

GENERAL NOTES

- TOPOGRAPHIC SURVEY WAS PROVIDED BY RGA DATED 4/10/02. ALL EXISTING SITE CONDITIONS SHALL BE DETERMINED BY EXAMINATION OF THE SHEETS AND FIELD VERIFICATION.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS GIVEN ON THESE DRAWINGS AS WELL AS STANDARD STATE AND LOCAL SPECIFICATIONS, WHICHEVER IS MORE RESTRICTIVE.
- DEVIATION FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT FROM THE ENGINEER MAY CAUSE THE WORK TO BE UNACCEPTABLE.
- christopher consultants SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES, UTILIZED BY THE CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN FREE FROM DAMAGE AND MAINTAIN UNINTERRUPTED SERVICE TO ALL USERS. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST 48 HOURS PRIOR TO BEGINNING ANY WORK ON THE PROJECT:

LOCAL UTILITY LOCATION COMPANY

WATER SERVICE AND SANITARY SEWER PROVIDER:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DEVELOPMENT ENGINEERING DIVISION
3450 COURTHOUSE DRIVE
ELLCOTT CITY, MARYLAND 21043
(410) 313-3362
CONTACT: JEAN REED

STORM DRAIN AND STORM WATER MANAGEMENT PROVIDER:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
STORM WATER MANAGEMENT DIVISION (410) 313-6444

ELECTRIC PROVIDER:
BALTIMORE GAS AND ELECTRIC
7317 PARKWAY DRIVE SOUTH
HANOVER, MD 21076
(410) 850-4620

TELEPHONE PROVIDER:
VERIZON MARYLAND, INC.
2510 RIVA RD. 6TH FLOOR
ANNAPOLIS, MD 21401
(410) 224-1670
(301) 261-8088 (FAX)
CONTACT: BRYAN SHANK

ROAD REGULATORY AUTHORITIES:

COUNTY: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS
TRAFFIC ENGINEERING DIVISION
3450 COURTHOUSE DRIVE
ELLCOTT CITY, MD 21043
(410) 313-2430
CONTACT: GEORGE FRANGOS

8. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. HE SHALL VERIFY SIZE AND LOCATIONS OF ALL UNDERGROUND UTILITIES AND TEST PIT AT PROPOSED TIE IN LOCATIONS. DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER WELL IN ADVANCE OF CONSTRUCTION START. START OF CONSTRUCTION BY THE CONTRACTOR SHALL CONSTITUTE FULL ACCEPTANCE OF ALL SITE CONDITIONS BY THE CONTRACTOR.

9. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR CONSTRUCTION PRIOR TO BEGINNING WORK.

10. ALL UTILITIES ARE TO REMAIN UNLESS DESIGNATED TO BE REMOVED AND ALL APPURTENANCES SHALL BE ADJUSTED TO FINISH GRADE.

11. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL STAKE OUT AND VERIFY LOCATIONS OF ALL IMPROVEMENTS AND UTILITY TIE IN LOCATIONS.

12. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY THE ENGINEER. IN THE EVENT OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS, THE FIGURED DIMENSIONS SHALL BE HELD.

13. CONTRACTOR SHALL INCLUDE DEMOLITION AND REMOVAL OF CURBING, SIDEWALK, AND PARKING AREAS WITHIN THE WORK AREA AS WELL AS REMOVAL AND CAPPING OF ANY UNDERGROUND UTILITIES SHOWN TO BE REMOVED.

14. THE CONTRACTOR SHALL ENSURE THAT CURRENT AS-BUILT RECORDS ARE MAINTAINED DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION, CERTIFIED (i.e. P.E. STAMPED) AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE OWNER.

15. CONTRACTOR SHALL MAINTAIN ALL SEDIMENT CONTROL DEVICES WITHIN THE LIMITS OF THE SITE DURING CONSTRUCTION OF THE SITE IMPROVEMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS MAY BE NECESSARY DURING CONSTRUCTION AND/OR BY GOVERNING AGENCIES.

16. THE SUBJECT PROPERTY IS ZONED M-2 PER THE 1993 COMPREHENSIVE ZONING PLAN.

17. ALL ADJACENT PROPERTIES ARE NON-RESIDENTIAL USES.

18. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.

19. PERIMETER SWM LANDSCAPING FOR POND #1 HAS BEEN INCORPORATED INTO THE POND PLANTINGS IN ACCORDANCE WITH THE MDE DESIGN GUIDE APPENDIX A. ALTERNATIVE COMPLIANCE REGULATIONS FOR PERIMETER LANDSCAPING REQUIREMENTS ARE DEFERRED UNTIL SITE DEVELOPMENT PLANS ARE SUBMITTED FOR THESE PARCELS.

20. A TOTAL OF 7.59 ACRES OF FOREST RETENTION, AND 3.79 ACRES REFORESTATION ARE PROPOSED UNDER THIS PLAN. AS SUCH, THE REQUIRED SURETY AMOUNT FOR THE RETENTION ACREAGE IS \$66,124.08 AND THE REQUIRED SURETY AMOUNT FOR REFORESTATION IS \$82,546.20 THE TOTAL AMOUNT OF THE REQUIRED FOREST CONSERVATION ACT SURETY IS \$148,670.28. A FOREST CONSERVATION PLAT OF EASEMENT WAS RECORDED IN LAND RECORDS AS PLAT #16682. THE REMAINING FOREST CONSERVATION OBLIGATION OF 8.1 ACRES WILL BE SATISFIED THROUGH FEE-IN-LIEU, AT \$0.50 PER SQUARE FOOT FOR A TOTAL OF \$176,418.00.

21. IN AN AREA WHERE EXCAVATION IS NEEDED WITHIN THE ROAD RIGHT-OF-WAY, EXCAVATION MUST BE MADE WITHIN ONE (1) FOOT OF THE FINAL SUB-GRADE.

22. IN AN AREA WHERE FILL IS NEEDED WITHIN THE ROAD RIGHT-OF-WAY, THE FILL SHALL BE MINIMUM OF TWO (2) FEET BELOW THE FINAL SUB-GRADE.

23. EROSION & SEDIMENT CONTROL BASIN SHALL NOT BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT FACILITY UNTIL ROAD (F-04-70) AND FUTURE BUILDING CONSTRUCTION HAVE BEEN COMPLETED.

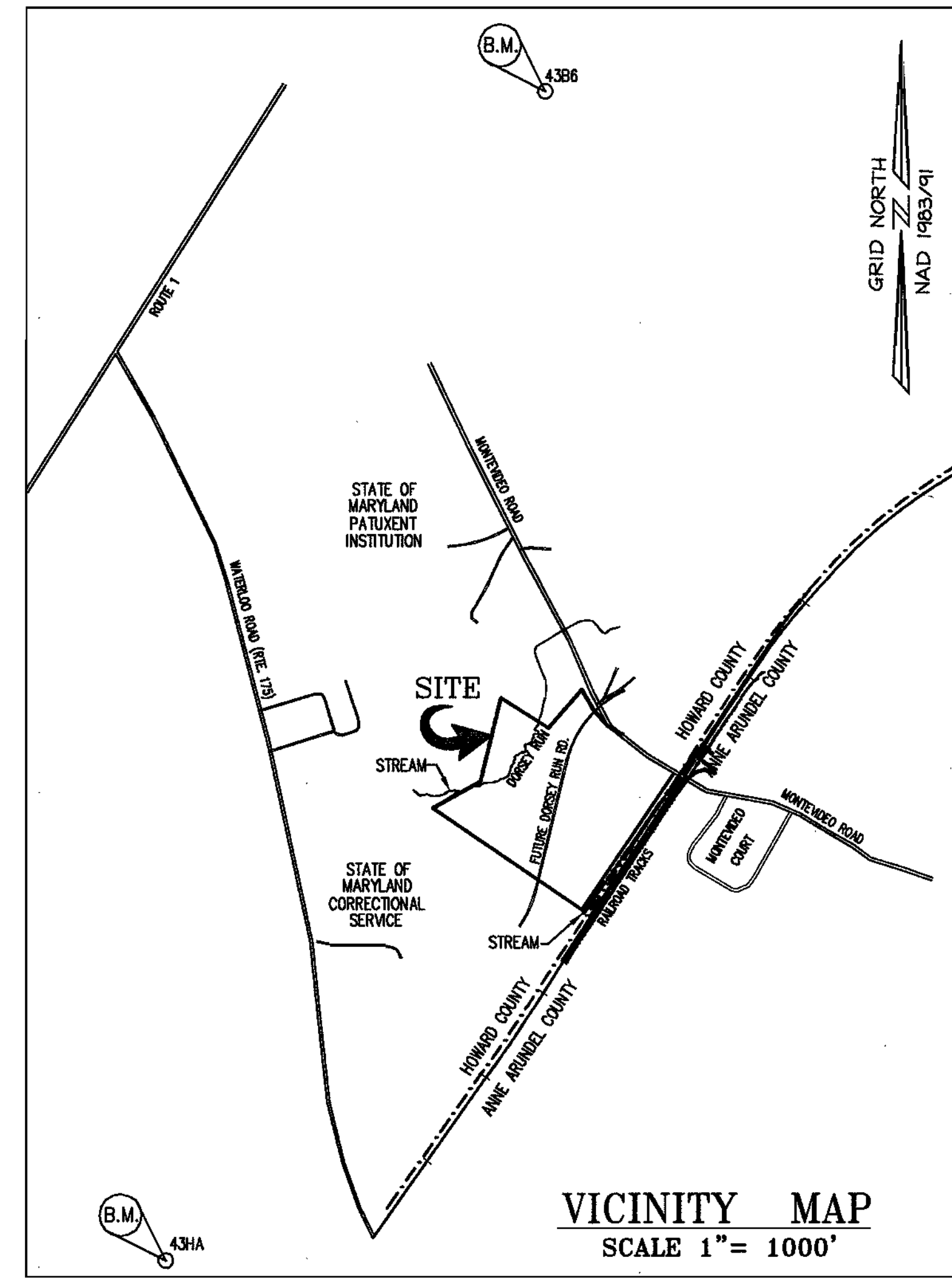
SITE DEVELOPMENT PLANS FOR MASS GRADING BALTIMORE AIRCOIL AT DORSEY RUN INDUSTRIAL CENTER

SITE ANALYSIS

- TOTAL AREA OF PARCELS: 2,325,233 SQ. FT. (62.04 AC.)
- ZONING: M-2
- EXISTING USE: VACANT
- PROPOSED USE: PAD SITES
- BUILDING DATA: N/A
- PARKING DATA: N/A
- IMPERVIOUS AREA: N/A
- DEED REFERENCE: LIBER/FOLIO 7315/688
- PLAT REFERENCE: PLAT N/A
- RELATED FILES FOR THIS SITE: N/A
- ELECTION DISTRICT NO. 2, HOWARD COUNTY MARYLAND
- TAX MAP: 43, GRID: 16, PARCELS: 100,325,372,574 & 572
- AREA OF DISTURBANCE: 22.6 ACRES

BENCHMARK

Horizontal Datum: Howard County Grid System (NAVD 1927)
Vertical Datum: NAVD 1929
Howard County Monument 439A
N540761.72, E1373837.37, Elev. 224.90
Howard County Monument 439B
N550601.61, E1376866.05, Elev. 210.56



SHEET INDEX

NO.	TITLE
1	COVER SHEET MASS GRADING PLAN
2	SCHEMATIC PLAN (1"=100')
3	SOIL BORING LOG FOR PONDS
4	PRE-DEVELOPMENT OVERALL DRAINAGE DIVIDES & SWM PLAN (1"=100')
5	POST-DEVELOPMENT OVERALL DRAINAGE DIVIDES & SWM PLAN (1"=100')
6	POND #1
7	STORMWATER MANAGEMENT DETAILS
8	LANDSCAPE PLAN
9	DAM BREACH AND OUTFALL ANALYSIS
10	FOREST CONSERVATION PLAN VIEW FOR ENTIRE PROPERTY (1"=100')
11	FOREST CONSERVATION PLAN (1"=30')
12	FOREST CONSERVATION PLAN (1"=30')
13	FOREST CONSERVATION PLAN (1"=30')
14	FOREST CONSERVATION PLAN (1"=30')
15	FOREST CONSERVATION PLAN (1"=30')
16	FOREST CONSERVATION PLAN (1"=30')
17	FOREST CONSERVATION PLAN (1"=30')
18	FOREST CONSERVATION DETAILS

SEE GP-04-55 FOR SEDIMENT CONTROL FOR THIS PLAN.

ADDRESS CHART	
LOT/PARCEL	STREET ADDRESS
572	7595 MONTEVIDEO ROAD

PERMIT INFORMATION CHART				
PROJECT NAME	LOTS/PARCELS	CENSUS TRACT		
BALTIMORE AIR COIL	574, 372, 325, 572, 100	6067.03		
PLAT NO.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
N/A *		M-2	43	1ST
WATER CODE	SEWER CODE			
N/A	N/A			

* see # 16682 for FC Easement

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 8/6/04

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 8/10/04

DIRECTOR
DATE: 8/10/04

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE: _____

SEDIMENT CONTROL NOTE

EROSION AND SEDIMENT CONTROL AND POND CONSTRUCTION FOR THIS PROJECT WAS PROVIDED UNDER GP-04-55* AND WAS APPROVED BY HOWARD SOIL CONSERVATION DISTRICT ON 03/24/04.

Reviewed for HOWARD SCD and meets Technical Requirements.

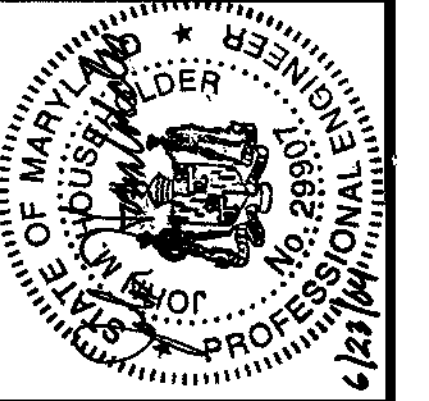
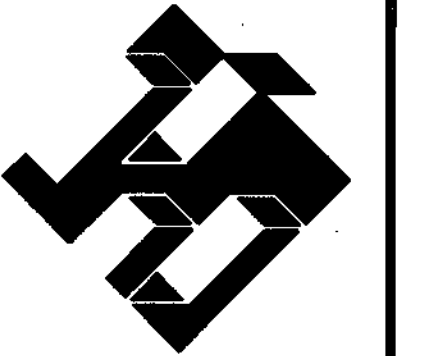
Jin Morales
USDA-Natural Resources, Conservation Service
Date: 7/27/04

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD
Date: 7/27/04

* SEDIMENT CONTROLS INSTALLED UNDER GP-04-55 MUST REMAIN UNTIL COMPLETION OF ALL WORK OF THIS PLAN

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engineering · surveying · land planning
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7712 Columbia Gateway Drive, Suite 100 Columbia, MD, 22046
410.872.8690 · fax: 410.872.8693



COVER SHEET
MASS GRADING PLAN

**BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND**

SCALE: N/A

DATE: JUNE 22, 2004

DESIGN: JMH
DRAWN: TN/ADL
CHECKED: JMH

SHEET No.

1 OF 18

PROJECT PHASING

THE 82.04 ACRE SITE IS TO BE BISECTED BY DORSEY RUN ROAD. THERE ARE TWO PROPOSED BUILDING SITES. THE NORTHERN SITE IS TO BE THE 64,000 SF HEADQUARTERS FOR BALTIMORE AIR COIL. THE SOUTHERN SITE IS TO BE A 630,000 SF WAREHOUSE.

THE PROJECT IS TO BE BUILT IN 5 PHASES. THEY ARE AS FOLLOWS:

PHASE I: MASS GRADING OF THE BALTIMORE AIR COIL SITE (BUILDING A), DORSEY RUN ROAD, AND CONSTRUCTION OF STORMWATER MANAGEMENT POND #1.

PHASE II: CONSTRUCTION OF DORSEY RUN ROAD FROM MONTEVIDEO ROAD TO THE WESTERN PROPERTY LINE.

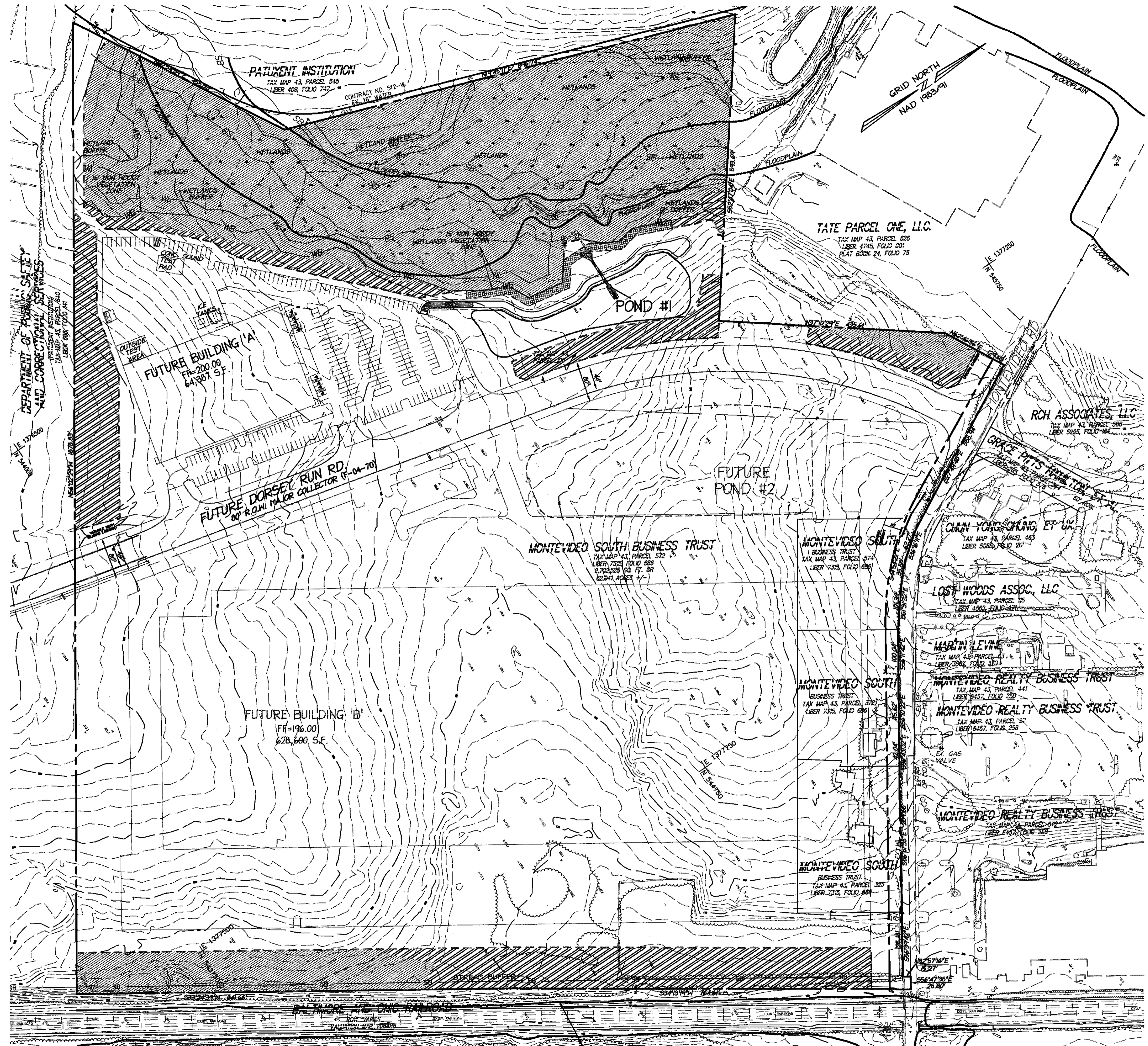
PHASE III: CONSTRUCTION OF THE BALTIMORE AIR COIL HEADQUARTERS (BUILDING A) AND SURROUNDING PARKING LOTS.

PHASE IV: MASS GRADING OF WAREHOUSE SITE (BUILDING B) AND CONSTRUCTION OF STORMWATER MANAGEMENT POND #2.

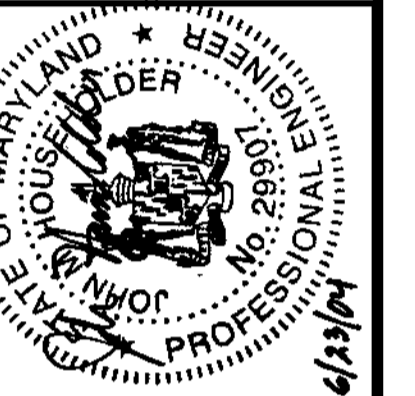
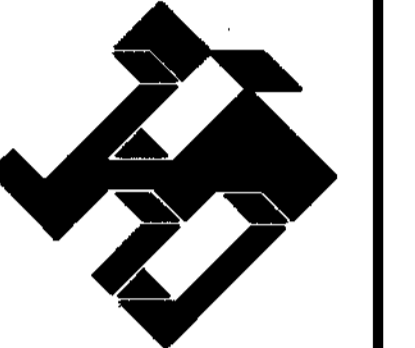
PHASE V: CONSTRUCTION OF WAREHOUSE (BUILDING B) AND SURROUNDING PARKING LOTS.

LEGEND

- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woddy Vegetation
- Tree Protection Fence
- Temporary Sign
- Permanent Sign
- Forest Conservation Easement
- Wetland
- Stream
- Wetland Delineation
- 25' Wetland Buffer
- 50' Stream Buffer
- Floodplain (100 YR) Boundary
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)
- Ex. Contour
- Prop. Mass Grading Contour
- Parcel Line
- Property Line
- Road ROW



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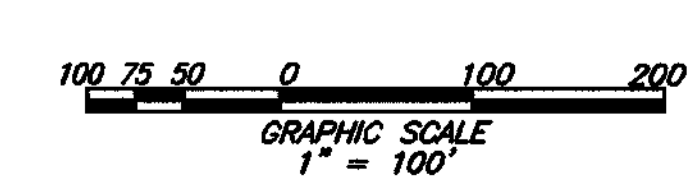
SCHEMATIC PLAN

BALTIMORE AIR COIL
PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 100'
 DATE: JUNE 22, 2004
 DESIGN: TIZ/JMH
 DRAWN: TNV/ADL
 CHECKED: JMH
 SHEET No. 2 OF 18

APPROVED DEPARTMENT OF PLANNING AND ZONING

	8/6/04
CHIEF, DEVELOPMENT/ENGINEERING DIVISION MAJ	DATE
	8/10/04
CHIEF, DIVISION OF LAND DEVELOPMENT HS	DATE
	8/10/04
DIRECTOR	DATE



VATC 8989 Herrmann Drive, Suite 300
Columbia, MD 21045-4710
(410) 381-0232
Fax (410) 381-0247

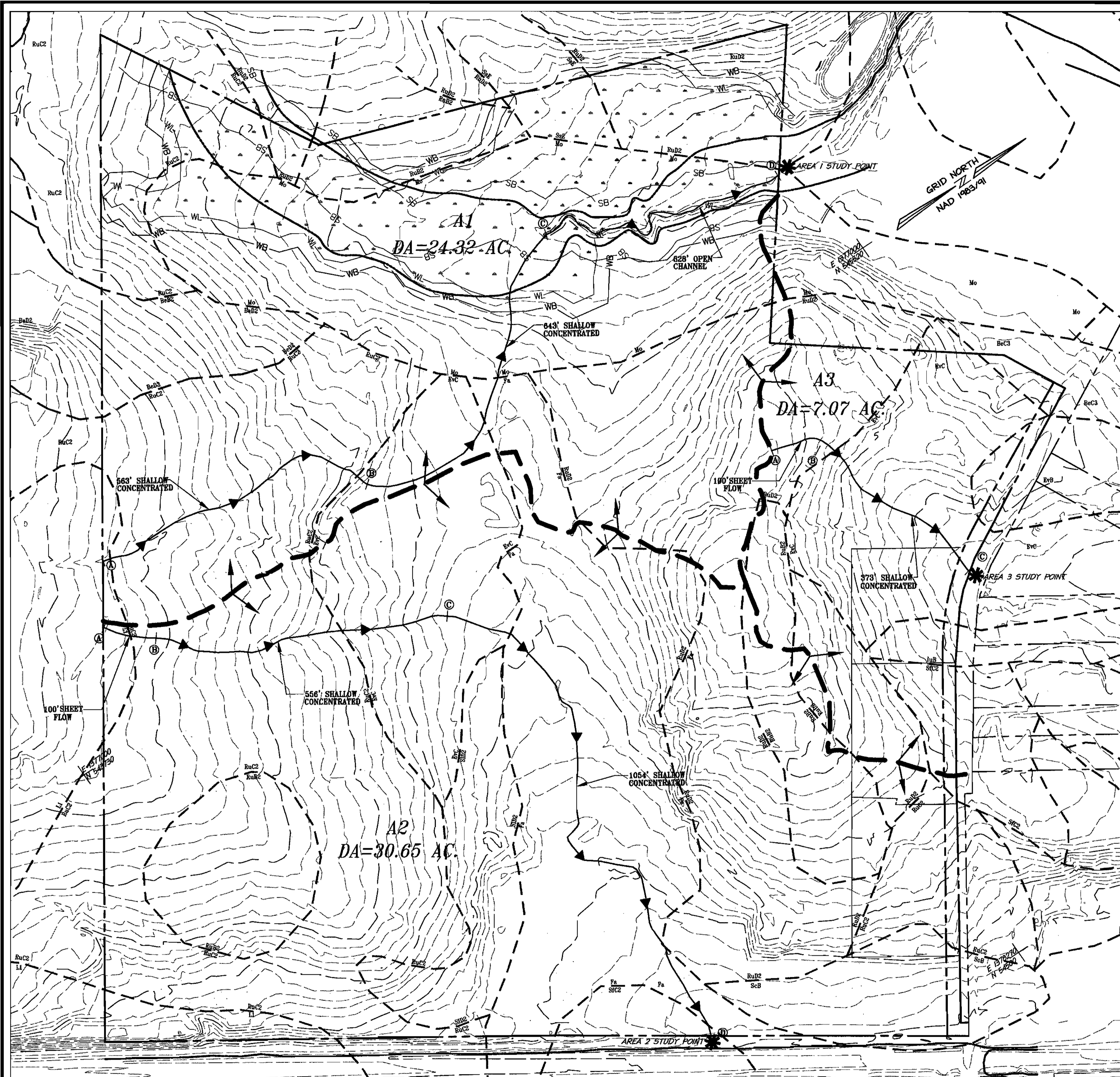
TEST BORING LOG

CLIENT: T.C. Mid-Atlantic Development, Inc. BORING # SB-5
PROJECT NAME: Proposed BAC Facility JOB # 09.14457.0030
PROJECT LOCATION: Howard County, Jessup, Maryland DRAWN BY: W. Tucker
APPROVED BY: F. Pons

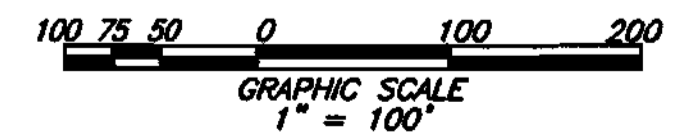
DRILLING and SAMPLING INFORMATION
Date Started: 9/24/03 Hammer Wt. 140 lbs.
Date Completed: 9/24/03 Hammer Drop 30 in.
Driller: J. Scribellito Spoon Sampler OD 2.25 in.
Field Professional: N/A Rock Core Dia. N/A in.
Boring Method: HSA Shelby Tube OD N/A in.

TEST DATA

Stratum	Depth	Sample	Soil Classification	Moisture Content %	Liquid Limit (LL)	Plastic Limit (PL)	Remarks
1	1-2	SS	10' TOPSOIL Gray, moist, medium stiff, FINE SANDY SILT (ML), trace mica				
2	2-3	SS	Gray and brown, moist, medium dense to dense, SILTY FINE TO MEDIUM SAND (SM)				
3	3-4	SS					
4	4-5	SS					
5	5-6	SS					
6	6-7	SS					
7	7-8	SS					
8	8-9	SS					
9	9-10	SS					
10	10-11	SS					
11	11-12	SS					
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201	201-202	SS					



PRE DEVELOPMENT DRAINAGE MAP
SCALE: 1" = 100'



SOILS DATA

Type	Name	Hydrologic Group
BeC3	Beltsville Silt Loam	C
BeD2		
EvC	Evesboro Loamy Sand	A
Fa	Fallington Loam	D
IuB	Iuka Loam	C
L1	Leonardtown Silt Loam	D
Mb	Mixed Alluvial Land	D
RuB2		
RuC2	Runford Loamy Sand	B
RuD2		
ScB	Sandy and Clayey Loam	C
SfC2	Sassafras Gravelly Sandy Loam	B
SfD2	Sassafras Loam	B
SsE	Sassafras Soils	B

BALTIMORE AIRCOIL COMPANY
At
DORSEY RUN INDUSTRIAL CENTER
STORMWATER MANAGEMENT
NARRATIVE

The subject site is located on the north side of the intersection of Montevideo Road and the proposed extension of Dorsey Run Road in the Jessup section of Howard County, Maryland. The site encompasses approximately 60 acres of forested land and is within the Dorsey Run watershed.

The site is zoned M-2, heavy manufacturing. The proposed development consists of two buildings as well as Dorsey Run Road. Phases I, II and III on the northern portion of the site consist of an office building with the necessary parking lot, a stormwater management facility and the extension of the proposed Dorsey Run Road. The remainder of the site, Phases IV and V, will be developed in the near future and will consist of a warehouse building with the necessary parking lot and loading areas, as well as a second stormwater management facility.

The site is bounded by an existing railroad track to the southeast. Across the railroad tracks is Anne Arundel County jurisdiction. To the east of the site is Montevideo Road. Montevideo Road's adjacent properties are used by small businesses. The Tate Property, which is an existing office and warehouse is adjacent to the eastern property line of the proposed site. The Department of Public Safety and Correctional Services own the property to the west of the proposed site. The Patuxent Institution owns the property to the north west of the site. Dorsey Run flows along the northern property line and a separate floodplain study has been submitted which maps out the 100-yr floodplain.

Both pre-developed and post-developed drainage areas were analyzed using the TR-55 computer model. The total flow was computed based on time of concentration and land use. TR-20 was utilized for modeling the proposed pond for Phase I and the future pond for Phase II per the requirements of Howard County Design Manual Volume I and the 2000 Maryland Stormwater Design Manual Volume I & II.

The proposed stormwater management pond for Phase I is a class 'A' pond and was designed per MD-37B. The pond will provide water quality and control of the post-developed runoff from the proposed office building and for the extension of Dorsey Run Road via extended detention as shown on sheet 17 of the Mass Grading Plan. The pond will be protected by a SWM easement surrounding the entire pond, a 20' access road easement, and a 15' non-woody vegetation easement along the toe of the dam.

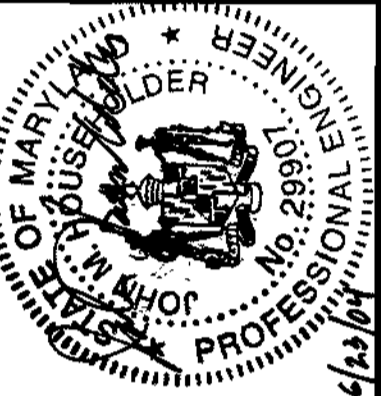
PRE DEVELOPMENT

Drainage Area	Hydrologic Soil Group (Ac)				Total Drainage Area (Ac)	RCN
	A	B	C	D		
1	0.06	12.85	1.31	9.30	24.32	63
2	3.34	18.35	1.44	7.52	30.65	50
3	3.66	2.98	0.43	0.00	7.07	43
Total Site Area:					62.04	59

LEGEND

- DRAINAGE DIVIDE
- PROP. Tc PATH
- SOIL LINE

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7712 Columbia Gateway Drive, Suite 100 Columbia, MD 21046
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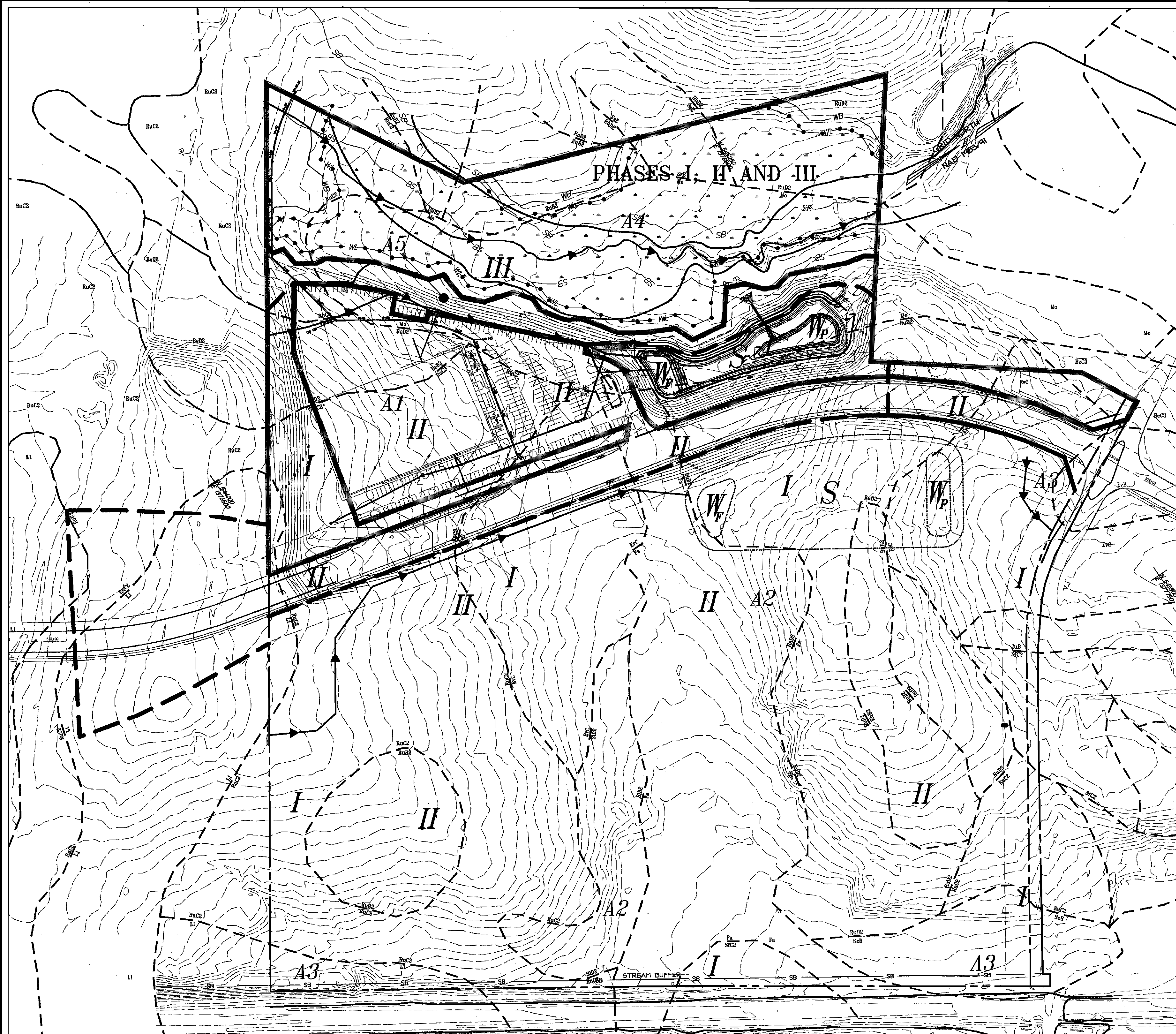
PRE-DEVELOPMENT
OVERALL DRAINAGE DIVIDES
AND SWM PLAN

BALTIMORE AIR COIL
PHASE I
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

SCALE: 1" = 100'

APPROVED:	DEPARTMENT OF PLANNING AND ZONING
	8/6/04 DATE
	8/14/04 DATE
	8/16/04 DATE

DATE: JUNE 22, 2004
DESIGN: T2/JFH
DRAWN: TN/ADL
CHECKED: JFH
SHEET No. 4 of 18



LEGEND

- AREA DIVIDE
- WATER QUALITY AREAS FOREBAY
- STORM WATER MANAGEMENT AREAS
- WATER QUALITY AREAS MICROPOOL
- NATURAL AREA CONSERVATION CREDIT AREA-LB ACV-
- DRAINAGE DIVIDE
- PROP. TO PATH
- SOIL LINE

SOILS DATA

Type	Name	Hydrologic Group
BuC3	Beltsville Silt Loam	C
BuB2		
EvC	Evesboro Loamy Sand	A
Fa	Fallingston Loam	D
LuB	Luka Loam	C
Li	Leonardtown Silt Loam	D
Mo	Mixed Alluvial Land	D
RuB2		
RuC2	Rumford Loamy Sand	B
RuB2		
SaB	Sandy and Clayey Loam	C
SrC2	Sassafras Gravelly Sandy Loam	B
SrD2	Sassafras Loam	B
SsE	Sassafras Soils	B

ULTIMATE LAND USE

Type	Name
I	Open Space (Lawns & Parks)
II	Impervious Area (Parking Lots, Buildings & Roads)
III	Woods

ULTIMATE DEVELOPMENT

Drainage Area	Hydrologic Soil Group	Area (Ac)	Total Drainage Area (Ac)	RCN	
A1	1,17	6,28	2,00	5,29	93
A4	0,00	4,49	0,00	5,13	67
A5	0,00	0,17	0,00	1,42	78
Total Site Area:				62,04	85

* 3.38 ACRES OF THE 14.04 IS OFFSITE AREA.

PRE VS. POST RELEASE RATES

Pre-development Discharges

Drainage Area	Q1 (cfs)	Q10 (cfs)	Q100 (cfs)
Area 1	6.0	51.0	102.0
Area 2	3.0	41.0	91.0
Area 3	0.0	1.0	7.0
Total	9.0	93.0	200.0

Post-development Discharges

Drainage Area	Q1 (cfs)	Q10 (cfs)	Q100 (cfs)
Area 1 - Pond 1	1.0	58.6	90.8
Area 4	3.0	20.0	38.0
Area 5	2.0	6.0	10.0
Total	5.7	114.9	203.1

IMPERVIOUS AREA CALCULATIONS

Drainage Area	Land Use (sq ft)					Total	%
	Building Footprint	Parking Lot	SWH %	Open Space	Impervious		
1	64,400	215,105	60,263	146,400	486,168	70	
2	627,400	498,549	133,956	126,297	1,386,202	91	
3	0	37,200	0	305,921	343,121	11	
4	0	0	0	419,047	419,047	0	
5	0	0	0	69,269	69,269	0	
Total	691,800	751,552	194,219	1,064,944	2,702,515	61	

THE AVERAGE PERCENT IMPERVIOUS AREA FOR COMMERCIAL AND BUSINESS DISTRICTS IS 66. AN IMPERVIOUS PERCENTAGE OF 65 WILL BE USED SINCE IT IS GREATER THAN THE CALCULATED PERCENT IMPERVIOUS AREA OF 61.

IMPERVIOUS AREA CALCULATIONS FOR POND 1

Drainage Area	Land Use (sq ft)					Total	%
	Building Footprint	Parking Lot	SWH %	Open Space	Impervious		
1	64,400	215,105	60,263	146,400	486,168	70	
4	0	0	0	419,047	419,047	0	
5	0	0	0	69,269	69,269	0	
Total	64,400	215,105	60,263	634,716	974,484	35	

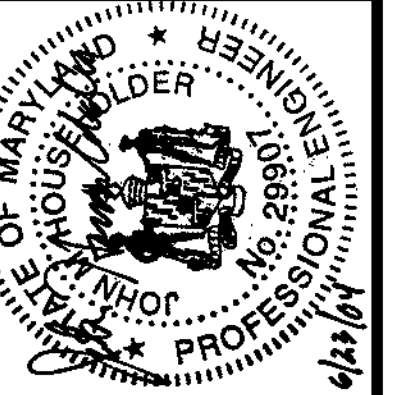
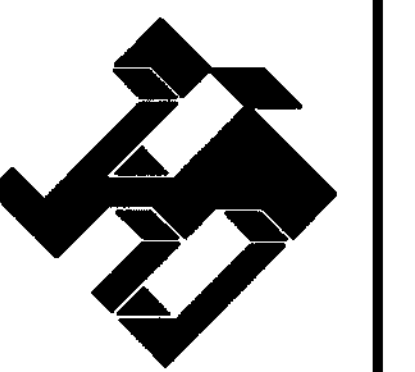
ULTIMATE DEVELOPMENT DRAINAGE MAP
SCALE: 1" = 100'



APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/16/04 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (MPC)
 [Signature] 8/10/04 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 8/10/04 DATE
 DIRECTOR

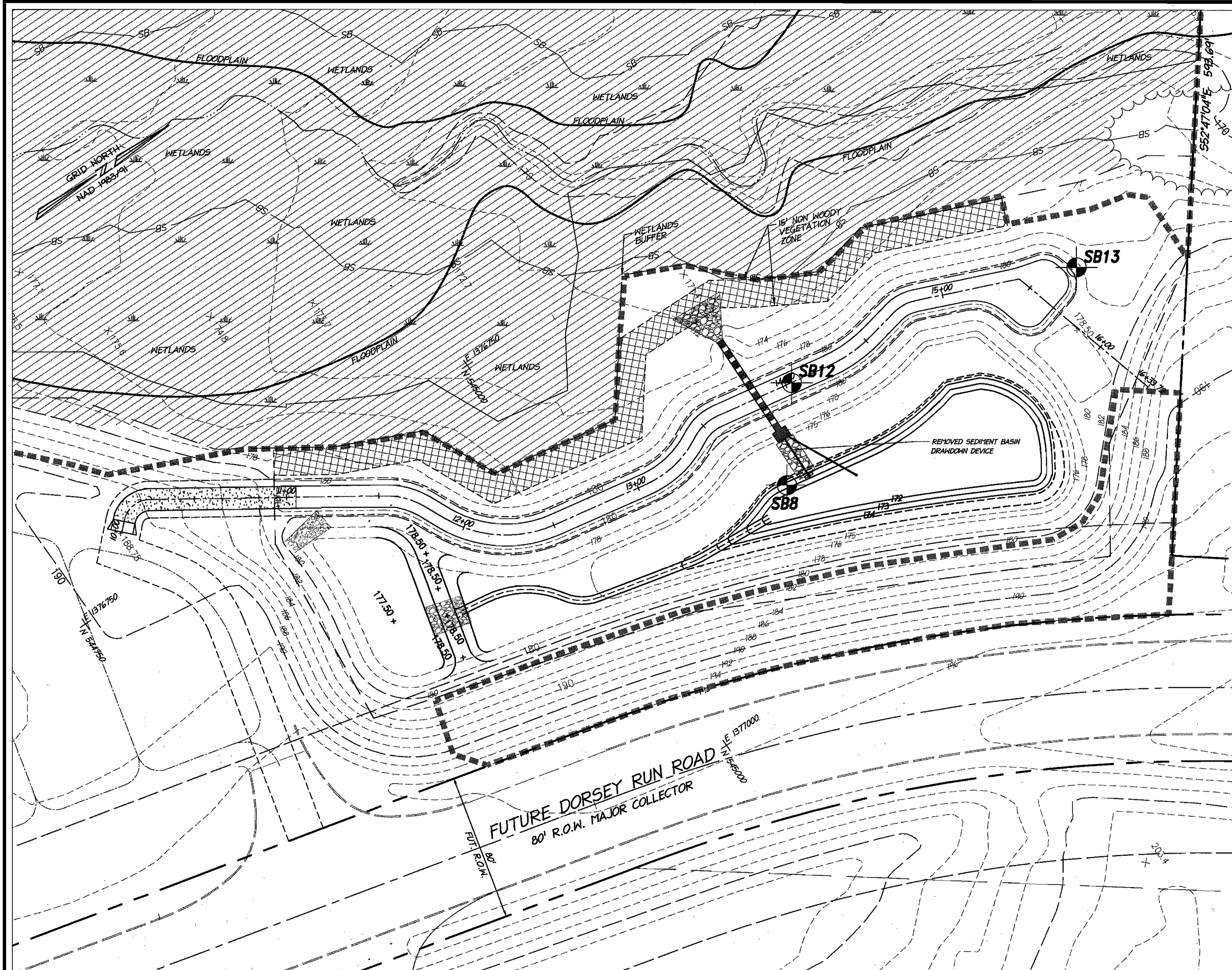
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**POST DEVELOPMENT
OVERALL DRAINAGE DIVIDES
AND SWM PLAN**

**BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND**

SCALE: 1" = 100'
DATE: JUNE 22, 2004
DESIGN: MZ/JPH
DRAWN: TN/ADL
CHECKED: JPH
SHEET No. **5 of 18**



SWM POND #1
SCALE: 1"=30'

LEGEND

- - - - - EXISTING CONTOUR
- x 233.7 EXISTING SPOT ELEVATION
- - - - - PROPOSED CONTOUR
- x 8.3 PROPOSED SPOT ELEVATION
- ~~~~~ EXISTING WOODS LINE
- - - - - EXISTING STORM SEWER
- - - - - PROPOSED STORM SEWER
- - - - - 10-YR/100-YR. WSE
- ⊙ SB8 BORING LOCATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHEF. DEVELOPMENT ENGINEERING DIVISION MAJ	8/6/04	DATE
CHEF. DIVISION OF LAND DEVELOPMENT	8/10/04	DATE
DIRECTOR	8/10/04	DATE



SWM Pond Summary #1

Type	Micropool Extended Detention Pond
Responsibility	Privately Maintained
Drainage Area	14.54 Acres
Top of Embankment	181.30'
Pond Bottom Elevation	175.00'
Emergency Spillway Elevation	174.50'
Micropool	Bottom Elevation: 172.00'
	Top Elevation: 175.00'
	Storage: Required = 21,507 cf, Provided = 21,650 cf
Forebay	Bottom Elevation: 176.00'
	Top Elevation: 178.50'
	Storage: Required = 4,552 cf, Provided = 7,374 cf
Riser	8'-0"x6'-0" Reinforced Concrete
Barrel	42" RCP (ASTM C-361, B-25 Pipe)
Recharge	Required = 6,603 cf, Provided = 7,000 cf
Volume	
Water Quality	WSEL: 178.10'
Volume	Storage: Required = 21,507 cf, Provided = 23,554 cf
Channel Protection	WSEL: 177.06'
Volume	Storage: Required = 65,000 cf, Provided = 65,000 cf
10 Year	WSEL: 179.33'
	Peak Discharge: 58.6 cfs, Storage: Provided = 40,598 cf
100 Year	WSEL: 179.59'
	Peak Discharge: 90.8 cfs, Storage: Provided = 29,596 cf
100 Year Clogged	WSEL: 180.33'
	Peak Discharge: 94.1 cfs, Storage: Provided = 56,924 cf

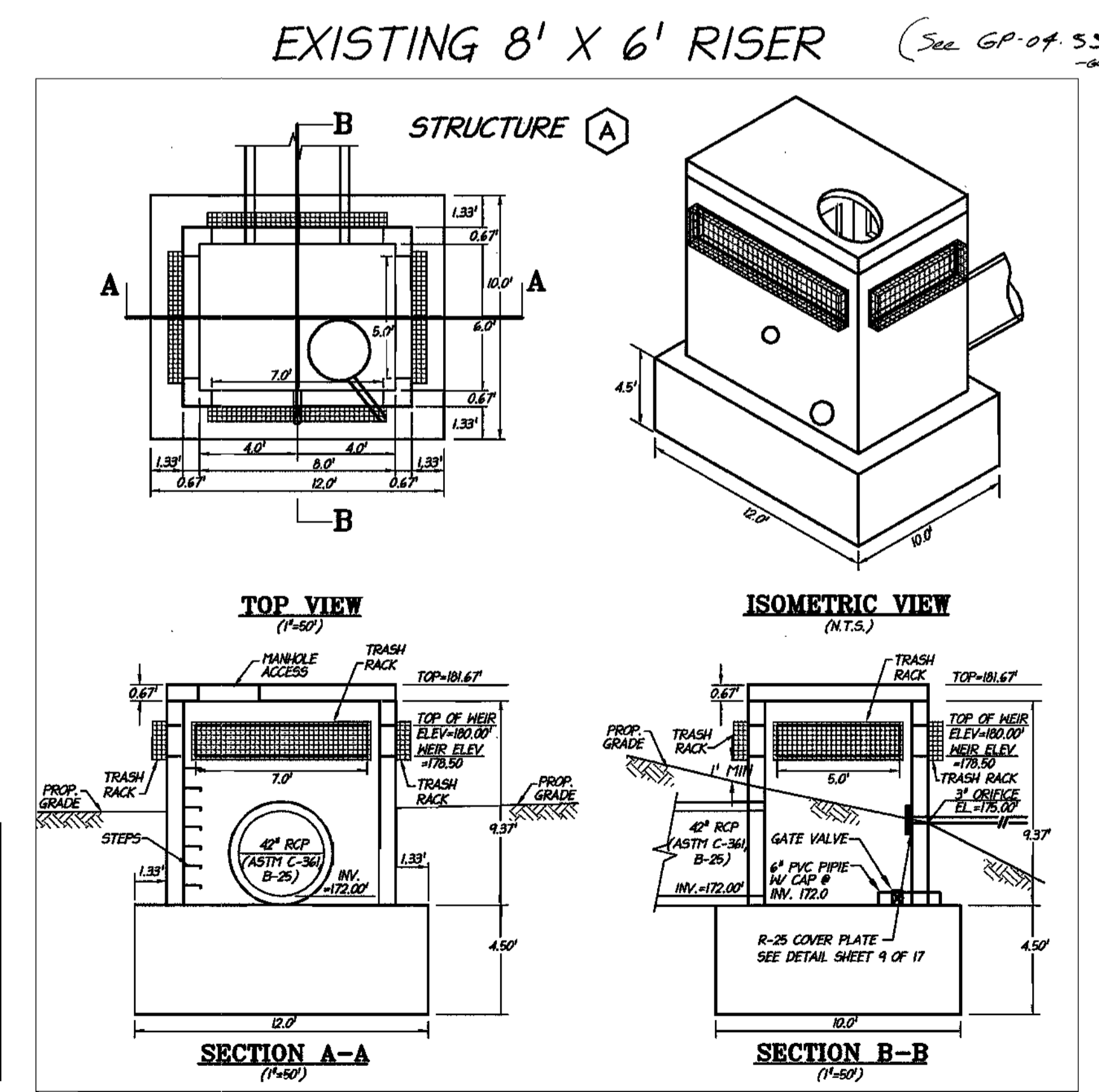
REFER TO SWM BOOKLET FOR SWM COMPUTATIONS.

NOTE: STORMWATER MANAGEMENT POND IS TO BE PRIVATELY OWNED & MAINTAINED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORM WATER PONDS

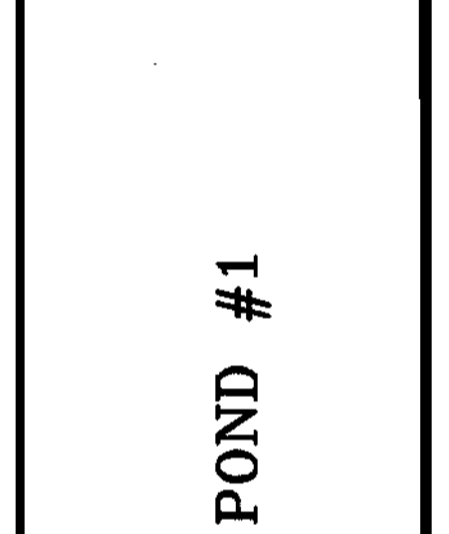
ROUTINE MAINTENANCE:
FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED. SEDIMENT & DEBRIS SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT FOREBAY WHEN 50% OF THE FOREBAY VOLUME HAS BEEN LOST.

NON-ROUTINE MAINTENANCE:
STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS. SEDIMENT SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASON, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.



NOTE: PROVIDE RESEATING GATE VALVE ON POND DRAIN. VALVE SHALL BE LOCATED INSIDE RISER SUCH THAT IT CAN BE ACCESSED FROM MANHOLE.

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POND #1

BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED

DATE: JUNE 22, 2004

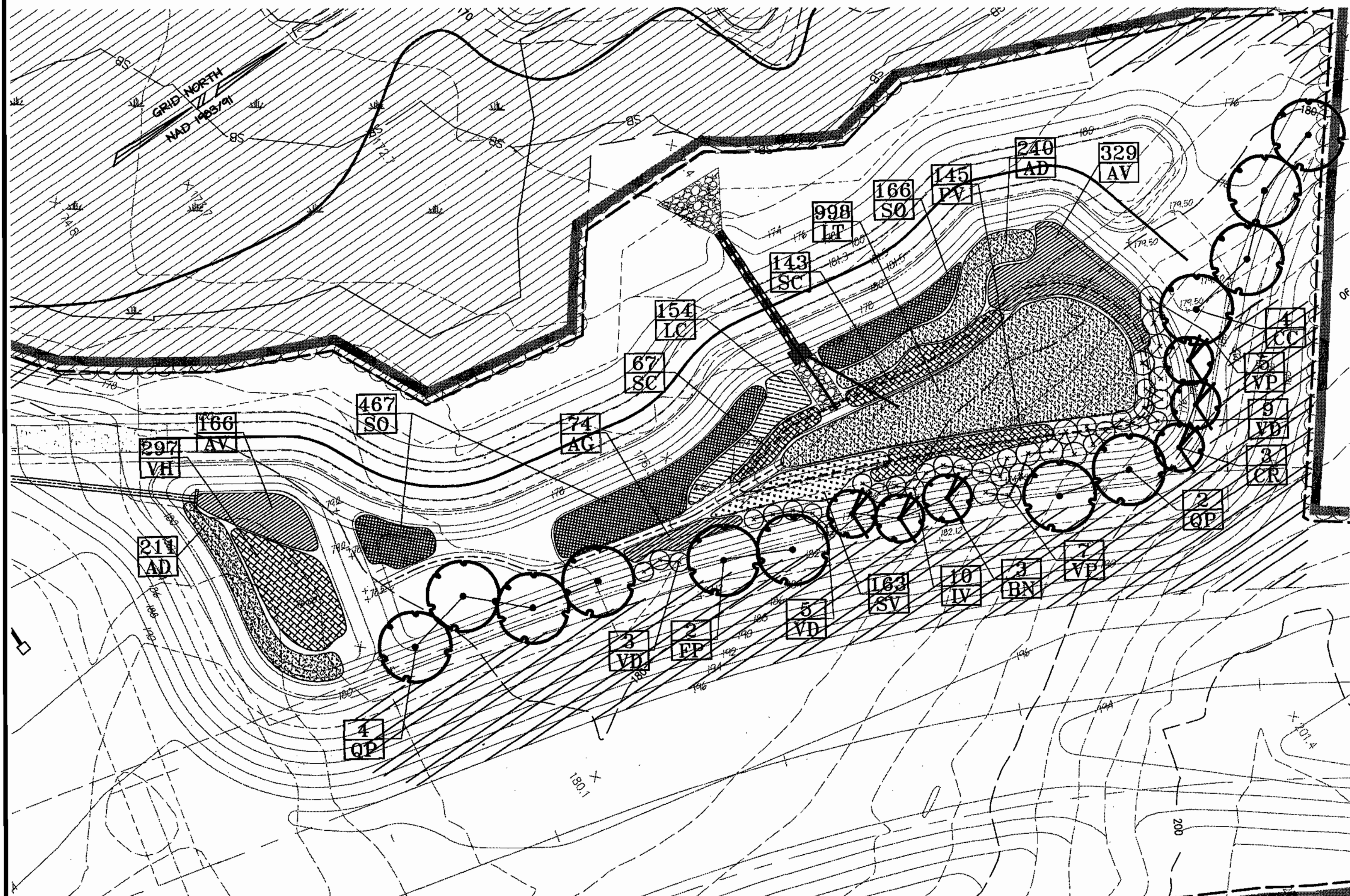
DESIGN: MZ/JMH

DRAWN: TN/ADL

CHECKED: JMH

SHEET No.

POND CONSTRUCTION SPECIFICATIONS FOR MDE-378 CLASS 'A' POND

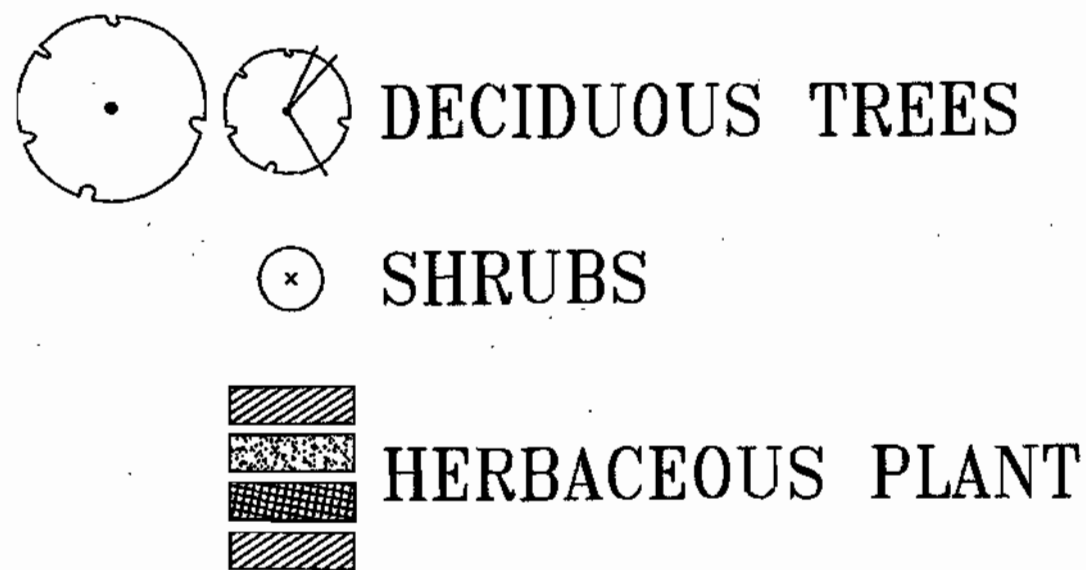


NOTE: STORMWATER MANAGEMENT PERIMETER LANDSCAPING HAS BEEN REMOVED AT THE RECOMMENDATION OF HOWARD COUNTY AND INCORPORATED INTO THE PLAN PLANTINGS AS PART OF THE ALTERNATIVE COMPLIANCE OPTION IN THE HOWARD COUNTY LANDSCAPE MANUAL.

NOTE: SURVEY FOR LANDSCAPING IN STORMWATER MANAGEMENT FACILITY HAS BEEN INCLUDED IN THE CONSTRUCTION COST ESTIMATE.

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
MAJOR DECIDUOUS TREES					
CC	4	Carya cordiformis	Bitternut Hickory	2" cal.	b&b
FP	2	Fraxinus Pennsylvanica	Green Ash	2" cal.	b&b
QP	6	Quercus palustris	Pin Oak	2" cal.	b&b
MINOR DECIDUOUS TREES					
BN	3	Betula nigra	River Birch	1.5" cal.	b&b
CR	3	Crataegus Crus-gali	Cockspur Hawthorn	1.5" cal.	b&b
SHRUBS					
IV	21	Ilex verticillata	Winterberry	18" hgt.	#3 cont.
VD	14	Viburnum dentatum	Arrow-wood Viburnum	24" hgt.	#3 cont.
VP	12	Viburnum prunifolium	Blackhaw Viburnum	24" hgt.	#3 cont.
HERBACEOUS PLANTS					
AD	421	Aster dumosus	Bush Aster		plug
AG	74	Andropogon glomeratus	Bushy Bluestem		plug
AV	495	Andropogon virginicus	Broomsedge		plug
LT	998	Lemna trinervis	Duckweed		plug
LC	154	Lobelia cardinalis	Cardinal Flower		plug
PV	145	Panicum virgatum	Switchgrass		plug
SC	210	Scirpus cyperinus	Wool Grass		plug
SV	163	Scirpus validus	Softstem Bulrush		plug
SO	633	Solidago caesia	Bluestem Goldenrod		plug
VH	297	Verbena hastata	Blue Vervain		plug



CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

ers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pft of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags,

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, roller,

etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
- Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

- Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
- Backfilling shall conform to "Structure Backfill".
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water during Construction

All work on permanent structures shall be carried out in a manner that will maintain the Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The Contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory per-

nish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory per-

INSPECTION REQUIREMENTS DURING CONSTRUCTION

- INSPECTIONS SHALL BE CONDUCTED BY THE AS-BUILT CERTIFYING ENGINEER:
 - UPON COMPLETION OF EXCAVATION TO SUB-FOUNDATION AND WHEN REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO:
 - CORE TRENCHES FOR STRUCTURAL EMBANKMENTS,
 - INLET AND OUTLET STRUCTURES,
 - ANTI-SEEP COLLARS OR FILTER DIAPHRAGMS,
 - WATERTIGHT CONNECTORS ON PIPES,
 - TRENCHES FOR ENCLOSED STORM DRAIN FACILITIES.
 - DURING PLACEMENT OF STRUCTURAL FILL, CONCRETE, AND INSTALLATION OF PIPING AND CATCH BASINS.
 - DURING BACKFILL OF FOUNDATIONS AND TRENCHES.
 - DURING EMBANKMENT CONSTRUCTION.
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 8/6/04

DATE: 8/1/04

DATE: 8/1/04

SCALE: 1" = 30'

DATE: JUNE 22, 2004

DESIGN: HL

CHECKED: TN

SHEET No. SWM-4

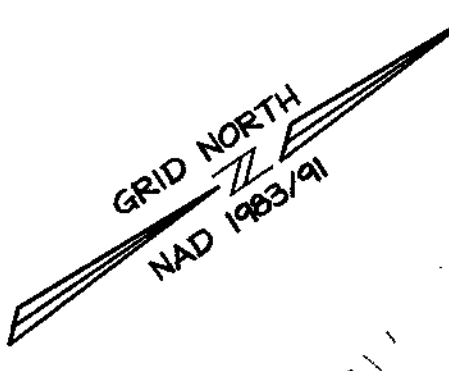
8 of 18

THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY!

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 7712 Columbia Gateway Drive, Suite 100 Columbia, MD 22046
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LANDSCAPE PLAN

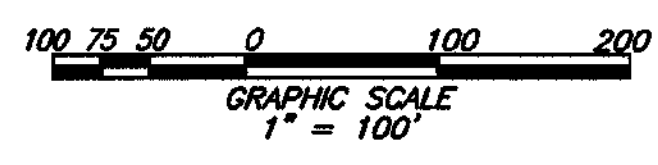
BALTIMORE AIR COIL
 PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND



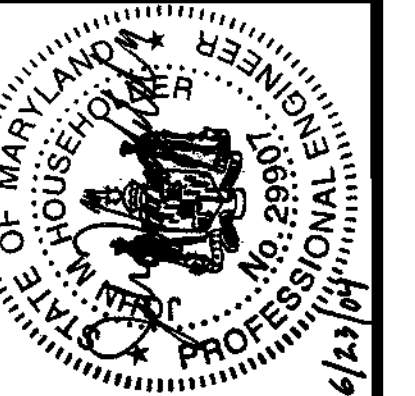
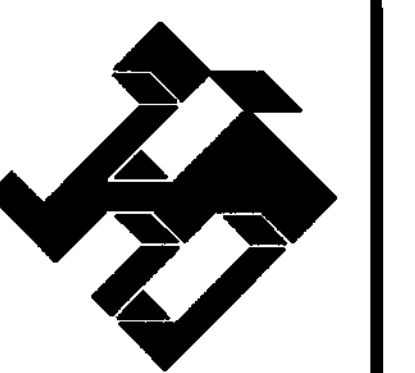
DEPARTMENT OF PUBLIC SAFETY
AND CORRECTIONAL SERVICES

APPROVED DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	8/6/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	8/10/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	8/10/04
DIRECTOR	DATE

- LEGEND**
- LIMITS OF DISTURBANCE
 - EXISTING CONTOUR
 - EXISTING SPOT ELEVATION
 - PROPOSED CONTOUR
 - PROPOSED SPOT ELEVATION
 - EXISTING WOODS LINE
 - EXISTING STORM SEWER
 - PROPOSED STORM SEWER
 - 100-YR. WSE.
 - DAM BREACH INUNDATION
 - POND OUTFALL PATH



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DAM BREACH
AND OUTFALL
ANALYSIS

BALTIMORE AIR COIL
PHASE 1
DORSET RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

SCALE: 1" = 100'
DATE: JUNE 22, 2004
DESIGN: MZ/JMH
DRAWN: TNV/ADL
CHECKED: JMH
SHEET No. 9 OF 18

SHEET 16

FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA

	ACRES
GROSS SITE AREA	62.0
AREA WITHIN 100 YEAR FLOODPLAIN	3.4
AREA WITHIN DORSEY RUN ROAD	+/- 3.3
NET TRACT AREA	55.3
LAND USE CATEGORY	C/N/O

INFORMATION FOR CALCULATIONS

A. NET TRACT AREA	55.3
B. REFORESTATION THRESHOLD (15% X A)	8.3
C. AFFORESTATION MINIMUM (15% X A)	8.3
D. EXISTING FOREST ON NET TRACT AREA	50.2
E. FOREST AREAS TO BE CLEARED	42.61
F. FOREST AREAS TO BE RETAINED	7.59

REFORESTATION CALCULATIONS

A. NET TRACT AREA	55.3
B. REFORESTATION THRESHOLD (15% X A)	8.3
C. EXISTING FOREST ON NET TRACT AREA	50.2
D. FOREST AREAS TO BE CLEARED	42.61
E. FOREST AREAS TO BE RETAINED	7.59
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	41.9
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.71
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00

CLEARING BELOW THE THRESHOLD

IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF E IS LESS THAN B), THE FOLLOWING CALCULATIONS APPLY:

REFORESTATION FOR CLEARING ABOVE THRESHOLD F x 1/4	10.48
REFORESTATION FOR CLEARING BELOW THRESHOLD G x 2	1.41
TOTAL REFORESTATION REQUIRED (F x 1/4) + (G x 2)	11.89
REFORESTATION PROVIDED ON SITE	3.79 ACRES
FEE - IN - LIEU @ \$0.50 PER SQ. FT.	8.1 ACRES
TOTAL	11.89 ACRES

General Notes

- All forest conservation areas, reforestation areas, clearing areas are preliminary in nature.
- A forest conservation plat of easement for this site has been recorded in the land records office of Howard County as plat number 16682 on May 19, 2004.
- The forest conservation easement has been established to fulfill the requirements of section 16.1200 of howard county code, forest conservation act. No clearing, grading or construction is permitted within the forest conservation easement, however forest management practices as defined in the deed of forest conservative easement are allowed.
- A total of 7.59 acres of forest retention, and 3.79 acres reforestation are proposed under this plan. As such, the required surety amount for the retention acreage is \$66,124.08 and the required surety amount for reforestation is \$82,546.20 The total amount of the required Forest Conservation Act Surety is \$148,670.28

The Remaining Forest Conservation obligation of 8.1 acres will be satisfied through Fee-in-Lieu, at \$0.50 per square foot for a total of 176,418.00

FOREST CONSERVATION EASEMENT	RETENTION	REFORESTATION	FLOODPLAIN
A 0.93 AC.	0.00 AC.	0.93 AC.	0.00AC.
B 10.07 AC.	6.15 AC.	.55 AC.	3.37 AC.
C 0.47 AC.	0.00 AC.	0.47 AC.	0.0 AC.
D 0.47 AC.	0.32 AC.	0.15 AC.	0.0 AC.
E 2.81 AC.	1.12 AC.	1.69 AC.	0.0 AC.
TOTAL 14.75 AC.	7.59 AC.	3.79 AC.	3.37 AC.

FOREST CONSERVATION EASEMENT "B" 10.07 AC. (INCLUDES FLOODPLAIN)
3.37 AC 100 YR FLOODPLAIN
6.15 AC RETENTION (EXCLUDES FLOODPLAIN)
.55 AC REFORESTATION

FOREST CONSERVATION EASEMENT "C" 0.47 AC.
0.47 AC REFORESTATION

FOREST CONSERVATION EASEMENT "D" 0.47 AC.
0.32 AC RETENTION
0.15 AC REFORESTATION

FOREST CONSERVATION EASEMENT "A" 0.93 AC.
0.93 AC REFORESTATION

FOREST CONSERVATION EASEMENT "E" 2.81 AC.
1.12 AC. RETENTION
1.69 AC REFORESTATION

LEGEND

- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woody Vegetation
- Tree Protection Fence
- Temporary Sign
- Permanent Sign
- Forest Conservation Easement
- Wetland
- Stream
- Wetland Delineation
- 25' Wetland Buffer
- 50' Stream Buffer
- Floodplain (100 YR) Boundary
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)
- Ex. Contour
- Prop. Mass Grading Contour
- Parcel Line
- Property Line
- Road ROW

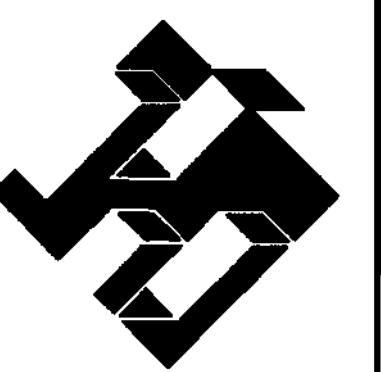
APPROVED: DEPARTMENT OF PLANNING AND ZONING

8/6/04

8/14/04

8/10/04

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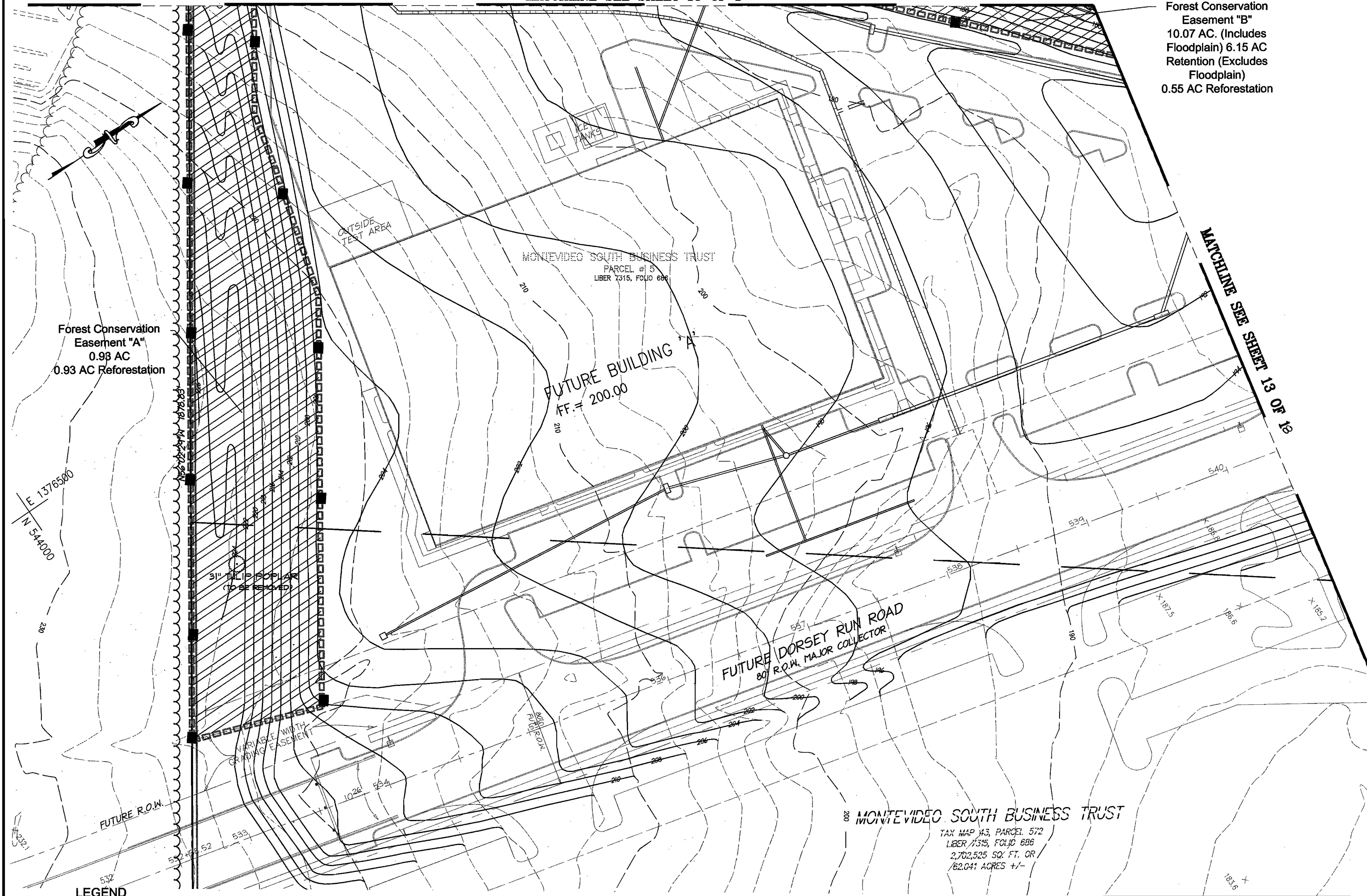
FOREST CONSERVATION PLAN

BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

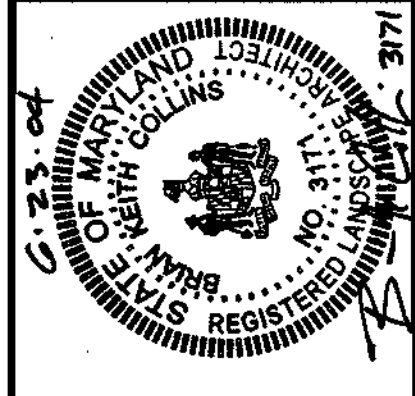
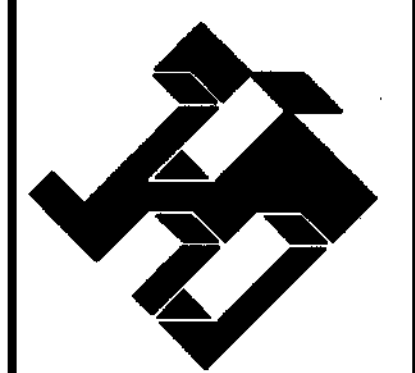
SCALE: 1" = 100'
DATE: JUNE 22, 2004
DESIGN: BKC
DRAWN: ADL
CHECKED:
SHEET No.

Forest Conservation Easement "B"
 10.07 AC. (Includes Floodplain) 6.15 AC
 Retention (Excludes Floodplain) 0.55 AC
 Reforestation

Forest Conservation Easement "A"
 0.93 AC
 0.93 AC Reforestation



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FOREST CONSERVATION PLAN

BALTIMORE AIR COIL
 PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

MATCHLINE SEE SHEET 13 OF 18

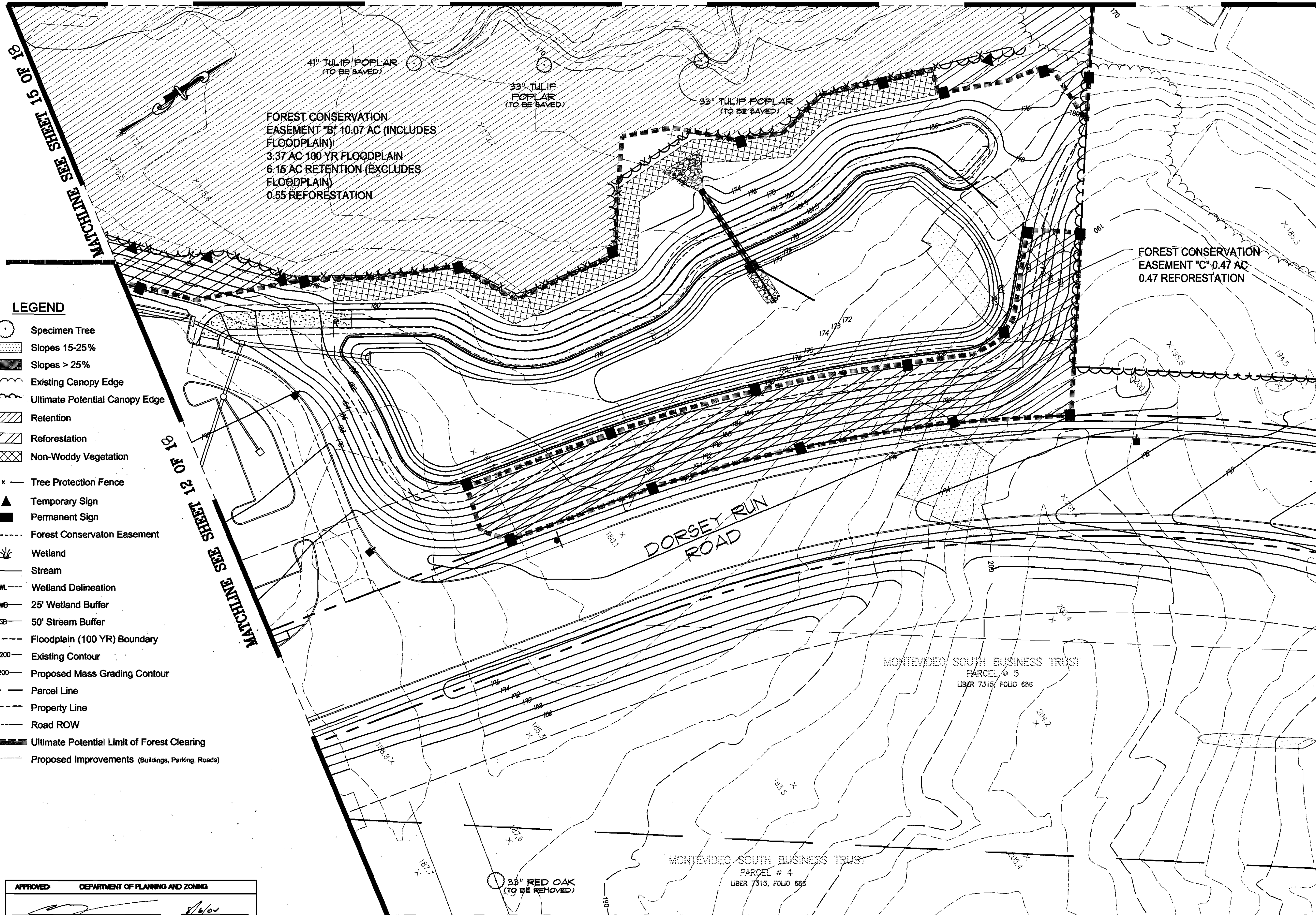
LEGEND

- | | | | | | | | | | | | |
|--|--------------------------------|--|----------------------|--|-----------------------|--|------------------------------|--|---|--|---|
| | Specimen Tree | | Retention | | Tree Protection Fence | | Forest Conservation Easement | | 50' Stream Buffer | | Parcel Line |
| | Slopes 15-25% | | Reforestation | | Temporary Sign | | Wetland | | Floodplain (100 YR) Boundary | | Property Line |
| | Slopes > 25% | | Non-Woddy Vegetation | | Permanent Sign | | Stream | | Existing Contour | | Road ROW |
| | Existing Canopy Edge | | | | | | Wetland Delineation | | Proposed Mass Grading Contour | | Ultimate Potential Limit of Forest Clearing |
| | Ultimate Potential Canopy Edge | | | | | | 25' Wetland Buffer | | Proposed Improvements (Buildings, Parking, Roads) | | |

APPROVED: DEPARTMENT OF PLANNING AND ZONING

	DATE: 8/6/04
	DATE: 8/10/04
	DATE: 8/10/04

SCALE: 1" = 30'
 DATE: JUNE 22, 2004
 DESIGN: BKC
 DRAWN: ADL
 CHECKED:
 SHEET No. 11 OF 18



LEGEND

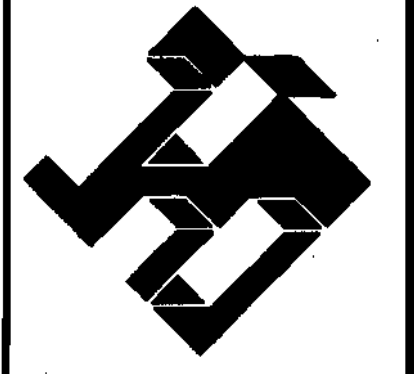
- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woddy Vegetation
- Tree Protection Fence
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- Stream
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- Existing Contour
- Proposed Mass Grading Contour
- Parcel Line
- Property Line
- Road ROW
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)

APPROVED DEPARTMENT OF PLANNING AND ZONING	
	8/6/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ	DATE
	8/11/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	8/10/04
DIRECTOR	DATE

MATCHLINE SEE SHEET 14 OF 18

MATCHLINE SEE SHEET 14 OF 18

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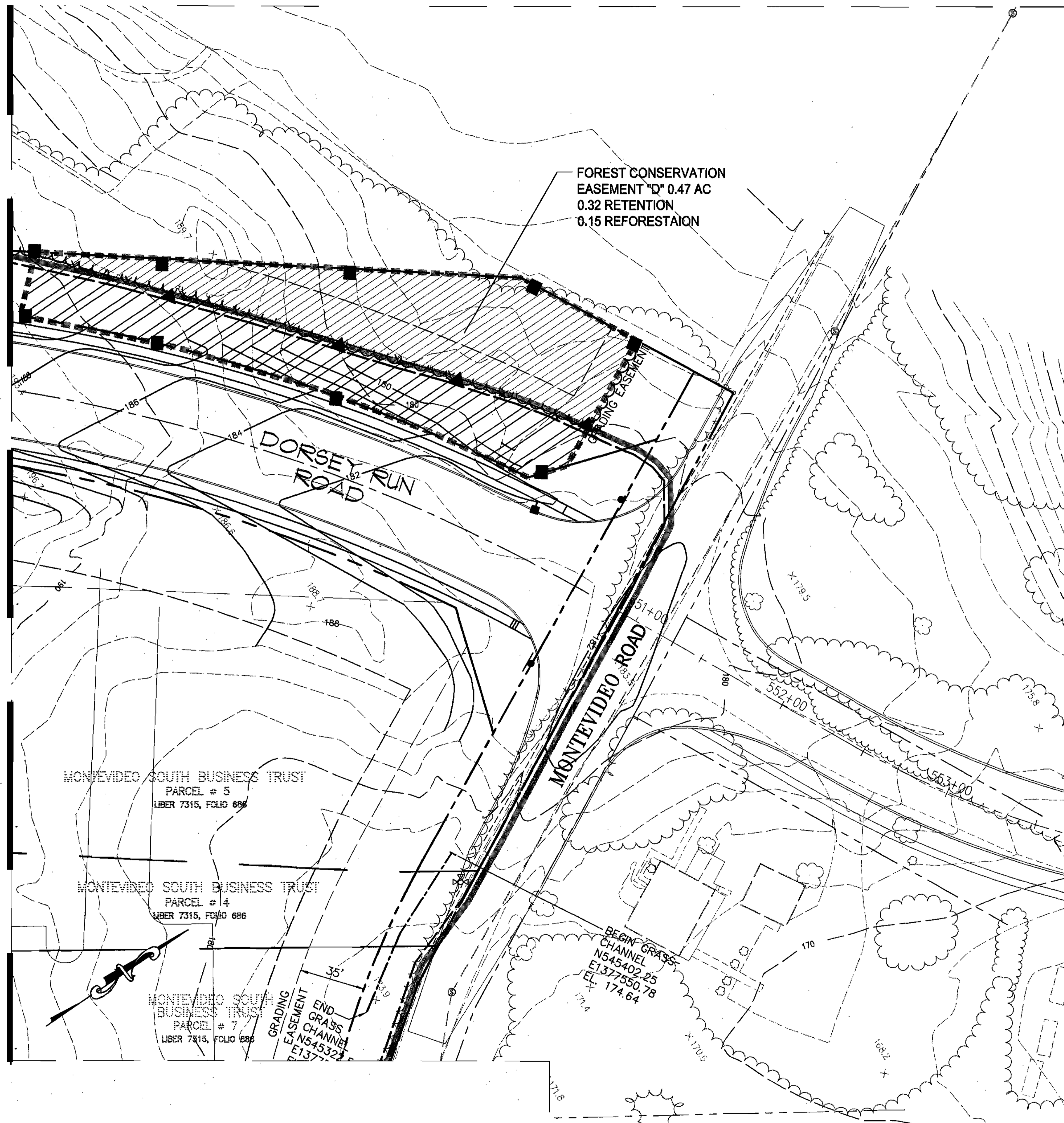


FOREST CONSERVATION PLAN

BALTIMORE AIR COIL
PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE	1" = 30'
DATE	JUNE 22, 2004
DESIGN	BKC
DRAWN	ADL
CHECKED	
SHEET No.	

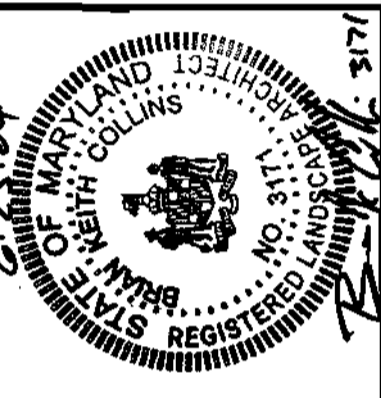
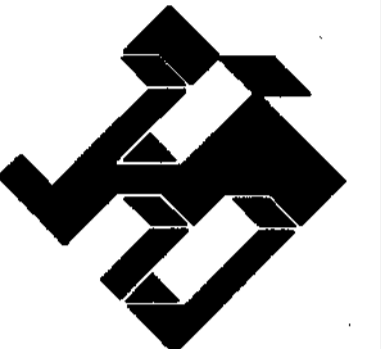
MATCHLINE SEE SHEET 13 OF 18



LEGEND

- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woddy Vegetation
- Tree Protection Fence
- Temporary Sign
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- Proposed Improvements (Buildings, Parking, Roads)

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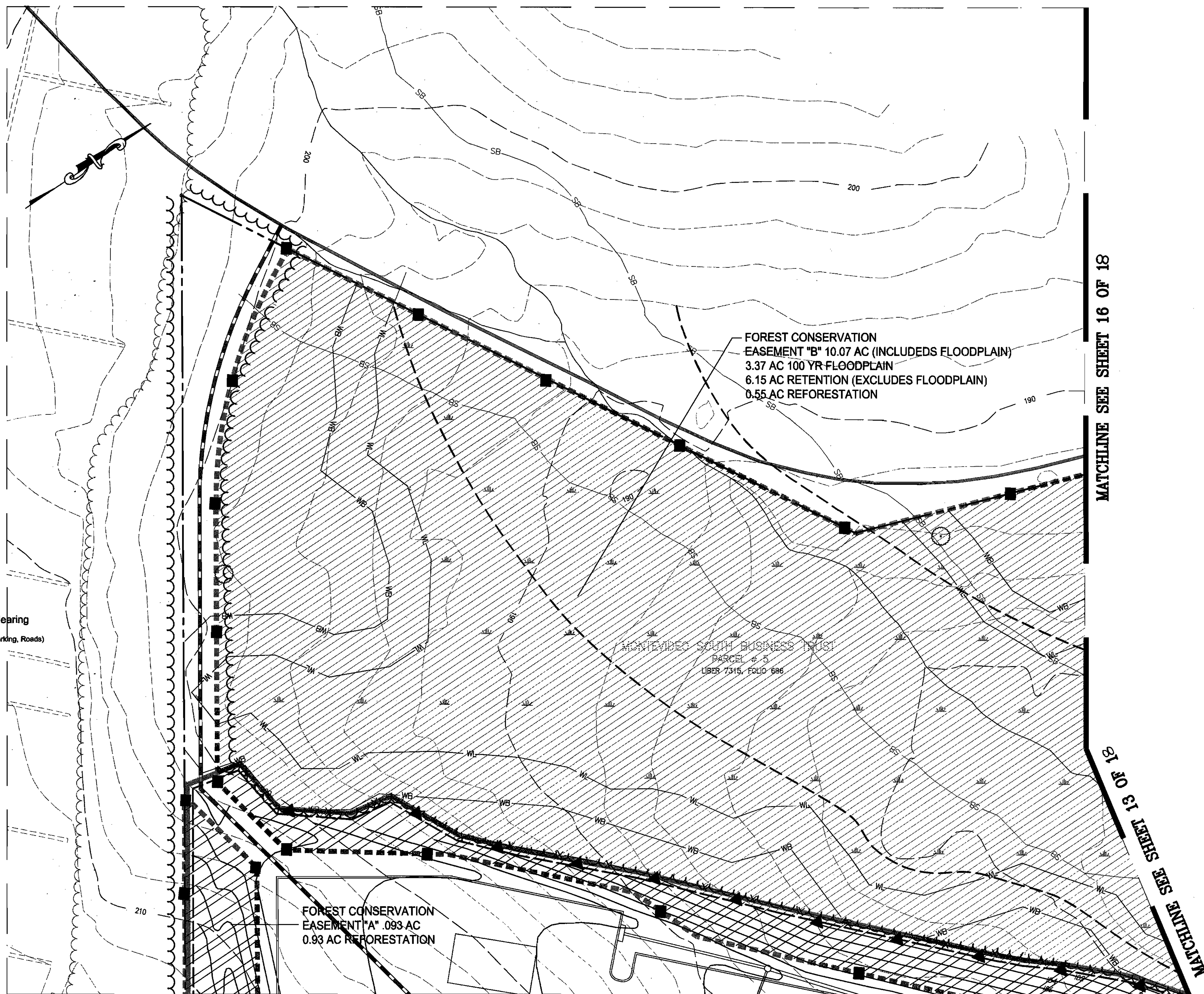
FOREST CONSERVATION PLAN

**BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND**

APPROVED:	DEPARTMENT OF PLANNING AND ZONING
	8/6/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION (MPC)	DATE
	8/10/04
CHIEF, DIVISION OF LAND DEVELOPMENT (HSP)	DATE
	8/20/04
DIRECTOR	DATE
SCALE:	1" = 30'
DATE:	JUNE 22, 2004
DESIGN:	BKC
DRAWN:	ADL
CHECKED:	
SHEET No.	13 of 18

LEGEND

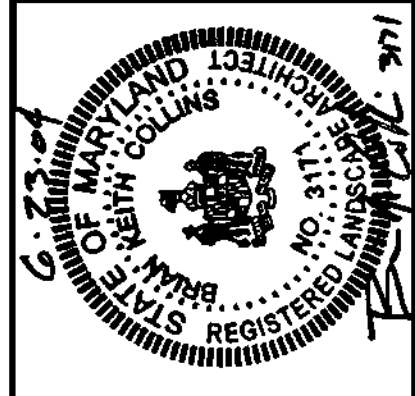
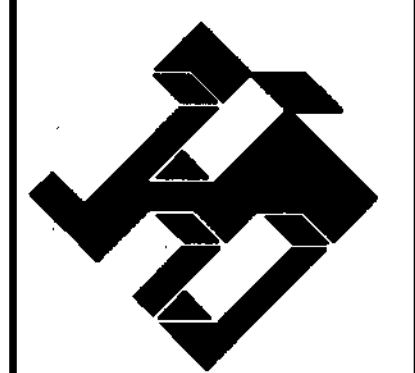
- Specimen Tree
- Slopes 15-25%
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- Parcel Line
- Property Line
- Road ROW
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)



MATCHLINE SEE SHEET 21 OF 18

APPROVED	DEPARTMENT OF PLANNING AND ZONING	
	8/6/04	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	MRJ	
	8/1/04	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	HS	
	8/1/04	DATE
DIRECTOR		

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FOREST CONSERVATION PLAN

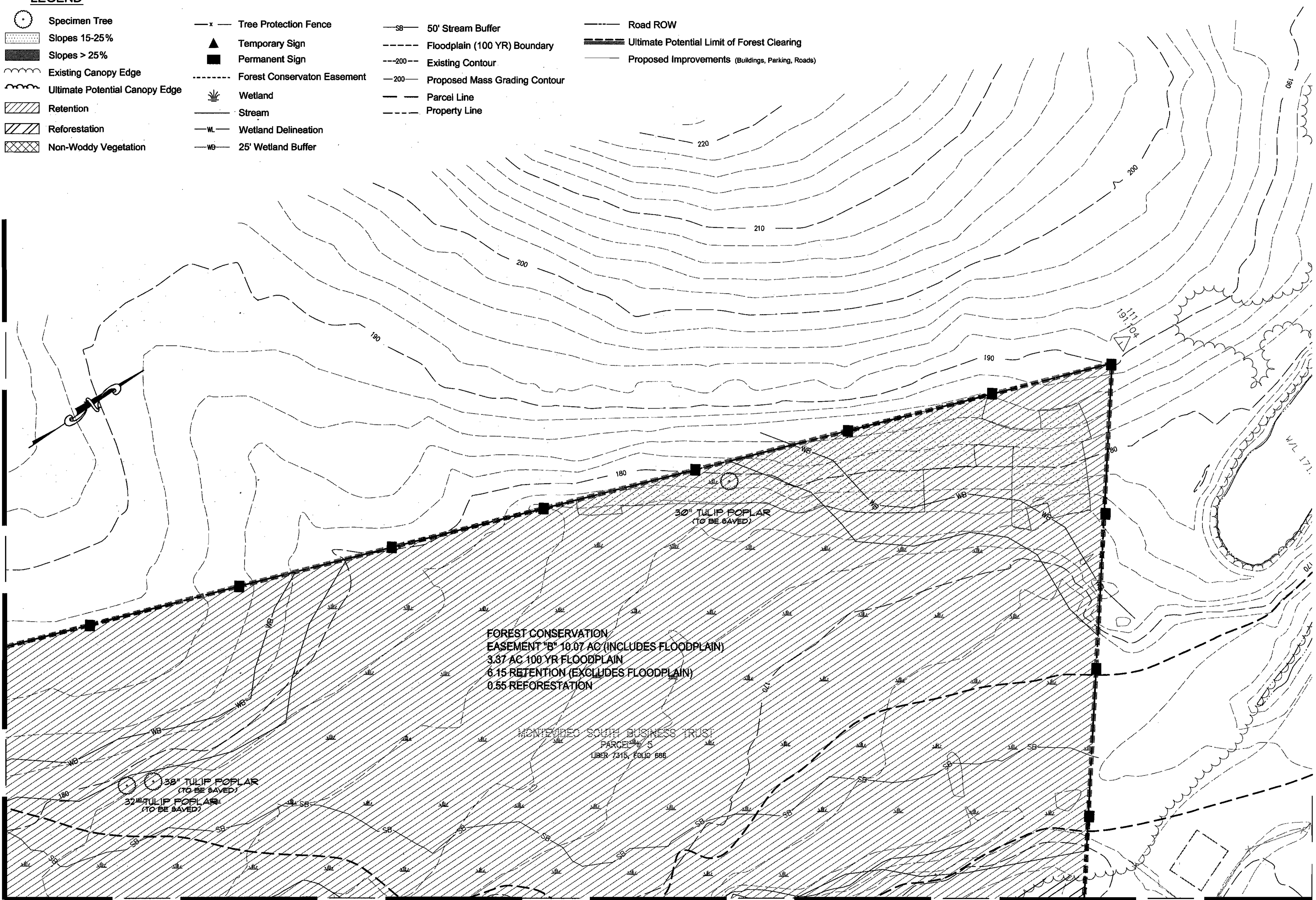
BALTIMORE AIR COIL
PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'
 DATE: JUNE 22, 2004
 DESIGN: BKC
 DRAWN: ADL
 CHECKED:
 SHEET No. 14 of 18

LEGEND

- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woddy Vegetation
- Tree Protection Fence
- Temporary Sign
- Permanent Sign
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- Parcel Line
- Property Line
- Road ROW
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)

MATCHLINE SEE SHEET 15 OF 18

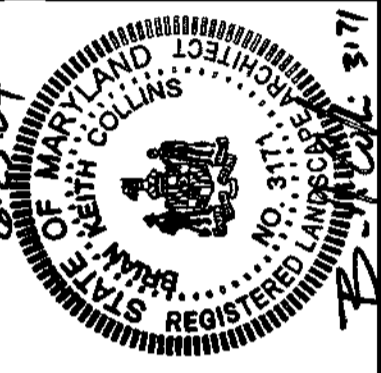
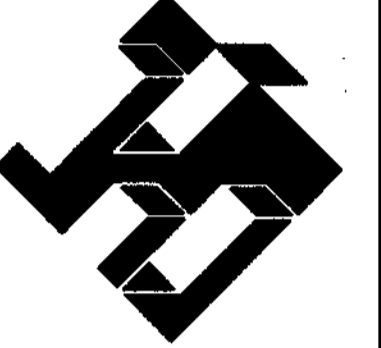


FOREST CONSERVATION EASEMENT 'B' 10.07 AC (INCLUDES FLOODPLAIN)
 3.37 AC 100 YR FLOODPLAIN
 6.15 RETENTION (EXCLUDES FLOODPLAIN)
 0.55 REFORESTATION

MONTEVIDEO SOUTH BUSINESS TRUST
 PARCELS 4 & 5
 LIBER 7315, FOLIO 686

MATCHLINE SEE SHEET 13 OF 18

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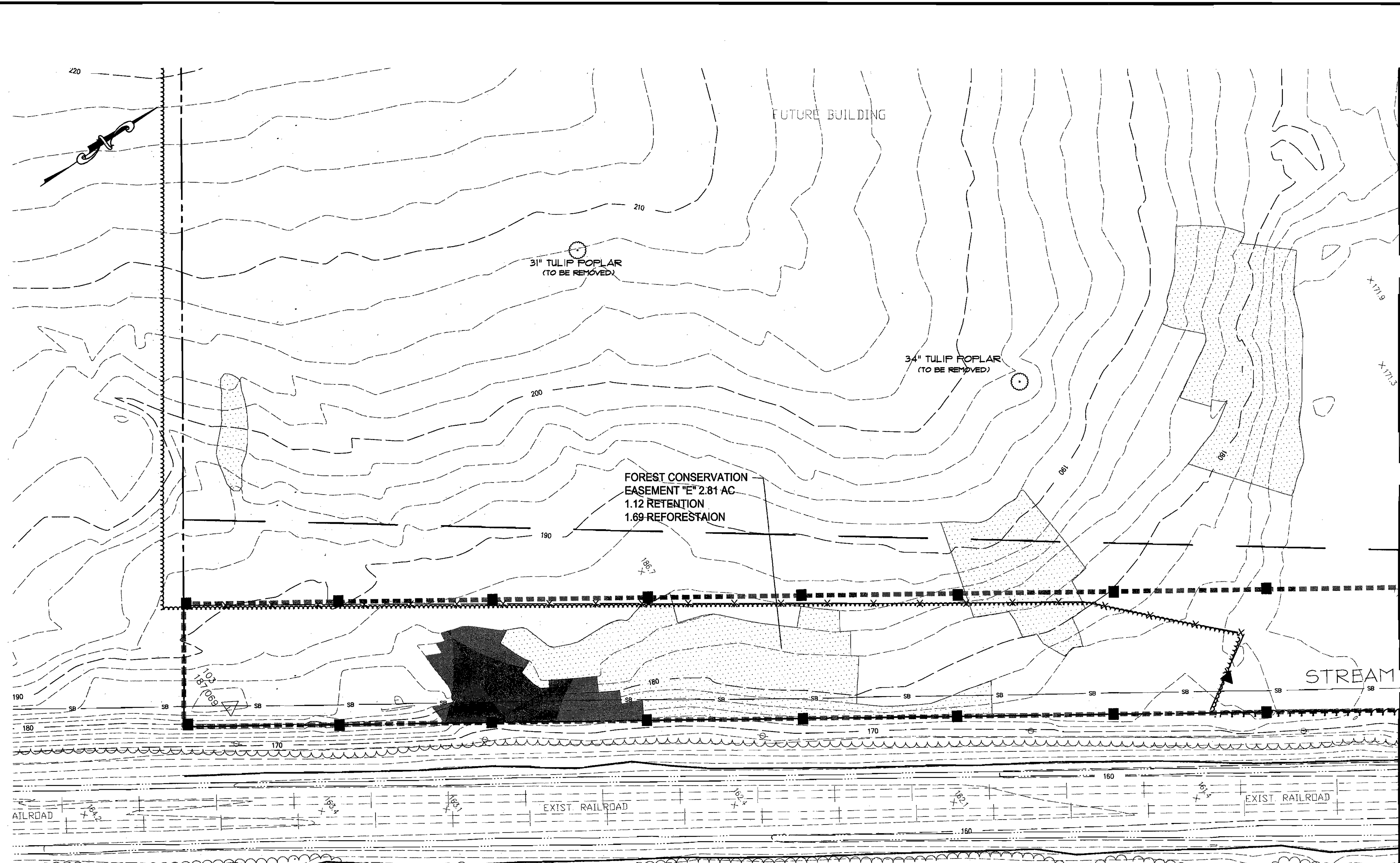


FOREST CONSERVATION PLAN

BALTIMORE AIR COIL PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'
 DATE: JUNE 22, 2004
 DESIGN: BKC
 DRAWN: ADL
 CHECKED:
 SHEET No. 15 of 18

APPROVED		DEPARTMENT OF PLANNING AND ZONING	
	8/6/04	DATE	
CHEF, DIVISION OF LAND DEVELOPMENT	8/10/04	DATE	
	8/10/04	DATE	
DIRECTOR			



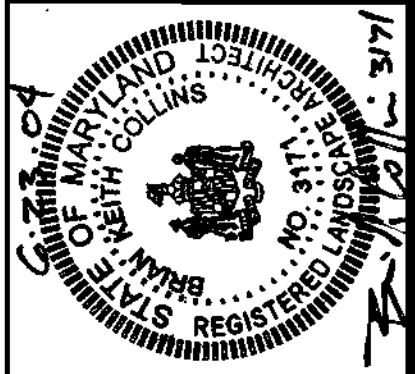
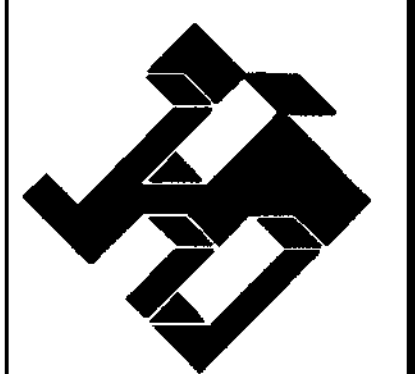
MATCHLINE SEE 18 OF 18

LEGEND

- | | | |
|--------------------------------|------------------------------|---|
| Specimen Tree | Tree Protection Fence | Floodplain (100 YR) Boundary |
| Slopes 15-25% | Temporary Sign | Existing Contour |
| Slopes > 25% | Permanent Sign | Proposed Mass Grading Contour |
| Existing Canopy Edge | Forest Conservation Easement | Parcel Line |
| Ultimate Potential Canopy Edge | Wetland | Property Line |
| Retention | Wetland Delineation | Road ROW |
| Reforestation | 25' Wetland Buffer | Ultimate Potential Limit of Forest Clearing |
| Non-Woody Vegetation | 50' Stream Buffer | Proposed Improvements (Buildings, Parking, Roads) |

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (M&Z)	8/10/04 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT	8/10/04 DATE
 DIRECTOR	8/10/04 DATE

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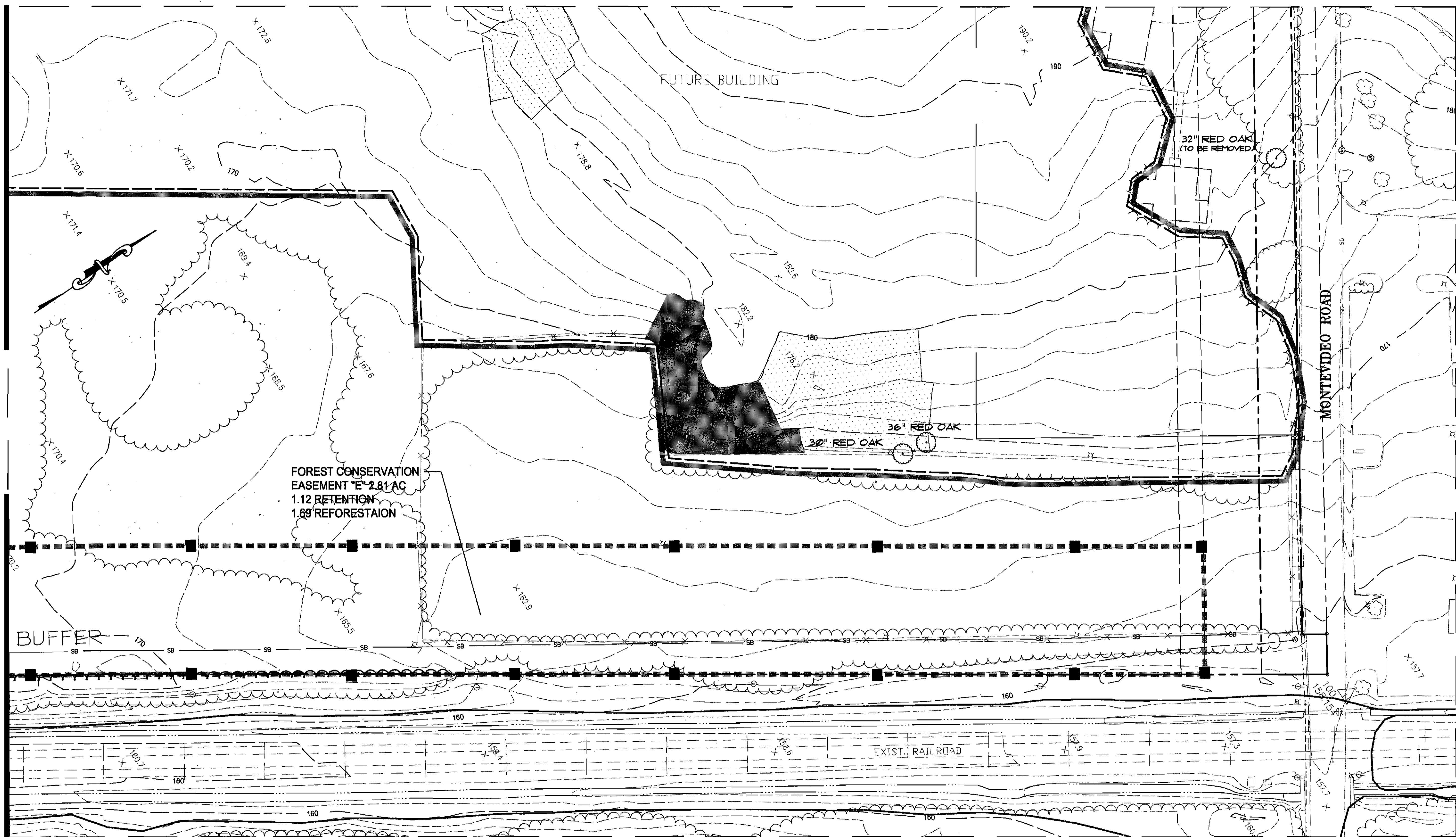


FOREST CONSERVATION PLAN

BALTIMORE AIR COIL
 PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'
 DATE: JUNE 22, 2004
 DESIGN: BKC
 DRAWN: ADL
 CHECKED:
 SHEET No. **16 OF 18**

MATCHLINE SEE SHEET 17 OF 18



FOREST CONSERVATION
EASEMENT "E" 2.81 AC
1.12 RETENTION
1.69 REFORESTATION

BUFFER

FUTURE BUILDING

32" RED OAK
(TO BE REMOVED)

36" RED OAK
30" RED OAK

MONTEVIDEO ROAD

EXIST. RAILROAD

LEGEND

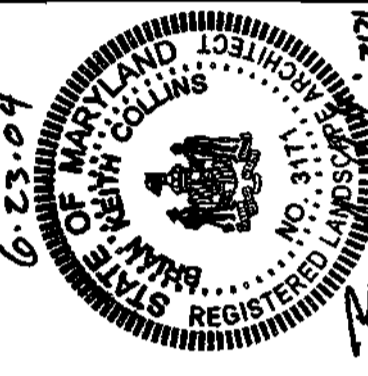
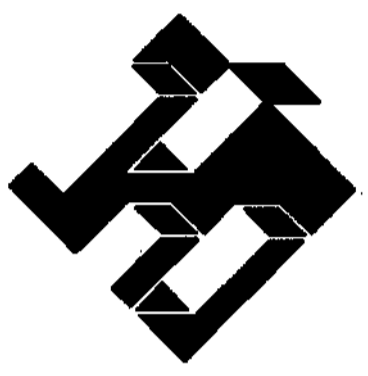
- | | | |
|--------------------------------|------------------------------|---|
| Specimen Tree | Tree Protection Fence | Floodplain (100 YR) Boundary |
| Slopes 15-25% | Temporary Sign | Existing Contour |
| Slopes > 25% | Permanent Sign | Proposed Mass Grading Contour |
| Existing Canopy Edge | Forest Conservation Easement | Parcel Line |
| Ultimate Potential Canopy Edge | Wetland | Property Line |
| Retention | Stream | Road ROW |
| Reforestation | Wetland Delineation | Ultimate Potential Limit of Forest Clearing |
| Non-Woody Vegetation | 25' Wetland Buffer | Proposed Improvements (Buildings, Parking, Roads) |
| | 50' Stream Buffer | |

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
MAB	#
DATE: 8/6/04	DATE: 8/10/04
DATE: 8/10/04	DATE: 8/10/04
DIRECTOR	DATE

SCALE: 1" = 30'
DATE: JUNE 22, 2004
DESIGN: BKC
DRAWN: ADL
CHECKED:
SHEET No.

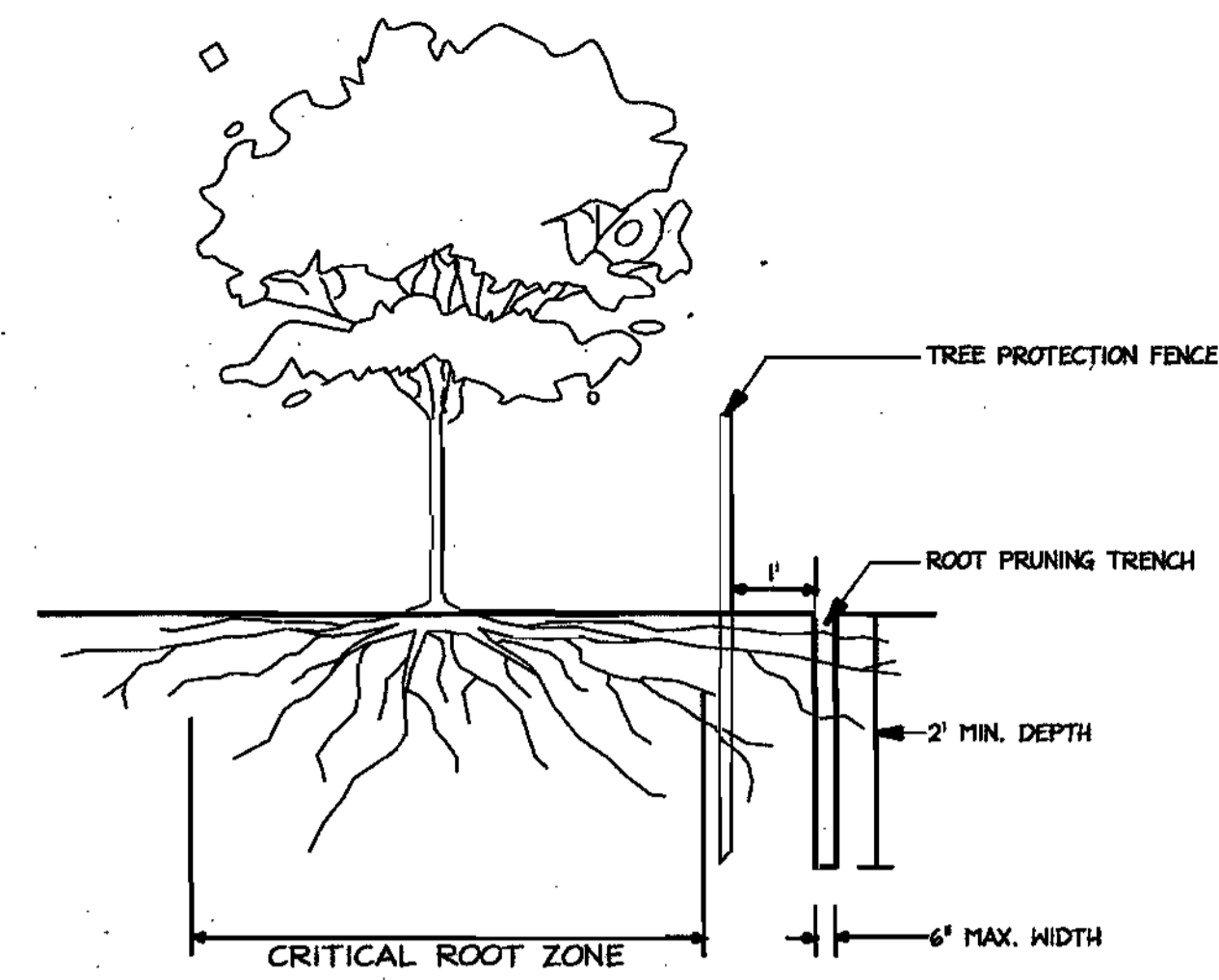
17 OF 18

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FOREST CONSERVATION
PLAN

BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

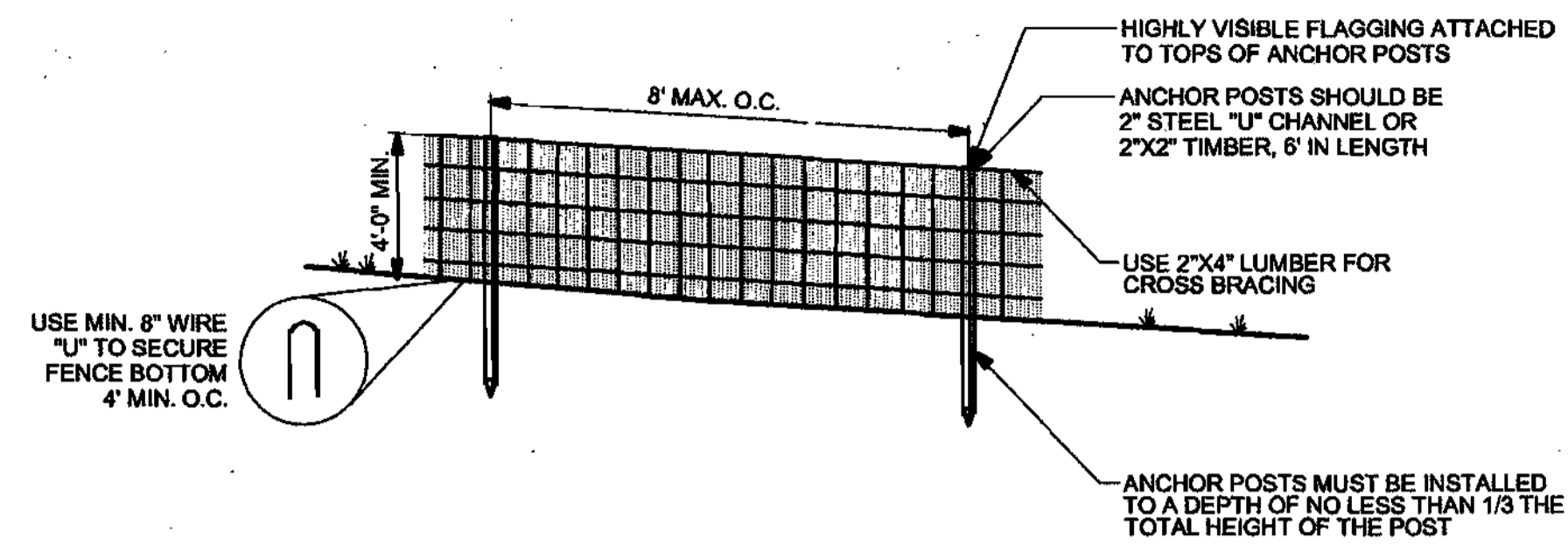


- NOTES:
1. RETENTION AREAS WILL BE SET AS A PART OF THE REVIEW PROCESS.
 2. BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED AND FLAGGED PRIOR TO TRENCHING.
 3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
 4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
 5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

SOURCE: Adapted from the City of Gaithersburg, Maryland.

Root Pruning

Not To Scale



- NOTES:
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
 2. BOUNDARIES OF RETENTIONS AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
 5. PROTECTION SIGNS ARE REQUIRED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

SOURCE: Adapted from Prince George's County, Maryland: Woodland Conservation Manual and Forest Conservation Manual, 1991.

Tree Protection Fence

Not To Scale

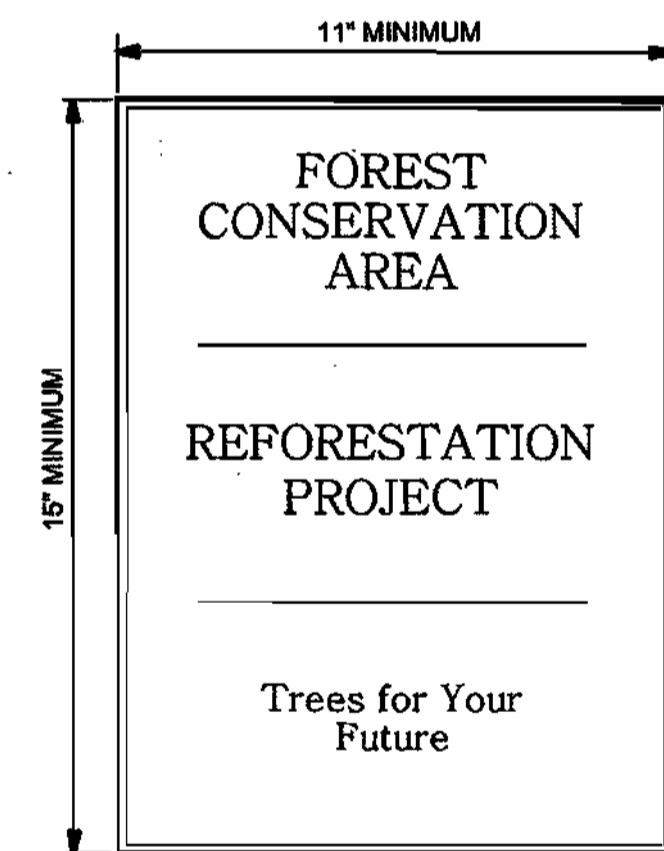
	J	F	M	A	M	J	J	A	S	O	N	D
Transplant of 2" DBH Greater	NOT RECOMMENDED											
Planting of Seedlings, Whips	NOT RECOMMENDED											
Inspection		X				X					X	
Fertilizer (if needed)	N, R. NOT RECOMMENDED											
Water	N, R. NOT RECOMMENDED											

Key:
 [diagonal lines] — greatly recommended
 [cross-hatch] — recommended with additional care dependent upon site conditions

Note: Activities during November through February are dependent upon ground conditions. No planting shall occur while ground is frozen.

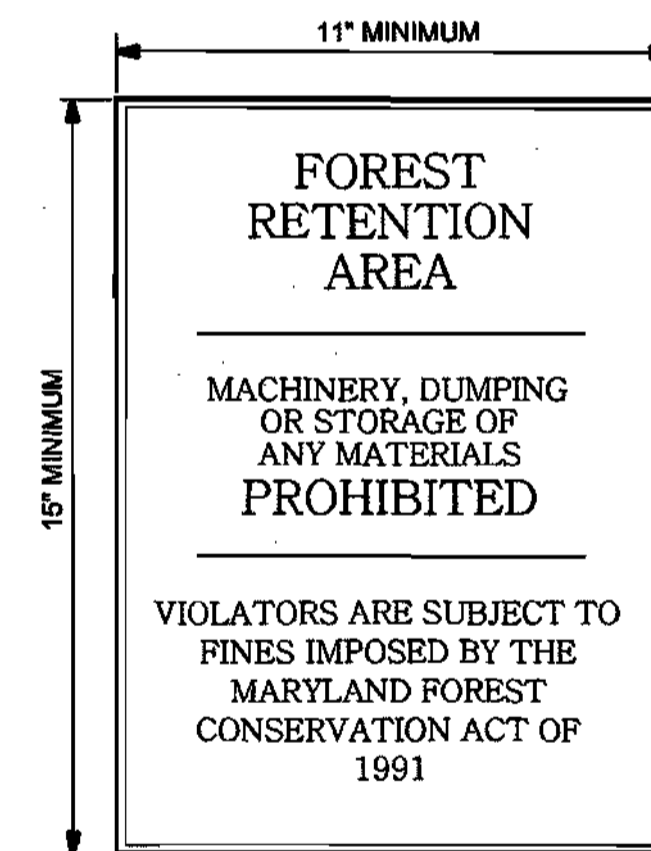
Tree Planting and Maintenance Calendar

General Guidelines



Permanent Signage

Not To Scale



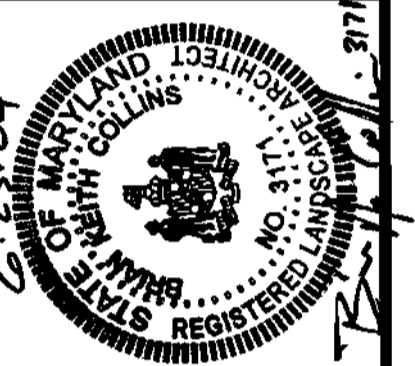
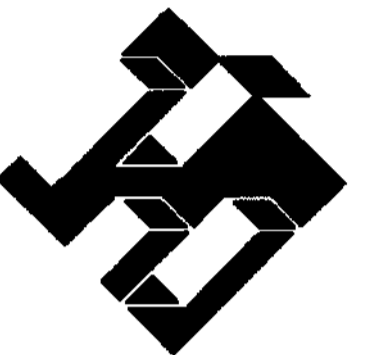
Temporary Signage

Not To Scale



Specimen Tree Signage

Not To Scale



FOREST CONSERVATION DETAILS

BALTIMORE AIR COIL PHASE 1 DORSEY RUN INDUSTRIAL CENTER HOWARD COUNTY, MARYLAND

SCALE:

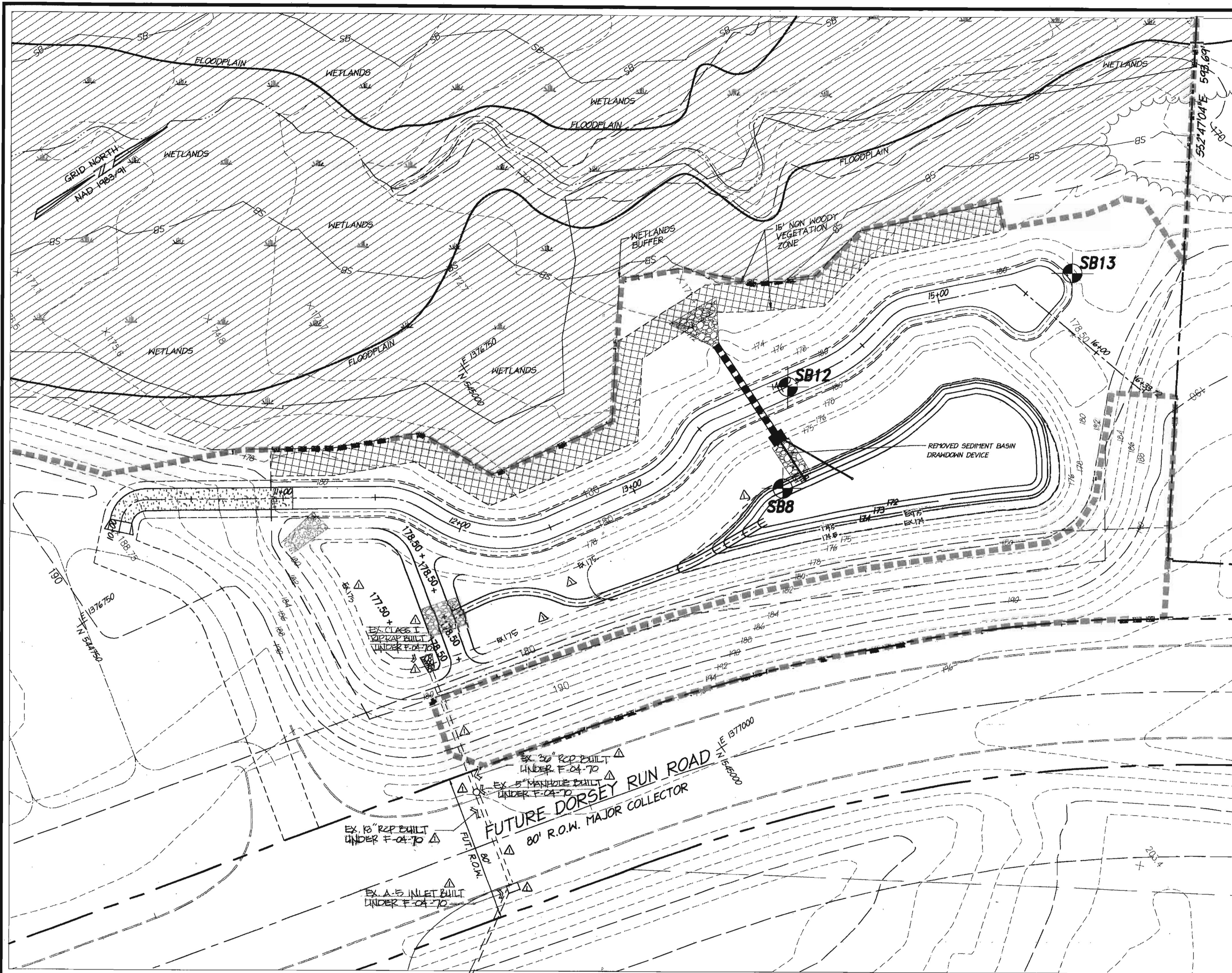
DATE: JUNE 22, 2004

DESIGN: BKC
 DRAWN: LES

SHEET No.

18 of 18

APPROVED	DEPARTMENT OF PLANNING AND ZONING
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	MARJ DATE 6/6/04
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	RS DATE 5/10/04
<i>[Signature]</i> DIRECTOR	DATE 6/11/04



SWM POND #1
SCALE: 1"=30'

LEGEND

- - - - - EXISTING CONTOUR
- x233.7 - - - - - EXISTING SPOT ELEVATION
- - - - - PROPOSED CONTOUR
- x49.3 - - - - - PROPOSED SPOT ELEVATION
- - - - - EXISTING WOODS LINE
- - - - - EXISTING STORM SEWER
- - - - - PROPOSED STORM SEWER
- - - - - 10-YR/100-YR. WSE.
- SB8 - BORING LOCATION

TEMP 18" HDPE TO BE BUILT UNDER SDP-04-164

REV. BASIN CONTOURS AND POND CONTOURS 4/9

APPROVED:	DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION (M.A.)	8/6/04 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	8/10/04 DATE
DIRECTOR	8/10/04 DATE



SWM Pond Summary #1		
Type	Micropool Extended Detention Pond	
Responsibility	Privately Maintained	
Drainage Area	14.54 Acres	
Top of Embankment	181.30'	
Pond Bottom Elevation	176.00'	
Emergency Spillway Elevation	179.50'	
Micropool	Bottom Elevation	172.00'
	Top Elevation	176.00'
Forebay	Bottom Elevation	176.00'
	Top Elevation	178.50'
Riser	Bottom Elevation	176.00'
	Top Elevation	178.50'
Recharge	Required = 21,507 cf	
Volume	Provided = 21,650 cf	
Water Quality	Required = 4,552 cf	
	Provided = 7,374 cf	
Channel Protection	Required = 6,603 cf	
	Provided = 7,000 cf	
10 Year	Required = 21,507 cf	
	Provided = 23,554 cf	
100 Year	Required = 65,000 cf	
	Provided = 65,000 cf	
100 Year Clogged	Required = 179.33'	
	Provided = 179.33'	
Peak Discharge	58.6 cfs	
	40.598 cfs	
Storage	40.8 cfs	
	29.596 cfs	
Peak Discharge	94.1 cfs	
	56.924 cfs	
Storage	180.33'	
	56.924 cfs	

REFER TO SWM BOOKLET FOR SWM COMPUTATIONS.

NOTE: STORMWATER MANAGEMENT POND IS TO BE PRIVATELY OWNED & MAINTAINED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS

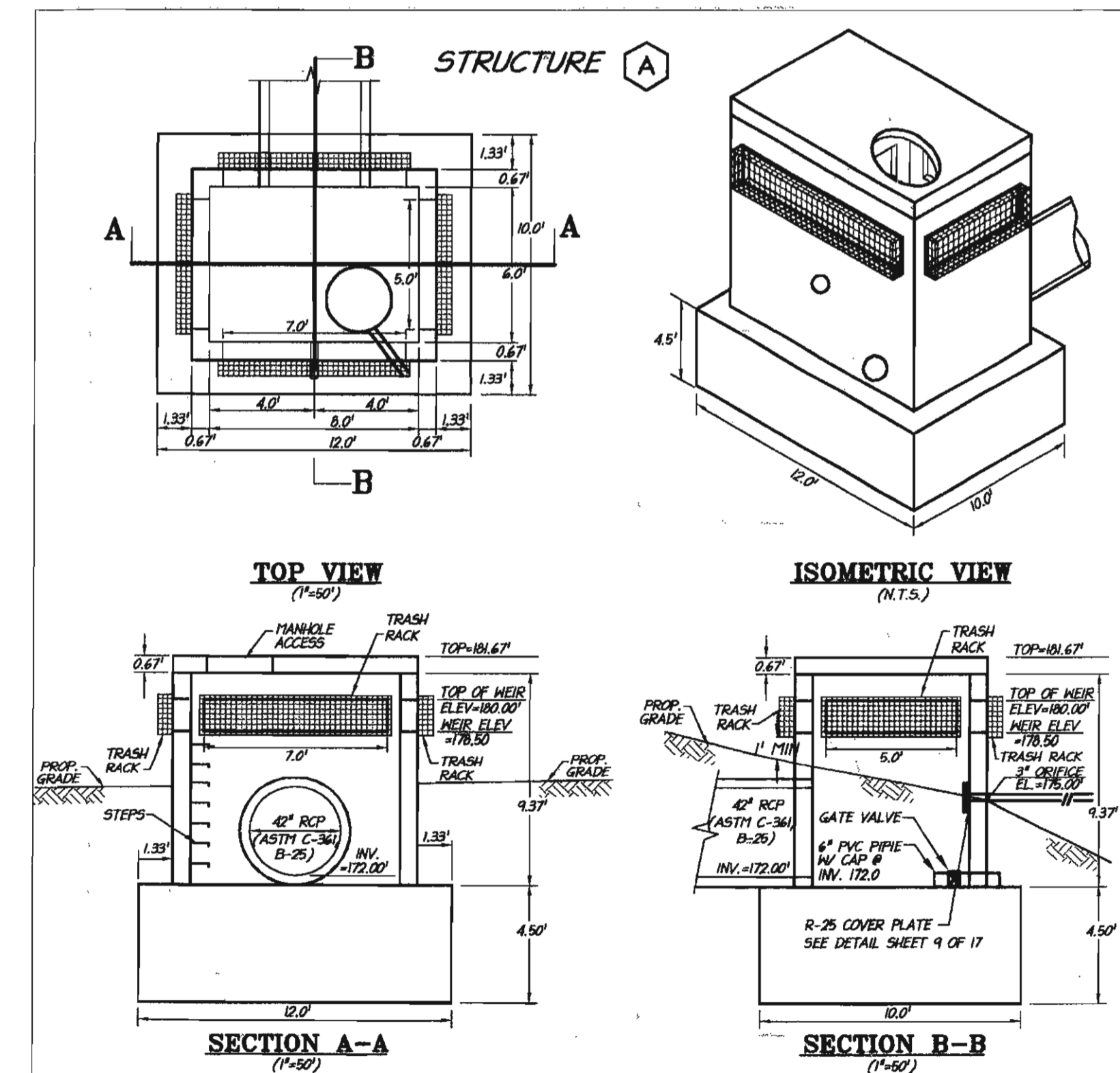
ROUTINE MAINTENANCE:

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED. SEDIMENT & DEBRIS SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT FOREBAY WHEN 50% OF THE FOREBAY VOLUME HAS BEEN LOST.

NON-ROUTINE MAINTENANCE:

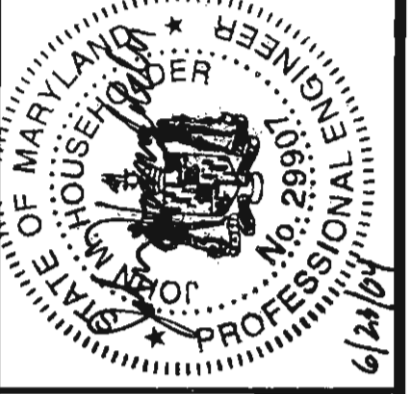
STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS. SEDIMENT SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASON, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

EXISTING 8' X 6' RISER (SEE GP-04-55)



NOTE: PROVIDE RESEATING GATE VALVE ON POND DRAIN. VALVE SHALL BE LOCATED INSIDE RISER SUCH THAT IT CAN BE ACCESSED FROM MANHOLE.

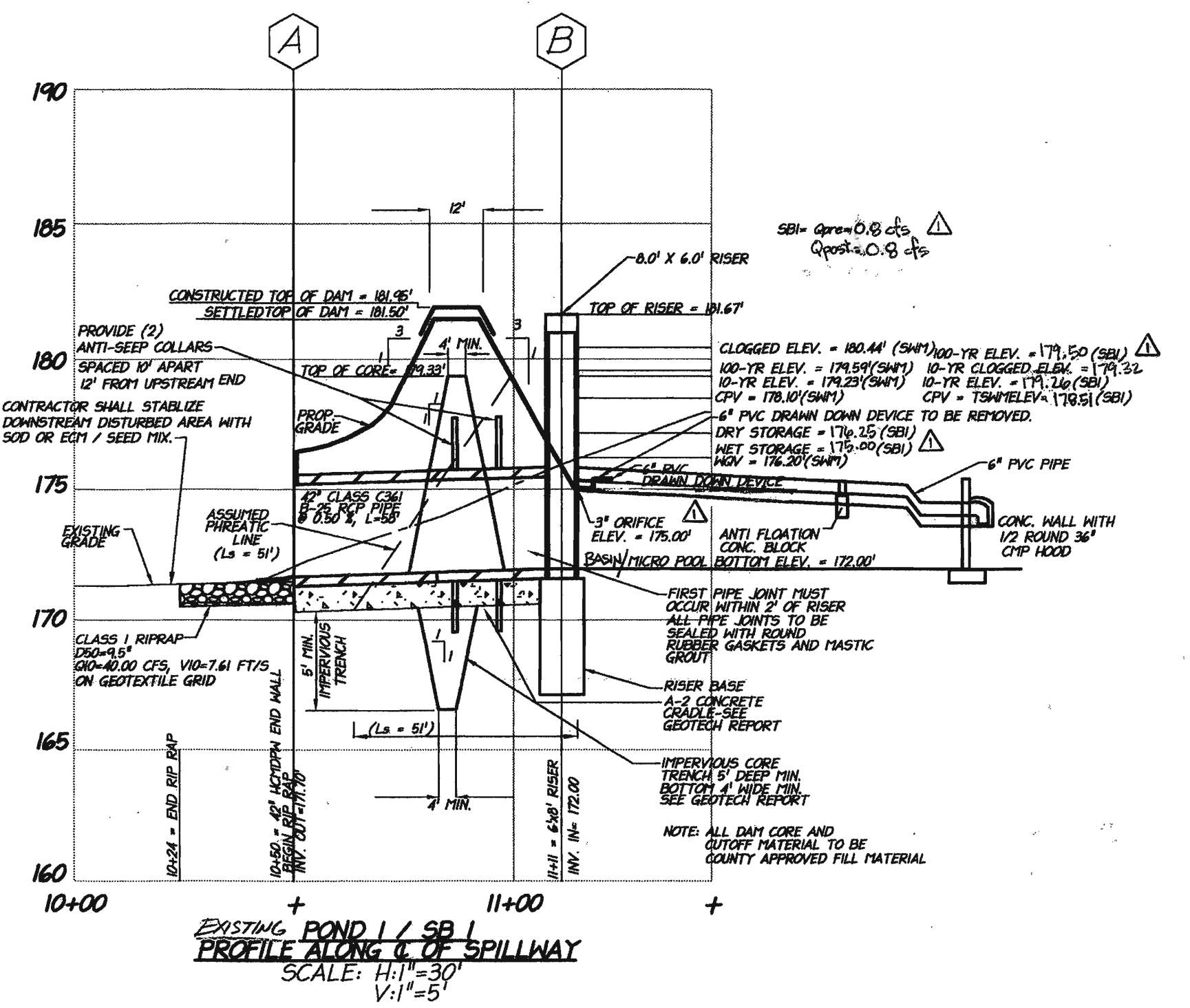
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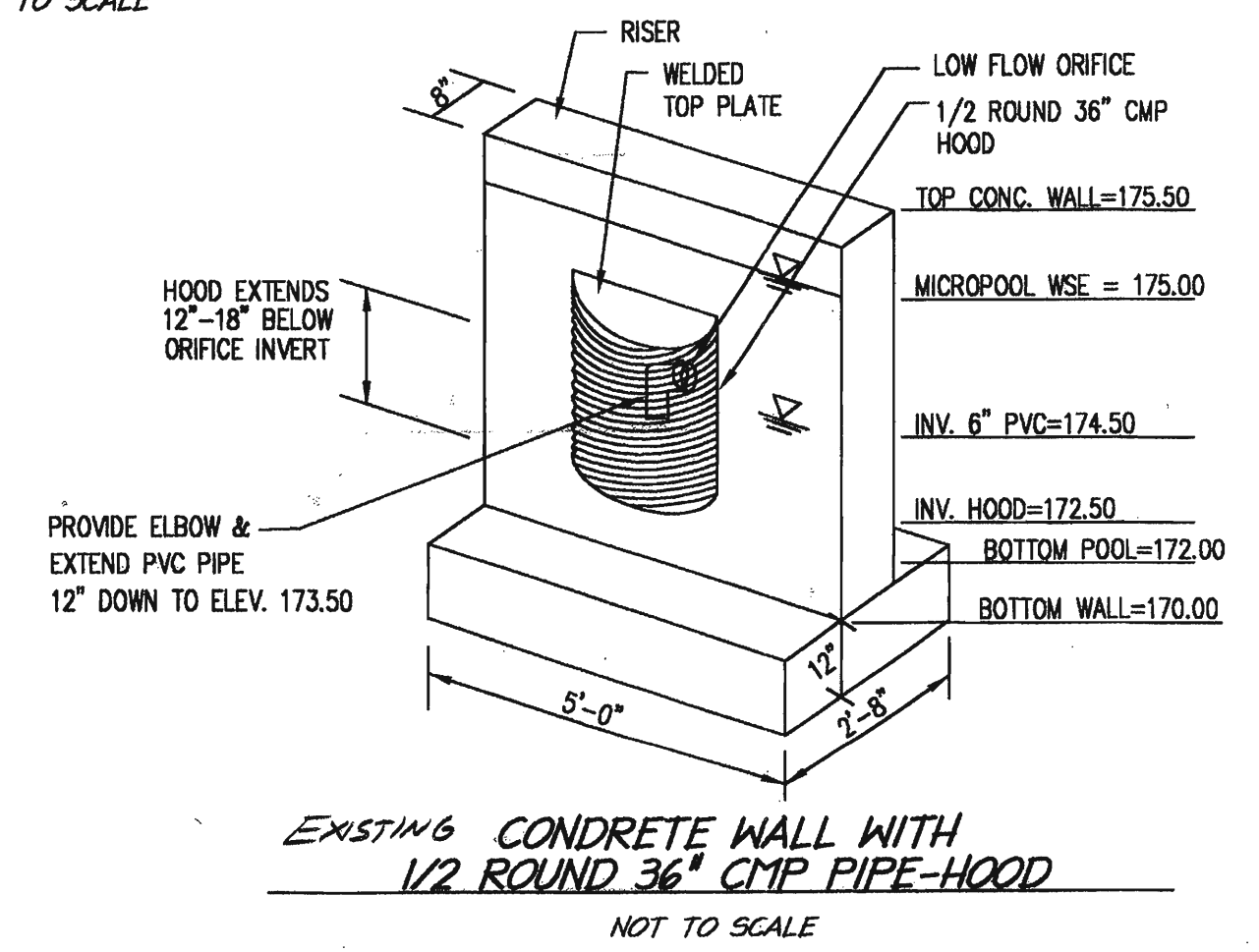
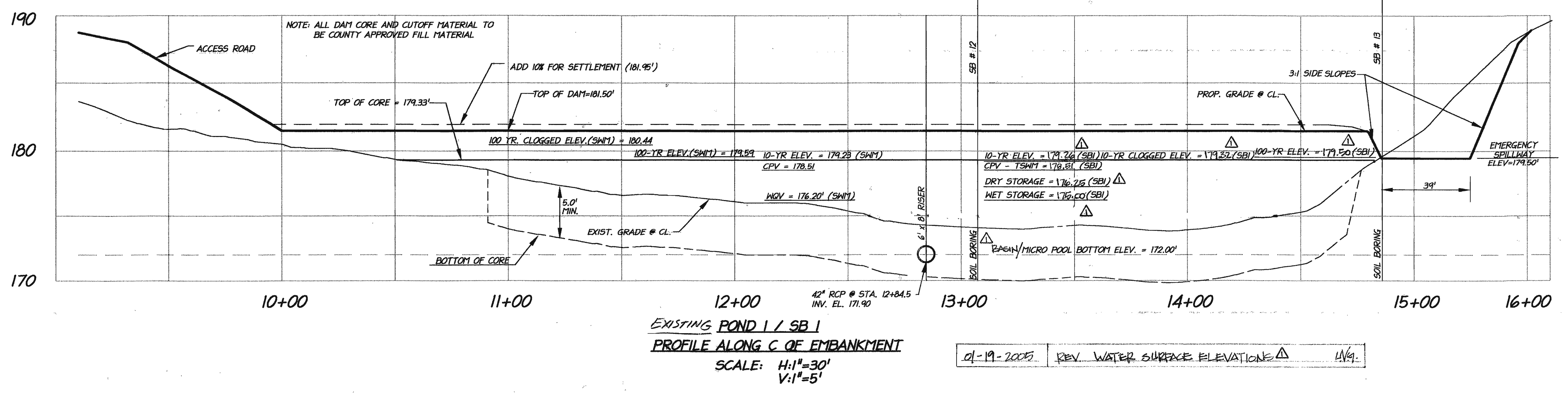
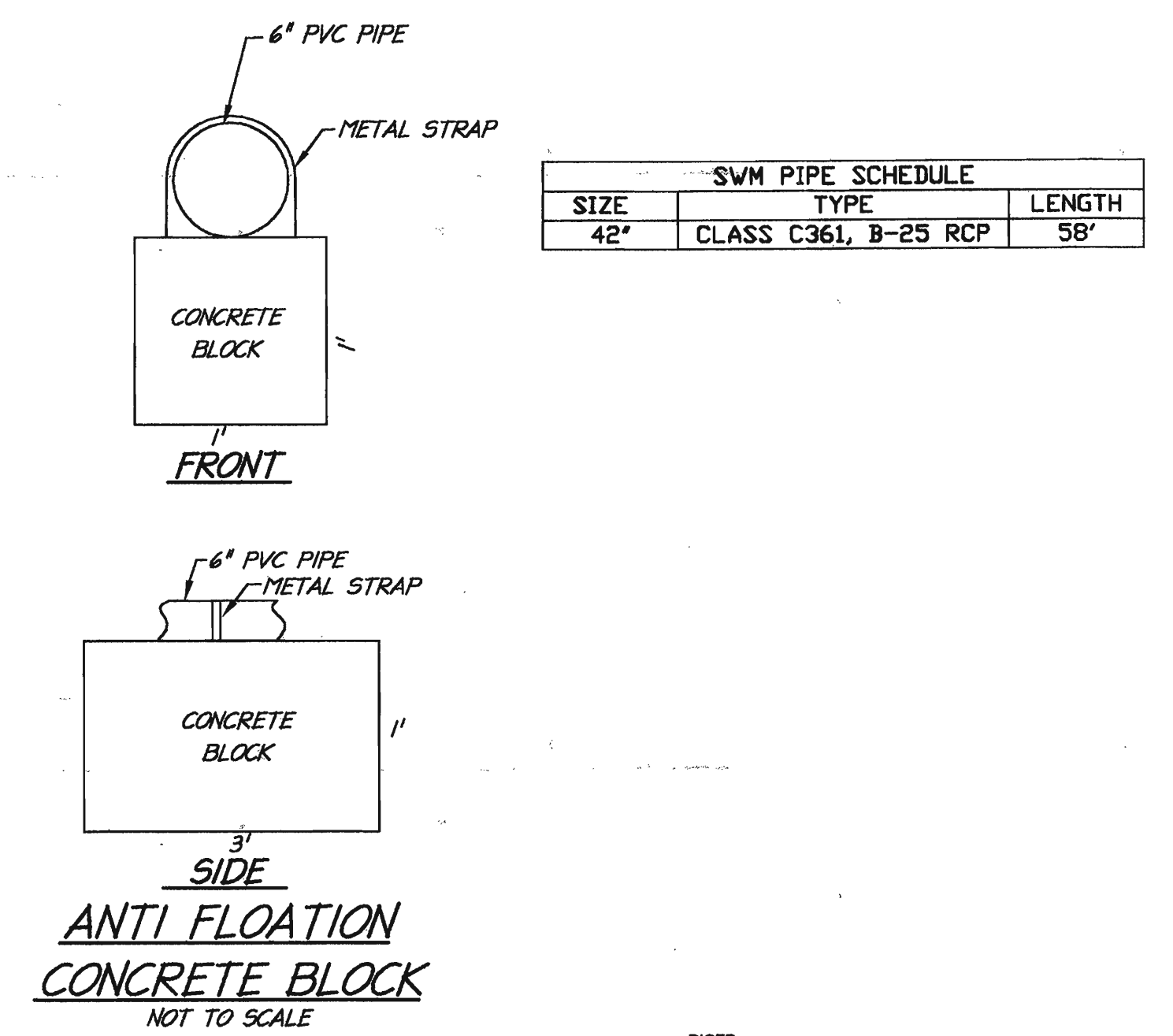
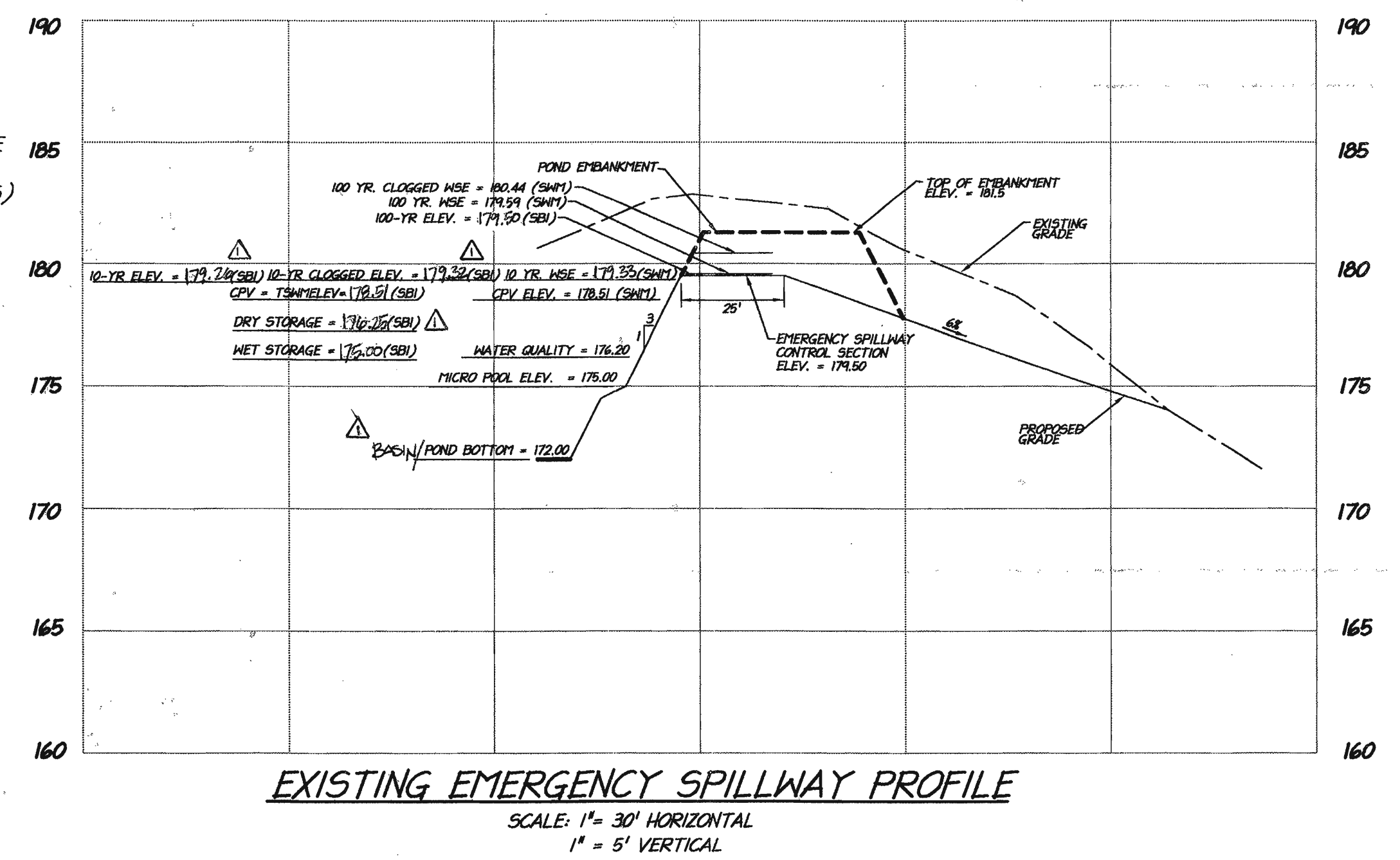
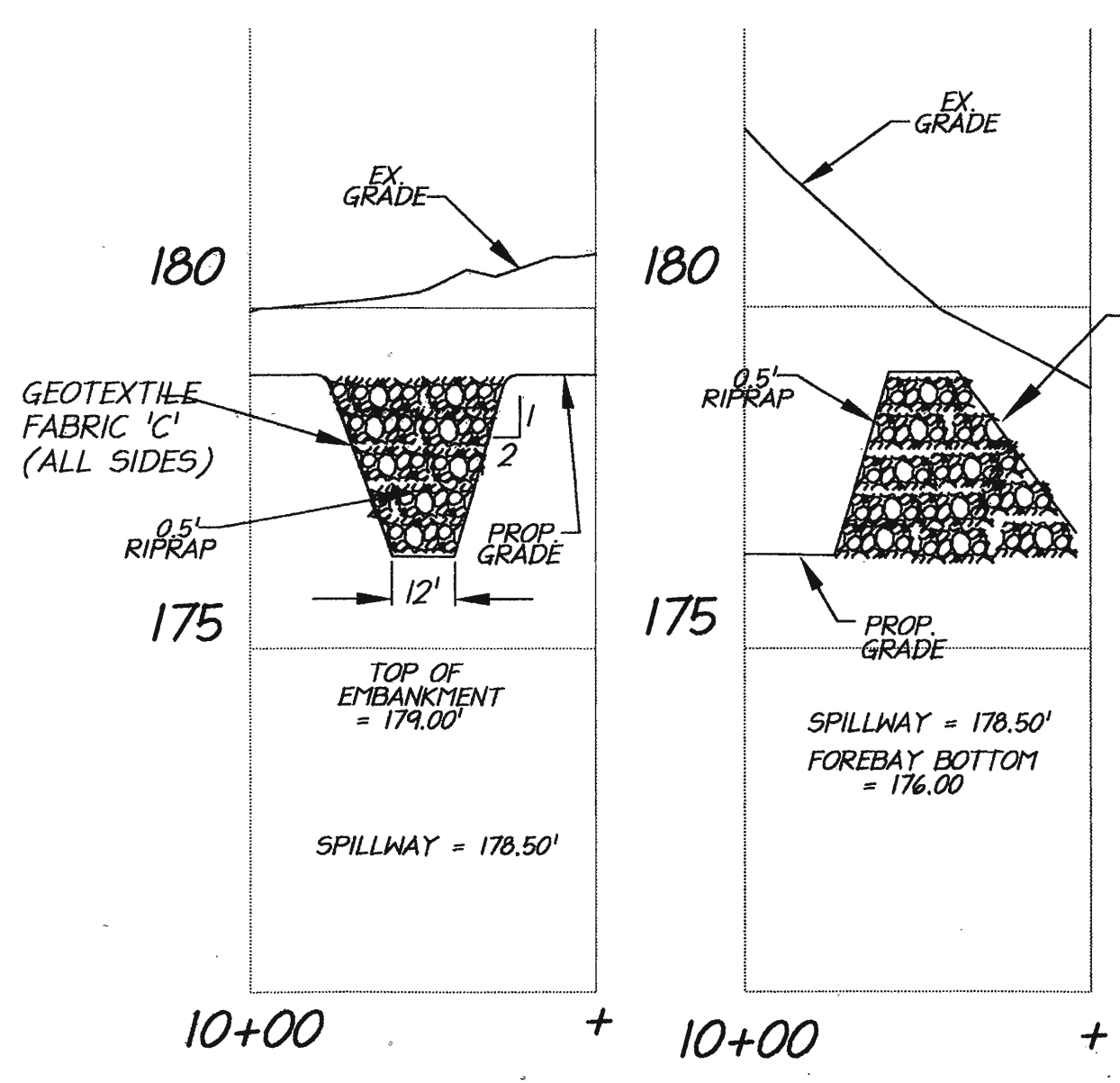
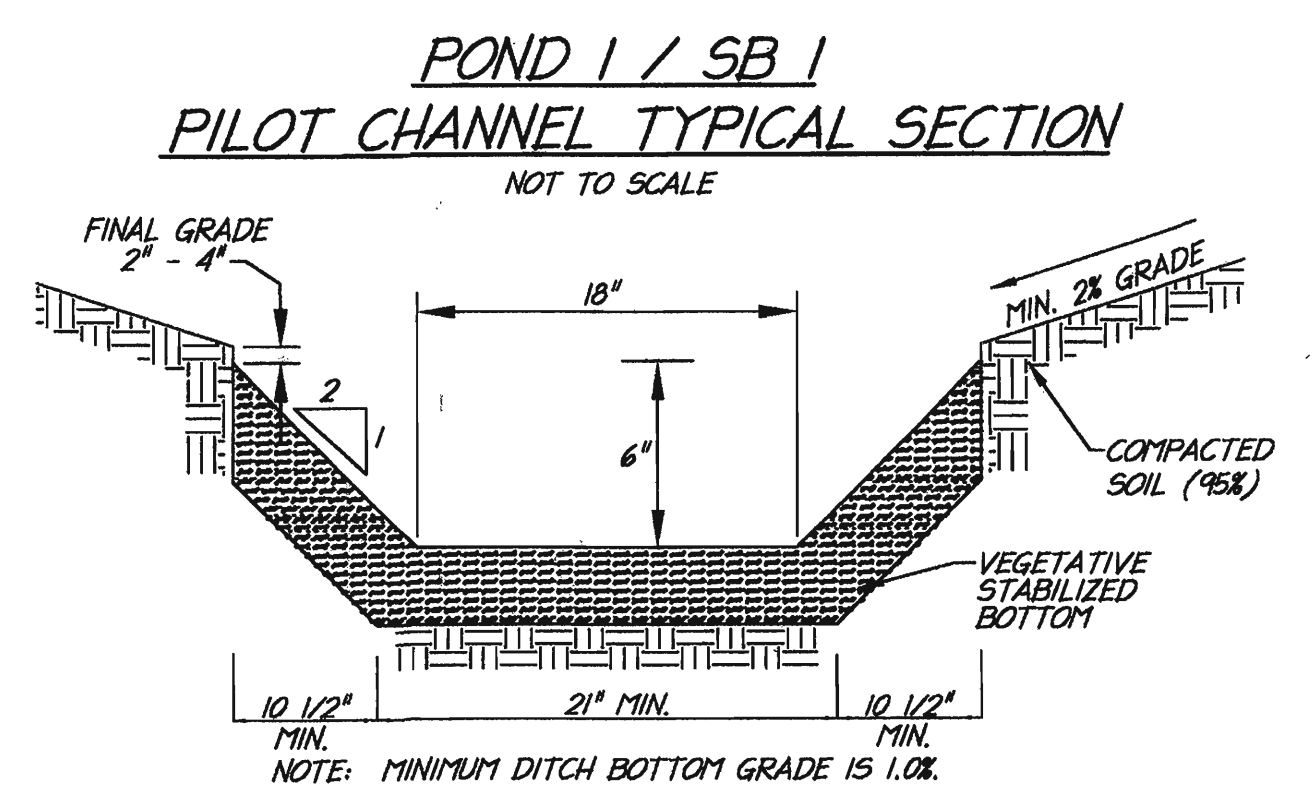
POND #1

BALTIMORE AIR COIL
PHASE 1
DORSEY RUN INDUSTRIAL CENTER
HOWARD COUNTY, MARYLAND

SCALE: AS NOTED
DATE: JUNE 22, 2004
DESIGN: MZ/JMH
DRAWN: TN/ADL
CHECKED: JMH
SHEET No.



STORMWATER MANAGEMENT CONVERSION NOTE
 EXISTING SEDIMENT BASIN WAS CONSTRUCTED UNDER GP-04-55, APPROVED BY HOWARD SOIL CONSERVATION DISTRICT ON 03/24/04. THE PROPOSED CONSTRUCTION ON THIS SDP IS THE CONVERSION OF THE BASIN TO A STORMWATER MANAGEMENT FACILITY. THIS CONSISTS OF THE REMOVAL OF THE DRAW DOWN DEVICE FOR SEDIMENT CONTROL, THE REGRADING OF THE FACILITY AS SHOWN ON SHEET 6, AND THE INSTALLATION OF THE POND DRAIN AND LOW FLOW DEVICE AS SHOWN ON THESE PLANS.



APPROVED: DEPARTMENT OF PLANNING AND ZONING	
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (M.A.J.)	8/16/04 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT (J.H.B.)	8/16/04 DATE
 DIRECTOR	8/16/04 DATE

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 christopher consultants, inc.
 7712 Columbia Gateway Drive, Suite 100, Columbia, MD 22046
 410.872.8890 · fax 410.872.8693

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 29601
 6/24/04

**STORMWATER
MANAGEMENT
DETAILS**

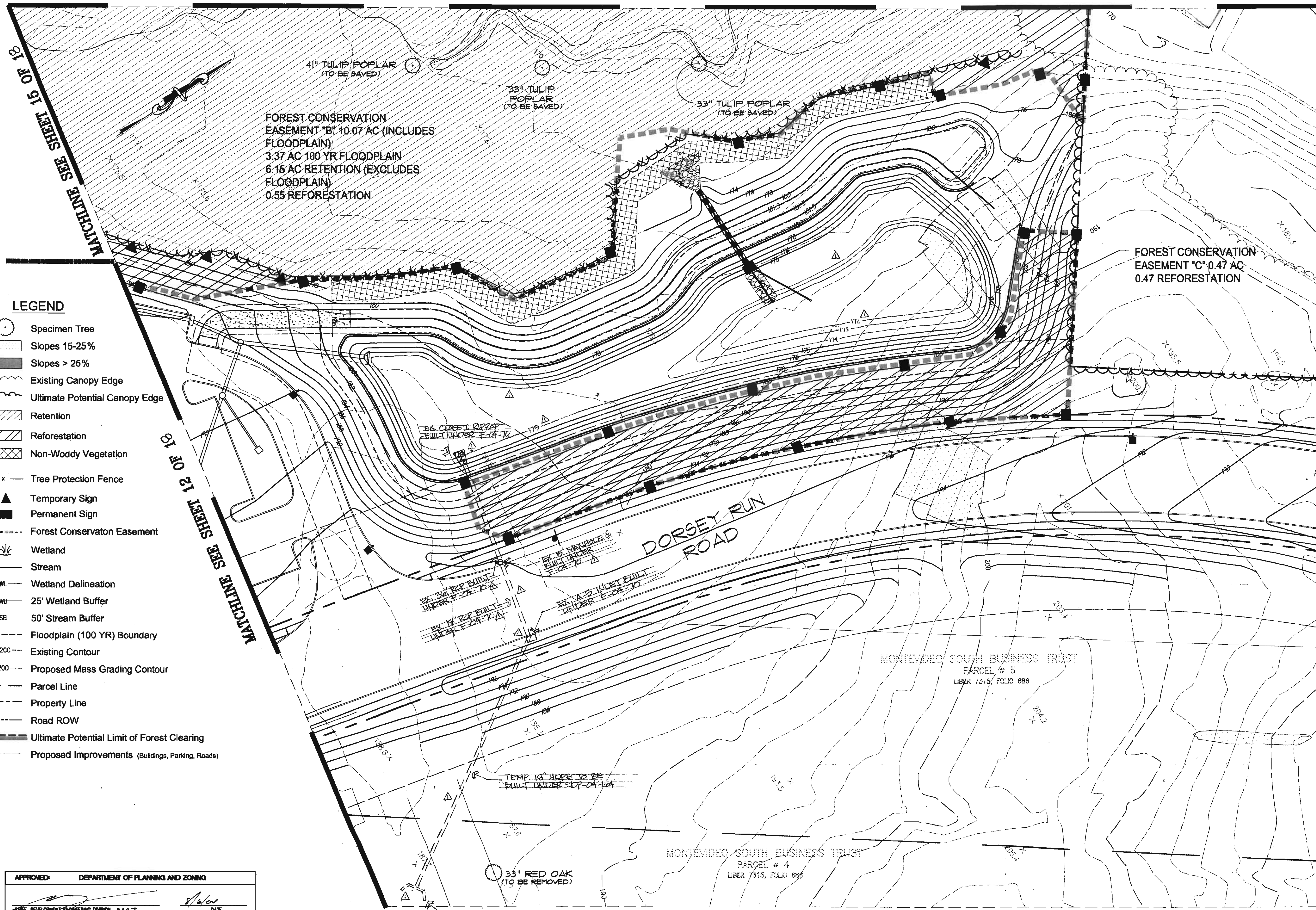
**BALTIMORE AIR COIL
PHASE 1**
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE: AS NOTED

DATE: JUNE 22, 2004

DESIGN: MZ/JMH
 DRAWN: TN/ADL
 CHECKED: JMH

SHEET No. 7 of 18



LEGEND

- Specimen Tree
- Slopes 15-25%
- Slopes > 25%
- Existing Canopy Edge
- Ultimate Potential Canopy Edge
- Retention
- Reforestation
- Non-Woddy Vegetation
- Tree Protection Fence
- Temporary Sign
- Permanent Sign
- Forest Conservation Easement
- Wetland
- Stream
- Wetland Delineation
- 25' Wetland Buffer
- 50' Stream Buffer
- Floodplain (100 YR) Boundary
- Existing Contour
- Proposed Mass Grading Contour
- Parcel Line
- Property Line
- Road ROW
- Ultimate Potential Limit of Forest Clearing
- Proposed Improvements (Buildings, Parking, Roads)

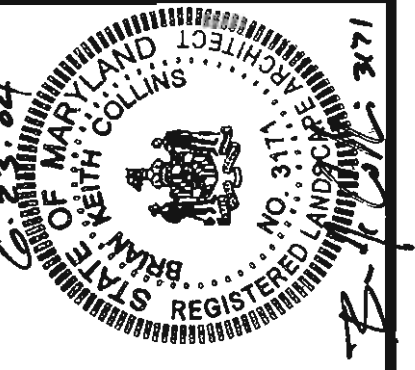
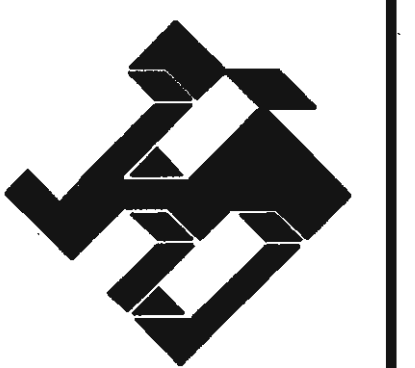
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	8/6/04 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
	8/14/04 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	
	8/10/04 DATE
DIRECTOR	

01-19-2005 REV. EASEIN CONTOURS

MATCHLINE SEE SHEET 14 OF 18

MATCHLINE SEE SHEET 14 OF 18

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FOREST CONSERVATION PLAN

BALTIMORE AIR COIL
PHASE 1
 DORSEY RUN INDUSTRIAL CENTER
 HOWARD COUNTY, MARYLAND

SCALE:	1" = 30'
DATE:	JUNE 22, 2004
DESIGN:	BKC
DRAWN:	ADL
CHECKED:	
SHEET No.	