ARNOLD & PORTER LLP

Nathan W Gross
Zoning and Land Use Specialist
Nathan_Gross@aporter.com
Not Engaged in the Practice of Law

202 942 5956
202 942 5999 Fax

555 Twelfth Street, NW
Washington, DC 20004-1206

September 21, 2004

Ms Carol Mitten, Chair
D C Zoning Commission
441 4th Street, N W
Suite 210
Washington, D C 20001

RECEIVED
D C OFFICE OF ZONING
2004 SEP 21 PM 4:26

Re Variance Application – 5000 Overlook Drive, S W

Dear MS Mitten and Members of the Commission·

Enclosed please find the requisite materials constituting at application for a variance at the premises indicated above, including the following

1 A completed Board of Zoning Adjustment Application form,
2 A plat of the subject property and architectural plans;
3 A statement in support of the application that includes information about the existing and intended use of the subject property and the basis for the variance,
4 Photographs of the subject property,
5 Mailing labels with the names and addresses of all property owners within 200 feet of the subject property;
7 Attorney's Self-Certification Form as to the necessary variance relief, and
8. No filing fee is required pursuant to 11 DMCR 3180 3

Please contact the undersigned if there are any questions or if additional information is required

ZONING COMMISSION
District of Columbia
CASE NO. 04-19
EXHIBIT NO. 13

Sincerely,

Cynthia A. Giordano

Nathan W. Gross

Nathan W Gross, AICP

Enclosures

ZONING COMMISSION
District of Columbia
CASE NO.04-19
EXHIBIT NO.13

Form 120 — Exhibit 1
(Revised 04/29/02)

Case No Zoning Commission 04

BEFORE THE BOARD OF ZONING ADJUSTMENT OF THE DISTRICT OF COLUMBIA

APPLICATION

Notice Click Here for Application Form Instructions

Pursuant to Sections §3103 2 – Use Variance, §3103 2 – Area Variance and/or §3104 1 – Special Exception of Title 11 DCMR – Zoning Regulations an application is hereby made, the details of which are as follows.

Address(es)*	Square(s)*	Lot No(s)*	Zoning Districts*	Relief Being Sought*	Section No(s)*
5000 Overlook Dr , SW	PAR 253	Part of	C-M-3	Area Variance	840 1
				Area Variance	
				Area Variance	
				Area Variance	

Present Use of Property *	Vacant
Proposed Use of Property *	Anaerobic Sludge Digesters and Auxiliary Structures
Owner of Property *	District of Columbia Government
Telephone No *	202-442-6282
Address *	941 N Capitol St., NE
City *	Washington
State *	District of Columbia
Zip *	20002

Written paragraph specifically stating the "who, what, and where of the proposed action(s)" This will serve as the Public Hearing Notice.*

Application of the D C Water and Sewer Authority pursuant to 11 DCMR 3103 for a variance from Subsection 840 1 to allow construction of the Egg-Shaped Digesters Facility at the Blue Plains Advanced Wastewater Treatment Plant in a C-M-3 District at premises 5000 Overlook Dr., SW (Part of Parcel

Estimated Construction Cost	$220 million	Advisory Neighborhood Commission Single-Member District(s) *	8D05
Date *	9/21/04	Signature*	Cynthia Giordano

* The Owner of the Property for which the application is made or his/her authorized agent. In the event an authorized agent files an application on the behalf of the Owner, a letter signed by the Owner authorizing the agent to act on his/her behalf shall accompany the notice of application

To be notified of hearing and decision:
(Owner or Authorized Agent*)

Name *	Cynthia A Giordano, ARNOLD & PORTER LLC						
Address*	555 12th Street, NW	City *	Washington	State *	District of Columbia	Zip *	20004
Phone No *	202-942-5840	Fax No	942-5999	E-Mail	Cynthia_Giordano@aporter com		

ANY APPLICATION THAT IS NOT COMPLETED IN ACCORDANCE WITH THE INSTRUCTIONS ON THE BACK OF THIS FORM WILL NOT BE ACCEPTED

Print Preview | Clear Form

Form 135 — Side 1
(Revised 03/15/02)

Case No

ZONING SELF-CERTIFICATION FORM

Project Address(es)*	Square(s)*	Lot No(s)*	Zoning Districts*	ANC(s)/Single Member District(s)*
5000 Overlook Dr., S.W.	PAR	253, part of	C-M-3	8D05

CERTIFICATION

The undersigned agent hereby certifies that the following zoning relief is required from the Board of Zoning Adjustment in this matter pursuant to

Relief Sought*	☐ §3103.2 - Use Variance	☒ §3103.2 - Area Variance	☐ §3104.1-Special Exception
Pursuant to Subsections		840.1	

Pursuant to 11 DCMR §3113.2, the undersigned agent certifies that

1. the agent is duly licensed to practice law or architecture in the District of Columbia,
2. the agent is currently in good standing and otherwise entitled to practice law or architecture in the District of Columbia, and
3. the applicant is entitled to apply for the variance or special exception sought for the reasons stated in the application

The undersigned agent and owner acknowledge that they are assuming the risk that the owner may require additional or different zoning relief from that which is self-certified in order to obtain, for the above-referenced project, any building permit, certificate of occupancy, or other administrative determination based upon the Zoning Regulations and Map. Any approval of the application by the Board of Zoning Adjustment does not constitute a Board finding that the relief sought is the relief required to obtain such permit, certification, or determination.

The undersigned agent and owner further acknowledge that any person aggrieved by the issuance of any permit, certificate, or determination for which the requested zoning relief is a prerequisite may appeal that permit, certificate, or determination on the grounds that additional or different zoning relief is required.

The undersigned agent and owner hereby hold the District of Columbia Office of Zoning and Department of Consumer and Regulatory Affairs harmless from any liability for failure of the undersigned to seek complete and proper zoning relief from the Board of Zoning Adjustment.

The undersigned owner hereby authorizes the undersigned agent to act on the owner's behalf in this matter.

Owners Signature		Owner's Name	
Agent Signature	Cynthia Guerrero	Agent Name	

Date*	9/21/04	DC Bar No	290973	or	Architect Registration No	

OFFICE OF ZONING DETERMINATION
(DCMR Title 11 §3113.2)

Based upon review of the application and self-certification, this application is

☐ Accepted for filing

☐ Referred to the Office of the Zoning Administrator, Department of Consumer and Regulatory Affairs, for determination of proper zoning relief required

☐ Rejected for failure to comply with the provisions of
- ☐ DCMR Title 11 §3113.2, or
- ☐ DCMR Title 11 Zoning Regulations

Explanation

Signature		Date	

Jerrily R Kress, FAIA - Director
District of Columbia Office of Zoning

441 4th Street, N W Ste. 210-S, Washington, D C 20001
(202) 727-6311 * (202) 727-6072 fax * www dcoz.dc.gov

Form 135 — Side 2

INSTRUCTIONS

Any request for self-certification that is not completed in accordance with the following instructions shall not be accepted

1 All self-certification applications shall be made on Form 135 All certification forms must be completely filled out (front **and** back) and be typewritten or printed legibly All information shall be furnished by the applicant If additional space is necessary, use separate sheets of paper to complete this form
2 Complete one self-certification form for each application filed Present this form with the Form 120 Application to the Office of Zoning, 441 4th Street, N W , Suite 210, Washington, D C 20001

ITEM	EXISTING CONDITIONS	MINIMUM REQUIRED	MAXIMUM ALLOWED	PROVIDED BY PROPOSED CONSTRUCTION	VARIANCE Deviation/Percent
Lot Area (sq. ft.)	351,600	—	—	351,600	—
Lot Width (ft. to the tenth)	*				—
Lot Occupancy (building area/lot	N.A.		100%		—
Floor Area Ratio (floor area/lot area)	N.A.			0.067	—
Parking Spaces (number)	0	24		40	—
Loading Berths (number and size	N.A.			N.A.	—
Front Yard (ft. to the tenth)	**				—
Rear Yard (ft. to the tenth)	**				—
Side Yard (ft. to the tenth)	0	0		0	—

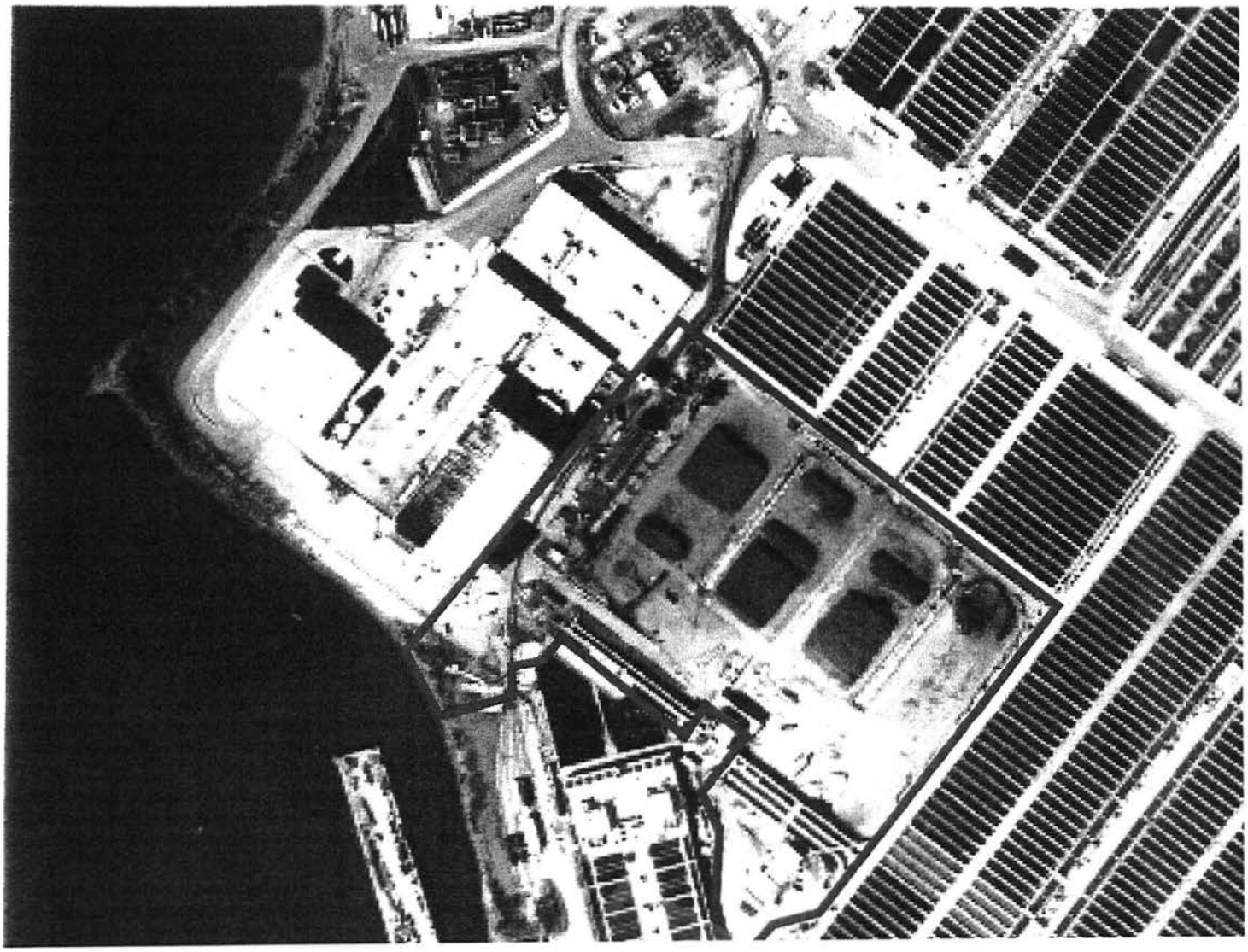
* theoretical lots to be created.
** Flexibility requested in PUD application

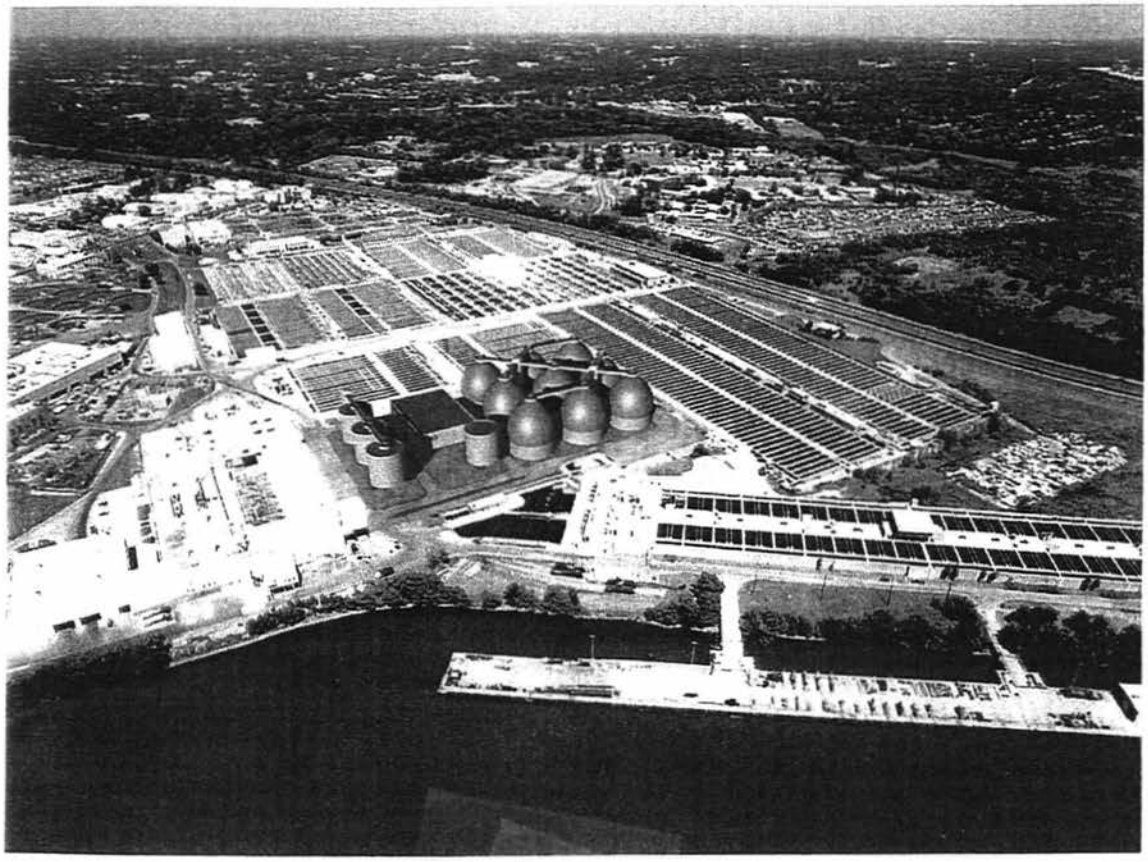
Court, Open (width by depth	N.A.				—
Court, Closed (width by depth	N.A.				—
Height (ft. to the tenth)	118				281

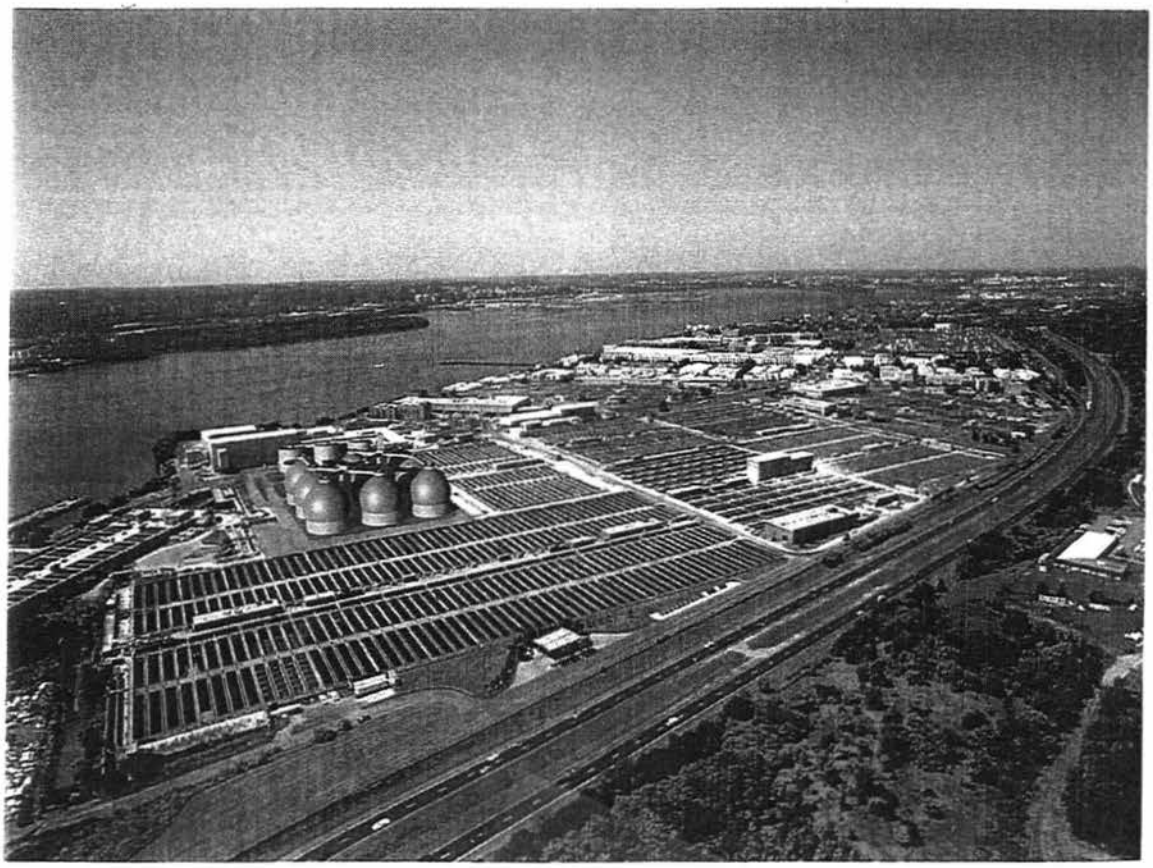
Print Preview | Clear Form

U S Naval Research Laboratory
4555 Overlook Avenue, S.W
Washington, D.C. 20375

AERIAL PHOTOGRAPHS OF EGG-SHAPED DIGESTERS FACILITY AND BLUE PLAINS ADVANCED WASTEWATER TREATMENT FACILITY







Aerial photographs of the Blue Plains Facility with a model of the Egg Shaped Digesters inserted. Note that the Anacostia Freeway abuts the facility along its eastern boundary. Note also that the pictures show an earlier scheme of the digesters.

APPLICATION FOR AREA VARIANCE
THE DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

FOR PROPOSED EGG-SHAPED DIGESTERS FACILITY AT 5000 OVERLOOK AVENUE, S.W.

RECEIVED
D.C. OFFICE OF ZONING
2004 SEP 21 PM 4:28

September 21, 2004

I. Nature of Relief Sought

The District of Columbia Water and Sewer Authority ("WASA" or the "Applicant") herein requests Zoning Commission approval of an area variance for its proposed Egg-Shaped Digesters Facility at the Blue Plains Advanced Wastewater Treatment Plant, 5000 Overlook Drive, S.W The subject property is zoned C-M-3 (Commercial-Manufacturing) The variance requested is from the height limitations set forth in 11 DCMR § 840.1. This Application is submitted concurrently with and in coordination with a planned unit development application for the project in Zoning Commission Case No 04-19.

II. The Applicant

The Applicant, the District of Columbia Water and Sewer Authority, is an independent authority of the District of Columbia government. It has a separate legal existence within the District of Columbia government. The Authority began operations on October 1, 1996 and was created to finance, operate and provide essential retail water distribution and wastewater conveyance and treatment services to approximately 570,000 people in the District of Columbia. WASA also provides wholesale wastewater conveyance and treatment services to approximately 1 6 million people in major suburban areas of this region. The Blue Plains service area includes the District of Columbia (retail water and wastewater treatment service), parts of Fairfax and Loudoun Counties, the Town of Vienna in Virginia, parts of Prince George's and Montgomery Counties in Maryland, Washington-Dulles International Airport, and various agencies of the U.S. Government (wholesale wastewater conveyance and treatment service)

III. The Proposed Project

Blue Plains is in the southernmost part of the District of Columbia, situated generally between the Anacostia Freeway and the Potomac River. The Plant is located approximately two and one-half miles southeast of Reagan National Airport and just over five miles south of the U. S Capitol. This location is in Ward 8 and within the boundaries

of Advisory Neighborhood Commission ("ANC") 8B and has a street address of 5000 Overlook Avenue, S.W

The proposed development is a state-of-the-art biosolids treatment facility Anaerobic digesters shaped in the form of large eggs will use microbial action, heat and mixing to process and reduce the volume of biosolids that are produced by wastewater treatment operations This process, also known as "sludge digestion," significantly reduces pathogens in the final product, greatly reduces odors by conducting the digestion process in sealed vessels and greatly reduces transportation costs due to much smaller volumes of end product

The ***Egg-Shaped Digesters*** will be built on the site of a now-demolished outdoor sludge composting facility in the south central section of the Blue Plains site.[1] The proposed new Digesters Facility will be located to the east of the existing Solids Processing Building and approximately 900 feet west of the Anacostia Freeway (Interstate 295) The land area to be occupied by the proposed new facility is approximately 351,600 square feet, or eight acres.

Eight Digesters are proposed to meet WASA's treatment capacity needs Egg-shaped digesters are tall and tapered containers for mixing, heating and processing thickened sludge The egg shape is a most efficient shape for mixing and processing the thickened sludge. Each Digester is approximately 95 feet wide at its widest point and has a volume of 4.5 million gallons. Basement space will be used for piping, electrical and mechanical equipment, control rooms, storage and other operations

Atop each Digester will be a ***Gas Dome Structure*** to support mechanical equipment and to provide access to the interior of the Digesters for maintenance and inspection.

Three or four ***Access Towers*** provide vertical access from the ground to the walkways. Four ***Silos*** for digested biosolids will be constructed to the west of the Digesters The issue of compliance with height limits for the foregoing structural elements is addressed in the following section, "The Requested Variances." The project includes low-scale buildings and structures that are well within the 90-foot height limit of the C-M-3 District, and for which no relief as to permitted height is necessary

The cladding for the digester eggs is "wrapped" around the form of the eggs, thereby maintaining the integrity of the inner shape of the vessel The cladding panels will be aluminum or stainless steel with different finishes to achieve the pattern shown in the exhibits that accompany this submission. The addition of an additional cladding finish not only enhances the appearance of the eggs, but the patterned surface this produces also tends to break down their monolithic appearance and somewhat reduce the egg's overall mass.

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[1] See the Zoning Map in *Exhibit A* and the Site Plan and other plans in *Exhibit B*

III. The Requested Height Variance

The requested area variance requires a demonstration that some exceptional or unique condition of the property creates a practical difficulty for the owner in using or developing the property. The Board must also find (2) that the requested variance can be granted without substantial detriment to the public good and (3) without substantially impairing the purpose and integrity of the zone plan In this section the exceptional condition and practical difficulty affecting the height variance is addressed first, followed by an analysis of variance tests 2 and 3.

Height of Structures.

The Egg-Shaped Digesters have engineering requirements for proper internal functioning that dictate their size and shape The proposed digesters are 145 feet in height and will be sunk in the ground to a depth of 44 feet. This results in a height above finished grade of 101 feet Other elements of the complex are somewhat higher The heights of the various components are shown in the chart below

Structure	Height (Ft.) Above Finished Grade	Zoning Compliance
Egg Digesters	101	11' Variance
Elevated Walkways	101	11' Variance[2]
Gas Domes	107	17' Variance
Access Towers	118	28' Variance
Silos	101	11' Variance
Other Structures/Buildings	60 or less	Within 90'

The unique and exceptional characteristics that create a practical difficulty and basis for the height variance are as follows

1. The Blue Plains Advanced Wastewater Treatment Plant is unique because it is the only public wastewater treatment plant for the District of Columbia and part of the suburbs Thus, the Egg-Shaped Digesters Facility must be located at Blue Plains, where all of the wastewater is received for treatment and must be at a certain location within Blue Plains in order to purify and reduce the treated product

2 For engineering reasons, the digesters cannot be designed to be shorter to achieve the necessary capacity and proper chemical functioning The vertical

[2] The Access (Elevator) Towers, Walkways and Gas Domes could be determined to constitute a roof structure for zoning purposes and therefore eligible for an additional 18 ½ feet of height In the interest of simplicity the Applicant has simply requested a variance for the tallest elements of the Digesters complex

access system needed to service the Digesters must be even higher, i.e., the Access Towers, Elevated Walkways and Gas Domes

3 Because of the high water table at Blue Plains, especially on this site close to the Potomac River, the Digesters cannot be sunk farther into the ground.

4 Moreover, there is a need to connect pipes to adjacent treatment facilities without an excessive difference in elevation. WASA conducted a study of the cost of sinking the digesters an additional four feet, but at $11 million, the cost is prohibitive Furthermore, the four feet of difference would not have resolved the zoning height issue

These exceptional conditions, the Applicant believes, constitute a significant practical difficulty in complying with the 90-foot height limit of the C-M-3 District

C. The requested relief can be granted without substantial detriment to the public good and without substantial impairment of the zone plan.

Regarding variance tests two and three cited above, it is clear that these standards are met:

- The proposed use is industrial in nature and is allowed as a matter of right in the C-M-3 District, an industrial zone.

- Although the requested height of structures exceeds the matter-of-right height limit, this project will be located in a remote location and at a low elevation so that there will be no effects on the light, air, privacy or vistas of surrounding properties and persons. The Applicant is not aware of any opposition to the proposed height, even after meeting with each Advisory Neighborhood Commission in Ward 8, the staff of the U.S. Commission on Fine Arts, the National Capital Planning Commission and the Office of Planning.

- As to the public good, the Digesters project is a major public initiative that exemplifies and carries out a number of policies in the *Comprehensive Plan for the National Capital* as well as the following specific benefits:

  1. Greater treatment capacity than conventional digesters while using the same amount of land;
  2. Elimination of approximately one half of the volume of biosolids produced;
  3. Reduced odor emissions at Blue Plains and at rural land application sites;
  4 Reduction in truck traffic (1.2 million annually) because of reduced volumes;
  5. Production of a recyclable end product,
  6 Production of digester gas that can be used for power generation, and
  7. Operations and maintenance annual savings to WASA and its regional wholesale customer and local retail customers of approximately $16 million

The proposed anaerobic digesters facility will enable the Authority to provide the city and the region with advanced wastewater treatment and other services on an economical basis

III. CONCLUSION

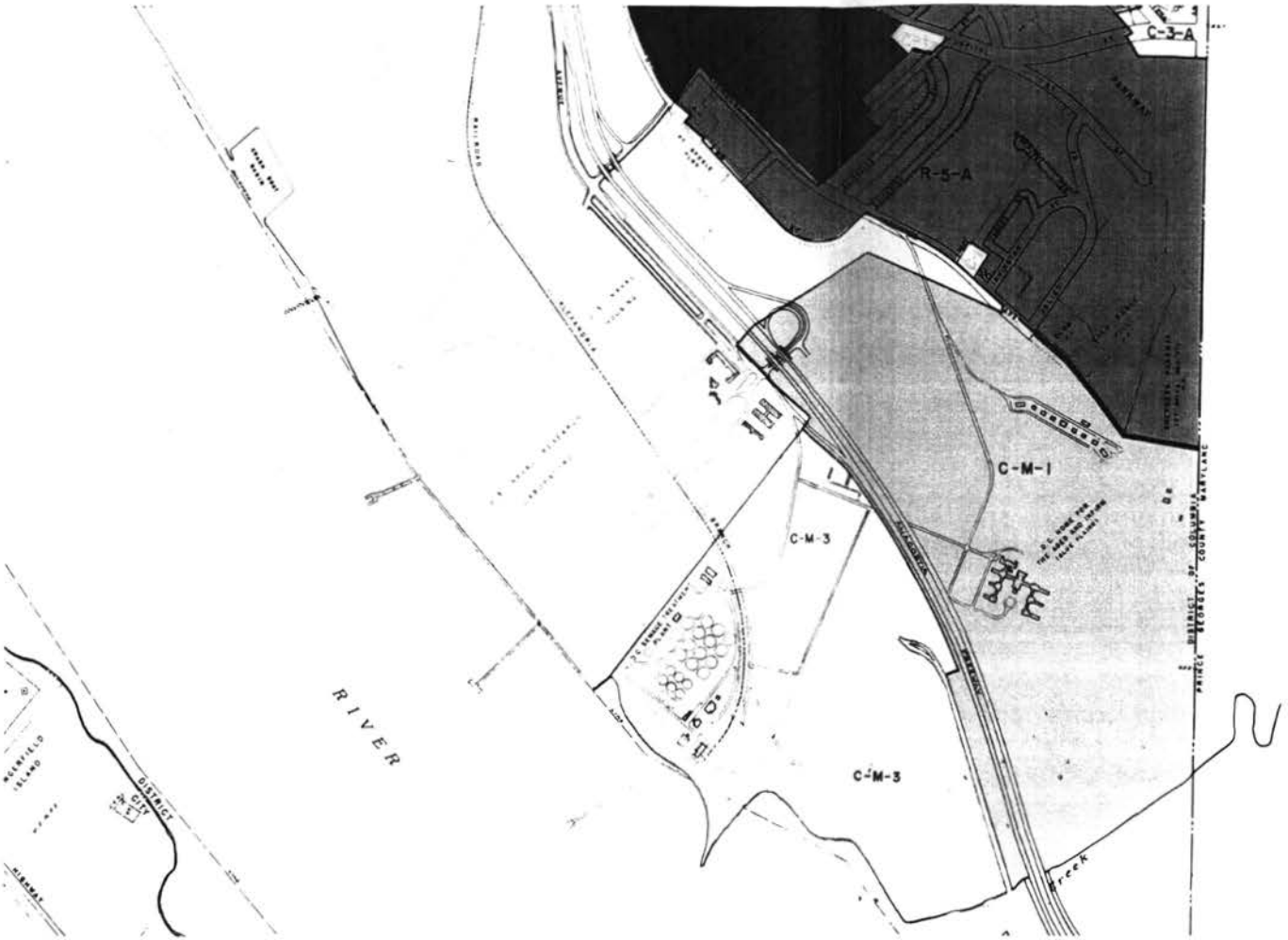
For the reasons set forth in this Statement and supporting materials, the Applicant believes that the requirements for the granting of the requested variances have been met and requests approval of the application

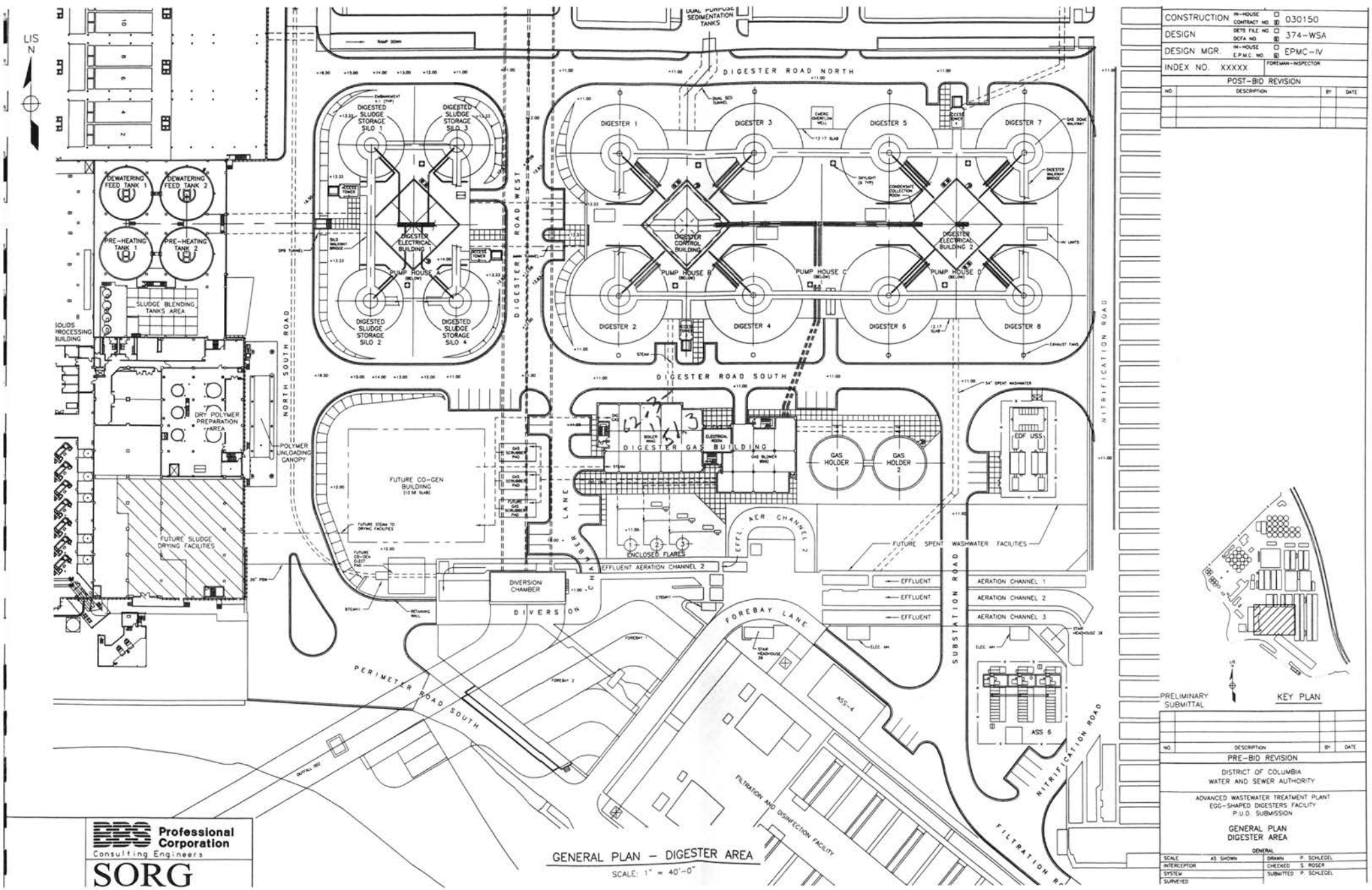
Respectfully submitted,
ARNOLD & PORTER

Cynthia A. Giordano

Nathan W. Gross, AICP


BLUE PLAINS WASTE WATER TREATMENT PLANT SITE
EGG DIGESTER FACILITY SITE
N


C-3-A
R-5-A
C-M-1
C-M-3
C-M-3
RIVER
Creek



GENERAL PLAN – DIGESTER AREA

SCALE: 1" = 40'-0"

BBS Professional Corporation
Consulting Engineers
SORG

CONSTRUCTION	IN-HOUSE ☐ CONTRACT NO. ☒	030150
DESIGN	DETS FILE NO. ☐ DCFA NO. ☒	374-WSA
DESIGN MGR.	IN-HOUSE ☐ E.P.M.C. NO. ☒	EPMC-IV
INDEX NO. XXXXX	FOREMAN-INSPECTOR	

POST-BID REVISION

NO.	DESCRIPTION	BY	DATE

PRELIMINARY SUBMITTAL

KEY PLAN

NO.	DESCRIPTION	BY	DATE

PRE-BID REVISION

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

ADVANCED WASTEWATER TREATMENT PLANT
EGG-SHAPED DIGESTERS FACILITY
P.U.D. SUBMISSION

GENERAL PLAN
DIGESTER AREA

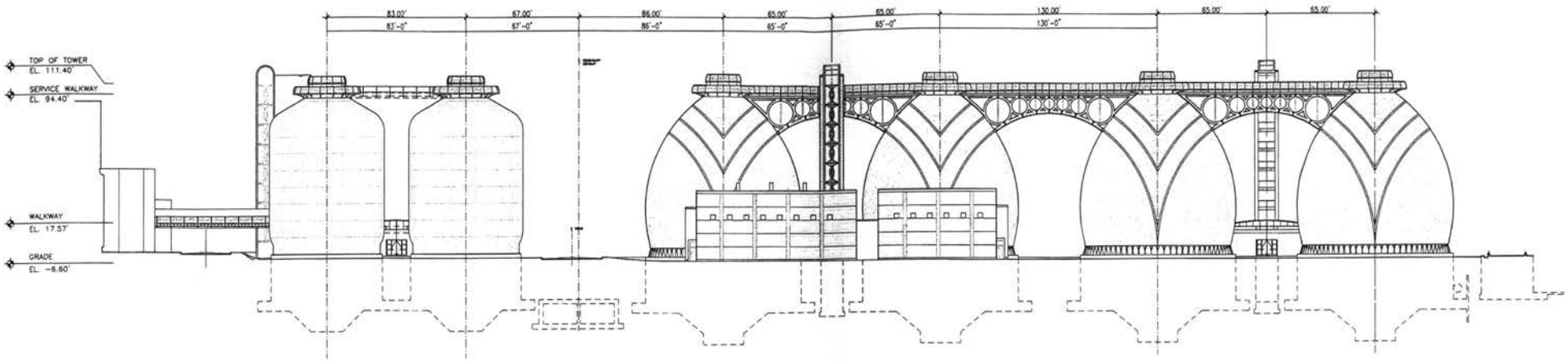
GENERAL

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INTERCEPTOR		CHECKED	S. ROSEN
SYSTEM		SUBMITTED	P. SCHLEGEL
SURVEYED			

CONSTRUCTION	IN-HOUSE CONTRACT NO.	☐ 030150
DESIGN	DET'S FILE NO. DCFA NO.	☐ 374-WSA
DESIGN MGR.	IN-HOUSE E.P.M.C. NO.	☐ EPMC-IV
INDEX NO. XXXXX	FOREMAN-INSPECTOR	

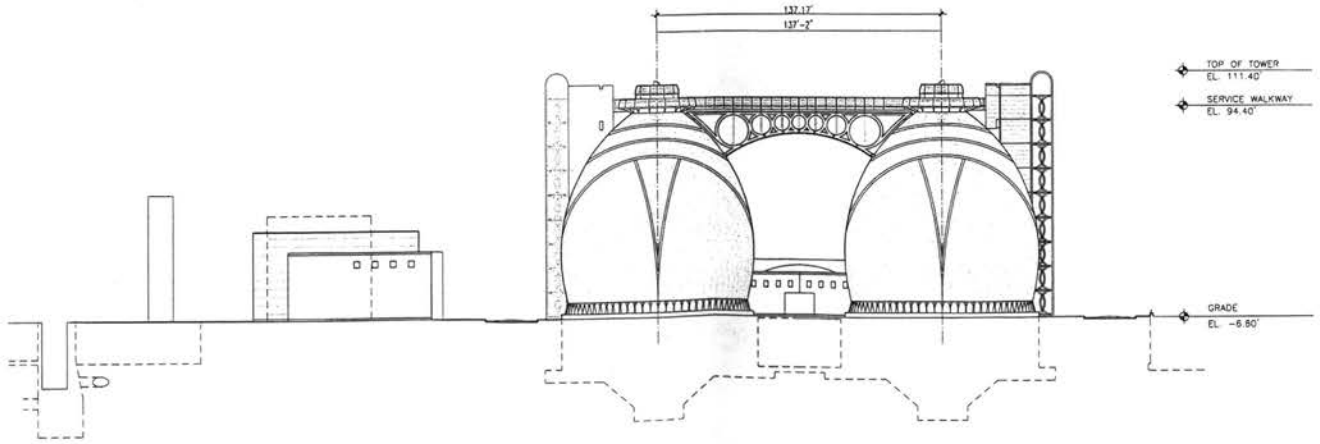
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NO.	DESCRIPTION	BY	DATE



EGG DIGESTER FACILITY SOUTH ELEVATION

SCALE: 1"=30'-0"



EGG DIGESTER FACILITY EAST ELEVATION

SCALE: 1"=30'-0"

BBS Professional Corporation
Consulting Engineers
SORG

PRELIMINARY SUBMITTAL

NO.	DESCRIPTION	BY	DATE

PRE-BID REVISION

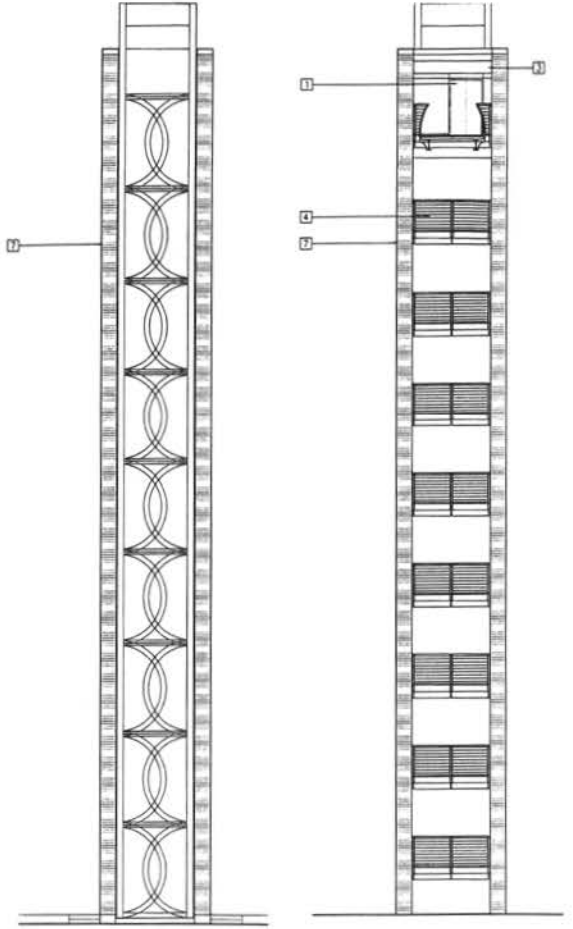
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

ADVANCED WASTEWATER TREATMENT PLANT
EGG-SHAPED DIGESTERS FACILITY
P.U.D. SUBMISSION

DIGESTER
ELEVATION 1

ARCHITECTURAL

SCALE	AS SHOWN	DRAWN	T. HANKS
INTERCEPTOR		CHECKED	R. ROBINSON
SYSTEM		SUBMITTED	
SURVEYED			XX

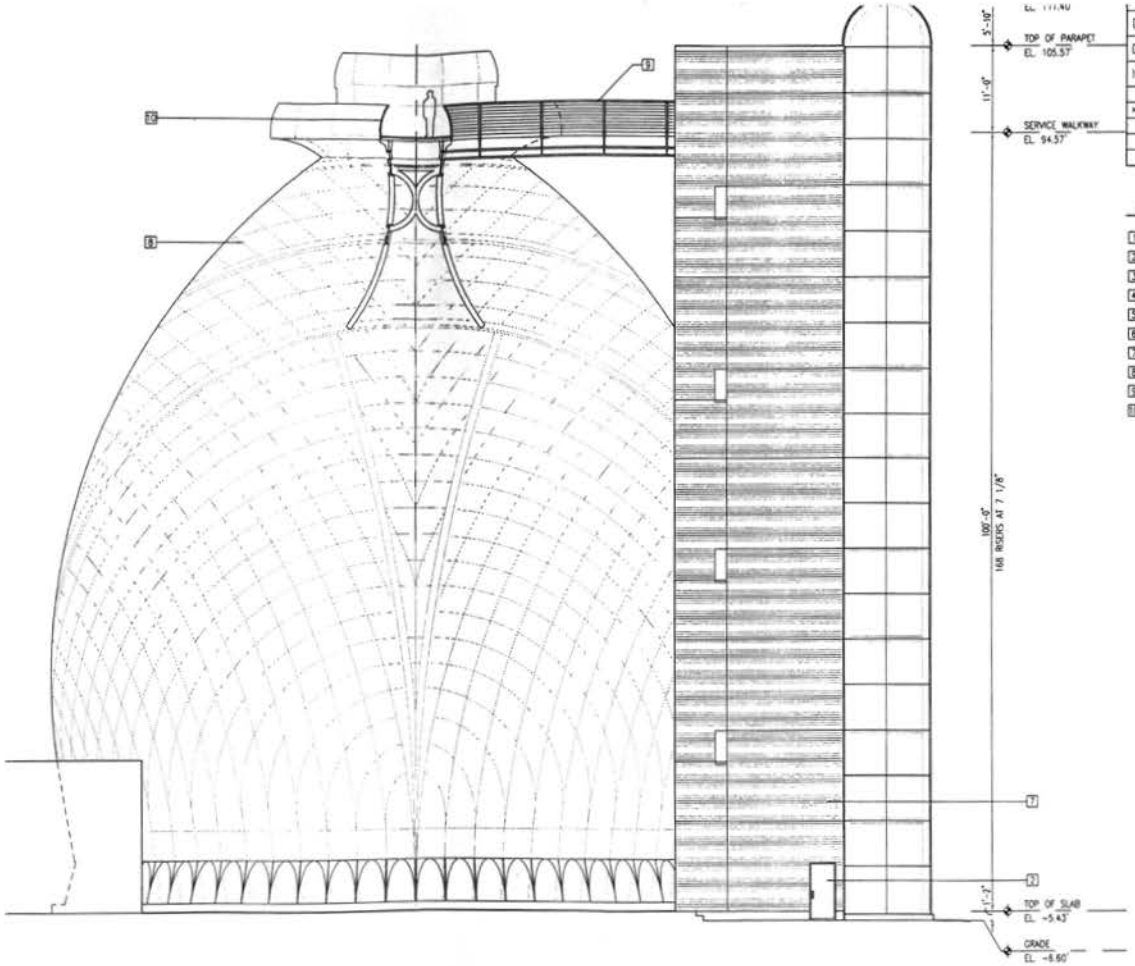


ACCESS TOWER ELEVATION 1

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

ACCESS TOWER ELEVATION 2

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



EGG DIGESTER ELEVATION

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

DESIGN	DEYS FILE NO. / DCFA NO.	374-WSA
DESIGN MGR.	IN-HOUSE / E.P.M.C. NO.	EPMC-IV
INDEX NO. XXXXX	FOREMAN-INSPECTOR	

POST-BID REVISION

NO.	DESCRIPTION	BY	DATE

KEYED NOTES:

1. ELEVATOR ACCESS
2. SECURITY DOOR
3. ELEVATOR MACHINE ACCESS
4. STAINLESS STEEL MESH
5. STEEL STRUCTURE
6. CONCRETE
7. CONCRETE STRUCTURE WITH BRICK VENEER
8. METAL PANEL CLADDING
9. CONNECTING BRIDGE TO EDF SERVICE WALKWAY
10. EDF SERVICE WALKWAY

PRELIMINARY SUBMITTAL

NO.	DESCRIPTION	BY	DATE

PRE-BID REVISION

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

ADVANCED WASTEWATER TREATMENT PLANT
EGG-SHAPED DIGESTERS FACILITY
P.U.D. SUBMISSION

ACCESS TOWER ELEVATIONS

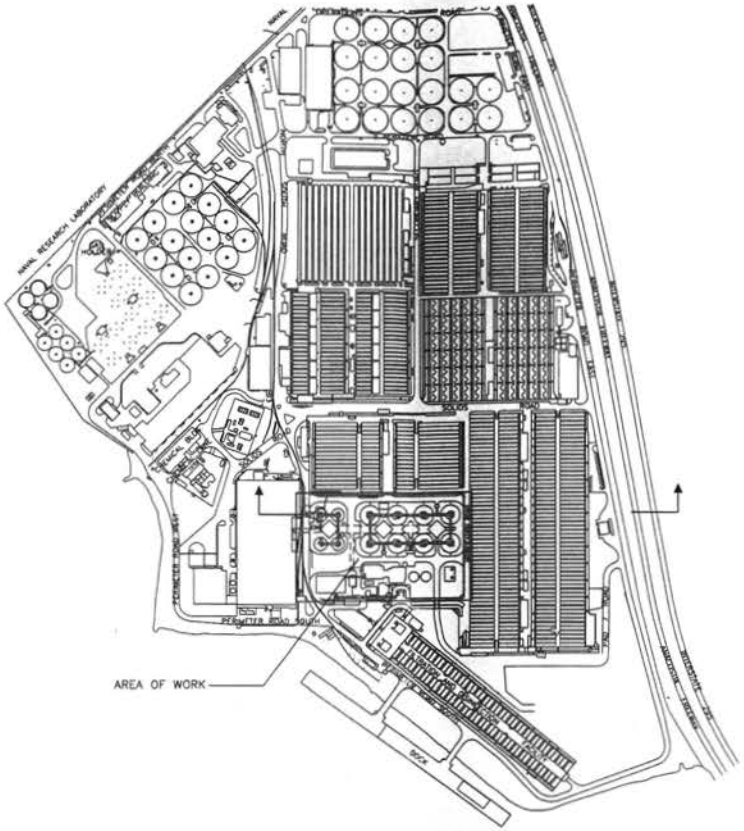
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INTERCEPTOR		CHECKED	RR
SYSTEM		SUBMITTED	XX
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BBS Professional Corporation
Consulting Engineers
SORG

CONSTRUCTION	IN-HOUSE CONTRACT NO. ☐	030150
DESIGN	DETS FILE NO. ☐ DCFA NO. ☒	374-WSA
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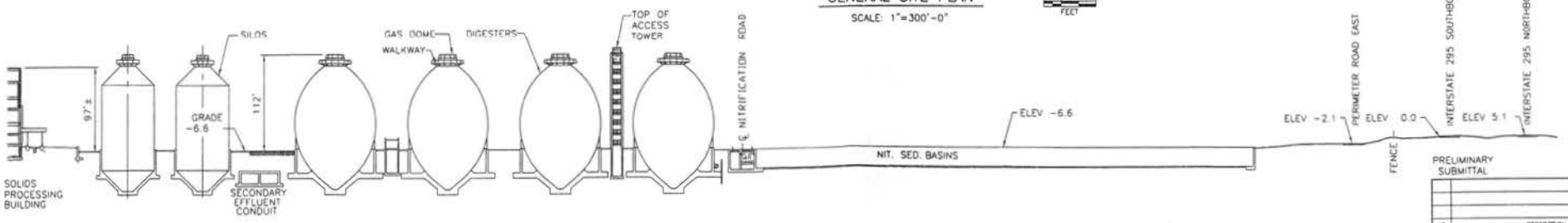
NO	DESCRIPTION	BY	DATE



GENERAL SITE PLAN

SCALE: 1"=300'-0"

0 100 300 FEET



GENERAL SITE SECTION

SCALE: 1"=60'-0"

0 20 60 FEET

PRELIMINARY SUBMITTAL

NO	DESCRIPTION	BY	DATE

PRE-BID REVISION

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

ADVANCED WASTEWATER TREATMENT PLANT
EGG-SHAPED DIGESTERS FACILITY
P.U.D. SUBMISSION

SITE PLAN AND SECTION

PERMITTING

SCALE	AS SHOWN	DRAWN	P. SCHLEGEL
INTERCEPTOR		CHECKED	X
SYSTEM		SUBMITTED	X

DDS Professional Corporation
Consulting Engineers
SORG