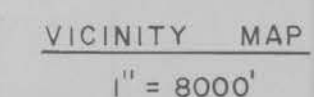


SANIBEL ISLAND
LEE COUNTY, FLORIDA



CITY COUNCIL

WILLIAM J. MIRACLE, MAYOR
MARK WESTALL, VICE MAYOR
FRANCIS P. BAILEY, JR.
WALLACE M. KAIN
JERROLD A. MUENCH

GARY A. PRICE, CITY MANAGER

BRUCE A. ROGERS, PLANNING DIRECTOR

DONALD R. SCHOFIELD, PUBLIC WORKS DIRECTOR

WILLIAM A. MILLS, ASSISTANT CITY MANAGER

INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	COVER SHEET
2	LOCATION MAP AND AERIAL INDEX
3	AERIAL PHOTOGRAPH
4	PLAN & PROFILE
5	WATER CONTROL STRUCTURE PLAN VIEW
6-7	WEIR DETAILS & SECTIONS
8	BOX CULVERT LAYOUT
9	BOX CULVERT DETAILS
10	FLAP GATE & BAFFLE DETAILS
11	ENVIRONMENTAL MARSH RESTORATION
B-1	BORING LOGS

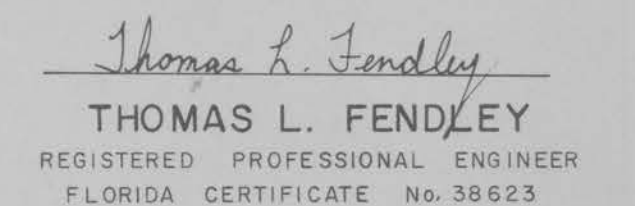
RECEIVED

AUG 26 1992

PUBLIC WORKS DEPARTMENT

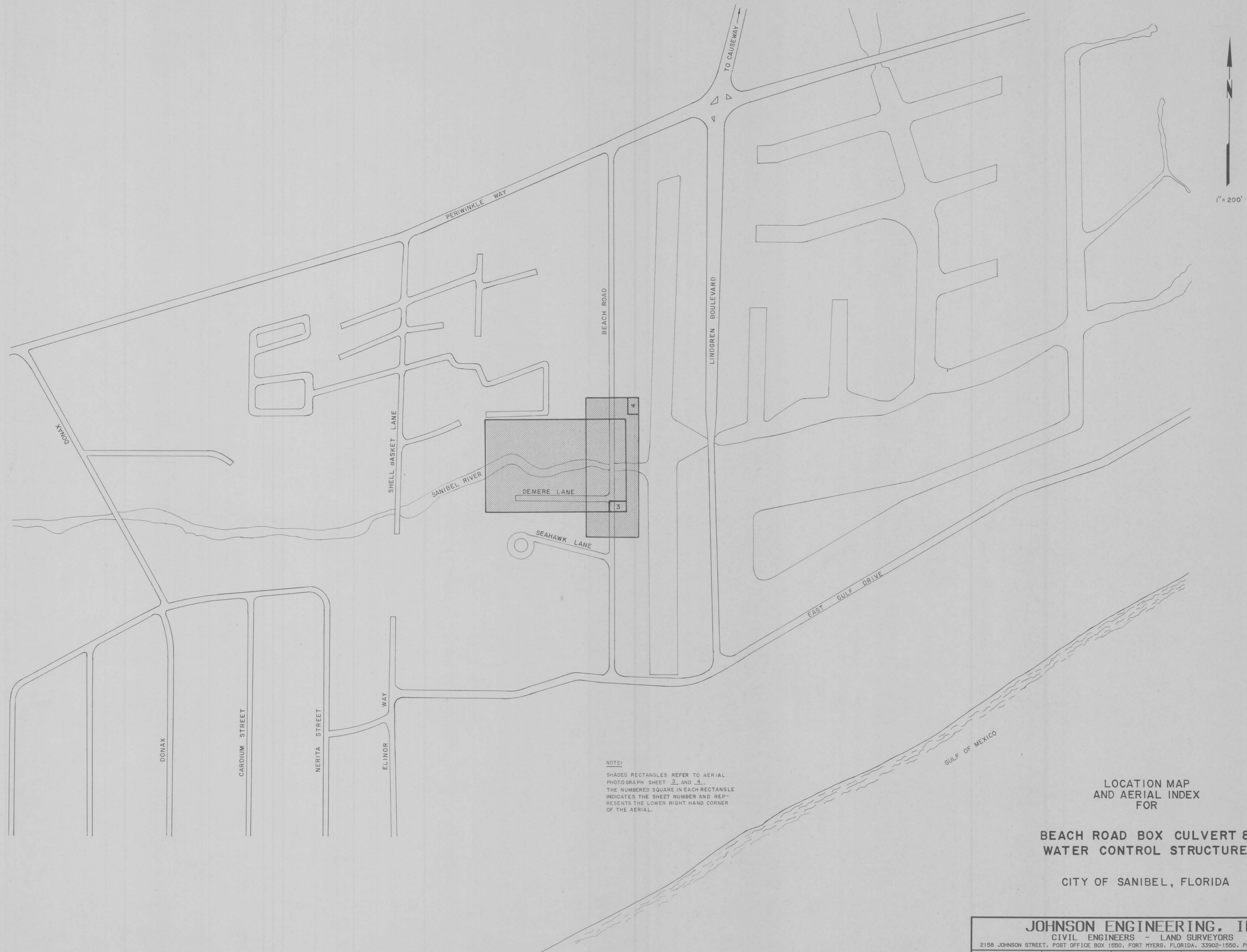
BY

JOHNSON ENGINEERING, INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS
FORT MYERS, FLORIDA



DECEMBER, 1991
REVISED JANUARY, 1992
REVISED AUGUST, 1992

BEACH ROAD WEIR Aug 1992



LOCATION MAP
 AND AERIAL INDEX
 FOR

BEACH ROAD BOX CULVERT &
 WATER CONTROL STRUCTURE

CITY OF SANIBEL, FLORIDA

JOHNSON ENGINEERING, INC.
 CIVIL ENGINEERS - LAND SURVEYORS

2158 JOHNSON STREET, POST OFFICE BOX 1550, FORT MYERS, FLORIDA, 33902-1550, PHONE (813) 334-0046

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	1" = 200'	2 OF 11

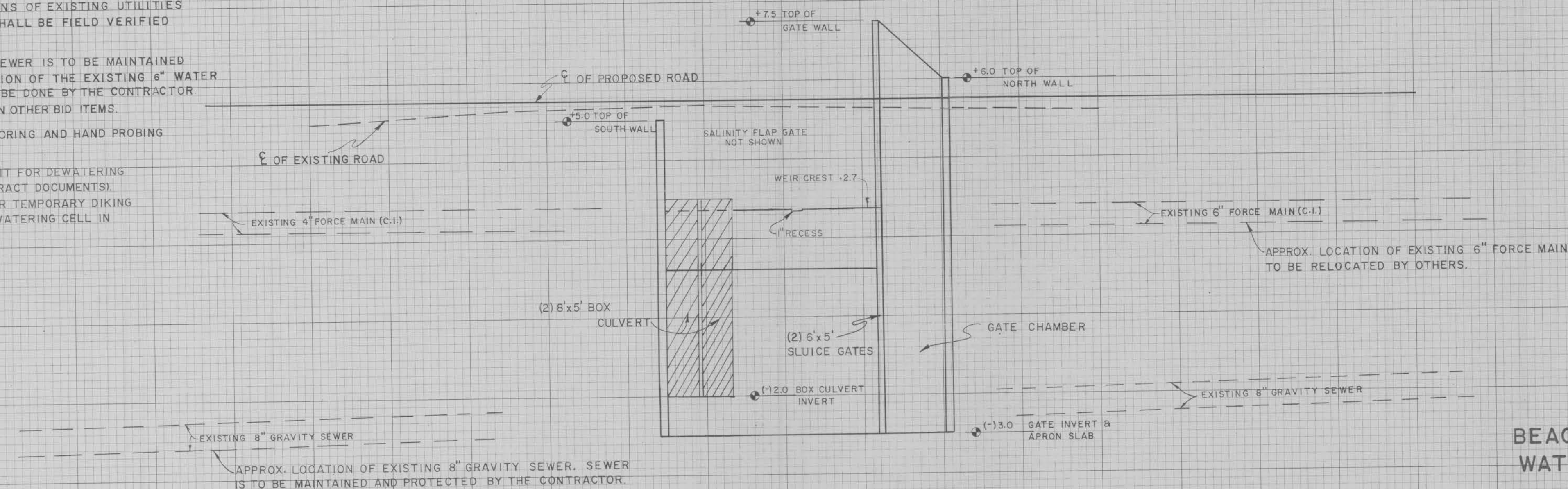


INFORMATION OF ACCURACY IS THE RESPONSIBILITY OF THE USER OF THIS PROGRAM MAP

JOHNSON ENGINEERING, INC.				
CIVIL ENGINEERS - LAND SURVEYORS				
POST OFFICE BOX 1550, FORT MYERS, FLORIDA, 33902-1550, PHONE (813) 334-0046				
DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	1"=20'	3 OF 11



- NOTE: 1. THE LOCATIONS & ELEVATIONS OF EXISTING UTILITIES SHOWN ARE APPROX. AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
2. THE EXISTING 8" GRAVITY SEWER IS TO BE MAINTAINED AND PROTECTED. RELOCATION OF THE EXISTING 6" WATER LINE (IF NECESSARY) SHALL BE DONE BY THE CONTRACTOR. PAYMENT TO BE INCLUDED IN OTHER BID ITEMS.
3. SEE SHEET B-1 FOR SOIL BORING AND HAND PROBING INFORMATION.
4. SEE APPROVED F.D.E.R. PERMIT FOR DEWATERING PROCEDURES (BACK OF CONTRACT DOCUMENTS). USE STEEL SHEET PILING FOR TEMPORARY DIKING AND CONSTRUCT UPLAND DEWATERING CELL IN ACCORDANCE WITH PERMIT.

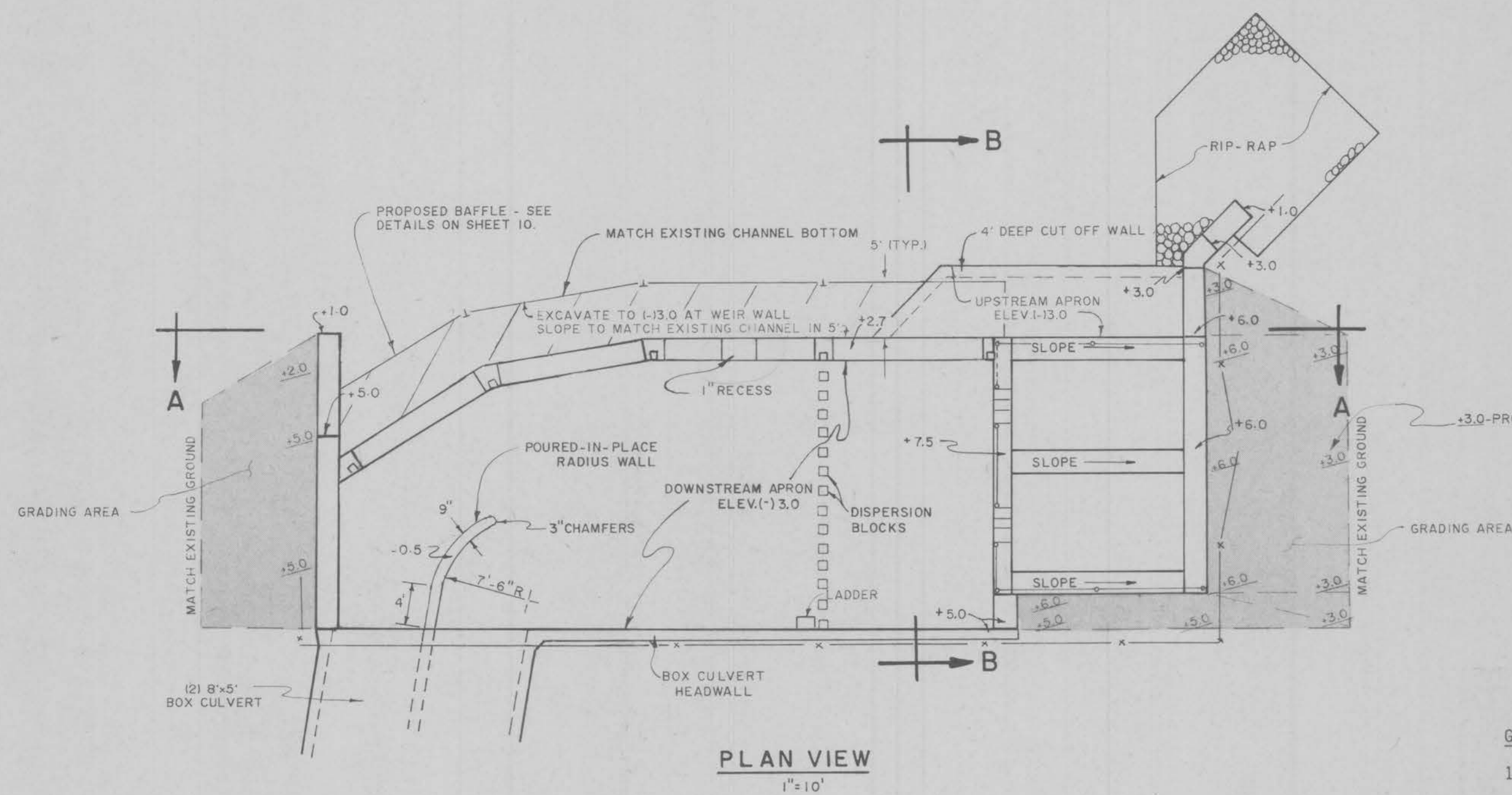


PLAN & PROFILE SHEET
FOR
BEACH ROAD BOX CULVERT &
WATER CONTROL STRUCTURE
CITY OF SANIBEL, FLORIDA

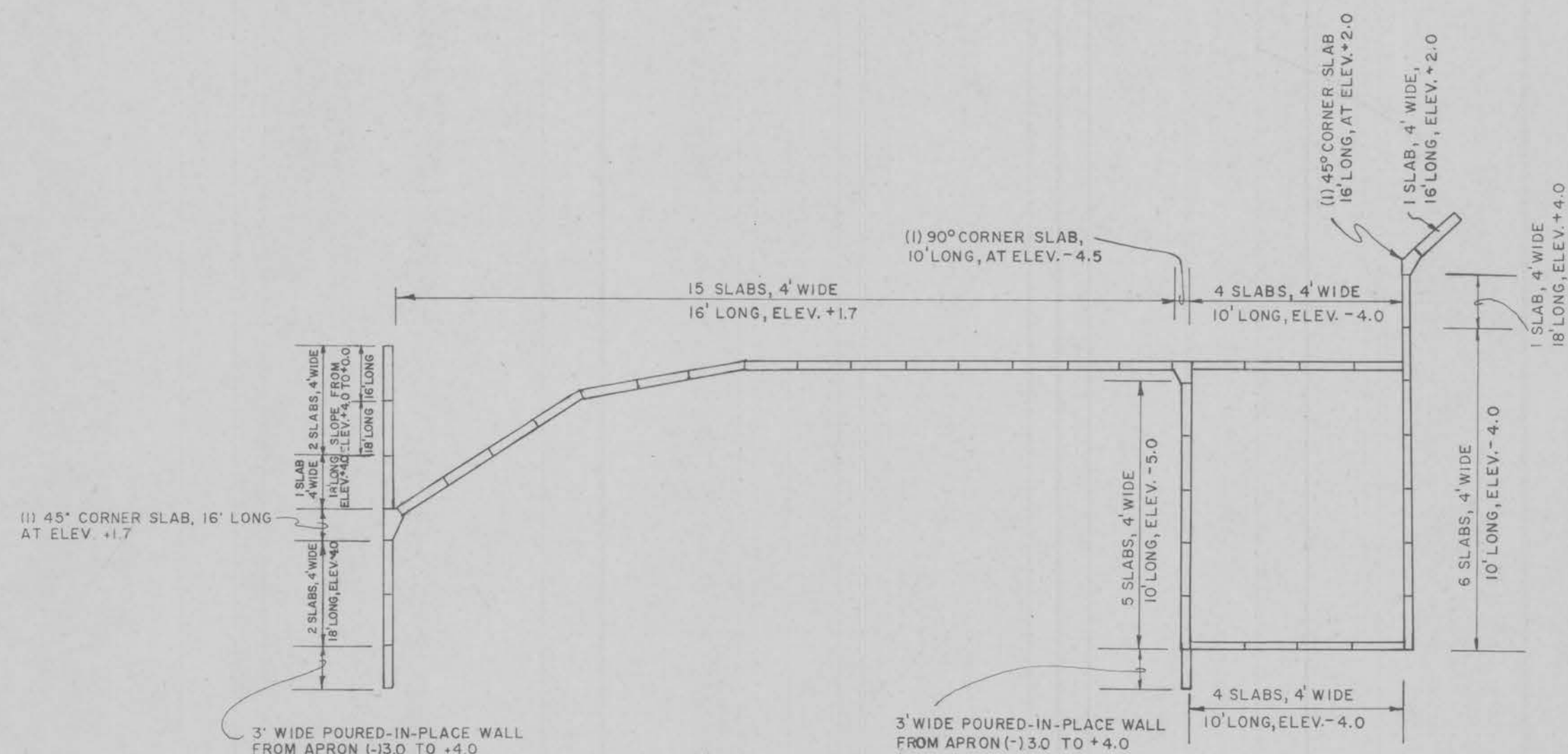
JOHNSON ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS

POST OFFICE BOX 1550, FORT MYERS, FLORIDA, 33902-1550, PHONE (813) 334-0046

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
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PLAN VIEW
1"=10'



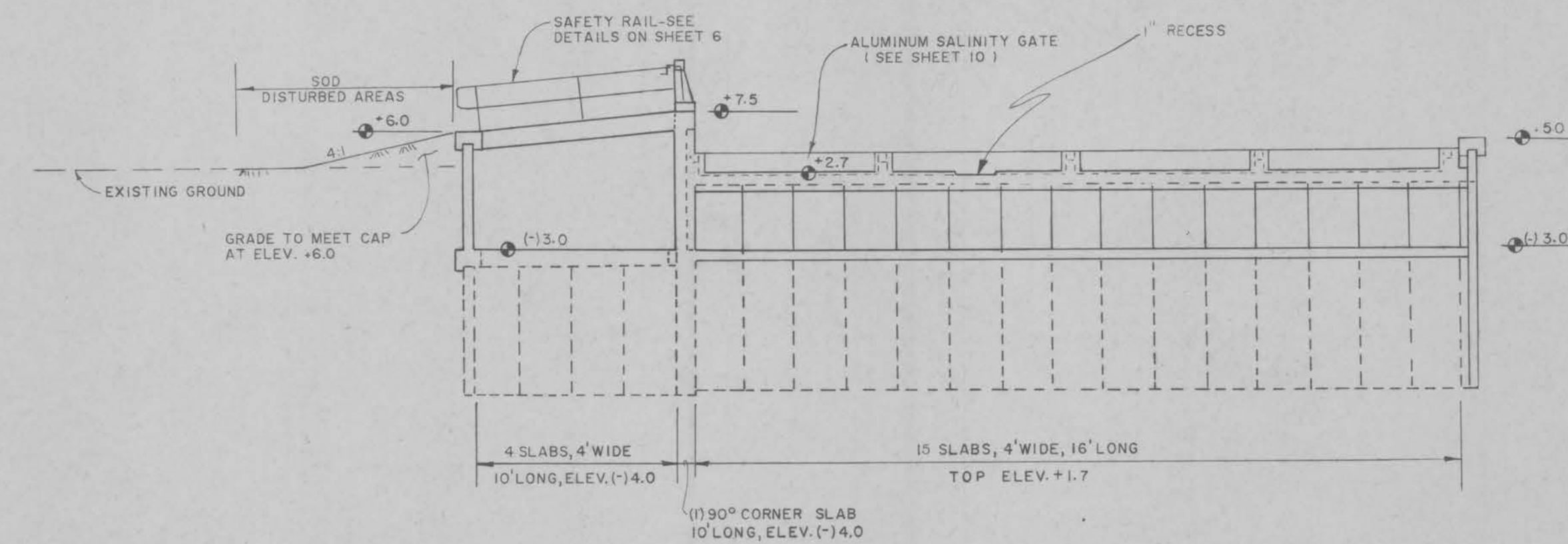
SHEET PILE PLAN
1"=10'

GENERAL

- ALL CONSTRUCTION IS TO CONFORM TO THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 1991 UNLESS OTHERWISE SPECIFIED HEREIN OR IN SPECIFICATIONS.
- ALL CONCRETE IS TO BE CLASS IV AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SEE FOOT 345-4.1 MASTER PROPORTION TABLE. ALL STRUCTURAL CONCRETE AND REINFORCING TO BE INSTALLED PER ACI 318 - LATEST EDITION (MIN.).
- ALL REINFORCING STEEL SHALL BE EPOXY COATED AND MADE OF NEW BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60 AND SHALL BE PLACED IN ACCORDANCE WITH F.D.O.T. SPECIFICATION SECTION 415. TIES TO BE GRADE 40.
- ALL EXPOSED CORNERS ARE TO BE CHAMFERED 3/4".
- ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CLASS 2 FINISH IN ACCORDANCE WITH SECTION 400-15.2 OF THE F.D.O.T. SPECIFICATIONS 1991. ALL UNEXPOSED SURFACES ARE TO BE FREE FROM HONEYCOMB OR MAJOR IMPERFECTIONS AND MUST COMPLY WITH F.D.O.T. SPECIFICATIONS SECTION 400-15.1.
- ALL ELEVATIONS REFER TO N.G.V.D. M.S.L. = 0.0
- SETTING OF ANCHOR BOLTS AND MISCELLANEOUS ANCHORAGE SHALL BE IN ACCORDANCE WITH F.D.O.T. SPECIFICATIONS 460-30.
- ALL GALVANIZING SHALL BE ACCOMPLISHED BY HOT DIP PROCESS IN COMPLIANCE WITH ASTM A-123.
- UTILITIES ARE SHOWN ON THE PLANS WHENEVER THE INFORMATION HAS BEEN AVAILABLE AND ARE BELIEVED TO BE CORRECT, BUT SUCH LOCATIONS ARE NOT SO WARRANTED TO BE CORRECT OR COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITY COMPANIES AND ALL PUBLIC WORKS DEPARTMENTS TO DETERMINE DETAILED LOCATIONS OF ANY UNDERGROUND UTILITIES BEFORE BEGINNING CONSTRUCTION OPERATIONS.

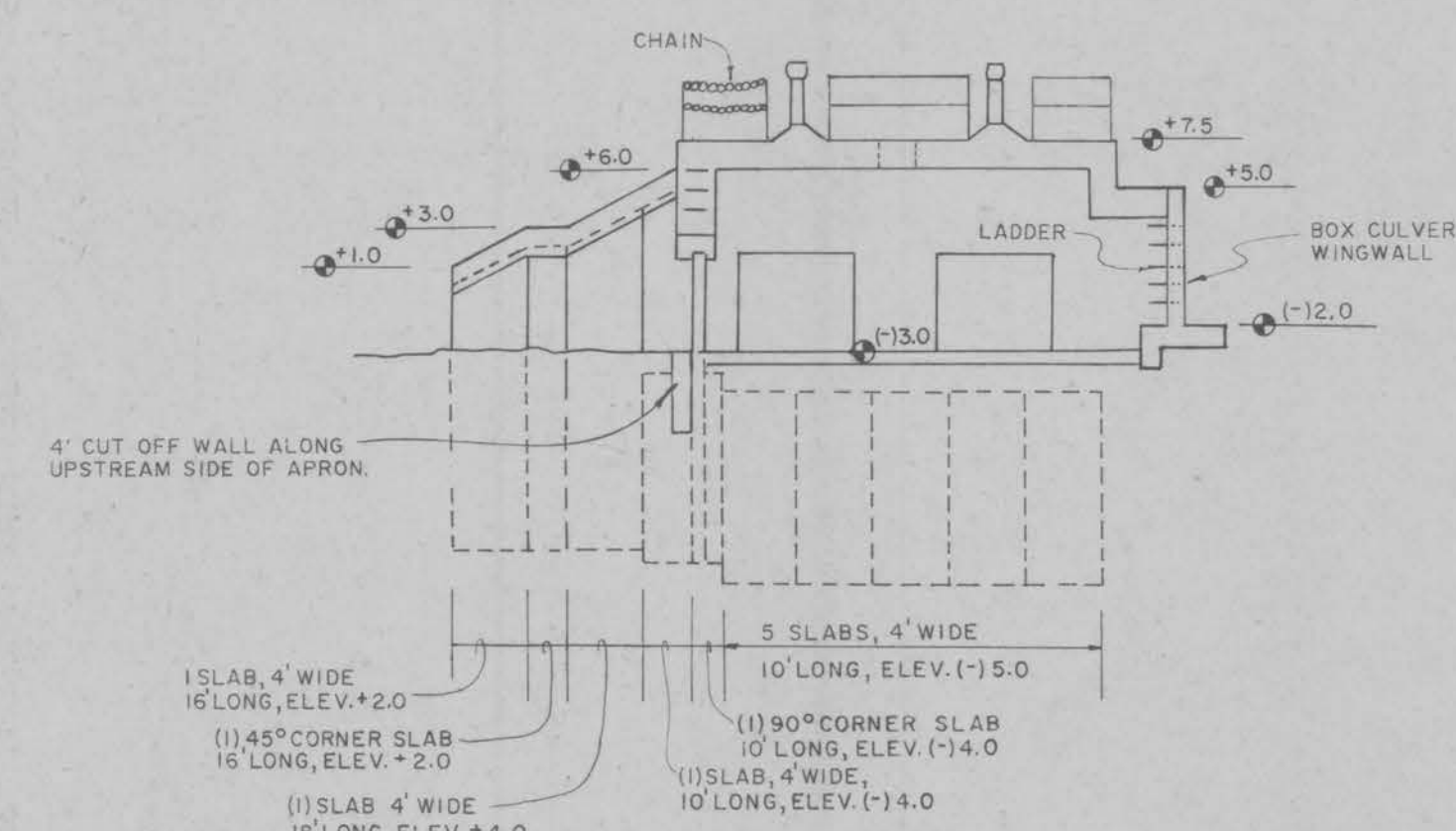
SLUICE GATES

- THE SLUICE GATES ARE TO BE RODNEY HUNT 72" X 60" OR EQUAL (FLUSH BOTTOM CLOSURE).
- EACH SLIDE GATE IS TO HAVE AN EFFECTIVE OPENING OF 30 SQUARE FEET (6' HORIZONTAL AND 5' VERTICAL) AND BE CAPABLE OF WITHSTANDING UNBALANCED HYDROSTATIC HEADS OF 3 TO 10 FEET WITHOUT LEAKING.
- THE GATES SHALL BE CAST IRON. STEMS AND ALL ACCESSORIES SHALL BE STAINLESS STEEL AND SHALL BE THE SIZE AND CONSTRUCTION SHOWN HEREIN, SHOWN IN SPECIFICATIONS AND/OR IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- SLUICE GATES MUST BE CONSTRUCTED IN SUCH A WAY THAT THEY CAN BE OPERATED WITH A HEAVY DUTY ELECTRIC WRENCH OR BY ELECTRIC DRILL AT A LATER DATE.
- THE MANUAL OPERATOR (GEAR LIFT) SHALL HAVE THE LIFTING CAPACITY TO OPEN THE GATE WHEN SUBJECT TO THE DESIGN LOAD OF 10' HYDROSTATIC HEAD, WITH A MAXIMUM PULL OF 40 POUNDS ON HAND LEVER.
- GATE LOCKING DEVICE: THE HOIST PINION SHAFT WILL TERMINATE AT THE FACE OF THE GEAR CASE. THE HANDLE WILL BE REMOVABLE AND THE SHAFT INACCESSIBLE.
- CONTRACTOR IS TO SUBMIT 3 SETS OF SHOP DRAWINGS OF THE MANUFACTURER'S SLUICE GATE DESIGN FOR ENGINEER'S APPROVAL.



SECTION A-A
1"=10'

NOTE: BAFFLE NOT SHOWN ON SECTION B-B



SECTION B-B
1"=10'

WATER CONTROL STRUCTURE PLAN VIEW
FOR

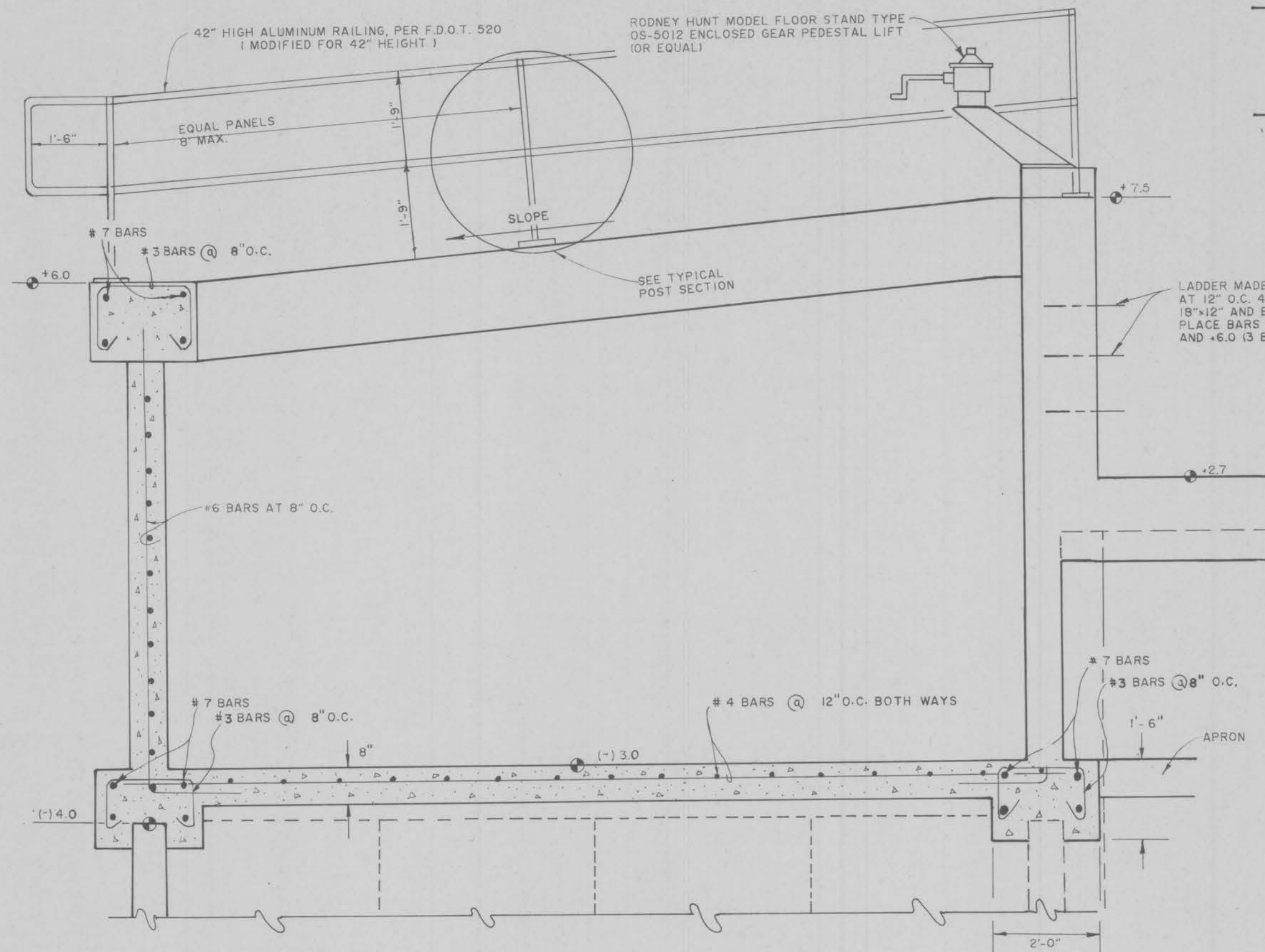
BEACH ROAD BOX CULVERT &
WATER CONTROL STRUCTURE

CITY OF SANIBEL, FLORIDA

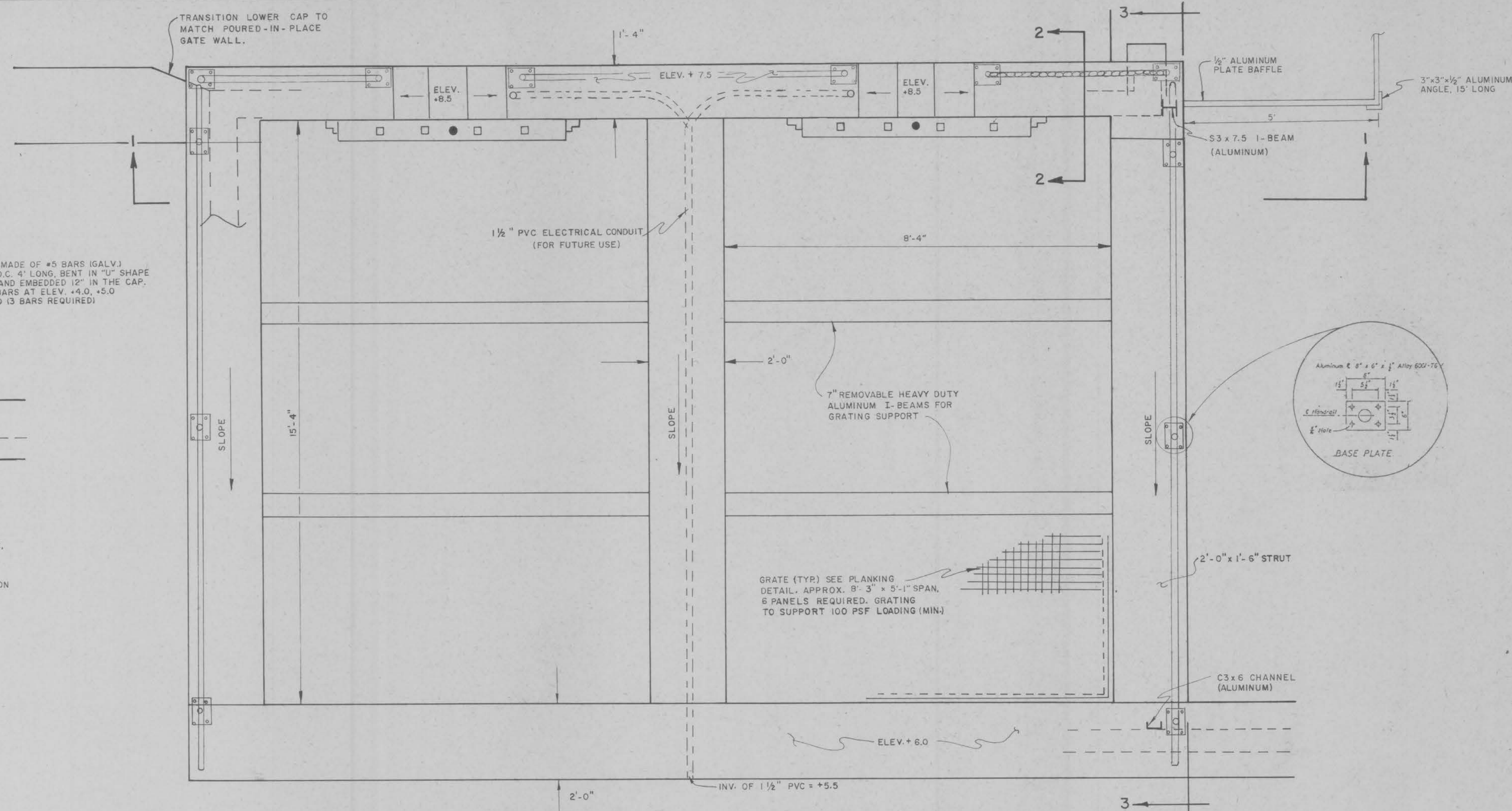
JOHNSON ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS

2156 JOHNSON STREET, POST OFFICE BOX 1550, FORT MYERS, FLORIDA, 33902-1550. PHONE (813) 334-0046

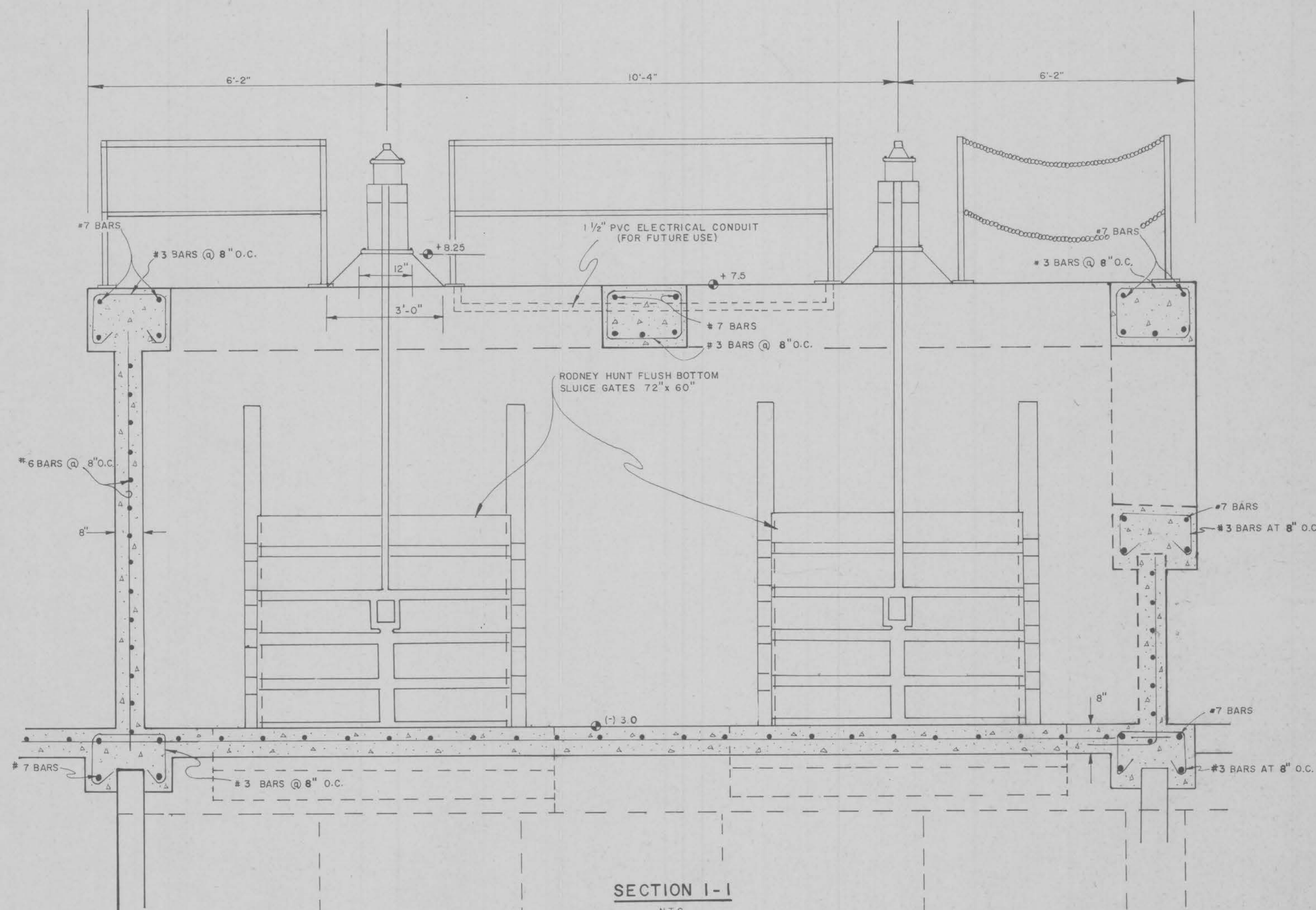
DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	1"=10'	5 OF 11



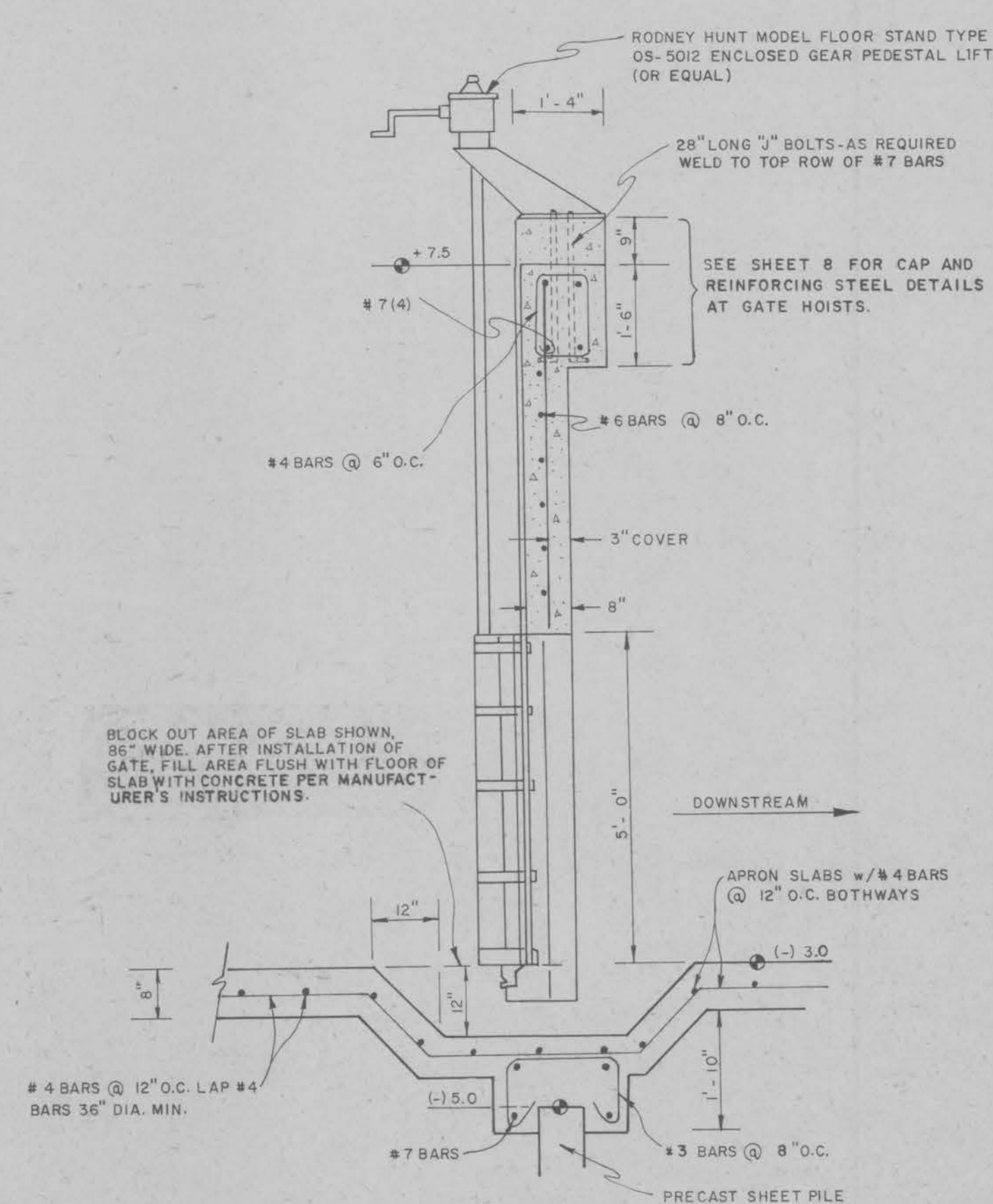
SECTION 3-3
N.T.S.



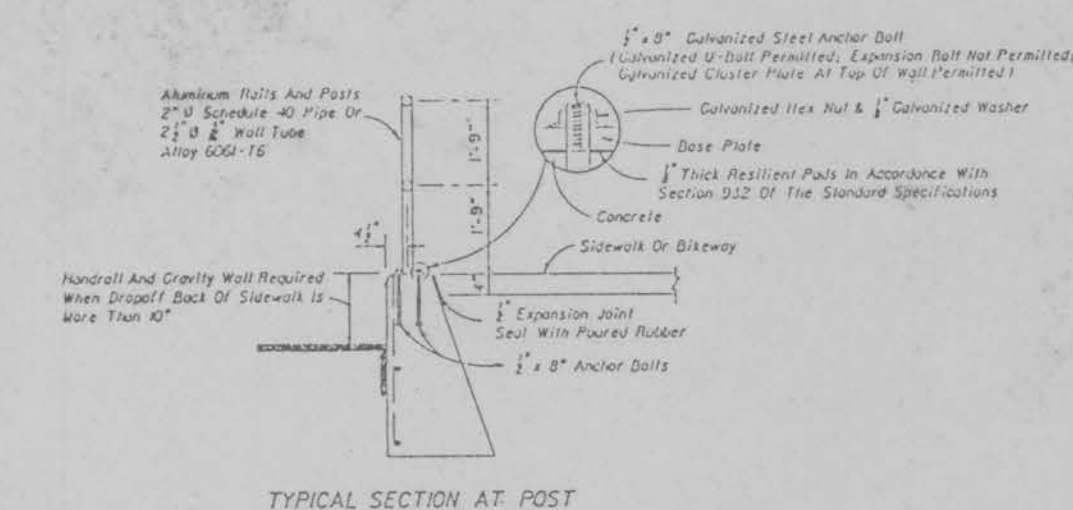
SLUICE GATE CHUTE
PLAN DETAIL
N.T.S.



SECTION 1-1
N.T.S.



SECTION 2-2
N.T.S.



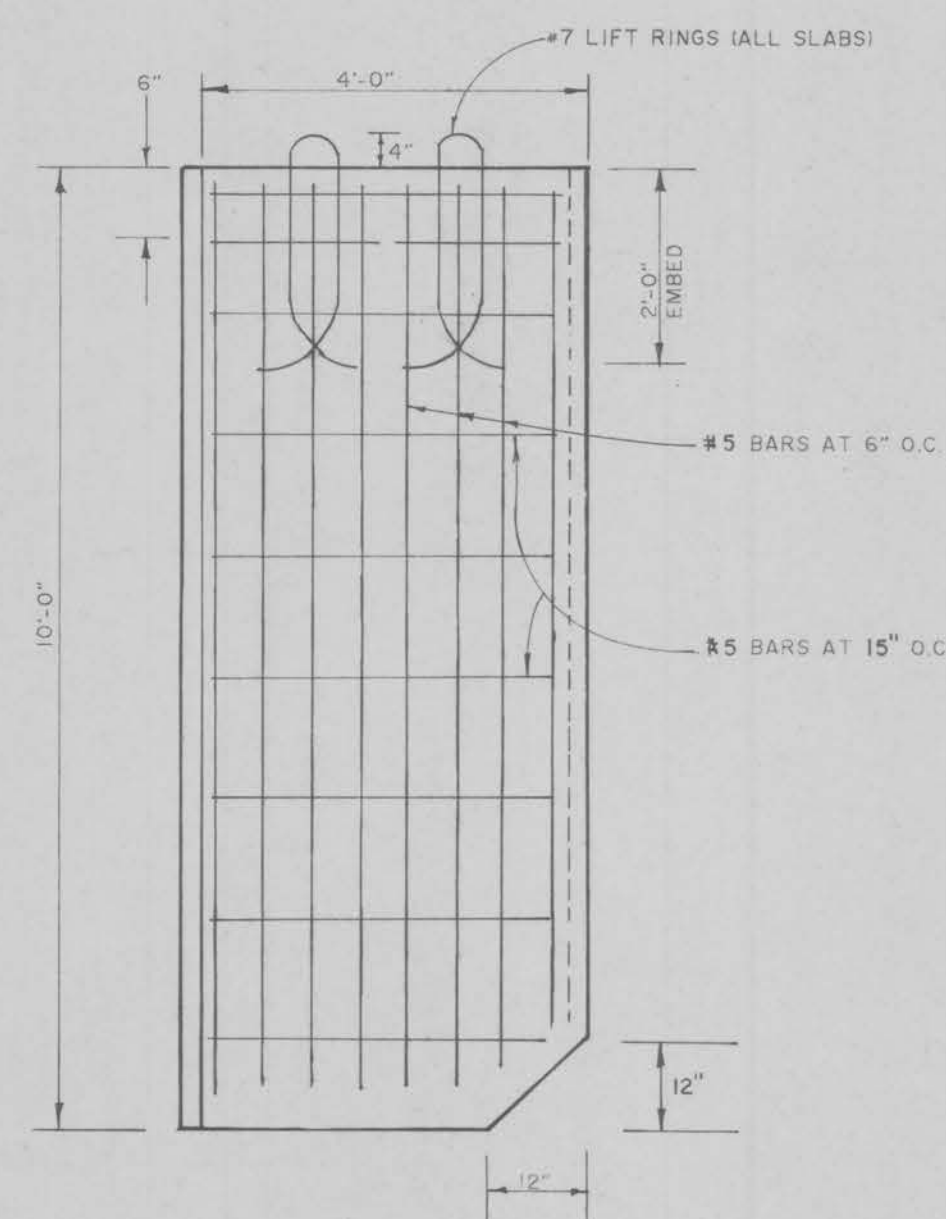
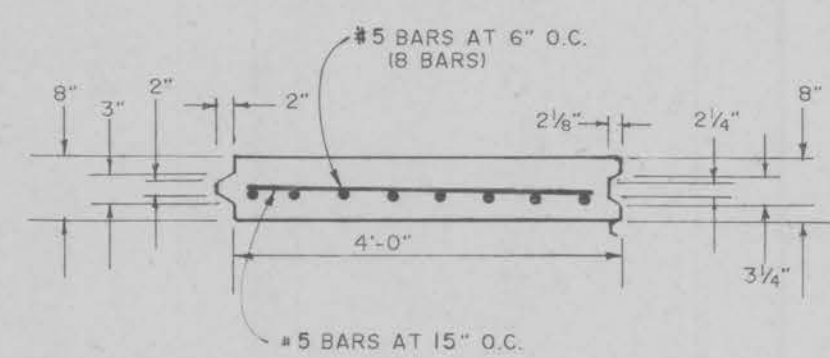
WEIR DETAILS & SECTIONS
FOR
BEACH ROAD BOX CULVERT &
WATER CONTROL STRUCTURE

CITY OF SANIBEL, FLORIDA

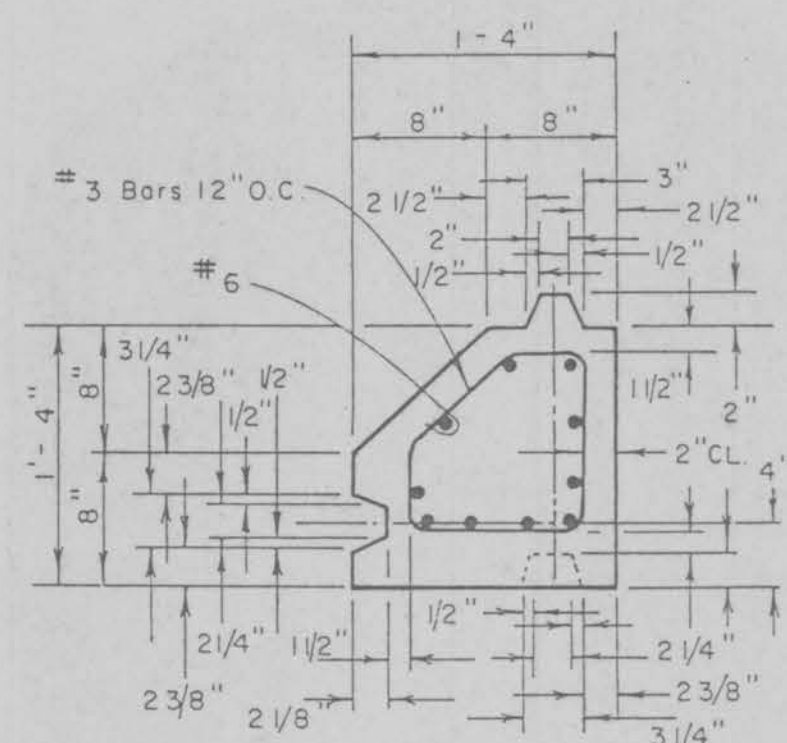
JOHNSON ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS

2150 JOHNSON STREET, POST OFFICE BOX 1550, FORT MYERS, FLORIDA, 33902-1550, PHONE (813) 334-0046

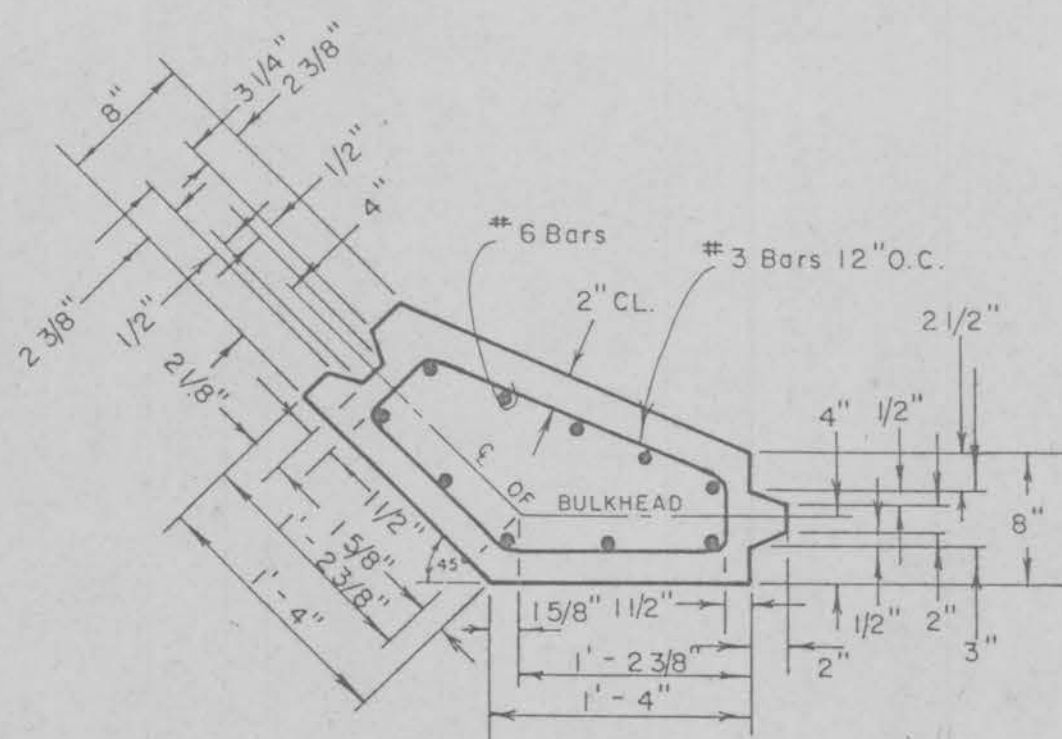
DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	AS SHOWN	6 OF 11



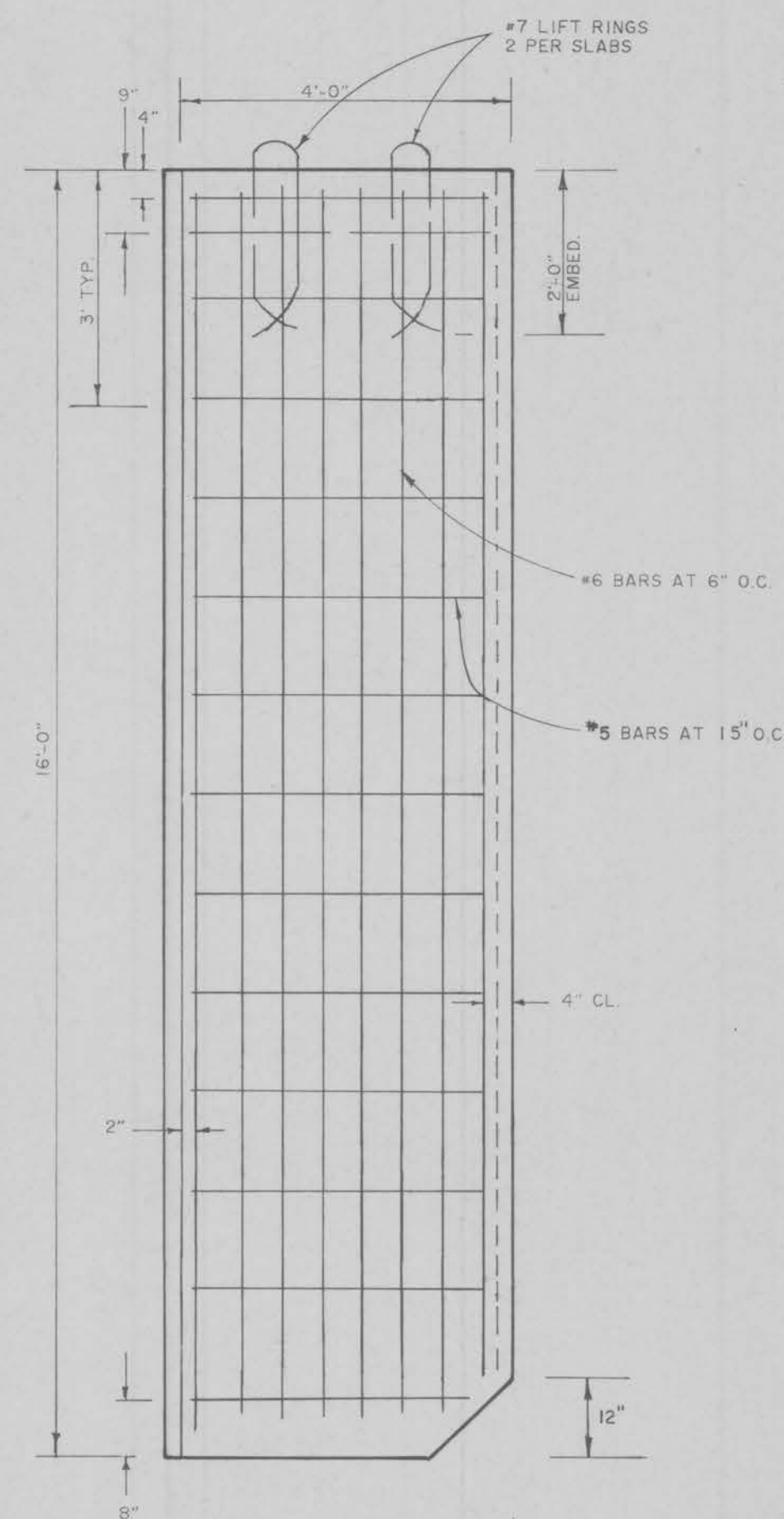
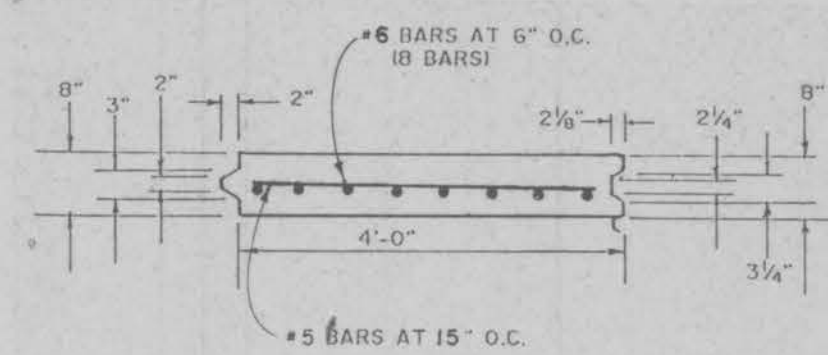
10' SHEET PILE



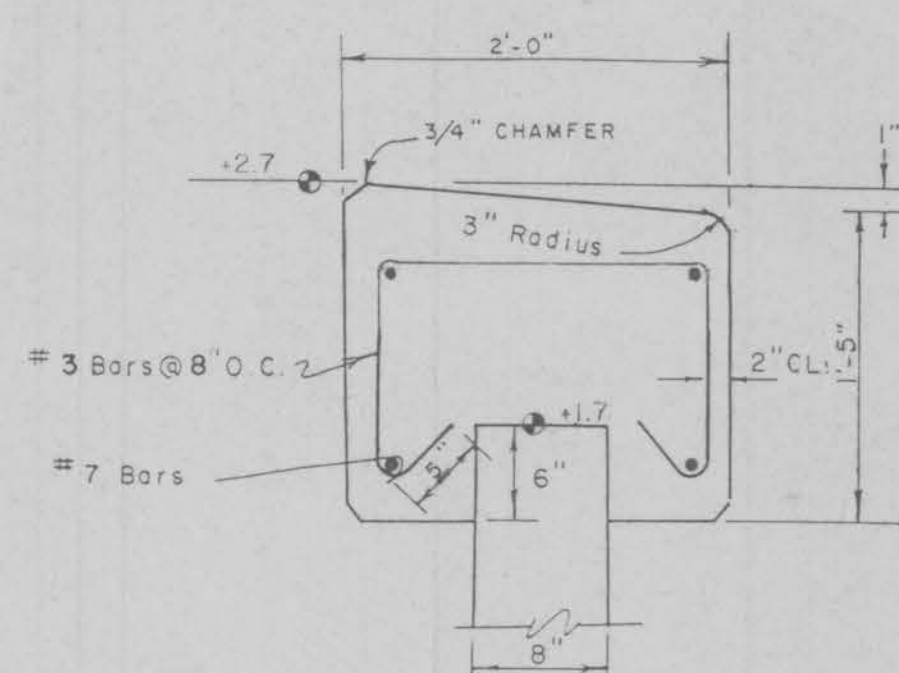
TYPICAL SECTION THRU 90°
CORNER PILE



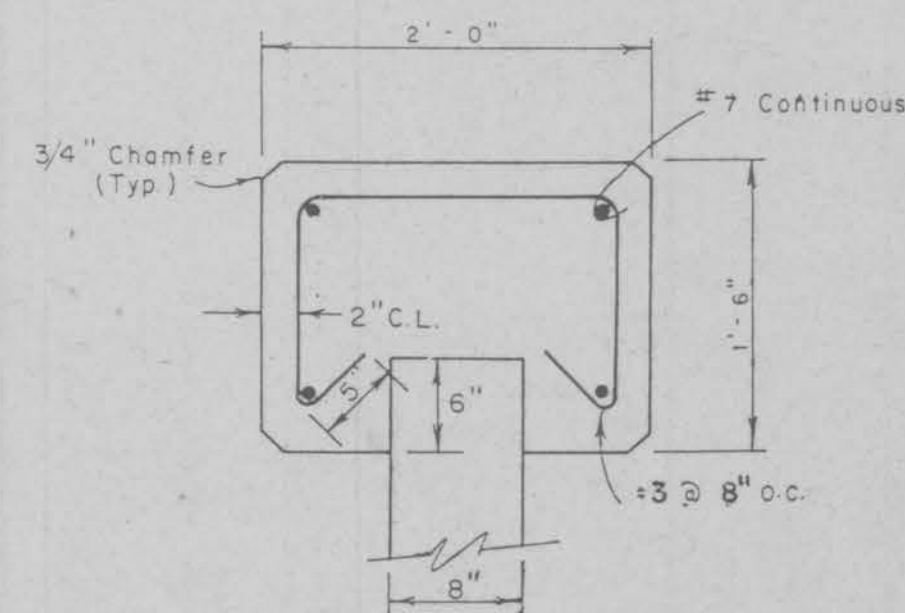
TYPICAL SECTION THRU 45°
CORNER PILE (STANDARD)



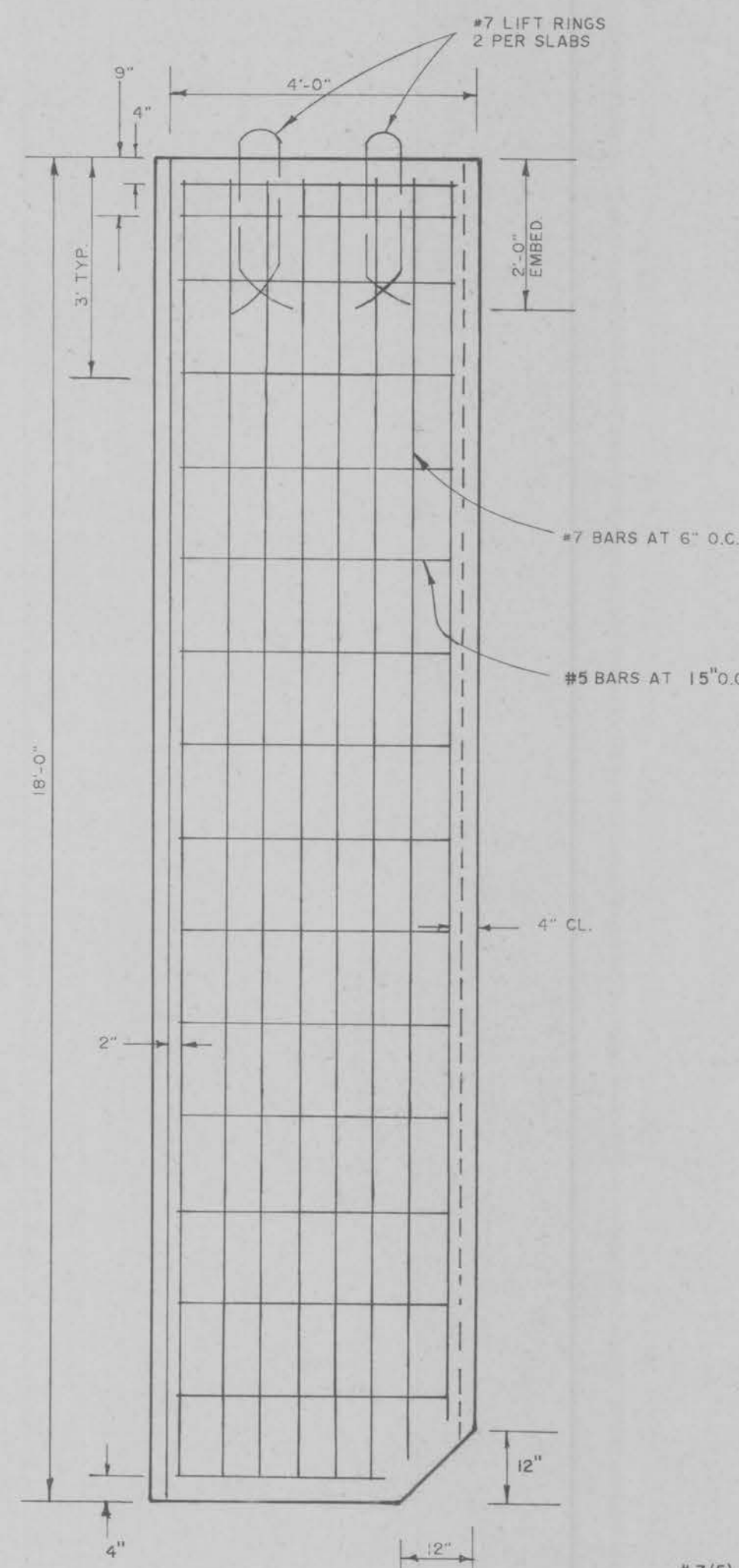
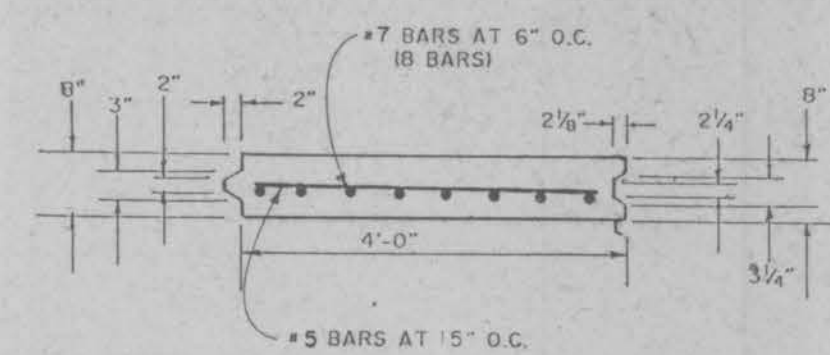
16' SHEET PILE



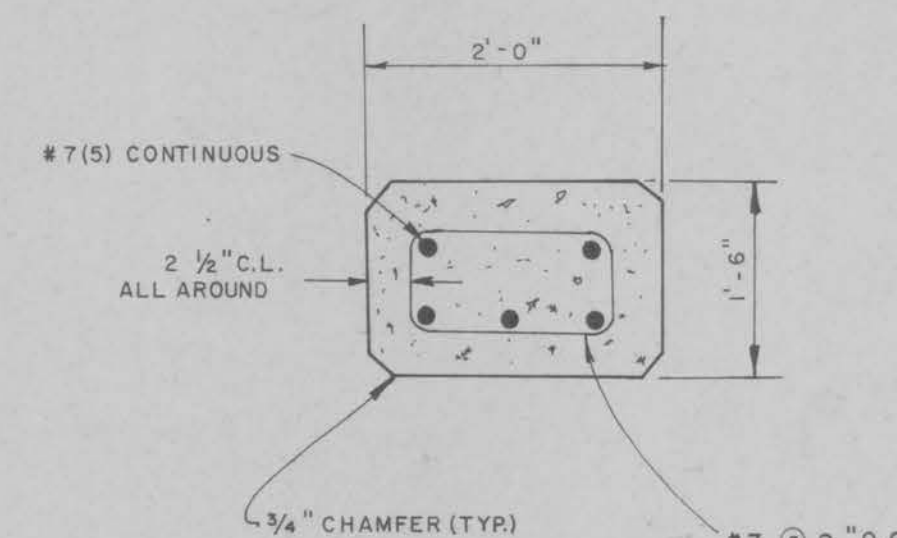
WEIR SHEET PILE CAP



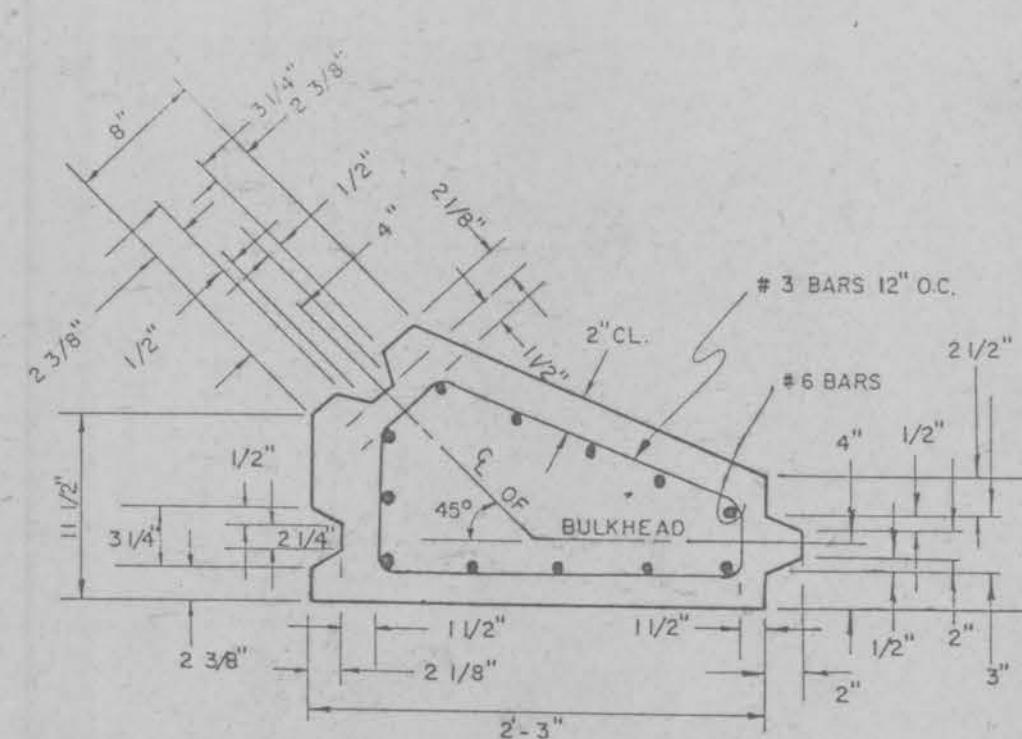
TYPICAL SHEET PILE CAP



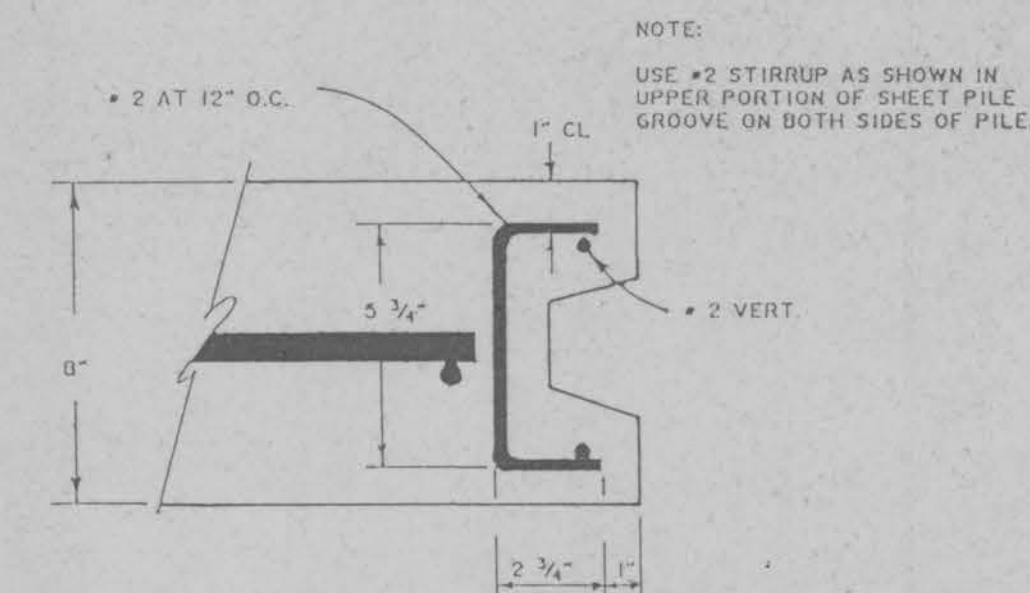
18' SHEET PILE



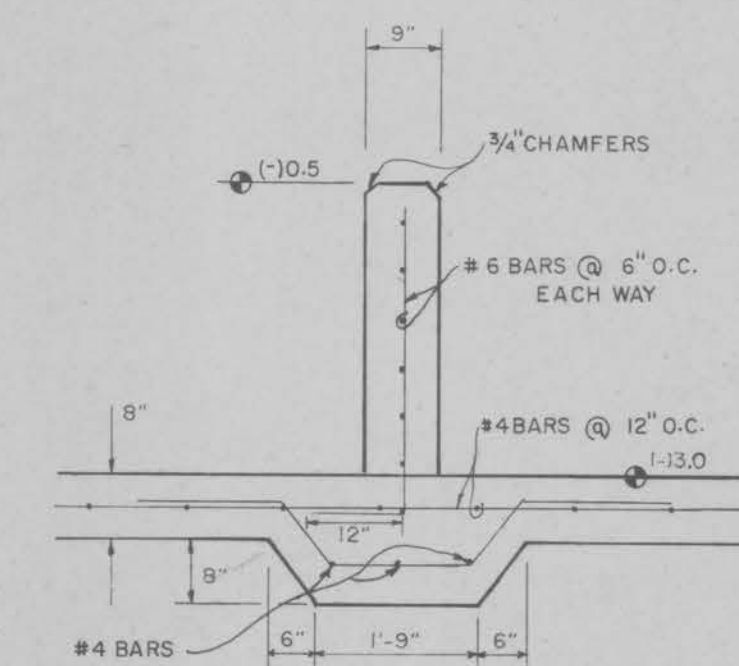
STRUT SECTION



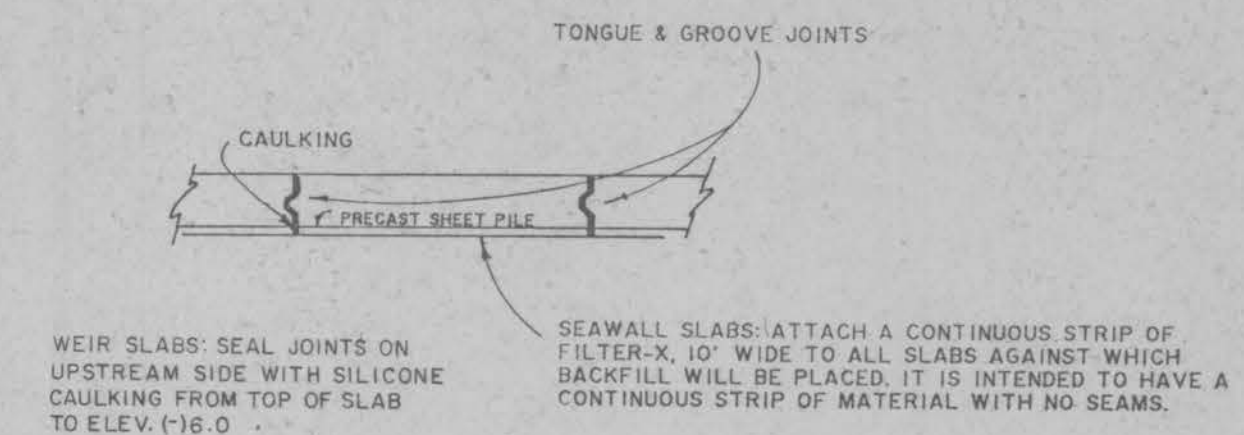
TYPICAL SECTION THRU 45°
CORNER PILE (SOUTH WALL)



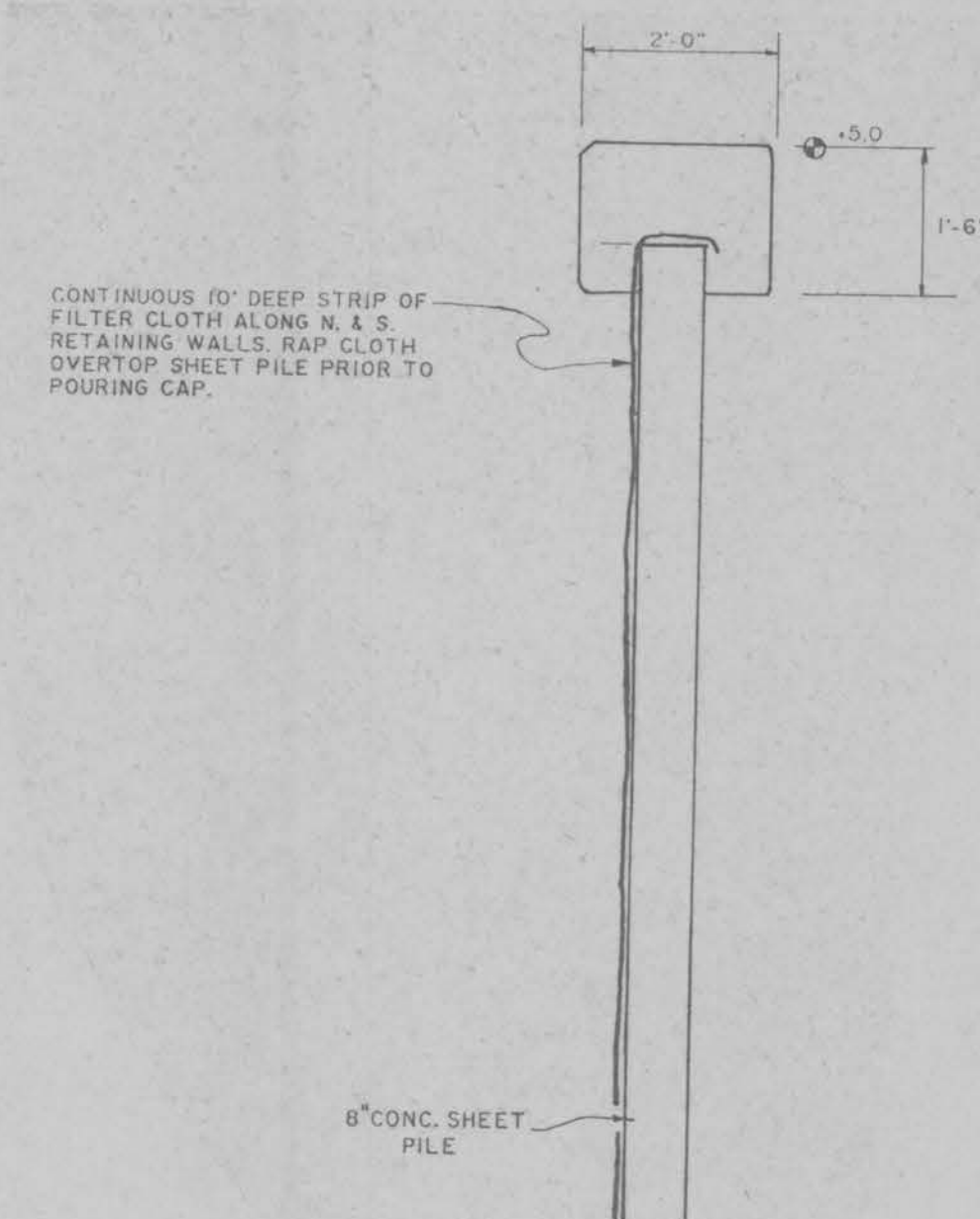
GROOVE DETAIL



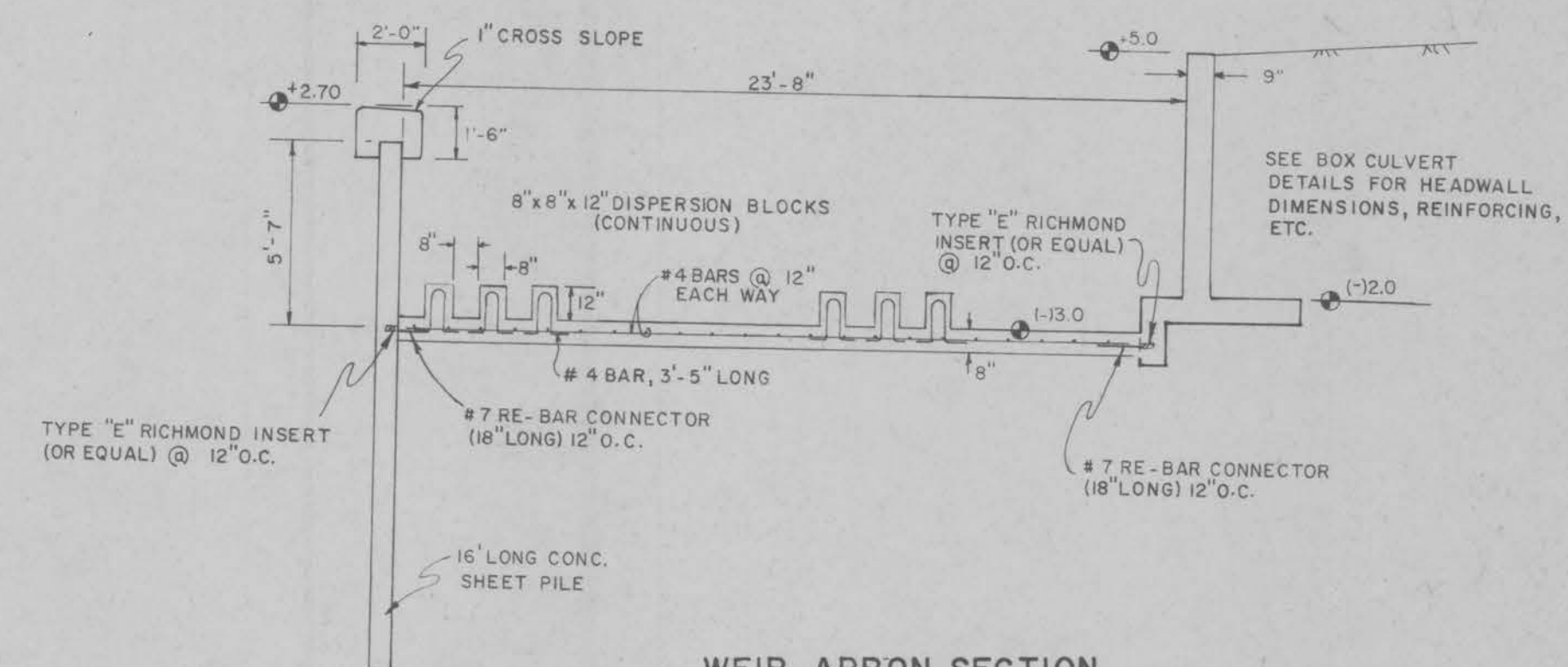
RADIUS WALL SECTION



FILTER CLOTH DETAIL



RETAINING WALL DETAIL



WEIR APRON SECTION

WEIR DETAILS & SECTIONS FOR

BEACH ROAD BOX CULVERT & WATER CONTROL STRUCTURE

CITY OF SANIBEL, FLORIDA

JOHNSON ENGINEERING, INC.

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	AS SHOWN	7 OF 11

STEEL QUANTITIES AND BAR SCHEDULE

BARREL QUANTITIES LOCATION	BAR	NUMBER	SETS	SIZE	SPACING (FT)	TYPE	LENGTH (FT-IN)	WEIGHT LBS	B LENGTH (FT-IN)	C LENGTH (FT-IN)	D LENGTH (FT-IN)
TOP SLAB	A100	57		5	.583	1	18-02	1080			
TOP SLAB BOTH SIDES	A101	4		5	.583	1	10-09	45			
	A102	4		5	.583	1	04-01	17			
BOTTOM SLAB	A200	53		4	.625	1	18-02	643			
BOTTOM SLAB BOTH SIDES	A201	4		4	.625	1	10-03	27			
	A202	4		4	.625	1	03-02	8			
TOP SLAB	A300	28		5	1.167	1	18-02	531			
TOP SLAB	B300	28		5	1.167	1	04-08	141			
TOP SLAB BOTH SIDES	A301	4		5	.583	1	10-09	45			
	A302	4		5	.583	1	04-01	17			
BOTTOM SLAB	A400	26		5	1.250	1	18-02	493			
BOTTOM SLAB	B400	27		5	1.250	1	04-08	131			
BOTTOM SLAB BOTH SIDES	A401	4		5	.625	1	10-03	43			
	A402	4		5	.625	1	03-02	13			
CORNER (TOP)	A1	99		4	.708	10	06-04	419	02-09	03-07	
CORNER (BOTTOM)	A2	99		4	.708	10	06-00	397	02-05	03-07	
EXTERIOR WALL (INSIDE)	B1	99		4	.708	1	06-02	408			
INTERIOR WALL	B3	90		4	.792	1	06-02	371			
LONGITUDINAL	C1	136	(2)	4	1.500	1	18-01	1643			
HEADWALL BOTH SIDES	G1	8	(1)	5	SEE INDEX	1	18-05	154			
HEADWALL RIGHT SIDE	P	19		4	1.000	11	03-05	44	00-11	01-05	01-01
HEADWALL LEFT SIDE	P	19		4	1.000	11	03-05	43	00-11	01-05	01-01
PER FOOT BARREL STEEL QUANTITY								LBS/FT	181		
TOTAL BARREL STEEL QUANTITY								LBS	6257		

WINGWALL QUANTITIES LOCATION	BAR	NUMBER	SETS	SIZE	SPACING (FT)	TYPE	LENGTH (FT-IN)	WEIGHT LBS	B LENGTH (FT-IN)	C LENGTH (FT-IN)
STEM - LEFT FRONT	F1	28		4	1.458	10	08-11	167	01-09	07-02
STEM - LEFT BACK	F2	0								
STEM - RIGHT FRONT	F3	8		4	1.458	10	08-11	48	01-09	07-02
STEM - RIGHT BACK	F4	8		4	1.458	10	08-11	48	01-09	07-02
STEM - LEFT FRONT	J1	28		4	1.458	1	07-02	134		
STEM - LEFT BACK	J2	0								
STEM - RIGHT FRONT	J3	8		4	1.458	1	07-02	38		
STEM - RIGHT BACK	J4	8		4	1.458	1	07-02	38		
STEM - LEFT FRONT	K1	10		4	1.500	1	39-09	266		
STEM - LEFT BACK	K2	0								
STEM - RIGHT FRONT	K3	10		4	1.500	1	10-09	72		
STEM - RIGHT BACK	K4	10		4	1.500	1	10-09	72		
FOOTING - LEFT FRONT	FK1	4		4	SEE INDEX	1	39-09	106		
FOOTING - LEFT BACK	FK2	0								
FOOTING - RIGHT FRONT	FK3	4		4	SEE INDEX	1	10-09	29		
FOOTING - RIGHT BACK	FK4	4		4	SEE INDEX	1	10-09	29		
FOOTING - LEFT FRONT	L1	28		4	1.458	1	04-06	84		
FOOTING - LEFT BACK	L2	0								
FOOTING - RIGHT FRONT	L3	8		4	1.458	1	04-06	24		
FOOTING - RIGHT BACK	L4	8		4	1.458	1	04-06	24		
FOOTING - LEFT SIDE	M1	4	(2)	4	SEE INDEX	1	30-04	81		
FOOTING - RIGHT SIDE	M2	2	(1)	4	SEE INDEX	1	40-06	54		
STEM TO BARREL DOWELS	N **	28		6	1.000	10	06-00	252	03-00	03-00
FOOTING SPILLWAY	R	38		4	1.000	1	02-07	66		
PER FOOT WINGWALL STEEL QUANTITY								LBS/FT	25	
TOTAL WINGWALL STEEL QUANTITY								LBS	1638	
TOTAL STEEL QUANTITIES										
BARREL								LBS	9351	
WINGWALL								LBS	1638	
TOTAL								LBS	10989	

* LENGTH IS THE SUM OF BAR LENGTH AT BEGINNING/TOP AND ENDING/BOTTOM OF WINGWALL. NUMBER OF BAR IS THE AMOUNT REQUIRED FOR THIS SUMMATION OF LENGTH. B AND C LENGTH IS FOR THE FIRST BAR OF WINGWALL CLOSE TO THE JOINT OF WINGWALL AND BARREL.

* FOR SKEWED WINGS READ BARS N TO ACCOMMODATE SKEW. PROVIDE FOR 3 FT. OF BAR IN THE WINGWALL AND HEADWALL.

CONCRETE QUANTITIES	CUBIC YARDS	APPROX.
BARREL	54	
LEFT WINGWALL	16	
RIGHT WINGWALL	11	
TOTAL	81	

CULVERT AND WINGWALL DIMENSIONS

BARREL	
CULVERT SIZE	DOUBLE 8'x5'
NUMBER OF BARRELS	2
SPAN	8'
HEIGHT	5'
CULVERT LENGTH	35 LF
TOP SLAB THICKNESS	9"
BOTTOM SLAB THICKNESS	9"
EXTERIOR WALL THICKNESS	10"
INTERIOR WALL THICKNESS	10"

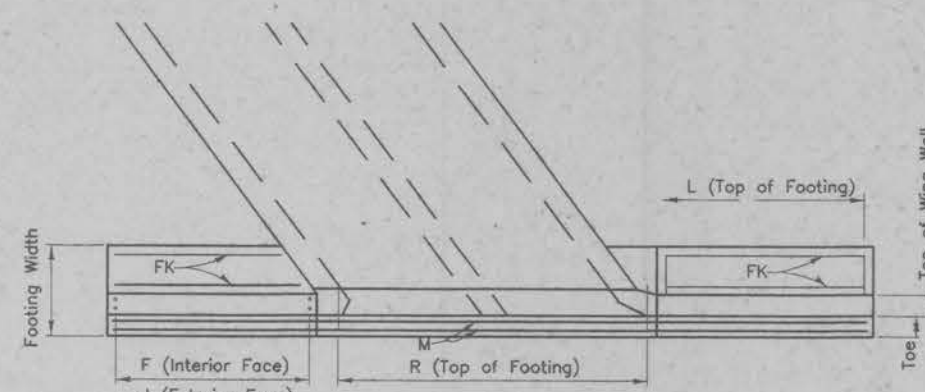
WINGWALL	
WALL HEIGHT	6'-9"
FOOTING WIDTH	4'-10"
HEEL DIMENSION	2'-1"
TOE DIMENSION	1'-3"
WALL THICKNESS	9"
FOOTING THICKNESS	8"
SKEW ANGLE *	170° FROM PERPENDICULAR

* MEASURED FROM PERPENDICULAR TO & BOX CULVERT IN THE DIRECTION OF STATIONING IN A CLOCKWISE MANNER.

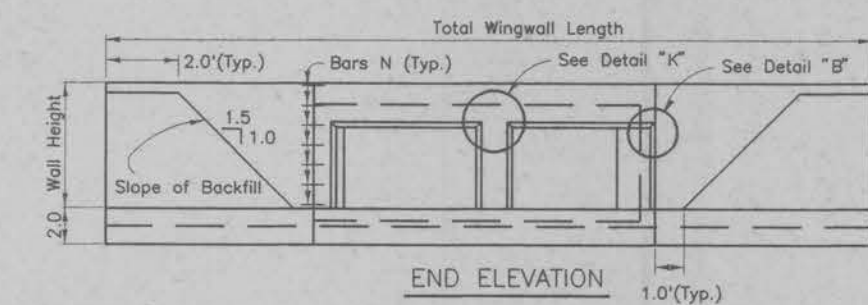
TOTAL WINGWALL LENGTH INCLUDING BARREL	
LEFT WINGWALL	50'-3 1/2"
RIGHT WINGWALL	40'-9 1/2"

LENGTH OF WINGWALL *	
LEFT FRONT	40'-0"
LEFT BACK	00'-0"
RIGHT FRONT	11'-0"
RIGHT BACK	11'-0"

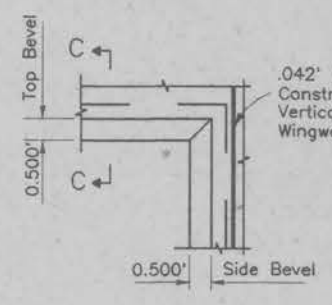
* MEASURED FROM CONSTRUCTION JOINT



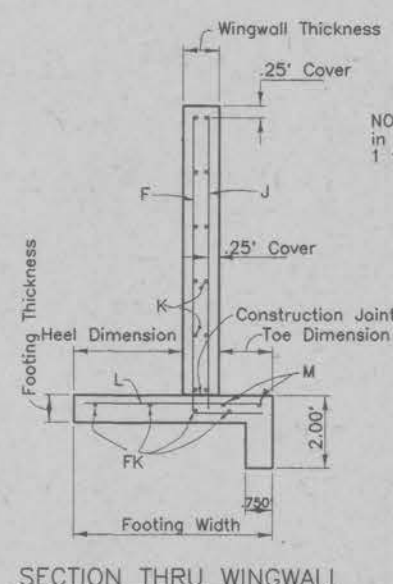
PART PLAN AT END OF CULVERT



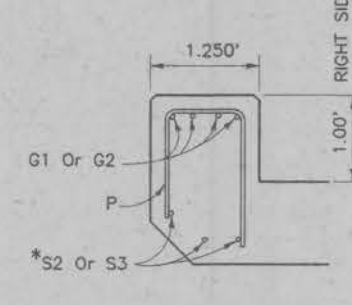
END ELEVATION



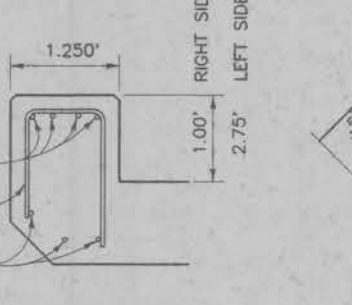
DETAIL "B"



SECTION THRU WINGWALL



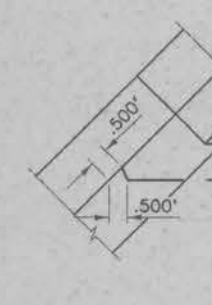
SECTION C-C



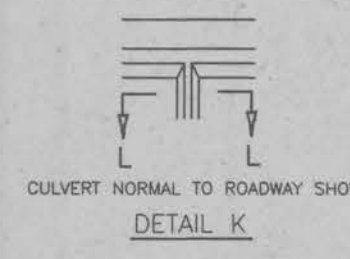
DETAIL "D"



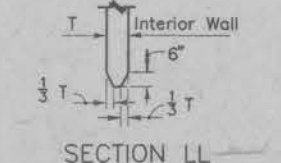
DETAIL "E"



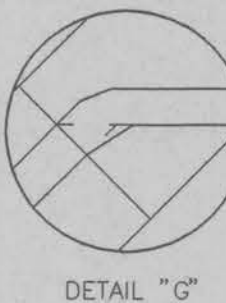
DETAIL "F"



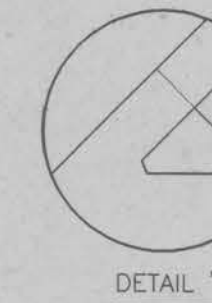
DETAIL K



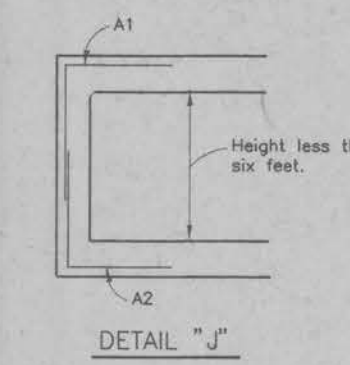
SECTION LL



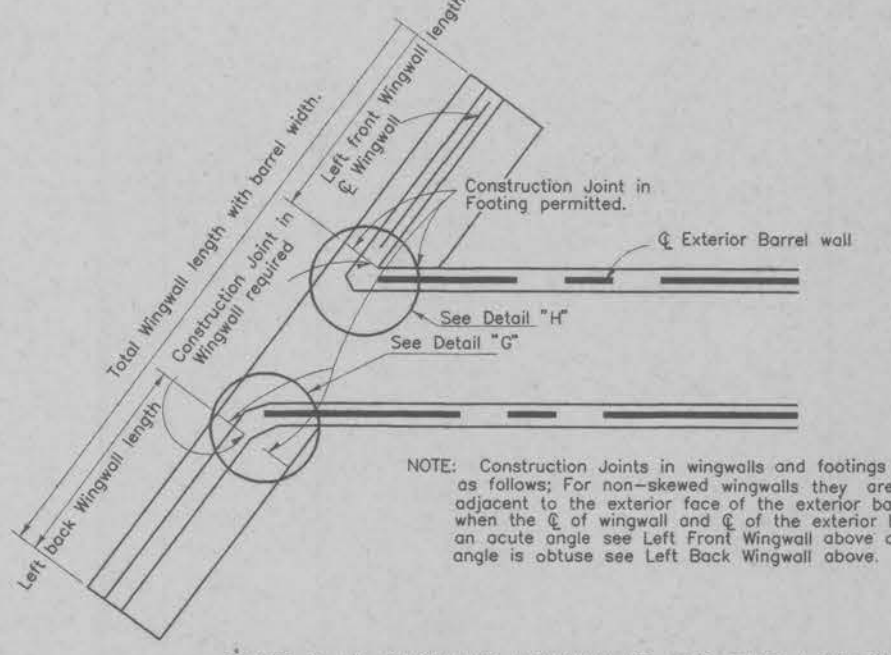
DETAIL "G"



DETAIL "H"



DETAIL "J"



PART PLAN SHOWING WINGWALLS AND THE LOCATION OF CONSTRUCTION JOINTS

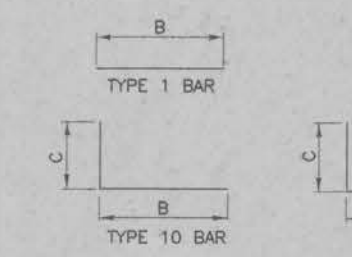
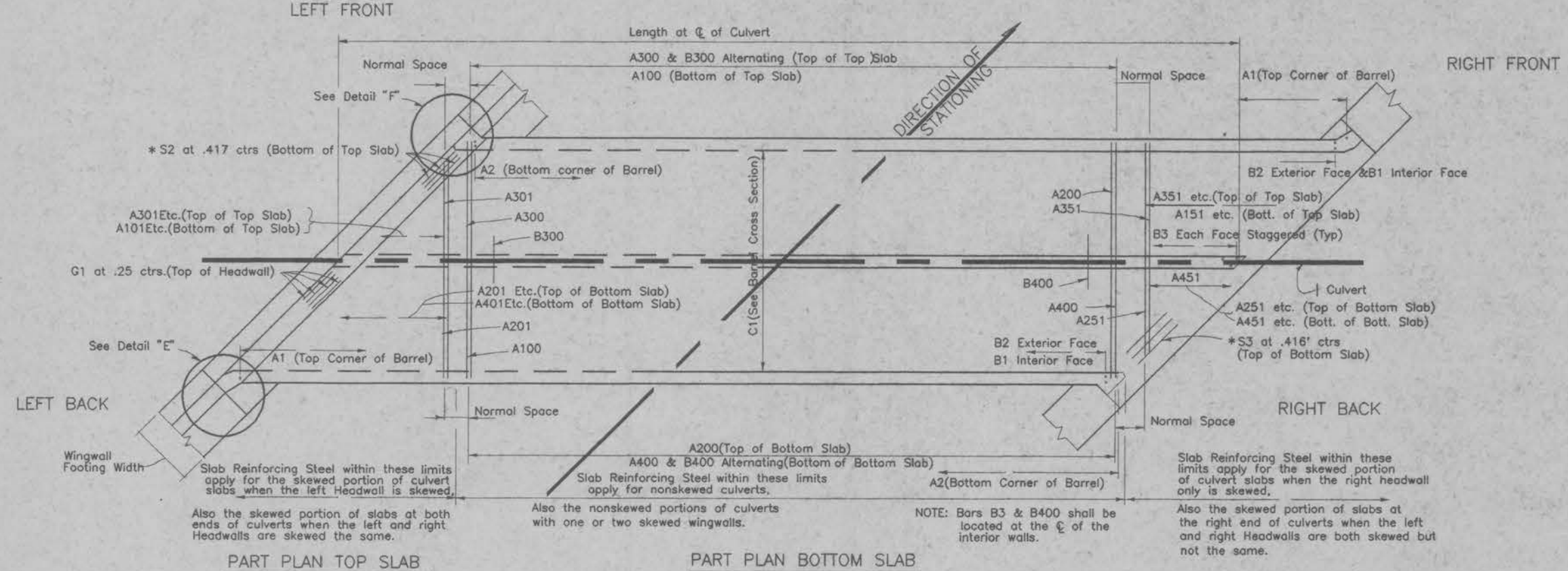
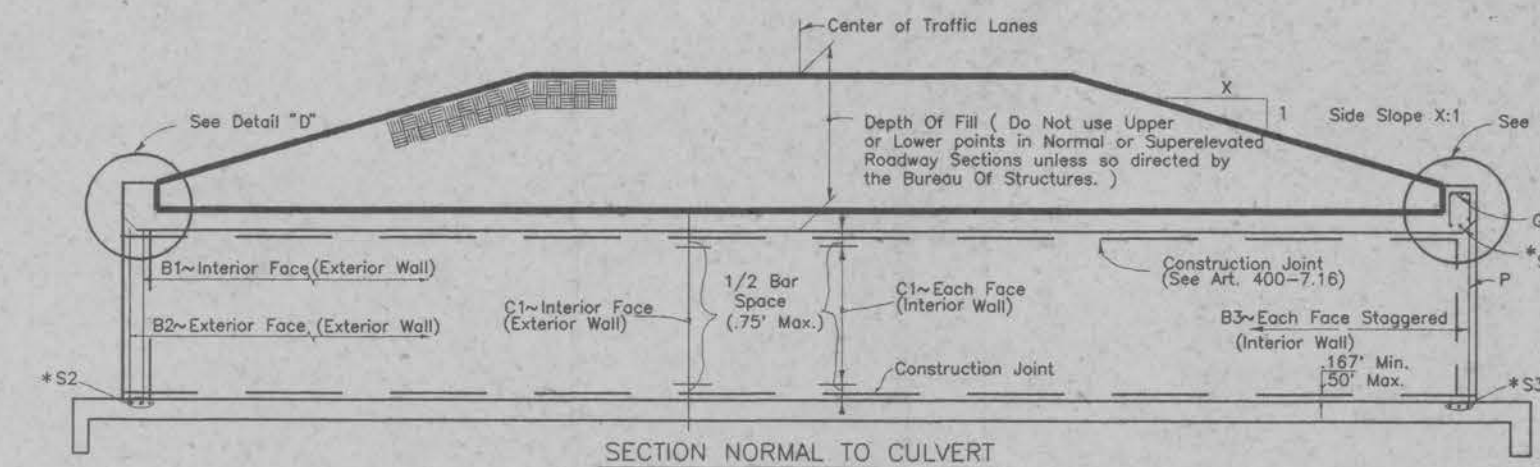


TABLE OF MINIMUM BAR SPLICE LENGTHS							
BAR SIZE		SPLICE		BAR SIZE		SPLICE	
4		1'- 8"		8		3'- 10	
5		2'- 2"		9		4'- 10"	
6		2'- 7"		10		6'- 1"	
7		3'- 0"		11		7'- 6"	

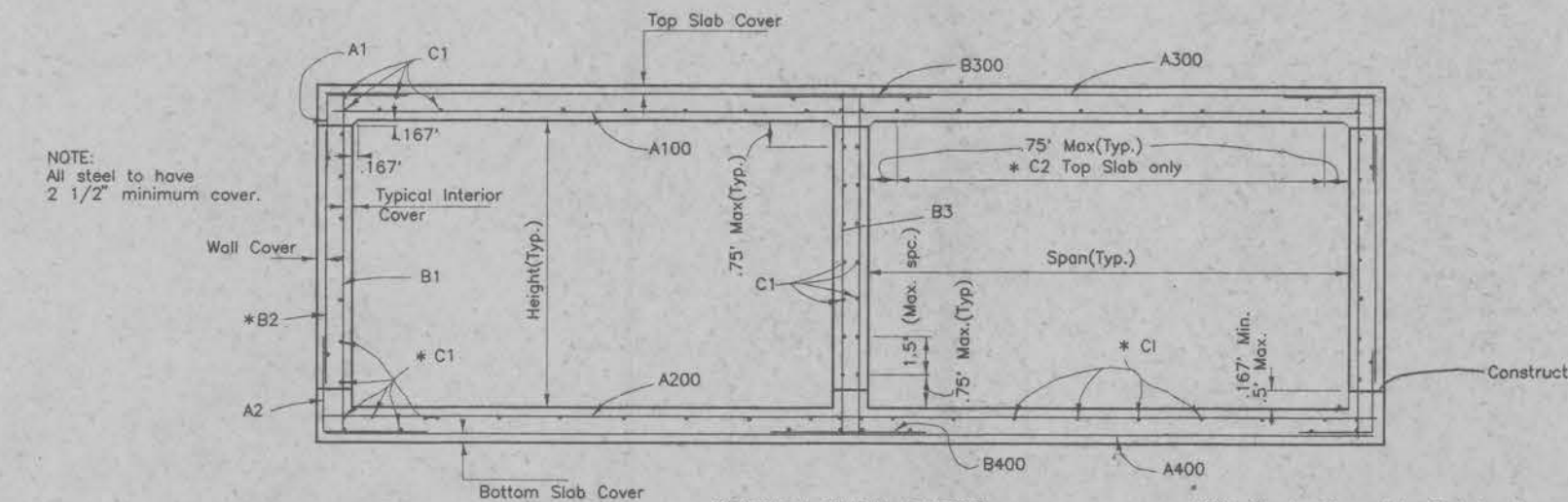


PART PLAN TOP SLAB

PART PLAN BOTTOM SLAB



SECTION NORMAL TO CULVERT



SECTION THRU BARREL

GENERAL NOTES

- DESIGN SPECIFICATIONS: A.A.S.H.T.O. 1983.
- LOADING: HS20-44, Modified for Military Loading as Required
- CONCRETE: Concrete shall be FDOT Class IV - 4000 psi minimum.
- SURFACE FINISH: The Class Surface finish for all concrete surfaces shall be a general surface finish.
- SKEWED CONSTRUCTION JOINTS: Construction joints in barrels of culverts with skewed wingwalls may be placed parallel to the headwalls and the reinforcing steel, in the aisle may be cut provided that the cut reinforcing steel extends beyond the construction joint enough for splices to be made in accordance with the table (lower right) this sheet. The cost of construction joints shall be at the expense of the contractor.
- CULVERT EXTENSIONS: For cut backs and ties into existing concrete box culverts see Index No. 280
- REINFORCING BAR SCHEDULE:
- When the depth is less than or equal to 2.0 feet, Bars C2 are utilized in the bottom of the top slab. In all other cases, Bars C2 are replaced with Bars C1 spaced at 18 inches on centers.
 - When the skew angle for a headwall equals 0 degrees plus or minus 11 degrees the respective 3 Bars (S2 or S3) will not be utilized.
 - When the barrel height is less than 6 feet, Bars B2 will be eliminated as shown in Detail J.
 - If the span is less than five feet, Bars A1 and A2 will be Type II Bars.
 - The portions of Bars "N" that extend thru Construction Joints into wingwalls above footings shall be wrapped with one layer of 55 lb smooth roofing.
 - For culvert extensions Bar C1 is redesignated Bar C3 in the bottom slab.
 - Reinforcing steel shall be ASTM 615 Grade 60 with deformation in accordance with FDOT specifications.

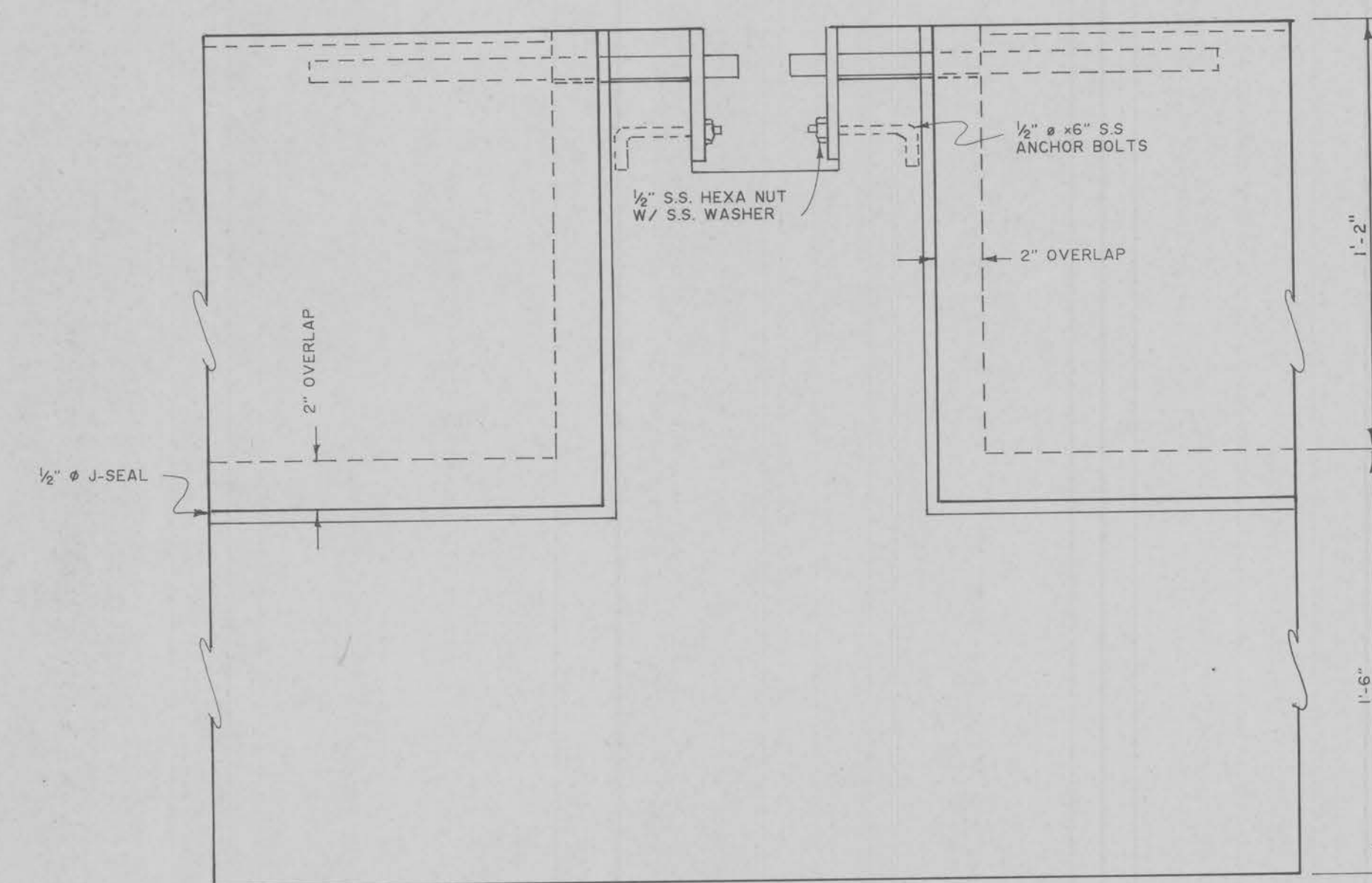
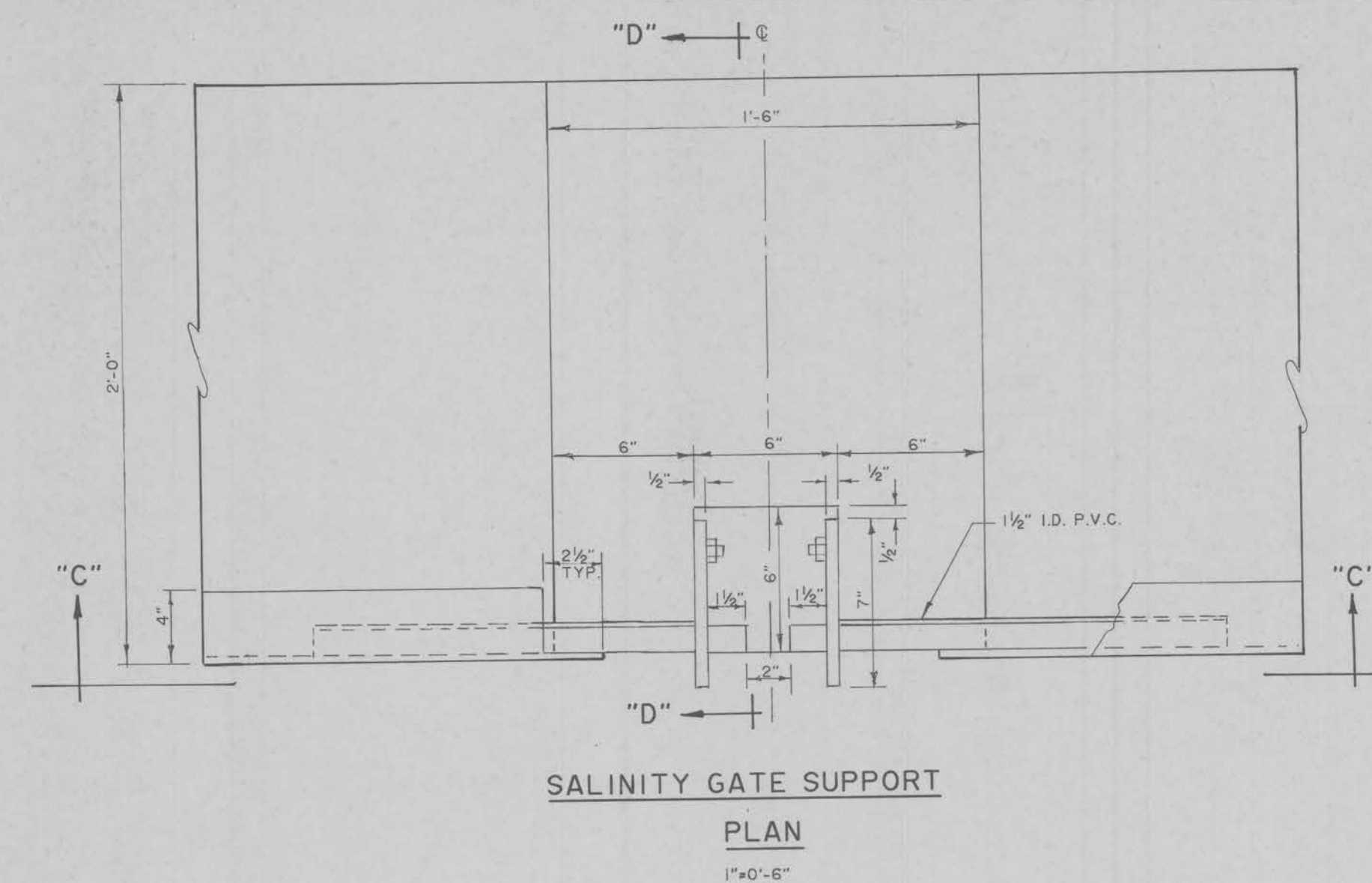
DOUBLE 8'x5' BOX CULVERT DETAILS

FOR BEACH ROAD BOX CULVERT & WATER CONTROL STRUCTURE

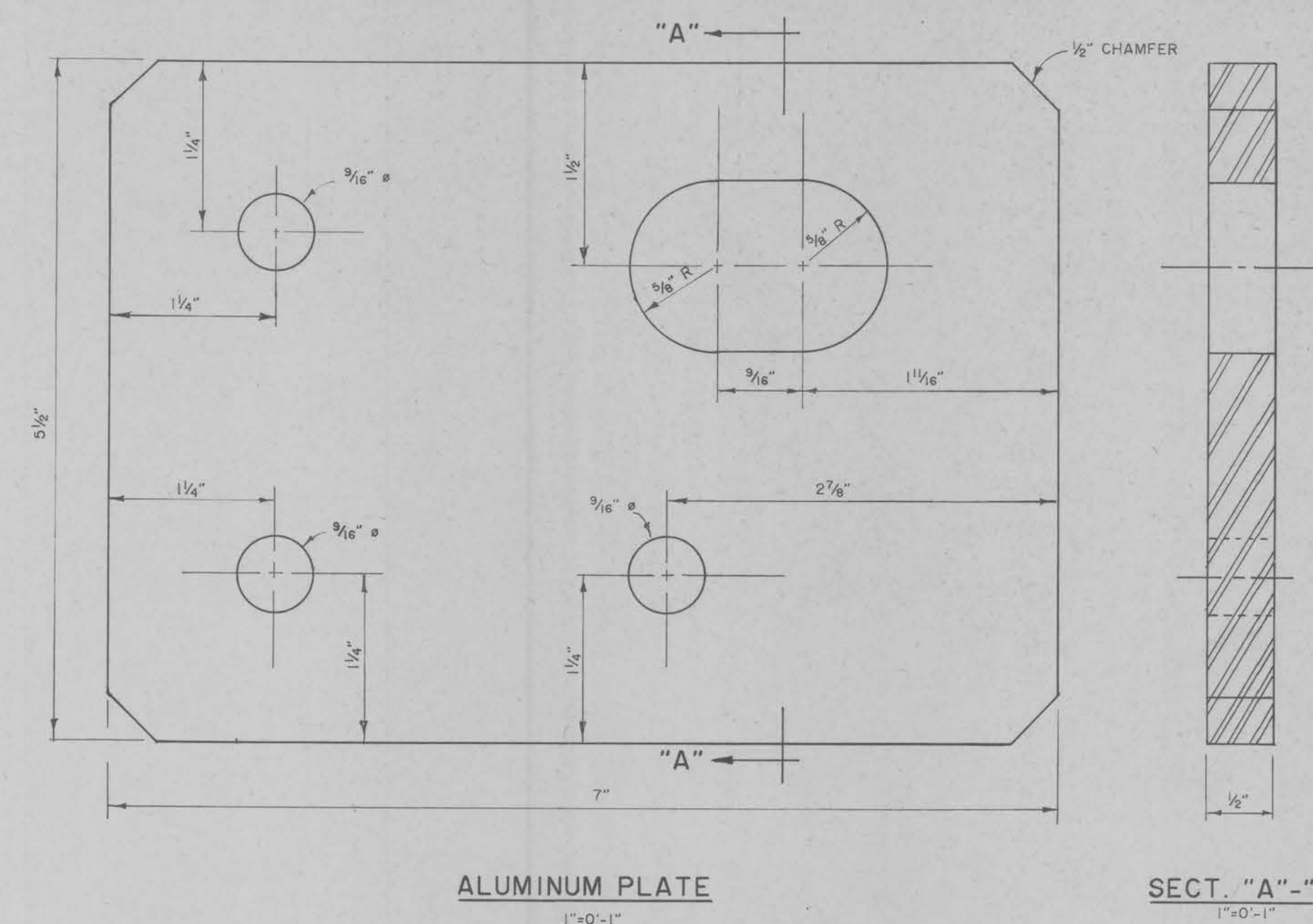
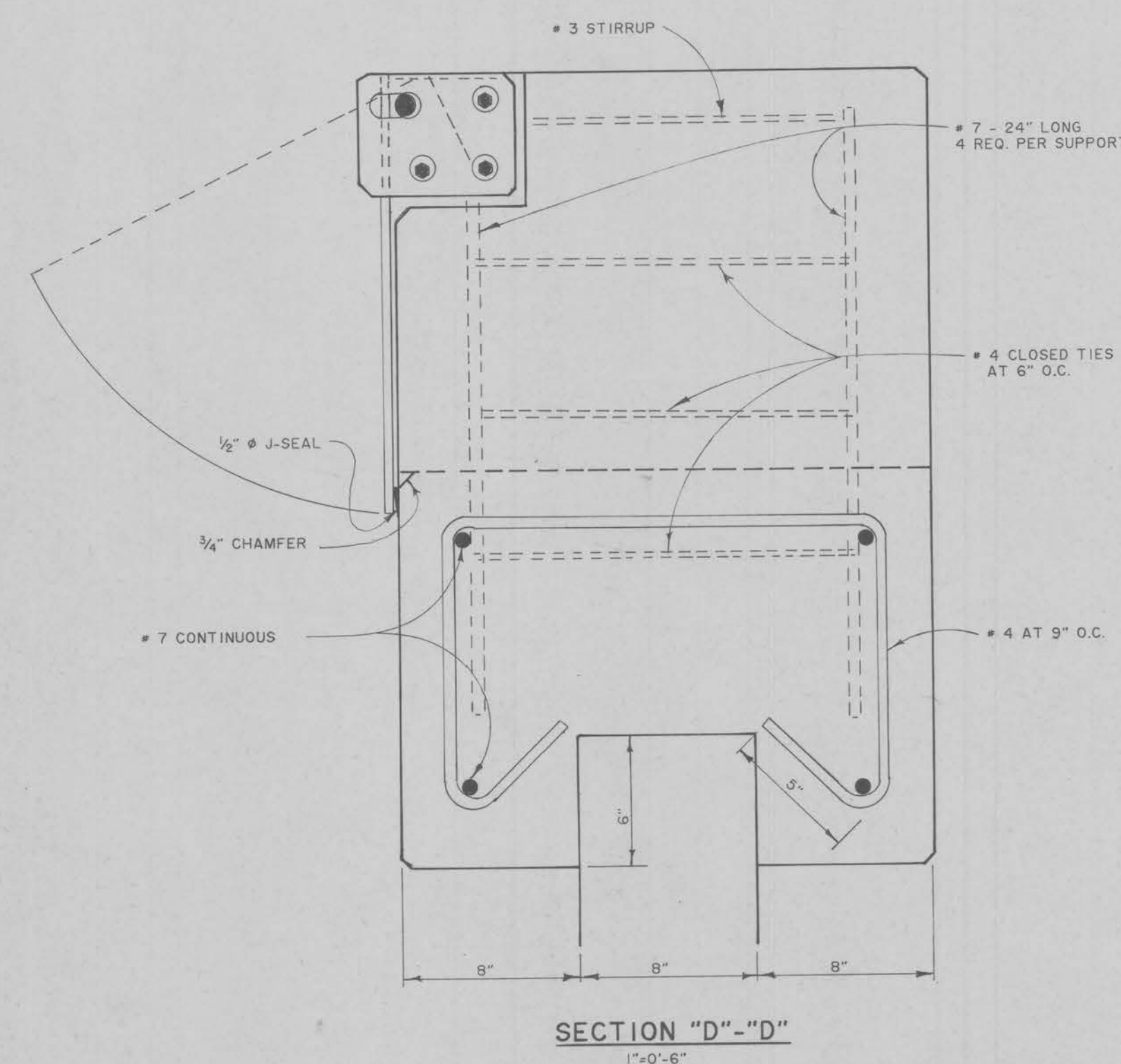
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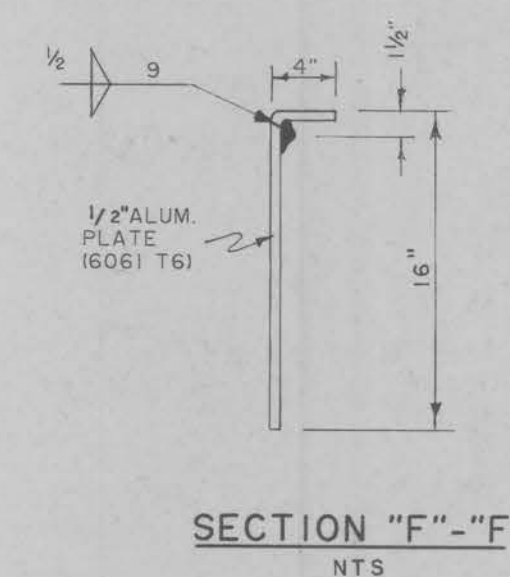
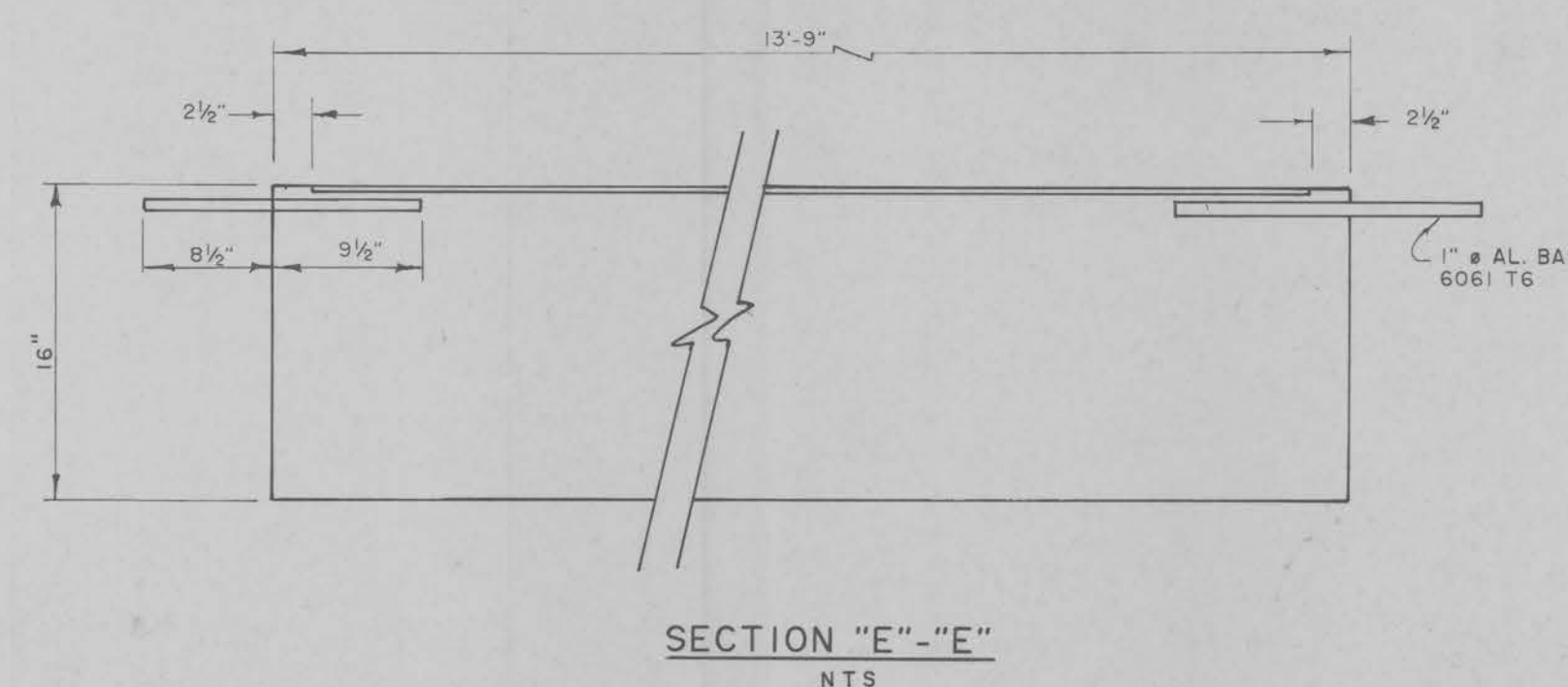
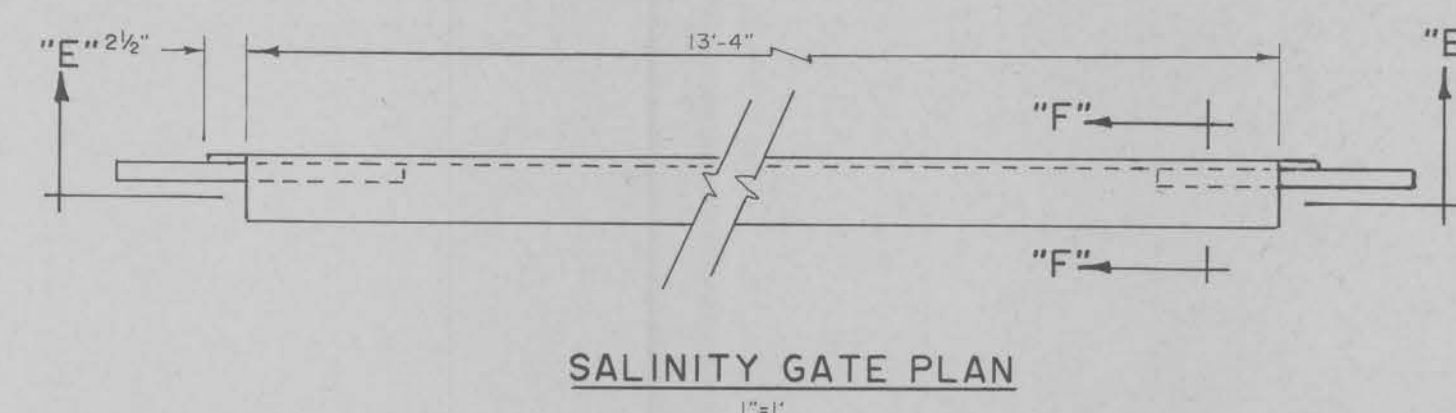
DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18963	29/30-46-23	N.T.S.	9 OF 11



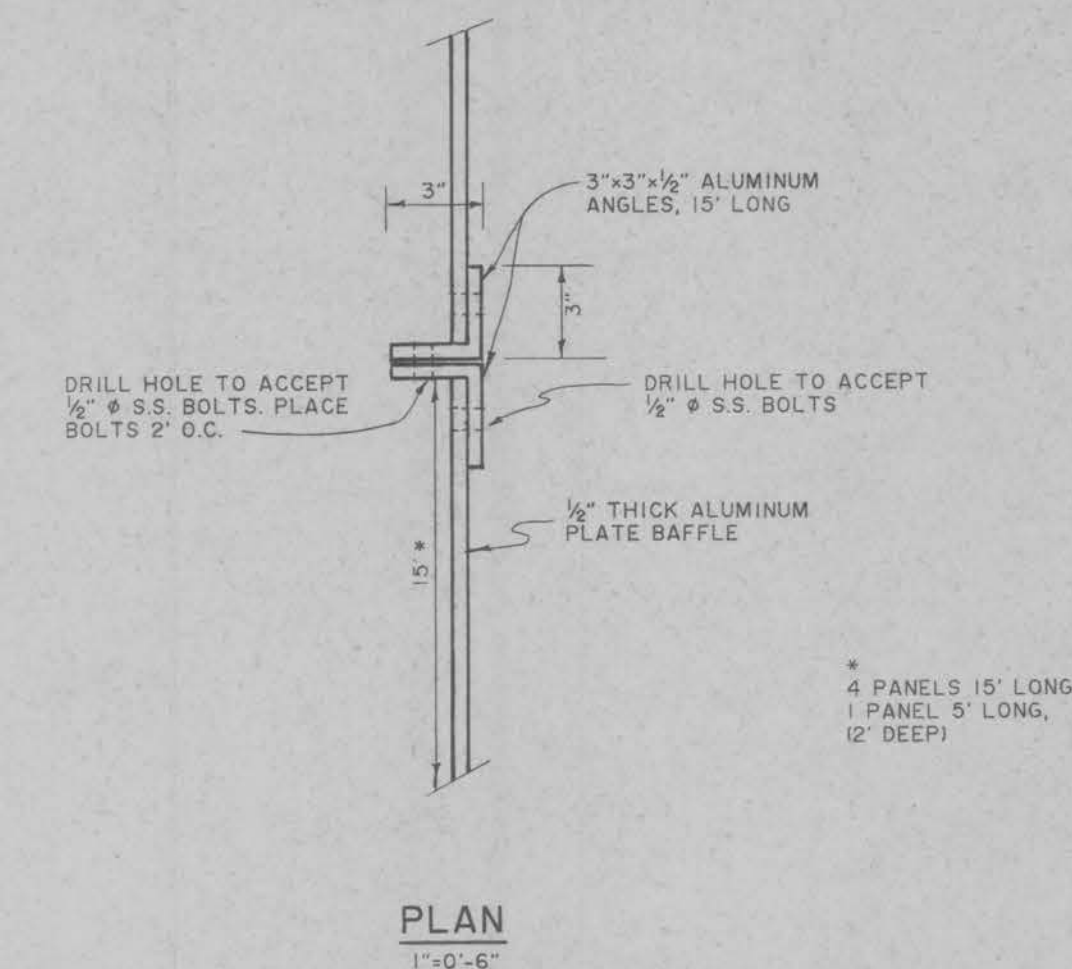
NOTE:
BALANCE SALINITY GATE IN
FIELD SUCH THAT IT IS CLOSED
WHEN NO HYDROSTATIC
HEAD IS ON IT.



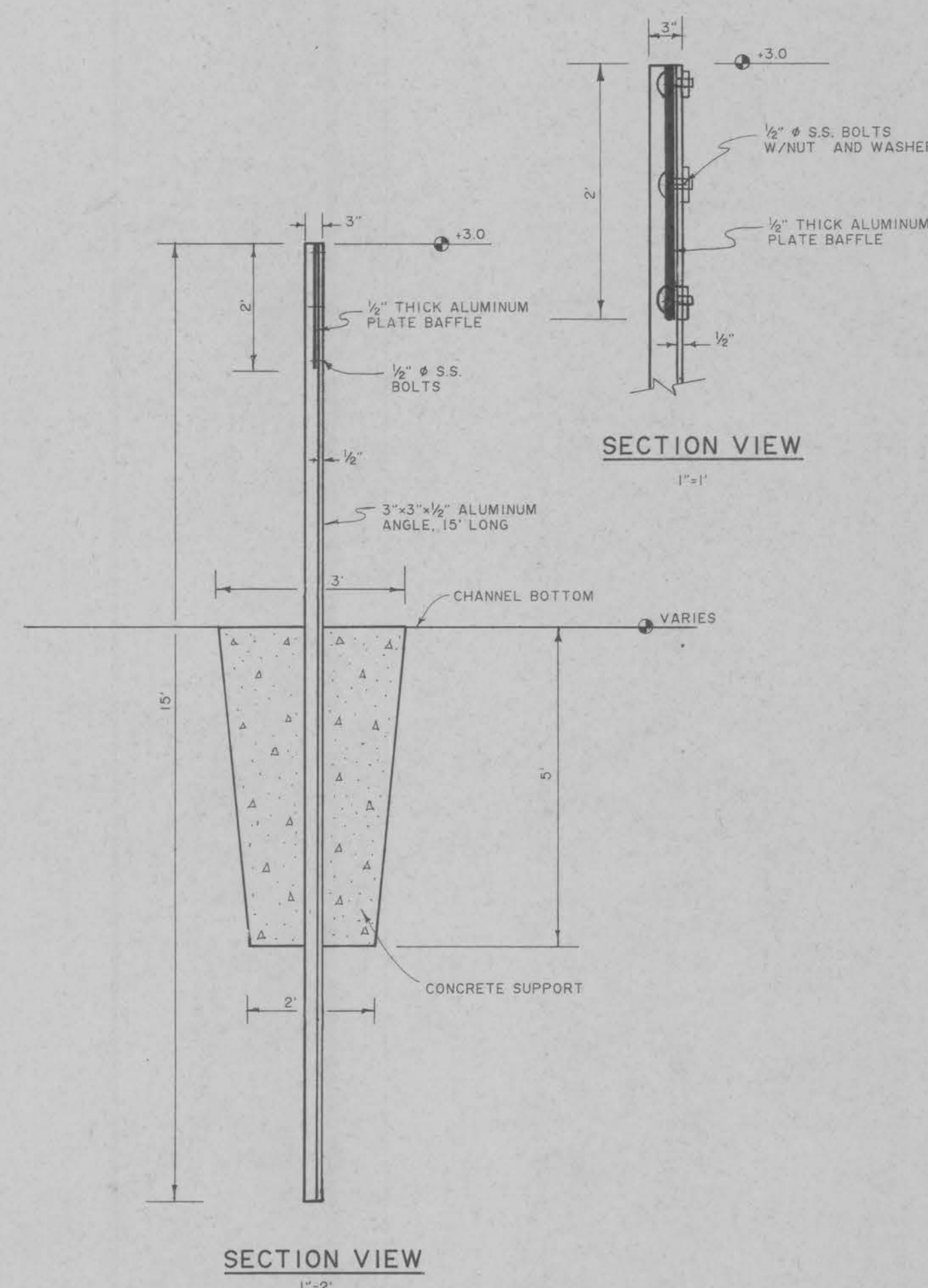
NOTE:
APPLY THREE COATS OF LIQUID
TEFLON TO 1" x 1" AL. BAR AND TO
THE ELLIPTICAL HOLE IN THE
ALUMINUM PLATE.



FLAP GATE DETAILS



* 4 PANELS 15' LONG,
1 PANEL 3' LONG,
12' DEEP



SECTION VIEW
1"=2"

BAFFLE DETAILS

**FLAP GATE & BAFFLE DETAILS
FOR**

**BEACH ROAD BOX CULVERT &
WATER CONTROL STRUCTURE**

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OCTOBER, 1991	18693	30/29-46-23	AS SHOWN	10 OF 11



EXTENSION OF ACCURACY IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION MAP

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DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
OCTOBER, 1991	18693	30/29-46-23	1" = 20'	11 OF 11

L. J. Ingeer's Laboratory and Inspection Service
1820 N.E. 144th Street
DRAWER "L", North Miami, Florida 33161

SONLER, J. Hicks DRILL No. 17

NAME	ADDRESS	PHONE NO.	DATE
...	...	...	...

AS A MUTUAL PROTECTION TO THE OWNERS AND OURSELVES, THE EMPLOYER MUST BE KEPT ADVISED OF ANY
CHECK THIS REPORT WITH THE SAMPLES SUBMITTED PRIOR TO THE DATE OF THE FOLLOWING: (DATE) (TIME)

** Blow count per each 6" (ASTM D-1586) WILCOX RESEARCH LABORATORIES, INC.

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GROUND ELEVATION	not given	DESCRIPTION OF MATERIALS	SAMPLE NUMBER	HARDED SLOPE ON	PENETRATION	HARDED SLOPE ON
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Engineer's Laboratory and Inspection Service
1820 N.E. 144th Street
DRAWER "I." North Miami, Florida 33161

DRILLER J. Hicks DRILL No. 17

SAMPLE	HAMMER	PENETRA	HAMMER
--------	--------	---------	--------

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GROUND ELEVATION	DESCRIPTION OF MATERIALS	SAMPLE NUMBER	HAMMER BLOWS ON	PENETRATION	HAMMER BLOWS ON
------------------	--------------------------	---------------	-----------------	-------------	-----------------

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<u>LOCATION</u>	<u>NAT'L. GROUND ELEV.</u>	<u>DEPTH OF PROBING</u>
HP-1	+3.6	8.0' - RESISTANCE
HP-2	+4.8	10.0' - RESISTANCE
	+4.8	12.8' - RESISTANCE
HP-3	+4.9	10.0' - RESISTANCE
HP-4	+2.5 (CREST)	8.6' - RESISTANCE
	+2.5 (CREST)	15.0' - NO RESISTANCE
HP-5	+5.2	3.6' - RESISTANCE
	+5.2	13.0' - RESISTANCE
HP-6	+3.3	11.9' - RESISTANCE
HP-7	+2.6	11.0' - RESISTANCE
	+2.6	15.0' - NO RESISTANCE

* TWO PROBINGS TAKEN AT SOME LOCATIONS

1820 N.E. 144th Street
DRAWER "L", North Miami, Florida 33161

DRILLER J. Hicks DRILL No. 17

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FOR

BEACH ROAD BOX CULVERT &
WATER CONTROL STRUCTURE

CITY OF SANIBEL, FLORIDA

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