

DESIGN MEMORANDUM



Dalecarlia Water Treatment Plant and Georgetown Reservoir Residuals Collection and Treatment



U.S. Army Corps of Engineers
Baltimore District
Washington Aqueduct Division

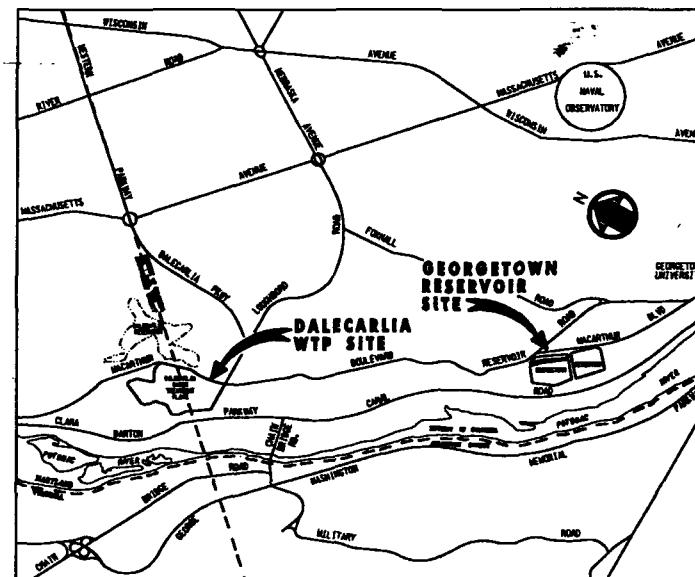
DESIGN MEMORANDUM - DRAWINGS *BOOK 2 OF 5*



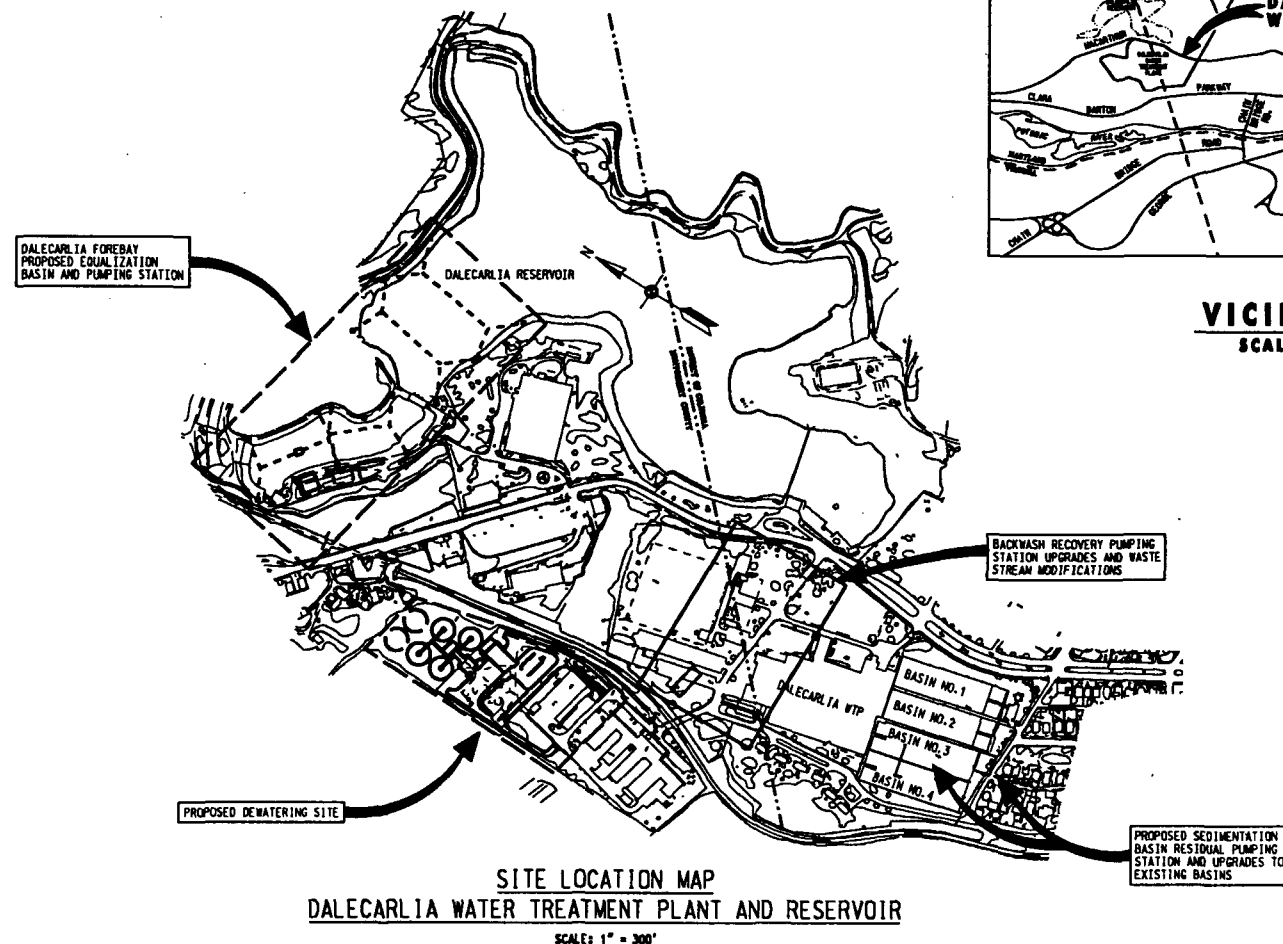
Whitman, Requardt and Associates

DALECARLIA WATER TREATMENT PLANT AND GEORGETOWN RESERVOIR

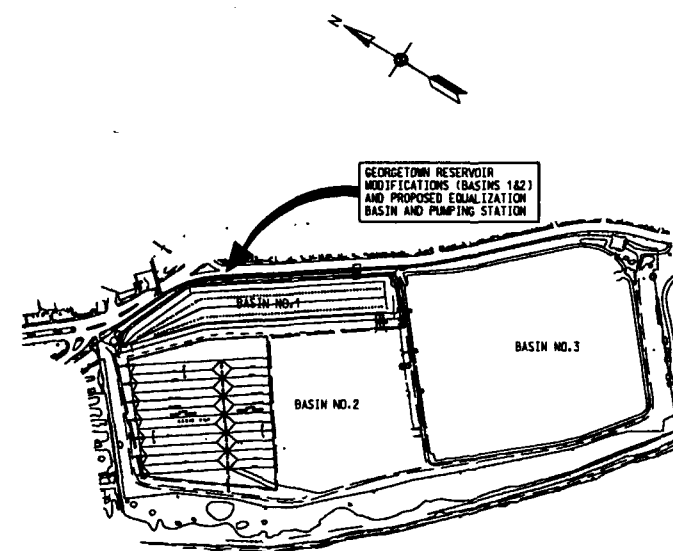
RESIDUALS COLLECTION AND TREATMENT



VICINITY MAP
SCALE: 1" = 2000'



SITE LOCATION MAP
DALECARLIA WATER TREATMENT PLANT AND RESERVOIR
SCALE: 1" = 300'



SITE LOCATION MAP
GEORGETOWN RESERVOIR
SCALE: 1" = 300'

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DESIGN MEMORANDUM		
VICINITY AND SITE LOCATION MAPS		
WITH: REEDNEY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 326-5400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET 0-1

GENERAL

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- G-2 Design Memorandum - Drawing Index

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- C-4 Dalecarlia Forebay - Site / Utility Plan
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- C-5 Sediment Basin Area to Dewatering Area - Utility Plan
- C-6 Dewatering Site to Dalecarlia Forebay - Utility Plan
- C-7 Georgetown Reservoir - Site and Utility Plan
- C-8 Georgetown Reservoir - Site Grading Plan and Sections
- C-9 Georgetown Conduit Residuals FM - Plan / Sections / Details
- C-10 Profiles - Force Mains - Utility Profiles
- C-11 Profiles - Force Mains - Utility Profiles
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- C-13 Georgetown Reservoir Area and Sedimentation Basin Area - Boring Location Plan
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- C-17 Dalecarlia Waste Streams Modifications - Plant Drain P.S.; Sedimentation Basins Valve Chamber
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- A-5 Dewatering Facility - Third Floor Plan
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- S-9 Gravity Thickener - Pile Plan
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- M-31 Dewatering Facility - Second Floor Plan
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INSTRUMENTATION

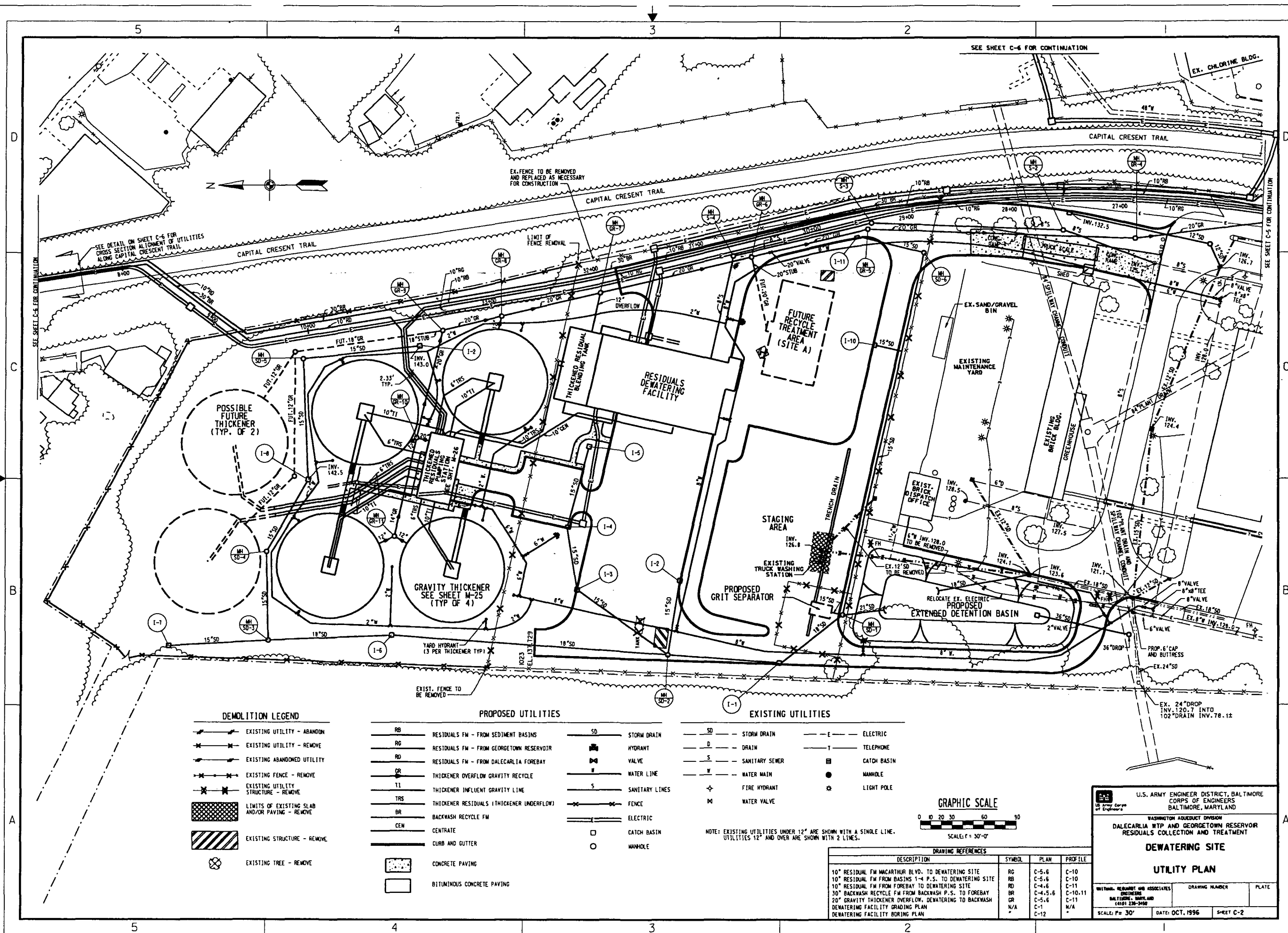
- I-1 SCADA System

ELECTRICAL

- E-1 Dewatering Facility - Single Line Diagram - Part A
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- E-8 Dalecarlia Waste Streams Modifications - Existing Backwash Recovery P.S. - Single Line Diagram

NOTE: FOR THE WEB RELEASE OF THIS DOCUMENT, THE FOLLOWING PAGES HAVE BEEN REMOVED BECAUSE THEY CONTAIN SPECIFIC DESIGN AND OPERATIONAL INFORMATION ABOUT EXISTING WATER TREATMENT PROCESSES OR FACILITIES: C-14, C-15, C-16, C-17, M-13, M-14, M-15, M-16, M-17, M-18, M-19, M-35, I-1, and E-4.

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ARMBURD DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DESIGN MEMORANDUM		
DRAWING INDEX		
WITHMAN, REINHOLD AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-5400	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET G-2



DEMOLITION LEGEND

- EXISTING UTILITY - ABANDON
- EXISTING UTILITY - REMOVE
- EXISTING ABANDONED UTILITY
- EXISTING FENCE - REMOVE
- EXISTING UTILITY STRUCTURE - REMOVE
- LIMITS OF EXISTING SLAB AND/OR PAVING - REMOVE
- EXISTING STRUCTURE - REMOVE
- EXISTING TREE - REMOVE

PROPOSED UTILITIES

- RB RESIDUALS FM - FROM SEDIMENT BASINS
- RG RESIDUALS FM - FROM GEORGETOWN RESERVOIR
- RD RESIDUALS FM - FROM DALECARLIA FOREBAY
- GR THICKENER OVERFLOW GRAVITY RECYCLE
- TI THICKENER INFLUENT GRAVITY LINE
- TRS THICKENER RESIDUALS (THICKENER UNDERFLOW)
- BR BACKWASH RECYCLE FM
- CEN CENTRATE
- CURB AND GUTTER
- CONCRETE PAVING
- BITUMINOUS CONCRETE PAVING

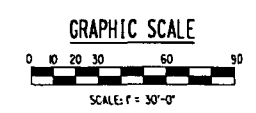
EXISTING UTILITIES

- SD STORM DRAIN
- D DRAIN
- S SANITARY SEWER
- W WATER MAIN
- FH FIRE HYDRANT
- WV WATER VALVE
- HYDRANT
- VALVE
- WATER LINE
- SANITARY LINES
- FENCE
- ELECTRIC
- CATCH BASIN
- MANHOLE

EXISTING UTILITIES

- SD STORM DRAIN
- D DRAIN
- S SANITARY SEWER
- W WATER MAIN
- FH FIRE HYDRANT
- WV WATER VALVE
- E ELECTRIC
- T TELEPHONE
- CATCH BASIN
- MANHOLE
- LIGHT POLE

NOTE: EXISTING UTILITIES UNDER 12" ARE SHOWN WITH A SINGLE LINE. UTILITIES 12" AND OVER ARE SHOWN WITH 2 LINES.



DESCRIPTION	SYMBOL	PLAN	PROFILE
10" RESIDUAL FM MCARTHUR BLVD. TO DEWATERING SITE	RG	C-5.6	C-10
10" RESIDUAL FM FROM BASINS 1-4 P.S. TO DEWATERING SITE	RG	C-5.6	C-10
10" RESIDUAL FM FROM FOREBAY TO DEWATERING SITE	RD	C-4.6	C-11
30" BACKWASH RECYCLE FM FROM BACKWASH P.S. TO FOREBAY	BR	C-4.5.6	C-10.11
20" GRAVITY THICKENER OVERFLOW, DEWATERING TO BACKWASH	GR	C-5.6	C-11
DEWATERING FACILITY GRADING PLAN	N/A	C-1	N/A
DEWATERING FACILITY BORING PLAN	N/A	C-12	N/A

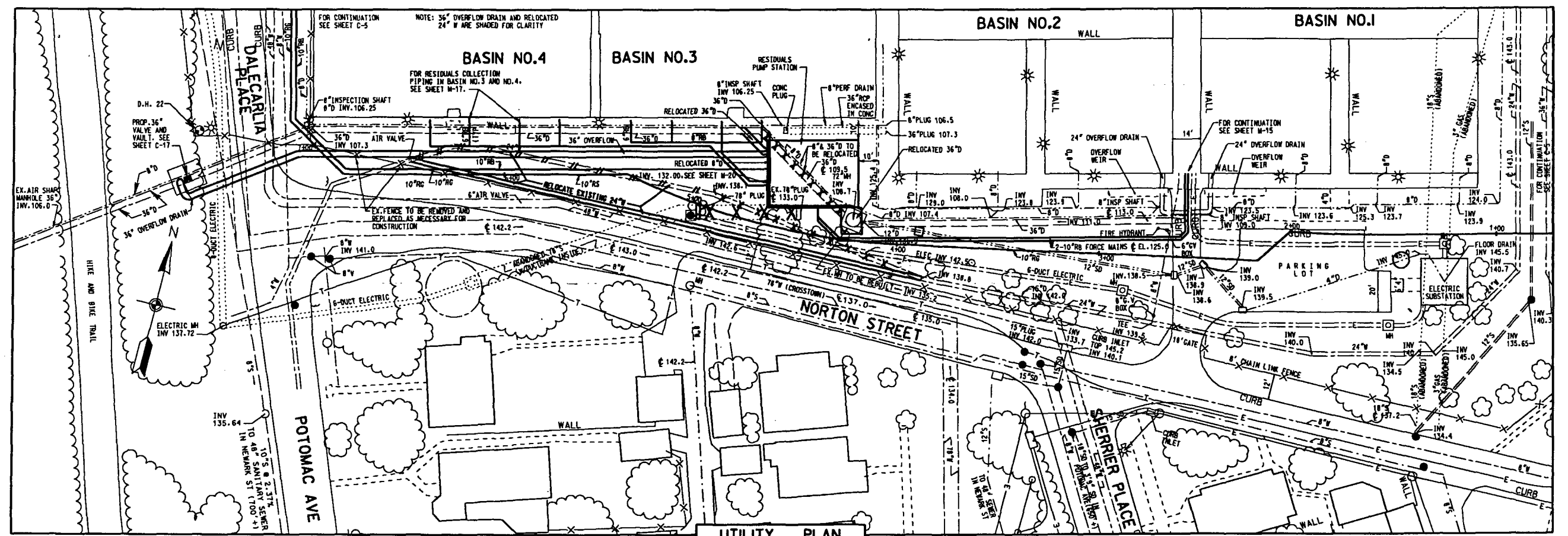
U.S. ARMY ENGINEER DISTRICT, BALTIMORE
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BALTIMORE, MARYLAND

WASHINGTON ADJUTANT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

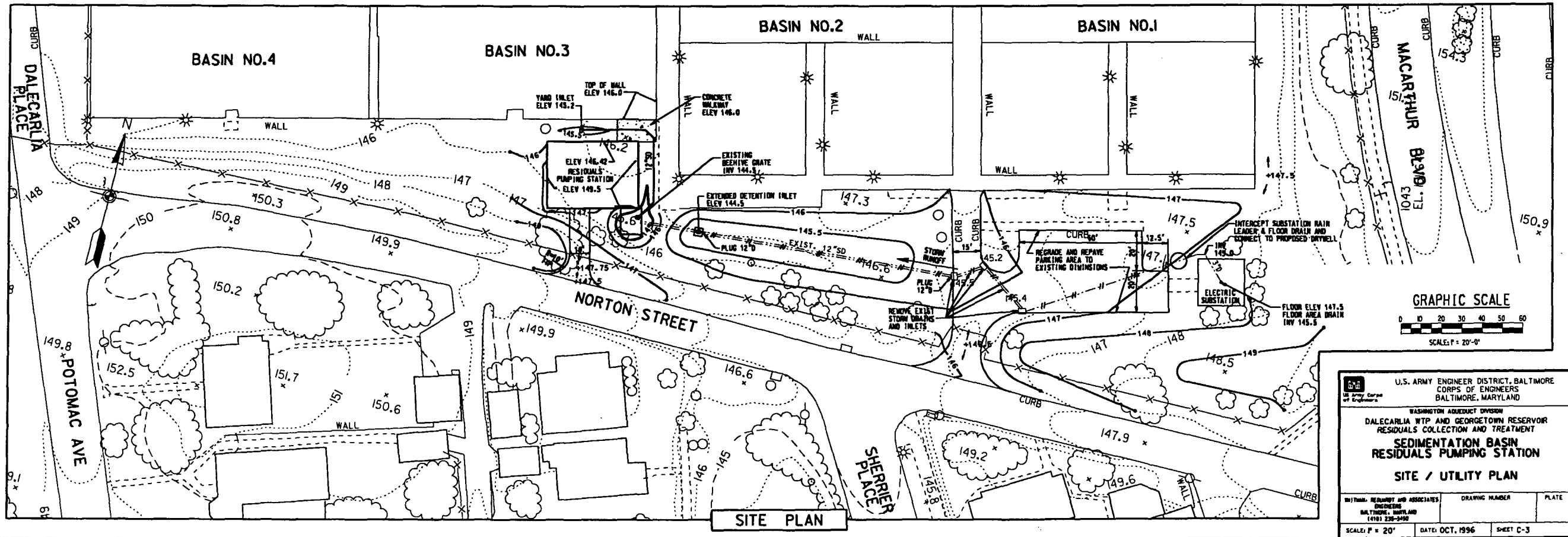
DEWATERING SITE

UTILITY PLAN

UNIVERSAL RECORDING AND ASSOCIATES BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER	PLATE
SCALE: 1" = 30'	DATE: OCT. 1996	SHEET C-2

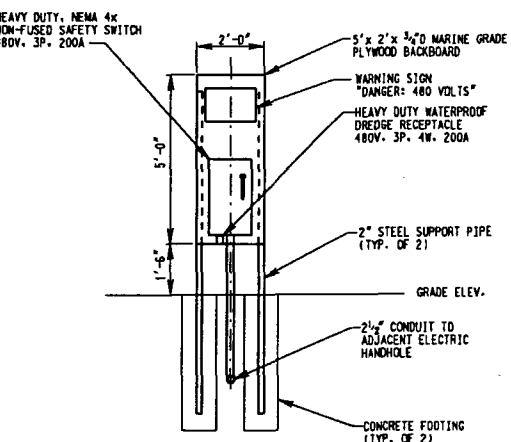
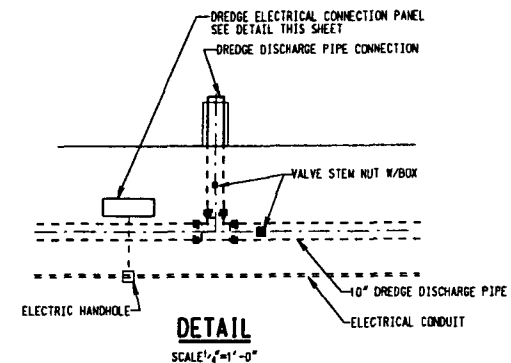
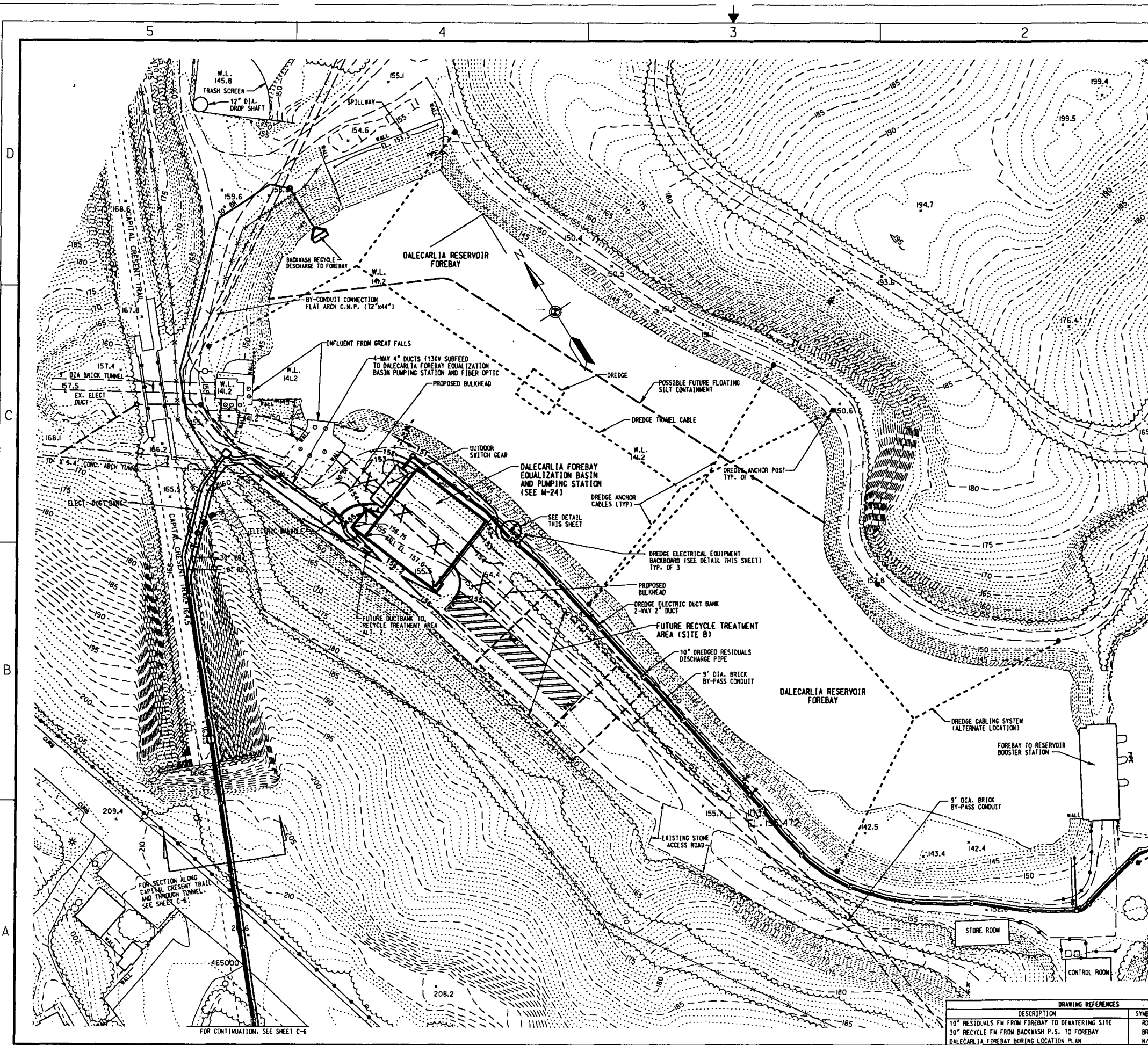


UTILITY PLAN

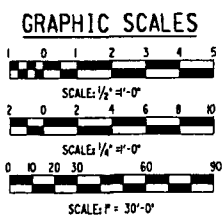


SITE PLAN

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR SEDIMENTATION BASIN RESIDUALS PUMPING STATION SITE / UTILITY PLAN		
BY: [Signature] DATE: OCT, 1996 SCALE: P = 20'	DRAWING NUMBER SHEET C-3	PLATE



DETAIL: DREDGE ELECTRICAL CONNECTION PANEL
SCALE: 1/2" = 1'-0"



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BALTIMORE, MARYLAND

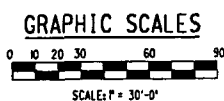
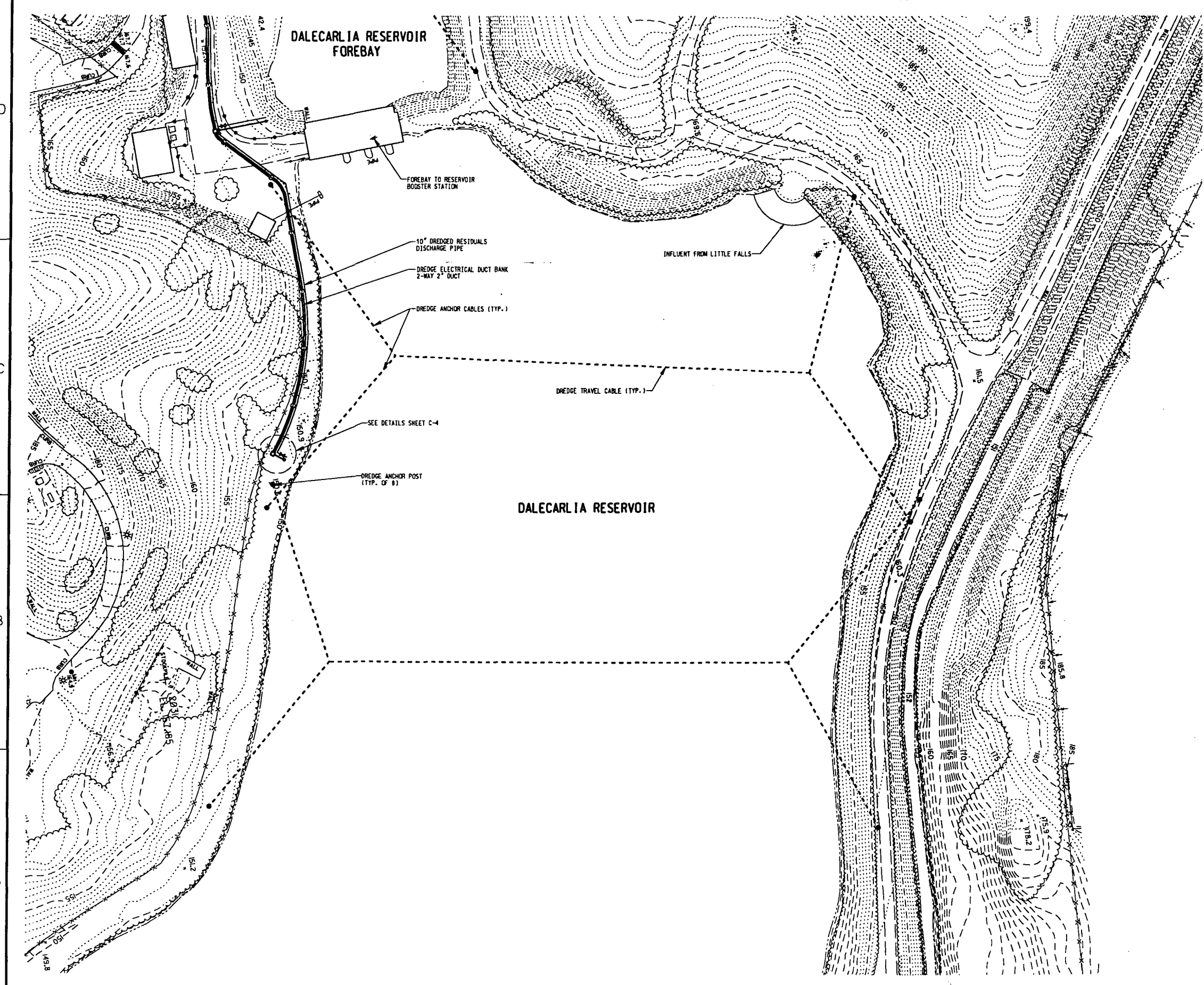
WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

DALECARLIA FOREBAY
SITE / UTILITY PLAN

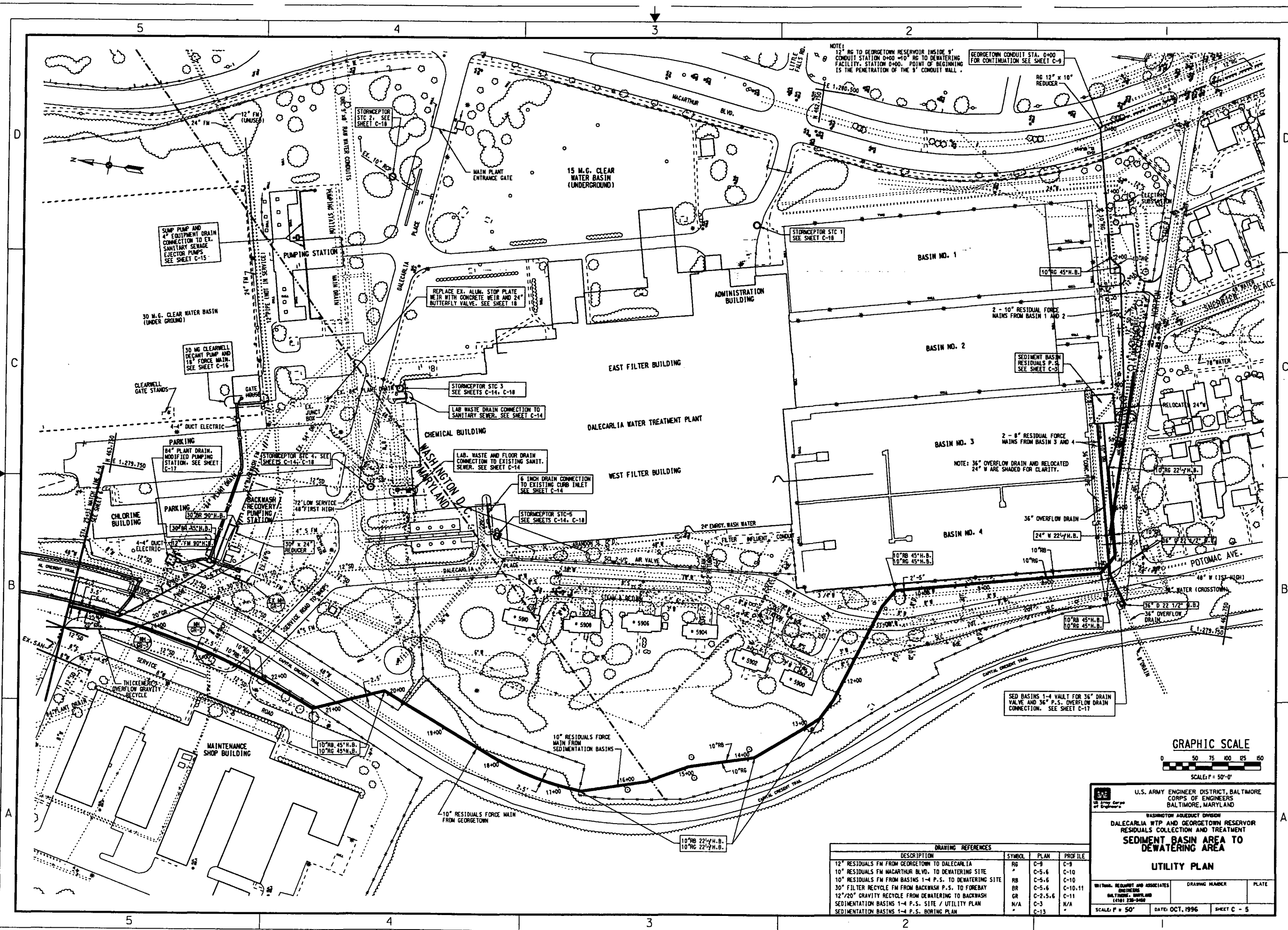
DESCRIPTION	SYMBOL	PLAN	PROFILE
10" RESIDUALS FM FOREBAY TO DOWLING SITE	RD	C-6	C-11
30" RECYCLE FM FROM BACKWASH P.S. TO FOREBAY	BR	C-5, 6	C-10, 11
DALECARLIA FOREBAY BORING LOCATION PLAN	N/A	C-12	N/A

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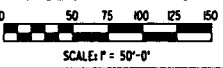
SCALE: P=30' DATE: OCT. 1996 SHEET C-4



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WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DALECARLIA RESERVOIR SITE / UTILITY PLAN		
WITHDRAWN, REQUIRING AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-3460	DRAWING NUMBER	PLATE
SCALE: 1"=30'	DATE: OCT. 1996	SHEET C-4A



GRAPHIC SCALE



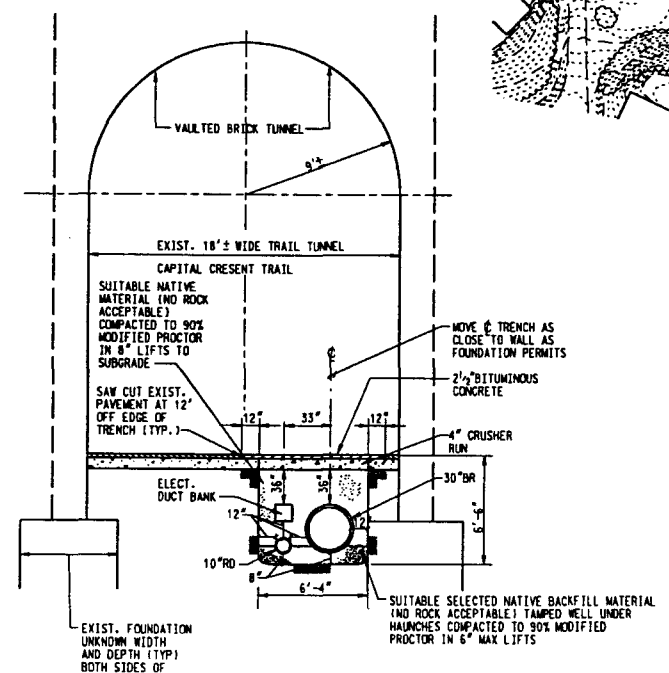
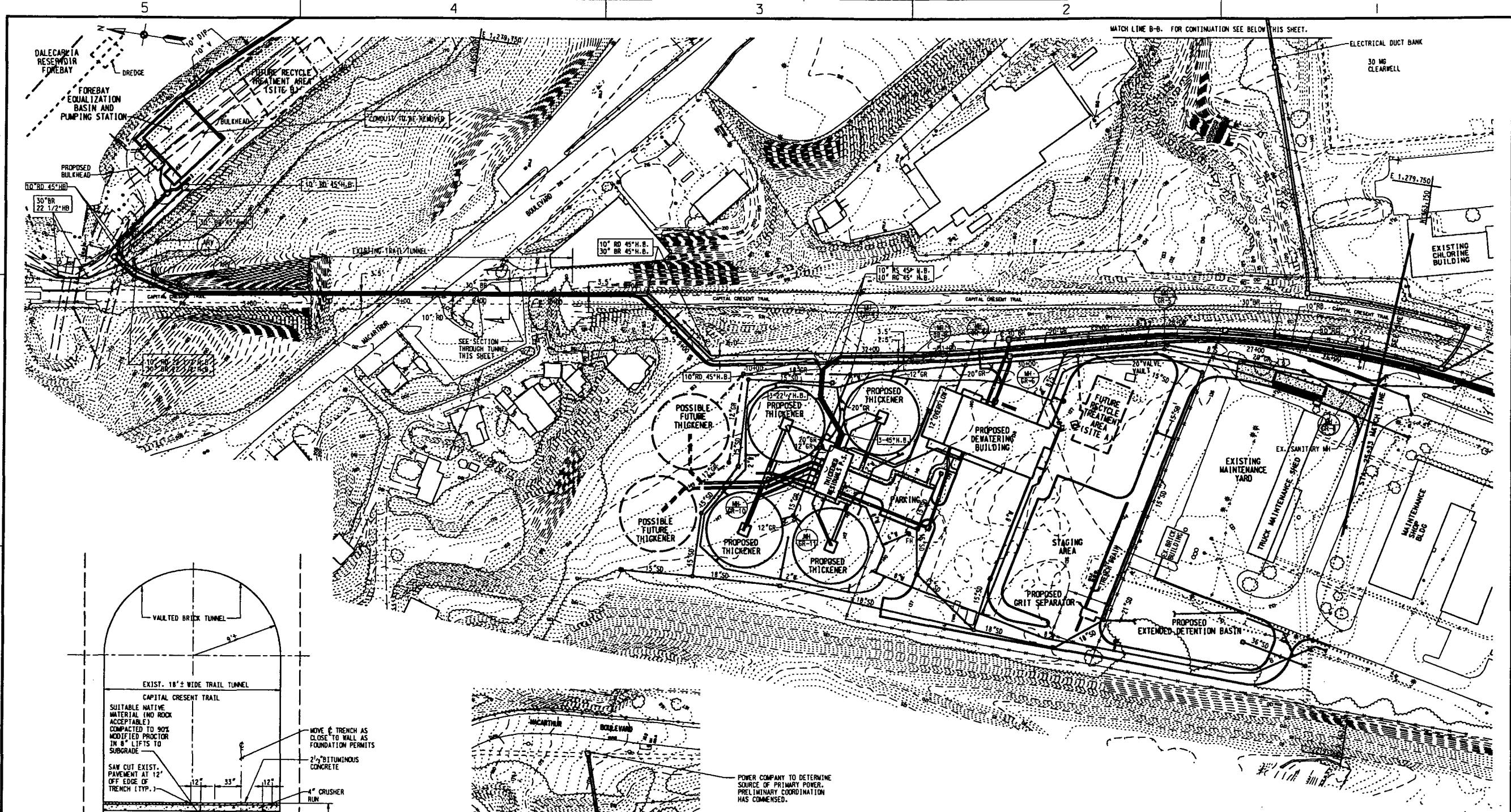
U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT
**SEDIMENT BASIN AREA TO
DEWATERING AREA**

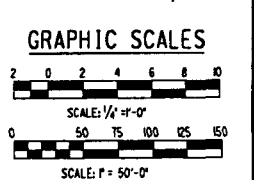
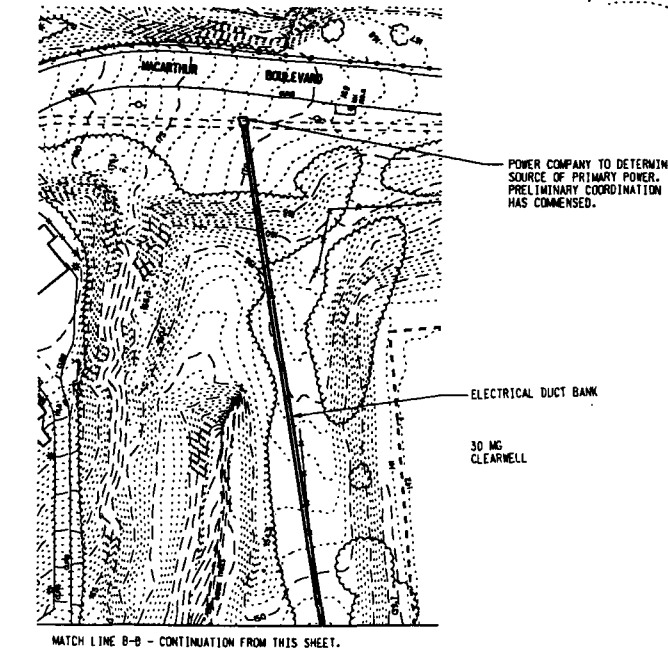
UTILITY PLAN

WITHALL, REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3400	DRAWING NUMBER	PLATE
SCALE: 1" = 50'	DATE: OCT, 1996	SHEET C - 5

DRAWING REFERENCES			
DESCRIPTION	SYMBOL	PLAN	PROFILE
12" RESIDUALS FM FROM GEORGETOWN TO DALECARLIA	RG	C-9	C-9
10" RESIDUALS FM MACARTHUR BLVD. TO DEWATERING SITE	"	C-5,6	C-10
10" RESIDUALS FM FROM BASINS 1-4 P.S. TO DEWATERING SITE	RB	C-5,6	C-10
30" FILTER RECYCLE FM FROM BACKWASH P.S. TO FOREBAY	BR	C-5,6	C-10,11
12"/20" GRAVITY RECYCLE FROM DEWATERING TO BACKWASH	GR	C-2,5,6	C-11
SEDIMENTATION BASINS 1-4 P.S. SITE / UTILITY PLAN	C-3	N/A	"
SEDIMENTATION BASINS 1-4 P.S. BORING PLAN	"	C-13	"



SECTION THROUGH TUNNEL AND
CAPITAL CRESENT TRAIL
SCALE: 1/4" = 1'-0"



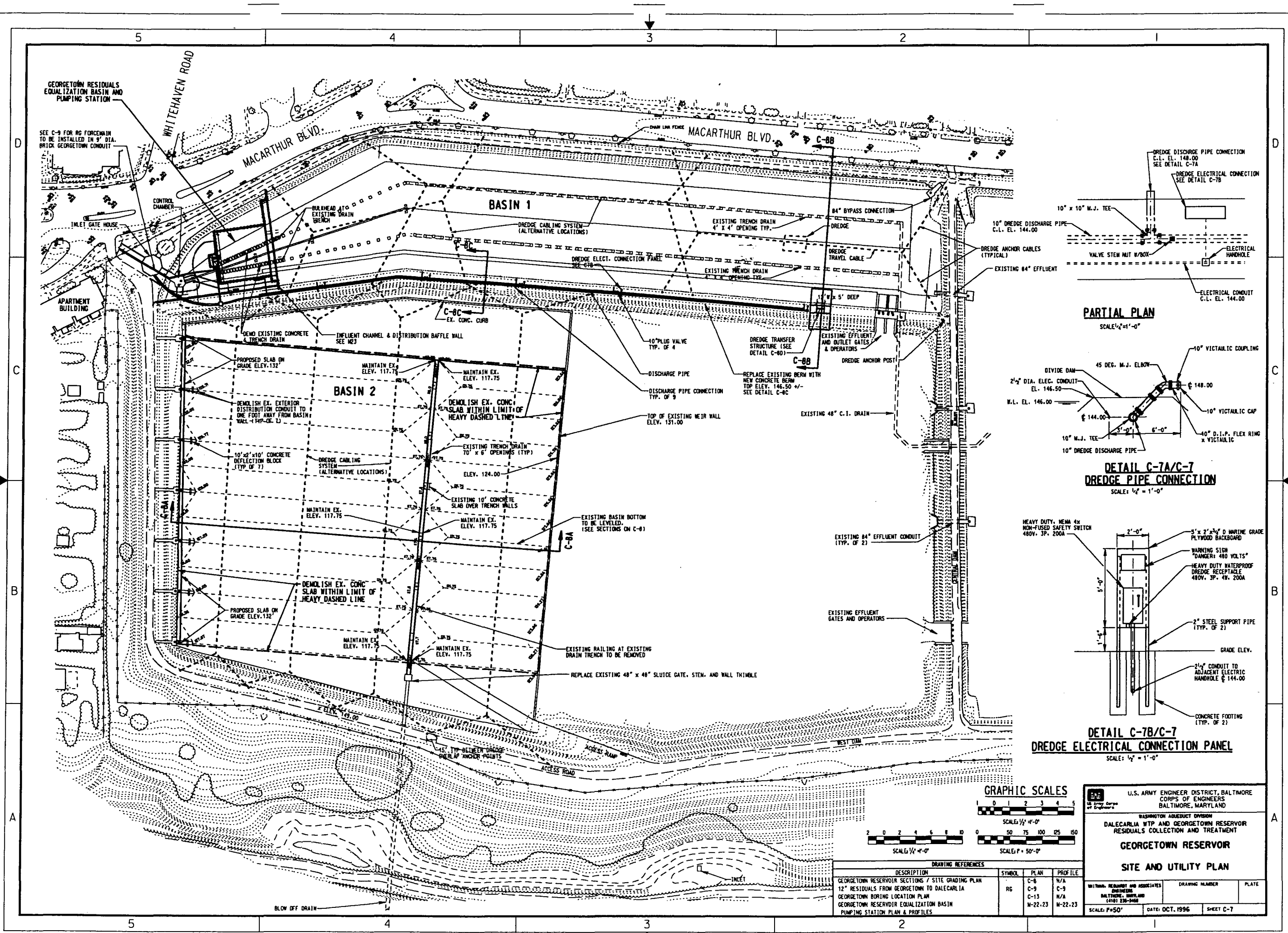
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DESCRIPTION	SYMBOL	PLAN	PROFILE
10" RESIDUALS MACARTHUR BLVD. TO DEWATERING SITE	RG	C-5.6	C-10
10" RESIDUALS FROM BASINS 1-4 P.S. TO DEWATERING SITE	RS	C-5.6	C-10
10" RESIDUALS FROM FOREBAY TO DEWATERING SITE	RD	C-6	C-11
30" RECYCLE FROM BACKWASH P.S. TO FOREBAY	RD	C-5.6	C-10,11
12"/20" GRAVITY RECYCLE FROM DEWATERING TO BACKWASH	N/A	C-5.6	C-11
DEWATERING FACILITY GRADING PLAN	"	C-1	N/A
DEWATERING FACILITY UTILITY PLAN	"	C-2	"
FOREBAY SITE / UTILITY PLAN	"	C-4	"
FOREBAY AND DEWATERING FACILITY AREA BORING LOCATION PLAN	"	C-12	"

U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

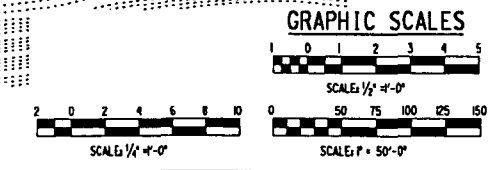
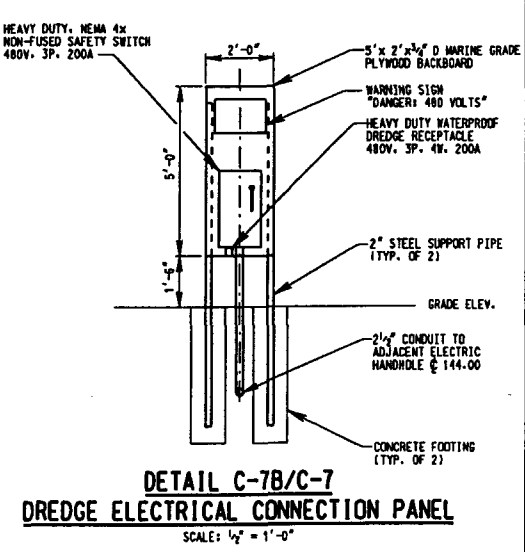
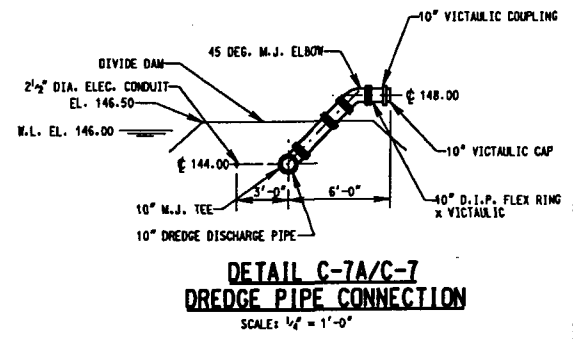
WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

**DEWATERING SITE TO
DALECARLIA FOREBAY
UTILITY PLAN**

DATE: OCT. 1996
SHEET C-6



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



DRAWING REFERENCES			
DESCRIPTION	SYMBOL	PLAN	PROFILE
GEORGETOWN RESERVOIR SECTIONS / SITE GRADING PLAN	RG	C-8	N/A
12" RESIDUALS FROM GEORGETOWN TO DALECARLIA		C-9	N/A
GEORGETOWN BORING LOCATION PLAN		C-13	N/A
GEORGETOWN RESERVOIR EQUALIZATION BASIN PUMPING STATION PLAN & PROFILES		N-22.23	N-22.23

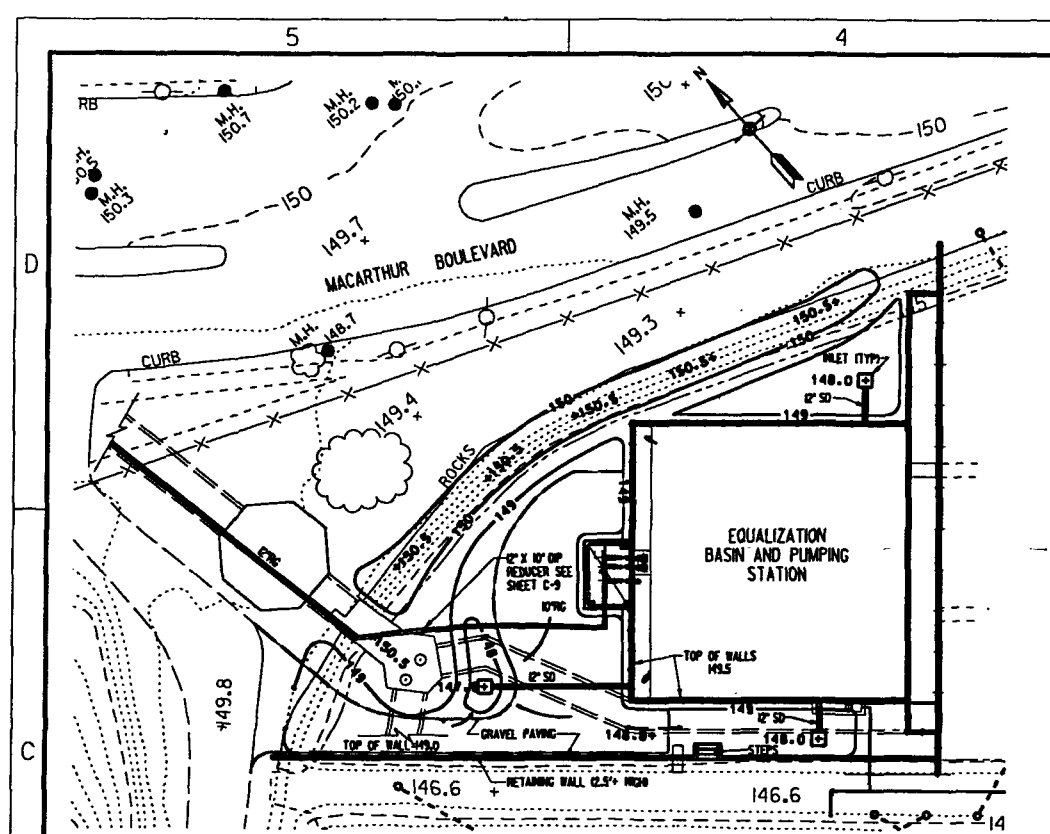
U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

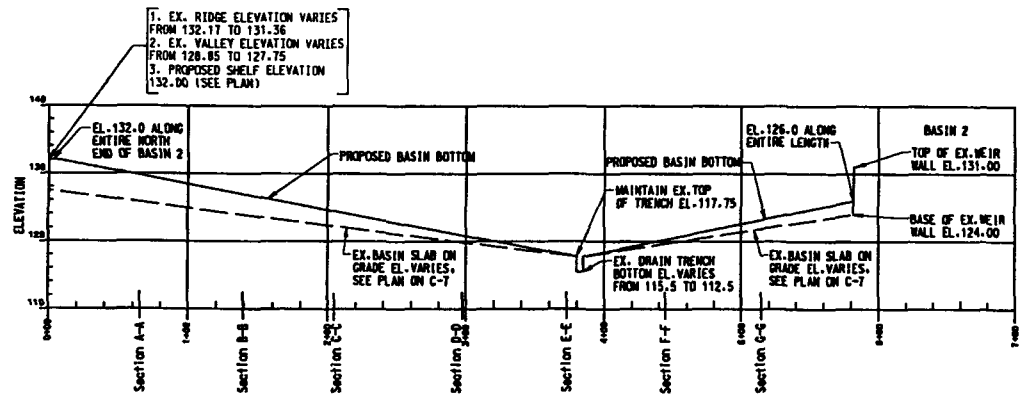
GEORGETOWN RESERVOIR

SITE AND UTILITY PLAN

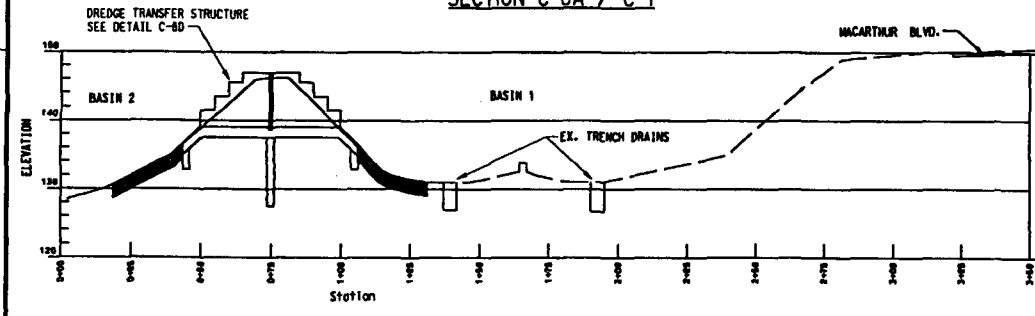
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SCALE: P=50'	DATE: OCT. 1996	SHEET C-7



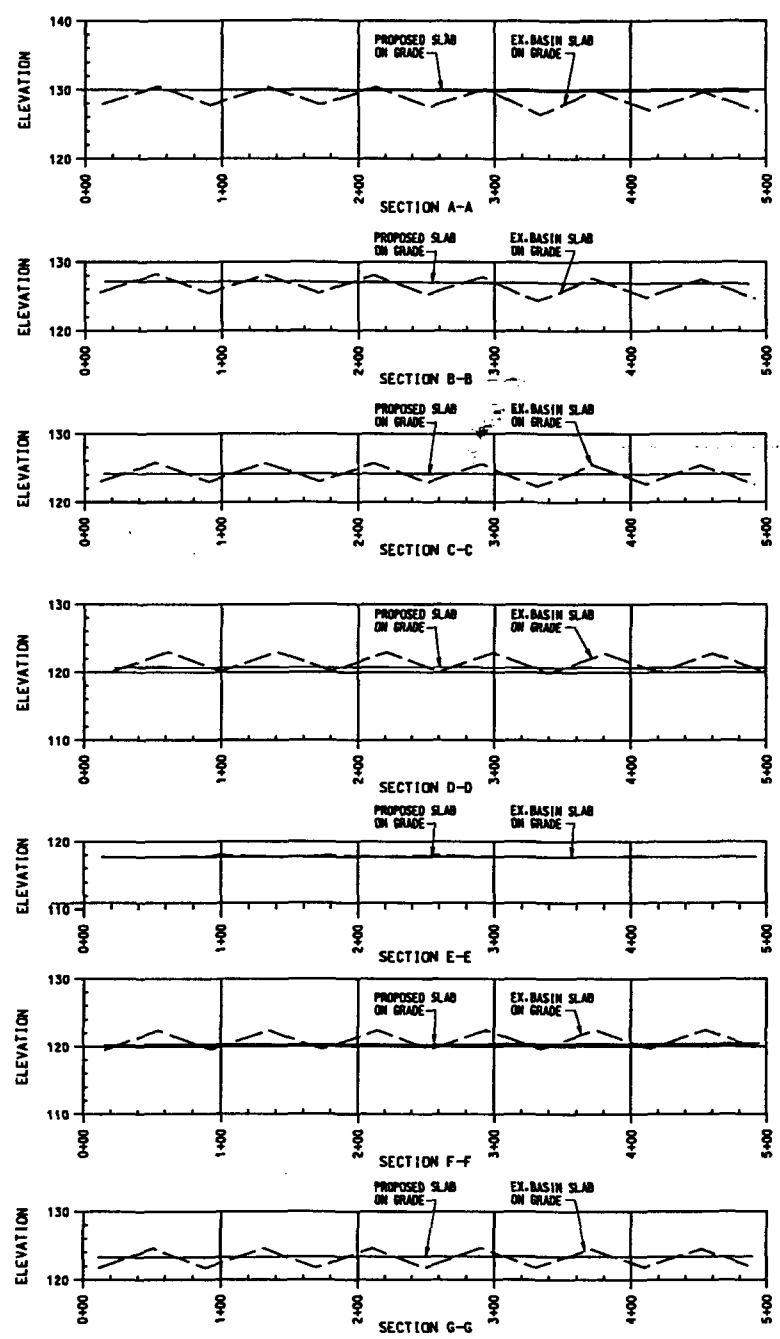
PLAN
GEORGETOWN RESIDUAL EQUALIZATION
BASIN AND PUMPING STATION
SCALE: P = 20'



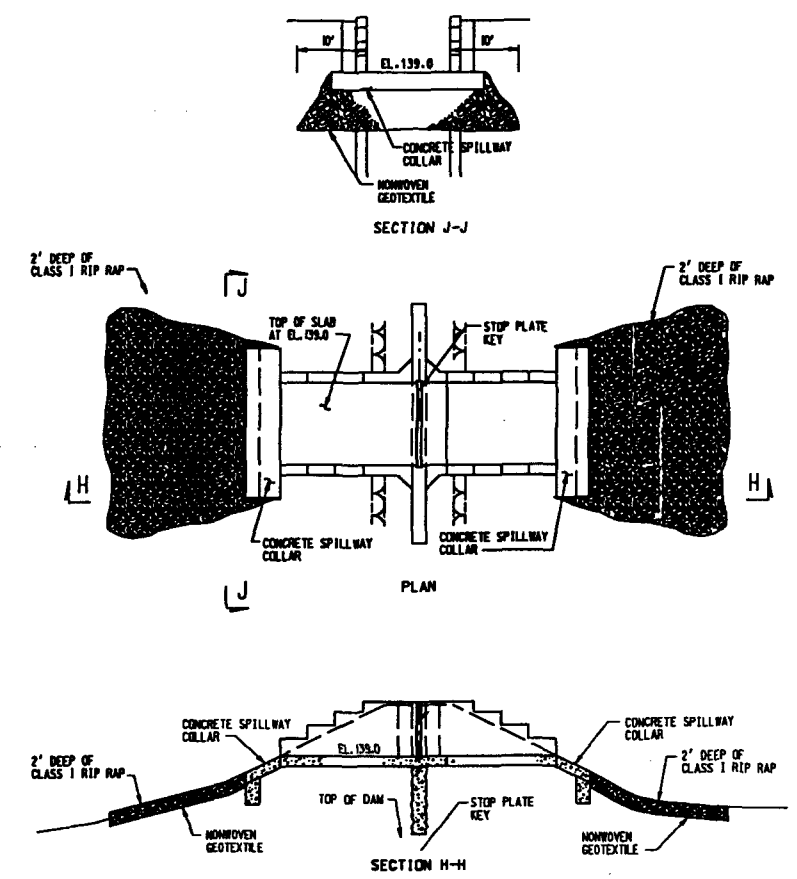
SCALE: HOR. 1"=50'
VERT. 1"=10'
NORTH - SOUTH SECTION - BASIN 2
SECTION C-8A / C-7



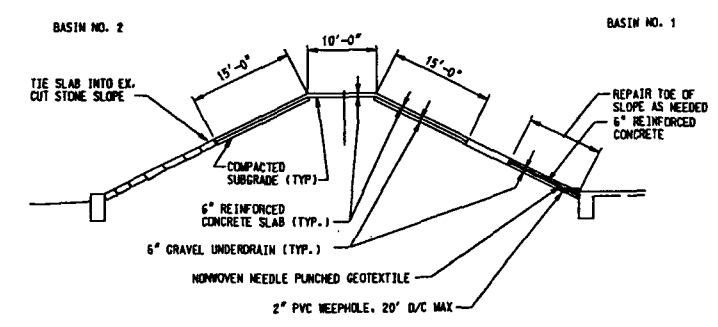
SCALE: HOR. 1"=25'
VERT. 1"=10'
EAST - WEST SECTION - BASIN 1
SECTION C-8B / C-7



SCALE: HOR. 1"=50'
VERT. 1"=10'
EAST - WEST SECTION - BASIN 2

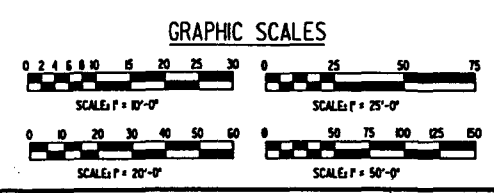


DETAIL C-8D / C-7
DREDGE TRANSFER STRUCTURE
SCALE: P = 10'

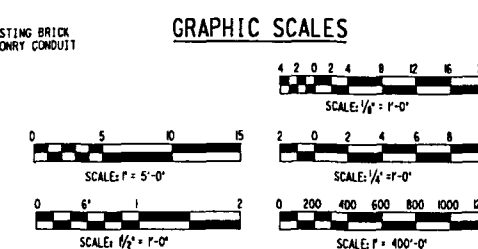
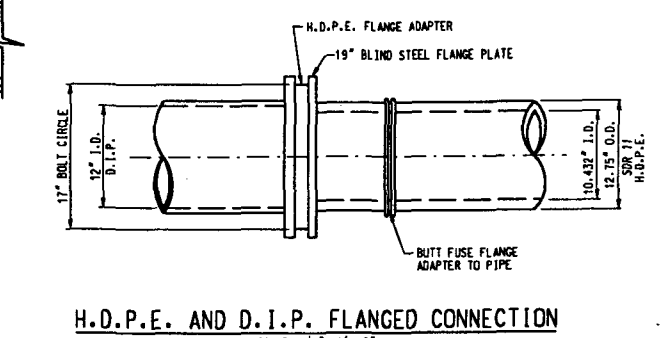
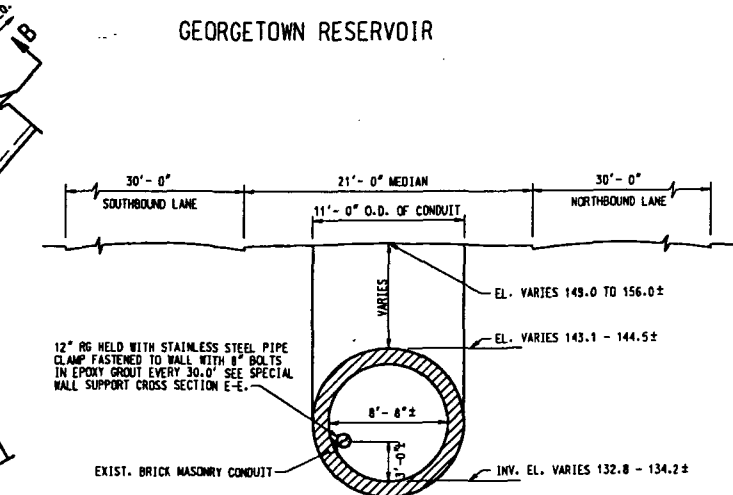
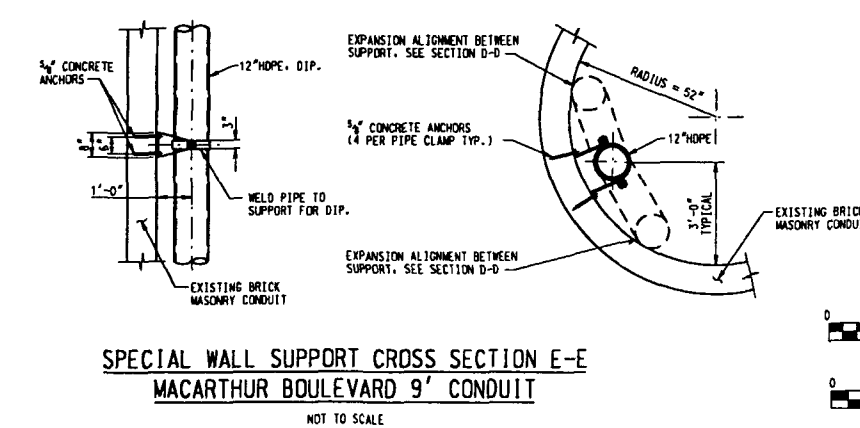
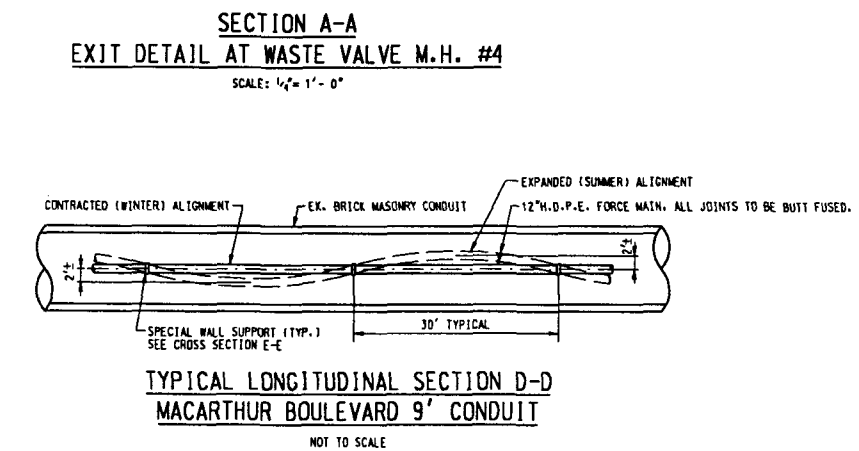
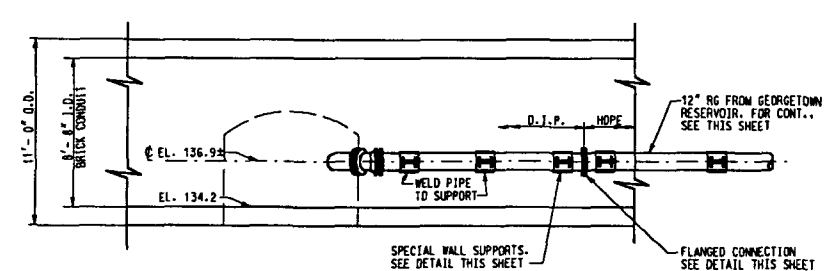
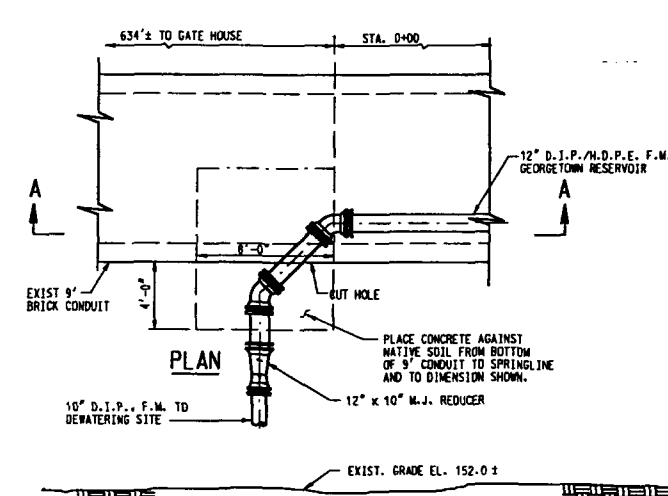
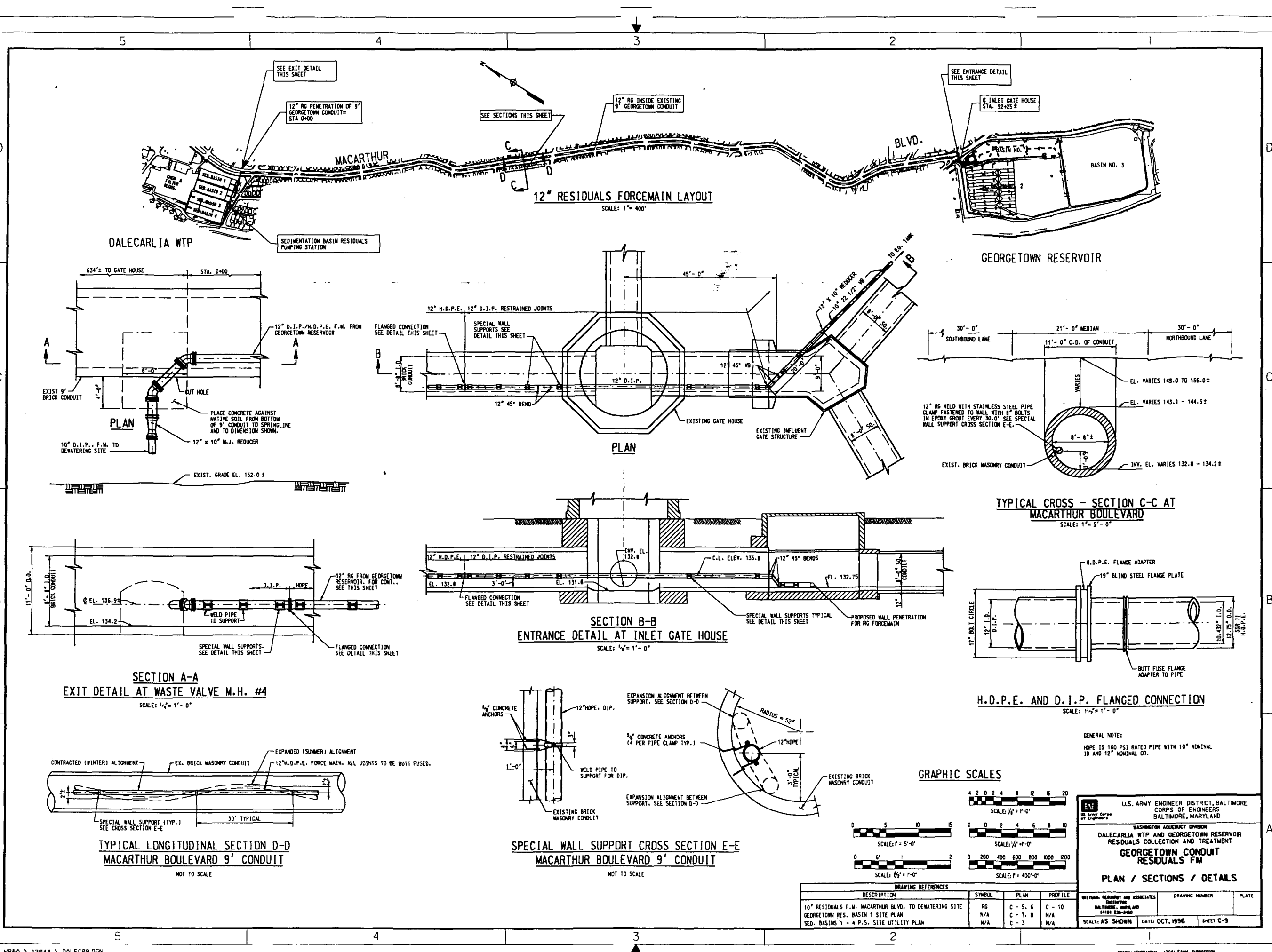


BASINS 1 & 2 DIVIDE DAM SLAB REPLACEMENT
AND BASIN 1 SLOPE REPAIR
SECTION C-8C / C-7

- NOTE: FOR BASIN NO. 1 BOTTOM AND DIVIDE DAM REPAIR:
1. SUBGRADE BENEATH NEW CONCRETE SLABS SHALL BE PROOFROLLED.
 2. SOFT OR UNSUITABLE SUBGRADE MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE FILL MATERIAL.
 3. EXISTING UNDERLYING SAND/GRAVEL DRAINAGE LAYER MUST BE MAINTAINED WHERE ENCOUNTERED ON SIDE SLOPES.
 4. REPAIR OF BASIN NO. 1 BOTTOM SHALL BE 6" REINFORCED CONCRETE OVER GEOTEXTILE AND 6" GRAVEL AS SHOWN FOR TOE OF SLOPE REPAIR.

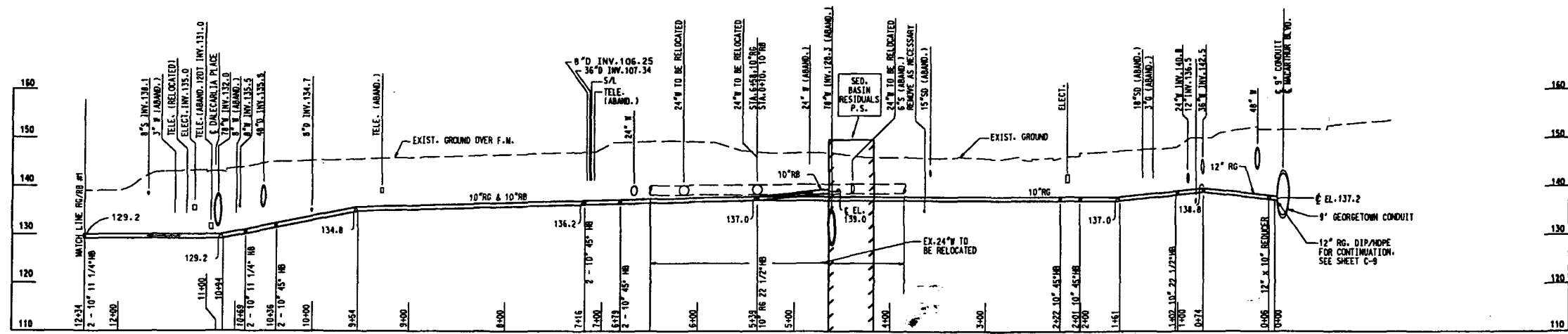


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
GEORGETOWN RESERVOIR		
SITE GRADING PLAN AND SECTIONS		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT SCALE: AS SHOWN	DRAWING NUMBER DATE: OCT, 1996	PLATE SHEET C-8



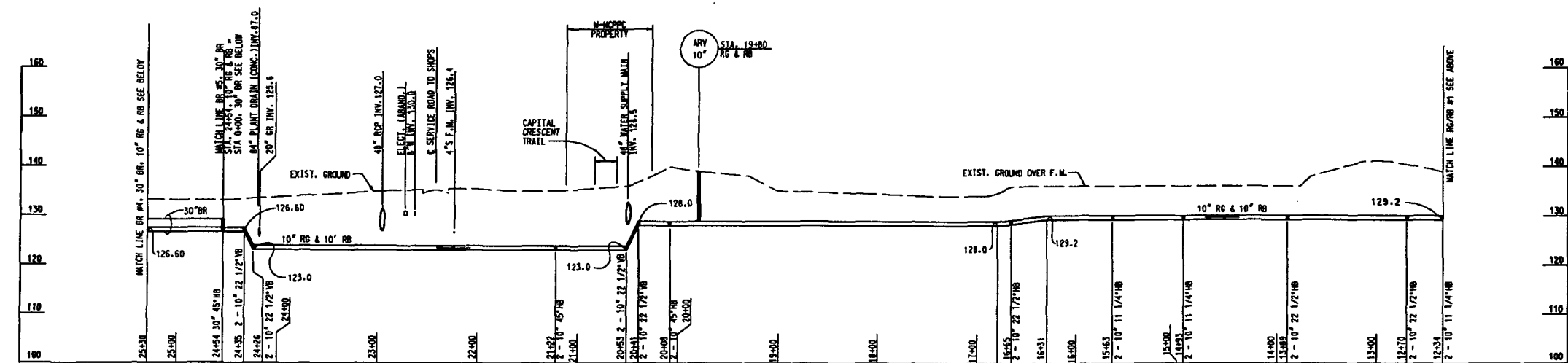
DRAWING REFERENCES			
DESCRIPTION	SYMBOL	PLAN	PROFILE
10" RESIDUALS F.W. MACARTHUR BLVD. TO DENWATERING SITE	RG	C - 5, 6	C - 10
GEORGETOWN RES. BASIN 1 SITE PLAN	N/A	C - 7, 8	N/A
SED. BASINS 1 - 4 P.S. SITE UTILITY PLAN	N/A	C - 3	N/A

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION		DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN CONDUIT RESIDUALS FM	
WITH: REEDMAN AND ASSOCIATES BALTIMORE, MARYLAND (410) 736-3400		DRAWING NUMBER	PLATE
SCALE: AS SHOWN		DATE: OCT. 1996	SHEET C-9



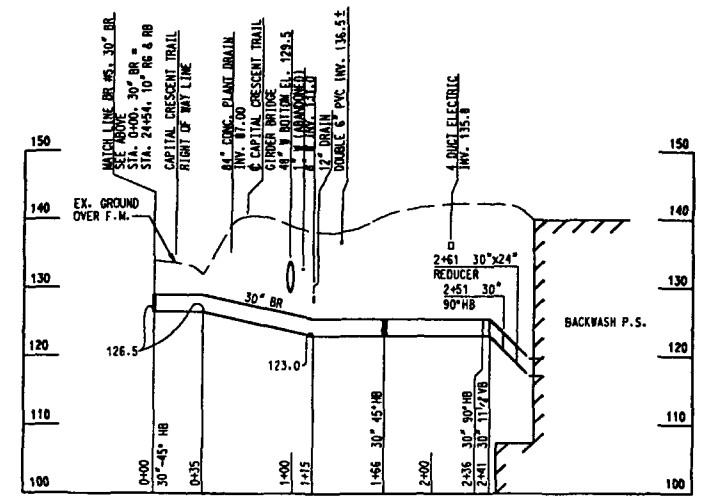
PROFILE: 10" RG & 10" RB FORCE MAINS

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 10'



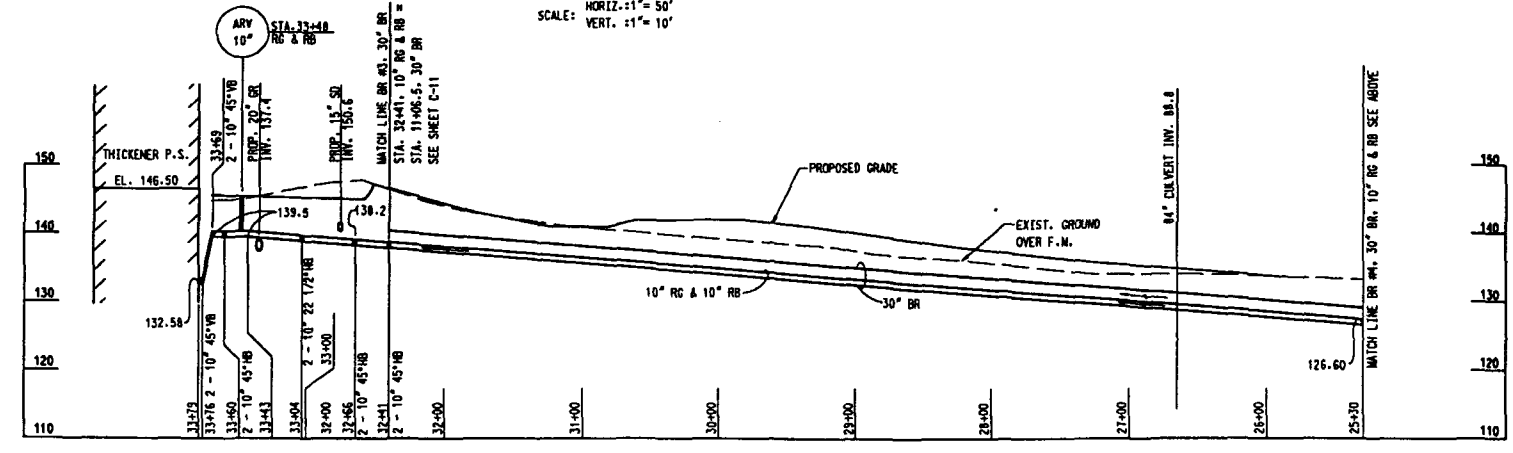
PROFILE: 10" RG & 10" RB FORCE MAINS

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 10'



PROFILE: 30" BR - STA. 24+54 (MAIN LINE) TO BACKWASH

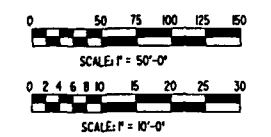
SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 10'



PROFILE: 30" BR, 10" RG & 10" RB FORCE MAINS

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 10'

GRAPHIC SCALES



U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

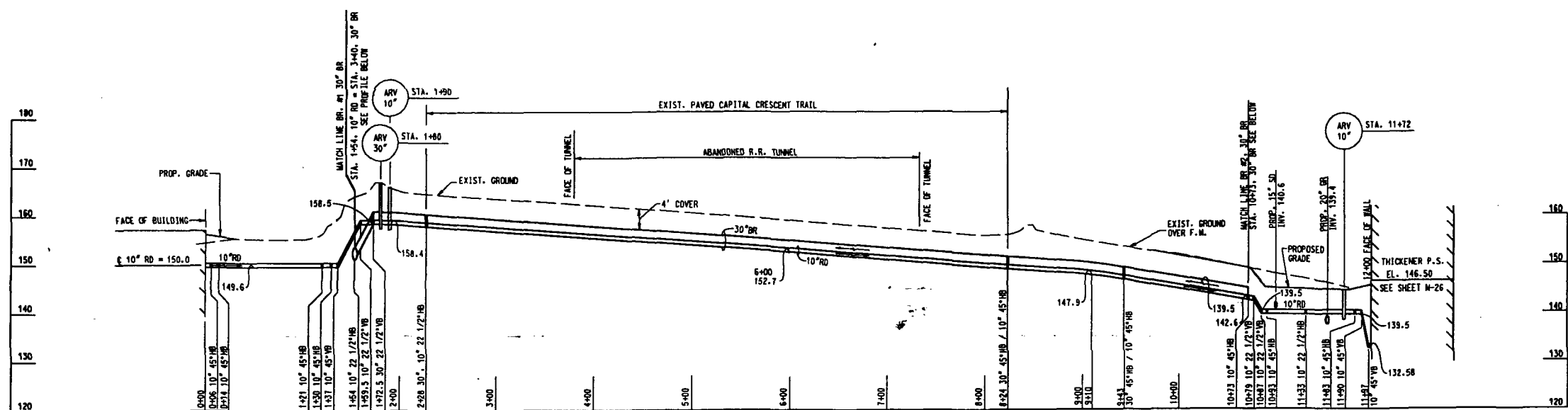
WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

UTILITY PROFILES

DESCRIPTION	SYMBOL	PLAN	PROFILE
12" RESIDUALS F.M. FROM GEORGETOWN TO DALECARLIA	RG	C - 9	C - 9
10" RESIDUALS F.M. MACARTHUR BLVD. TO DEWATERING SITE	RG	C - 5, 6	C - 10
10" RESIDUALS F.M. FROM BASINS 1 - 4 P.S. TO DEWATERING SITE	RB	C - 5, 6	C - 10
30" RECYCLE F.M. FROM BACKWASH P.S. TO FOREBAY	BR	C - 5, 6	C - 10, 11

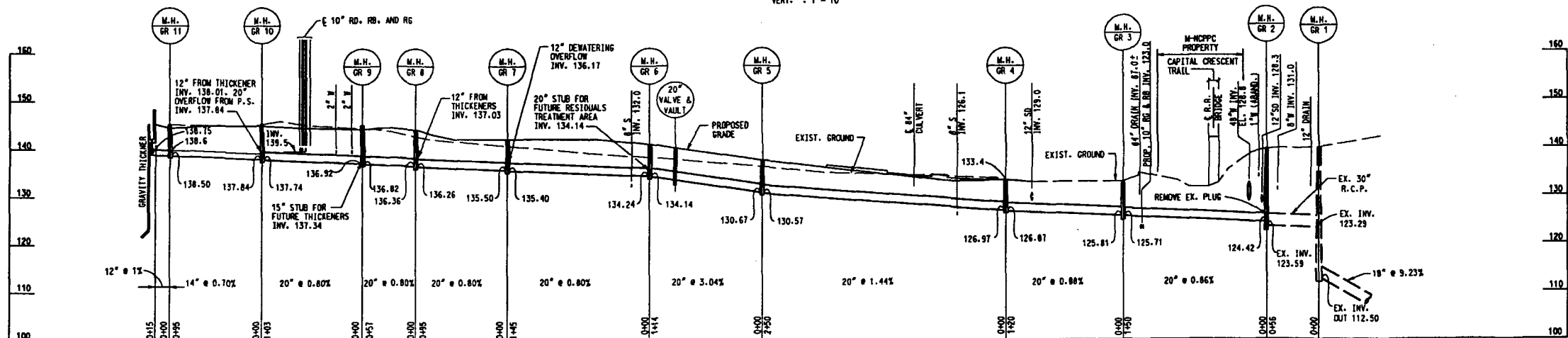
WITHDRAWN, REQUIRING AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND
(410) 230-2400

SCALE: AS SHOWN DATE: OCT. 1996 SHEET C-10



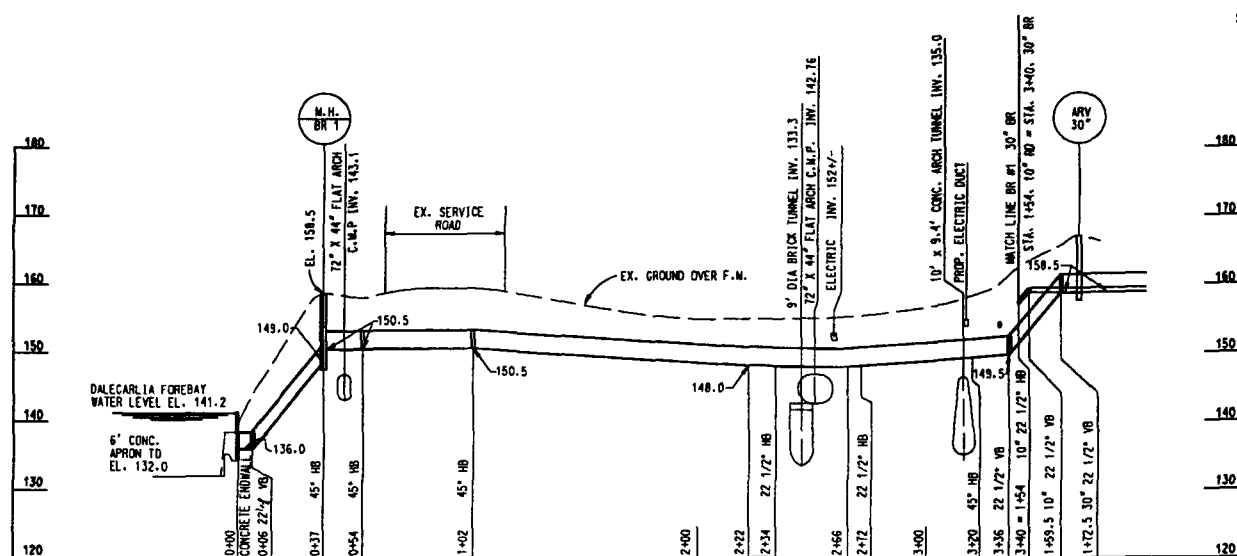
10" RD & 30" BR FORCE MAINS

SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 10'



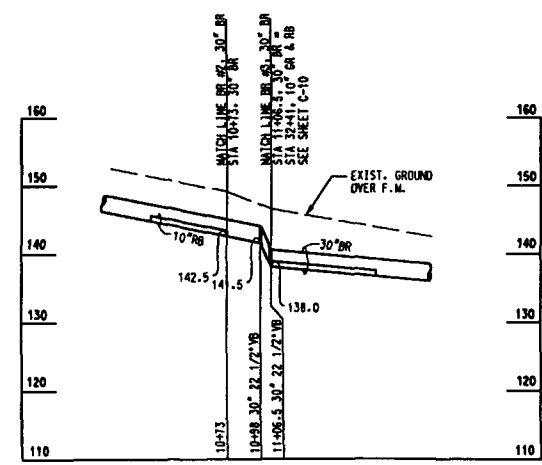
PROFILE: GRAVITY RECYCLE FROM THICKENERS TO BACKWASH

SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 10'



PROFILE: EXTENDED 30" BR

SCALE: HORIZ. : 1" = 30'
VERT. : 1" = 10'

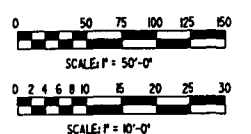


30" BR FORCE MAIN

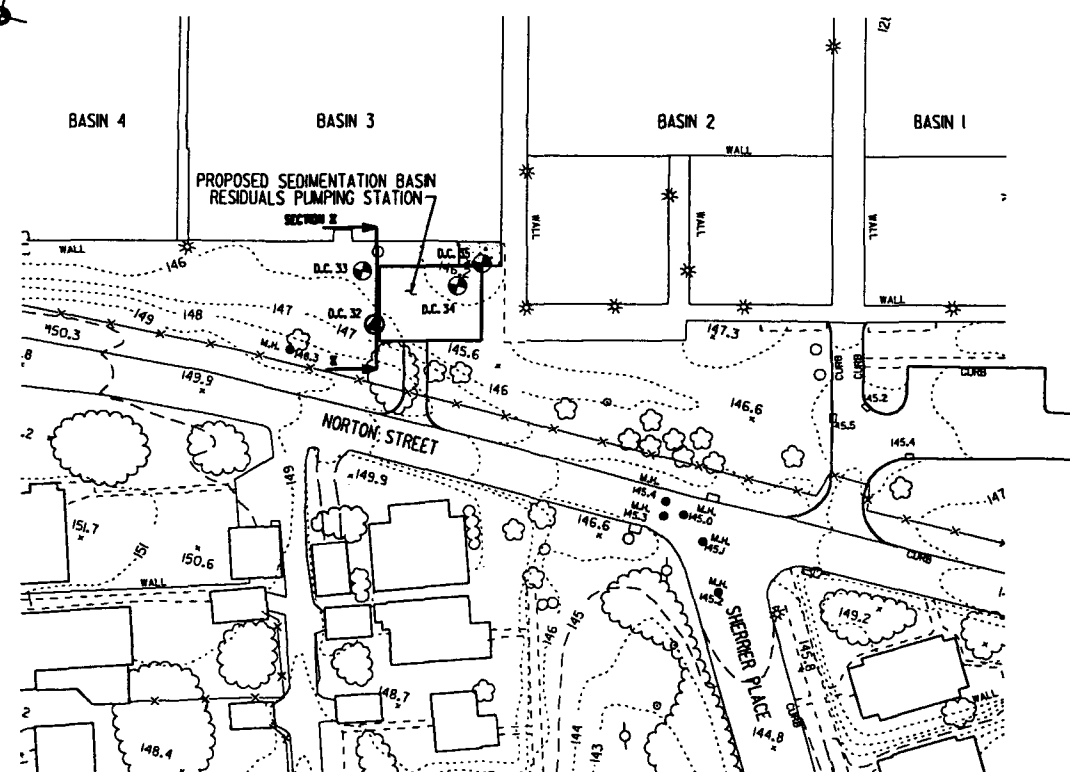
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 10'

DRAWING REFERENCES			
DESCRIPTION	SYMBOL	PLAN	PROFILE
10" RESIDUALS F.M. FROM FOREBAY TO DOWATERING SITE	RD	C - 6	C - 11
30" RECYCLE F.M. FROM BACKWASH P.S. TO FOREBAY	BR	C - 5, 6	C - 10, 11
12" 720" GRAVITY RECYCLE FROM DOWATERING TO BACKWASH	GR	C - 2, 5, 6	C - 11

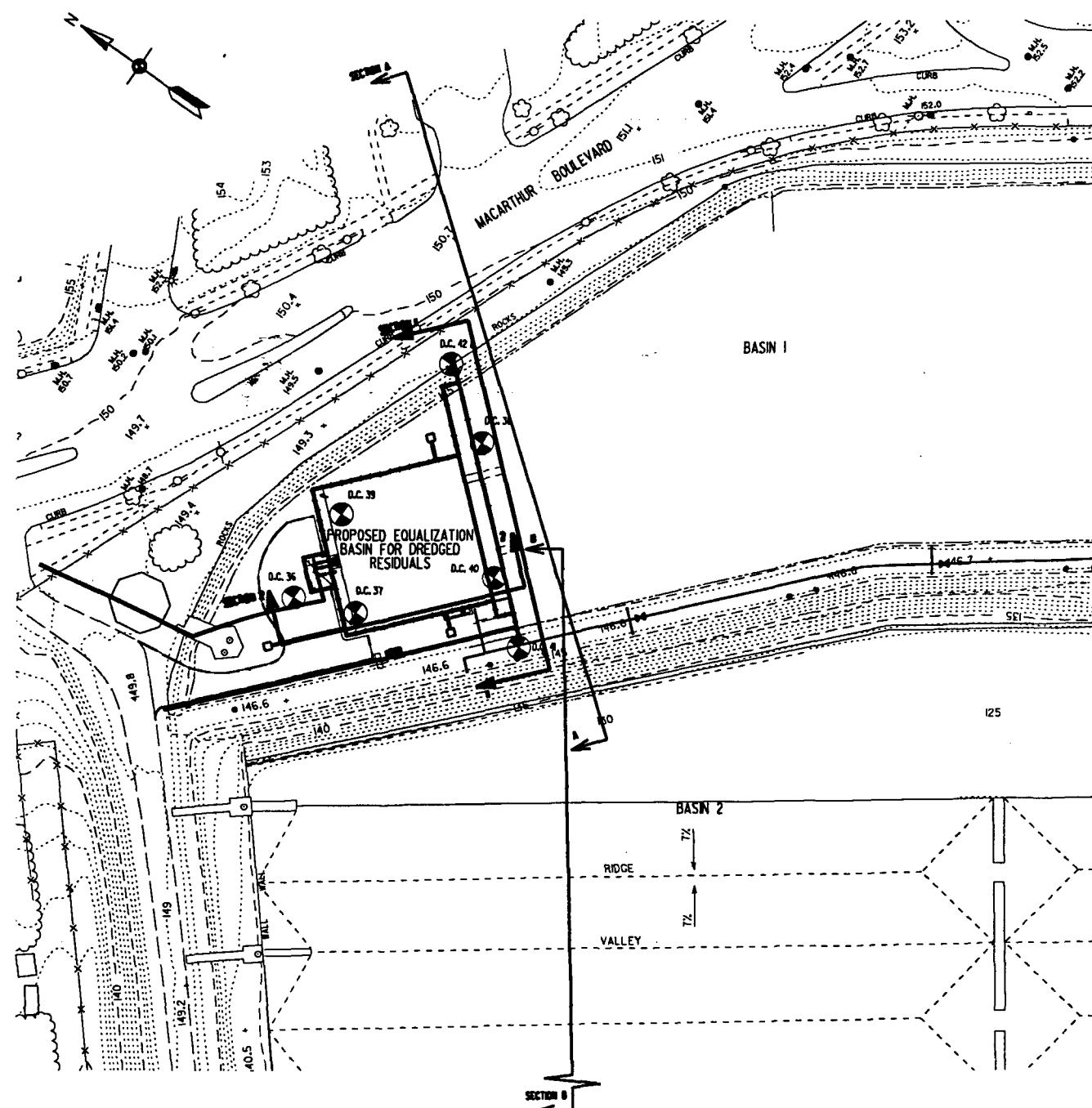
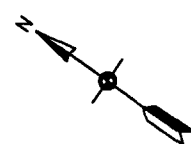
GRAPHIC SCALES



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ABSTRACT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
UTILITY PROFILES		
DESIGNED BY WILLIAM R. QUINN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 270-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET C - II



DALECARLIA SEDIMENTATION BASIN AREA



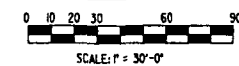
GEORGETOWN RESERVOIR AREA


NOTE: SEE GEOTECHNICAL REPORT
FOR ALL SECTIONS SHOWN.

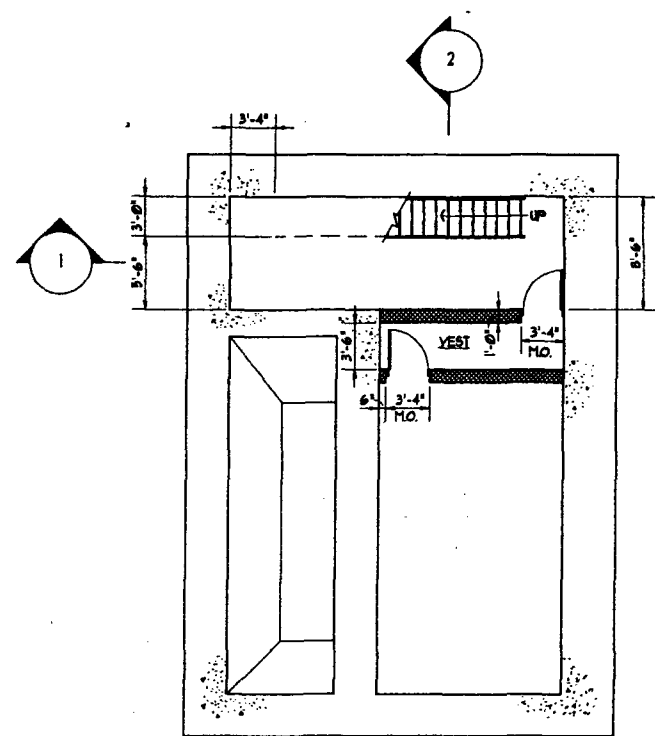
LEGEND

- ⊕ SOIL BORINGS IN CURRENT
SUBSURFACE INVESTIGATION
- ⊙ GROUNDWATER MONITORING
WELLS IN CURRENT SUBSURFACE
INVESTIGATION

GRAPHIC SCALE



 U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN RESERVOIR AREA AND SEDIMENTATION BASIN AREA BORING LOCATION PLAN		
WITMAN, REARDON AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-2488	DRAWING NUMBER	PLATE
SCALE: 1" = 30'	DATE: OCT. 1996	SHEET C-13

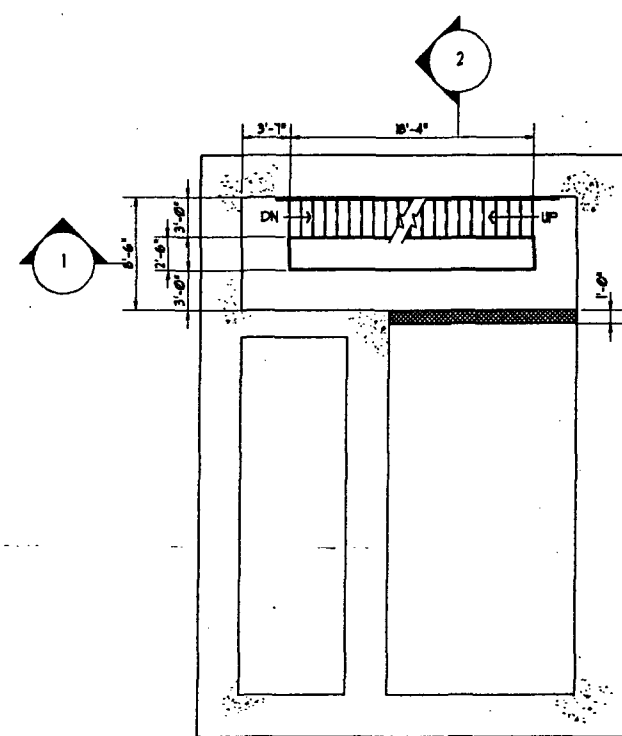


EQUIPMENT LEVEL
PLAN - EL. 103.17'

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

AUT/PS-A/PLANS

0 3 6 9 12 FEET

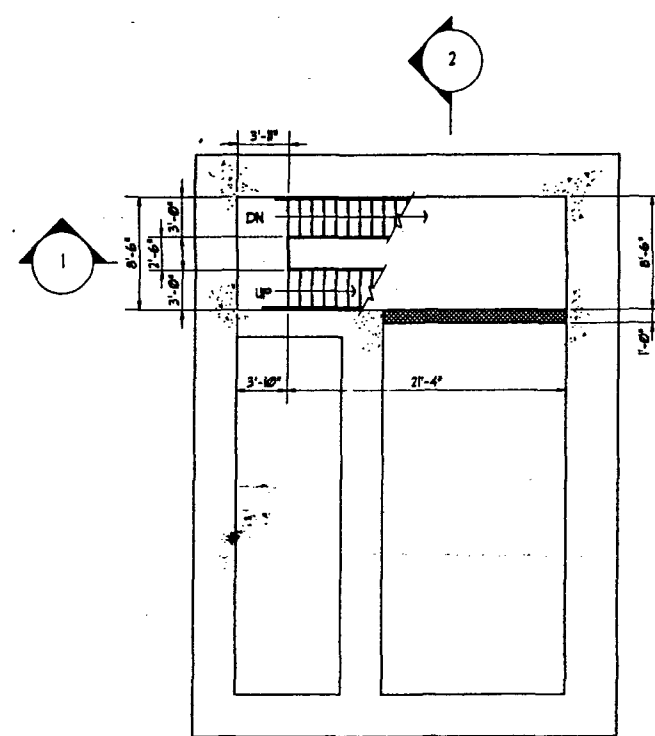


PLATFORM LEVEL 1
EL.

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

AUT/PS-A/PLANS

0 3 6 9 12 FEET

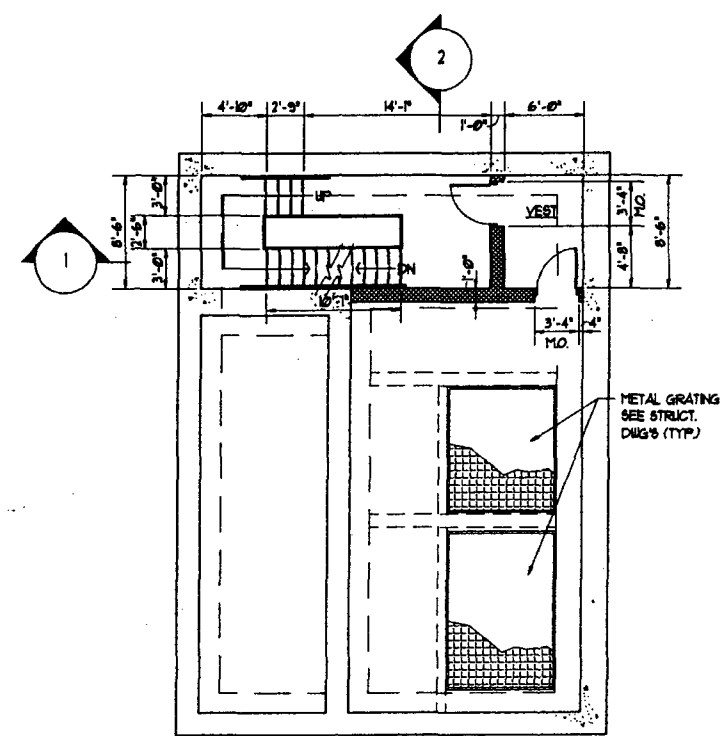


PLATFORM LEVEL 2
EL.

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

AUT/PS-A/PLANS

0 3 6 9 12 FEET

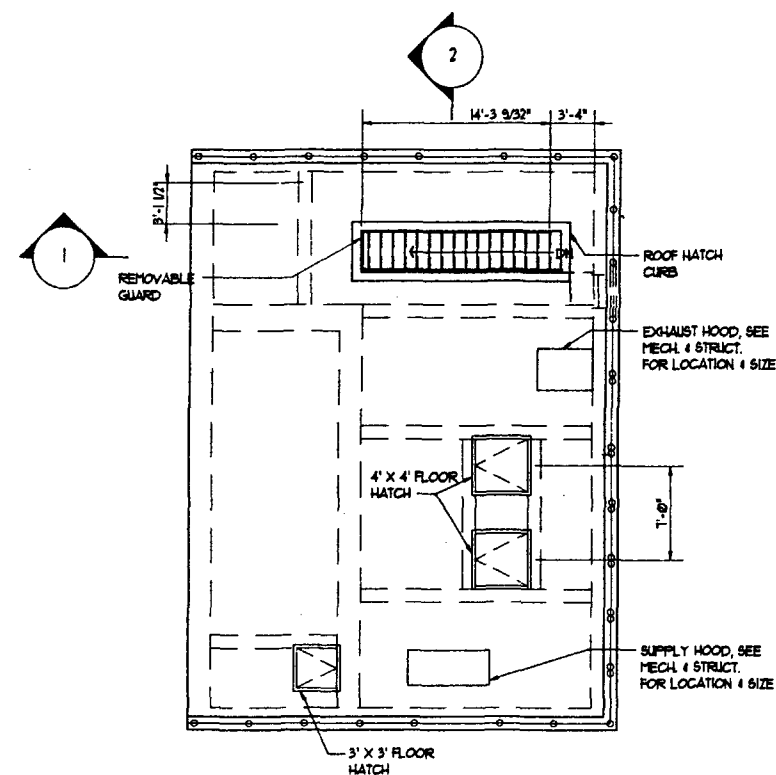


CONTROL LEVEL
EL. 133.00'

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

AUT/PS-A/PLANS

0 3 6 9 12 FEET

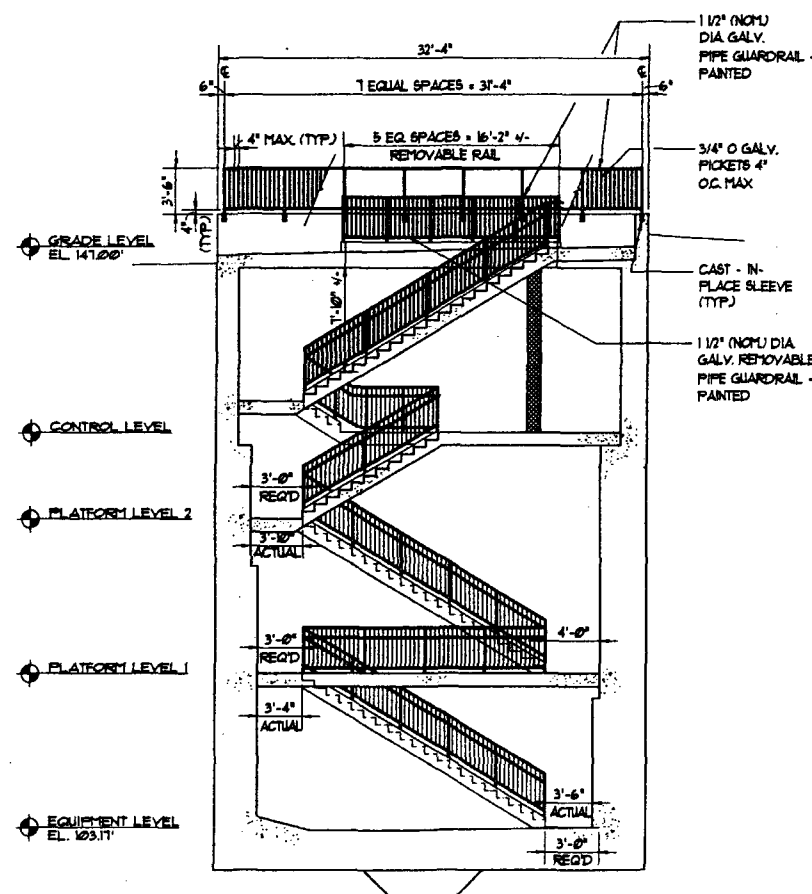


GRADE LEVEL
PLAN - EL. 147.00'

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

AUT/PS-A/PLANS

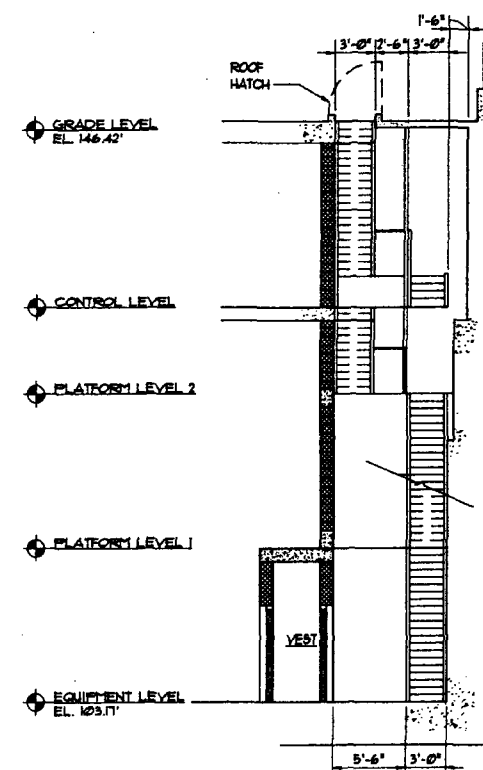
0 3 6 9 12 FEET



1 STAIR SECTION
SCALE: 3/16" = 1'-0"

AUT/PS-A/PLANS

0 3 6 9 12 FEET



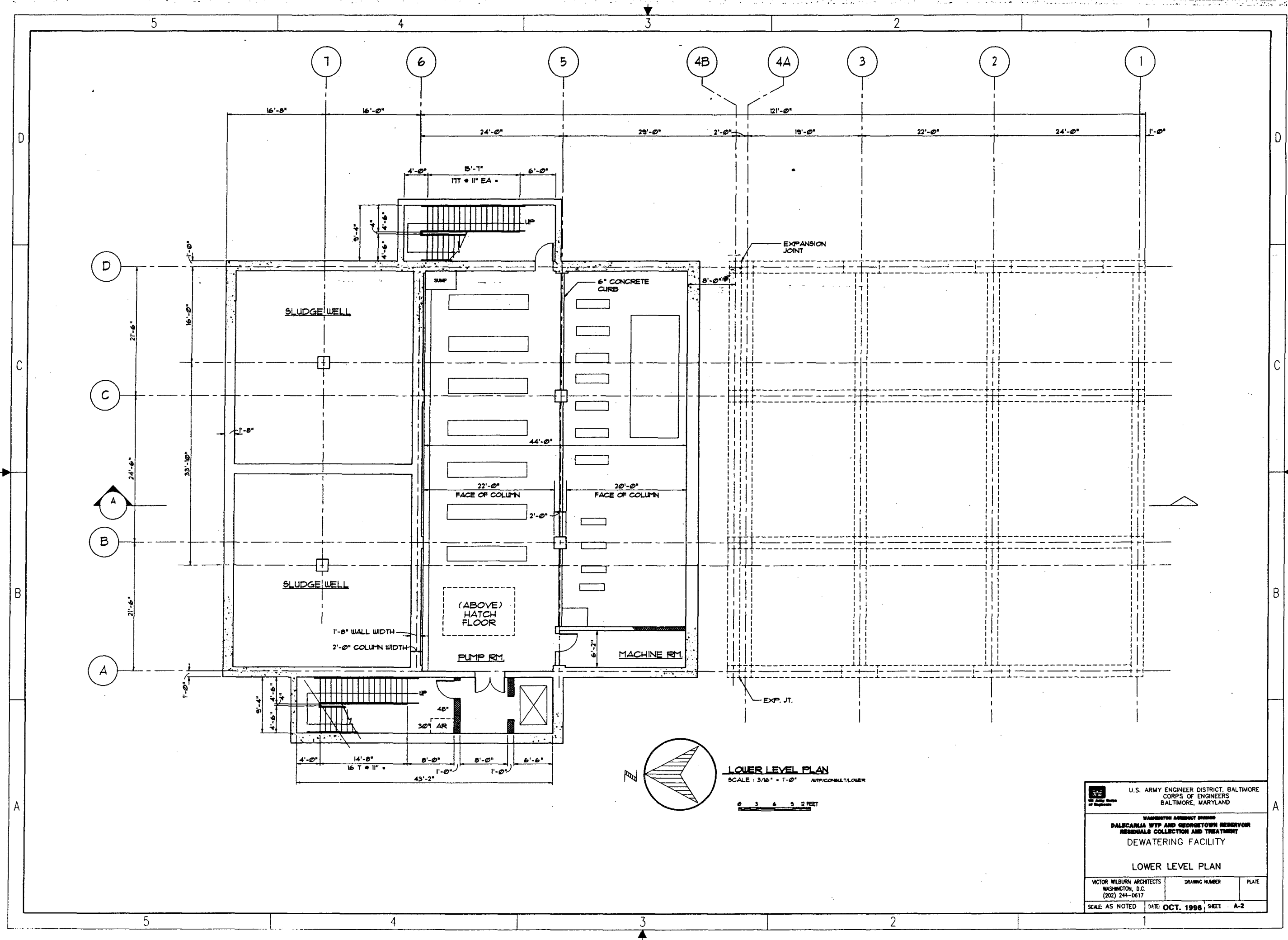
2 STAIR SECTION
SCALE: 3/16" = 1'-0"

AUT/PS-A/PLANS

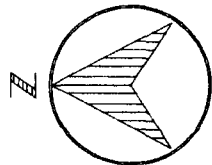
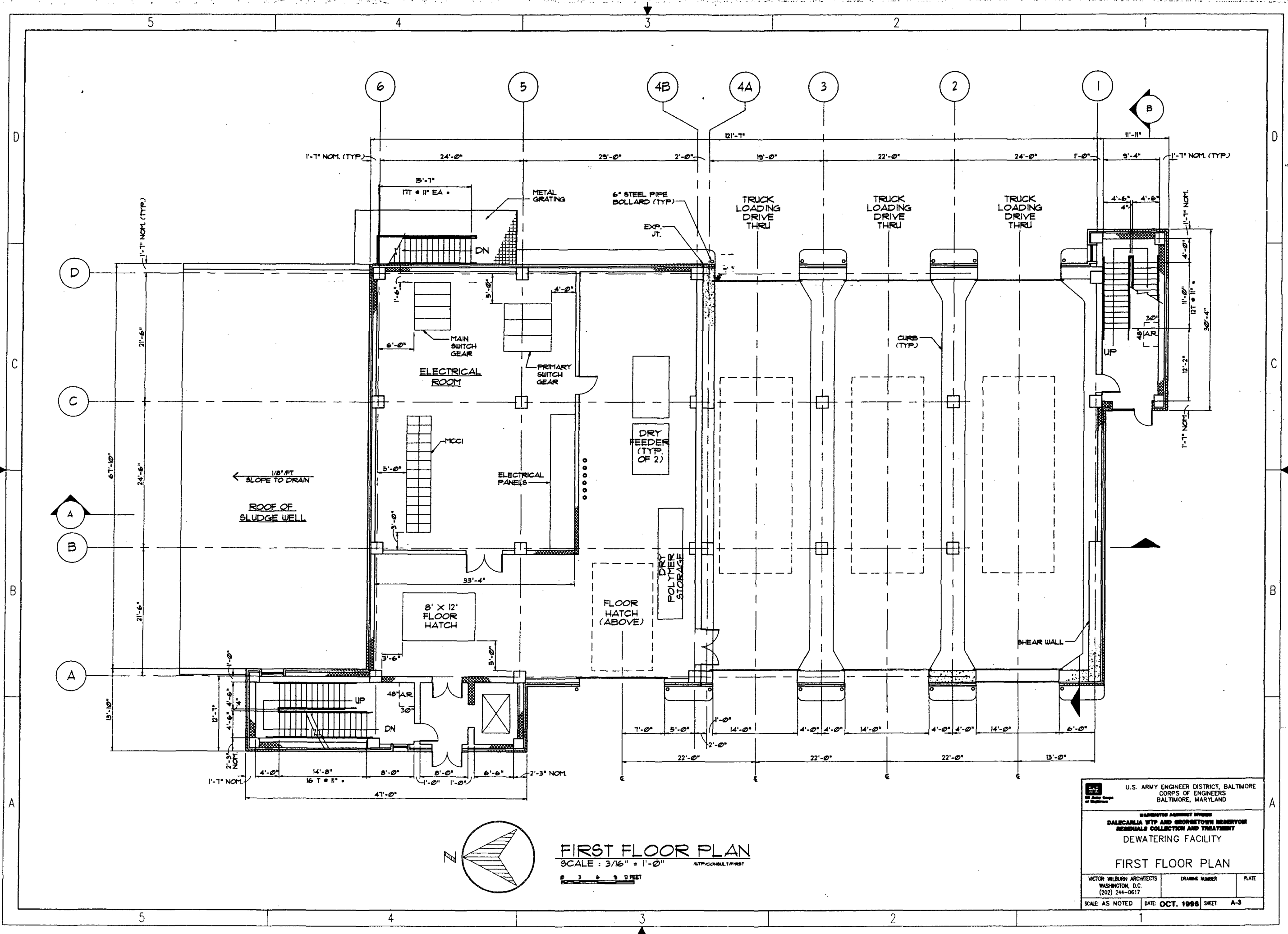
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U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ANCHORAGE BRANCH DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT SEDIMENTATION BASIN RESIDUALS PUMPING STATION PLANS AND SECTIONS		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-1

Drawing name: A-10VG
Saved on July 18, 1996 at 4:30 PM



Drawing name: A-2.DWG
Saved on July 23, 1996 at 11:15 AM



FIRST FLOOR PLAN

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

0 3 6 9 FEET

AUTOCAD/CONSULT/PRINT

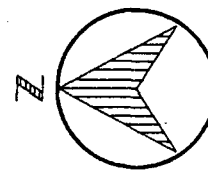
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGREEMENT OFFICE DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
FIRST FLOOR PLAN		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-3

MEZZANINE PLAN

SCALE: 3/16" = 1'-0" AUP/CONSULT/THIRD

THIRD FLOOR PLAN

SCALE: 3/16" = 1'-0" AUP/CONSULT/THIRD

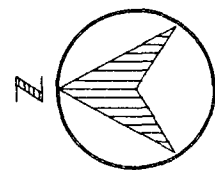
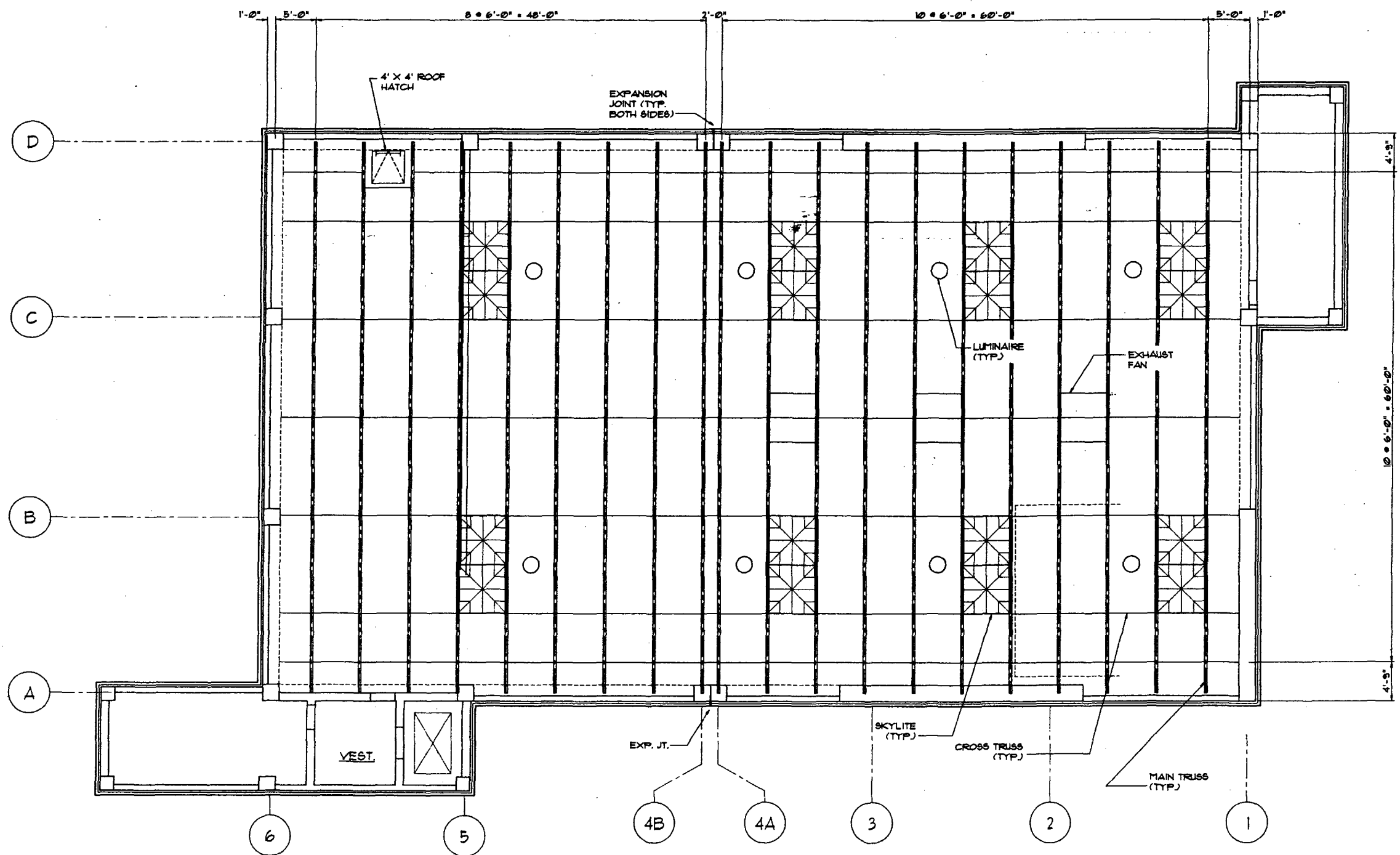


0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGENT RIVER DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
THIRD FLOOR PLAN		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0817	DRAWING NUMBER	PLATE
SCALE AS NOTED	DATE OCT. 1996	SHEET A-5

Issued: 10/1/96, A-4.DWG
Revised: July 22, 1996 at 2:50 PM

Drawing name: A-5.DWG
Saved on: July 17, 1996 at 1:01 PM



REFLECTED CEILING PLAN

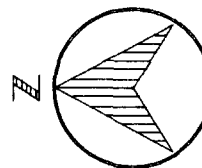
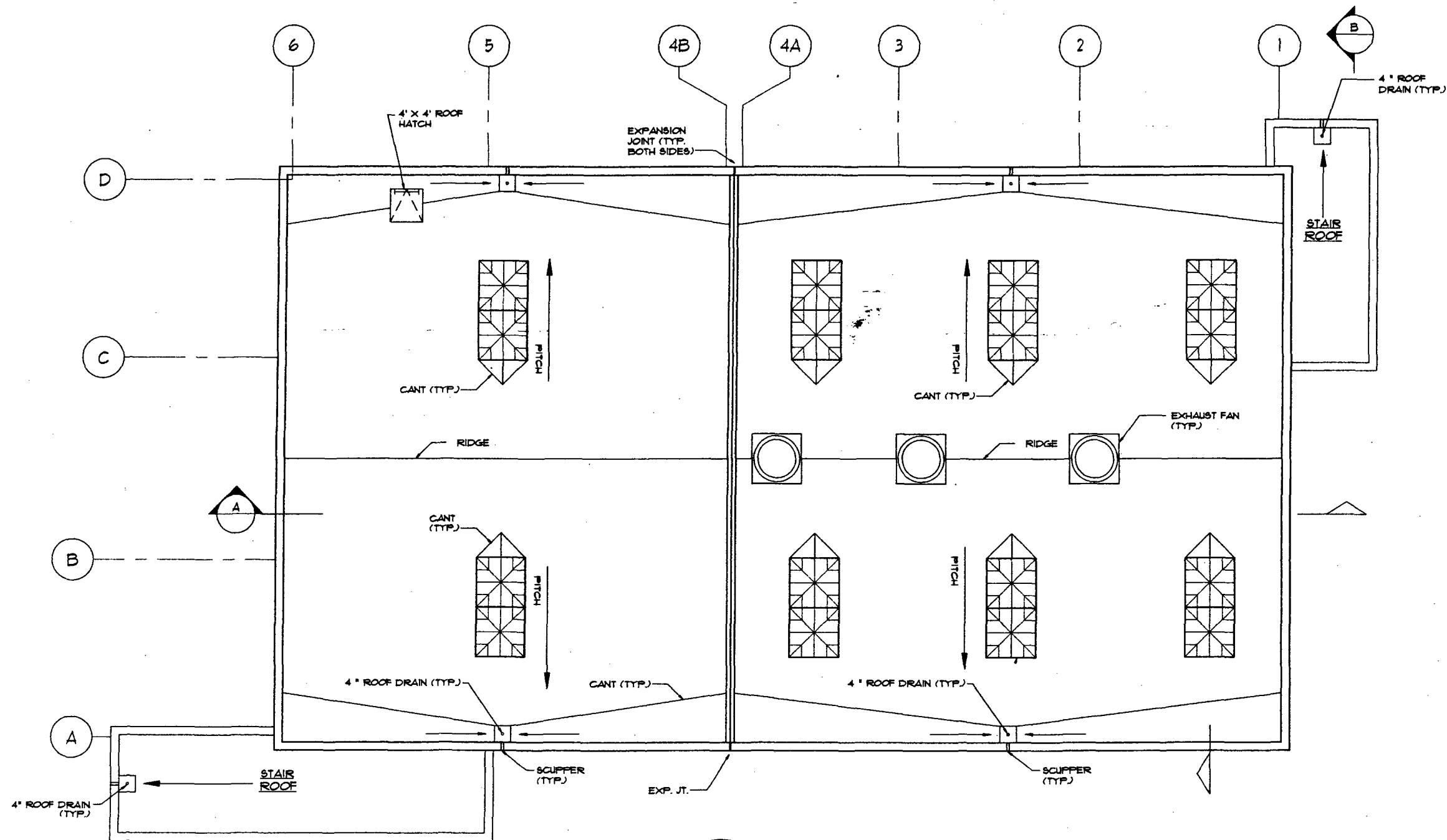
SCALE: 3/16" = 1'-0"

NOT TO SCALE

0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ADJUTANT GENERAL DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
REFLECTED CEILING PLAN		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-5

Drawing name: A-6.DWG
Saved on: July 16, 1996 at 12:35 PM



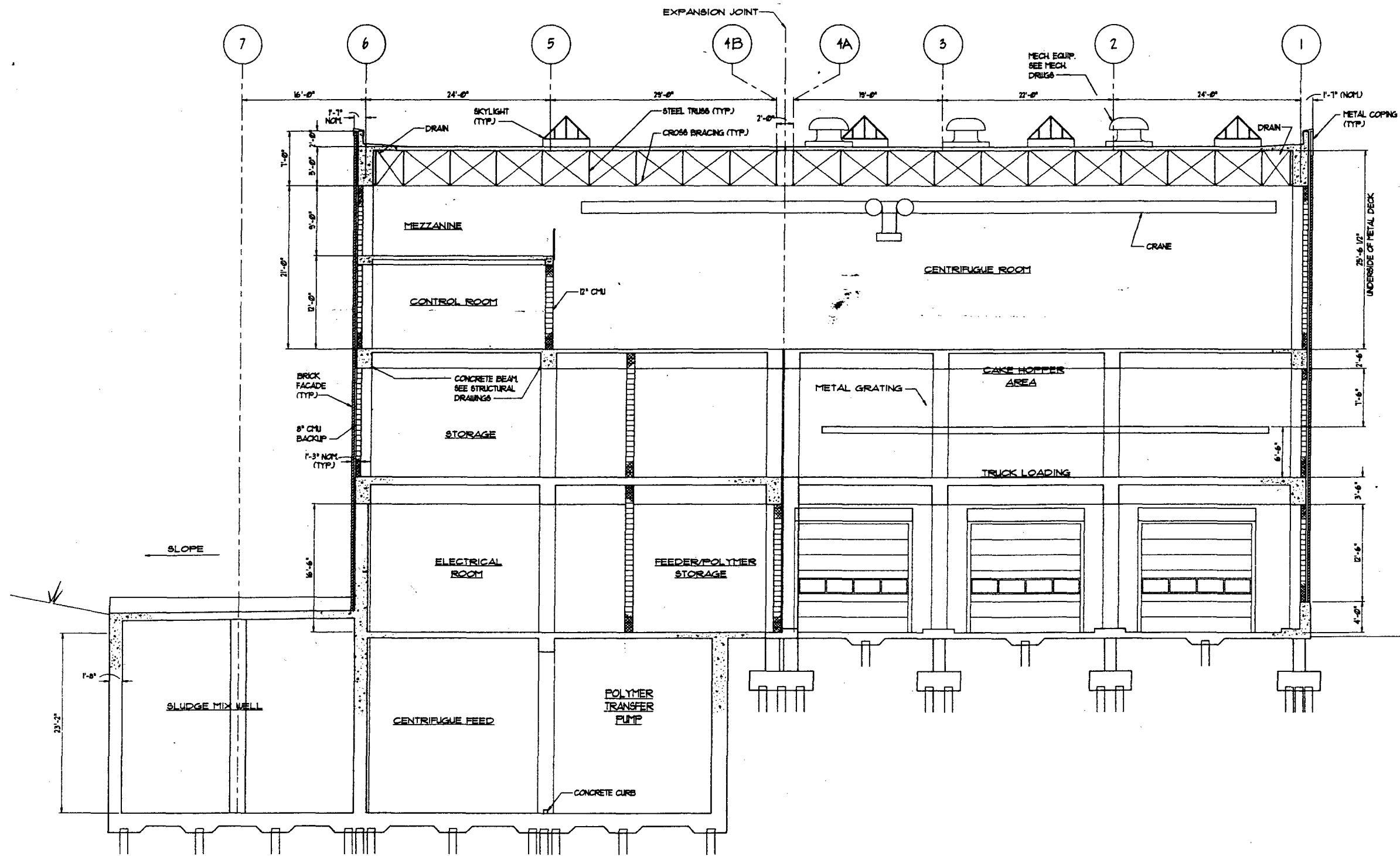
ROOF PLAN

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

0 3 6 9 12 FEET

ATP/CONSULT/ROOF

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ARMED FORCES DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
ROOF PLAN		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-7



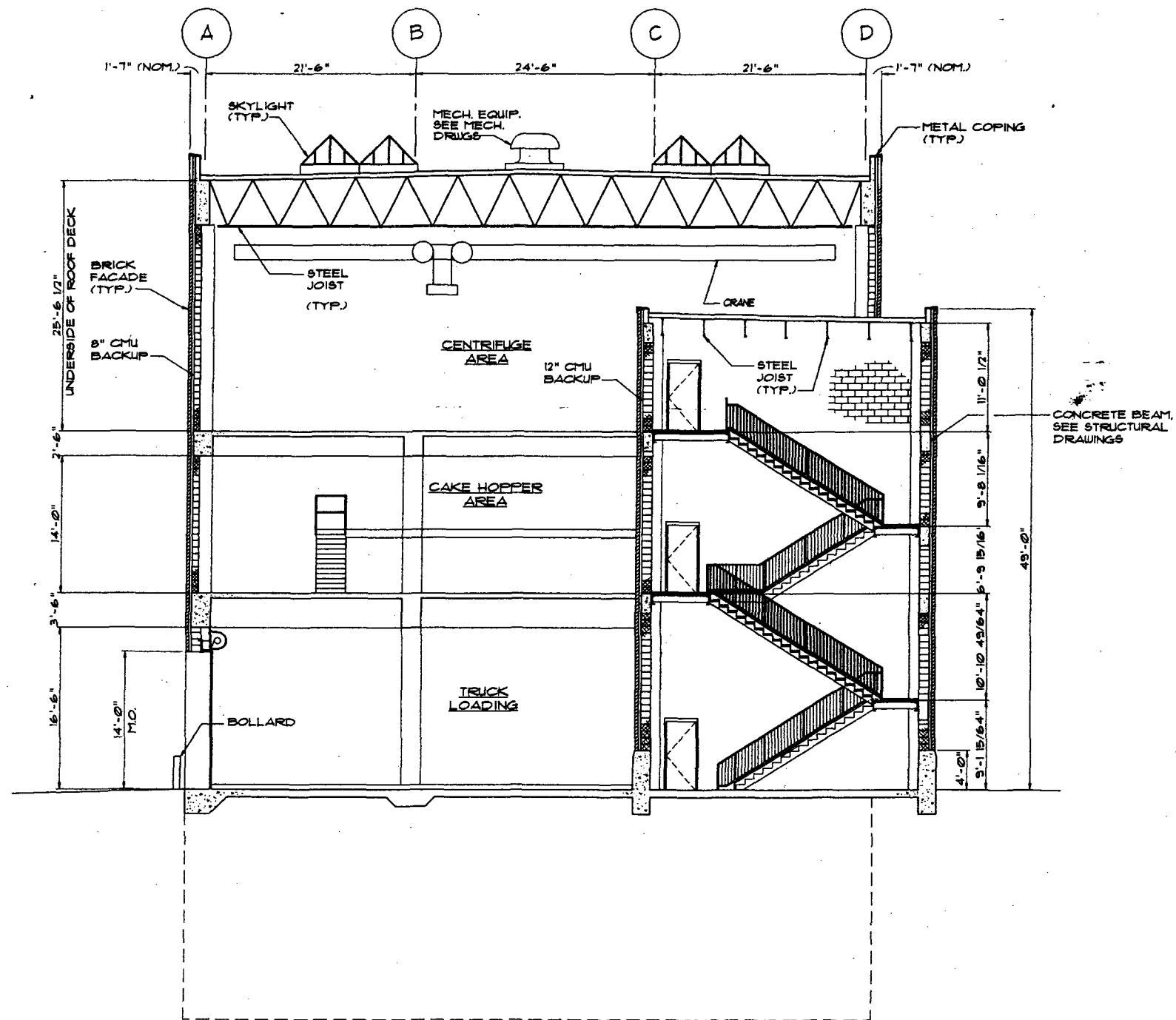
LONGITUDINAL SECTION

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

AUTP/CONSULT/SECTION

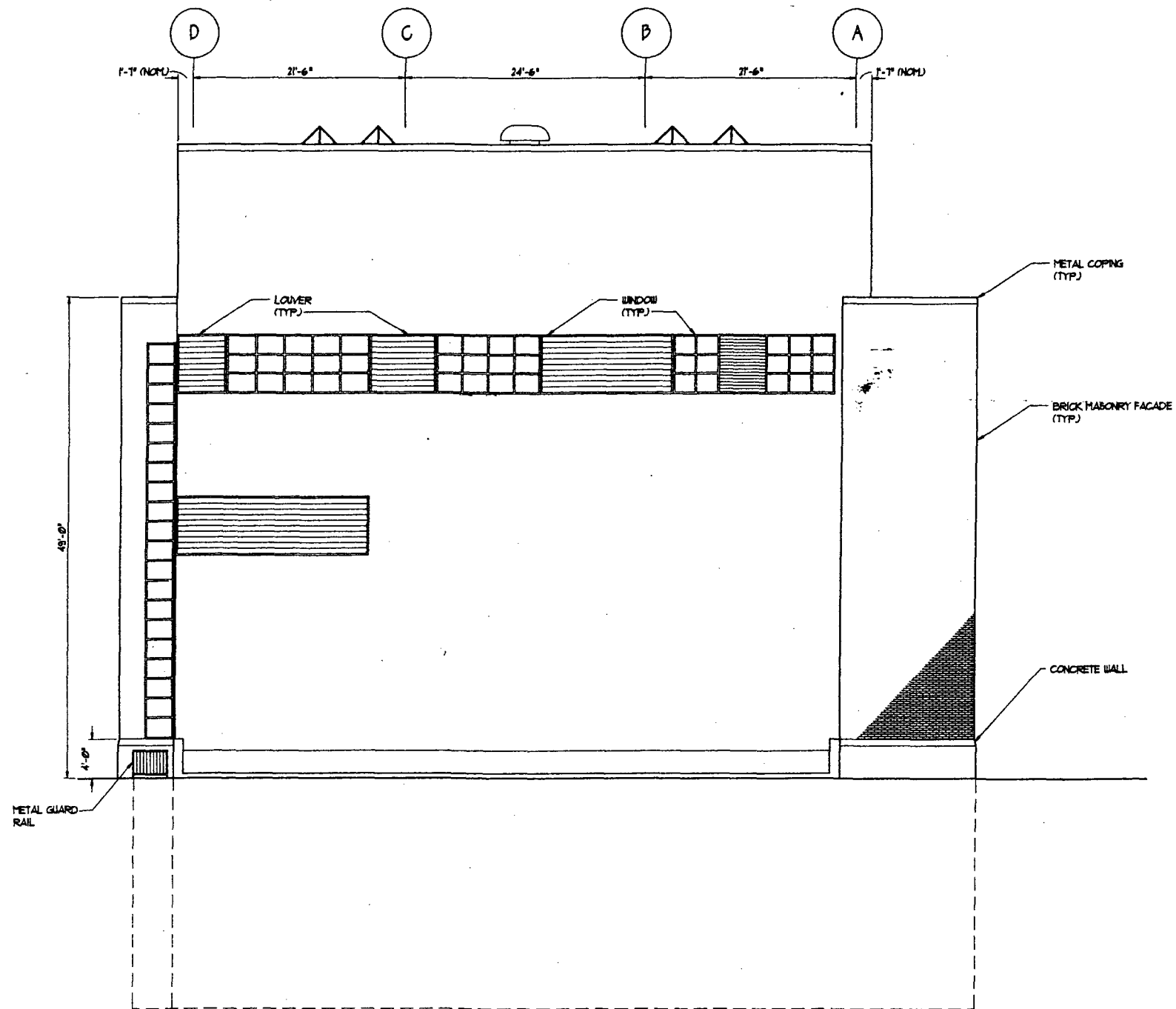
0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ARCHITECTS DALLAS/ARL WTP AND GEORGETOWN RESERVOIR WASTEWATER COLLECTION AND TREATMENT DEWATERING FACILITY		
LONGITUDINAL SECTION		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-8



② TRANSVERSE SECTION
 SCALE: 3/16" = 1'-0"
 0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGREEMENT NUMBER DALECARLIA WTP AND GROSSETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
TRANSVERSE SECTION		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-9

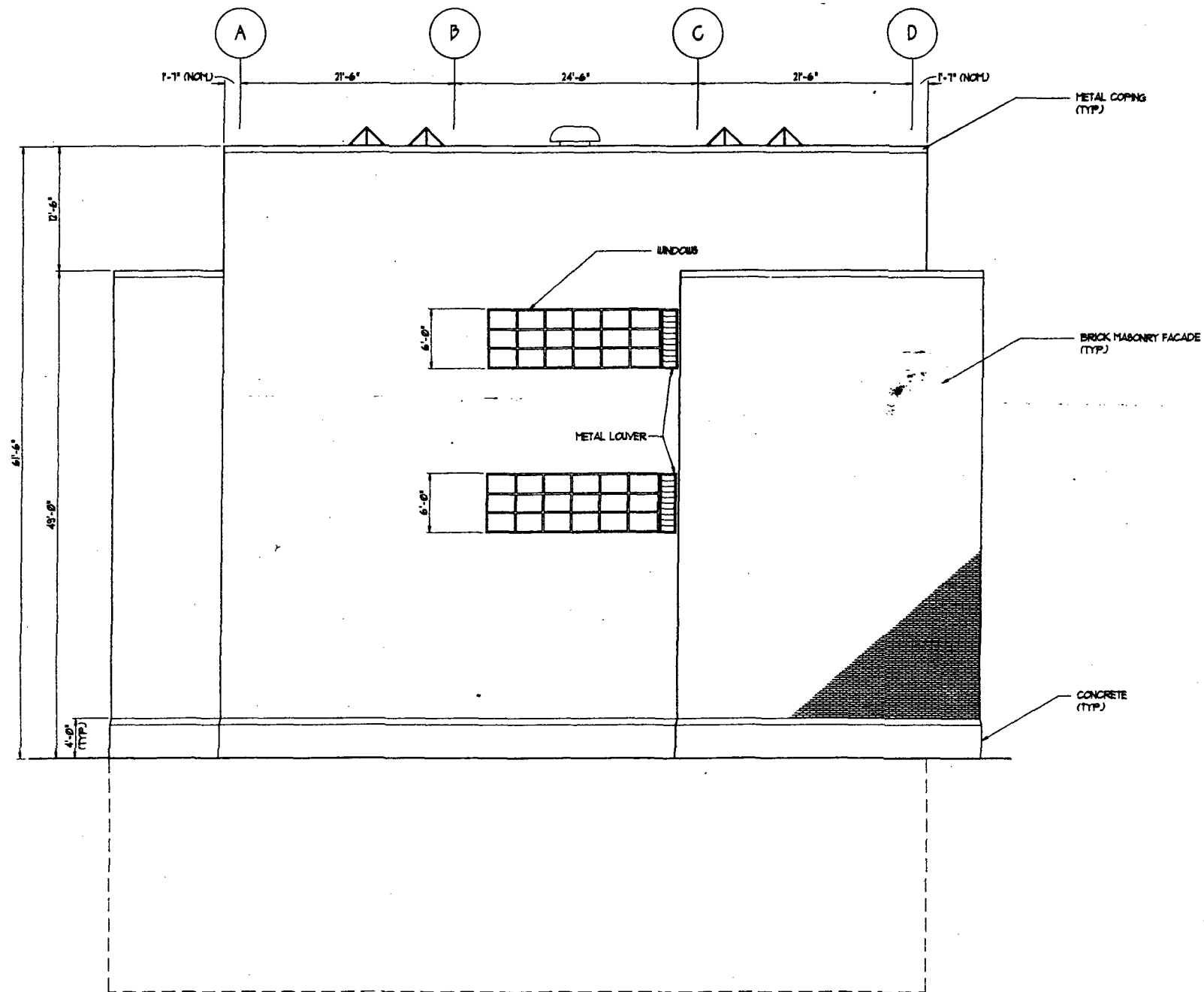


NORTH ELEVATION

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

0 3 6 9 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AREA DISTRICT ENGINEER DALECARLIA WTP AND BOWENSTOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
NORTH ELEVATION		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-10



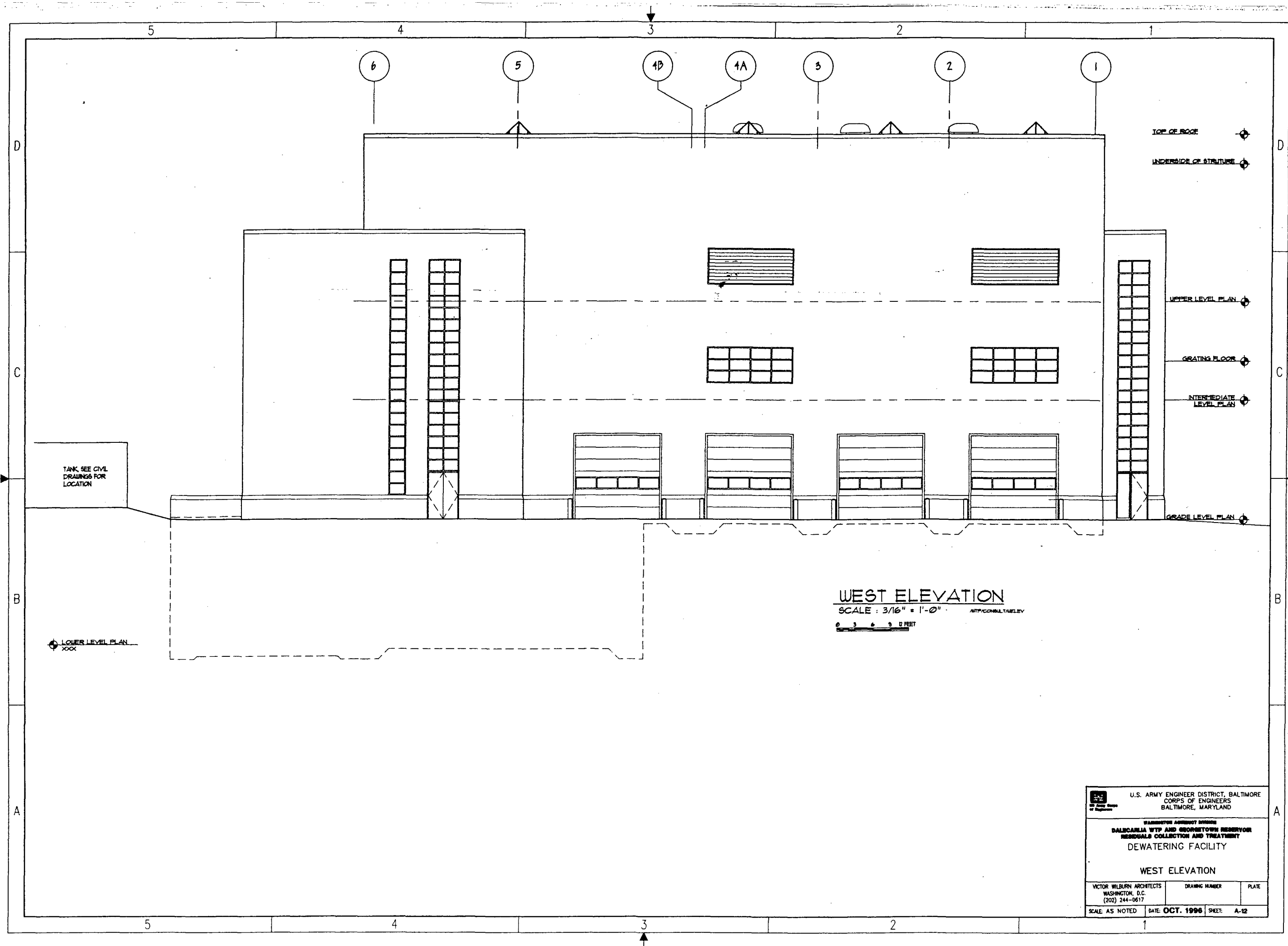
SOUTH ELEVATION

SCALE: 3/16" = 1'-0" AITP/CONSULT/RELEV

0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGONY DIVISION DALLAS/ARL WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
SOUTH ELEVATION		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-11

Drawing name: A-12.DWG
Saved on July 23, 1996, at 11:53 AM



Drawing name: A-11.DWG
Saved on: July 23, 1996 at 10:2 PM

TOP OF ROOF
UNDERSIDE OF STRUCTURE

UPPER LEVEL PLAN

INTERMEDIATE LEVEL PLAN

GRADE LEVEL PLAN

METAL COPING
(TYP)

GLAZING

BRICK MASONRY FACADE
(TYP)

CONCRETE WALL

TANK SEE CIVIL
DRAWINGS FOR
LOCATION

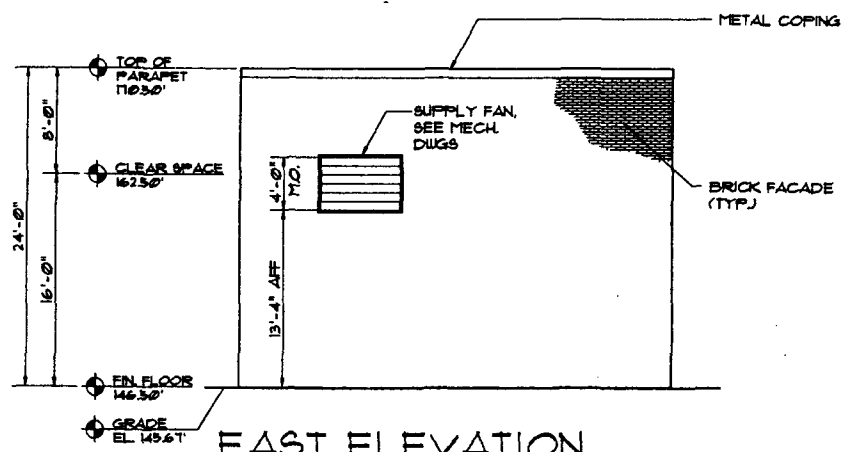
LOWER LEVEL PLAN

EAST ELEVATION

SCALE: 3/16" = 1'-0" AUTOMATICALLY RELEV

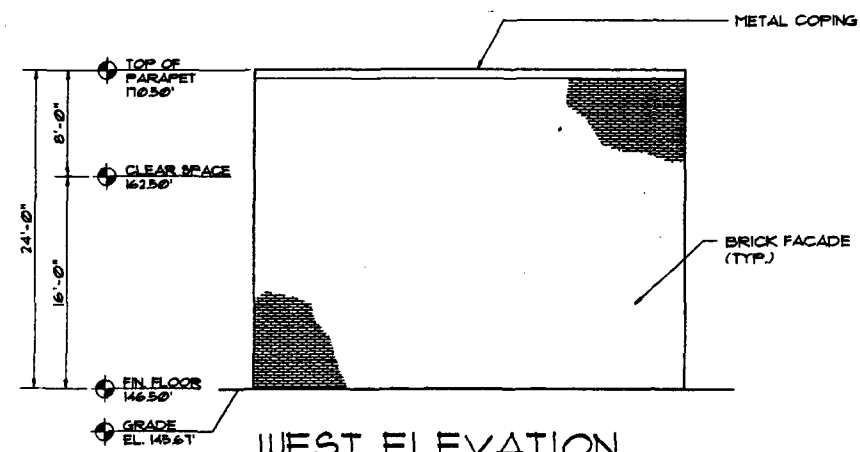
0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ASSESSMENT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING FACILITY		
EAST ELEVATION		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE: AS NOTED	DATE: OCT. 1996	SHEET: A-13



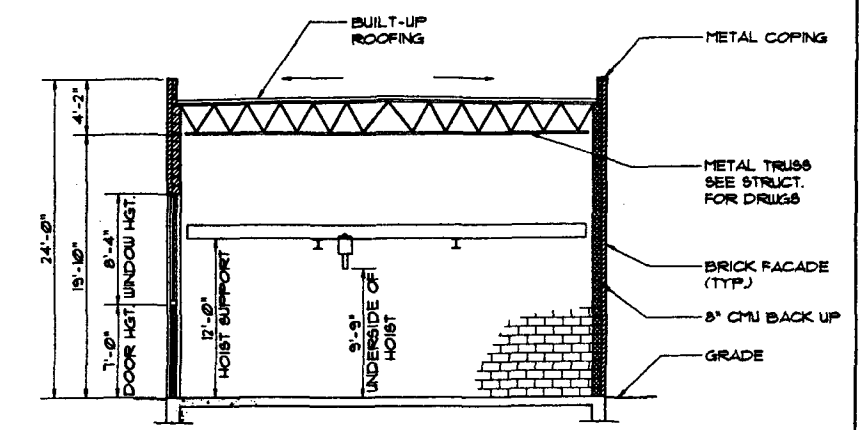
EAST ELEVATION

SCALE: 3/16" = 1'-0" AUT/PS-B/ELEV
0 3 6 9 12 FEET



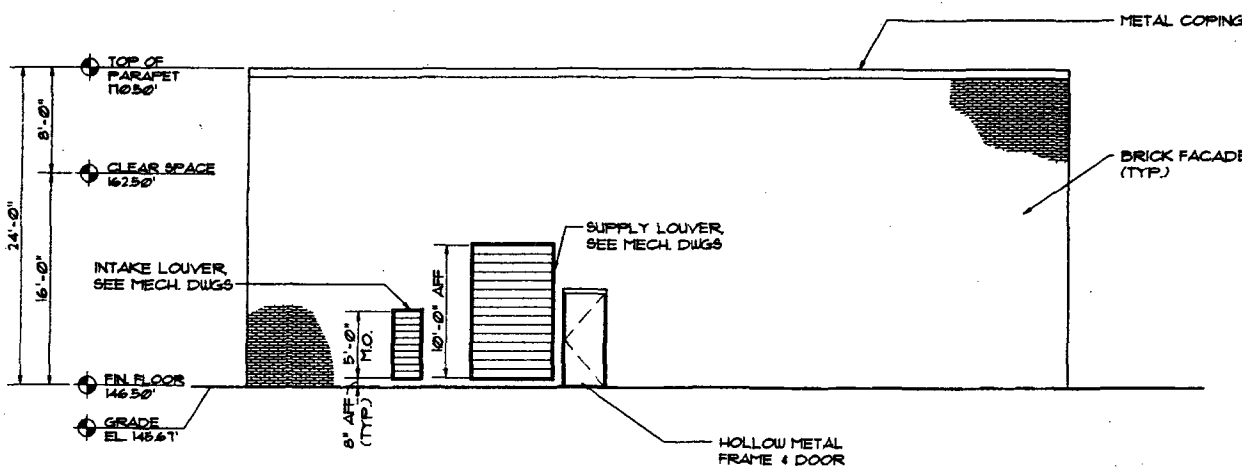
WEST ELEVATION

SCALE: 3/16" = 1'-0" AUT/PS-B/ELEV
0 3 6 9 12 FEET



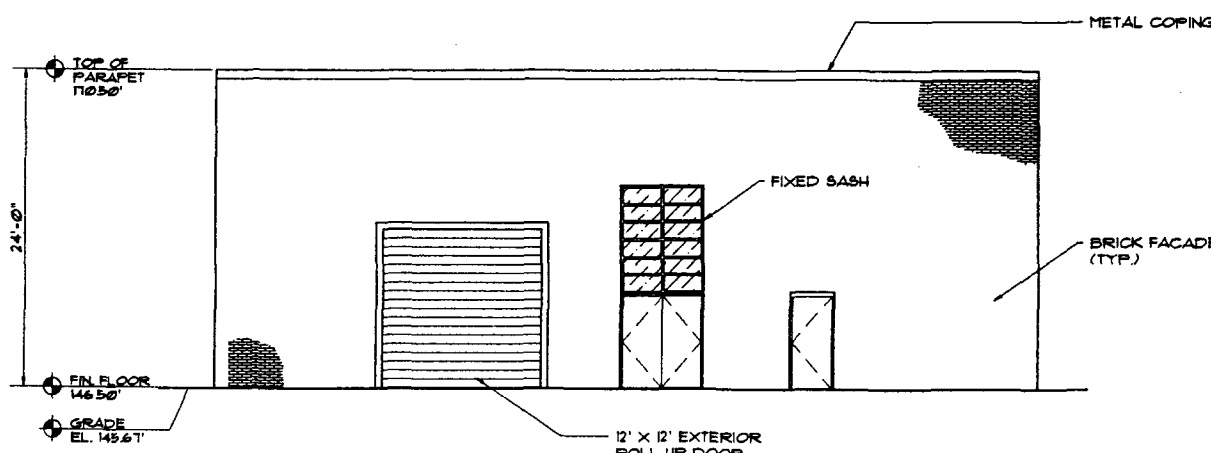
TRANSVERSE SECTION

SCALE: 3/16" = 1'-0" AUT/PS-B/ELEV
0 3 6 9 12 FEET



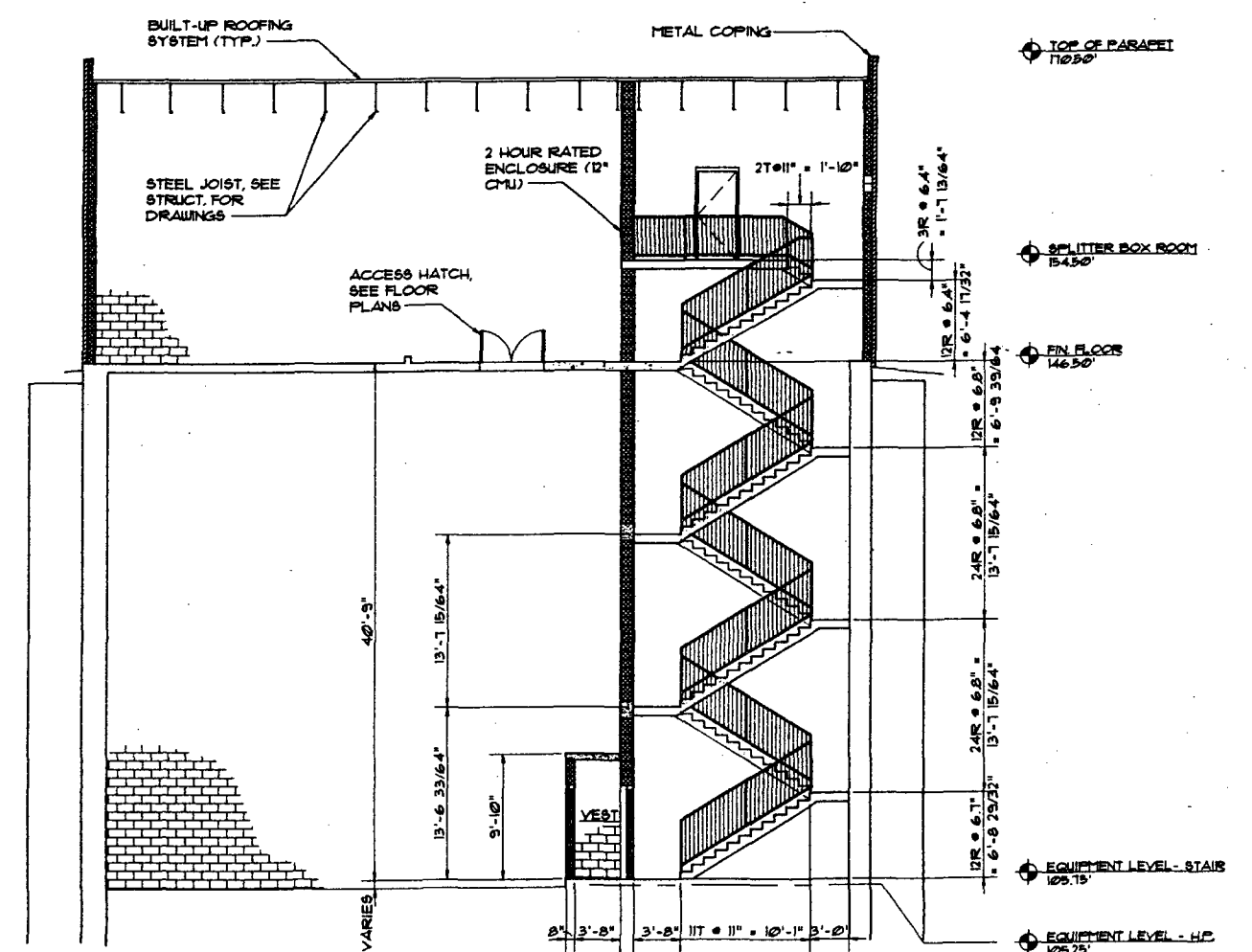
NORTH ELEVATION

SCALE: 3/16" = 1'-0" AUT/PS-B/ELEV
0 3 6 9 12 FEET



SOUTH ELEVATION

SCALE: 3/16" = 1'-0" AUT/PS-B/ELEV
0 3 6 9 12 FEET

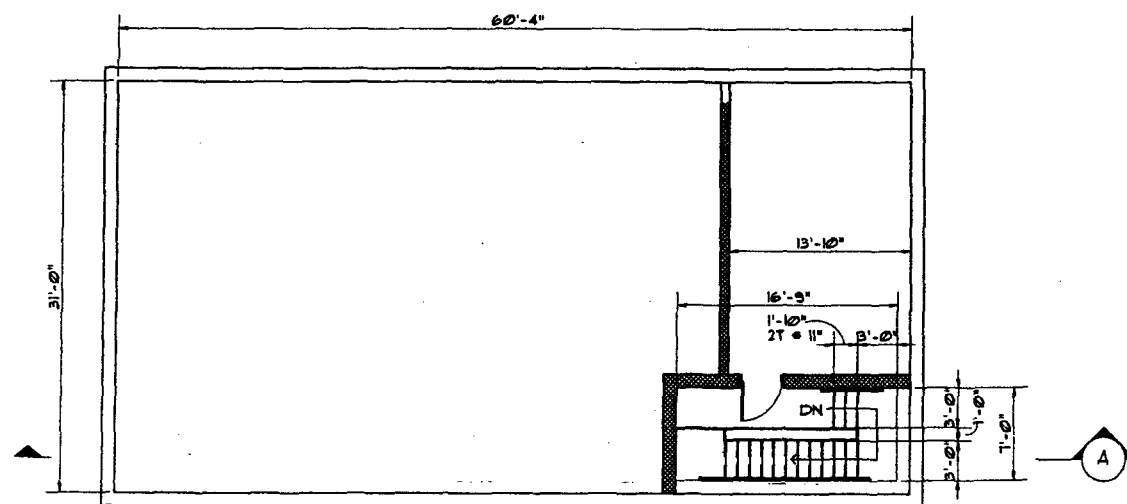


LONGITUDINAL SECTION

SCALE: 3/16" = 1'-0" AUT/PS-B/LSECTION
0 3 6 9 12 FEET

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGONY BRIDGE GALCARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
THICKENED RESIDUALS PUMPING STATION		
SECTIONS AND ELEVATIONS		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0617	DRAWING NUMBER	PLATE
SCALE AS NOTED	DATE OCT. 1996	SHEET A-14

Drawing name: A-15.DWG
Saved on: July 16, 1996 at 2:10 PM

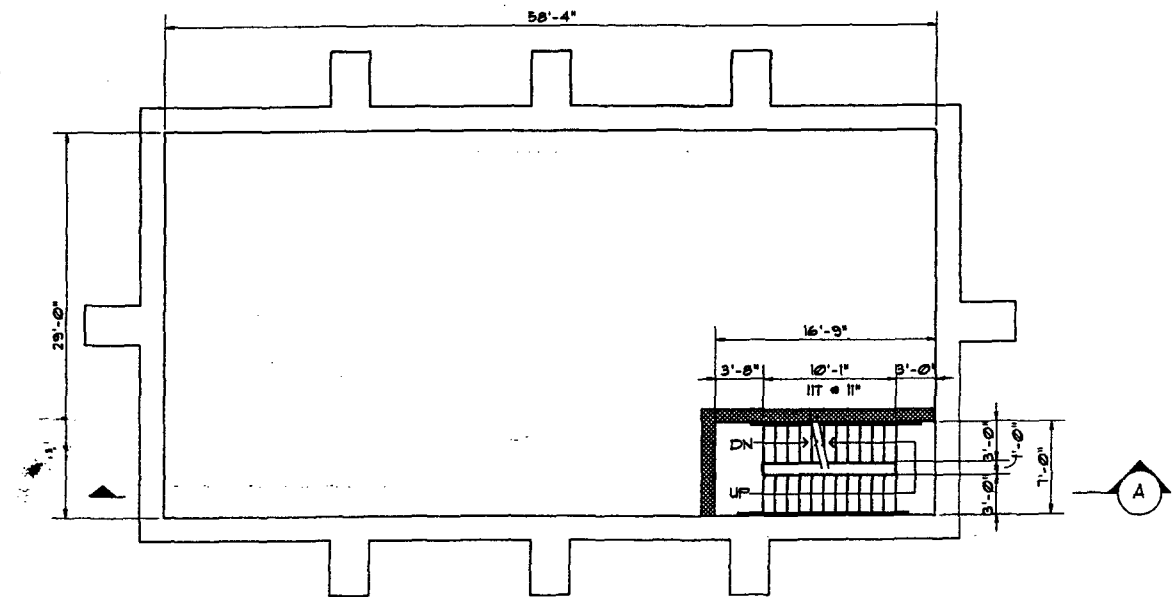


SPLITTER BOX ROOM
LEVEL @ EL. 154.50'

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

AUT/PS-B/PLANS

0 3 6 9 12 FEET

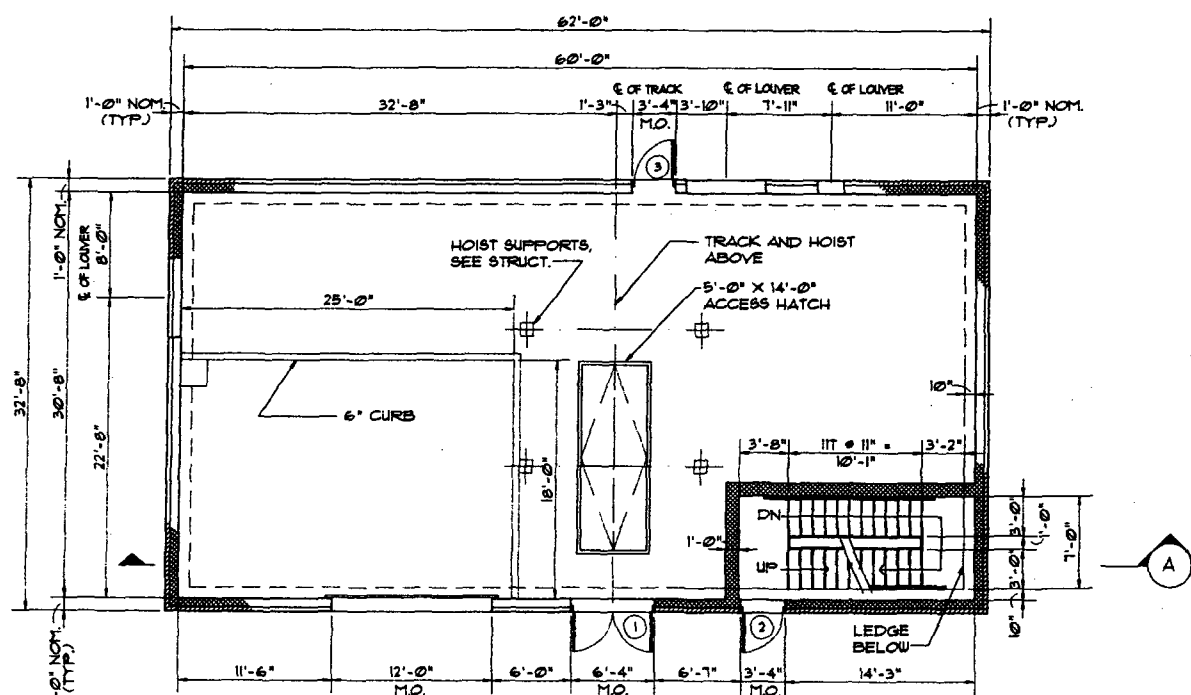


PLAN @ EL. 140.00'

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

AUT/PS-B/PLANS

0 3 6 9 12 FEET

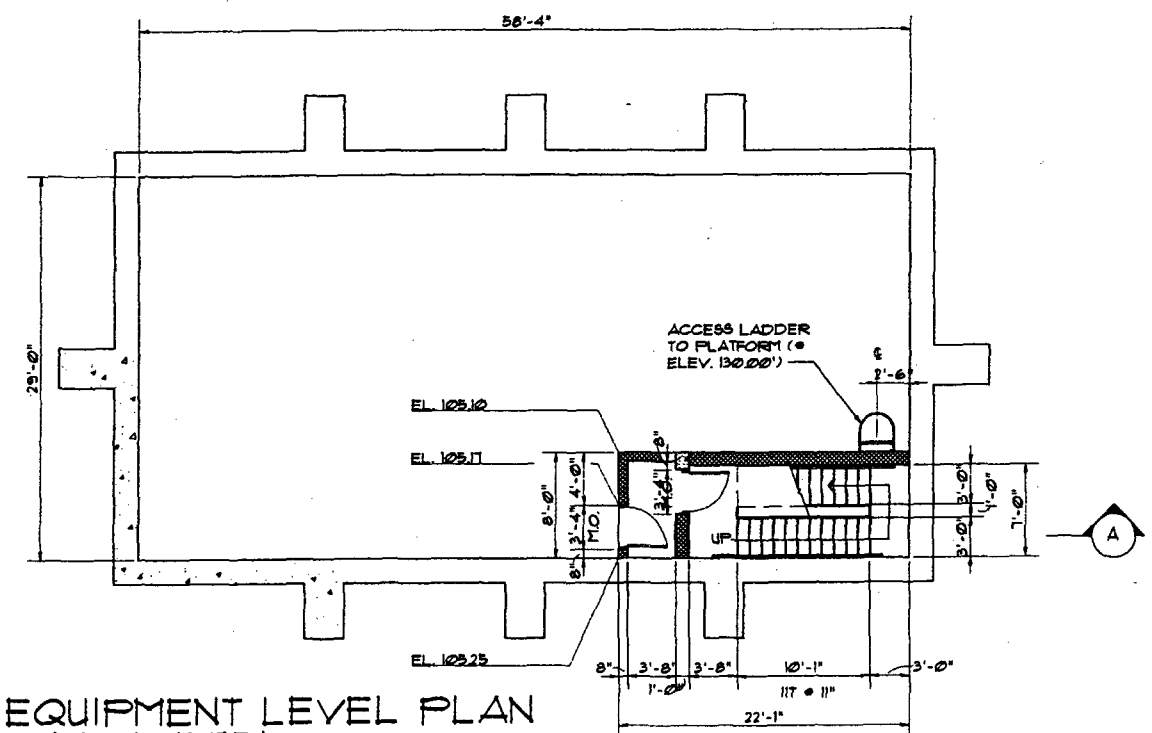


GRADE LEVEL PLAN
@ EL. 146.50'

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

AUT/PS-B/PLANS

0 3 6 9 12 FEET



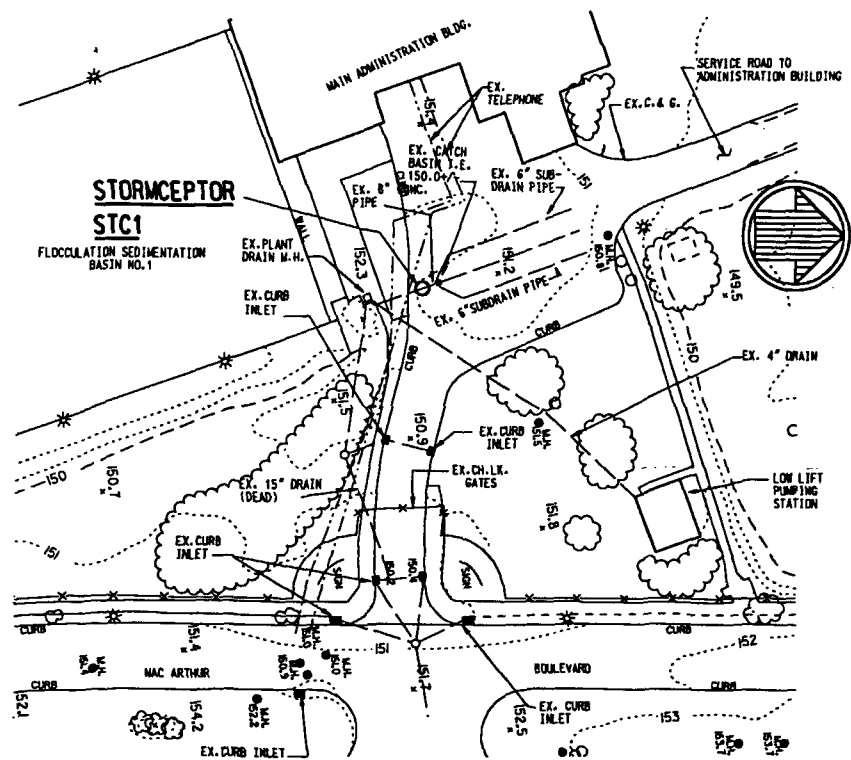
EQUIPMENT LEVEL PLAN
@ EL. 105.15'

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

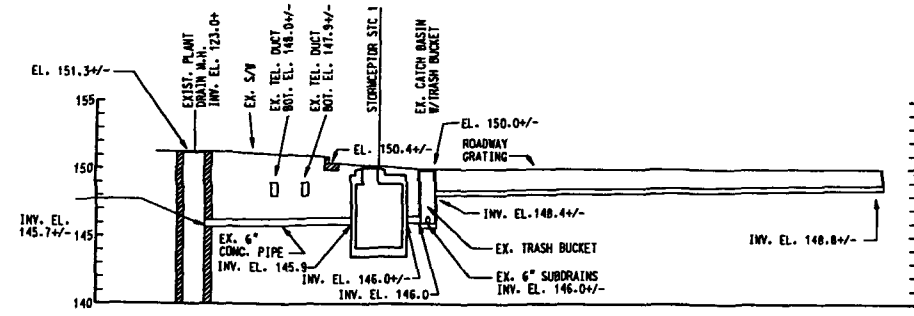
AUT/PS-B/PLANS

0 3 6 9 12 FEET

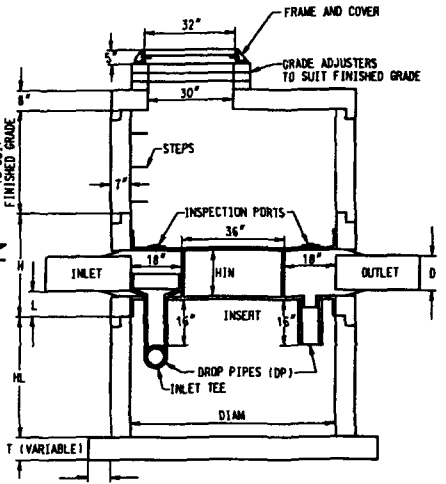
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AGREEMENT NUMBER DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
THICKENED RESIDUALS PUMPING STATION PLANS		
VICTOR WILBURN ARCHITECTS WASHINGTON, D.C. (202) 244-0817	DRAWING NUMBER	PLATE
SCALE AS NOTED	DATE: OCT. 1996	SHEET: A-15



ADMINISTRATION BUILDING PARKING LOT STORM DRAINAGE - PLAN
SCALE: 1" = 30'



PROFILE: STC 1
SCALE: HORIZ. 1" = 10', VERT. 1" = 5'



DETAIL: STORMCEPTOR CROSS SECTION
SCALE: NONE

FLOWS AND CAPACITIES *

MODEL	MAX. TREATED FLOW RATE (GPM)	SEDIMENT CAPACITY (CU YD)	OIL CAPACITY (US GALS)	TOTAL CAPACITY (US GALS)
STC 900	285	70	280	910
STC 1200	285	110	280	1230
STC 1800	285	195	280	1860

* APPROXIMATE
** WITHOUT BY-PASSING

DIMENSIONS *

MODEL	DIAM. (IN)	DROP PIPE DIAM. (IN)	HL (IN)	T (IN)	W (IN)	H (IN)
STC 900	6	6	42	8	8	8
STC 1200	6	6	60	8	8	8
STC 1800	6	6	96	8	8	8

* APPROXIMATE
** MAXIMUM VALUES

PIPING AND INSERT DIMENSIONS

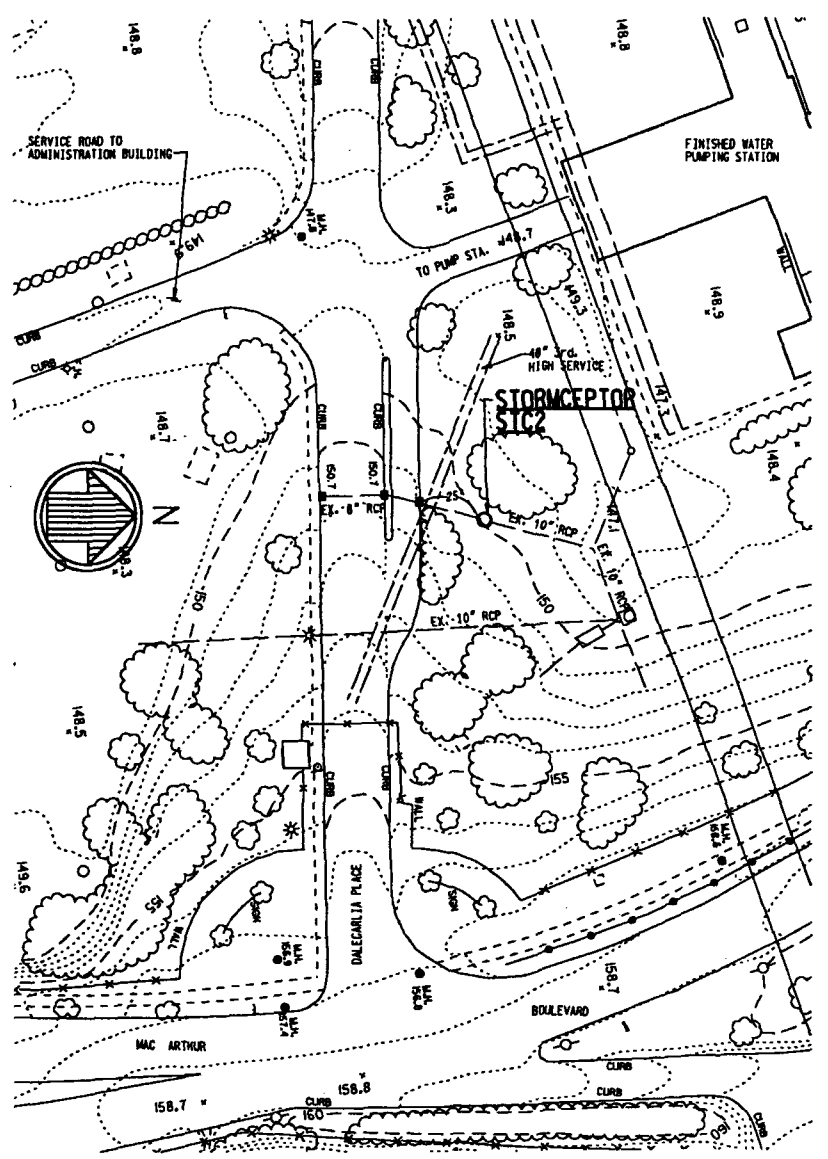
PIPE DIAMETER D (IN)	PIPE MATERIAL	HIN (IN)	H (IN)	L (IN)
10	PVC	22	36	8
10	CONC / PE RIB	22	36	7
12	PVC / PE RIB	22	36	9
12	CONCRETE	22	42	11

DALECARLIA STORMCEPTOR CHART

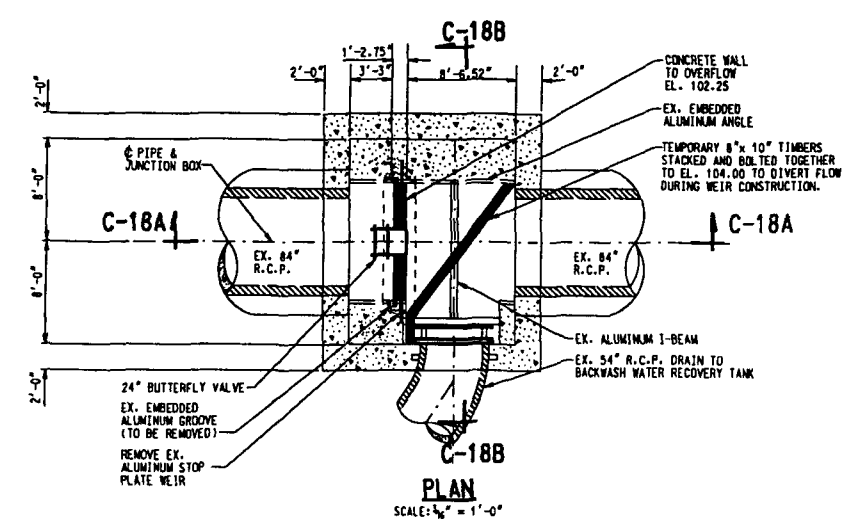
STC. NO.	SHEET NO. OF PLAN VIEW	WASTE FLOW NUMBER	IMPERVIOUS DRAINAGE AREA	INVERT IN	INVERT OUT	TOP ELEV.	MODEL NO.
1.	C-18	(7)	0.50	146.0	145.9	150.3	900
2.	C-18	(36)	0.60	145.5	145.4	150.1+/-	1200
3.	C-14	(10)	0.84	139.0	138.9	146.5+/-	1800
4.	C-14	(22)	0.50	134.7	134.6	145.6+/-	900
5.	C-14	(21)	0.30	139.4	139.3	145.7+/-	900

- NOTES:
1. THE STORMCEPTOR IS PROTECTED BY U.S. PATENT NO. 4,985,148.
 2. CAST IRON FRAME AND COVER TO BE APPROVED BY STORMCEPTOR CORPORATION. "STORMCEPTOR" TO BE EMBOSSED ON COVER.
 3. BEDDING, BACKFILL AND GENERAL INSTALLATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND A PROFESSIONAL ENGINEER BASED ON SITE SPECIFIC SOILS CONDITIONS. SUBJECT TO THE APPROVAL OF THE C.O.E. W.A.D.
 4. THE STORMCEPTOR SHOULD BE MAINTAINED ANNUALLY AND/OR IMMEDIATELY FOLLOWING ANY KNOWN SPILLS.
 5. THE STORMCEPTOR CONFORMS TO ASTM C 478 DESIGN SPECIFICATIONS/STANDARDS.
 6. FURTHER TECHNICAL INFORMATION IS AVAILABLE FROM STORMCEPTOR CORPORATION 1-800-762-4703.

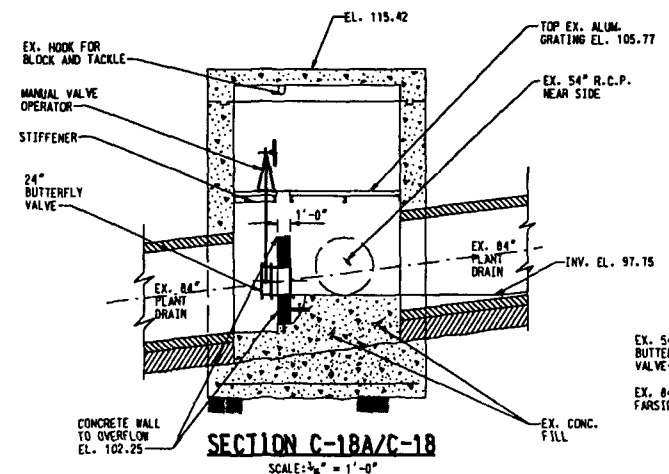
STORMCEPTOR WATER QUALITY INLET



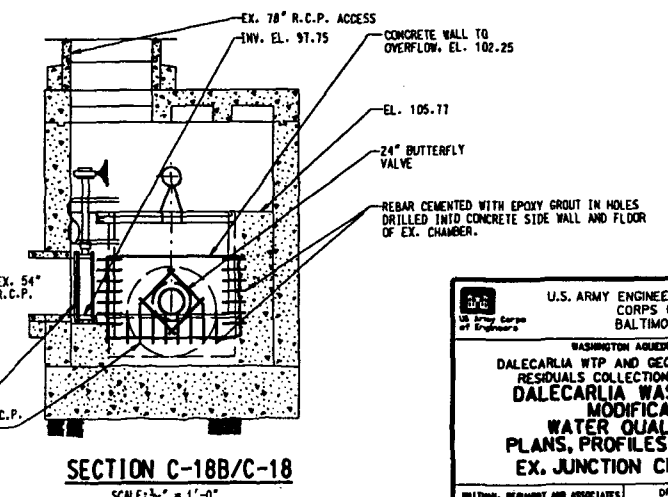
DALECARLIA PLACE STORM DRAINAGE - PLAN
SCALE: 1" = 30'



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



SECTION C-18A/C-18
SCALE: 1/4" = 1'-0"



SECTION C-18B/C-18
SCALE: 1/4" = 1'-0"

EX. JUNCTION CHAMBER NO. 1 WEIR RECONSTRUCTION

U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT
DALECARLIA WASTE STREAMS
MODIFICATIONS
WATER QUALITY INLET
PLANS, PROFILES AND DETAILS
EX. JUNCTION CHAMBER NO. 1

WITH: REEDMAN AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND
(410) 230-2400

DRAWING NUMBER
DATE: OCT. 1996

SCALE: AS SHOWN

PLATE
SHEET C-18

GENERAL NOTES

- ALL DIMENSIONS, LOCATIONS AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE SIZES AND LOCATIONS OF EQUIPMENT PADS AND PEDESTALS, AS WELL AS EQUIPMENT RELATED FLOOR AND SLAB OPENINGS ARE DEPENDENT UPON THE ACTUAL EQUIPMENT FURNISHED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL SUCH ITEMS. NO DIMENSIONS INDICATED ON THESE DRAWINGS SHALL BE ALTERED WITHOUT THE ENGINEER'S APPROVAL. ALL EQUIPMENT PADS AND OTHER EQUIPMENT SUPPORTS REQUIRED MAY NOT HAVE BEEN SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZES AND LOCATIONS OF SUCH PADS AND SUPPORTS.
- THE BUILDING STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LOADS ONLY AS COMPLETE STRUCTURES. ANY PROPOSED APPLICATION OF CONSTRUCTION LOADS WHICH EXCEED THE DESIGN LOADS OR ANY LOADS APPLIED TO THE PARTIALLY COMPLETED STRUCTURE WILL REQUIRE REANALYSIS AND PROBABLE REDESIGN WHICH SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S EXPENSE.
- LOCATIONS OF BORINGS ARE SHOWN ON CIVIL DRAWINGS. BORING LOGS ARE INCLUDED IN THE GEOTECHNICAL REPORT.
- FOR NOTES PERTAINING TO INDIVIDUAL STRUCTURES, SEE DRAWINGS FOR THOSE STRUCTURES.

CONCRETE NOTES

- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- REINFORCED CONCRETE SHALL BE DETAILLED AND CONSTRUCTED IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE, (ACI 318-89) "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS".
- ALL REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615-90, DEFORMED, GRADE 60.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM SPECIFICATION A185-90G.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
 - UNFORMED CONCRETE BOTTOM BARS IN FOOTINGS AND SLABS ON EARTH, OR GRAVEL - 3"
 - ALL OTHER CONDITIONS - 2"
- ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL SUBMIT SHOP DETAILS OF REINFORCING STEEL BEFORE PROCEEDING WITH FABRICATION. CONCRETE POURING SEQUENCE SHALL BE SUBMITTED BEFORE REINFORCING STEEL SHOP DRAWINGS ARE SUBMITTED.
- REINFORCING STEEL SHALL BE DETAILLED IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE, (ACI 318-89, REVISED 1986) "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", AND (ACI SP-66) "ACI DETAILING MANUAL 1980".
- ALL SPLICES FOR REINFORCING BARS NOT DIMENSIONED ON THE DRAWINGS SHALL BE DETAILLED AS TABULATED ON THIS DRAWING.
- ALL EMBEDMENTS FOR THE REINFORCING BARS NOT DIMENSIONED ON THE DRAWINGS SHALL BE DETAILLED TO DEVELOP FULL TENSION CAPACITY. FULL DEVELOPMENT SHALL BE PURSUANT TO ACI 318 REQUIREMENTS.
- CONCRETE SLAB AND WALLS SHALL BE POURED BETWEEN INDICATED JOINTS ALLOWING A MINIMUM PERIOD OF 3 DAYS TO ELAPSE BETWEEN ADJACENT POURS.
- CONSTRUCTION JOINTS SHALL BE AS DETAILLED ON THE DRAWINGS AND NO ADDITIONAL JOINTS SHALL BE USED NOR ANY OMITTED EXCEPT BY WRITTEN AUTHORIZATION OF THE ENGINEER. ENGINEER APPROVED ADDITIONAL CONSTRUCTION JOINTS SHALL NOT RESULT IN ADDITIONAL EXPENSE TO THE OWNER.
- WATERSTOPS SHALL BE 3/4" THICK PVC 9" WIDE OF THE 2-BUILD OR 3-BUILD TYPE AS NOTED ON THE DRAWINGS.
- ANCHOR BOLTS AND EQUIPMENT PEDESTALS SHALL BE SIZED AND LOCATED AS REQUIRED TO SUIT EQUIPMENT FURNISHED.
- SEE ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL EMBEDDED ITEMS SUCH AS SLEEVES, ANCHORS, ELECTRICAL CONDUITS, OPENINGS, WHICH MAY INTERFERE WITH CONCRETE CONSTRUCTION. ALL PIPING AND OTHER EMBEDDED ITEMS ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
- WHERE A BEAM FRAMES INTO A WALL, IF A CONSTRUCTION JOINT IS NOT INDICATED AT THE BOTTOM OF THE BEAM, A POCKET SHALL BE PROVIDED IN THE WALL FOR BEAM BEARING. THE DEPTH OF THE POCKET SHALL BE FULL THICKNESS OF THE WALL.

STRUCTURAL NOTES

CONCRETE MASONRY NOTES

- MASONRY CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE (ACI) 530.1-88/ASCE 6-88, "SPECIFICATION FOR CONCRETE MASONRY CONSTRUCTION".
- LOAD BEARING CONCRETE MASONRY UNITS SHALL BE HOLLOW LIGHTWEIGHT UNITS MEETING THE REQUIREMENTS OF ASTM C90.
- MORTAR SHALL MEET THE REQUIREMENTS OF ASTM C270 TYPE M OR S. CEMENT SHALL BE PORTLAND CEMENT.
- GROUT SHALL MEET THE REQUIREMENTS OF ASTM C476 COARSE GROUT, AND SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 2000 POUNDS PER SQUARE INCH AT 28 DAYS.
- MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY F' m SHALL BE 1350 POUNDS PER SQUARE INCH.
- REINFORCING BARS SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60, AND CMU MUST BE DESIGNED ACCORDING TO CODE TM 5-809-3, "MASONRY STRUCTURAL DESIGN FOR BUILDINGS".
- CONCRETE FOR PRECAST LINTELS SHALL COMPLY WITH SPECIFICATION SECTION 03300, "CAST-IN-PLACE CONCRETE", AND SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 4000 POUNDS PER SQUARE INCH.
- PEA GRAVEL CONCRETE (GROUT) WHERE USED FOR FILLING CONCRETE MASONRY CELLS SHALL REACH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 POUNDS PER SQUARE INCH.

STRUCTURAL STEEL NOTES

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC) "MANUAL OF STEEL CONSTRUCTION", NINTH EDITION 1989.
- THE CONTRACTOR SHALL SUBMIT ERECTION PLANS AND SHOP DETAILS BEFORE PROCEEDING WITH FABRICATION.
- ALL STRUCTURAL STEEL AND PLATE SHALL COMPLY WITH A.S.T.M. DESIGNATION A36.
- ANCHOR BOLTS (A.B.) SHALL COMPLY WITH ASTM A307.
- HIGH STRENGTH BOLTS (HS) SHALL COMPLY WITH ASTM A325.
- ALL WELDING SHALL COMPLY WITH AMERICAN WELDING SOCIETY, (AWS D1.1) "STRUCTURAL WELDING CODE" 1990.
- ALL SHOP CONNECTIONS SHALL BE WELDED WITH CLASS E-70 SERIES ELECTRODES. FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED EXCEPT WHERE OTHERWISE NOTED.
- CONNECTIONS NOT INDICATED SHALL BE DESIGNED BY THE FABRICATOR. BEAM CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF THE TOTAL ALLOWABLE UNIFORM LOAD GIVEN IN PART 2 OF THE AISC "MANUAL OF STEEL CONSTRUCTION". OTHER CONNECTIONS SHALL BE DESIGNED FOR THE LOADS INDICATED. ALL CONNECTIONS SHALL BE A MINIMUM OF TWO 3/4" H.S. BOLTS OR WELDS OF EQUAL STRENGTH.
- WILL BOTTOM OF ALL COLUMNS AND FINISH TOP OF ALL BASE PLATES IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS. BASE PLATES SHALL BE WELDED TO BOTTOM OF COLUMNS.

CODES

- ARMY TM 5-809-1 "STRUCTURAL DESIGN CRITERIA LOADS," AND EM 1110-2-2104, "STRENGTH DESIGN OF REINFORCED CONCRETE STRUCTURES."
- ASCE 7 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES".
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC) "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" 1989.
- AMERICAN CONCRETE INSTITUTE, (ACI-318-89) "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- AMERICAN CONCRETE INSTITUTE, (ACI-350-83) "CONCRETE SANITARY ENGINEERING STRUCTURES".
- AMERICAN CONCRETE INSTITUTE, (ACI-530-88/ASCE 5-88) "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES".

DESIGN LOADS

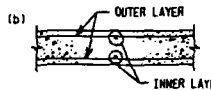
- DEAD LOADS - ACTUAL WEIGHT OF STRUCTURE.
WEIGHT OF SOIL - 100 P.C.F. TO RESIST UPLIFT.
- 120 P.C.F. DEAD LOAD
- LIVE LOADS - FLOOR - 150 P.S.F. IN AREAS NOT OCCUPIED BY EQUIPMENT OR SUBJECT TO TRUCK LOADING.
- EQUIPMENT - ACTUAL WEIGHT - 300 P.S.F. MINIMUM.
- TRUCK - H20-44 AASHTO LOADING
- WALKWAYS - 150 P.S.F.
- STAIRWAY - 100 P.S.F.
- ROOF - 20 P.S.F.
- SNOW LOAD - GROUND SNOW LOAD - 20 PSF
- WIND LOAD - BASIC WIND SPEED - 70 MPH (EXPOSURE C)
- SEISMIC LOAD - SEISMIC ZONE 1
WATER IS ASSUMED TO BE BELOW THE BASE OF STRUCTURES DURING CONSTRUCTION.
- DEWATERING BUILDING
STRUCTURE NATURAL FREQUENCY 5.82 HZ
CRITICAL CENTRIFUGAL FREQUENCY 3.68 HZ

FOUNDATION NOTES

- ALL PILES SHALL BE AS INDICATED ON THE DRAWINGS.
- PILES SHALL BE DRIVEN TO THE REQUIRED MINIMUM CAPACITY OF AS SHOWN ON THE DRAWINGS. MINIMUM PILE TIP ELEVATION SHALL BE AS SHOWN ON THE DRAWINGS ALSO.
- DESIGN FROST PENETRATION IS 26 INCHES. ALL BOTTOM OF FOOTINGS SHALL BE BELOW THE FINISH GRADE BY NOT LESS THAN 26 INCHES, UNLESS NOTED OTHERWISE.
- FOR MECHANICAL AND ELECTRICAL WORK TO BE INCORPORATED IN FOUNDATION WORK, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- ALL EXCAVATION SHALL BE KEPT DRY. STANDING WATER SHALL NOT BE ALLOWED IN EXCAVATIONS.
- BEFORE PLACING ANY CONCRETE ON SUBGRADE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

BAR SIZE	SLABS (a) AND WALLS 6" MIN. SPACING		BEAMS (a) (b) (c)		
	INNER LAYER (d)	OUTER LAYER (e)	(d)	(e)	(f)
#4	19"	19"	20"	19"	19"
#5	23"	23"	31"	23"	23"
#6	28"	28"	44"	31"	28"
#7	33"	33" (c)	59"	42"	33"
#8	37"	44" (c)	78"	55"	39"
#9	50"	69" (c)	99"	69"	50"
#10	63"	88" (c)	125"	88"	63"

(a) FOR SLAB OR BEAM REINFORCEMENT SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST BELOW THE SPLICE, INCREASE THE SPLICE LENGTH BY A FACTOR OF 1.3.



(c) LENGTH FOR 1.5" MIN. COVER.

(d) CENTER TO CENTER BAR SPACING LESS THAN OR EQUAL TO 3 BAR DIAMETERS.

(e) CENTER TO CENTER BAR SPACING GREATER THAN 3 BAR DIAMETERS.

(f) CENTER TO CENTER BAR SPACING GREATER THAN OR EQUAL TO 4 BAR DIAMETERS.

LAP SPLICES OF REINFORCING BARS $f'_c = 4000$ PSI

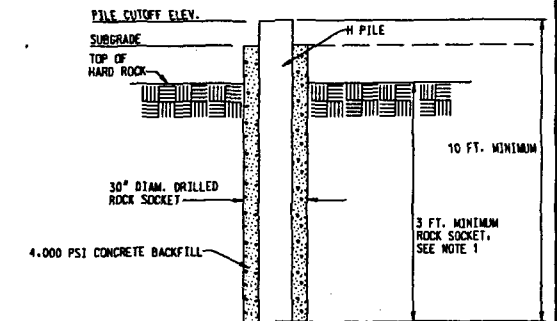
-(NON-EPOXY COATED)-

FOUNDATION DESIGN

NO.	STRUCTURE	TYPE OF FOUNDATION	ALLOWABLE BEARING CAPACITY OR DESIGN LOAD
1	DEWATERING BUILDING	HP 14 x 73	60 TONS (COMPRESSION) 25 TONS (TENSION)
2	GRAVITY THICKENERS	HP 14 x 73	40 TONS (COMPRESSION) 12 TONS, 16 TONS (TENSION)
3	THICKENED RESIDUAL PUMPING STATION	MAT FOUNDATION	4,000 POUNDS PER SQUARE FOOT
4	DALECARLIA FOREBAY EQUALIZATION BASIN	THICKENED SLAB OR MAT ON GRADE	2,000 PSF ON CONTROLLED FILL 7,000 PSF ON DECOMPOSED ROCK
5	SEDIMENTATION BASIN RESIDUALS PUMPING STATION	SLAB ON ROCK	10,000 PSF
6	GEORGETOWN RESERVOIR EQUALIZATION BASIN (ALL STRUCTURES)	HP 12 x 53	15 TONS (TENSION)

NOTES:

12 TONS FOR EASTERN MOST THICKENERS; 16 TONS FOR WESTERN MOST THICKENERS

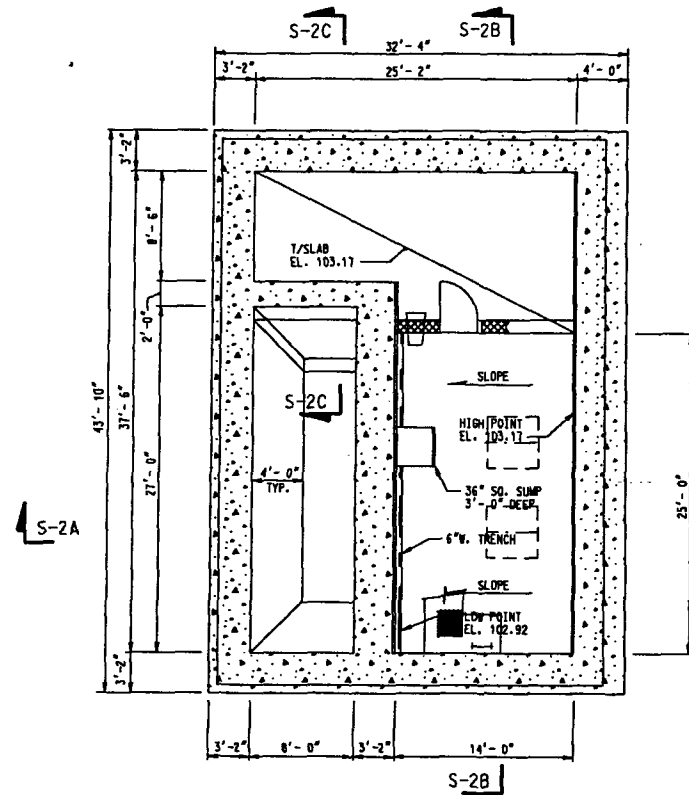


NOTE 1: THE ROCK SOCKET DEPTH SHALL VARY AS REQUIRED, SO THAT NO PILE IS LESS THAN 10 FEET IN LENGTH.

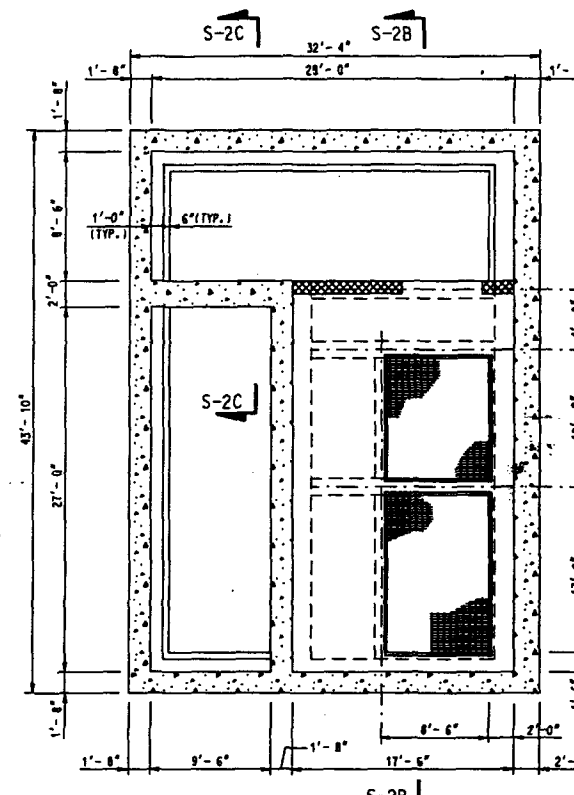
H PILE ROCK SOCKET DETAIL

NOT TO SCALE

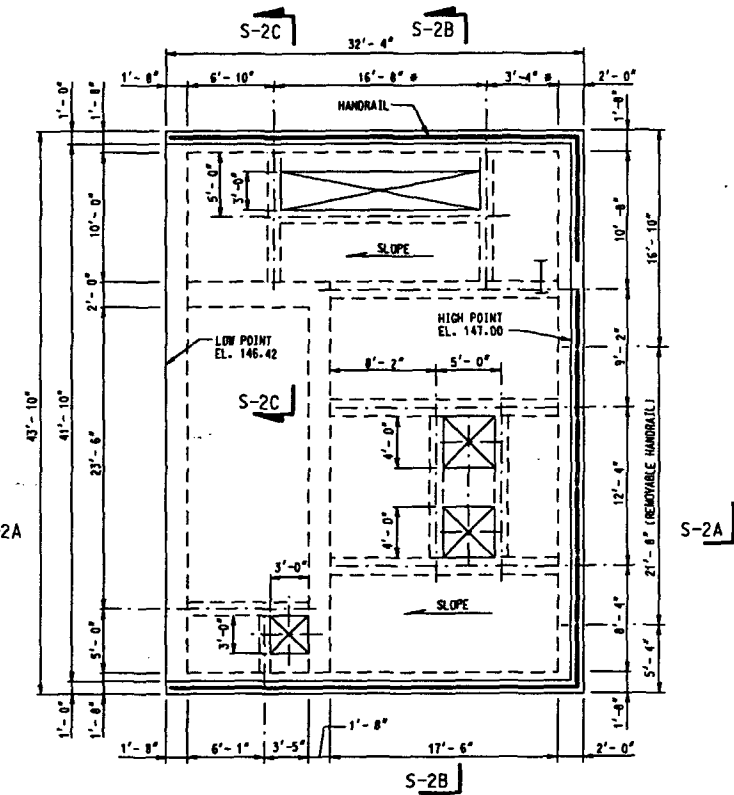
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
STRUCTURAL NOTES AND DESIGN LOADS		
WITHMAN, REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-3400	DRAWING NUMBER	PLATE
SCALE: NO SCALE	DATE: OCT. 1996	SHEET S-1



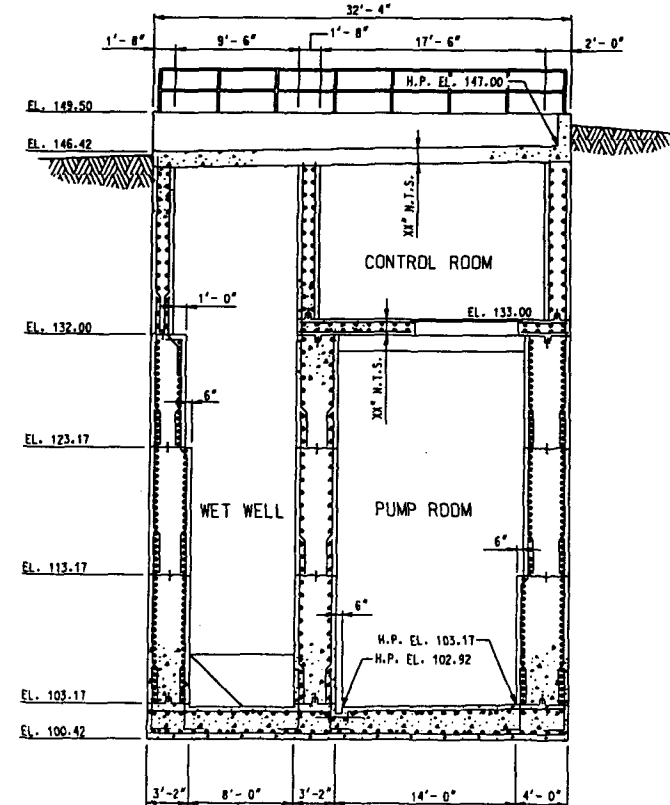
BASE LEVEL PLAN
SCALE: $\frac{3}{16}'' = 1' - 0''$



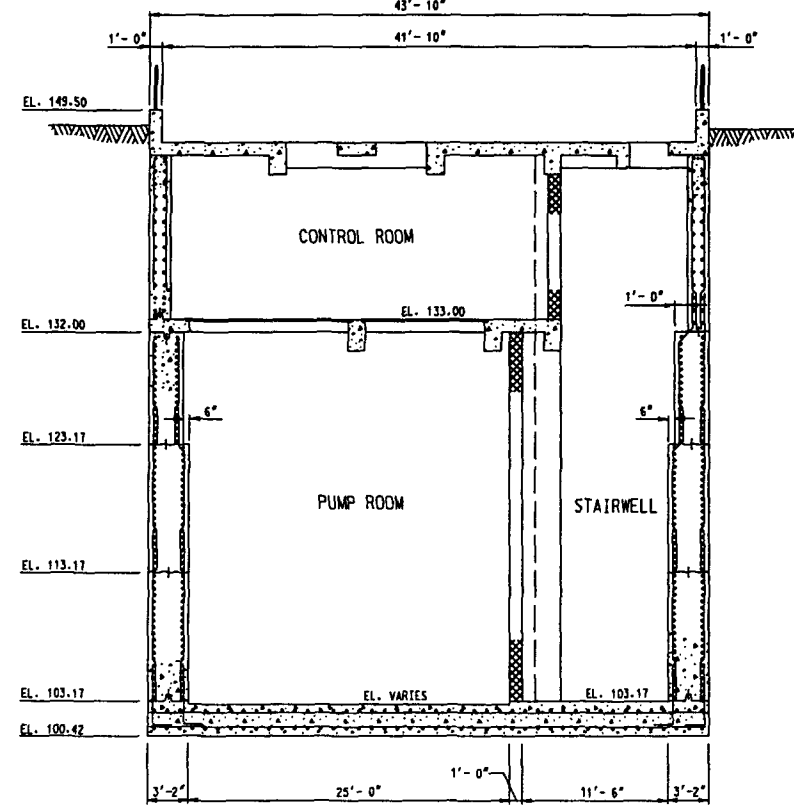
MID LEVEL PLAN
SCALE: $\frac{3}{16}'' = 1' - 0''$



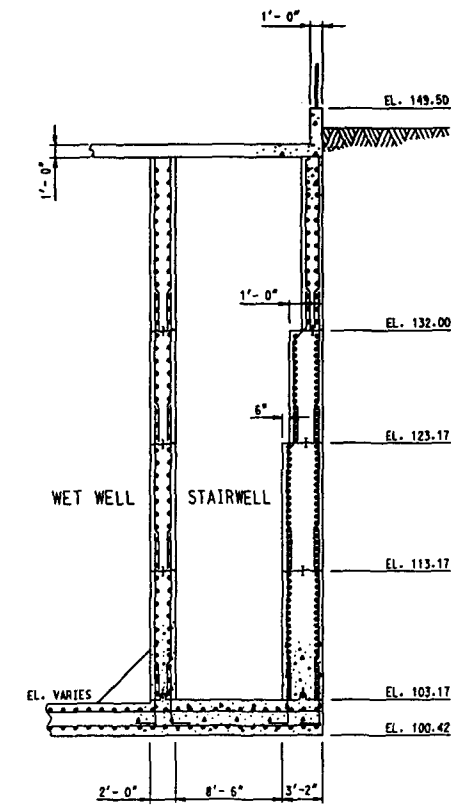
TOP LEVEL PLAN
SCALE: $\frac{3}{16}'' = 1' - 0''$



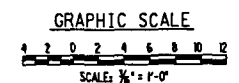
SECTION S-2A/S-2
SCALE: $\frac{3}{16}'' = 1' - 0''$



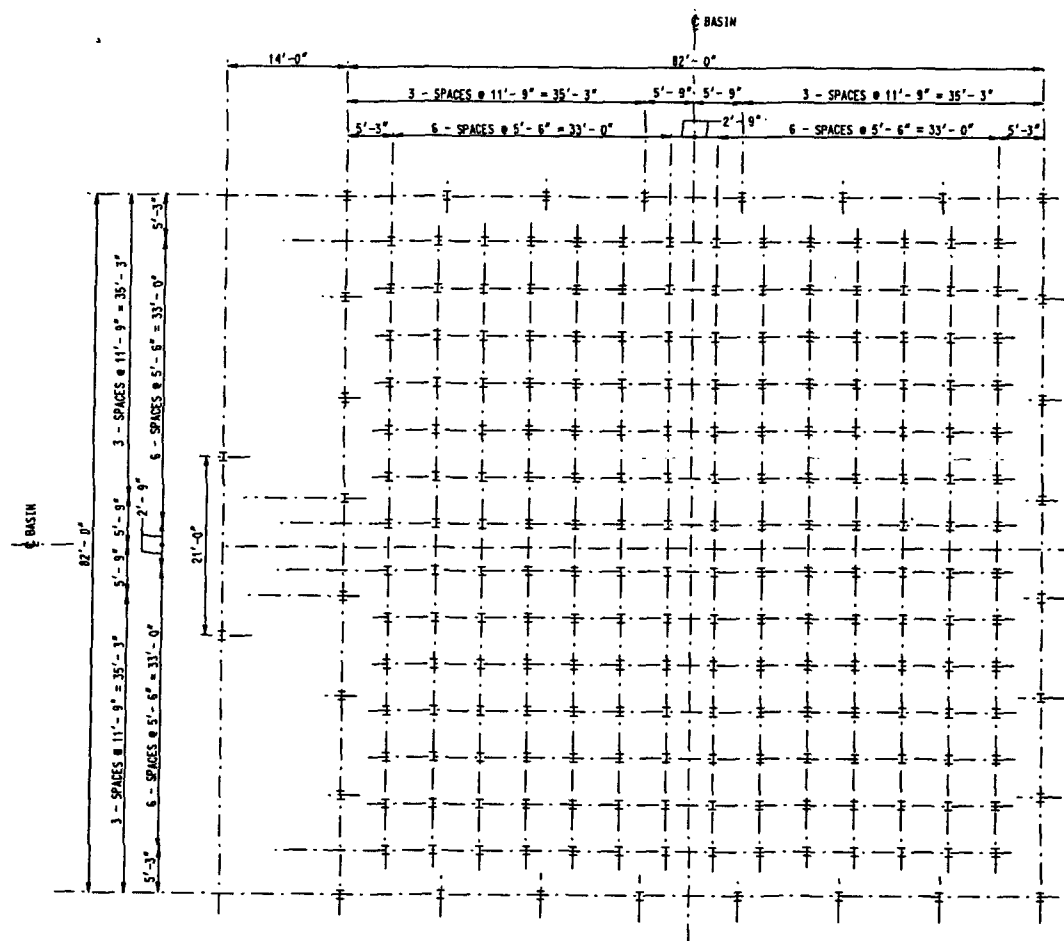
SECTION S-2B/S-2
SCALE: $\frac{3}{16}'' = 1' - 0''$



SECTION S-2C/S-2
SCALE: $\frac{3}{16}'' = 1' - 0''$



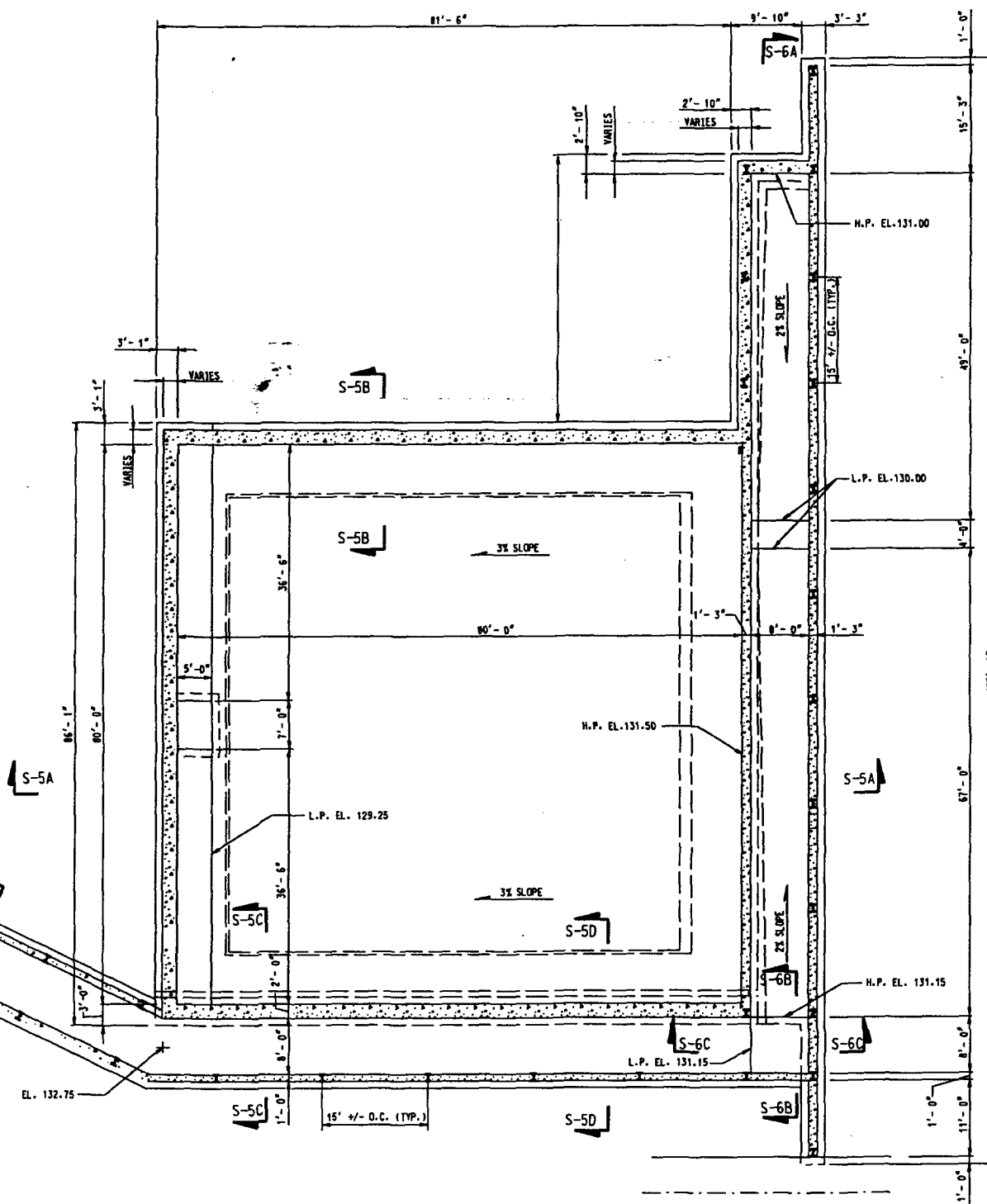
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
SEDIMENTATION BASIN RESIDUALS PUMPING STATION PLANS AND SECTIONS		
BY: W. B. BERRY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-2400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-2



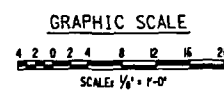
PILE PLAN
SCALE: 1/4" = 1'-0"

NOTES:

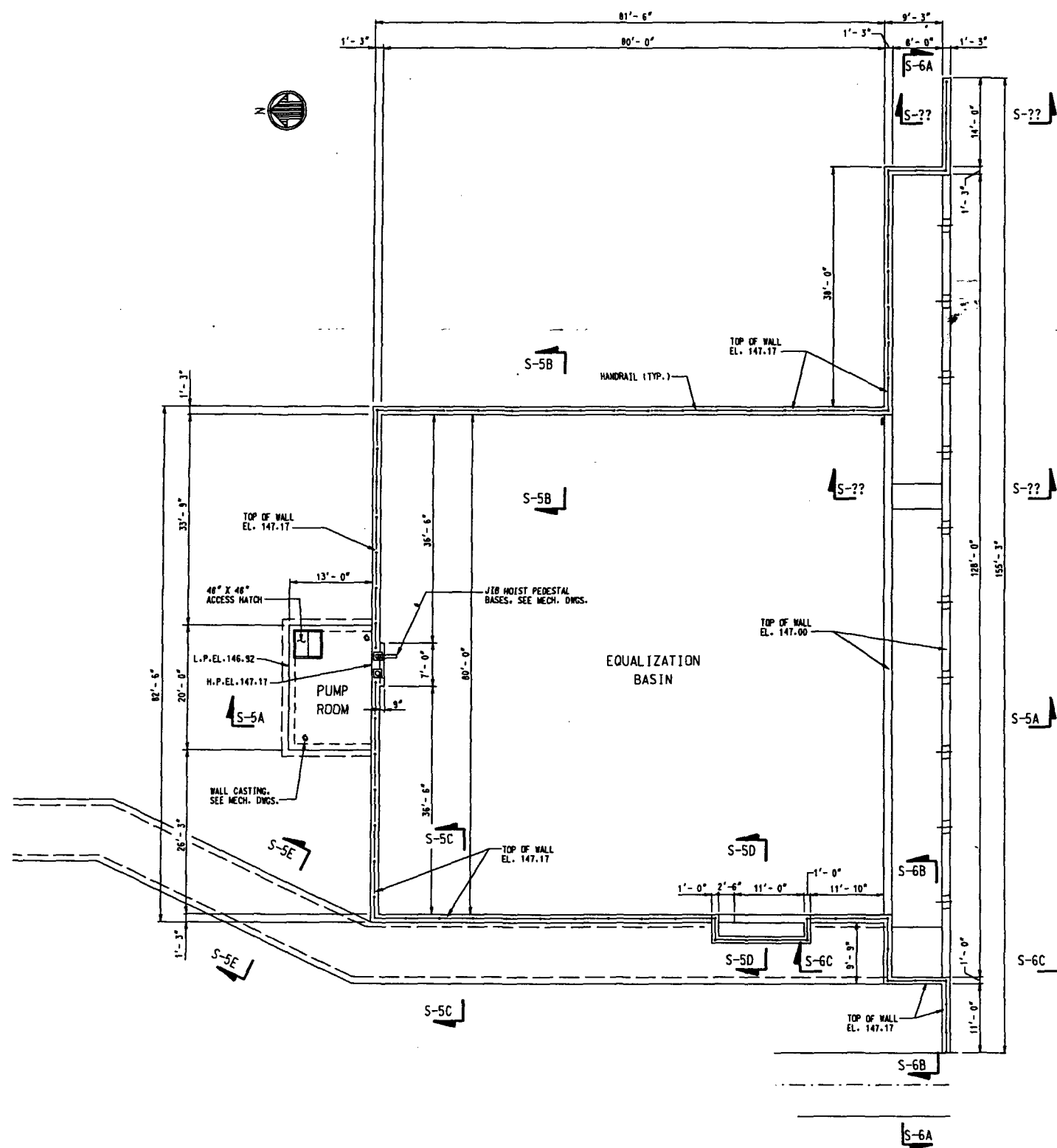
1. ALL PILES SHALL BE HP12x53.
2. PILES SHALL BE DRIVEN TO THE REQUIRED MINIMUM CAPACITY OF TONS COMPRESSION AND MINIMUM OF 15 TONS TENSION. MINIMUM PILE TIP ELEVATION SHALL BE
3. GROUND WATER IS ASSUMED AT ELEVATION 147.17.



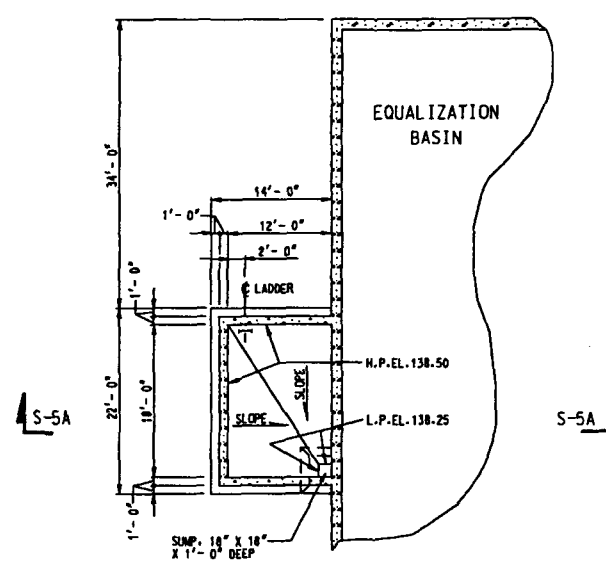
BASE SLAB PLAN
SCALE: 1/4" = 1'-0"



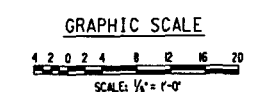
REV	DATE	DESCRIPTION	BY
1			
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN EQUALIZATION BASIN PUMPING STATION PILE AND BASE SLAB PLANS			
NATIONAL RESEARCH AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400		DRAWING NUMBER	PLATE
SCALE: AS SHOWN		DATE: OCT. 1996	SHEET S-3



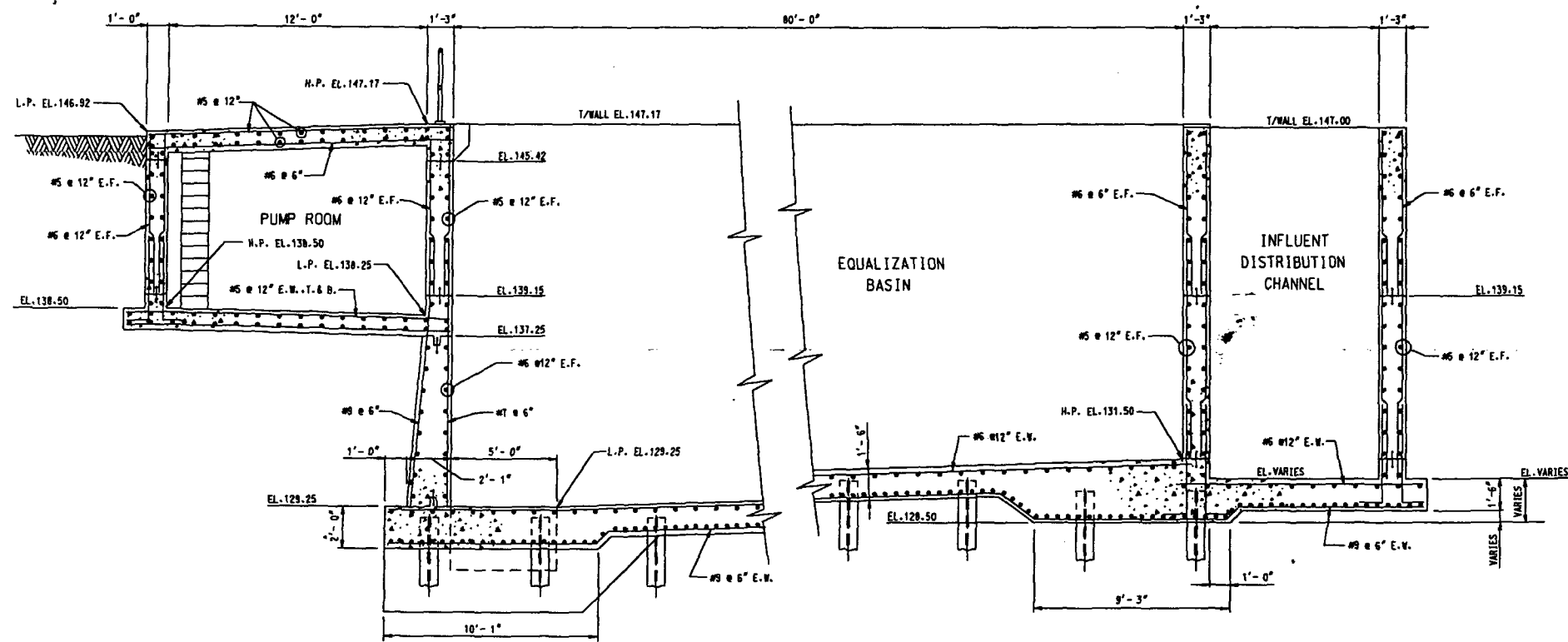
TOP PLAN
SCALE: 1/8" = 1'-0"



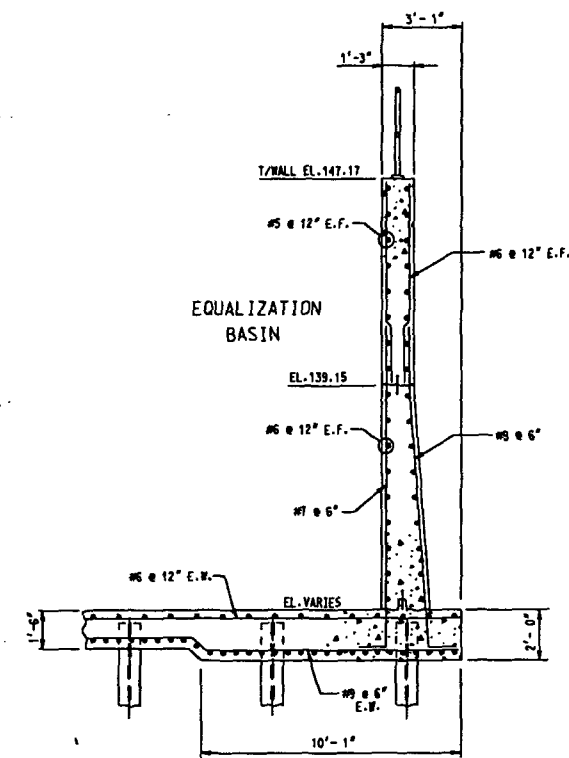
PUMP ROOM BOTTOM PLAN
SCALE: 1/8" = 1'-0"



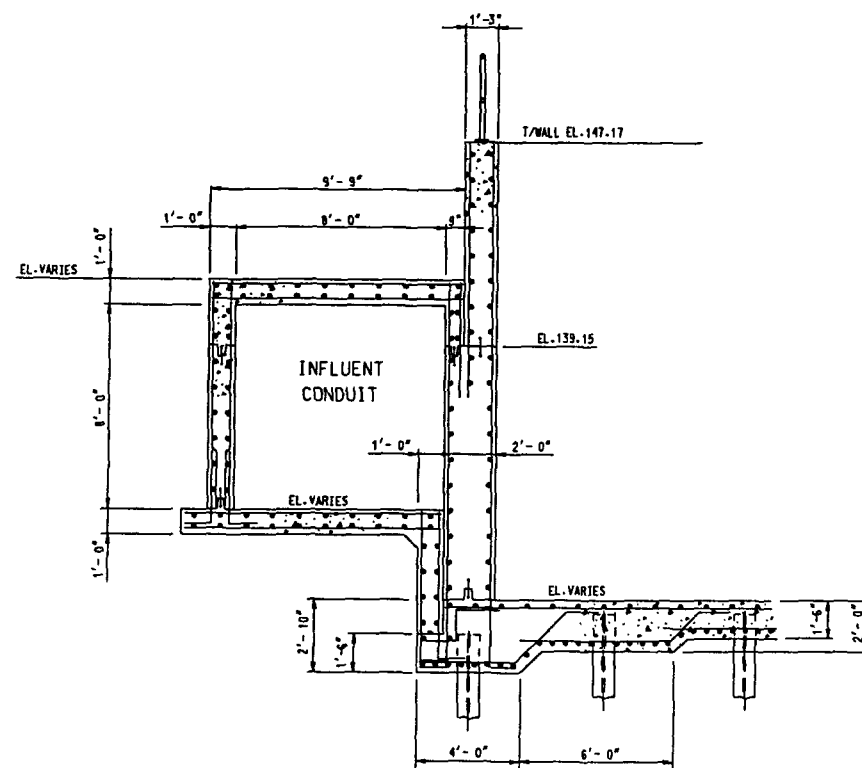
REV	DATE	DESCRIPTION	BY
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN EQUALIZATION BASIN PUMPING STATION TOP PLAN			
DESIGN: REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-2400		DRAWING NUMBER	PLATE
SCALE: AS SHOWN		DATE: OCT. 1996	SHEET S-4



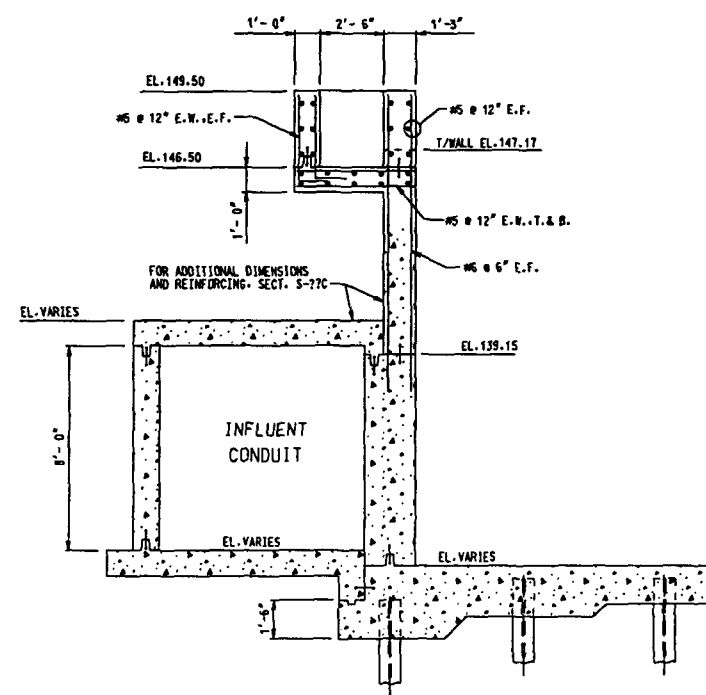
SECTION: S-5A/S-3,S-4
SCALE: 3/4" = 1'-0"



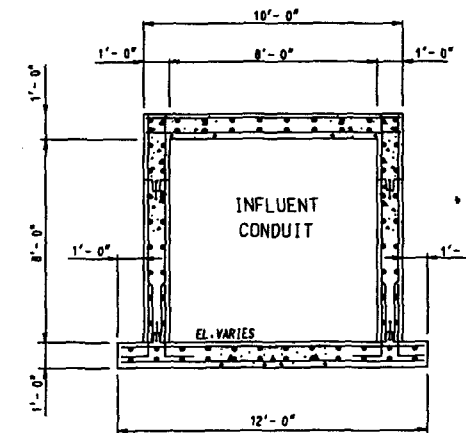
SECTION: S-5B/S-3,S-4
SCALE: 3/4" = 1'-0"



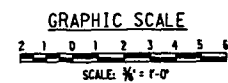
SECTION: S-5C/S-3,S-4
SCALE: 3/4" = 1'-0"



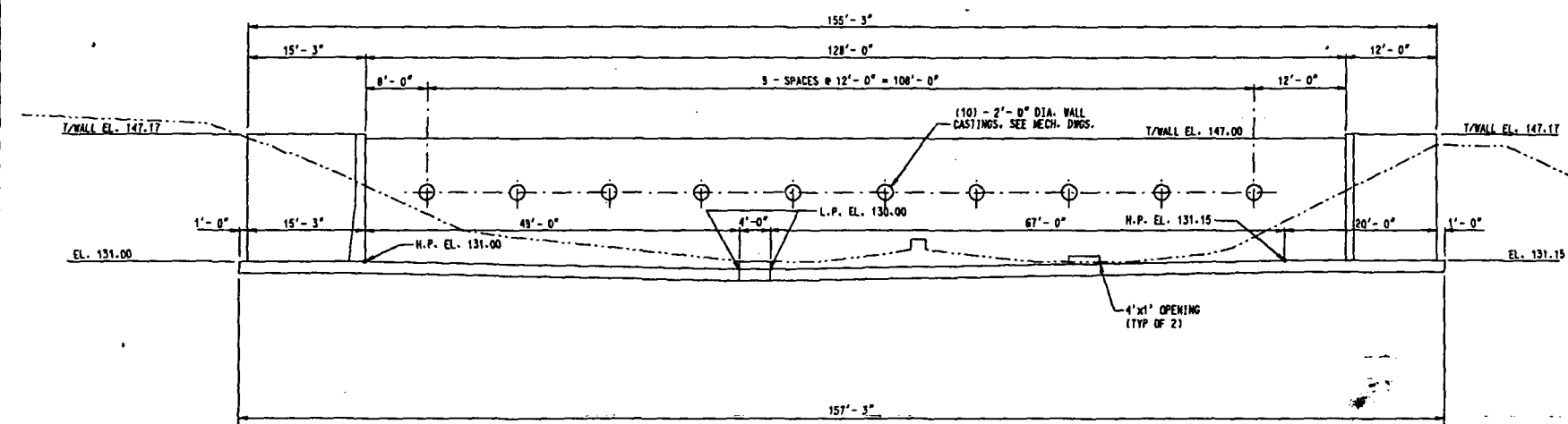
SECTION: S-5D/S-3,S-4
SCALE: 3/4" = 1'-0"



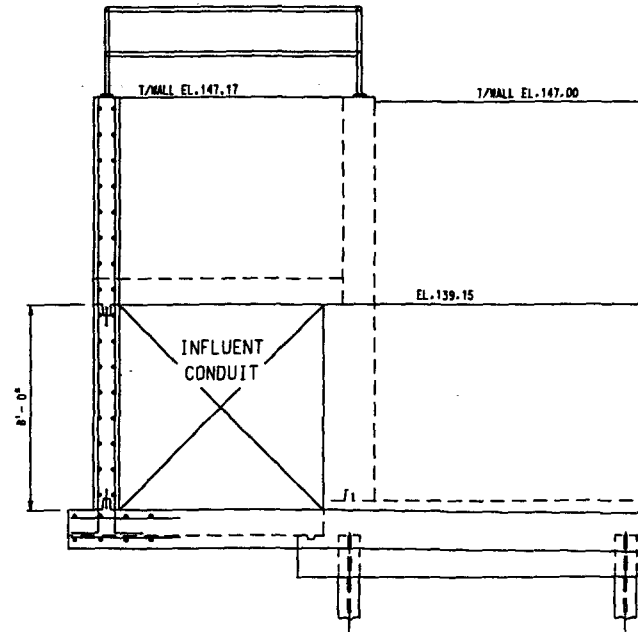
SECTION: S-5E/S-3,S-4
SCALE: 3/4" = 1'-0"



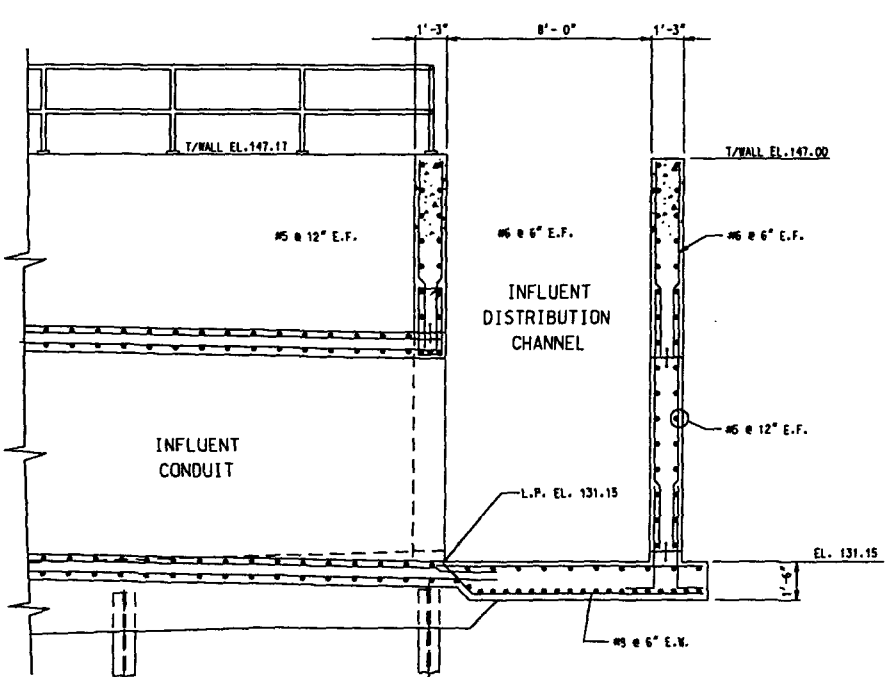
REV	DATE	DESCRIPTION	BY
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN EQUALIZATION BASIN PUMPING STATION SECTIONS			
WITHIN: HEADQUARTERS AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 231-5400		DRAWING NUMBER	PLATE
SCALE: AS SHOWN		DATE: OCT. 1996	SHEET S-5



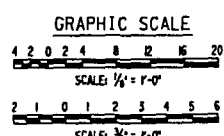
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SCALE: 1/8" = 1'-0"



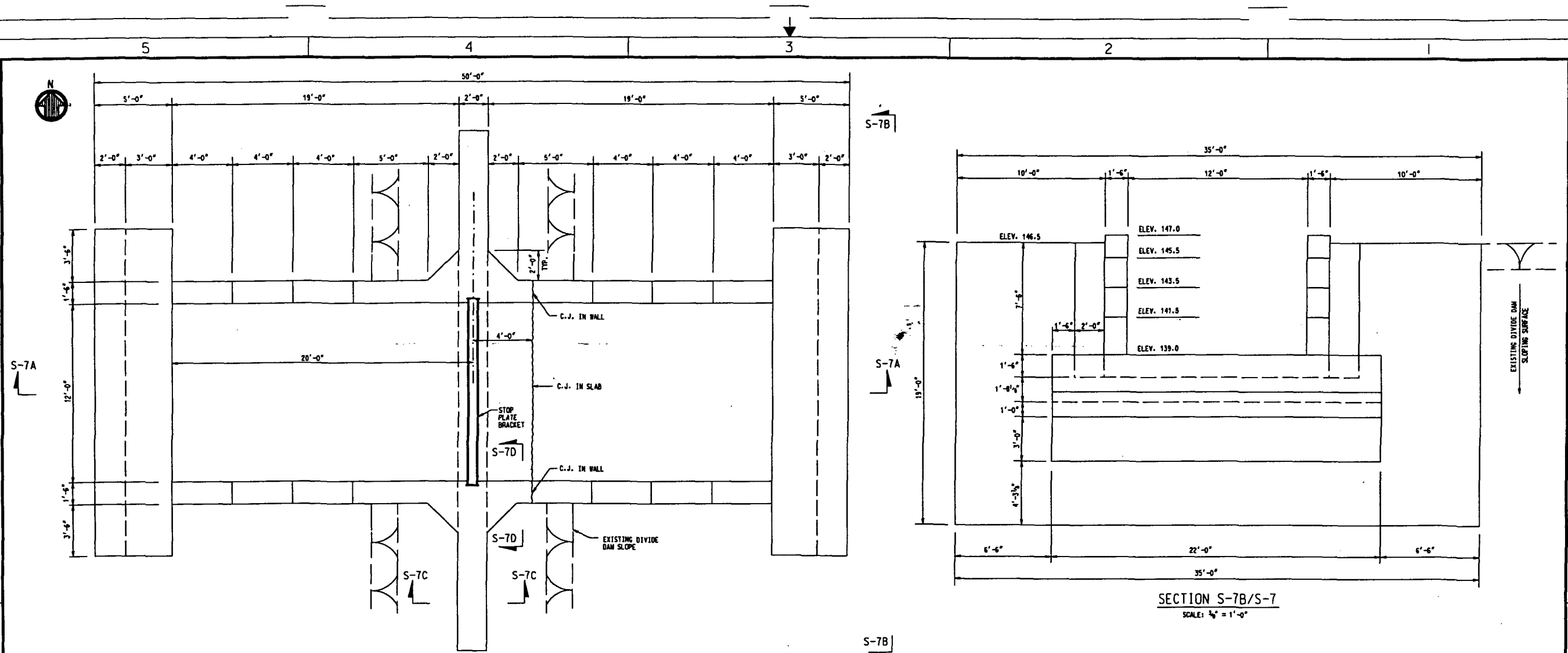
SECTION: S-6B/S-3.S-4
SCALE: 1/8" = 1'-0"



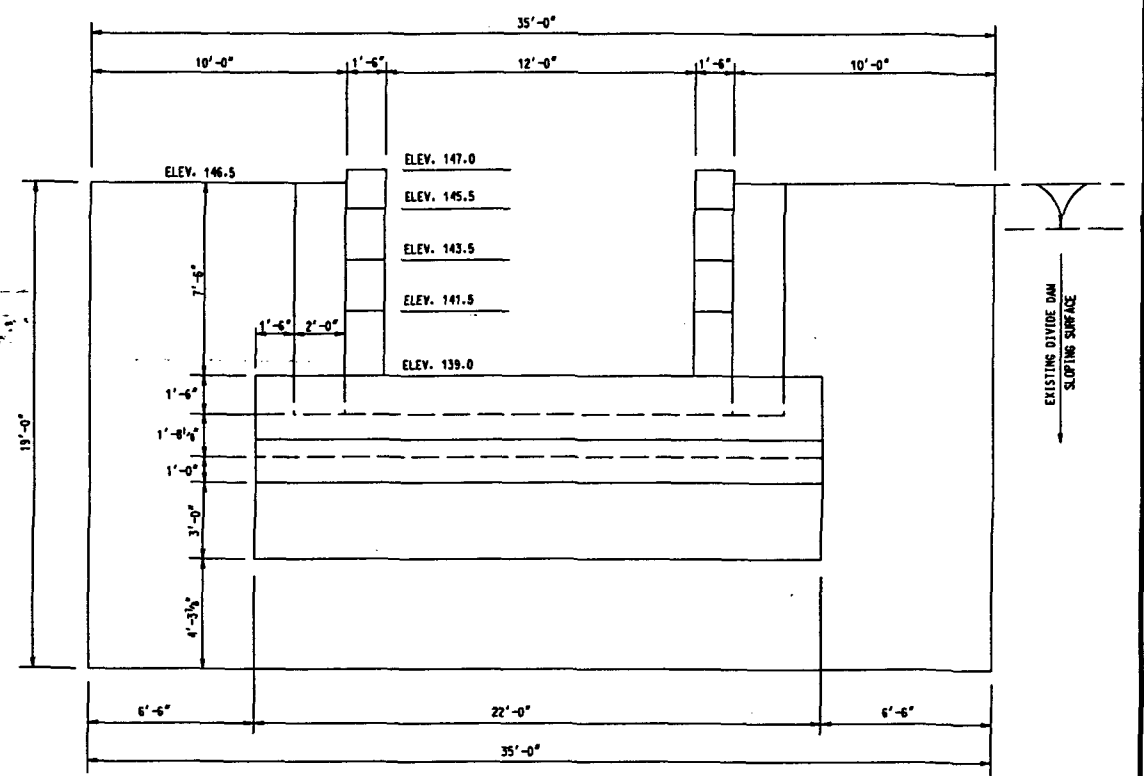
SECTION: S-6C/S-3.S-4
SCALE: 1/8" = 1'-0"



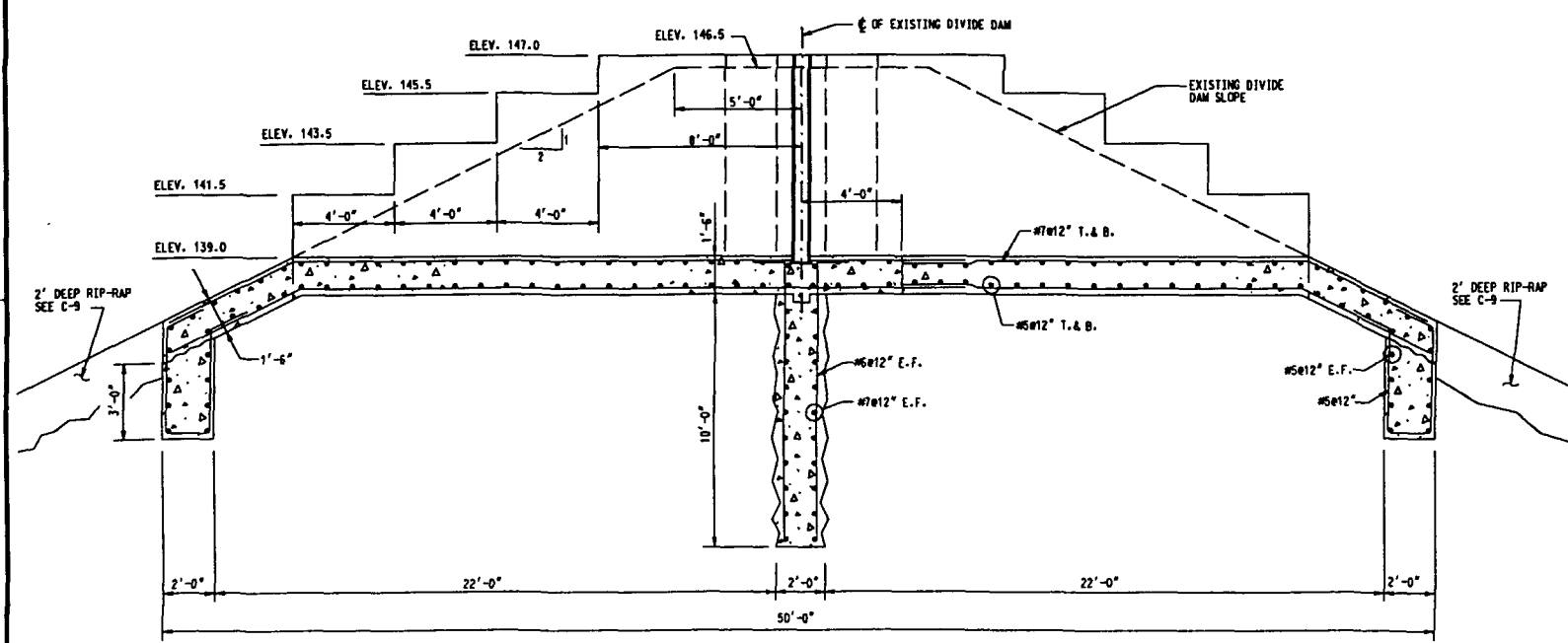
REV	DATE	DESCRIPTION	BY
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN EQUALIZATION BASIN PUMPING STATION SECTIONS AND DETAILS			
MITCHELL, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (201) 252-3400		DRAWING NUMBER	PLATE
SCALE: AS SHOWN		DATE: OCT. 1996	SHEET S-6



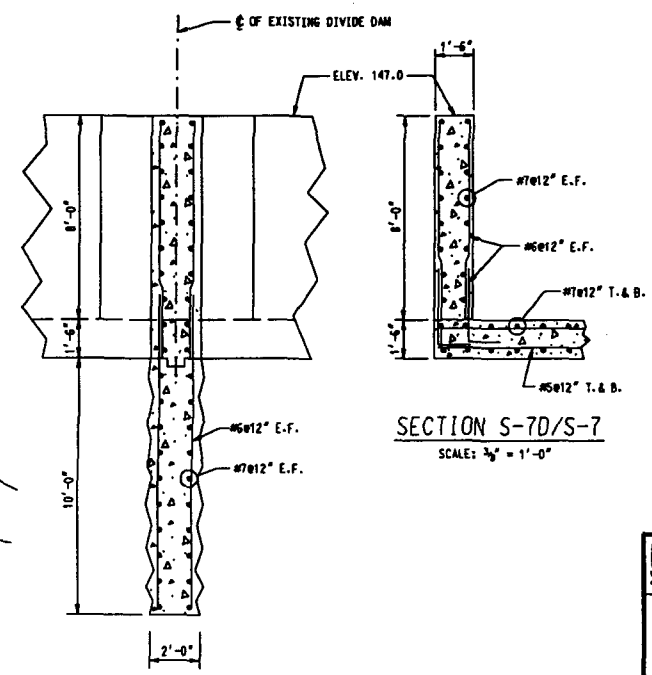
DIKE PLAN - BASIN 1
SCALE: 3/8" = 1'-0"



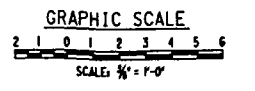
SECTION S-7B/S-7
SCALE: 3/8" = 1'-0"



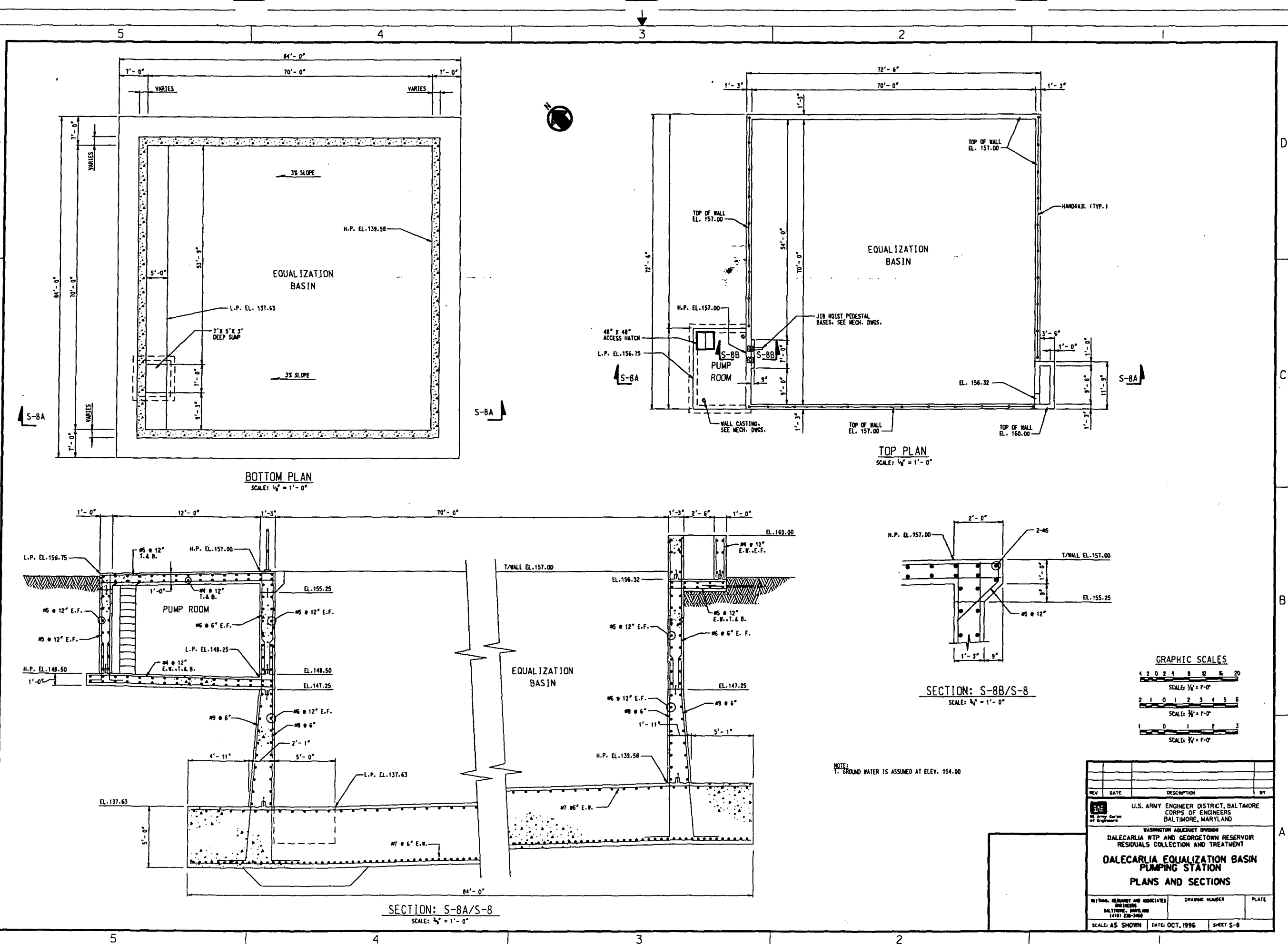
SECTION S-7A/S-7
SCALE: 3/8" = 1'-0"



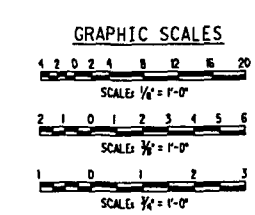
SECTION S-7C/S-7
SCALE: 3/8" = 1'-0"



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AREA DISTRICT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DREDGE TRANSFER STRUCTURE PLAN AND SECTIONS		
WITHAM, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER DATE: OCT, 1996	PLATE SHEET S-7



NOTE:
1. GROUND WATER IS ASSUMED AT ELEV. 154.00



REV	DATE	DESCRIPTION	BY
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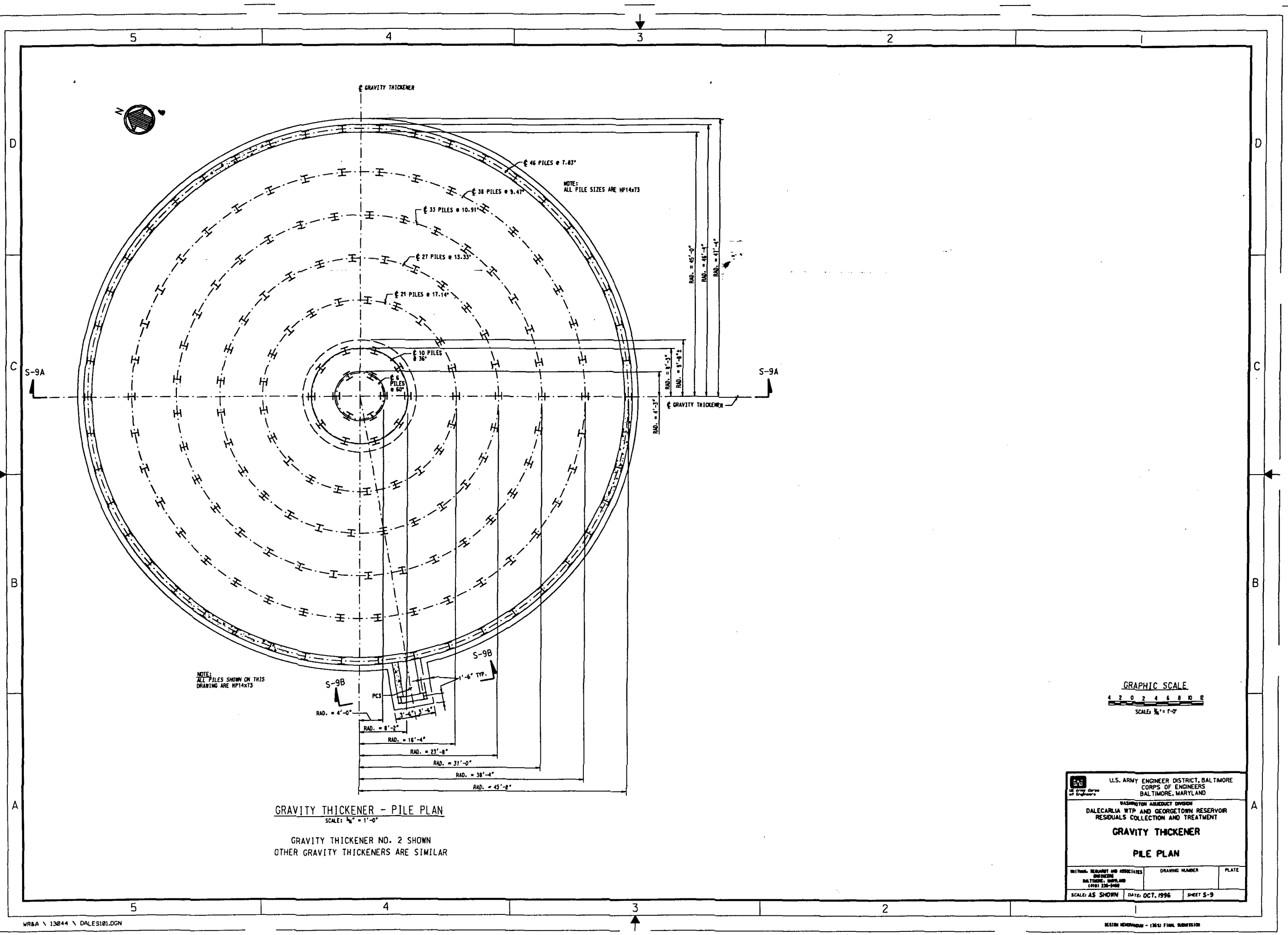
U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

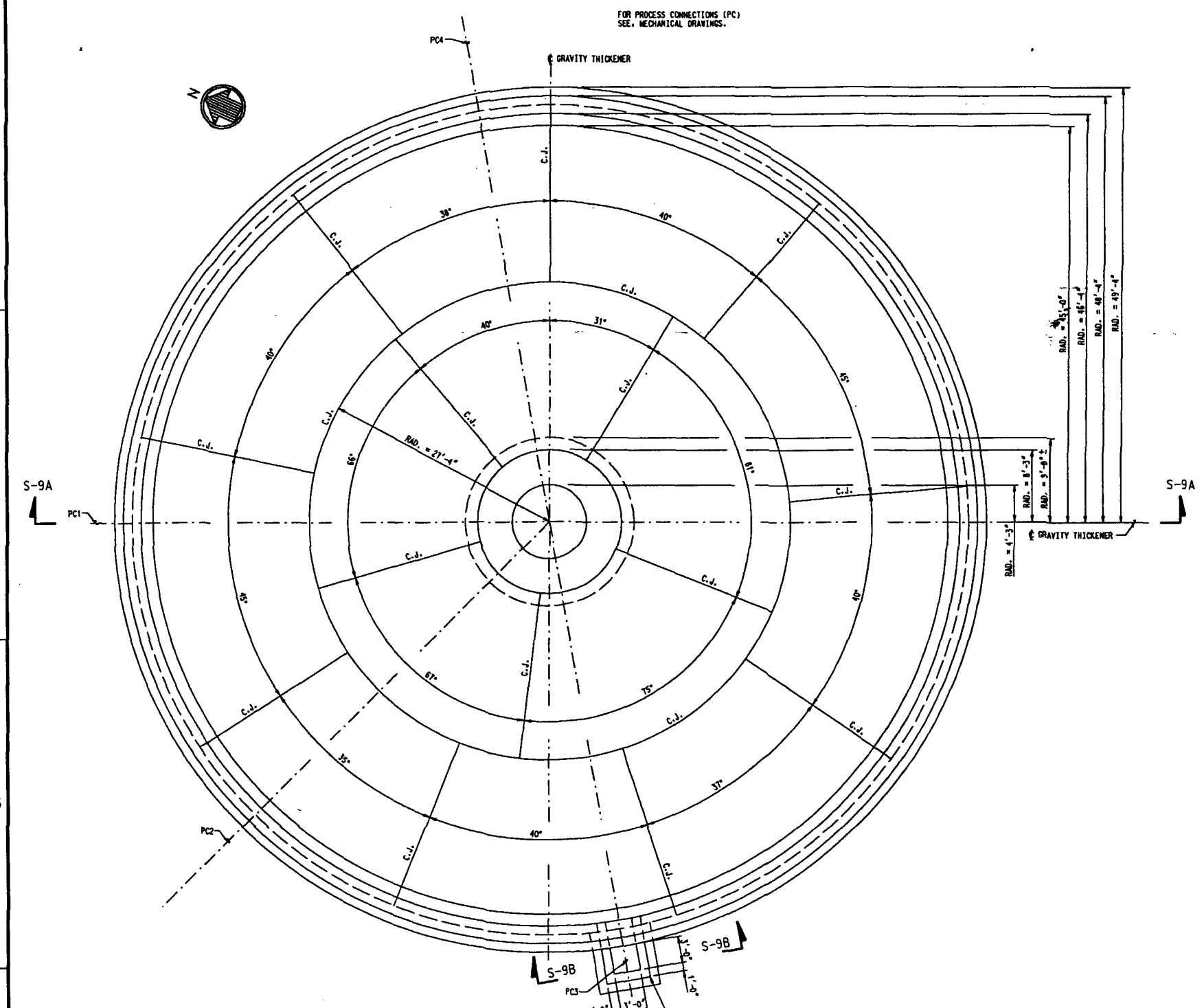
WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

**DALECARLIA EQUALIZATION BASIN
PUMPING STATION**

PLANS AND SECTIONS

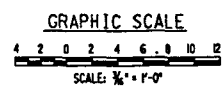
DESIGNED BY: [blank]
DRAWING NUMBER: [blank]
DATE: OCT. 1996
SHEET: S-8



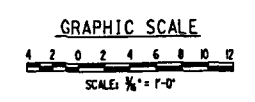
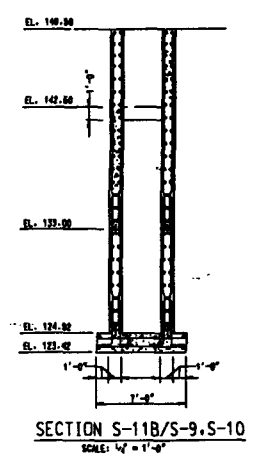
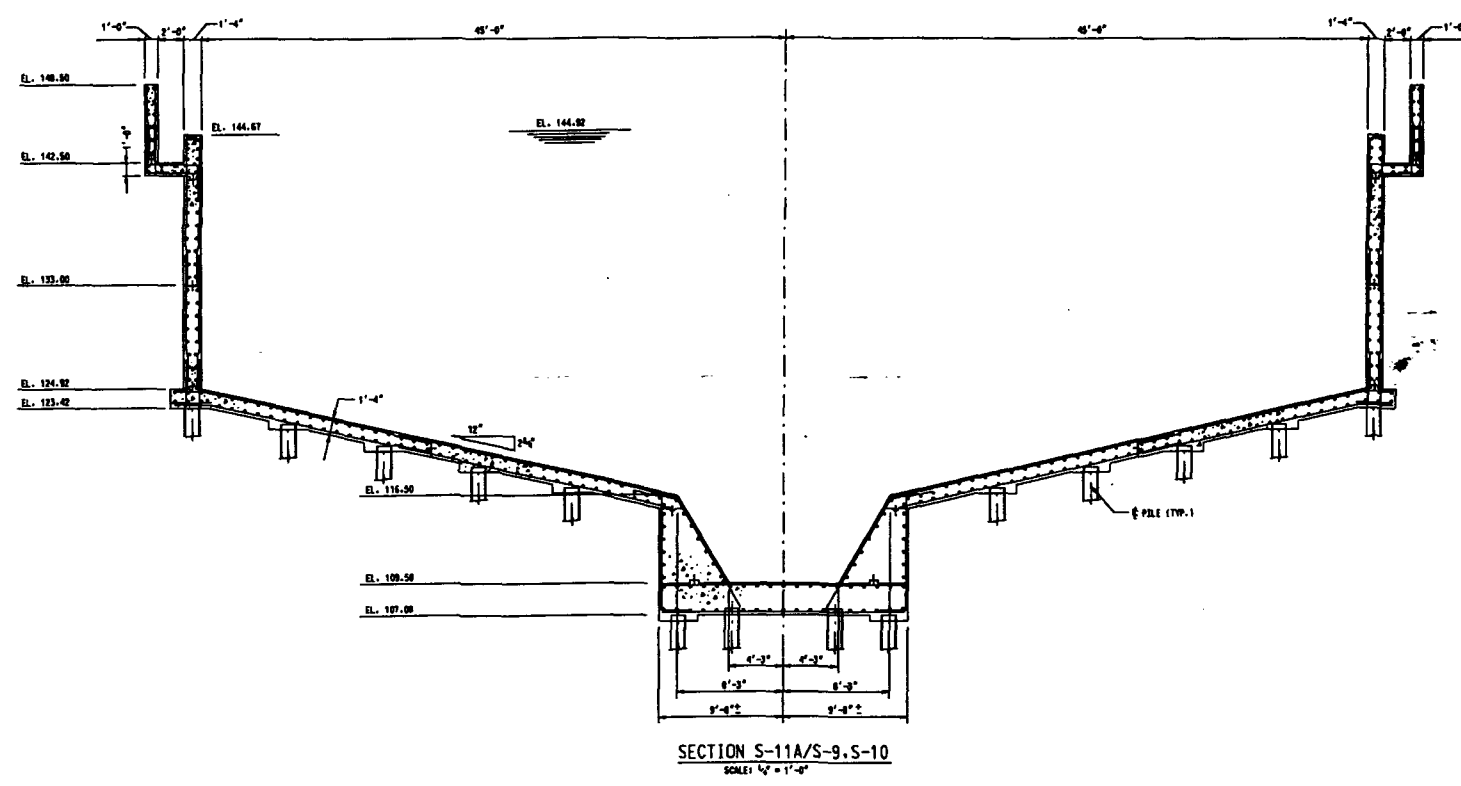


GRAVITY THICKENER - GRADE LEVEL PLAN

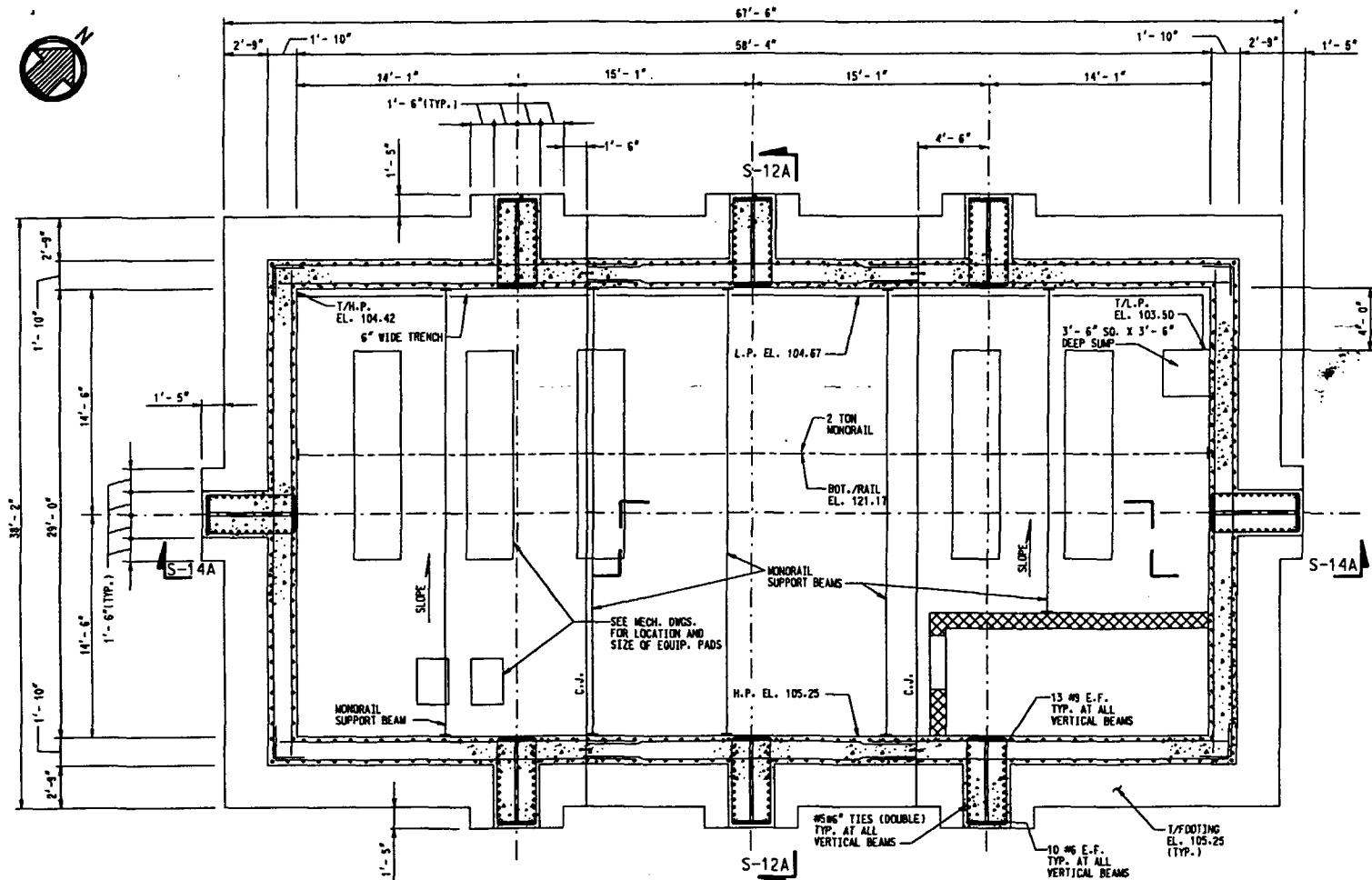
GRAVITY THICKENER NO. 2 SHOWN
OTHER GRAVITY THICKENERS ARE SIMILAR



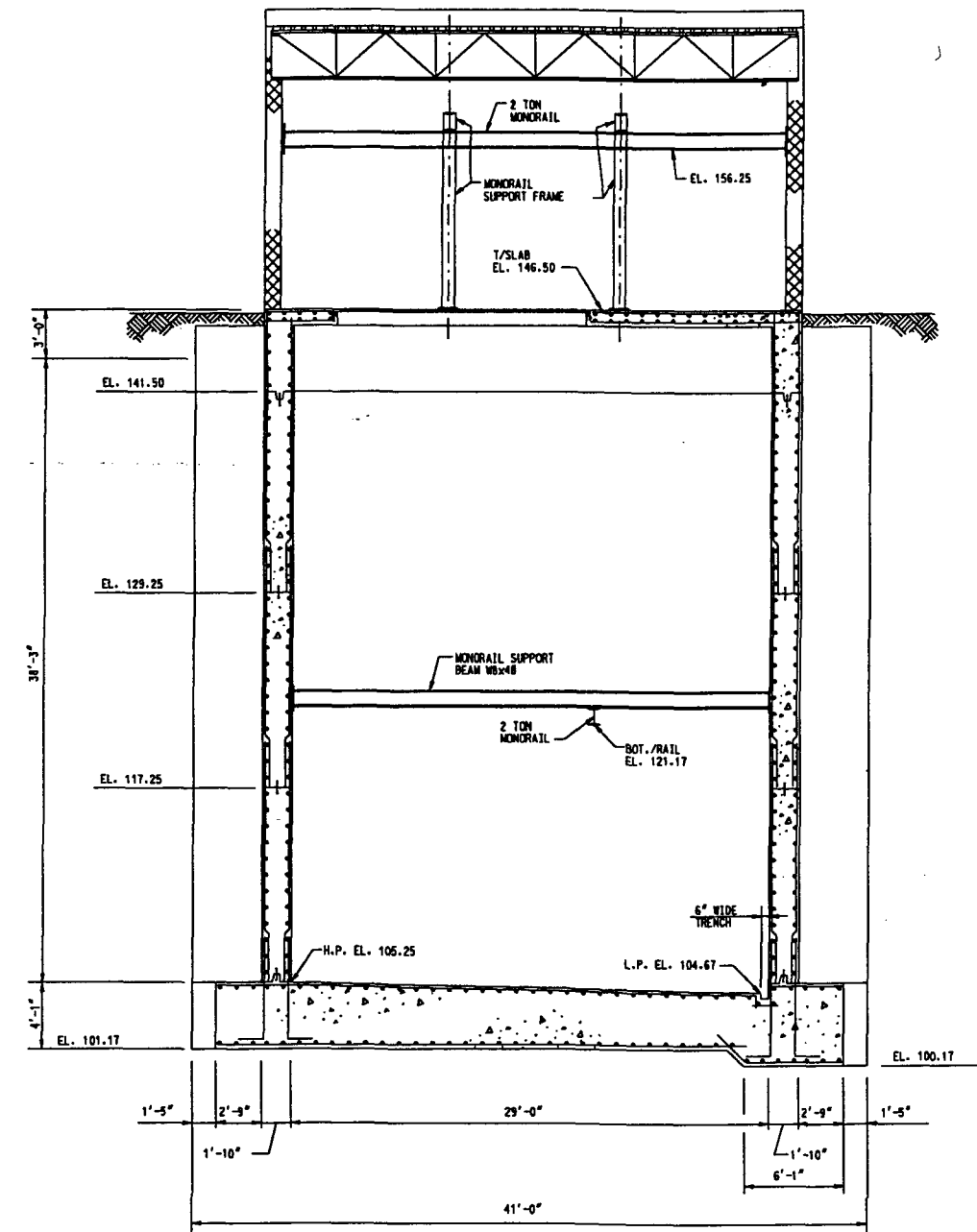
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ARCADE DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
GRAVITY THICKENER		
GRADE LEVEL PLAN		
WILLIAM, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT, 1996	SHEET 5-10



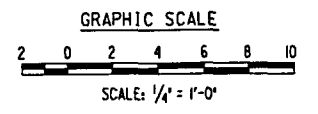
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON ADJUTANT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GRAVITY THICKENER SECTIONS		
WITHDRAWN, REPAIRED AND ASSOCIATED ENGINEERING BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER DATE: OCT. 1996	PLATE SHEET S-11



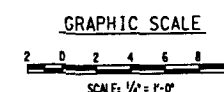
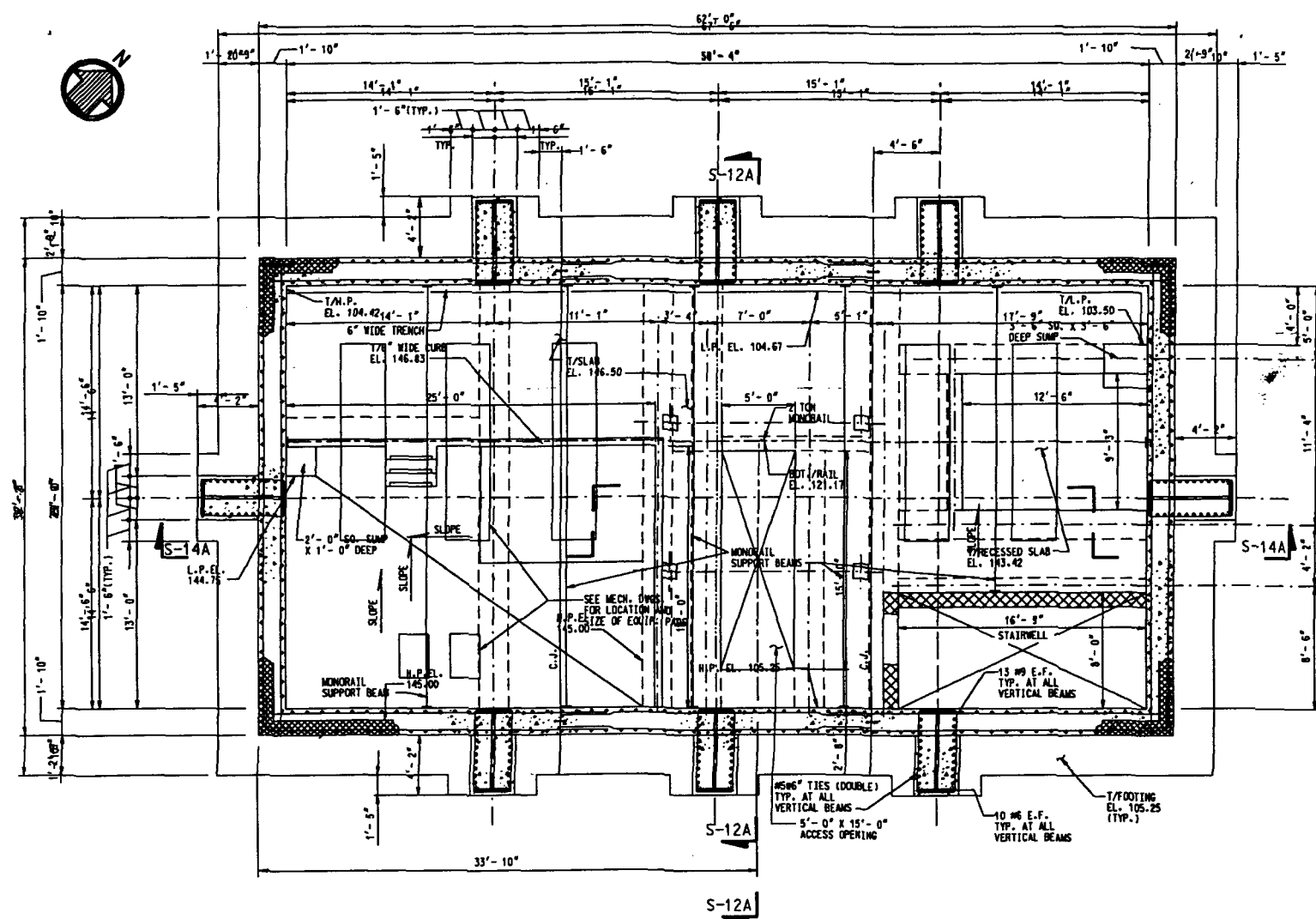
BOTTOM PLAN
SCALE: 1/4" = 1'-0"



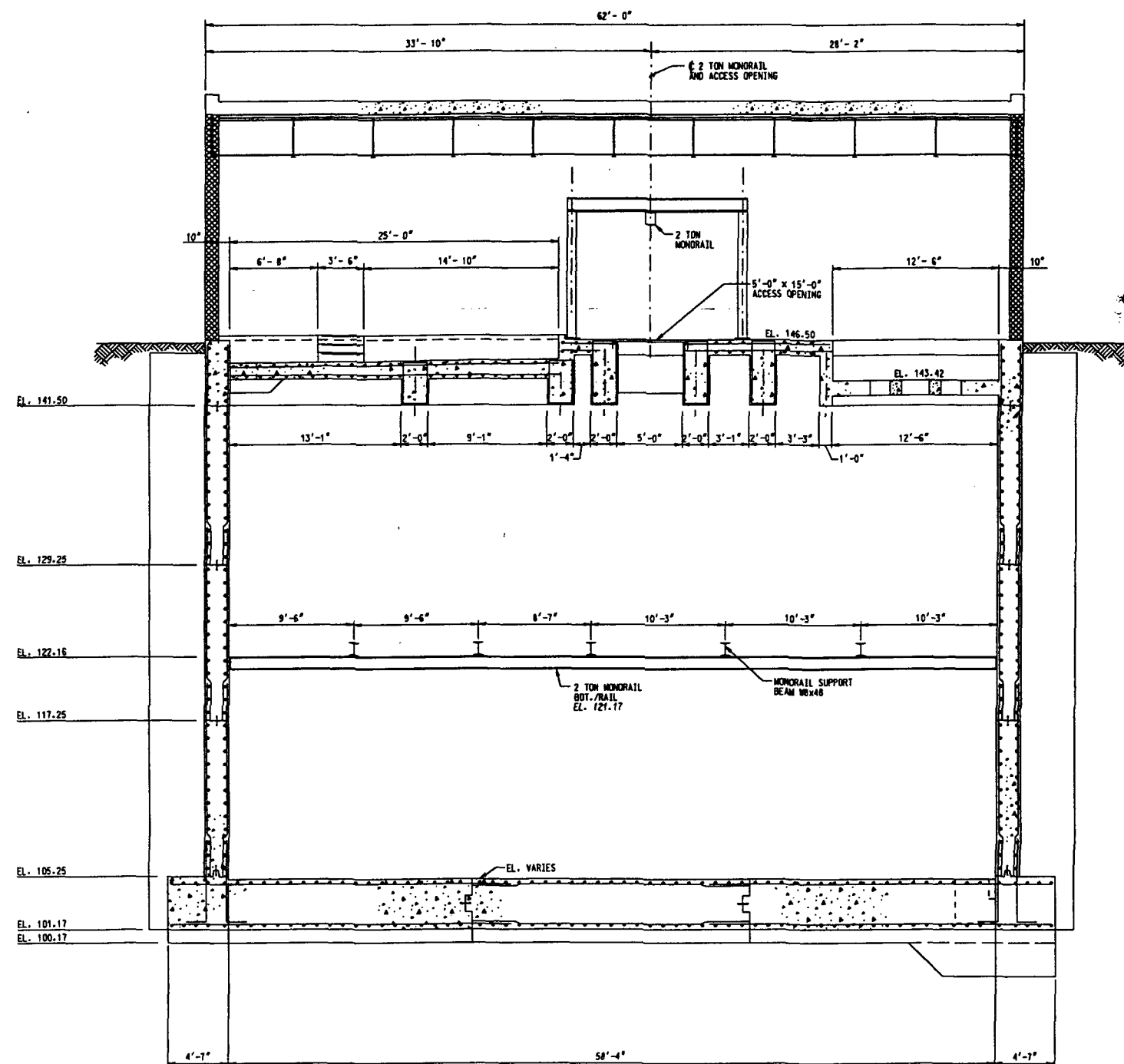
SECTION S-12A/S-12
SCALE: 1/4" = 1'-0"



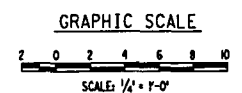
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
THICKENED RESIDUALS PUMPING STATION		
BASE PLAN AND SECTIONS		
DESIGNED BY RESEARCH AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 236-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT, 1996	SHEET S-12



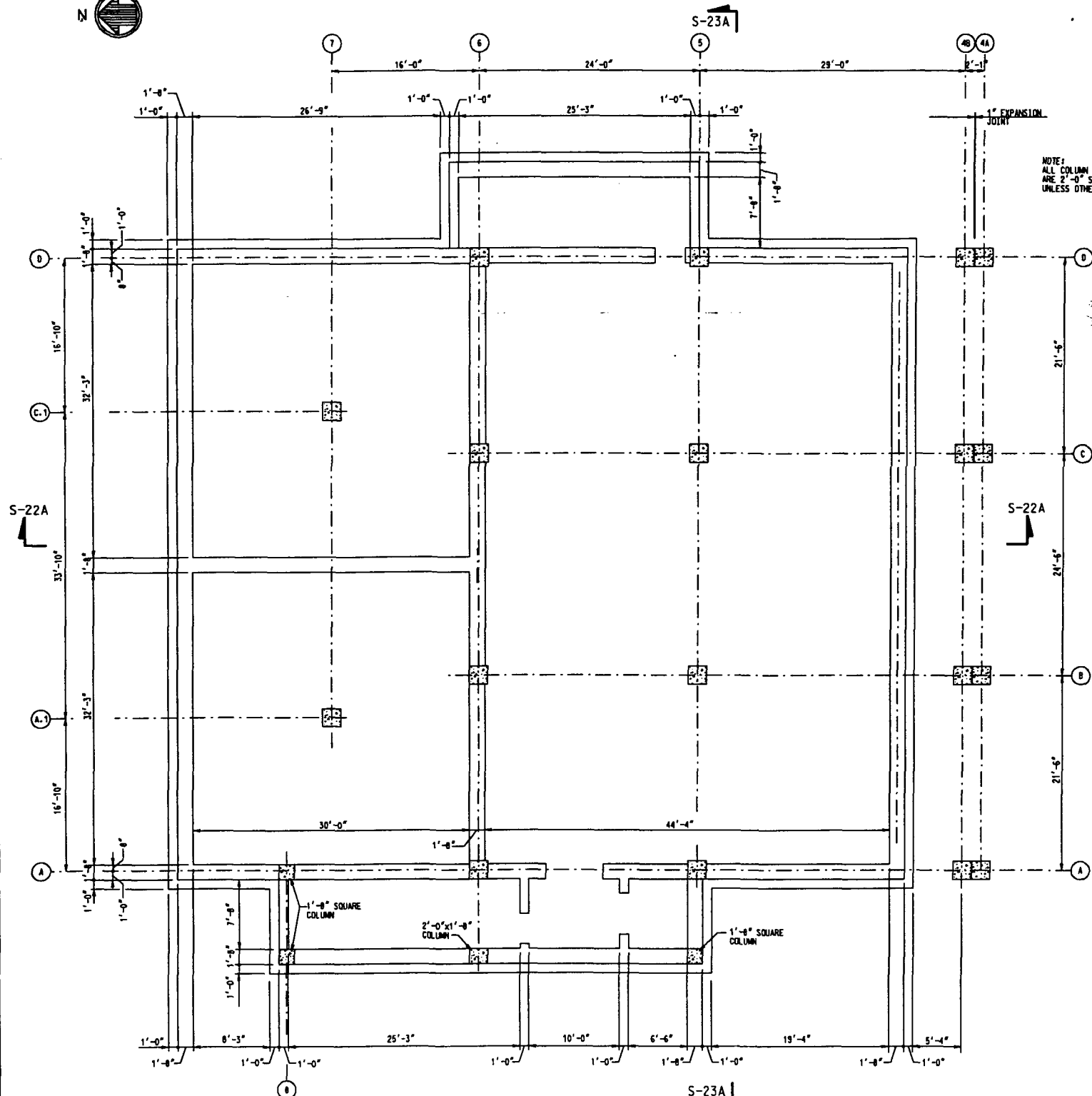
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
THICKENED RESIDUALS PUMPING STATION		
TOP PLAN AND SECTION		
DESIGNER DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT	DRAWING NUMBER 14101 230-2400	DATE OCT. 1996
SCALE: AS SHOWN	SHEET S-13	PLATE



SECTION S-14/S-12,S-13
SCALE: 1/4" = 1'-0"

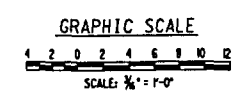


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
THICKENED RESIDUALS PUMPING STATION		
SECTIONS AND DETAILS		
WITMAN, REINHART AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 236-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-14

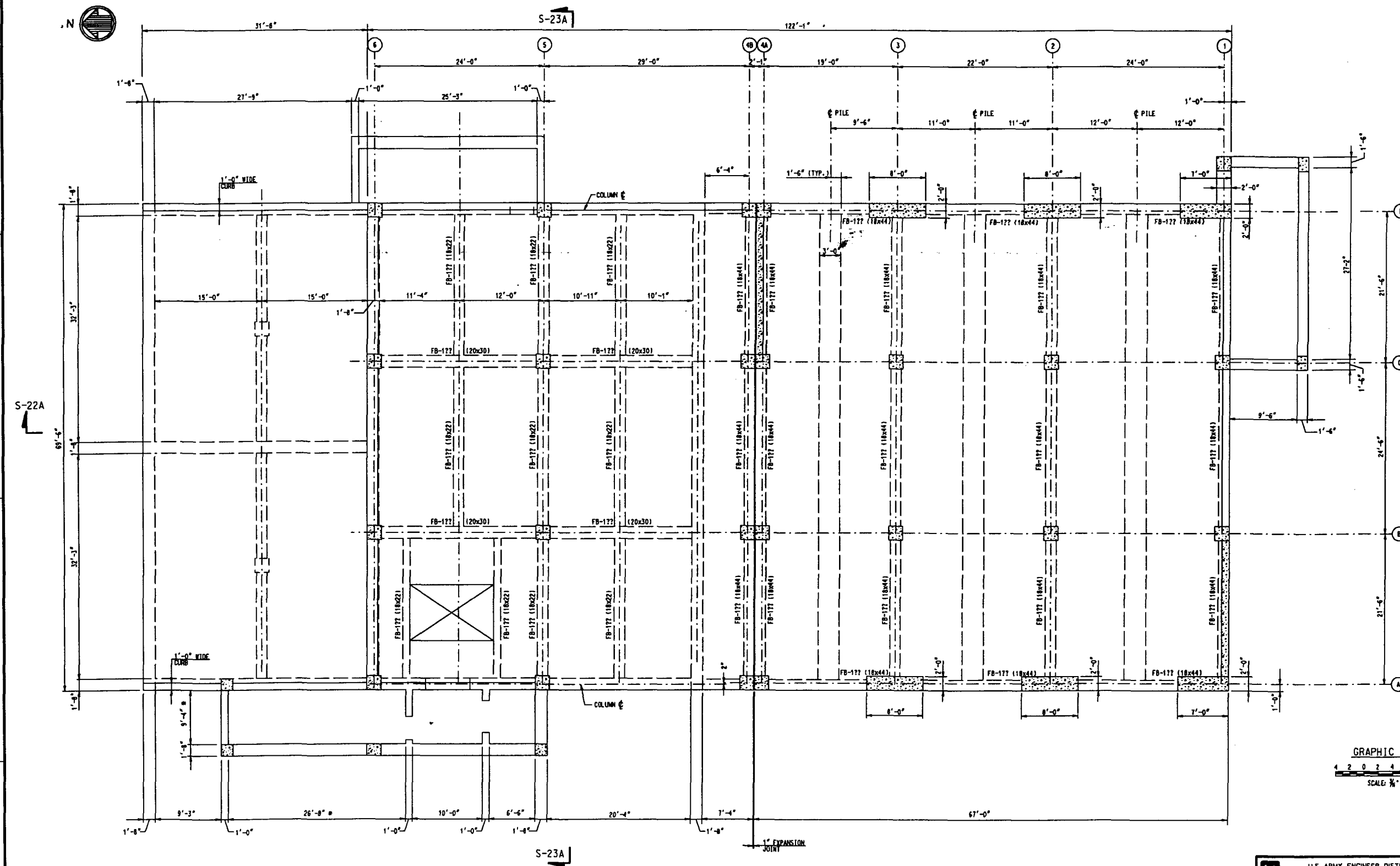


NOTE:
ALL COLUMN SIZES
ARE 2'-0" SQUARE,
UNLESS OTHERWISE NOTED.

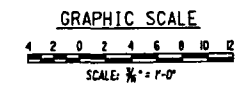
DEWATERING FACILITY - LOWER LEVEL
SCALE: 1/8" = 1'-0"



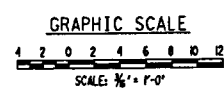
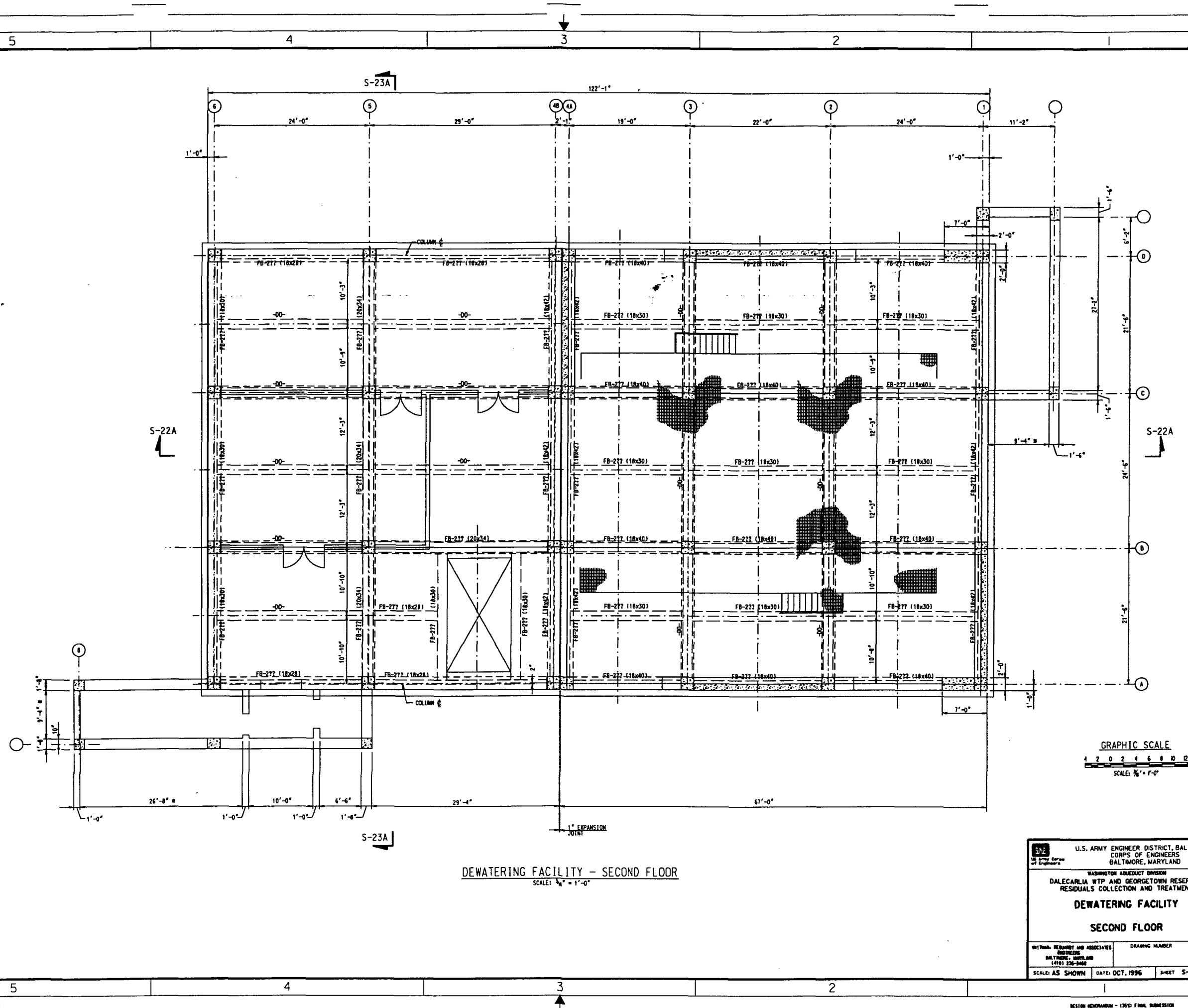
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
LOWER LEVEL		
BY: P. H. REEDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 210-5400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-16



DEWATERING FACILITY - FIRST FLOOR
SCALE: 1/8" = 1'-0"

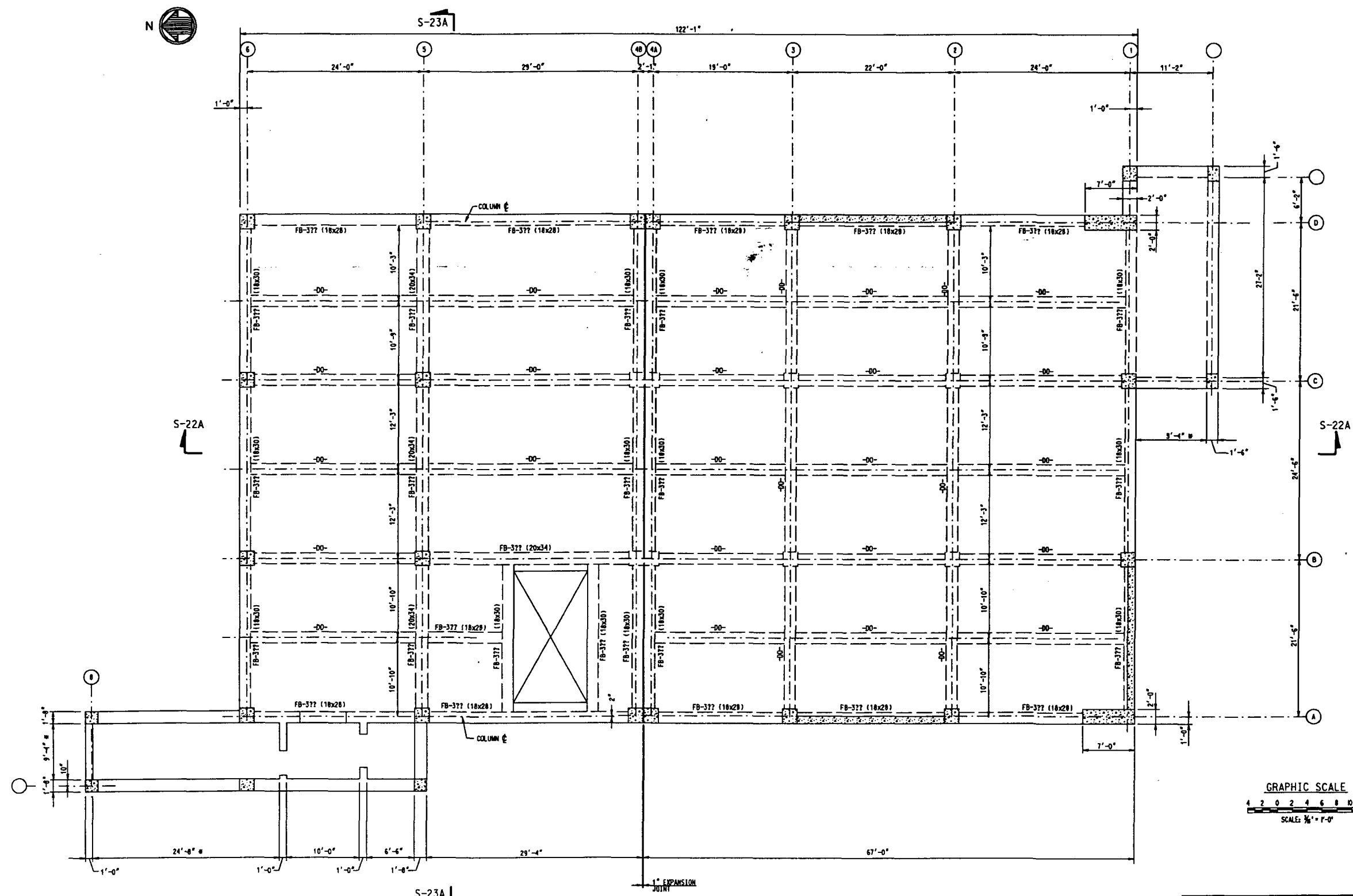


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ARCADE DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
FIRST FLOOR		
WR&A WRITING, RESEARCH AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-17

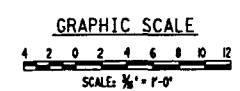


DEWATERING FACILITY - SECOND FLOOR
SCALE: 1/8" = 1'-0"

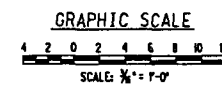
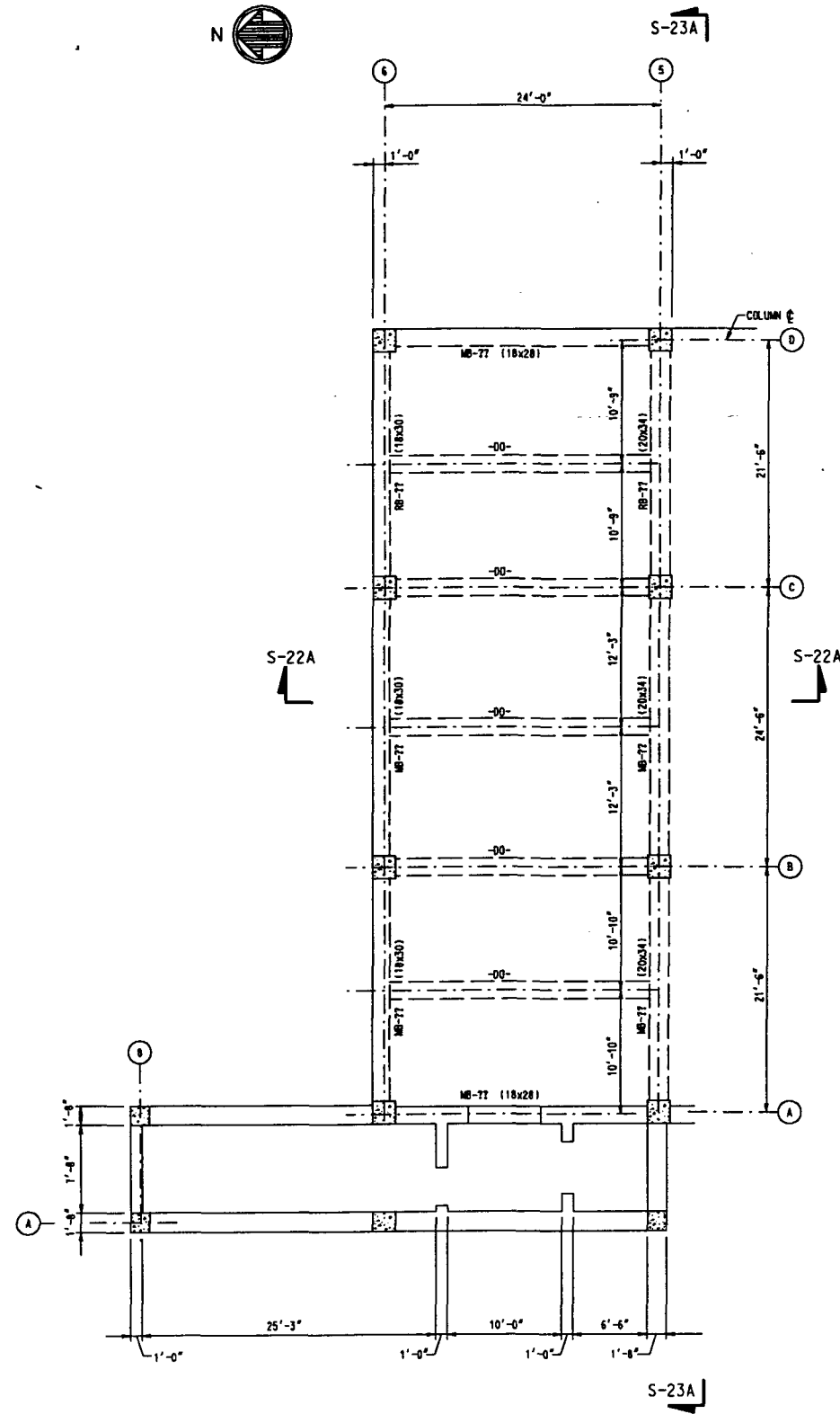
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY SECOND FLOOR		
BY: W. R. A. & ASSOCIATES BALTIMORE, MARYLAND (410) 230-5400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-18




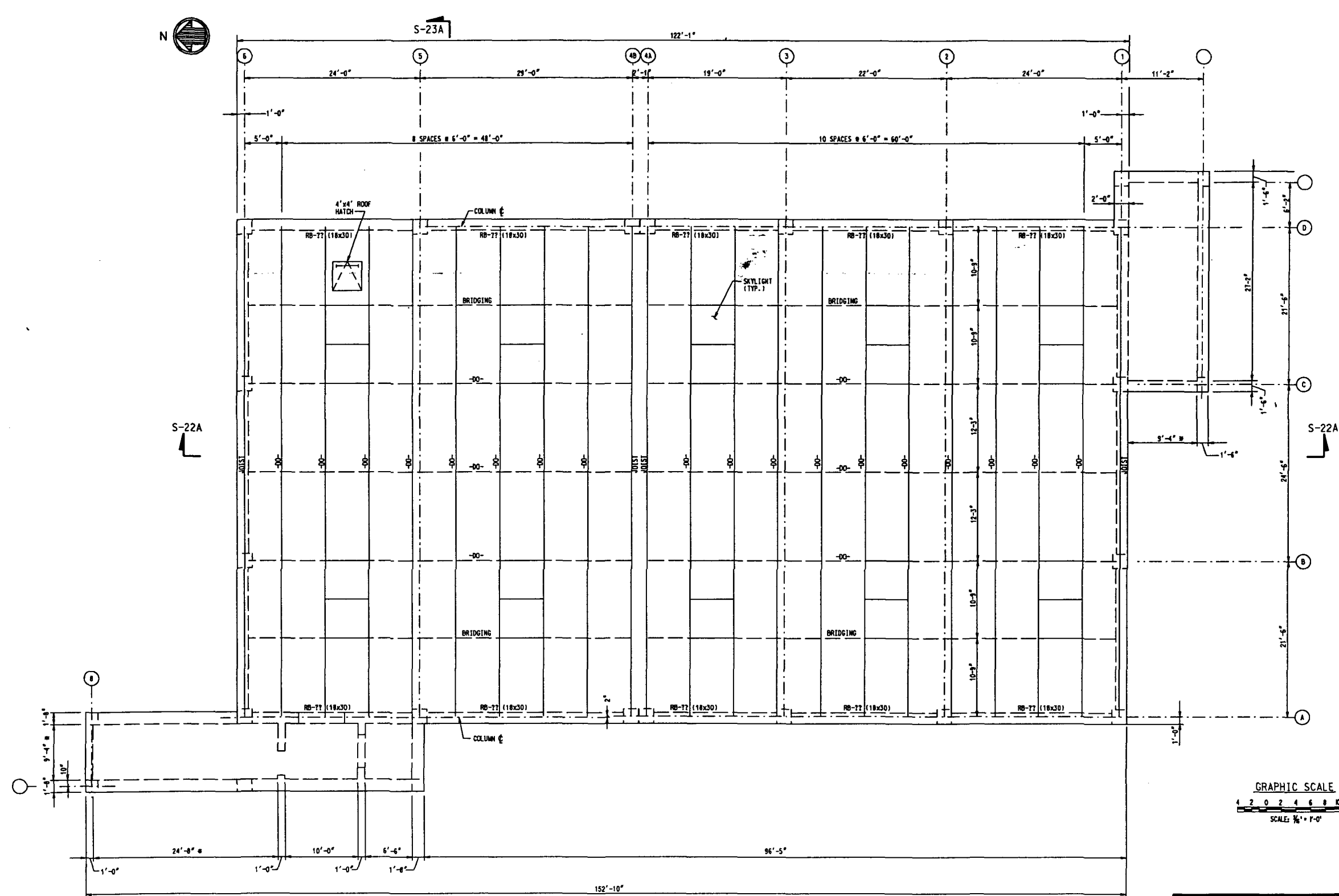
DEWATERING FACILITY - THIRD FLOOR
SCALE: 1/8" = 1'-0"



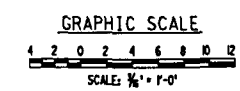
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION		
DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
THIRD FLOOR		
DESIGNED BY WITTMAN, REBAUMY AND ASSOCIATES BALTIMORE, MARYLAND (410) 235-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET 5-19



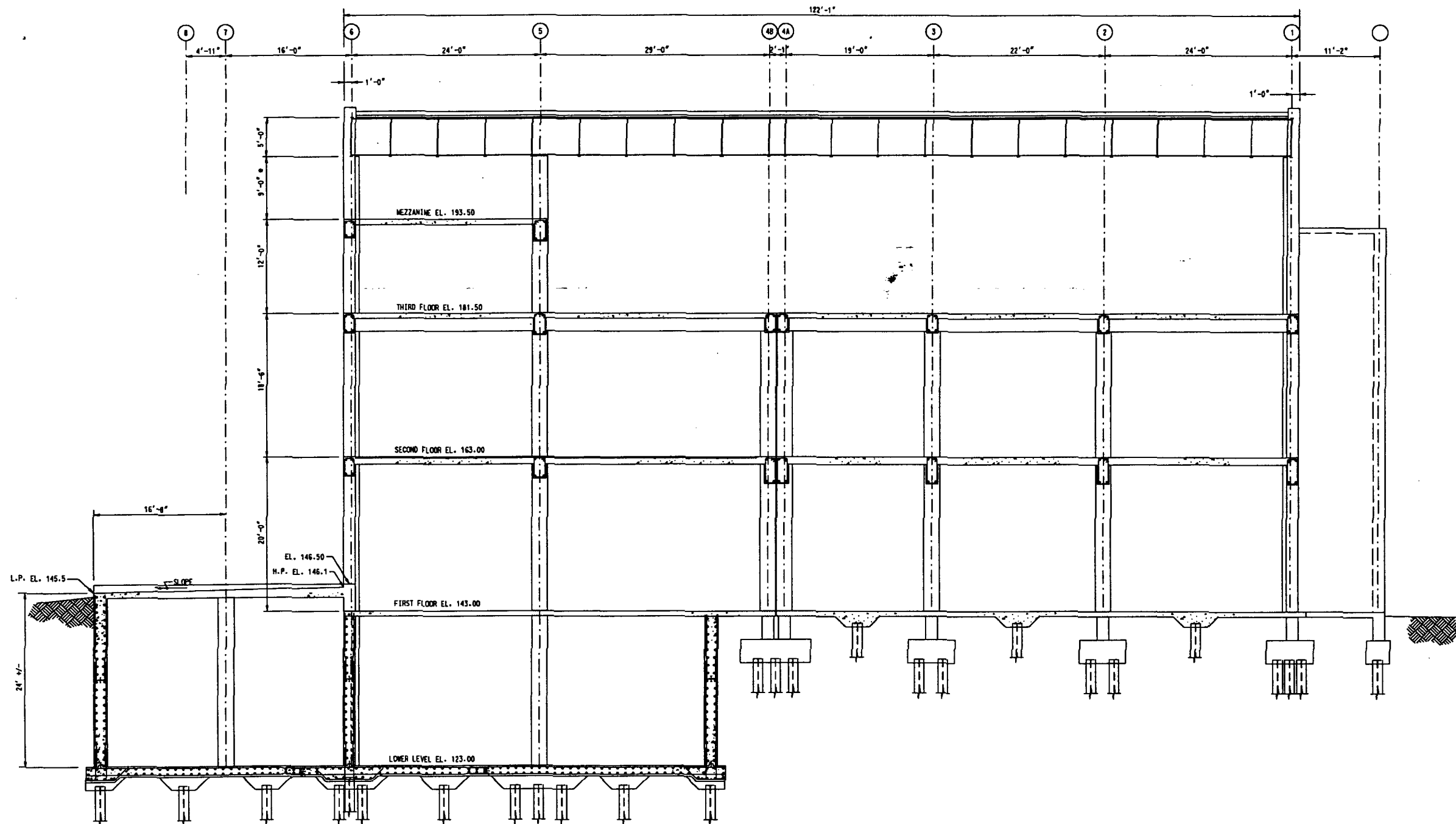
 U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
MEZZANINE LEVEL		
DESIGNED BY WILLIAM, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET 5-20



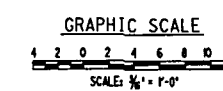
DEWATERING FACILITY - ROOF PLAN
SCALE: 1/8" = 1'-0"



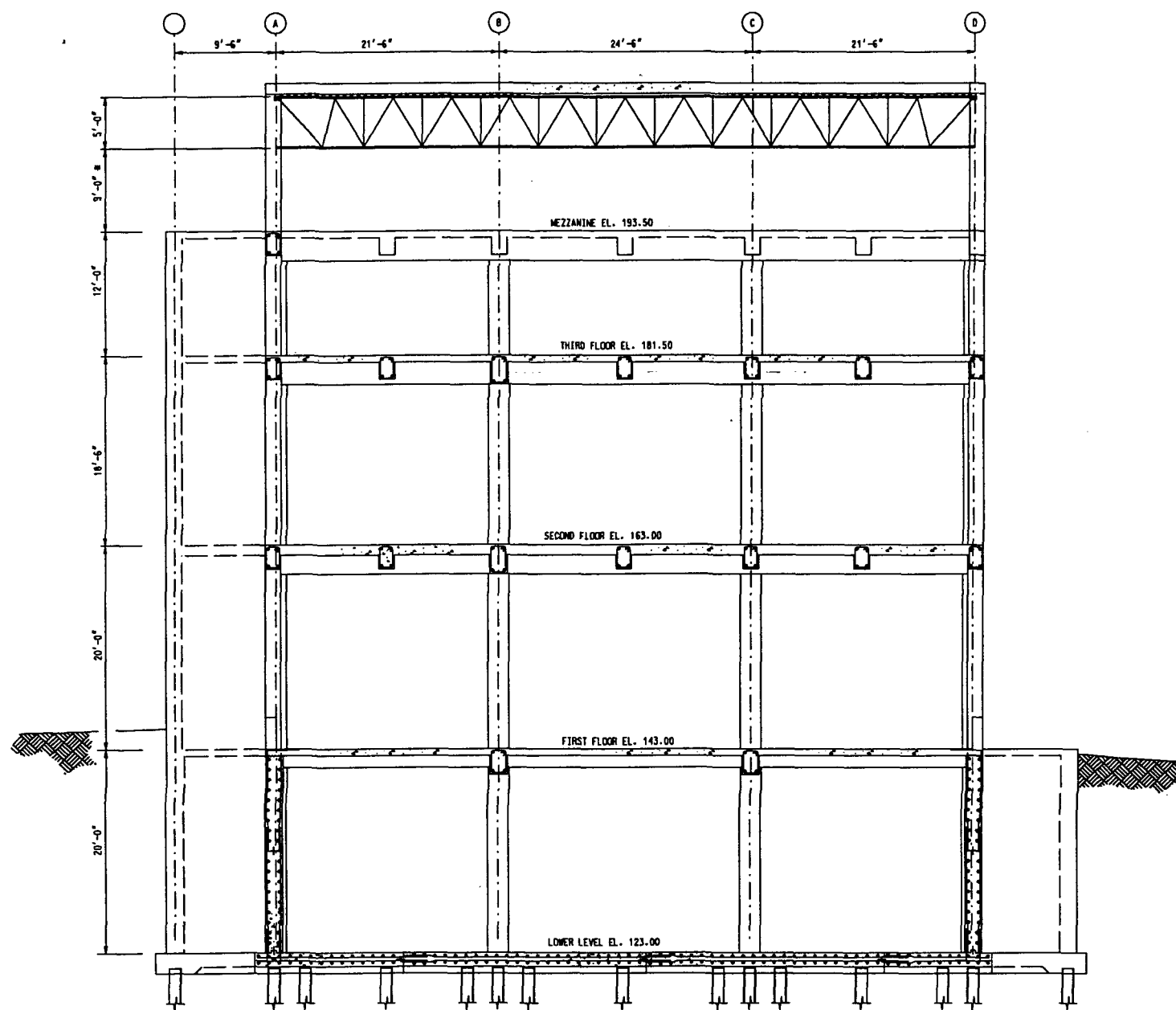
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
ROOF PLAN		
WILLIAM, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT, 1996	SHEET: S-21



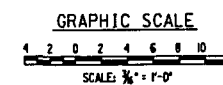
DEWATERING FACILITY - SECTION S-22A/S-15 THRU S-21
SCALE: 1/4" = 1'-0"




U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AREA DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
SECTION A-A		
DESIGNER WITTMAN, REEDMAN AND ASSOCIATES BALTIMORE, MARYLAND (410) 330-2400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET 5-22



DEWATERING FACILITY - SECTION S-23A/S-15 THRU S-21
SCALE: 1/8" = 1'-0"



 U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
SECTION B-B		
WITHMAN, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET S-23

DESCRIPTION	GENERAL NOMENCLATURE	ABBREVIATION
BACKWASH WASTE		BWW
BATCH METER		BM
BLOWER AIR		BA
BOTTOM ELEVATION		B-E
BUBBLER TUBE		BT
CENTRATE		CEN
CENTRIFUGE FEED		CF
DEWATERING POLYMER SOLUTION		DPS
COMPRESSED AIR		CA
DRY POLYMER		DP
EMERGENCY EYE-WASH SHOWER		ES
FLOOR DRAIN		FD
FLUSHING CONNECTION		F.C.
GALLONS PER MINUTE		GPM
HIGH WATER LEVEL		H.W.L.
HUB END		H.E.
INSTRUMENT AIR		IA
LIQUID POLYMER		LP
LOW WATER LEVEL		L.W.L.
MOTOR CONTROL CENTER		MCC
MECHANICAL JOINT		M.J.
NATURAL GAS		NG
NON POTABLE WATER		NPW
NORMALLY OPEN		NO
NORMALLY CLOSED		NC
NORMAL WATER LEVEL		N.W.L.
OVERFLOW		OF
POTABLE WATER		PW
PROPANE GAS		PG
RESIDUALS FROM DALECARLIA FORBAY		RD
RESIDUALS FROM SEDIMENTATION BASINS		RB
RESIDUALS FROM GEORGETOWN RESERVOIR		RG
RESIDUALS FROM RECYCLE TREATMENT		RR
MIXED RESIDUALS STREAM INTO THICKENER		RS
SCALE INDICATOR		SI
SERVICE DRAIN		D
SUMP PUMP DISCHARGE		SPD
SUPERNATANT		SPN
SURGE RELIEF DISCHARGE		SRD
THICKENING POLYMER SOLUTION		TPS
THICKENED RESIDUALS		TRS
VACUUM		VC

HEATING/VENTILATION/AIR CONDITIONING

A/C CONDENSER UNIT	ACU
AIR HANDLING UNIT	AHU
AUTOMATIC TEMPERATURE CONTROL	ATC
BACKDRAFT DAMPER	BD
BRITISH THERMAL UNITS PER HOUR	BTUH
CUBIC FEET PER MINUTE	CFM
ELECTRIC BASEBOARD HEATER	EBH
ELECTRIC UNIT HEATER (GENERAL)	EUM1
ELECTRIC UNIT HEATER (CORROSION TYPE)	EUM2
EXHAUST FAN	EF
EXHAUST GRILLE	EG
EXHAUST GRILLE WITH REGISTER	EGR
EXHAUST REGISTER	ER
GRAVITY DAMPER, (COUNTER WEIGHTED)	GD
KILOWATT	KW
OUTDOOR AIR	OA
PRESSURE DROP	PD
REFRIGERANT LIQUID	RL
RETURN GRILLE	RG
RETURN REGISTER	RR
SUPPLY DIFFUSER	SD
SUPPLY FAN	SF
SUPPLY GRILLE	SG
SUPPLY GRILLE WITH REGISTER	SGR
THOUSANDS OF BRITISH THERMAL UNITS PER HOUR	MBH

SYMBOL	DESCRIPTION	GENERAL SYMBOLS	ABBREVIATION
	2-WAY SOLENOID VALVE		
	3-WAY SOLENOID VALVE		
	AMMONIA UNION		
	ANGLE VALVE		
	AUTOMATIC AIR VENT		
	BACKFLOW PREVENTER		BFP
	BALANCING VALVE		
	BALL CHECK VALVE		
	BALL VALVE		
	BUTTERFLY VALVE		
	CALIBRATION CYLINDER		
	CLEANOUT, FLOOR FLUSH TYPE		C.O.
	COLD WATER		CW
	CORPORATION COCK		
	DIAPHRAGM VALVE		
	DRAIN		D
	FLEXIBLE CONNECTION		
	FLEXIBLE COUPLING		
	FLEXIBLE COUPLING WITH TIE RODS		
	FLEXIBLE HOSE		
	FLOOR DRAIN		F.D.
	FLOW ARROW		
	GATE VALVE		
	GLOBE VALVE		
	HOSE BIBB		HB
	HOT WATER		HW
	HUB END DRAIN		H.E.
	LINE PRESSURE SENSOR		
	MAGNETIC FLOW METER		
	MIXER		
	MOTOR OPERATED BALL VALVE (X DENOTES ACTUATOR STYLE)		
	MOTOR OPERATED BUTTERFLY		
	MOTOR OPERATED DIAPHRAGM VALVE		
	MOTOR OPERATED PLUG VALVE		
	NEEDLE VALVE		
	NON-FREEZE HOSE BIBB		NFHB
	PINCH VALVE		
	PIPE CAP		
	PIPE ELBOW-TURNED DOWN		
	PIPE ELBOW-TURNED UP		

SYMBOL	DESCRIPTION	GENERAL SYMBOLS	ABBREVIATION
	PIPE GUIDE/SLEEVE		
	PIPE HANGERS		
	PIPE TEE-OUTLET DOWN		
	PIPE TEE-OUTLET UP		
	PLUG VALVE		
	PRESSURE GAUGE WITH DIAPHRAGM SEAL		
	PRESSURE GAUGE WITH STOPCOCK		
	PRESSURE REDUCING VALVE (DIAPHRAGM TYPE)		PRV
	PRESSURE RELIEF VALVE		
	PROCESS PUMP		
	PULSATION DAMPER		
	PULSATION DAMPER (THRU FLOW)		
	REDUCER OR INCREASER		
	ROOF DRAIN		RD
	ROTAMETER METER		
	SANITARY SEWER		S
	STOPCOCK		
	SWING CHECK VALVE		
	TRAP		TP
	UNION		
	VENT		V
	VENT THRU ROOF		VTR
	WYE STRAINER		

SYMBOL	DESCRIPTION	ABBREVIATION
	DUCT SIZE - RECTANGULAR (FIRST DIMENSION ON PLAN OR ELEVATION IS SIDE SHOWN)	
	DUCT TRANSITION - FLAT ON BOTTOM	
	DUCT TRANSITION - FLAT ON TOP	
	FIRE DAMPER	FD
	FLEXIBLE CONNECTION AT FAN SUCTION AND DISCHARGE	
	INCLINED DROP IN DUCT WITH RESPECT TO AIR FLOW	DN.
	INCLINED RISE IN DUCT WITH RESPECT TO AIR FLOW	
	MOTOR OPERATED DAMPER	M.O.D.
	SD-1 REFER TO SUPPLY DIFFUSER SCHEDULE	
	RETURN OR EXHAUST AIR DUCT	
	SPLITTER DAMPER	SD
	SQUARE ELBOW WITH TURNING VANES	
	SUPPLY AIR DUCT	
	THERMOMETER	
	HUMIDISTAT	
	THERMOSTAT (A/C)	
	THERMOSTAT (FREEZE)	
	THERMOSTAT (HEAT)	
	THERMOSTAT (VENT)	
	VOLUME DAMPER	

GENERAL NOTES

1. UNLESS OTHERWISE INDICATED, ALL DUCTILE IRON BALL CASTINGS SHALL HAVE A WATER STOP-COLLAR POSITIONED IN CENTER OF WALL.
2. ALL VENTS THRU ROOF SHALL BE EXTENDED A MINIMUM OF 8" INCHES.
3. ALL HOSE BIBBS SHALL BE INSTALLED 3 FEET ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.
4. ALL PIPING AND DUCTWORK PASSING THRU FLOORS AND INTERIOR WALLS SHALL BE SLEEVED AND SEALED UNLESS OTHERWISE NOTED.
5. ALL UNIT HEATERS SHALL BE MOUNTED A MINIMUM OF 7 FEET ABOVE FINISHED FLOOR. CONTRACTOR SHALL COORDINATE CLEARANCES.

ANALYZING INSTRUMENTS

PH	PH
TURBIDITY	TB
SOLIDS DENSITY	SD
STREAMING CURRENT	SC

PROCESS SAMPLING

DEWATERED RESIDUALS	S1
RESIDUALS	S2
THICKENER SUPERNATANT	S3
THICKENED RESIDUALS	S4
CENTRIFUGE CENTRATE	S5

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
GENERAL NOTES AND LEGEND		
WITHIN REQUIRMENT AND ASSOCIATES BUSINESS BALTIMORE, MARYLAND (410) 230-5400	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT, 1996	SHEET M-1

GRAVITY THICKENER FACILITIES AND THICKENER RESIDUALS PUMPING STATION

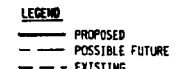
OPERATING SCHEDULE-----365 DAYS/YEAR
24 HOURS/DAY
SOLIDS LOADING RATE (MAX)-----7 LBS/FT²
HYDRAULIC LOADING (MAX)-----200 GPD/FT²
EFFICIENCY (PERCENT)-----99

AVERAGE MONTHLY CONDITIONS

SOLIDS LOADING RANGE

MINIMUM-----28.000 LBS/DAY
MAXIMUM-----168.664 LBS/DAY

DALECARLIA WATER TREATMENT PLANT
SEDIMENTATION BASINS



DESIGN MEMORANDUM - (35%) FINAL SUBMISSION

THICKENING			
SCHEDULE: 7 DAYS/WEEK, 24 HOURS/DAY			
THICKENERS: 4 UNITS	SOLIDS LOADING RATE (MAX): 7 LBS/FT ²	HYDRAULIC RETENTION TIME (MIN): 18 HRS	
DIAMETER: 90 FT.	HYDRAULIC LOADING RATE (MAX): 200 GPD/FT ²	SLUDGE BLANKET DEPTH: 7.0 FT.	
SIDE WATER DEPTH: 20 FT.			
	MAX. MONTH COND. 4 UNITS	AVG. MONTH COND. 3 UNITS	
INFLUENT			
SOLIDS CONCENTRATION: 0.5% TO 1.0%			
FLOW RATE:			
MON THRU FRI: 14 HR/DAY (DEWATERING)	162,971 GPH	103,710 GPH	
10 HR/DAY (NO DEWATERING)	100,720 GPH	59,952 GPH	
WEEKENDS: 24 HR/DAY (NO DEWATERING)	68,745 GPH	27,978 GPH	
DRAW-OFF TO BLENDING TANKS (SIMULTANEOUS WITH DEWATERING)			
SOLIDS CONCENTRATION: 2.5%			
FLOW RATE:			
MON THRU FRI: 14 HR/DAY (DEWATERING)	67,232 GPH	47,262 GPH	
OVERFLOW TO RECYCLE			
FLOW RATE:			
MON THRU FRI: 14 HR/DAY (DEWATERING)	95,739 GPH	56,448 GPH	
10 HR/DAY (NO DEWATERING)	100,720 GPH	59,952 GPH	
WEEKENDS: 24 HR/DAY (NO DEWATERING)	68,745 GPH	27,978 GPH	

SOLIDS PROCESS DESIGN CRITERIA

RESIDUAL DEWATERING SCHEDULE: 5 DAYS/WEEK, 2 SHIFTS/DAY, 7 HRS/SHIFT

CENTRIFUGES:

QUANTITY:	5-11 (STAND-BY)
FEED RATE:	150-250 GPM
FEED CONCENTRATION:	2.5% SOLIDS
SOLIDS RECOVERY:	97-99%
POLYMER DOSAGE/RESIDUALS:	4-14 LBS/DRY TON
DISCHARGE CAKE CONCENTRATION:	25-32%

MAX. MONTH COND.

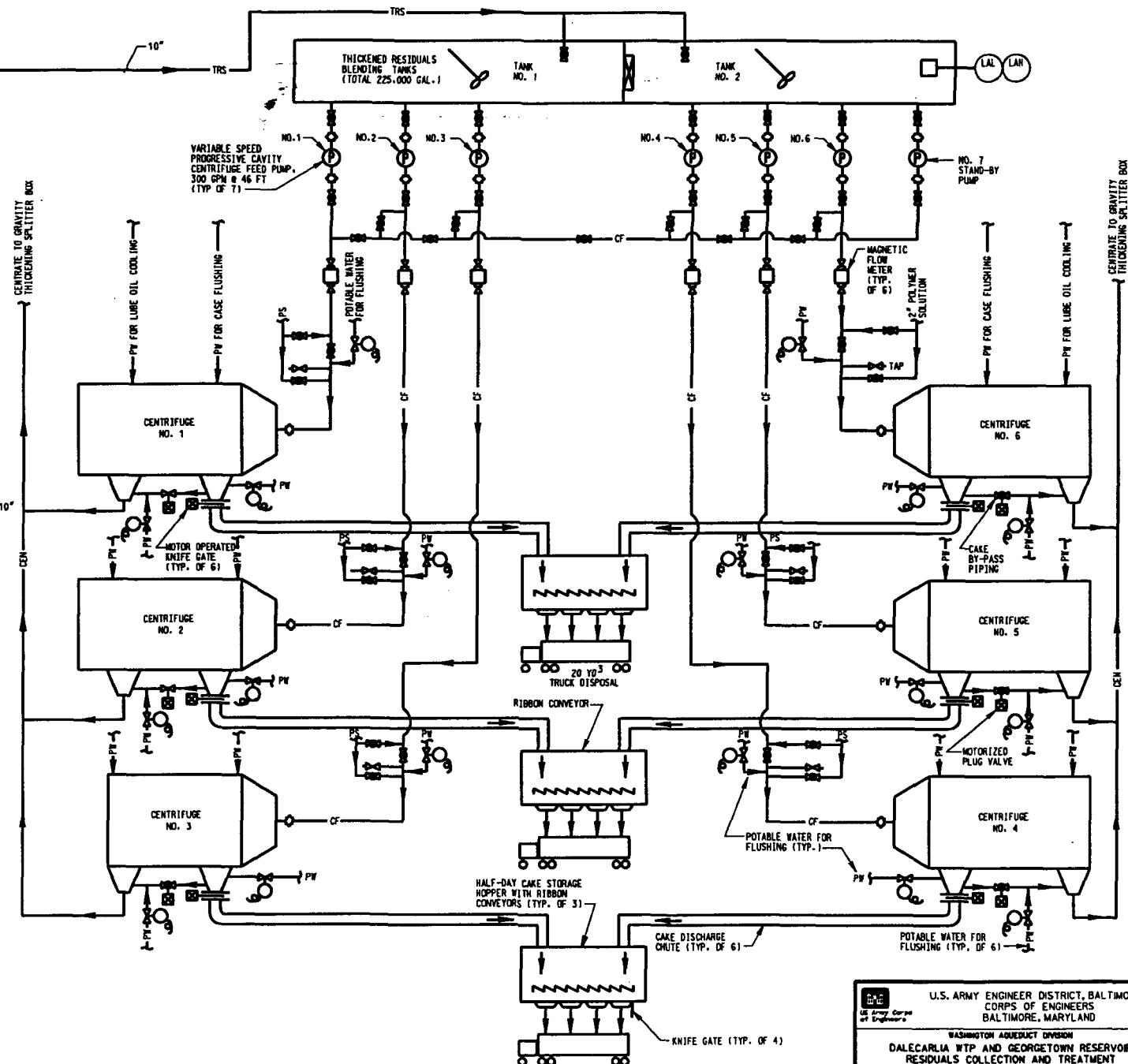
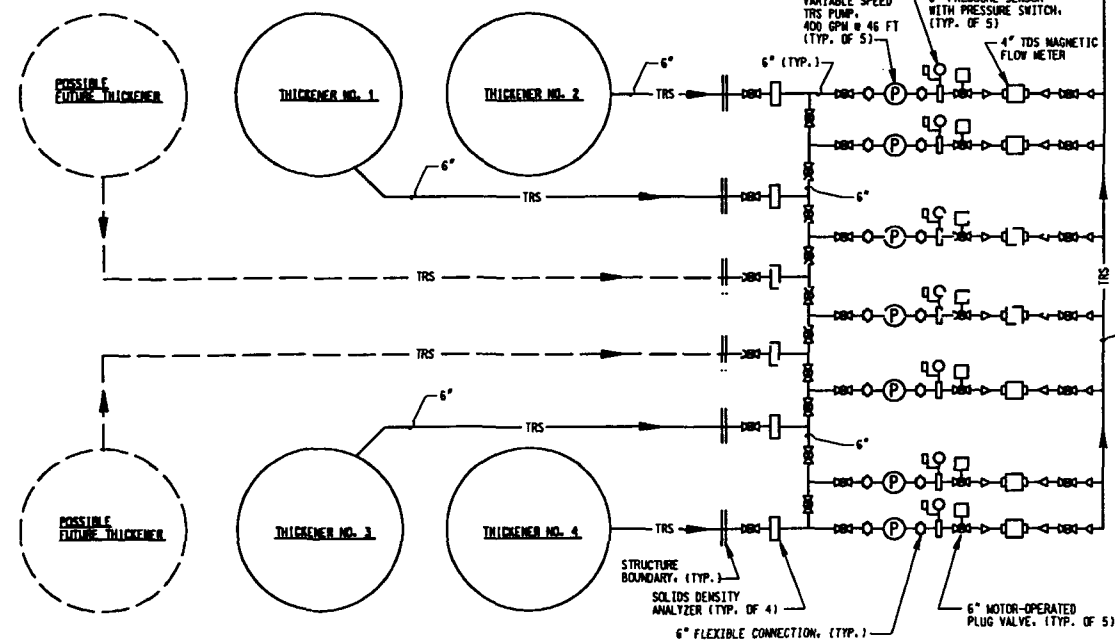
AVG. MONTH COND.

CENTRIFUGE IN OPERATION:	5 UNITS	4 UNITS
TOTAL SOLIDS TO DEWATERED:	202,143 LBS/DAY	139,694 LBS/DAY
SOLIDS PRODUCED @ 30%:	2100 FT ³ /DAY	1825 FT ³ /DAY

CAKE STORAGE HOPPERS:

QUANTITY-----	3	
CAPACITY-----	2640 FT ³ (EACH)	
TOTAL STORAGE DURATION-----	7 HRS	9 HRS
DAILY TRUCK LOADS (20 YD ³)-----	20	14

GRAVITY THICKENER FACILITIES



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
SOLID PROCESS FLOW SCHEMATIC		
DESIGNED BY BIRMINGHAM AND ASSOCIATES BALTIMORE, MARYLAND (410) 238-3400	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET M-3

**DALECARLIA FOREBAY
EQUALIZATION BASIN / PUMPING STATION**

SOLIDS (LBS/DAY)-----84,000

DAILY FLOW @ 1.5%-----671,463 GPD
DAILY FLOW @ 1.0% (MIN)-----1,007,194 GPD

DESIGN FLOW @ 1.5%-----560 GPM

FUTURE PROCESS DESIGN CRITERIA

**DALECARLIA WATER TREATMENT PLANT
SEDIMENTATION BASIN RESIDUALS PUMPING STATION**

OPERATING SCHEDULE-----365 DAYS/YEAR
20 HOURS/DAY

ANNUAL AVERAGE (LBS/DAY)-----28,000
MAXIMUM MONTHLY (LBS/DAY)-----68,800

BALANCED ZONE DISTRIBUTION
ANNUAL AVERAGE @ 0.25%-----1,120 GPM
MAXIMUM MONTHLY @ 0.50%-----1,375 GPM

MAXIMUM ZONE DISTRIBUTION
BASIN 1 AND 2 ZONES-----2 QTY
DESIGN FLOW-----400 GPM

BASIN 3 AND 4 ZONES-----4 QTY
DESIGN FLOW-----800 GPM

TOTAL DESIGN FLOW-----1700 GPM

**GEORGETOWN RESERVOIR
EQUALIZATION BASIN / PUMPING STATION**

SOLIDS (LBS/DAY)-----94,900
DREDGING SCHEDULE-----7 HOURS/DAY
5 DAYS/WEEK
4 1/2 MONTHS/YEAR

DAILY FLOW @ 1.5%-----758,593 GPD
DAILY FLOW @ 1.0% (MIN)-----1,137,890 GPD

EQUALIZATION PUMPING
SCHEDULE-----20 HOURS/DAY
5 DAYS/WEEK

DESIGN FLOW @ 1.5%-----632 GPM

**DALECARLIA FOREBAY
GRAVITY THICKENER FACILITIES**

OPERATING SCHEDULE-----365 DAYS/YEAR
24 HOURS/DAY

SOLIDS LOADING RATE (MAX)-----7 LBS/FT²
HYDRAULIC LOADING (MAX)-----200 GPD/FT²
EFFICIENCY (PERCENT)-----99

AVERAGE MONTHLY CONDITIONS
SOLIDS LOADING RANGE
MINIMUM-----28,000 LBS/DAY
MAXIMUM-----168,664 LBS/DAY

**GEORGETOWN RESERVOIR
THICKENER FACILITIES**

OPERATING SCHEDULE-----30 DAYS/MONTH
7 DAYS/WEEK
24 HOURS/DAY

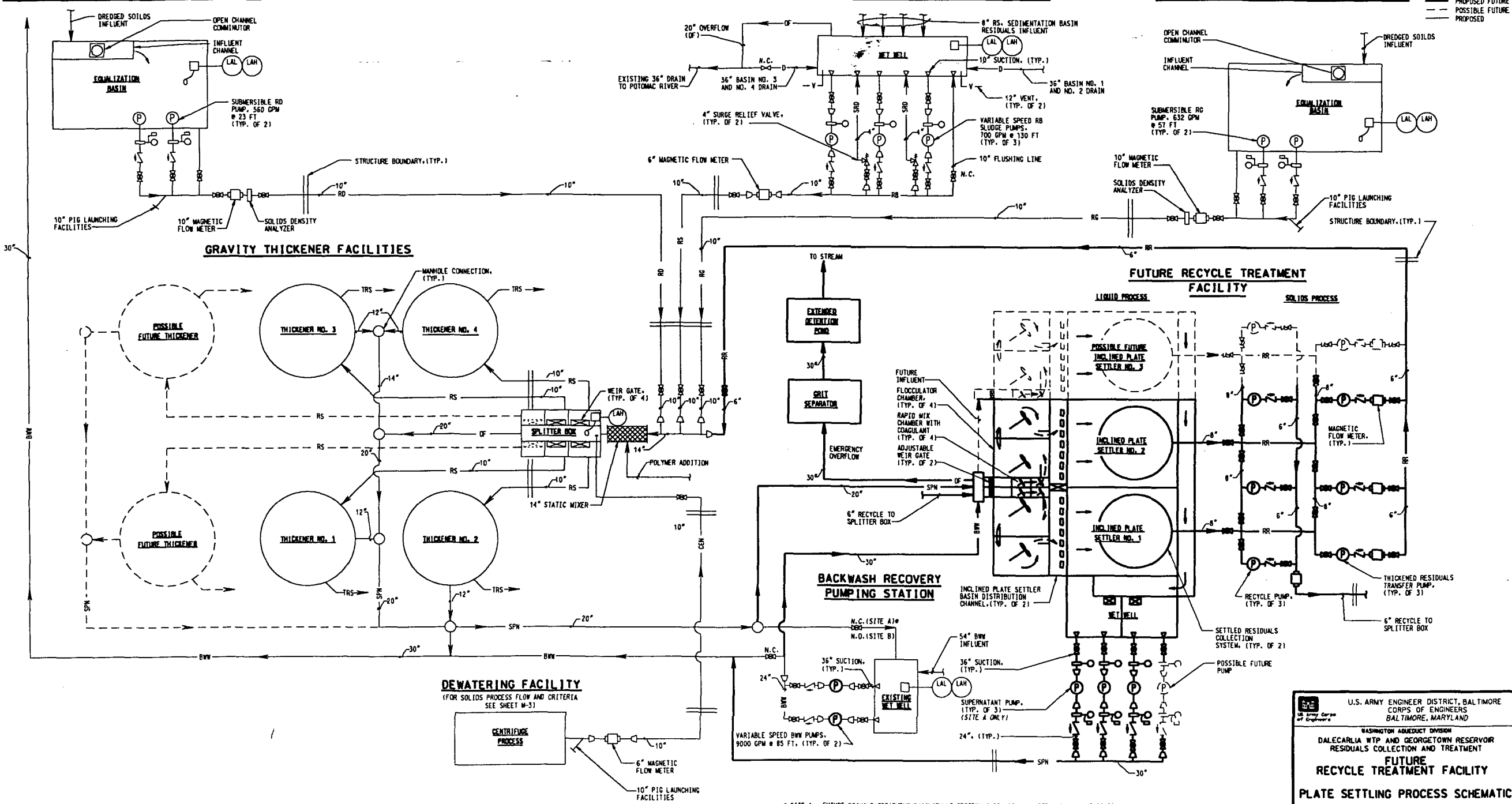
DESIGN FLOW (GPM)-----12,000
DESIGN SOLIDS (LBS/DAY)-----18,000

COMPOSITE QUALITY (NTN)-----126
HYDRAULIC PLATE LOADING (GPM/FT)-----0.40
HYDRAULIC SURFACE LOADING (GPM/FT)-----5.0
EFFICIENCY (PERCENT)-----95
SOLIDS @ 0.5% CONC. (GPM)-----286
SOLIDS @ 1.0% CONC. (GPM)-----143

**DALECARLIA FOREBAY
EQUALIZATION BASIN PUMPING STATION**

**DALECARLIA WATER TREATMENT PLANT
SEDIMENTATION BASIN RESIDUALS PUMPING STATION**

**GEORGETOWN RESERVOIR
EQUALIZATION BASIN PUMPING STATION**



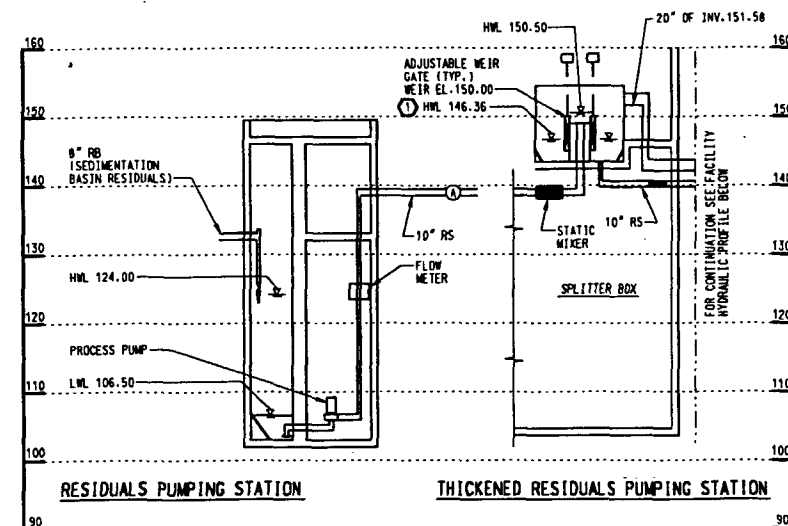
* SITE A = FUTURE RECYCLE TREATMENT FACILITY AT RESIDUALS DEWATERING SITE (AS SHOWN THIS SCHEMATIC)
SITE B = FUTURE RECYCLE TREATMENT FACILITY AT DALECARLIA FOREBAY

U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

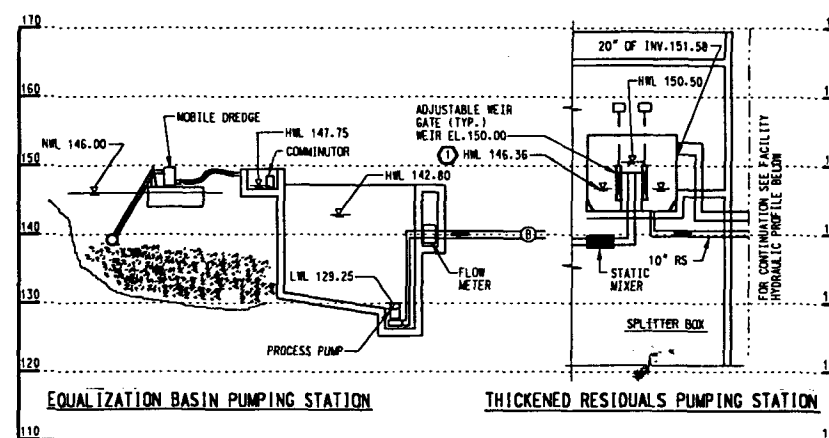
WASHINGTON ADJUTANT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

**FUTURE
RECYCLE TREATMENT FACILITY
PLATE SETTLING PROCESS SCHEMATIC**

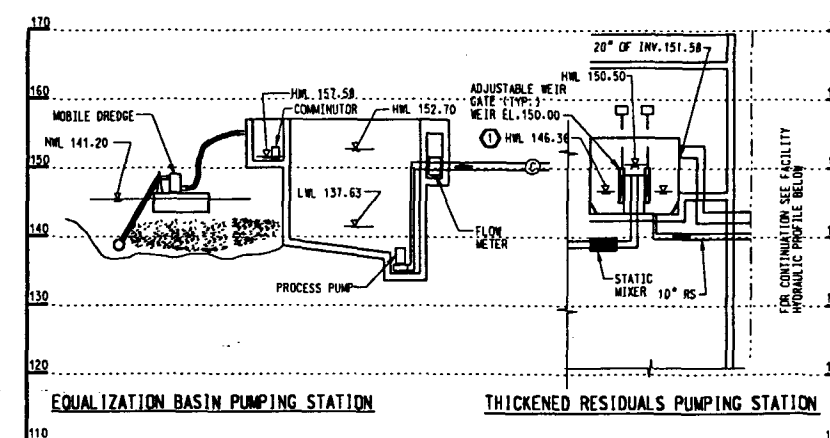
DESIGNED BY: [Signature]
DRAWING NUMBER: [Blank]
SCALE: NONE
DATE: OCT. 1996
SHEET M-4



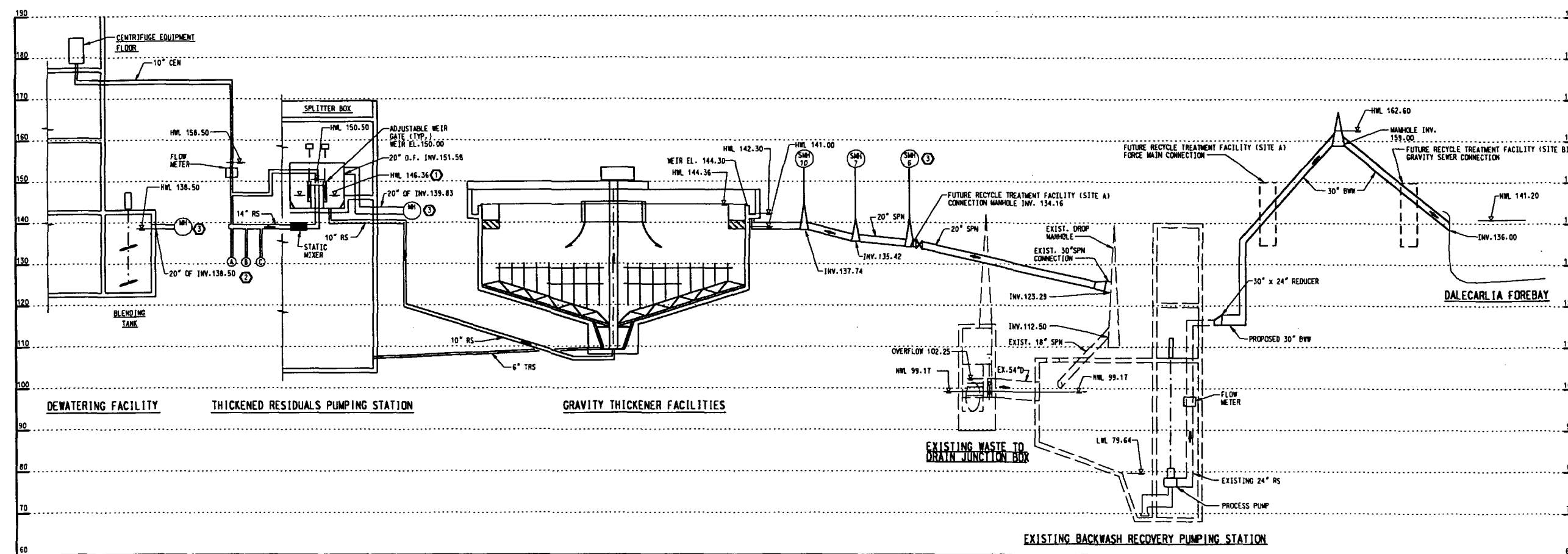
SEDIMENTATION BASIN RESIDUALS PUMPING STATION PROFILE



GEORGETOWN RESERVOIR EQUALIZATION BASIN PUMPING STATION PROFILE



DALECARLIA FOREBAY EQUALIZATION BASIN PUMPING STATION PROFILE



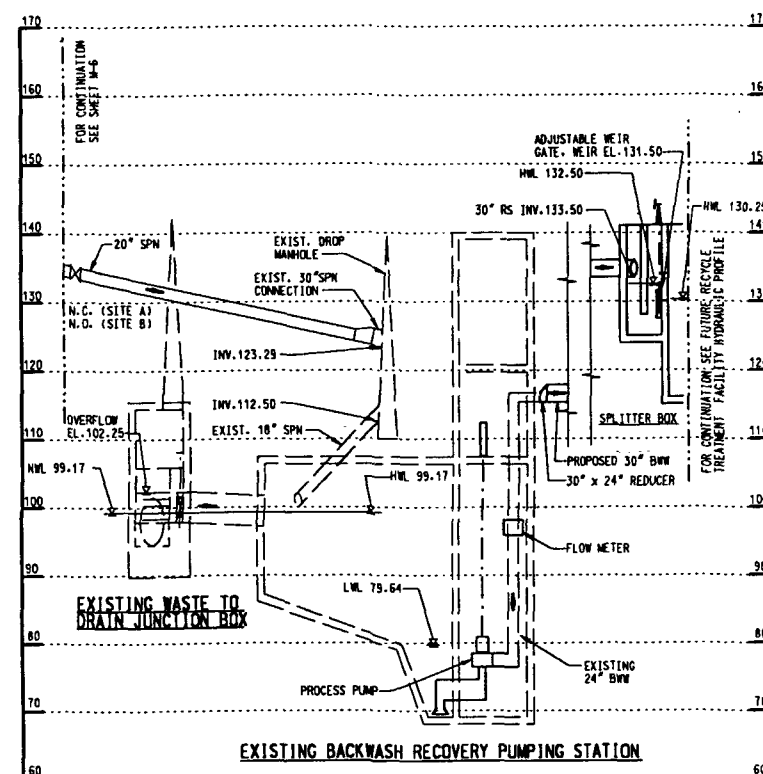
DEWATERING FACILITIES HYDRAULIC PROFILE

SCALE: VERTICAL: 1"=10'-0"
HORIZONTAL: NO SCALE

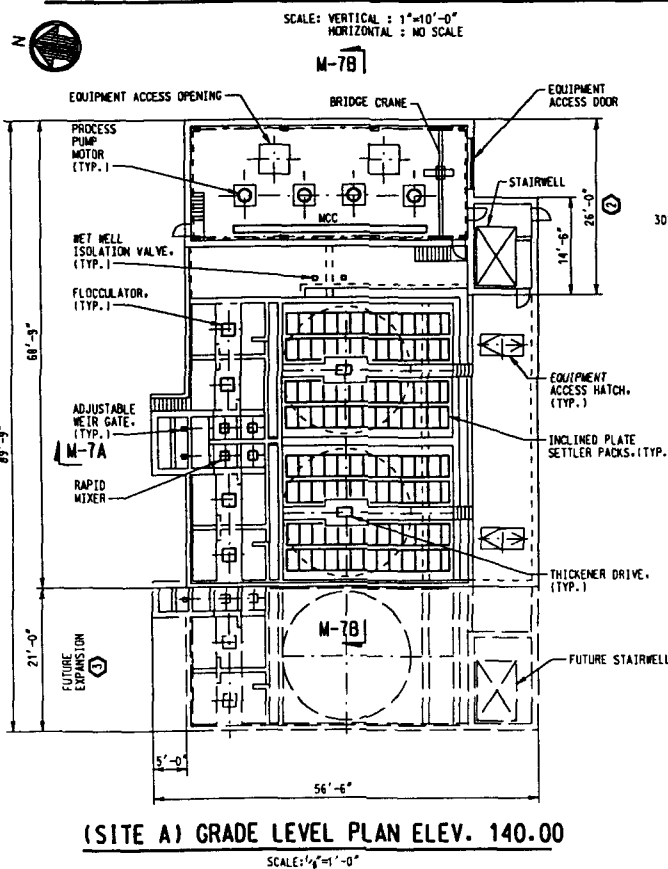
- NOTES:
- ① WHEN POSSIBLE FUTURE GRAVITY THICKENERS ARE INSTALLED, RESPECTIVE INFLUENT CHAMBERS SHALL HAVE A HML OF 146.86.
 - ② FOR CONTINUATION SEE RESPECTIVE PUMPING STATION HYDRAULIC PROFILE.
 - ③ FOR CIVIL CONTINUATION-SEE SHEETS

LEGEND
— PROPOSED FACILITIES
--- EXISTING FACILITIES

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITIES HYDRAULIC PROFILES		
DESIGNED BY: REINHOLDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT, 1996	SHEET M-6

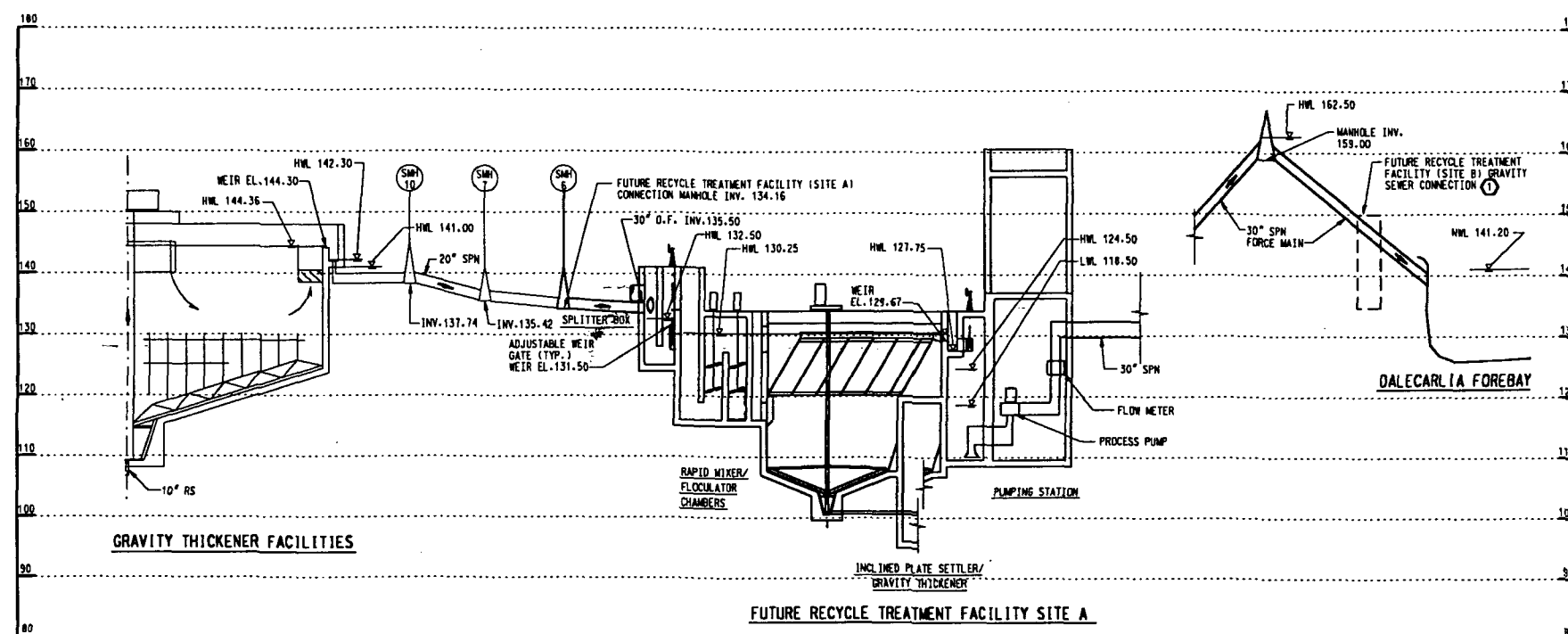


BACKWASH RECOVERY PUMPING STATION HYDRAULIC PROFILE

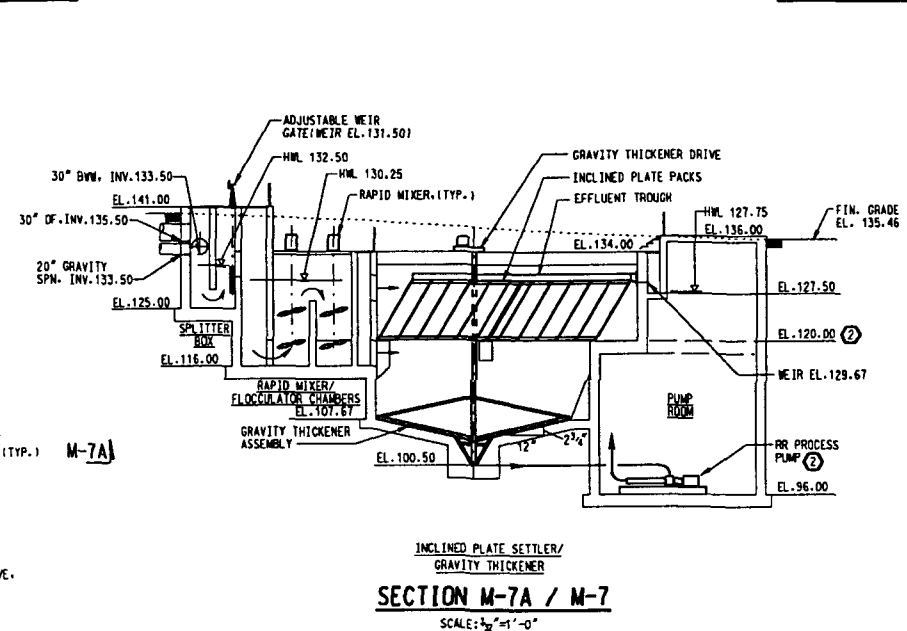


(SITE A) GRADE LEVEL PLAN ELEV. 140.00

SCALE: 1/8\"/>



FUTURE RECYCLE TREATMENT FACILITY HYDRAULIC PROFILE

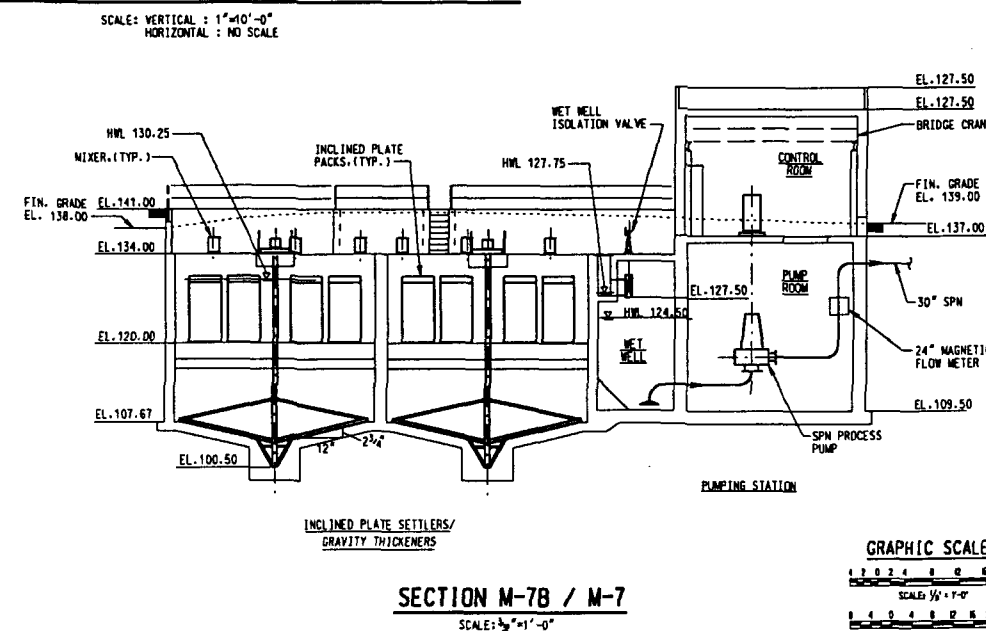


SECTION M-7A / M-7

SCALE: 1/8\"/>

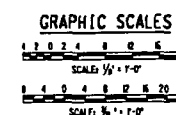
NOTES:

- ① SITE B UTILIZES THE BACKWASH RECOVERY PUMPING STATION FOR CONVEYANCE OF ALL COMPOSITE RESIDUALS FROM THE POSSIBLE FUTURE EXPANSIONS OF THE RESIDUALS HANDLING FACILITIES.
- ② PROPOSED SITE B SITE LOCATION WOULD BE ADJACENT TO THE DALECARLIA FOREBAY UTILIZING HYDRAULIC GRADIENT FOR SUPERNATANT GRAVITY FLOW TO THE FOREBAY. THICKENED RESIDUALS WOULD BE PUMPED TO THE EQUALIZATION BASIN PUMPING STATION FOR CONVEYANCE TO THE RESIDUALS HANDLING FACILITIES GRAVITY THICKENERS. ALL RESPECTIVE FOREMANS WOULD BE OF ADEQUATE SIZE FOR FUTURE PROCESS EXPANSION.
- ③ BOTH ALTERNATIVE SITE LOCATIONS WOULD CONSIDER AN ULTIMATE EXPANSION OF FACILITIES TO PROVIDE ONE-THIRD CAPACITY EXPANSION.



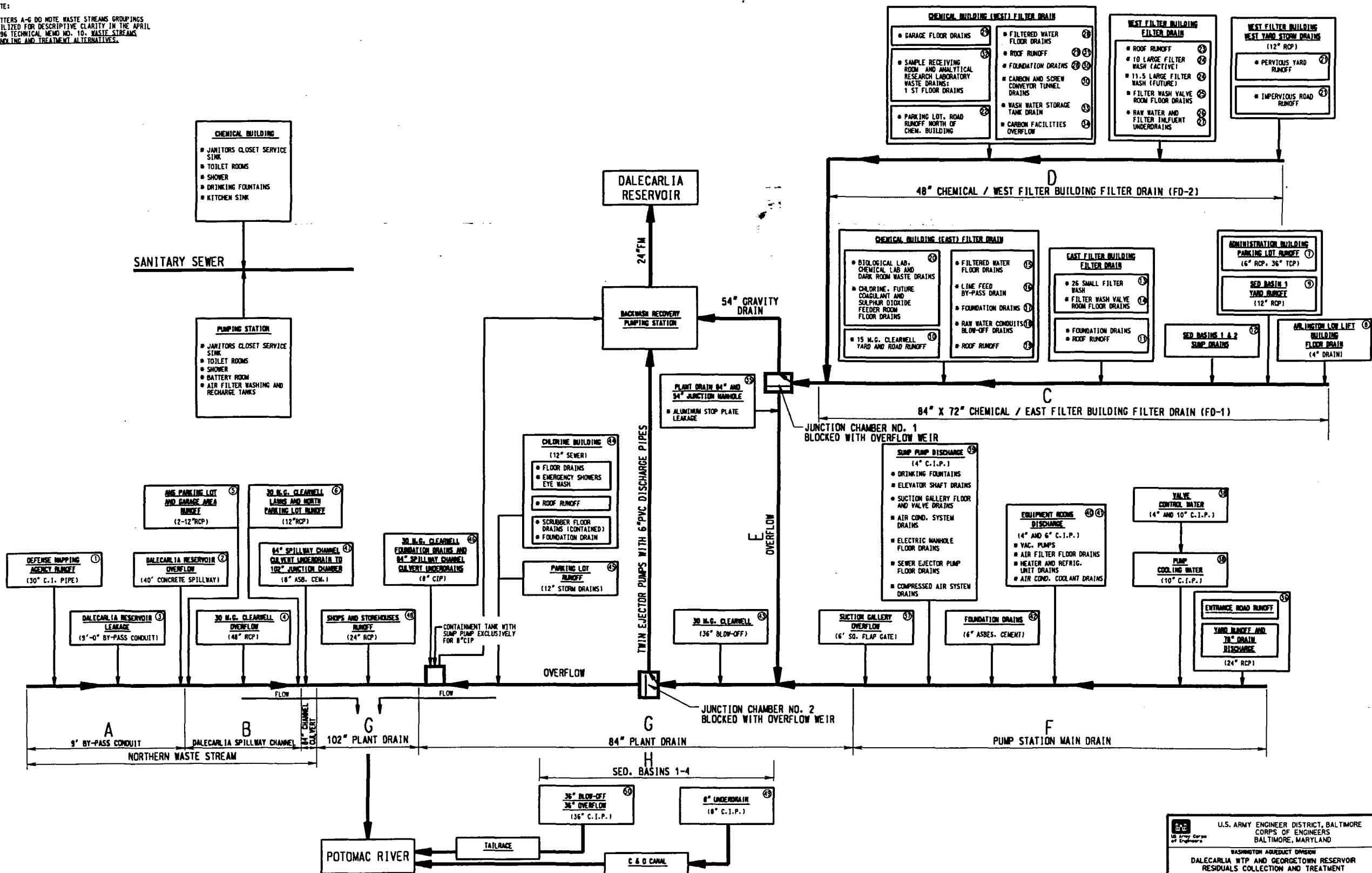
SECTION M-7B / M-7

SCALE: 1/8\"/>



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON ADJUNCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
FUTURE RECYCLE TREATMENT FACILITY HYDRAULIC PROFILES, PLAN AND SECTION		
DESIGNED BY: ENGINEER BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET M-7

NOTE:
LETTERS A-G DO NOT WASTE STREAMS GROUPINGS
UTILIZED FOR DESCRIPTIVE CLARITY IN THE APRIL
1996 TECHNICAL MEMO NO. 10, WASTE STREAMS
HANDLING AND TREATMENT ALTERNATIVES.



DALECARLIA W.T.P. EXISTING WASTE STREAMS SCHEMATIC

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DALECARLIA W.T.P. EXISTING WASTE STREAMS SCHEMATIC		
WITHMAN, REQUART AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3400	DRAWING NUMBER DATE: OCT. 1996	PLATE SHEET M-9
SCALE: NONE		

LEGEND

SYMBOL DESTINATION OF WASTE DISCHARGE

RECYCLE TO BACKWASH

POTOMAC RIVER

SANITARY SEWER

OIL AND GRIT SEPARATOR TO BE ADDED TO EXISTING STORM DRAINS (BASED ON C.O.E. DECISION RENDERED APRIL 1 AND MAY 16, 1996)

CONTAINED

INDICATES THIS WASTE STREAM WILL BE RE-ROUTED (BASED ON C.O.E. DECISION RENDERED APRIL 1 AND MAY 16, 1996)

CHEMICAL BUILDING
 • JANITORS CLOSET SERVICE SINK
 • TOILET ROOMS
 • SHOWER
 • DRINKING FOUNTAINS
 • KITCHEN SINK

SANITARY SEWER

PUMPING STATION
 • JANITORS CLOSET SERVICE SINK
 • TOILET ROOMS
 • SHOWER
 • BATTERY ROOM
 • AIR FILTER WASHING AND RECHARGE TANKS

PROPOSED FUTURE DRAINAGE FACILITY
 • THICKENER SUPERNATANT
 • STORM DRAINS
 • 8" SANITARY SEWER

DALECARLIA RESERVOIR FOREBAY

DALECARLIA RESERVOIR

30 M.G. CLEARNELL
 (36" BLOW-OFF)

BACKWASH RECOVERY PUMP STATION

54" GRAVITY DRAIN

20" GRAVITY DRAIN

REDUCER

CHLORINE BUILDING
 (12" SEWER)
 • FLOOR DRAINS
 • EMERGENCY SHOWERS
 • EYE WASH
 • FOUNDATION DRAIN
 • ROOF RUNOFF
 • SCRUBBER FLOOR DRAINS (CONTAINED)
PARKING LOT RUNOFF
 (12" STORM DRAINS)

OVERFLOW

TWIN EJECOR PUMPS WITH 6" PVC DISCHARGE PIPES (TO BE UPGRADED TO PERMANENT FACILITY)

OVERFLOW

JUNCTION CHAMBER NO. 2 BLOCKED WITH OVERFLOW WIER

84" PLANT DRAIN

SED. BASINS 1-4

PROPOSED SED. BASIN P.S. 36" OVERFLOW

36" BLOW-OFF
 (36" C.I.P.)

PROPOSED VALVE

EMERGENCY BLOW-OFF

8" UNDERDRAIN
 (8" C.I.P.) (TO BE UPGRADED)

TAILRAVE

POTOMAC RIVER

DALECARLIA W.T.P. PROPOSED WASTE STREAMS SCHEMATIC

CHEMICAL BUILDING (WEST) FILTER DRAIN
 • GARAGE FLOOR DRAINS
 • SAMPLE RECEIVING ROOM AND ANALYTICAL RESEARCH LABORATORY WASTE DRAINS: 1 ST FLOOR DRAINS
 • PARKING LOT, ROAD RUNOFF NORTH OF CHEM. BUILDING
 • ROOF RUNOFF
 • FILTERED WATER FLOOR DRAINS
 • ROOF RUNOFF
 • FOUNDATION DRAINS
 • CARBON AND SCREW CONVEYOR TUNNEL DRAINS
 • WASH WATER STORAGE TANK DRAIN
 • CARBON FACILITIES OVERFLOW

WEST FILTER BUILDING FILTER DRAIN
 • ROOF RUNOFF
 • 10 LARGE FILTER WASH (ACTIVE)
 • 11.5 LARGE FILTER WASH (FUTURE)
 • FILTER WASH VALVE ROOM FLOOR DRAINS
 • RAW WATER AND FILTER INFLUENT UNDERDRAINS

WEST FILTER BUILDING WEST YARD STORM DRAINS
 (12" RCP)
 • PERVIOUS YARD RUNOFF
 • IMPERVIOUS ROAD RUNOFF

48" CHEMICAL / WEST FILTER BUILDING FILTER DRAIN (FD-2)

CHEMICAL BUILDING (EAST) FILTER DRAIN
 • BIOLOGICAL LAB, CHEMICAL LAB AND DARK ROOM WASTE DRAINS
 • CHLORINE, FUTURE COAGULANT AND SULPHUR DIOXIDE FEEDER ROOM FLOOR DRAINS
 • 15 M.G. CLEARNELL AND ROAD RUNOFF
 • FILTERED WATER FLOOR DRAINS
 • LINE FEED BY-PASS DRAIN
 • FOUNDATION DRAINS
 • RAW WATER CONDUITS BLOW-OFF DRAINS
 • ROOF RUNOFF

EAST FILTER BUILDING FILTER DRAIN
 • 26 SMALL FILTER WASH
 • FILTER WASH VALVE ROOM FLOOR DRAINS
 • FOUNDATION DRAINS
 • ROOF RUNOFF

ADMINISTRATION BUILDING PARKING LOT RUNOFF
 (6" RCP, 36" TCP)
SED. BASIN 1 YARD RUNOFF
 (12" RCP)
SED. BASINS 1 & 2 SLAM DRAINS
ADMINISTRATIVE LOW LIFT BUILDING FLOOR DRAIN
 (4" DRAIN)

84" X 72" CHEMICAL / EAST FILTER BUILDING FILTER DRAIN (FD-1)

JUNCTION CHAMBER NO. 1 BLOCKED WITH OVERFLOW WEIR

SLAM PUMP DISCHARGE
 (4" C.I.P.)
 • DRINKING FOUNTAINS
 • ELEVATOR SHAFT DRAINS
 • SUCTION GALLERY FLOOR AND VALVE DRAINS
 • AIR COND. SYSTEM DRAINS
 • ELECTRIC MANHOLE FLOOR DRAINS
 • SEWER EJECOR PUMP FLOOR DRAINS
 • COMPRESSED AIR SYSTEM DRAINS

EQUIPMENT ROOMS DISCHARGE
 (4" C.I.P.)
 • FLOOR DRAINS FOR AIR FILTERS, VAC PUMPS

VALVE CONTROL WATER
 (4" AND 10" C.I.P.)

PUMP COOLING WATER
 (10" C.I.P.)

SUCTION GALLERY OVERFLOW
 (6" SQ. FLAP GATE)

FOUNDATION DRAINS
 (6" ASBES. CEMENT)

EQUIPMENT ROOMS DISCHARGE
 (6" C.I.P.)
 • FLOOR DRAINS FOR AIR FILTERS, VAC. PUMPS & STORAGE HEATER TANKS
 • REFRIG. COMPRESSOR DRAIN
 • AIR COND. COOLANT DRAIN

ENTRANCE ROAD RUNOFF
YARD RUNOFF AND 78" DRAIN DISCHARGE
 (24" RCP)

FINISHED WATER PUMP STATION MAIN DRAIN

U.S. ARMY ENGINEER DISTRICT, BALTIMORE
 CORPS OF ENGINEERS
 BALTIMORE, MARYLAND
 WASHINGTON AQUEDUCT DIVISION
 DALECARLIA W.T.P. AND GEORGETOWN RESERVOIR
 RESIDUALS COLLECTION AND TREATMENT
DALECARLIA W.T.P.
PROPOSED WASTE STREAMS SCHEMATIC

WITHIN: REQUIRMENT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND
 (410) 230-3400
 DRAWING NUMBER
 DATE: OCT. 1996
 SHEET M-10

RESIDUALS THICKENING POLYMER SYSTEM DESIGN CRITERIA

OPERATIONS SCHEDULE
 DAYS/MONTH-----30
 DAYS/WEEK-----7
 HOURS/DAY (VARIES)-----24

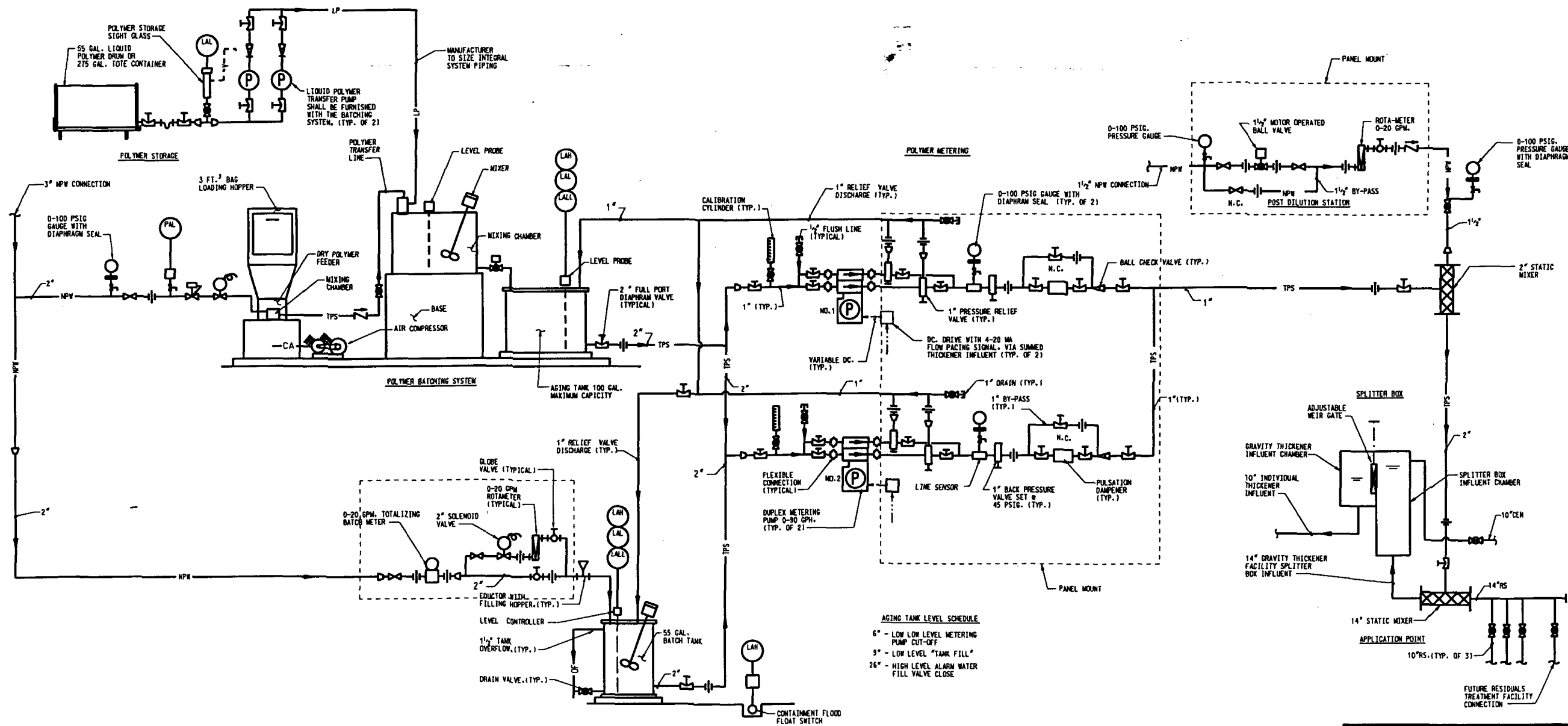
PROCESS INFLUENT CONDITIONS
 PEAK PROCESS FLOW @ 200 GPD/FT² THICKENER (GPM)-----3600
 AVERAGE MONTH CONDITION (GPM)-----2000
 MINIMUM PROCESS FLOW @ SEDIMENTATION BASIN RESIDUALS PUMPING STATION (GPM)-----300

POLYMER DOSAGE
 MAXIMUM (MG/L)-----2.0
 AVERAGE (MG/L)-----1.0
 MINIMUM (MG/L)-----0.5

DRY POLYMER SYSTEM
 PRODUCT DENSITY (LBS/FT³) VARIES-----40
 MAXIMUM DOSAGE (LBS/DAY)-----87
 AVERAGE DOSAGE (LBS/DAY)-----24
 MINIMUM DOSAGE (LBS/DAY)-----1.8

LIQUID POLYMER SYSTEM (OPTIONAL)
 POLYMER ACTIVE WEIGHT (%)-----36
 POLYMER DENSITY (LBS/GAL VARIES)-----8.7
 MAXIMUM DOSAGE (GAL/DAY VARIES)-----28
 AVERAGE DOSAGE (GAL/DAY)-----8
 MINIMUM DOSAGE (GAL/DAY)-----0.6

POLYMER STORAGE
 PROCESS INFLUENT CONDITIONS (GPM)-----3600 PEAK
 POLYMER DOSAGE (MG/L)-----1.0 AVERAGE
 STORAGE PERIOD (DAYS)-----30
 DRY POLYMER STORAGE (LBS)-----1320
 DRY PALLETS (QTY)-----1
 LIQUID POLYMER STORAGE (GALS)-----420
 LIQUID TOTE CONTAINER (QTY)-----2



RESIDUALS THICKENING POLYMER SYSTEM SCHEMATIC

No Scale

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
RESIDUALS THICKENING POLYMER SYSTEM		
PROCESS SCHEMATICS		
WITHDRAWN, REVISIONS AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 14181 238-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET: M-3

DEWATERING POLYMER PROCESS DESIGN CRITERIA

RESIDUALS PRODUCTION

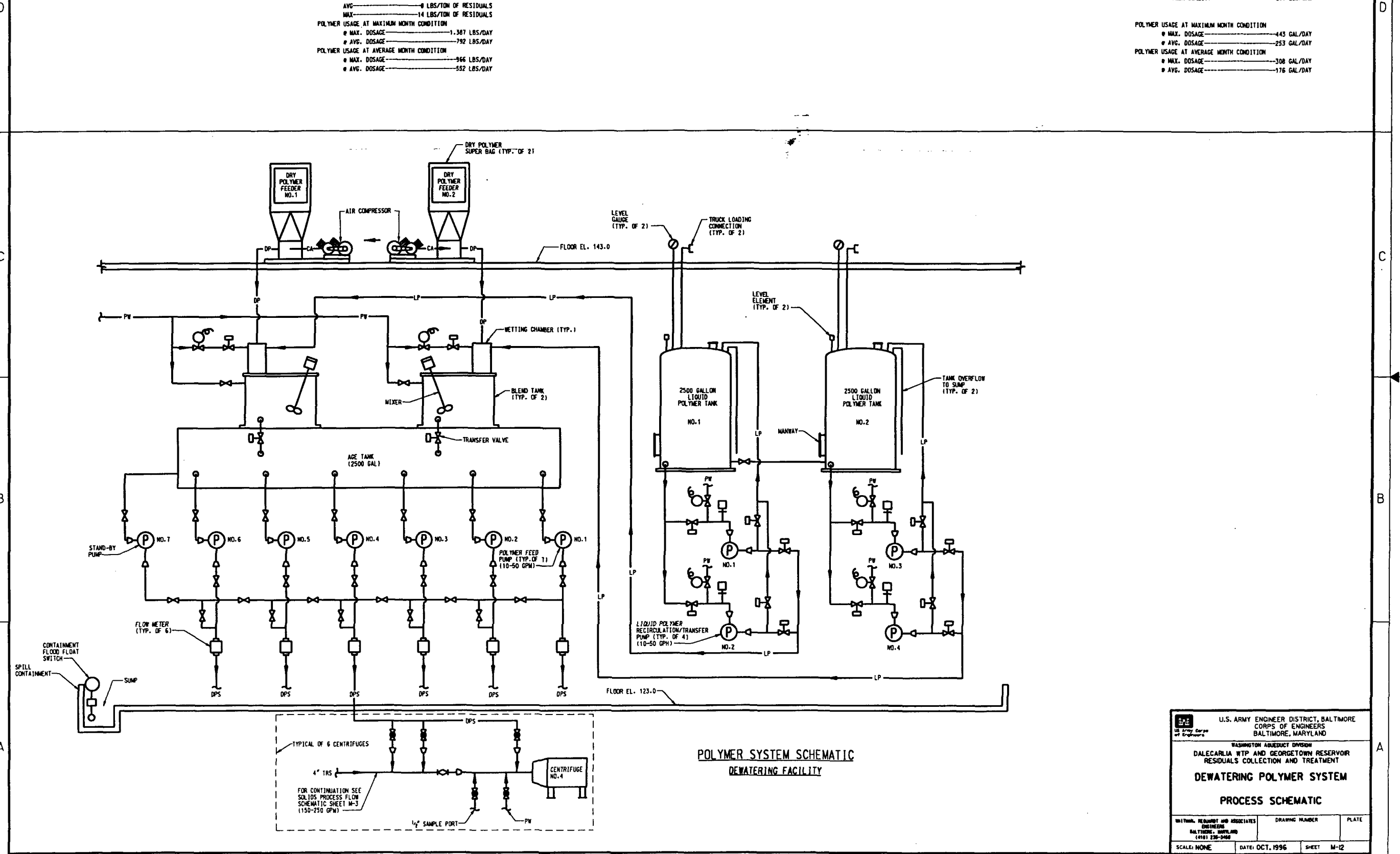
MAXIMUM MONTH CONDITION — 59 TONS/DAY
AVERAGE MONTH CONDITION — 69 TONS/DAY

DRY POLYMER SYSTEM

OPERATION — 14 HRS/DAY
POLYMER ACTIVE WEIGHT — 100%
DOSAGE — 8 LBS/TON OF RESIDUALS
MAX — 14 LBS/TON OF RESIDUALS
POLYMER USAGE AT MAXIMUM MONTH CONDITION
• MAX. DOSAGE — 1,387 LBS/DAY
• AVG. DOSAGE — 792 LBS/DAY
POLYMER USAGE AT AVERAGE MONTH CONDITION
• MAX. DOSAGE — 966 LBS/DAY
• AVG. DOSAGE — 552 LBS/DAY

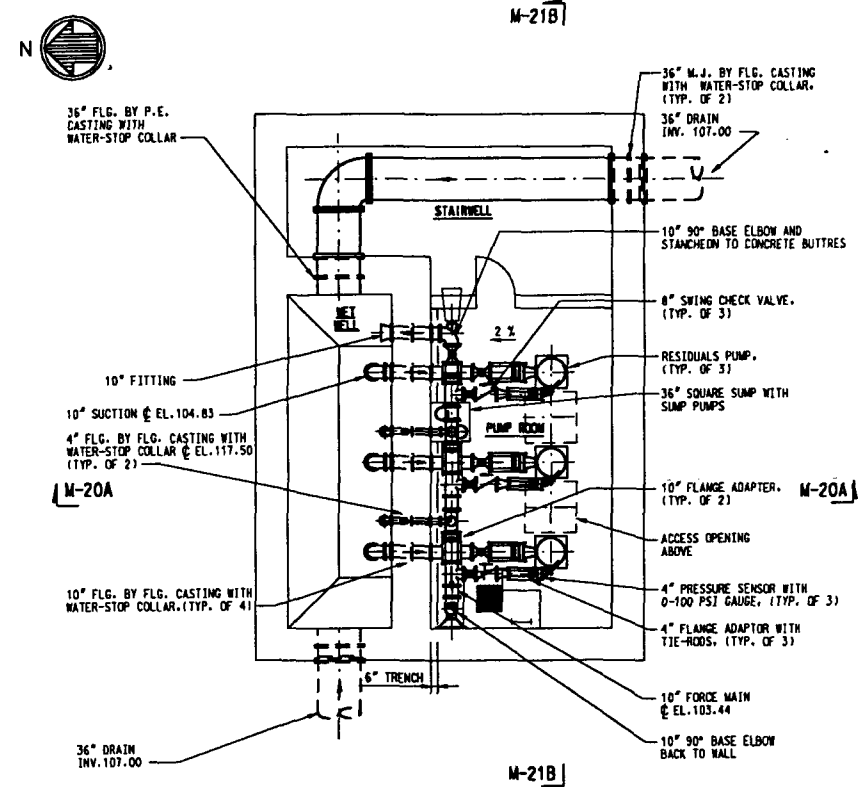
LIQUID POLYMER SYSTEM

OPERATION — 14 HRS/DAY
POLYMER ACTIVE WEIGHT — 36%
POLYMER DENSITY — 8.7 LBS/GAL
POLYMER USAGE AT MAXIMUM MONTH CONDITION
• MAX. DOSAGE — 443 GAL/DAY
• AVG. DOSAGE — 253 GAL/DAY
POLYMER USAGE AT AVERAGE MONTH CONDITION
• MAX. DOSAGE — 308 GAL/DAY
• AVG. DOSAGE — 176 GAL/DAY

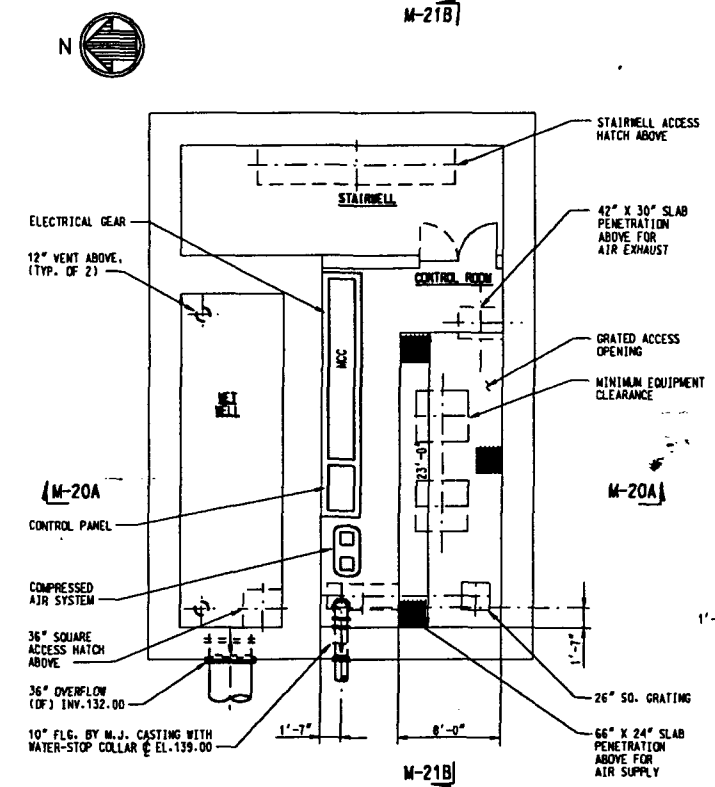


POLYMER SYSTEM SCHEMATIC
DEWATERING FACILITY

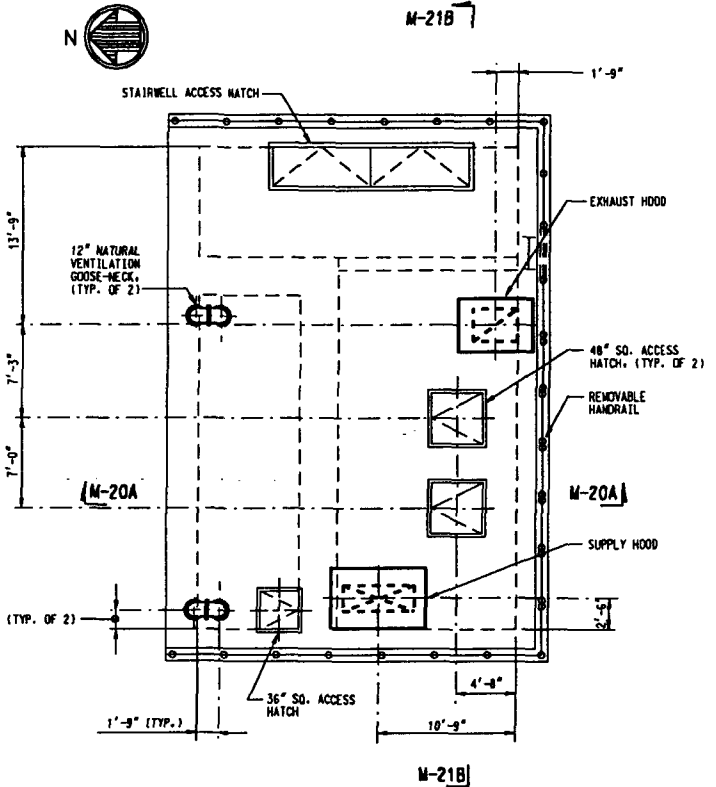
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DEWATERING POLYMER SYSTEM PROCESS SCHEMATIC		
INITIAL, REVISION AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET M-12



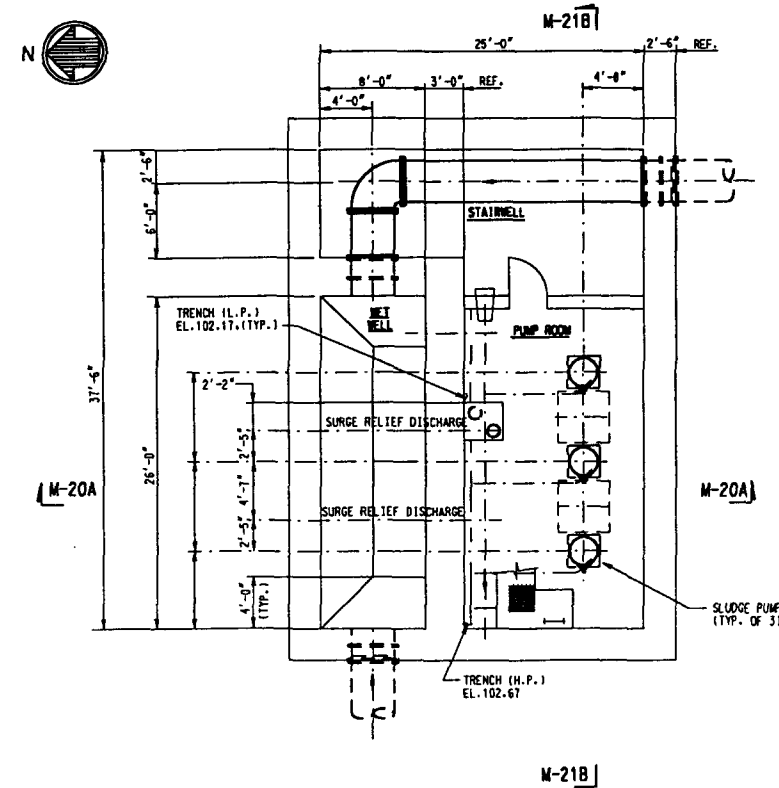
LOWER LEVEL PLAN - ELEV. 118.00



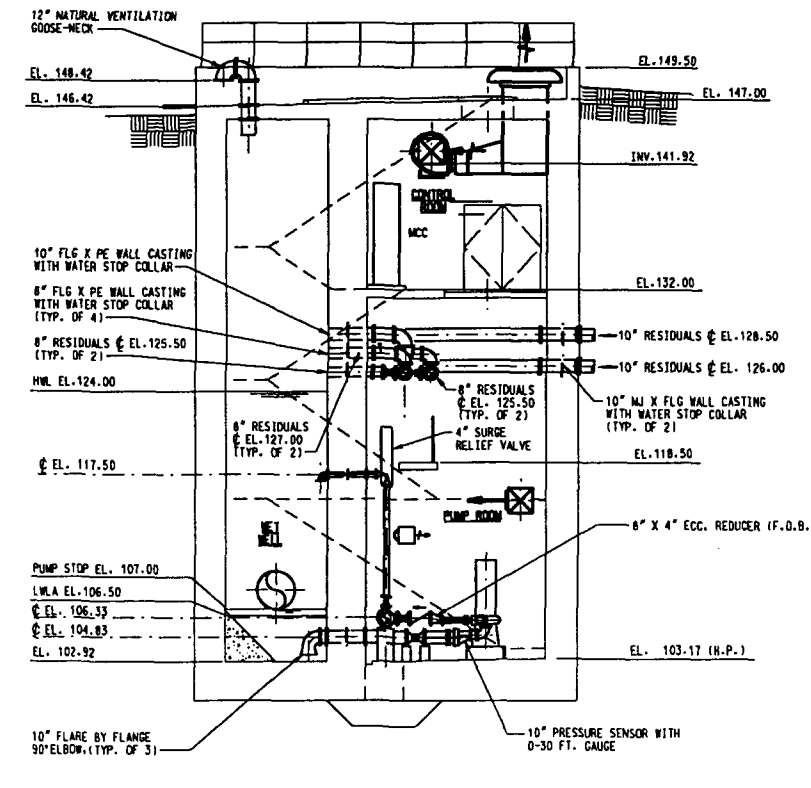
CONTROL LEVEL PLAN - ELEV. 144.00



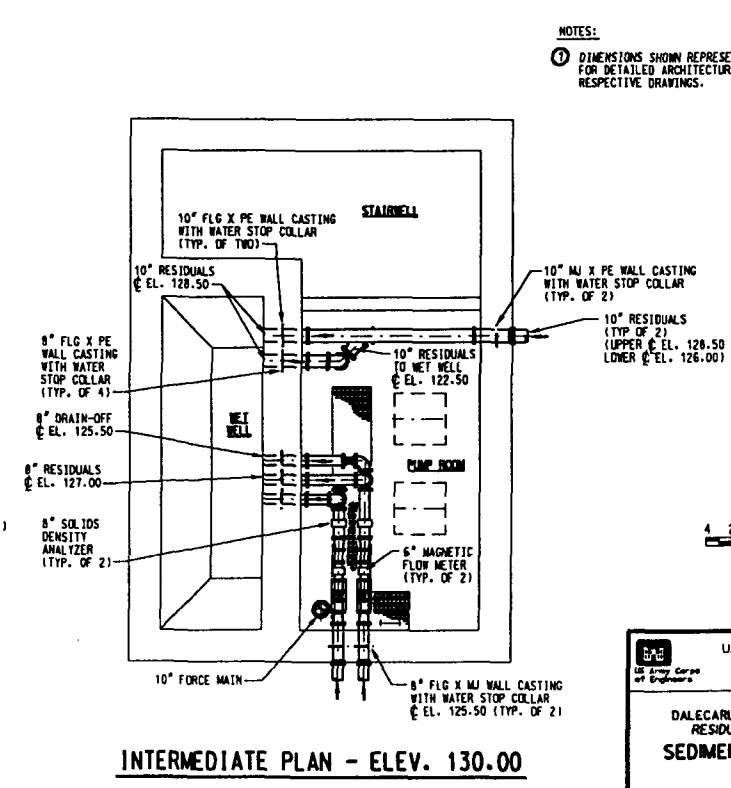
GRADE LEVEL PLAN - ELEV. 147.00



EQUIPMENT PLAN - ELEV. 102.92

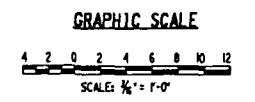


SECTION M-20A/M-20-M-21

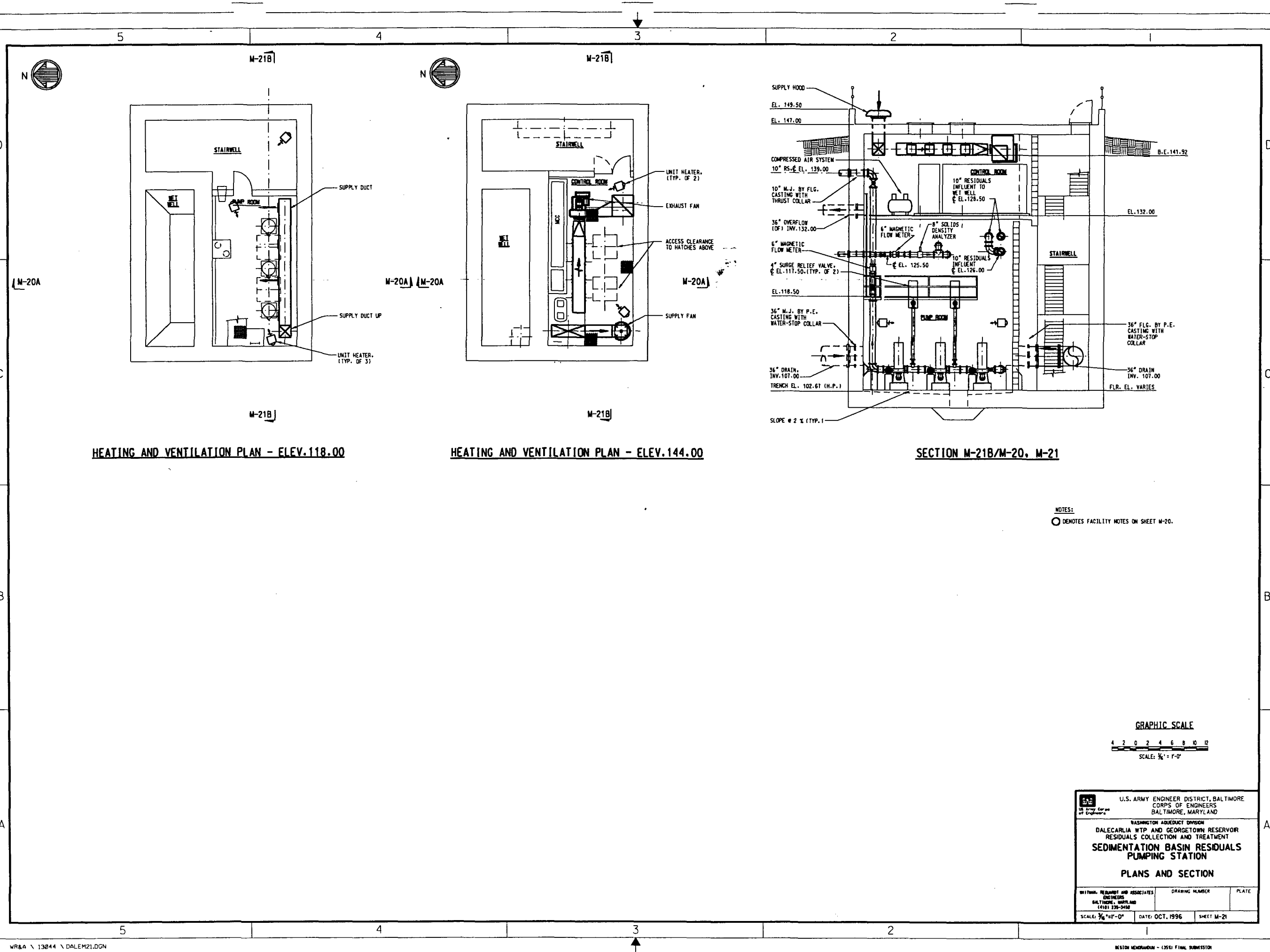


INTERMEDIATE PLAN - ELEV. 130.00

NOTES:
 ① DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS. FOR DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR SEDIMENTATION BASIN RESIDUALS PUMPING STATION		
PLANS AND SECTION		
DESIGNED BY WILLIAM H. REEDER AND ASSOCIATES BALTIMORE, MARYLAND (410) 238-3400	DRAWING NUMBER	PLATE
SCALE: 3/8\"/>		

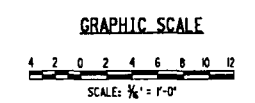


HEATING AND VENTILATION PLAN - ELEV. 118.00

HEATING AND VENTILATION PLAN - ELEV. 144.00

SECTION M-21B/M-20, M-21

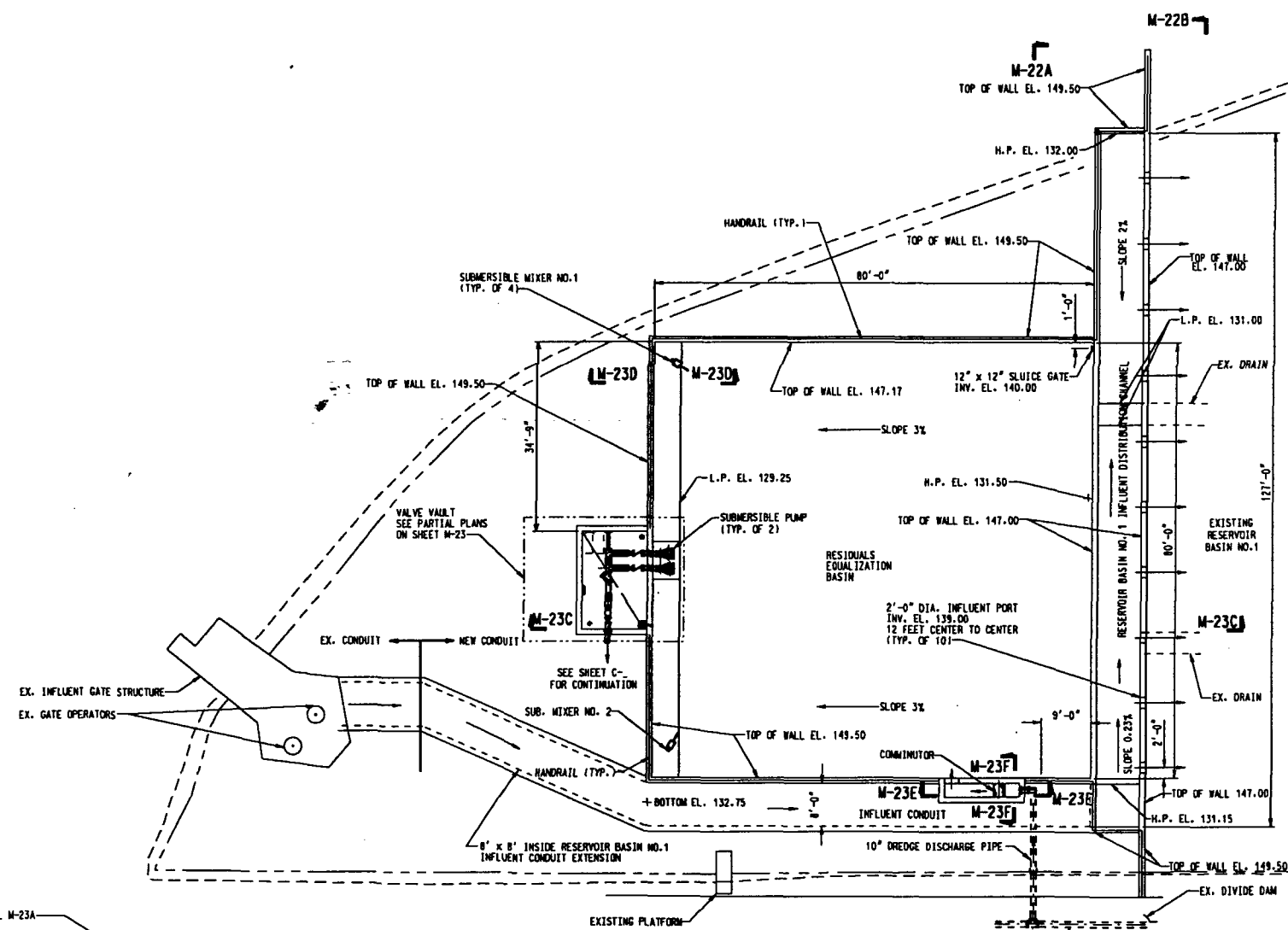
NOTES:
○ DENOTES FACILITY NOTES ON SHEET M-20.



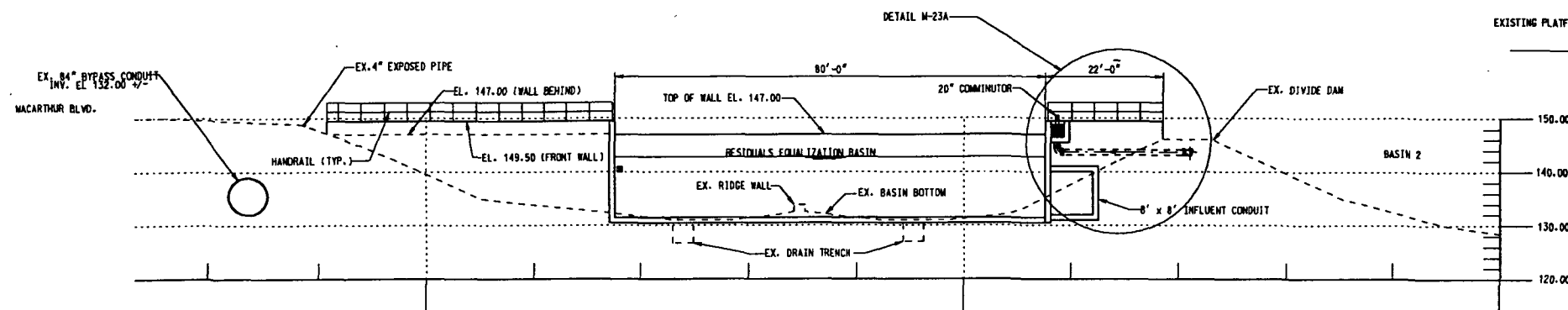
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT SEDIMENTATION BASIN RESIDUALS PUMPING STATION		
PLANS AND SECTION		
DESIGNED BY: REINHOLDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3400	DRAWING NUMBER	PLATE
SCALE: 1/8" = 1'-0"	DATE: OCT. 1996	SHEET M-21



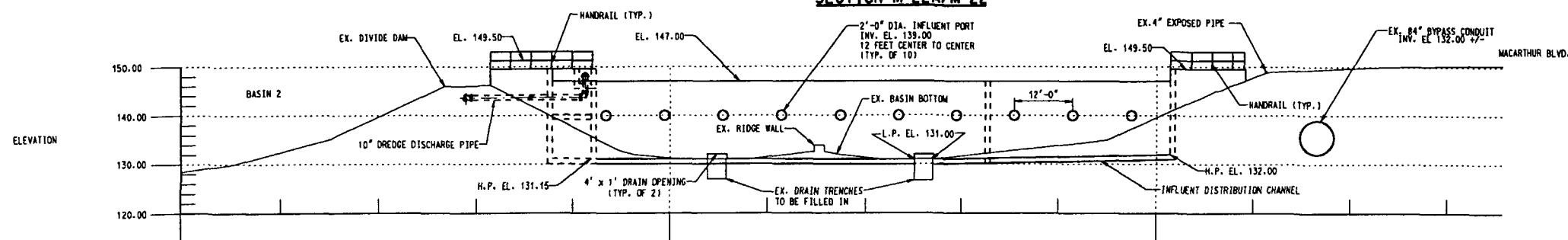
NOTE
1. DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS.
FOR DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS SEE
RESPECTIVE DRAWINGS.
2. REFER TO SHEET C-8 FOR SITE PLAN



PLAN ELEV. 129.10
SCALE 1/8" = 1'-0"

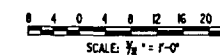


SECTION M-22A/M-22

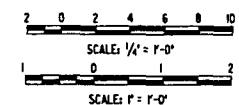
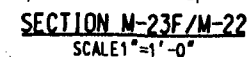
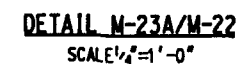
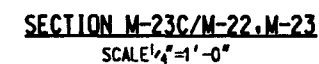
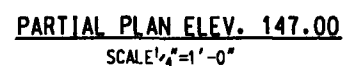
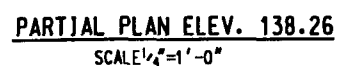
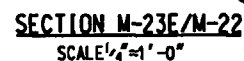
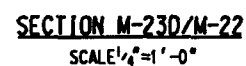


SECTION M-22B/M-22

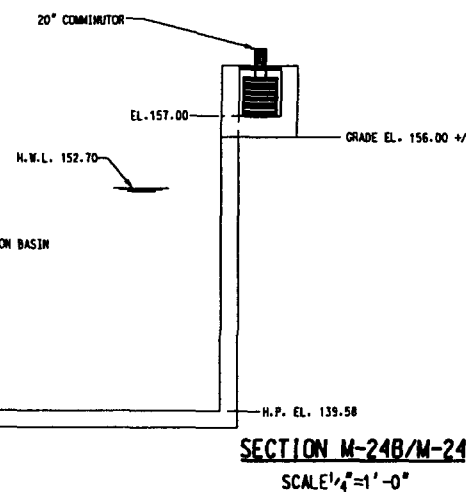
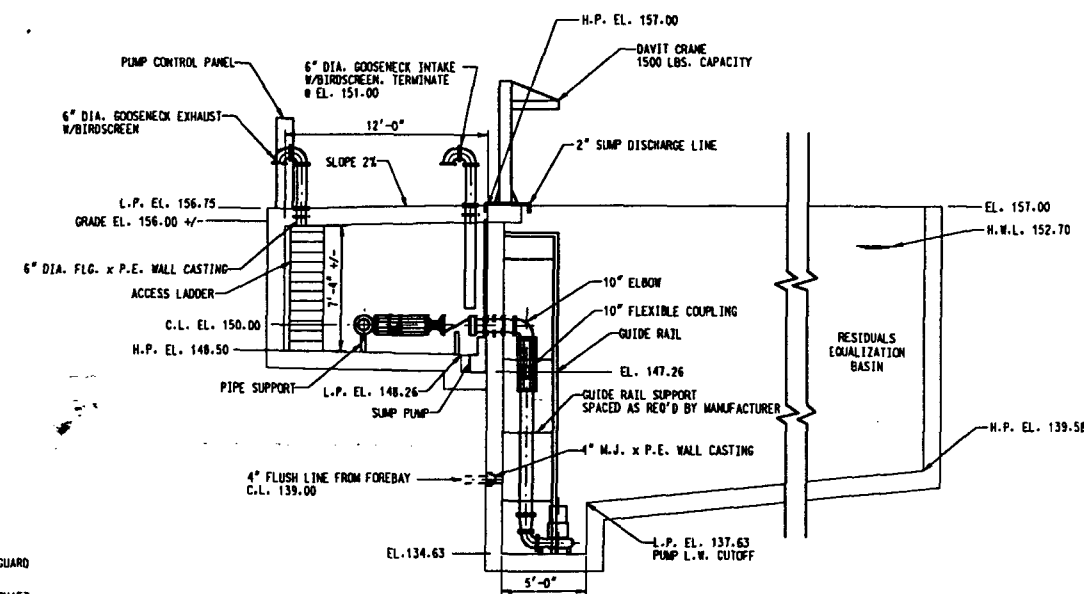
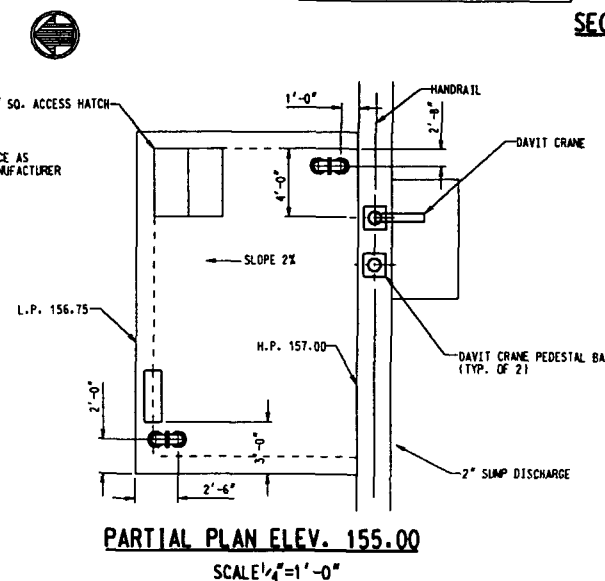
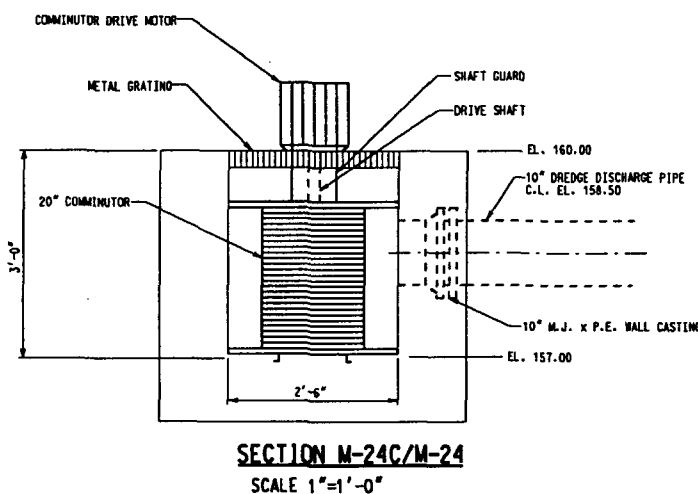
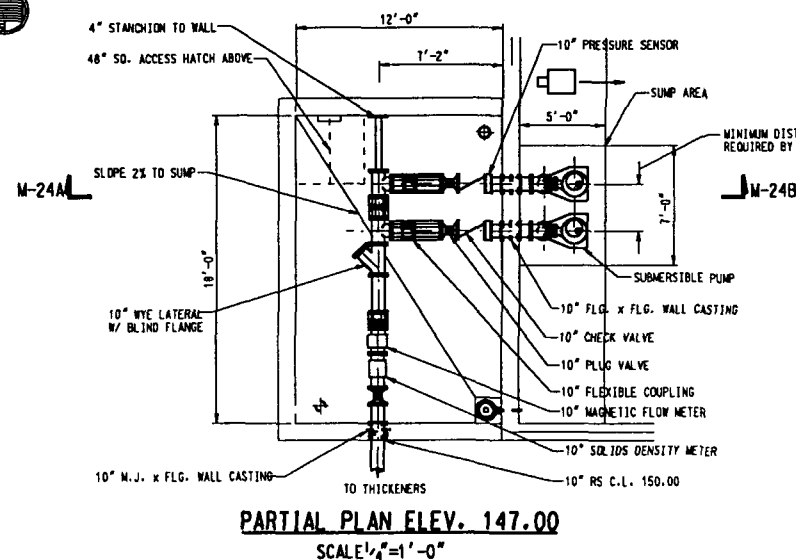
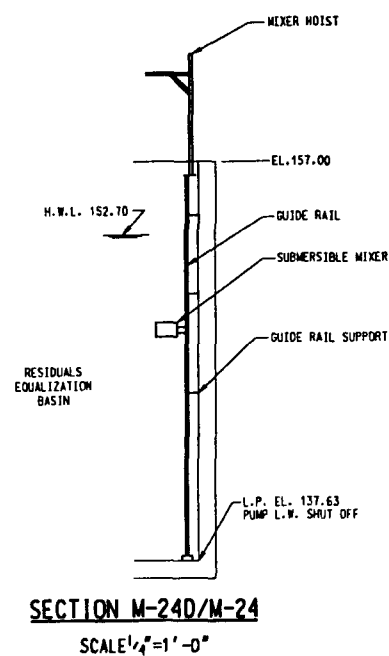
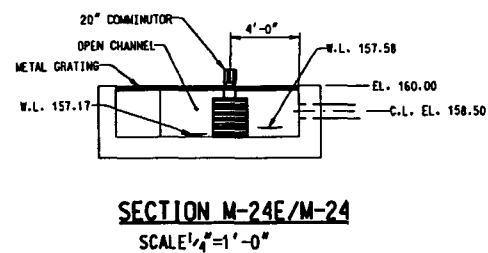
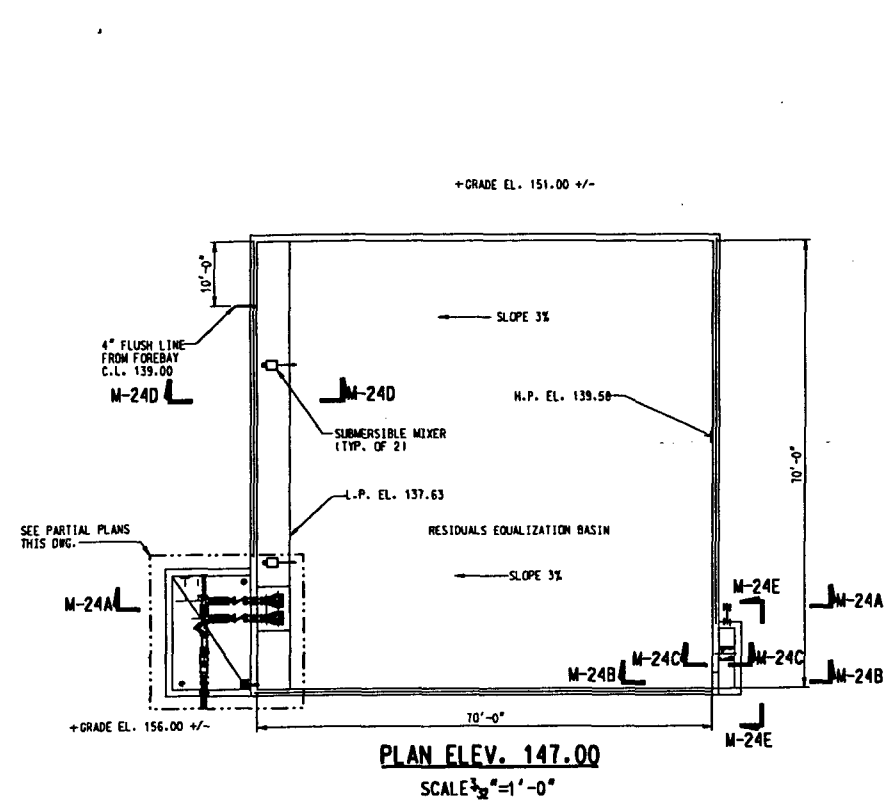
GRAPHIC SCALE



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT GEORGETOWN RESERVOIR EQUALIZATION BASIN PUMPING STATION		
PLANS AND SECTIONS		
WITH: REED AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 230-3466	DRAWING NUMBER	PLATE
SCALE: 1/8" = 1'-0"	DATE: OCT. 1996	SHEET M-22

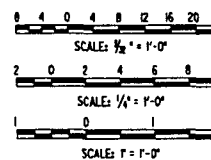


DESIGN MEMORANDUM - (35%) FINAL SUBMISSION

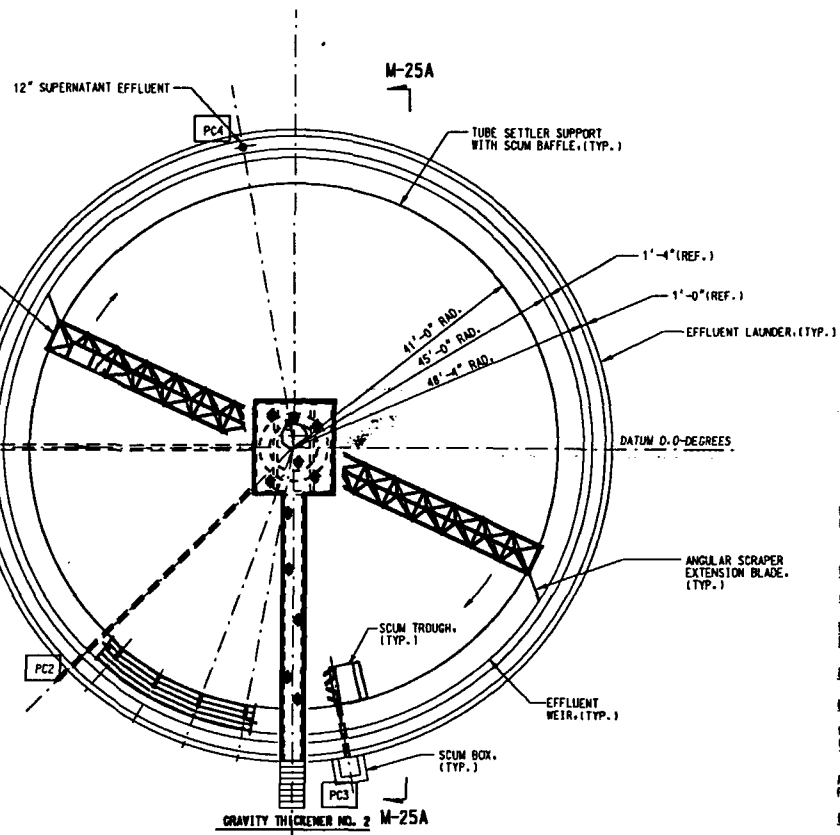
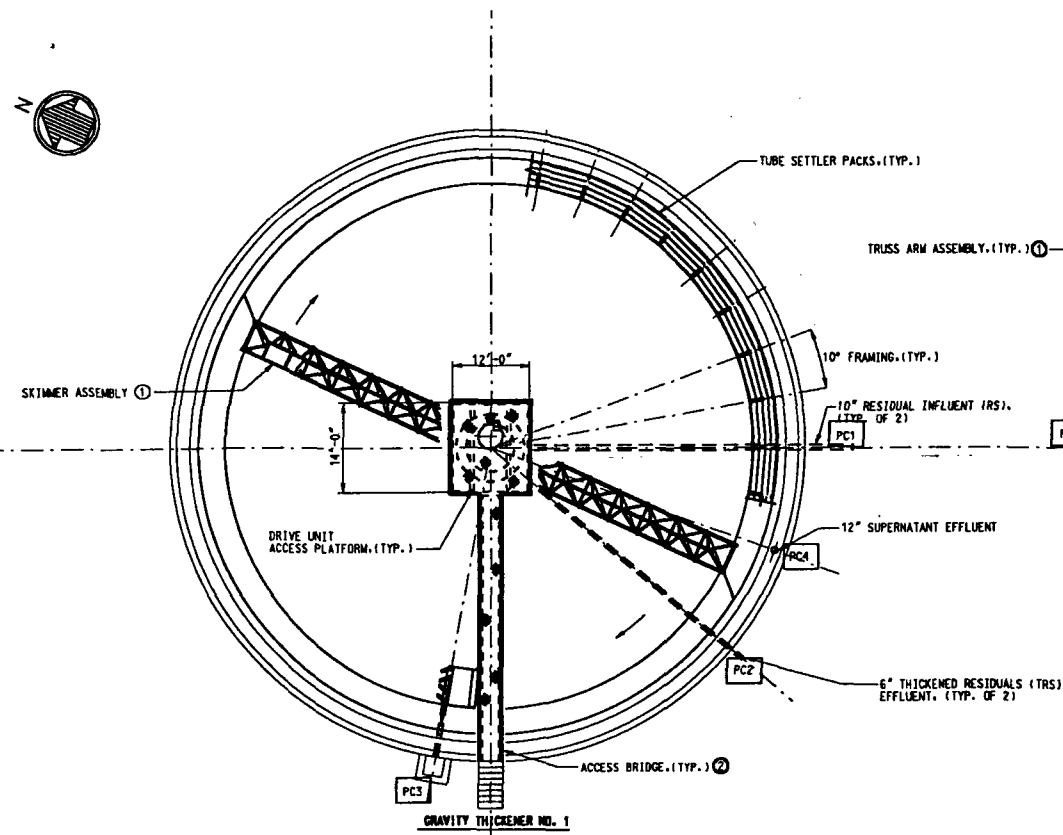
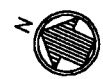


NOTES:
DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS.
FOR DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS.

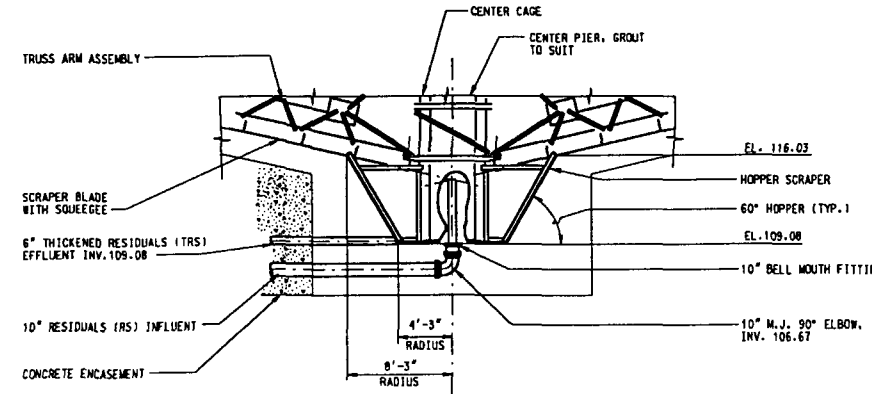
GRAPHIC SCALES



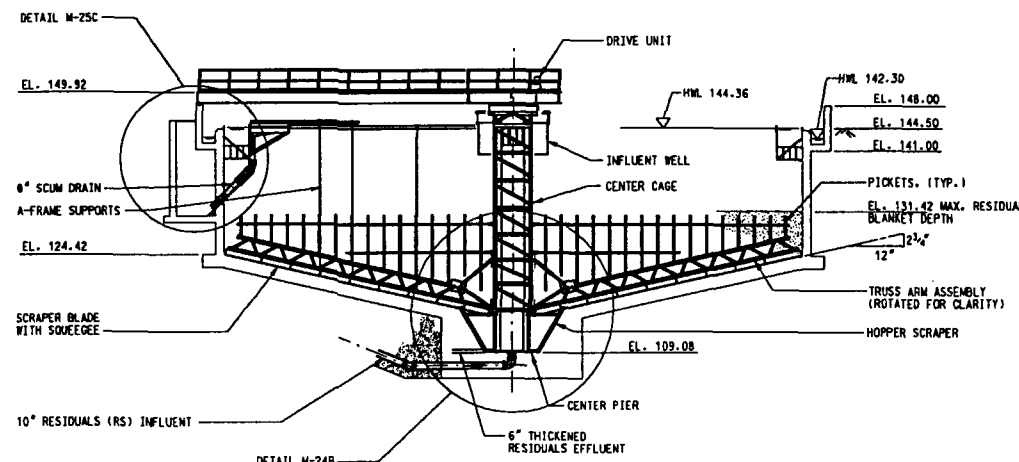
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT DALECARLIA FOREBAY EQUALIZATION BASIN PUMPING STATION PLANS AND SECTIONS		
WITHIN: REVISIONS AND ASSOCIATES CHANGING BALTIMORE, MARYLAND 14101 238-5450	DRAWING NUMBER	PLATE
SCALE: AS SHOWN	DATE: OCT. 1996	SHEET M-24



GRADE LEVEL PLAN - ELEV. 144.50
SCALE: 1/8" = 1' - 0"



DETAIL M - 25B / M - 25
SCALE: 1/8" = 1' - 0"

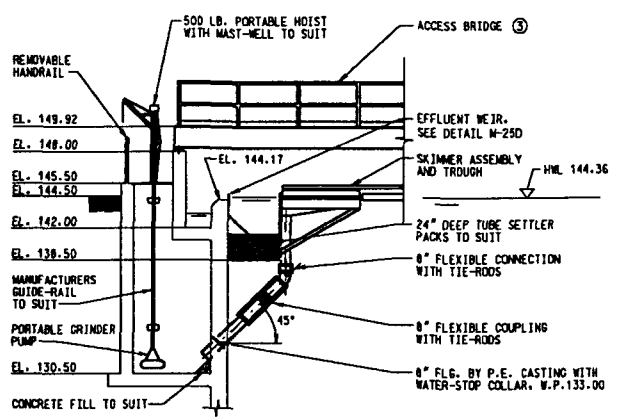


SECTION M - 25A / M - 25
SCALE: 1/8" = 1' - 0"

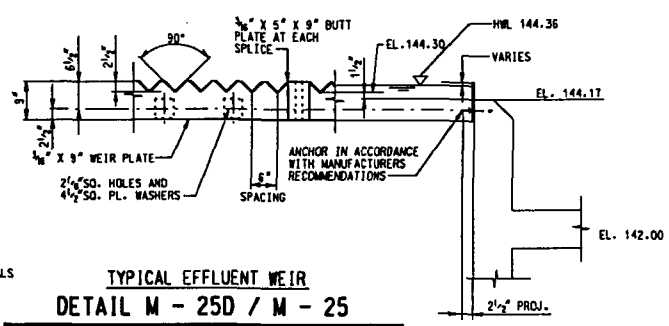
- NOTES:
- 1. ALL GRAVITY THICKENERS SHALL ROTATE CLOCKWISE.
 - 2. FOR GRAVITY THICKENERS NO. 3 AND NO. 4 MIRROR ACCESS BRIDGE.
 - 3. ACCESS BRIDGE STEPS NOT SHOWN FOR CLARITY.
 - 4. DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS. FOR DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.

PROCESS ANGULAR ALIGNMENT SCHEDULE

GRAVITY THICKENER	PROCESS CONNECTIONS (DEGREES)	PC1	PC2	PC3	PC4
NO. 1	0	315	260	340	
NO. 2	180	225	280	100	
NO. 3	90	90	100	40	
NO. 4	135	135	80	165	

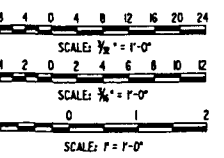


DETAIL M - 25C / M - 25
SCALE: 1/8" = 1' - 0"



TYPICAL EFFLUENT WEIR
DETAIL M - 25D / M - 25
SCALE: 1/8" = 1' - 0"

GRAPHIC SCALES



U.S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

WASHINGTON AQUEDUCT DIVISION
DALECARLIA WTP AND GEORGETOWN RESERVOIR
RESIDUALS COLLECTION AND TREATMENT

GRAVITY THICKENER

PLANS, SECTION AND DETAILS

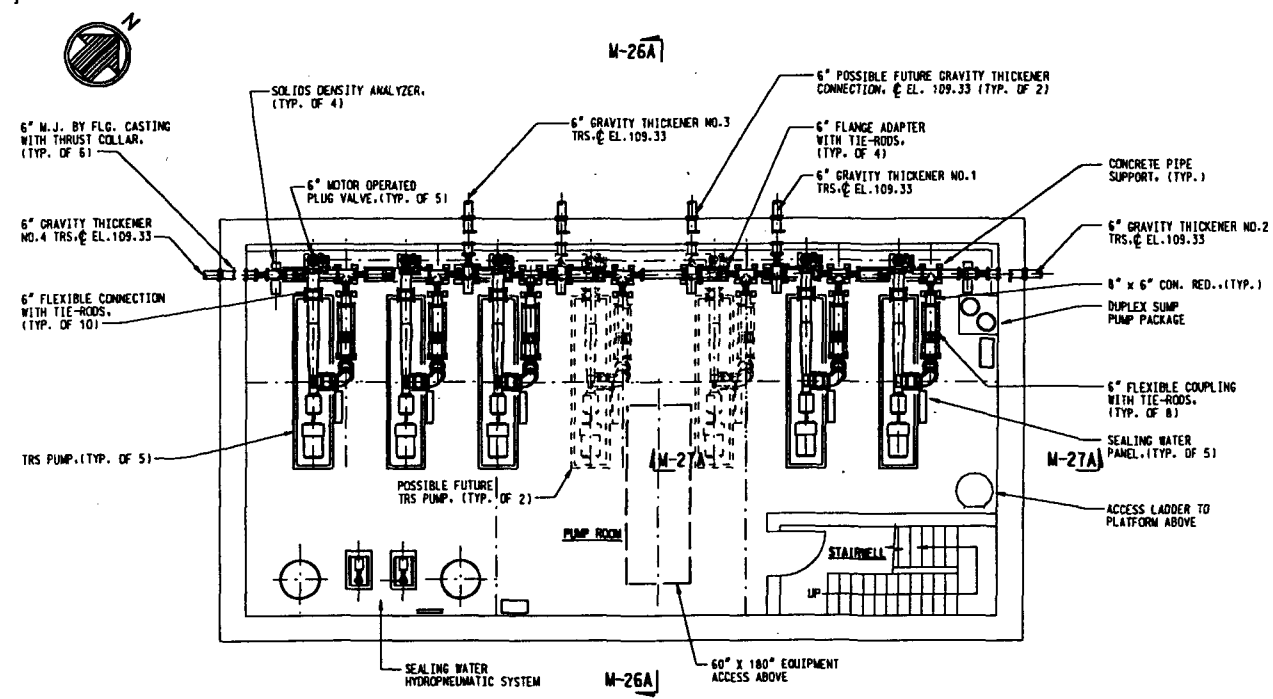
WITHMAN, REEDHOUT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND
(410) 238-3434

DRAWING NUMBER

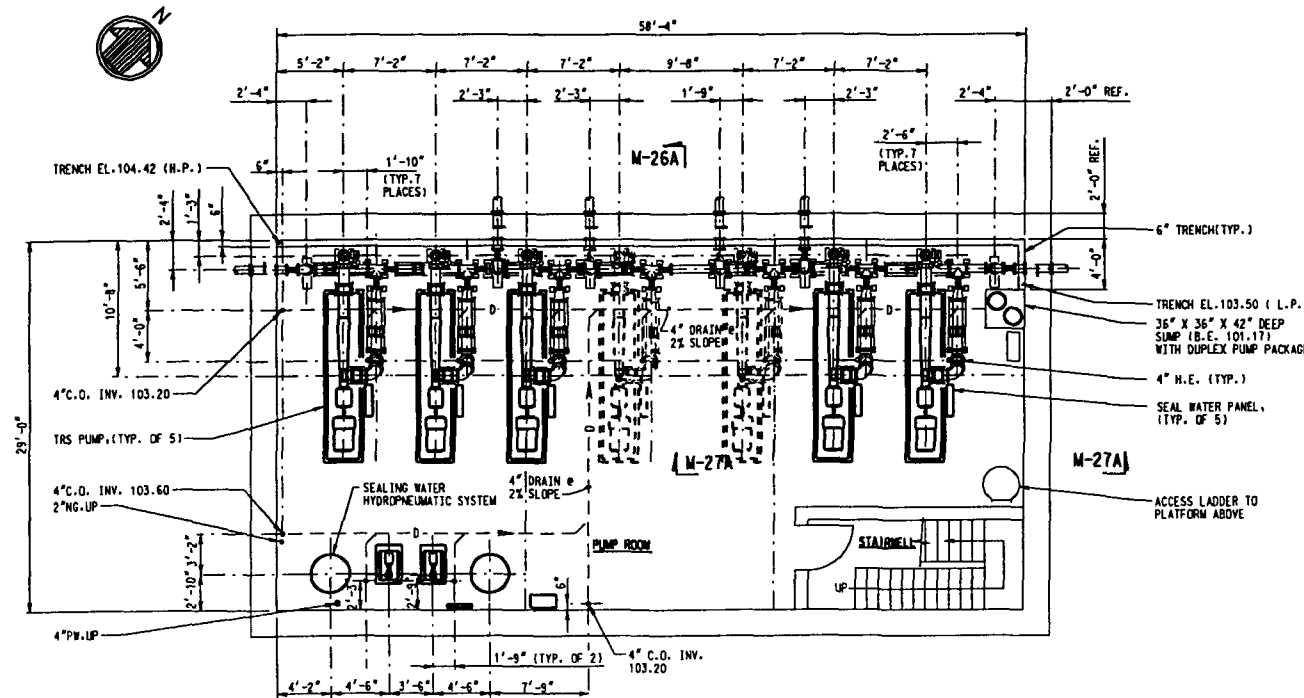
SCALE: AS SHOWN

DATE: OCT. 1996

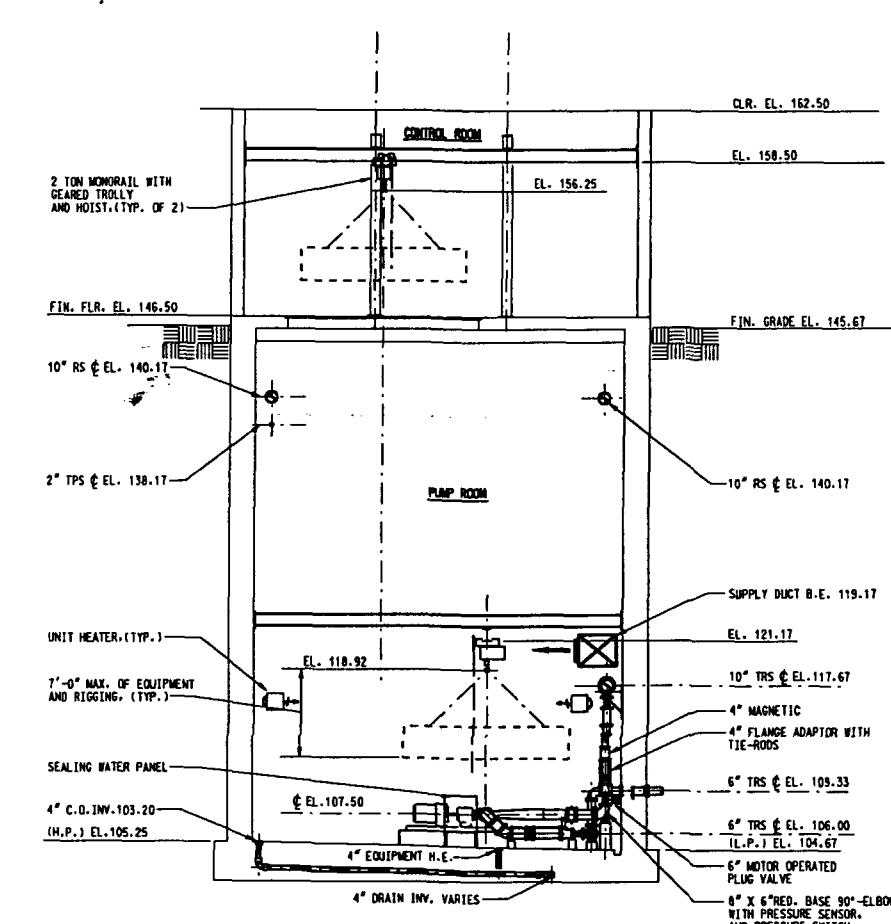
SHEET M-25



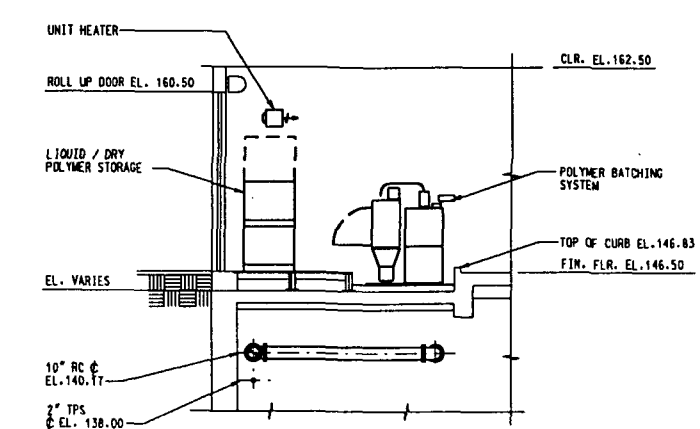
LOWER LEVEL PLAN - ELEV. 120.00



EQUIPMENT PLAN - ELEV. 105.75

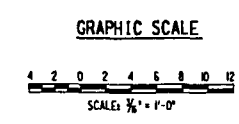


SECTION M-26A/M-26, M-27, M-28

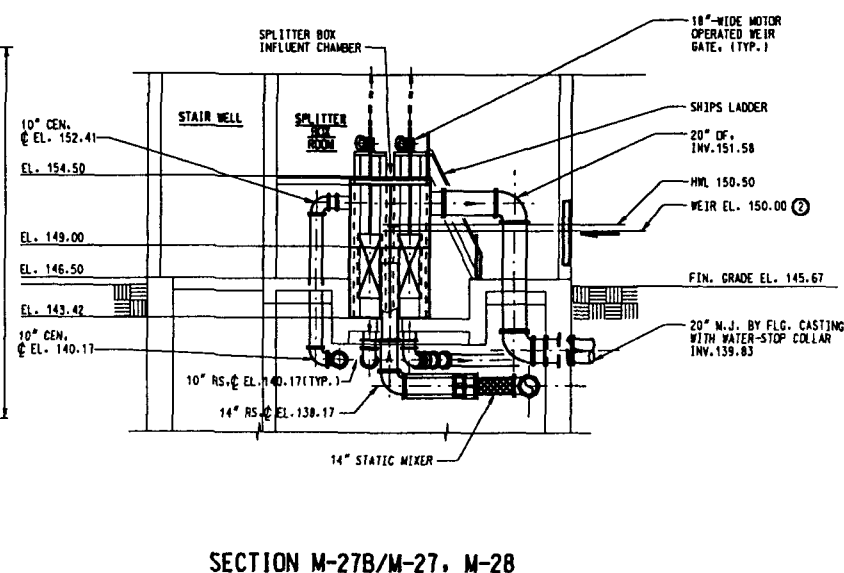
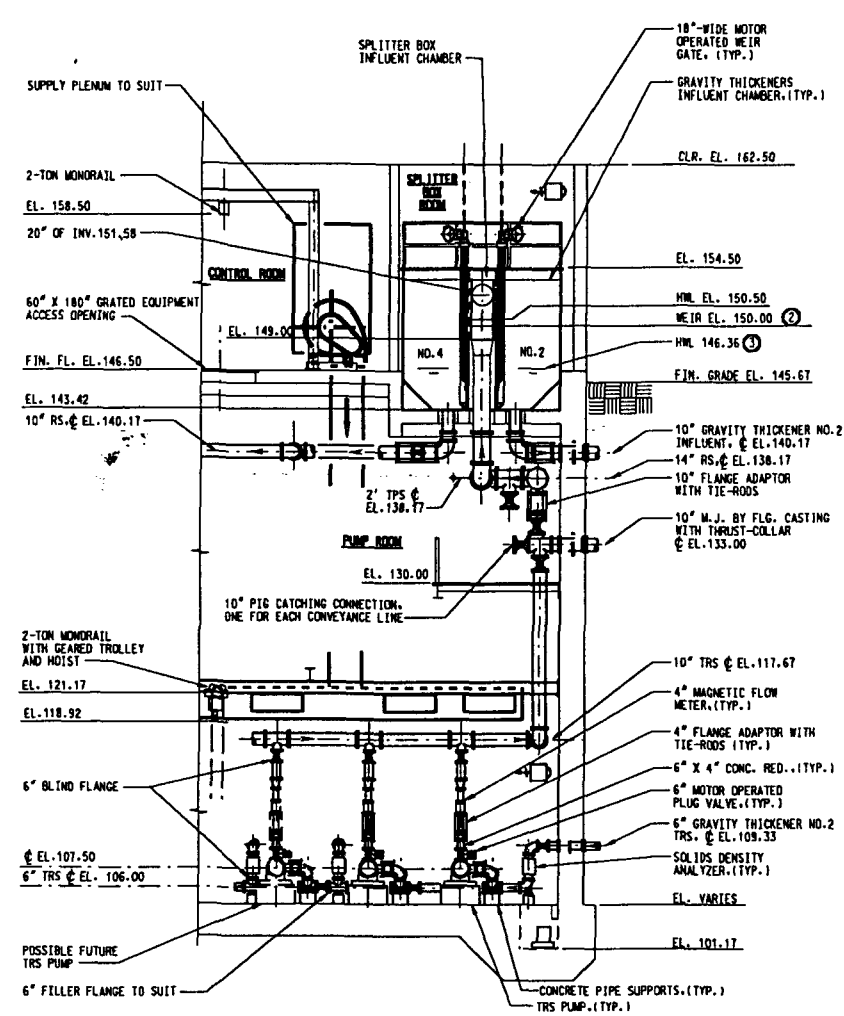
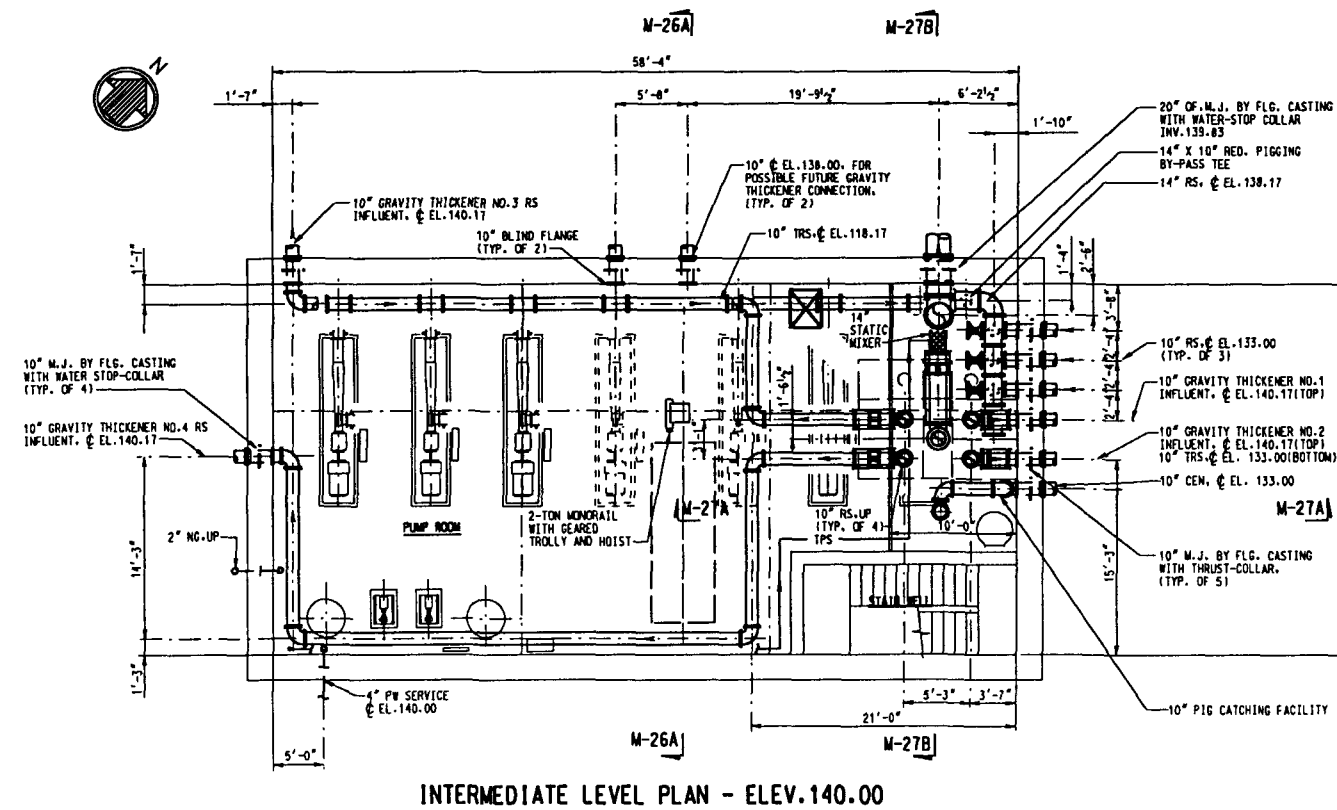
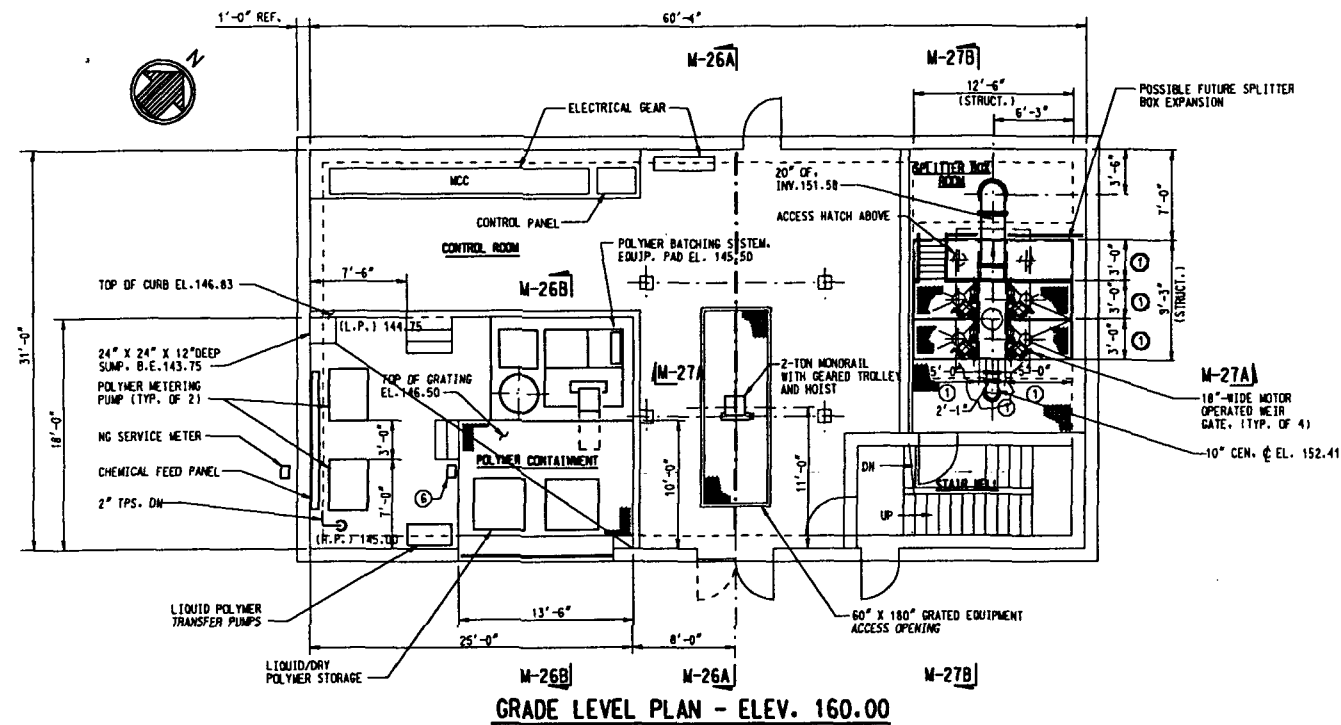


SECTION M-26B/M-27, M-28

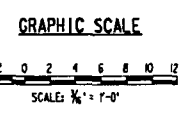
- NOTES:
1. SPLITTER BOX INSIDE CHAMBER DIMENSIONS SHOWN ONLY. TANK CONSTRUCTION SHALL BE STEEL WITH VARYING WALL THICKNESS.
 2. WEIR ADJUSTABILITY SHALL RANGE FROM 4" - 6" INCHES OF NORMAL WEIR ELEV. SHOWN.
 3. WHEN POSSIBLE FUTURE GRAVITY THICKENERS ARE INSTALLED, INFLUENT CHAMBERS NO. 5 AND NO. 6 SHALL HAVE A HRL OF 146.86.
 4. ALL LOWER DIMENSIONS SHOWN ARE BASED ON 50-PERCENT FREE AREA.
 5. DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS. FOR DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.
 6. LIQUID POLYMER SITE-GLASS WITH LEVEL MONITORING AND ALARMS DEVICES.



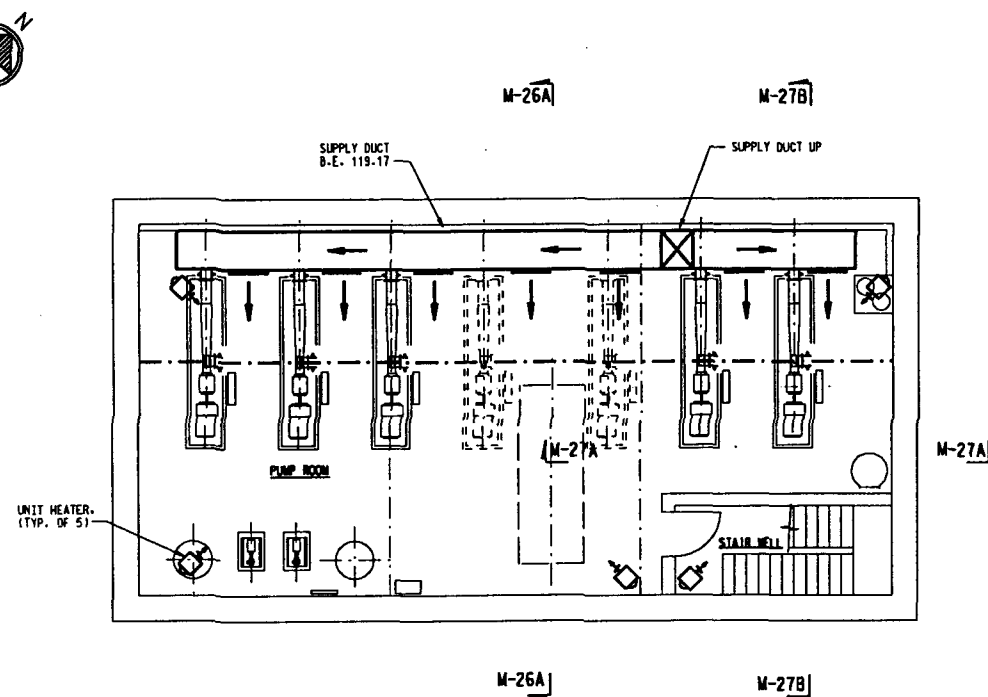
U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT THICKENED RESIDUALS PUMPING STATION		
PLANS AND SECTIONS		
DESIGNED BY WR&A	DRAWING NUMBER	PLATE
CHECKED BY DALECARLIA	DATE: OCT. 1996	SHEET M-26



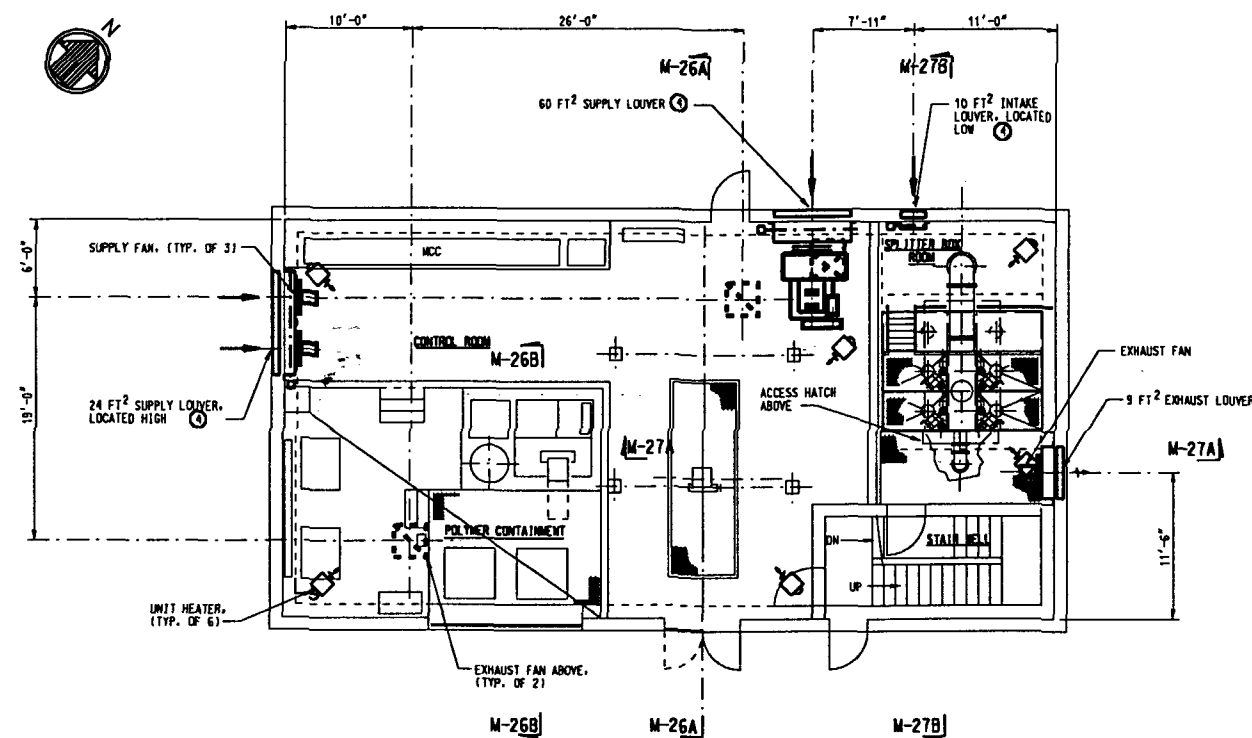
NOTES:
 ○ DENOTES FACILITY NOTES SHOWN ON SHEET M-25.



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT THICKENED RESIDUALS PUMPING STATION		
PLANS AND SECTIONS		
WITH: REQUIRMENT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 530-3400	DRAWING NUMBER	PLATE
SCALE: 1/4" = 1'-0"	DATE: OCT. 1996	SHEET M-27



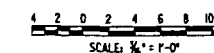
HEATING AND VENTILATION PLAN - ELEV. 120.00



HEATING AND VENTILATION PLAN - ELEV. 160.00

NOTES:
○ DENOTES FACILITY NOTES SHOWN ON SHEET M-25.

GRAPHIC SCALE



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT THICKENED RESIDUALS PUMPING STATION PLANS		
WITHIN: RESIDUALS AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 4101 230-5400	DRAWING NUMBER	PLATE
SCALE: 1/8" = 1'-0"	DATE: OCT. 1996	SHEET M-28



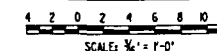
NOTES:
① DIMENSIONS SHOWN REPRESENT REQUIRED MINIMUM MECHANICAL REQUIREMENTS.
FOR STAIRWELL/ELEVATOR LOCATIONS, AND DETAILED ARCHITECTURAL AND
STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.

M-33A

M-33A

LOWER LEVEL PLAN

GRAPHIC SCALE



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
LOWER LEVEL PLAN		
DESIGNED BY WILLIAM H. REARDEN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3400	DRAWING NUMBER	PLATE
SCALE: 1/4" = 1'-0"	DATE: OCT. 1996	SHEET M-29

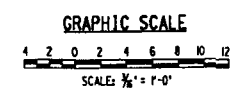


M-33A

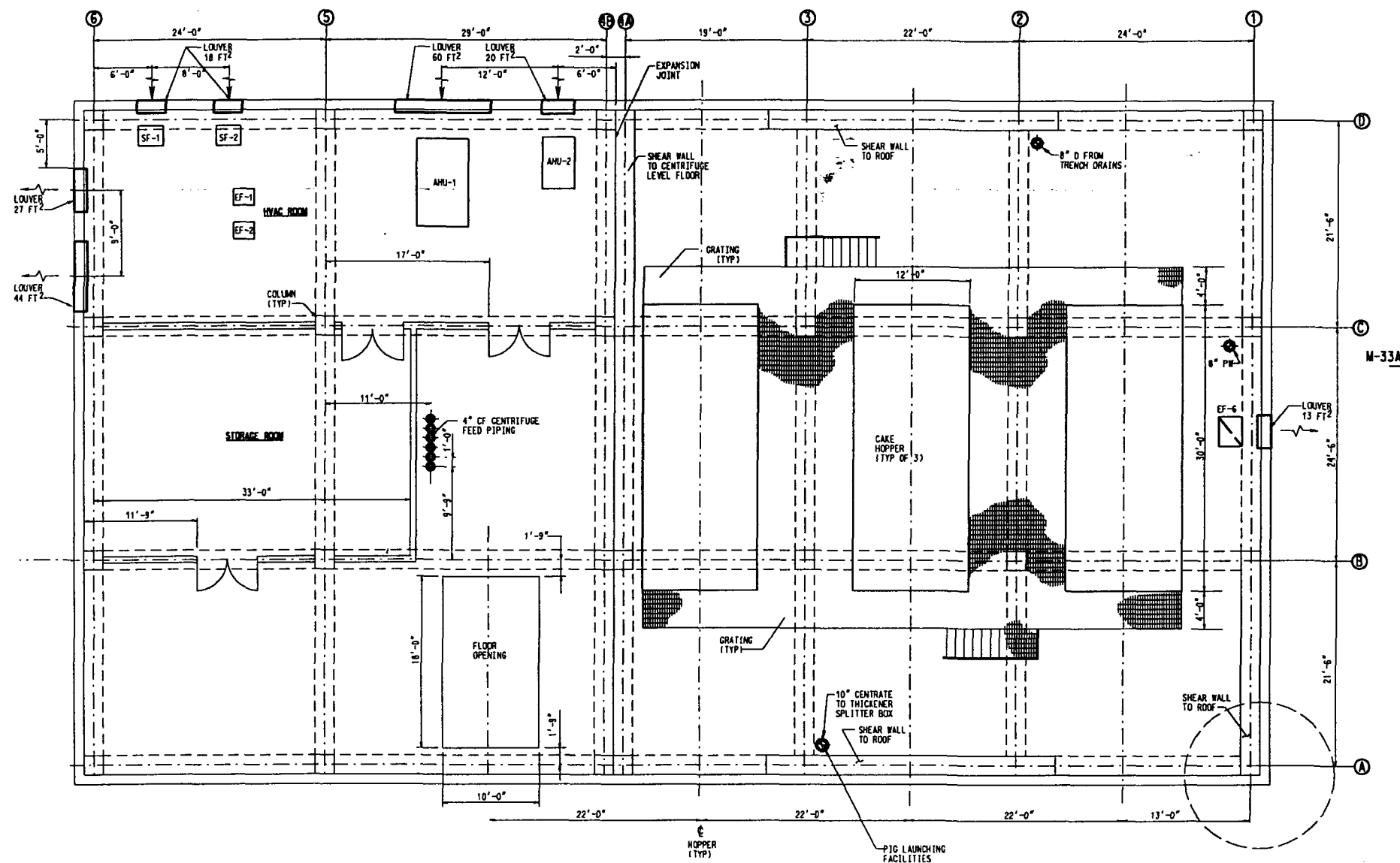
M-33A

FIRST FLOOR PLAN

NOTES:
① DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS.
FOR STAIRWELL/ELEVATOR LOCATIONS AND DETAILED ARCHITECTURAL AND
STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.

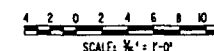


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
FIRST FLOOR PLAN		
WITHMAN, REARDY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 236-3460	DRAWING NUMBER	PLATE
SCALE: 1/8" = 1'-0"	DATE: OCT. 1996	SHEET M-30



SECOND FLOOR PLAN

GRAPHIC SCALE

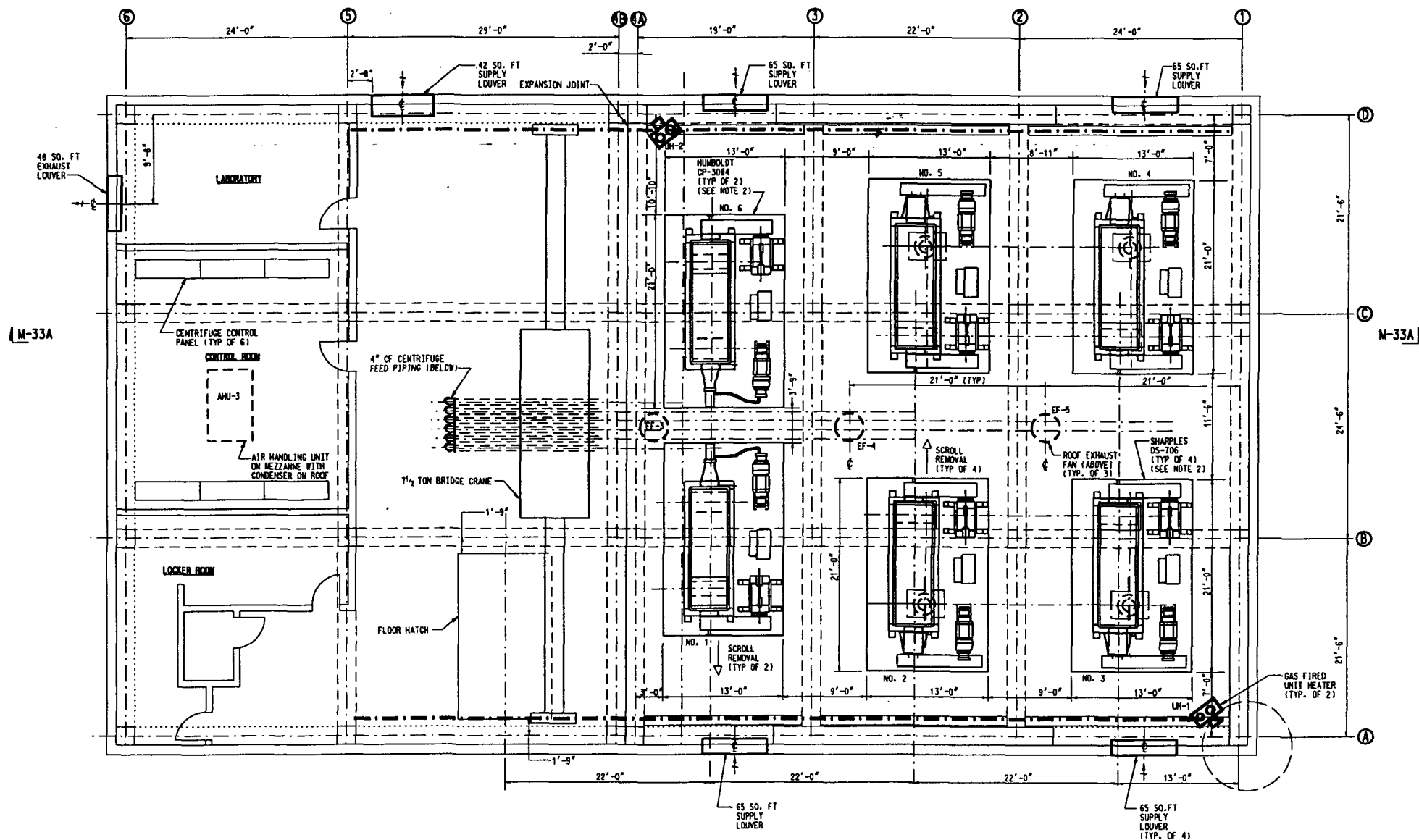


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
SECOND FLOOR PLAN		
BY: THOMAS, REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 235-3456	DRAWING NUMBER	PLATE
SCALE: 1/4\"/>		



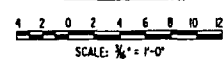
NOTES:

- ① DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS. FOR STAIRWELL/ELEVATOR LOCATIONS AND DETAILED ARCHITECTURAL AND STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.
- ② SHOWN ARE THE TWO ACCEPTABLE CENTRIFUGE MANUFACTURERS. THE DIFFERENCE IN LAYOUTS IS TO ACCOMMODATE SCROLL REMOVAL AS REQUIRED FOR EACH MANUFACTURER.



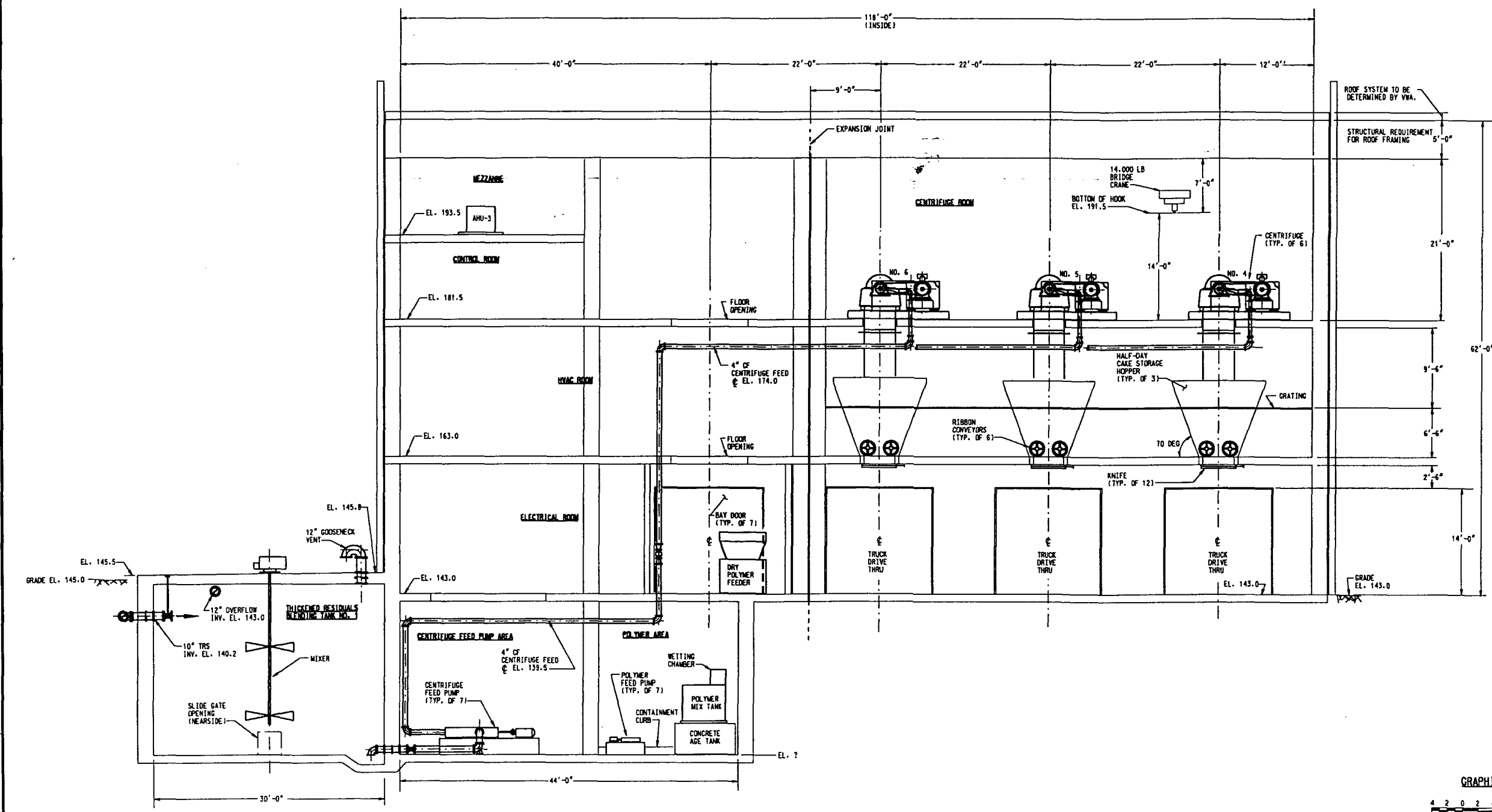
THIRD FLOOR PLAN

GRAPHIC SCALE

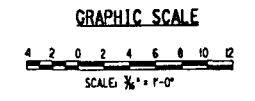


U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
THIRD FLOOR PLAN		
DESIGNED BY BRITTON, REEDS AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 330-3450	DRAWING NUMBER	PLATE
SCALE: 1/8\"/>		

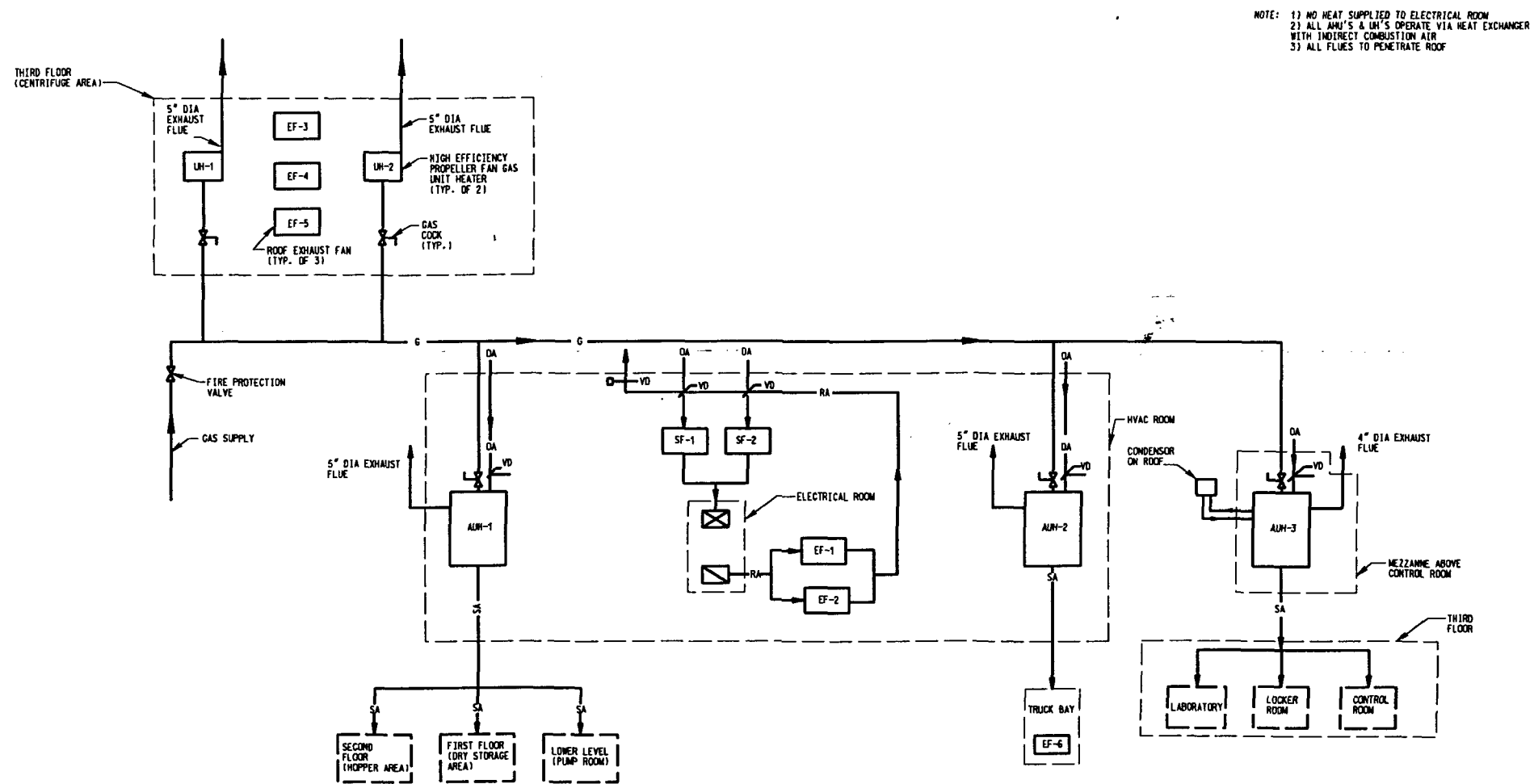
NOTES:
 ① DIMENSIONS SHOWN REPRESENT MINIMUM MECHANICAL REQUIREMENTS.
 FOR STAIRWELL/ELEVATOR LOCATIONS AND DETAILED ARCHITECTURAL AND
 STRUCTURAL REQUIREMENTS SEE RESPECTIVE DRAWINGS.



SECTION M-33A



U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
SECTION		
WITHIN, REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 336-3400	DRAWING NUMBER	PLATE
SCALE: 3/8" = 1'-0"	DATE: OCT. 1996	SHEET M-33

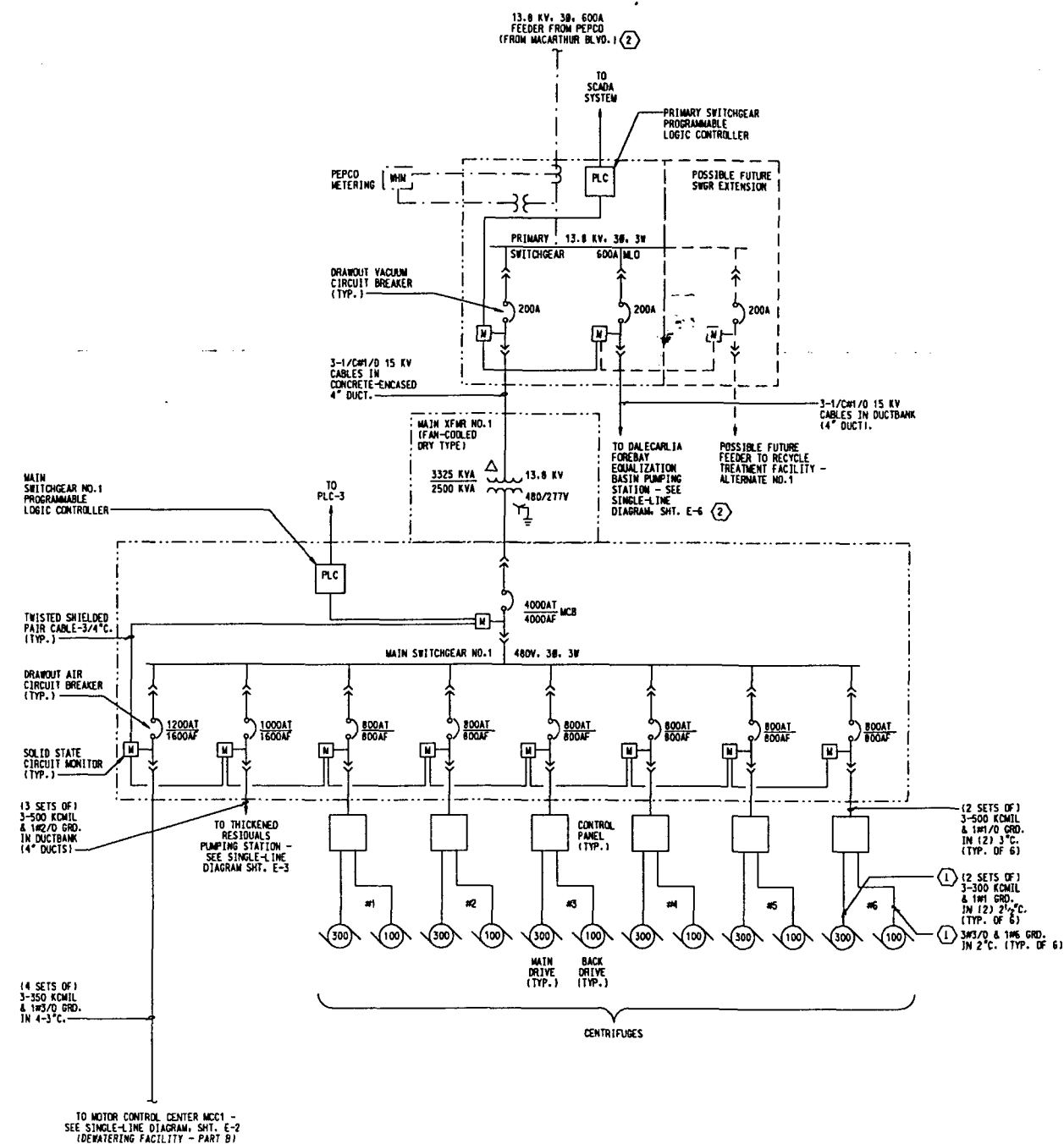


HVAC SCHEMATIC

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY		
HVAC SCHEMATIC		
WR&A 13044 DALEM34.DGN	WITHIN: REQUANT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 236-3440	DRAWING NUMBER PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET M-34

DRAWING NOTES:

- ① ACTUAL CONDUCTOR SIZES SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE CENTRIFUGE SYSTEM.
- ② REFERENCE C-5 AND C-6 FOR DUCTBANK ROUTING.



SINGLE-LINE DIAGRAM:
DEWATERING FACILITY - PART A

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY SINGLE LINE DIAGRAM - PART A		
WITHMAN, REBERTY AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 336-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET E-1

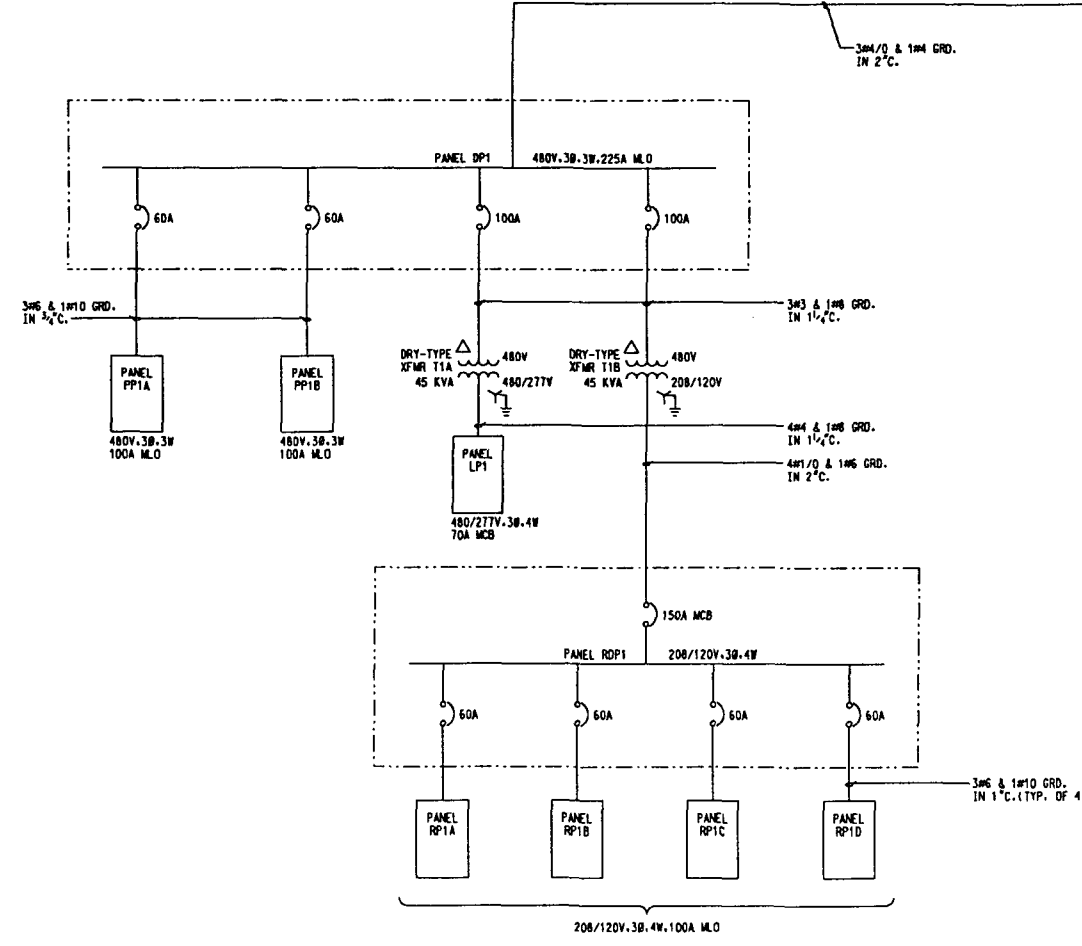
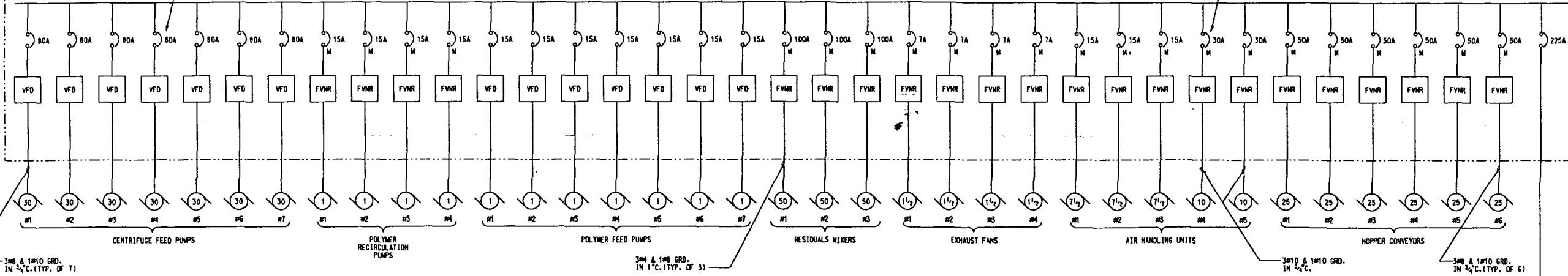
MOLDED CASE
CIRCUIT BREAKER
(TYP. FOR USE WITHOUT
INTEGRAL STARTER AND
WITH VFDs)

(4 SETS OF)
3-350 KCMIL
& 1W3/0 GRD.
IN 141 3" C.

FROM MAIN SWITCHGEAR NO. 1 -
SEE SINGLE-LINE DIAGRAM, SH. E-1
(DEWATERING FACILITY - PART A)

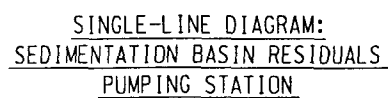
MOTOR CIRCUIT PROTECTOR
(TYP. FOR USE WITH INTEGRAL
STARTERS)

MOTOR CONTROL CENTER MCC1 480V, 3Ø, 3W, 1200A MLO




SINGLE-LINE DIAGRAM:
DEWATERING FACILITY - PART B

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DEWATERING FACILITY SINGLE LINE DIAGRAM - PART B		
WITTING, REED & ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 238-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET E-2

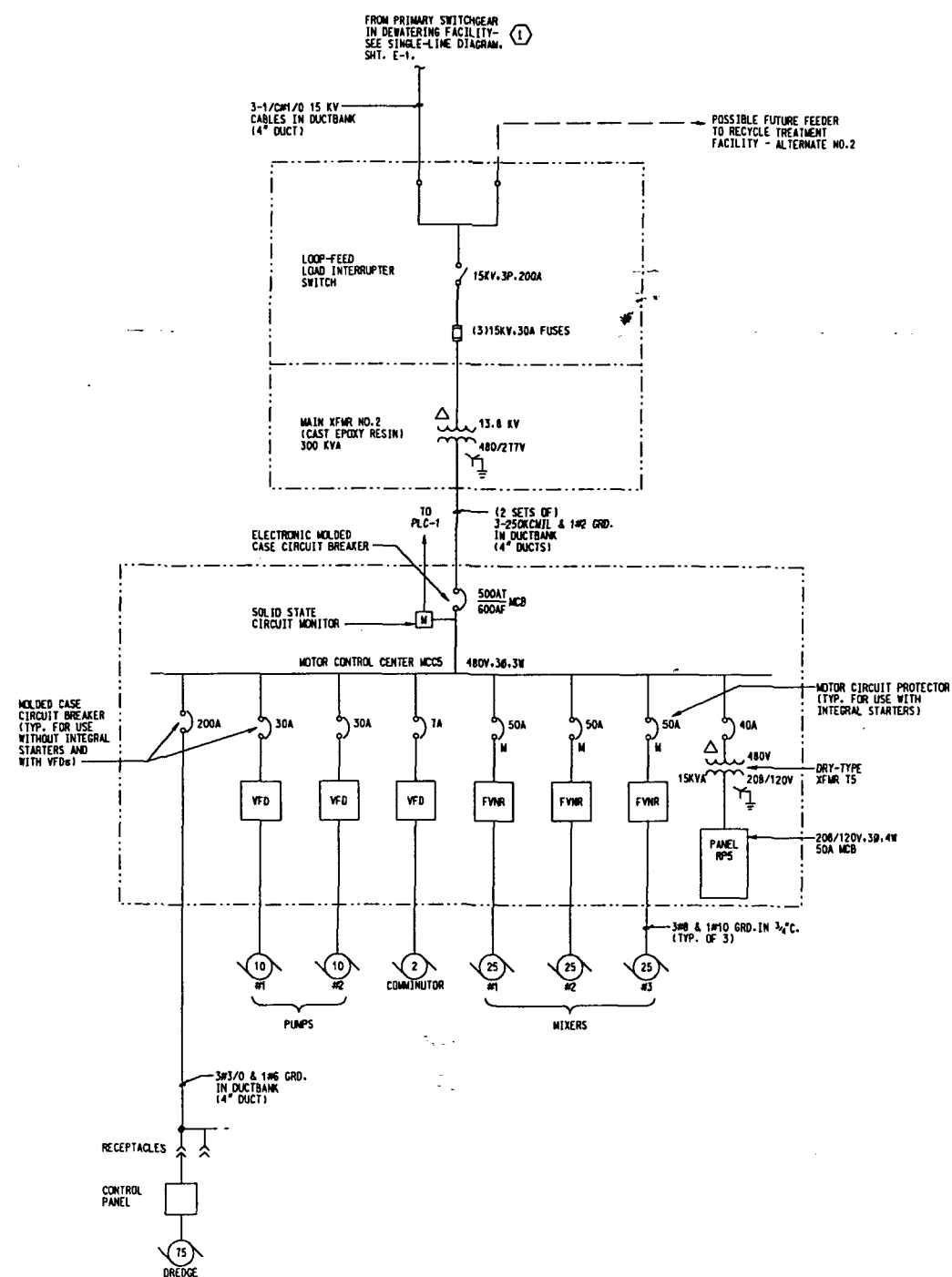


① EACH VFD SHALL BE SIZED TO OPERATE 75 HP MOTOR FOR FUTURE UPGRADE IN PUMP SIZE.

	U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
	WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT SEDIMENTATION BASIN RESIDUALS PUMPING STATION SINGLE LINE DIAGRAM		
WITHMAN, REYNOLDS AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 235-5400	DRAWING NUMBER		PLATE
SCALE: NONE	DATE: OCT. 1996		SHEET E-5

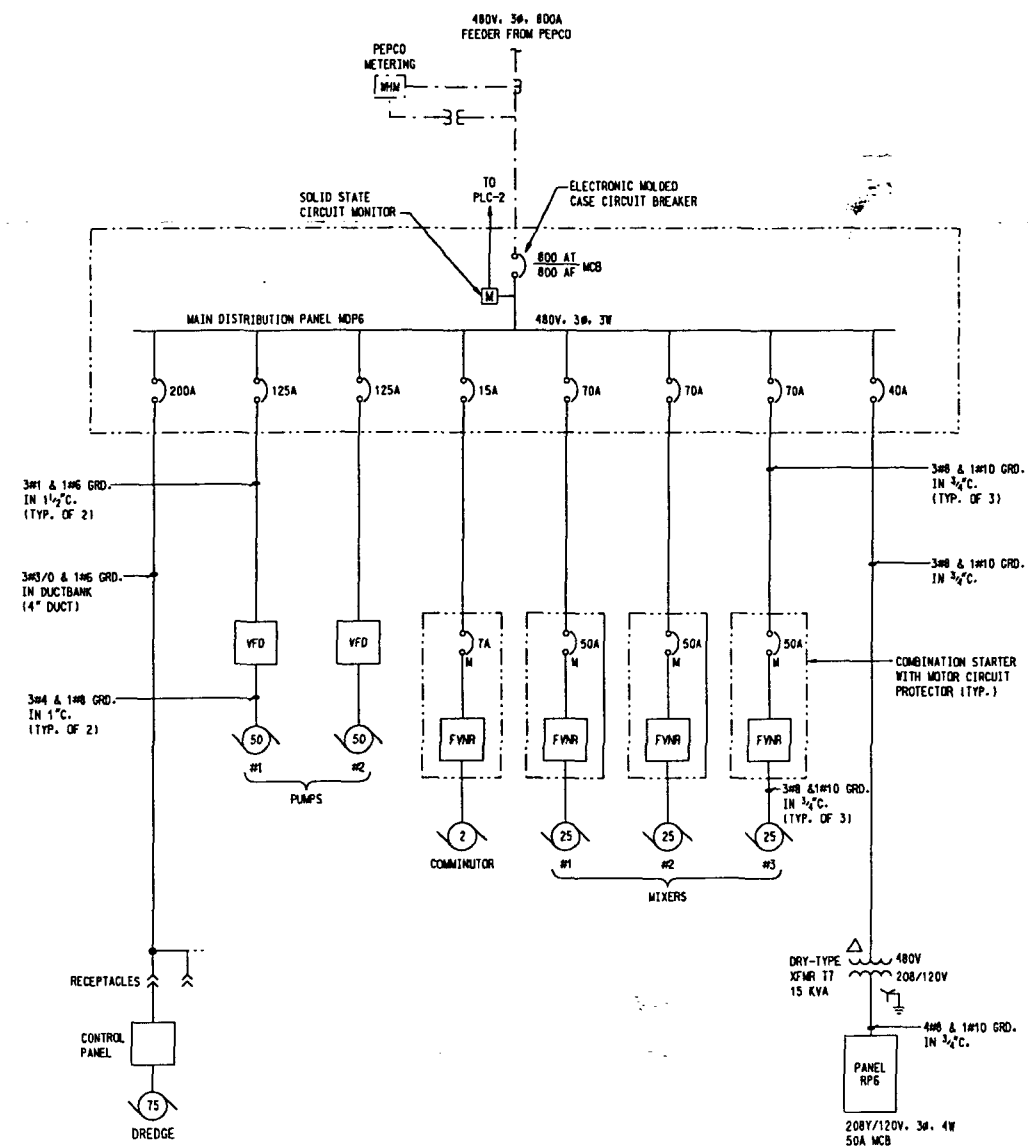
DRAWING NOTES:

① REFERENCE C-5 AND C-6 FOR DUCTBANK ROUTING.



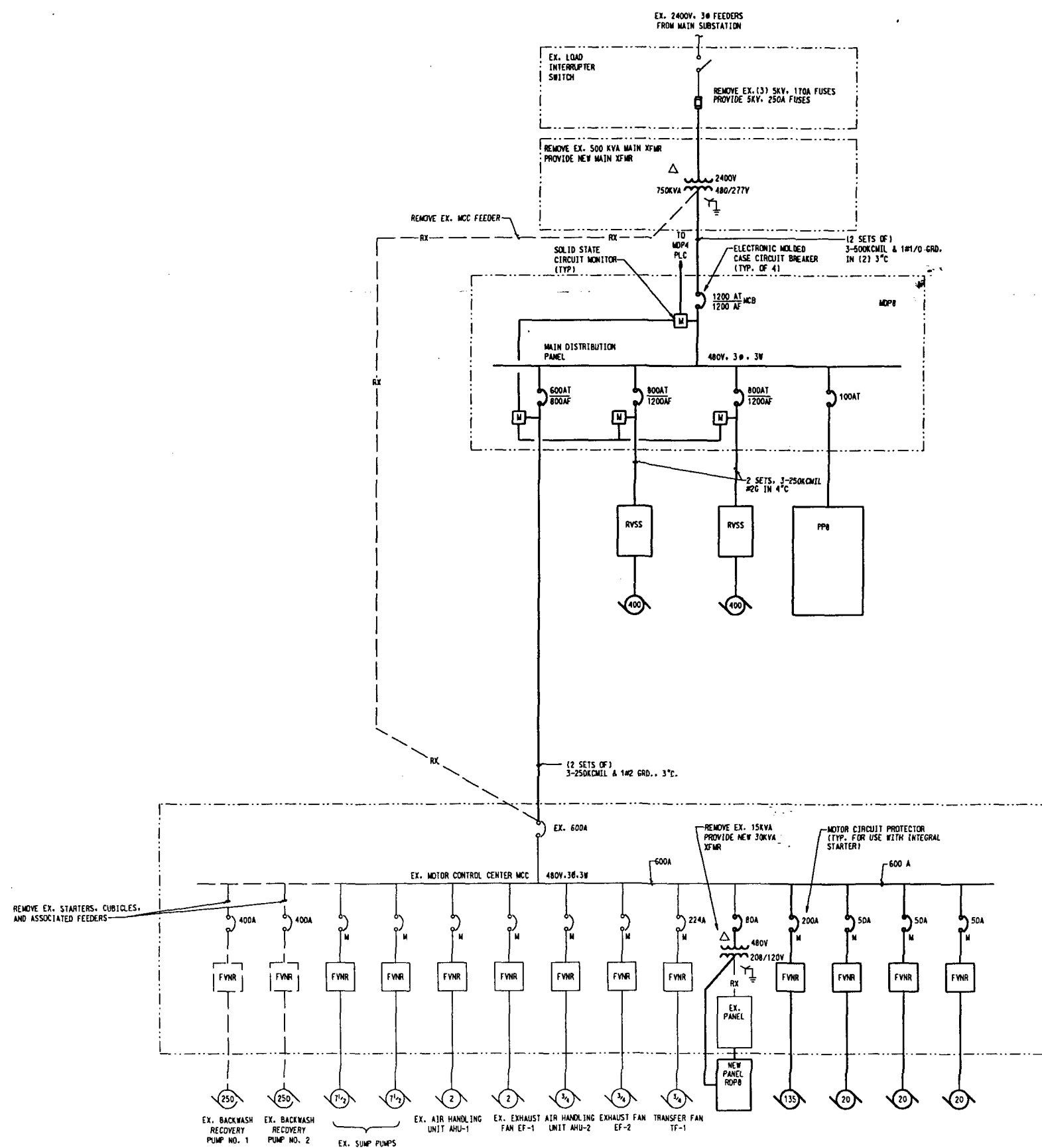
SINGLE-LINE DIAGRAM:
DALECARLIA FOREBAY
EQUALIZATION BASIN PUMPING STATION

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DALECARLIA FOREBAY EQUALIZATION BASIN PUMPING STATION SINGLE LINE DIAGRAM		
WITHMAN, REEDMAN AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 236-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT, 1996	SHEET E-6



SINGLE-LINE DIAGRAM:
GEORGETOWN RESERVOIR EQUALIZATION BASIN
PUMPING STATION

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
GEORGETOWN RESERVOIR EQUALIZATION BASIN PUMPING STATION		
SINGLE LINE DIAGRAM		
WITTMAN, REINHOLD AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND (410) 275-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET E-7



LEGEND:
EXISTING —
NEW —
REMOVE - -

U.S. ARMY ENGINEER DISTRICT, BALTIMORE CORPS OF ENGINEERS BALTIMORE, MARYLAND		
WASHINGTON AQUEDUCT DIVISION		
DALECARLIA WTP AND GEORGETOWN RESERVOIR RESIDUALS COLLECTION AND TREATMENT		
DALECARLIA WASTE STREAMS MODIFICATIONS		
EXISTING BACKWASH RECOVERY P.S. SINGLE LINE DIAGRAM		
WITH: REINHOLD AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND E101 230-3450	DRAWING NUMBER	PLATE
SCALE: NONE	DATE: OCT. 1996	SHEET E-8



WR&A

