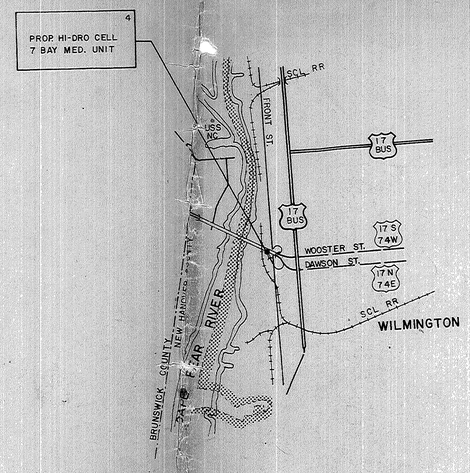
NEW HANOVER COUNTY

LOCATION: IN GORE AREA ON CAPE FEAR RIVER BRIDGE AT WILMINGTON.

TYPE: IMPACT ATTENUATOR INSTALLATION.

PROJECT: 8.7325002

SHIPPING POINT
WILMINGTON



CONVENTIONAL SIGNS

County Line
City or Town Line
Exist. Right of Way Line
Right of Way Line
Survey Line
Property Line
Exist. Fence
Proposed Road
Existing Road
Railroad
Control of Access Line
Slope Stake Line
Bridge
Culvert
Woods
Telephone or Telegraph Pole (EXISTING) (PROPOSED)
Tower Pole and Line
Power Pole (EXISTING) (PROPOSED)
Proposed Right of Way Marker
Existing Right of Way Marker
Guard Rail
Sanitary Sewer Line
Water Line
Gas Line
Proposed Woven Wire Fence
Proposed Chain Link Fence
Easement Line

GRAPHIC SCALE
20 0 20 40
PLAN

RIGHT OF WAY ON THIS PROJECT IS EXISTING.

PREPARED IN OFFICE OF
DEPARTMENT OF TRANSPORTATION
AND HIGHWAY SAFETY
DIVISION OF HIGHWAYS
RALEIGH, N. C.

PLANS PREPARED BY: N.H. WILLEY, PROJ. ENGINEER
H.M. THOMPSON, PLANS & ESTIMATE

LETTING DATE: _____

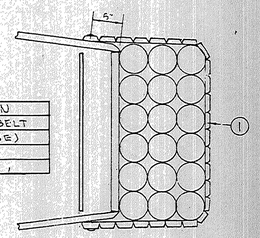
1972 STANDARD SPECIFICATIONS

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
APPROVED:
CHIEF ENGINEER

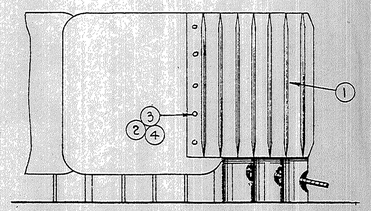
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ENGINEER DATE

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	1-A	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

ITEM	PART NO.	DESCRIPTION
1	27-16-011	SAFETY-FLEX-BELT
2	27-01-421	BOLTS (CARRIAGE)
3	27-08-011	WASHERS
4	27-04-011	NUTS



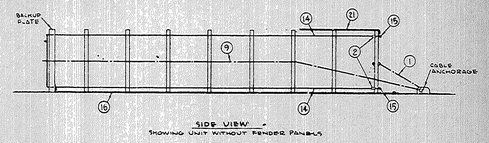
PLAN



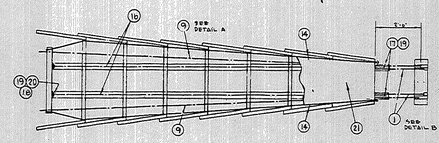
ELEVATION
CELL SANDWICH UNIT

SAFETY-FLEX BELT ASSEMBLY

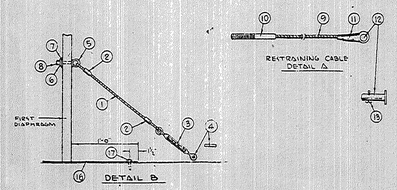
35-12-01



SIDE VIEW
SHOWING UNIT WITHOUT FENDER PANELS



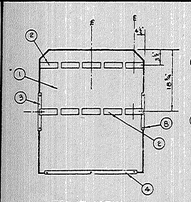
PLAN



RESTRAINING CABLE
DETAIL A

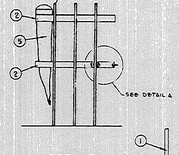
ITEM	PART NO.	DESCRIPTION
	35-06-02	SECONDARY CABLE ASSEMBLY
1	27-42-031	SECONDARY CABLE
2	27-14-091	SWAGED SLEEVE
3	27-14-071	TURNBUCKLE
4	27-02-011	SHEAR PIN
5	27-04-051	EYE NUT
6	27-08-011	WASHER
7	27-08-081	WASHER
8	27-01-181	BOLT
	35-06-02	RESTRAINING CABLE ASSEMBLY
9	27-42-011	RESTRAINING CABLE
10	27-14-101	SWAGED FITTING
11	27-14-111	WIRE ROPE SOCKET-OPEN
12	27-02-021	PIN
13	27-02-031	COTTER PIN
	35-06-03	PULL-OUT CABLE ASSEMBLY
14	27-42-021	PULL-OUT CABLES
15	27-14-081	WIRE ROPE THIMBLE
2	27-14-091	SWAGED SLEEVE
	35-10-01	SLIDE STRAP ASSEMBLY
16	OMIT	
	27-41-021	SLIDE STRAP (INCLUDES NUTS)
17	27-01-121	CONC. ANCHOR BOLT
18	27-01-111	BOLT
19	27-08-011	WASHER
20	27-04-011	NUT
	35-11-01	SNOW SHIELD ASSEMBLY
21	27-49-011	SNOW SHIELD

CELL SANDWICH UNIT
CABLE ASSEMBLY 35-06-01 to 03
SLIDE STRAP ASSEMBLY 35-10-01
SNOW SHIELD ASSEMBLY 35-11-01

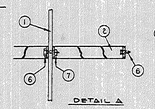


FRONT VIEW

NOTE:
LATERAL DIMENSIONS BETWEEN STRUCTURAL RINGS VARY FROM BAY TO BAY AND UNIT TO UNIT.

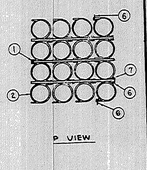


SIDE VIEW



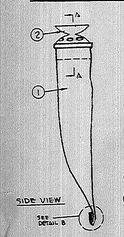
DETAIL A

ITEM	PART NO.	DESCRIPTION
1	27-37-011	EDGE PANEL
2	20-20-041	STRUCTURAL RINGS
3	27-43-011	DBL. ROOF PROTECTORS
4	27-43-021	DBL. ROOF PROTECTORS
5	35-01-01	CARTRIDGE ASSEMBLY
6	27-01-141	BOLT
7	27-04-041	WASHERS
8	27-06-071	DRILLING SCREW



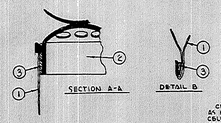
TOP VIEW

CELL SANDWICH UNIT
INTERIOR PANEL ASSEMBLY 35-04-01



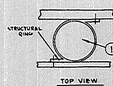
SIDE VIEW

ITEM	PART NO.	DESCRIPTION
1	20-20-041	24" CELL CARTRIDGE
	20-20-101	30" " "
	20-20-111	36" " "
2	20-20-051	CAP-INSERT - BLACK
	20-20-053	" " - YELLOW
	20-20-052	" " - GRAY
3	27-16-021	ADHESIVE



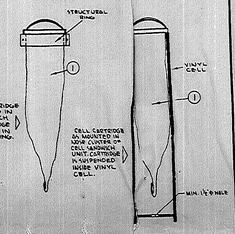
SECTION A-A

DETAIL B

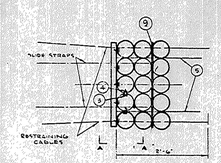


TOP VIEW

TOP VIEW

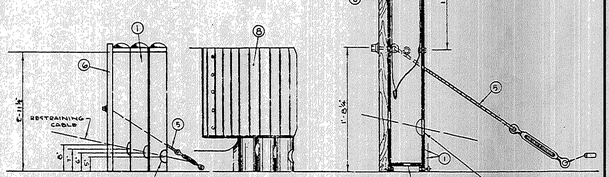


CELL SANDWICH UNIT
CELL CARTRIDGE ASSEMBLY
35-01-01

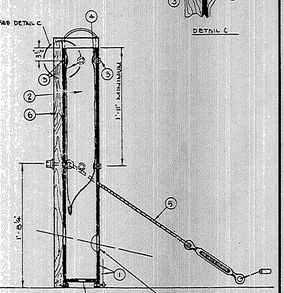


PLAN

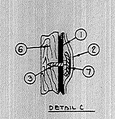
ITEM	PART NO.	DESCRIPTION
1	20-20-031	VINYL TUBE
2	35-01-01	CELL CARTRIDGE ASSEMBLY
3	27-01-141	SPEED BOLT
4	27-04-041	NUT-WASHER
5	35-06-01	SECONDARY CABLE ASSM.
6	35-05-01	DIAPHRAGM-ASSEMBLY
7	27-12-011	VINYL-FOAM TAPE
8	35-12-01	SAFETY-FLEX BELT ASSEMBLY
9	20-20-071	ABS-STIFFENER SHEET



ELEVATION

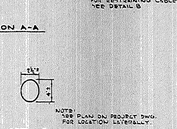


SECTION A-A



DETAIL C

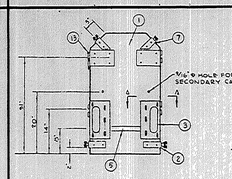
NOTE:
ALL HEAVY WALLED CELLS SHALL BE THE SAME LENGTHS AS SHOWN FOR NOSE CLUSTER. HOLE IN CELL BOTTOM ALSO REQUIRED. WIDTH OF NOSE CLUSTER MAY VARY TO SUIT SPECIFIC NEEDS, BUT SHOULD NOT EXCEED 3 ROWS IN DEPTH.



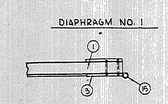
NOTE:
SEE PLAN ON PROJECT DWG. FOR LOCATION LATERALLY.

DETAIL B
HOLE IN OUTSIDE BOW OF VINYL CELLS

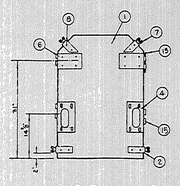
CELL SANDWICH UNIT
CELL NOSE CLUSTER
ASSEMBLY
35-02-01



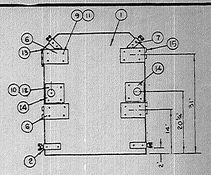
DIAPHRAGM NO. 1



SECTION A-A



DIAPHRAGM NO. 2

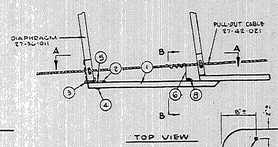


DIAPHRAGM NO. 3 THROUGH UNIT

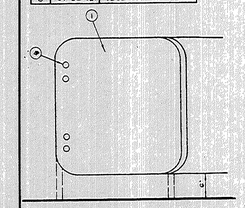
CELL SANDWICH UNIT
DIAPHRAGM ASSEMBLY
35-03-01

ITEM	PART NO.	DESCRIPTION
1	27-36-011	DIAPHRAGM
2	27-4-011	CABLE CLIP (BOTTOM)
3	27-40-061	CABLE EYE GUIDE-(IN DIAPHRAGM)
4	27-40-071	CABLE EYE GUIDE-(DIAPHRAGM)
5	27-14-231	STRAP
6	27-38-011	HINGE LEAF
7	27-14-021	CABLE CLIP (TOP)
8	27-01-141	SPEED BOLT
9	27-01-171	BOLT - CARRIAGE
10	27-01-181	BOLT - H/H
11	27-04-051	NUT
12	27-04-011	NUT
13	27-14-031	HINGE PIN
14	27-40-011	CABLE EYE GUIDE-(3) (IN DIAPHRAGM)
15	27-38-071	HINGE

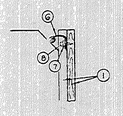
	PART NO.	DESCRIPTION
1	27-38-061	FENDER PANEL
2	27-38-042	HINGE LEAF
3	27-14-031	HINGE PIN
4	27-01-041	BOLT
5	27-04-011	NUT
6	27-14-051	FENDER PANEL CLIP
7	27-08-121	WASHER
8	27-06-121	SCREW



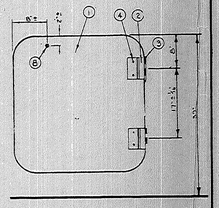
TOP VIEW



SIDE VIEW



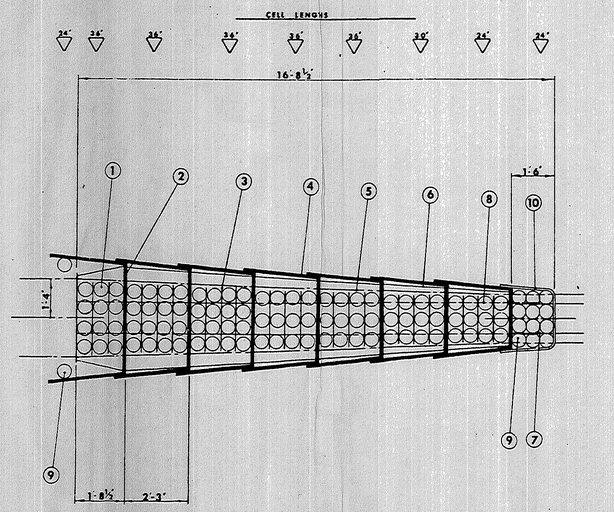
SECTION B-B



SECTION A-A

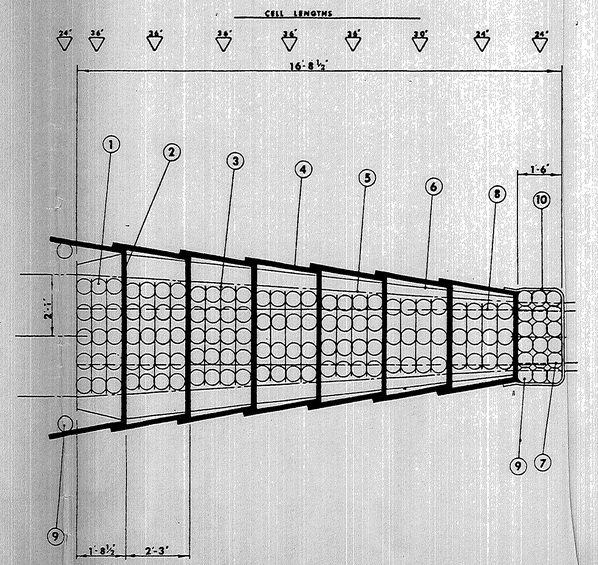
CELL SANDWICH UNIT
FENDER PANEL ASSEMBLY
35-05-01

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	8.7325002	2	
F.A. PROJECT NO.			



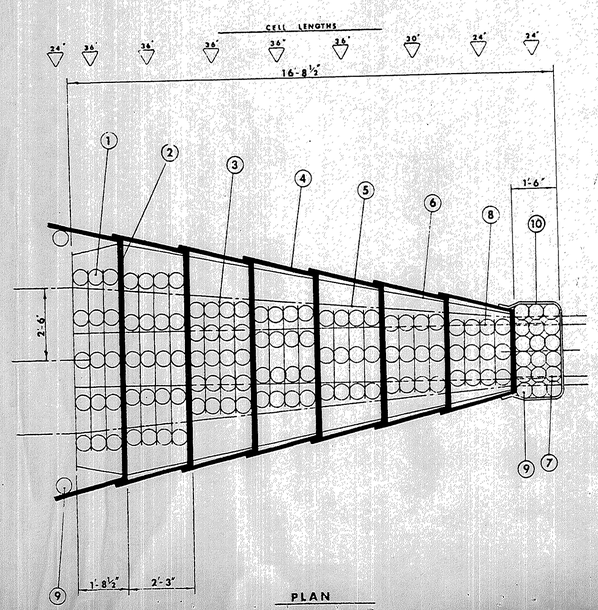
PLAN

NARROW UNIT



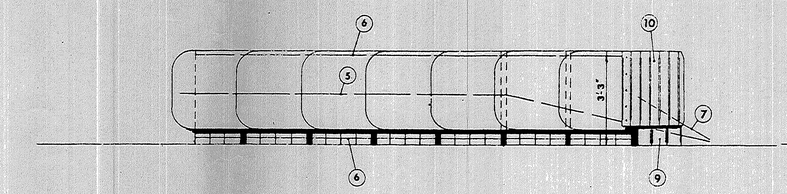
PLAN

MEDIUM UNIT

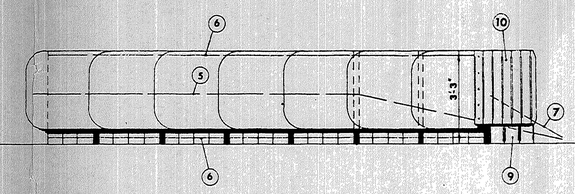


PLAN

WIDE UNIT

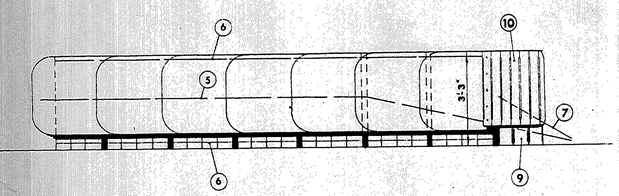


ELEVATION



ELEVATION

MEDIUM UNIT TO BE USED ON THIS PROJECT.



ELEVATION

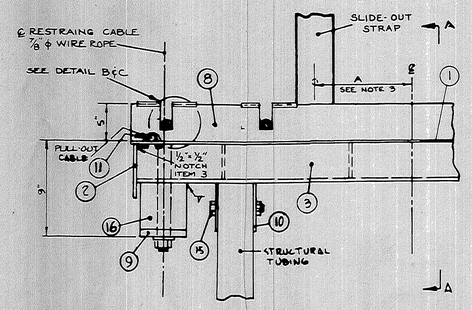
KEY

1. HI-DRO CUSHION CELLS
2. DIAPHRAGMS
3. INTERIOR PANELS
4. FENDER PANELS
5. RESTRAINING CABLES
6. PULL-OUT CABLES
7. SECONDARY CABLES
8. SLIDE STRAPS
9. STD. VINYL CELLS
10. SAFETY-FLEX BELT

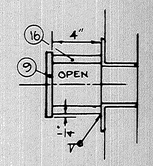
HI-DRO CELL CUSHION

7- BAY UNIT

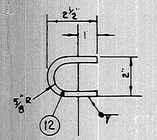
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
87325002	2A	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



TOP VIEW

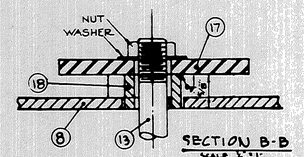


SECTION C-C



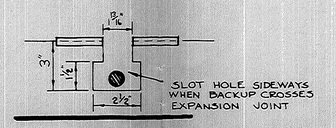
DETAIL A

SEE NOTE 1

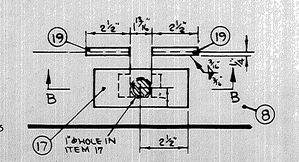


SECTION B-B

SCALE 3"=1'



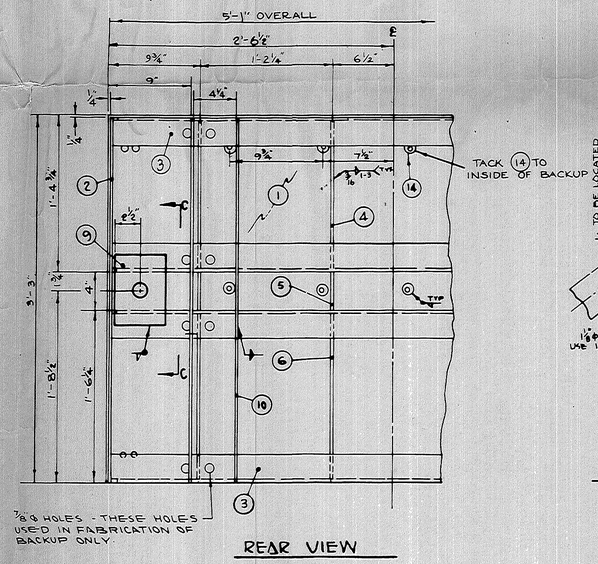
DETAIL C



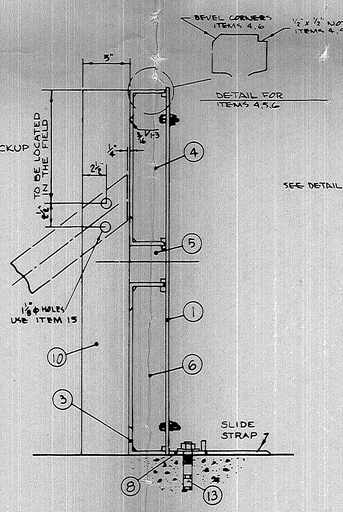
DETAIL B

ITEM 18 IS FOR USE ONLY WHEN BACKUP CROSSES AN EXPANSION JOINT

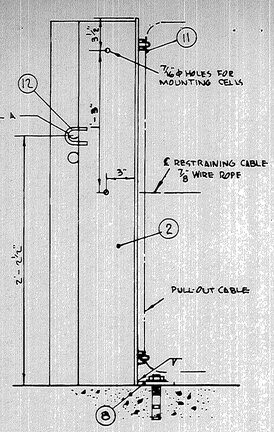
SCALE 3"=1'



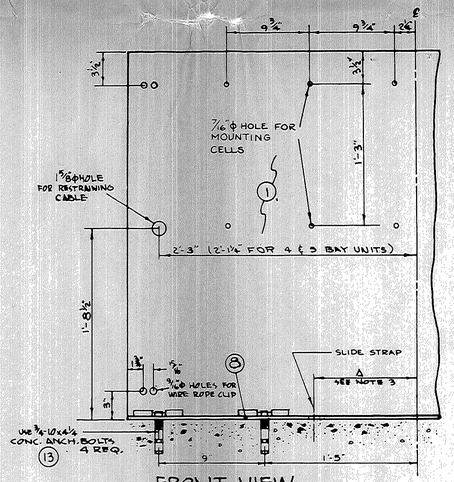
REAR VIEW



SECTION A-A



RIGHT SIDE



FRONT VIEW

PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	REQ'D
1		PL 3'-3" x ¼" x 5'-1"	1
2		F.B. 6" x ¼" x 3'-2¾"	2
3		L 4" x 3" x ⅜" x 5'-5"	4
4		F.B. 3½" x ¼" x 1'-3⅝"	4
5		" 3½" x ¼" x 0'-4"	4
6		" 3⅛" x ¼" x 1'-5⅜"	4
7	DELETE		
8		" 5" x ¼" x 5'-1"	1
9		" 5" x ¾" x 0'-7"	2
10		" 5" x ⅜" x 3'-2¾"	4
11	SEE NOTE 4	⅜" WIRE ROPE CLIPS	4
12	SEE NOTE 1	⅜" ϕ ROUND STOCK x 6½"	2
13		¾"x10x4¾" EXP. TYPE CONC. ANCH. BOLT W/WASH. & NUT	4
14		SPEED BOLTS W/WASHER-NUTS	14
15		1" ϕ x 6½" H.H. BOLTS	4
16		F.B. 5" x ¾" x 4"	4

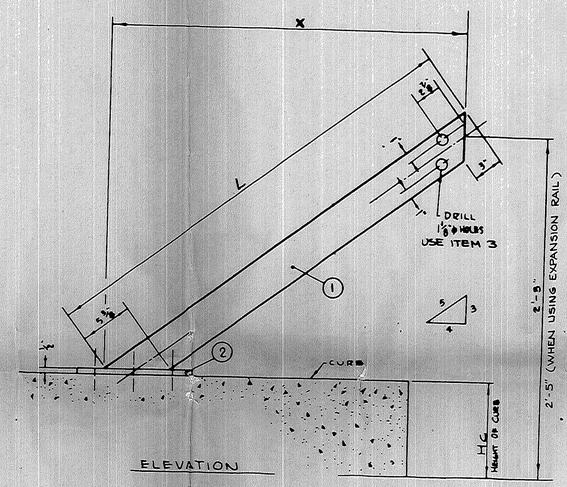
DETAIL B

17		F.B. 2" x ⅜" x 5"	4
18	SEE NOTE 2	PIPE 1" ϕ ASA SCH. 40 x ⅝" LONG	4
19		F.B. 1" x ½" x 2½"	8

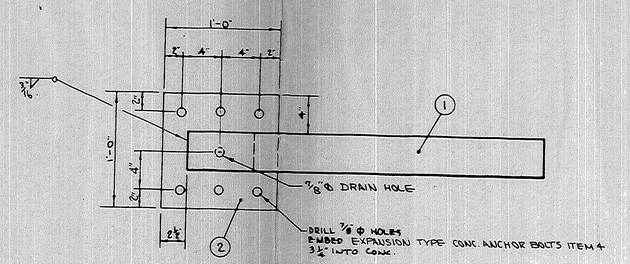
NOTES:

1. ITEM 12 IS REQ. ONLY WHEN WATER WALL IS USED.
2. ITEM 18 IS REQ. ONLY WHEN BACKUP CROSSES AN EXPANSION JOINT.
3. DIMENSION A IS 0'-11" EXCEPT FOR 10, 11 & 12 BAY UNITS IN WHICH A IS 0'-9".
4. SPECIAL WASHER PART NO. 27-08-111 IS REQUIRED WHEN USING ⅜" ϕ U-BOLT FOR WIRE ROPE CLIP. WHEN WIRE ROPE CLIP U-BOLT IS 7/16" ϕ SPECIAL WASHER IS NOT REQUIRED.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
8.7325002	2-B	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



ELEVATION



TOP VIEW

PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	FORMAX R"-2" W/ BACKUP	4x4 □ 14.52 STRUCTURAL TUBING x	1
2		R. 1'-0" x 1/4" x 1'-0"	1
3		1" Φ x 6 1/2" H.H. BOLTS W/WASHER & NUT	2
4		3/4"-10 x 4 3/4" EXPANSION TYPE CONC. ANCH. BOLTS	6

TABLE OF DIMENSIONS

	Hc	L	X		Hc	L	X
A	0"	48 3/8"	38 13/16"	I	7 1/2"	35 7/8"	28 9/16"
B	4"	41 5/8"	33 9/16"	J	8"	35"	28"
C	4 1/2"	40 7/8"	32 13/16"	K	8 1/2"	34 1/8"	27 3/16"
D	5"	40"	32"	M	9"	33 3/8"	26 9/16"
E	5 1/2"	39 1/8"	31 3/16"	N	9 1/2"	32 1/2"	26"
F	6"	38 3/8"	30 7/16"	O	10"	31 5/8"	25 3/16"
G	6 1/2"	37 1/2"	30"	P	10 1/2"	30 3/4"	24 3/8"
H	7"	36 7/8"	29 9/16"	Q	11"	29 7/8"	23 7/8"
				R	12"	28 7/8"	22 11/16"

NOTE:
WHEN USING EXPANSION RAIL L DIM. WILL LENGTHEN. FIND THIS DIMENSION BY SUBTRACTING 2" FROM CURB HEIGHT.
EXAMPLE - CURB IS 6" L DIM. IS 38 3/8" DEDUCT 2" FROM 6" CURB AND THE L-DIM. FOR THE 4" CURB WOULD BE CORRECT. (41 5/8")

REF:
BACKUP DETAILS - DWG. NO.

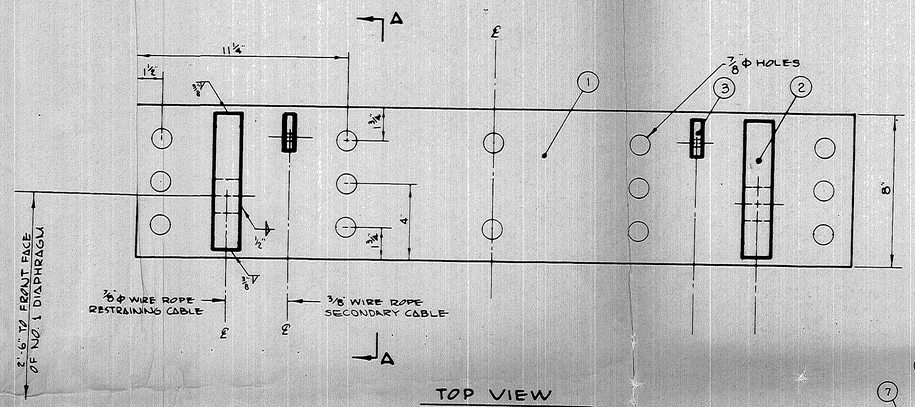
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
8.7325002	2C	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

PARTS LIST

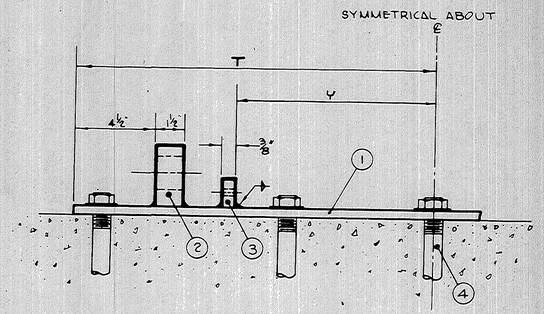
ITEM	STOCK NO	DESCRIPTION	REQ'D.
1		PLATE 1/2" x 8" x	1
2		BAR 1 1/2" x 3 1/2" x 7 1/16"	2
3		" 3/8" x 1 1/2" x 2"	2
4		CONC. ANCHOR BOLTS 3/4-10 x 6 1/2 (SEE NOTE	14
5	27-14-371	BAR 3" x 3/4" x 0'-3 1/2" SEE NOTE 2	4
6	27-02-091	1 5/8" Φ x 5" ROD " " "	4
7	27-02-031	COTTER PIN " " "	8

DIMENSION TABLE

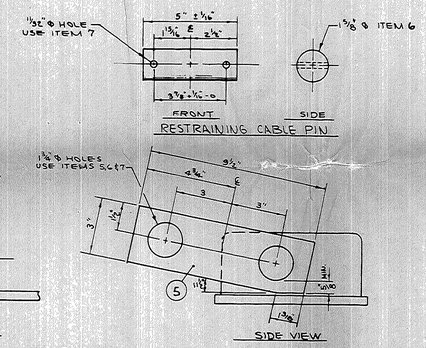
	FRONT DIAPHRAGM WIDTH	T	Y
A	1'-11"	1'-2 3/4"	0'-5 5/8"
B	2'-4"	1'-5 1/4"	0'-8 5/8"
C	2'-9"	1'-7"	0'-10 5/8"



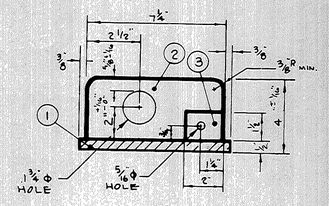
TOP VIEW



FRONT VIEW



ADAPTER DETAILS



SECTION A-A

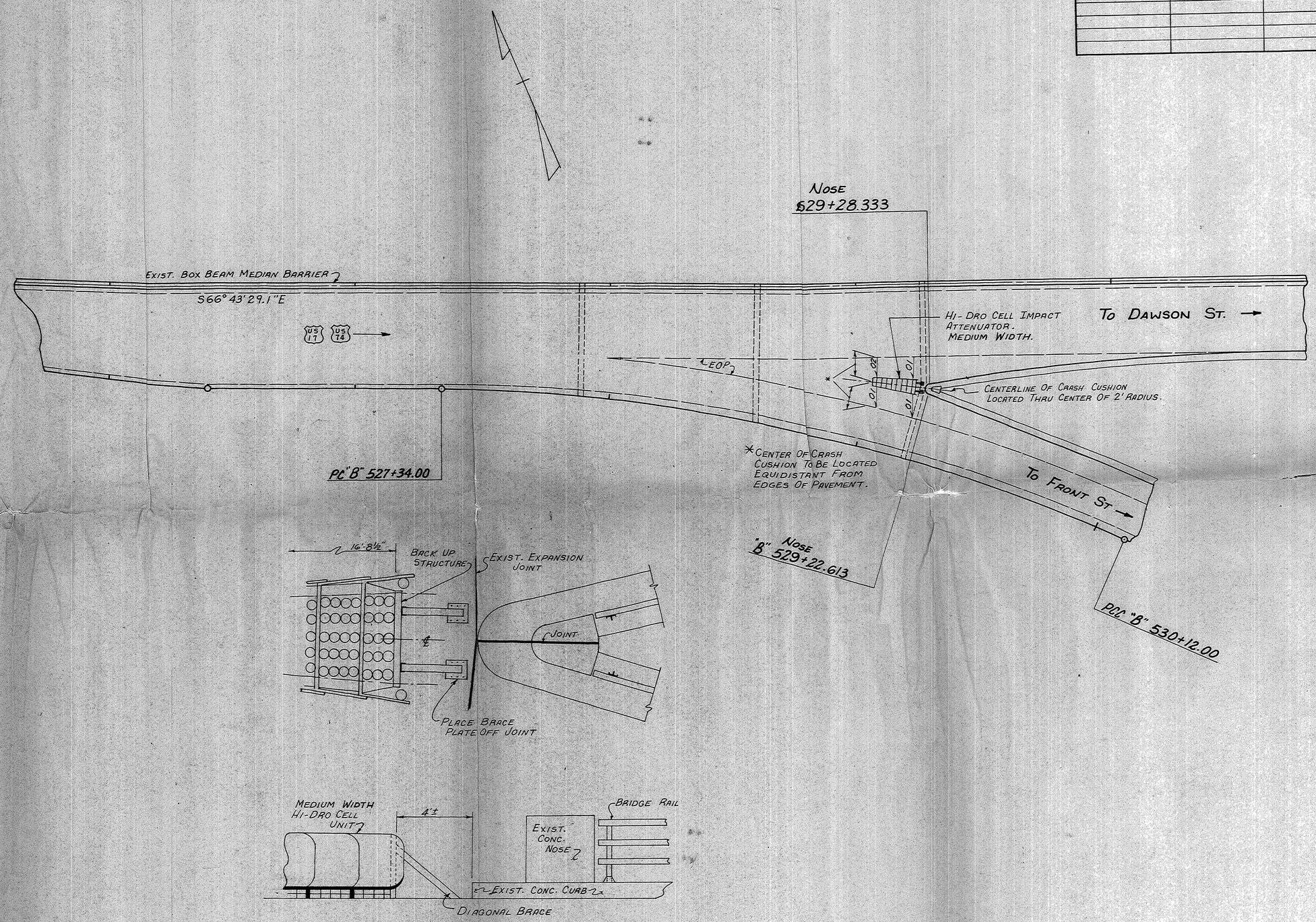
NOTES:

1. 14 CONCRETE ANCHOR BOLTS. 10 BOLTS MIN. REQ'D. PLACED SYMM. ABOUT ℄ OF PLATE.
2. ITEMS 5, 6 & 7 ARE REQ'D. ONLY WHEN RESTRAINING CABLES WITH MALE CLEVIS ENDS ARE USED.

TOLERANCES ± 3/16 EXCEPT WHERE NOTED

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
8.7325002	4	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



N7770

FED. ROAD DIST. NO.	STATE	STATE PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	N.C.	8.1355104		2	20

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION

PLANS OF
CAPE FEAR RIVER CROSSING
AT WILMINGTON
NEW HANOVER COUNTY

CONTRACT No. 1
RIVER PIERS

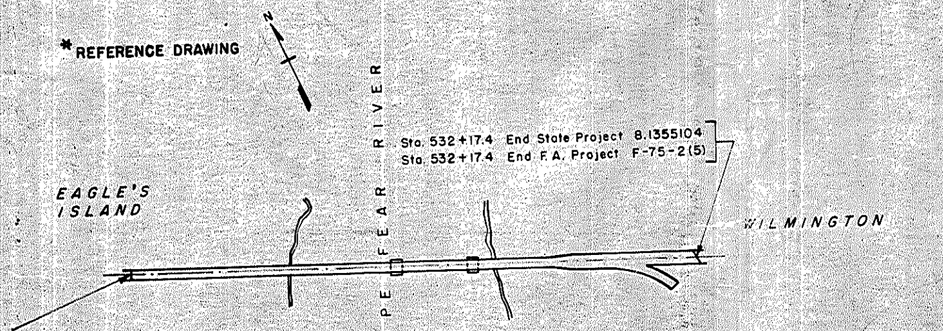
17-25-10 BR 13#

REEL 854
POS 3

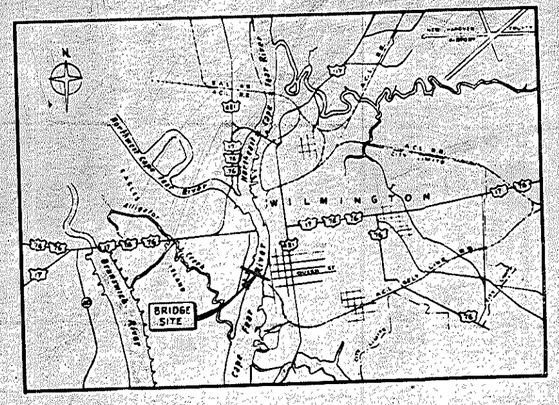
INDEX OF SHEETS

1. TITLE SHEET
2. ESTIMATED QUANTITIES AND GENERAL NOTES
3. MAIN BRIDGE - GENERAL PLAN AND ELEVATION
4. LOGS OF BORINGS B-1 THROUGH B-8
5. LOGS OF BORINGS B-9 THROUGH B-15
6. PIERS 1E AND 1W - SIDE AND FRONT ELEVATIONS
7. PIERS 1E AND 1W - PIER TOPS AND ANCHOR BOLTS
8. PIERS 1E AND 1W - GENERATOR ROOM DETAILS
9. PIERS 1E AND 1W - MISCELLANEOUS SECTIONS AND DETAILS
10. PIERS 1E AND 1W - STAIRWAY, LADDERS AND DETAILS
11. PIERS 1E AND 1W - REINFORCING BAR SCHEDULE
12. PIERS 1E AND 1W - FENDER DETAILS
13. PIERS 2W THROUGH 5W - FOOTING PLANS AND ELEVATIONS
14. DETAILS OF PIERS 2W AND 3W
15. DETAILS OF PIERS 4W AND 5W
* 16. WILMINGTON, N.C. - ANCHORAGE BASIN
CORPS OF ENGINEERS FILE NO. WH 65-26-3

* REFERENCE DRAWING



PLAN
Scale: 1" = 400'



LOCATION PLAN
1" = 5000'±

CONVENTIONAL SIGNS

County Line
Township Line
City or Town Line
Right of Way Line
Survey Line
Property or Exist. Right of Way Line
Fence
Proposed Road
Existing Road
Railroad
Control of Access Line
Slope Stake Line
Bridge
Culvert
Woods
Telephone or Telegraph Pole
Tower Pole and Line
Power Pole
Proposed Right of Way Marker
Existing Right of Way Marker
Guard Rail

THESE PLANS MICRO-FILMED BY NORTH CAROLINA STATE HIGHWAY COMMISSION REPRODUCTION DEPT.

APPROVED

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER DATE

Prepared in Office of
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
New York, N.Y.

CONTRACT NO. 1

~SUMMARY OF ESTIMATED QUANTITIES~

NO.	ITEM	UNIT	Contract QUANTITY	Final Quantities
15	Mobilization	Lump Sum	—	
24A	Cofferdams, Piers 1E and 1W.	Lump Sum	—	
24B	Cofferdams, Piers 2W, 3W, 4W and 5W	Lump Sum	—	
24C	Stone Backfill	Cu. Yd.	4,410	4410.18
207B	Tremie Seal (Class AA Concrete)	Cu. Yd.	12,290	12,155.55
207C	Footing Concrete (Class A Concrete)	Cu. Yd.	5,450	5495.58
207D	Concrete Above Footings (Class A Concrete)	Cu. Yd.	12,280	12,255.41
208	Reinforcing Steel	Lbs.	810,000	809,016.36
209	Structural Steel (Approximate quantity 105,000#)	Lump Sum	—	
210A	Treated and Painted Structural Timber for Handrails, Posts and Walkway Flooring	M.F.B.M.	3.6	3.5
210B	All Other Treated Structural Timber	M.F.B.M.	37.5	39.54
300A	Steel Piles (14BP73)	Lin. Ft.	3,770	4389.56
300B	Steel Pile Points	Each	25	75
300C	Loading Tests	Each	2	2
751	5" Diameter Conduit	Lin. Ft.	2,160	2,169.74
752	Engineer's Field Office	Lump Sum	—	
753	Submarine Trench Excavation	Lump Sum	—	

13. REINFORCING STEEL QUANTITY
Total Quantity shown for reinforcing steel is not exact and is to be used for bid purposes only. The quantity of reinforcing steel to be paid for will be the total theoretical weight of the steel as required by the plans and accepted.

~GENERAL NOTES~

1. SPECIFICATIONS:
North Carolina State Highway Commission 1965 Standard Specifications, together with the Special Provisions prepared for this Contract.

2. DESIGN SPECIFICATIONS:
A.A.S.H.O. 1961 Standard Specifications for Highway Bridges, Division I, and 1953 Standard Specifications for Movable Highway Bridges, Division III.

3. LIVE LOAD:
HS 20-44 as defined in the A.A.S.H.O. Specifications

4. DESIGN STRESSES:
a) Concrete in Structures
Ultimate Compressive Strength f'_c = 3,000 p.s.i.
Extreme Fiber in Compression, max. f_c = 1,200 p.s.i.
b) Reinforcement Steel, Intermediate Grade f_s = 20,000 p.s.i.
c) Structural Steel & Steel Sheet Piling f_s = 20,000 p.s.i.

5. REINFORCING STEEL:
All reinforcing steel shall be Intermediate Grade Deformed bars. Unless otherwise provided on the Plans, all bars shall be spliced or embedded a minimum of 30 diameters. Unless otherwise noted, clear distances between reinforcing and the face of concrete shall be as follows:
Below Elev. + 12 on Piers 1E and 1W
Below Elev. + 8 on Piers 2W, 3W, 4W and 5W } 4"
All other locations 2"

6. STRUCTURAL STEEL:
ASTM A36-63T except as otherwise noted.

7. STEEL SHEET PILING:
ASTM A328 for fender system at Piers 1E and 1W.

8. FOUNDATION DESIGN LOADS:
Steel H-Piles (14BP73) 80 Tons
Spread Footings (Piers 1E & 1W) 5 Tons/S.F.

9. DATUM:
All elevations refer to U.S. Coast and Geodetic Survey Sea Level Datum of 1929 (adjusted).

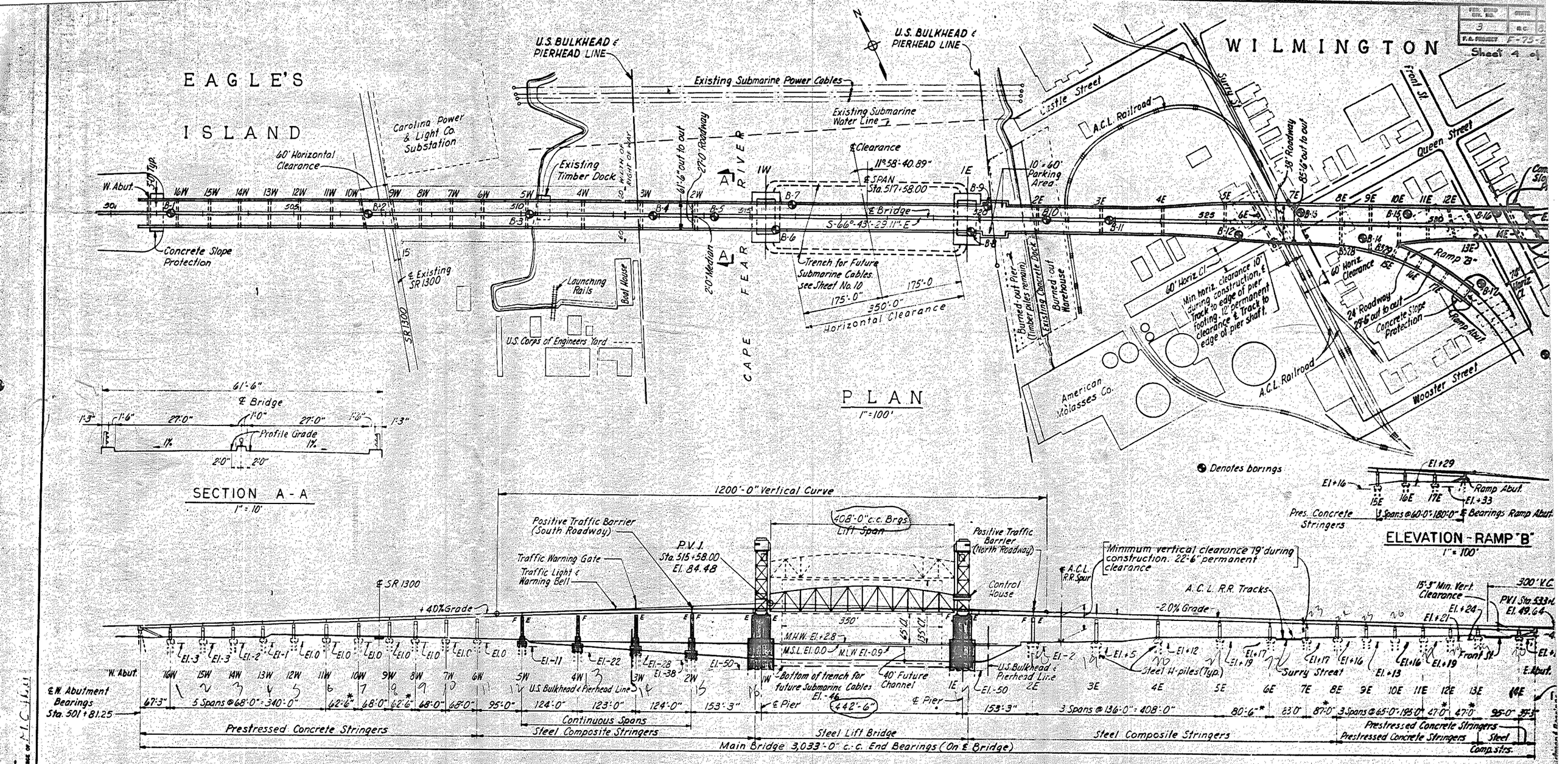
10. PROTECTION OF RIVER TRAFFIC:
See Special Provisions for requirements for temporary navigation lights and protection of river traffic.

11. CONCRETE IN STRUCTURES:
a) Class AA
Tremie Seals
b) Class A
Footings, Pedestals, Walls, Shafts, Beams & Caps, Floors & Stairways

12. CONSTRUCTION JOINTS & CHAMFERS:
Construction joints, other than those shown, will not be permitted without written approval of the Engineer. Unless otherwise noted, all exposed concrete edges shall be chamfered thus:

PROJECT No. 8.1355104
NEW HANOVER COUNTY
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
CAPE FEAR RIVER CROSSING
AT WILMINGTON
RIVER PIERS
ESTIMATED QUANTITIES AND GENERAL NOTES
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS NEW YORK
DATE: 4-29-66
SHEET NO. 3 OF

IN CHARGE OF M.C. Flu
M.C. Flu



LOCATIONS OF BORINGS

HOLE	STATION	OFFSET	APPROX. DEPTH	CASING DIAM.	HOLE	STATION	OFFSET	APPROX. DEPTH	CASING DIAM.
B-1	502+25	℄	59.8'	3½"	B10	521+55	℄	60'	3½"
B-2	506+60	℄	59.3'	2½"	B11	522+90	℄	60'	2½"
B-3	510+15	8' LT.	60.5'	2½"	B12	525+82	32' RT.	60'	2½"
B-4	512+85	℄	60'	2½"	B13	527+05	33' LT.	60'	2½"
B-5	514+20	℄	99.3'	3½"	B14	528+50	30' RT.	60.2'	2½"
B-6	515+60	30' RT.	100'	2½"	B15	529+45	35' LT.	60'	2½"
B-7	515+90	30' LT.	150'	2½"	B16	531+40	25 LT.	60'	3½"
B-8	519+80	30 RT.	150'	2½"	B17	531+00	115' RT.	60'	3½"
B-9	520+10	30 LT.	100.3'	2½"	B18	532+50	280' RT.	60'	3½"

NOTE

SHADING INDICATES PIERS IN CONTRACT NO. 1

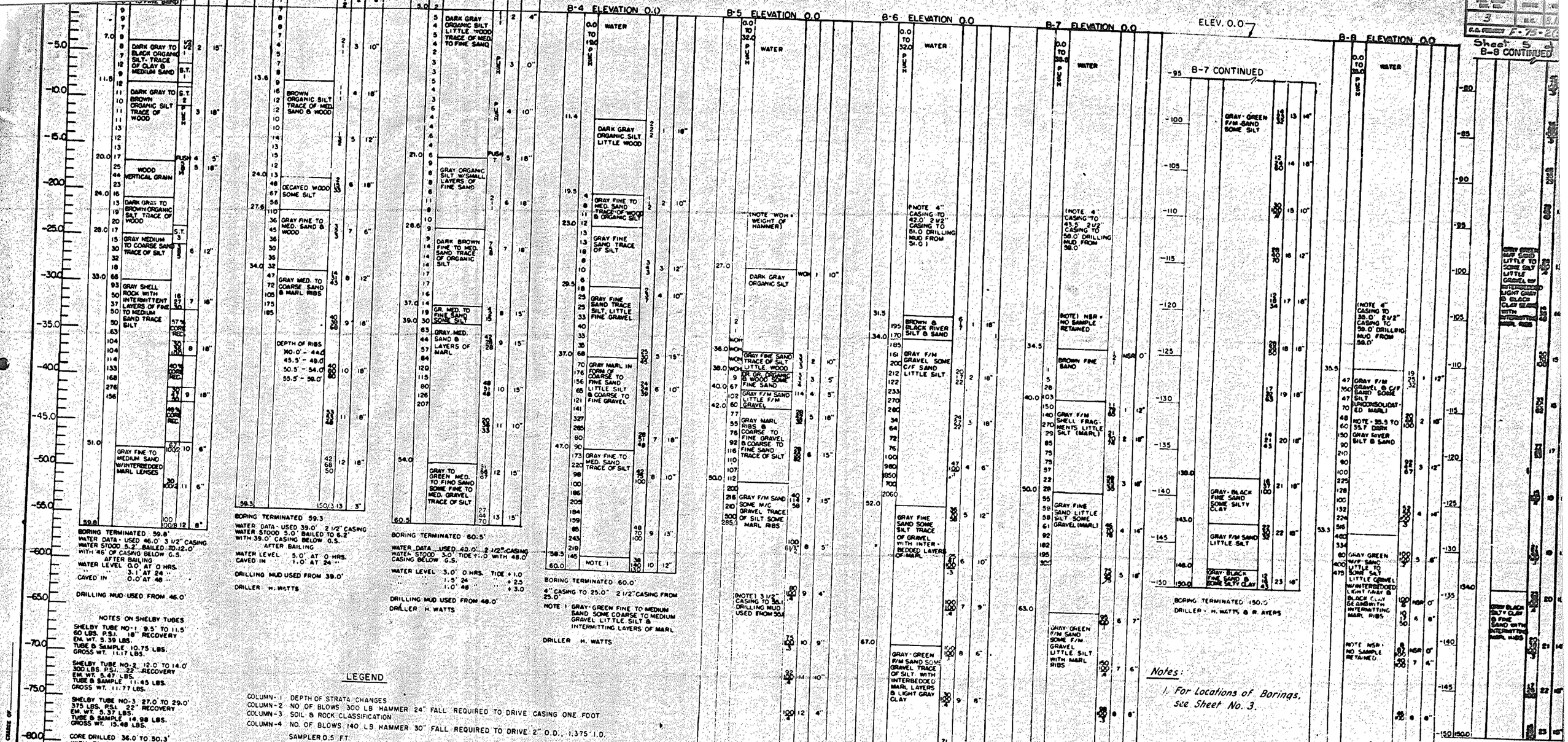
PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON
MAIN BRIDGE

GENERAL PLAN AND ELEVATION

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC. DATE 4-29-66



BORING TERMINATED 59.8'
WATER DATA - USED 46.0' 3 1/2" CASING
WATER STOOD 5.2' BAILED TO 12.0'
WITH 46' OF CASING BELOW G.S.
AFTER BAILING
WATER LEVEL 0.0' AT 0 HRS.
" " 3.1' AT 24 "
CAVED IN 0.0' AT 48 "

DRILLING MUD USED FROM 46.0'

BORING TERMINATED 59.3
WATER DATA - USED 39.0' 2 1/2" CASING
WATER STOOD 5.0' BAILED TO 6.2'
WITH 39.0' CASING BELOW G.S.
AFTER BAILING
WATER LEVEL 5.0' AT 0 HRS.
CAVED IN 1.0' AT 24 "

DRILLING MUD USED FROM 39.0'

DRILLER H. WATTS

BORING TERMINATED 60.5'
WATER DATA USED 48.0' 2 1/2" CASING
WATER STOOD 3.0' TIDE + 1.0 WITH 48.0'
CASING BELOW G.S.
WATER LEVEL 3.0' 0 HRS. TIDE + 1.0
" " 1.5' 24 " " + 2.5
" " 1.0' 48 " " + 3.0

DRILLING MUD USED FROM 48.0'

DRILLER H. WATTS

BORING TERMINATED 60.0'
4" CASING TO 25.0' 2 1/2" CASING FROM 25.0'
NOTE 1 GRAY-GREEN FINE TO MEDIUM SAND SOME COARSE TO MEDIUM GRAVEL LITTLE SILT & INTERMITTING LAYERS OF MARL

DRILLER H. WATTS

NOTES ON SHELBY TUBES

SHELBY TUBE NO-1 9.5' TO 11.5'
60 LBS. P.S.I. 18" RECOVERY
EM. WT. 5.39 LBS.
TUBE & SAMPLE 10.75 LBS.
GROSS WT. 11.17 LBS.

SHELBY TUBE NO-2 12.0' TO 14.0'
300 LBS. P.S.I. 22" RECOVERY
EM. WT. 5.47 LBS.
TUBE & SAMPLE 11.45 LBS.
GROSS WT. 11.77 LBS.

SHELBY TUBE NO-3 27.0' TO 29.0'
375 LBS. P.S.I. 22" RECOVERY
EM. WT. 5.37 LBS.
TUBE & SAMPLE 14.98 LBS.
GROSS WT. 15.48 LBS.

CORE DRILLED 36.0' TO 50.3'
WITH BX DIAMOND BIT

DRILLER H. WATTS

LEGEND

COLUMN-1 DEPTH OF STRATA CHANGES
COLUMN-2 NO. OF BLOWS 300 LB HAMMER 24" FALL REQUIRED TO DRIVE CASING ONE FOOT
COLUMN-3 SOIL & ROCK CLASSIFICATION
COLUMN-4 NO. OF BLOWS 140 LB HAMMER 30" FALL REQUIRED TO DRIVE 2" O.D., 1.375" I.D. SAMPLER 0.5 FT.
COLUMN-5 SAMPLE NUMBER
COLUMN-6 SAMPLE RECOVERY
VERTICAL SCALE 1" = 5'

1	2	3	4	5	6

Notes:

1. For Locations of Borings, see Sheet No. 3.

B-7 CONTINUED NEXT COLUMN

BORINGS MADE BY
FROEHLING & ROBERTSON, INC.
RICHMOND, VIRGINIA

PROJECT No. 8.1355104

NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

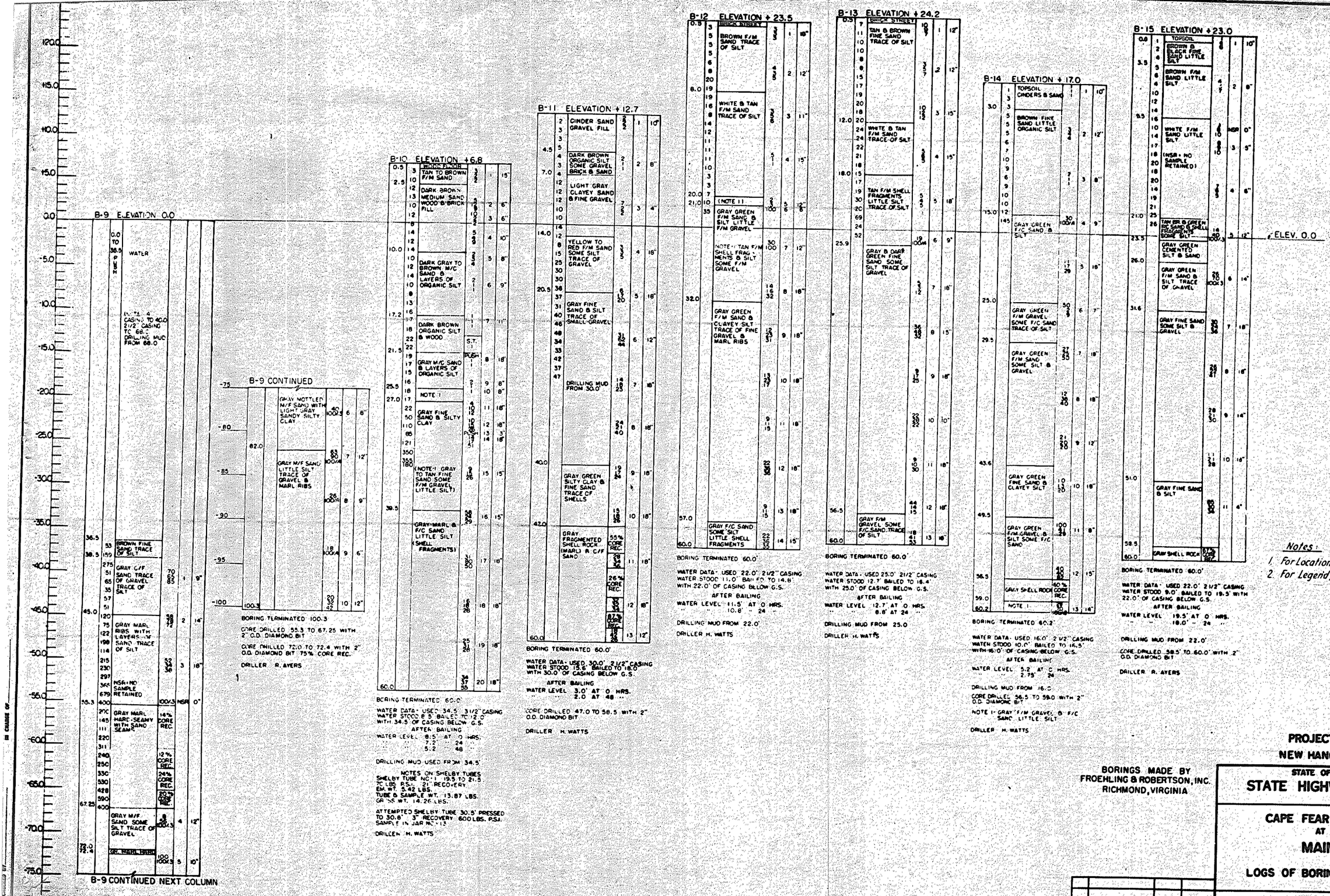
CAPE FEAR RIVER CROSSING
AT WILMINGTON
MAIN BRIDGE

LOGS OF BORINGS B-1 THROUGH B-8

REVISION	BY	DATE

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS NEW YORK

DATE 4-29-66
SHEET NO. 4 OF 16



Notes:

1. For Locations of Borings, see Sheet No. 3
2. For Legend, see Sheet No. 4.

PROJECT No. 8.1355104

NEW HANOVER COUNTY

BORINGS MADE BY
FROEHLING & ROBERTSON, INC.
RICHMOND, VIRGINIA

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

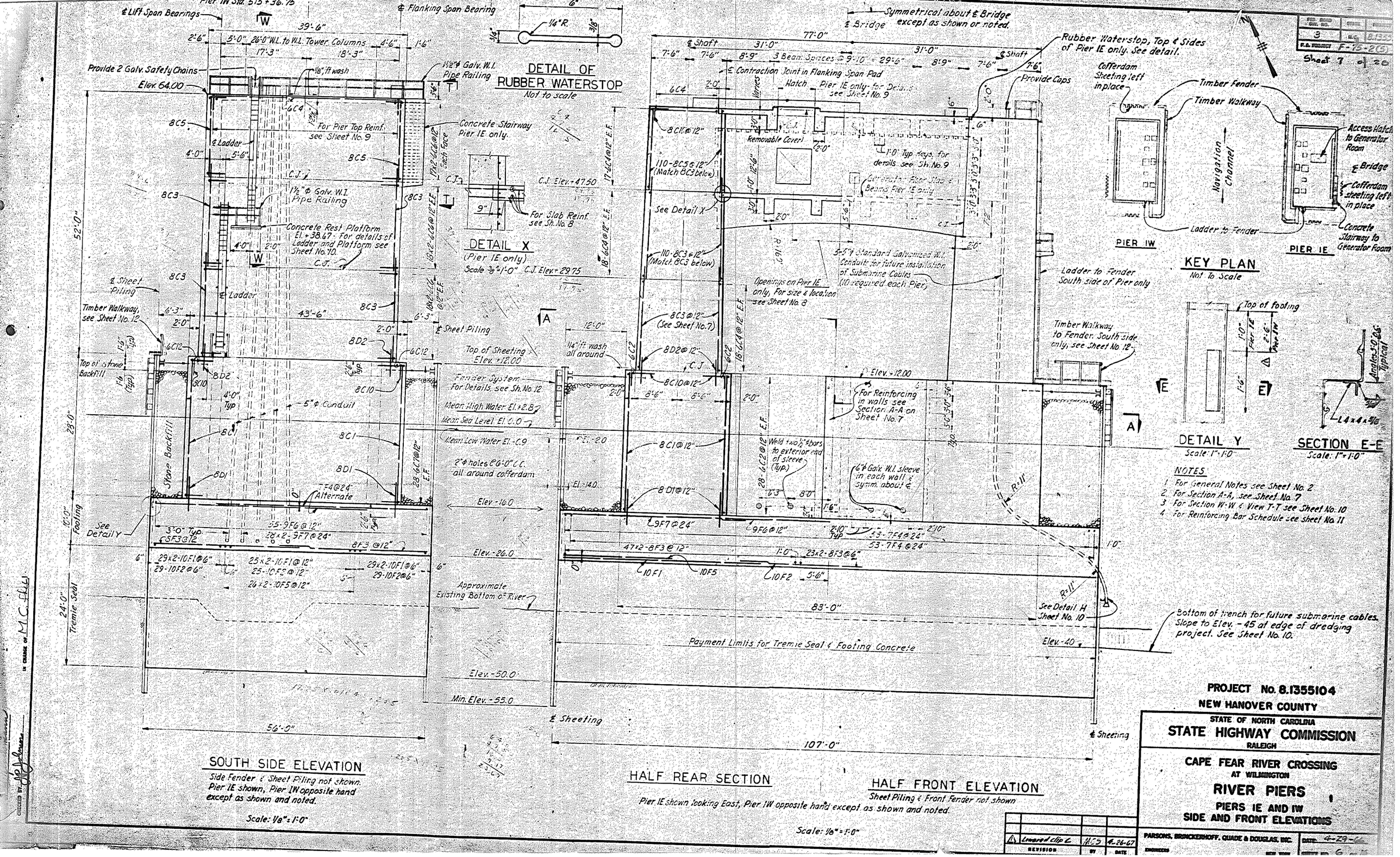
CAPE FEAR RIVER CROSSING
AT WILMINGTON
MAIN BRIDGE

LOGS OF BORINGS B-9 THROUGH B-15

REVISION	BY	DATE

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS NEW YORK

DATE 4-29-66
SHEET NO. 5 OF 16



SOUTH SIDE ELEVATION

Side Fender & Sheet Piling not shown. Pier IE shown, Pier IW opposite hand except as shown and noted.

Scale: 1/8"=1'-0"

HALF REAR SECTION

HALF FRONT ELEVATION

Sheet Piling & Front Fender not shown

Pier IE shown looking East, Pier IW opposite hand except as shown and noted.

Scale: 1/8"=1'-0"

PROJECT No. 8.1355104

NEW HANOVER COUNTY

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

CAPE FEAR RIVER CROSSING

AT WILMINGTON

RIVER PIERS

PIERS IE AND IW

SIDE AND FRONT ELEVATIONS

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

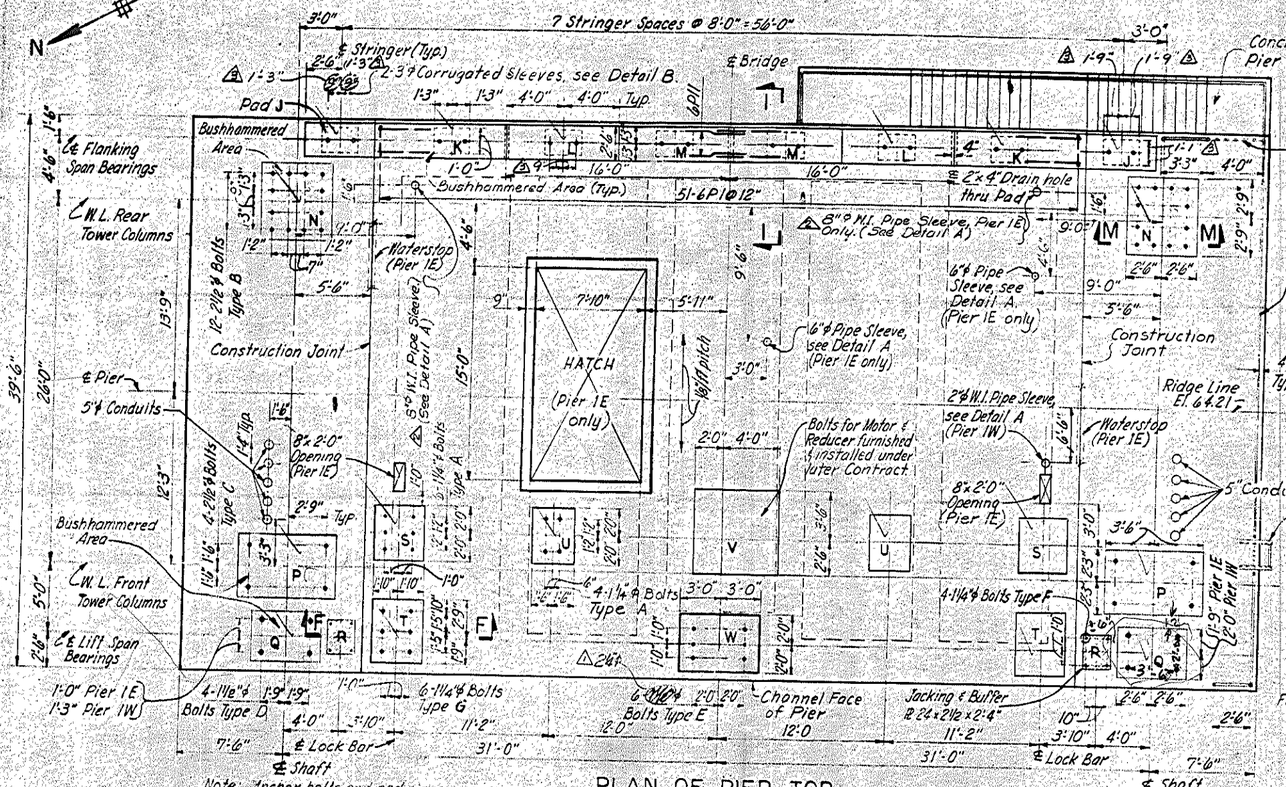
ENGINEERS

NEW YORK

DATE 4-29-66

SHEET NO. 6

REVISION	BY	DATE
Lowered clip C	MCS	4-26-67



Note: Anchor bolts and pad sizes are symmetrical about ℄ Bridge except as shown and noted.

PLAN OF PIER TOP

Pier 1E Shown; Pier 1W opposite hand except as shown and noted.

Scale: 3/16" = 1'-0"

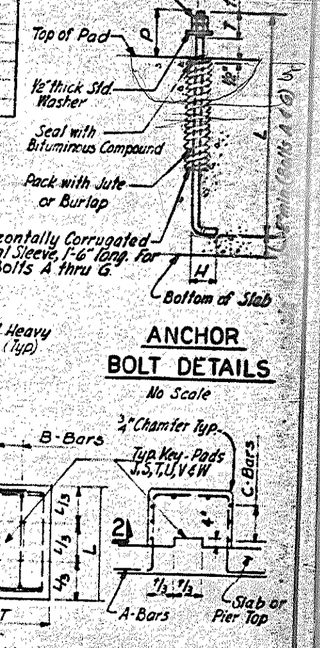
PIERS 1E & 1W BEARING SEAT ELEVS.		
J	~~66.22~~ 65.22	Bushhammered Elevations
K	~~66.27~~ 66.31	
L	~~66.32~~ 66.39	
M	~~66.37~~ 66.47	
N	64.12	
P	64.12	
Q	64.12	
PAD ELEVATIONS		
S	66.10	Screeded Elevations
T	65.70	
U	66.10	
V	65.80	
W	66.00	

ANCHOR BOLT SCHEDULE

Type	d	L	T	P	H	No. Req'd Each Pier
A	1¼¾	3'-4"	4½"	5"	4"	20
B	2½¾	16'-2"	7½"	9½"	*	24
C	2½¾	7'-8½"	7½"	1'-2½"	6"	8
D	1¼¾	3'-6"	5½"	**	4"	8
E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6
F	1¼¾	2'-6"	5"	5½"	4"	8
G	1¼¾	3'-0"	4½"	5"	4"	12

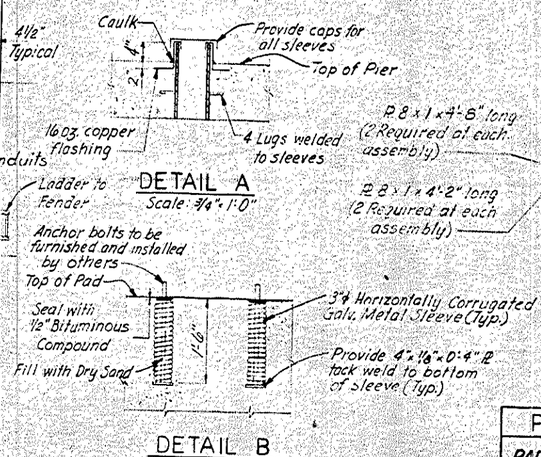
* See Section M-M
** Pier 1E 8" / Pier 1W 9½"

2'-6" △ 6'-2" △ 6½" △ 8" △ 6" △



ANCHOR BOLT DETAILS

No Scale



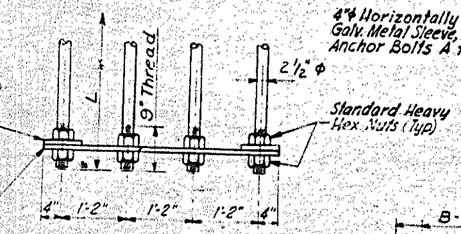
DETAIL A

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

DETAIL B

Scale: 3/8" = 1'-0"

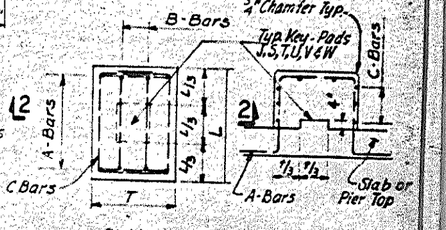
(See Pads J, K-L-M & Approach Piers)



SECTION M-M

At bottom of Type B Bolts

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



PLAN

SECTION 2-2

TYPICAL PAD DETAILS

Scale 3/8" = 1'-0"

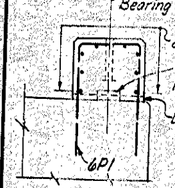
Note: For Bar Marks see Pad Reinforcing Chart this sheet. For Pad K-L-M see Section 1-1

NOTES

1. For General Notes see Sheet No. 2
2. For Section F-F see Sheet No. 9
3. For Reinforcing Bar Schedule see Sheet No. 11

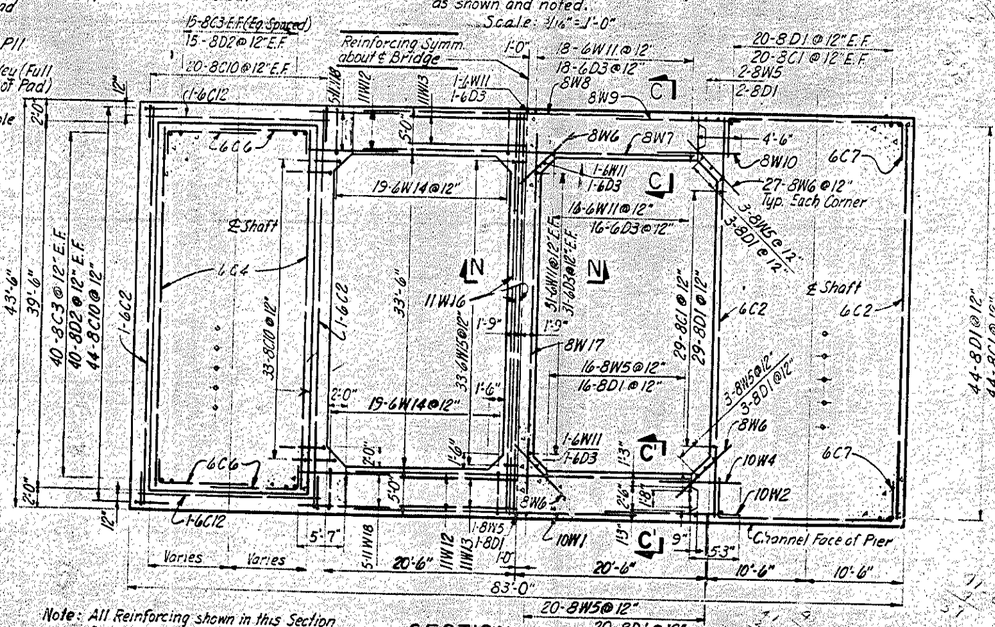
PAD REINFORCING			
PAD	BAR	MARK	NO. PER PAD
J	A	6P1	10
	B	6P2	3
	C	6P3	3
S	A	6P4	6
	B	6P5	5
	C	6P6	3
T	A	6P7	6
	B	6P8	5
	C	6P9	2
U	A	6P10	6
	B	6P5	3
	C	6P12	3
V	A	6P13	8
	B	6P13	8
	C	6P14	2
W	A	6P15	9
	B	~~6P16~~	8
	C	6P17	3
K-L-M	–	6P1	51
	–	6P11	16

△ 6P16



SECTION 1-1

Scale: 3/8" = 1'-0"

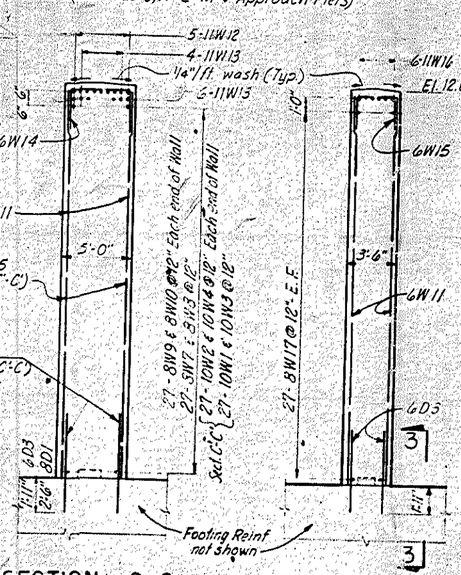


Note: All Reinforcing shown in this Section for both Piers 1E & 1W.

SECTION A-A

Scale: 1/8" = 1'-0"

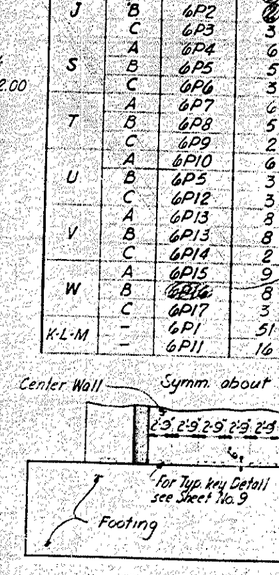
For location, see Sheet No. 6



SECTION C-C

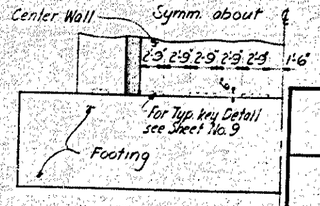
Section C'-C' similar & as noted

Scale: 3/16" = 1'-0"



SECTION N-N

Scale: 3/16" = 1'-0"



SECTION 3-3

Scale 1/8" = 1'-0"

4	Revised Pads J	M.C.S.	3-27-67
3	Added Sleeves	M.C.S.	12.20.66
1	Revised Bolts E	V.W.W.	11-18-66

PROJECT No. 8.1355104

NEW HANOVER COUNTY

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

CAPE FEAR RIVER CROSSING AT WILMINGTON

RIVER PIERS

PIERS 1E AND 1W

PIER TOPS AND ANCHOR BOLTS

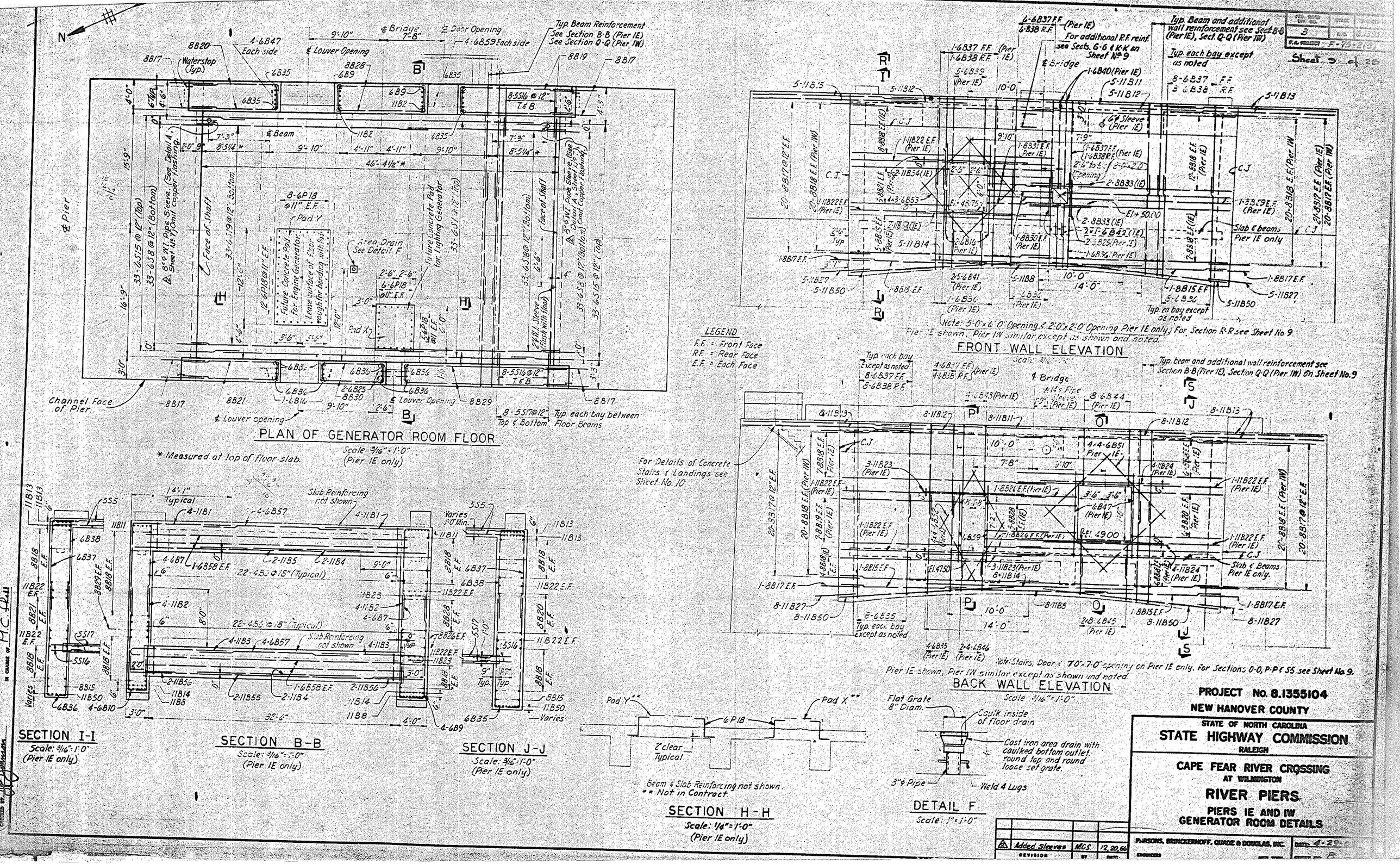
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

DATE 4-29-66

3 | F.A. PROJECT F-95-2(3) | Sheet 8 of 20

IN CHARGE OF M.C. Hall

DESIGNED BY N.R. Johnson



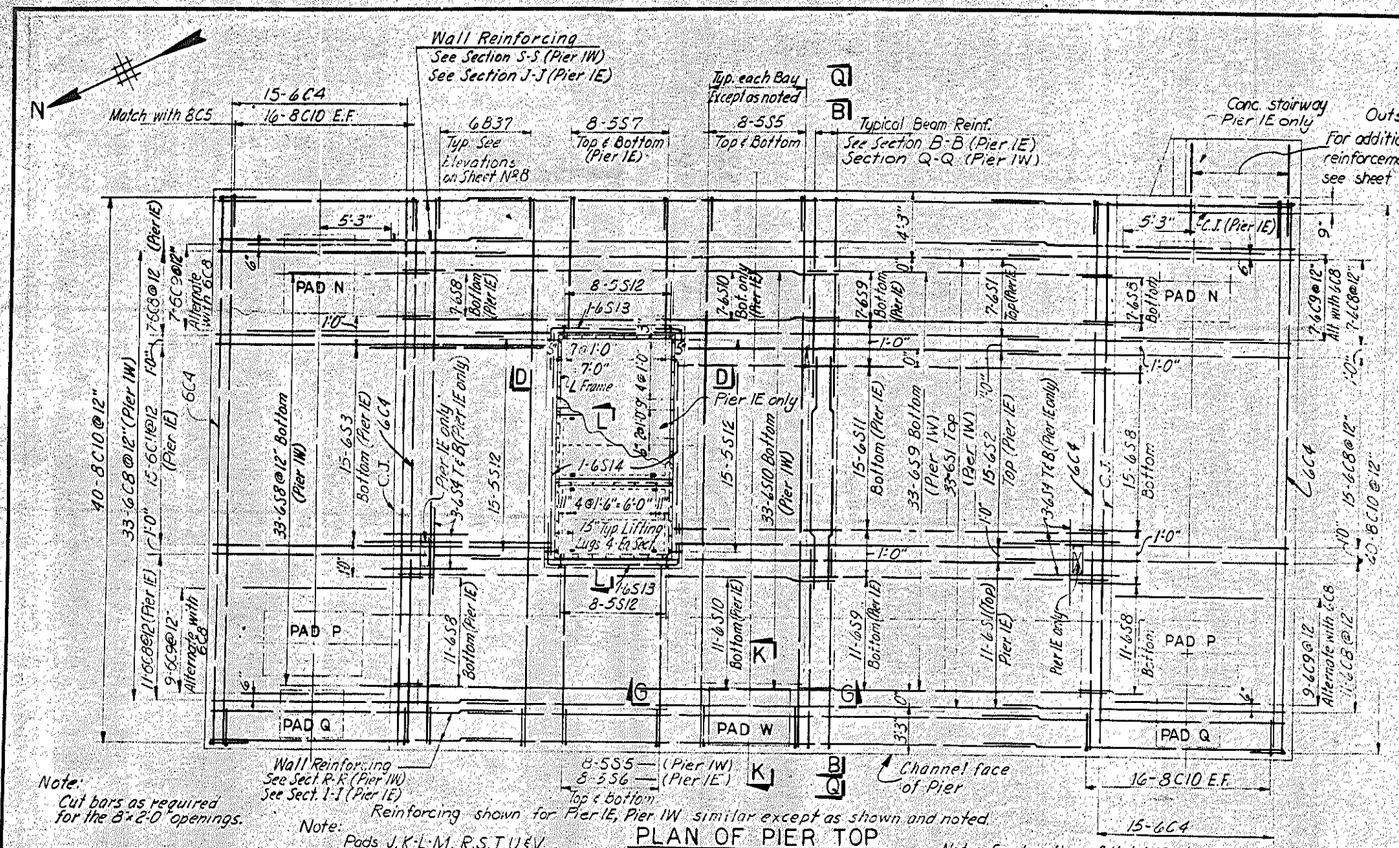
PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON
RIVER PIERS
PIERS 1E AND 1W
GENERATOR ROOM DETAILS

REVISION	BY	DATE
Added Sleeves	MCS	12, 20, 66

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS
DATE 4-29-
SHEET NO. 8



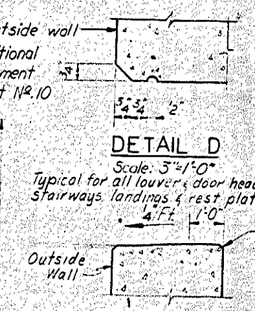
Note: Cut bars as required for the 8'×2'-0" openings.

Note: Pads J, K, L, M, R, S, T, U & V omited for clarity.

PLAN OF PIER TOP

Scale: 3/16" = 1'-0"

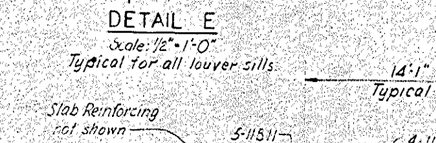
Note: For location of Hatch, Pads and Anchor Bolts, see Plan of Pier Top, Sheet No. 7



DETAIL D

Scale: 3"=1'-0"

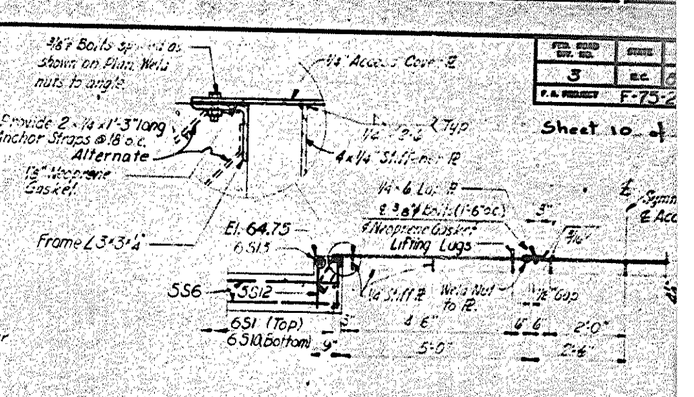
Typical for all louver & door heads and underside of stairways landings & rest platforms.



DETAIL E

Scale: 1/2"=1'-0"

Typical for all louver sills.



SECTION L-L

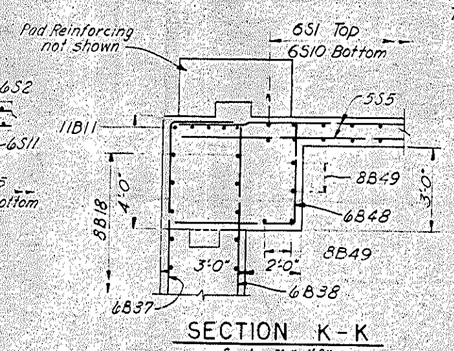
Scale: 3/8"=1'-0"

(Pier IE only)

SECTION D-D

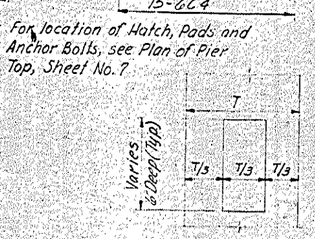
Scale: 3/8"=1'-0"

(Pier IE only)



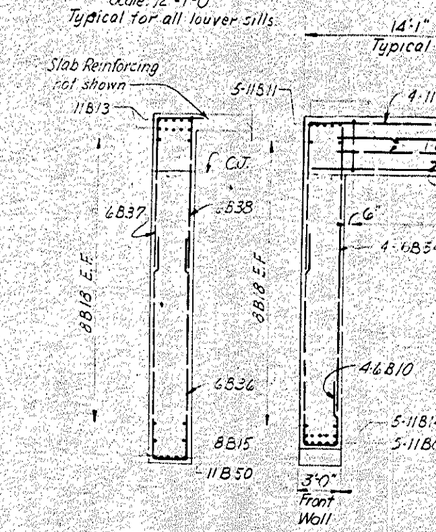
SECTION K-K

Scale: 3/8"=1'-0"



TYPICAL KEY DETAIL

N.T.S.



SECTION R-R

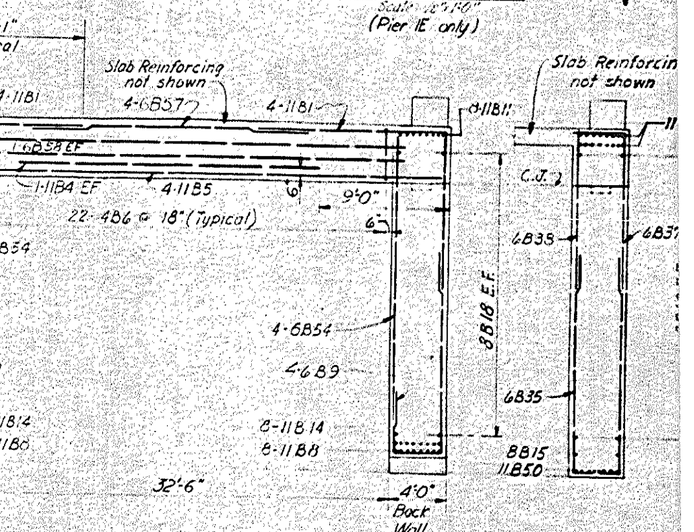
Scale: 3/16"=1'-0"

(Pier IW only)

SECTION Q-Q

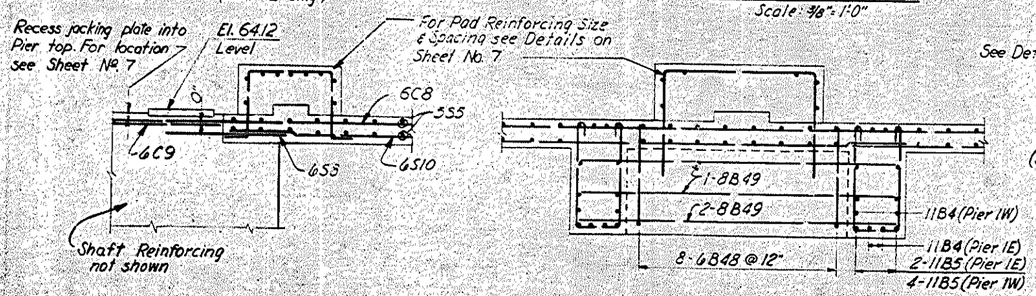
Scale: 3/16"=1'-0"

(Pier IW only)



(Pier IE Only)

SECTION P-P

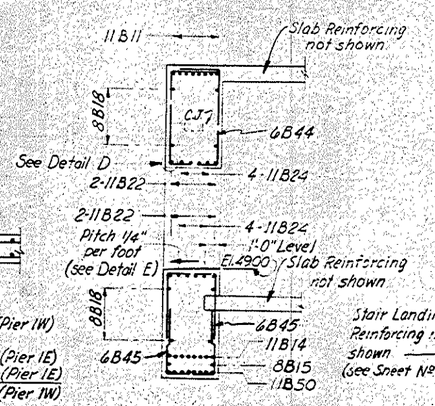


SECTION F-F

Scale: 3/8"=1'-0"

SECTION G-G

Scale: 3/8"=1'-0"



(Pier IE Only)

SECTION O-O

NOTES:

1. For Section B-B see Sh. No. 8
2. For location of Sections O-O, P-P, R-R & S-S see Sheet No. 8.
3. For location of Section F-F see Sheet No. 7.

SECTION S-S

Scale: 3/16"=1'-0"

(Pier IW only)

PROJECT No. 8.1355104

NEW HANOVER COUNTY

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

CAPE FEAR RIVER CROSSING AT WILMINGTON

RIVER PIERS

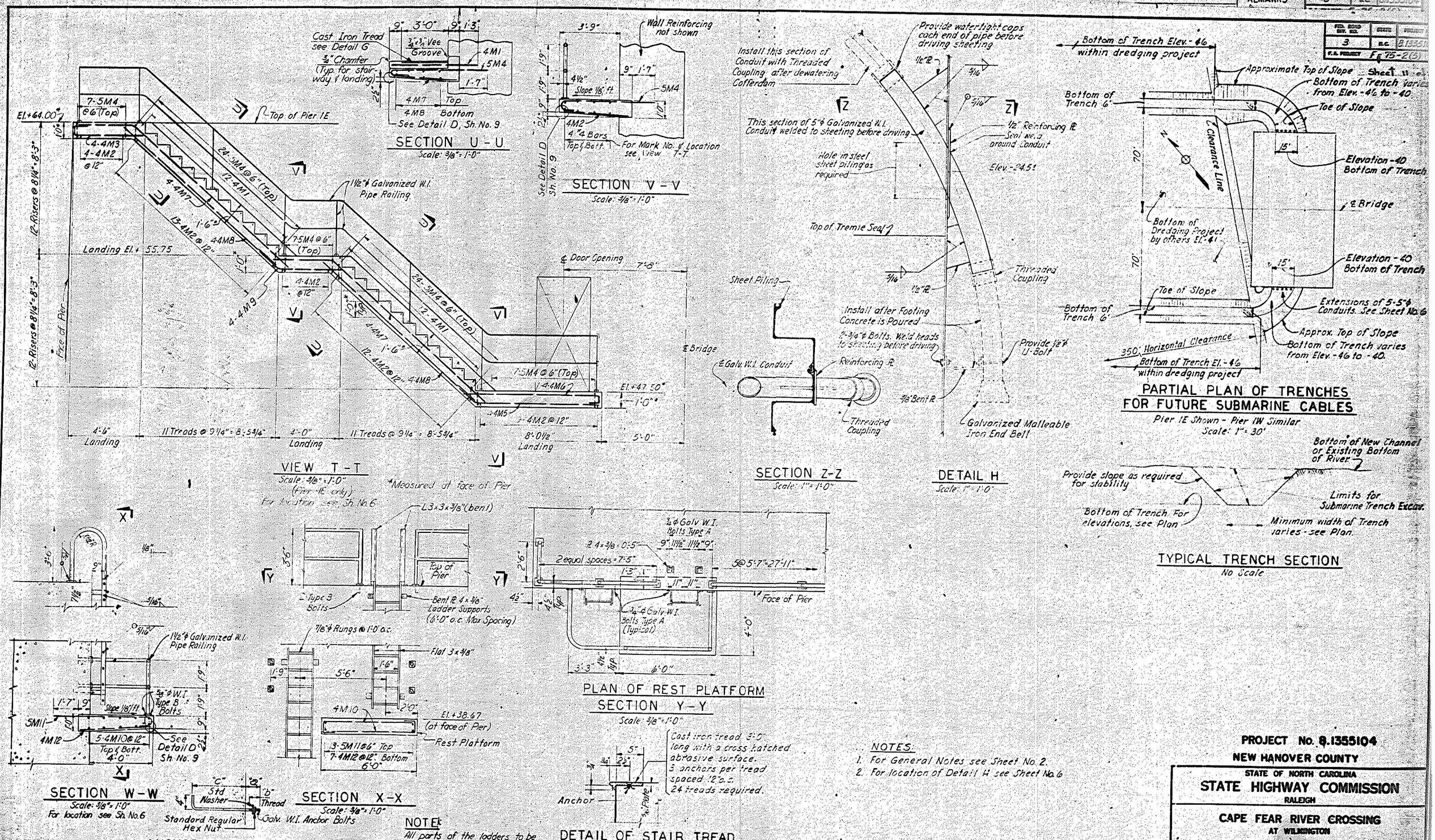
PIERS IE AND IW

MISCELLANEOUS SECTIONS AND DETAILS

FED. ROAD DIV. NO.	STATE	
3	N.C.	
P.A. PROJECT F-75-2		

IN CHARGE OF M. C. Hall

DESIGNED BY A. R. Johnson



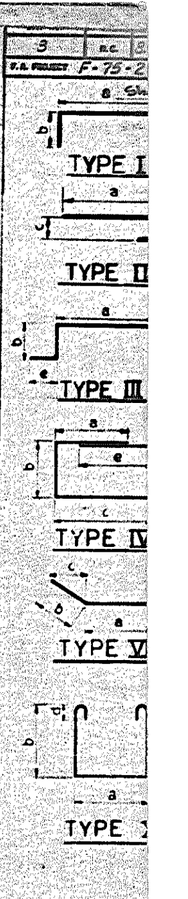
Location	Type	"a"	"b"	"c"	No Required Pier 1E	No Required Pier 1W	Size
Ladder Support	A	2"	11 1/2"	1'-0"	24	24	3'-6"

PROJECT No. 8.1355104
NEW HANOVER COUNTY
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
CAPE FEAR RIVER CROSSING
AT WILMINGTON
RIVER PIERS
PIERS 1E AND 1W
STAIRWAY, LADDERS AND DETAILS

MARK	TOTAL LENGTH	TYPE	NUMBER REQ'D PIER IE	NUMBER REQ'D PIER IW	NUMBER REQ'D TOTAL	DIMENSIONS a	b	c	d	e	REMARKS
10F1	40'-0"		166	166	332						
10F2	31'-10"		83	83	166						
8F3	28'-4"		234	234	468						
7F4	42'-0"		106	106	212						
10F5	22'-0"		52	52	104						
9F6	42'-0"		55	55	110						
9F7	34'-4"		56	56	112						
8D1	7'-0"		315	315	630						
8D2	5'-0"		220	220	440						
6D3	5'-10"		135	135	270						
10W1	25'-6"		27	27	54						
10W2	14'-3"		54	54	108						
10W3	36'-6"		27	27	54						
10W4	8'-9"		54	54	108						
8W5	27'-8"		89	89	178						
8W6	8'-0"		216	216	432						
8W7	36'-6"		27	27	54						
8W8	24'-9"		27	27	54						
8W9	13'-2"		54	54	108						
8W10	7'-3"		54	54	108						
6W11	27'-8"		135	135	270						
11W12	36'-6"		10	10	20						
11W13	25'-0"		20	20	40						
6W14	8'-2"	I	76	76	152	4'-4"	1'-11"	1'-11"			
6W15	6'-8"	I	33	33	66	2'-10"	1'-11"	1'-11"			
11W16	42'-10"		6	6	12						
8W17	38'-6"		54	54	108						
11W18	9'-5"		20	20	40						
8C1	27'-8"		226	226	452						
6C2	42'-10"		116	116	232						
8C3	20'-3"		440	440	880						
6C4	34'-2"		242	242	484						
8C5	16'-4"		220	220	440						
6C6	11'-3"	I	424	424	848	9'-4"	1'-11"	0			
6C7	24'-2"	I	116	116	232	20'-4"	1'-11"	1'-11"			
6C8	20'-3"		51	66	117						
6C9	10'-6"		32	32	64						
8C10	6'-6"	I	378	378	756	4'-0	2'-6"	0			
6C11	24'-5"		15	-	15						
6C12	20'-4"		4	4	8						
6S1	40'-0"		51	33	84						
6S2	25'-9"		15	-	15						
6S3	13'-6"		15	-	15						
6S4	5'-10"		12	-	12						
5S5	39'-2"		64	80	144						
5S6	13'-8"		16	-	16						
5S7	10'-2"		16	-	16						
6S8	4'-3"		117	66	183						
6S9	21'-5"		18	33	51						
6S10	31'-5"		18	33	51						
6S11	31'-1"		15	-	15						
5S12	2'-9"	I	46	-	46	5"	1'-2"	1'-2"			
6S13	12'-9"	I	2	-	2	8'-11"	1'-11"	1'-11"			
6S14	16'-1"		2	-	2						
6S15	7'-11"		66	-	66						
5S16	4'-3"		160	-	160						
5S17	32'-0"		80	-	80						
6S18	19'-10"		33	-	33						
6S19	29'-8"		33	-	33						

MARK	TOTAL LENGTH	TYPE	NUMBER REQ'D PIER IE	NUMBER REQ'D PIER IW	NUMBER REQ'D TOTAL	DIMENSIONS a	b	c	d	e	REMARKS
11B1	25'-9"	I	32	32	64	13'-11"	11'-10"	0			
11B2	13'-4"		32	-	32						
11B3	15'-8"	II	32	-	32	13'-1½"	1'-9½"	1'-5"			
11B4	21'-6"		16	8	24						
11B5	39'-2"		8	16	24						
4B6	10'-0"	X	176	88	264	1'-8"	3'-8"	3'-8"	6"		
6B7	11'-11"		32	-	32						
11B8	20'-0"		13	13	26						
6B9	21'-7"	I	16	16	32	3'-8"	14'-1"	3'-10"			
6B10	20'-7"	I	16	16	32	2'-8"	14'-1"	3'-10"			
11B11	40'-0"		13	13	26						
11B12	10'-0"		26	26	52						
11B13	22'-0"		52	52	104						
11B14	28'-0"		13	13	26						
8B15	18'-6"		8	8	16						
6B16	10'-0"		4	-	4						
8B17	5'-2"		170	168	338						
8B18	26'-7"		110	160	270						
8B19	18'-7"	I	14	-	14	15'-6"	3'-1"	0			
8B20	14'-7"	I	12	-	12	11'-6"	3'-1"	0			
8B21	15'-1"	I	10	-	10	12'-6"	2'-7"	0			
11B22	26'-7"		12	-	12						
11B23	13'-4"		6	-	6						
11B24	17'-0"		8	-	8						
4B25	6'-0"		4	-	4						
8B26	10'-6"	I	6	-	6	7'-5	3'-1"	0			
11B27	7'-4"		26	26	52						
6B28	15'-1"	I	10	-	10	12'-0"	3'-1"	0			
8B29	24'-0"	I	4	-	4	21'-5	2'-7"	0			
8B30	13'-8"	I	4	-	4	8'-6"	2'-7"	2'-7"			
8B31	11'-0"	I	8	-	8	8'-5"	2'-7"	0			
8B33	8'-0"		4	-	4						
11B34	15'-0"		4	-	4						
6B35	32'-2"	I	28	40	68	3'-8"	14'-3"	14'-3"			
6B36	31'-2"	I	34	40	74	2'-8"	14'-3"	14'-3"			
6B37	14'-9"	I	62	80	142	3'-8"	11'-1"	0			
6B38	11'-1"		62	80	142						
6B39	25'-2"	IV	5	-	5	2'-4	8'-11"	2'-8"	8'-11"	2'-4"	
6B40	30'-8"	IV	2	-	2	2'-4	11'-8"	2'-8"	11'-8"	2'-4"	
6B41	11'-8"	I	10	-	10	2'-8"	4'-6	4'-6			
6B42	12'-8"	I	4	-	4	2'-8"	5'-0	5'-0			
6B43	27'-4"	IV	4	-	4	2'-10"	9'-0	3'-8"	9'-0	2'-10"	
6B44	24'-8"	IV	8	-	8	2'-10"	7'-8	3'-8	7'-8"	2'-10"	
6B45	13'-2"	I	16	-	16	3'-8"	4'-9	4'-9			
5B46	11'-4"	I	8	-	8	3'-8"	3'-10"	3'-10"			
6B47	11'-0"		8	-	8						
6B48	8'-4"	I	8	8	16	4'-8	3'-8"	0			
5B49	11'-6"		4	4	8						
11B50	23'-4"		26	26	52						
6B51	13'-0"		16	-	16						
6B52	10'-0"		16	-	16						
6B53	11'-0"		12	-	12						
6B54	20'-4"		-	32	32						
11B55	33'-8"		8	-	8						
11B56	6'-9"		16	-	16						
6B57	18'-6"		32	16	48						
6B58	33'-8"		32	16	48						
6B59	11'-2"		8	-	8						
4M1	5'-7"		24	-	24						
4M2	4'-2"		42	-	42						
4M3	6'-0"	I	4	-	4	7"	4'-2"	1'-3"			
5M4	6'-6"	II	79	-	79	5'-11"	7"	5"			
4M5	9'-10"	VI	4	-	4	7'-10"	2'-0"	1'-6"			
4M6	10'-5"	I	4	-	4	7"	8'-7"	1'-3"			
4M7	16'-0"	VI	8	-	8	12'-5"	3'-6"	2'-7"			
4M8	12'-6"		8	-	8						
4M9	5'-9"	VI	4	-	4	3'-9"	2'-0"	1'-6"			
4M10	7'-6"	I	10	10	20	7"	5'-8"	1'-3"			
5M11	6'-9"	II	13	13	26	6'-2"	7"	5"			
4M12	4'-5"		7	7	14						

MARK	TOTAL LENGTH	TYPE	NUMBER REQ'D PIER IE	NUMBER REQ'D PIER IW	NUMBER REQ'D TOTAL	DIMENSIONS a	b	c	d	e	REMARKS
6P1	10'-0½"	I	71	71	142	2'-0½"	4'-0"	4'-0"			
6P2	12'-6½"	I	6	6	12	4'-6½"	4'-0"	4'-0"			
6P3	15'-8"	IV	6	6	12	3'-4"	2'-2"	4'-8"	2'-2"	3'-4"	
6P4	10'-5½"	III	12	12	24	3'-2½"	2'-7"	2'-7"	1'-0½"	1'-0½"	
6P5	10'-9½"	III	16	16	32	3'-6½"	2'-7"	2'-7"	1'-0½"	1'-0½"	
6P6	16'-0"	IV	6	6	12	2'-8"	3'-8"	3'-4"	3'-8"	2'-8"	
6P7	9'-9½"	III	12	12	24	3'-2½"	2'-3"	2'-3"	1'-0½"	1'-0½"	
6P8	11'-1"	III	10	10	20	4'-0½"	3'-9"	2'-3"	1'-0½"	0"	
6P9	17'-0"	IV	4	4	8	2'-8"	4'-2"	3'-4"	4'-2"	2'-8	
6P10	9'-9½"	III	12	12	24	2'-6½"	2'-7"	2'-7"	1'-0½"	1'-0½"	
6P11	26'-3"		16	16	32						
6P12	14'-8"	IV	6	6	12	2'-4"	3'-8"	2'-8"	3'-8"	2'-4"	
6P13	12'-3½"	III	16	16	32	5'-6½"	2'-4"	2'-4"	1'-0½"	1'-0½"	
6P14	24'-8"	IV	2	2	4	3'-10"	5'-8"	5'-8"	5'-8"	3'-10"	
6P15	11'-6½"	I	9	9	18	3'-6½"	4'-0"	4'-0"			
~~6P16~~	~~8'-6½"~~	~~I~~	~~8~~	~~8~~	~~16~~	~~3'-0½"~~	~~4'-0"~~	~~4'-0"~~			
6P17	20'-5"	IV	3	3	6	3'-10"	3'-8"	5'-8"	3'-8"	3'-10"	
6P18	3'-9"	III	62	-	62	1'-0½"	1'-8"	0	0	1'-0½"	
8P16	14'-2½"	I	8	8	16	3'-6½"	2'-4"	4'-4"			



LEGEND
10F1, 10-Bar Size, F1-Bar Mark
All dimensions are out to out of bars

PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON
RIVER PIERS
PIERS IE AND IW
REINFORCING BAR SCHEDULE

REVISION	BY	DATE
2 Revised GP1 & 2	MCS	3-27-67
1 Revised bar bars	VWW	11-13-66

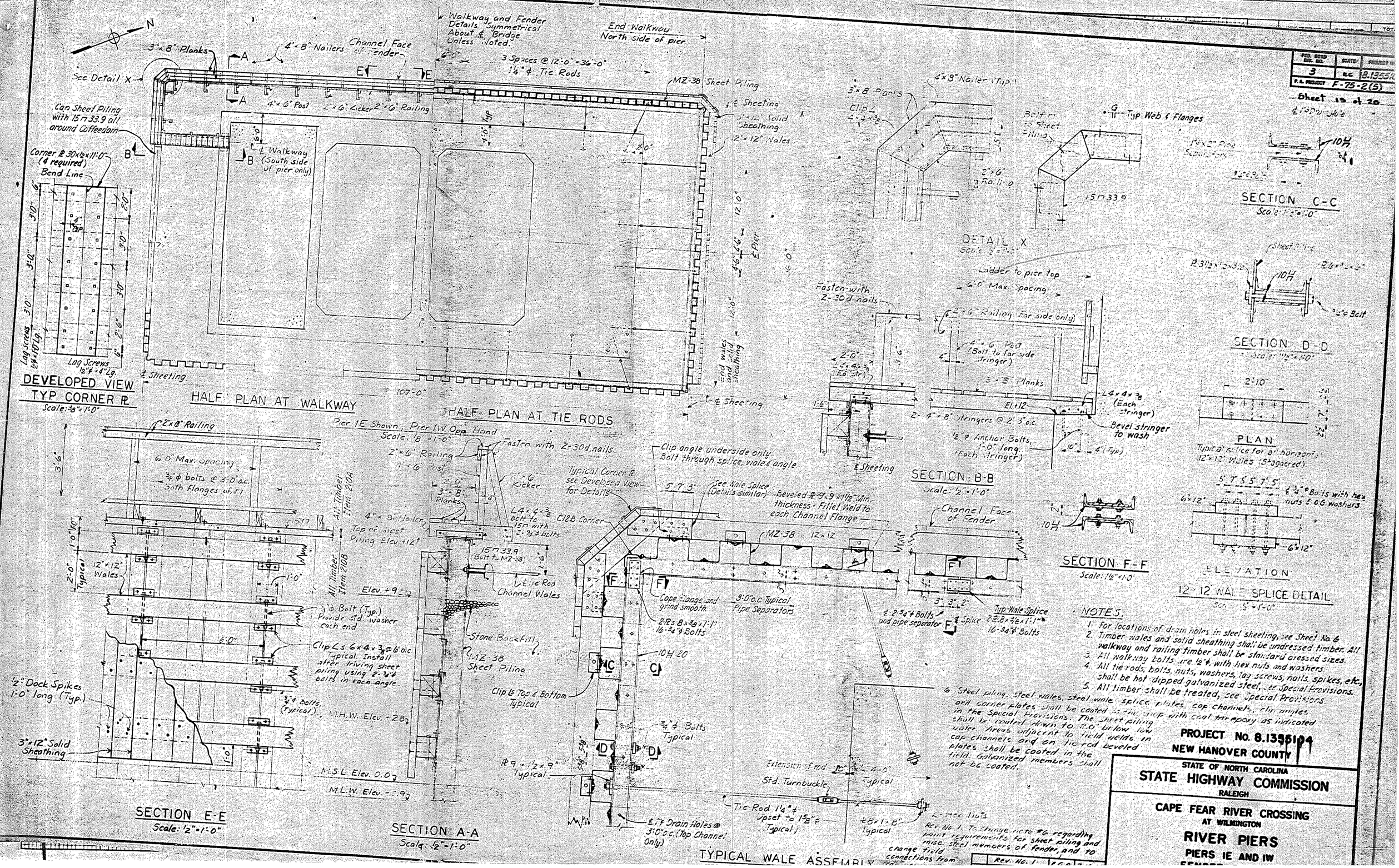
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS NEW YORK

DATE 4-29-6
SHEET NO. 11 o

LAID OUT BY D. Blaumann
CHECKED BY
IN CHARGE OF M.C. Fleet

FED. ROAD DIV. NO.	STATE	PROJECT
3	N.C.	8.1355104
F.A. PROJECT	F-75-2(5)	

Sheet 12 of 20



NOTES:

1. For locations of drain holes in steel sheeting, see Sheet No. 6
2. Timber wales and solid sheathing shall be undressed timber. All walkway and railing timber shall be standard dressed sizes.
3. All walkway bolts are ½" ϕ with hex nuts and washers.
4. All tie rods, bolts, nuts, washers, lag screws, nails, spikes, etc., shall be hot dipped galvanized steel, see Special Provisions.
5. All timber shall be treated, see Special Provisions.
6. Steel piling, steel wales, steel wale splice plates, cap channels, clip angles and corner plates shall be coated in the shop with coal tar epoxy as indicated in the Special Provisions. The sheet piling shall be coated down to 2.0' below low water. Areas adjacent to field welds in cap channels and on tie rod beveled plates shall be coated in the field. Galvanized members shall not be coated.

Rev. No. 1. To change note #6 regarding paint requirements for sheet piling and misc. steel members of fender, and to change field connections from

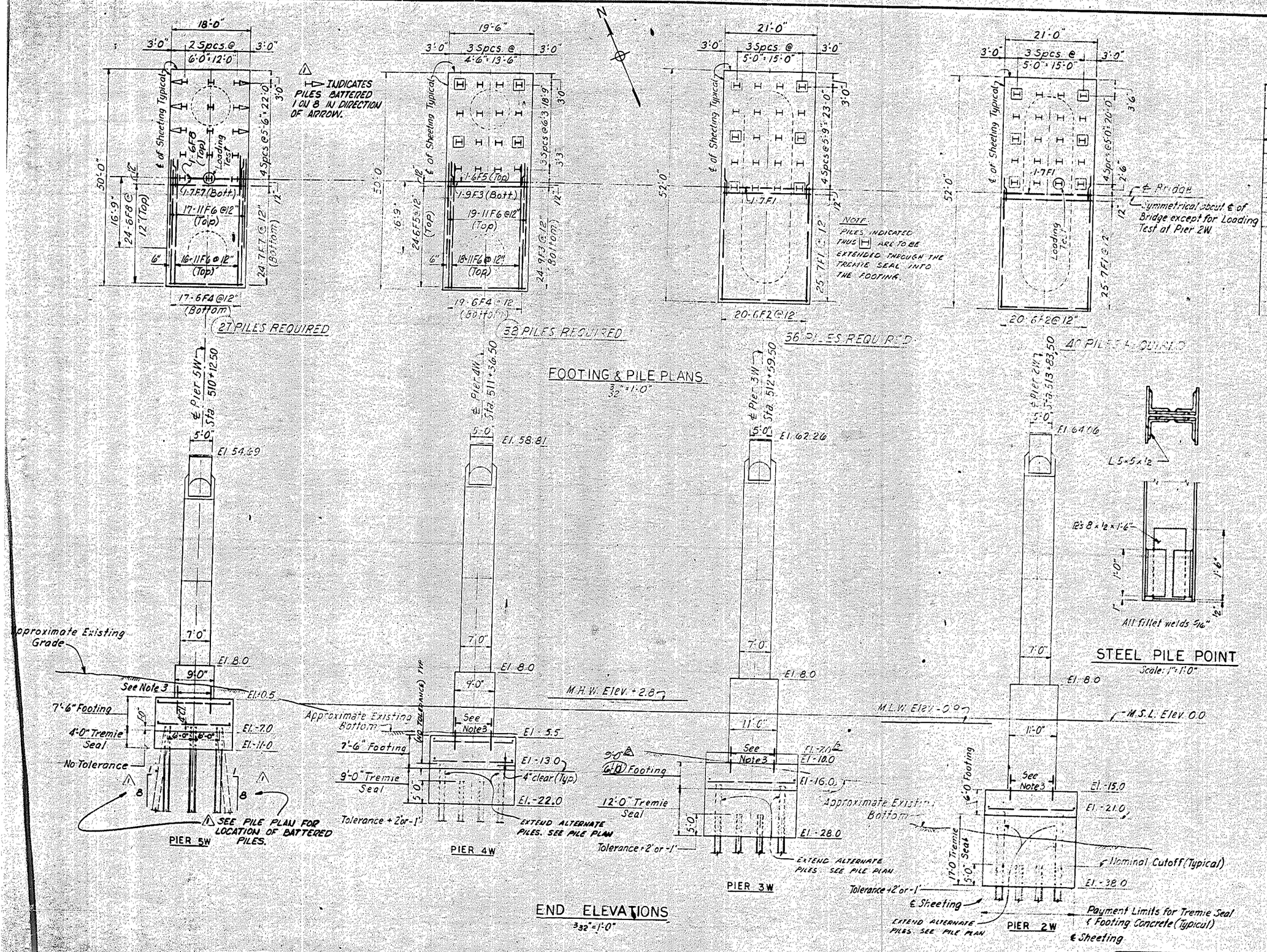
PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON
RIVER PIERS
PIERS 1E AND 1W

FED. ROAD DIV. NO.	STATE	PROJECT NO.
3	N.C.	8.1355104
F.A. PROJECT	F-75-2(5)	

Sheet 16 of 20



FOOTING REINF. BAR SCHEDULE

MARK	LENGTH	TYPE	PIER 2W	PIER 3W	PIER 4W	PIER 5W	TOTAL
7F1	19'-3"	Str.	51	51			102
6F2	26'-3"	"	40	40			80
9F3	17'-9"	"			49		49
6F4	25'-3"	"			38	34	72
6F5	17'-9"	"			49		49
11F6	41'-0"	"			37	33	70
7F7	16'-3"	"				49	49
6F8	16'-3"	Str.				49	49

NOTES
1. For General Notes Sh. No. 2
2. All piles are 14 BP 73.
3. For number and location of dowels see Sh. Nos. 14 & 15

PROJECT No. 8.1355104
NEW HANOVER COUNTY

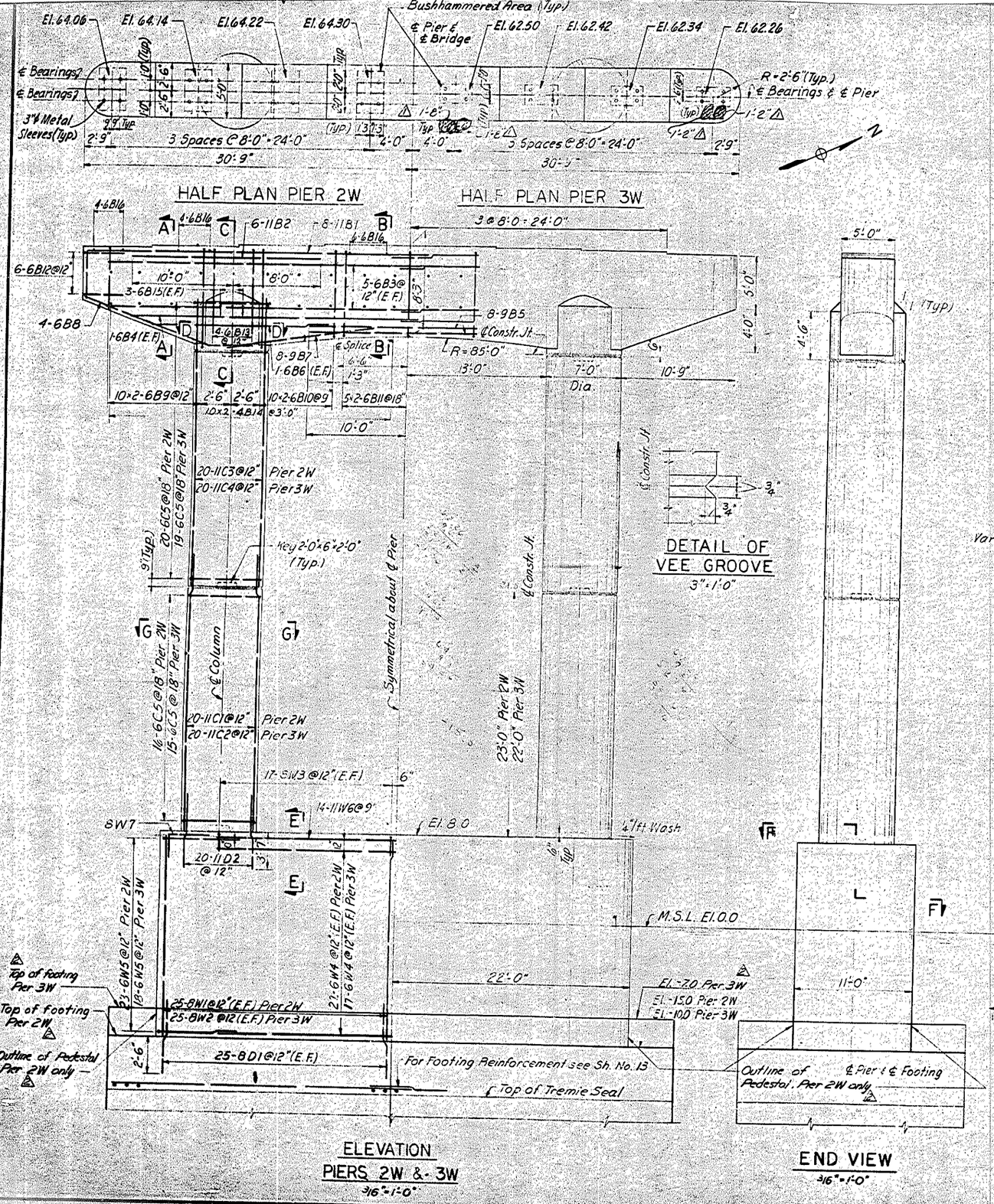
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

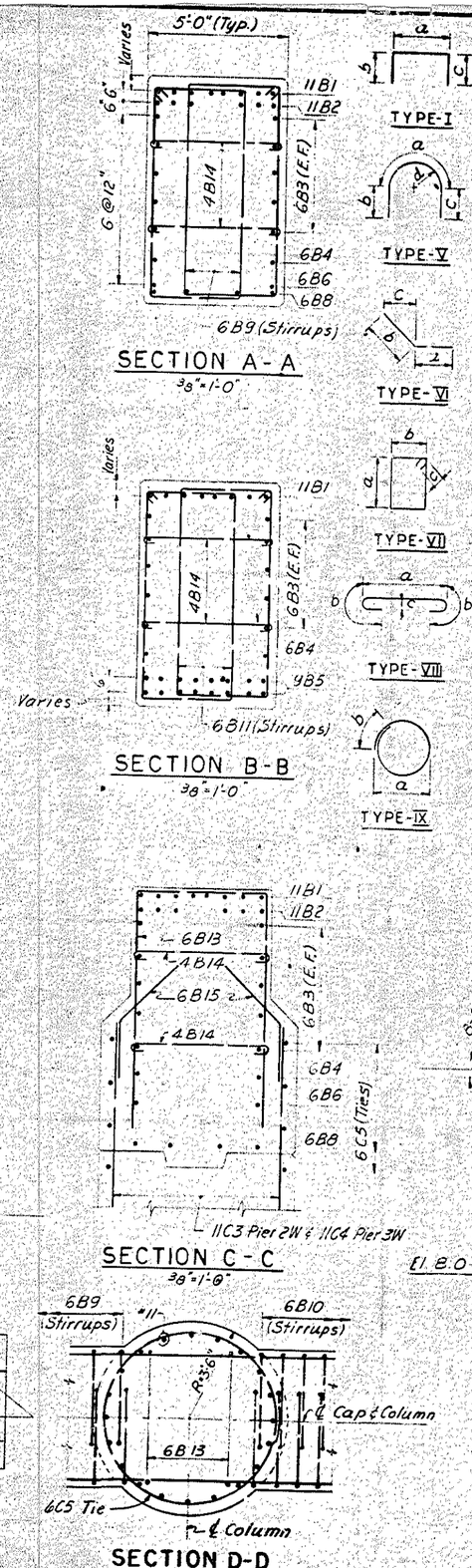
CAPE FEAR RIVER CROSSING
AT WILMINGTON

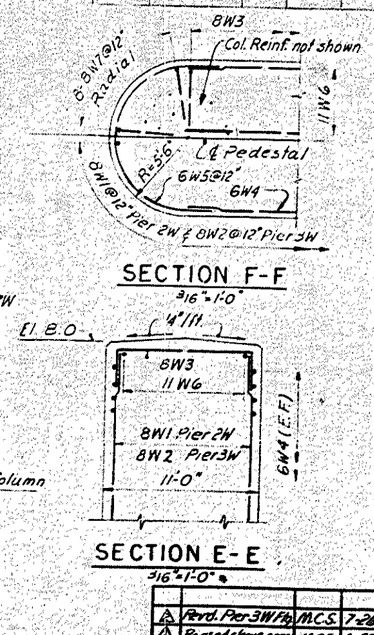
RIVER PIERS

PIERS 2W THROUGH 5W
FOOTING PLANS AND PIER ELEVATIONS

A	Rev'd. Pier 3W Ftg.	M.C.S.	7-26-67







LEGEND: 8D1 ; 8 - Bar Size , D1 - Bar Mark
E.F. - Each Face
All dimensions are out to out of bars.

3		8.1355
F.A. PROJECT	F-75-2(5)	

BAR SCHEDULE

Sheet 19 of 20

MARK	TOTAL LENGTH	TYPE	PIERS 2W	PIERS 3W	TOTAL	DIMENSION a	b	c	d	REMARKS
8D1	6'-0"		100	100	200					
11D2	7'-3"		40	40	80					
8W1	22'-8"		100		100					
8W2	17'-8"			100	100					
8W3	15'-2"	I	68	68	136	10'-2"	2'-6"	2'-6"		
6W4	33'-0"		44	34	78					
6W5	21'-3"	V	46	36	82	16'-3"	2'-6"	2'-6"	5'-2"	
11W6	33'-0"		14	14	28					
8W7	6'-0"	I	32	32	64	3'-6"	2'-6"	0"		
11B1	36'-10"	I	16	16	32	32'-4"	4'-6"	0"		
11B2	18'-0"		12	12	24					
6B3	29'-0"		20	20	40					
6B4	28'-0"		4	4	8					
9B5	20'-0"		16	16	32					
6B6	15'-6"		4	4	8					
9B7	13'-0"		16	16	32					
6B8	18'-9"	VI	8	8	16	5'-3"	13'-0"	12'-2"		
6B9	18'-6" to 25'-4"	VII	40	40	80	5'-8" to 9'-0"	3'-2"	6"		vary "a" by 4½"
6B10	22'-10" to 24'-10"	VII	40	40	80	7'-9" to 9'-9"	3'-2"	6"		vary "a" by 1½"
6B11	22'-6"	VII	18	18	36	7'-8"	3'-2"	6"		
6B12	11'-10"	I	12	12	24	7'-4"	2'-3"	2'-3"	2'-4"	
6B13	22'-0"	I	8	8	16	4'-8"	8'-8"	8'-8"		
4B14	5'-8"	VII	40	40	80	4'-8"	6"	3"		
6B15	5'-0"	V	12	12	24	2'-0"	3'-0"	2'-2"		
6B16	4'-8"		28	28	56					
11C1	26'-7"		40		40					
11C2	25'-7"			40	40					
11C3	28'-0"		40		40					
11C4	27'-3"			40	40					
6C5	22'-11"	IX	72	68	140	6'-8"	2'-0"			

NOTES

1. For General Notes see Sh. No. 2
2. For Section G-G see Sh. No. 15
3. For Details of Foundation see Sheet No. 13
4. For Details of 3"φ Corrugated Metal Sleeve see Detail B on Sheet No. 7.

PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON

RIVER PIERS

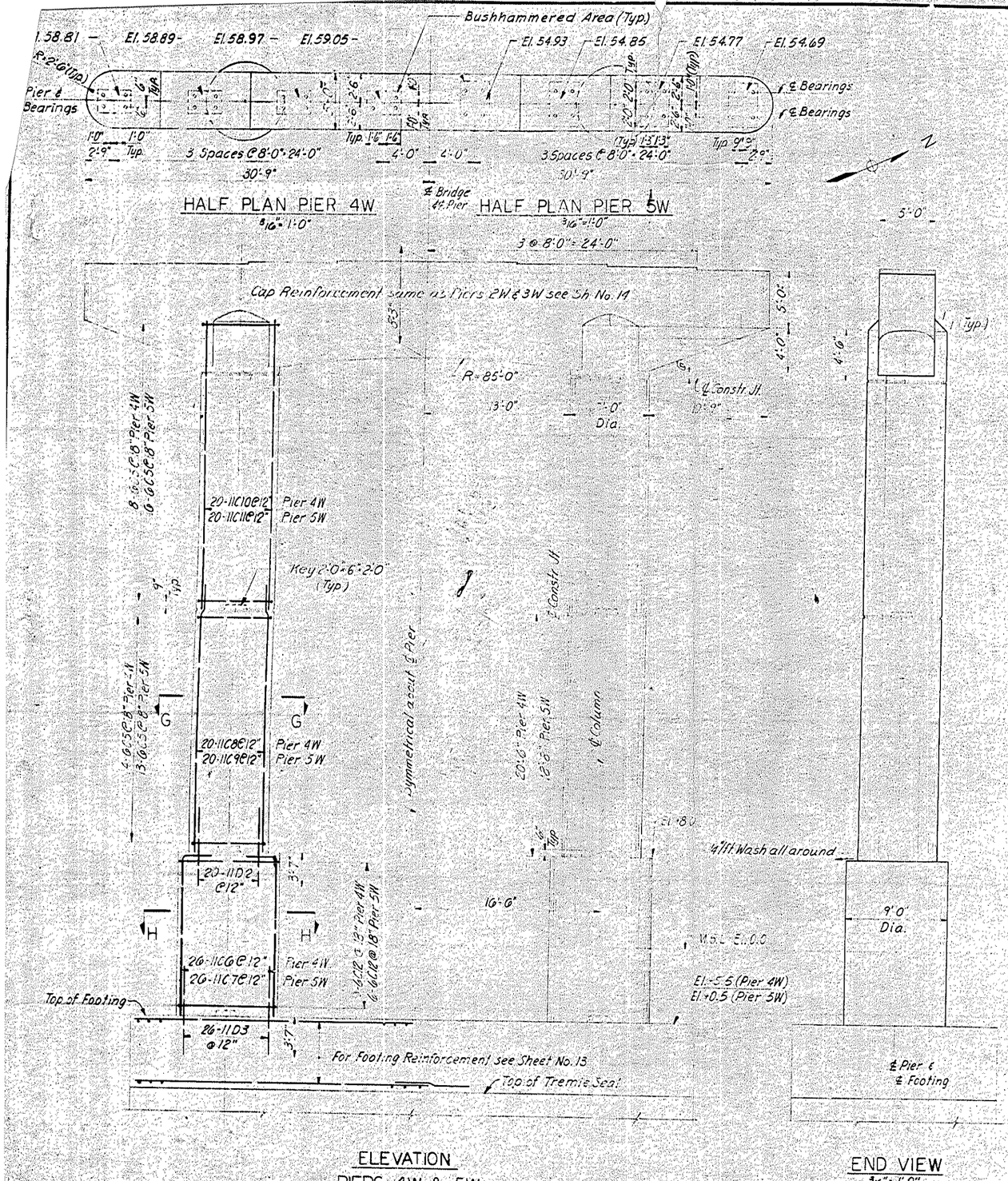
DETAILS OF PIERS 2W AND 3W

REVISION	BY	DATE
2 Rev'd. Pier 3W Ftg.	M.C.S.	7-26-67
1 Revised chrng. spec.	MCS	3-27-67

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.
ENGINEERS — NEW YORK

DATE 4-27-66
SHEET NO. 14 OF 20

IN CHARGE OF M.C. Hall



LEGEND: 11D2 ; 11 - Bar Size , D2 - Bar Mark
E.F. - Each Face
All dimensions are out to out of bars.

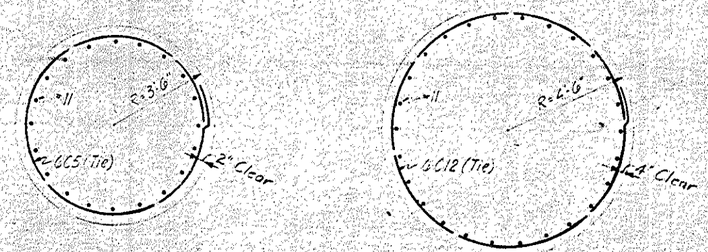
FED. ROAD DIV. NO.	STATE	PROJECT NO.
3	N.C.	8.1355104
F.A. PROJECT	F-75-2(5)	

BAR SCHEDULE

Sheet 20 of 20

MARK	TOTAL LENGTH	* TYPE	PIERS 4W	PIERS 5W	TOTAL	DIMENSION a	DIMENSION b	DIMENSION c	DIMENSION d	REMARKS
11D2	7'-3"		40	40	80					
11D3	8'-2"		52	52	104					
11B1	36'-10"	I	16	16	32	32'-4"	4'-6"	0"		
11B2	18'-0"		12	12	24					
6B3	29'-0"		20	20	40					
6B4	25'-0"		4	4	8					
9B5	20'-0"		6	16	32					
6B6	15'-6"		4	4	8					
9B7	13'-0"		16	16	32					
6B8	18'-3"	VI	8	8	16	5'-3"	13'-0"	12'-2"		
6B9	6'-6" to 25'-4"	VII	40	40	80	5'-8" to 9'-0"	3'-2"	6"		vary "a" by 4 1/2"
6B10	22'-10" to 24'-0"	VII	40	40	80	7'-9" to 8'-9"	3'-2"	6"		vary "a" by 1 1/8"
6B11	22'-8"	VII	18	18	36	7'-8"	3'-2"	6"		
6B12	11'-10"	V	12	12	24	7'-4"	2'-3"	2'-3"	2'-4"	
6B13	22'-0"	I	8	8	16	4'-8"	8'-8"	8'-8"		
4B14	5'-5"	VIII	40	40	80	4'-8"	6"	3"		
6B15	5'-0"	VI	12	12	24	2'-0"	3'-0"	2'-2"		
6B16	4'-8"		28	28	56					
6C5	22'-11"	IX	64	58	122	6'-8"	2'-0"			
11C6	15'-11"	I	52		52	2'-9"	13'-2"	0"		
11C7	9'-11"	I		52	52	2'-9"	7'-2"	0"		
11C8	24'-1"		40		40					
11C9	22'-3"			40	40					
11C10	25'-4"		40		40					
11C11	23'-0"			40	40					
6C12	28'-2"	IX	18	12	30	8'-4"	2'-0"			

* For Bar Types, see Sheet No. 14



SECTION G-G
3/8" = 1'-0"

SECTION H-H
3/8" = 1'-0"

NOTES:

1. For General Notes see Sh. No. 2
2. For details of 3"ϕ Corrugated Metal Sleeve see Detail B Sh. No. 7
3. For Detail of Vee Groove see Sh. No. 14
4. For Details of foundation see Sheet No. 13

PROJECT No. 8.1355104
NEW HANOVER COUNTY

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

CAPE FEAR RIVER CROSSING
AT WILMINGTON

RIVER PIERS

DETAILS OF PIERS 4W AND 5W

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC.

DATE: 4-29-66