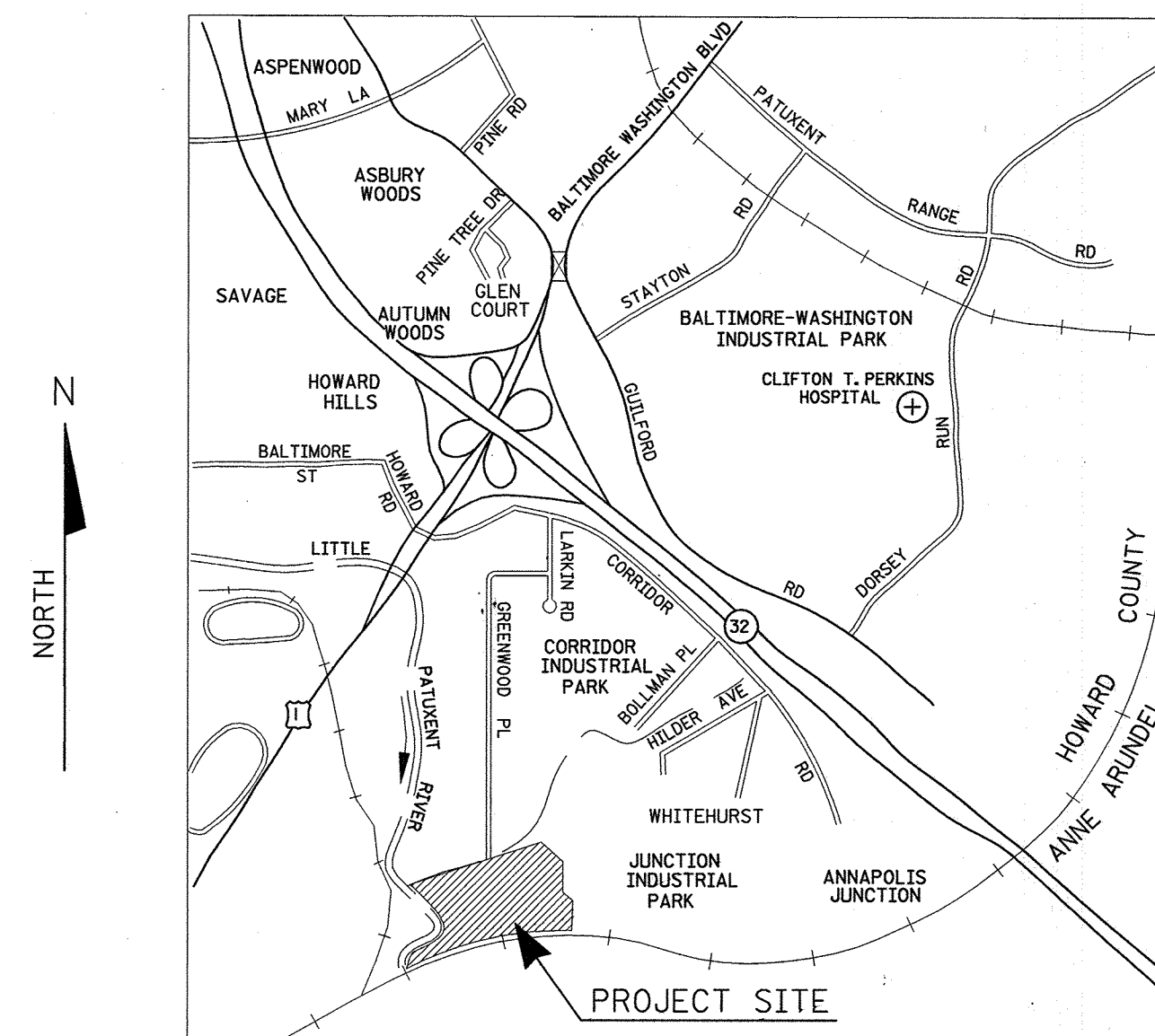


HOWARD COUNTY, MARYLAND LITTLE PATUXENT WATER RECLAMATION PLANT

STRUCTURAL IMPROVEMENTS CAPITAL PROJECT NO. S-6223 CONTRACT NO. 20-3843



VICINITY MAP

SCALE IN FEET 0 1000 2000 4000 6000
SCALE: 1"= 2000'

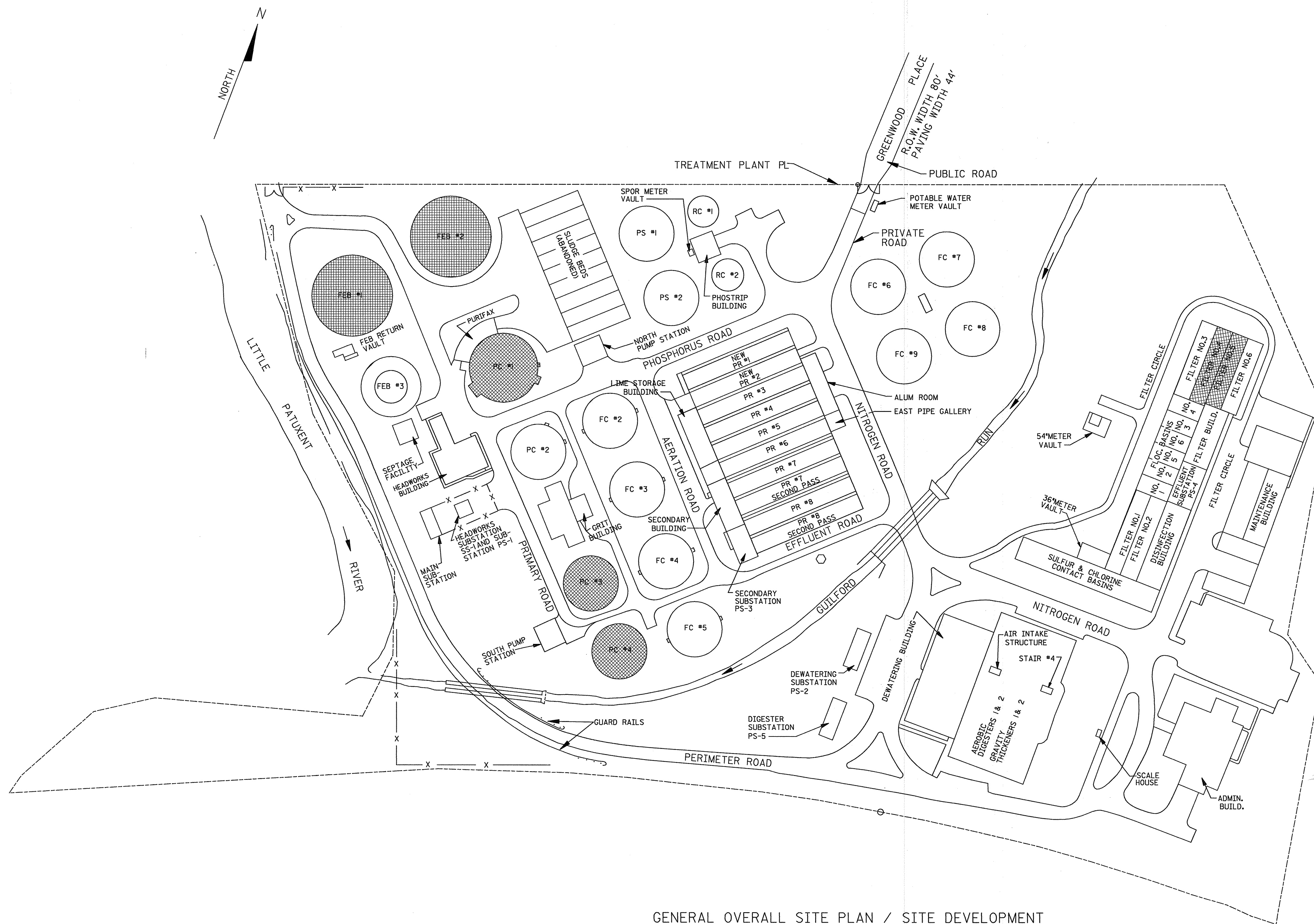
DRAWING NUMBER	SHEET NUMBER	DRAWING TITLE
T-1	1 OF 14	TITLE PAGE
SI-1	2 OF 14	OVERALL PLAN
S-1	3 OF 14	FEB-2 WALKWAY REPAIRS PLAN, SECTIONS AND DETAILS
S-2	4 OF 14	FEB-2 WALKWAY REPAIRS SECTIONS AND DETAILS
S-3	5 OF 14	FLOW EQUALIZATION BASIN No. 1
S-4	6 OF 14	FLOW EQUALIZATION BASIN No. 2
S-5	7 OF 14	FEB-1 AND FEB-2 PHOTOGRAPHS
S-6	8 OF 14	PRIMARY CLARIFIER No. 1 PLANS AND DETAILS
S-7	9 OF 14	PRIMARY CLARIFIER No. 3 & No. 4 PLANS AND DETAILS
S-8	10 OF 14	PC-1 AND PC-4 PHOTOGRAPHS
S-9	11 OF 14	PC-3 PHOTOGRAPHS
S-10	12 OF 14	PC-3 PHOTOGRAPHS
S-11	13 OF 14	SAND FILTERS NO. 4 AND NO. 5 PLAN, SECTION AND DETAILS
S-12	14 OF 14	SAND FILTERS NO. 4 AND NO. 5 PHOTOGRAPHS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 7/6/00 DATE
DIRECTOR OF PUBLIC WORKS
[Signature] 7/7/00 DATE
CHIEF, BUREAU OF ENGINEERS
[Signature] 7-6-00 DATE
CHIEF, BUREAU OF UTILITIES

**BUCHART
HORN, INC.**
3000 CHESTNUT AVENUE
SUITE 400
BALTIMORE, MD 21211
Engineers, Architects and Planners





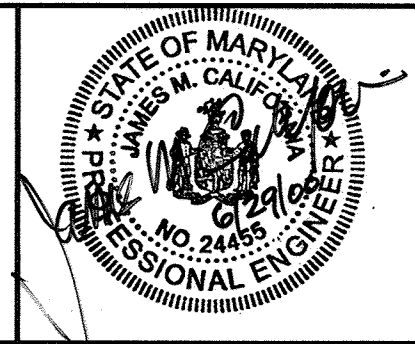
LEGEND:
 - INDICATES AREA OF NEW WORK.

- GENERAL NOTES:**
1. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING SERVICES, PIPELINES, UTILITIES AND EQUIPMENTS, ANY DAMAGE TO THEM DUE TO HIS NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE COUNTY AT THE CONTRACTOR'S EXPENSE.
 2. CONTRACTOR SHALL NOT OPERATE ANY VALVES OR HYDRANTS WITHOUT PLANT PERSONNEL'S PERMISSION.
 3. DAMAGE TO PAVED ROADWAYS, SIDEWALKS, AND CURBS THAT IS ATTRIBUTABLE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED OR REPAIRED IN KIND BY THE CONTRACTOR AT HIS OWN EXPENSE.
 4. INFORMATION SHOWN FOR THE EXISTING STRUCTURES ON THESE DRAWINGS IS TAKEN FROM PREVIOUS CONTRACTS' DRAWINGS PROVIDED BY THE COUNTY.

GENERAL OVERALL SITE PLAN / SITE DEVELOPMENT
 SCALE IN FEET 0 50 100 200 300
 SCALE: 1" = 100'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Robert W. Bevington
 CHIEF, BUREAU OF UTILITIES
 7-6-00
 DATE

BUCHART HORN, INC.
 3000 CHESTNUT AVENUE
 SUITE 401
 BALTIMORE, MD 21211
 Engineers, Architects and Planners

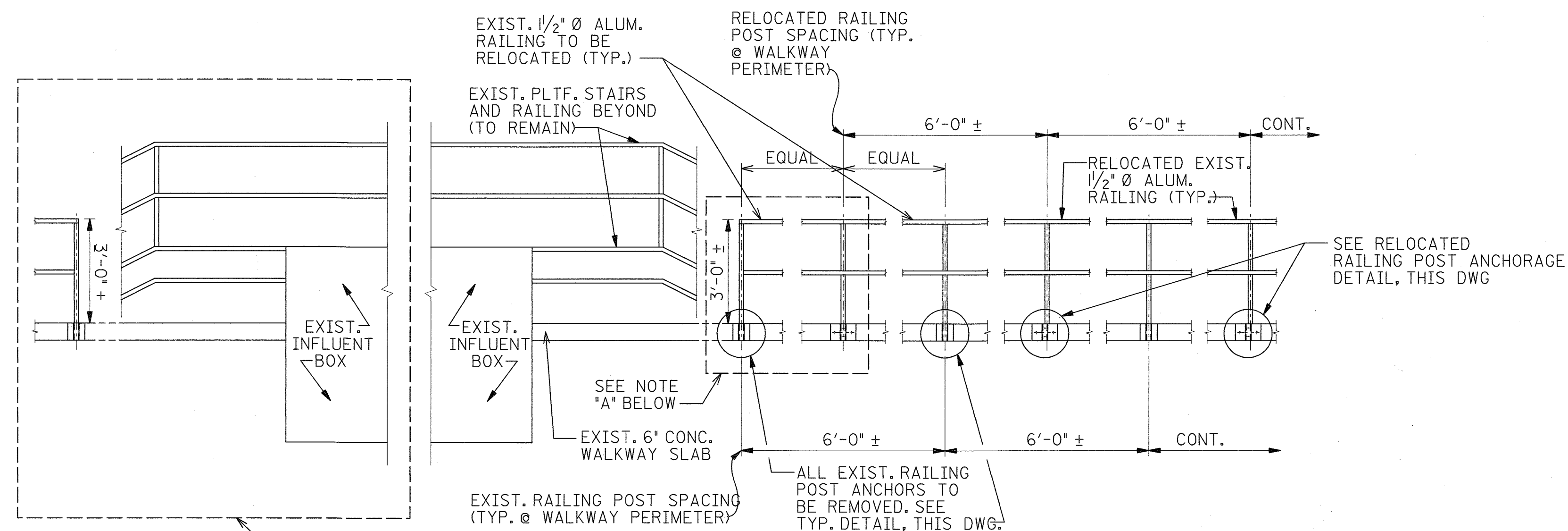


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DRN:	BB
CHK:	HG
DATE:	5/1/00
BY:	NO.
REVISION	DATE

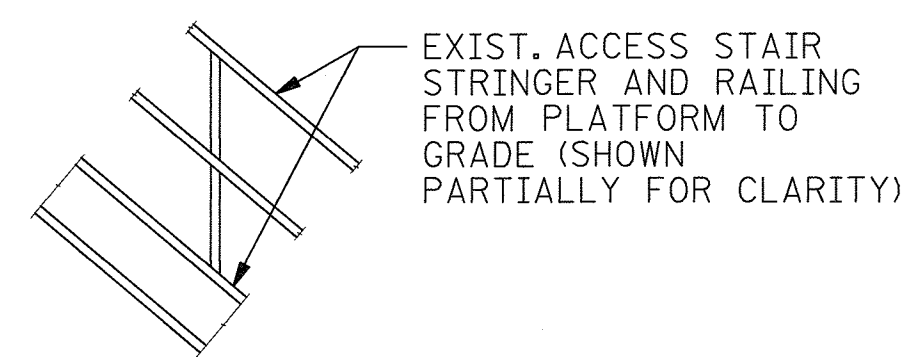
OVERALL PLAN

LITTLE PATUXENT WATER RECLAMATION PLANT
 STRUCTURAL IMPROVEMENTS
 CAPITAL PROJECT NO. S-6223
 CONTRACT NO. 20-3843
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 2 OF 14
 SI-1



SEE NOTE "B" BELOW

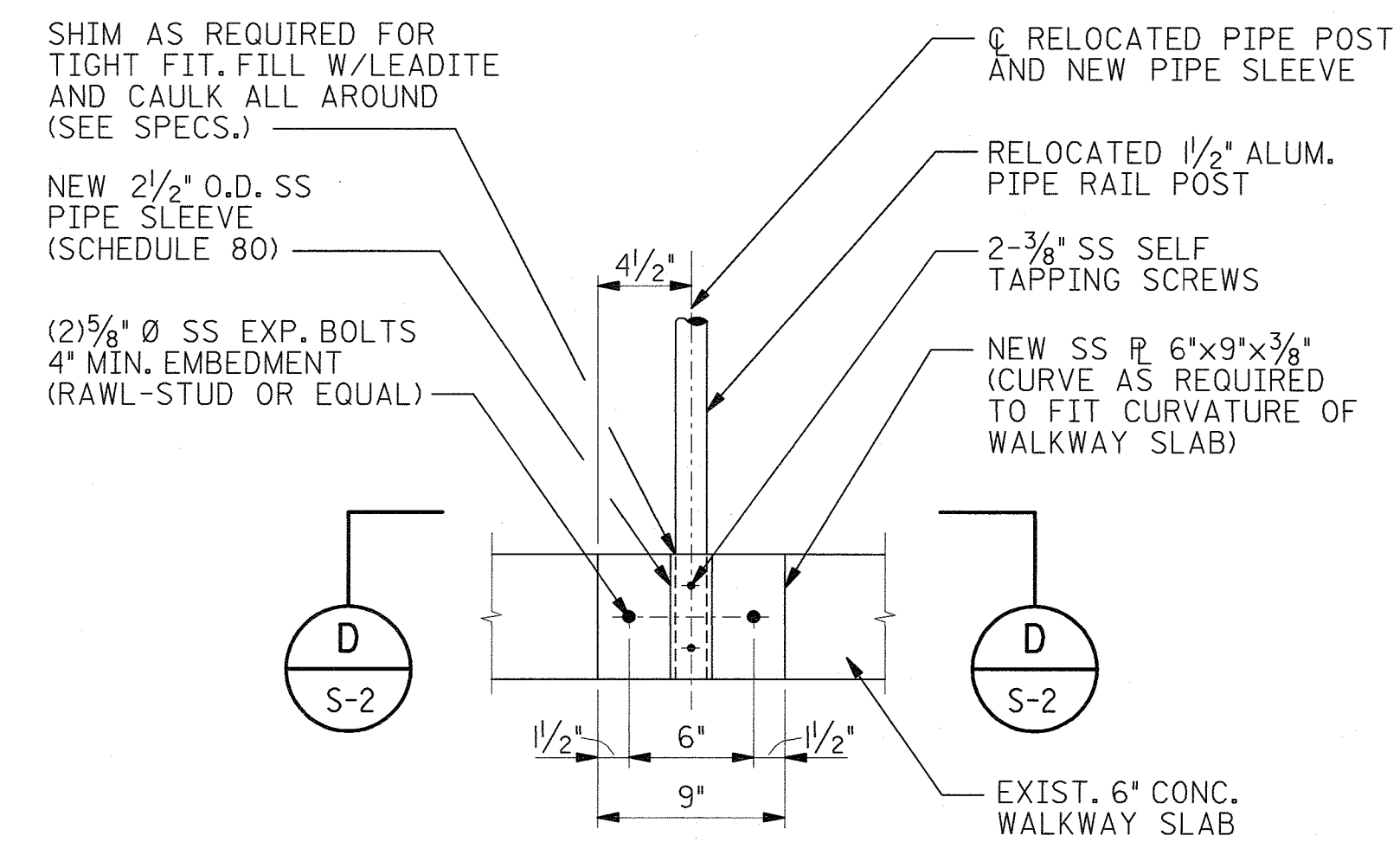


SECTION B-B

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

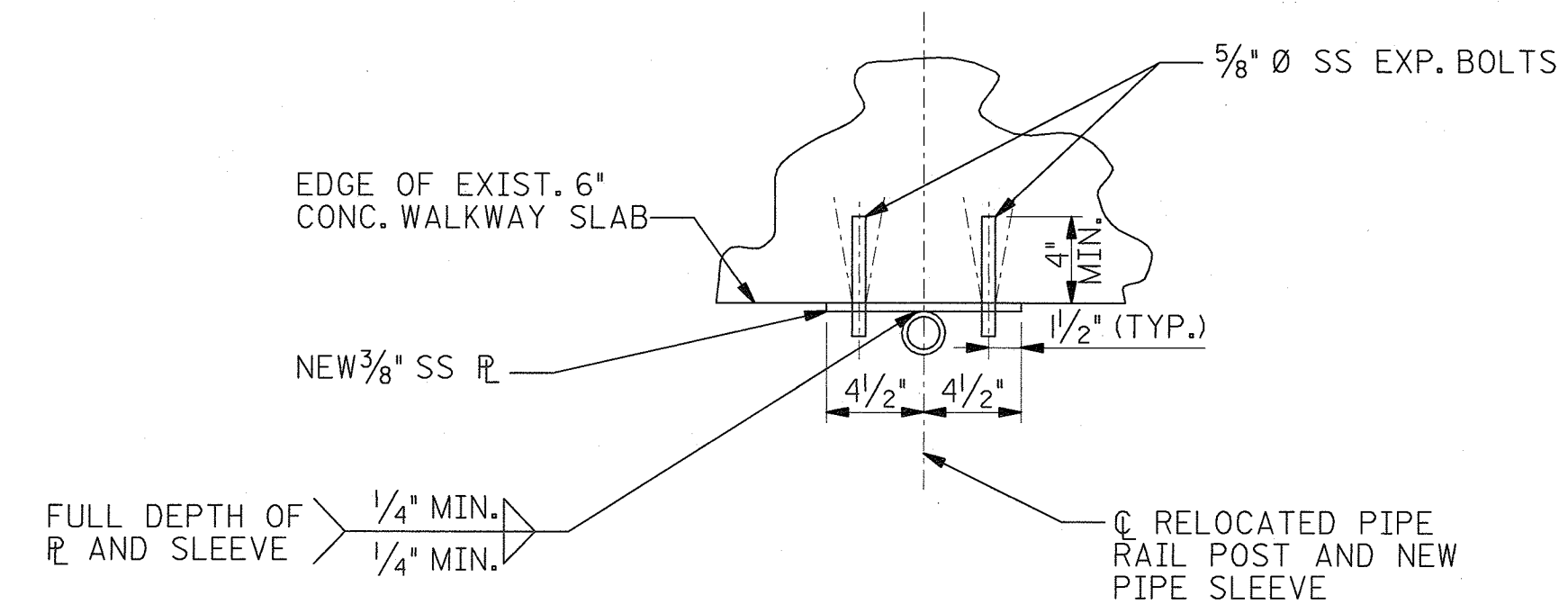
NOTES:

- A. PROVIDE NEW 1/2" Ø ALUM. PIPE POST AND 3'-0" ± LENGTH OF NEW ALUM RAILING THIS AREA TO MATCH EXIST. AFTER REMOVAL OF EXIST POST ANCHORAGE AND REPAIR OF DETERIORATED CONC., LOCATE NEW POST IN SAME LOCATION AS EXIST. POST THAT WAS RELOCATED. ANCHORAGE FOR THIS NEW POST TO BE PER TYPICAL RELOCATED ALUM. RAILING POST ANCHORAGE DETAIL, ON THIS DWG. PROVIDE CONNECTIONS FOR ALL HORIZONTAL RAILING MEMBERS TO BOTH POSTS SPACED AT 3'-0" ± AT THIS LOCATION.
- B. RAILING POST ADJACENT TO BOTTOM OF STAIR THIS SIDE OF EXIST INFLUENT BOX TO BE AT SAME LOCATION AS EXISTING POST. AFTER REMOVAL OF EXISTING POST ANCHORAGE AND REPAIR OF DETERIORATED CONCRETE, ANCHOR THE POST AT THIS LOCATION PER TYPICAL RELOCATED ALUM. RAILING POST ANCHORAGE DETAIL ON THIS DWG. MODIFY 6'-0" ± LENGTH OF EXIST. RAILING AS REQUIRED TO PROVIDE A 3'-0" ± LENGTH OF RAILING. PROVIDE CONNECTIONS FOR ALL HORIZ. RAILING MEMBERS TO BOTH POSTS AT THIS LOCATION.



TYPICAL RELOCATED ALUM. RAILING POST ANCHORAGE DETAIL

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



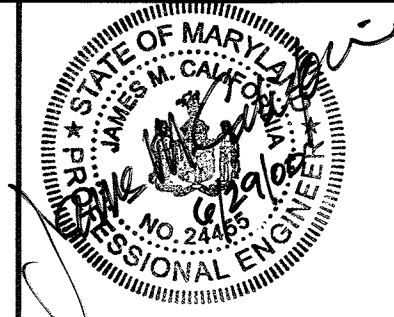
SECTION D-D

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Bainger 7-6-00
CHIEF, BUREAU OF UTILITIES DATE

BUCHART HORN, INC.
3000 CHESTNUT AVENUE
SUITE 400
BALTIMORE, MD 21211
Engineers, Architects and Planners

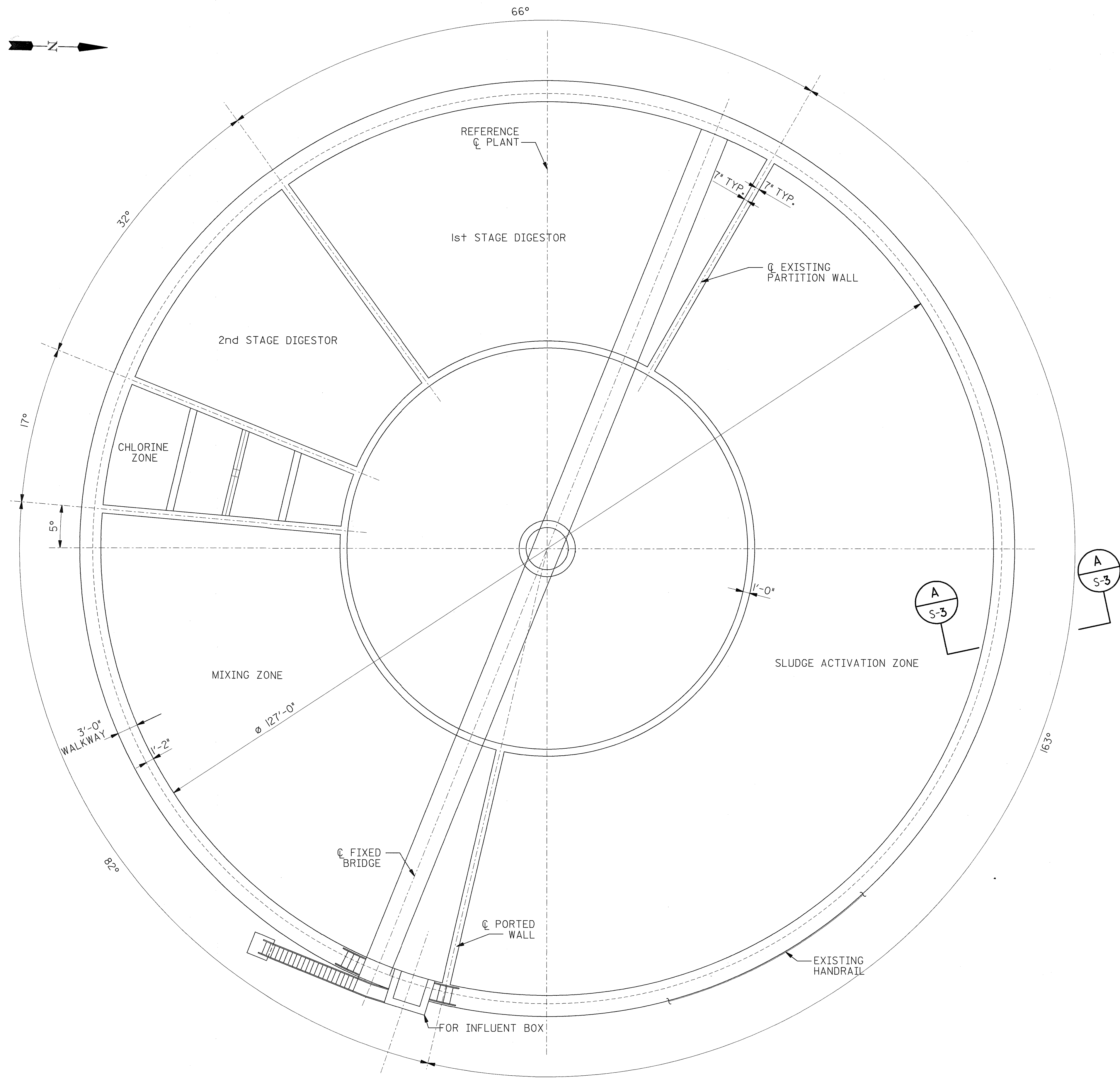


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DRN:	BB			
CHK:	HG			
DATE:	5/11/00	BY	NO.	REVISION
				DATE

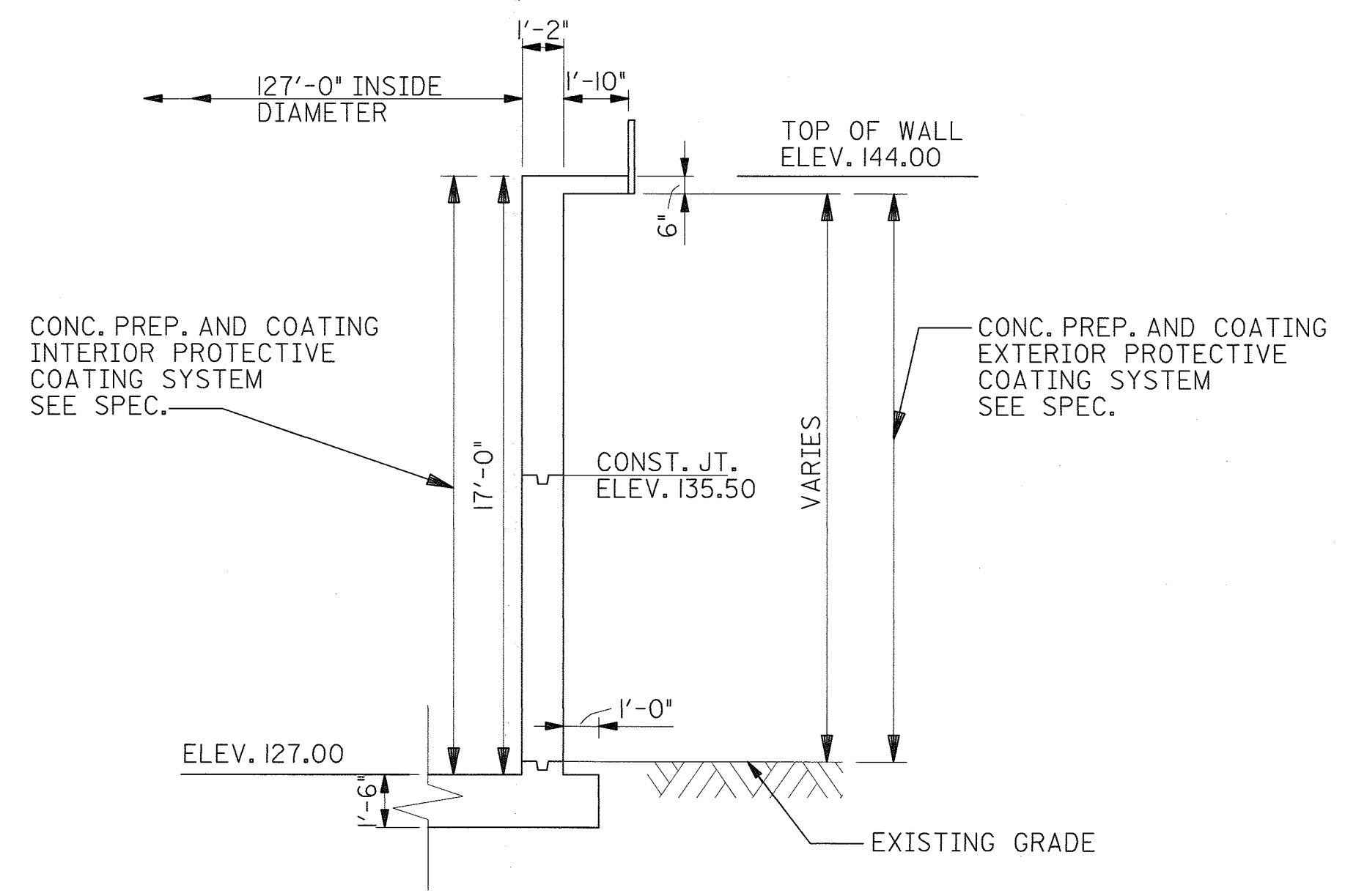
FEB-2
WALKWAY REPAIRS
SECTIONS AND DETAIL

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 14
S-2



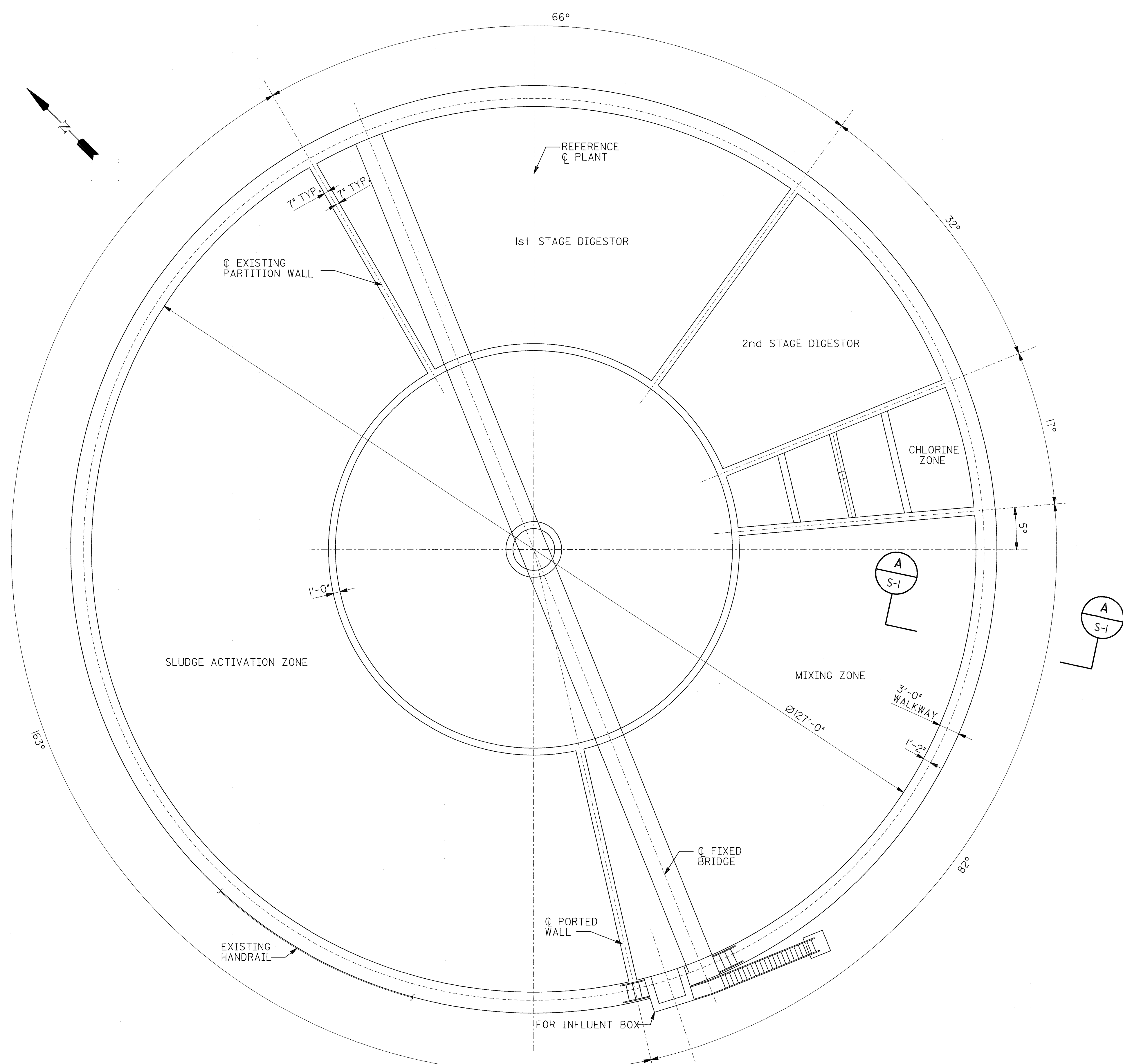
PLAN - EXISTING FLOW EQUALIZATION BASIN I (FEB-1)
N.T.S



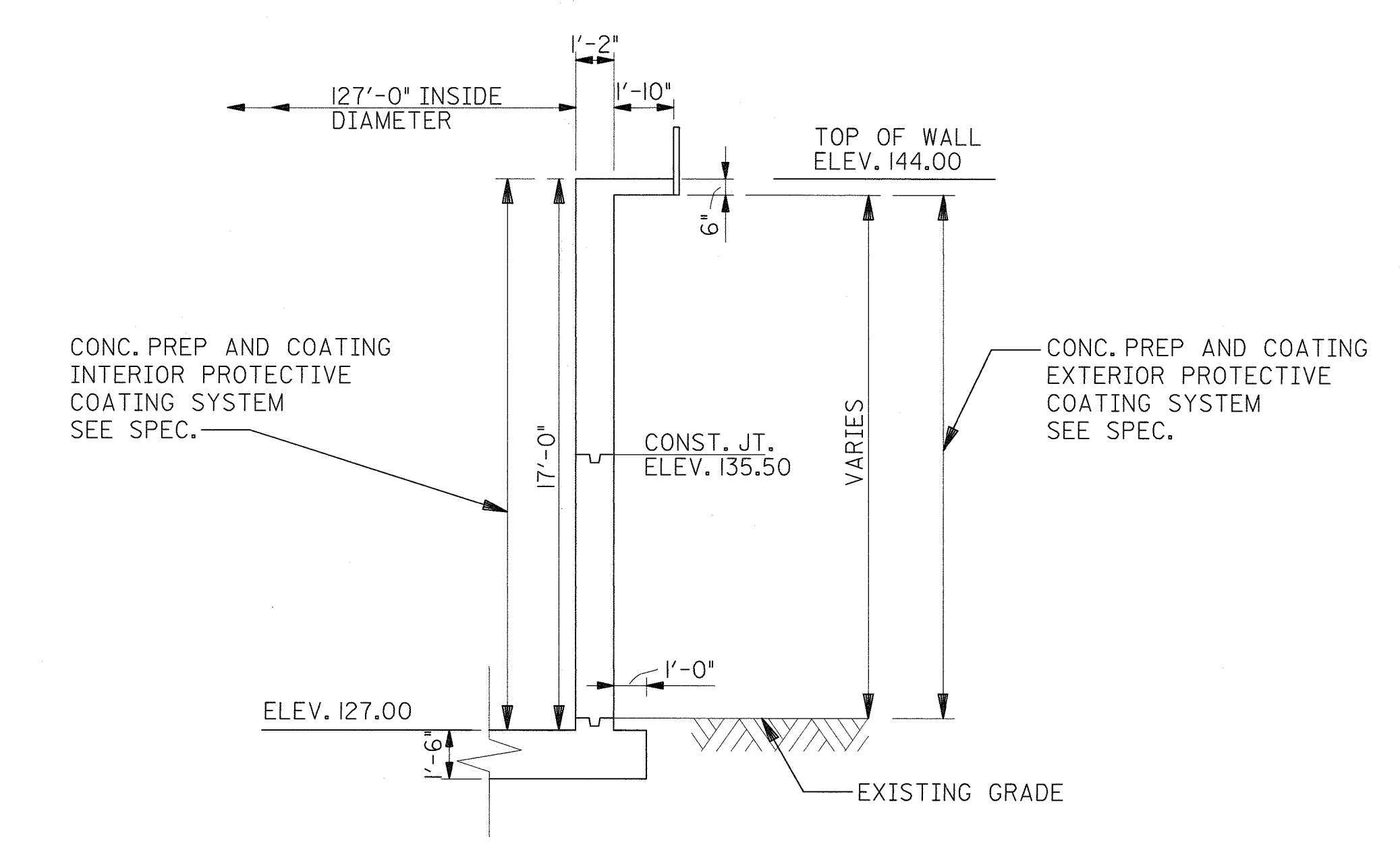
TYPICAL EXIST. EXTERIOR SECTION A-A
N.T.S.

- NOTES:
1. COATING OF INTERIOR BAFFLES AND PARTITIONS ARE NOT IN THIS CONTRACT.
 2. TANK IS SHOWN FOR GENERAL PURPOSE ONLY.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert M. Berger</i> 7-6-00 CHIEF, BUREAU OF UTILITIES	BUCHART HORNING 3000 CHESTNUT AVENUE SUITE 400 BALTIMORE, MD 21211 Engineers, Architects and Planners		DES:				FLOW EQUALIZATION BASIN No. 1	LITTLE PATUXENT WATER RECLAMATION PLANT STRUCTURAL IMPROVEMENTS CAPITAL PROJECT NO. S-6223 CONTRACT NO. 20-3843 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: BB						SHEET 5 OF 14
			CHK: HG						
			DATE: 5/11/00	BY NO.		REVISION	DATE		S-3



PLAN - EXISTING FLOW EQUALIZATION BASIN 2 (FEB-2)
N.T.S.



TYPICAL EXIST. EXTERIOR SECTION A-A
N.T.S.

- NOTES:
1. COATING OF INTERIOR BAFFLES AND PARTITIONS ARE NOT IN THIS CONTRACT.
 2. TANK IS SHOWN FOR GENERAL PURPOSE ONLY.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert W. Berger</i> 7-6-00 CHIEF, BUREAU OF UTILITIES	BUCHART HORNING 3000 CHESTNUT AVENUE BALTIMORE, MD 21211 Engineers, Architects and Planners		DES:				FLOW EQUALIZATION BASIN No. 2	LITTLE PATUXENT WATER RECLAMATION PLANT STRUCTURAL IMPROVEMENTS CAPITAL PROJECT NO. S-6223 CONTRACT NO. 20-3843 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: BB						SHEET 6 OF 14
			CHK: HG						
			DATE: 5/11/00	BY NO.		REVISION	DATE		S-4



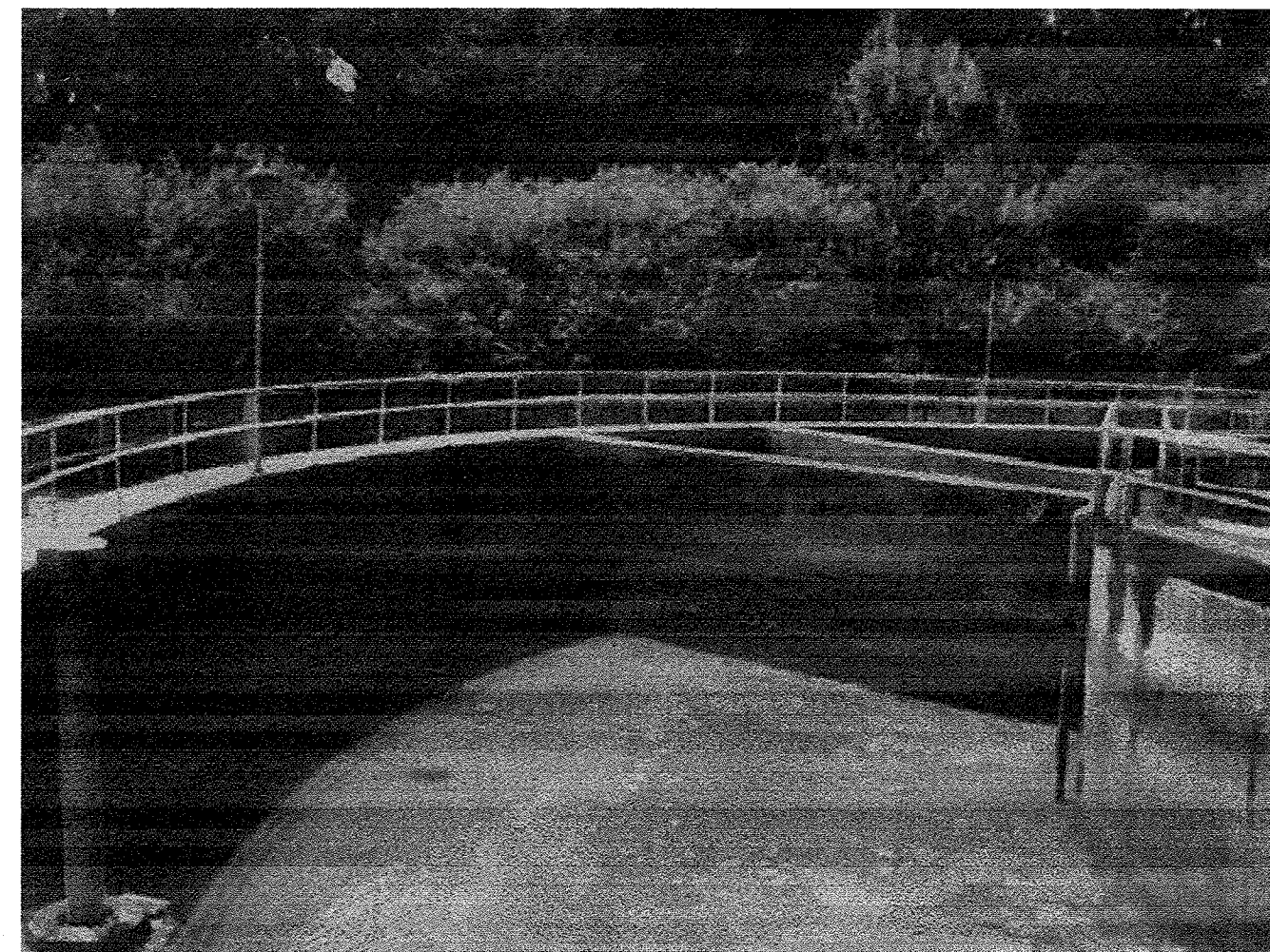
FEB-1



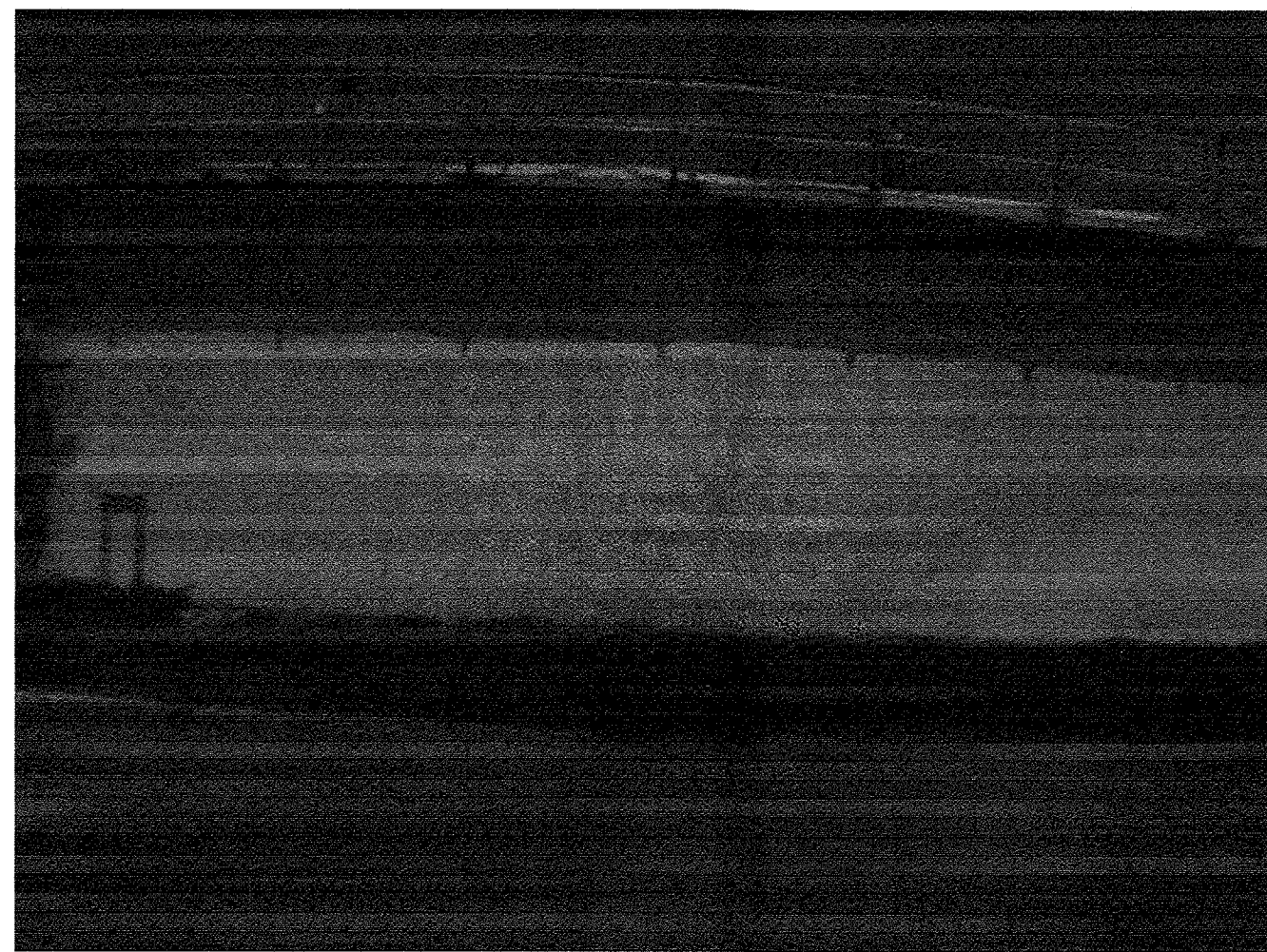
FEB-1



FEB-1



FEB-1



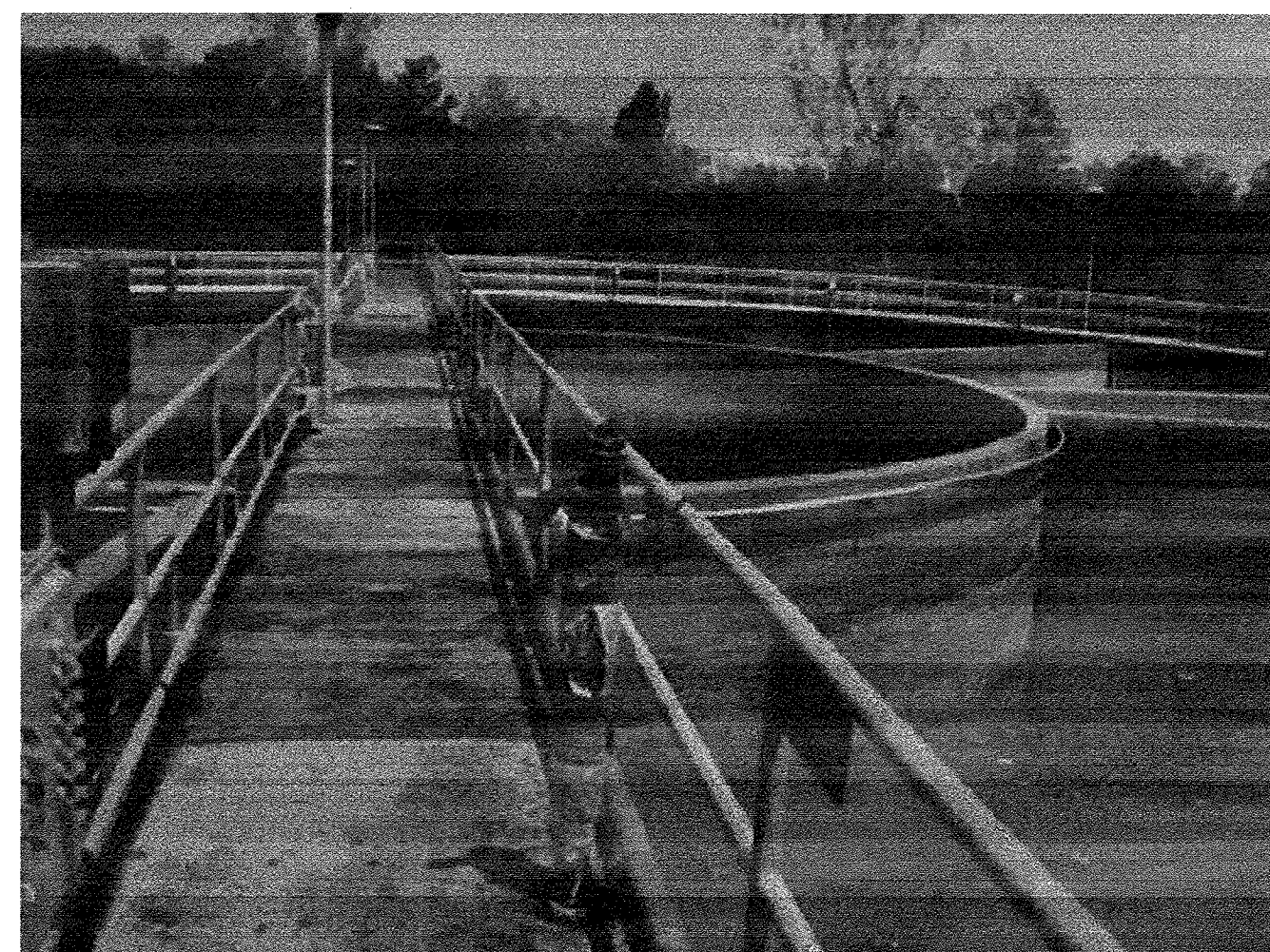
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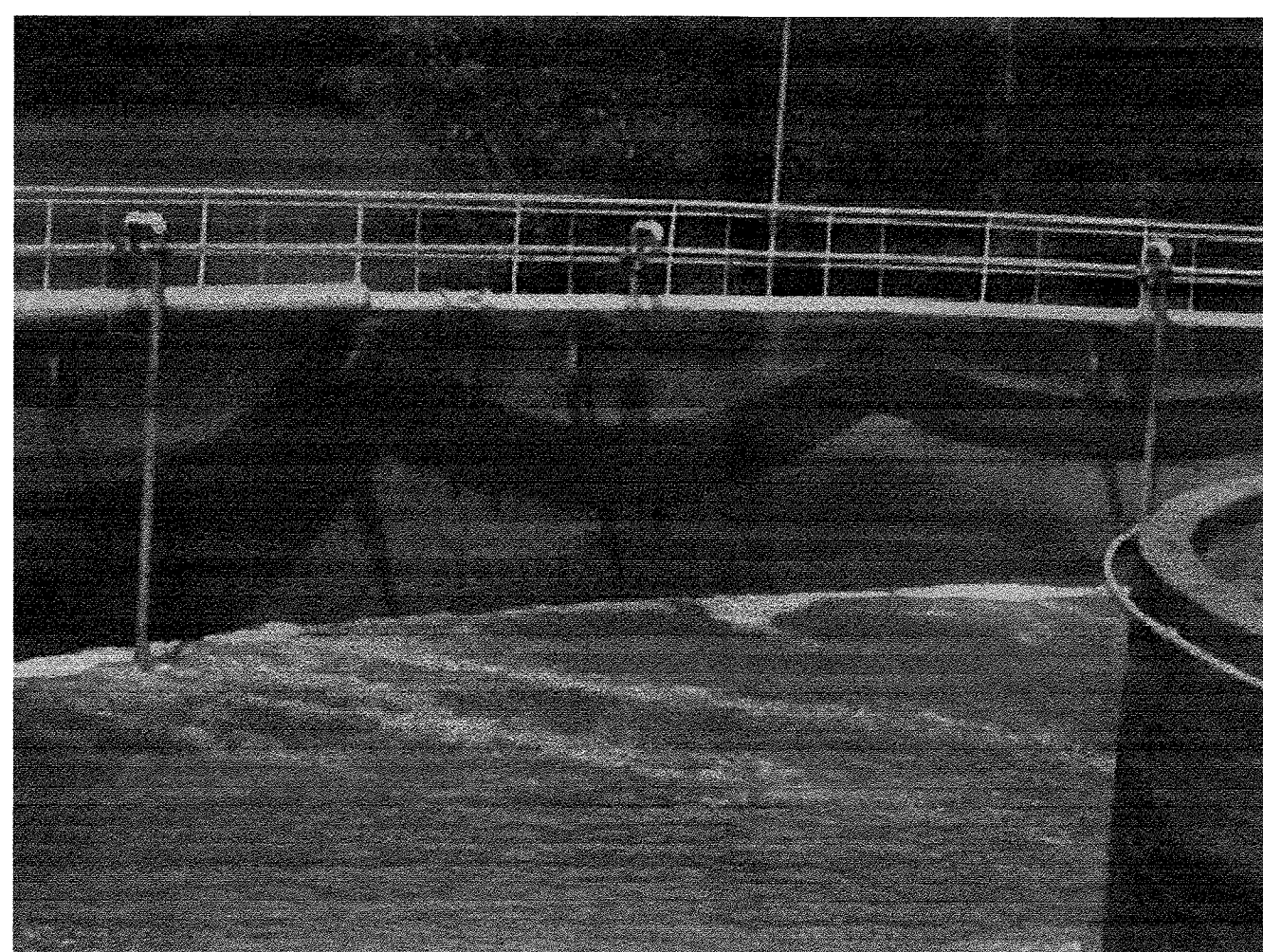
FEB-2



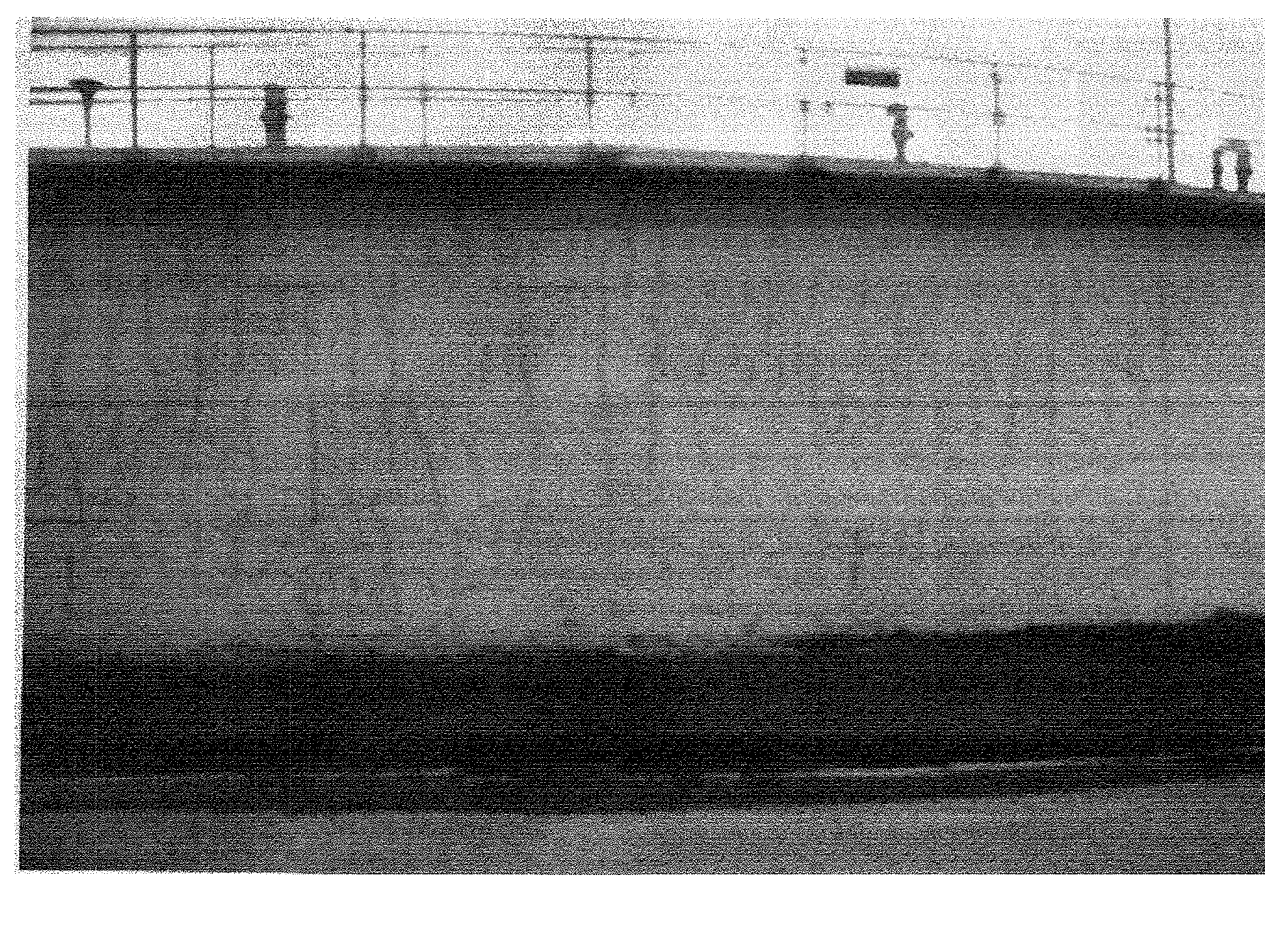
FEB-2



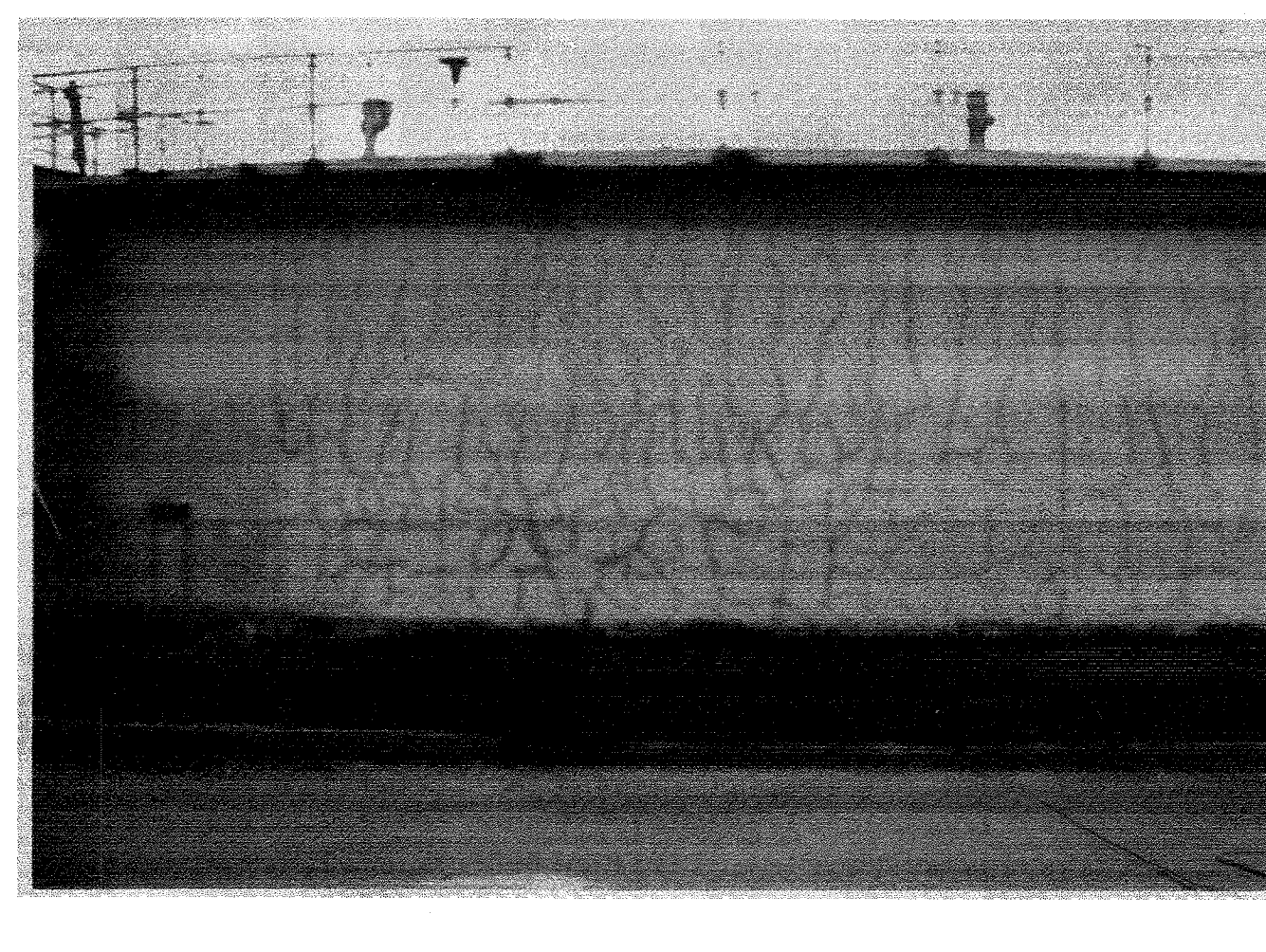
FEB-2



FEB-2



FEB-2



FEB-2

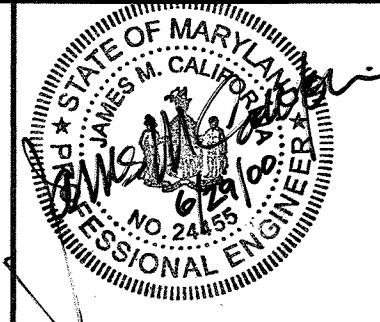
NOTES:

- 1. PHOTOS ARE FOR CONTRACTOR'S GENERAL INFO. ONLY
- 2. FEB-2 EXTERIOR-CRACKS SHOWN WERE HIGHLIGHTED W/DYE FOR EMPHASIS PURPOSE.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Beasly 7-6-02
CHIEF, BUREAU OF UTILITIES

**BUCHART
HORN, INC.**
3000 CHESTNUT AVENUE
SUITE 400
BALTIMORE, MD 21211
Engineers, Architects and Planners

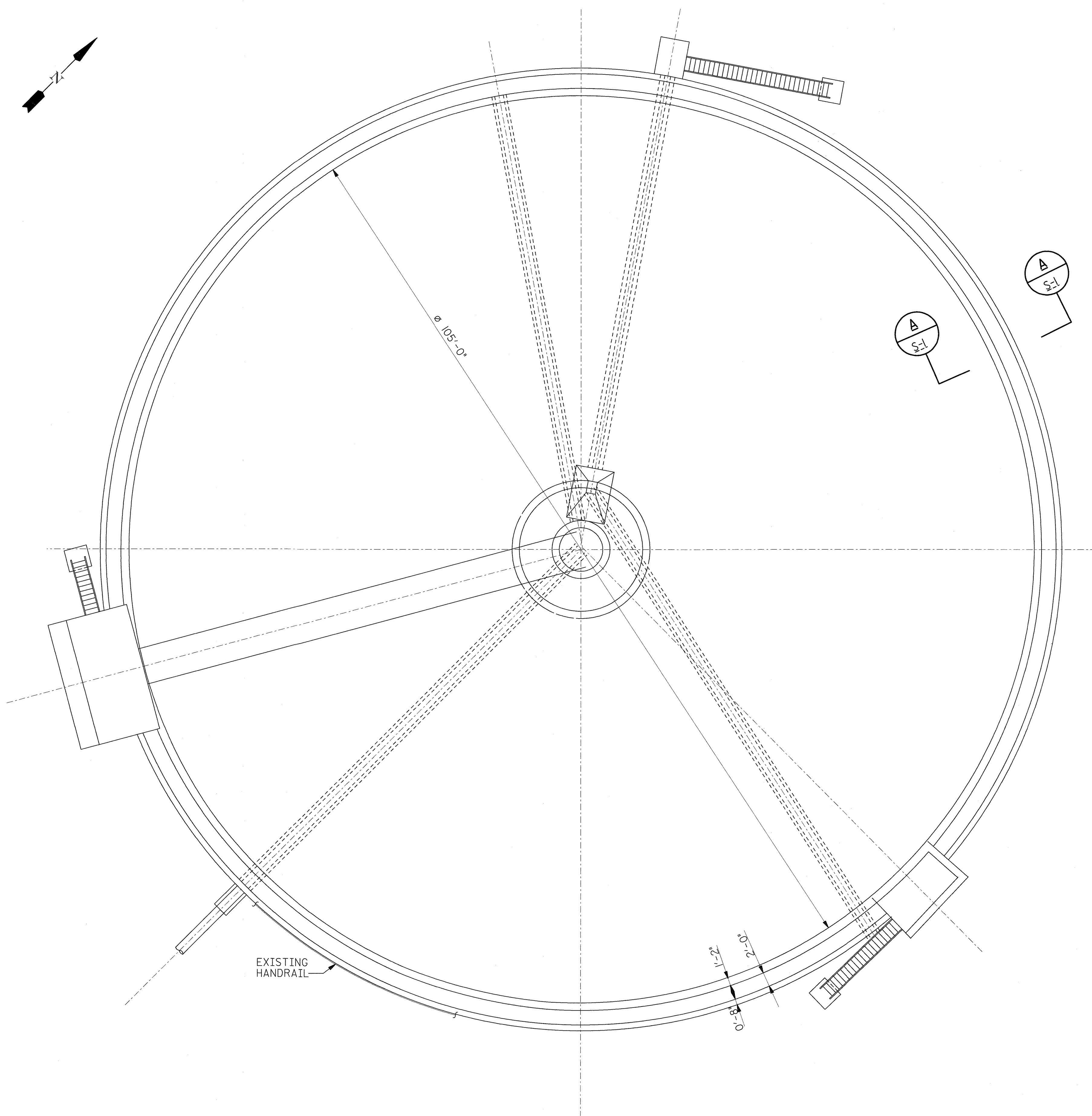
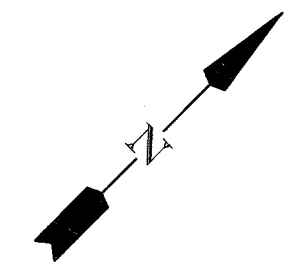


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DATE:	5/1/00
BY:	NO.
NO.	
REVISION	
DATE	

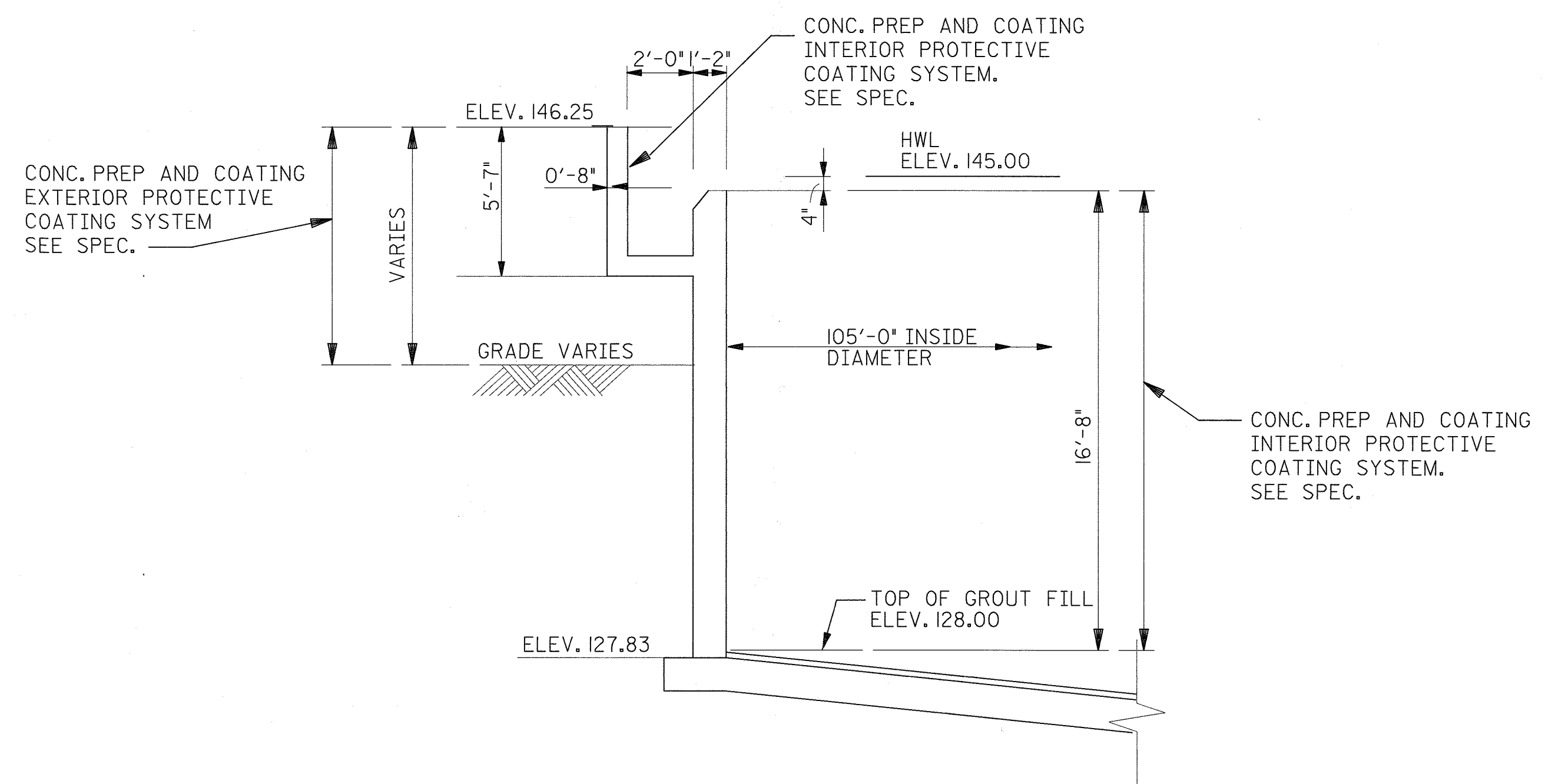
FEB-1 AND FEB-2
PHOTOGRAPHS

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
7 OF 14
S-5





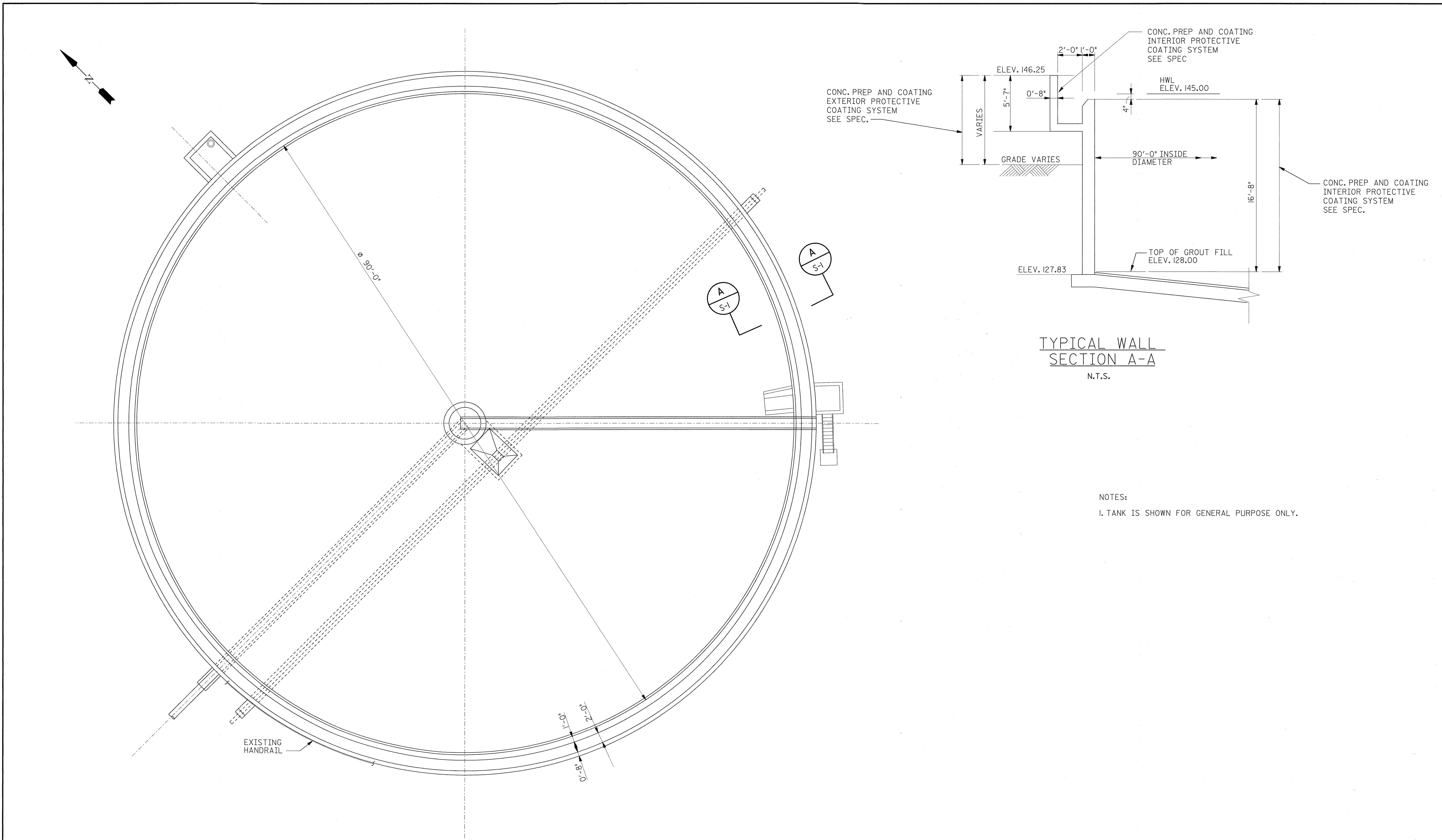
PLAN - EXISTING PRIMARY CLARIFIER No.1 (PC-1)
N.T.S.



TYPICAL WALL
SECTION A-A
N.T.S.

NOTES:
1. TANK IS SHOWN FOR GENERAL PURPOSE ONLY.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	 BUCHART HORNING 3000 CHESTNUT AVENUE SUITE 400 BALTIMORE, MD 21211 Engineers, Architects and Planners		<table border="1"> <tr> <td>DES:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRN:</td> <td>BB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHK:</td> <td>HG</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE:</td> <td>5/11/00</td> <td>BY</td> <td>NO.</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>DATE</td> </tr> </table>	DES:					DRN:	BB				CHK:	HG				DATE:	5/11/00	BY	NO.	REVISION					DATE	<p>PRIMARY CLARIFIER No. 1 PLANS AND DETAILS</p>	<p>LITTLE PATUXENT WATER RECLAMATION PLANT STRUCTURAL IMPROVEMENTS CAPITAL PROJECT NO. S-6223 CONTRACT NO. 20-3843 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN SHEET 8 OF 14 S-6</p>
DES:																															
DRN:	BB																														
CHK:	HG																														
DATE:	5/11/00	BY	NO.	REVISION																											
				DATE																											



PLAN - EXISTING PRIMARY CLARIFIERS No. 3 (PC-3) & No.4 (PC-4)
N.T.S.

TYPICAL WALL SECTION A-A
N.T.S.

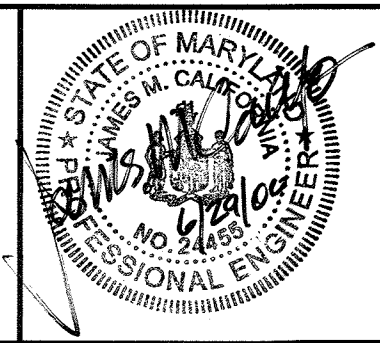
NOTES:
1. TANK IS SHOWN FOR GENERAL PURPOSE ONLY.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Baugher 7-6-02
CHIEF, BUREAU OF UTILITIES DATE

BUCHART HORN INC.
3000 CHESTNUT AVENUE
SUITE 200
BALTIMORE, MD 21211

Engineers, Architects and Planners



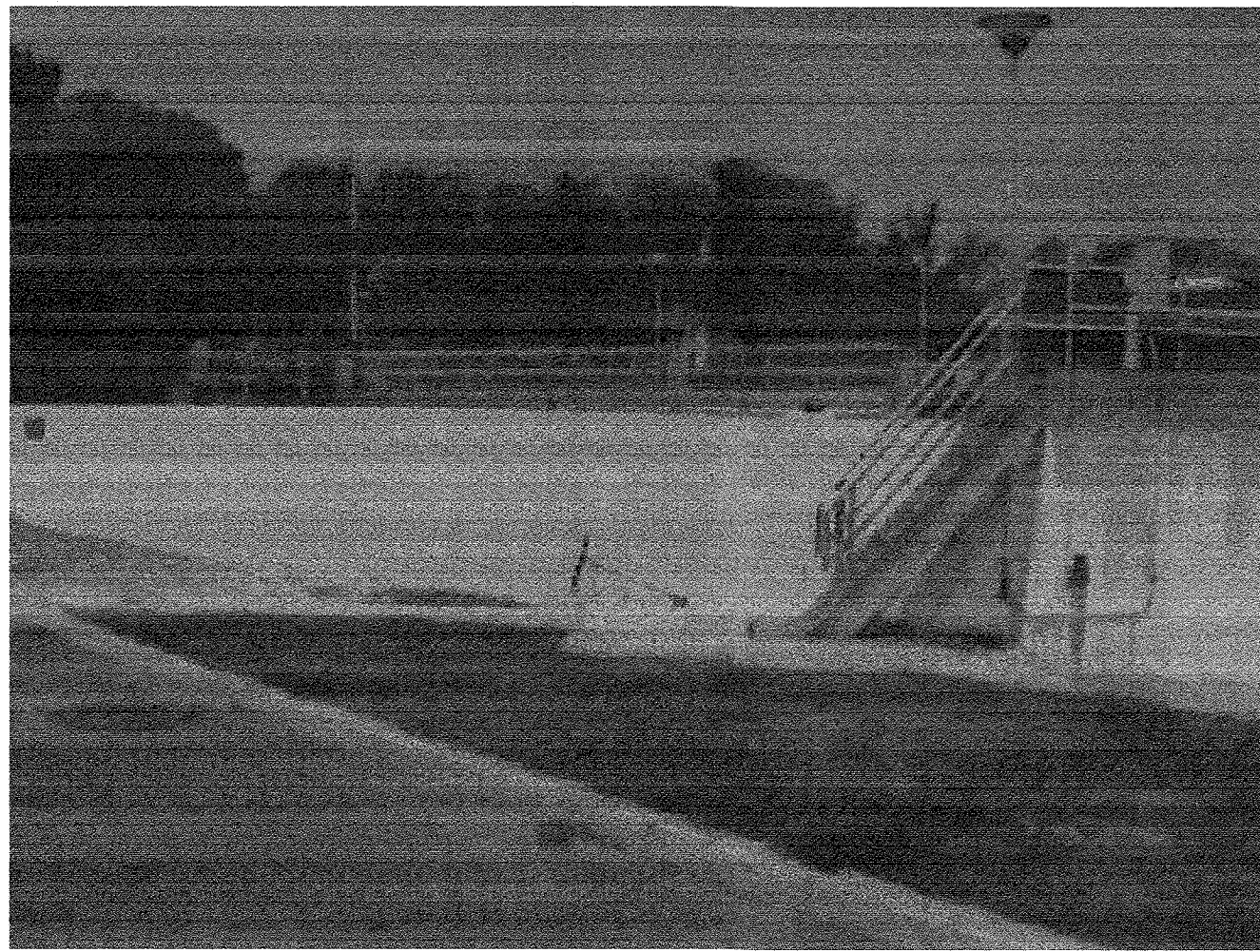
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DATE:	5/1/00	BY	NO.	REVISION	DATE

PRIMARY CLARIFIERS No. 3 & No. 4 PLANS AND DETAILS

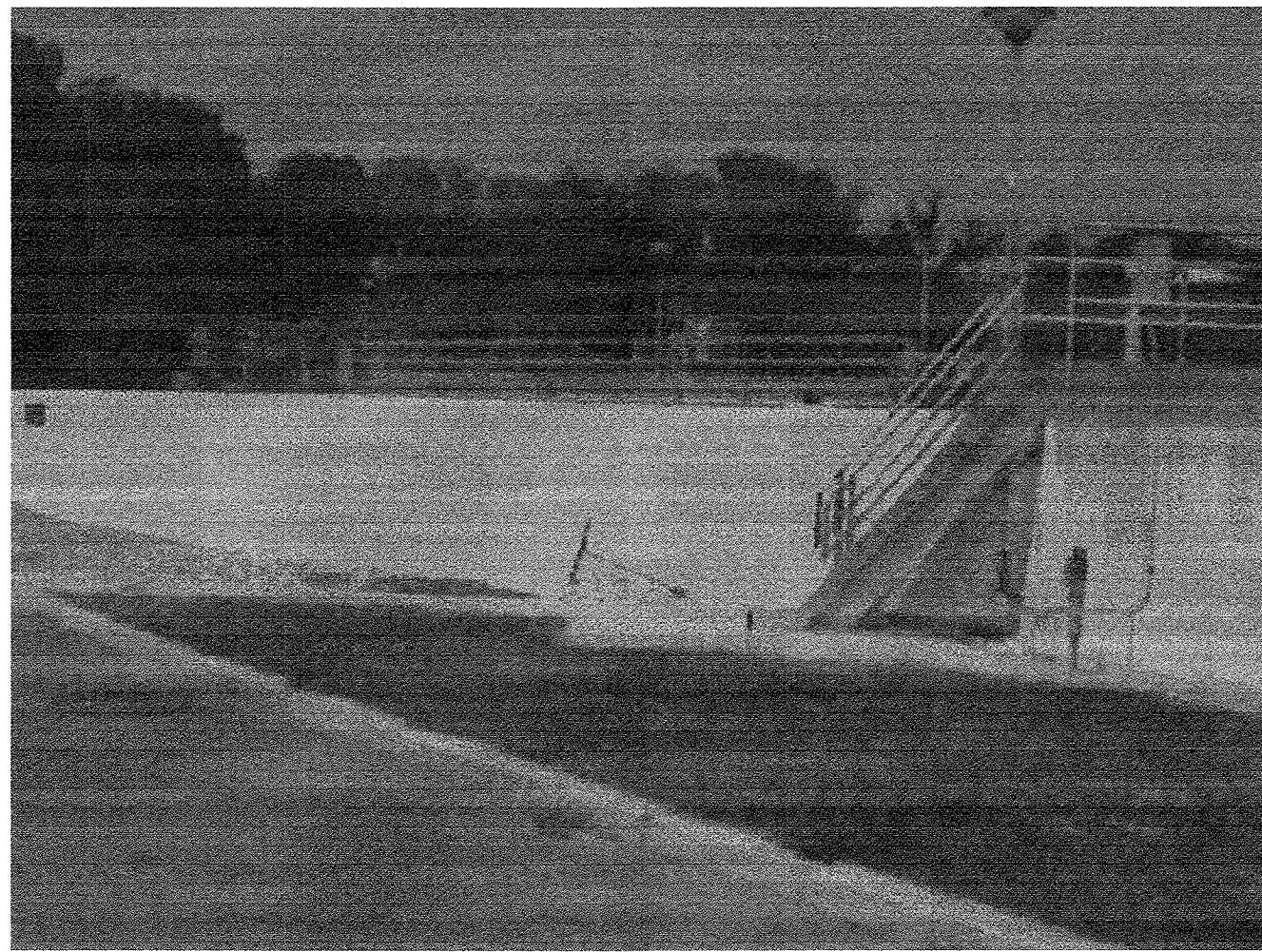
LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 9 OF 14
S-7

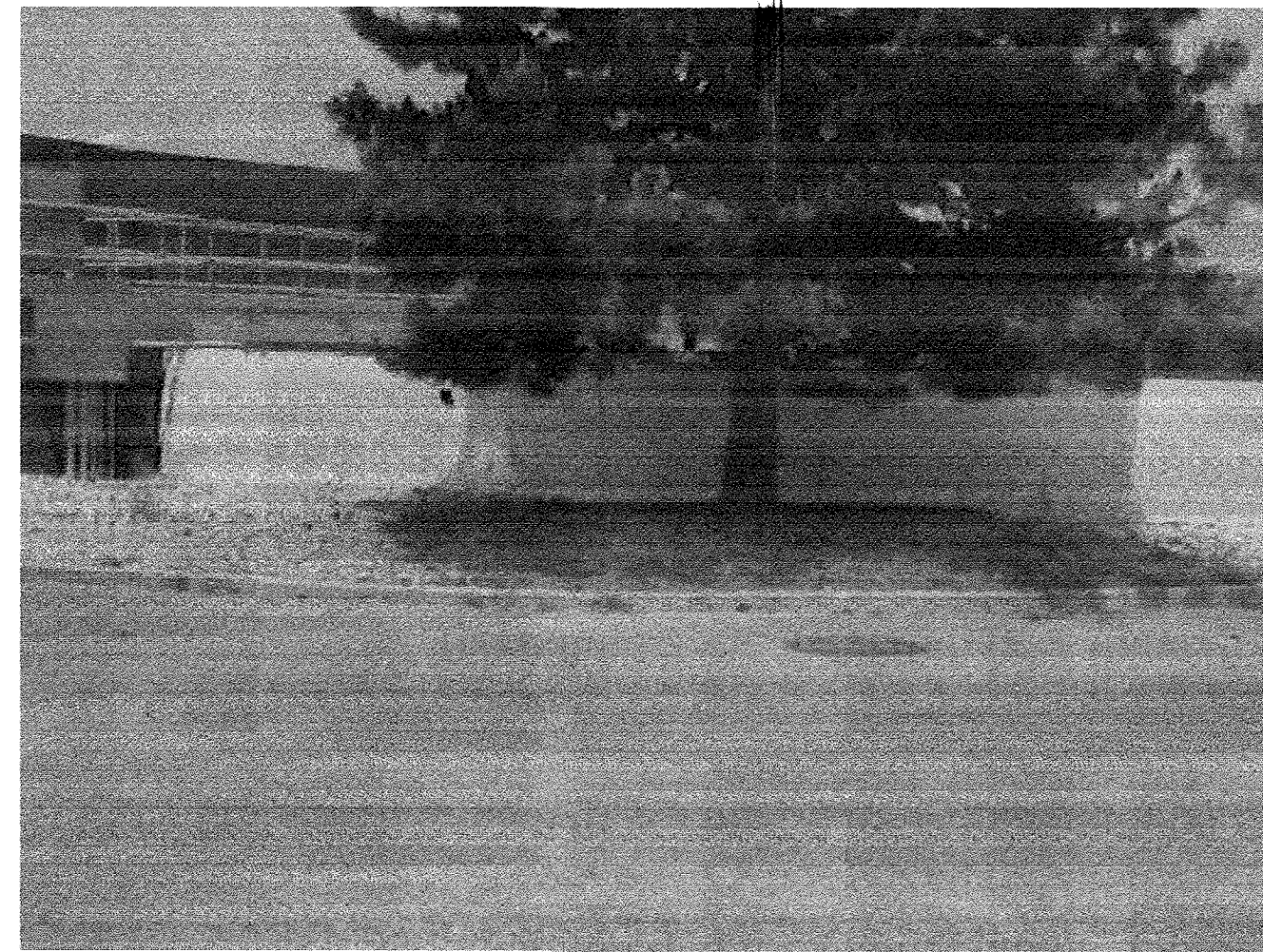
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PC-1



PC-1



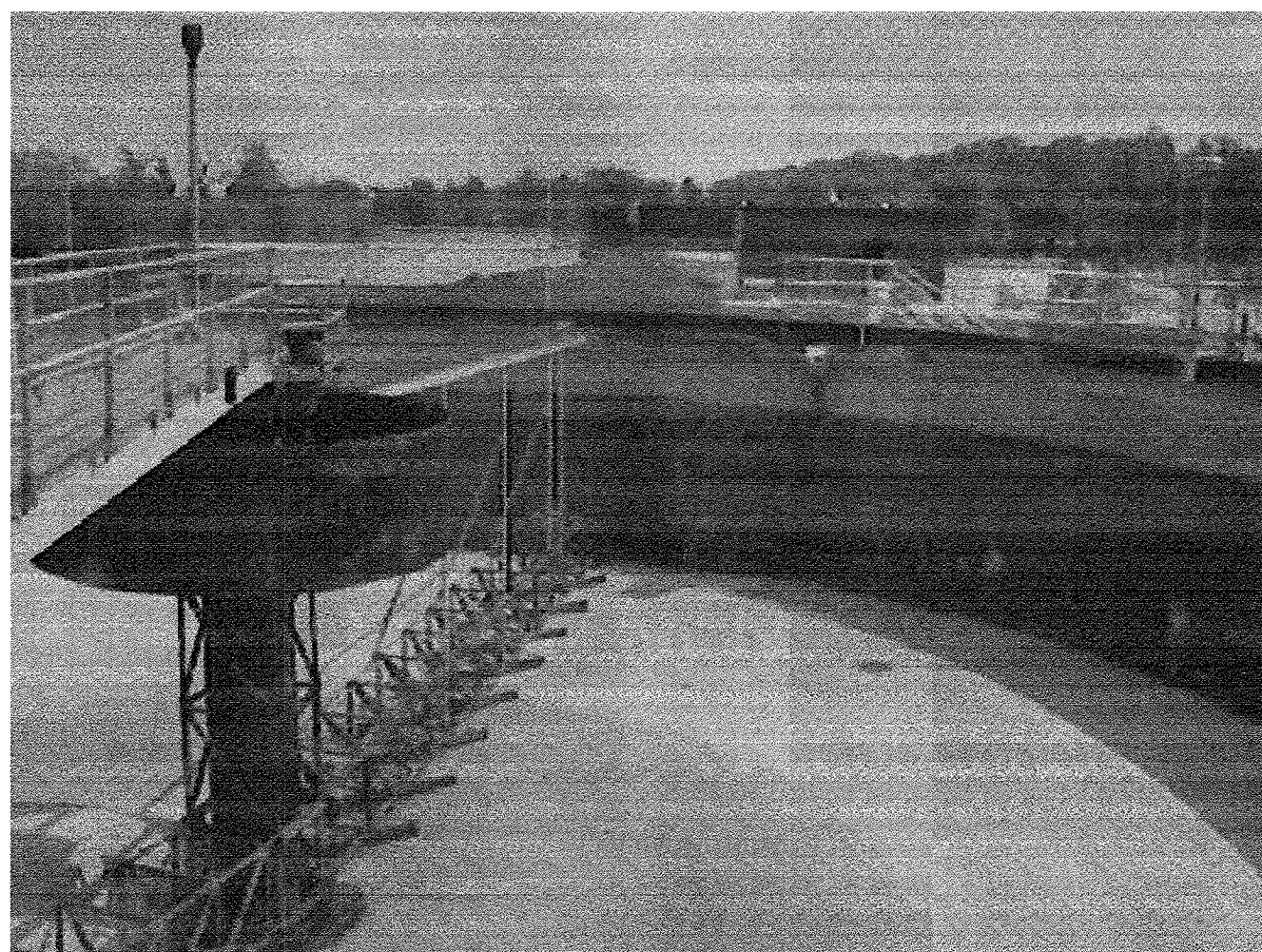
PC-1



PC-1



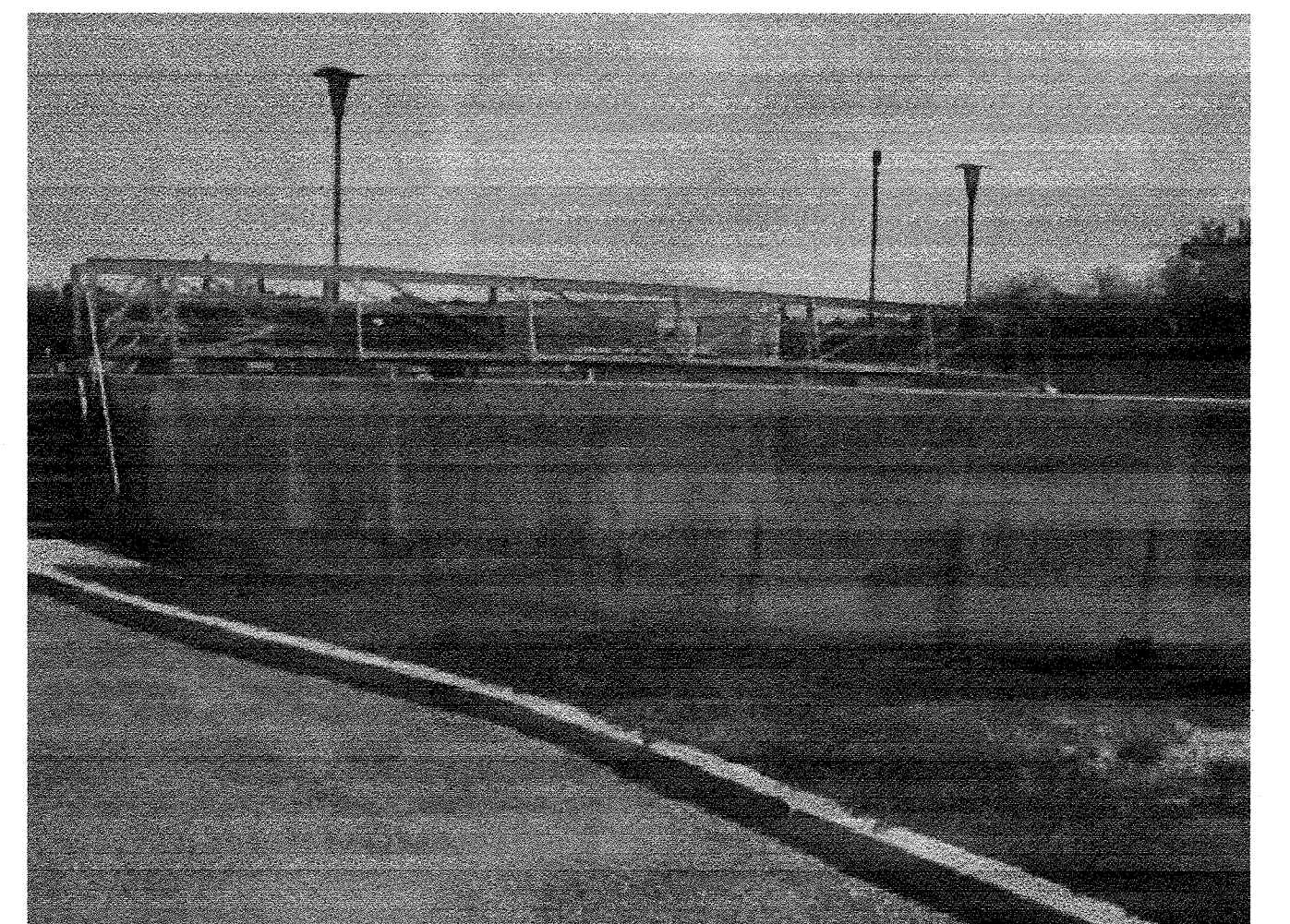
PC-1



PC-1



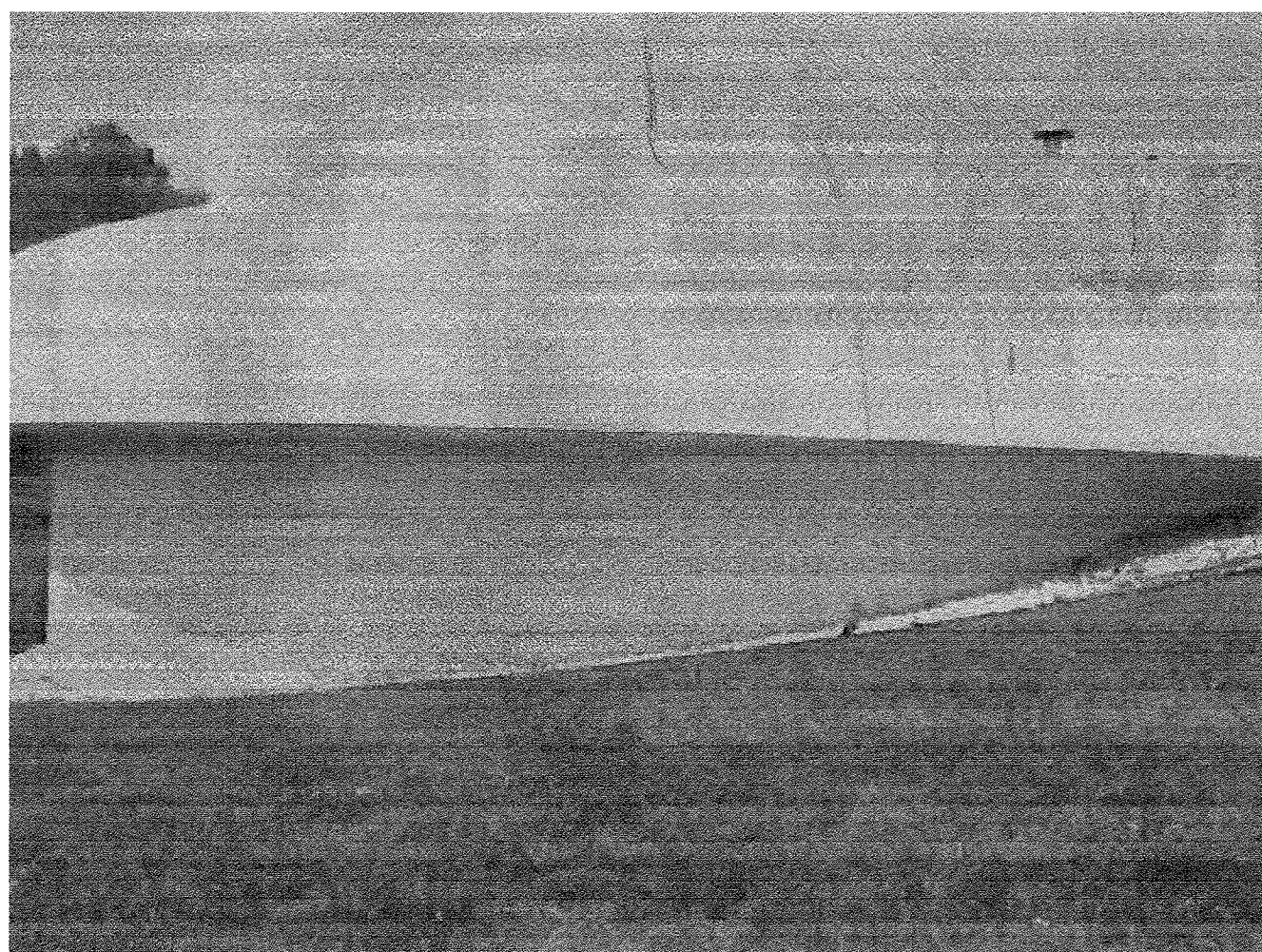
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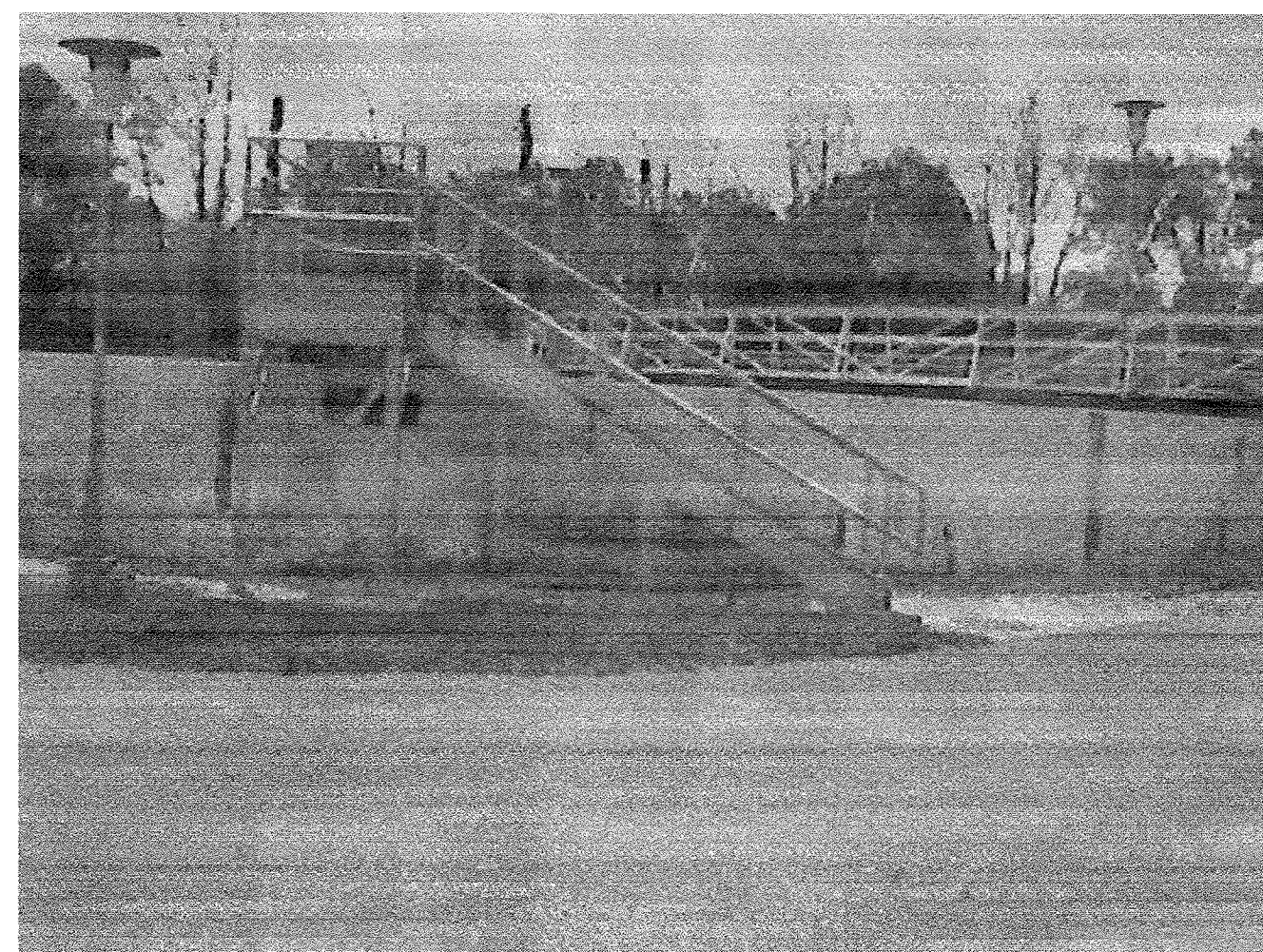
PC-4



PC-4



PC-4



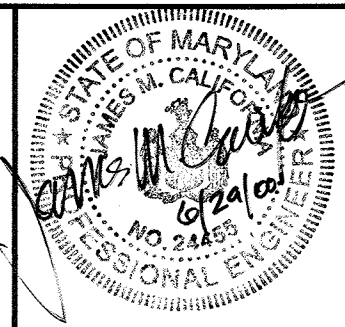
PC-4

NOTES:
1. PHOTOS ARE FOR CONTRACTOR'S GENERAL INFO. ONLY

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert H. Bainger 7-6-09
CHIEF, BUREAU OF UTILITIES DATE

bh
BUCHART
HORN, INC.
3000 CHESTNUT AVENUE
SUITE 400
BALTIMORE, MD 21211
Engineers, Architects and Planners

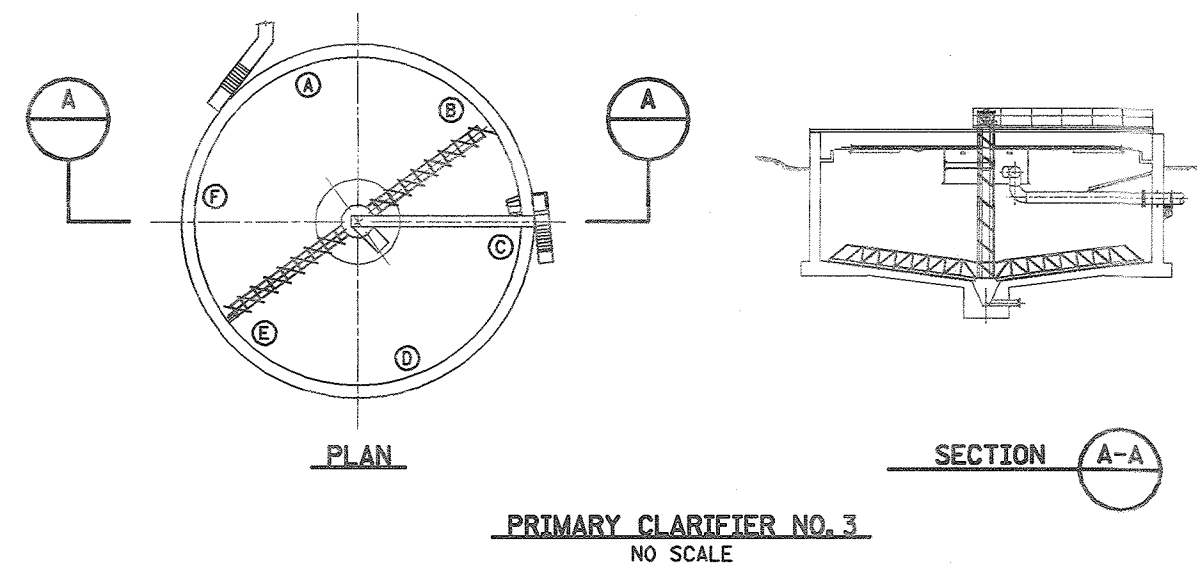


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DRN:	BB		
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DATE:	5/1/00	BY NO.	REVISION
			DATE

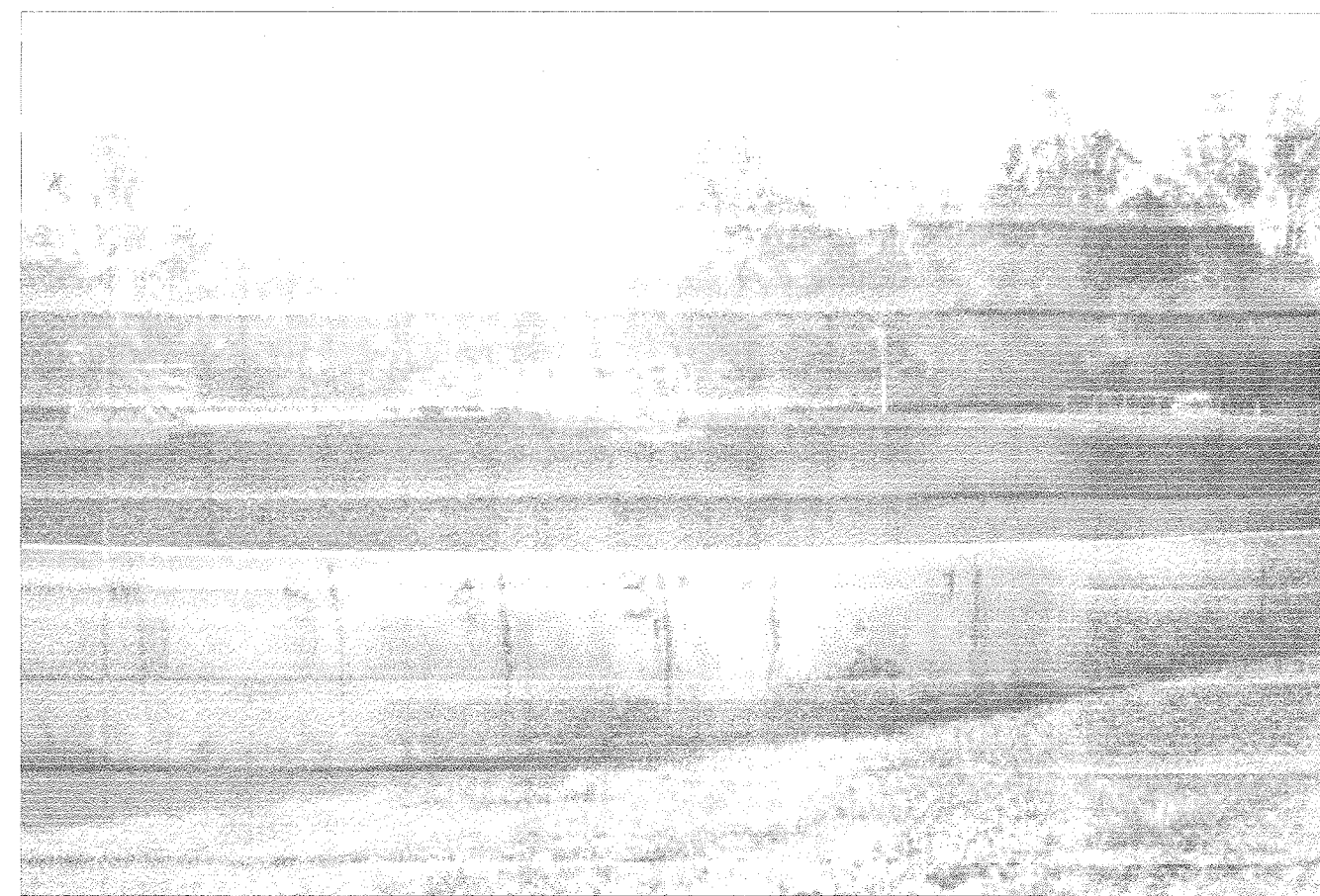
PC-1 AND PC-4
PHOTOGRAPHS

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

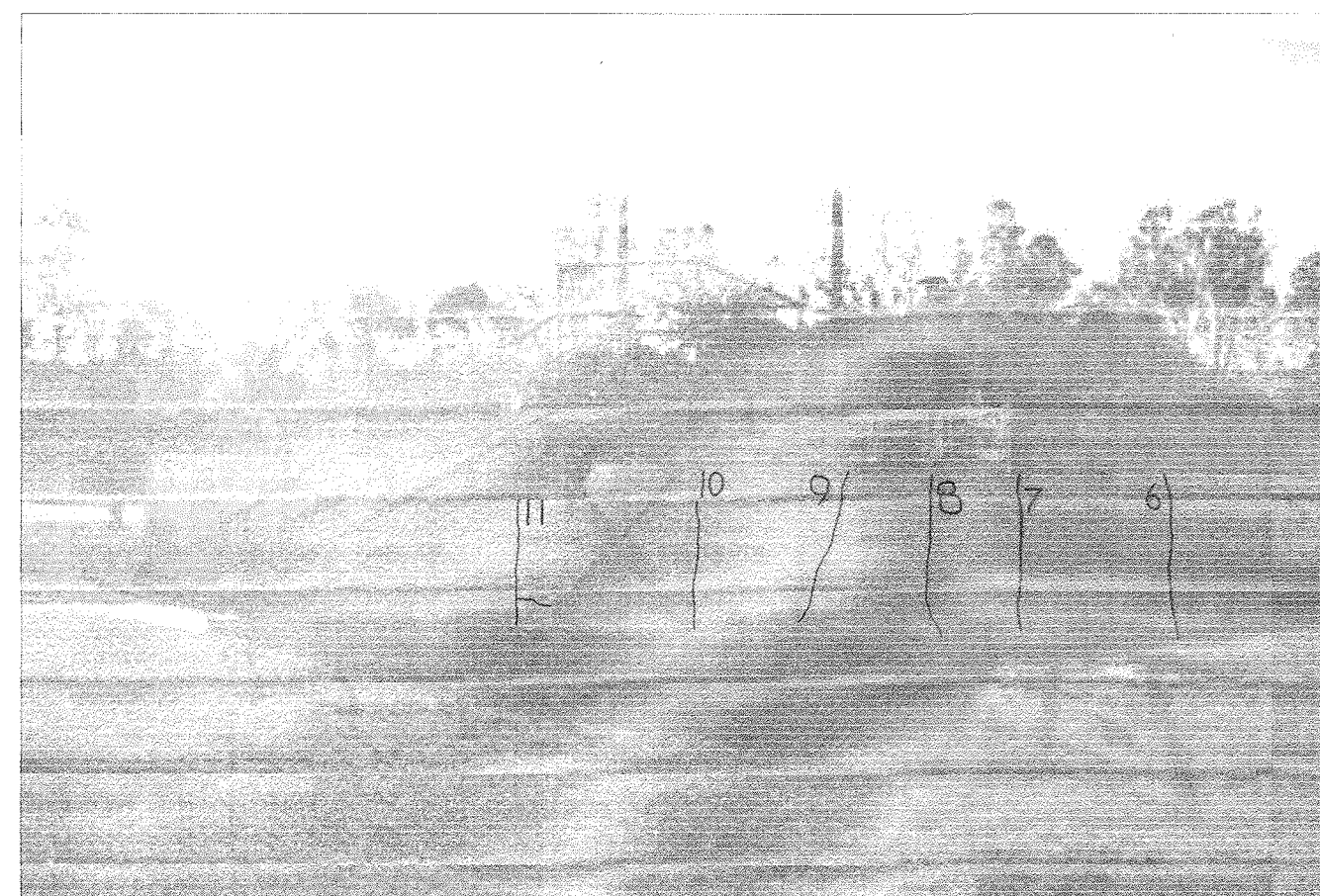
SCALE
AS
SHOWN
SHEET
10 OF 14
S-8



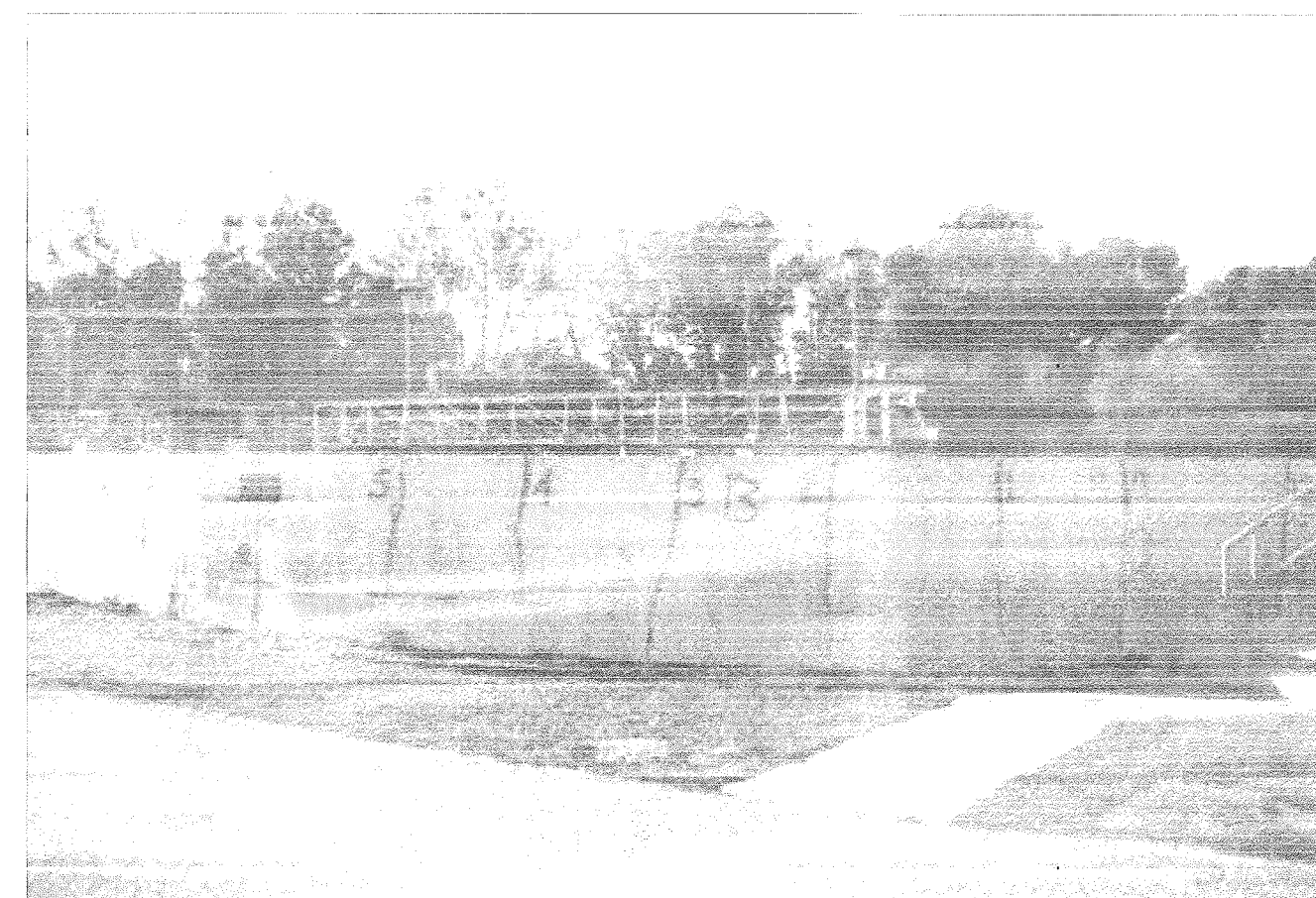
NOTES:
1. PHOTOS ARE FOR CONTRACTOR'S GENERAL INFO. ONLY
2. CRACKS SHOWN WERE HIGHLIGHTED WITH DYE FOR EMPHASIS PURPOSE.



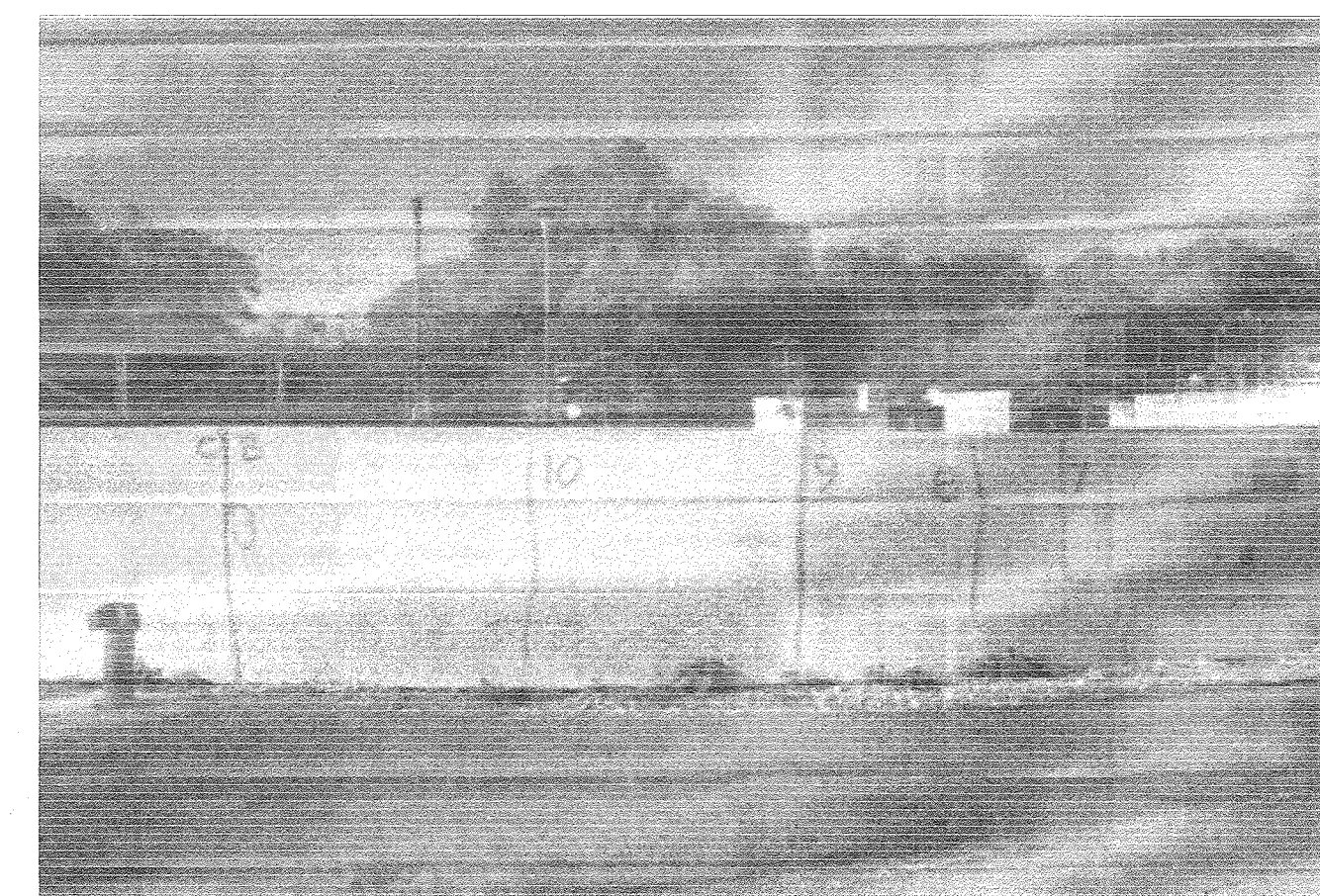
VIEW A-1



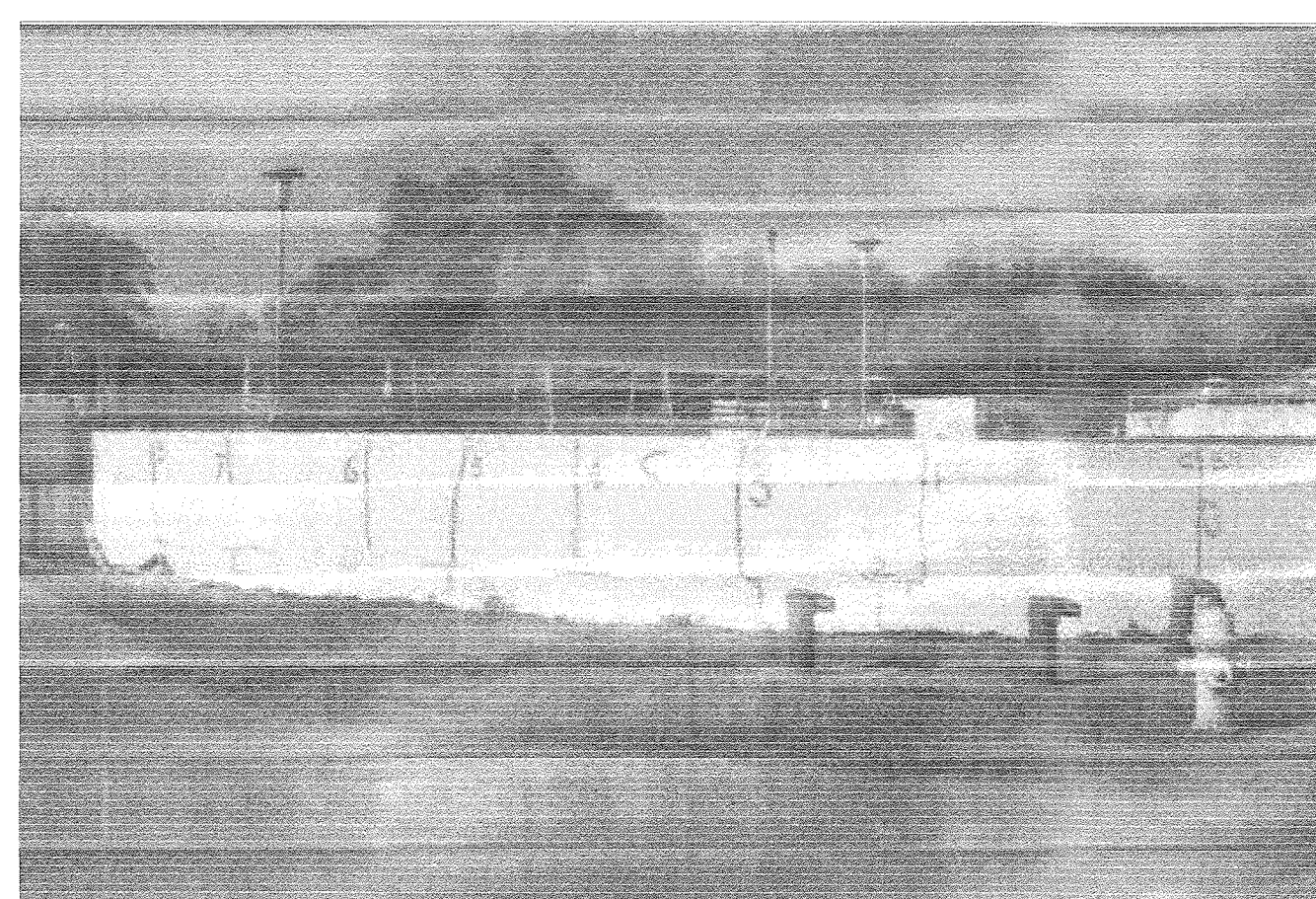
VIEW A-2



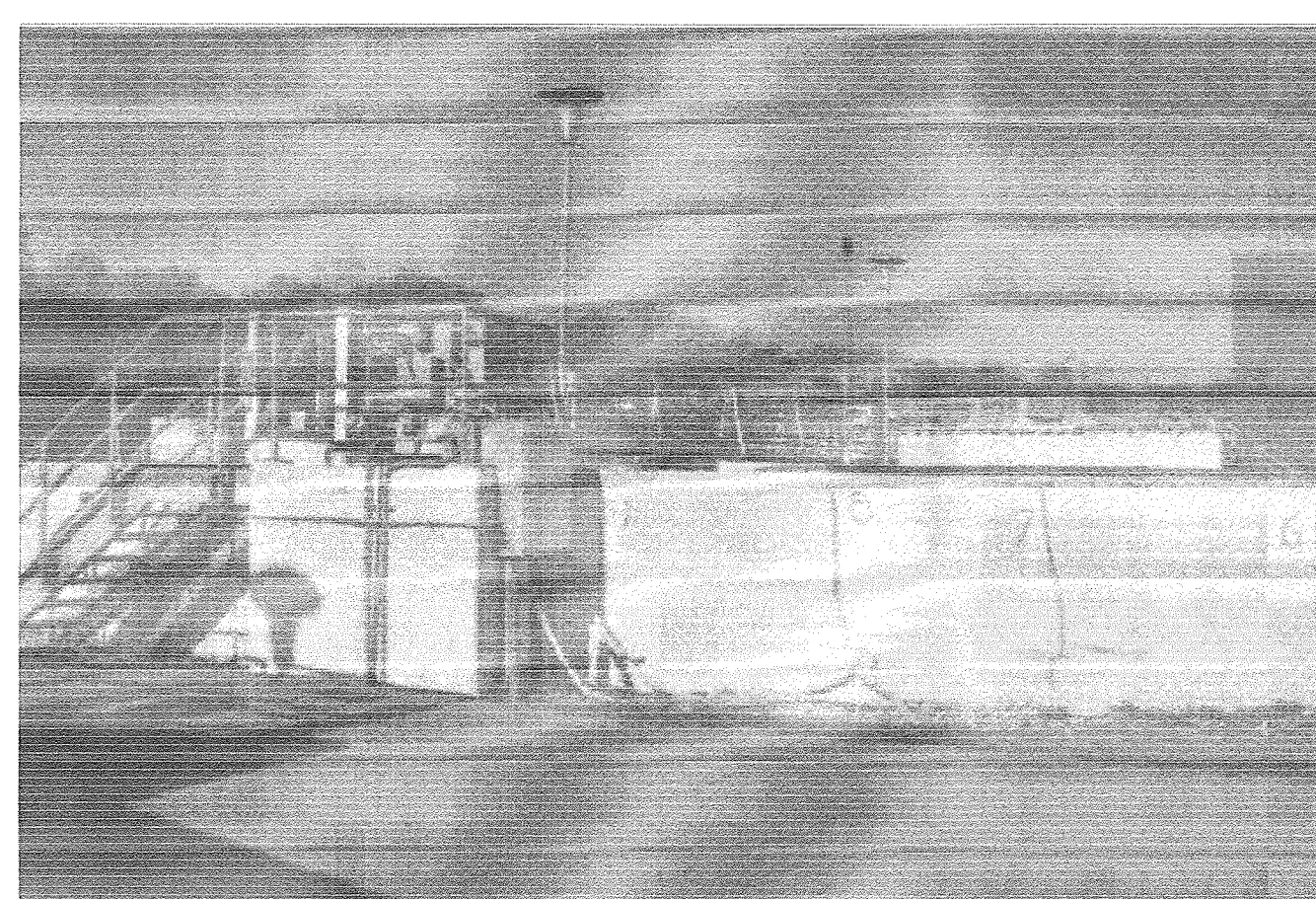
VIEW B-1



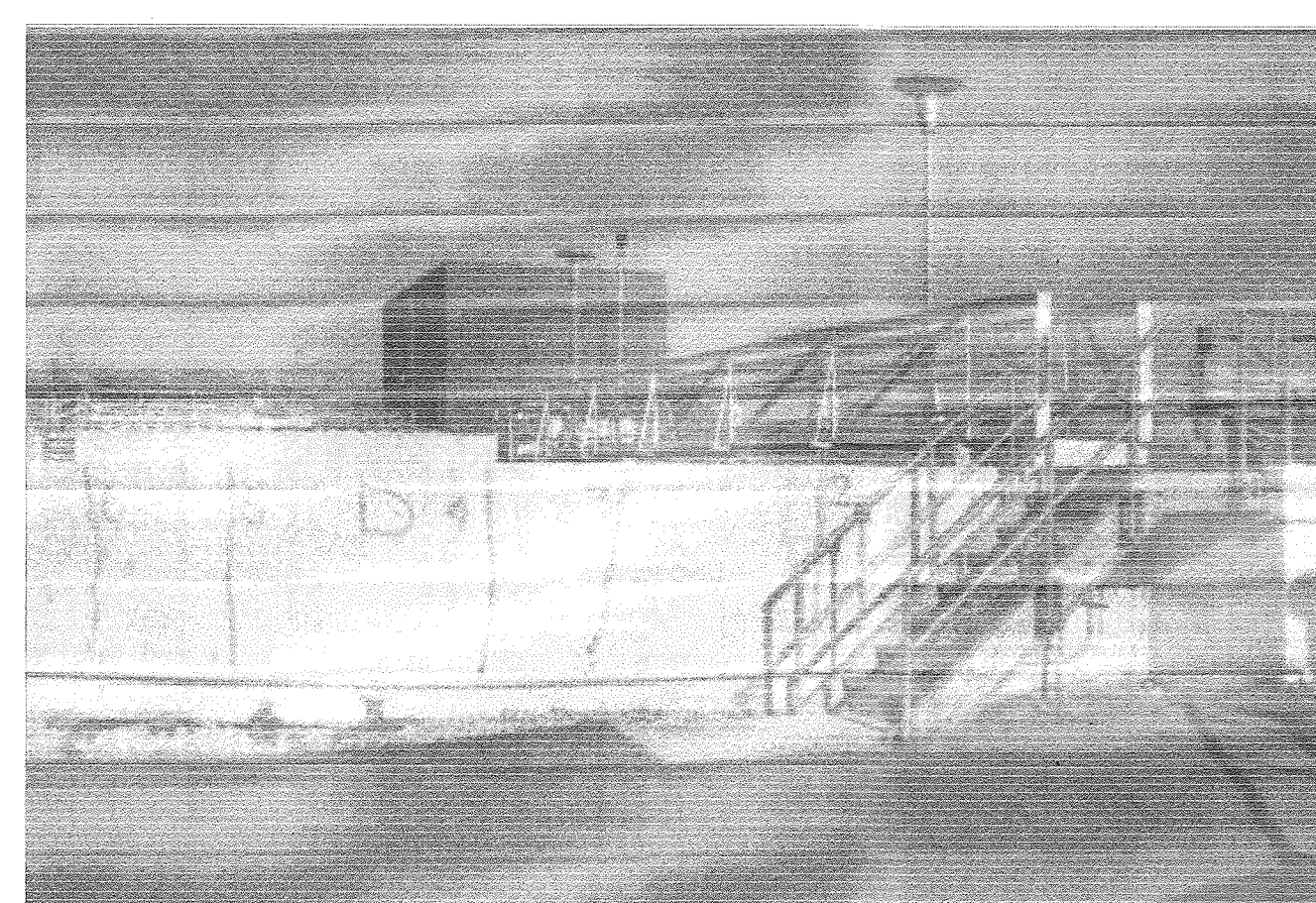
VIEW B-2



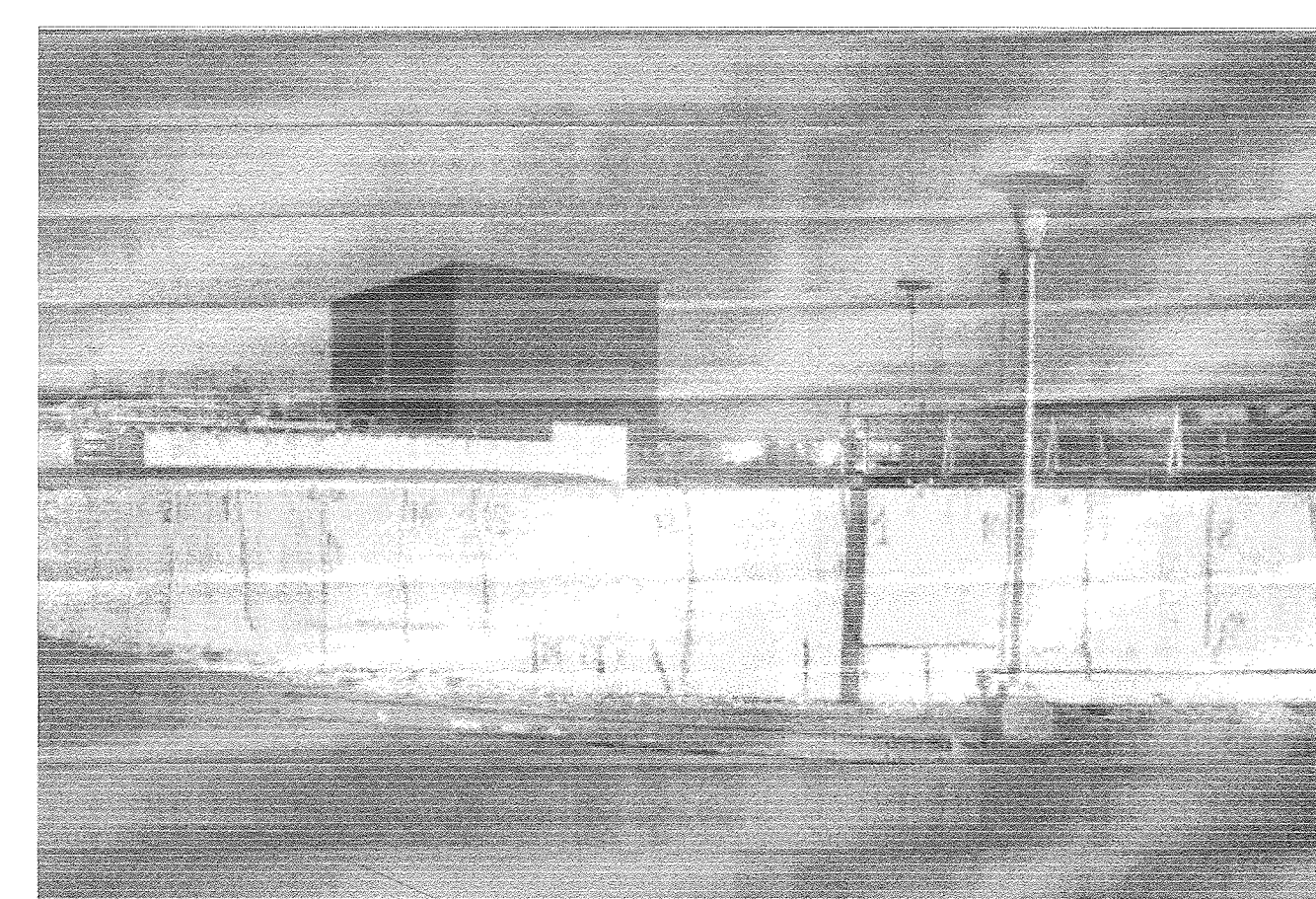
VIEW C-1



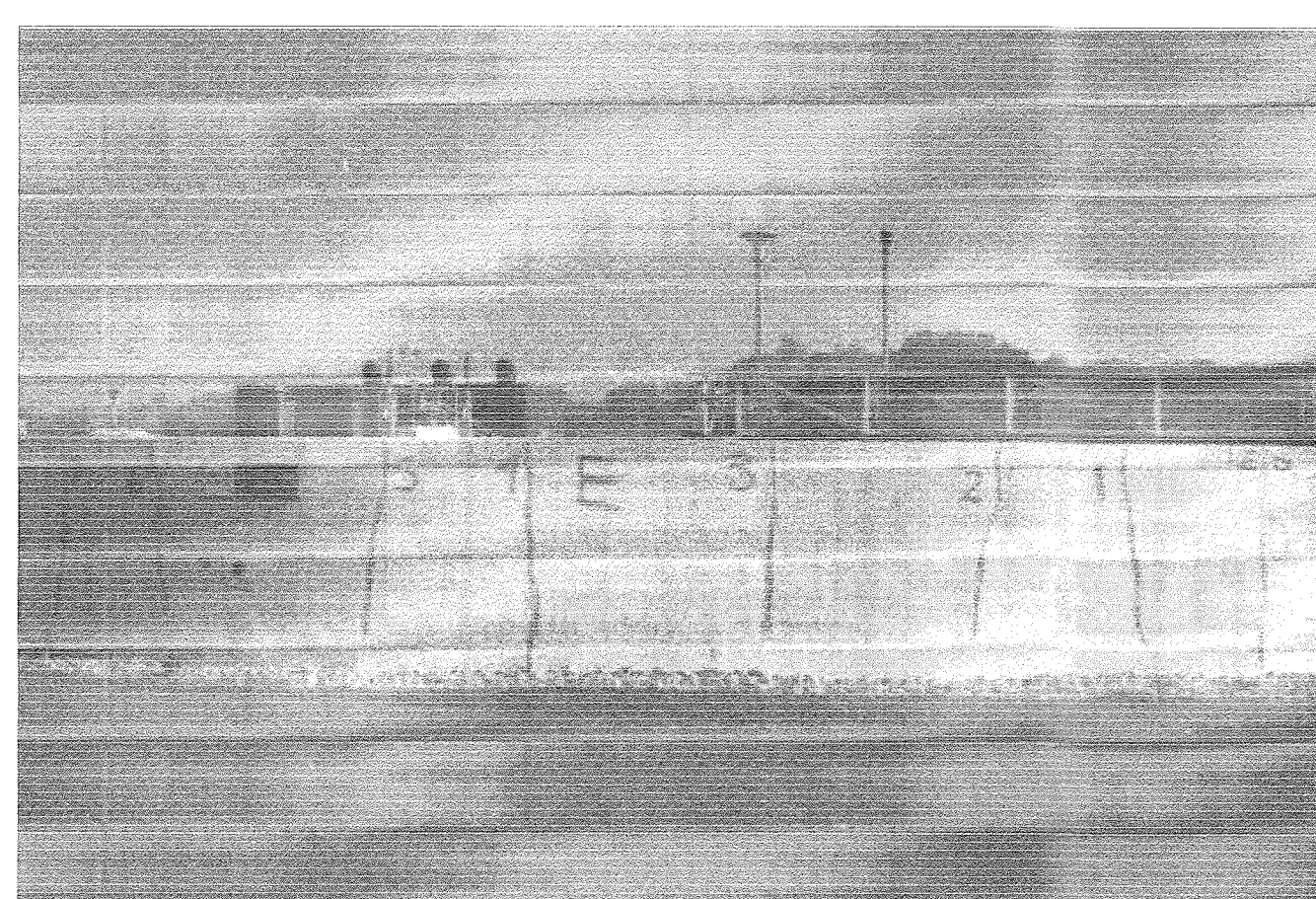
VIEW C-2



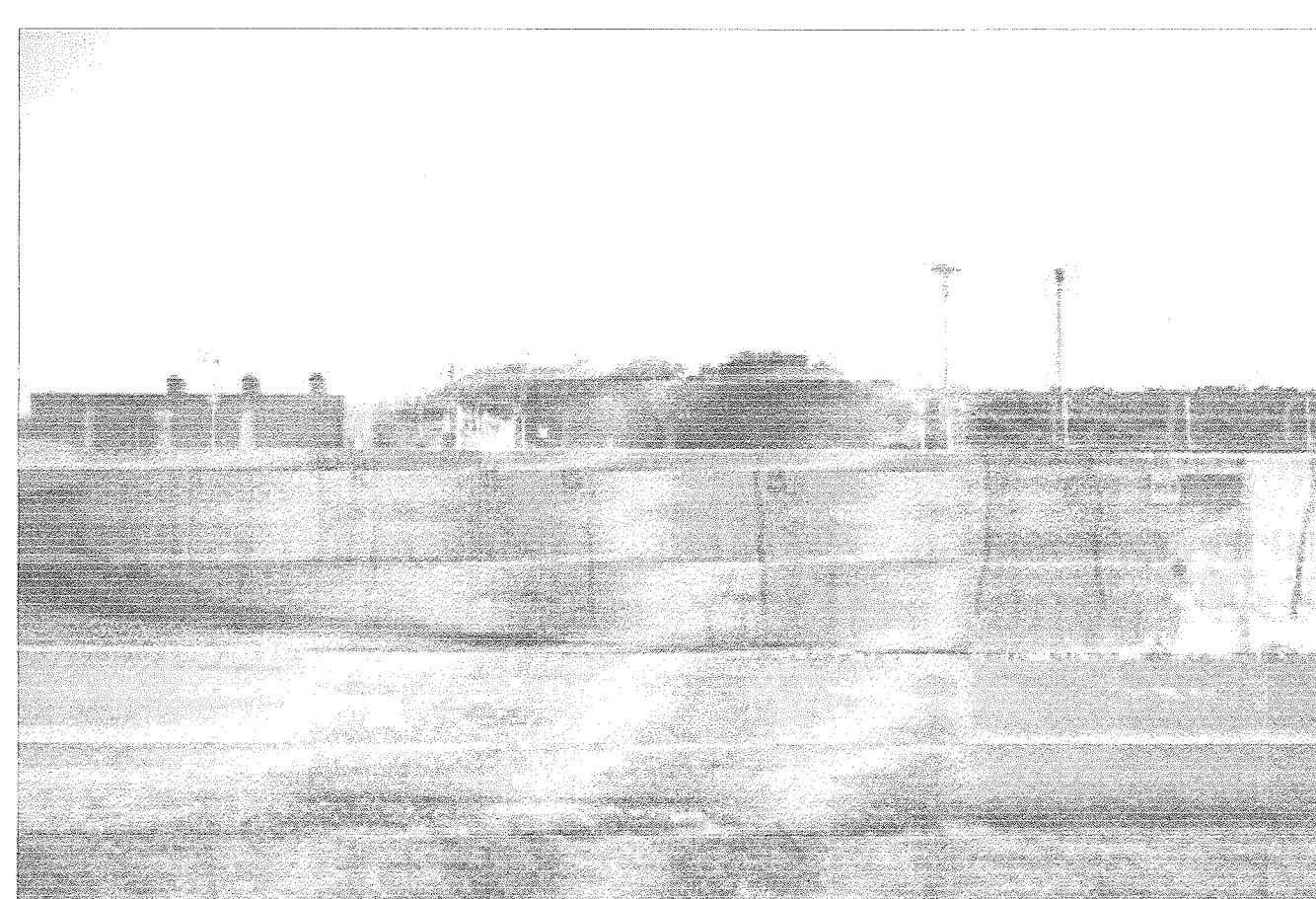
VIEW D-1



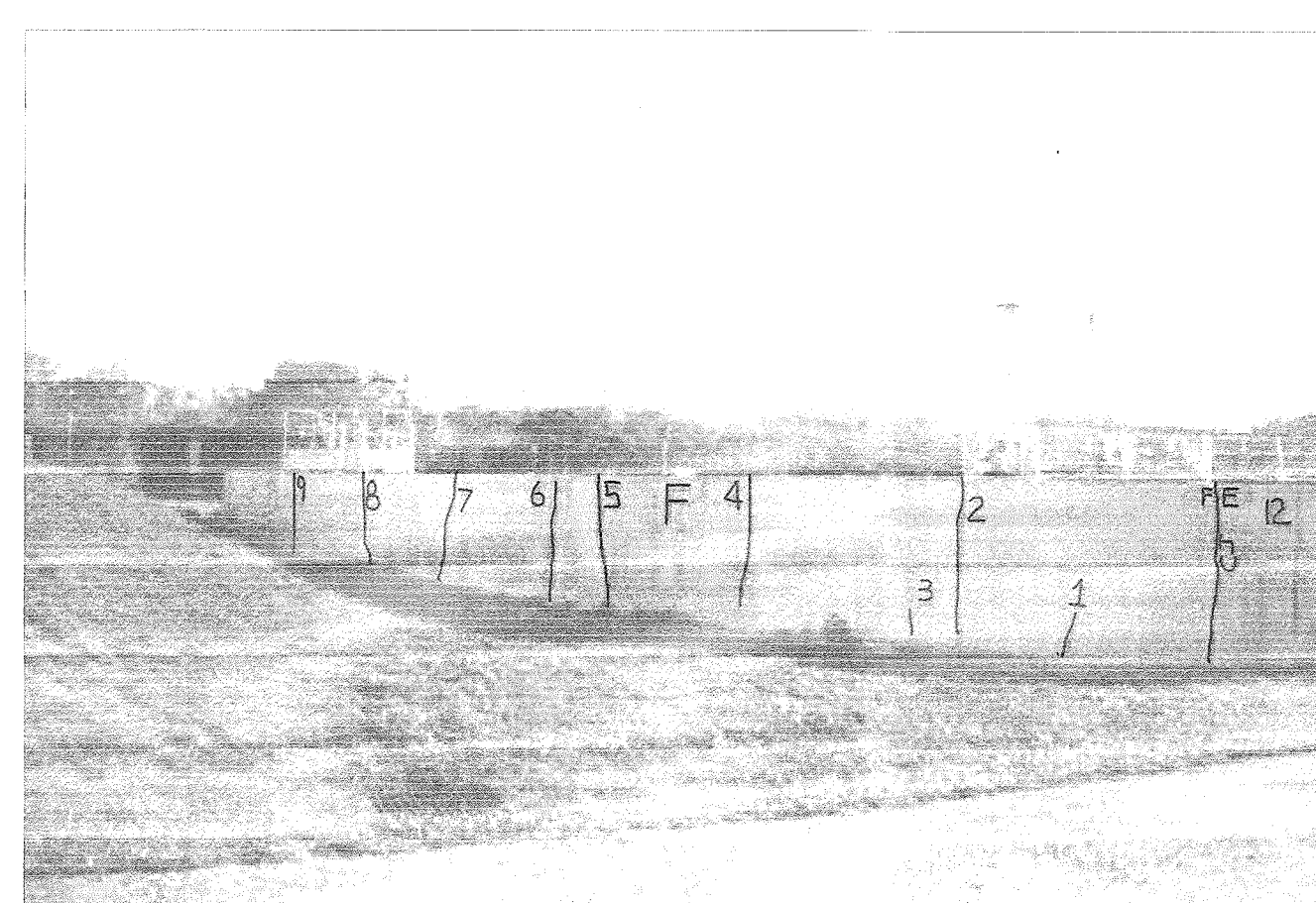
VIEW D-2



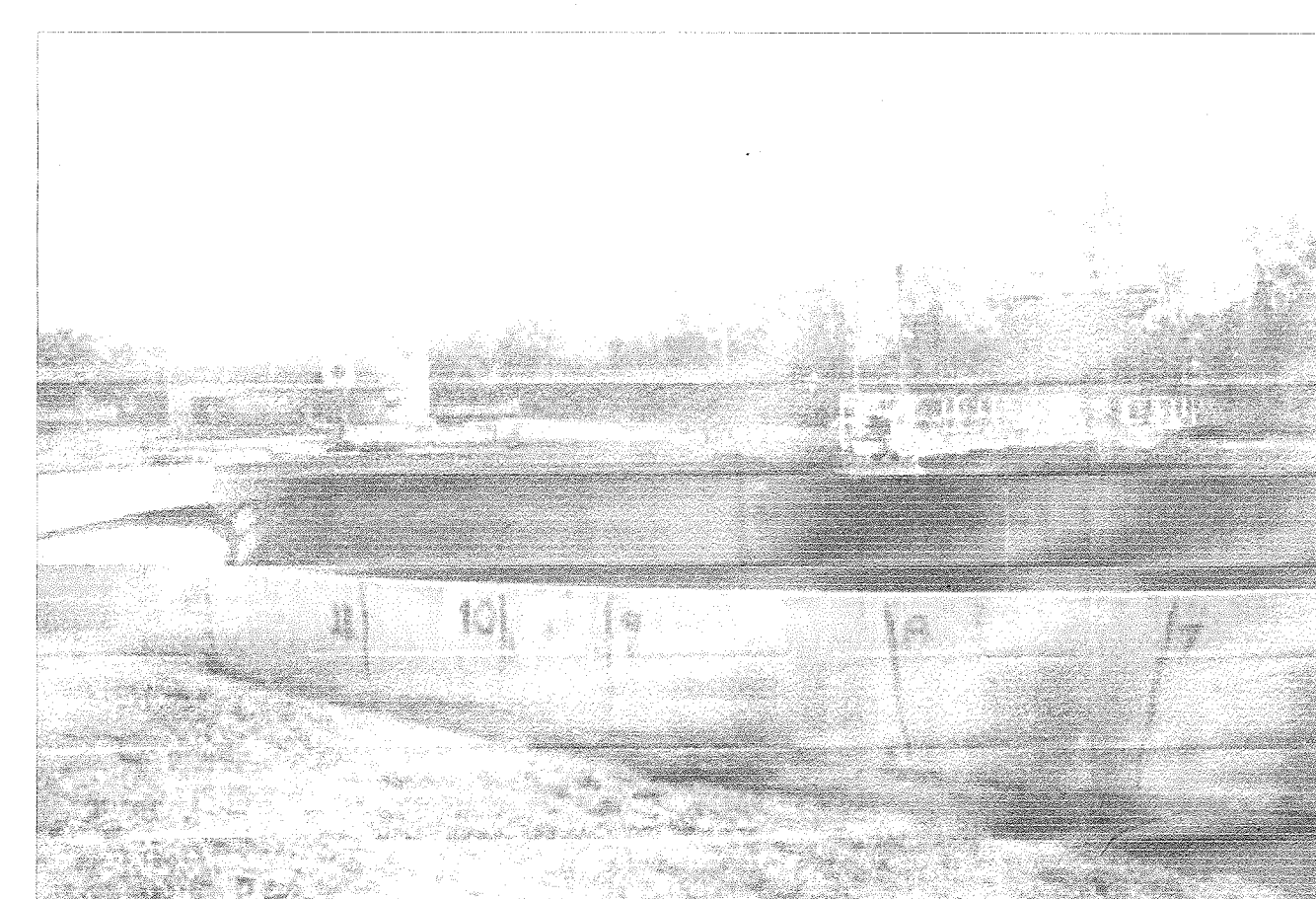
VIEW E-1



VIEW E-2



VIEW F-1

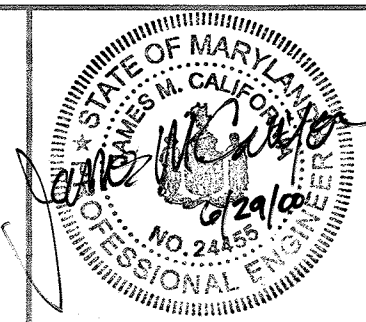


VIEW F-2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Bainger 7-6-02
CHIEF, BUREAU OF UTILITIES

BUCHART HORN, INC.
3000 CHESTNUT AVENUE
BALTIMORE, MD 21211
Engineers, Architects and Planners

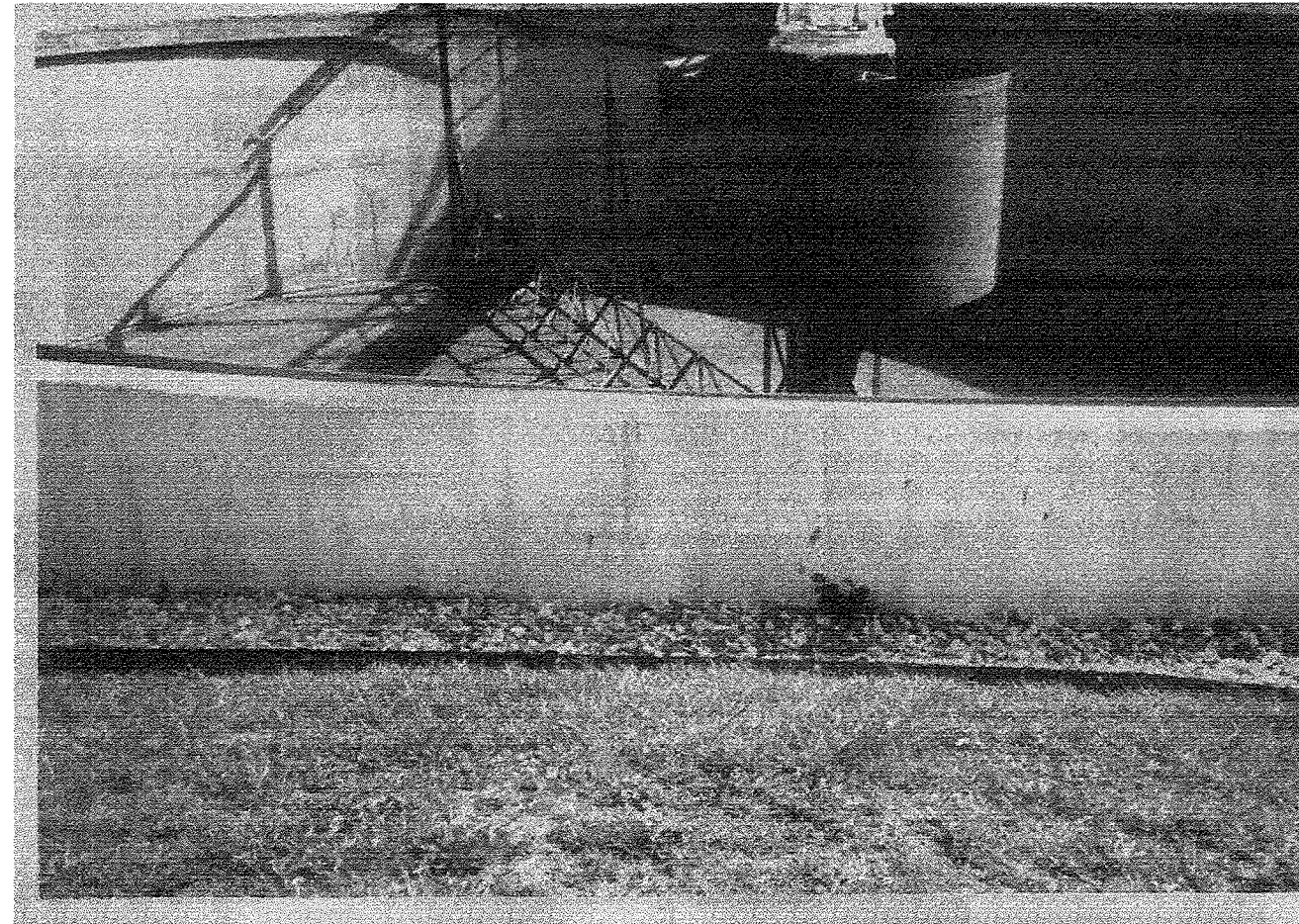


DES:			
DRN:	BB		
CHK:	HG		
DATE:	5/11/00		
BY:		NO.	
		REVISION	
			DATE

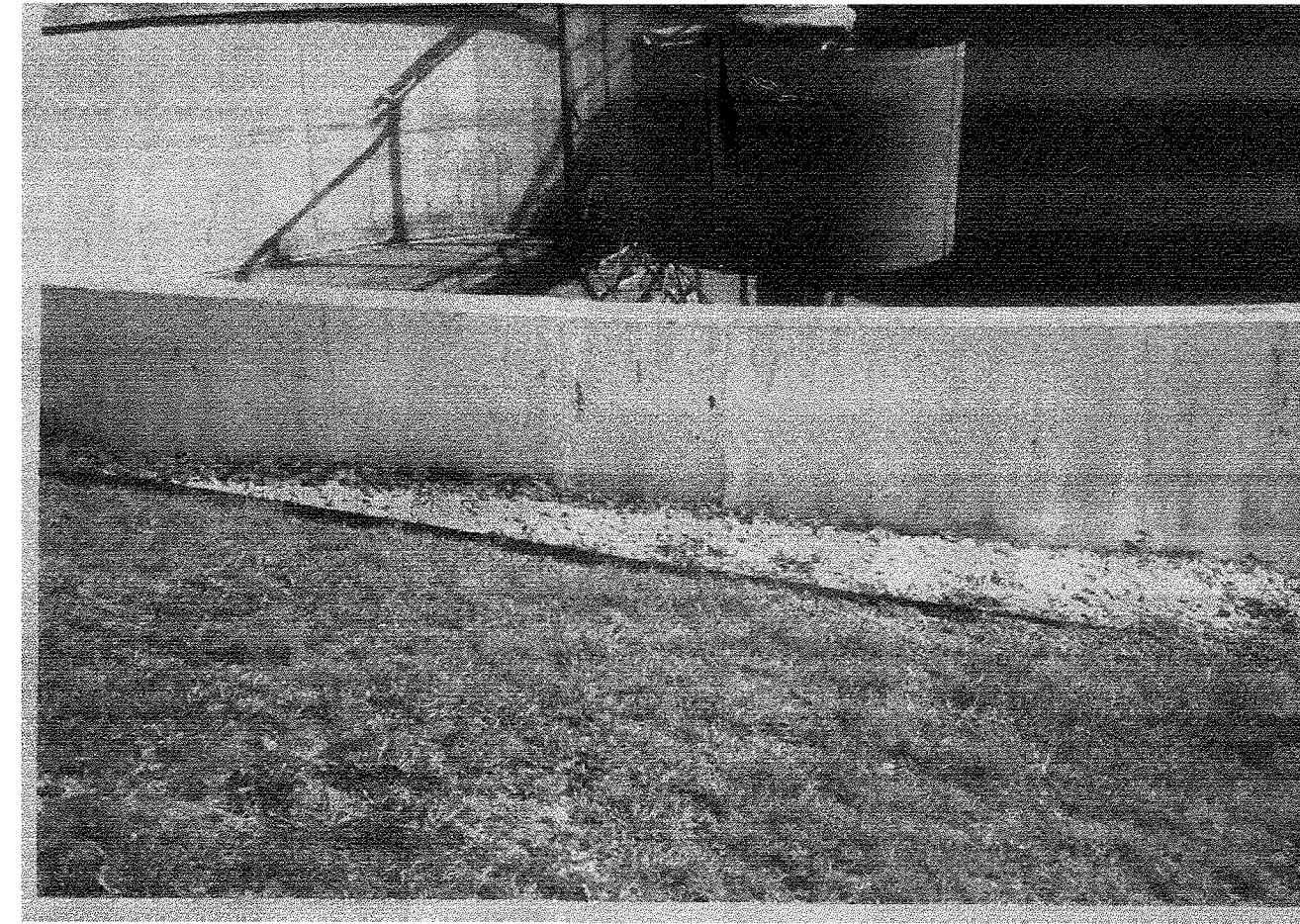
PC-3 PHOTOGRAPHS

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
11 OF 14
S-9


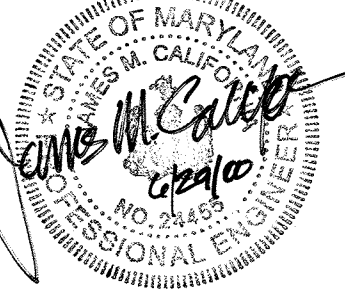


PC-3 (INTERIOR)

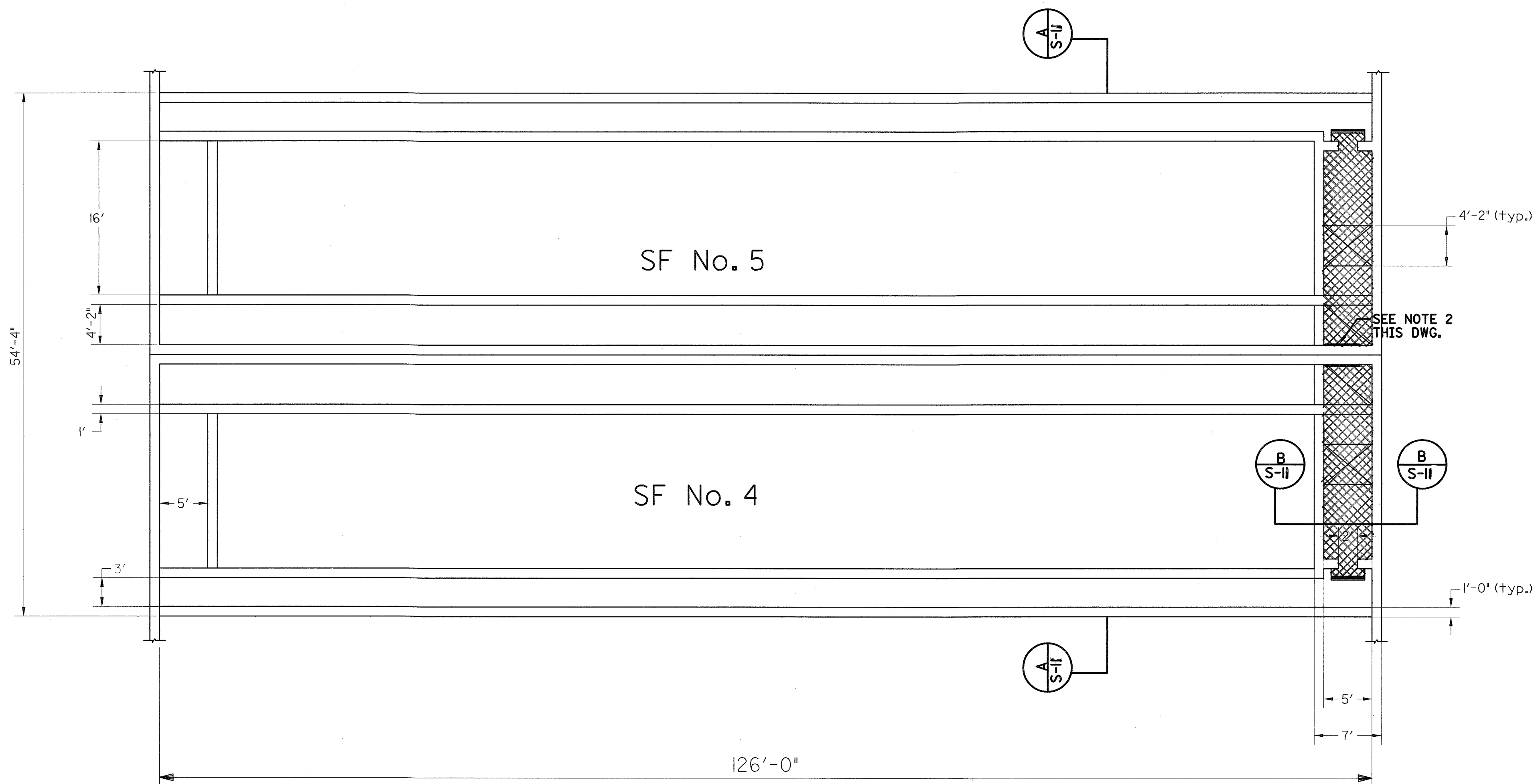


PC-3 (INTERIOR)

NOTE: PHOTOS ARE FOR CONTRACTOR'S GENERAL INFO. ONLY.

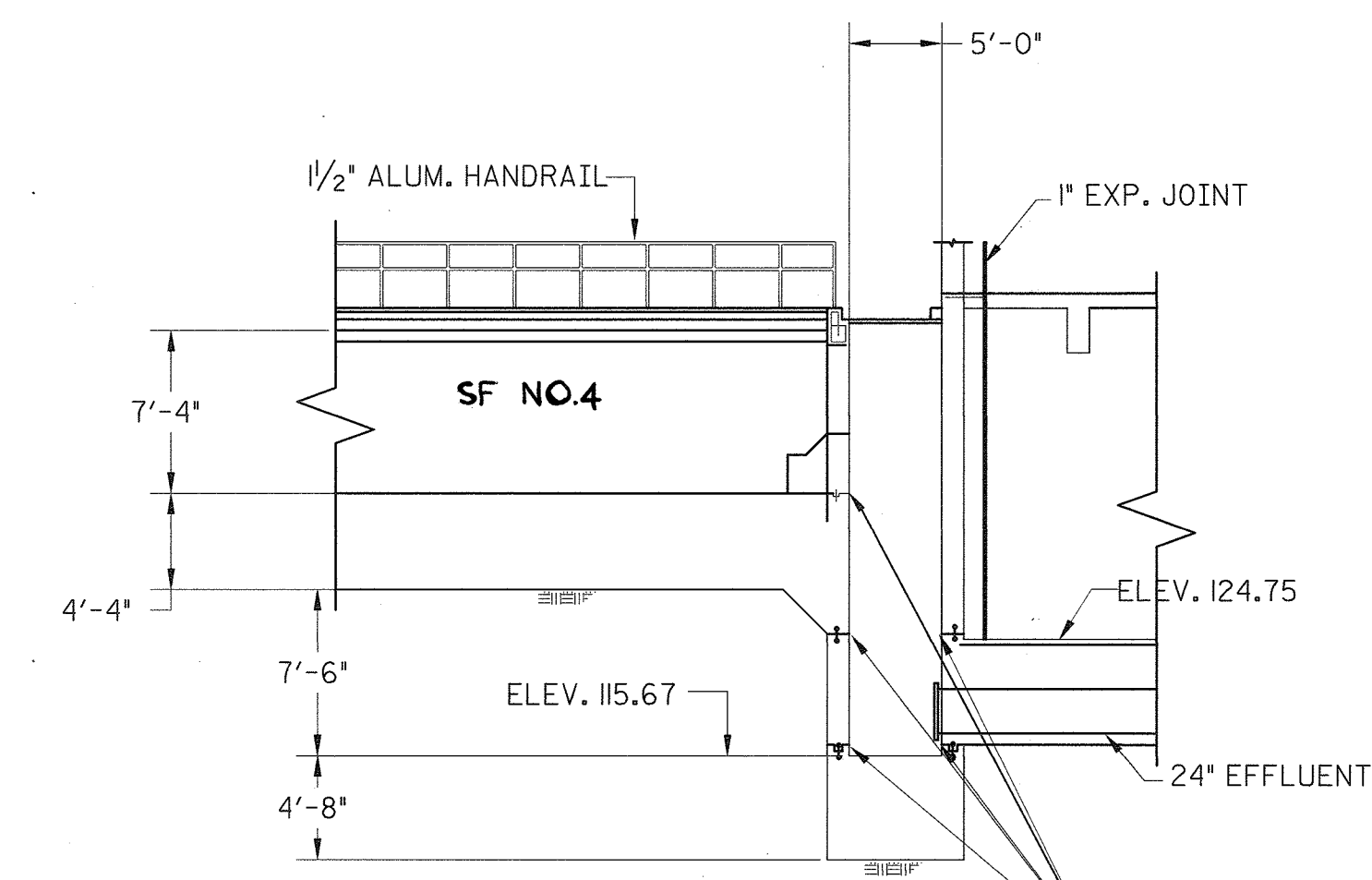
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	 BUCHART HORNING <small>3000 CHESTNUT AVENUE SUITE 400 BALTIMORE, MD 21211</small> Engineers, Architects and Planners		DES: _____ DRN: BB _____ CHK: HG _____ DATE: 5/11/00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>BY</th> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	BY	NO.	REVISION	DATE					PC - 3 PHOTOGRAPHS	LITTLE PATUXENT WATER RECLAMATION PLANT STRUCTURAL IMPROVEMENTS CAPITAL PROJECT NO. S-6223 CONTRACT NO. 20-3843 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 12 OF 14 S-10
BY	NO.	REVISION	DATE												

R. L. Benjamin 7-6-00
CHIEF, BUREAU OF UTILITIES DATE



PLAN - SAND FILTER NO. 4 AND SAND FILTER NO. 5

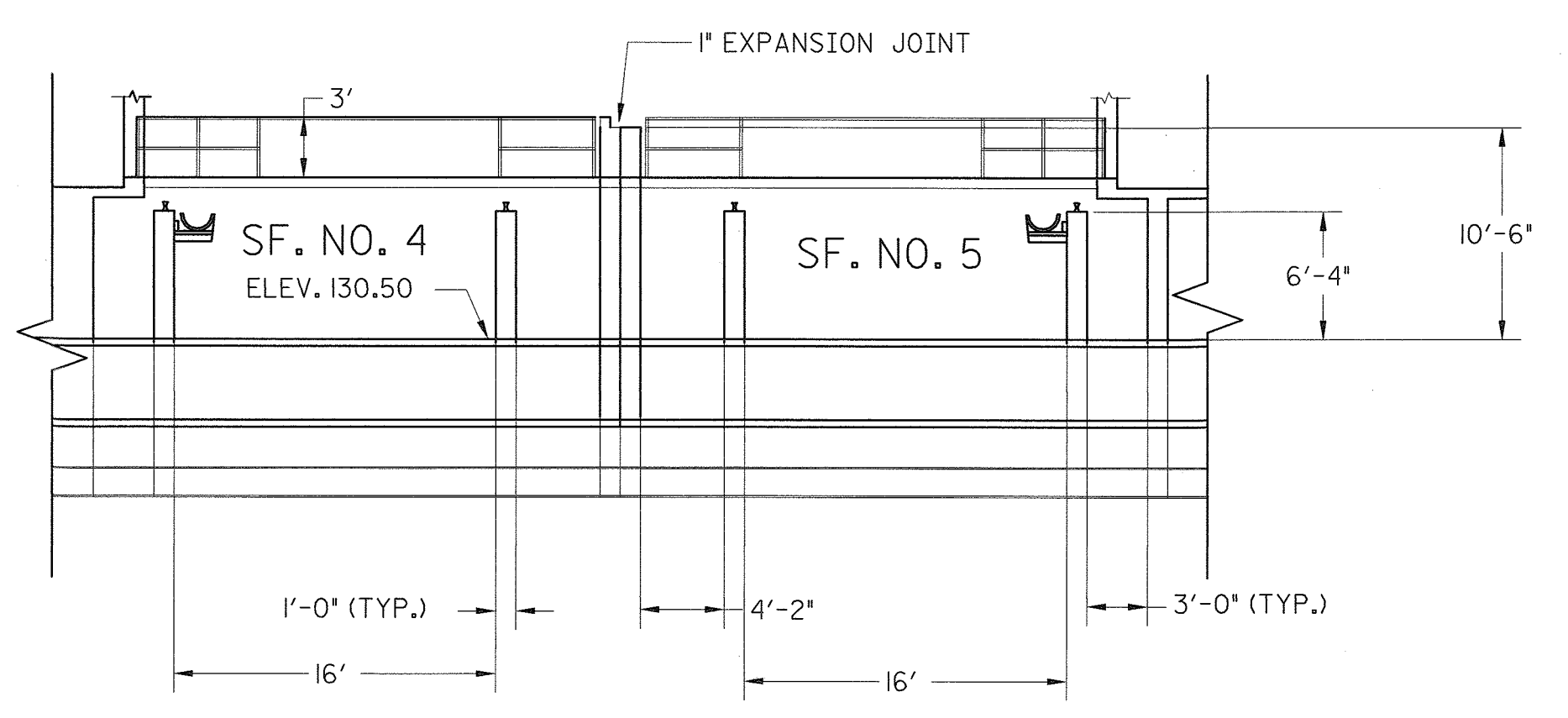
N.T.S.



B-B SECTION

N.T.S.

CONTRACTOR SHALL REPAIR FULL LENGTH OF HORIZONTAL CONSTRUCTION JOINTS AS PER SPECIFICATIONS. CONSTRUCTION JOINT AT ELEV. 124.75 AT COMMON WALL BETWEEN SAND FILTER #4 EFFLUENT PIT AND FLOCCULATION BASIN #4 EFFLUENT PIT SHALL BE REPAIRED ON BOTH SIDES OF THE COMMON WALL. ALL OTHER HORIZONTAL JOINTS SHALL BE REPAIRED ALONG INSIDE FACE OF THE WALL AT THE EFFLUENT PITS FOR SF. NO. 4 & SF. NO. 5.



A-A SECTION

N.T.S.

LEGEND

 LIMIT OF WORK UNDER THIS CONTRACT

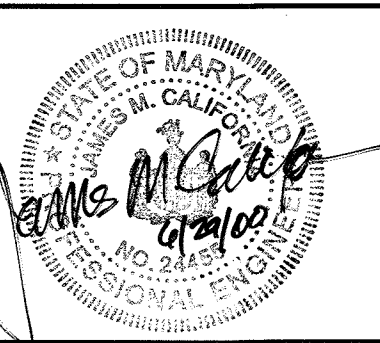
NOTES:

1. REINFORCING IS NOT SHOWN FOR CLARITY.
2. REPAIR LEAKING JOINTS AND VERTICAL CRACKS, AND MINOR CRACKS ON BOTH SIDES ALONG THE COMMON WALL BETWEEN SAND FILTER NO. 4 AND SAND FILTER NO. 5 AS PER SPECIFICATIONS.
3. SEE SHEET 14 FOR PHOTOGRAPHS OF THESE TANKS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Bevinger 7-6-00
CHIEF, BUREAU OF UTILITIES

bh
BUCHART
HORN, INC.
3000 CHESTNUT AVENUE
SUITE 400
BALTIMORE, MD 21211
Engineers, Architects and Planners

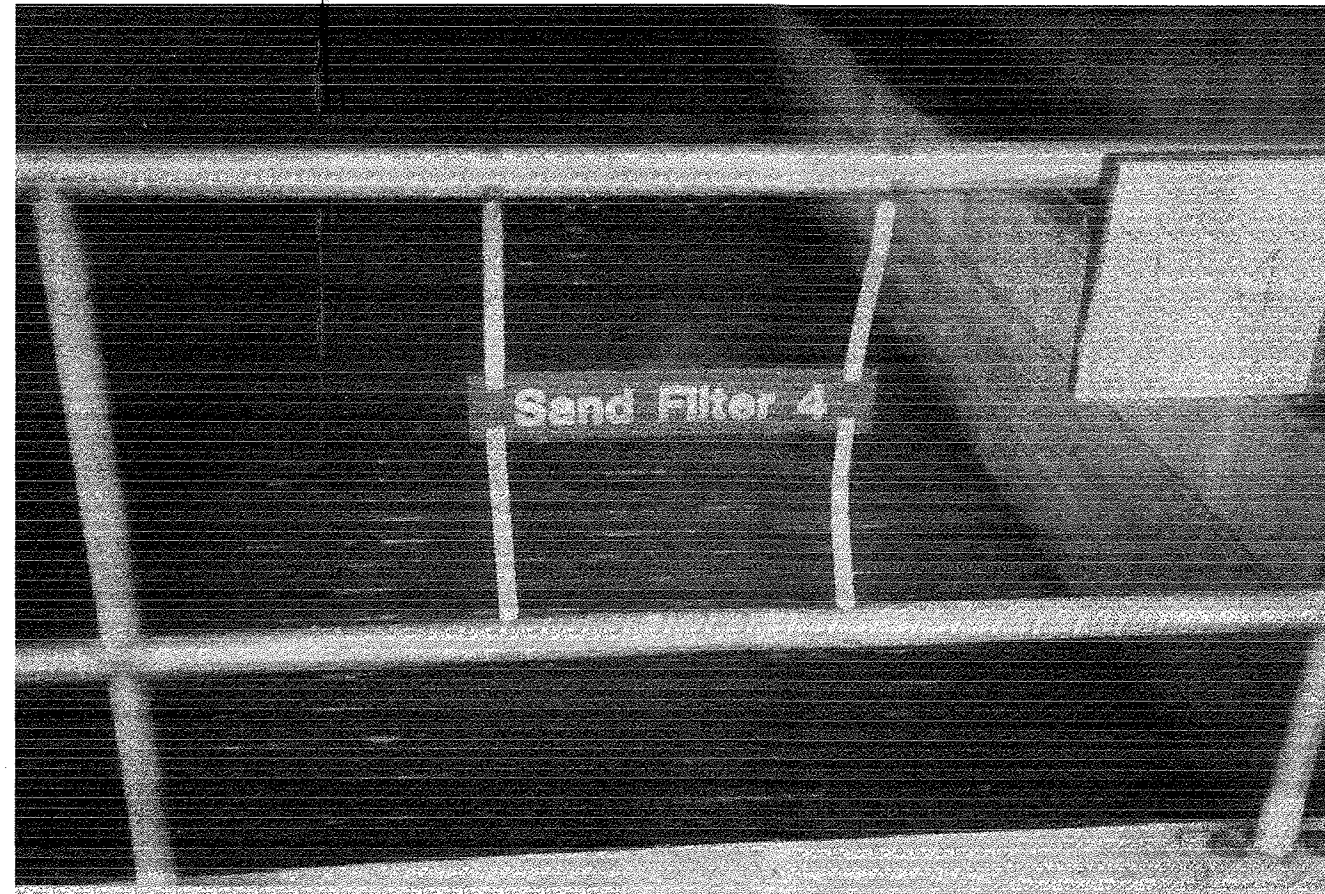


DES:				
DRN:	BB			
CHK:	HG			
DATE:	5/1/00	BY	NO.	REVISION
				DATE

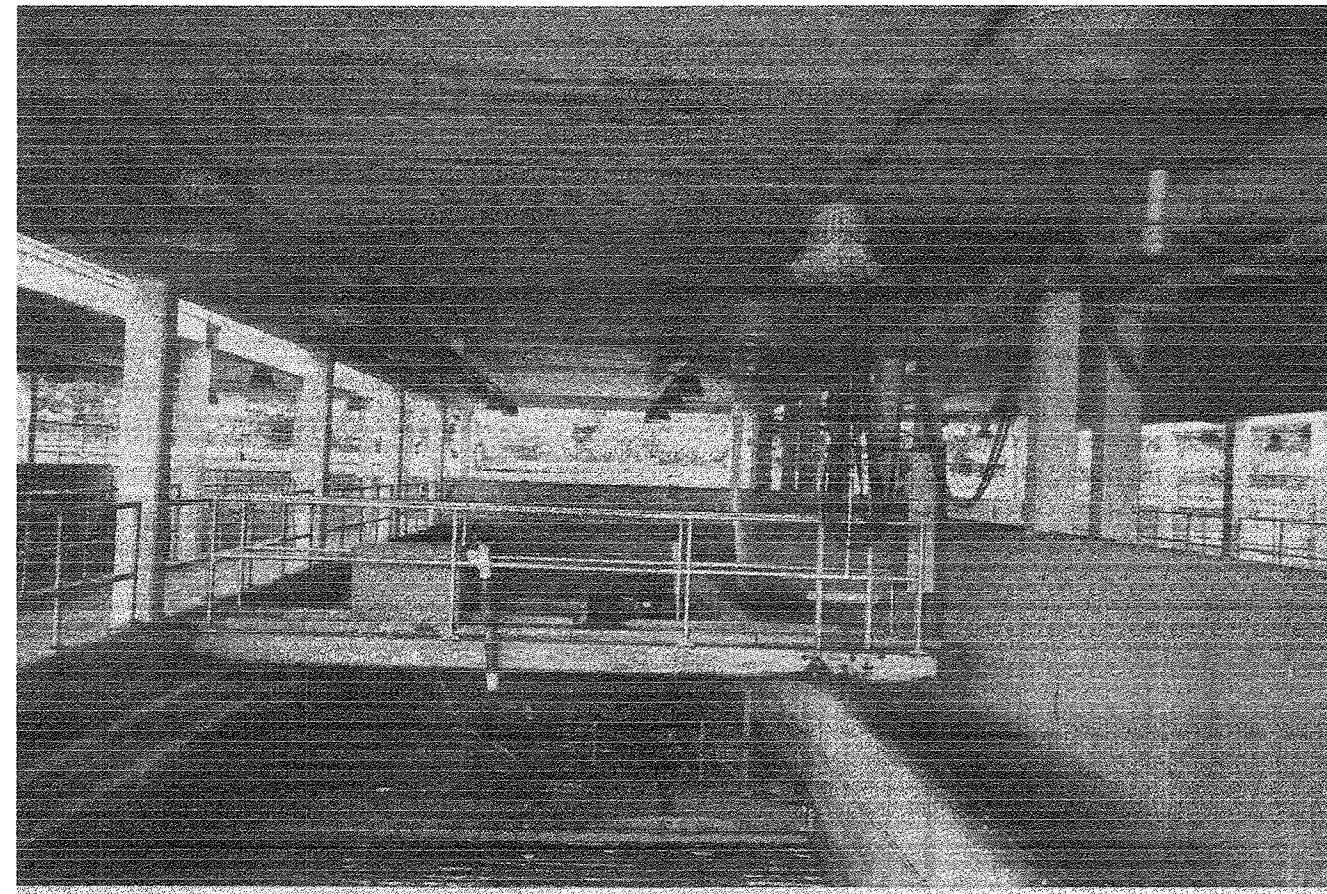
SAND FILTERS NO. 4 AND NO. 5
PLAN, SECTIONS, AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

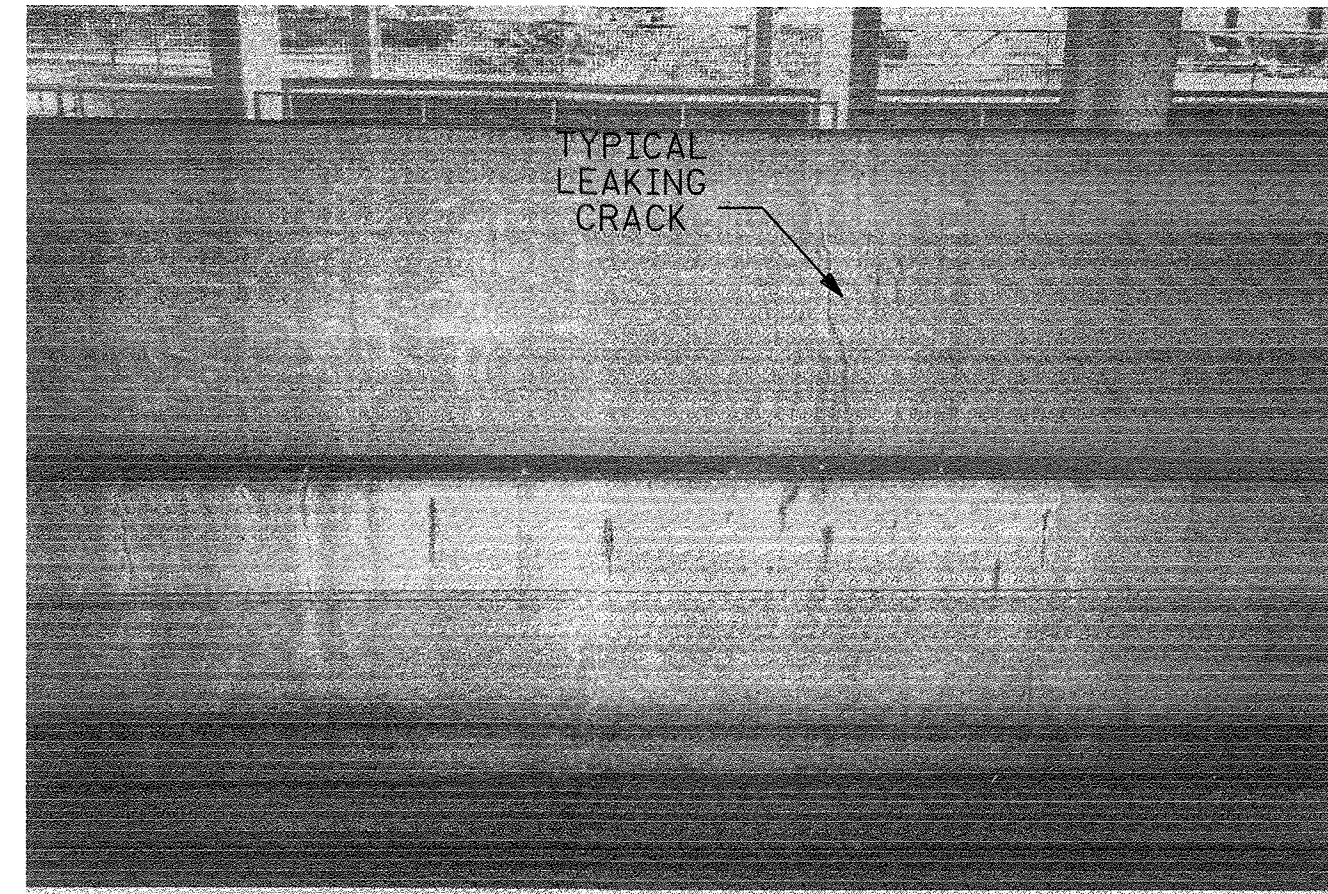
SCALE AS SHOWN
SHEET 13 OF 14
S-II



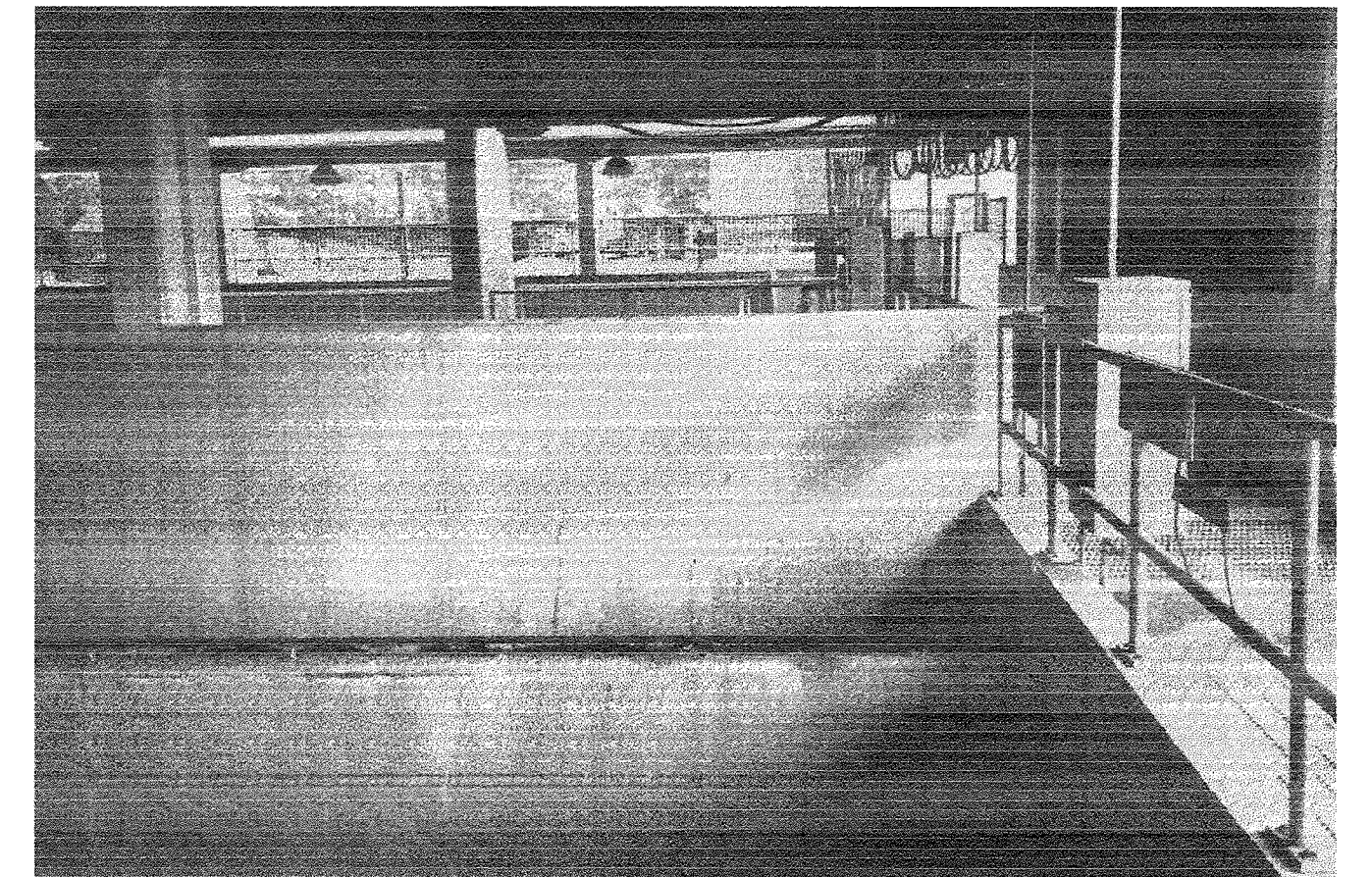
SF-4



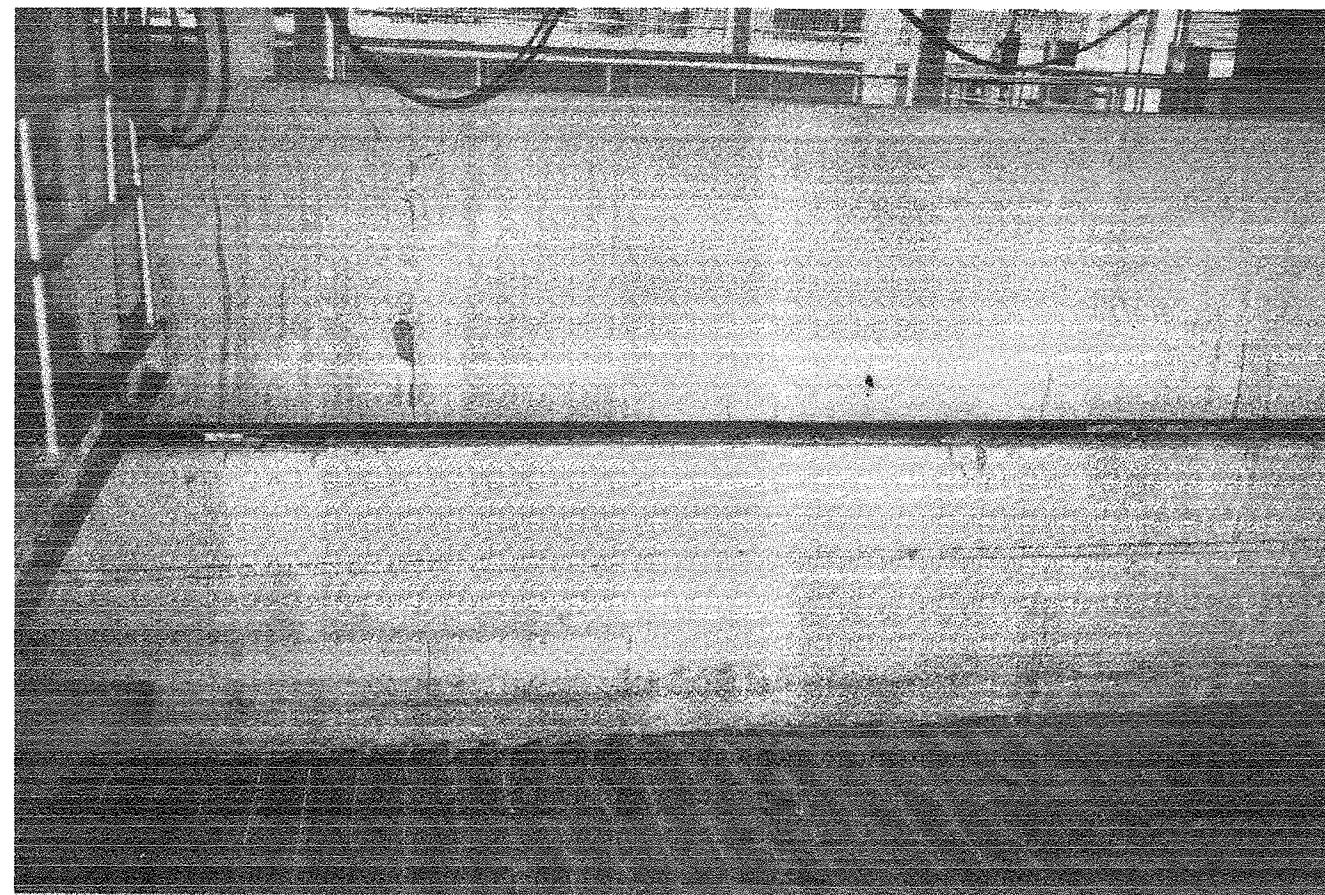
SF-4



SF-4



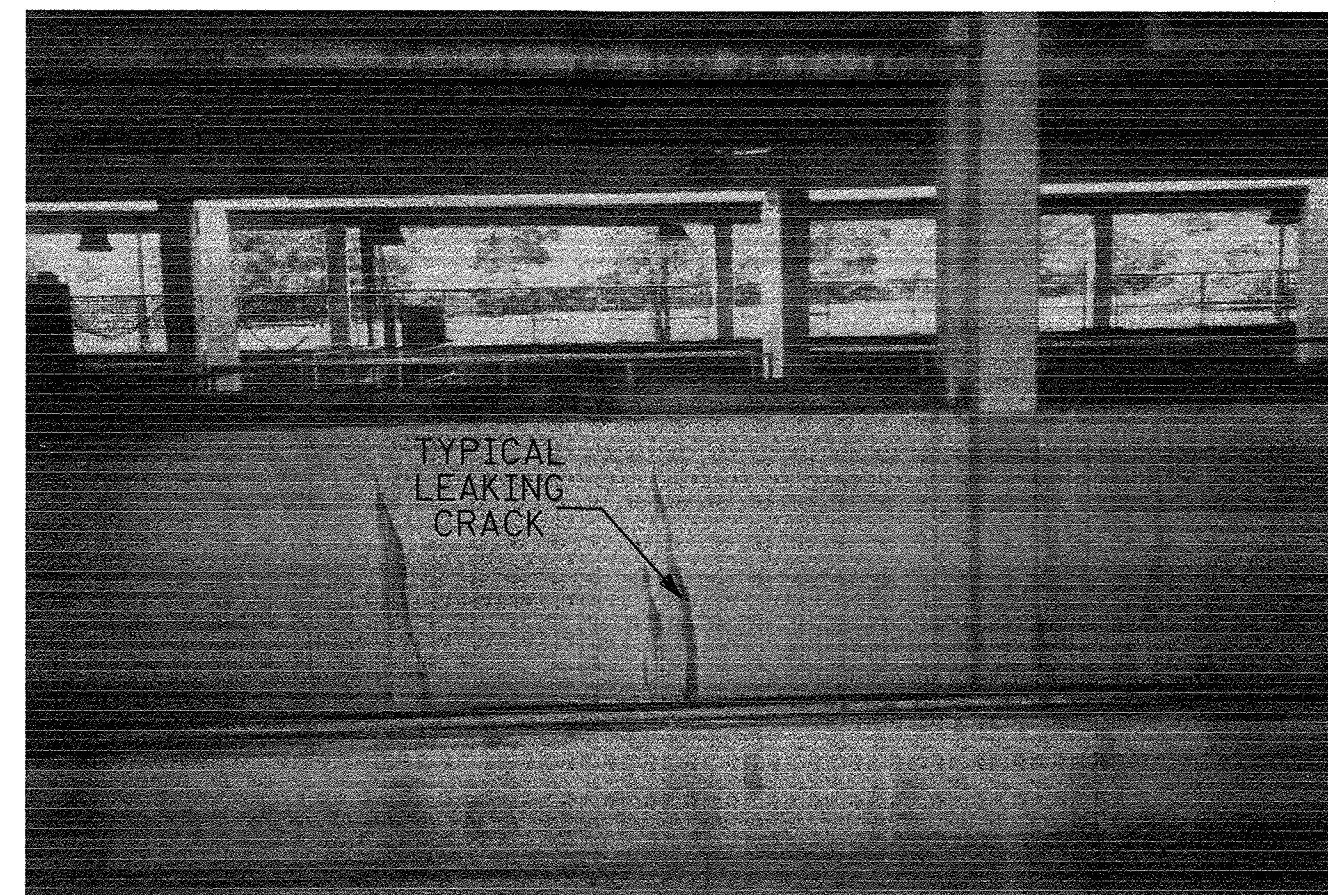
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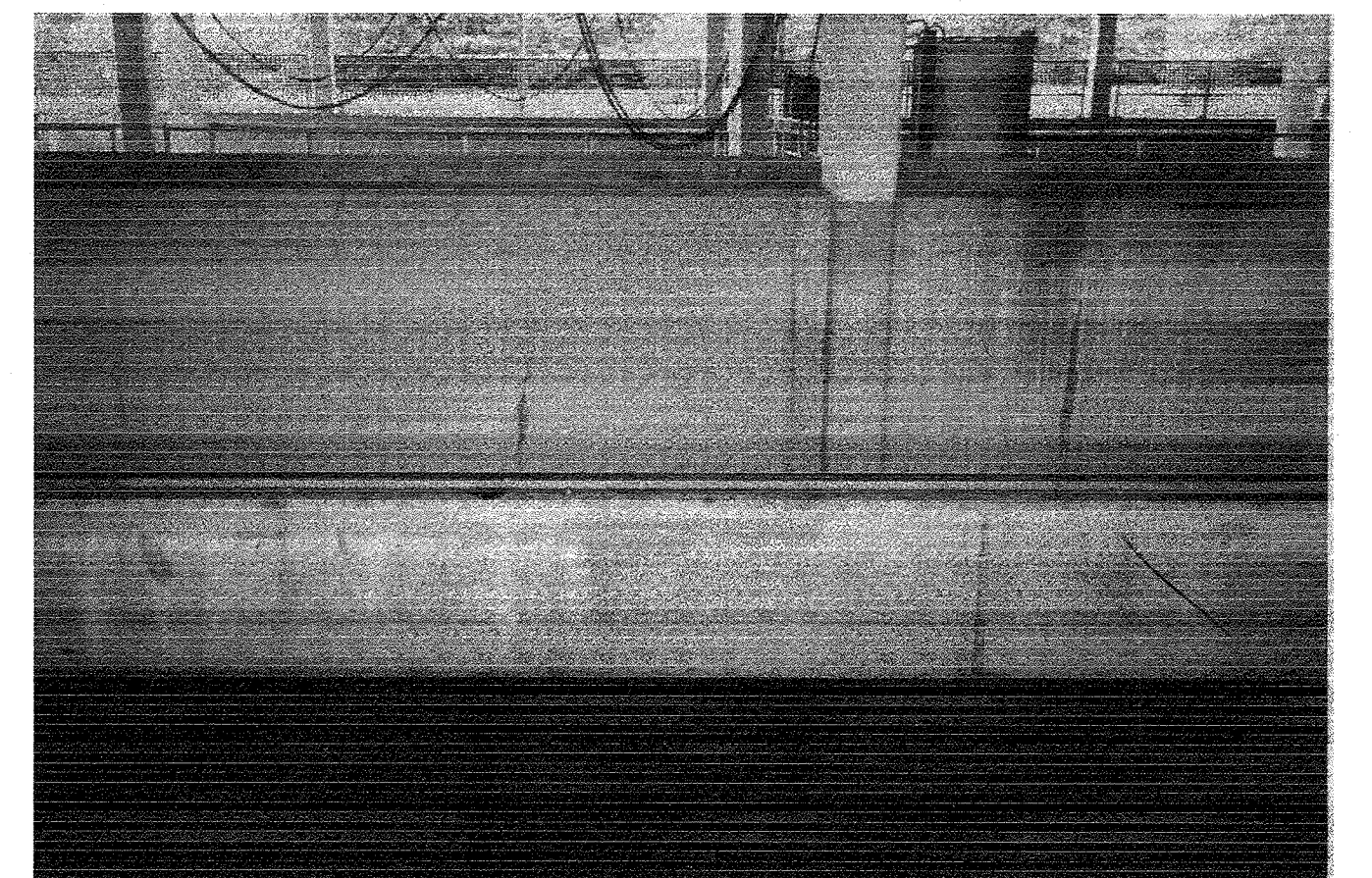
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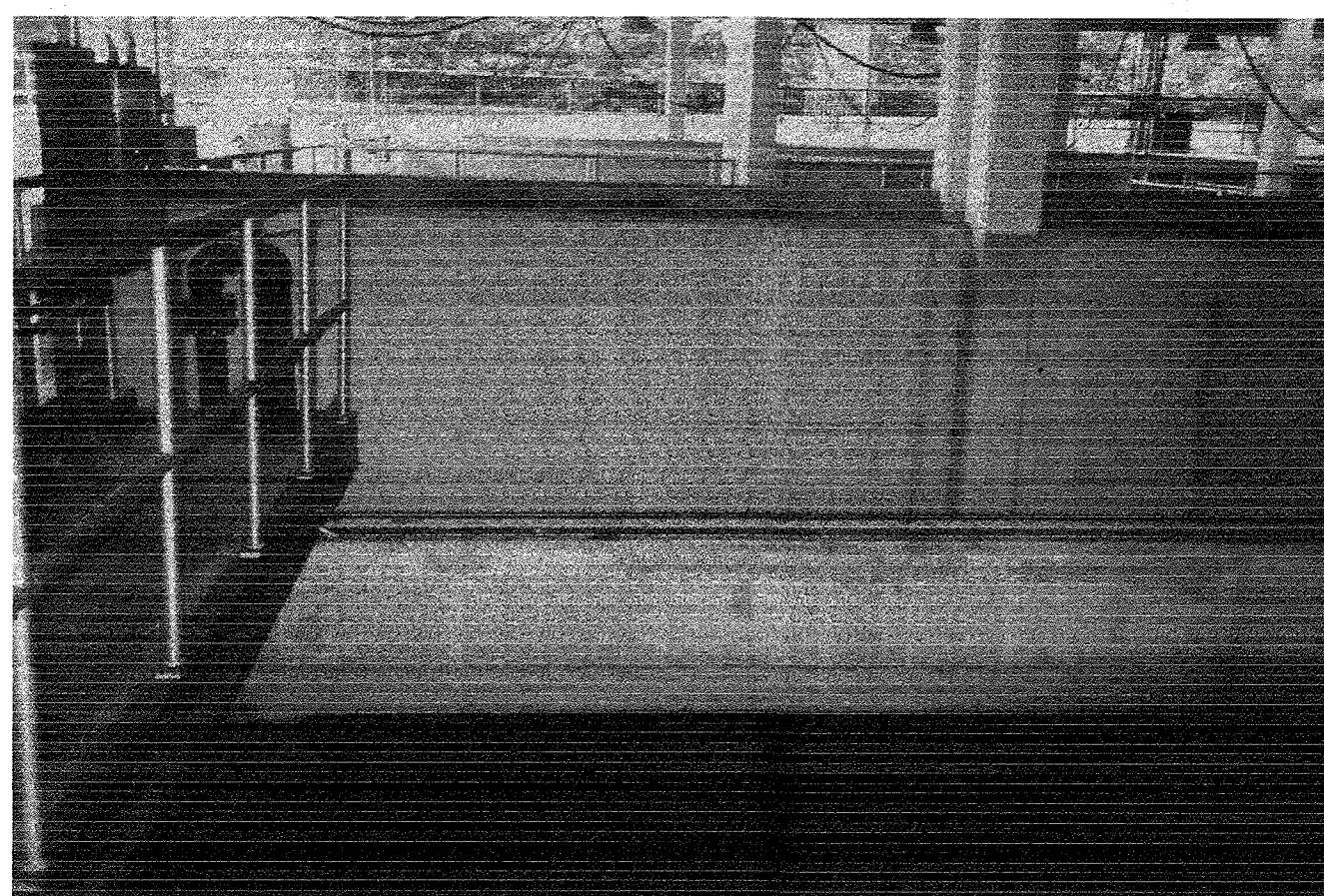
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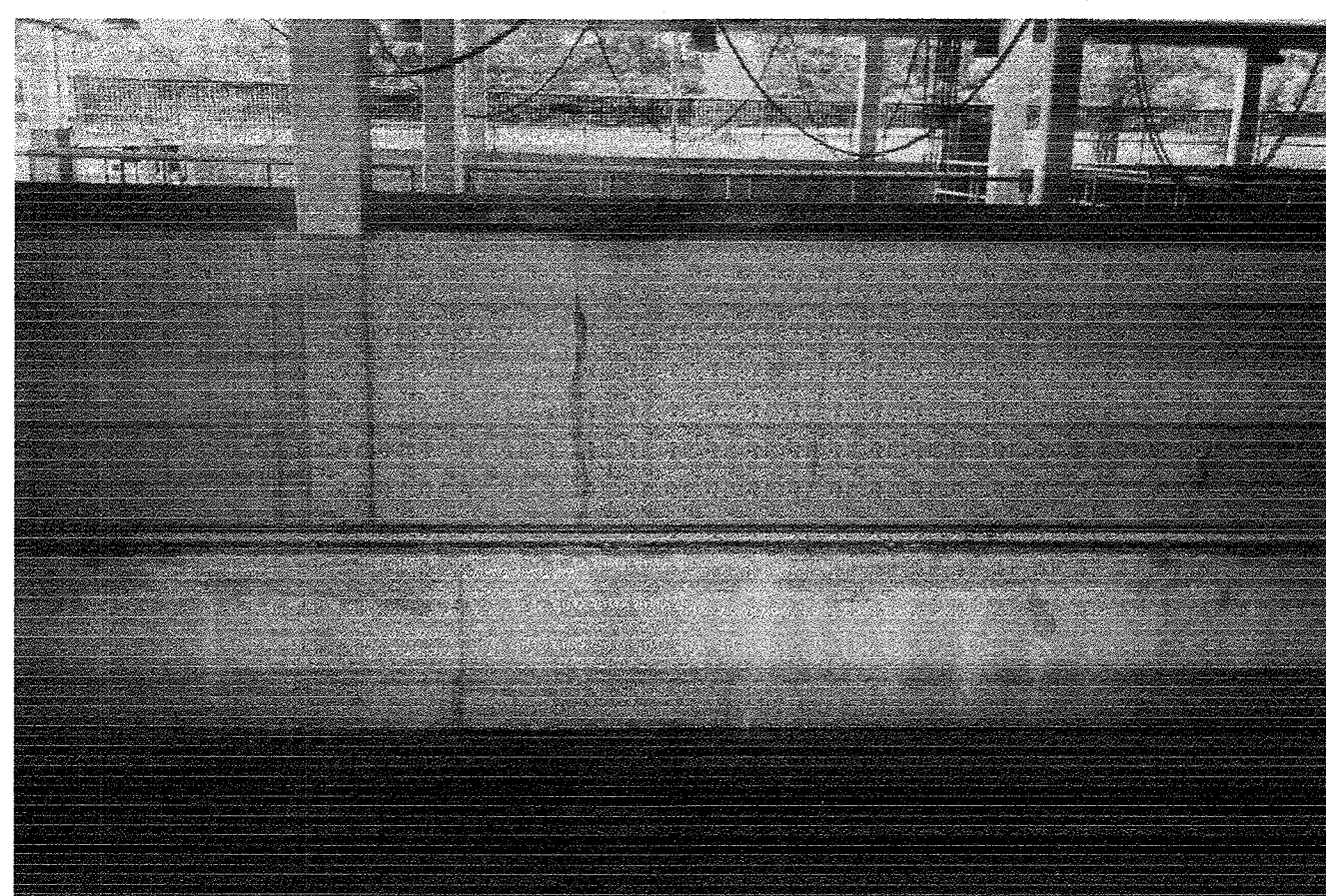
SF-5



SF-5



SF-5

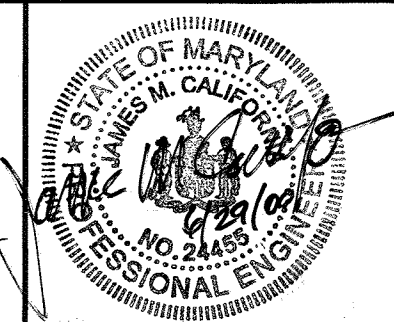


SF-5

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Benjamin 7-6-07
CHIEF, BUREAU OF UTILITIES DATE

BUCHART HORN, INC.
3000 CHESTNUT AVENUE
SUITE 501
BALTIMORE, MD 21211
Engineers, Architects and Planners



DES:	
DRN: BB	
CHK: HG	
DATE: 5/1/00	
BY NO.	
REVISION	
DATE	

SAND FILTERS NOS. 4 & 5
PHOTOGRAPHS

LITTLE PATUXENT WATER RECLAMATION PLANT
STRUCTURAL IMPROVEMENTS
CAPITAL PROJECT NO. S-6223
CONTRACT NO. 20-3843
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
14 OF 14
S-12

FILE: g:\0917809\02_design\structural\willomberg\02.sl.dgn
DATE: 5-May-00 10:05