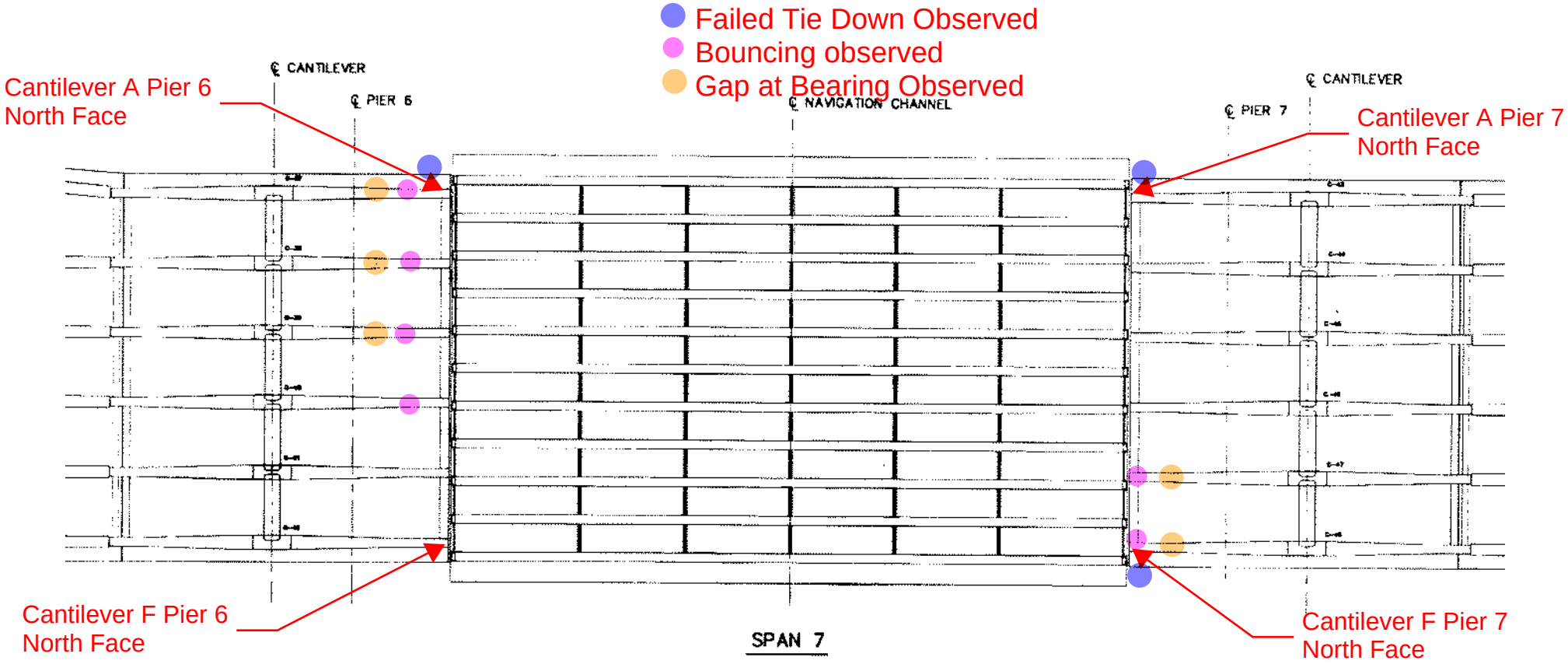


Cantilever A Pier 6 North Face

- See photos 1 and 2.
- 1" diameter remaining at base of steel rod (original 1 3/8" diameter based on 1967 record plans) (See Photo 1).
- Defect to cause failure of tiedown not found, however, it was observed a gap between cantilever end and beam seat (fit 11" long section of clipboard in gap), bouncing of cantilever end and tiedown under live load. It is assumed based on the observations that the tiedown has failed with the failure location not visible. (See Photos 1 and 2)

Cantilever A Pier 7 North Face

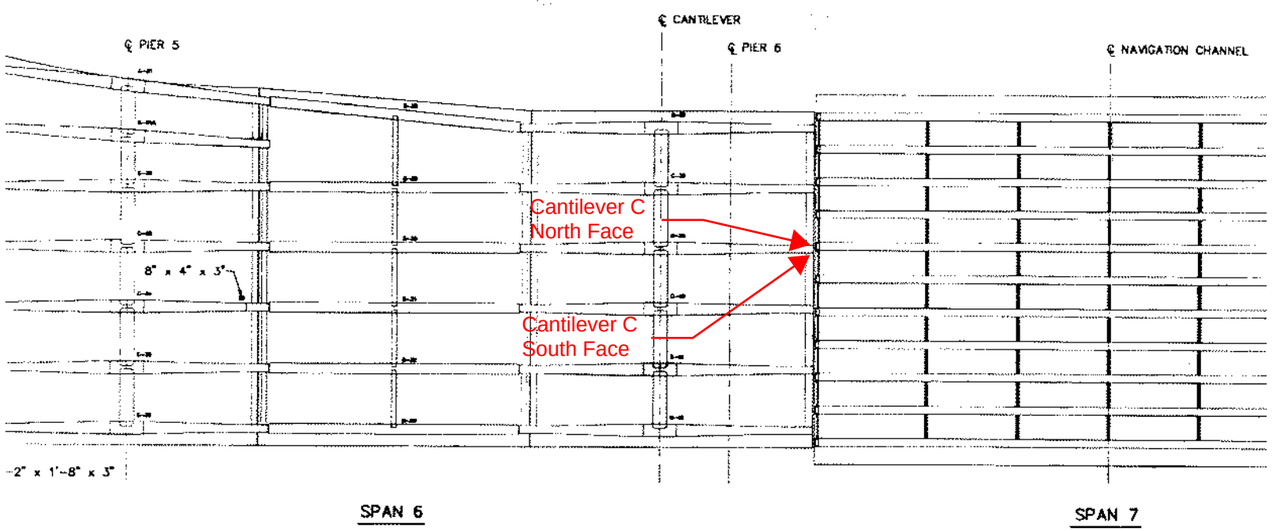
- See photos 3-5.
- Tiedown steel rod failed, sheared at the top below deck (See Photos 3-5)

Cantilever F Pier 6 South Face

- See photos 6 and 7.
- 1" diameter remaining at base of steel rod (original 1 3/8" diameter based on 1967 record plans) (See Photos 6 and 7).

Cantilever F Pier 7 South Face

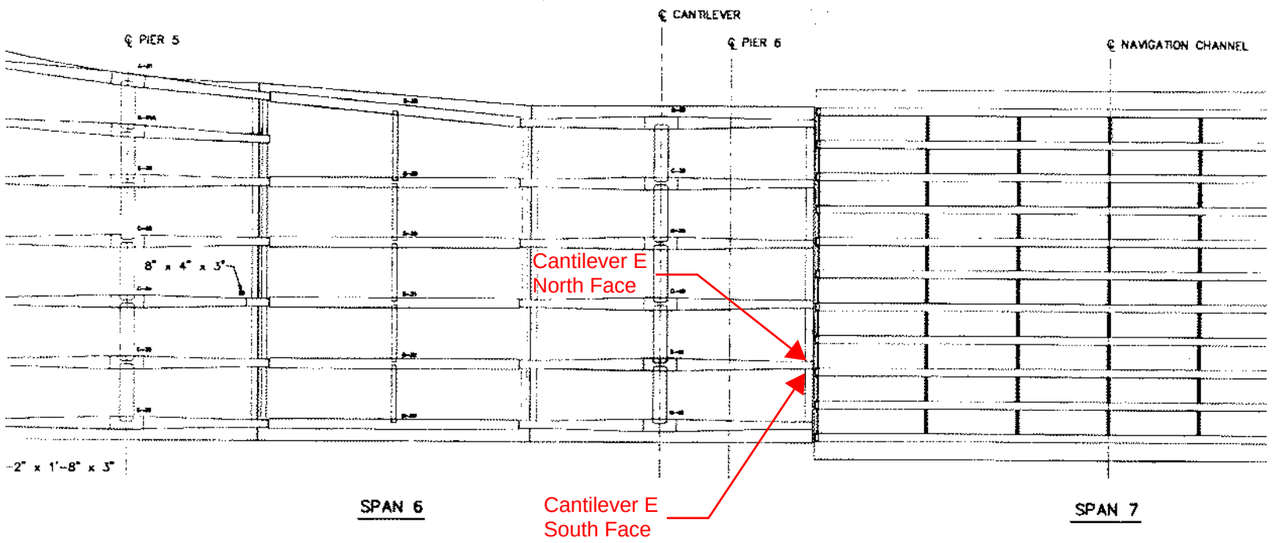
- See photos 8 and 9.
- Tiedown steel rod failed, sheared at the base near the seat (See Photos 8)
- Gap between cantilever end and seat up to 8" long (See Photo 9)

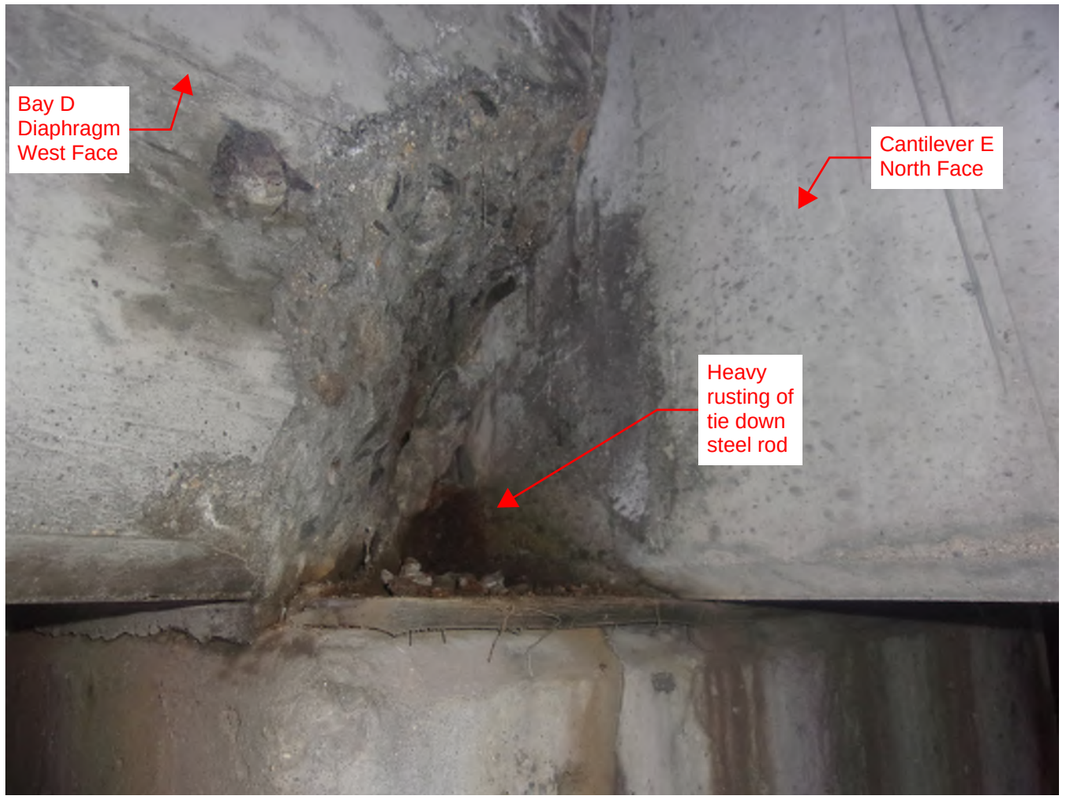


Cantilever C North Face

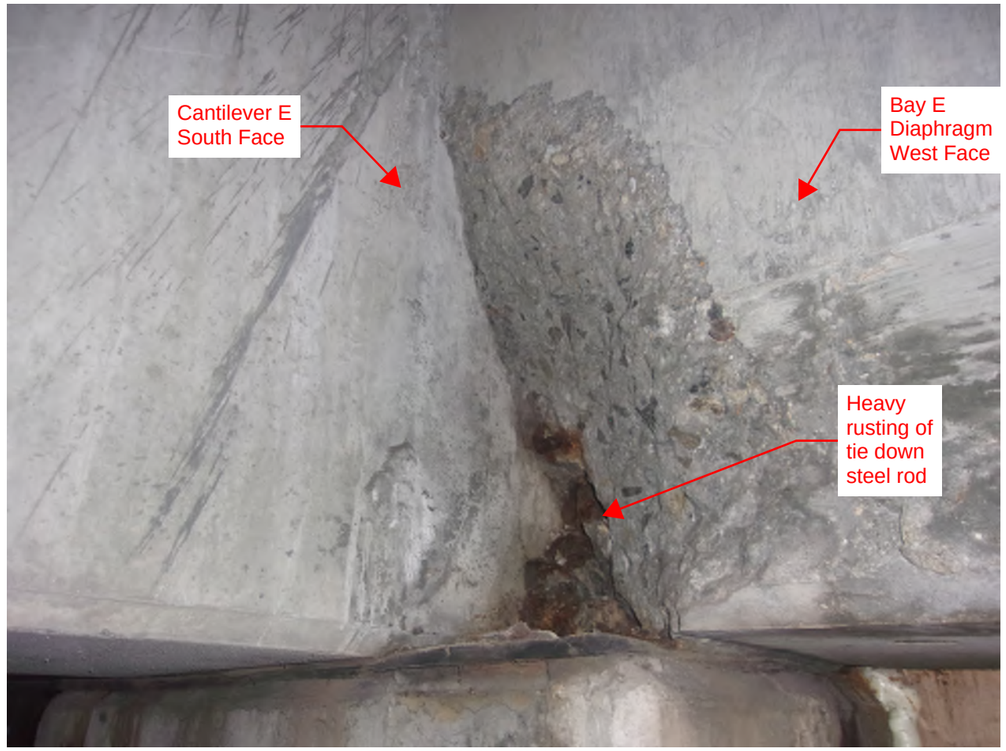
Cantilever C South Face

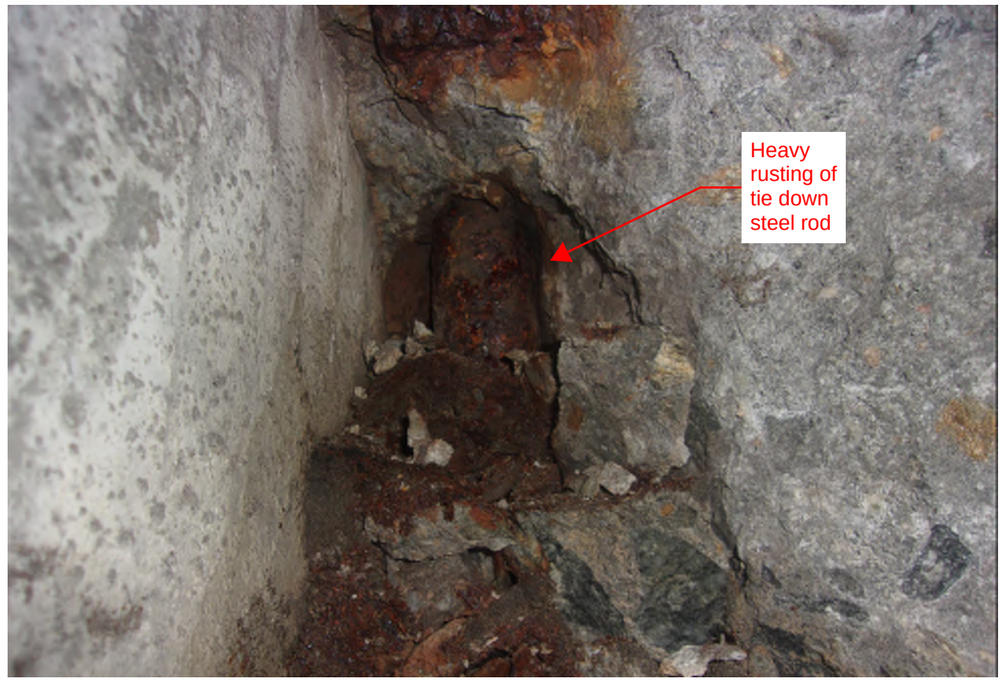
Note:
- Spalls on diaphragm at Cantilever C north and south face. Rust stain on the Bay B diaphragm at approximate tie down steel rod location, and exposed steel rod at Bay diaphragm.





Cantilever E North Face





Cantilever E South Face

Note:
- Spalls on diaphragm at Cantilever E north and south face. Tie down steel rod exposed with heavy rusting.

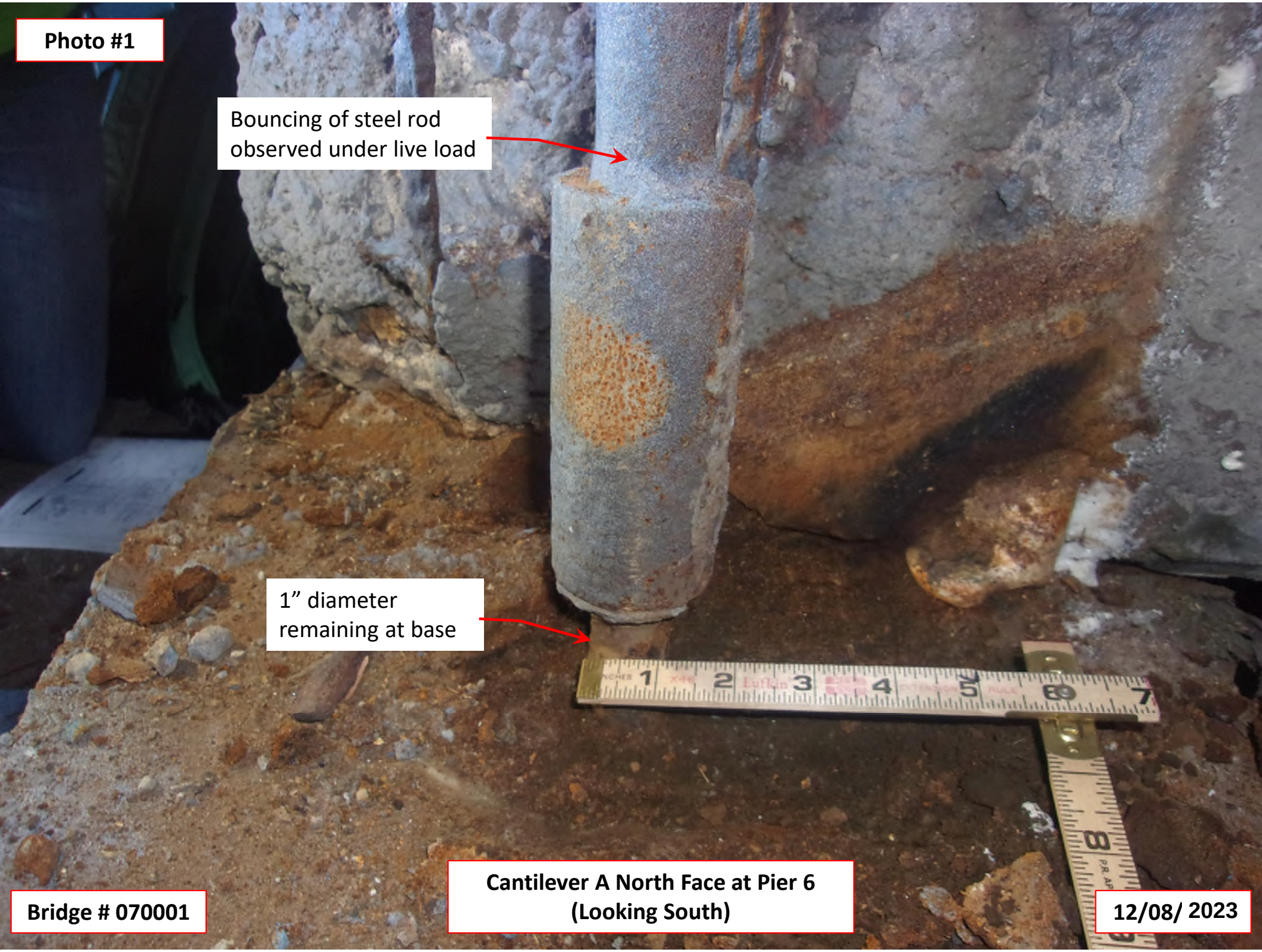


Photo #1
Bouncing of steel rod observed under live load
1” diameter remaining at base
Cantilever A North Face at Pier 6 (Looking South)
Bridge # 070001
12/08/ 2023

Photo #2

Bridge # 070001

Cantilever A East Face at Pier 6 (Looking West)

12/08/ 2023

Photo #3

Cantilever A North Face at Pier 7
(Looking South)

Bridge # 070001

12/08/ 2023

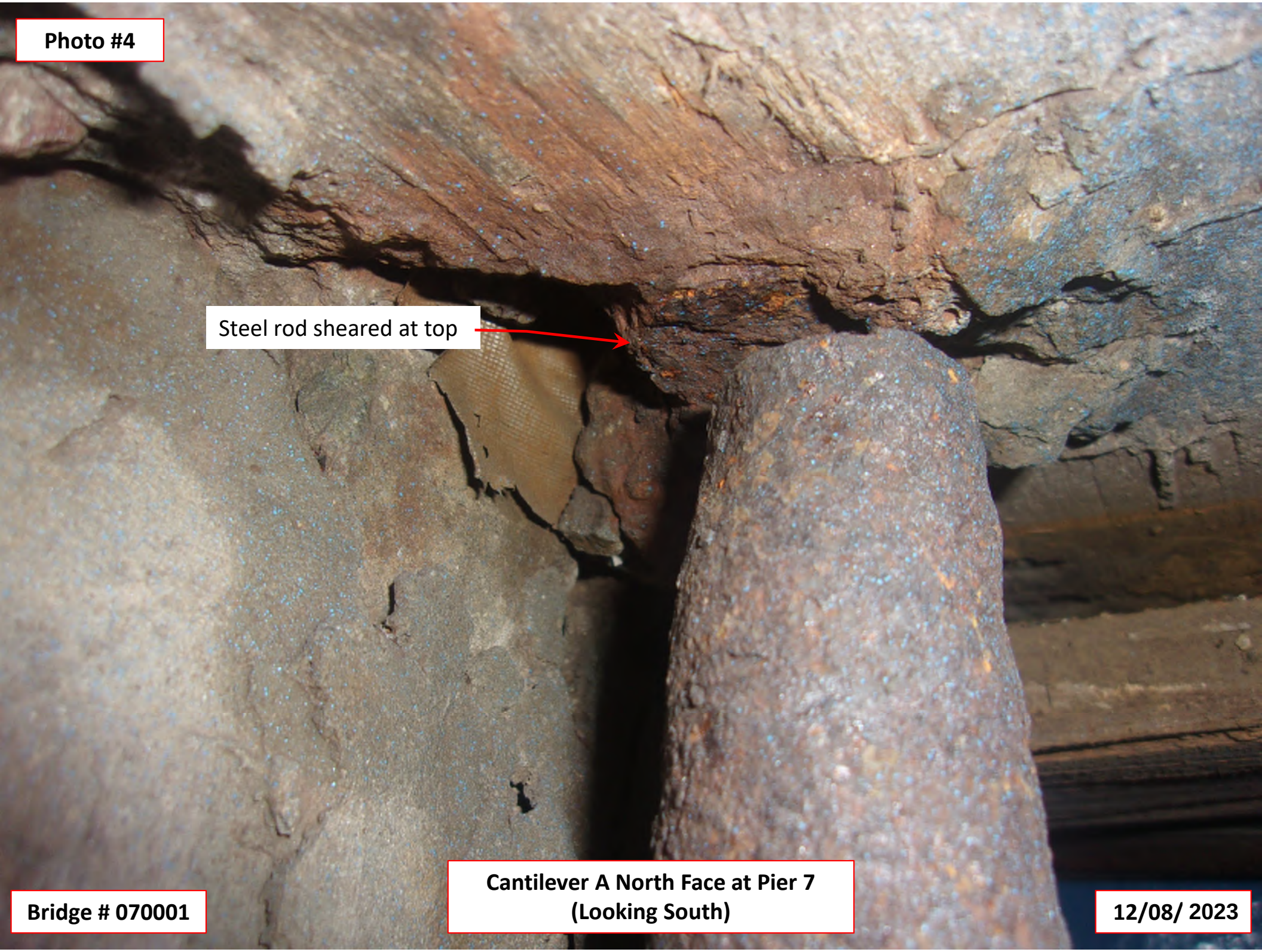


Photo #4
Steel rod sheared at top
Cantilever A North Face at Pier 7
(Looking South)
Bridge # 070001
12/08/ 2023

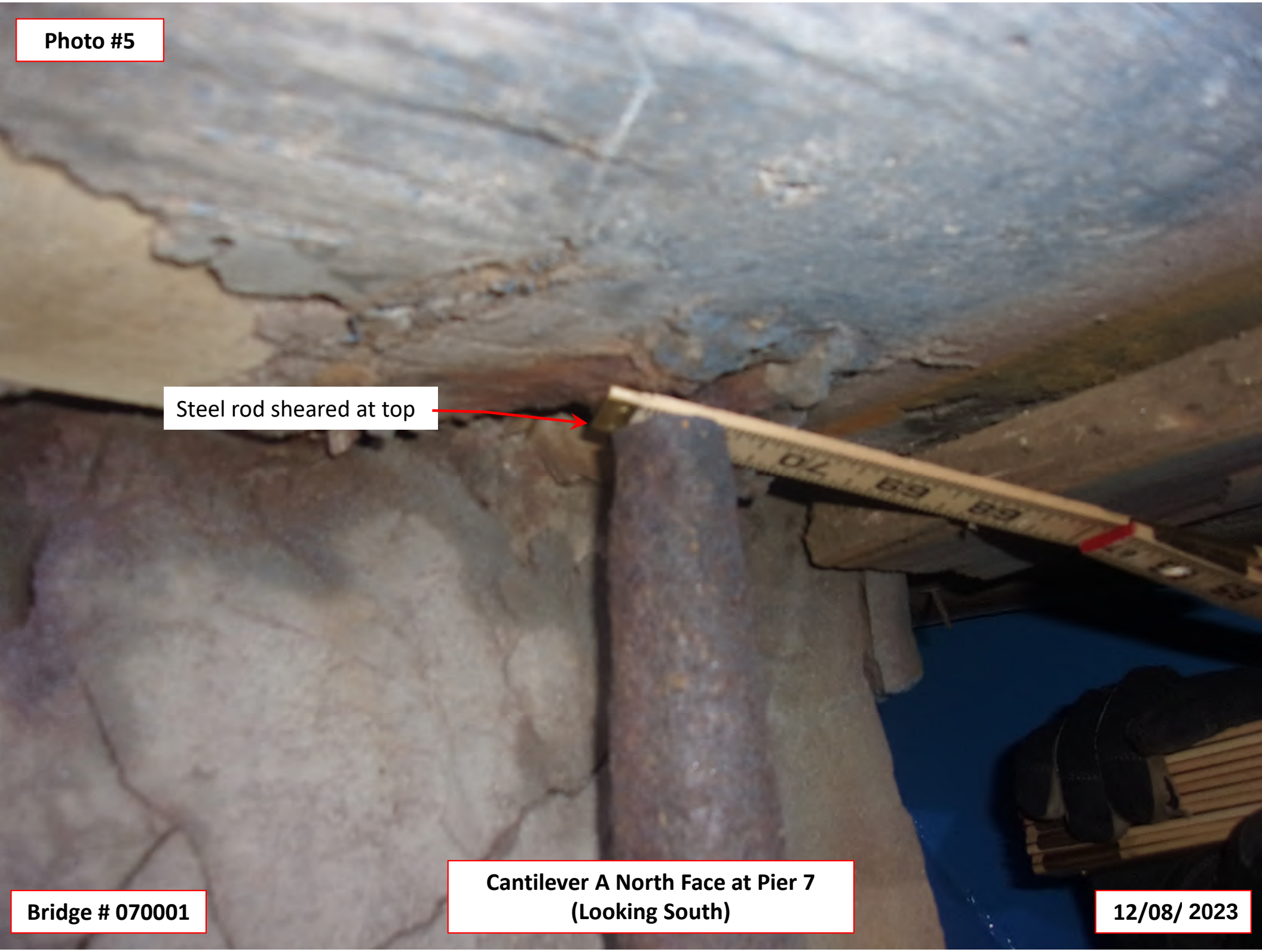


Photo #5
Steel rod sheared at top
Cantilever A North Face at Pier 7
(Looking South)
Bridge # 070001
12/08/ 2023

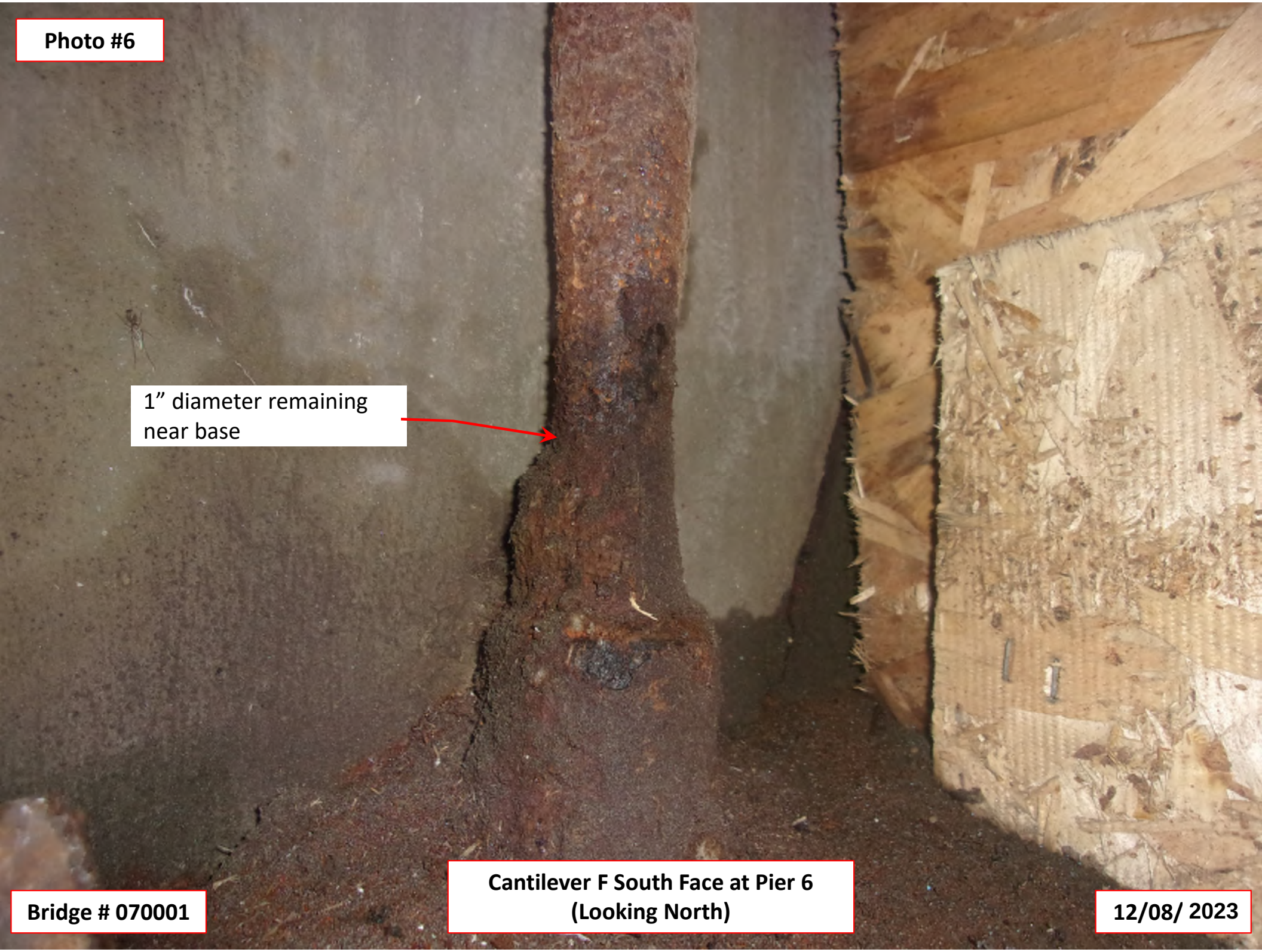


Photo #6
1” diameter remaining near base
Bridge # 070001
Cantilever F South Face at Pier 6 (Looking North)
12/08/ 2023

Photo #7

Cantilever F South Face at Pier 6
(Looking North)

Bridge # 070001

12/08/ 2023

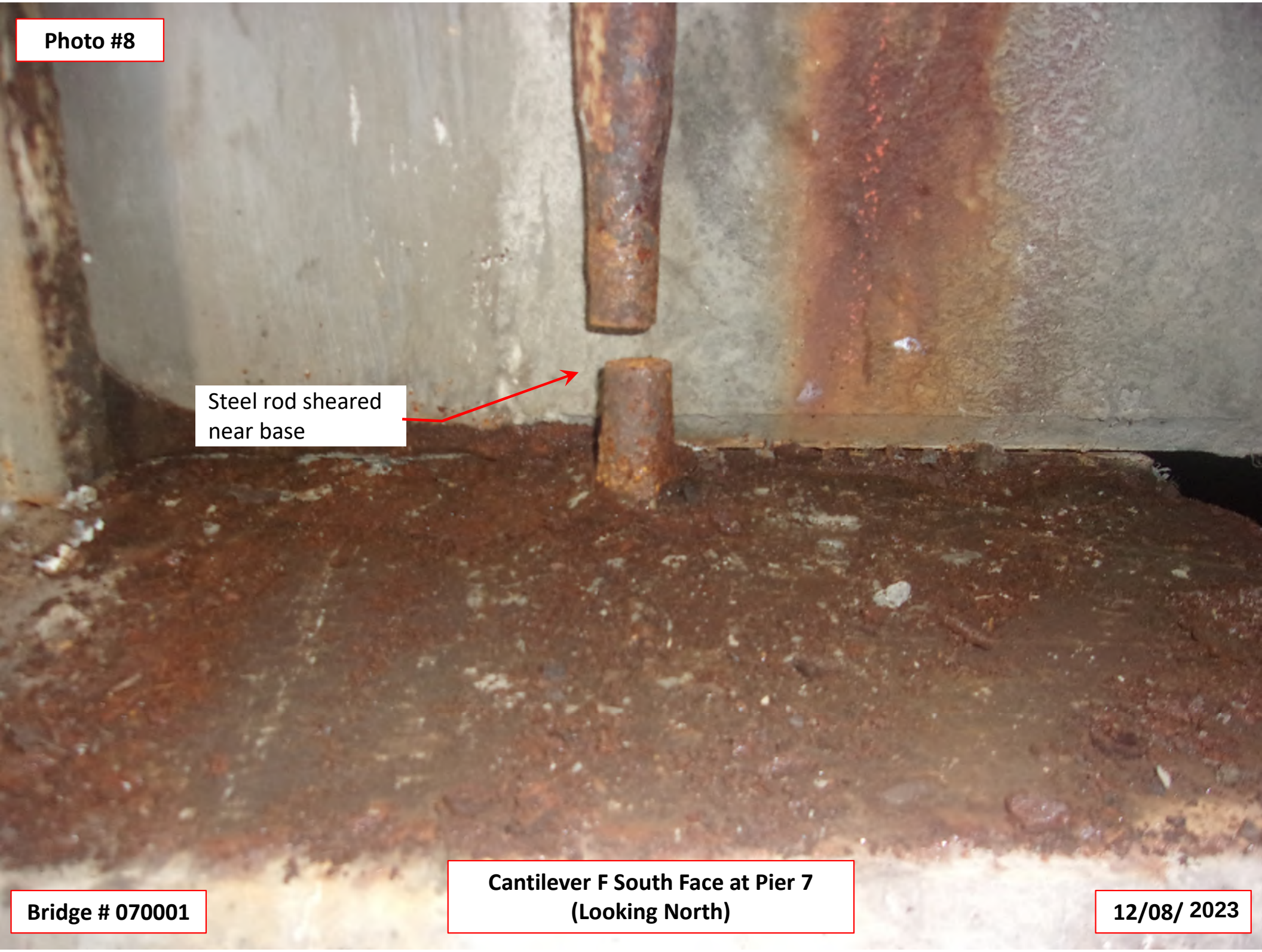


Photo #8
Steel rod sheared near base
Bridge # 070001
Cantilever F South Face at Pier 7 (Looking North)
12/08/ 2023

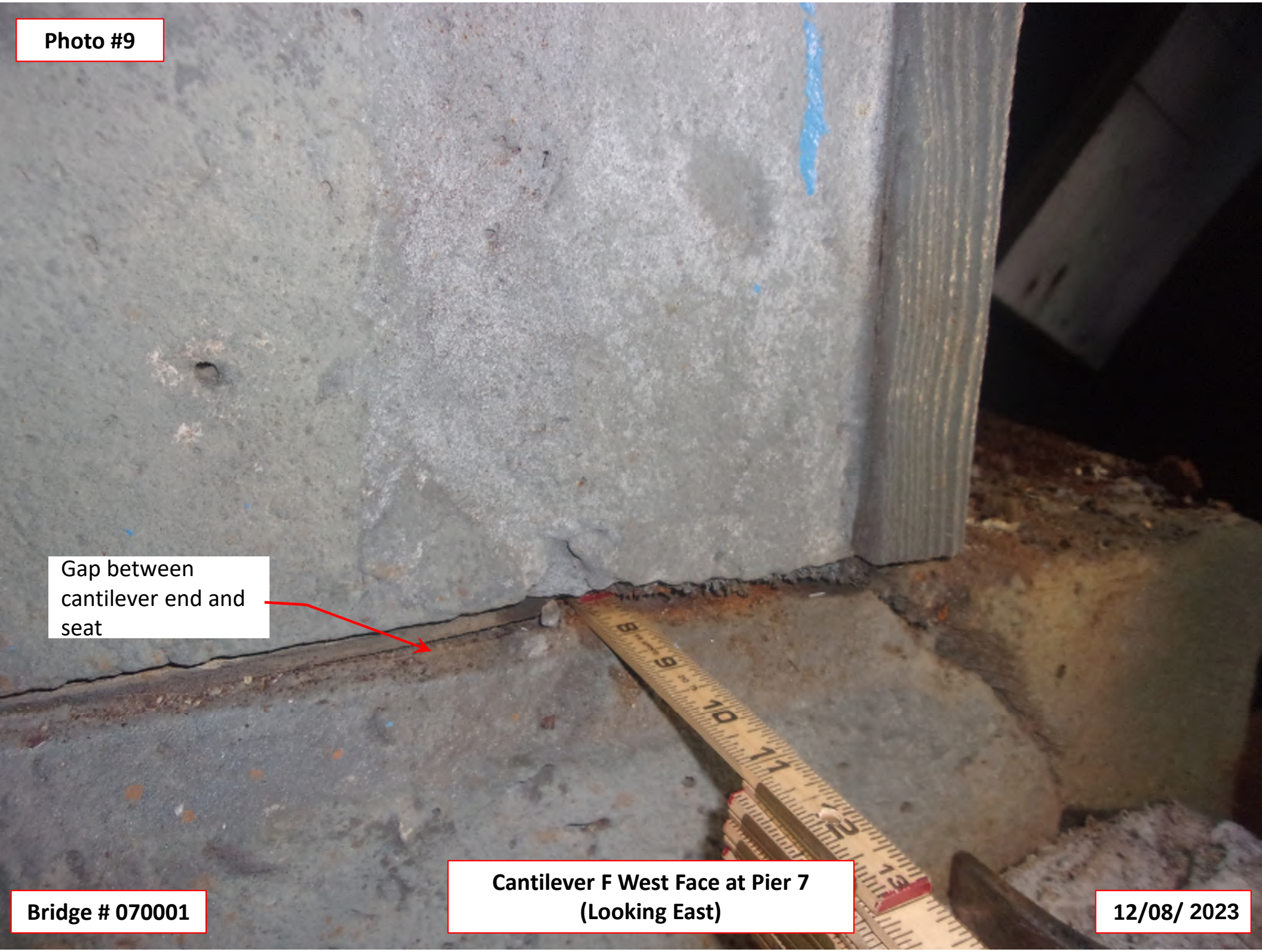
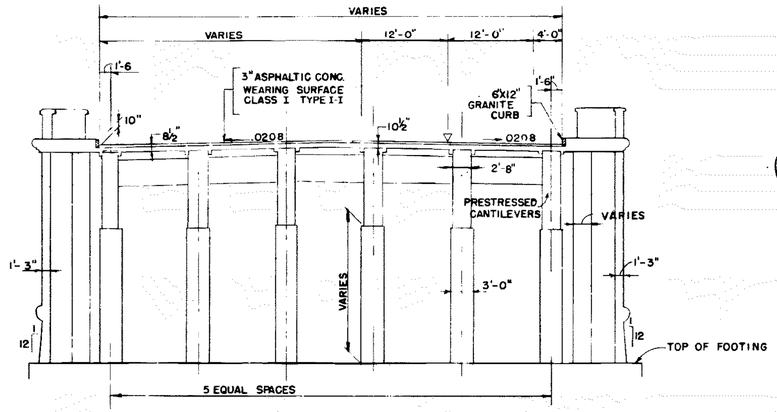


Photo #9
Gap between cantilever end and seat
Bridge # 070001
Cantilever F West Face at Pier 7 (Looking East)
12/08/ 2023

1967 Record Plans

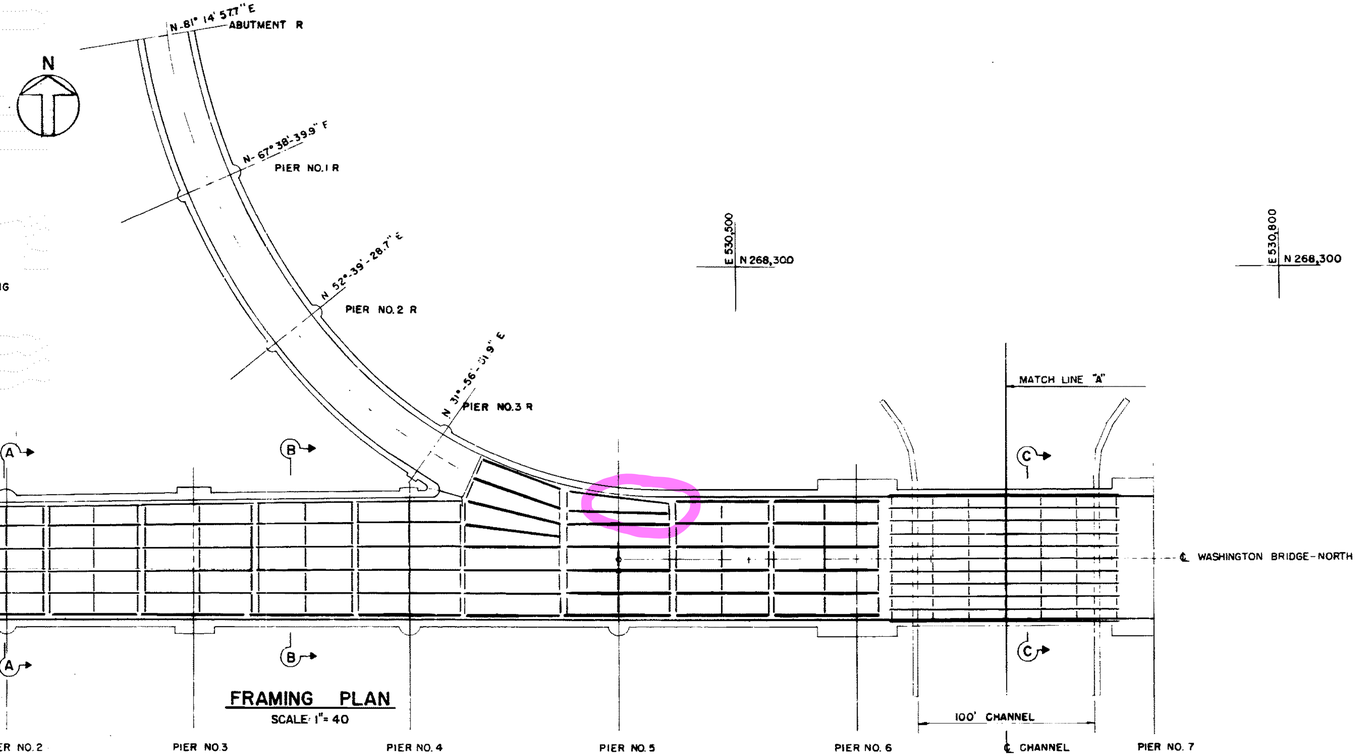
700,071

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(1)38	1968	71	223



SECTION A-A

SCALE: 1"= 10'

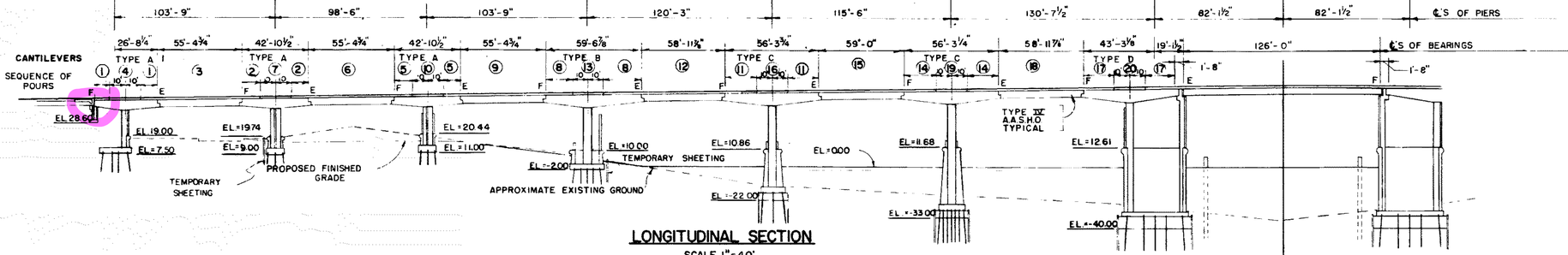


FRAMING PLAN

SCALE: 1"= 40'

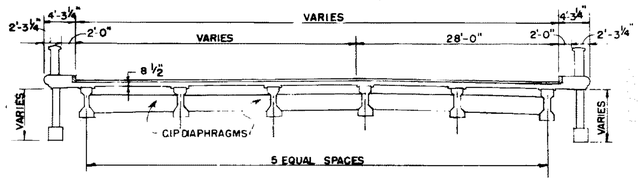
SEQUENCE OF DECK POURS

1. Numbers within circles, ①etc., indicate typical sequence of deck pours.
2. All ① pours must be completed before figure ② pours, etc.
3. The sequence indicated is based on order of pours proceeding from Abutment No. 1 toward Pier 6 and from Pier 13 toward Pier 7. Similar sequence will apply as order of pours proceeds from Pier 6 toward Abutment 1 and Pier 7 toward Pier 18. Pours may commence from either end or both ends simultaneously.
4. The Contractor shall submit his actual proposed sequence of pours to the Engineer for review 30 days prior to making the initial pour. The sequencing shall be satisfactory to the Engineer and must be approved in writing.



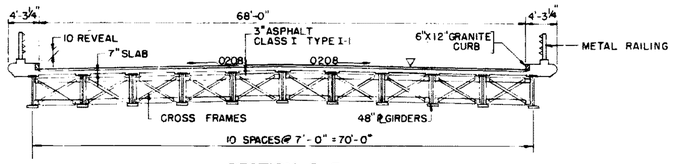
LONGITUDINAL SECTION

SCALE: 1"= 40'



SECTION B-B

SCALE: 1"= 10'



SECTION C-C

SCALE: 1"= 10'

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE-EAST PROVIDENCE, RHODE ISLAND

FRAMING PLAN & SECTIONS- I

STA. 21+85 TO 29+46

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE AS SHOWN SHEET 71 OF 223

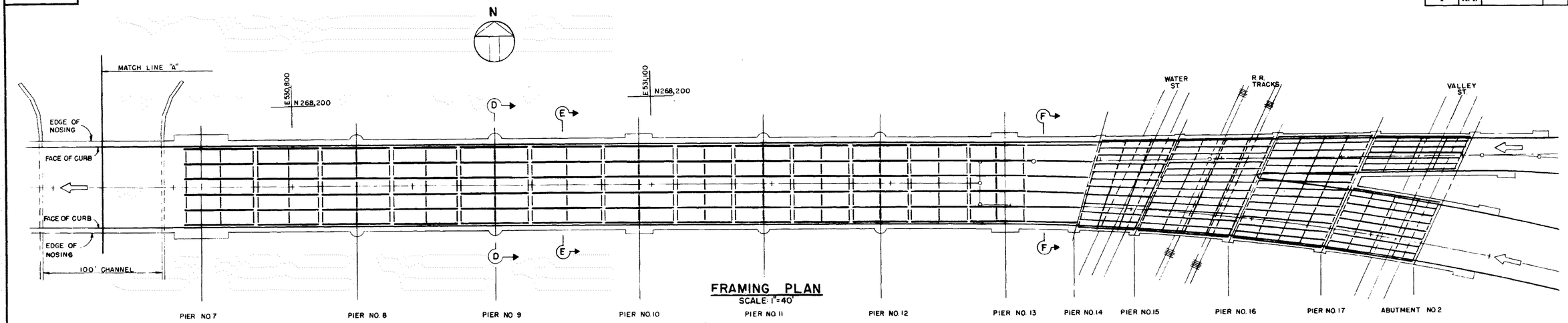
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO.
PRINTED
ISSUED TO

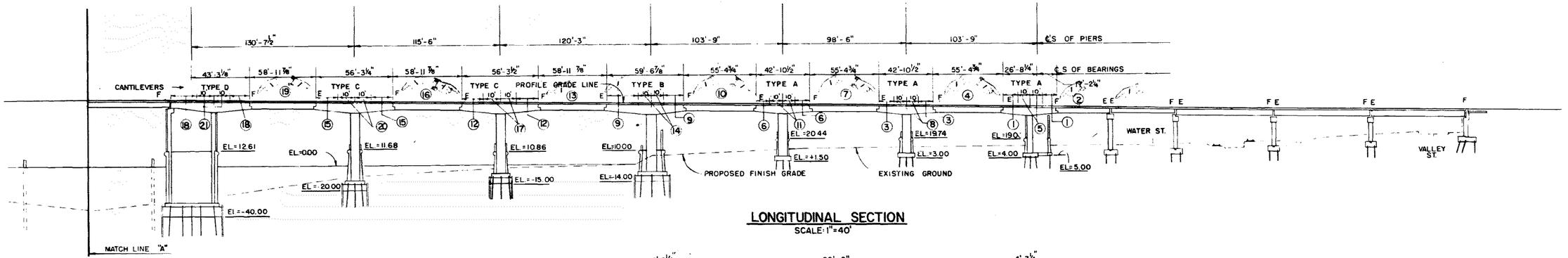
700,071

700,072

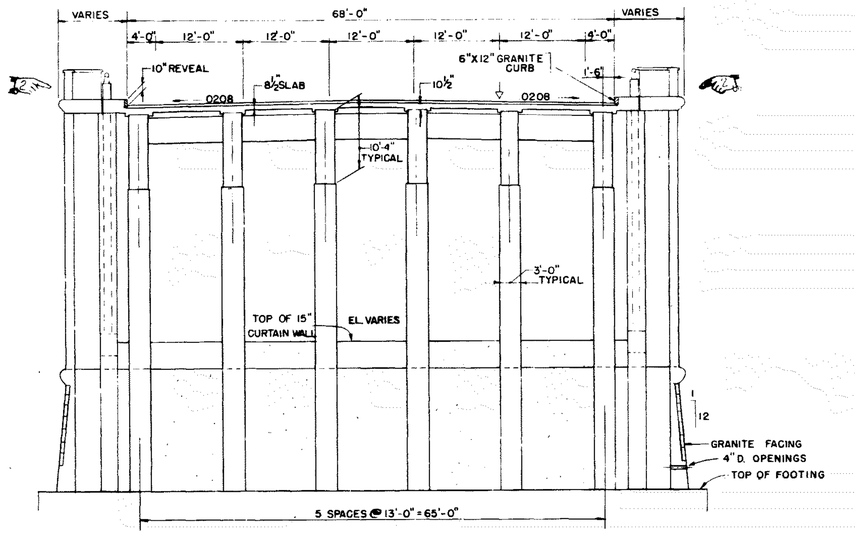
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(438)	1968	72	223



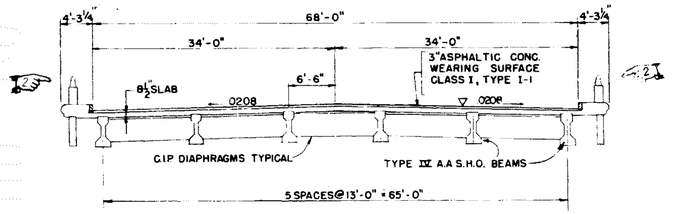
FRAMING PLAN
SCALE: 1"=40'



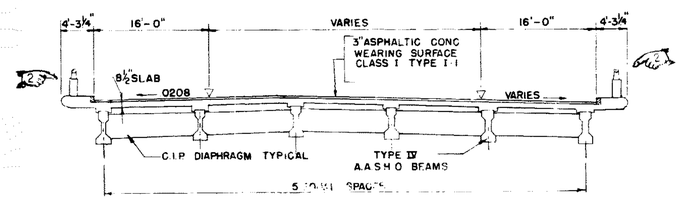
LONGITUDINAL SECTION
SCALE: 1"=40'



SECTION D-D
SCALE: 1"=10'



SECTION E-E
SCALE: 1"=10'



SECTION F-F
SCALE: 1"=10'

REVISIONS		
NO.	DATE	BY
1	7-15-68	J.N.C.
2	8-8-68	RC

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)
CROSSING SEEKONK RIVER
PROVIDENCE-EAST PROVIDENCE, RHODE ISLAND

FRAMING PLAN & SECTIONS-2
STA. 29+46 TO 42+50

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE AS SHOWN SHEET 72 OF 223

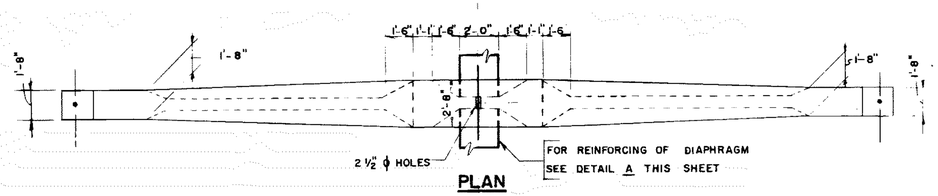
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

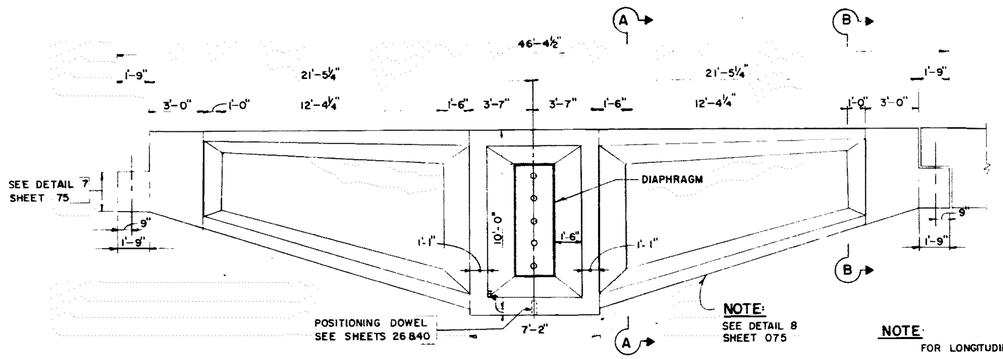
700,072

700,074

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(138)	1968	74	223

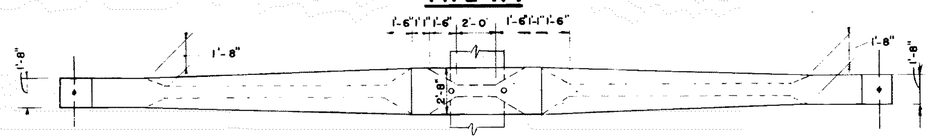


PLAN

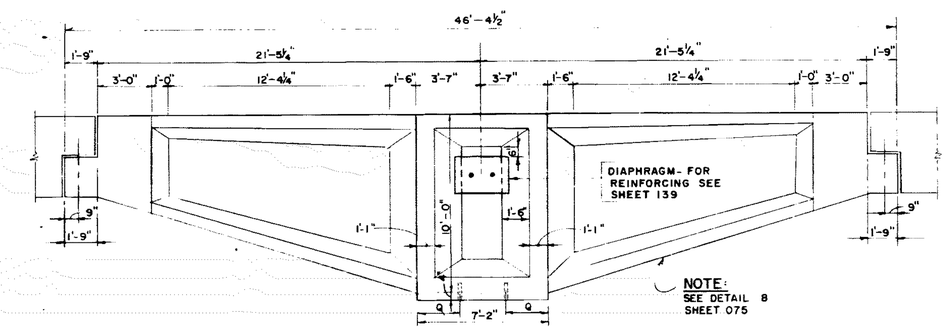


ELEVATION
ABUTMENT 1

TYPE A-1



PLAN

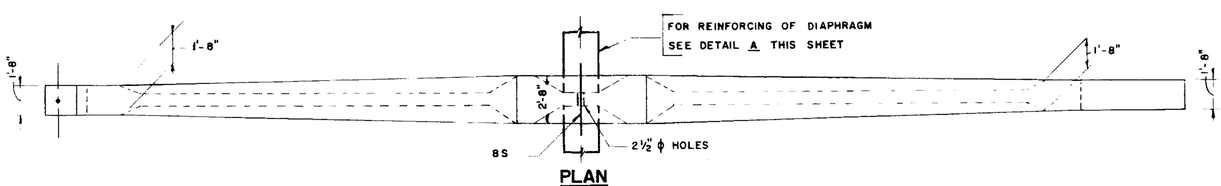


ELEVATION

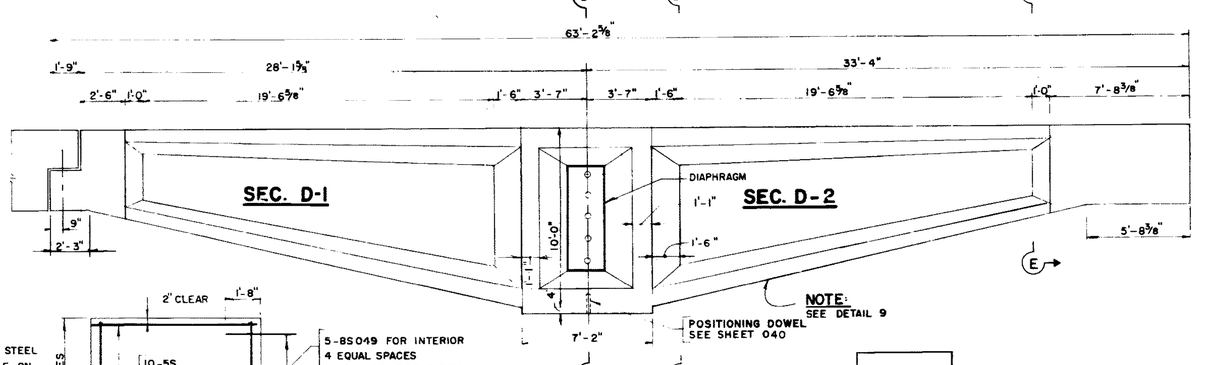
PIERS 1,2,11,12 & 13

TYPE A

NOTE:
FOR LONGITUDINAL STEEL LENGTHS SEE TABLE ON SHEET 700,139.



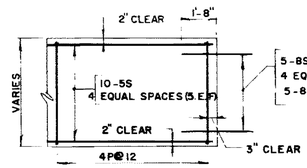
PLAN



ELEVATION

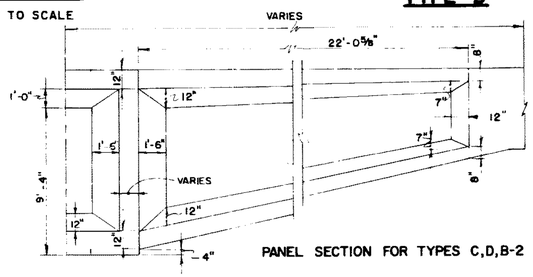
PIERS 6 & 7

TYPE D

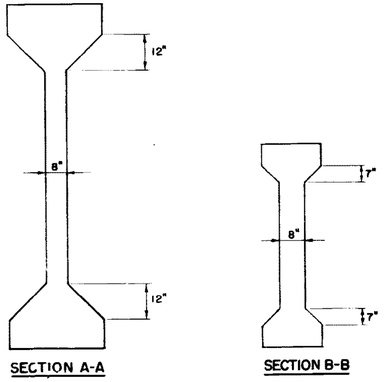


DETAIL A

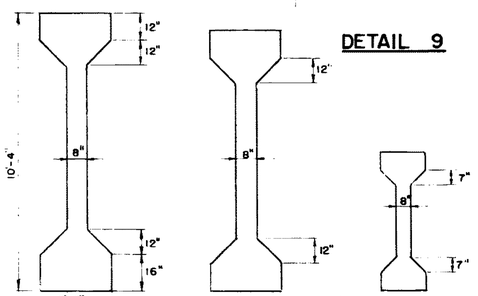
NOT TO SCALE



PANEL SECTION FOR TYPES C,D,B-2



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



DETAIL 9

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

NOTE
SEE NOTES ON SHEET 078

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES
WASHINGTON BRIDGE (NORTH)
CROSSING SEEKONK RIVER
PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

CANTILEVERS
SHEET - 1

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE: 1/4"=1'-0"
EXCEPT AS NOTED SHEET 74 OF 223

APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

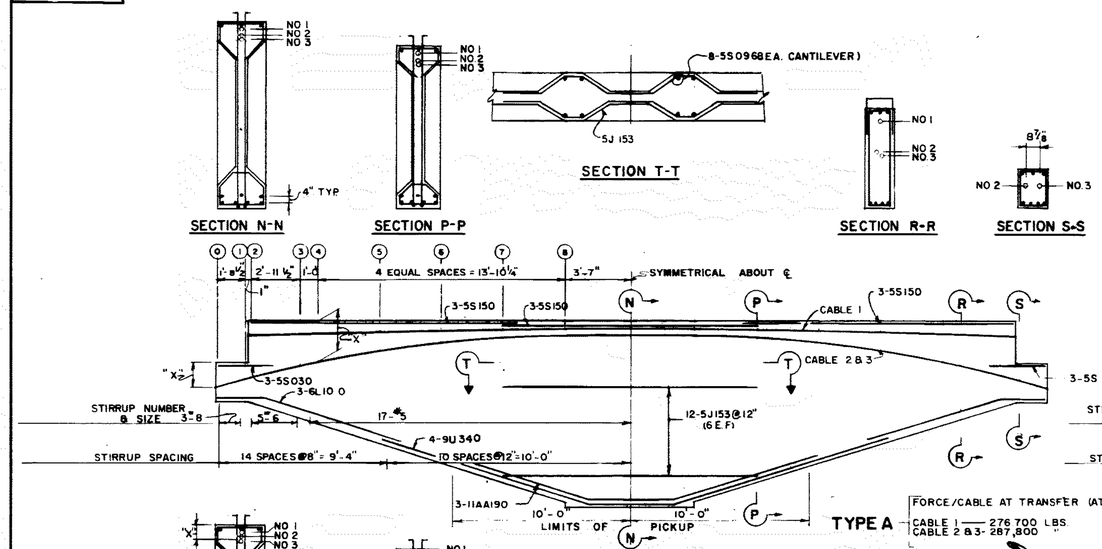
SET NO. ☐
PRINTED
ISSUED TO ☐

M. PETERSON

700,074

700,077

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(1)38	1965	77	223



FORCE/CABLE AT TRANSFER (AT ANCHORAGE)

CABLE 1 — 276,700 LBS.
CABLE 2 & 3 — 287,800 "

FORCE/CABLE AT TRANSFER (AT ANCHORAGE)

	B-1	B-2
CABLE 1 & 2	276,420	278,900
" 3 & 4	283,800	282,540
" 5		298,830

FORCE/CABLE AT TRANSFER (AT ANCHORAGE)

CABLE 1 — 276,700 LBS.
CABLE 2 & 3 — 284,800 "
CABLE 4 — 299,380 "

NOTE:
FOR ADDITIONAL REINFORCEMENT SEE DETAIL A BELOW.

NOTE:
FOR ALTERNATE SEE SHEET 082

NOTE:
SEE SHEET 078 FOR STIRRUP DETAILS

TYPE A

LOC	"X" CABLE 1	"X" CABLE 2 & 3
0	—	16 3/4
1	—	11
2	10	38
3	8 1/16	29 3/8
4	8'	26 7/8
5	6 11/16	19 1/2
6	5 3/4	14 1/4
7	5 3/16	11 1/16
8	5	10

TYPE A-1

LOC	"X" CABLE 1	"X" CABLE 2 & 3
0	—	15 3/4
1	—	11
2	10	38
3	8 1/16	30 3/4
4	8 5/16	28 1/2
5	7 1/8	21 7/8
6	6 3/16	16 3/4
7	5 3/16	13
8	5 1/8	10 3/4
9	5	10

NOTE:
1. ALL DIMENSIONS IN INCHES
2. FOR ANCHORAGE DETAILS SEE SHEET 078
3. SEE NOTES ON SHEET 078.

FORCE/CABLE AT TRANSFER (AT ANCHORAGE)
CABLE 1 — 276,210 LBS.
CABLE 2&3 — 286,100 LBS.

TYPE B-1

LOC	"X" CABLE 1 & 2	"X" CABLE 3 & 4	CABLE 5
0	—	14 11/16	—
1	—	11	—
2	10	38	—
3	8 1/8	29 3/8	—
4	7 3/16	24 9/16	—
5	6 7/8	23 5/8	—
6	6 1/16	19 7/8	—
7	5 1/2	17 3/16	—
8	5 1/8	15 9/16	—
9	5	15	—

TYPE B-2

LOC	"X" CABLE 1 & 2	"X" CABLE 3 & 4	CABLE 5
0	—	10 1/2	—
1	—	8	—
2	10	35	—
3	7	28 3/16	—
4	6 3/16	26 3/4	—
5	5 13/16	25 11/16	—
6	5 5/16	23 3/16	—
7	5	21	76 11/16
8	5	19 3/16	62 7/16
9	5	17 11/16	50 3/4
10	5	16 1/2	41 3/8
11	5	15 11/16	35 3/16
12	5	15 3/16	31 5/16
13	5	15	30

TYPE C

LOC	"X" CABLE 1	"X" CABLE 2 & 3	"X" CABLE 4
0	—	12 9/16	—
1	—	9	—
2	10	36	—
3	9 3/16	31 7/8	—
4	8 1/16	29 15/16	—
5	7 11/16	23 13/16	71 7/8
6	6 11/16	18 7/8	53 3/16
7	5 13/16	15	38 11/16
8	5 7/8	12 1/4	28 5/16
9	5 1/8	10 9/16	22 1/16
10	5	10	20

REVISIONS		
NO.	DATE	BY
1.	6/23/67	R. C.

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

CANTILEVERS
SHEET-4

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE: JAN 1967 DESIGNED BY
SCALE: 1/4" = 1'-0"
EXCEPT AS NOTED SHEET 77 OF 223

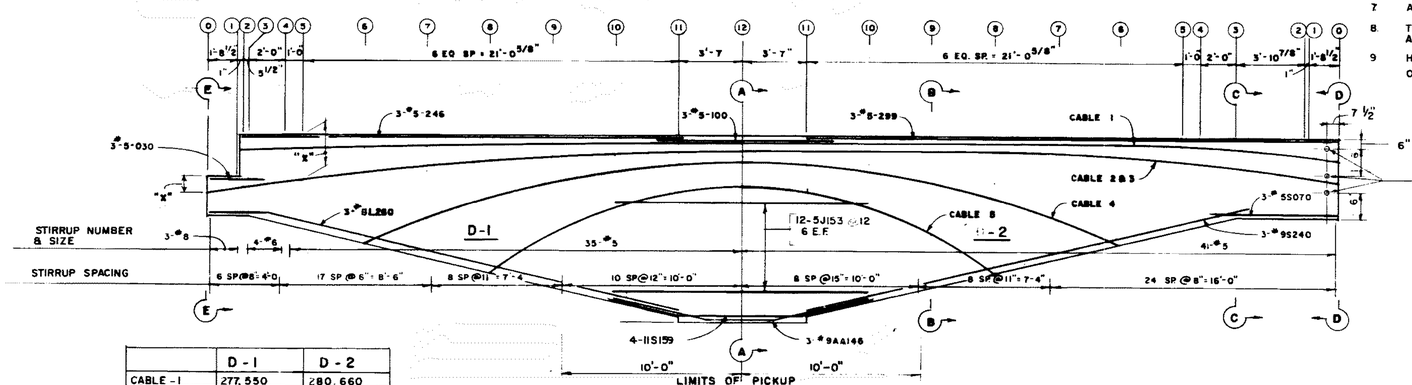
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. ☐ PRINTED ☐ ISSUED TO ☐

700,077

700,078

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(1138)	1968	78	223



	D-1	D-2
CABLE - 1	277,550	280,660
CABLES 2 & 3	284,170	283,400
CABLE - 4	297,490	297,490
CABLE - 5	307,170	307,170

NOTES

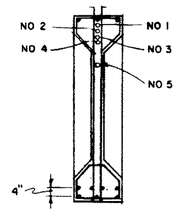
1. FC = 5,000 P.S.I TYPICAL FOR ALL CANTILEVERS EXCEPT TYPE B. FOR TYPE B USE FC = 6,000 P.S.I.
2. NO POST TENSIONING ALLOWED UNTIL SPECIFIED COMPRESSIVE STRENGTH IS REACHED. (NOTE 1.)
3. ALL CABLES ARE OF 12-1/2" Ø STRANDS
4. ALTERNATE ANCHORAGE SYSTEM MAY BE USED (SUBJECT TO APPROVAL OF THE ENGINEER) BUT TYPE, NUMBER, AND LOCATIONS OF CABLES MAY NOT BE ALTERED.
5. FORCES SHOWN FOR CABLES DO NOT INCLUDE ANCHORAGE LOSSES.
6. CABLES ARE TO BE TENSIONED FROM BOTH ENDS (EXCEPT CABLE 5, TYPE B).
7. ALL TENDONS SHALL BE GROUTED AFTER PRESTRESSING
8. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS. COMPUTATIONS OF ALL P/S. LOSSES FOR APPROVAL SHALL BE PROVIDED.
9. HANDLING AND TRANSPORTATION PROCEDURES SHOWING COMPUTATIONS OF ANTICIPATED STRESS LEVELS SHALL BE PROVIDED FOR APPROVAL.

TYPE D-1

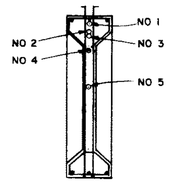
LOC	"X" CABLE 1	CABLE 2&3	CABLE 4	CABLE 5
0	—	11 3/16	—	—
1	—	8	—	—
2	10	35	—	—
3	9 13/16	34 1/8	—	—
4	9 1/8	30 3/4	—	—
5	8 13/16	29 3/16	—	—
6	7 13/16	24 1/8	71 7/8	—
7	6 5/16	19 13/16	55 1/8	—
8	6 1/4	16 5/16	41 7/16	91 1/8
9	5 1/16	13 9/16	30 13/16	65 7/8
10	5 3/16	11 9/16	23 3/16	47 3/4
11	5 1/16	10 7/16	18 9/16	36 3/4
12	5	10	17	33

TYPE D-2

LOC	"X" CABLE 1	CABLE 2&3	CABLE 4	CABLE 5
0	14 9/16	29 3/8	—	—
1	12	26	—	—
2	12	26	—	—
3	7 5/16	19 9/16	—	—
4	6 3/16	16 5/16	—	—
5	5 13/16	15 13/16	—	—
6	5	12 9/16	71 7/8	—
7	5	10 5/8	55 1/8	—
8	5	10	41 7/16	91 1/8
9	5	10	30 13/16	65 7/8
10	5	10	23 3/16	47 3/4
11	5	10	18 9/16	36 3/4
12	5	10	17	33

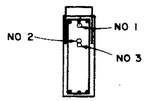


SECTION A-A

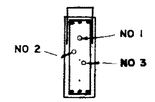


SECTION B-B

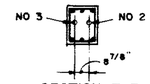
NOTE
ALL DIMENSIONS IN INCHES



SECTION C-C

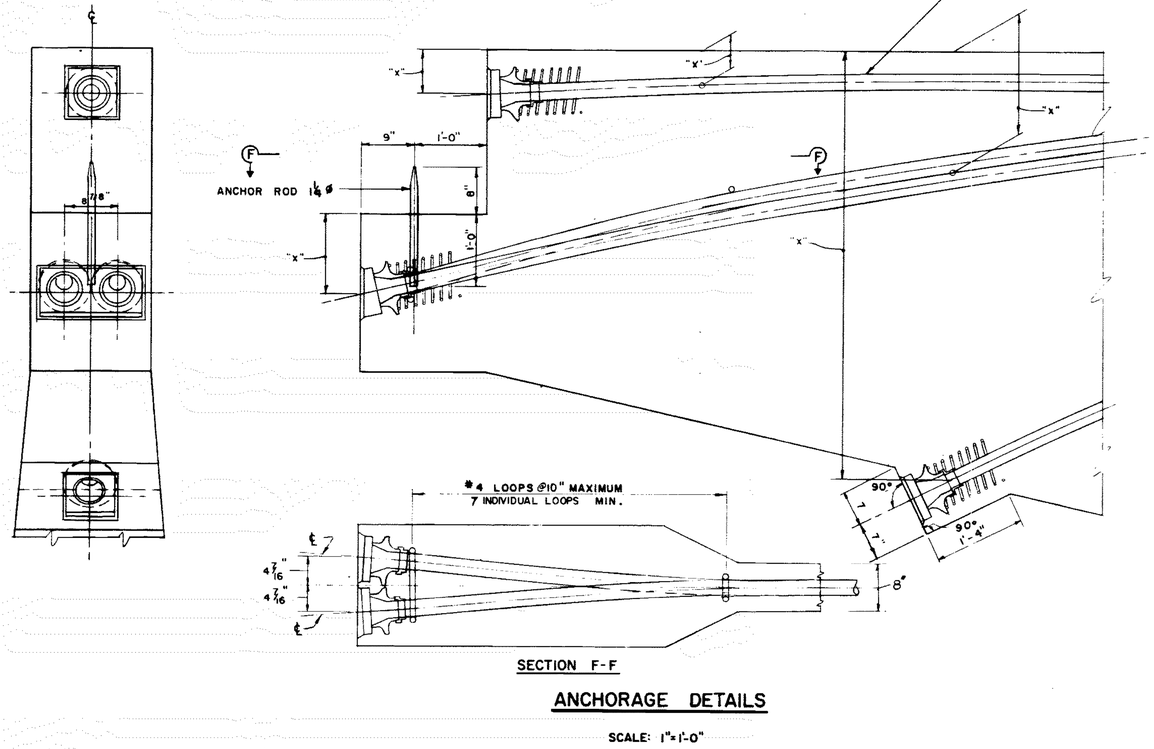


SECTION D-D



SECTION E-E

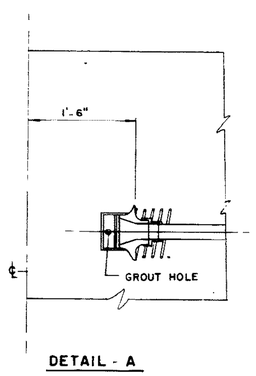
TYPE D



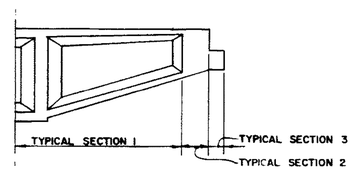
SECTION F-F

ANCHORAGE DETAILS

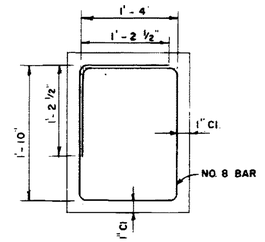
SCALE: 1"=1'-0"



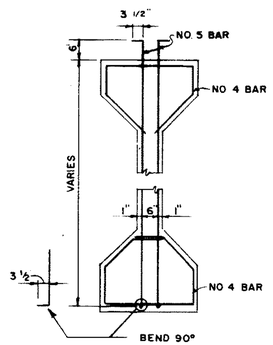
DETAIL - A



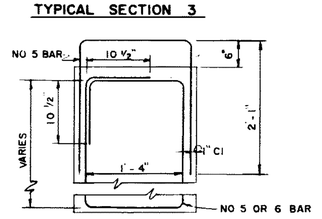
ELEVATION



TYPICAL SECTION 3



TYPICAL SECTION 1



TYPICAL SECTION 2

STIRRUP DETAILS

NOT TO SCALE

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE-EAST PROVIDENCE, RHODE ISLAND

CANTILEVERS
SHEET-5

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN. 1967 DESIGNED BY
SCALE 1/4" = 1'-0"
EXCEPT AS NOTED SHEET 78 OF 223

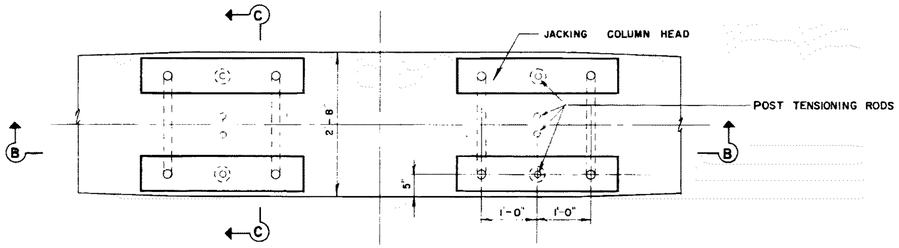
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

700,078

700,079

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(10)38	1968	79	223



PLAN AT TOP OF CANTILEVER

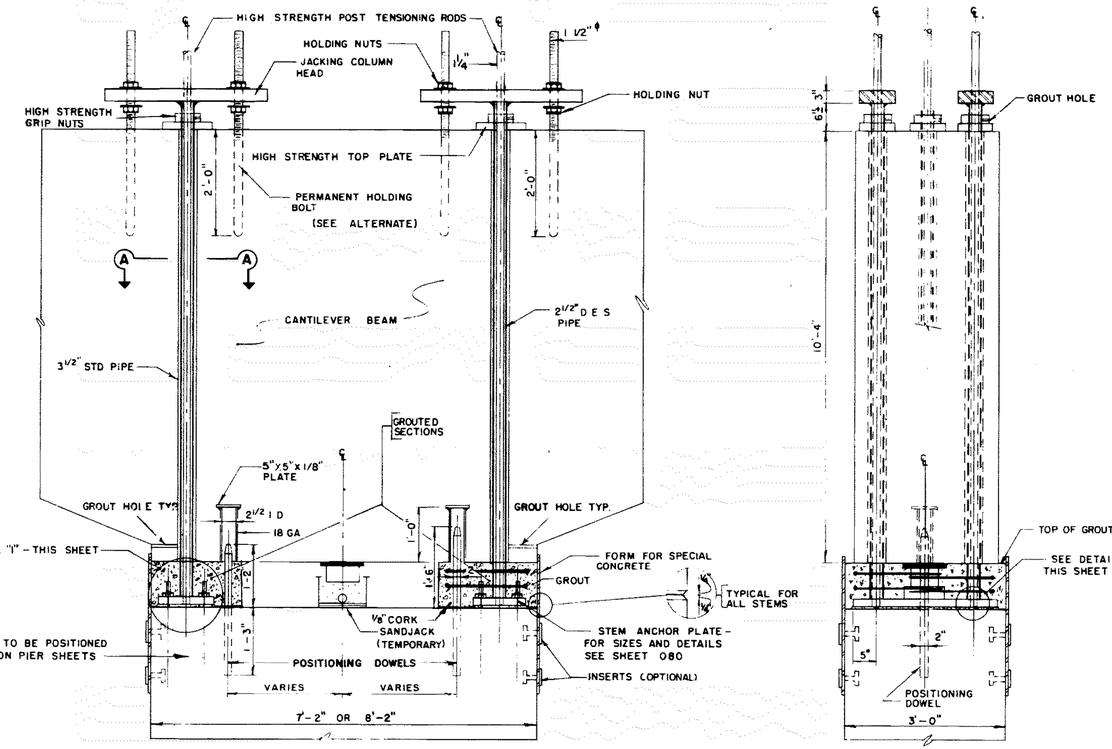
NOTE:

THE HIGH STRENGTH STEEL TO BE USED FOR ANCHOR PLATES, HOLD DOWN PLATES AND PLATE WASHERS SHOWN ON SHEETS LISTED BELOW SHALL CONFORM TO A.S.T.M. DESIGNATION A 107 - GIT. GRADE 1040 FOR BAR SIZES AND SHALL BE FROM ROLLED BILLETS CONFORMING TO THE SAME DESIGNATION AS WELL AS THE REQUIRMENTS OF A.S.T.M. DESIGNATION A-6 FOR PLATE SIZES WITH THE FOLLOWING PHYSICAL REQUIRMENTS:

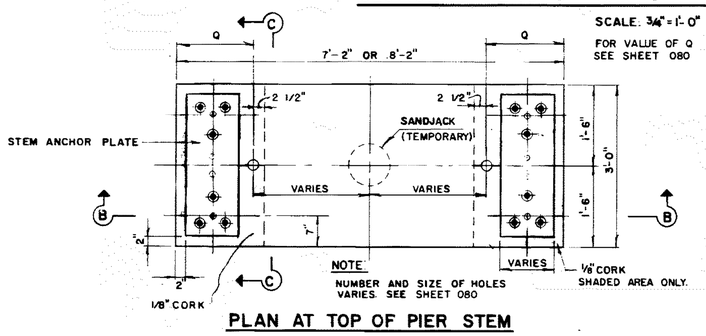
MIN ULTIMATE STRENGTH = 91,000 P.S.I.
MIN YIELD POINT = 50,000 P.S.I

LIST OF DRAWINGS:

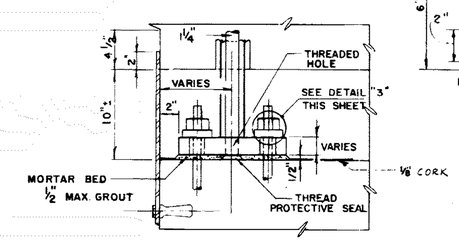
026, 040, 042, 080, 139 & 143



SECTIONAL VIEWS OF CANTILEVER POSITIONING ASSEMBLY

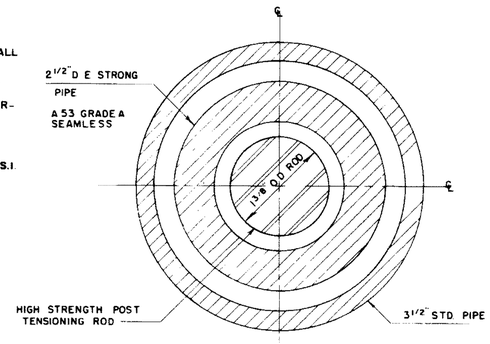


PLAN AT TOP OF PIER STEM



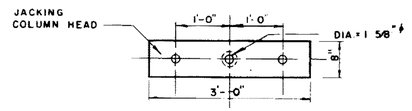
DETAIL "1"

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

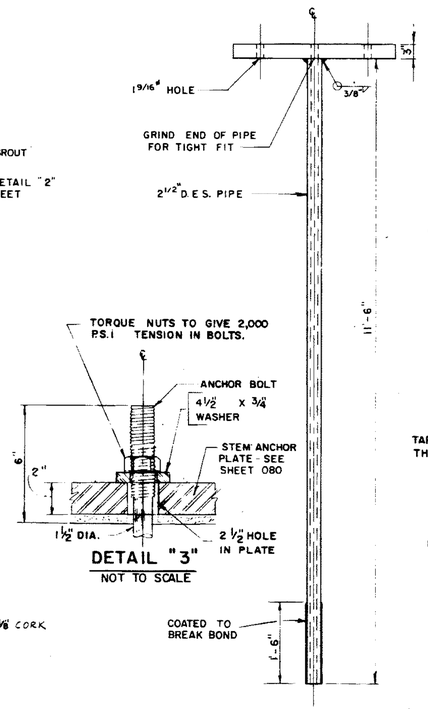


SECTION A-A

FULL SIZE

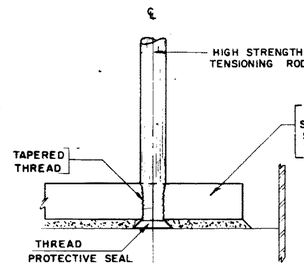


PLAN



DETAIL "3"

NOT TO SCALE



DETAIL "2"

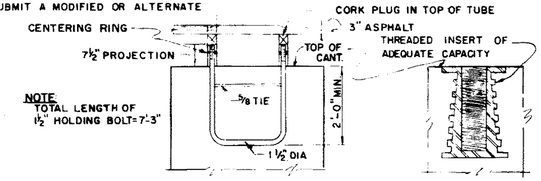
SCALE: 3" = 1'-0"

DESCRIPTION OF SUGGESTED METHOD FOR POSITIONING CANTILEVER BEAMS ON STEMS

1. After the concrete in the pier stem has obtained a minimum strength of 2500 psi compression, place the stem anchor plates over the anchor bolts (Detail 3) , level on a 1/2" grout bed. When mortar has aquired sufficient strength, tighten anchor bolt nuts as shown on drawing.
2. Lower the cantilever beam over the positioning dowels, align and seat on sand jack. (Hydraulic jack may be used rather than sand jack)
3. Remove protection from the threaded holes in the stem anchor plates, insert all high strength post tensioning rods and tighten to full extent of thread on the rods. Visually inspect each rod to assure that it is completely seated.
4. Insert jacking columns into corner holes and position on stem anchor plates.
5. Install and tighten holding nuts on temporary jacking column heads.
6. Crane may now be released.
7. Adjust beam to required grade with holding nuts and sand jack.
8. Tighten all holding nuts and block cantilever beam to prevent any further movement.
9. Install forms for Special Concrete grout and place concrete between pier stem and bottom of cantilever, as shown on the plans.
10. Remove jacking columns after concrete described in par.#9 has obtained a strength of not less than 2,500 psi, as measured in ultimate compressive strength test cylinders, prepared and tested as required by the Engineer. Remove sand jack.
11. After concrete as described in par.#9 has obtained a minimum ultimate compressive strength of 4,000 psi as determined by test as required by the Engineer, post tension all high strength rods to loads as specified, anchor and grout.
12. Remove all extraneous material and cut, remove or burn off all hardware extending more than 8 inches above the top of the cantilever beam.
13. Chase threads for re-use, prior to concreting

NOTE:

THE METHOD SHOWN HERE IS ONLY A SUGGESTED ONE. THE CONTRACTOR MAY SUBMIT A MODIFIED OR ALTERNATE METHOD FOR APPROVAL.



PERMANENT HOLDING BOLTS

NOT TO SCALE

ALTERNATE

NOT TO SCALE

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES
WASHINGTON BRIDGE (NORTH)
CROSSING SEEKONK RIVER
PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

CANTILEVER BEAM ANCHORAGE

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE 3/4"=1'-0"
EXCEPT AS NOTED SHEET 79 OF 223

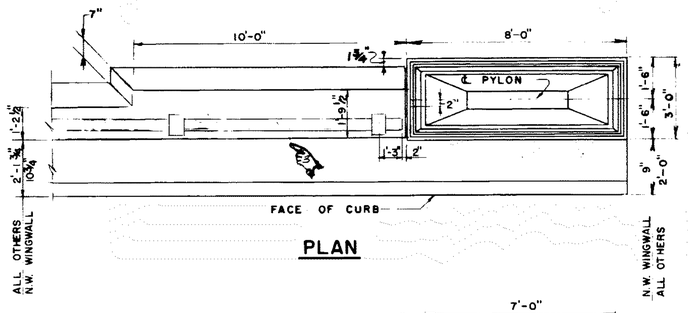
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO.
PRINTED
ISSUED TO

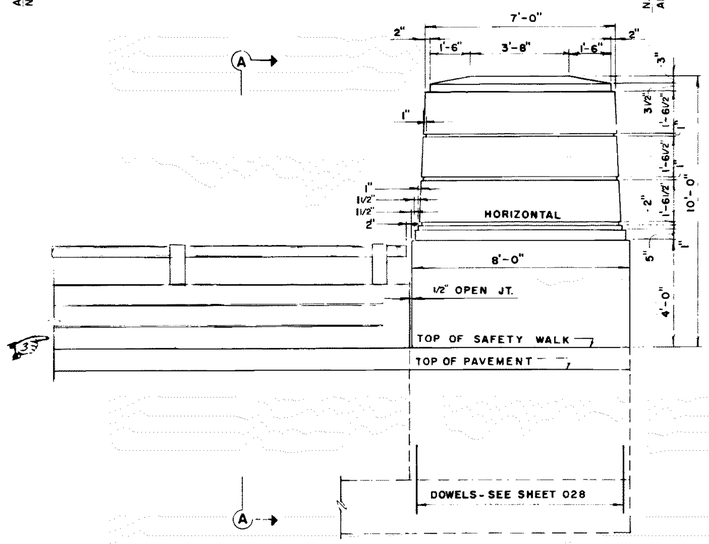
700,079

700,139

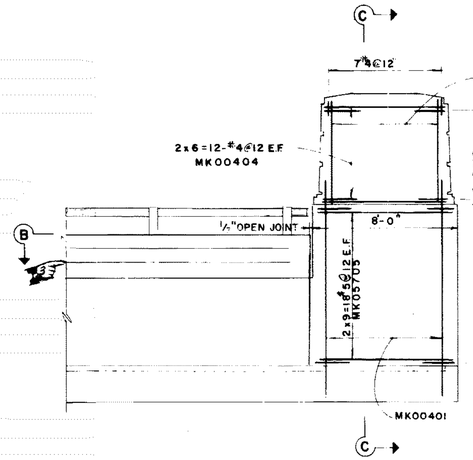
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(4[illegible])	1968	139	223



PLAN



ELEVATION NEW PYLON

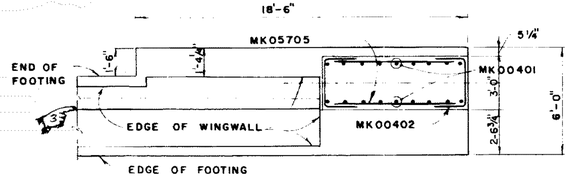


PYLON REINFORCING

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

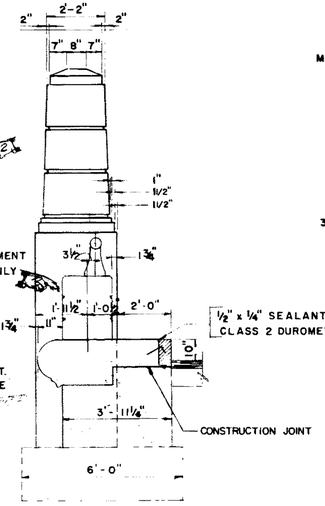
NOTE

FOR REINFORCING BARS IN PYLONS SEE SCHEDULE ON SHEET 700,177

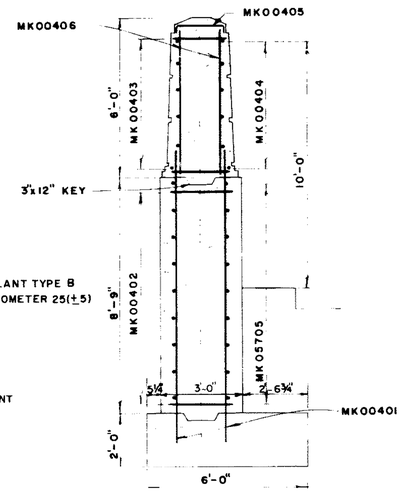


SECTION B-B

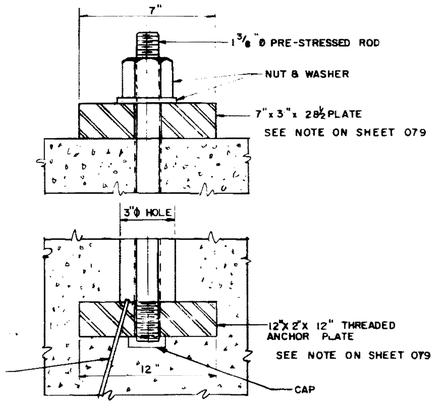
SCALE: 1/4" = 1'-0"



SECTION A-A



SECTION C-C

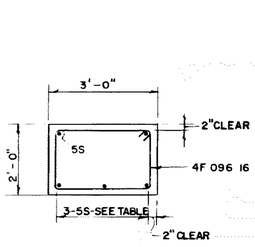


DETAIL OF STRESS STEEL TENSIONING UNIT

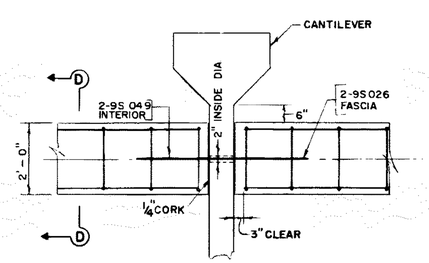
NOT TO SCALE

NOTE

SEE NOTES FOR SEQUENCE OF CONSTRUCTION OF BEAM SEAT ON SHEET 143



SECTION D-D

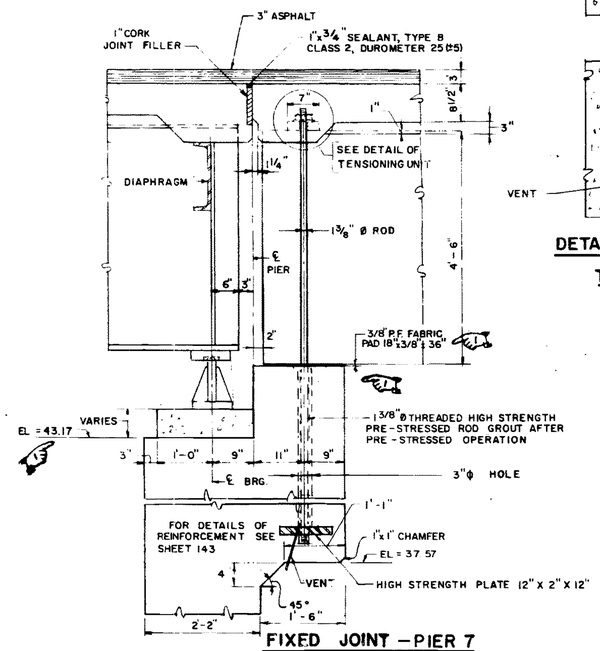


DIAPHRAGM REINFORCING & CANTILEVER CONNECTION

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

TABLE OF LONGITUDINAL DIAPHRAGM STEEL LENGTHS

	PIER NO	NO DIAPMS	LENGTH
PIERS	ABUT 1	5	9'-9"
	1	5	10'-0"
	2	5	10'-6"
	3	5	10'-9"
	4	5	11'-0"
	5	4	11'-0"
	5	2	6'-3"
	6-13	5	11'-0"



FIXED JOINT — PIER 7

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

REVISIONS		
NO.	DATE	BY
1	7/25/67	HMA
2	2/18/68	RCS
3	8/26/68	RCS

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

DETAIL SHEET 4

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. — BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE 3/8" = 1'-0"
EXCEPT AS NOTED SHEET 139 OF 223

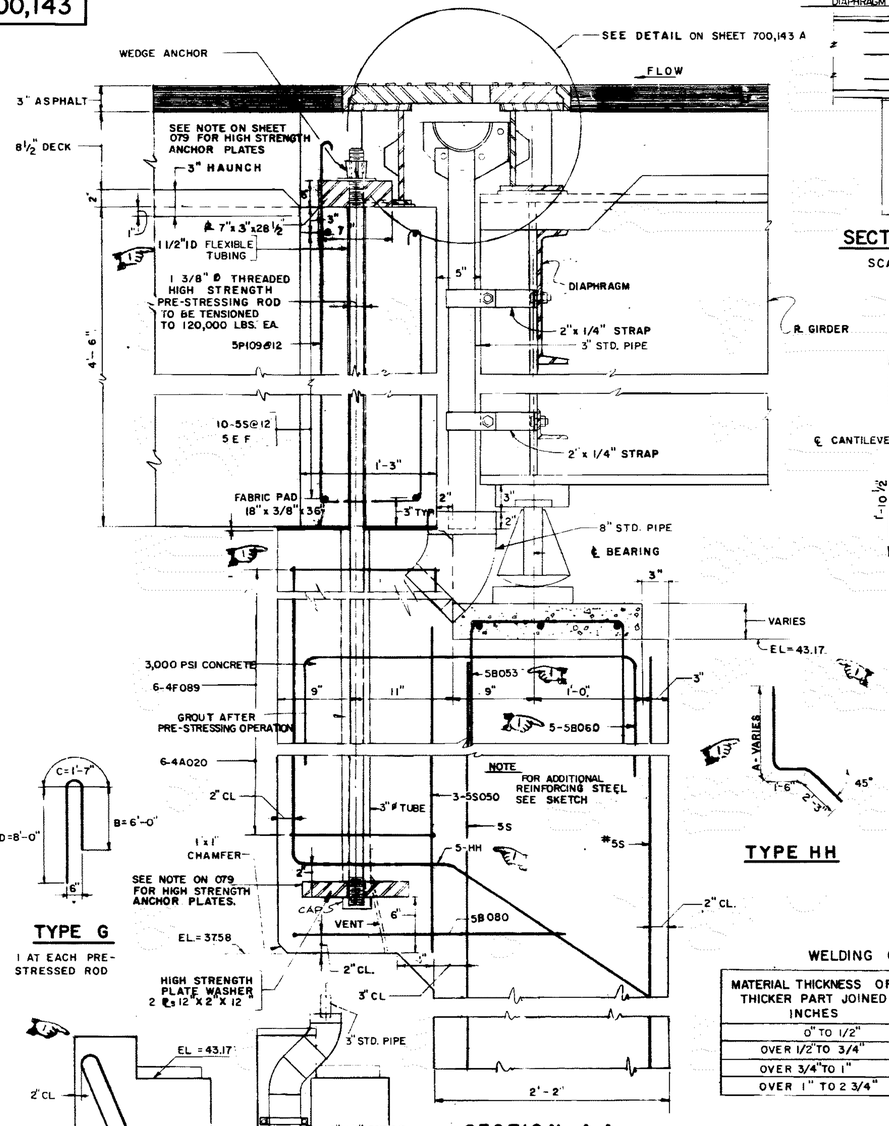
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

700,139

700,143

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I 195-4(438	1968	143	223



WELDING CHART

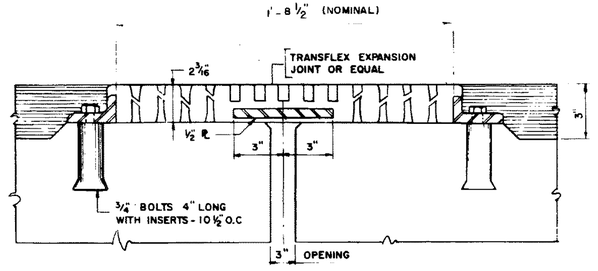
MATERIAL THICKNESS OF THICKER PART JOINED INCHES	MINIMUM SIZE OF FILLET WELD INCHES
0" TO 1/2"	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1"	5/16"
OVER 1" TO 2 3/4"	3/8"

SEQUENCE OF CONSTRUCTION
BEAM SEATS PIERS 6 & 7
ABUTMENT #1 (AS APPLICABLE)

THE FOLLOWING SEQUENCE SHALL BE FOLLOWED FOR THE PLACING OF CONCRETE, SETTING OF CANTILEVER GIRDERS AND PRESTRESSING AT CANTILEVER GIRDERS TO PIERS 6 & 7 UNLESS ANOTHER SEQUENCE IS PROPOSED BY THE CONTRACTOR AND APPROVED IN WRITING BY THE ENGINEER.

1) PLACE PRESTRESS PLATE, WASHERS, RODS, SLEEVES AND ACCESSORIES IN THE FORM TO TEMPLATES OR BY OTHER PRECISE METHODS TO POSITIONS AS SHOWN ON THE DRAWINGS.
2) INSERT SPECIAL REINFORCING IN CANTILEVER BEAM SEAT AND PLACE CONCRETE WITH PIER CONCRETE.
3)* REMOVE PRESTRESS RODS, SET AND ALIGN CANTILEVER BEAM ON FABRIC PAD, RESET PRESTRESS RODS AND SLEEVES PLACE HOLD DOWN PLATES OVER BEAMS AND ESTABLISH WASHERS AND NUTS SECURELY BUT WITHOUT TENSIONING OF RODS.
4) FORM DIAPHRAGMS, SET REINFORCING, POUR AND CURE DIAPHRAGMS.
5) PRESTRESS RODS AND GROUT.

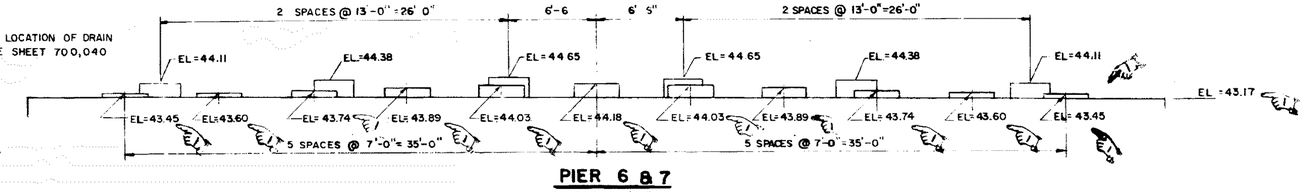
* THE PURPOSE OF REMOVING THE RODS IS TO PREVENT DAMAGE TO THEM WHILE SETTING THE CANTILEVER BEAMS.



DETAIL OF ALTERNATE EXPANSION JOINT

NOT TO SCALE

FOR CURB DETAIL SEE SHEET 144



PIER 6 & 7
SCALE: 3/16"=1'-0"

REVISIONS NO.	DATE	BY
1	7/25/67	HAA

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES
WASHINGTON BRIDGE (NORTH)
CROSSING SEEKONK RIVER
PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

DETAIL SHEET 8

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE AS SHOWN EXCEPT AS NOTED
SHEET 143 OF 223

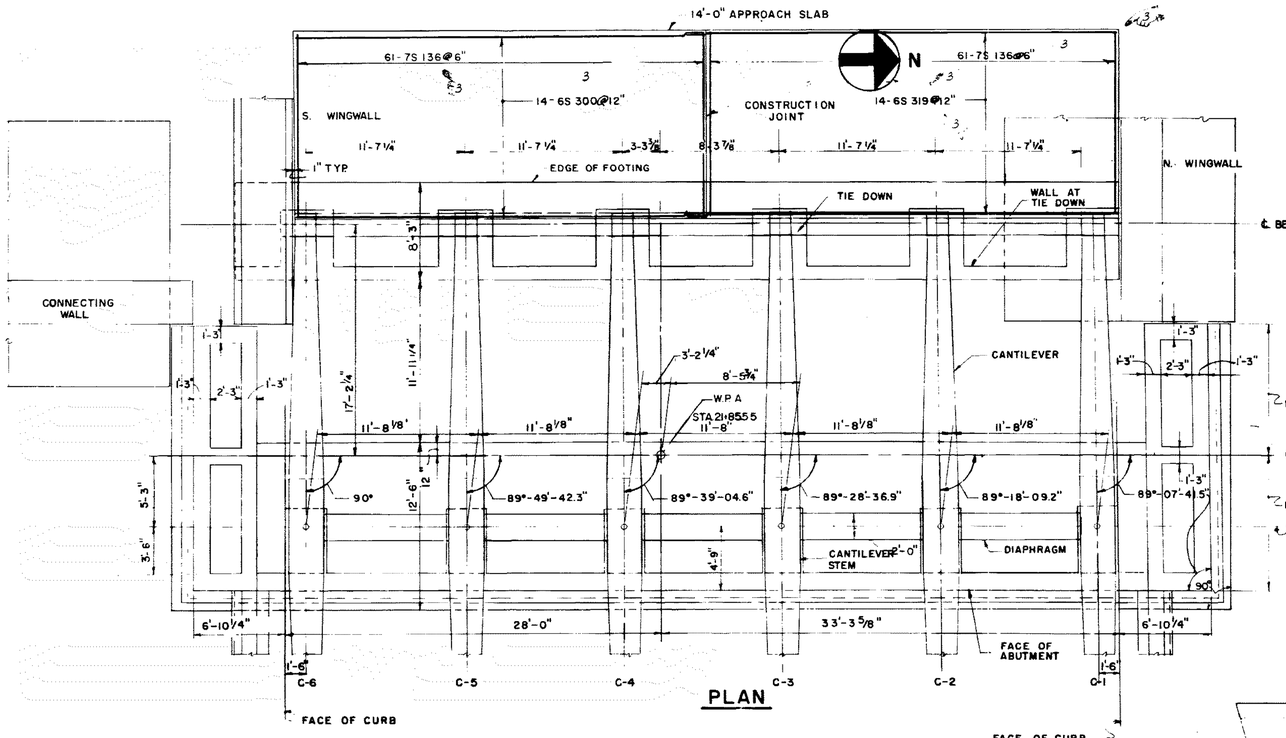
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

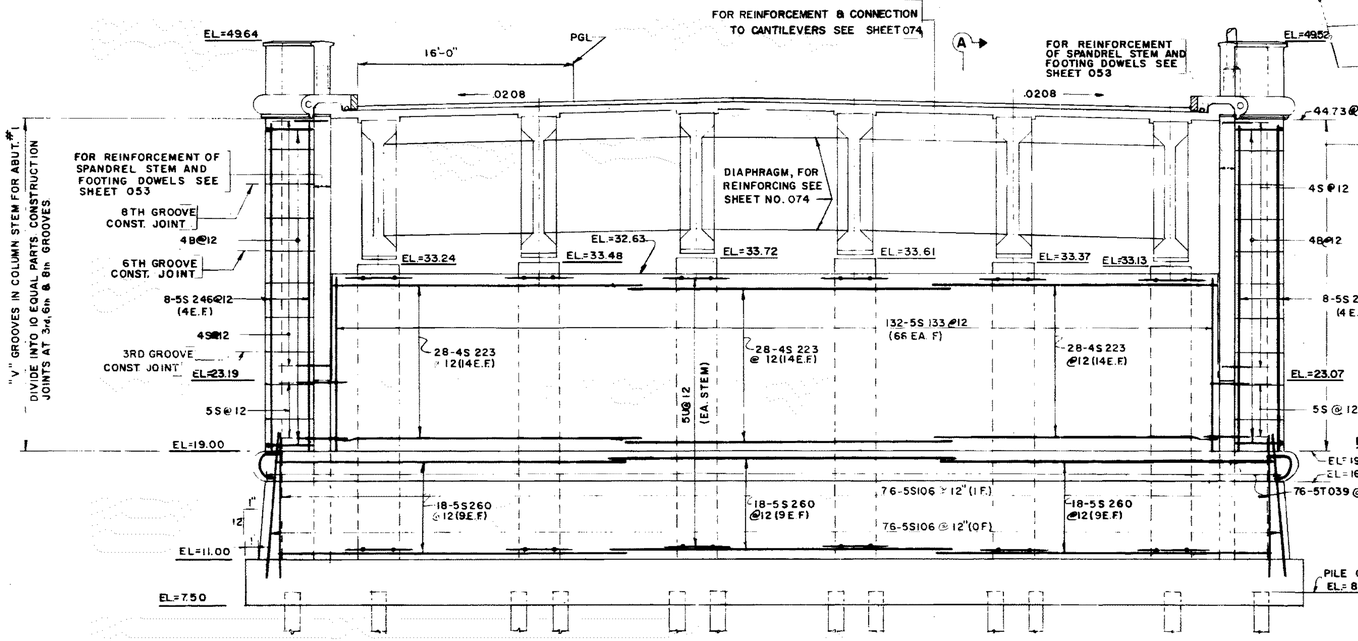
700,143

700,026

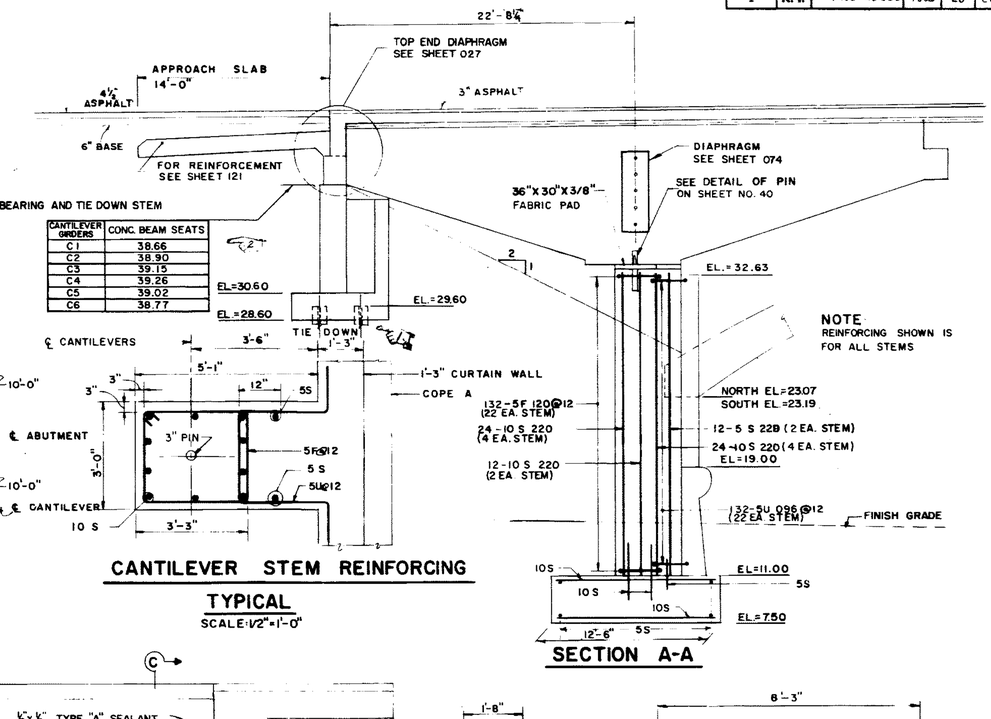
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(038)	1968	26	223



PLAN



ELEVATION



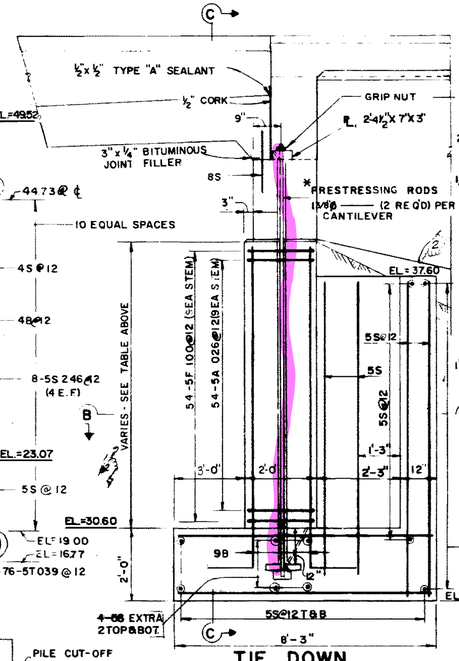
CANTILEVER STEM REINFORCING

TYPICAL

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

SECTION A-A

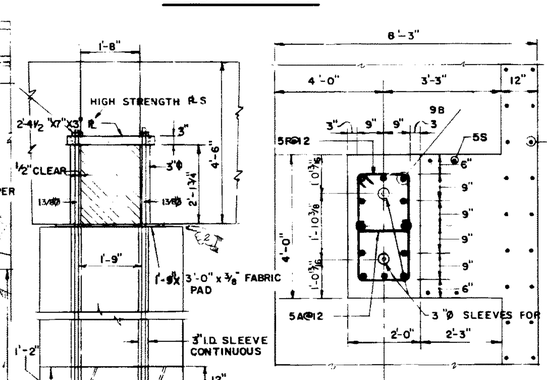
CANTILEVER GIRDERS	CONC. BEAM SEATS
C1	38.66
C2	38.90
C3	39.15
C4	39.26
C5	39.02
C6	38.77



TIE DOWN

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

CONSTRUCTION SEQUENCE OF TIE DOWN IS SIMILAR TO THAT OF PIER 6 AND 7 SEE SHEET 143



SECTION C-C

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

SECTION B-B

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

NOTE:

* P/S FORCE IN RODS: 120,000 LBS. EACH SEE NOTE ON SHEET 079

REVISIONS		
NO.	DATE	BY
1	4/19/67	D.H.
2	11-24-67	J.N.C.
3	7-17-68	C.F.C.

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

ABUTMENT 1
SHEET - 1

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE: 3/16" = 1'-0"

APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

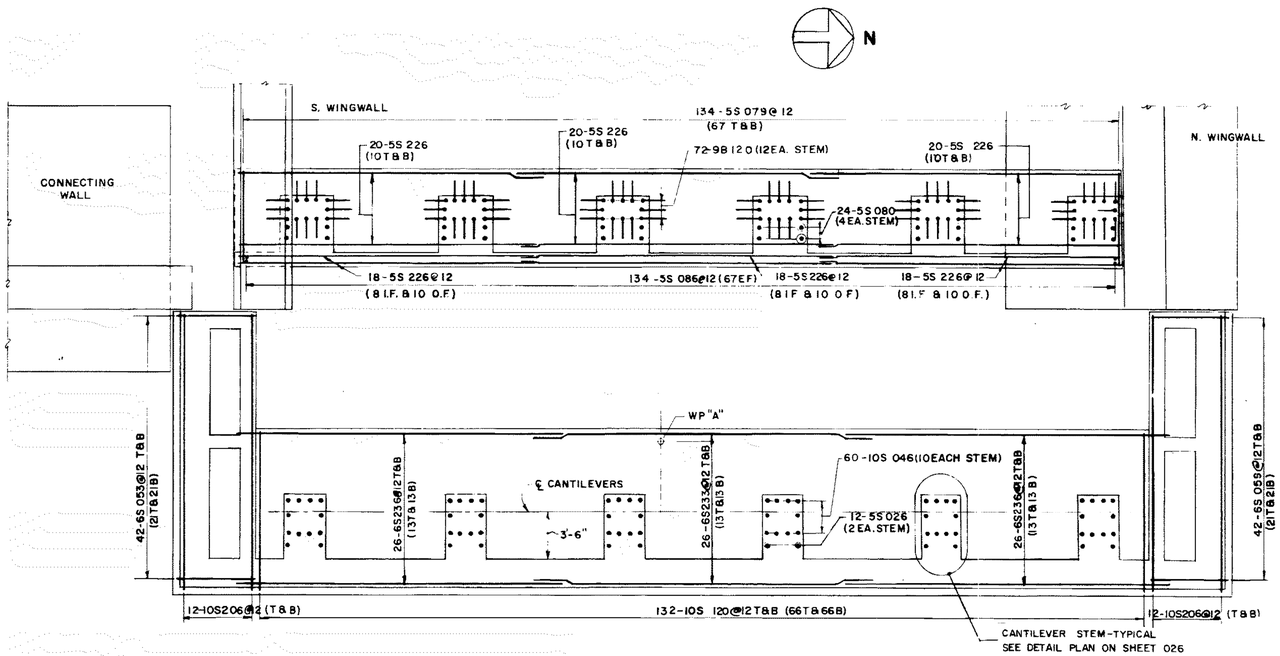
SET NO. ____ PRINTED
ISSUED TO

SHEET 26 OF 223

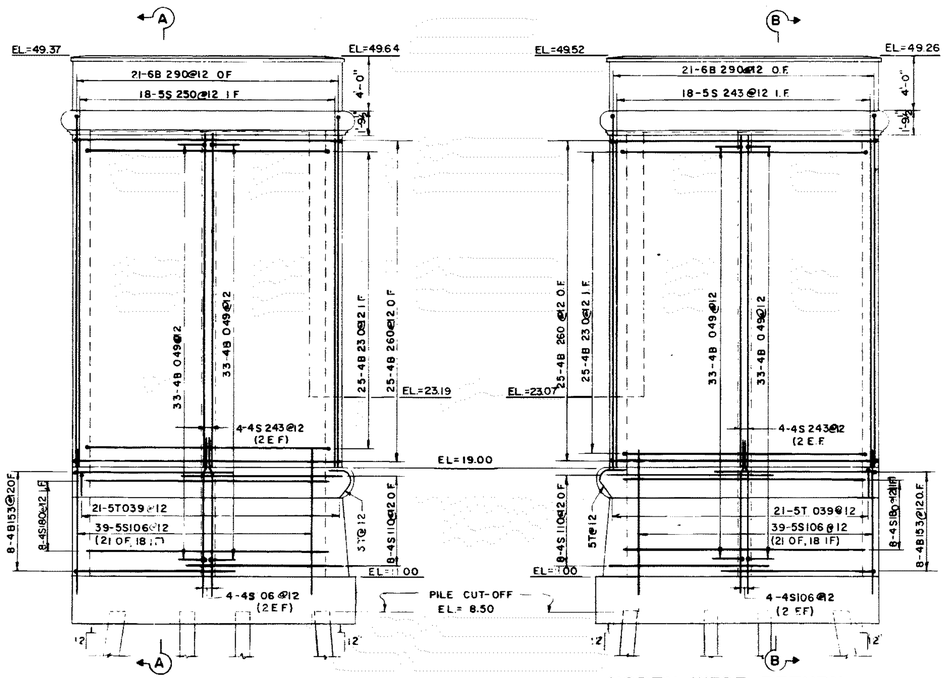
700,026

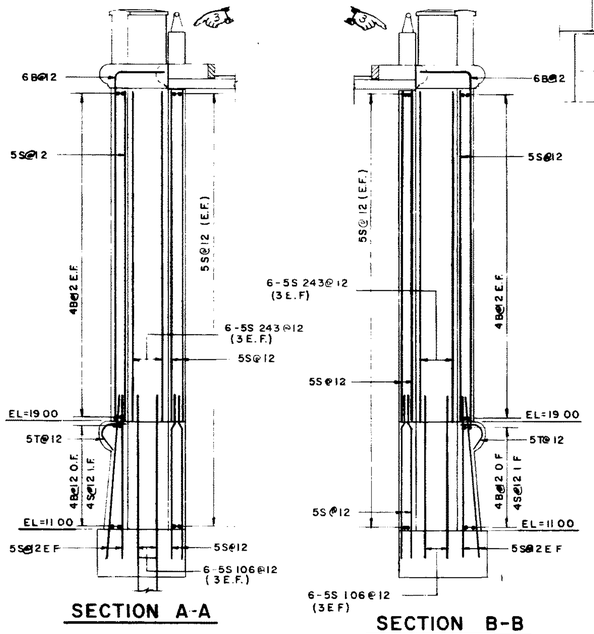
700,027

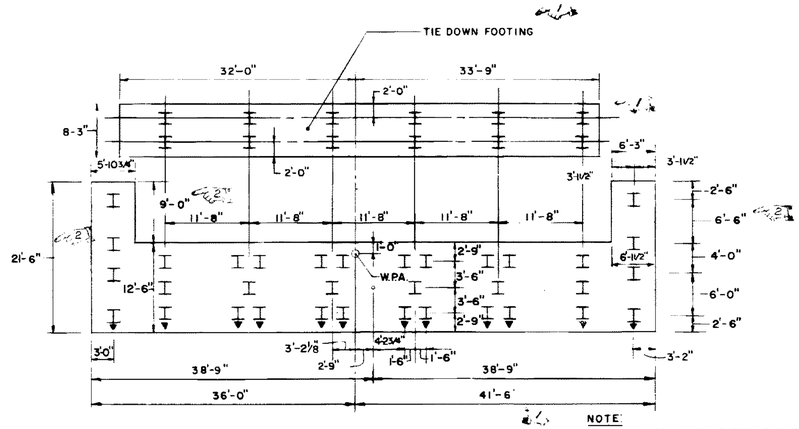
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(10)38	1968	27	223



FOOTING REINFORCING PLAN

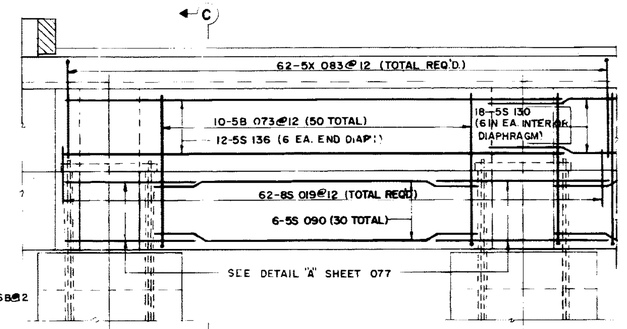




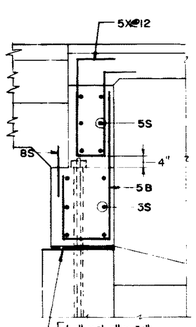


PILE PLAN
SCALE: 1" =10'-0"

NOTE:
USE 34-14 BP 89 PILES FOR ABUTMENT FOOTING
ESTIMATED LENGTH OF PILES - 112'
USE 12-10BP 42 PILES FOR TIE DOWN
ESTIMATED LENGTH OF PILES - 133'



END DIAPHRAGM AT TIE DOWN
SCALE: 1/2" = 1'-0"



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

REVISIONS		
NO.	DATE	BY
1	4/19/67	D.H.
2	5/11/67	J.N.C.
3	8-8-68	

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES
WASHINGTON BRIDGE (NORTH)
CROSSING SEEKONK RIVER
PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

ABUTMENT 1
SHEET - 2

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE 3/16"=1'-0"
EXCEPT AS NOTED SHEET 27 OF 223

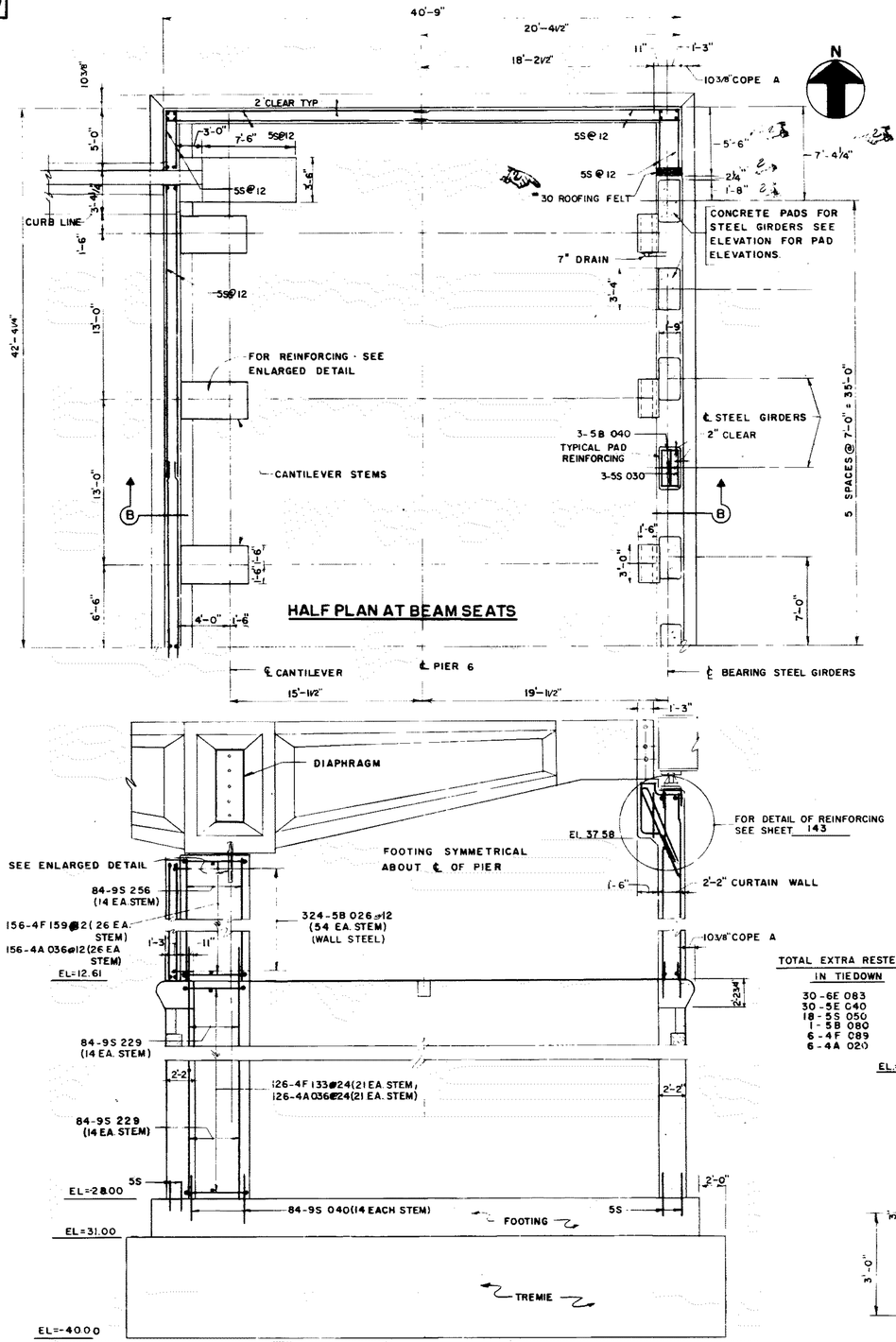
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

700,027

700,040

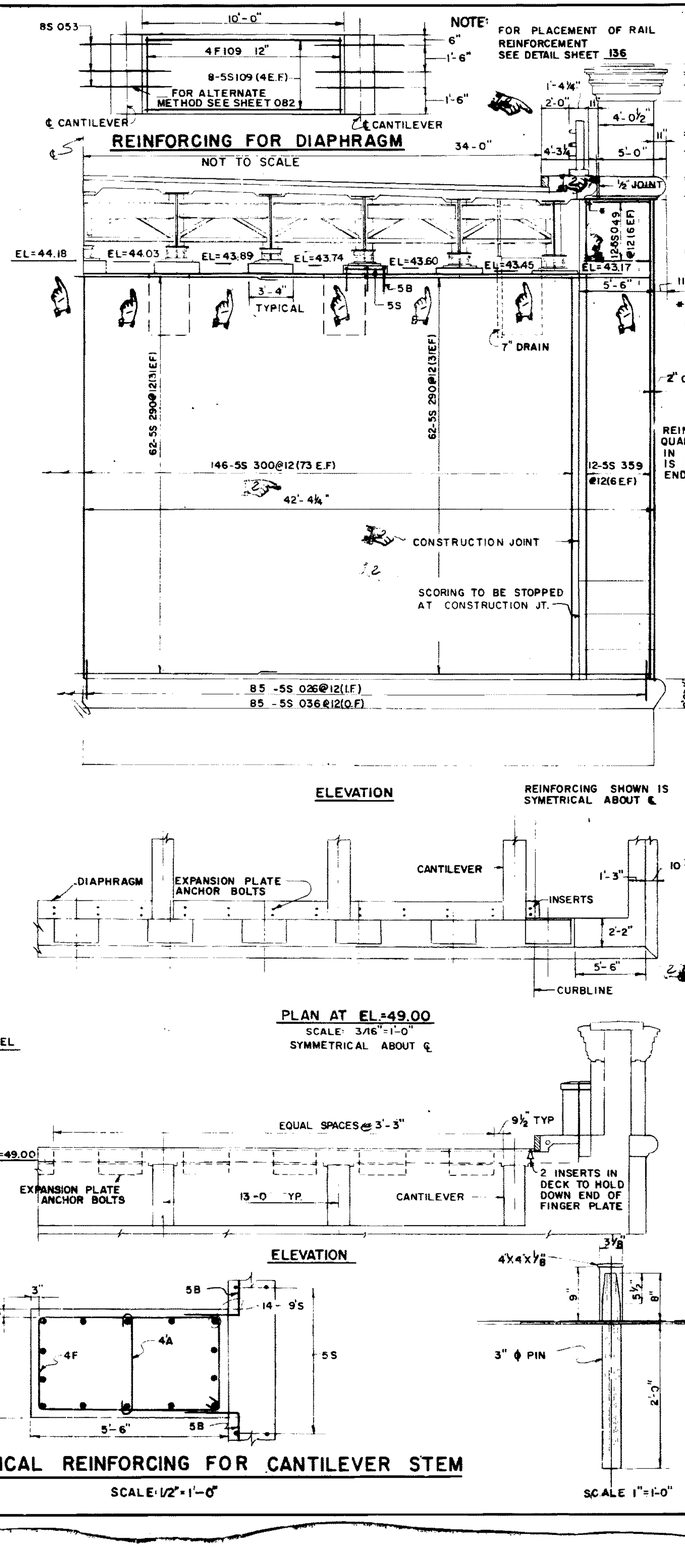
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(14) 38	1968	40	223

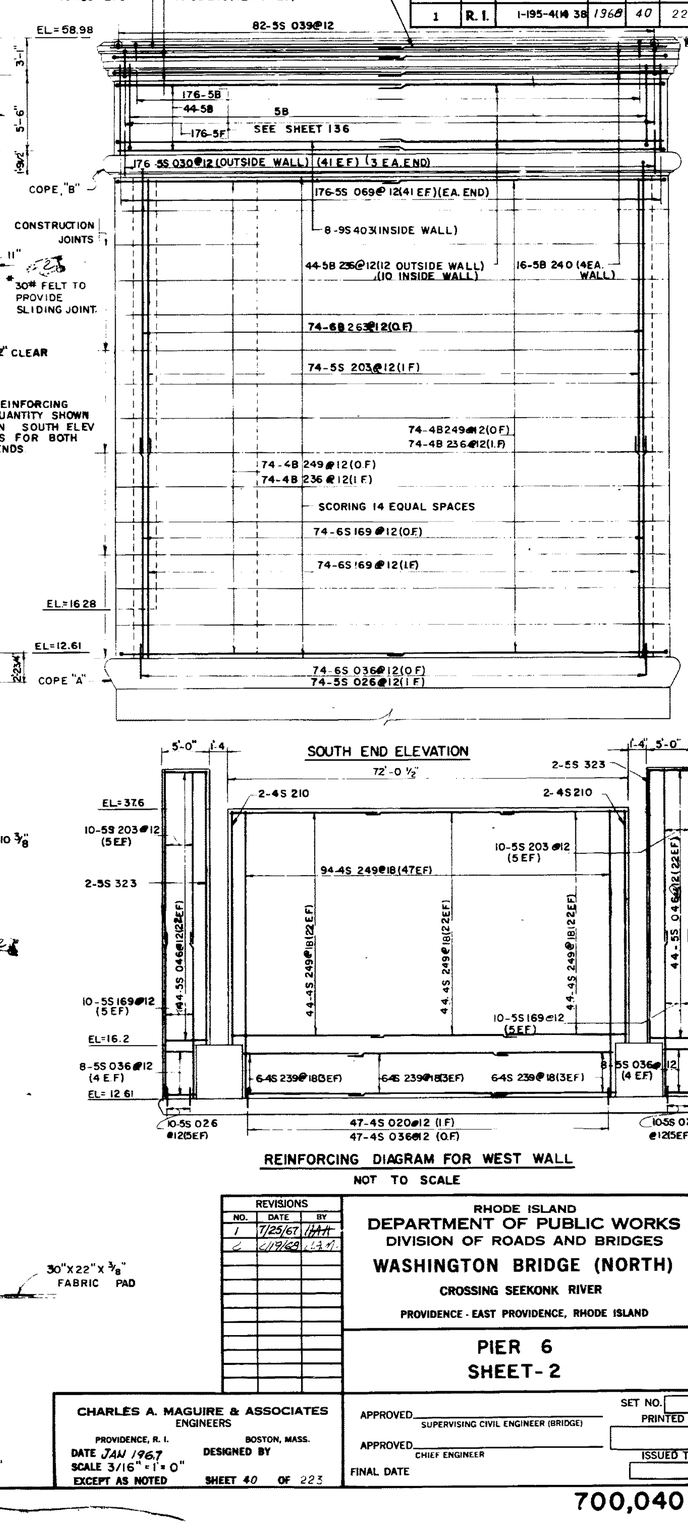


SECTION B-B
SCALE 3/16" = 1'-0"

TOTAL EXTRA RESTEEL IN TIEDOWN

30-6E 083
30-5E 040
18-5S 050
1-5B 080
6-4F 089
6-4A 020

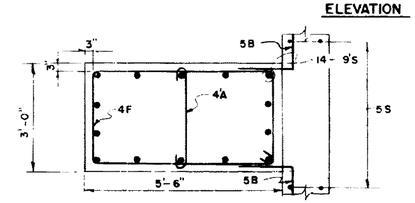




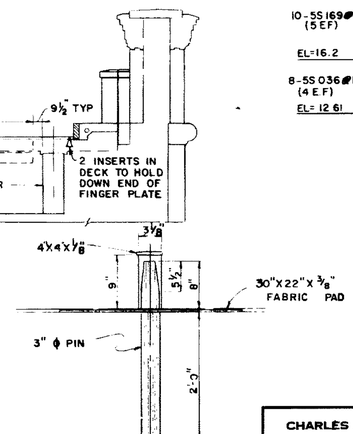
ELEVATION

PLAN AT EL=49.00
SCALE: 3/16" = 1'-0"
SYMMETRICAL ABOUT ℄

ELEVATION



TYPICAL REINFORCING FOR CANTILEVER STEM
SCALE: 1/2" = 1'-0"



SCALE 1"=1'-0"

SOUTH END ELEVATION

REINFORCING DIAGRAM FOR WEST WALL
NOT TO SCALE

REVISIONS		
NO.	DATE	BY
1	7/25/67	HAA
2	2/19/68	HAA

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

PIER 6
SHEET - 2

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE 3/16" = 1' 0"
EXCEPT AS NOTED SHEET 40 OF 223

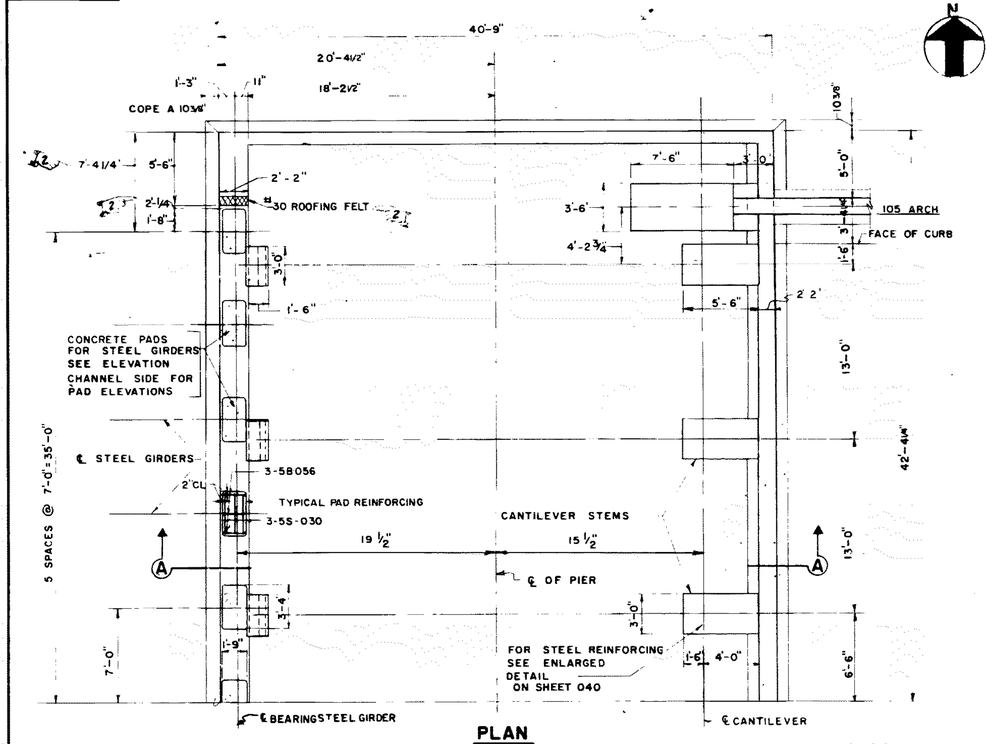
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO. PRINTED
ISSUED TO

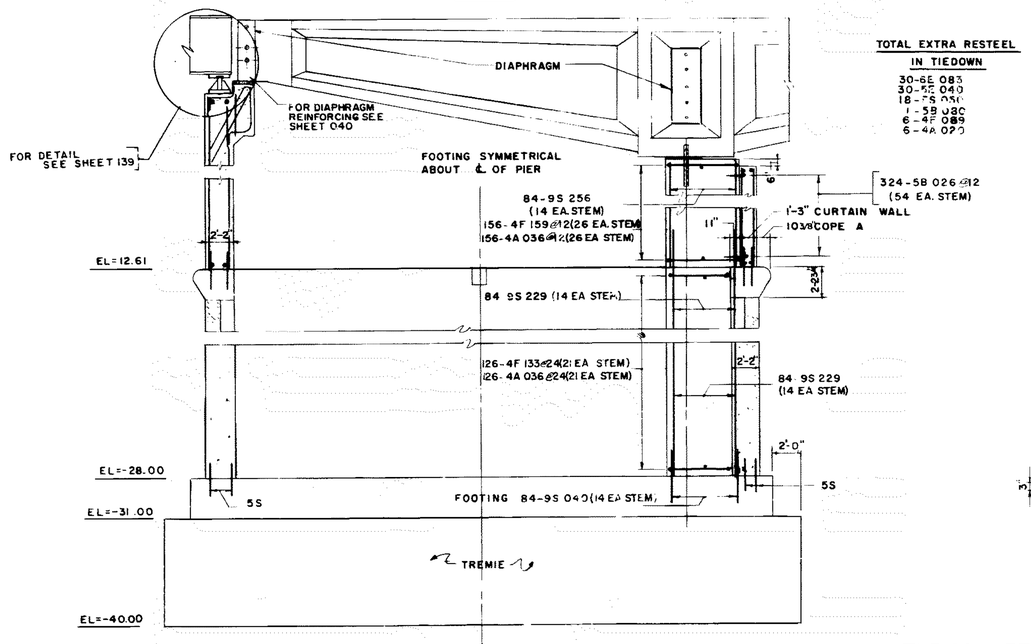
700,040

700,042

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R. I.	I-195-4(1)38	1968	42	223



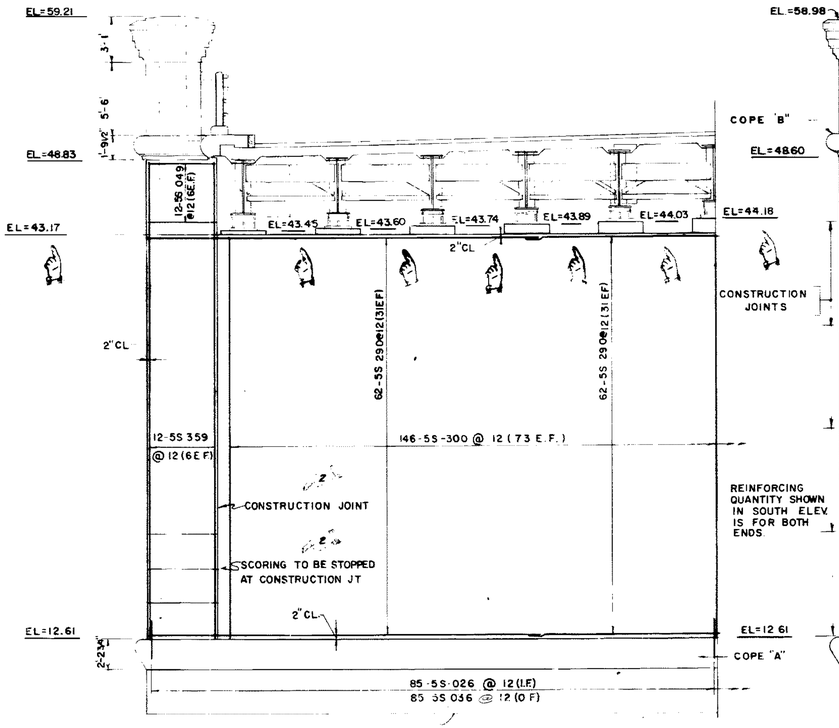
PLAN



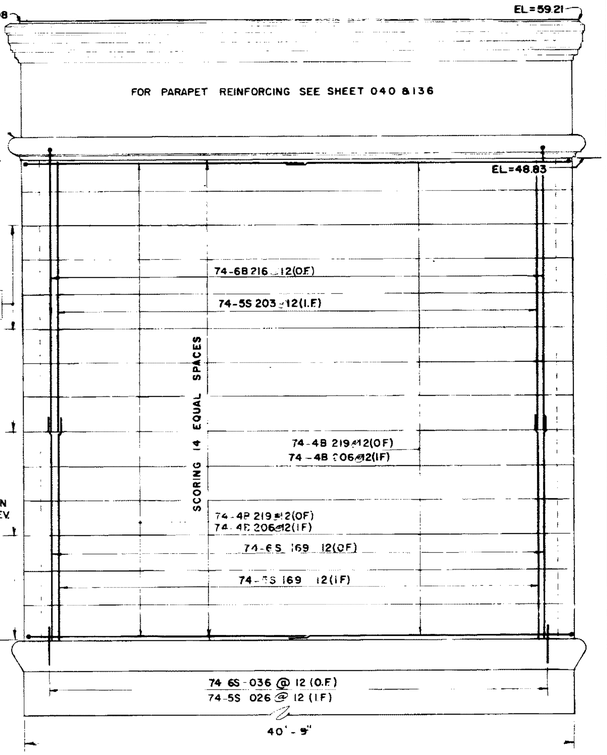
SECTION A-A

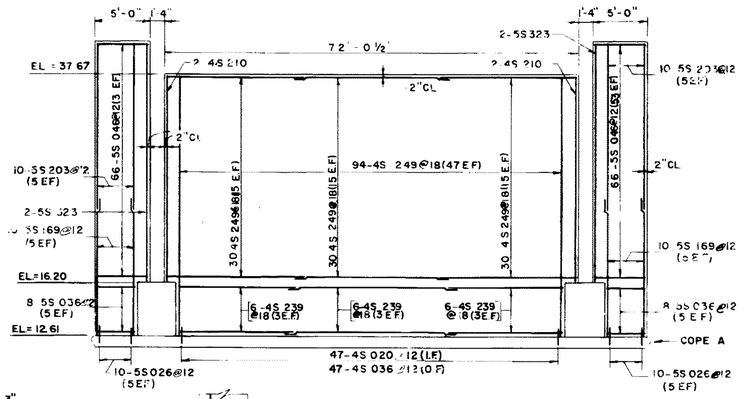
TOTAL EXTRA RESTEEL IN TIEDOWN

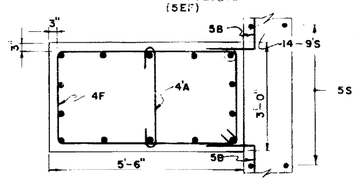
30-6E 083
30-4E 040
18-7S 036
1-5B 080
6-4F 089
6-4A 020



REINFORCING SHOWN S
SYMMETRICAL ABOUT ℄







REINFORCING DIAGRAM FOR EAST WALL

NOT TO SCALE

TYPICAL REINFORCING FOR CANTILEVER STEM

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

NOTES

THE ORDER OF CONSTRUCTION FOR SPANS BETWEEN PIERS 6 & 7 AS FOLLOWS:

1. PLACE STEEL GIRDERS BETWEEN PIERS 6 & 7
2. PLACE CANTILEVERS ON PIERS 6 & 7
3. PLACE ADJACENT AASHO GIRDERS
4. POUR SLAB ON STEEL GIRDERS
5. POUR REMAINING DECK SLABS (SEE SHEET 071)
6. REINFORCING STEEL IN PIER 7 IS THE SAME AS PIER 6 SEE SHEETS 039, 040 & 143.

NOTE:
FOR POSITION & DETAILS OF ANCHOR BOLTS SEE SHEET 080

REVISIONS		
NO.	DATE	BY
1	7/25/67	HAH
2	2-21-68	JMC

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

PIER 7
SHEET-2

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.
DATE JAN 1967 DESIGNED BY
SCALE 3/16" = 1'-0"
EXCEPT AS NOTED SHEET 42 OF 223

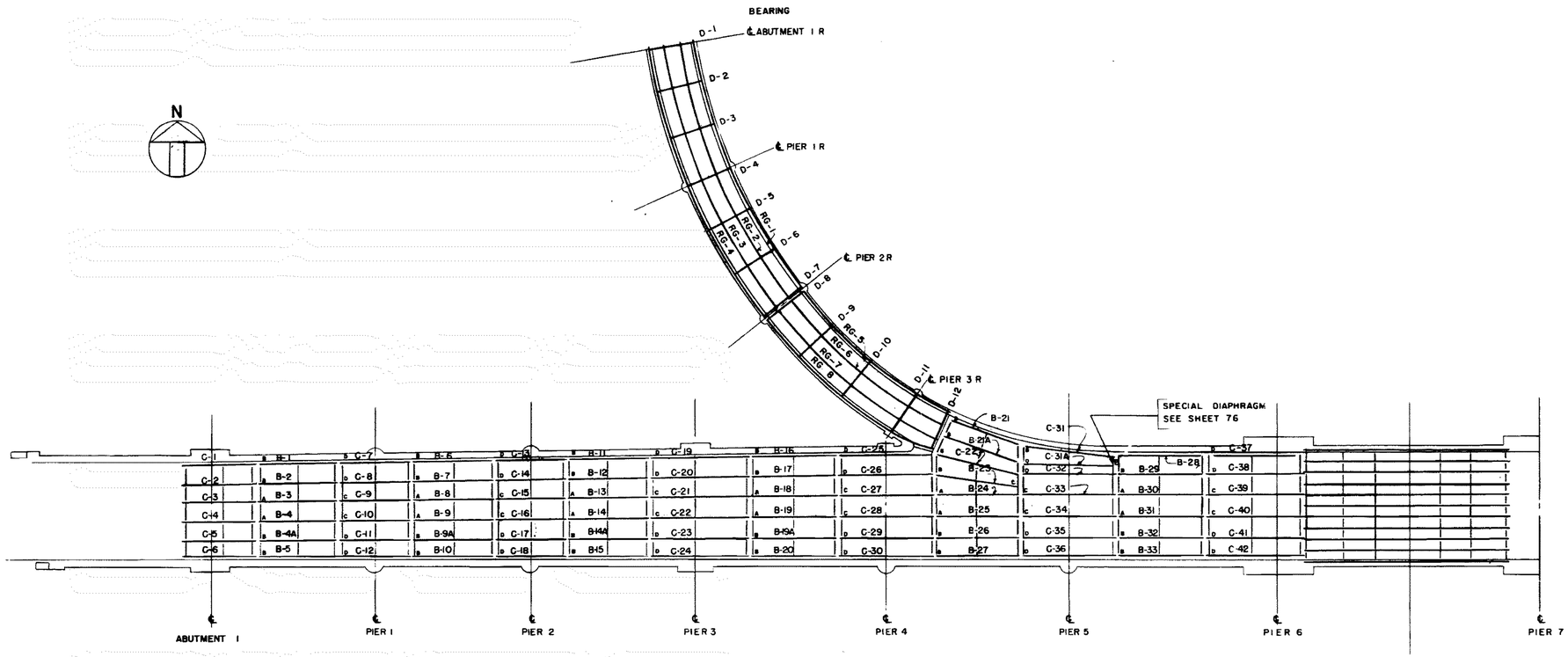
APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

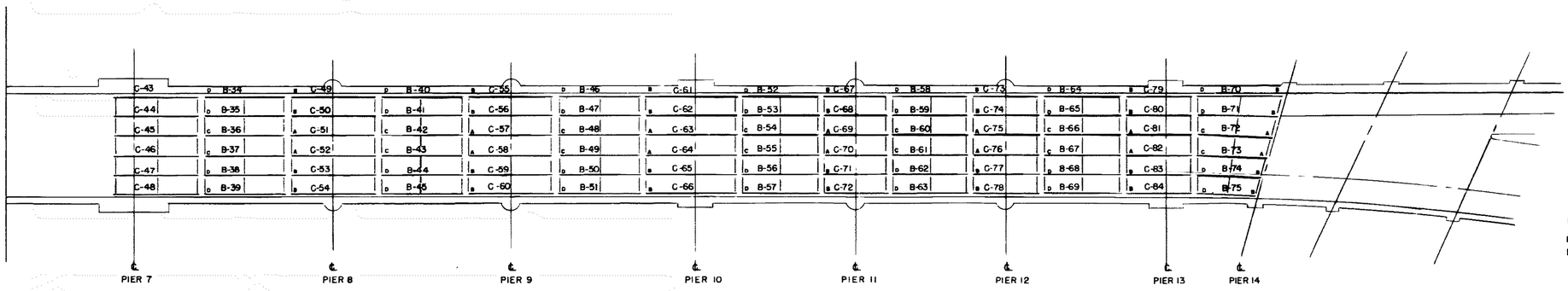
SET NO. PRINTED
ISSUED TO

700,042

700,070

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.	I-195-4(1)038	1968	70	223





REFERENCES:

FOR MAIN SPAN STEEL SEE SHEETS 090 & 091.
FOR GRADES SEE SHEET 073.

CONSTRUCTION LOADS

MAXIMUM CONSTRUCTION LOAD 5 TONS PER GIRDER, SEE GENERAL SPECIAL PROVISIONS ON PAGES 6 - 1 3

NOTES:

A & B EXP. BEARINGS
C & D FIXED BEARINGS
SEE TABLE ON SHEET 075

REVISIONS		
NO.	DATE	BY

RHODE ISLAND
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ROADS AND BRIDGES

WASHINGTON BRIDGE (NORTH)

CROSSING SEEKONK RIVER

PROVIDENCE - EAST PROVIDENCE, RHODE ISLAND

FRAMING PLAN

CHARLES A. MAGUIRE & ASSOCIATES
ENGINEERS
PROVIDENCE, R. I. BOSTON, MASS.

DATE JAN 1967. DESIGNED BY
SCALE
EXCEPT AS NOTED SHEET 70 OF 223

APPROVED _____ SUPERVISING CIVIL ENGINEER (BRIDGE)
APPROVED _____ CHIEF ENGINEER
FINAL DATE

SET NO.
PRINTED
ISSUED TO

700,070