



MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Item # 12
10/4/07

September 20, 2007

MEMORANDUM – MANDATORY REFERRAL

TO: Montgomery County Planning Board

VIA: John A. Carter, Chief, Community-Based Planning Division *KC*

FROM: *CM* Callum Murray, Potomac and Rural Area West Team Leader
Community-Based Planning Division (301-495-4733)

SUBJECT Mandatory Referral No. 07002-MIR-1: Air Quality Control System Project, Dickerson Generating Station, I-2 Zone, Dickerson. Preservation of Agriculture and Rural Open Space Master Plan

This staff report provides recommendations on the Mandatory Referral for the air quality control system project for the Dickerson Generating Station, Dickerson (No. 07002-MIR-1). The Dickerson site is located approximately one mile east of Dickerson, Maryland and west of Maryland State Road 28 in the northeastern portion of the county, along the eastern bank of the Potomac River, south of the Monocacy River, and within the boundaries of the 1980 *Preservation of Agriculture and Rural Open Space Master Plan*.

STAFF RECOMMENDATIONS

APPROVE transmittal of the following comments to Mirant Mid-Atlantic, LLC and the Maryland Public Service Commission:

1. Comply with the conditions of the Stormwater Management Concept approved by the Montgomery County Department of Permitting Services on August 12, 2007.
2. Submit a new Mandatory Referral for any future expansions.
3. No truck traffic to and from the site will be allowed via Martinsburg Road, west of the site entrance road, during construction and post construction.
4. Minimize lighting not needed for safety and security between 11:00 p.m. and sunrise.
5. Contain light within its intended target area by suitable choice of luminaries and minimize glare in horizontal and vertical directions.

INTRODUCTION

Mirant Mid-Atlantic, LLC is a subsidiary of Mirant Corporation. Mirant Mid-Atlantic and its subsidiaries and affiliates own and operate electric generating stations in Maryland and Virginia, including the coal, gas, and oil fired generating facilities located at the Dickerson site in Montgomery County. Mirant has ownership interest in and operates (either directly or through subsidiaries) the electric generating stations in Maryland that were previously owned by Potomac Electric Power Company (PEPCO), including the generating facilities at Dickerson. PEPCO retained ownership of certain electric substations and transmission lines and equipment located on approximately 200 acres of the Dickerson site. Mirant has submitted a Mandatory Referral for a flue gas desulfurization (FGD) system and other associated facilities located at Dickerson. The 800-acre Mirant property is located approximately one mile east of Dickerson, west of MD 28 (see Attachment 1).

The Mirant site is within the boundaries of the 1980 *Preservation of Agriculture and Rural Open Space Master Plan*. Much of the site is zoned Rural Density Transfer (RDT), but no part of the site is devoted to agricultural use. The area encompassing the existing generation facilities is zoned I-2 (Heavy Industrial) which allows for uses of a heavy industrial nature.

Project Summary

The project consists of installing a FGD system on Dickerson Units 1, 2 and 3. The primary purpose of the project is to reduce the sulfur dioxide emissions emitted from the existing coal-fired units 1, 2 and 3, with an added benefit of reduction of mercury.

The proposed FGD system consists of a sulfur dioxide scrubber absorber with the following facilities (see Attachment 2):

- A new, single-flue, 400-foot exhaust stack
- Limestone receiving, handling
- Solid waste storage and handling system for scrubber and wastewater treatment solids, and storage facilities
- Limestone slurry preparation facility
- Gypsum byproduct storage, handling, and off-loading facilities
- New makeup water supply tank
- Wastewater treatment systems for water and scrubber wastewater treatment.

Justification

The project is in response to enactment of the Healthy Air Act Legislation by the State of Maryland. The legislation mandates a steep reduction in sulfur dioxide and mercury emissions for all coal-fired electric generating units in the State. The installation of the FGD system at Dickerson is a major part of Mirant's Mid-Atlantic system-wide sulfur emission reduction compliance plan that is designed to meet the requirements of the State-mandated emission reductions while maintaining a reliable supply of electric

power to the region. State regulations require that emission reductions be effective by 2010. The resulting major reductions of sulfur dioxide emissions will help the State of Maryland achieve compliance with the National Ambient Air Quality Standard (NAAQS) for particulate matter with aerodynamic size less than 2.5 microns.

The project has been reviewed by a variety of State agencies and the Maryland Public Service Commission, the agency with jurisdiction over the project. This includes environmental issues reviewed by the Maryland Department of Environment and the Department of Natural Resources. Both agencies support the project as proposed.

Project Site

The Dickerson Generating Station has been in existence since the late 1950s, providing electric power to Maryland and the District of Columbia. The Station consists of three 182 Megawatt coal-fired units, two 147 megawatt gas- and oil-fired simple-cycle combustion turbines, and one 13 megawatt peaking turbine.

The coal-fired units, designated as units 1, 2 and 3, were constructed in the late 1950s and began operation in 1959, 1960, and 1962 respectively. Exhaust gases from these units exit a 700-foot-high stack constructed in 1978. There are also two existing 400-foot-high stacks originally constructed for these units, which are used when the 700-foot-high stack is under maintenance. Condenser cooling is accomplished using once-through cooling water from the Potomac River. The water circulation is 285,000 gallons per minute, which is discharged back to the Potomac River. Coal is delivered to the units by a CSX Transportation Corporation (CSXT) rail spur line off the main line. The units are equipped with high-efficiency particulate control devices to minimize emissions of particulate matter and other equipment to limit emissions of nitrogen dioxides. By-product ash is stored in a facility adjacent to the Dickerson site.

Two combustion gas turbines began operation in 1992 and 1993 respectively, and are normally fired with natural gas from a Consolidated Natural Gas pipeline traversing the Dickerson site. A gas-pressure reducing and heating station is located onsite and supplies the natural gas directly to the units. A 10-million-gallon storage tank was installed with the units to supply distillate oil in the event that natural gas was unavailable or too expensive. Two, 130-foot-high stacks were installed to exhaust gases from these units. During construction of the units, site activity included site preparation and leveling the site to grade for an area of approximately 10 acres.

Community Issues

The applicant arranged and held meetings with the Sugarloaf Citizens Association, and the Dickerson and Boyds Citizens Associations, on February 5, 2007, and with the Sugarloaf Citizens Association on April 28, 2007. To date, staff has not received any communication regarding the application.

The nearest residential dwelling located on Martinsburg Road is approximately 3,200-foot southeast of the project. Other residences are located further from the site, along MD 28. There are also commercial establishments and residences along MD 28 within

the Town of Dickerson. These dwellings and businesses are located approximately 1.2 miles from the project location. The construction activities for the project will not materially change or affect the existing environment immediately around the Dickerson site and will be temporary in nature.

Environmental, aesthetic and noise impacts on the community are minimized by the fact that the project is centrally located on a 1,000-acre site, which provides a very significant buffer to the surrounding rural area. The proposed stack is 60 percent shorter than the existing operating stack, while raw materials and byproducts, such as limestone and gypsum, will be transported to and from the site by rail to minimize transportation impacts.

The outdoor lighting of the project is not anticipated to cause significant light pollution or light trespass. The lighting on the new stack, which must comply with FAA requirements, will be at a much lower elevation than the existing 700-foot stacks.

ANALYSIS

Master Plan, Land Use and Zoning

The Dickerson site is within the boundaries of the 1980 *Preservation of Agriculture and Rural Open Space Master Plan*. It is located in Planning Area 12: Little Monocacy Basin Dickerson – Barnesville, and is part of Community-Based Planning Area Potomac Subregion/Rural Area West. The Master Plan did not specifically allude to the Dickerson site but confirmed the existing industrial zoning (I-2, Heavy Industrial) on part of the property. One of the main policies of the Master Plan was to limit public water and sewer service in areas designated for agricultural preservation. The Dickerson Generating Station uses wells for potable water and has a sewage treatment plant.

Neighboring lands are primarily agricultural, although the Montgomery County Resource Recovery Facility (RRF), a waste-to-energy plant, is adjacent to the property to the south. A PEPCO transmission corridor borders the site to the west and a storage facility for coal byproducts is on the south side of Martinsburg Road. The site is adjacent to the Potomac River, The C & O Canal National Historic Park, and the Dickerson Conservation Area. The Monocacy Natural Resources Management Area is less than two miles to the north, in Frederick County, and the Woodstock Equestrian Park and Owens Park are less than three miles to the east. There is one residence opposite the Dickerson site on Martinsburg Road between MD 28 and the plant gate. A second residence is on Martinsburg Road past the entrance to the Dickerson site. The closest community is the unincorporated community of Dickerson, while the crossroads community of Beallsville is approximately three miles east on MD 28 at the intersection of MD 109.

No direct land use impacts will result from construction activities or operation of the FGD system. No lands outside the Mirant property will be pre-empted from other uses, and no indirect impacts on surrounding land uses are anticipated from the proposed modifications to the Dickerson facility.

TRANSPORTATION

Transportation Planning staff performed an Adequate Public Facilities (APF) review and recommendation on the subject Mandatory Referral application for installation of a flue gas desulphurization ("FGD") system at the Dickerson Generating Station.

Recommendation

Transportation Planning staff recommends the following comment associated with the support of approval of the subject Mandatory Referral application:

1. No truck traffic to and from the site will be allowed via Martinsburg Road, west of the site entrance road, during construction and post construction.

Site Vehicle/Rail Access

The site has access from Martinsburg Road, which connects to Darnestown Road (MD 28), a rural two-lane state highway providing access to I-270 in Rockville. Martinsburg Road is classified as a country arterial from Darnestown Road to the site entrance road and an exceptional rustic road from the site entrance road to the west. The traffic volumes (14 trips during the weekday peak hour or 40 weekday daily trips) associated with the proposed project operation are relatively low and will not adversely affect the country arterial classification of Martinsburg Road. The site is also served by a CSX Railroad line, which will transport limestone and carry gypsum by-product created from the FGD process to an off-site location. Staff finds the existing access to the site and condition of Martinsburg Road in the vicinity of the site to be safe and adequate to accommodate the relatively low traffic volumes associated with the proposed facility operation.

Truck Travel Route

There are two "No Thru Truck Over ¾ Ton" signs and one weight-restricted bridge on Martinsburg Road west of the site entrance road. Staff recommends that no truck traffic to and from the site be allowed on this segment of Martinsburg Road to avoid the weight-restricted bridge and address the "No Thru Truck Over ¾ Ton" restrictions.

Local Area Transportation Review

Staff reviewed the submitted traffic statement and concurs that the additional traffic generated by the proposed installation of the FGD system at the Dickerson Generating Station is not expected to have an adverse effect on the adjacent roadway network. Based on the information contained in the traffic statement prepared by the applicant's traffic consultant, the operation of the facility with proposed installation of the FGD system would generate approximately 13 weekday morning and 14 weekday evening peak hour vehicle trips. Therefore, this Mandatory Referral application would not require a Local Area Transportation Review (LATR) study to satisfy the Adequate Public Facilities review.

ENVIRONMENT

Forest Conservation

The site meets the requirements for an exemption from forest conservation under Section 22A-5(o) of the Forest Conservation Law i.e. the cutting or clearing of public utility rights-of-way or land for electric generating stations licensed under Sections 7-204, 7-205, 7-207, and 7-208 of the Public Utilities Company Article of the Maryland Annotated Code (and COMAR 08.19.01.04A(5)). Consequently the project does not need to submit a forest conservation plan, and the Planning Board need take no action on forest conservation.

Environmental Guidelines

The project complies with the Environmental Guidelines (*Guidelines for Environmental Management of Development in Montgomery County*) as they relate to protection of the site's wetlands, streams, forest, and other environmental resources.

Air Quality

The project is a required upgrade of the Mirant plant at Dickerson to bring it in compliance with new pollution control requirements for SO₂, NO_x, and mercury (Hg) mandated by the Maryland Healthy Air Act. The project will install new antipollution equipment (scrubbers) for air quality control, which must be in place by 2010. The change is mandated by the U.S. Environmental Protection Agency (EPA).

Water Quality

The site is in the Broad Run Watershed that flows directly to the Potomac River. The Broad Run originates west of Poolesville near Wasche Road and West Hunt Road. The *Montgomery County Stream Protection Strategy* (CSPS, 2003 Update) lists the overall watershed condition, stream quality condition, and current habitat status as 'good' and habitat stability as 'unstable', based on data gathered from 1994 and 2000. Broad Run has remained in essentially the same land use - open rolling farmland for over 100 years. The project is not expected to impact negatively on the watershed since most of the work will be on already developed portions of the site (only 31.5 acres of the site's 800 acres will be disturbed).

Stormwater Management

The Montgomery County Department of Permitting Services (DPS) approved the site's stormwater management concept request on August 12, 2007. The stormwater management concept consists of on-site channel protection measures via a dry pond for the lay-down area and on-site water quality control and recharge via the use of surface sand filters and non structural measures. Channel protection measures for the plant are not required due to the project's close proximity to the Potomac River.

CONCLUSION

Staff recommends approval of Mandatory Referral No. 07002-MIR-1 to install a flue gas desulfurization system and other associated facilities at Dickerson. Staff recommends that the Planning Board approve transmittal of the comments summarized on page 1 of this memorandum to Mirant Mid-Atlantic LLC. and the Maryland Public Service Commission.

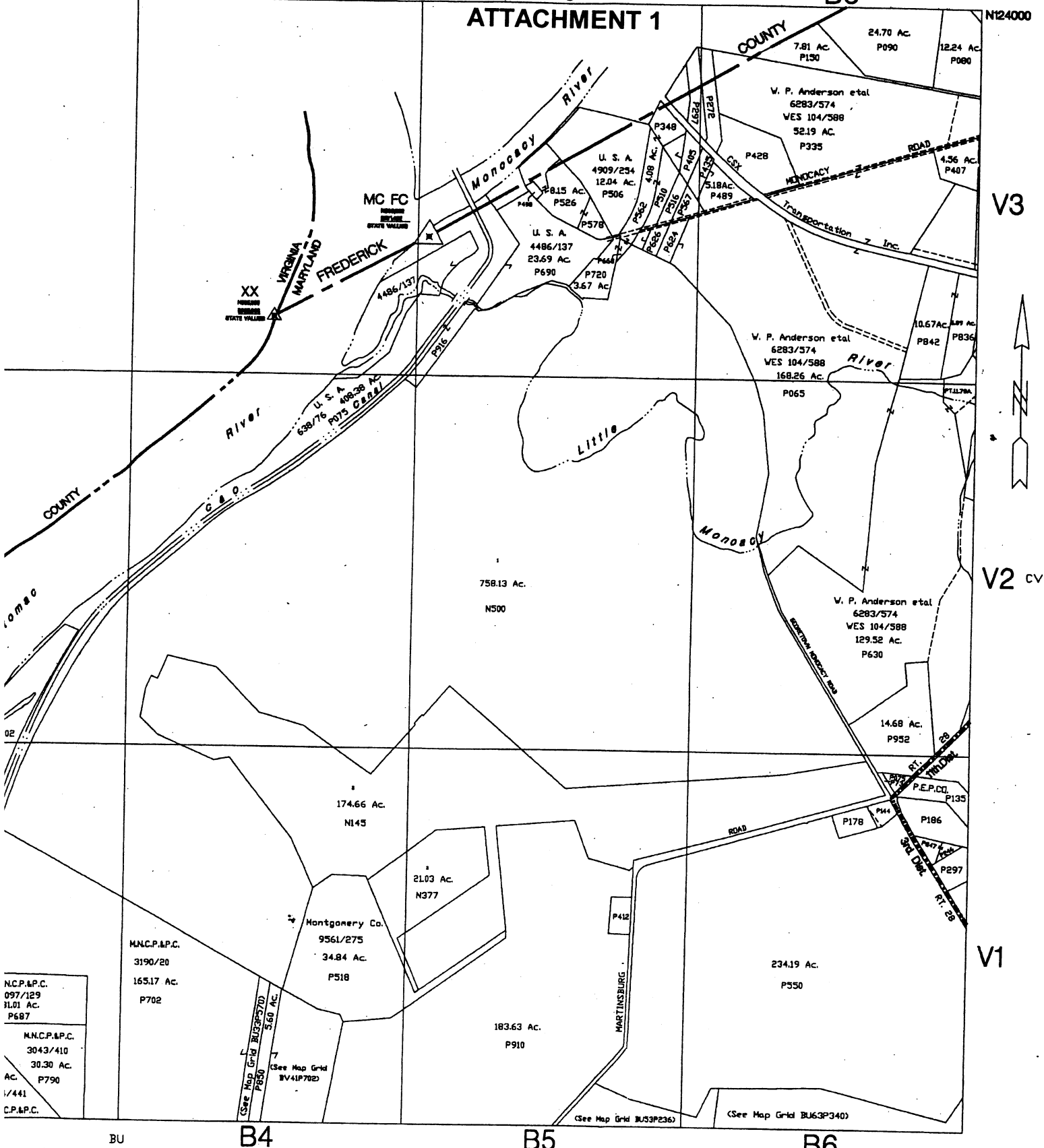
CM:ha: g:\murray\Mirant-Mandatory Referral

Attachments

1. Vicinity Map
2. Zoning Map
3. Aerial Photo
4. Aerial Photo (Detail)
5. Existing and Proposed Structures
6. Plan Detail
7. Plan Detail Legend

N124000

COUNTY



N.C.P.&P.C.
097/129
31.01 Ac.
P687

M.N.C.P.&P.C.
3043/410
30.30 Ac.
AC. P790
1/441
C.P.&P.C.

M.N.C.P.&P.C.
3190/20
165.17 Ac.
P702

Map Grid BU33P570)
850
5.60 AC.

Montgomery Co.
9561/275
34.84 Ac.
P518

2103 Ac.
N377

183.63 Ac.
P910

(See Map Grid BU53P236)

(See Map Grid BU63P340)

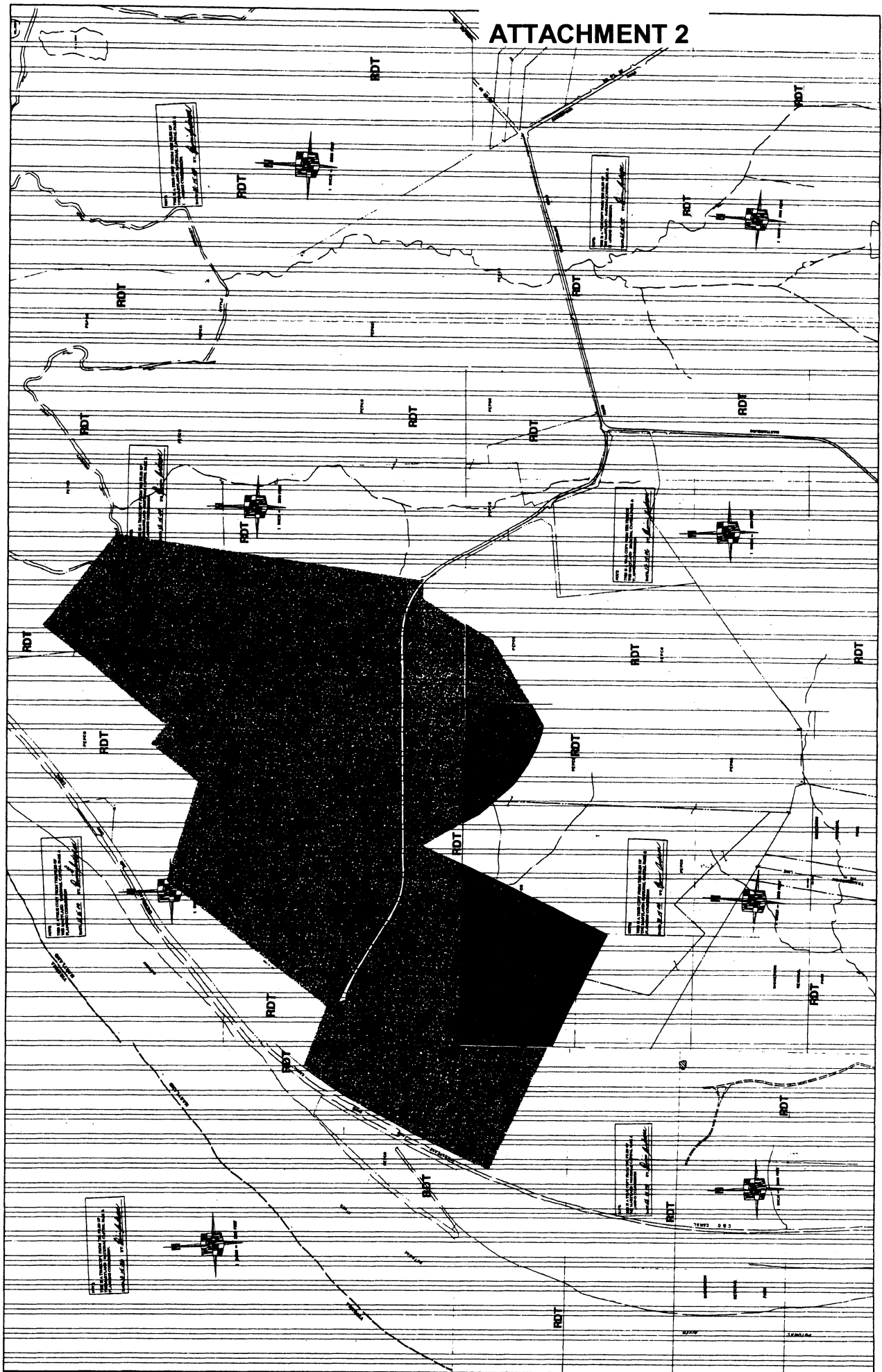
| | | | | | | | |
|------------------------|--|-------|------|------------|-------|--------------------|----------|
| OF PLANNING SECTION | PROPERTY LINE SUBDIVISION BOUNDARY TOWN BOUNDARY PRIVATE ROAD STREAM LINE | | | | | | |
| | CONTAINING CURVES: ALL CURVATURES TO BE INDICATED TO IDENTIFY OWNERSHIP. MUST BE PRECEDED BY A DEGREE SYMBOL. | | | | | | |
| | SCALE 1"=800' (N.F.: 17290) | | | | | | |
| DATE | BY | FILED | LIBR | LAST & NO. | PHOTO | COUNTER QUADRANGLE | S&W GRID |
| 06 | R/LB | | | | | | |



MONTGOMERY CO.,
MARYLAND

MAP BV

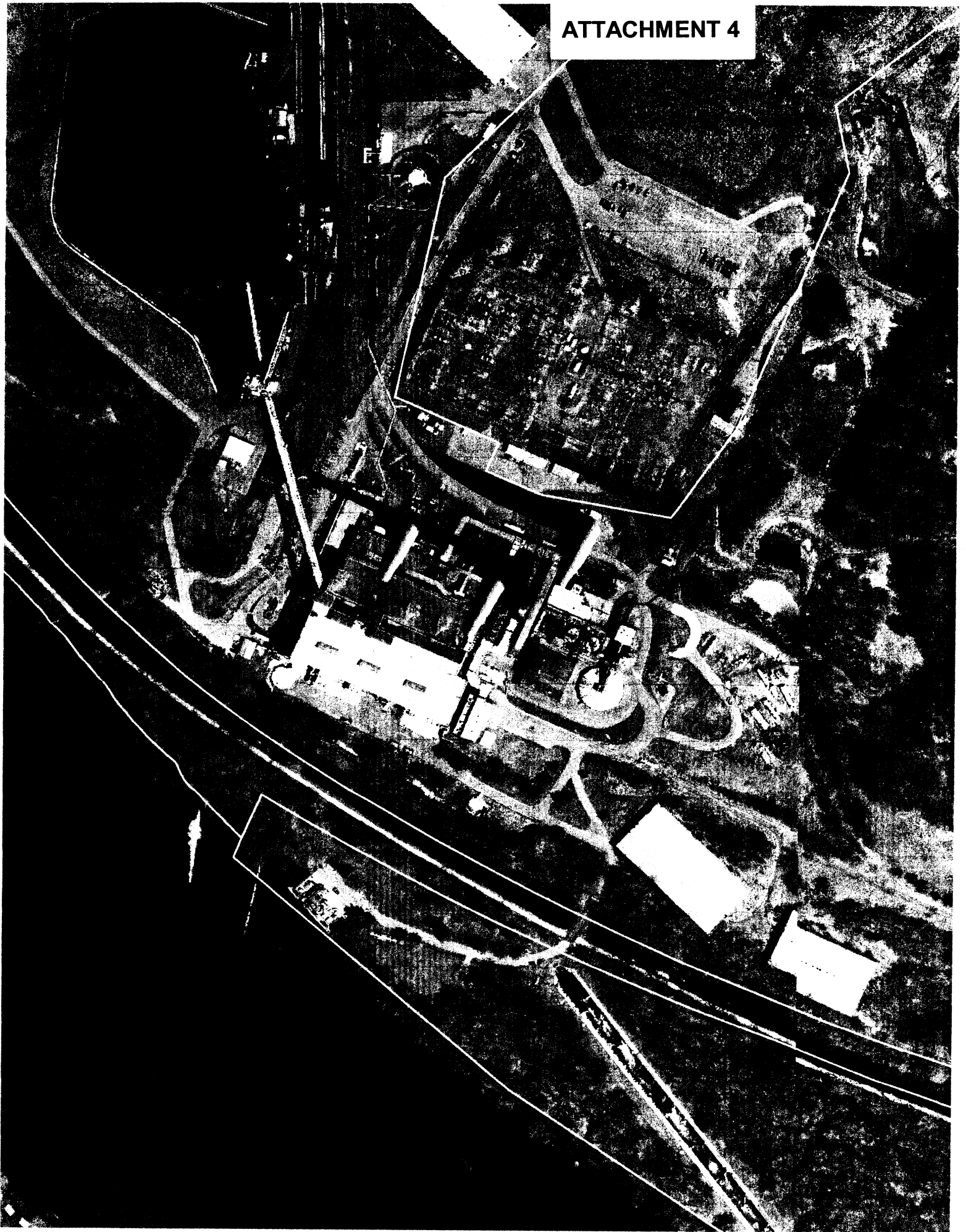
EXHIBIT B



ATTACHMENT 3



ATTACHMENT 4



| EXISTING BUILDING/STRUCTURE INVENTORY | | | | |
|---------------------------------------|------------------|-------------|---------|-------------|
| BUILDING NAME | DIMENSIONS (LxW) | HT. | STORIES | SQ. FOOTAGE |
| STACK UNIT 1 & 2 | 60' RADIUS | APPROX 400' | NA | 718 SF |
| STACK UNIT 3 | 60' RADIUS | APPROX 400' | NA | 718 SF |
| ASH SILD | 55' RADIUS | 121' | NA | 9903 SF |
| WASTE WATER TREATMENT BUILDING | 100' X 100' | 23' | 2 | 10,000 SF |
| ELECTRICAL BUILDING | 48' X 95' | 31' | 3 | 4107 SF |
| PIPE RACK | 100 LIN FT X 14' | 12' | NA | 1400 SF |
| WAREHOUSE #4 | 141' X 300' | 32' | 1 | 42,300 SF |
| WAREHOUSE #5 | 141' X 300' | 34' | 1 | 45,300 SF |
| CHIMNEY | 21' RADIUS | 700' | NA | 1375 SF |

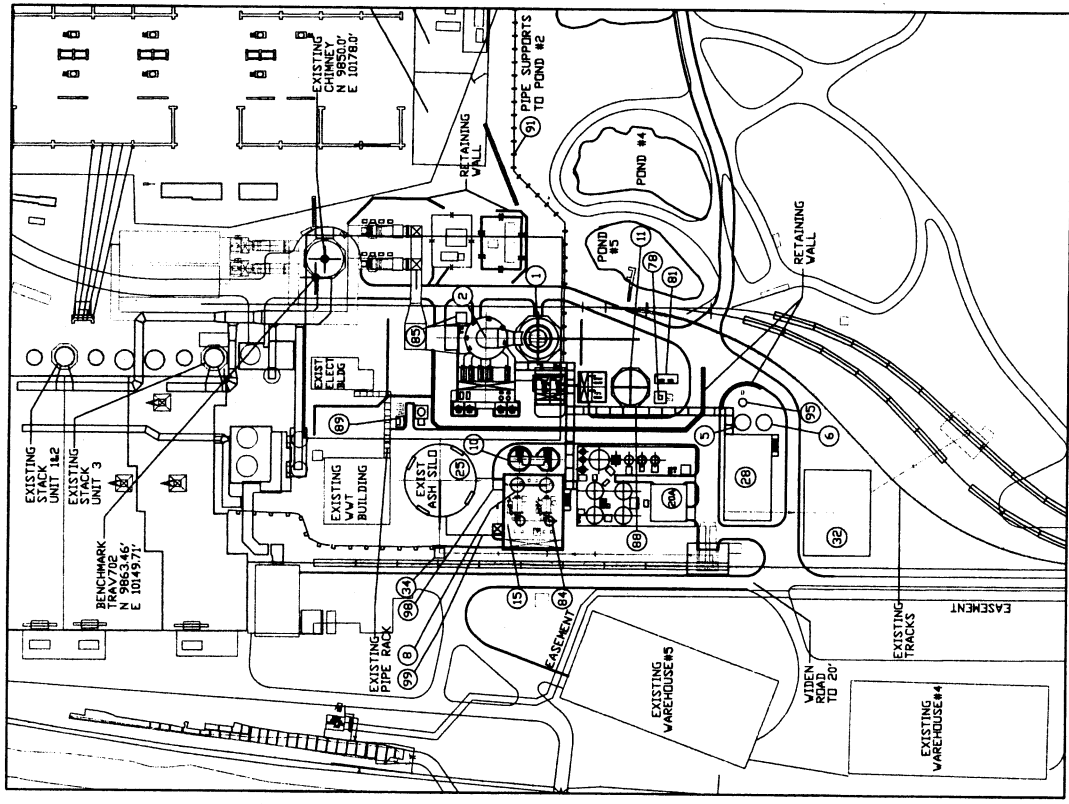
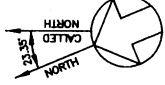
NOTES:

1. THE BUILDING NUMBERS EG. ① ARE TAKEN FROM GENERAL ARRANGEMENT DRAWING 122491-00000-N-GA-001-1-H.

LEGEND

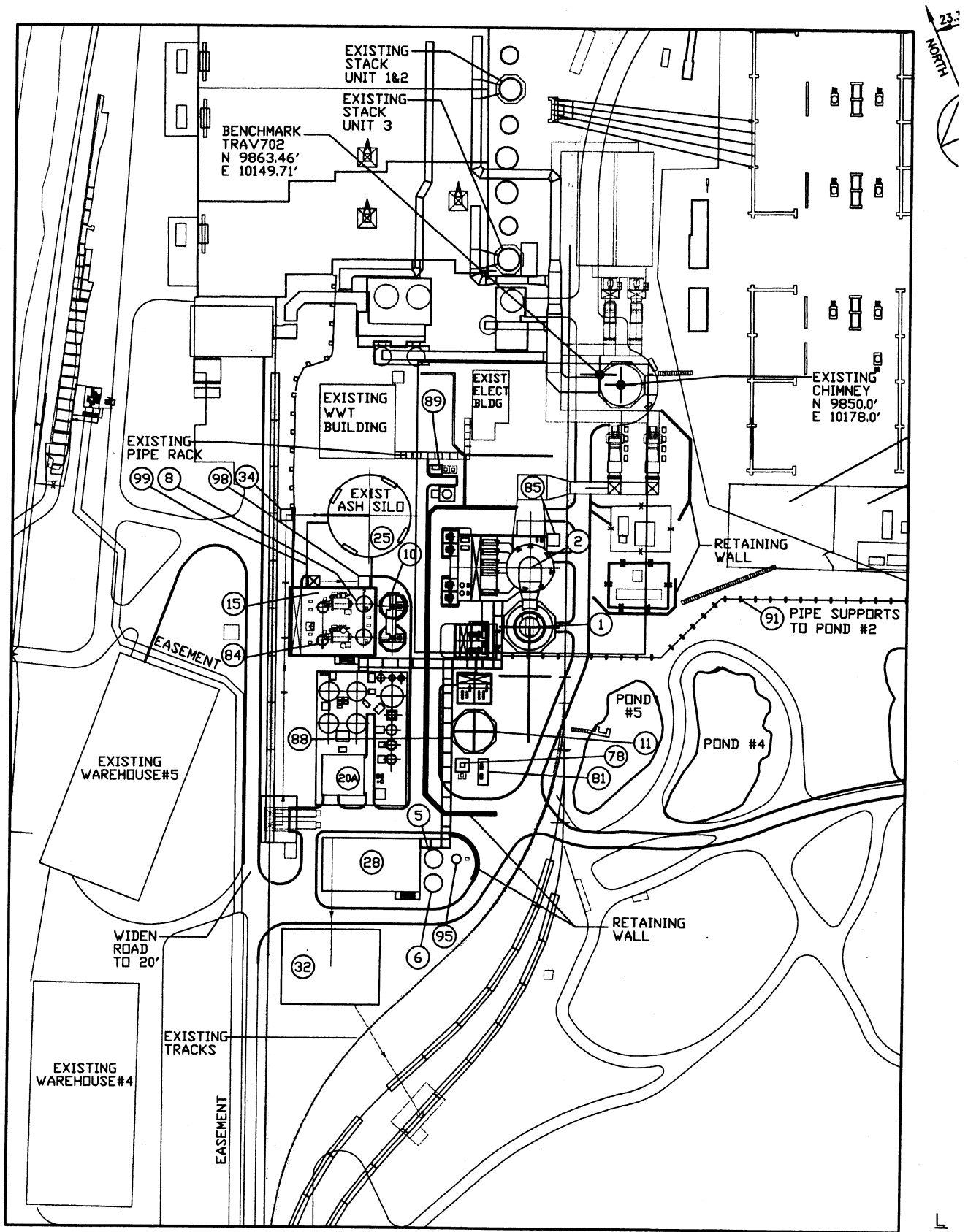
_____ EXISTING EQUIPMENT AND STRUCTURES

_____ NEW EQUIPMENT AND STRUCTURES



PLAN
SCALE: 1" = 80'

ATTACHMENT 6



PLAN

SCALE: 1" = 80'

ATTACHMENT 7

| NEW BUILDING/STRUCTURE INVENTORY | | | | | |
|----------------------------------|--|-------------------|-----------|---------|-------------|
| BLDG. No. | BUILDING. NAME | DIMENSIONS (LxW) | HT. | STORIES | SQ. FOOTAGE |
| ① | CHIMNEY | 67' RADIUS DIA. | 400' | NA | 3,267 SF |
| ② | ABSORBER | 117' X 86' | 133' | 10 | 10,062 SF |
| ⑤ | ABSORBER RETURN TANK | 12' RADIUS | 31' | NA | 452 SF |
| ⑥ | SLURRY FEED TANK | 12' RADIUS | 18' | NA | 452 SF |
| ⑧ | LIMESTONE SILOS (2 REQUIRED) | 10'-6" RADIUS | 29' | NA | 344 SF |
| ⑩ | LIMESTONE SLURRY STORAGE TANKS (2 REQ'D) | 16'-3" RADIUS | 30' | NA | 828 SF |
| ⑪ | FGD MAKE-UP WATER TANK | 27' RADIUS | 52' | NA | 2290 SF |
| ⑮ | LIMESTONE PREP BUILDING | 111' X 92' | 136' | 10 | 10,212 SF |
| ⑳ | WASTE WATER TREATMENT CONTROL BUILDING | 56' X 55' | 23' | 2 | 3080 SF |
| ㉔ | DEWATERING BUILDING | 130' X 70' | 86' | 3 | 9100 SF |
| ㉔ | GYPSUM STORAGE ENCLOSURE | 130' X 100' | 32' | NA | 13,000 SF |
| ㉔ | TRANSFER TOWER | 15' X 15' | 28' | NA | 225 SF |
| ㉔ | QUENCH PUMP HOUSE | 18' X 18' | 16' | 1 | 324 SF |
| ㉔ | FIRE PUMP HOUSE | 14' X 35' | 18' | 1 | 479 SF |
| ㉔ | BALL MILL SLURRY PRODUCT TANKS (2 REQ'D) | 7' RADIUS | 22' | 1 | 146 SF |
| ㉔ | ABSORBER SEAL BOX ENCLOSURE | 16' X 16' | 7' | 1 | 256 SF |
| ㉔ | CENTRAL PIPE RACK | 600 LIN. FT X 20' | 80' AVER. | NA | 1440 SF |
| ㉔ | BOOSTER PUMP HOUSE | 16' X 12' | 16' | 1 | 192 SF |
| ㉔ | SLEEPER RACKS (PIPE SUPPORTS) | 12' X 120' | 12' | NA | 1440 SF |
| ㉔ | FGD BLOWDOWN STORAGE TANK | 6' RADIUS | 18' | NA | 113 SF |
| ㉔ | BUCKET ELEVATORS | 15' X 15' | 22' | NA | 225 SF |
| ㉔ | LIMESTONE UNLOAD ENCLOSURE | 86' X 86' | 38' | NA | 5021 SF |
| | | | | | |
| | | | | | |
| | | | | | |

| EXISTING BUILDING/STRUCTURE INVENTORY | | | | |
|---------------------------------------|------------------|-------------|---------|-------------|
| BUILDING. NAME | DIMENSIONS (LxW) | HT. | STORIES | SQ. FOOTAGE |
| STACK UNIT 1 & 2 | 60' RADIUS | APPROX 400' | NA | 718 SF |
| STACK UNIT 3 | 60' RADIUS | APPROX 400' | NA | 718 SF |
| ASH SILO | 55' RADIUS | 121' | NA | 9503 SF |
| WASTE WATER TREATMENT BUILDING | 100' X 100' | 23' | 2 | 10,000 SF |
| ELECTRICAL BUILDING | 48' X 95' | 31' | 3 | 4107 SF |
| PIPE RACK | 100 LIN FT X 14' | 12' | NA | 1400 SF |
| WAREHOUSE #4 | 141' X 300' | 32' | 1 | 42,300 SF |
| WAREHOUSE #5 | 141' X 300' | 34' | 1 | 42,300 SF |
| CHIMNEY | 21' RADIUS | 700' | NA | 1375 SF |
| | | | | |

EXISTING EQUIPMENT AND STRUCTURES
NEW EQUIPMENT AND STRUCTURES

80 160
1" = 80'

NOTES:

1. THE BUILDING NUMBERS EG. ① ARE TAKEN FROM GENERAL ARRANGEMENT DRAWING 122491-00000-M-GA-001-1-H.