

Attachment A

Sheets from Record Drawings for the Work prepared by Binkley & Barfield, Inc. and dated 1/24/2017 consisting of 9 pages.

Sheets from Record Drawings for the Work prepared by Freese & Nichols, Inc. and dated April 1953 consisting of 6 pages.



SAN JACINTO RIVER AUTHORITY

PLANS FOR HIGHLANDS CAPACITY IMPROVEMENTS PROGRAM MISCELLANEOUS REHABILITATION LAKE HOUSTON PUMP STATION JANUARY 2016

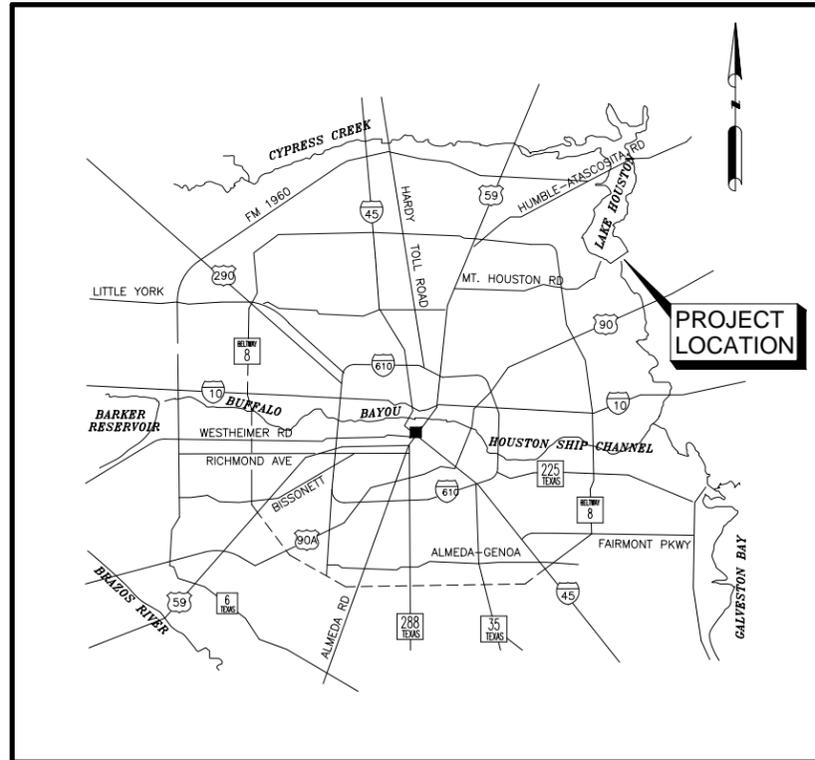
SAN JACINTO RIVER AUTHORITY

BOARD OF DIRECTORS: LLOYD B. TISDALE PRESIDENT
 FRED KOETTING VICE PRESIDENT
 MARY L. RUMMELL SECRETARY
 JOSEPH L. STUNJA TREASURER
 JOHN D. ECKSTRUM MEMBER
 MICHAEL BLEIER MEMBER
 JIM ALEXANDER MEMBER

GENERAL MANAGER JACE A. HOUSTON

INDEX OF SHEETS

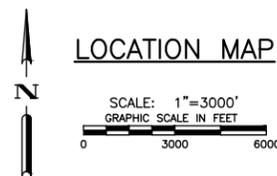
SHEET NO.	DESCRIPTION
<u>GENERAL</u>	
	COVER SHEET/SHEET INDEX
G-1	VICINITY MAP
G-2	GENERAL NOTES
G-3	LEGEND AND ABBREVIATIONS
<u>CIVIL</u>	
C-1	PUMP NO. 4 FLOW METER BLDC DEMOLITION/PIPE COATING PLAN
C-2	PROPOSED SITE PLAN
C-3	SITE TOPOGRAPHIC MAP
C-4	ENLARGED SITE PLAN
C-5	TRASH RACK REPLACEMENT/SILT DEPOSITS REMOVAL 1 OF 2
C-6	TRASH RACK REPLACEMENT/SILT DEPOSITS REMOVAL 2 OF 2
<u>STRUCTURAL</u>	
S-1	PUMP NO. 4 FLOW METER BLDC STRUCTURAL GENERAL NOTES
S-2	PUMP NO. 4 FLOW METER BLDC PLAN, SECTIONS AND DETAILS
<u>ARCHITECTURAL</u>	
A-1	PUMP NO. 4 FLOW METER BLDC PLAN AND ELEVATIONS
<u>ELECTRICAL</u>	
E-1	PUMP NO. 4 FLOW METER BLDC SJRA ELECTRICAL STDC
E-2	PUMP NO. 4 FLOW METER BLDC ELECTRICAL SITE PLAN
E-3	PUMP NO. 4 FLOW METER BLDC ELECTRICAL PLAN
E-4	PUMP NO. 4 FLOW METER BLDC ELECTRICAL DETAILS
E-5	ELECTRICAL ONE LINE DIAGRAM
<u>STANDARD DETAILS</u>	
SD-1	TRASH RACKS PLAN, SECTIONS & DETAILS
SD-2	TREE PROTECTION
<u>STORM WATER POLLUTION PREVENTION PLAN</u>	
SW-1	SWPPP DETAILS



RECORD DRAWINGS

RECORD DRAWINGS
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Chris Campbell
 01/24/2017



Binkley & Barfield, Inc.
 consulting engineers
 Texas Registration Number F-257
 1710 Seamist Drive Houston, Texas 77008 (713) 869-3433

PROJECT #HDPM003.1012.2L002

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FILE: \\pzhou\Data\bbi\Enviro\190102 - LHPS Misc. Rehab. Final Design\CAD\Drawings\002C-DTrash.dwg LAYOUT: 002C-DTrash DATE: 1/17/2017 2:44:11 PM BY: JR



FLOOR ELEV. 60.14±

PHOTO A - SOUTH ELEVATION (SEE NOTE 1)



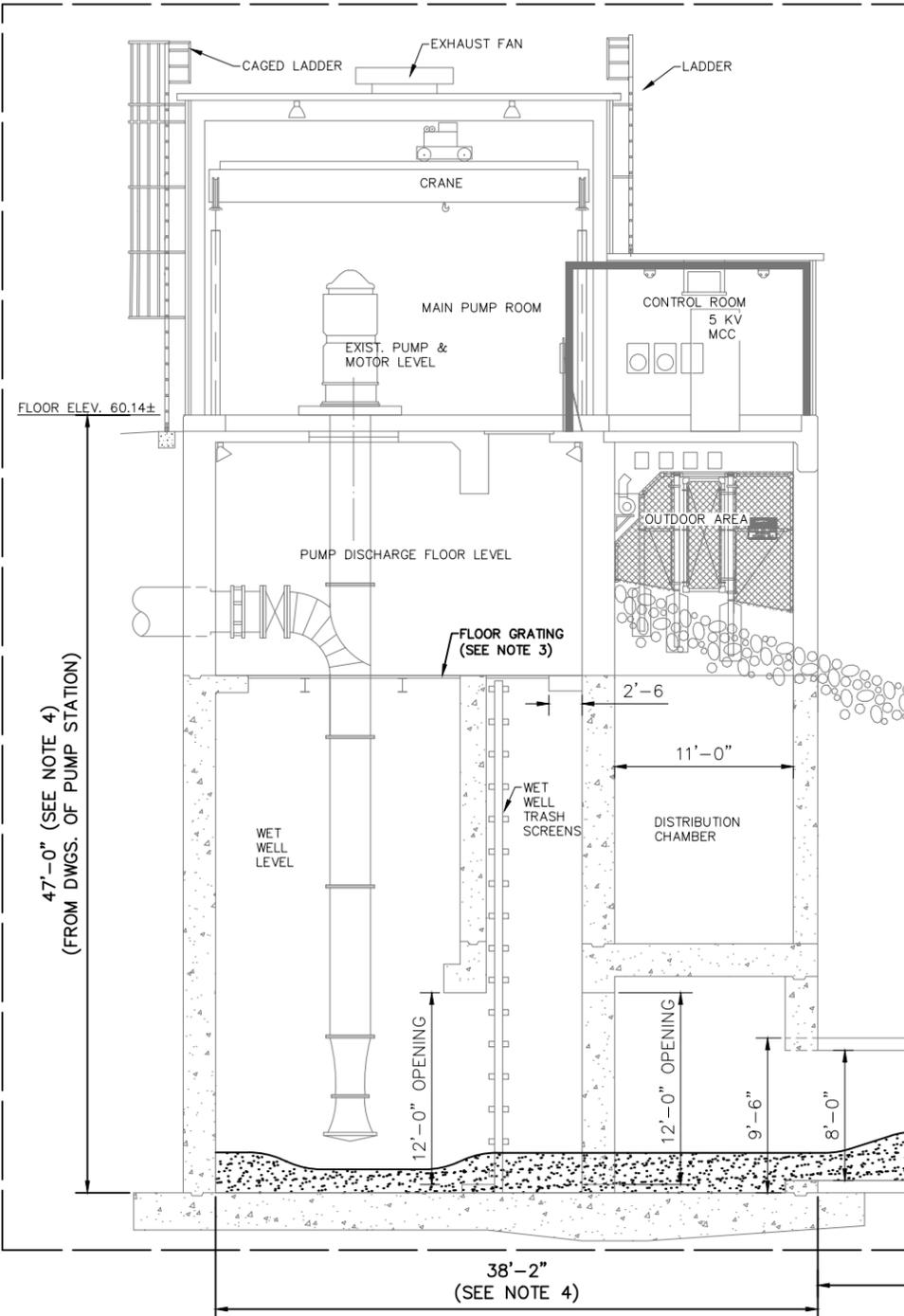
PHOTO B - INTERIOR ELEVATION @ SOUTH CORNER OF THE PUMP STATION BUILDING (SEE NOTE 2)



PHOTO C - SHIPS LADDER (SEE NOTE 2)

NOTES:

1. CONTRACTOR ACCESS FROM GROUND LEVEL FOR DISCHARGE HOUSING FOR SILT DEPOSITS REMOVAL FROM THE INTAKE CONDUITS SHALL BE THROUGH THE EXISTING WINDOW CONFIGURATION.
2. CONTRACTOR ACCESS FROM 1st FLOOR MOTOR LEVEL SHALL BE THROUGH GRATING OPENINGS TO THE BELOW PUMP DISCHARGE VIA A SHIPS LADDER STAIRWAY.
3. CONTRACTOR ACCESS TO THE INTAKE CONDUITS FROM THE PUMP DISCHARGE LEVEL SHALL BE THROUGH GRATING OPENINGS OUTBOUND OF THE WET WELL TRASH SCREENS.
4. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.



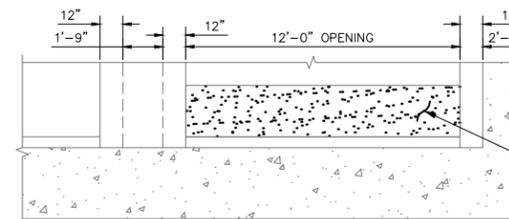
EXIST. PUMP STA. BLDG, CONTROL ROOM, PUMPS, ETC. SHOWN FOR REFERENCE ONLY. THE SCOPE OF THIS PROJECT AT THE PUMP STATION STRUCTURE CONSISTS OF ONLY SILT DEPOSITS REMOVAL AND EXIST. TRASH RACK REMOVAL AND REPLACEMENT.



PHOTO D - PUMP DISCHARGE LEVEL (SEE NOTE 3)



PHOTO E - PHOTO OF ORIGINAL CONSTRUCTION OF INTAKE STRUCTURE INLET AND TRASH RACK



SECTION A-A (SEE SHT. C-2) SCALE: 1/4"=1'-0"

RECORD DRAWINGS

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 Chris Campbell
 01/24/2017

REMOVE AND PROPERLY DISPOSE OF EXISTING SILT DEPOSITS. FOR MORE EXACT LIMITS OF SILT DEPOSITS, (SEE SHT. C-6)

REMOVE AND REPLACE EXIST. STEEL TRASH RACKS 1-4. (SEE SHEET SD-1)

TYPICAL LONGITUDINAL SECTION B-B THRU EXIST. PUMP STA. BLDG. AND INTAKE CONDUITS (LOOKING FROM NORTH TO SOUTH) SCALE: 3/16"=1'-0"



SAN JACINTO RIVER AUTHORITY
 HIGHLANDS DIVISION



LAKE HOUSTON PUMP STATION
 MISCELLANEOUS REHABILITATION

ISSUE	DATE	DESCRIPTION
△		RECORD DRAWING
SJRA PROJECT NO: 190102		
FILE NAME: 002C-DTrash.dwg		
DRAWN BY: J.R.R.		
CHECKED BY: M.M.		
SCALE: HORIZ: N.T.S.		AS SHOWN

CIVIL
 TRASH RACK REPLACEMENT/
 SILT DEPOSITS REMOVAL 1 OF 2

SHEET C-5
 SEQ. 9 of 21

RECORD DRAWINGS

- NOTES:**
1. FABRICATE AND INSTALL IN ACCORDANCE WITH SPECIFICATIONS 05 12 00 TITLED "STRUCTURAL STEEL" AND 05 50 00 TITLED "METAL FABRICATIONS".
 2. ALL STEEL SHALL BE 304 OR 316 STAINLESS STEEL.
 3. ALL PIPES SHALL BE 304 OR 316 STAINLESS STEEL SCHEDULE 40.
 4. ALL REQUIRED WELDING SHALL BE DONE IN ACCORDANCE WITH AWS CODE AND SPECIFICATIONS 05 12 00 TITLED "STRUCTURAL STEEL" AND 05 50 00 TITLED "METAL FABRICATIONS".
 5. ALL WELDS SHALL BE ¼" CONTINUOUS FILLET WELDS.
 6. CONTRACTOR SHALL APPLY AN ANTI-FOULING COATING BY JOTUN, OR APPROVED EQUAL, TO ALL METAL SURFACES PER SPECIFICATION 09 91 00.
 7. CONTRACTOR SHALL FIELD VERIFY EXISTING STRUCTURE CONDITION, CONFIGURATION, AND DIMENSIONS AND ADJUST TRASH RACK DIMENSIONS ACCORDINGLY PRIOR TO SUBMITTAL OF SHOP DRAWINGS FOR APPROVAL.
 8. OPTION 1 IS THE PRIMARY STOP LOG ANCHOR DETAIL TO BE UTILIZED BY THE CONTRACTOR.
 9. CONTRACTOR SHALL APPLY APPROPRIATE COATINGS TO ANY AREAS AFFECTED BY FIELD WELDING.

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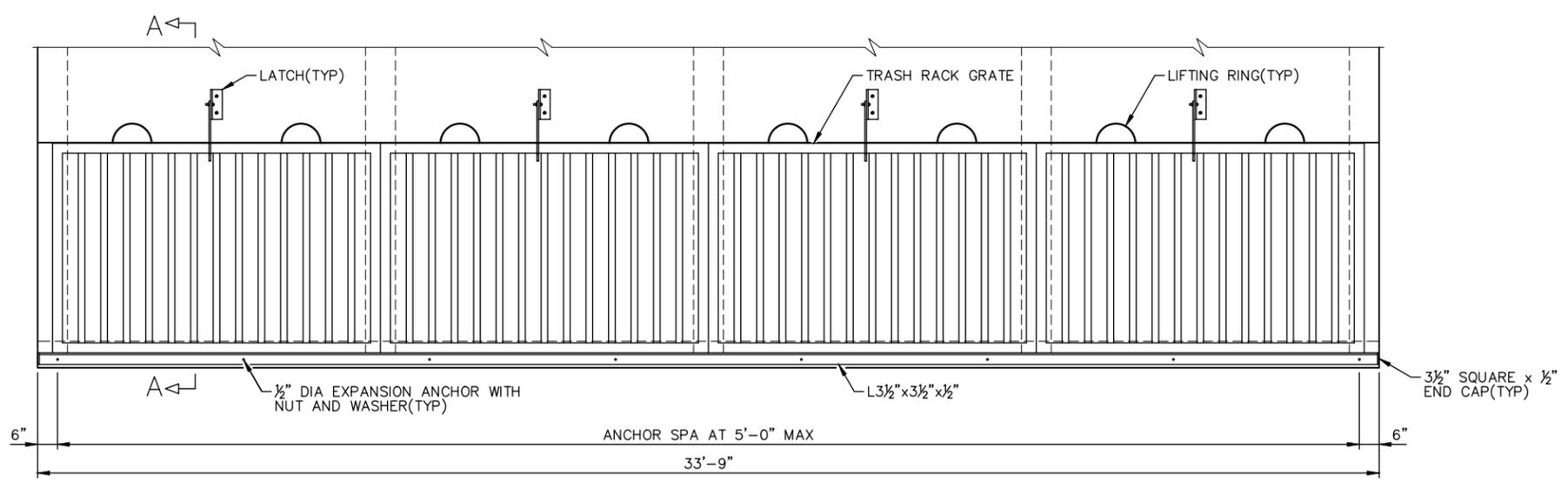


**LAKE HOUSTON PUMP STATION
 MISCELLANEOUS REHABILITATION**

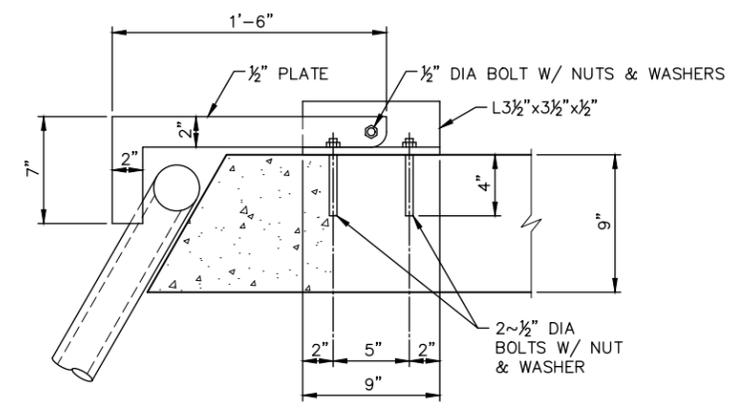
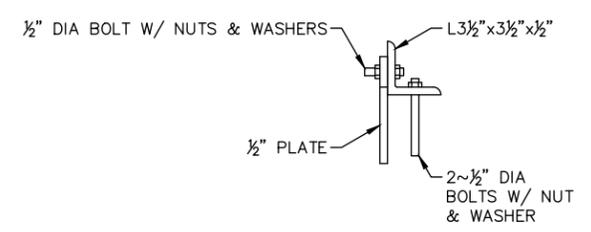
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FILE NAME: 003S-DTmisc.dwg		
DRAWN BY: J.R.R.		
CHECKED BY: M.M.		
SCALE: HORIZ: 1/2" = 1'-0"		AS SHOWN

**STANDARD DETAILS
 TRASH RACKS
 PLAN, SECTIONS & DETAILS**

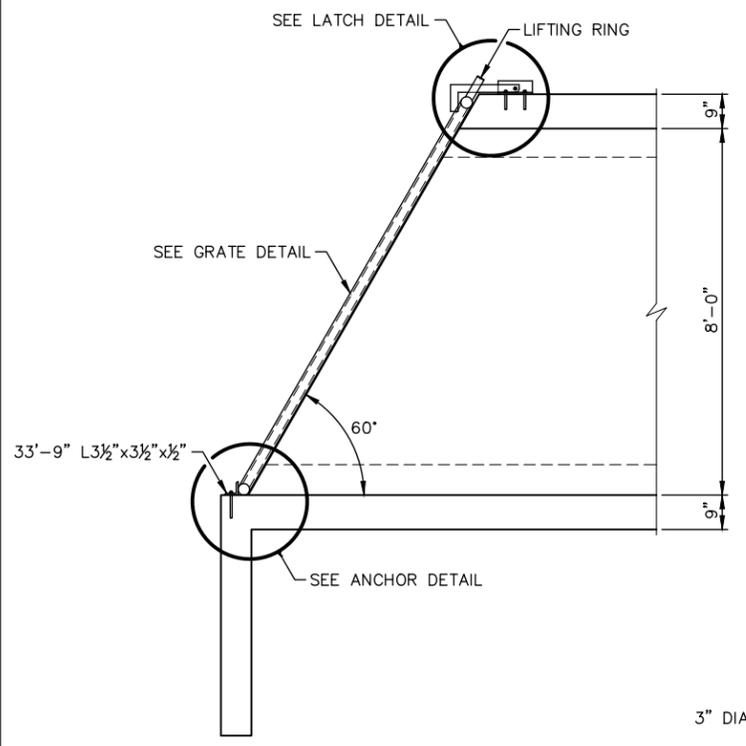
SHEET SD-1
 SEQ. 19 of 21



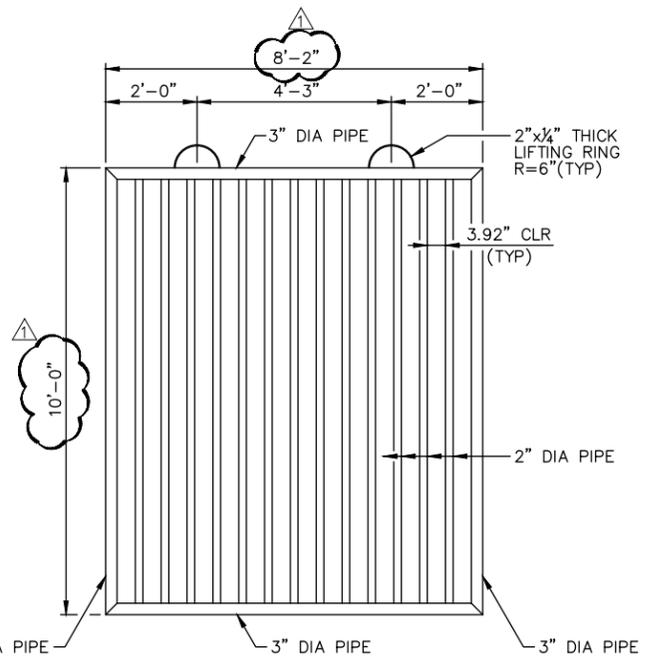
PLAN
 SCALE: 1/2"=1'-0"



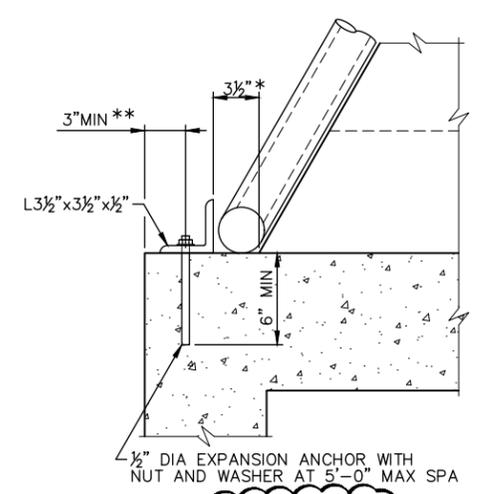
LATCH DETAIL
 SCALE: 2"=1'-0"



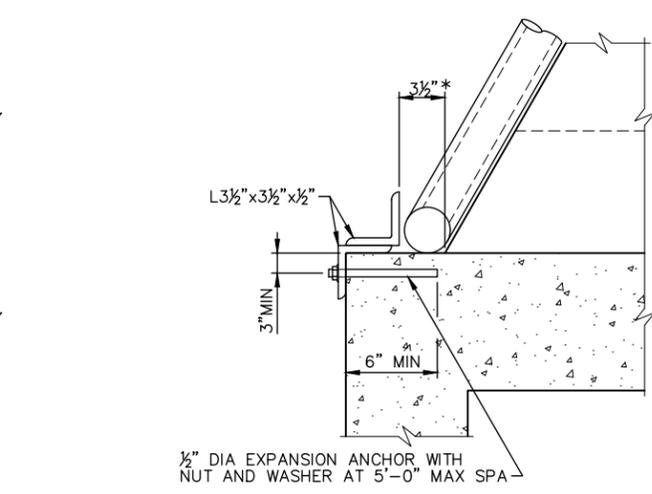
SECTION A-A
 SCALE: 1/2"=1'-0"



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



OPTION 1
 (SEE NOTE 8)



ANCHOR DETAIL
 SCALE: 2"=1'-0"

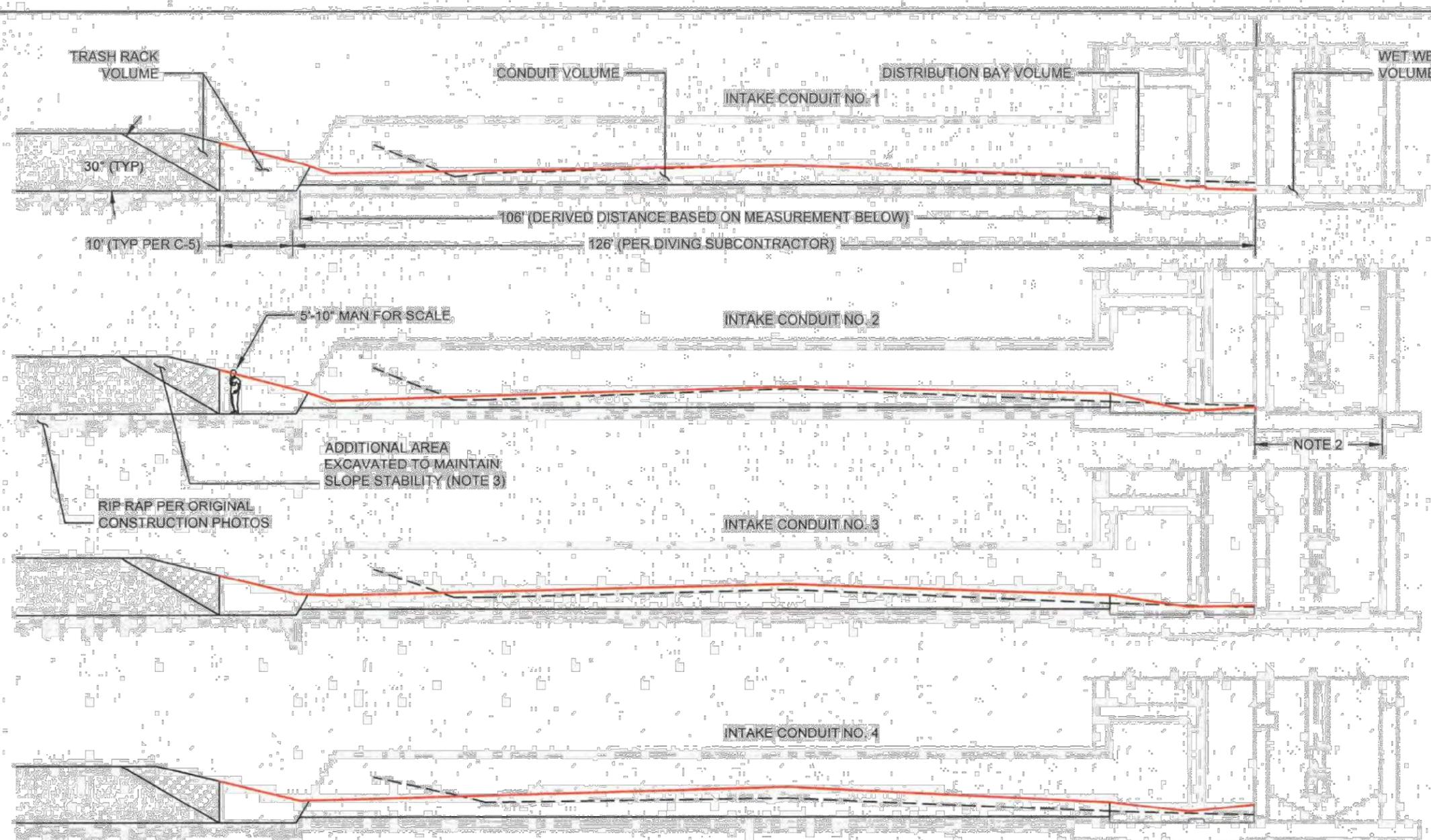
- * ADJUST DIMENSION IN FIELD PLACEMENT OF ANGLE TO ALLOW PLACEMENT OF GRATE FLUSH AGAINST EXISTING CONCRETE.
- ** SEE OPTION 2 IF CLEAR DISTANCE FROM ANCHOR TO EDGE OF CONCRETE IS LESS THAN 3".

FILE: \\pzhou\Data\bbi\Enviro\190102 - LHPS Misc. Rehab. Final Design\CAD\Drawings\003S-DTmisc.dwg LAYOUT: 003S-DTmisc.dwg DATE: 1/17/2017 2:47:16 PM BY: JR

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Chris Campbell
 01/24/2017



	VOLUME
TRASH RACK	31
CONDUIT	56
D.B.	10
WET WELL	2
TOTAL	99

	VOLUME
TRASH RACK	29
CONDUIT	60
D.B.	6
WET WELL	5
TOTAL	100

	VOLUME
TRASH RACK	25
CONDUIT	74
D.B.	8
WET WELL	4
TOTAL	111

	VOLUME
TRASH RACK	27
CONDUIT	90
D.B.	31
WET WELL	25
TOTAL	173

ORIGINAL VOLUMES	
ORIGINAL CONDUIT	294
ORIGINAL WET WELL	36
ORIGINAL TOTAL	330
CONTRACT TOTAL	350

NEW THEORETICAL VOLUMES	
TRASH RACK	112
CONDUITS	280
DISTRIBUTION BAY	55
WET WELL	36
NEW TOTAL	483

NOTE 3

NOTE 2

OVERAGE: +38%

ORIGINAL SILT PROFILE (C-6)

NEW SILT PROFILE

GENERAL NOTES:
 1. ORIGINAL AND NEW CONDUIT VOLUME LIMITS.
 2. SILT IN WET WELL NOT RE-VERIFIED DUE TO LOW VOLUME QUANTITY. ORIGINAL VALUES PER C-6 USED.
 3. THE SILT'S ANGLE OF REPOSE (15°) OUTSIDE TRASH RACK WILL REQUIRE ADDITIONAL SILT EXTRACTION TO MAINTAIN SLOPE STABILITY (30° MAX.) AT THE 10' LIMIT.
 4. QUANTITIES REVISED BASED ON INCREASED CONDUIT LENGTH.

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"

SILT VOLUME DIVE INSPECTION

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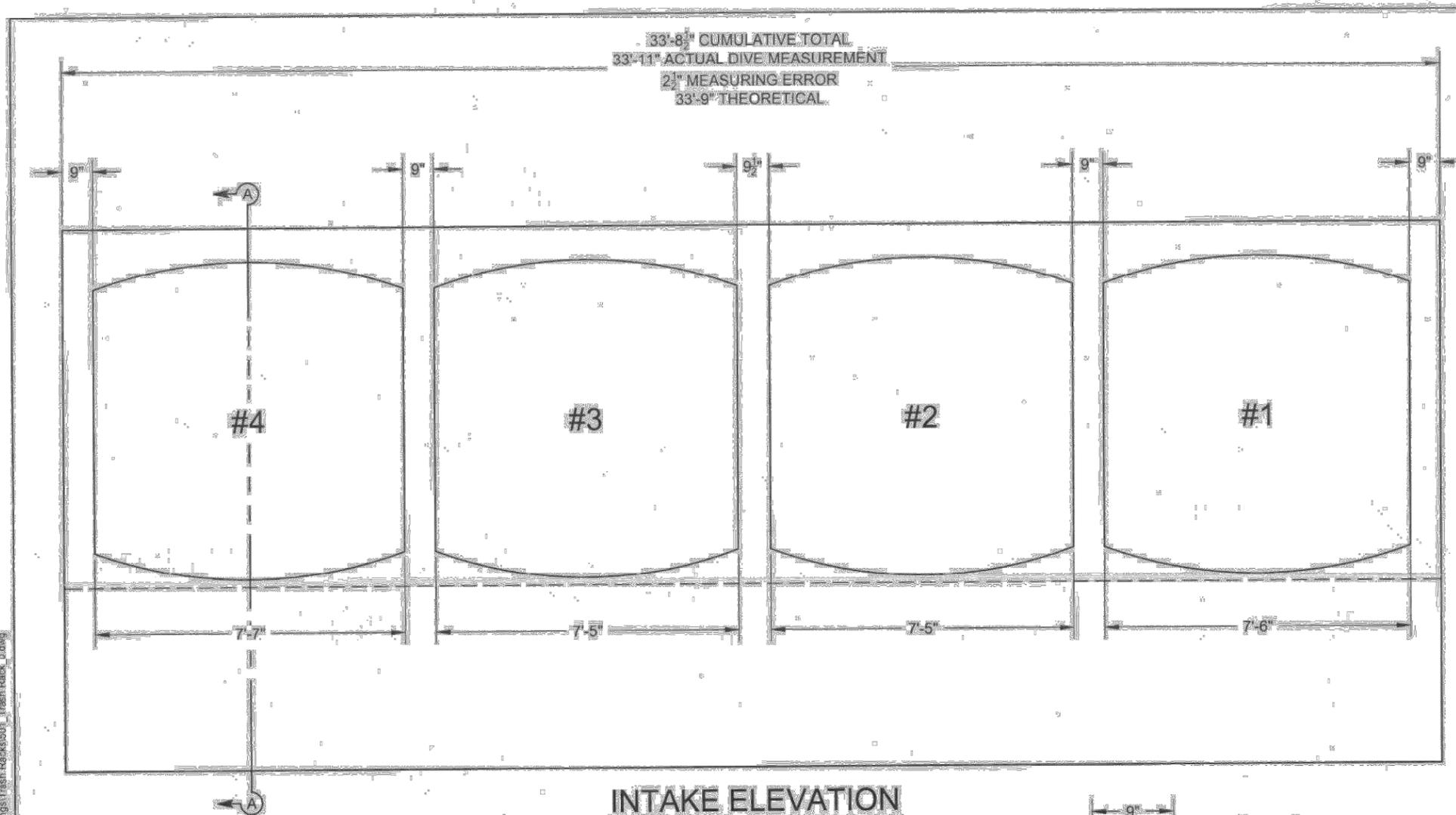
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 Fax: 713-466-8198



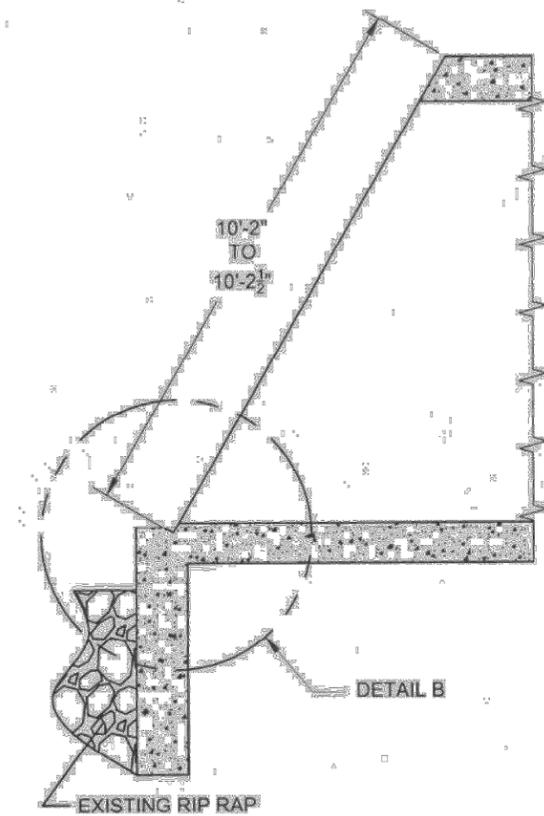
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SHEET: 1 OF 1	FILE: 501_Volume Survey_0.dwg	SCALE: NTS	DATE: 4/22/2015
DRN: N/A	CHKD: BDK	QTY: N/A	
SILT VOLUME DIVE INSPECTION			
LAKE HOUSTON PUMP STATION MISCELLANEOUS REHAB			

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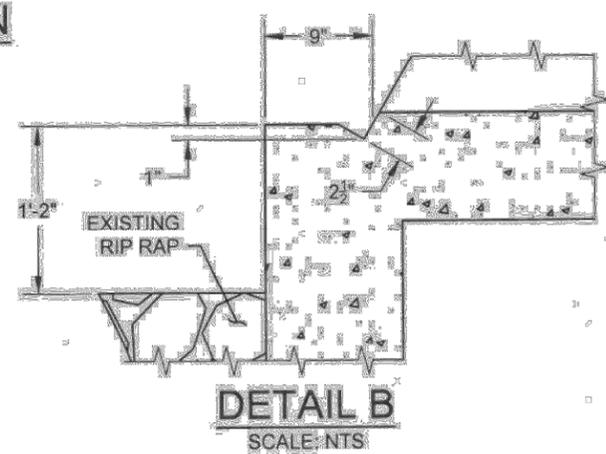
Chris Campbell
 01/24/2017



INTAKE ELEVATION
 SCALE: NTS



SECTION A-A
 TYPICAL @ EACH CONDUIT



DETAIL B
 SCALE: NTS

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"

GENERAL NOTES:
 1. DIMENSIONS SHOWN ARE APPROXIMATE, BUT BASED ON A DIVER-PERFORMED FIELD VERIFICATION SURVEY ON 10/11/16.

INTAKE CONDUIT DIMENSIONAL VERIFICATION

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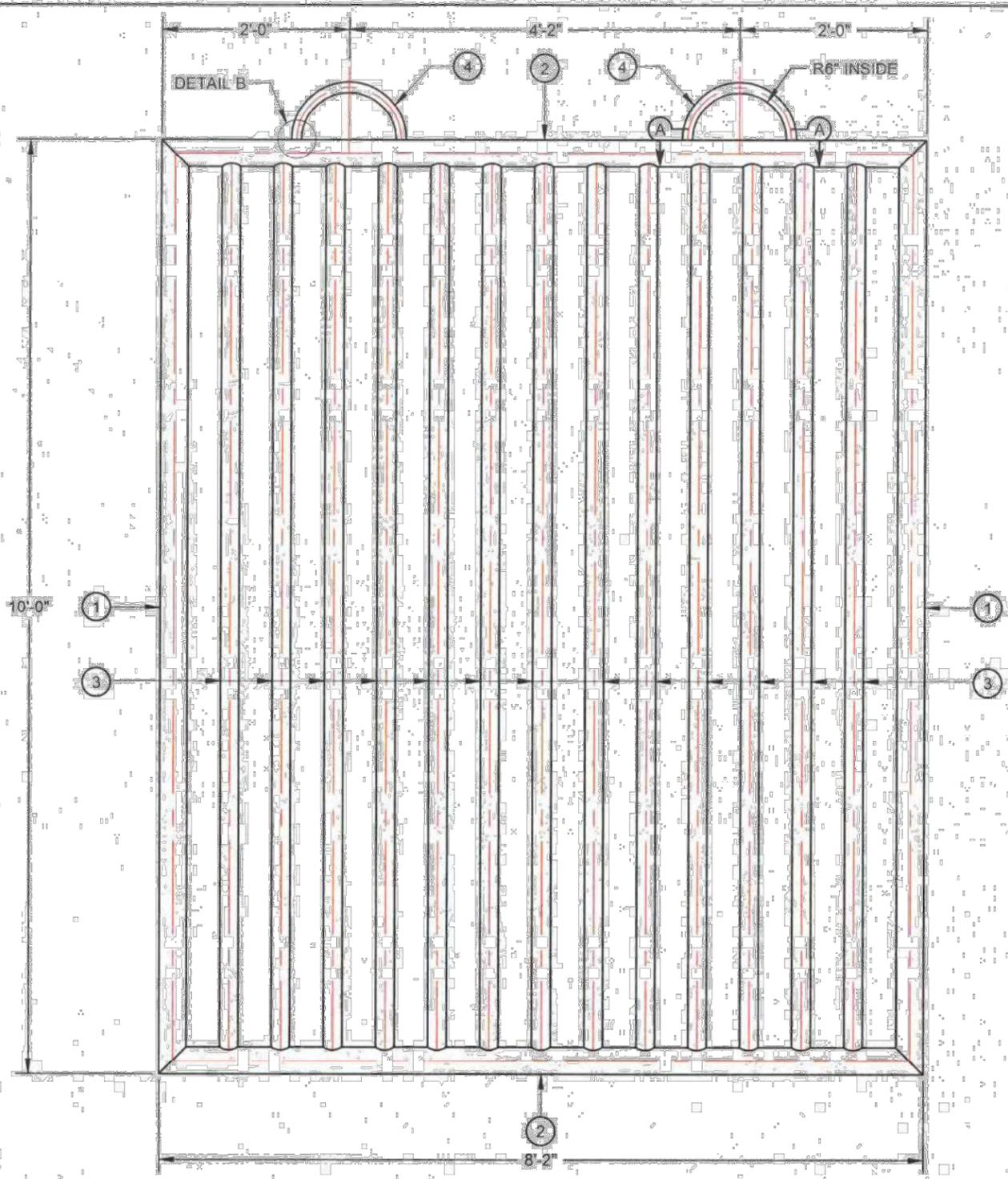


SAN JACINTO RIVER AUTHORITY			
SHEET: 1 OF 5	FILE: 501_Trash Rack_0.dwg	DATE: 4/22/2015	JOB: 501
SCALE: NTS	DRWN: NCD	CHKD: BDK	QTY: N/A
INTAKE CONDUIT DIMENSIONAL VERIFICATION			
LAKE HOUSTON PUMP STATION MISCELLANEOUS REHABILITATION			

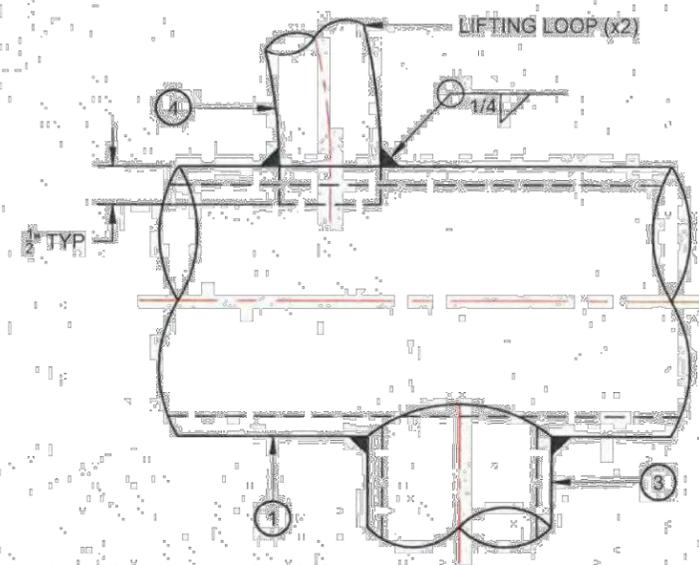
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Chris Campbell
 01/24/2017



SECTION A-A
 2 PLACES



DETAIL B
 4 PLACES

- GENERAL NOTES:**
1. QUANTITIES LISTED BELOW ARE FOR (1) TRASH GRATE.
 2. (4) TRASH GRATES REQUIRED.
 3. FINISH: HPIC SYSTEM #45 - ANTI-FOULING COATING.
 4. 1" FILLET WELD ALL AROUND, UNLESS NOTED OTHERWISE.
 5. TRASH GRATE HEIGHT AND WIDTH COORDINATED WITH AS-BUILT DIMENSIONS OF CONDUITS (RE. SHEET 1 OF 5).

BILL OF MATERIALS			
ITEM	DESCRIPTION	MAT	QTY
1	Ø3" SCH 40 PIPE X 10'-0" LONG (45° MITER EACH END)	304 SS	2
2	Ø3" SCH 40 PIPE X 8'-2" LONG (45° MITER EACH END)	304 SS	2
3	Ø2" SCH 40 PIPE X 10'-0" LONG (COPE EACH END)	304 SS	13
4	Ø1" SCH 40 PIPE X 1'-9" LONG (ROLL TO RADIUS SHOWN)	304 SS	2

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1"

TRASH GRATE WELDMENT

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SHEET: 3 OF 5	FILE: 501_Trash Rack.dwg	DATE: 4/22/2015	JOB: 501
SCALE: NTS	DRWN: NCD	CHKD: BDK	QTY: 4
TRASH GRATE WELDMENT			
LAKE HOUSTON PUMP STATION MISCELLANEOUS REHABILITATION			

Z:\Projects\Active Projects\501 - SJRA Lake Houston_P5102000 - Design\Drawings\Trash_Racks\501_Trash Rack.dwg

REFERENCE DRAWINGS FOR SAN JACINTO RIVER AUTHORITY REHABILITATION OF THE LAKE HOUSTON PUMP STATION FACILITIES



SHEET NUMBER	DRAWING TITLE
1 OF 12	COVER SHEET
2 OF 12	PIPING LAYOUT AND CONCRETE ENCASMENT
3 OF 12	SUBSTRUCTURE SECTIONS
4 OF 12	SUBSTRUCTURE DETAILS
5 OF 12	INTAKE CONDUITS - SUBSTRUCTURE DETAILS
6 OF 12	FLOOR FRAMING - STRUCTURAL DETAILS
7 OF 12	FLOOR PLAN ELEVATIONS
8 OF 12	BUILDING SECTION - STRUCTURAL DETAILS
9 OF 12	BUILDING FRAMING AND LADDER
10 OF 12	MISCELLANEOUS BUILDING DETAILS
11 OF 12	SCREEN GATE AND MOTOR BASE DETAILS
12 OF 12	JUNCTION BOX CONDUIT OUTLET

SHEET NUMBER	DRAWING TITLE
1 OF 4	LAKE PUMP STATION - MISCELLANEOUS DETAILS
2 OF 4	PUMPING STATION WIRING
3 OF 4	LAKE PUMP STATION - ELECTRIC SUBSTATION
4 OF 4	LAKE PUMP STATION - ELECTRIC SUBSTATION

SHEET NUMBER	DRAWING TITLE
1	PIPE SECTION AND DESIGN
2	LAYOUT OF PIPING AND DETAILS OF SPECIALS
3	DETAILS OF SPECIALS



Binkley & Barfield, Inc.
Consulting Engineers
1710 Seamist Drive Houston, Texas 77008

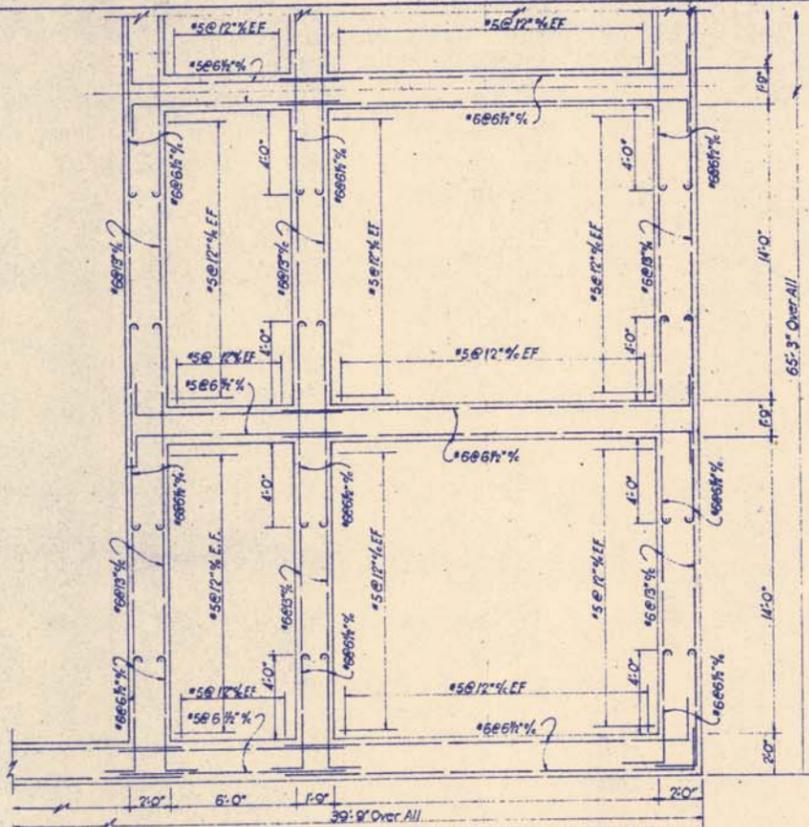
SAN JACINTO RIVER AUTHORITY
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SAN JACINTO RIVER PUMP STATION

1953

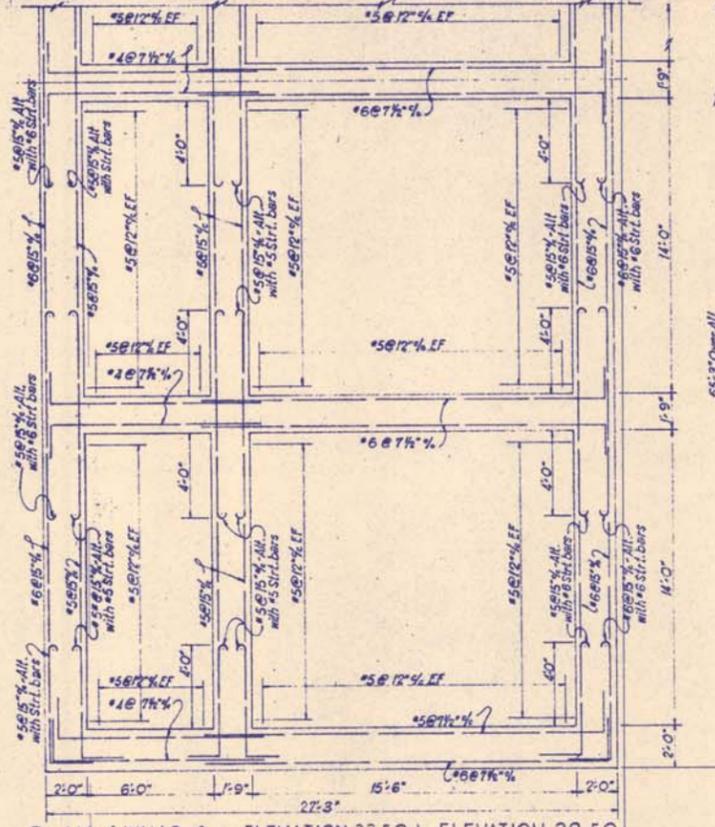
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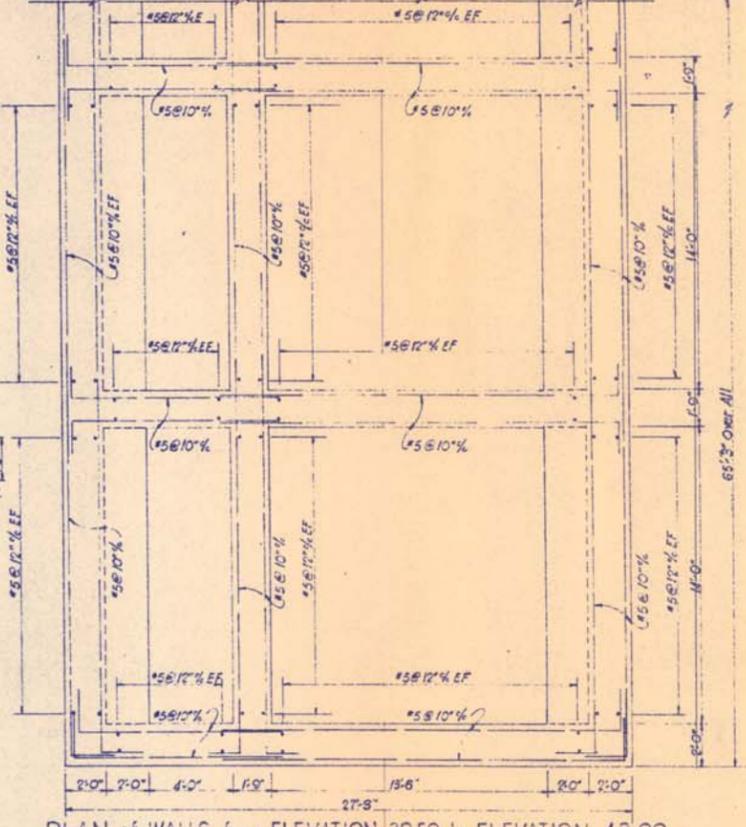
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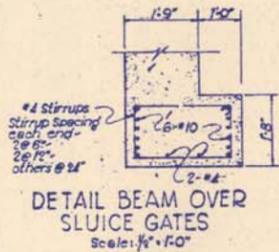
PLAN of WALLS from ELEVATION 28.50 to ELEVATION 33.50
Scale: 1/4" = 1'-0"



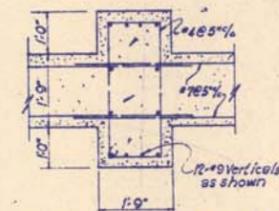
PLAN of WALLS from ELEVATION 33.50 to ELEVATION 38.50
Scale: 1/4" = 1'-0"



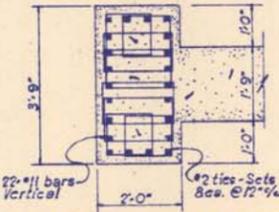
PLAN of WALLS from ELEVATION 38.50 to ELEVATION 48.00
Scale: 1/4" = 1'-0"



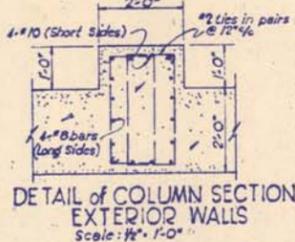
DETAIL BEAM OVER SLUICE GATES
Scale: 1/2" = 1'-0"



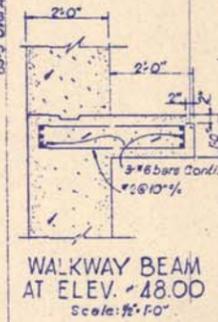
DETAIL of COLUMN SECTION INTERIOR WALLS
Scale: 1/2" = 1'-0"



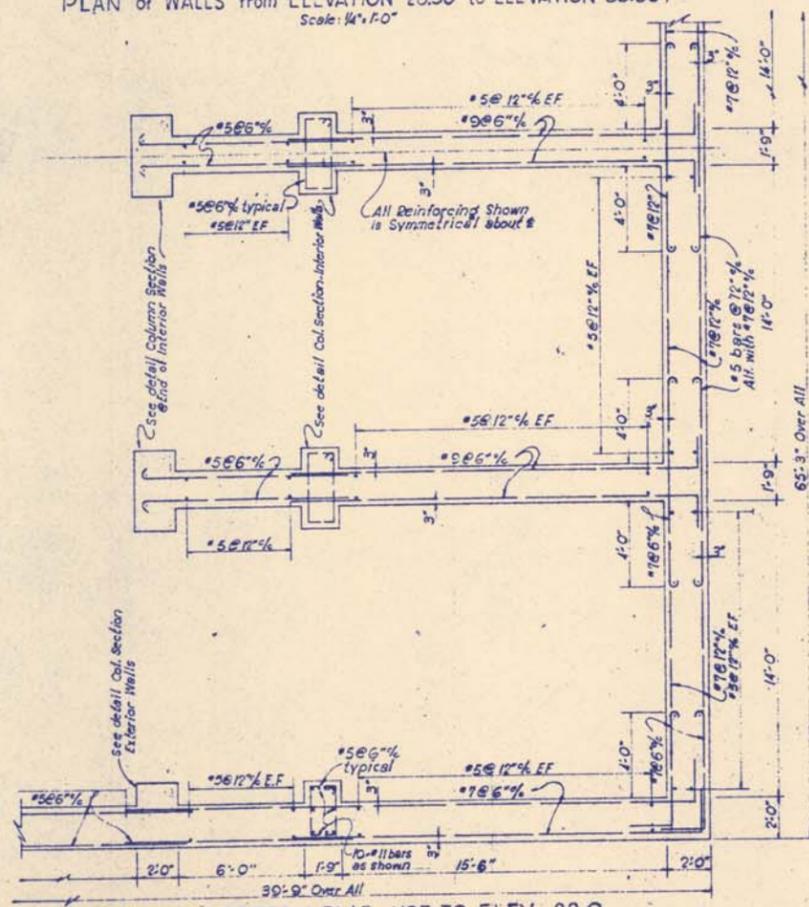
DETAIL of COLUMN SECTION AT END of INTERIOR WALLS
Scale: 1/2" = 1'-0"



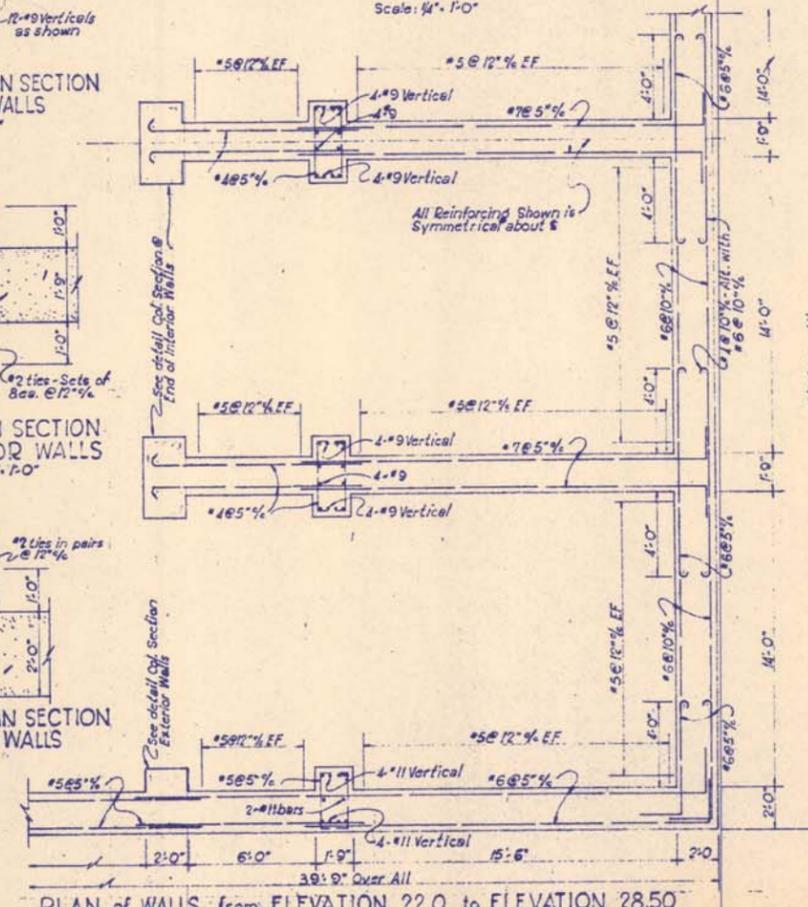
DETAIL of COLUMN SECTION EXTERIOR WALLS
Scale: 1/2" = 1'-0"



WALKWAY BEAM AT ELEV. 48.00
Scale: 1/2" = 1'-0"

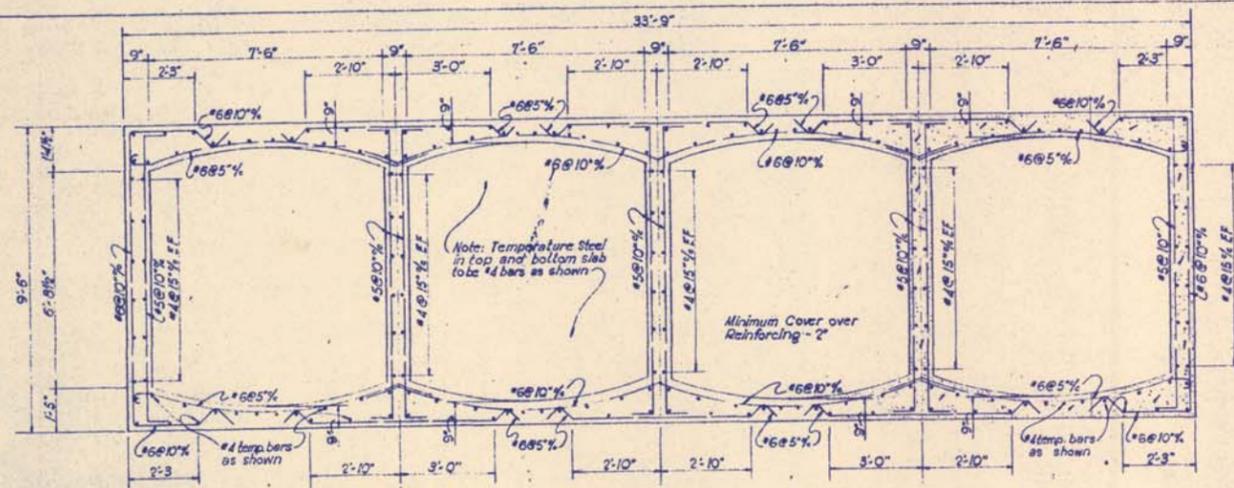


PLAN of WALLS @ BOTTOM SLAB-USE TO ELEV. 22.0
Scale: 1/4" = 1'-0"

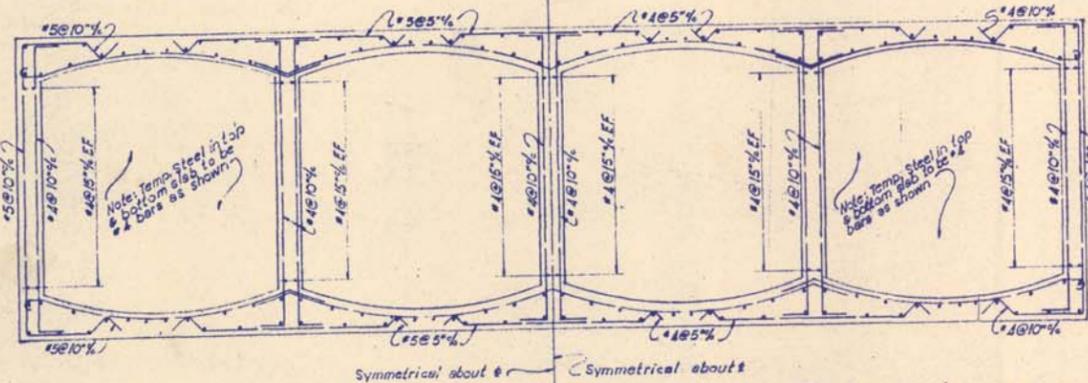


PLAN of WALLS from ELEVATION 22.0 to ELEVATION 28.50
Scale: 1/4" = 1'-0"

SAN JACINTO RIVER AUTHORITY		
JOB NO 5314	SUBSTRUCTURE DETAILS	DATE: APRIL 1953
DESIGNED WLE	FREESE AND NICHOLS CONSULTING ENGINEERS FORT WORTH, TEXAS	SHEET NO. 4
DRAWN WJA		OF 12
CHECKED SWF		

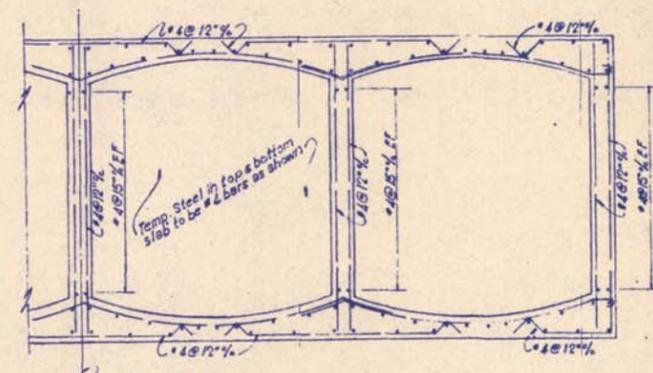


TYPICAL SECTION - INTAKE CONDUIT AT PUMP STRUCTURE
Scale: 3/8" = 1'-0"

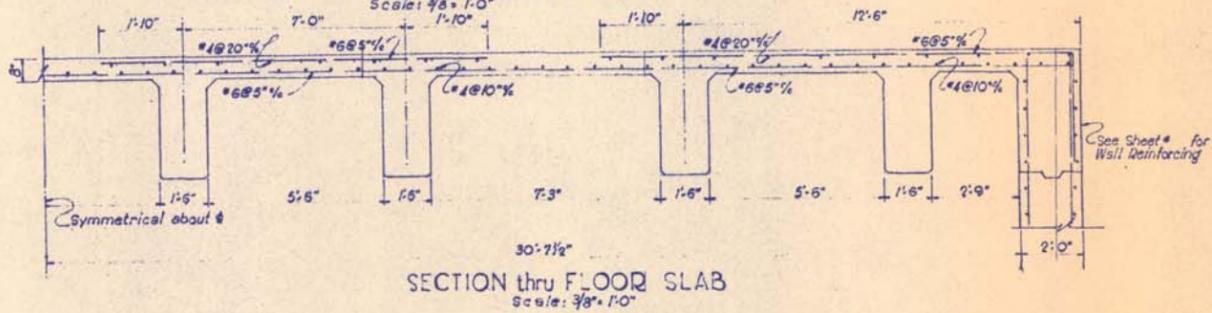


SECTION - INTAKE CONDUIT - 25 FEET OUT FROM PUMP STRUCTURE
Scale: 3/8" = 1'-0"

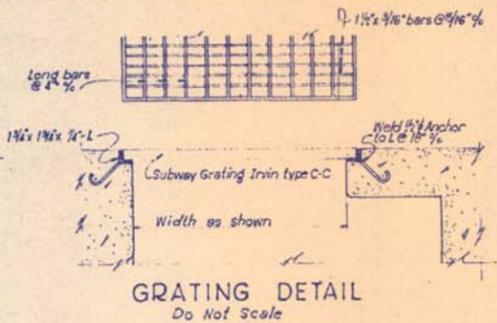
SECTION - INTAKE CONDUIT - 45 FEET OUT FROM PUMP STRUCTURE
Scale: 3/8" = 1'-0"



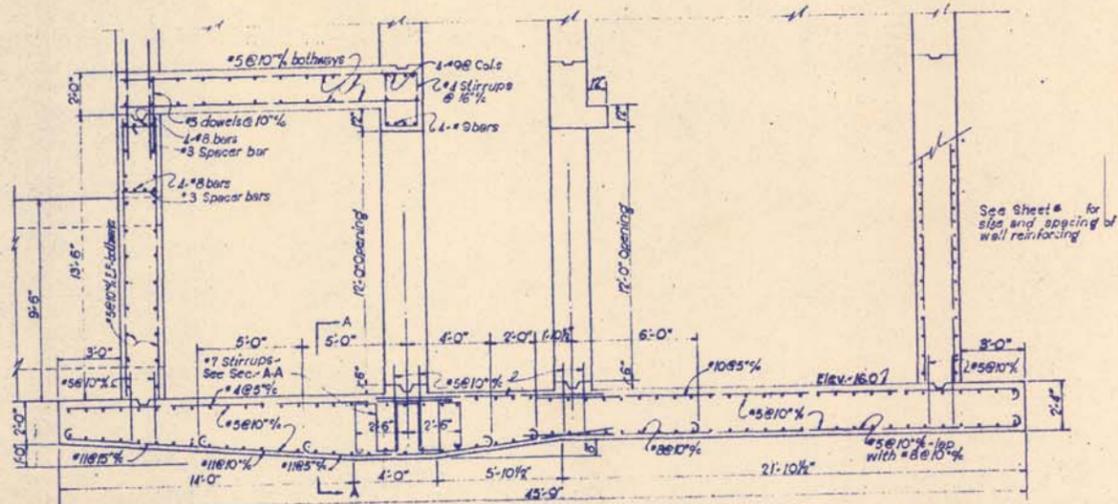
SECTION - INTAKE CONDUIT - 65 FEET OUT FROM PUMP STRUCTURE
Scale: 3/8" = 1'-0"



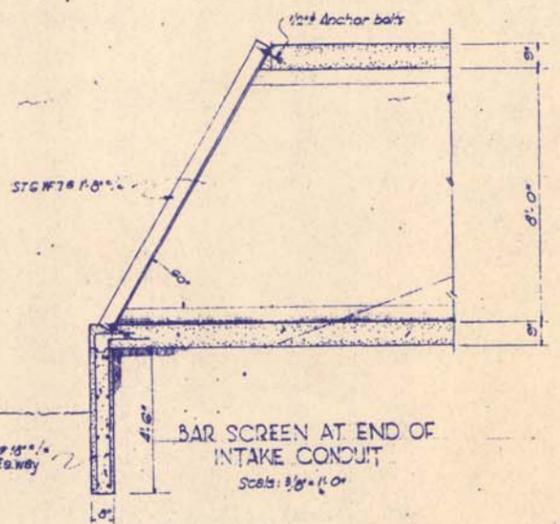
SECTION thru FLOOR SLAB
Scale: 3/8" = 1'-0"



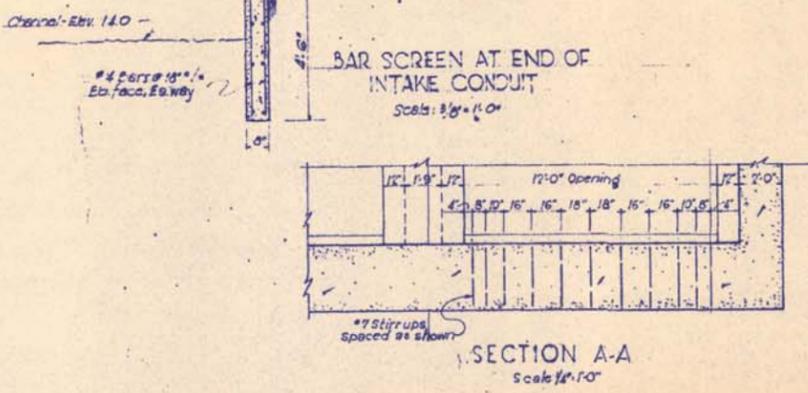
GRATING DETAIL
Do Not Scale



PART ELEVATION showing REINFORCING for BOTTOM SLAB and DISTRIBUTION BOX
Scale: 1/4" = 1'-0"

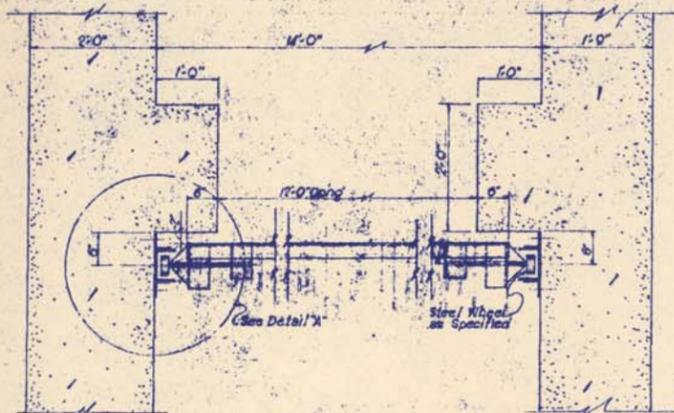


ELEVATION
Scale: 3/8" = 1'-0"
INTAKE CONDUIT WALL AT PUMP STRUCTURE - TYPICAL

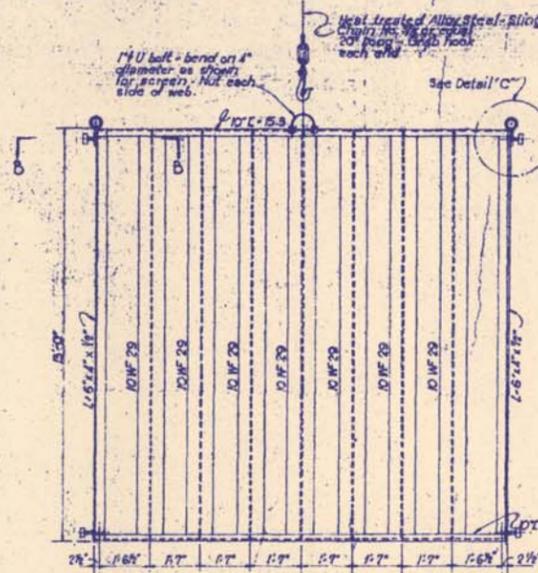


SECTION A-A
Scale: 1/4" = 1'-0"

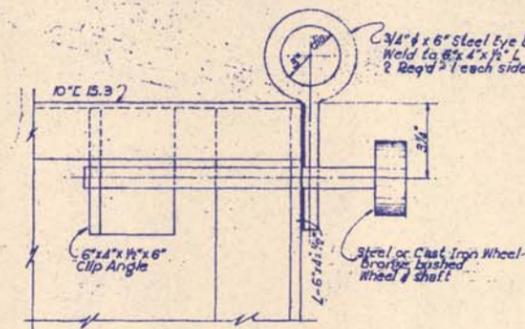
SAN JACINTO RIVER AUTHORITY		
JOB NO. 5314	INTAKE CONDUIT SUBSTRUCTURE DETAILS	DATE: APRIL 1953
DESIGNED WLE	FREES AND NICHOLS CONSULTING ENGINEERS	SHEET NO. 5
DRAWN RSM	FORT WORTH, TEXAS	OF 12
CHECKED SWP		



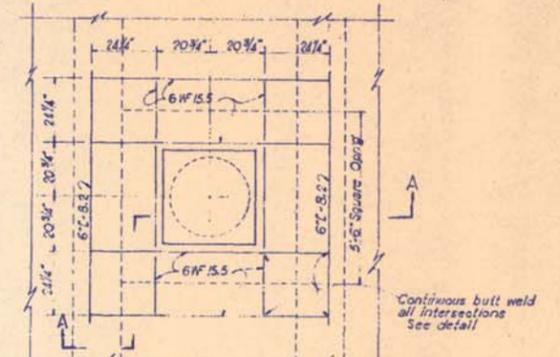
PLAN OF BAR SCREEN
Scale: 3/4" = 1'-0"



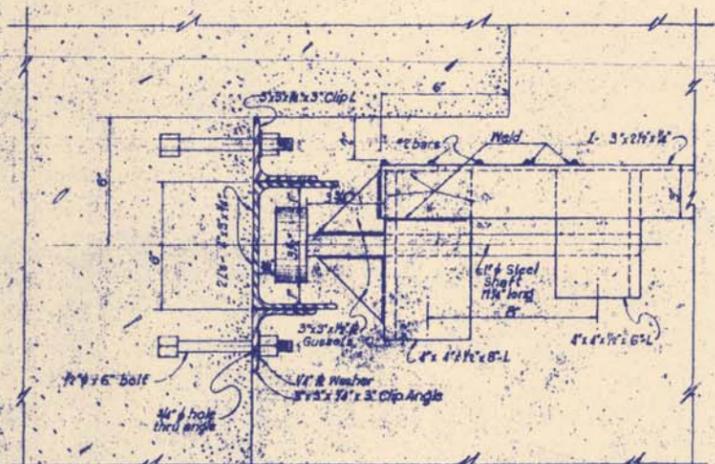
SLUICE GATE REAR ELEVATION
Scale: 3/8" = 1'-0"



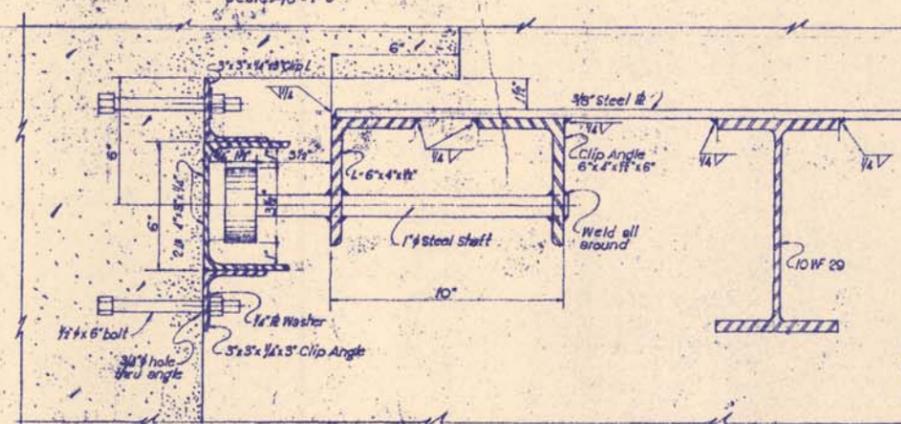
DETAIL "C"
Scale: 3" = 1'-0"



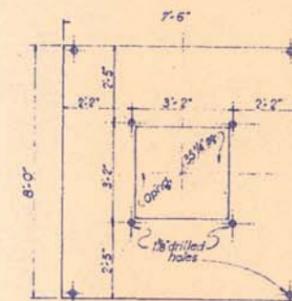
FRAMING PLAN PUMP SUPPORT
Scale: 3/8" = 1'-0"



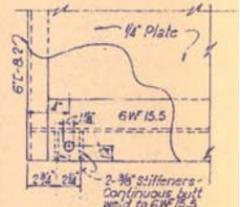
DETAIL "A"
Scale: 3" = 1'-0"



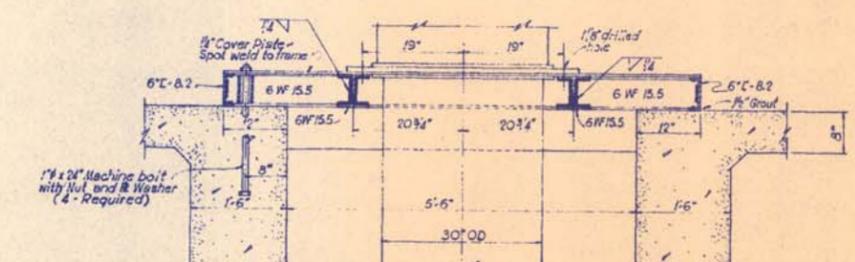
SECTION B-B
Scale: 3" = 1'-0"



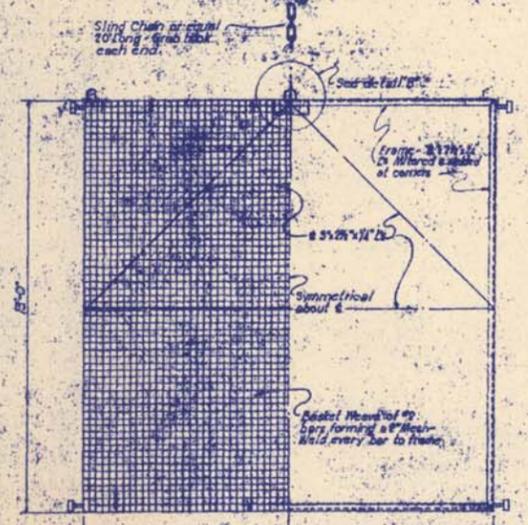
PLAN COVER PLATE
Scale: 3/8" = 1'-0"



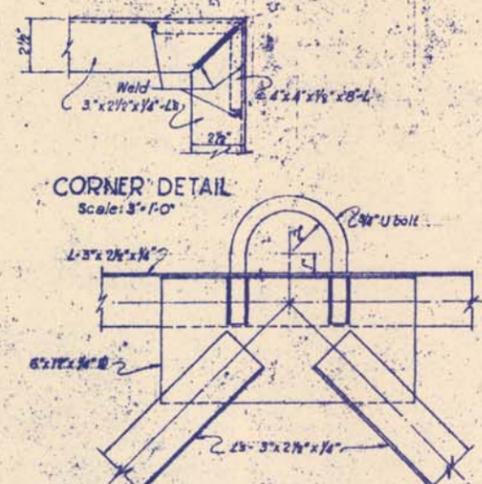
PLAN ANCHOR BOLT
Scale: 1 1/2" = 1'-0"



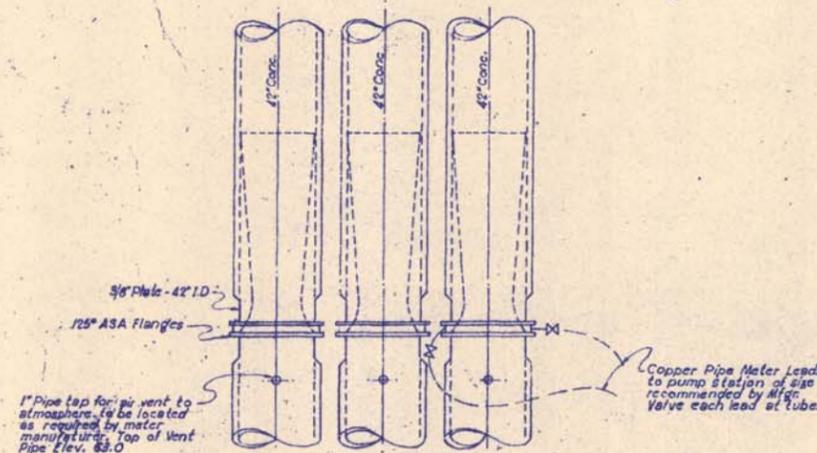
SECTION A-A
Scale: 3/4" = 1'-0"



SCREEN FRONT ELEVATION - 1 REQD
Scale: 3/8" = 1'-0"



CORNER DETAIL
Scale: 3" = 1'-0"



DETAIL OF VENTURI TUBES
Do Not Scale

SAN JACINTO RIVER AUTHORITY		
JOB NO 5314	SCREEN-GATE AND MOTOR BASE DETAILS	DATE: APRIL 1953
DESIGNED W.L.E.	FRESE AND NICHOLS CONSULTING ENGINEERS FORT WORTH, TEXAS	SHEET NO 11
CHECKED S.W.F.		OF 12