BLANDAIR REGIONAL PARK - PHASE 1
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT #N-3102
SITE DEVELOPMENT PLAN 10-007

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.

2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

4. THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND PER THE "COMP LITE" ZONING REGULATION AMENDMENTS EFFECTIVE 7/28/06.

5. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING OR NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAMS, WETLAND OR STREAM BUFFERS, 100-YEAR FLOODPLAIN, OR FOREST CONSERVATION EASEMENTS UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

6. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

7. THIS PROJECT WILL PHASE THE REQUIREMENTS OF SUBSECTION 16.1202(a)(1) OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION AS ALLOWED BY WAIVER PETITION WP-10-013, APPROVED OCTOBER 15, 2009. THE TOTAL PROJECT FOREST CONSERVATION OBLIGATION WILL BE UPDATED UPON SUBMITTAL OF EACH NEW PHASE. IN ADDITION, RECONSIDERATION OF WP-10-013, APPROVED JANUARY 27, 2010, WILL WAIVE SUBSECTION 16.1204(d) TO ALLOW TEMPORARY DEFERRAL OF RECORDATION OF FOREST CONSERVATION EASEMENTS. PRIOR TO APPROVAL OF THE SDP FOR THE FINAL PHASE OF THE PARK, A FINAL PLAN APPLICATION SHALL BE SUBMITTED CONCURRENTLY TO DEPICT THE FOREST CONSERVATION EASEMENTS OF THE FINAL PHASE AND ALL FOREST CONSERVATION EASEMENTS PREVIOUSLY APPROVED ON PRIOR SDP'S FOR THE PARK.

   TOTAL EXISTING FOREST (EXCLUDING FLOODPLAIN): 105.64 AC
   ESTIMATED TOTAL CLEARING PER MASTERPLAN: 41.79 AC
   ESTIMATED TOTAL FOREST RETAINED: 63.85 AC

   PHASE 1 PROPOSED CLEARING: 2.87 AC
   PHASE 1 PROPOSED RETENTION: 1.94 AC

8. WATER IS PUBLIC: CONTRACT NUMBER 24-4637-D.

9. SEWER IS PUBLIC: CONTRACT NUMBER 24-4637-D.

10. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UP ON THE MARYLAND STATE PLANE COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAVD'88.

    HOWARD COUNTY MONUMENTS USED FOR THIS PROJECT:
    30HA: N 566030.6258, E 1357989.5444
    36BC: N 563264.1261, E 1359585.7197

11. THE 100-YEAR APPROXIMATE FLOODPLAIN IS SHOWN ON NFIP FIRM PANEL 240044 0034B, DATED 12/4/1986 AND NFIP LOMR, DATED 10/14/1999. A FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND AND WAS APPROVED ON NOVEMBER 5, 2009 BY PLANNING AND ZONING, DEVELOPMENT ENGINEERING DIVISION.

12. THE WETLANDS DELINEATION STUDY FOR PHASE 1 AND PHASE J OF THE PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND REVIEWED AND CONCURRED IN THE FIELD WITH MDE AND USACE ON AUGUST 17, 2009.

13. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND WAS APPROVED ON NOVEMBER 5, 2009 BY PLANNING AND ZONING, DEVELOPMENT ENGINEERING DIVISION AND DEPARTMENT OF PUBLIC WORKS, TRAFFIC ENGINEERING DIVISION.

14. TOPOGRAPHICAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY WHITMAN, REQUARDT AND ASSOCIATES LLP (WRA) IN MARCH 2008. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORDS AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPIC AND UTILITY INFORMATION.

15. APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

16. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF MSHA'S MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL TRAFFIC SIGNS SHALL CONFORM TO THE LATEST VERSION OF MSHA'S STANDARD SIGN BOOK.

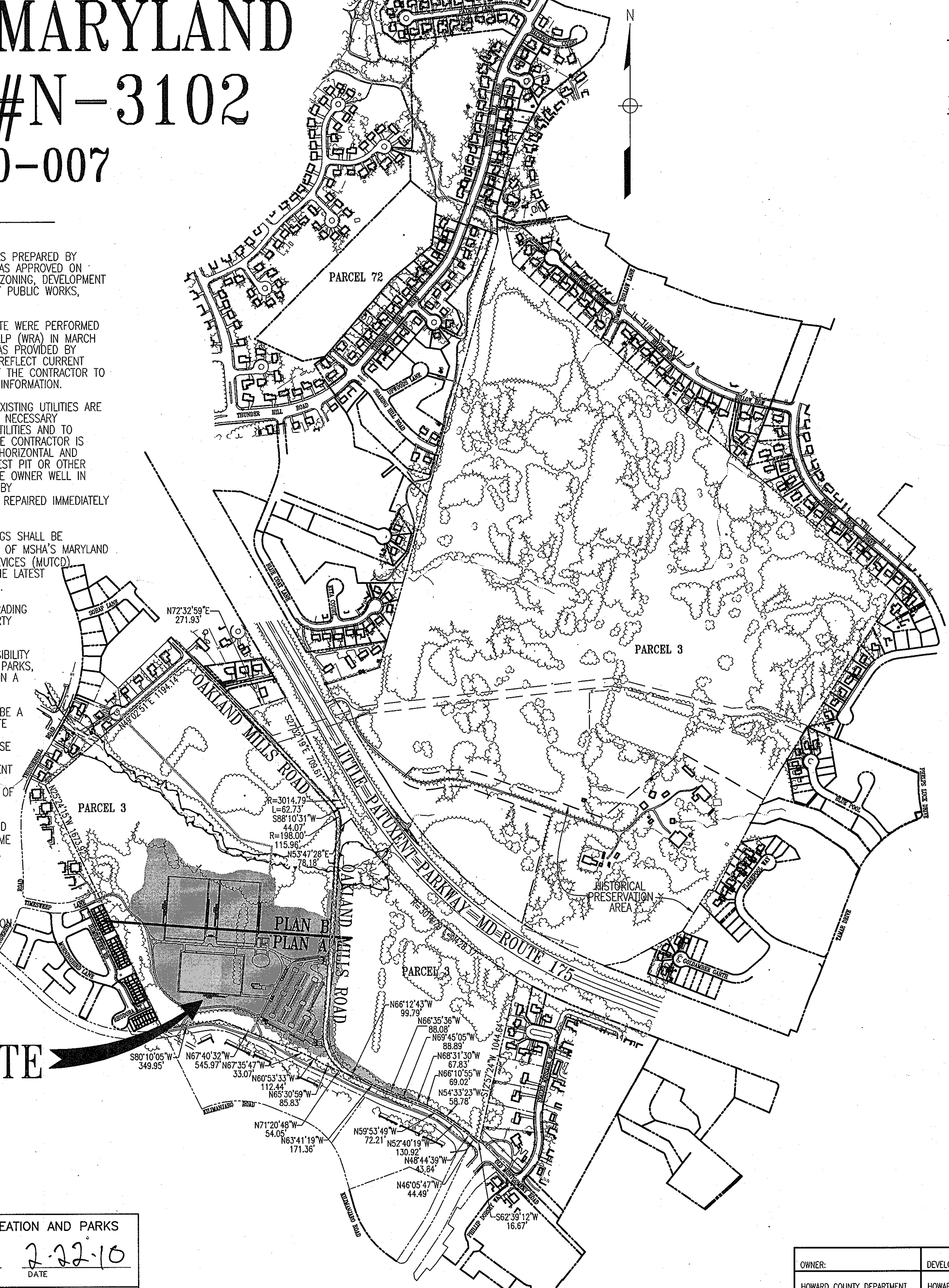
17. LETTERS SHALL BE OBTAINED PRIOR TO GRADING PERMIT APPROVAL FROM ADJACENT PROPERTY OWNERS AUTHORIZING OFF-SITE ACTIVITIES.

18. ALL TRASH AND REFUSE WILL BE RESPONSIBILITY OF THE DEPARTMENT OF RECREATION AND PARKS, AND WILL BE REMOVED FROM THE PARK ON A WEEKLY BASIS.

19. PERIMETER LANDSCAPE BUFFER P-3 WILL BE A TEMPORARY CONDITION. PLANS TO RELOCATE OAKLAND MILLS ROAD TO THE EAST AND EXPAND THE PARKING LOT SHOWN ON THESE PLANS ARE CURRENTLY UNDERWAY. THE PROPOSED PERIMETER LANDSCAPE TREATMENT ALONG THE FUTURE RELOCATED OAKLAND MILLS ROAD WILL BE DEVELOPED AS PART OF THE EXPANDED PARKING LOT PLANS.

20. AN EXTENDED DETENTION SHALLOW WETLAND (W-2) WILL PROVIDE WATER QUALITY VOLUME (WQv), CHANNEL PROTECTION VOLUME(CPv), OVERBANK FLOOD PROTECTION VOLUME (Qp) AND EXTREME FLOOD VOLUME(Qf). RECHARGE VOLUME (REv) WILL BE PROVIDED WITH RECHARGE TRENCHES UNDER DRY SWALES AND THE FIELD TURF UNDERDRAINS. NON-ROOFTOP DISCONNECTION CREDITS, ROOFTOP DISCONNECTION CREDIT AND GRASS CHANNEL CREDITS WILL ALSO BE USED TO MANAGE THE PROPOSED DEVELOPMENT. HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES.

21. MDE PERMIT FOR LOD WITHIN STREAM IS 09-NT-0448/200963354.



LOCATION MAP
1" = 400'

REVISIONS		

BENCHMARK DATA

30HA: N 566030.6258, E 1357989.5444, ELEV. 386.983

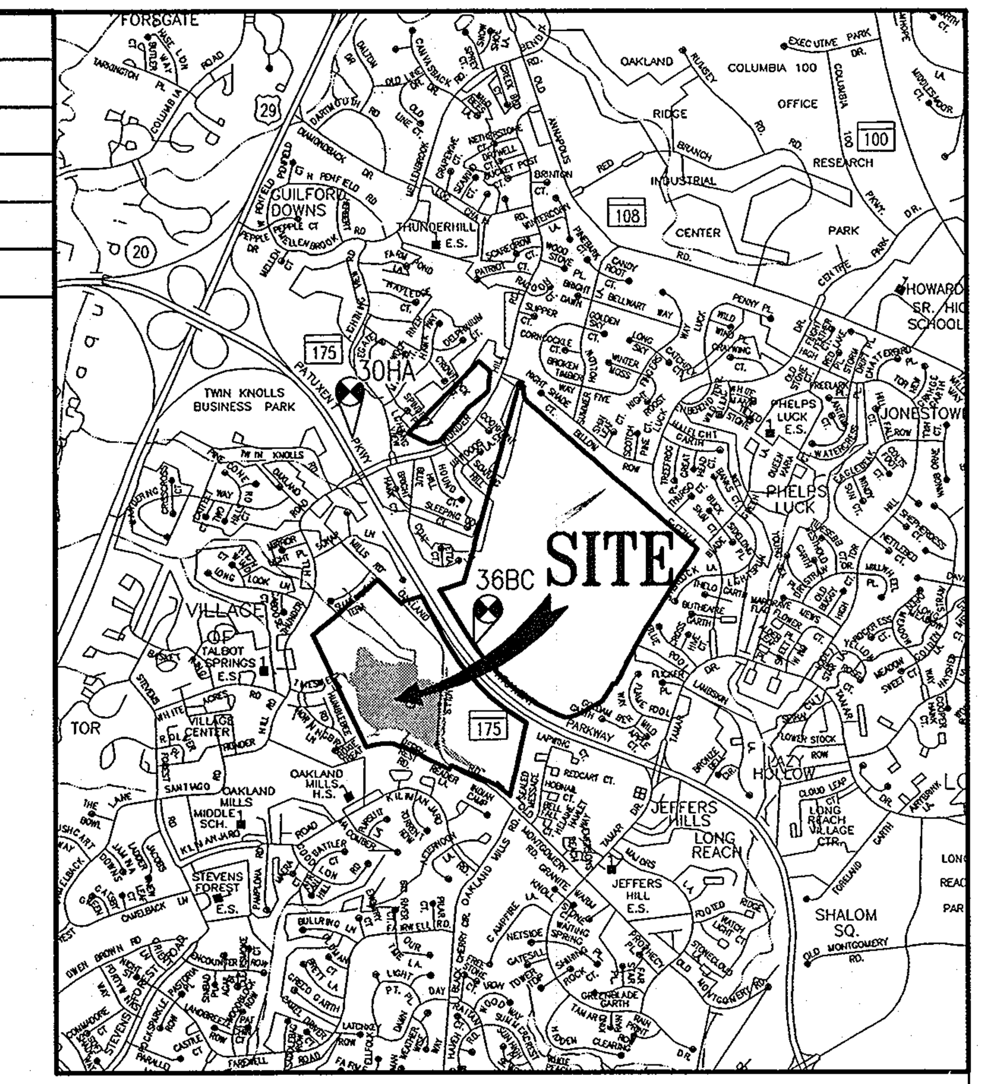
36BC: N 563264.1261, E 1359585.7197, ELEV. 409.981

LIST OF DRAWINGS

CIVIL
1. C0.1 COVER SHEET
2. C0.2 ABBREVIATIONS, NOTES, AND LEGENDS
3. C1.0 EXISTING SITE PLAN
4. C1.1 OVERALL SITE DEVELOPMENT PLAN
5. C1.2 SITE PLAN A
6. C1.3 SITE PLAN B
7. C1.4 STAKEOUT PLAN A
8. C1.5 STAKEOUT PLAN B
9. C1.6 OVERALL EROSION & SEDIMENT CONTROL PLAN
10. C1.7 EROSION & SEDIMENT CONTROL/GRADING PLAN A
11. C1.8 EROSION & SEDIMENT CONTROL/GRADING PLAN B INITIAL GRADING
12. C1.9 EROSION & SEDIMENT CONTROL/GRADING PLAN B FINAL GRADING
13. C1.10 PHOTOMETRIC TEST PLAN
14. C1.11 TRAFFIC CONTROL PLAN PHASE 1
15. C1.12 TRAFFIC CONTROL PLAN PHASE 1
16. C1.13 TRAFFIC CONTROL PLAN PHASE 1
17. C1.14 TRAFFIC CONTROL PLAN PHASE 2
18. C1.15 TRAFFIC CONTROL PLAN PHASE 2
19. C1.16 TRAFFIC CONTROL PLAN PHASE 2
20. C1.17 SIGNING AND MARKING PLAN
21. C2.1 STORM DRAIN PROFILES
22. C2.2 STORM DRAIN PROFILES
23. C2.3 STORM DRAIN PROFILES
24. C3.1 MULTIPURPOSE FIELD PLAN
25. C3.2 ENLARGED SITE PLANS
26. C3.3 STORMWATER MANAGEMENT POND PLAN
27. C4.1 STORMWATER MANAGEMENT DETAILS
28. C4.2 SITE DETAILS
29. C4.3 SITE DETAILS
30. C4.4 SITE DETAILS
31. C5.1 EROSION AND SEDIMENT CONTROL - NOTES
32. C5.2 EROSION AND SEDIMENT CONTROL - NOTES/DETAILS
33. C5.3 EROSION AND SEDIMENT CONTROL - DETAILS
34. C5.4 BORING LOGS
35. C5.5 SWM CONSTRUCTION NOTES AND SWM BORINGS
36. C6.1 OVERALL DRAINAGE AREA MAPS
37. C6.2 STORMWATER MANAGEMENT DRAINAGE AREA PLAN
38. C6.3 INLET DRAINAGE AREA MAP

LANDSCAPE
39. L1.1 SITE LANDSCAPE PLAN
40. L1.2 SITE LANDSCAPE PLAN
41. L1.3 SWM LANDSCAPE PLAN ENLARGEMENT
42. L1.4 LANDSCAPE PLAN ENLARGEMENTS
43. L1.5 SEEDING PLAN
44. L2.1 HARDSCAPE DETAILS
45. L2.2 HARDSCAPE DETAILS
46. L2.3 PLANTING DETAILS
47. L2.4 PLANTING DETAILS
48. L2.5 PLANTING SCHEDULES

FOREST CONSERVATION
49. F1.1 FOREST CONSERVATION PLAN
50. F1.2 FOREST CONSERVATION PLAN
51. F1.3 FOREST CONSERVATION PLAN DETAILS



ADC MAP: 16
GRID: A6,A7

VICINITY MAP
1" = 2000'

SITE ANALYSIS DATA CHART

TOTAL PROPERTY AREA: 298.08 ACRES
AREA OF PLAN SUBMISSION: 25.1 ACRES
LIMIT OF DISTURBED AREA: 25.1 ACRES

PRESENT ZONING DESIGNATION: RC-DEO

PROPOSED USES: REGIONAL PARK, ATHLETIC FIELDS, PLAYGROUND, PICNIC SHELTER, COMFORT STATION

FLOOR SPACE: PICNIC SHELTER - 1ST FLOOR: 1470 SF
COMFORT STATION - 1ST FLOOR: 1270 SF

PARKING REQUIREMENTS (PER HOWARD COUNTY RECREATION & PARKS)
MULTIPURPOSE FIELD: 50 SPACES X 3 = 150 SPACES
PICNIC SHELTER: 50 SPACES
PLAYGROUND: 10 SPACES
TOTAL REQUIRED: 210 SPACES

PARKING SPACES PROVIDED: 270 SPACES, 8 HANDICAP (278 TOTAL)

APPLICABLE DPZ FILE NUMBERS: WP-10-013

ADDRESS CHART	
PARCEL #	STREET ADDRESS
3/72	PICNIC SHELTER: 5750 OAKLAND MILLS ROAD
	COMFORT STATION: 5752 OAKLAND MILLS ROAD

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

GRAPHIC SCALES

0 2000' 4000'
SCALE: 1" = 2000'

0 400' 800'
SCALE: 1" = 400'

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

APPROVED: DEPARTMENT OF PUBLIC WORKS	
DIRECTOR OF PUBLIC WORKS	DATE 2/22/10
CHIEF, BUREAU OF ENGINEERING	DATE 2/22/10
Steve Shaver — CHIEF, TRANSPORTATION AND SPECIAL PROJECTS	DATE 2/22/10

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: DEPARTMENT OF RECREATION AND PARKS	
DIRECTOR	DATE 2.22.10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
BN for Peter Beilenson — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

OWNER:	DEVELOPER:
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 ATTN: MR. RAUL DELERME VOICE 410-313-4689 FAX 410-313-4646	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 9250 BENDIX ROAD COLUMBIA, MD 21045 ATTN: MR. MARK KOVACH VOICE 410-313-6153 FAX 410-313-6144

PERMIT INFORMATION CHART							
WATER CODE: PUBLIC		SEWER CODE: PUBLIC	BUILDING N/A		STREET ADDRESS N/A		
PROJECT NAME: BLANDAIR REGIONAL PARK - PHASE 1			SECTION/AREA N/A			PARCEL 3/72	
L/F 4391/55 5203/439	GRID #5	ZONING RC-DEO	TAX MAP 36	BLOCK 5	ELEC. DIST. 3/7	CENSUS TRACT 60603	

BLANDAIR REGIONAL PARK - PHASE 1

COVER SHEET

Drawing No.
C0.1

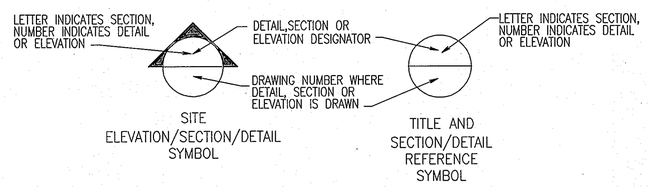
Scale: AS SHOWN		
Date: 02/19/10	Sheet 1 of 51	
Des: CYH	Drawn: CJK	Check: AUO

SDP-10-007

PLOT DATE: 2/19/2010 9:55:31 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)
FILENAME: N:\42038-001\CADD\42038001C001.DWG

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABAN, ABAND	ABANDON
APPROX	APPROXIMATELY
ASTM	ASSOCIATION FOR STANDARD TESTING METHODS
BLDG	BUILDING
BIT	BITUMINOUS
B.M.	BENCH MARK
CFS	CUBIC FEET PER SECOND
C.I.	CAST IRON
C.I.P	CAST IRON PIPE
C/L	CENTERLINE
CO	CLEAN OUT
COMM	COMMUNICATION
CONTR. JT	CONTRACTION JOINT
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
DEMO	DEMOLITION
DIP	DUCTILE IRON PIPE
DIA, DIAM	DIAMETER
DWG, DRWG	DRAWING
E	EAST
EL, ELEV	ELEVATION
ELECT, ELEC	ELECTRICAL
EMBED	EMBEDDED
EX	EXISTING
EXP JT	EXPANSION JOINT
EW	EACH WAY
F&C	FRAME AND COVER
FH	FIRE HYDRANT
FIN, FL, F.F.	FINISHED FLOOR
FT	FEET
FPS	FEET PER SECOND
HB	HORIZONTAL BEND
HO. CO.	HOWARD COUNTY
HC	HANDICAPPED
HP	HIGH POINT
IN	INCH
INV	INVERT
IP	INLET PROTECTION
JT	JOINT
LT	LEFT
LOD	LIMIT OF DISTURBANCE
LP	LOW POINT
MAX	MAXIMUM
MECH	MECHANICAL
MH	MANHOLE
MIN	MINIMUM
MW	MONITORING WELL
N	NORTH
NE	NORTHEAST
NTS	NOT TO SCALE
NW	NORTHWEST
OC, O/C	ON CENTER
OD	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRIC
OHT	OVERHEAD TELEPHONE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PERF	PERFORATED
PI	POINT OF INTERSECTION, POST INDICATOR
POB	POINT OF BEGINNING
POC	POINT ON CURVE
POE	POINT OF END
POT	POINT ON TRAVERSE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PP	POWER POLE
PIV	POST INDICATOR VALVE
PROP	PROPOSED
R	RADIUS, RIGHT
RD	ROAD
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCP	REINFORCED CONCRETE PIPE
REIN, REINF	REINFORCED
RR	RAILROAD
S	SOUTH, SLOPE, SANITARY
SAN	SANITARY
SCE	STABILIZED CONSTRUCTION ENTRANCE
SCH	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SE	SOUTHEAST
SF	SILT FENCE
SHT	SHEET
SP	STUDY POINT
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STRUCT, STR	STRUCTURAL
SW	SOUTHWEST
TEL	TELEPHONE
TS&V	TAPPING SLEEVE & VALVE
T/C	TOP OF CURB
TC	TOP OF COVER
TG	TOP OF GRATE
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UE	UNDERGROUND ELECTRIC DUCT
UMH	UNKNOWN MANHOLE
UT	UNDERGROUND TELEPHONE DUCT
UFA	UNDERGROUND FIRE ALARM
VB	VERTICAL BEND
VC	VERTICAL CURVE
W	WEST, WATT, WATER, WIDE
W/	WITH
WWF	WELDED WIRE FABRIC



LEGEND

EXISTING	PROPOSED	DESCRIPTION
145	145	CONTOUR
× 145.50	145.50	SPOT ELEVATION
D 12"RCP D	12"SD	STORM DRAIN
W 8"WATER W	8"W	WATER
S 6"SAN S	6"SAN	SANITARY SEWER
E E	E E	UNDERGROUND ELECTRIC
T T	T T	UNDERGROUND TELEPHONE
		CONCRETE CURB AND GUTTER
X	X	FENCE
		BUILDING
CONC		CONCRETE PAVEMENT
		HEAVY DUTY CONCRETE PAVEMENT
MAC		BITUMINOUS CONCRETE PAVEMENT
		PLAYGROUND PAVEMENT
		WATER VALVE
		FIRE HYDRANT
		STORM DRAIN INLET
D	D	STORM DRAIN MANHOLE
S	S	SANITARY SEWER MANHOLE
E		ELECTRIC MANHOLE
T		TELEPHONE MANHOLE
		LIGHT POLE
		UTILITY POLE
	T	TRANSFORMER
	SG	SWITCHGEAR
UTIL		UTILITY MARKER
EJB		ELECTRIC JUNCTION BOX
		GUY WIRE
		SIGN
		BUSH/SHRUBS
		EVERGREEN TREE
		DECIDUOUS TREE
		HEDGEROW
		WOODSLINE
		RIPRAP
		CONNECT TO EXISTING
		15-24.9% SLOPES
		>25% SLOPES
		100-YR FLOODPLAIN
		STREAM
SB		75' STREAM BUFFER
WRA FLY		FLY MONUMENT
GPS		GPS MONUMENT
		PHOTO TARGET
WRA		SURVEY TRAVERSE MONUMENT
LOD		LIMIT OF DISTURBANCE
		PROPERTY LINE
		SETBACK

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/5/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

FILENAME: W:\42938-001\CADD\42938001C002.DWG

PLOT DATE: 8/19/2010 9:37:26 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

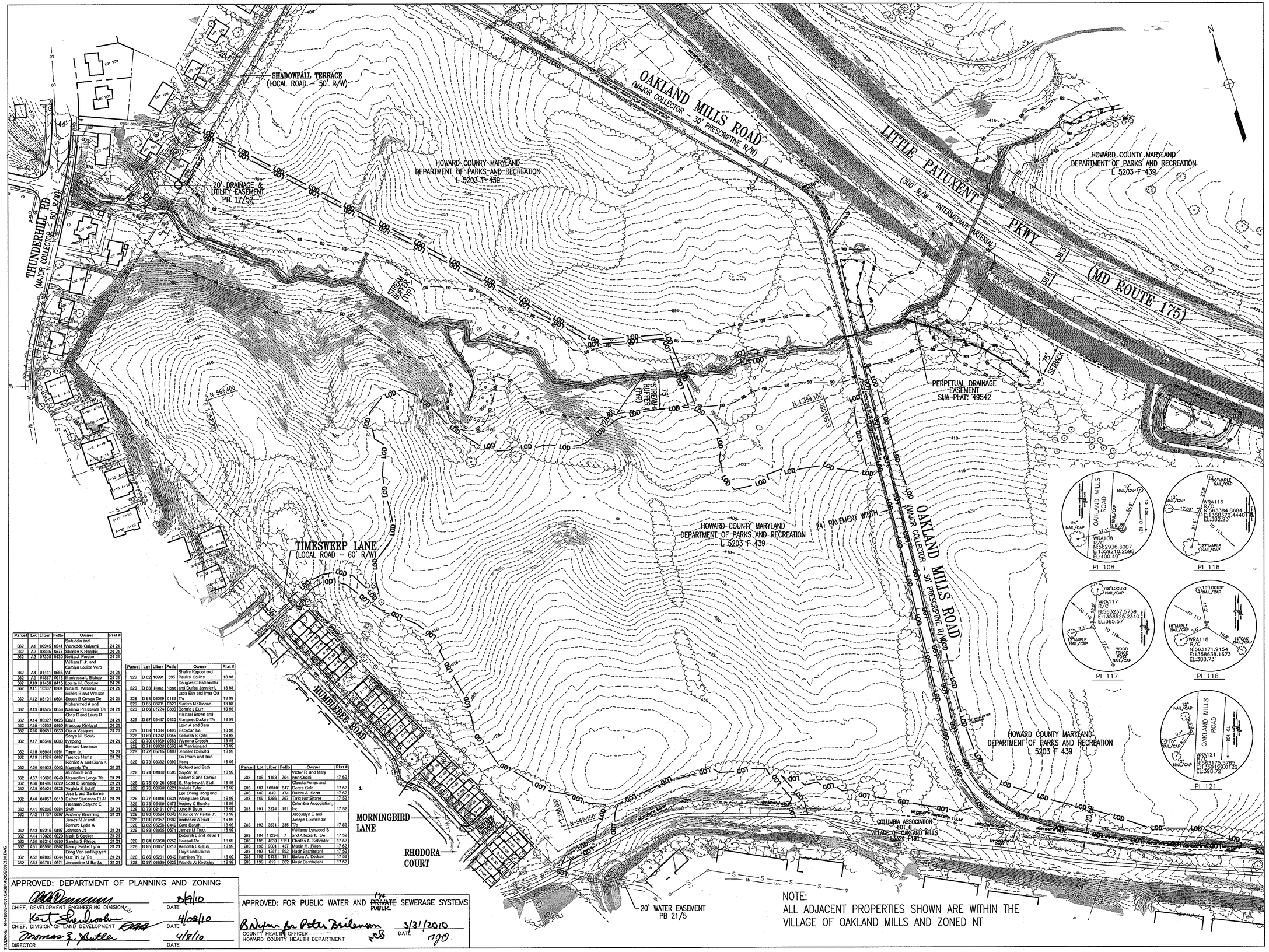
ABBREVIATIONS, NOTES AND LEGENDS

Drawing No.

C0.2

Scale: NONE		
Date: 02/19/10	Sheet 2 of 51	
Des: CJK	Drawn: CJK	Check: AUO

SDP-10-007



Parcel	Lot	Liber	Folio	Owner	Plat #
362	A1	00915	0541	Sailuddin and Wahedda Qajnurni	24 21
362	A2	03805	0577	Shanice K Hendrix	24 21
362	A3	07308	0430	Nelita J. Proctor	24 21
362	A4	01441	0585	William F Jr. and Carolyn Louise Verb Wt	24 21
362	A9	04887	0016	Montressa L Bishop	24 21
362	A10	01459	0415	Louise M. Couture	24 21
362	A11	10307	0204	Nina M. Williams	24 21
362	A12	05101	0504	Robert S and Watson Susan B Cowan Tte	24 21
362	A13	07525	0059	Mohammed A and Nazima Presswala Tte	24 21
362	A14	03327	0426	Chris C and Laura R Davis	24 21
362	A15	10903	0460	Marquay Kirkland	24 21
362	A16	06651	0630	Oscar Vasquez	24 21
362	A17	05549	0003	Sonya M. Scott-Simpong	24 21
362	A18	05044	0291	Bernard Laurence Turpin Jr.	24 21
362	A19	11329	0487	Terence Harris	24 21
362	A20	04032	0002	Richard A and Diana K Mcready Tte	24 21
362	A37	10690	0249	Akinrunde and Nkemdilim Longe Tte	24 21
362	A38	01690	0629	Scott D Kennedy	24 21
362	A39	03024	0338	Virginia E Schiff	24 21
362	A40	04857	0510	Rose L and Santonna Esther Santanna Et Al	24 21
362	A41	02805	0384	Freeman Benjene E Swift	24 21
362	A42	11137	0697	Anthony Hemming	24 21
362	A43	08210	0197	James M Jr and Romero Lydia A Johnson Jt	24 21
362	A44	10028	0220	Mark S Goeller	24 21
362	A50	09216	0390	Sandra S Phillips	24 21
362	A51	03966	0502	Nancy Foster Lyon	24 21
362	A52	07882	0644	Ooog Van and Nguyen Duc Thi Ly Tte	24 21
362	A53	03761	0571	Jacqueline M Banks	24 21

Parcel	Lot	Liber	Folio	Owner	Plat #
328	D 62	10991	595	Shalini Kapoor and Patrick Collins	18 93
328	D 63	None	None	Douglas C Bottomiller and Durbin Jennifer L	18 93
328	D 64	08029	0186	Jada Elio and Irma Qui Tte	18 93
328	D 65	06701	0320	Marilyn McKinnon	18 93
328	D 66	07724	0385	Bonnie J Durr	18 93
328	D 67	09447	0430	Michael Brown and Margaret Dadzie Tte	18 93
328	D 68	11334	0496	Leon A and Sara Escobar Tte	18 93
328	D 69	01392	0605	Deborah S Cole	18 93
328	D 70	01869	0583	Wynona Creech	18 92
328	D 71	09906	0563	Ali Yamminejad	18 92
328	D 72	05715	0483	Jennifer Cornwell	18 92
328	D 73	03362	0399	Do Pham and Tran Hong	18 92
328	D 74	04086	0585	Richard and Beth Snyder Jt	18 92
328	D 75	09126	0535	Robert S and Connie S. Mayhew Jt Etal	18 92
328	D 76	03898	0221	Valerie Tyler	18 92
328	D 77	01916	0631	Lee Chung Hong and Wong Mee Chun	18 92
328	D 78	05419	0473	Audrey C Brooks	18 92
328	D 79	02161	0710	Jung H Bryan	18 92
328	D 80	00584	0645	Maurice W Parlin Jr	18 92
328	D 81	07367	0682	Ambrosse A Rust	18 92
328	D 82	00256	0440	Cara Bandh	18 92
328	D 83	03805	0671	James M Trout	18 92
328	D 84	00960	0252	Deborah L and Kevin T Howard Tte	18 92
328	D 85	03857	0213	Kenneth L Gillus	18 92
328	D 86	05281	0649	Lloyd and Marcia Hamilton Tte	18 92
328	D 87	01939	0628	Wanda Jo Kostelny	18 92

Parcel	Lot	Liber	Folio	Owner	Plat #
				Victor R. and Mary	
283	186	1163	704	Ann Crisini	17 52
				Claudia Fornes and	
283	187	10040	847	Denys Galo	17 52
283	188	649	474	Beatriz A. Scott	17 52
283	189	5286	267	Tang Nur Shane	17 52
283	191	3324	191	Columbia Association, Inc.	17 52
				Jacquelyn E and	
				Joseph L Smith Sr.	
283	193	3531	335	Tte	17 52
				Williams Lynwood S	
283	194	11294	7	and Arlecia T. Life	17 52
283	195	4659	1111	Charles A. Schneider	17 52
283	196	9001	437	Marlin M. Pitton	17 52
283	197	1297	692	Nasir Bashirelahi	17 52
283	198	9132	181	Barbra A. Dodson	17 52
283	199	619	682	Nasir Bashirelahi	17 52

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 2/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/02/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

NOTE:
ALL ADJACENT PROPERTIES SHOWN ARE WITHIN THE VILLAGE OF OAKLAND MILLS AND ZONED NT

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

EXISTING SITE PLAN

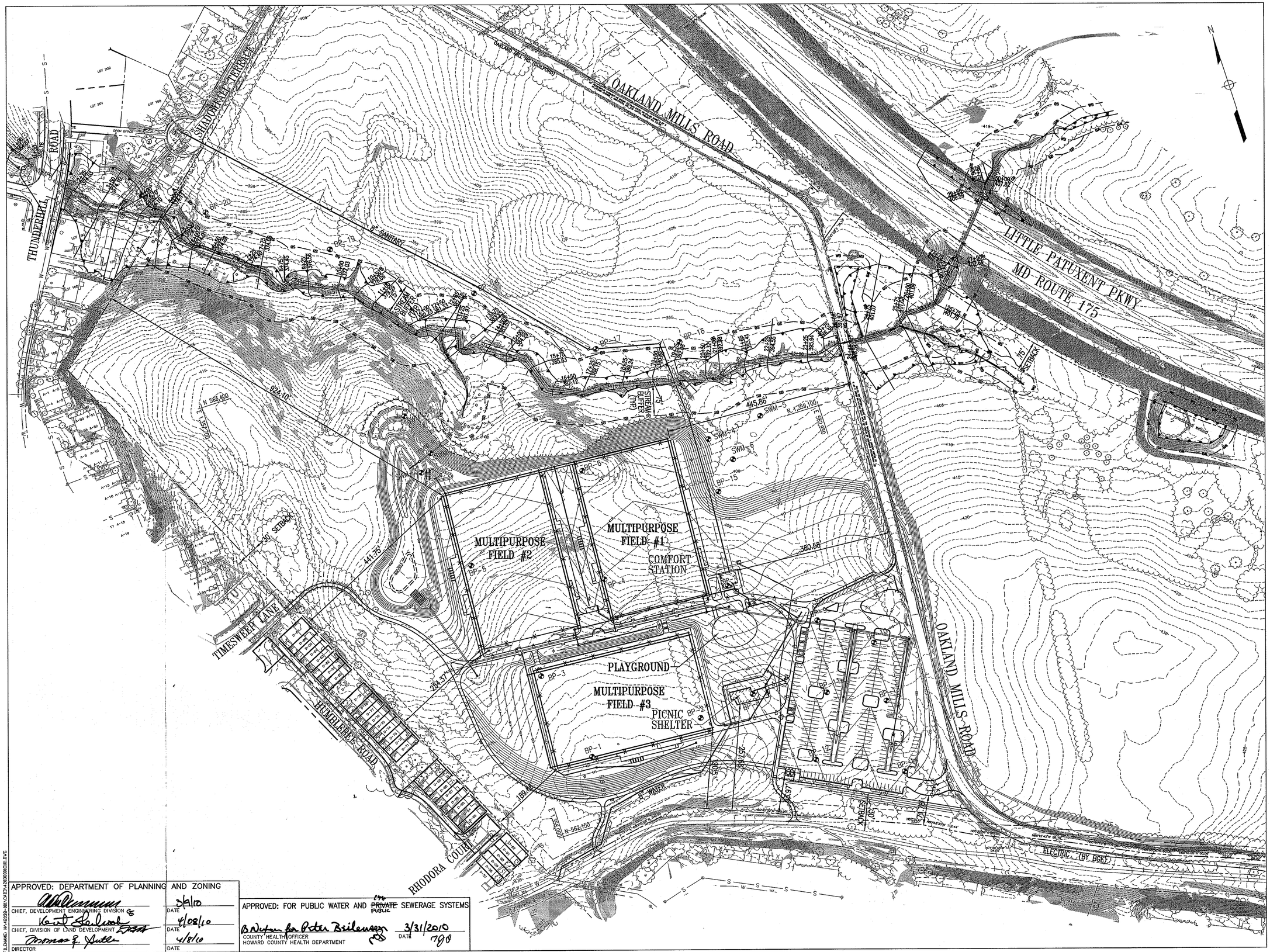
Drawing No.
C1.0

Scale: 1" = 100'		
Date: 02/19/10	Sheet 3 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

PLOT DATE: 2/19/2010 9:08:47 AM PAGE SETUP: SETS GRAYSCALE PLOT STYLE: WRA_BW.CTB PAPER SIZE:ARCH E (36.00 X 24.00 INCHES)

FILENAME: W:\2038-001\CADD\42038001C100.DWG



APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/31/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

FILENAME: W:\2038-001\CADD\4203B001C01.DWG

PLOT DATE: 2/19/2010 9:09:59 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

STATE OF MARYLAND ANTHONY U. CHIOLA No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

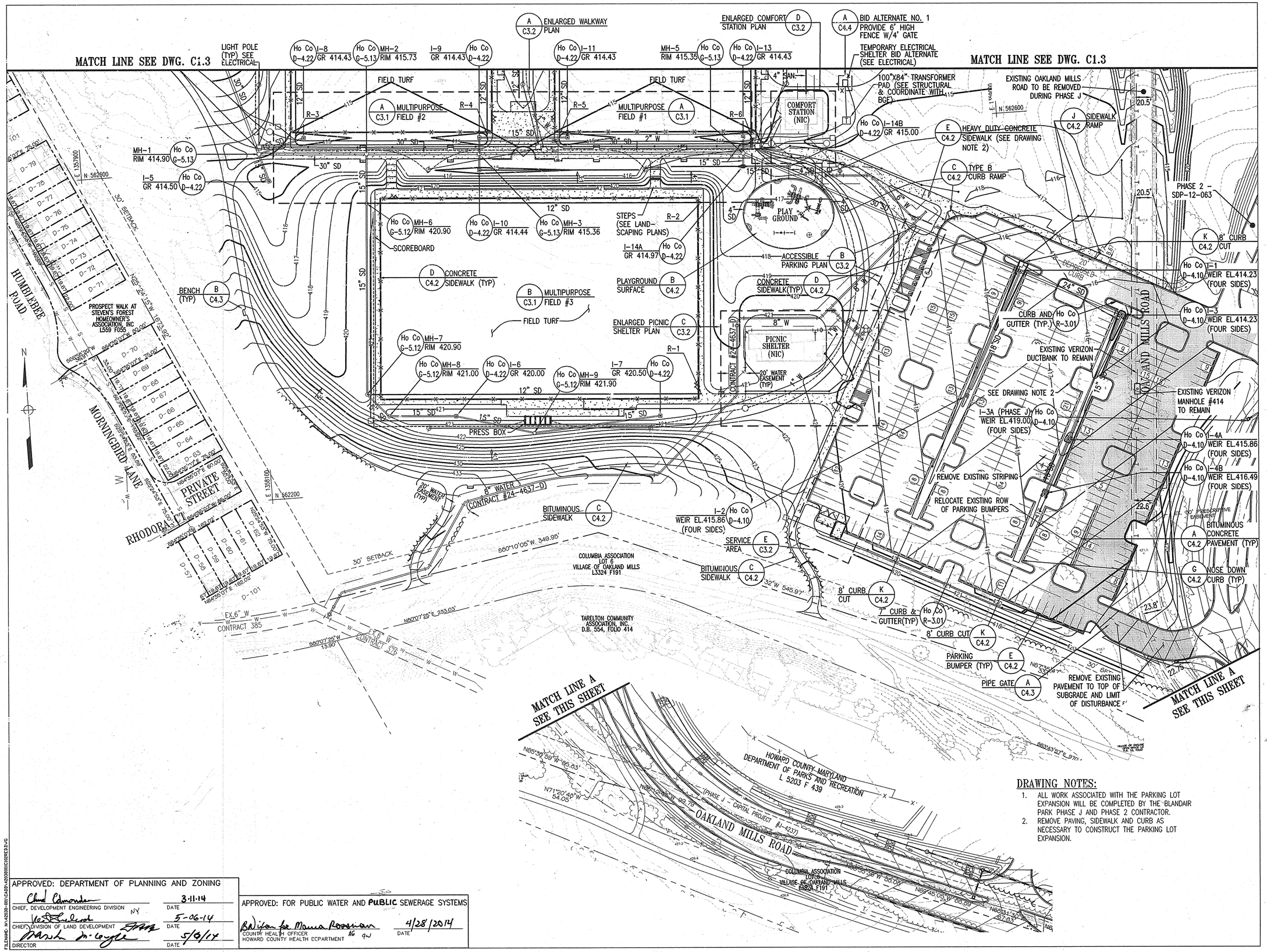
OVERALL SITE DEVELOPMENT PLAN

Drawing No.

C1.1

Scale: 1" = 100'		
Date: 02/19/10	Sheet 4 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007



DRAWING NOTES:

1. ALL WORK ASSOCIATED WITH THE PARKING LOT EXPANSION WILL BE COMPLETED BY THE BLANDAIR PARK PHASE J AND PHASE 2 CONTRACTOR.
2. REMOVE PAVING, SIDEWALK AND CURB AS NECESSARY TO CONSTRUCT THE PARKING LOT EXPANSION.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chad Edmondson — CHIEF, DEVELOPMENT ENGINEERING DIVISION	3-11-14 DATE
Kent Sheubrooks — CHIEF, DIVISION OF LAND DEVELOPMENT	5-06-14 DATE
Marsha McLaughlin — DIRECTOR	5/8/14 DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS	
By direction for Maura Rossman — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT	4/28/2014 DATE

FILENAME: H:\42026-001\CADD\42026001C1B2RED.DWG

REVISIONS		
	PARKING LOT EXPANSION	01/31/14

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — ANTHONY UCHEDO CHI — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2015

BLANDAIR REGIONAL PARK - PHASE 1

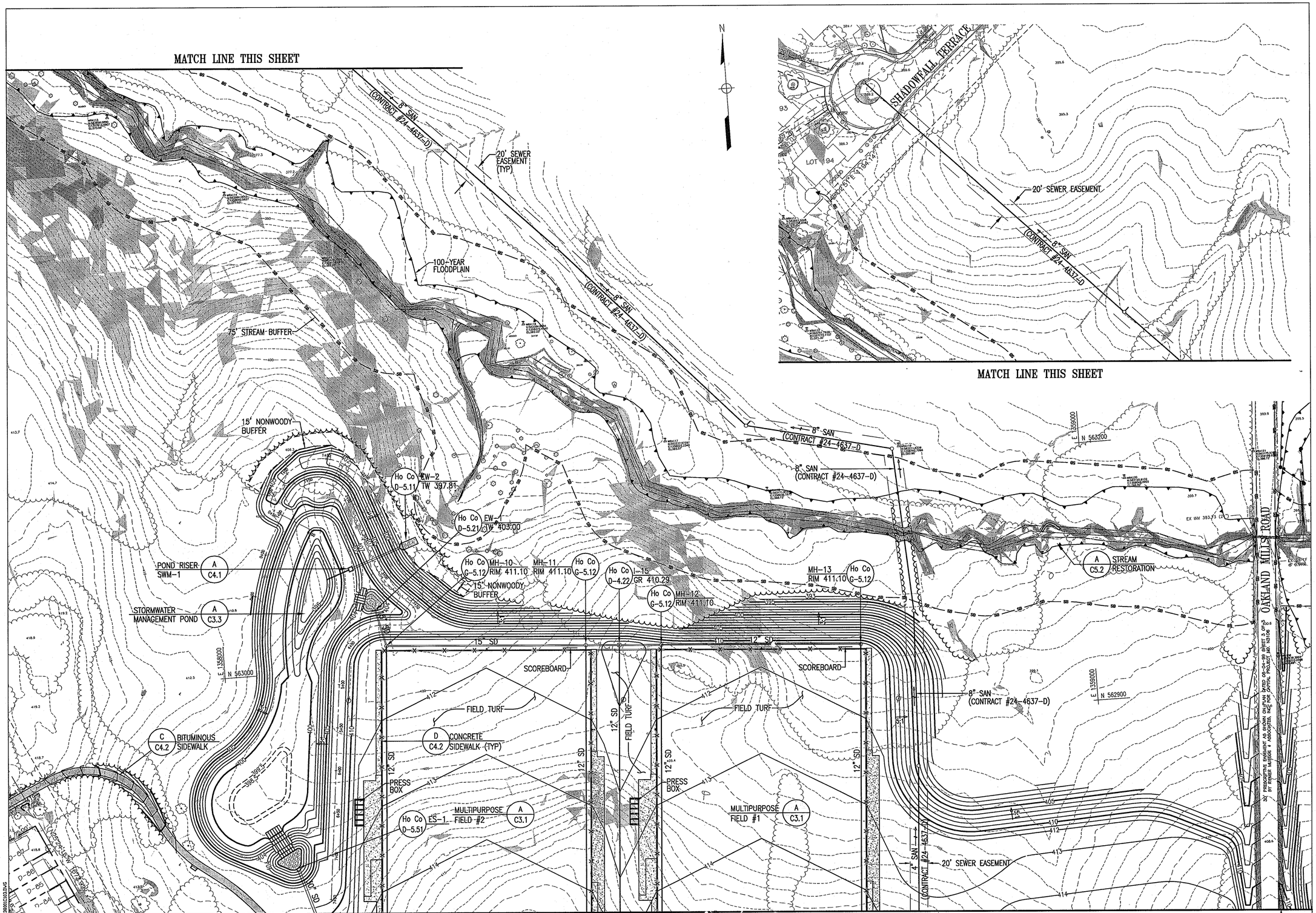
SITE PLAN A

Drawing No.

C1.2

Scale: 1" = 50'		
Date: 11/16/2012	Sheet 5 of 65	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007



REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND ANTHONY U. OLIVA No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

SITE PLAN B

Drawing No.

C1.3

Scale: 1" = 50'		
Date: 02/19/10	Sheet 6 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

FILENAME: M:\4639B-001\CADD\4639B001C103.DWG
PLOT DATE: 2/19/2010 9:41:58 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_8056CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

PARKING LOT STAKEOUT

POINT	NORTHING	EASTING	R	Δ	T
C1	561975.55	1359129.94	40.00'	079°07'45"	33.05'
C2	561963.13	1359049.36	76.00'	065°03'52"	48.48'
C3.1	562007.76	1359019.60	20.00'	028°57'18"	5.16'
C3.2	562013.00	1359009.47	5.00'	090°00'00"	5.00'
P1	561997.02	1359001.20	-	-	-
P2	562042.50	1358913.27	-	-	-
C4	562058.48	1358921.53	6.00'	090°00'00"	6.00'
C5	562069.51	1358900.22	6.00'	090°00'00"	6.00'
P3	562053.52	1358891.95	-	-	-
P4	562111.40	1358780.03	-	-	-
C6	562143.93	1358756.32	6.00'	090°00'00"	6.00'
P5	562152.20	1358740.33	-	-	-
P6	562248.13	1358789.95	-	-	-

POINT	NORTHING	EASTING	R	Δ	T
C7	562239.86	1358805.94	6.00'	090°00'00"	6.00'
C8	562258.51	1358815.58	6.00'	090°00'00"	6.00'
P7	562266.78	1358799.60	-	-	-
P8	562376.03	1358856.10	-	-	-
C9	562367.77	1358872.09	6.00'	090°00'00"	6.00'
C10	562386.42	1358881.74	6.00'	090°00'00"	6.00'
P9	562394.69	1358865.75	-	-	-
P10	562453.31	1358896.07	-	-	-
C11	562445.04	1358912.06	5.00'	090°00'00"	5.00'
C12	562497.17	1358939.02	72.00'	054°15'27"	36.89'
P11	562520.76	1359098.88	-	-	-
C13	562512.33	1359110.24	15.00'	045°00'00"	6.21'
C14	562519.83	1359161.04	40.00'	077°34'18"	32.14'

POINT	NORTHING	EASTING	R	Δ	T
C15	562483.07	1359158.57	40.00'	102°50'13"	50.14'
C16	562462.07	1359016.26	15.00'	144°15'27"	46.52'
C17	562401.77	1359132.86	-	-	-
C18	562305.84	1359083.24	6.00'	090°00'00"	6.00'
P12	562297.57	1359099.23	-	-	-
P13	562177.66	1359037.21	-	-	-
C19	562155.96	1359079.17	30.00'	075°31'21"	23.24'
C20	562128.78	1359072.96	6.00'	075°31'21"	4.65'
P14	562120.60	1359088.76	-	-	-
P15	562048.66	1359051.55	-	-	-
C21	562056.93	1359035.56	6.00'	090°00'00"	6.00'
C22	562032.94	1359023.16	6.00'	090°00'00"	6.00'
C23	561978.81	1359127.82	40.00'	119°09'01"	68.11'

SIDEWALK STAKEOUT

POINT	NORTHING	EASTING	R	Δ	T
30	562501.32	1358934.80	81.87'	039°21'33"	29.28'
31	562567.48	1358806.90	122.00'	013°03'47"	13.97'
32	562550.92	1358936.79	110.00'	113°16'44"	167.07'
33	562344.97	1358830.28	15.00'	061°43'16"	8.96'
34	562276.87	1358795.06	35.00'	066°43'16"	23.04'
36	562288.94	1358625.40	15.00'	090°00'00"	15.00'
37	562265.26	1358789.05	20.00'	113°16'44"	30.38'

PLAYGROUND STAKEOUT

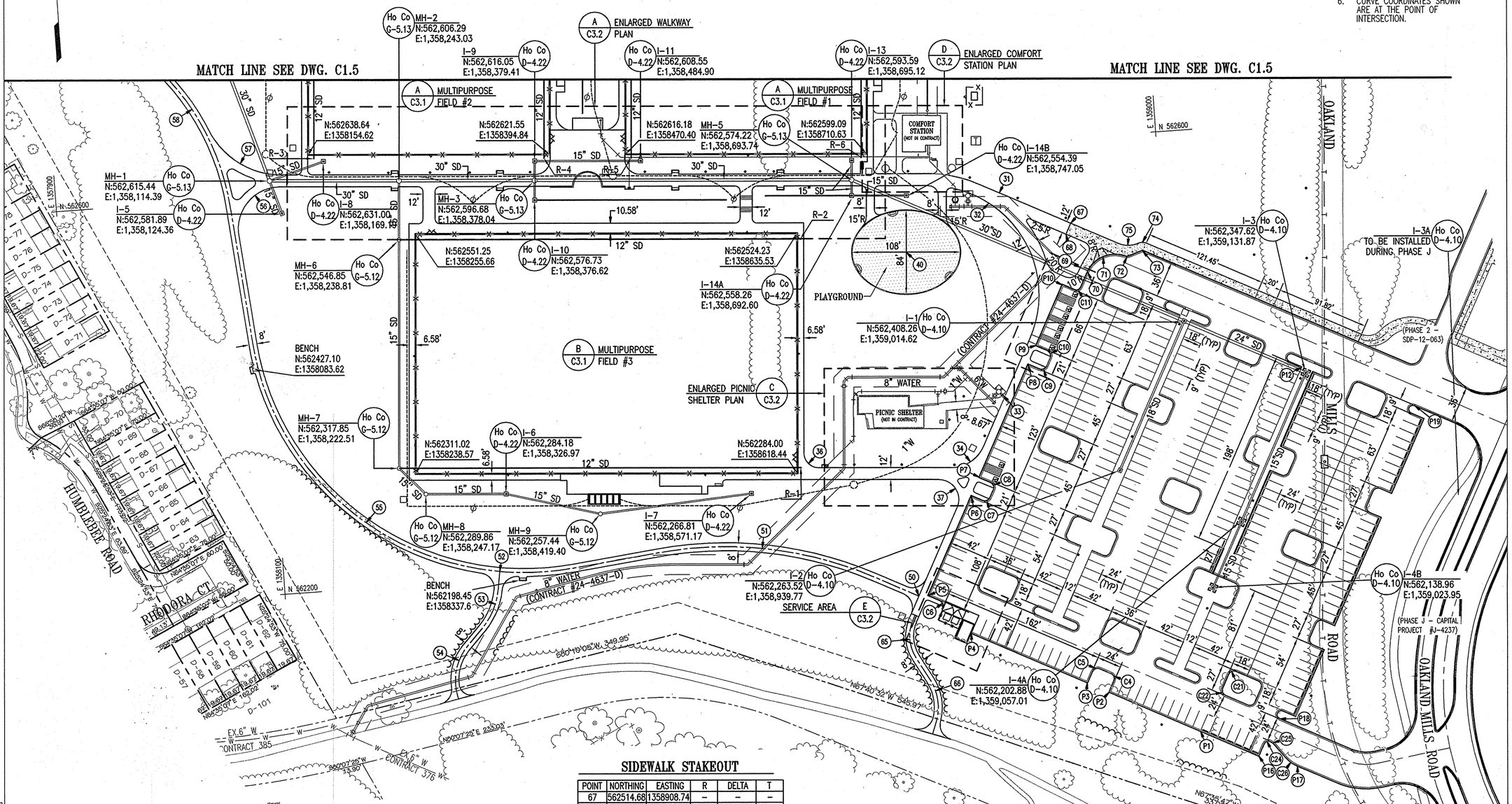
POINT	NORTHING	EASTING
40	562497.54	1358742.89

PATHWAY STAKEOUT

POINT	NORTHING	EASTING	R	Δ	T
50	562152.04	1358730.49	-	-	-
51	562226.49	1358586.54	375.00'	033°31'46"	112.97'
52	562207.19	1358315.17	-	-	-
53	562167.45	1358308.63	70.00'	034°28'41"	21.72'
54	562115.04	1358258.33	55.00'	055°09'52"	28.73
55	562175.01	1358111.30	275.00'	090°59'03"	279.76'
56	562610.48	1358079.05	42.00'	093°04'38"	44.32'
57	562625.18	1358079.64	81.51'	058°13'41"	45.40'
58	562704.82	1358063.11	250.00'	048°21'38"	112.25'
65	562109.69	1358713.09	40.00'	055°32'42"	21.07'
66	562047.12	1358746.64	50.00'	048°23'50"	22.47'

STAKEOUT NOTES

1. ALL PARKING LOT STAKEOUT IS FROM FACE OF CURB, UNLESS OTHERWISE NOTED.
2. ALL CURB FILLETS ARE 6' UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SIDEWALK FILLETS ARE 5' UNLESS OTHERWISE NOTED.
4. ALL ASPHALT PATHWAY FILLETS ARE 15' UNLESS OTHERWISE NOTED.
5. ATHLETIC FIELD STAKEOUT ARE AT C/L OF FENCE.
6. CURVE COORDINATES SHOWN ARE AT THE POINT OF INTERSECTION.



SIDEWALK STAKEOUT

POINT	NORTHING	EASTING	R	DELTA	T
67	562514.68	1358908.74	–	–	–
68	562504.02	1358903.23	–	–	–
69	562469.78	1358915.11	–	–	–
70	562464.41	1358922.07	–	–	–
71	562488.46	1358935.36	30.02'	84°55'57"	27.47'
72	562476.59	1358962.21	5.00'	41°30'02'	1.89'
73	562481.71	1358978.3	–	–	–
74	562491.05	1358979.1	10.00'	45°0'0"	4.14'
75	562486.19	1358963.82	25.00'	45°0'0"	10.36'

PARKING LOT STAKEOUT

POINT	NORTHING	EASTING	R	DELTA	T
P16	561968.07	1359057.16	–	–	–
C24	561984.52	1359065.66	5.00'	96°10'56"	5.57'
C25	561979.99	1359072.49	15.00'	19°48'25"	2.62'
C26	561958.7	1359088.34	30.00'	25°59'21"	6.92'
P17	561955.2	1359095.12	–	–	–
P18	562003.31	1359080.45	–	–	–
P19	562307.09	1359237.56	–	–	–

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3.11.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 5-06-14
DIRECTOR	DATE 5/6/14

APPROVED: FOR PUBLIC WATER AND ~~PUBLIC~~ SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 4/28/2014

REVISIONS		
	PARKING LOT EXPANSION	01/31/14

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — MICHAEL U. BARGER — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2015

BLANDAIR REGIONAL PARK - PHASE 1

STAKEOUT PLAN A

Drawing No.

C1.4

Scale: 1" = 50'		
Date: 11/16/2012	Sheet 7 of 65	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

FILENAME: N:\42038-001\CADD\42038001C1045E13.DWG
PLOT DATE: 2/5/2014 10:04:53 AM PAGE SETUP: WRA-PDF (50X34) PLOT STYLE: WRA_2006.CTB PAPER SIZE:36X24

PATHWAY STAKEOUT

POINT	NORTHING	EASTING	R	Δ	T
58	562704.82	1358063.11	250.00'	048°21'38"	112.25'
59	562805.18	1357927.19	150.00'	029°27'28"	39.43'
60	562934.70	1357869.25	85.00'	091°18'14"	86.96'
61	562866.90	1357726.50	-	-	-

POND EMBANKMENT C/L STAKEOUT

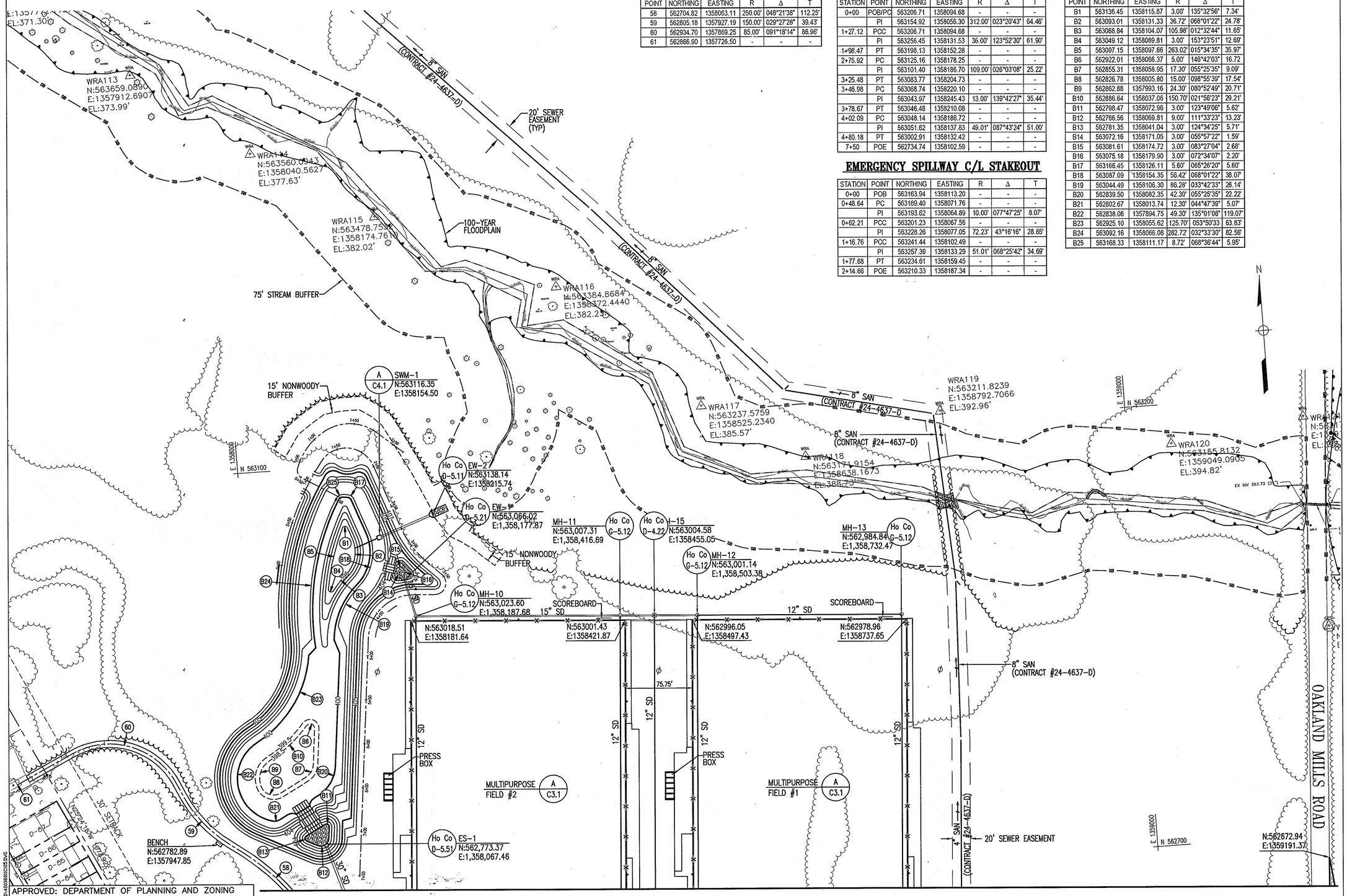
STATION	POINT	NORTHING	EASTING	R	Δ	T
0+00	POB/PC	563206.71	1358094.68	-		-
	PI	563154.92	1358056.30	312.00'	023°20'43"	64.46'
1+27.12	PCC	563206.71	1358094.68	-	-	-
	PI	563256.45	1358131.53	36.00'	123°52'30"	61.90'
1+98.47	PT	563198.13	1358152.28	-	-	-
2+75.92	PC	563125.16	1358178.25	-	-	-
	PI	563101.40	1358186.70	109.00'	026°03'08"	25.22'
3+25.48	PT	563083.77	1358204.73	-	-	-
3+46.98	PC	563068.74	1358220.10	-	-	-
	PI	563043.97	1358245.43	13.00'	139°42'27"	35.44'
3+78.67	PT	563046.48	1358210.08	-	-	-
4+02.09	PC	563048.14	1358186.72	-	-	-
	PI	563051.62	1358137.83	49.01'	087°43'24"	51.00'
4+80.18	PT	563002.91	1358132.42	-	-	-
7+50	POE	562734.74	1358102.59	-	-	-

EMERGENCY SPILLWAY C/L STAKEOUT

STATION	POINT	NORTHING	EASTING	R	Δ	T
0+00	POB	563163.94	1358113.20	-	-	-
0+48.64	PC	563189.40	1358071.76	-	-	-
	PI	563193.62	1358064.89	10.00'	077°47'25"	8.07'
0+62.21	PCC	563201.23	1358067.56	-	-	-
	PI	563228.26	1358077.05	72.23'	43°16'16"	28.65'
1+16.76	PCC	563241.44	1358102.49	-	-	-
	PI	563257.39	1358133.29	51.01'	068°25'42"	34.69'
1+77.68	PT	563234.61	1358159.45	-	-	-
2+14.66	POE	563210.33	1358187.34	-	-	-

POND BOTTOM STAKEOUT

POINT	NORTHING	EASTING	R	Δ	T
B1	563136.45	1358115.87	3.00'	135°32'56"	7.34'
B2	563093.01	1358131.33	36.72'	068°01'22"	24.78'
B3	563068.84	1358104.07	105.98'	012°32'44"	11.65'
B4	563049.12	1358089.81	3.00'	153°23'51"	12.69'
B5	563097.15	1358097.66	263.02'	015°34'35"	35.97'
B6	562922.01	1358066.37	5.00'	146°42'03"	16.72
B7	562855.31	1358058.95	17.30'	055°25'35"	9.09'
B8	562826.78	1358005.80	15.00'	098°55'39"	17.54'
B9	562862.88	1357993.16	24.30'	080°52'49"	20.71'
B10	562886.64	1358037.06	150.70'	021°56'23"	29.21'
B11	562798.47	1358072.96	3.00'	123°49'06"	5.62'
B12	562766.56	1358069.81	9.00'	111°33'23"	13.23'
B13	562781.35	1358041.04	3.00'	124°34'25"	5.71'
B14	563072.16	1358171.05	3.00'	055°57'22"	1.59'
B15	563081.61	1358174.72	3.00'	083°27'04"	2.68'
B16	563075.18	1358179.90	3.00'	072°34'07"	2.20'
B17	563166.45	1358126.11	5.60'	065°26'20"	5.60'
B18	563087.09	1358154.35	56.42'	068°01'22"	38.07'
B19	563044.49	1358106.30	86.28'	033°42'33"	26.14'
B20	562839.50	1358082.35	42.30'	055°25'35"	22.22'
B21	562802.67	1358013.74	12.30'	044°47'39"	5.07'
B22	562838.06	1357894.75	49.30'	135°01'06"	119.07'
B23	562925.10	1358055.62	125.70'	053°50'33	63.83'
B24	563092.16	1358066.08	282.72'	032°33'30"	82.56'
B25	563168.33	1358111.17	8.72'	068°36'44"	5.95'



MATCH LINE SEE DWG. C1.4

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLIVIERI — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

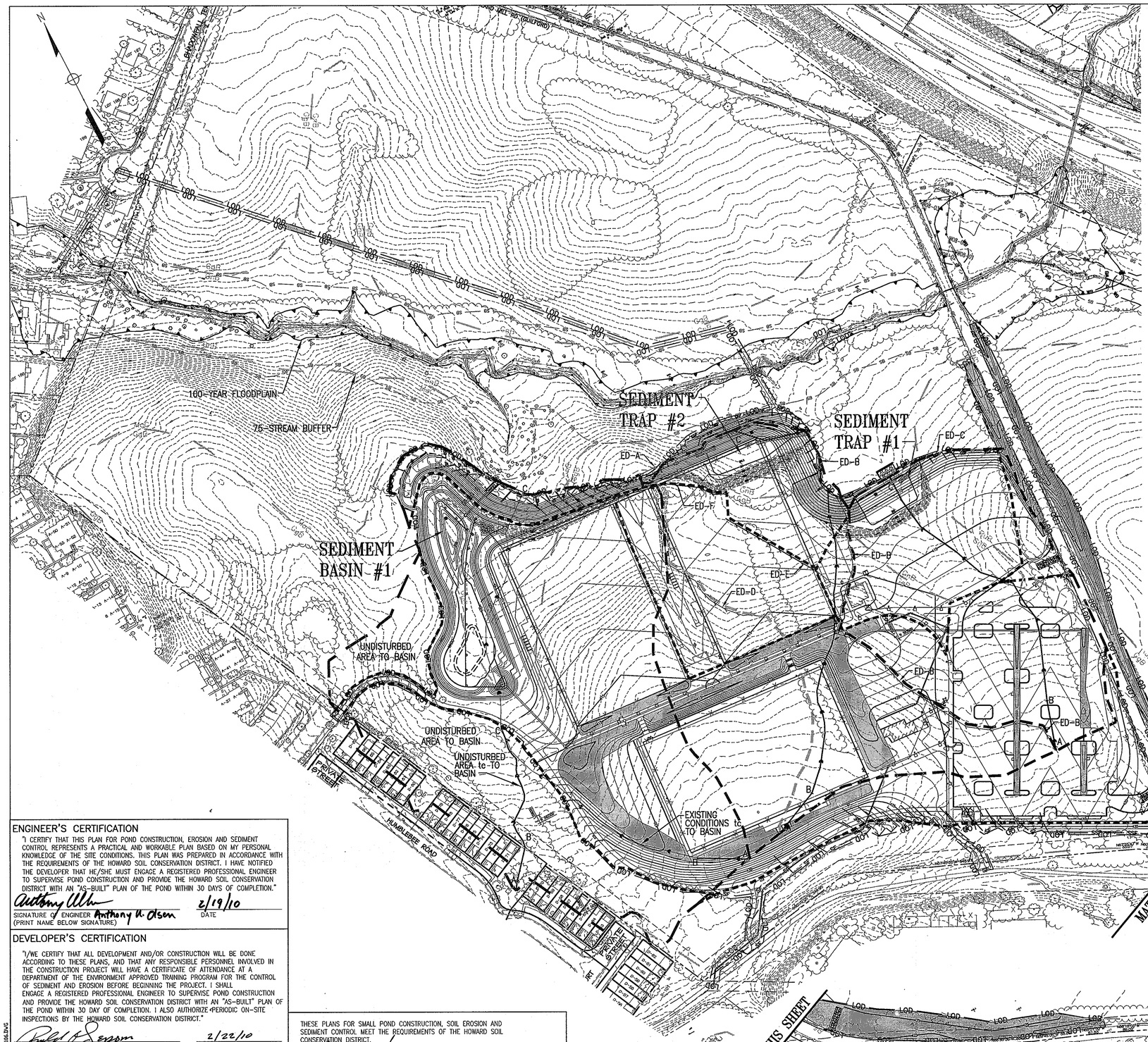
STAKEOUT PLAN B

Drawing No.
C1.5

Scale: 1" = 50'		
Date: 02/19/10	Sheet 8 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

FILENAME: W:\62939-001\CADD\4939001C15.DWG
PLOT DATE: 2/19/2010 9:42:05 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_BW36.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT AND ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING. (1 DAY)
2. NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION. (1 DAY)
3. FOR ROAD CONSTRUCTION, INSTALL SUPER SILT FENCE AT DOWNSTREAM END OF LIMIT OF OAKLAND MILLS ROAD SWALES AND ALONG WEST SIDE OF THE WEST DITCH. STARTING FROM DOWNSTREAM END, CONSTRUCT WIDENING OF OAKLAND MILLS ROAD/ADJACENT SWALES IN DAILY SEGMENTS AND PERMANENTLY STABILIZE WITH EROSION CONTROL MATTING AT END OF EACH WORK DAY. INSTALL IMBRICATED SILT FENCE BETWEEN ROAD EDGE AND SWALE. INSTALL STABILIZED CONSTRUCTION ENTRANCE UPON REACHING OAKLAND MILLS ROAD SWALE AREA AS SHOWN ON SHEET C1.7. (1 MONTH)
4. FOR PARK CONSTRUCTION, INSTALL THE STONE CONSTRUCTION ENTRANCES AND SILT FENCE/SUPER SILT FENCE FOR CONSTRUCTION OF SEDIMENT TRAPS #1, AND #2. (1 WEEK)
5. CLEAR AND GRUB AS NECESSARY FOR CONSTRUCTION OF SEDIMENT TRAPS #1 AND #2. CONSTRUCT TRAPS AND UPON COMPLETION OF TRAPS INSTALL EARTH DIKES ED-A, ED-B, ED-C AND ED-D TO DIRECT RUNOFF TOWARDS SEDIMENT TRAPS. INSTALL HIGHLY VISIBLE FENCE (HVF) ON INTERNAL EARTH DIKES ED-B AND ED-D. MAINTAIN POSITIVE DRAINAGE ALONG ALL EARTH DIKES DURING CONSTRUCTION. SEE SHEET C1.7 AND C1.8 FOR LOCATION OF EARTH DIKES AND GRADING OF TRAPS. (1 MONTH)
6. INSTALL IMBRICATED SILT FENCE AND SUPER SILT FOR CONSTRUCTION OF SEDIMENT BASIN. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB AS NECESSARY FOR CONSTRUCTION OF SEDIMENT BASIN EMBANKMENT. UPON VERIFICATION FROM THE NATIONAL WEATHER SERVICE OF NEXT 5 DAY NO PRECIPITAION FORECAST, BEGIN CONSTRUCTION OF BASIN EMBANKMENT, RISER R-1 AND PRINCIPAL SPILLWAY. INSTALL DRAW-DOWN DEVICE IN RISER. SEE SHEET C1.8 FOR GRADING OF BASIN EMBANKMENT. (1 MONTH)
7. UPON COMPLETION OF SEDIMENT BASIN EMBANKMENT, INSTALL IMBRICATED SILT FENCE ON ALONG SOUTH PROPERTY LINE. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN GRADING OF ENTIRE SITE AS SHOWN ON SHEET C1.7 AND C1.9. ADJUST EARTH DIKES AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE. GRADE TO LIMIT OF TEMPORARY GRADES OF SEDIMENT TRAPS #1 AND #2 AS SHOWN ON SHEET C1.9. UPON COMPLETION OF GRADING TO TEMPORARY LIMITS OF SEDIMENT TRAP #2, INSTALL EARTH DIKE (ED-E) W/HVF AND ED-F UPSTREAM OF TRAP #2 TO DIVERT RUNOFF TO BASIN. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE EARTH DIKE ED-A, ED-B, ED-C AND ED-D. (3 MONTHS)
8. INSTALL ALL UTILITIES AND COORDINATE WITH GRADING OPERATION. DURING INSTALLATION OF SANITARY AND WATER, ONLY EXCAVATE AMOUNT OF TRENCH TO ALLOW INSTALLATION OF PIPE AND BACKFILL WITHIN 1 WORK DAY. PLACE EXCAVATED MATERIAL ON UPHILL SIDED OF TRENCH AND IMMEDIATELY STABILIZE ALL DISTURBED AREA AROUND TRENCH AT THE END OF EACH WORK DAY. (1 MONTH)
9. BEGIN PICNIC SHELTER AND COMFORT STATION CONSTRUCTION. (3 MONTHS)
10. INSTALL SUBBASE FOR SYNTHETIC ATHLETIC FIELDS AND PARKING LOT. (1 MONTH)
11. INSTALL ATHLETIC FIELD CURB, PARKING CURB AND GUTTER, SIDEWALKS AND PAVE ALL AREAS TO BE PAVED. (1 MONTH)
12. STABILIZE ALL OTHER AREAS WITH PERMANENT SEEDING, MULCH, AND LANDSCAPING. INSTALLATION OR THE FINAL PAVEMENT COURSE MUST BE INSPECTED BY THE ON-SITE GEO-TECHNICAL ENGINEER. COMPLETE UTILITY, BUILDING AND REMAINING SITE CONSTRUCTION. (1 MONTH)
13. STABILIZE ALL UPSTREAM DRAINAGE AREA TO TRAP#1. EARTH DIKE W/HVF (ED-E) UPSTREAM OF TRAP #2 TO REMAIN DIVERTING RUNOFF TO BASIN UNTIL STORM DRAIN FROM ES-1 TO I-3 IS COMPLETED. WHEN ALL RUNOFF IS FLOWING INTO THE INLETS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ED-E. (1 WEEK)
14. MAINTAIN SILT FENCE PROTECTION DOWNSTREAM OF SEDIMENT TRAPS. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, FILL IN SEDIMENT TRAPS #1 AND #2 AND COMPLETE FINAL GRADES OVER TRAPS AS SHOWN ON SHEET C1.9. BACKFILL OF SEDIMENT TRAPS SHALL BE WITH SUITABLE MATERIAL AS APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED/TESTED AS DEFINED BY THE SPECIFICATIONS. (1 WEEK)
15. COMPLETE STORM DRAIN CONSTRUCTION, ATHLETIC TURF SUBBASE AND CURBING ALONG NORTH ATHLETIC FIELDS. (2 WEEKS)
16. INSTALL SYNTHETIC ATHLETIC TURF SURFACE AND FENCE CONSTRUCTION. (2 WEEKS)
17. FLUSH AND PUMP CLEAN THE STORM DRAIN SYSTEM. (1 DAY)
18. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, CONVERT THE SEDIMENT BASIN TO THE STORMWATER MANAGEMENT FACILITY AND COMPLETE FINAL GRADING. SEE SHEET C3.3. CONSTRUCT FOREBAYS AND GABION MATTRESSES AND STORMWATER MANAGEMENT LANDSCAPING. REMOVE TEMPORARY DRAW-DOWN DEVICE FROM RISER AND INSTALL ALL TRASH RACKS. (1 MONTH)
19. UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES AND ALL NON-NATURAL ITEMS FROM FORESTS, FLOODPLAIN, STREAMS, WETLANDS AND THEIR BUFFERS.

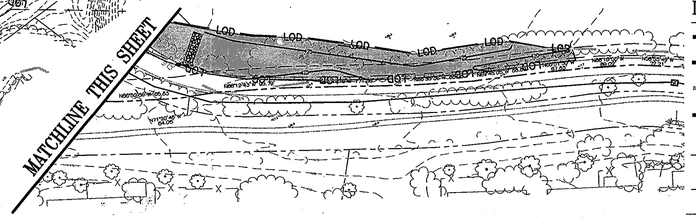
***ALL ROOT PRUNING SHALL BE COMPLETED PRIOR TO ANY CONSTRUCTION ACTIVITIES

***NO CLEARING OR GRUBBING SHALL COMMENCE PRIOR TO THE INSTALLATION OF THE TREE PROTECTION FENCING AND SIGNAGE ADJACENT TO THE CLEARING/GRUBBING AREA WHERE APPLICABLE.

***TREE PROTECTION FENCING AND SIGNAGE SHOULD BE INSTALLED SIMULTANEOUSLY WITH SILT FENCE/SUPER SILT FENCE/IMBRICATED SILT FENCE AND PRIOR TO INSTALLATION OF EARTHS DIKES. (STEPS 3, 4, 5, AND 6)

***ALL TREE PROTECTION FENCING AND SIGNAGE AS INDICATED ON FOREST CONSERVATION PLAN SHEETS FCP02 THROUGH FCP06 SHALL BE INSTALLED IN STEPS 1 THROUGH 6, BEFORE BEGINNING ROUGH GRADING OF THE ENTIRE SITE.

***TREE PROTECTION FENCING AND SPECIMEN TREE SIGNAGE SHALL BE REMOVED UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS. FOREST RETENTION SIGNAGE SHALL REMAIN. (STEP 17)



LEGEND

- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- INTERMEDIATE DRAINAGE DIVIDE
- EXISTING/PROPOSED DRAINAGE DIVIDE
- EXISTING TIME OF CONCETRATION FLOW PATH
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- STABLIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL MATTING
- EXISTING CONTOURS
- TEMPORARY CONTOURS
- FINISHED CONTOURS
- LOD — LIMIT OF DISTURBANCE

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER Anthony H. Olsen — DATE 2/19/10
(PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 2/22/10
(PRINT NAME BELOW SIGNATURE) Ronald G. Lapsm.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10
DIRECTOR — DATE 4/8/10

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

FILENAME: W:\49338-001\CADD\49338001C06.DWG

PLOT DATE: 2/19/2010 9:43:56 AM PAGE SETUP: SETS C8432SD PLOT STYLE: VRA_2006.CTB PAPER SIZE:ANSI D (36.00 X 24.00 INCHES)

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

STATE OF MARYLAND — ANTHONY H. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

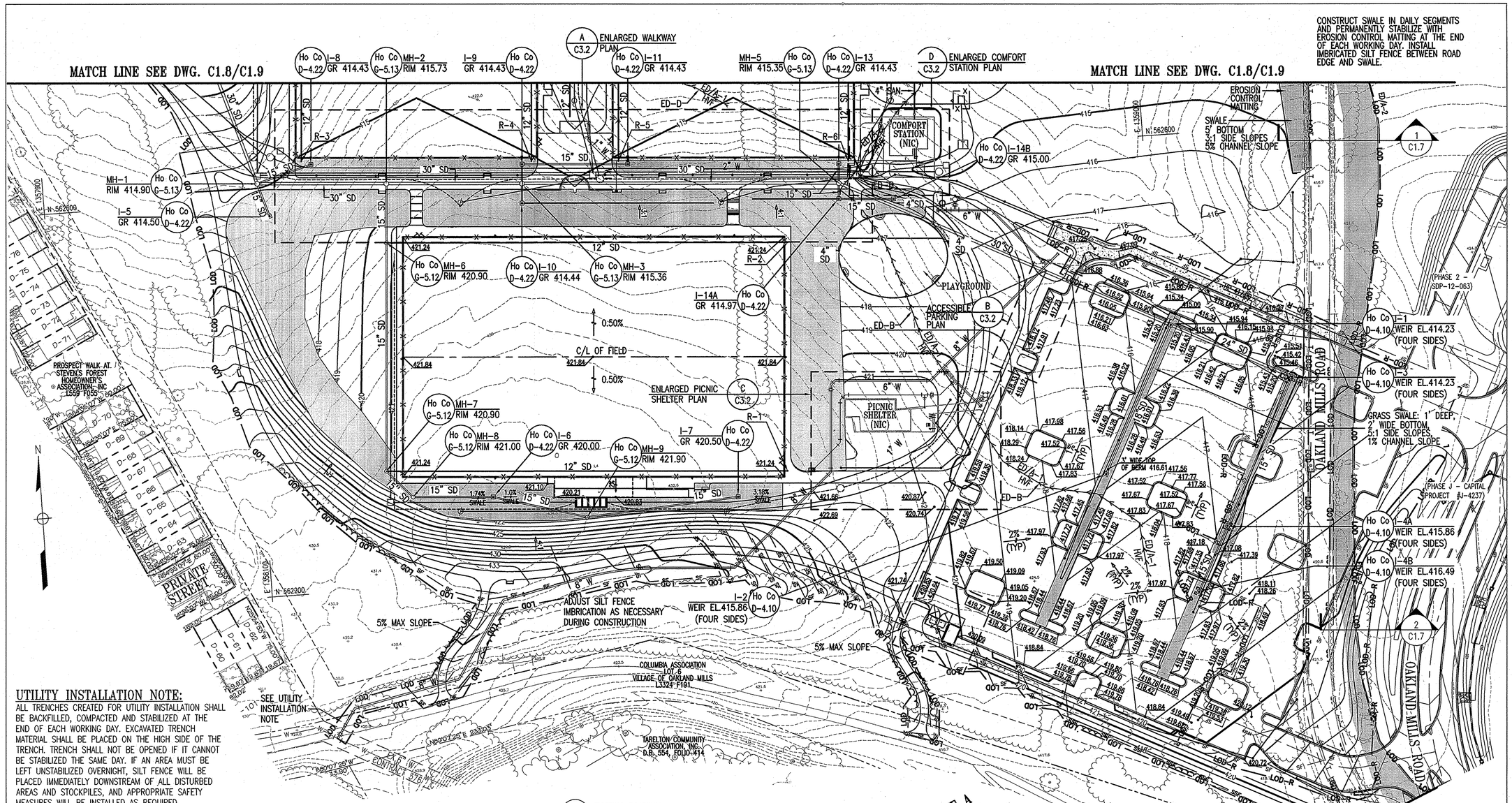
OVERALL SEDIMENT/EROSION CONTROL PLAN

Drawing No.

C1.6

Scale: 1" = 100'		
Date: 02/19/10	Sheet 9 of 51	
Des: CYH	Drawn: CYH	Check: AUO

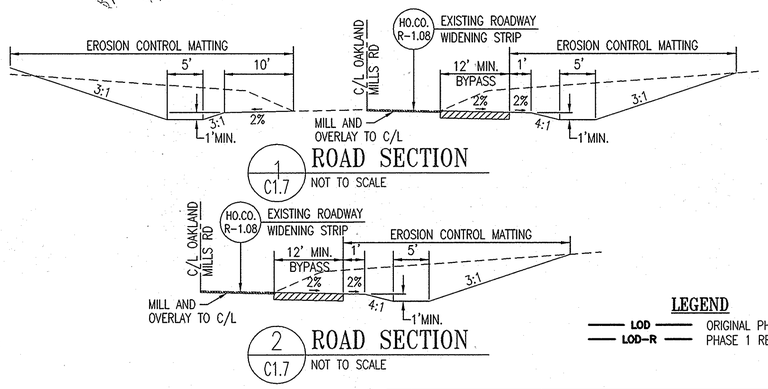
SDP-10-007



CONSTRUCT SWALE IN DAILY SEGMENTS AND PERMANENTLY STABILIZE WITH EROSION CONTROL MATTING AT THE END OF EACH WORKING DAY. INSTALL IMBRICATED SILT FENCE BETWEEN ROAD EDGE AND SWALE.

UTILITY INSTALLATION NOTE:

ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTURBED AREAS AND STOCKPILES, AND APPROPRIATE SAFETY MEASURES WILL BE INSTALLED AS REQUIRED.



1 C1.7 ROAD SECTION
NOT TO SCALE

2 C1.7 ROAD SECTION
NOT TO SCALE

LEGEND

LOD	ORIGINAL PHASE 1 LOD
LOD-R	PHASE 1 REDLINE LOD

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER Anthony W. Olsen DATE 3/18/14
(PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER DATE 3/27/14
(PRINT NAME BELOW SIGNATURE)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 4.7.14

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5-06-14

DIRECTOR DATE 5/6/14

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT DATE 4/28/2014

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE 4/15/14

SPOT ELEVATION NOTE:

ALL SPOT ELEVATIONS SHOWN ALONG CURB ARE AT THE BASE OF CURB, ALONG THE FLOW LINE.

DRAWING NOTE:

STABILIZED CONSTRUCTION ENTRANCE(S) FOR THE PARKING LOT EXPANSION WILL BE PROVIDED AS PART OF PHASE J, CAPITAL PROJECT # J-4237.

REVISIONS		
	PARKING LOT EXPANSION	01/31/14

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND ANTHONY WAYNE USABURO OLSEN No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2015

BLANDAIR REGIONAL PARK - PHASE 1

EROSION & SEDIMENT CONTROL / GRADING PLAN A

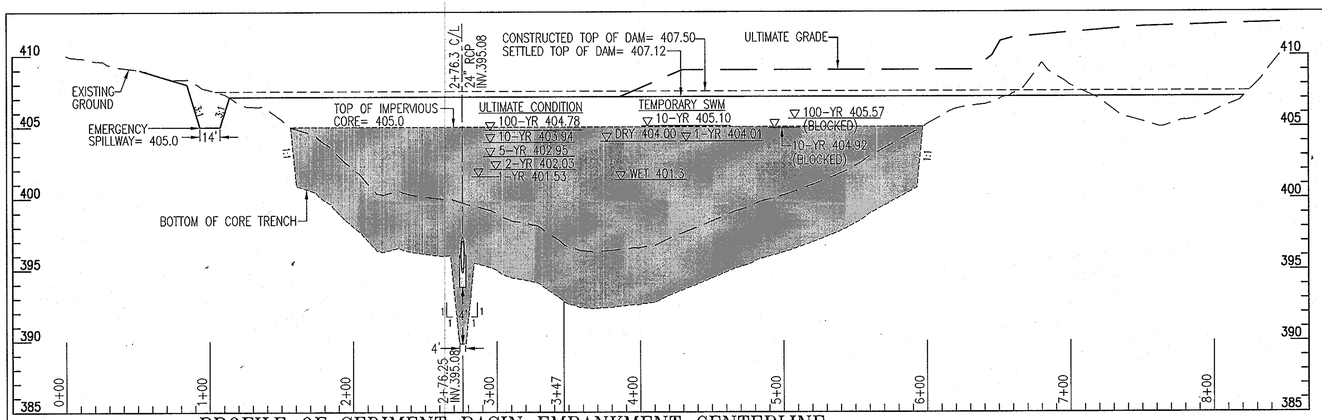
Drawing No.

C1.7

Scale: 1" = 50'		
Date: 11/16/2012	Sheet 10 of 65	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

FILENAME: W:\82028-001\CADD\82028001C1D7REV2.DWG PLOT DATE: 3/18/2014 4:59:23 PM PAGE SETUP: WRA-PDF C82240 PLOT STYLE: WRA_2006.CTB PAPER SIZE:36X24



PROFILE OF SEDIMENT BASIN EMBANKMENT CENTERLINE

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL

SEDIMENT BASIN

EXISTING DRAINAGE AREA: 11.17 AC +/-
INTERMEDIATE DRAINAGE AREA: 13.60 AC +/-
PROPOSED DRAINAGE AREA: 21.65 AC +/-
WET STORAGE REQUIRED: 38,970 CF
WET STORAGE PROVIDED: 45,505 CF
DRY STORAGE REQUIRED: 38,970 CF
DRY STORAGE PROVIDED: 57,533 CF
TOP OF EMBANKMENT ELEV.: 407.12
RISER CREST ELEV.: 404.0
DRY STORAGE ELEV.: 404.0
WET STORAGE ELEV.: 401.3
CLEANOUT ELEV.: 400.0
BOTTOM ELEV.: 396.0
SIDE SLOPES: 3(H):1(V)
Q1 EXISTING = 1.12 CFS
Q1 INT (UNMANAGED) = 19.97 CFS
Q1 DEV (UNMANAGED) = 234.87 CFS
1 YR STORAGE REQUIRED: 56,845 CF
1 YR STORAGE PROVIDED: 57,533 CF
1 YR STORM STORAGE ELEV.: 404.0
Q1 INT (MANAGED) = 0.64 CFS
Q1 DEV (MANAGED) = 1.05 CFS

SEDIMENT TRAP #2

TYPE: ST II
EXISTING DRAINAGE AREA: 4.88 AC +/-
PROPOSED DRAINAGE AREA: 3.6 AC +/-
WET STORAGE REQUIRED: 8,784 CF
WET STORAGE PROVIDED: 11,975 CF
DRY STORAGE REQUIRED: 8,784 CF
DRY STORAGE PROVIDED: 25,415 CF
1 YR STORAGE REQUIRED: 15,165 CF
1 YR STORAGE PROVIDED: 25,415 CF
WEIR LENGTH: 24 FT
TOP OF EMBANKMENT ELEV.: 396.5
WEIR CREST ELEV.: 395.5
1 YR STORM STORAGE ELEV.: 395.5
DRY STORAGE ELEV.: 395.5
WET STORAGE ELEV.: 392.5
CLEANOUT ELEV.: 391.3
BOTTOM ELEV.: 390.5
SIDE SLOPES: 2(H):1(V)
OUTFALL LENGTH: 10 FT

SEDIMENT TRAP #1

TYPE: ST II
EXISTING DRAINAGE AREA: 4.98 AC +/-
PROPOSED DRAINAGE AREA: 2.4 AC +/-
WET STORAGE REQUIRED: 8,964 CF
WET STORAGE PROVIDED: 13,755 CF
DRY STORAGE REQUIRED: 8,964 CF
DRY STORAGE PROVIDED: 15,070 CF
1 YR STORAGE REQUIRED: 14,857 CF
1 YR STORAGE PROVIDED: 15,070 CF
WEIR LENGTH: 28 FT
TOP OF EMBANKMENT ELEV.: 403.5
WEIR CREST ELEV.: 402.5
1 YR STORM STORAGE ELEV.: 402.5
DRY STORAGE ELEV.: 402.5
WET STORAGE ELEV.: 400.4
CLEANOUT ELEV.: 398.8
BOTTOM ELEV.: 398.0
SIDE SLOPES: 2(H):1(V)
OUTFALL LENGTH: 10 FT

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

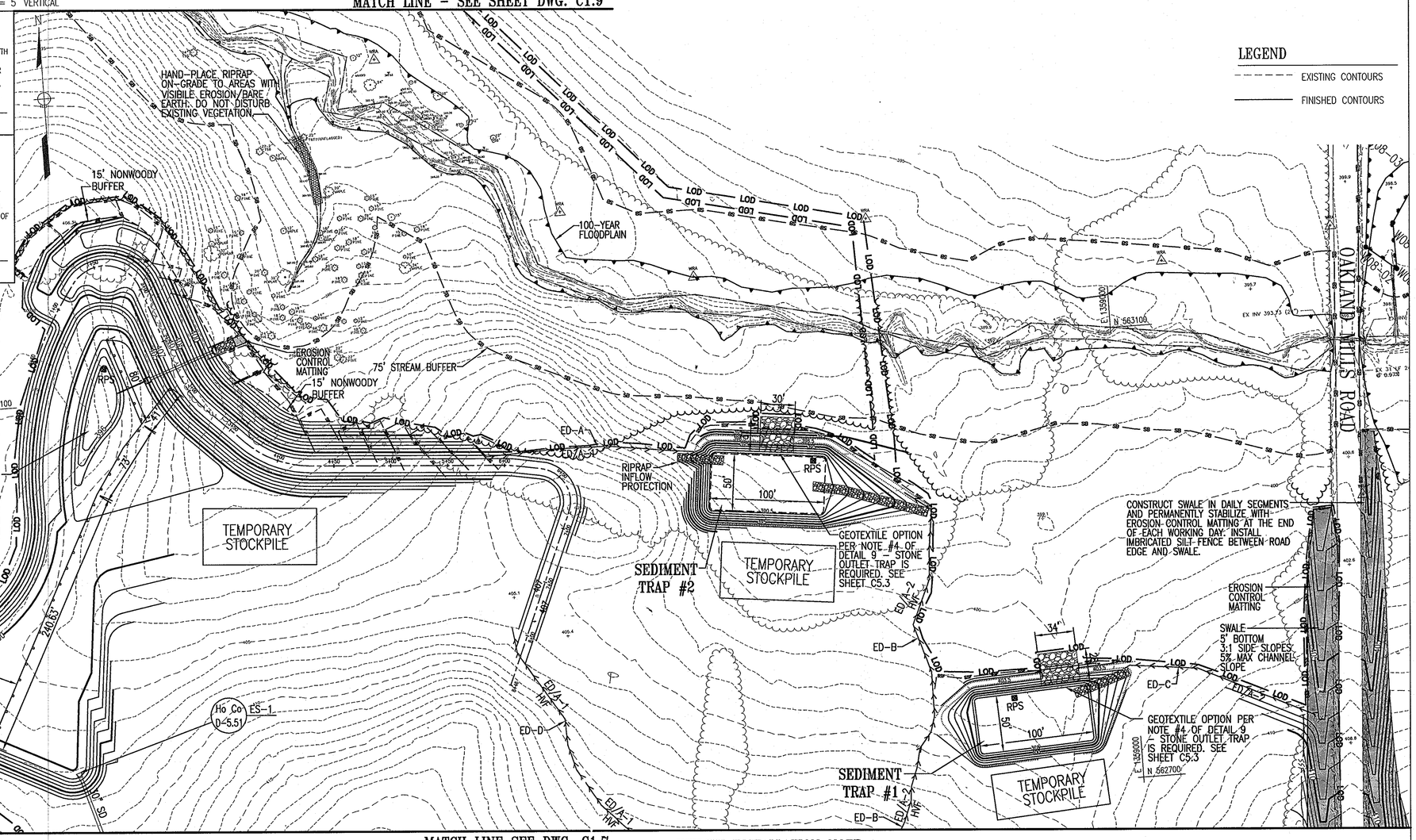
SIGNATURE OF ENGINEER Anthony U. Olsen (PRINT NAME BELOW SIGNATURE) — DATE 2/19/10

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) Ronald G. Lepson — DATE 2/22/10

MATCH LINE - SEE SHEET DWG. C1.9



LEGEND

EXISTING CONTOURS
FINISHED CONTOURS

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

MATCH LINE SEE DWG. C1.7

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

UTILITY INSTALLATION NOTE:

ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTRUBED AREAS AND STOCKPILES, AND APPROPRIATE SAVETY MEASURES WILL BE INSTALLED AS REQUIRED.

NOTE:
ALL BACKFILL OF SEDIMENT TRAPS SHALL BE WITH SUITABLE MATERIAL AS APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED AS DEFINED BY THE SPECIFICATIONS.

BLANDAIR REGIONAL PARK - PHASE 1

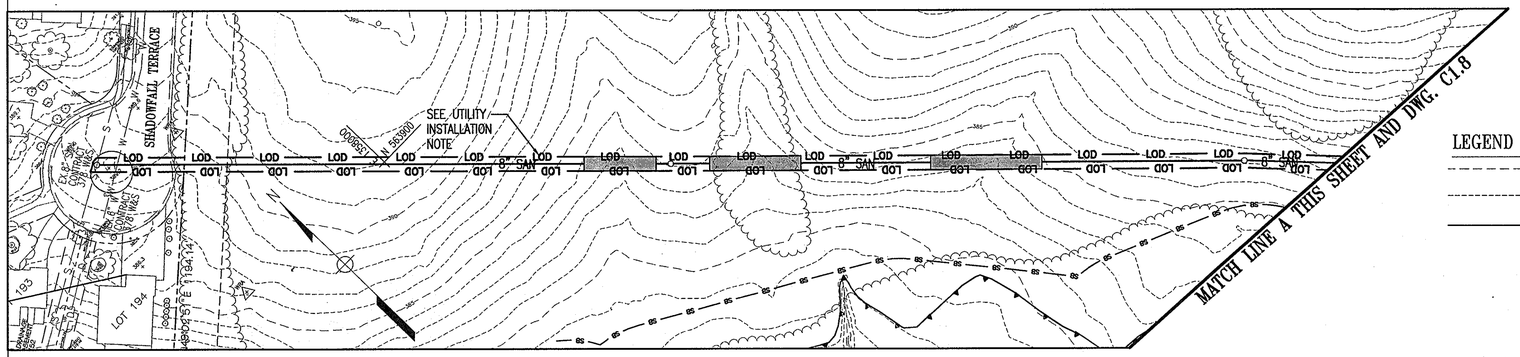
EROSION & SEDIMENT CONTROL / GRADING PLAN B
INITIAL GRADING

Drawing No.
C1.8

Scale: 1" = 50'		
Date: 02/19/10	Sheet 11 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

FILENAME: N:\2038-101\CADD\42038B0C1B8.DWG
PLOT DATE: 2/19/2010 9:45:33 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_BW36.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER — DATE 2/19/10

(PRINT NAME BELOW SIGNATURE) Anthony H Olsen

DEVELOPER'S CERTIFICATION

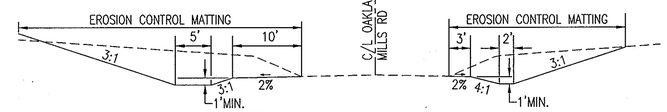
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 2/22/10

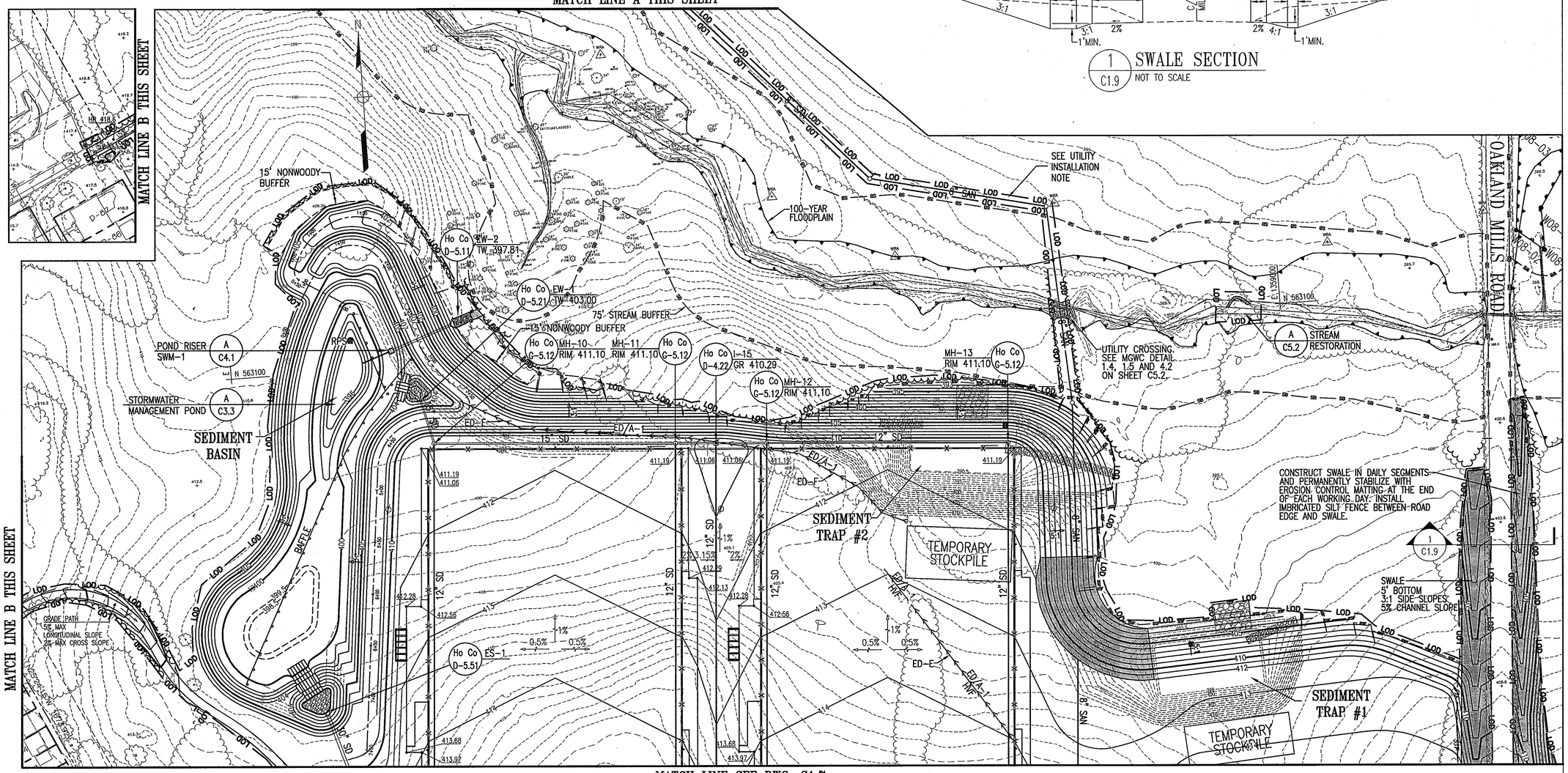
(PRINT NAME BELOW SIGNATURE) Ronald G. Lepson

LEGEND

- EXISTING CONTOURS
- TEMPORARY CONTOURS
- FINISHED CONTOURS



1 / C1.9 SWALE SECTION
NOT TO SCALE



REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — ANTHONY H. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

EROSION & SEDIMENT CONTROL / GRADING PLAN B
FINAL GRADING

Drawing No.

C1.9

Scale: 1" = 50'		
Date: 02/19/10	Sheet 12 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10

DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

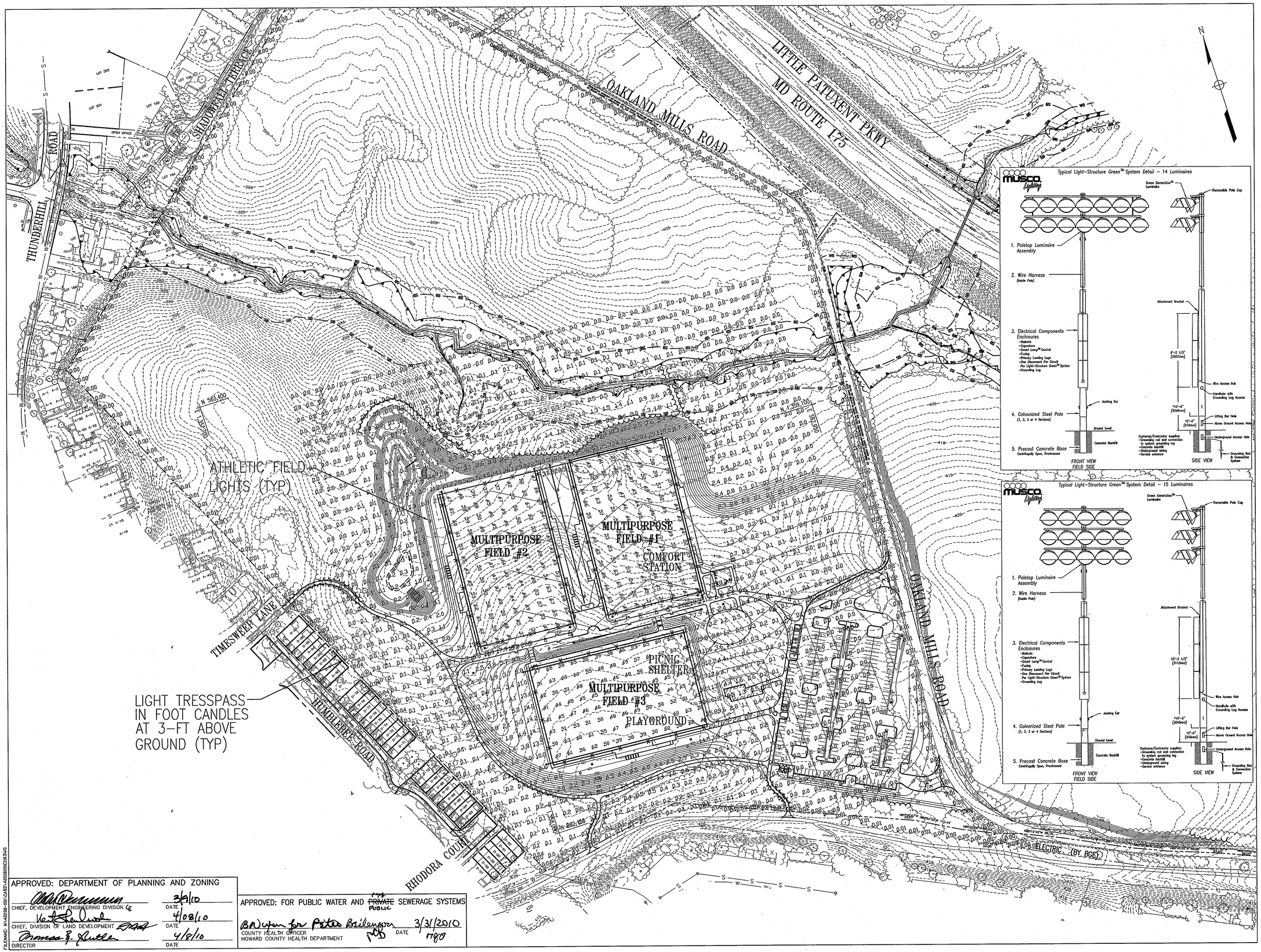
HOWARD SOIL CONSERVATION DISTRICT — DATE 7/1/10

UTILITY INSTALLATION NOTE:

ALL TRENCHES CREATED FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. TRENCH SHALL NOT BE OPENED IF IT CANNOT BE STABILIZED THE SAME DAY. IF AN AREA MUST BE LEFT UNSTABILIZED OVERNIGHT, SILT FENCE WILL BE PLACED IMMEDIATELY DOWNSTREAM OF ALL DISTRUBED AREAS AND STOCKPILES, AND APPROPRIATE SAVETY MEASURES WILL BE INSTALLED AS REQUIRED.

NOTE:
ALL BACKFILL OF SEDIMENT TRAPS SHALL BE WITH SUITABLE MATERIAL AS APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED AS DEFINED BY THE SPECIFICATIONS.

FILENAME: MN-43958-001\CADD\43958001C109.DWG
PLOT DATE: 2/19/2010 9:46:41 AM PAGE SETUP: SETS GRAYSCALE PLOT STYLE: VARA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

STATE OF MARYLAND ANTHONY U. OLIVER No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

PHOTOMETRIC TEST DIAGRAM

Drawing No.

C1.10

Scale: 1" = 100'		
Date: 02/19/10	Sheet 13 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

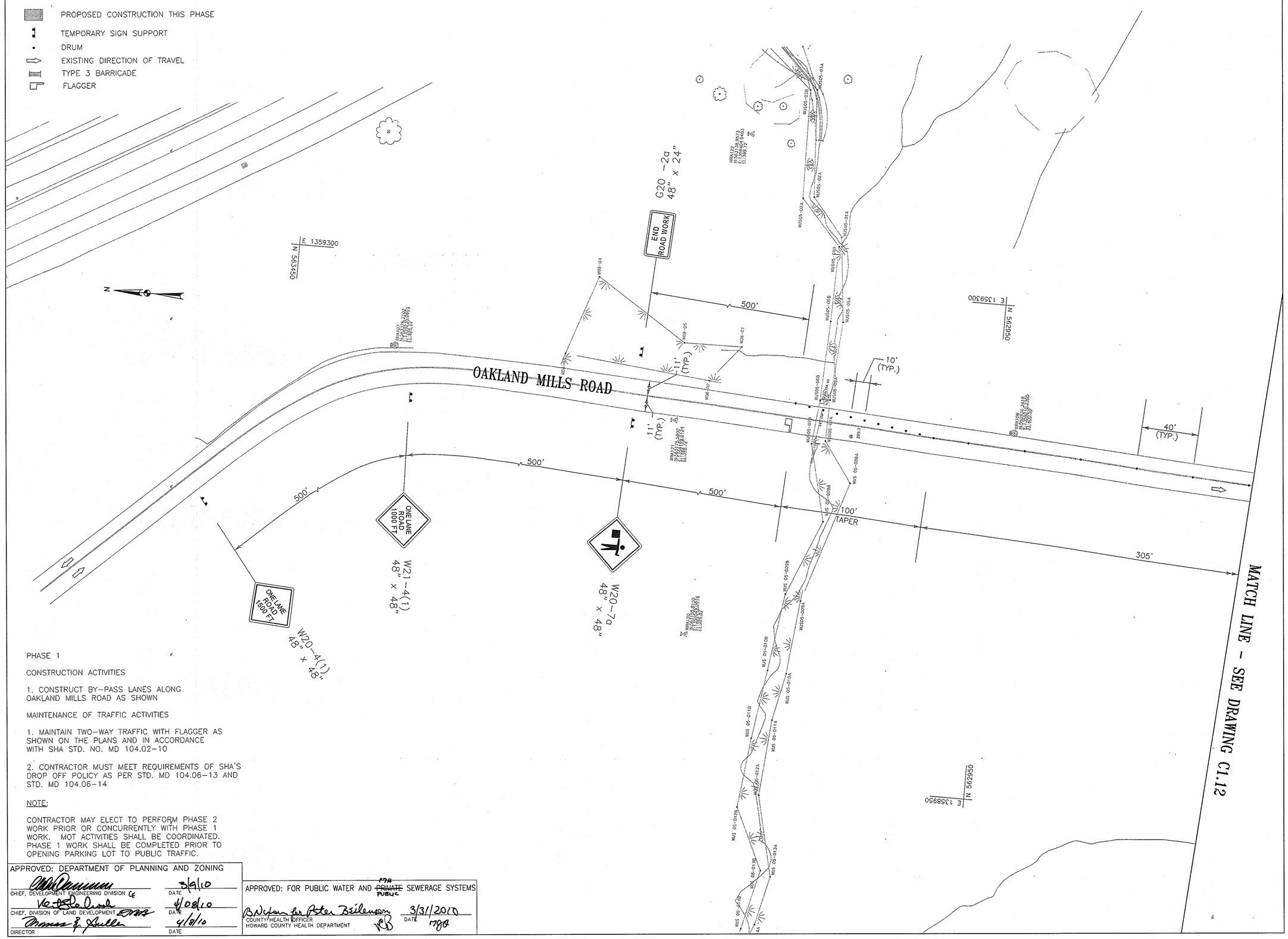
APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B.N. Upton for Peter Beilenson 3/31/2010
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE

FILENAME: N:\42038-001\CADD\42038001C110.DWG

MOT LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- TEMPORARY SIGN SUPPORT
- DRUM
- EXISTING DIRECTION OF TRAVEL
- TYPE 3 BARRICADE
- FLAGGER



PHASE 1

CONSTRUCTION ACTIVITIES

1. CONSTRUCT BY-PASS LANES ALONG OAKLAND MILLS ROAD AS SHOWN

MAINTENANCE OF TRAFFIC ACTIVITIES

1. MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B Nelson for Peter Beilenson 3/31/2010
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND WALTER P. MILLER No. 19165 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

TRAFFIC CONTROL PLAN
PHASE 1-A

Drawing No.

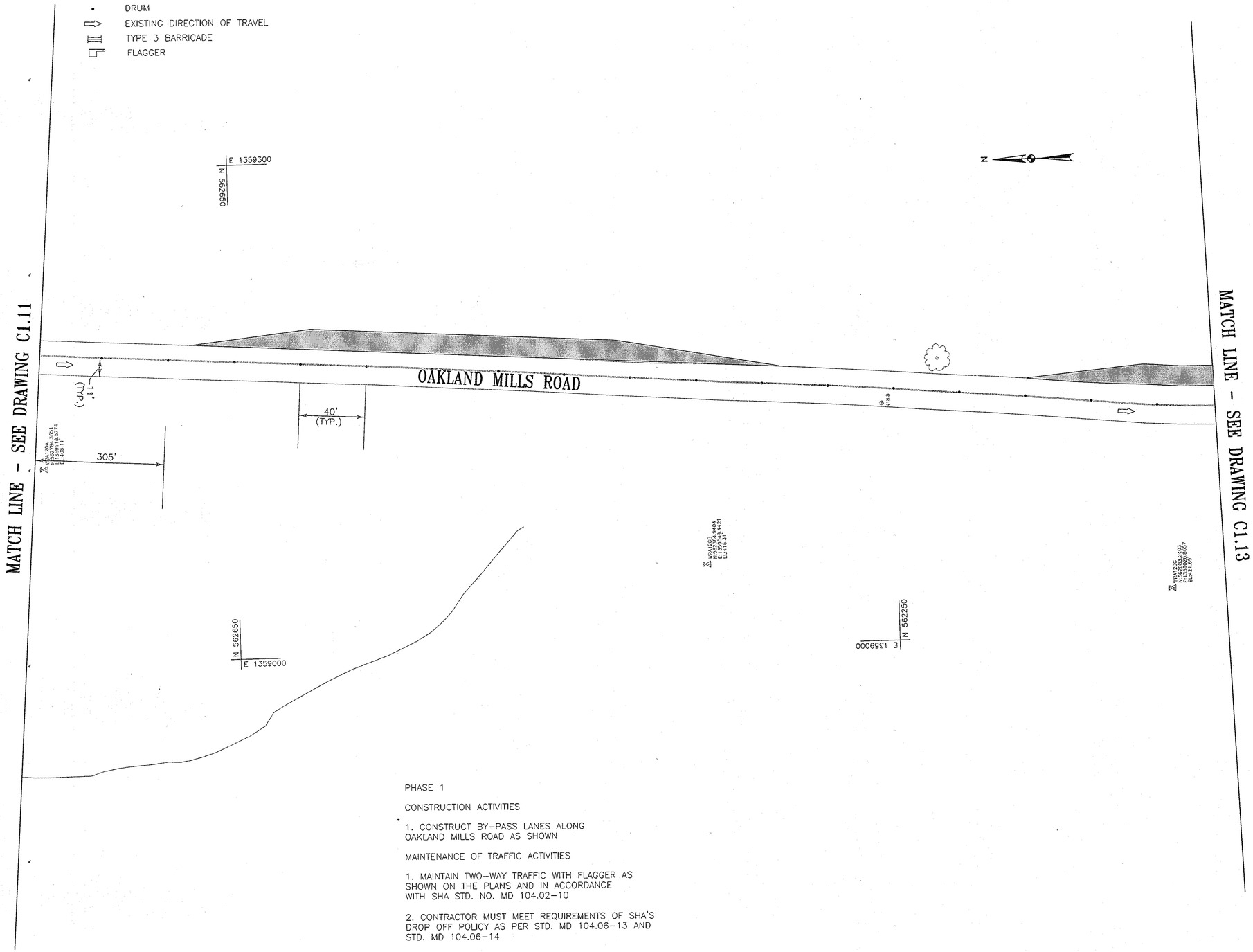
C1.11

Scale: AS SHOWN		
Date: 02/19/10	Sheet 14 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007

MOT LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- TEMPORARY SIGN SUPPORT
- DRUM
- EXISTING DIRECTION OF TRAVEL
- TYPE 3 BARRICADE
- FLAGGER



PHASE 1

CONSTRUCTION ACTIVITIES

1. CONSTRUCT BY-PASS LANES ALONG OAKLAND MILLS ROAD AS SHOWN

MAINTENANCE OF TRAFFIC ACTIVITIES

1. MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

B Nixon for Peter Beilenson — DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND — WALTER P. WHITMAN — No. 19165 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

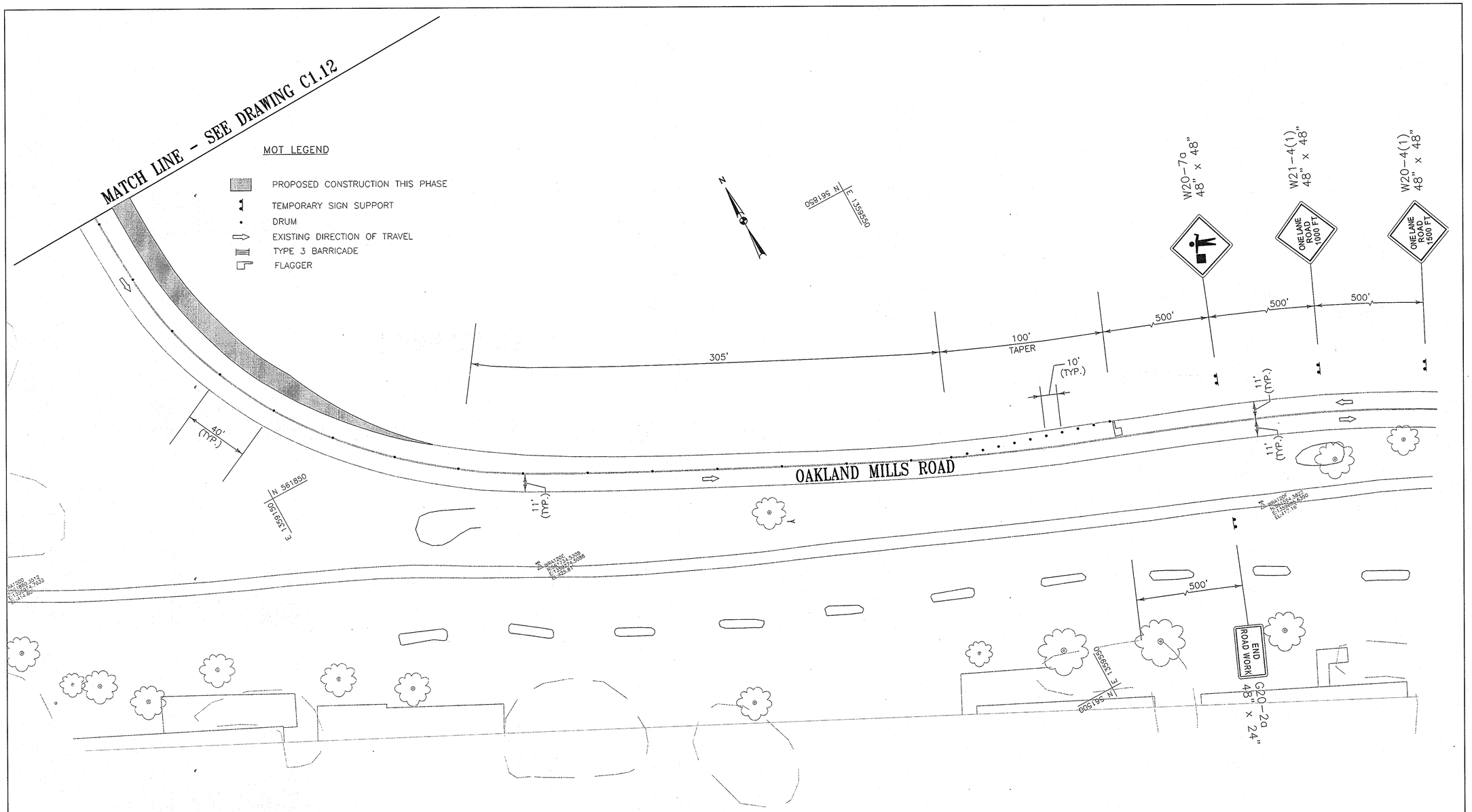
TRAFFIC CONTROL PLAN
PHASE 1-A

Drawing No.

C1.12

Scale: AS SHOWN		
Date: 02/19/10	Sheet 15 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007



PHASE 1

CONSTRUCTION ACTIVITIES

1. CONSTRUCT BY-PASS LANES ALONG OAKLAND MILLS ROAD AS SHOWN

MAINTENANCE OF TRAFFIC ACTIVITIES

1. MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND
WALTER P. HUNTOON
No. 19165
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

TRAFFIC CONTROL PLAN
PHASE 1-A

Drawing No.

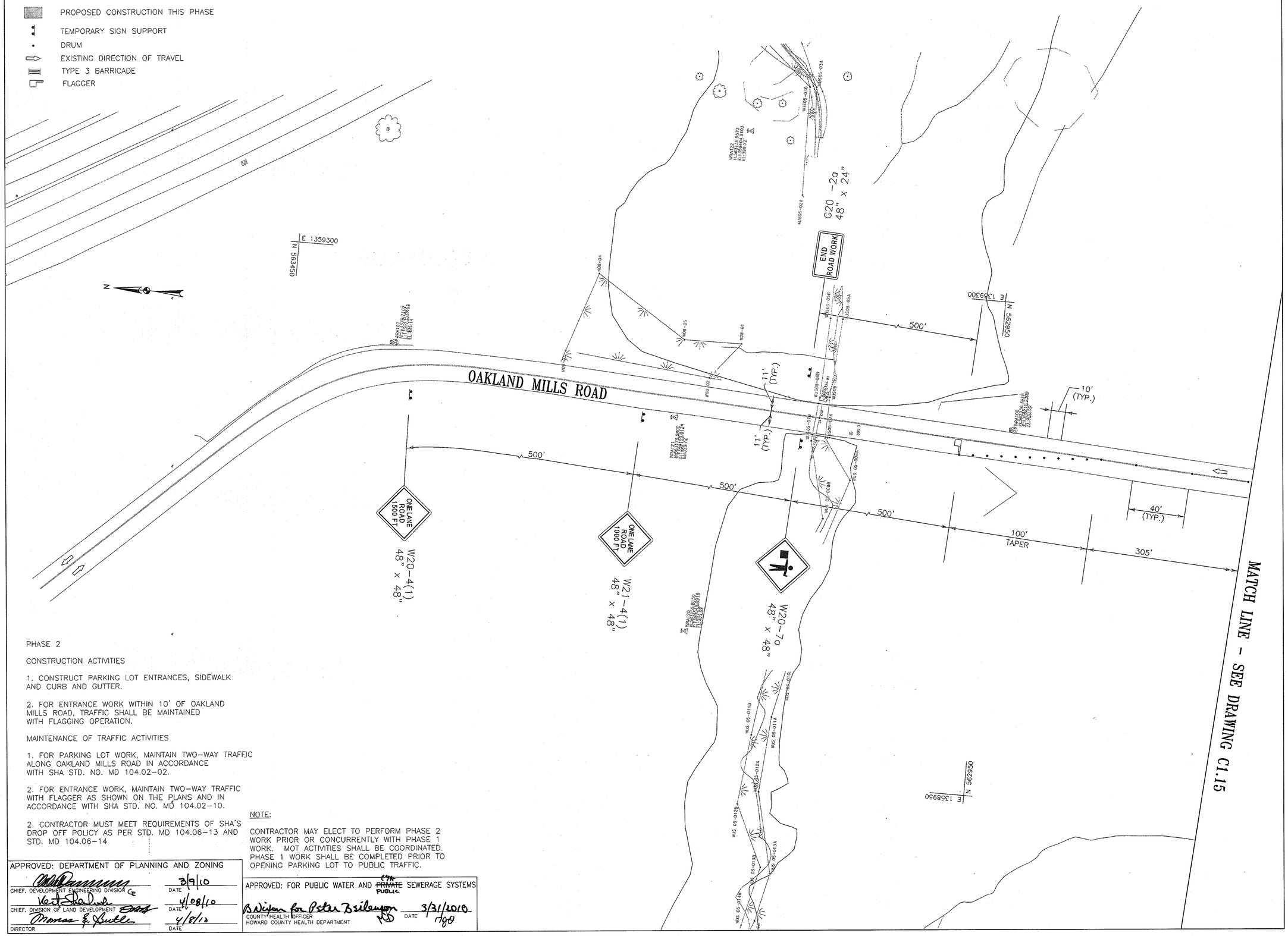
C1.13

Scale: AS SHOWN		
Date: 02/19/10	Sheet 16 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007

MOT LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- TEMPORARY SIGN SUPPORT
- DRUM
- EXISTING DIRECTION OF TRAVEL
- TYPE 3 BARRICADE
- FLAGGER



PHASE 2

CONSTRUCTION ACTIVITIES

1. CONSTRUCT PARKING LOT ENTRANCES, SIDEWALK AND CURB AND GUTTER.

2. FOR ENTRANCE WORK WITHIN 10' OF OAKLAND MILLS ROAD, TRAFFIC SHALL BE MAINTAINED WITH FLAGGING OPERATION.

MAINTENANCE OF TRAFFIC ACTIVITIES

1. FOR PARKING LOT WORK, MAINTAIN TWO-WAY TRAFFIC ALONG OAKLAND MILLS ROAD IN ACCORDANCE WITH SHA STD. NO. MD 104.02-02.

2. FOR ENTRANCE WORK, MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10.

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND — WALTER P. MILLER — No. 19165 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

TRAFFIC CONTROL PLAN
PHASE 1-B

Drawing No.

C1.14

Scale: AS SHOWN		
Date: 02/19/10	Sheet 17 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007

MOT LEGEND

- PROPOSED CONSTRUCTION THIS PHASE
- TEMPORARY SIGN SUPPORT
- DRUM
- EXISTING DIRECTION OF TRAVEL
- TYPE 3 BARRICADE
- FLAGGER

PHASE 2

CONSTRUCTION ACTIVITIES

1. CONSTRUCT PARKING LOT ENTRANCES, SIDEWALK AND CURB AND GUTTER.

2. FOR ENTRANCE WORK WITHIN 10' OF OAKLAND MILLS ROAD, TRAFFIC SHALL BE MAINTAINED WITH FLAGGING OPERATION.

MAINTENANCE OF TRAFFIC ACTIVITIES

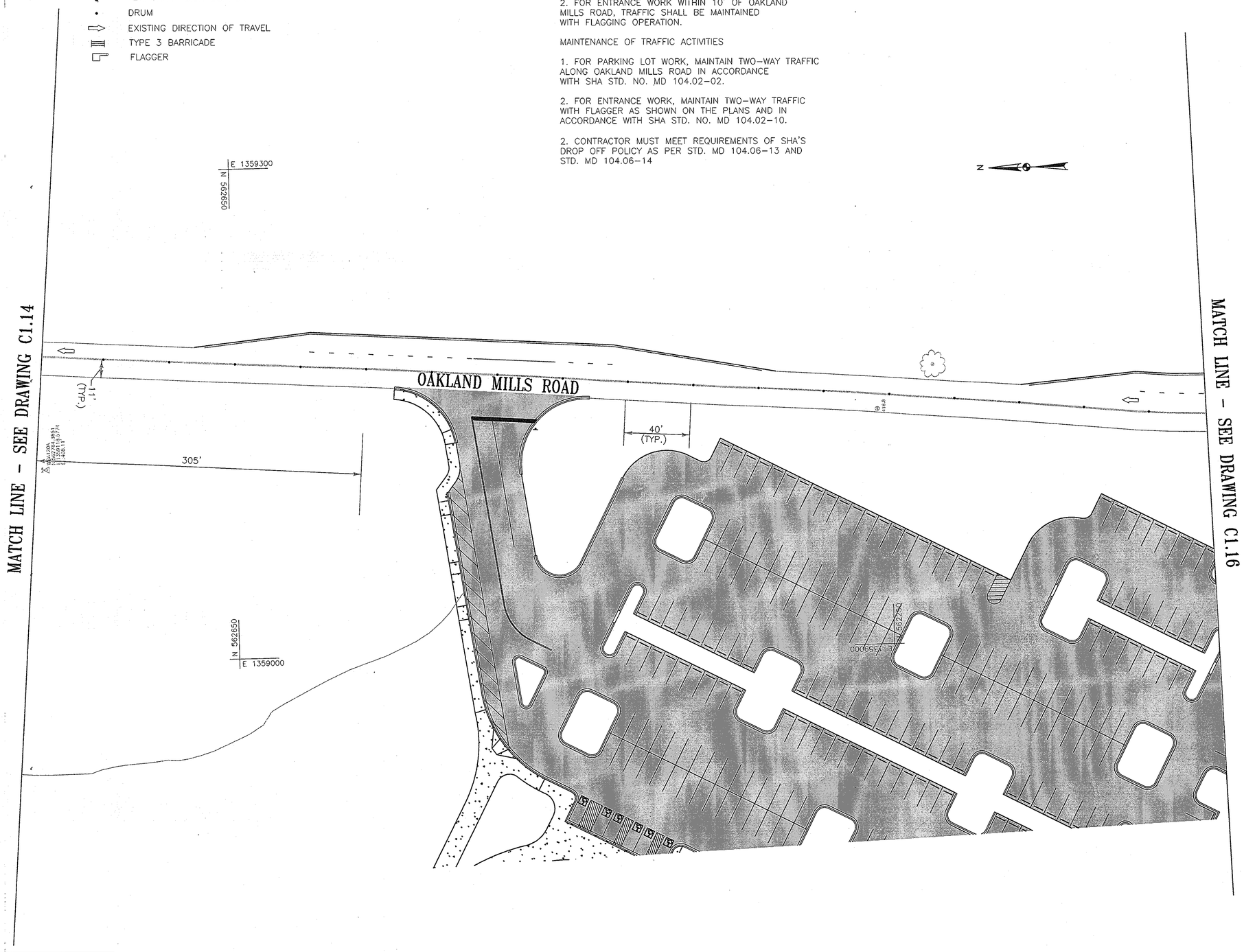
1. FOR PARKING LOT WORK, MAINTAIN TWO-WAY TRAFFIC ALONG OAKLAND MILLS ROAD IN ACCORDANCE WITH SHA STD. NO. MD 104.02-02.

2. FOR ENTRANCE WORK, MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10.

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/03/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND — WALTER P. MILLARD — No. 19165 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

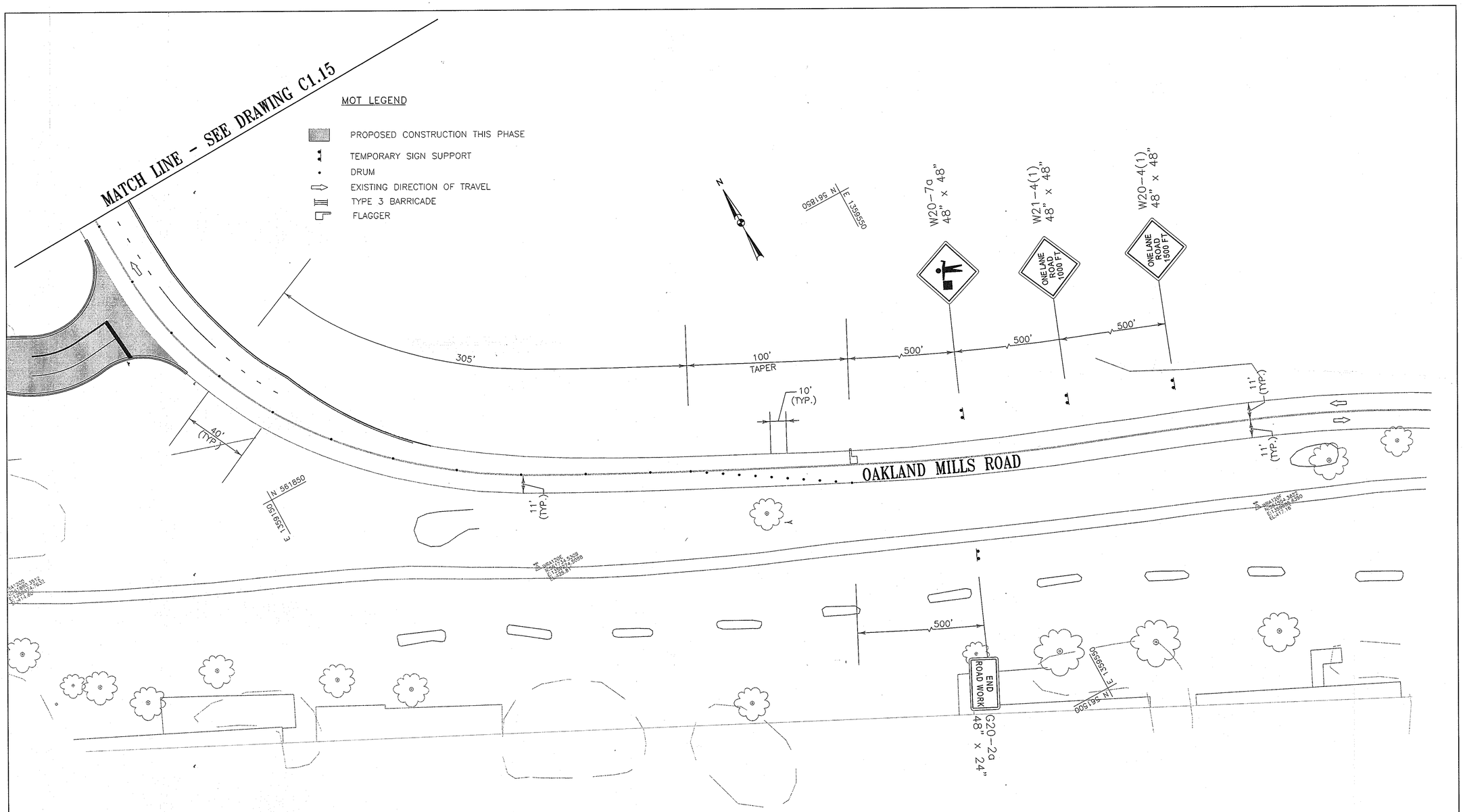
TRAFFIC CONTROL PLAN
PHASE 1-B

Drawing No.

C1.15

Scale: AS SHOWN		
Date: 02/19/10	Sheet 18 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007



PHASE 2

CONSTRUCTION ACTIVITIES

1. CONSTRUCT PARKING LOT ENTRANCES, SIDEWALK AND CURB AND GUTTER.

2. FOR ENTRANCE WORK WITHIN 10' OF OAKLAND MILLS ROAD, TRAFFIC SHALL BE MAINTAINED WITH FLAGGING OPERATION.

MAINTENANCE OF TRAFFIC ACTIVITIES

1. FOR PARKING LOT WORK, MAINTAIN TWO-WAY TRAFFIC ALONG OAKLAND MILLS ROAD IN ACCORDANCE WITH SHA STD. NO. MD 104.02-02.

2. FOR ENTRANCE WORK, MAINTAIN TWO-WAY TRAFFIC WITH FLAGGER AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SHA STD. NO. MD 104.02-10.

2. CONTRACTOR MUST MEET REQUIREMENTS OF SHA'S DROP OFF POLICY AS PER STD. MD 104.06-13 AND STD. MD 104.06-14

NOTE:

CONTRACTOR MAY ELECT TO PERFORM PHASE 2 WORK PRIOR OR CONCURRENTLY WITH PHASE 1 WORK. MOT ACTIVITIES SHALL BE COORDINATED. PHASE 1 WORK SHALL BE COMPLETED PRIOR TO OPENING PARKING LOT TO PUBLIC TRAFFIC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B Nixon for Peter Beilenson — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND — WALTER P. MOORE — No. 19165 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

TRAFFIC CONTROL PLAN
PHASE 1-B

Drawing No.

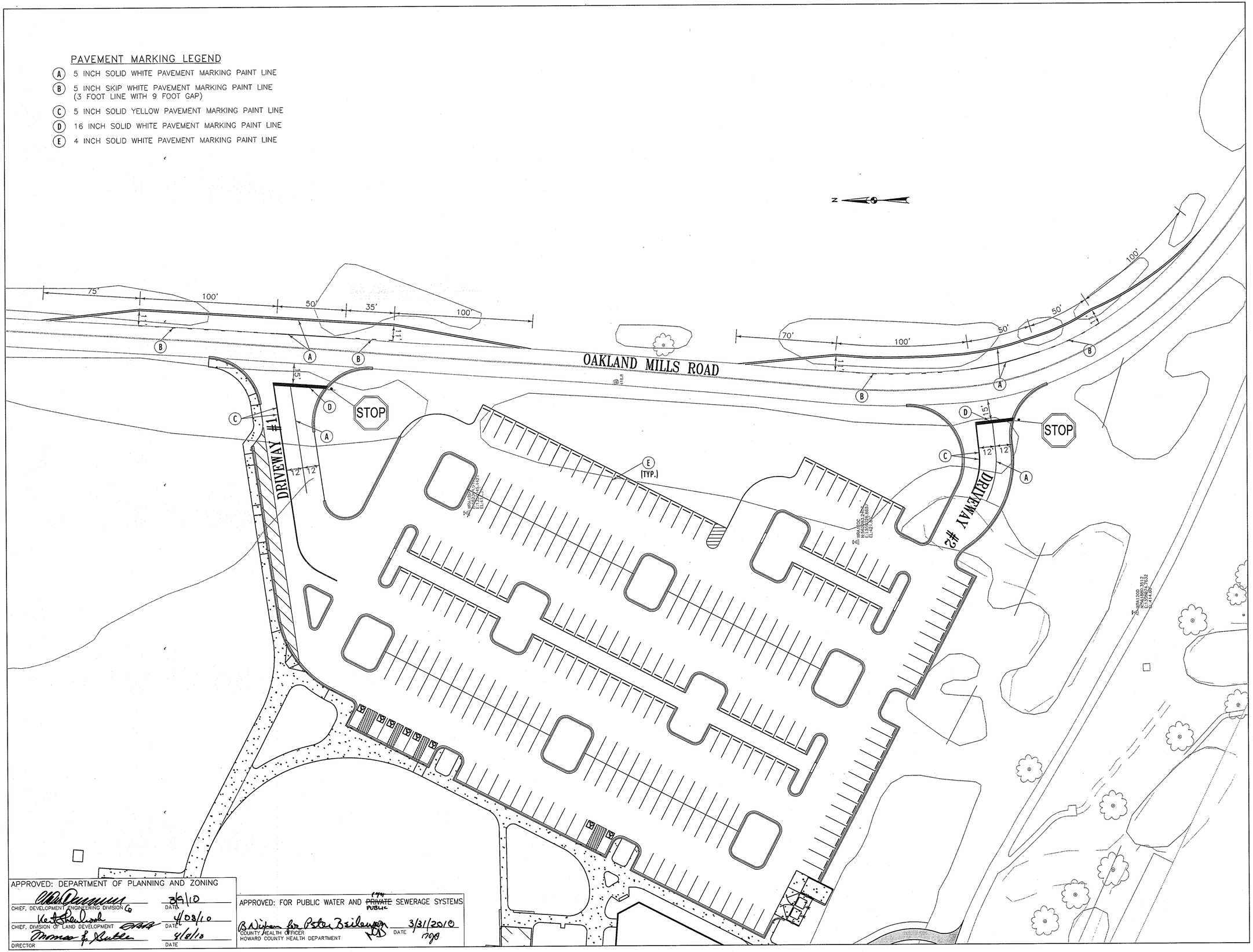
C1.16

Scale: AS SHOWN		
Date: 02/19/10	Sheet 19 of 51	
Des: KAH	Drawn: KAH	Check: BRT

SDP-10-007

PAVEMENT MARKING LEGEND

- (A) 5 INCH SOLID WHITE PAVEMENT MARKING PAINT LINE
- (B) 5 INCH SKIP WHITE PAVEMENT MARKING PAINT LINE (3 FOOT LINE WITH 9 FOOT GAP)
- (C) 5 INCH SOLID YELLOW PAVEMENT MARKING PAINT LINE
- (D) 16 INCH SOLID WHITE PAVEMENT MARKING PAINT LINE
- (E) 4 INCH SOLID WHITE PAVEMENT MARKING PAINT LINE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/03/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B Nixon for Peter Beilenson — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15' 30' 60'
SCALE: 1" = 30'-0"

SIGNATURE

STATE OF MARYLAND — WALTER P. MILLER — No. 19165 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19165
EXPIRATION DATE: 06/11/2011

BLANDAIR REGIONAL PARK - PHASE 1

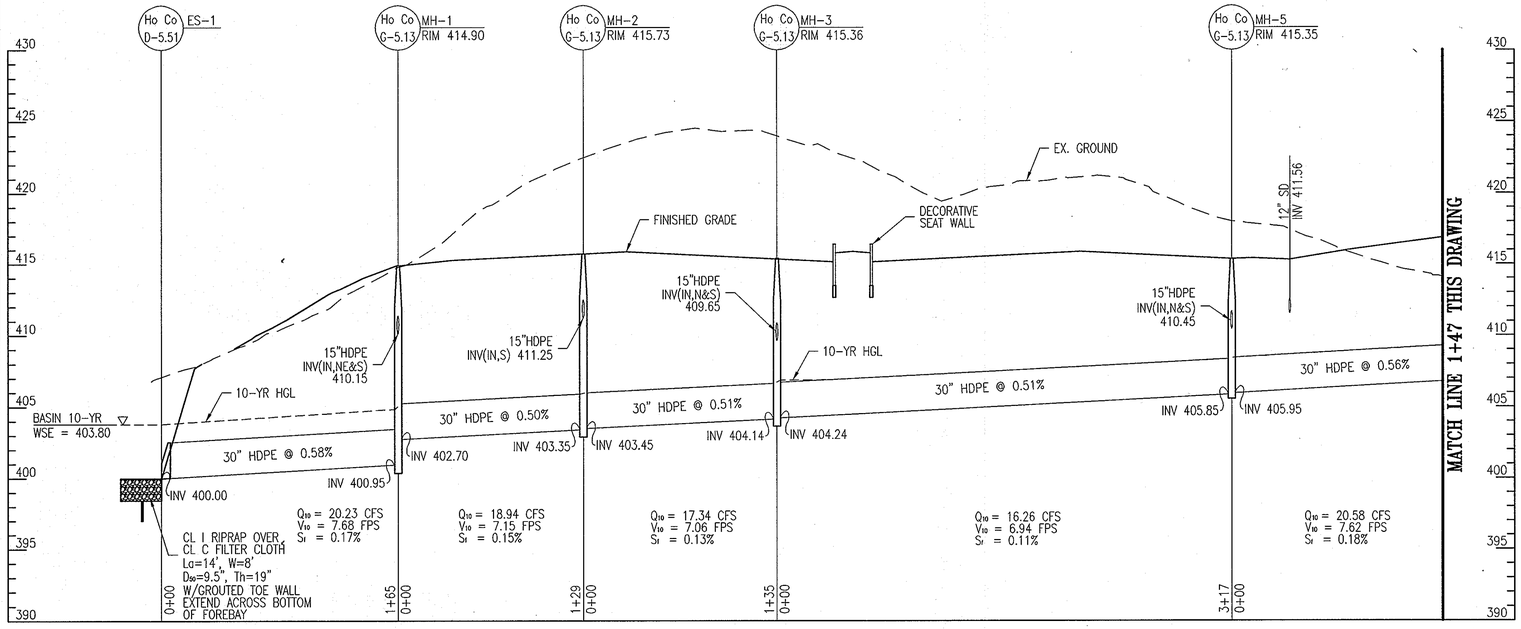
SIGNING AND MARKING PLAN

Drawing No.

C1.17

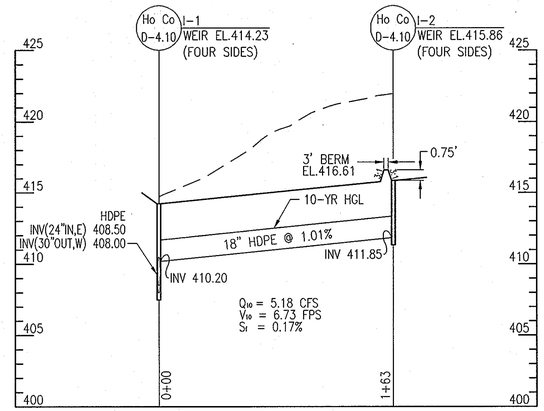
Scale: AS SHOWN		
Date: 02/19/10	Sheet 20 of 51	
Des: CH	Drawn: VAK	Check: BRT

SDP-10-007



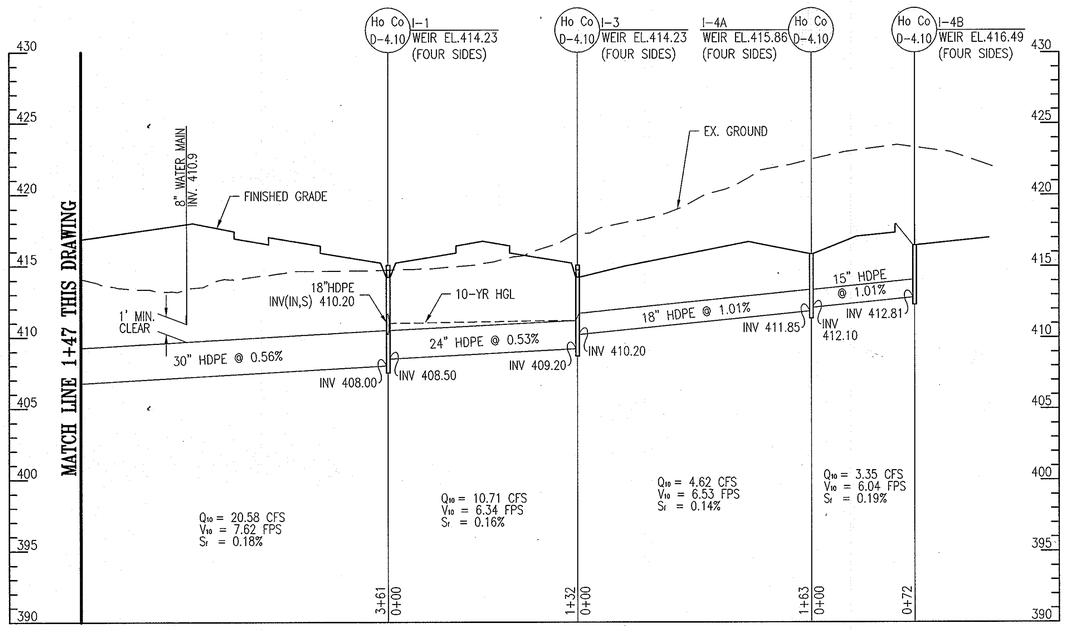
STORM DRAIN PROFILE: I-1 TO ES-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



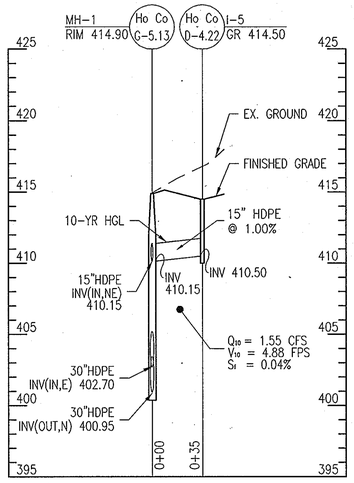
STORM DRAIN PROFILE: I-2 TO I-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



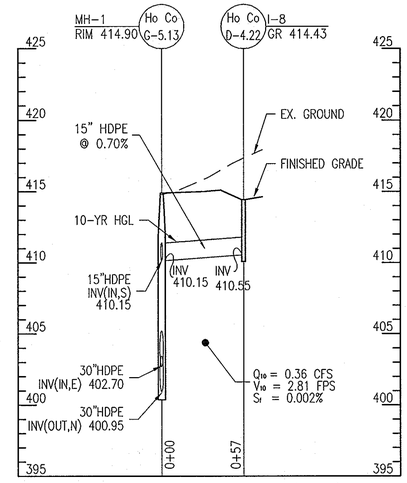
STORM DRAIN PROFILE: I-1 TO ES-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



STORM DRAIN PROFILE: I-5 TO MH-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



STORM DRAIN PROFILE: I-8 TO MH-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

0 5' 10'
SCALE: 1" = 5'

SIGNATURE

STATE OF MARYLAND ANTHONY U. OKPARA No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

STORM DRAIN PROFILES

Drawing No.

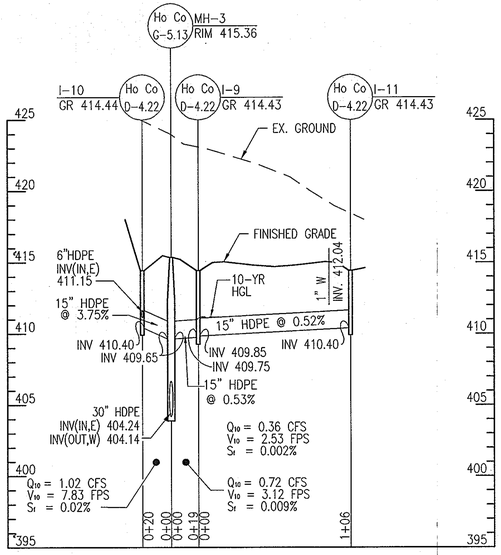
C2.1

Scale: AS SHOWN		
Date: 02/19/10	Sheet 21 of 51	
Des: RBC	Drawn: CJK	Check: AUO

SDP-10-007

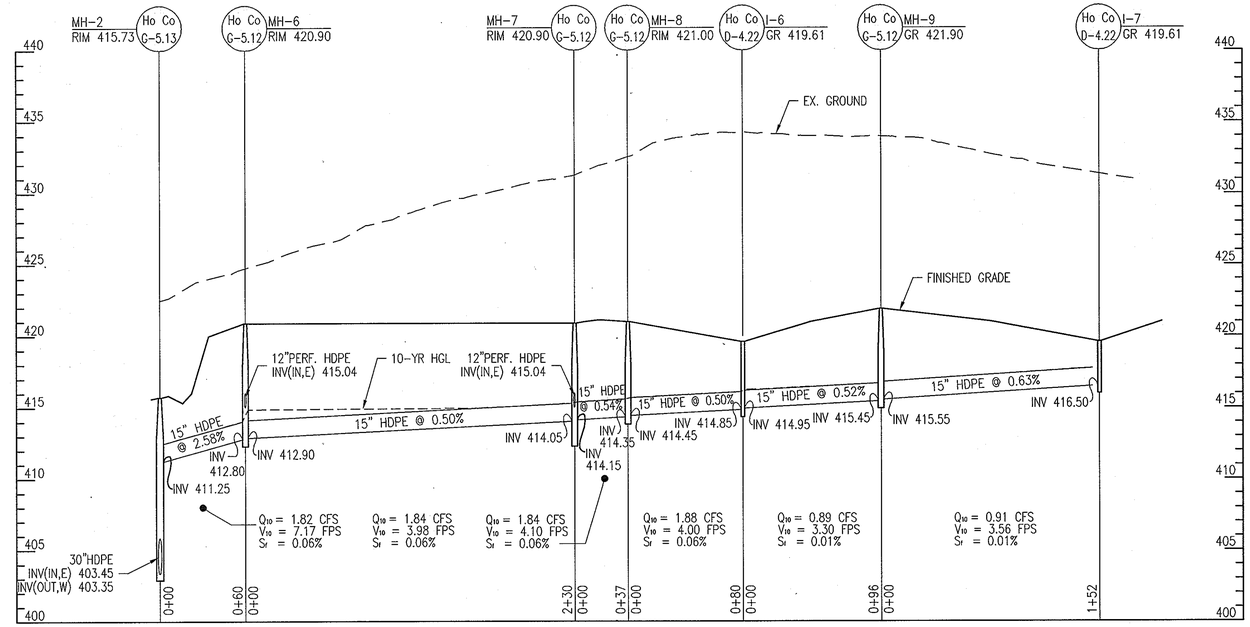
FILENAME: N:\42938-00\CADD\42938001C2011.DWG

PLOT DATE: 2/19/2010 9:46:52 AM PAGE SETUP: SETS (GRAY30) PLOT STYLE: VRA_2006CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



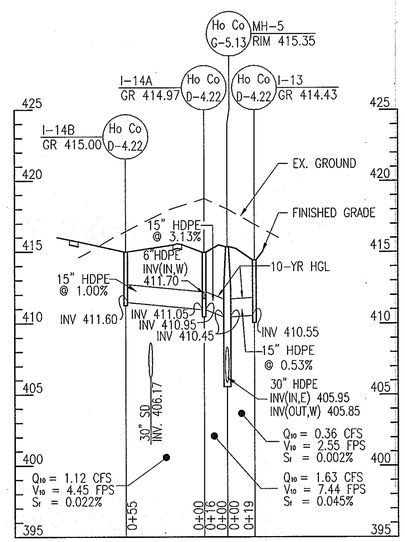
STORM DRAIN PROFILE: I-10 TO I-11

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



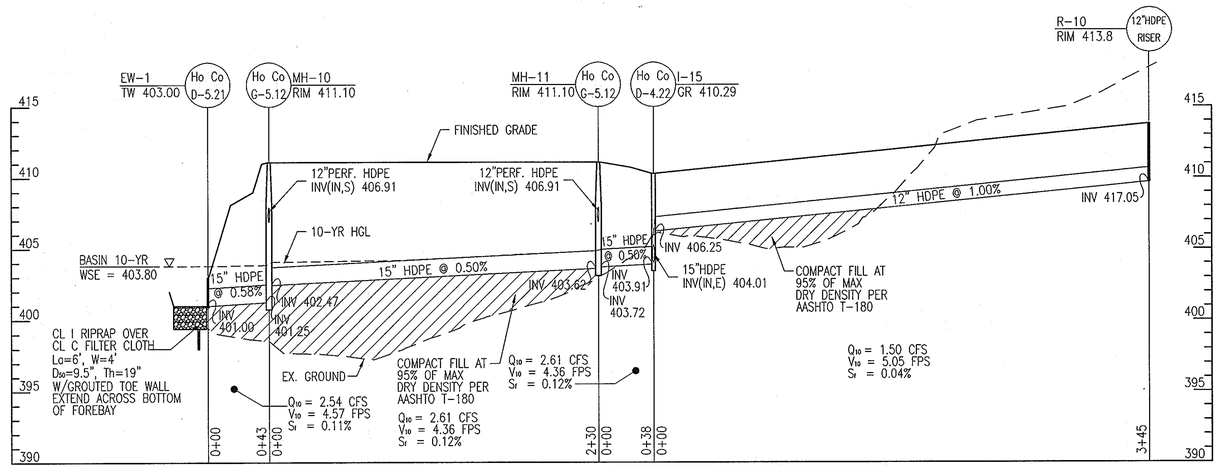
STORM DRAIN PROFILE: I-7 TO MH-2

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



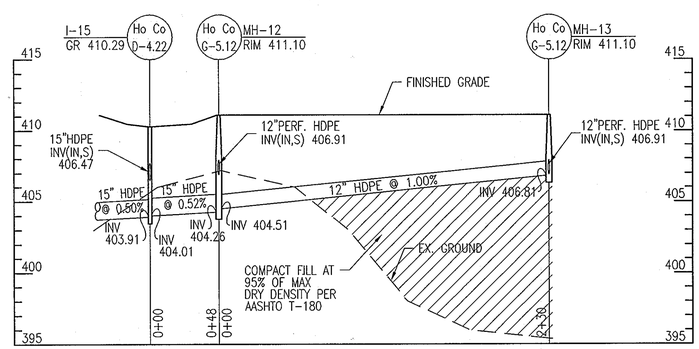
STORM DRAIN PROFILE: I-13 & I-14 TO MH-5

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



STORM DRAIN PROFILE: I-16 TO EW-1

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



STORM DRAIN PROFILE: MH-13 TO I-15

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

0 5' 10'
SCALE: 1" = 5'

SIGNATURE

STATE OF MARYLAND ANTHONY U. CHEN No. 19376 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

STORM DRAIN PROFILES

Drawing No.

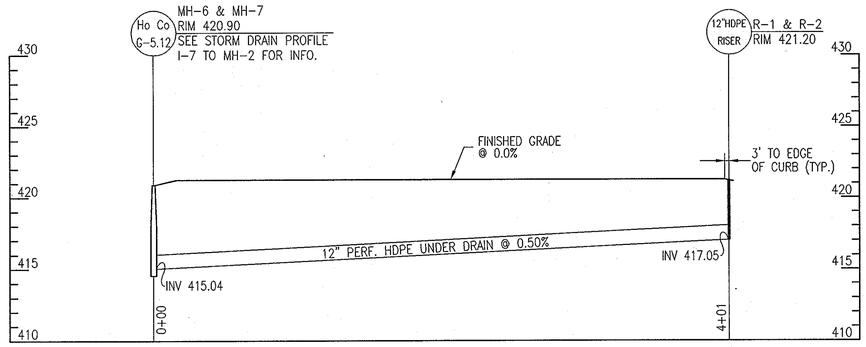
C2.2

Scale: 1" = 50'		
Date: 02/19/10	Sheet 22 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

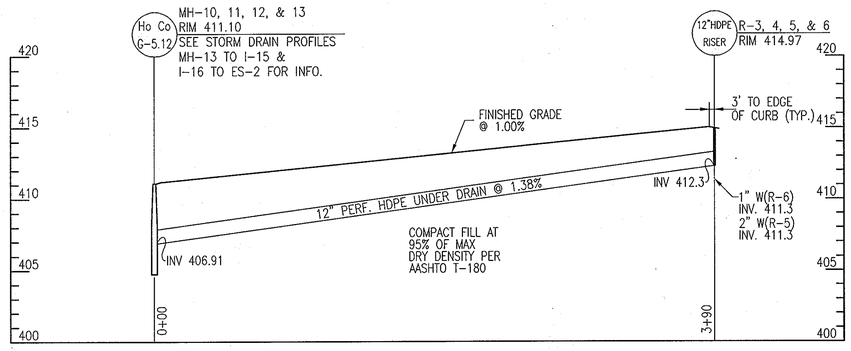
PLOT DATE: 2/19/2010 9:47:01 AM PAGE SETUP: SETZ (24X36) PLOT STYLE: VPA_B096.CTB PAPER SIZE:24INCH B (36.00 X 24.00 INCHES)

FILENAME: N:\42598-001\CADD\42598001C202.DWG



UNDER DRAIN PROFILE: R-1 & R-2 TO MH-6 & MH-7

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



UNDER DRAIN PROFILE: R-3, 4, 5 & 6 TO MH-10, 11, 12 & 13

SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	STANDARD DETAIL
ES-1	CONCRETE END SECTION	HO. CO. SD 5.51
EW-1	TYPE 'C' ENDWALL	HO. CO. SD 5.21
I-1	TYPE 'D' INLET	HO. CO. SD 4.10
I-2	TYPE 'D' INLET	HO. CO. SD 4.10
I-3	TYPE 'D' INLET	HO. CO. SD 4.10
I-4A	TYPE 'D' INLET	HO. CO. SD 4.10
I-4B	TYPE 'D' INLET	HO. CO. SD 4.10
I-5	TYPE 'S' INLET	HO. CO. SD 4.22
I-6	TYPE 'S' INLET	HO. CO. SD 4.22
I-7	TYPE 'S' INLET	HO. CO. SD 4.22
I-8	TYPE 'S' INLET	HO. CO. SD 4.22
I-9	TYPE 'S' INLET	HO. CO. SD 4.22
I-10	TYPE 'S' INLET	HO. CO. SD 4.22
I-11	TYPE 'S' INLET	HO. CO. SD 4.22
I-13	TYPE 'S' INLET	HO. CO. SD 4.22
I-14A	TYPE 'S' INLET	HO. CO. SD 4.22
I-14B	TYPE 'S' INLET	HO. CO. SD 4.22
I-15	TYPE 'S' INLET	HO. CO. SD 4.22
MH-1	5'-0" PRECAST MANHOLE	HO. CO. G 5.13
MH-2	5'-0" PRECAST MANHOLE	HO. CO. G 5.13
MH-3	5'-0" PRECAST MANHOLE	HO. CO. G 5.13
MH-5	5'-0" PRECAST MANHOLE	HO. CO. G 5.13
MH-6	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-7	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-8	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-9	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-10	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-11	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-12	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
MH-13	4'-0" PRECAST MANHOLE	HO. CO. G 5.12
R-1	12" HDPE RISER WITH VENTED CAP	-
R-2	12" HDPE RISER WITH VENTED CAP	-
R-3	12" HDPE RISER WITH VENTED CAP	-
R-4	12" HDPE RISER WITH VENTED CAP	-
R-5	12" HDPE RISER WITH VENTED CAP	-
R-6	12" HDPE RISER WITH VENTED CAP	-
R-7	6" HDPE RISER WITH VENTED CAP	-
R-8	6" HDPE RISER WITH VENTED CAP	-
R-9	6" HDPE RISER WITH VENTED CAP	-
R-10	12" HDPE RISER WITH VENTED CAP	-

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE	TYPE	LENGTH
I-4B	I-4A	15	HDPE	72
I-4A	I-3	18	HDPE	163
I-3	I-1	24	HDPE	132
I-2	I-1	18	HDPE	163
I-1	MH-5	30	HDPE	361
R-9	I-14	6	PERF HDPE	98
R-8	I-14	6	PERF HDPE	86
I-14B	I-14A	15	HDPE	55
I-14A	MH-5	15	HDPE	16
I-13	MH-5	15	HDPE	19
MH-5	MH-3	30	HDPE	317
I-11	I-9	15	HDPE	106
I-9	MH-3	15	HDPE	19
R-7	I-10	6	PERF HDPE	191
I-10	MH-3	15	HDPE	20
MH-3	MH-2	30	HDPE	135
I-7	MH-9	15	HDPE	152
MH-9	I-6	15	HDPE	96
I-6	MH-8	15	HDPE	80
MH-8	MH-7	15	HDPE	37
R-1	MH-7	12	PERF HDPE	401
MH-7	MH-6	15	HDPE	230
R-2	MH-6	12	PERF HDPE	401
MH-6	MH-2	15	HDPE	60
MH-2	MH-1	30	HDPE	129
I-8	MH-1	15	HDPE	57
I-5	MH-1	15	HDPE	35
MH-1	ES-1	30	HDPE	165
R-6	MH-13	12	PERF HDPE	390
MH-13	MH-12	12	HDPE	230
R-5	MH-12	12	PERF HDPE	390
MH-12	I-15	15	HDPE	48
R-10	I-15	12	PERF HDPE	345
I-15	MH-11	15	HDPE	38
R-4	MH-11	12	PERF HDPE	390
MH-11	MH-10	15	HDPE	230
R-3	MH-10	12	PERF HDPE	390
MH-10	EW-1	15	HDPE	43

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

FILENAME: HA-K2058-001\CADD\K2058001C2S3.DWG

PLOT DATE: 2/19/2010 9:47:10 AM PAGE SETUP: SETS C24/30 PLOT STYLE: VRA_BW.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC--DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25' 50' 100'
SCALE: 1" = 50'

0 5' 10'
SCALE: 1" = 5'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLIVERI — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

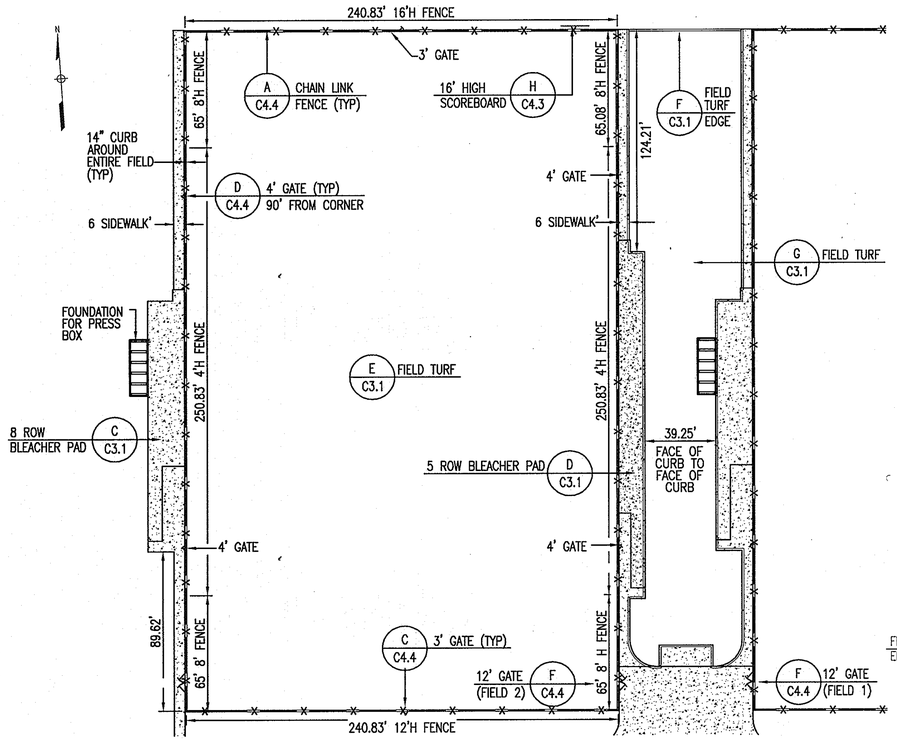
STORM DRAIN PROFILES

Drawing No.

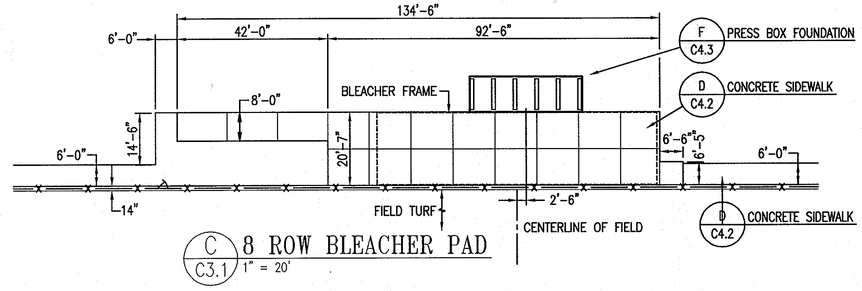
C2.3

Scale: AS SHOWN		
Date: 02/19/10	Sheet 23 of 51	
Des: CYH	Drawn: CYH	Check: AUO

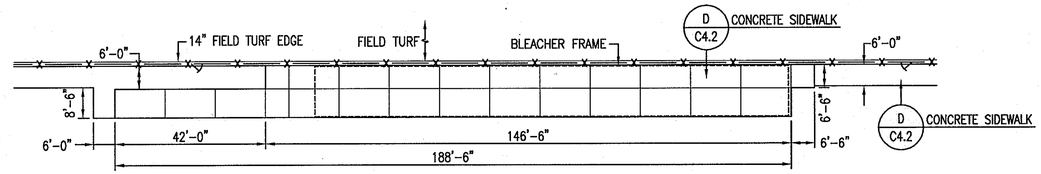
SDP-10-007



A C3.1 MULTIPURPOSE FIELD #1 AND #2
1" = 40'



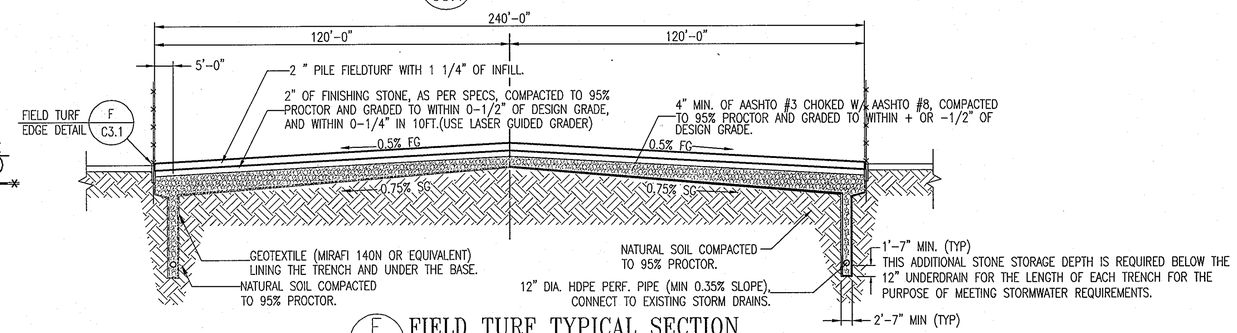
C C3.1 8 ROW BLEACHER PAD
1" = 20'



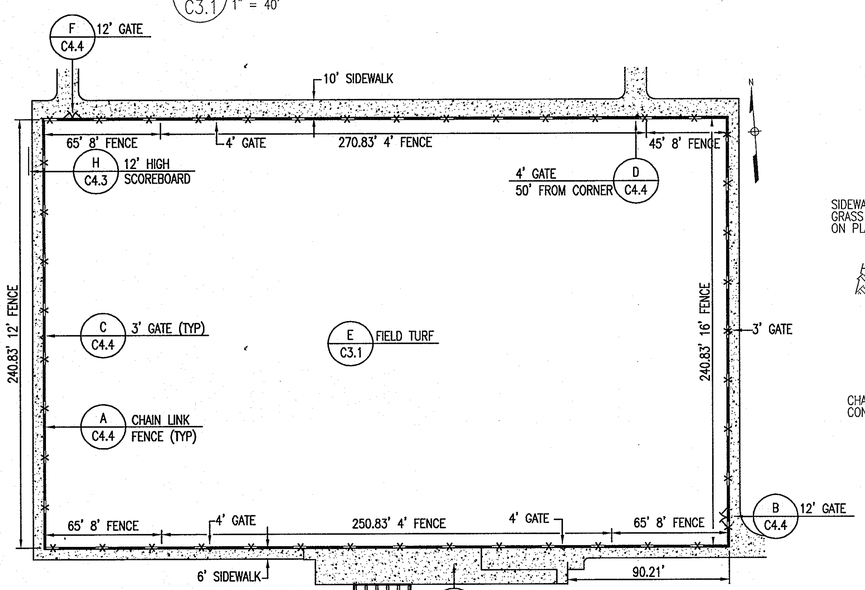
D C3.1 5 ROW BLEACHER PAD
1" = 20'

NOTES:

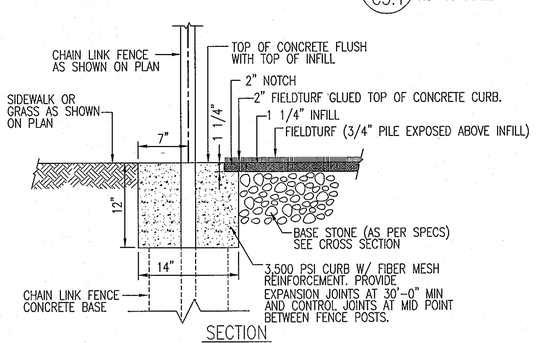
1. ALL DIMENSIONS FROM THE MULTIPURPOSE FIELDS ARE MEASURED FROM THE CENTERLINE OF FENCE.
2. DIMENSIONS OF CONCRETE PAVEMENT ARE MEASURED FROM EDGE OF CONCRETE PAVEMENT OR FROM INNER FACE OF NOTCH ON TURF EDGE, UNLESS OTHERWISE NOTED.
3. FINAL DETAILS, DIMENSIONS AND STEEL REINFORCEMENT FOR CONCRETE BLEACHER PADS AND PRESS BOX FOUNDATIONS ARE TO BE PROVIDED BY BLEACHER AND PRESS BOX MANUFACTURER. SUBMIT SHOP DRAWINGS FOR APPROVAL.

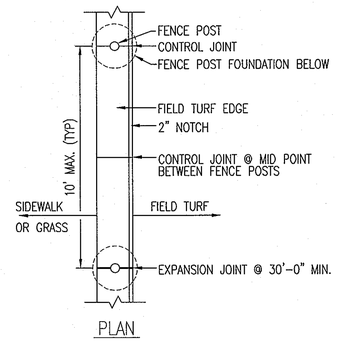


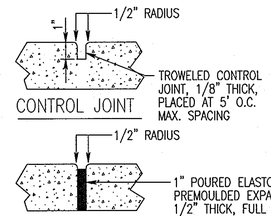
E C3.1 FIELD TURF TYPICAL SECTION
NOT TO SCALE



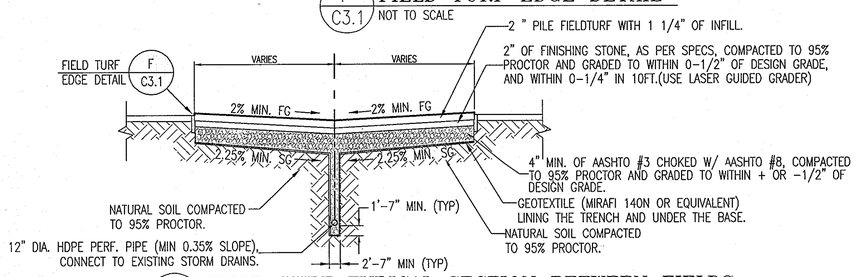
B C3.1 MULTIPURPOSE FIELD #3
1" = 40'







F C3.1 FIELD TURF EDGE DETAIL
NOT TO SCALE



G C3.1 FIELD TURF TYPICAL SECTION BETWEEN FIELDS
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 20' 40' 80'
SCALE: 1" = 40'

0 10' 20' 40'
SCALE: 1" = 20'

SIGNATURE

STATE OF MARYLAND — ANTHONY W. QUEEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

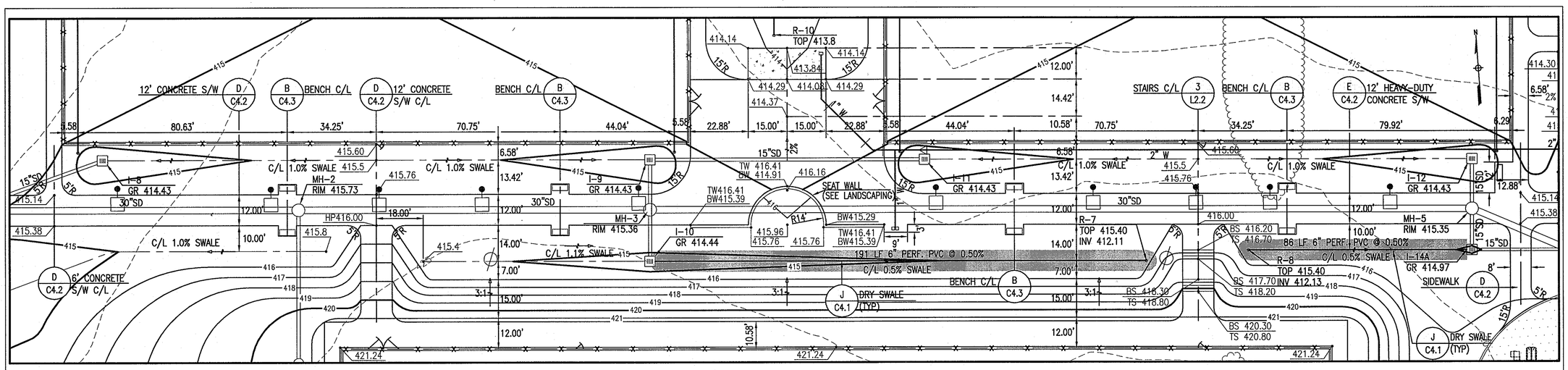
MULTIPURPOSE FIELD PLAN

Drawing No.
C3.1

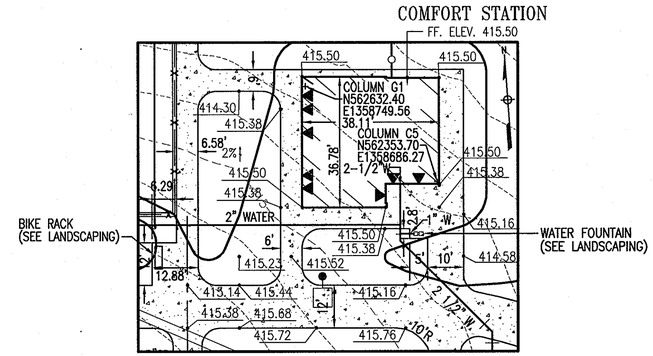
Scale: AS SHOWN		
Date: 02/19/10	Sheet 24 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

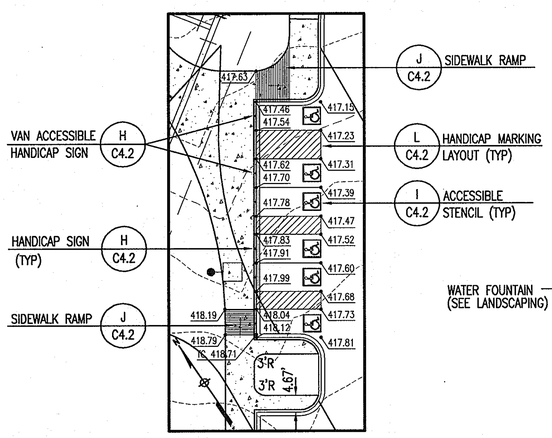
PLOT DATE: 8/19/2010 9:47:05 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2005.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)
FILENAME: N:\42858-REV\CADD\42858REV2C3D1.DWG



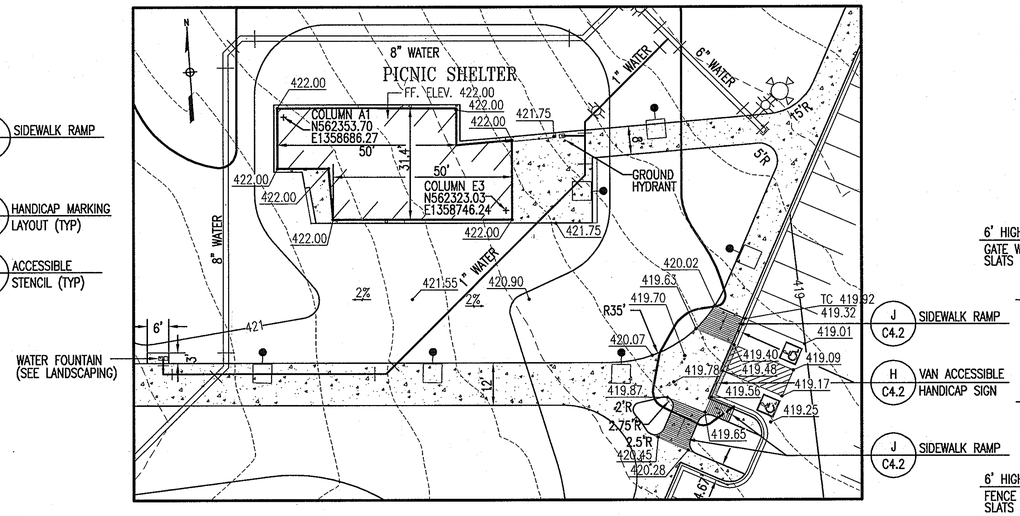
A C3.2 ENLARGED WALKWAY PLAN
1" = 20'



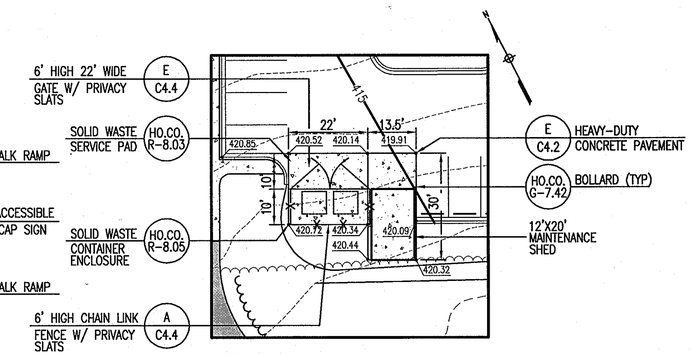
D C3.2 ENLARGED COMFORT STATION PLAN
1" = 20'



B C3.2 ACCESSIBLE PARKING PLAN
1" = 20'



C C3.2 ENLARGED PICNIC SHELTER PLAN
1" = 20'



E C3.2 SERVICE AREA PLAN
1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/31/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/02/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

FILENAME: W-42598-001\CADD\EXG\BDI01C303.DWG

PLOT DATE: 2/19/2010 9:48:38 AM PAGE SETUP: SETS (GM360 PLOT STYLE: VRA_2006CTB PAPER SIZE:ANSI D (36.00 X 24.00 INCHES)

REVISIONS

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 10' 20' 40'
SCALE: 1" = 20'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. CUTTER — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

ENLARGED SITE PLANS

Drawing No.
C3.2

Scale: 1" = 20'		
Date: 02/19/10	Sheet 25 of 51	
Des: CYH	Drawn: CYH	Check: AUO

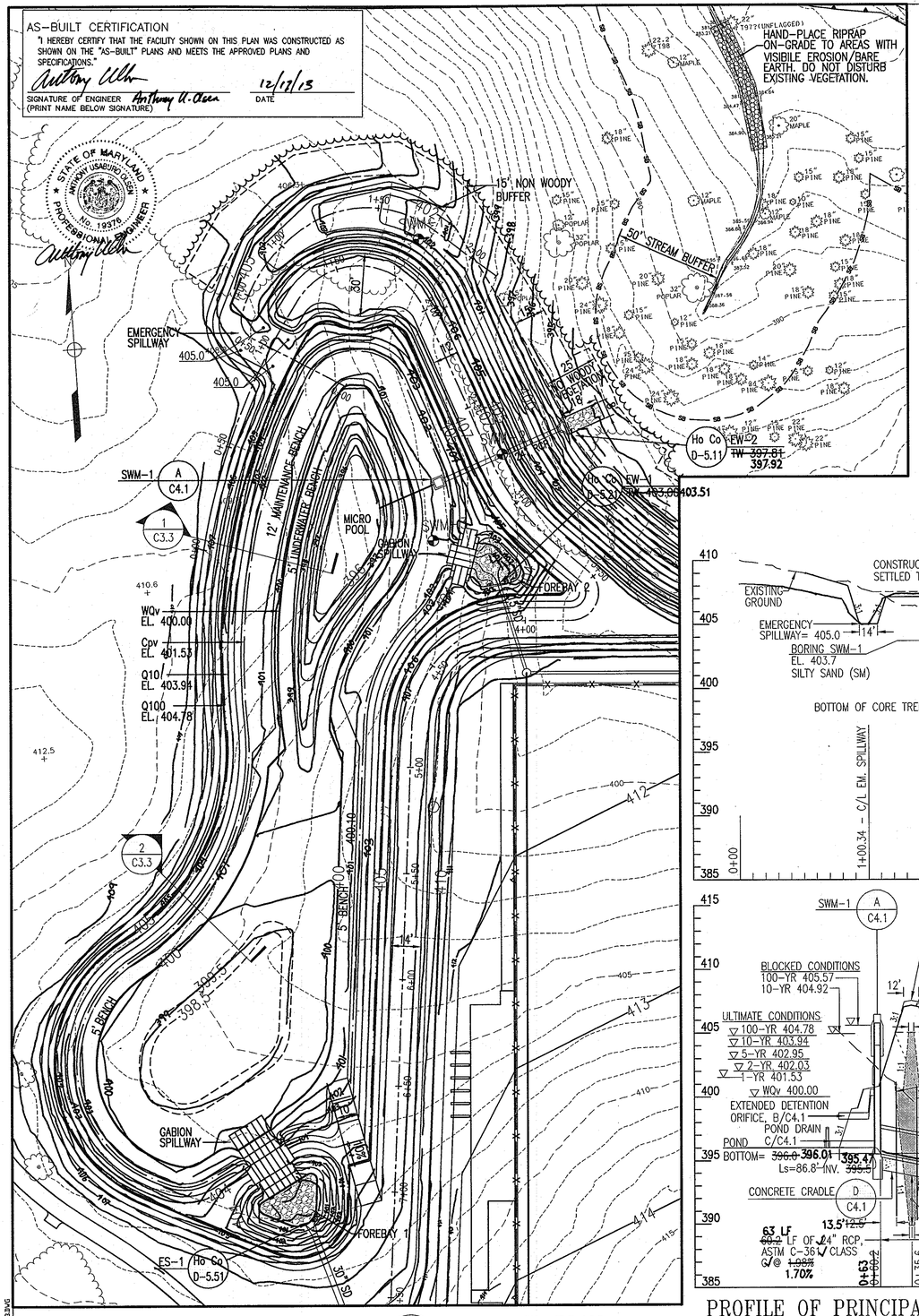
SDP-10-007

AS-BUILT CERTIFICATION

"I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS."

SIGNATURE OF ENGINEER Anthony U. Olsen DATE 12/17/13
(PRINT NAME BELOW SIGNATURE)

STATE OF MARYLAND — ANTHONY USABURO OLSEN — No. 19376 — PROFESSIONAL ENGINEER



A C3.3 SWM POND PLAN
1" = 30'

POND DESIGN SUMMARY

EXTENDED DETENTION SHALLOW WETLAND (W-2) HAZARD CLASS "A"
DRAINAGE AREA: 22.47 AC
IMPERVIOUS AREA: 6.39 AC

DESIGN STORM	WSEL (FT)	STORAGE (AC-FT)	Qin (CFS)	Qout (CFS)
INVERT	396.0			
WQv	400.00	~~0.431~~ **0.517**	n/a	n/a
Cpv	401.53	~~0.857~~ **1.349**	16.63	0.36
2-YEAR	402.03	~~1.187~~ **1.677**	26.86	0.87
10-YEAR	403.94	~~2.722~~ **3.233**	65.16	2.32
100-YEAR	404.78	~~3.516~~ **4.044**	112.72	34.13

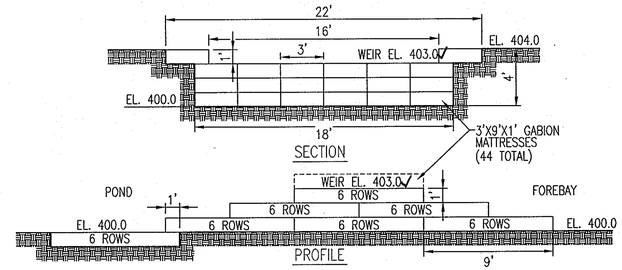
OPERATION AND MAINTENANCE SCHEDULE

INSPECTION SCHEDULE
1. ANNUALLY: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS TO INSPECT ANNUALLY AND GENERATE ANNUAL INSPECTION REPORT
2. SIXTY HOURS AFTER THE END OF EACH SIGNIFICANT RAINFALL EVENT: (>2.6 INCHES OF RAINFALL). CHECK FOR PONDING WATER, SEDIMENT DEPOSITION IN THE FOREBAYS, EROSION DAMAGE, TRASH AND CLOGGING OF THE SPILLWAY ORIFICES.

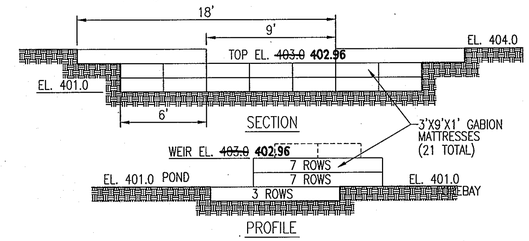
ROUTINE MAINTENANCE
1. MOW GRASS ON EMBANKMENT TWICE PER YEAR OR WHEN GRASS HEIGHT EXCEEDS 18 INCHES.
2. ANNUALLY REMOVE ANY WOODY VEGETATION FROM EMBANKMENT WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT AND WITHIN 25 FEET OF THE PRINCIPAL SPILLWAY.

MAINTENANCE REQUIREMENTS
1. REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS FOUR (4) INCHES IN FOREBAY.
2. REMOVAL OF ACCUMULATED PAPER, TRASH AND DEBRIS AS NECESSARY.
3. VEGETATION GROWING ON THE EMBANKMENT TOP AND FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
4. ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.
5. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME THE EXTENDED DETENTION BASIN OR FOREBAYS DO NOT DRAIN WITHIN 60 HOURS.
6. IF MINIMUM COVERAGE OF 50% IS NOT ACHIEVED IN THE PLANTED WETLAND ZONES AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING WILL BE REQUIRED.

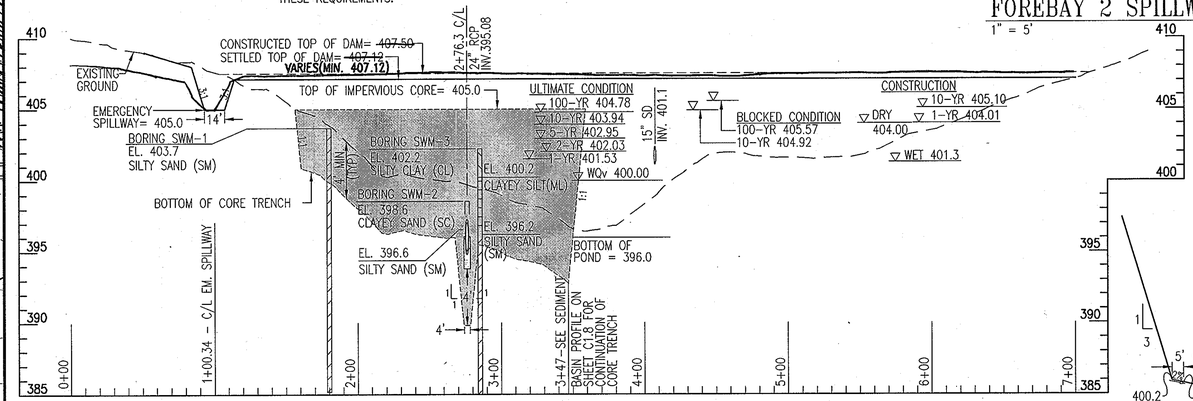
THE DAM INSPECTION CHECKLIST CAN BE FOUND IN APPENDIX A OF USDA NRCS – MARYLAND–CONSERVATION PRACTICE STANDARD – POND – CODE 378 (MD–378) MAY BE USED TO DOCUMENT THESE REQUIREMENTS.



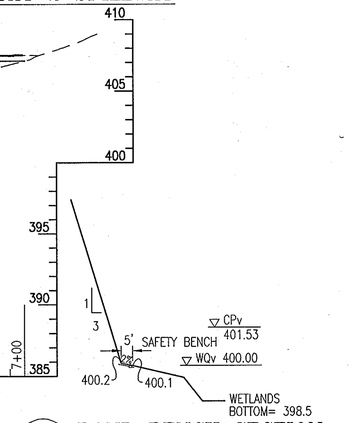
FOREBAY 1 SPILLWAY
1" = 5'



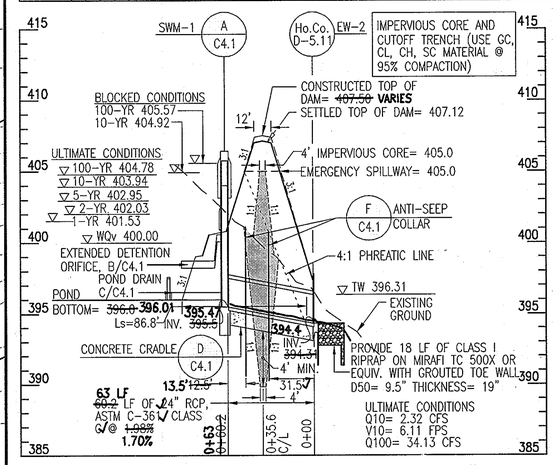
FOREBAY 2 SPILLWAY
1" = 5'



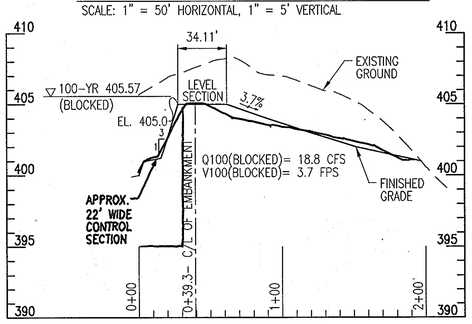
PROFILE OF POND CENTERLINE
SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



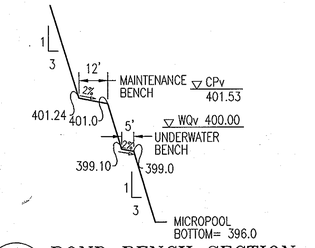
2 C3.3 POND BENCH SECTION
NOT TO SCALE



PROFILE OF PRINCIPAL SPILLWAY – 24" RCP
SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



PROFILE OF EMERGENCY SPILLWAY
SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



1 C3.3 POND BENCH SECTION
NOT TO SCALE

NOTE:
1. SEE SHEET C5.5 FOR RISER STRUCTURAL NOTES.
2. SEE SHEET L1.3 FOR POND LANDSCAPING.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/1/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/03/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B Nelson for Peter Beilenson — COUNTY HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER Ronald G. Lepson DATE 2/22/10
(PRINT NAME BELOW SIGNATURE) Ronald G. Lepson

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER Anthony U. Olsen DATE 2/19/10
(PRINT NAME BELOW SIGNATURE)

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 5' 10' — SCALE: 1" = 5'
0 15' 30' 60' — SCALE: 1" = 30'
0 25' 50' 100' — SCALE: 1" = 50'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

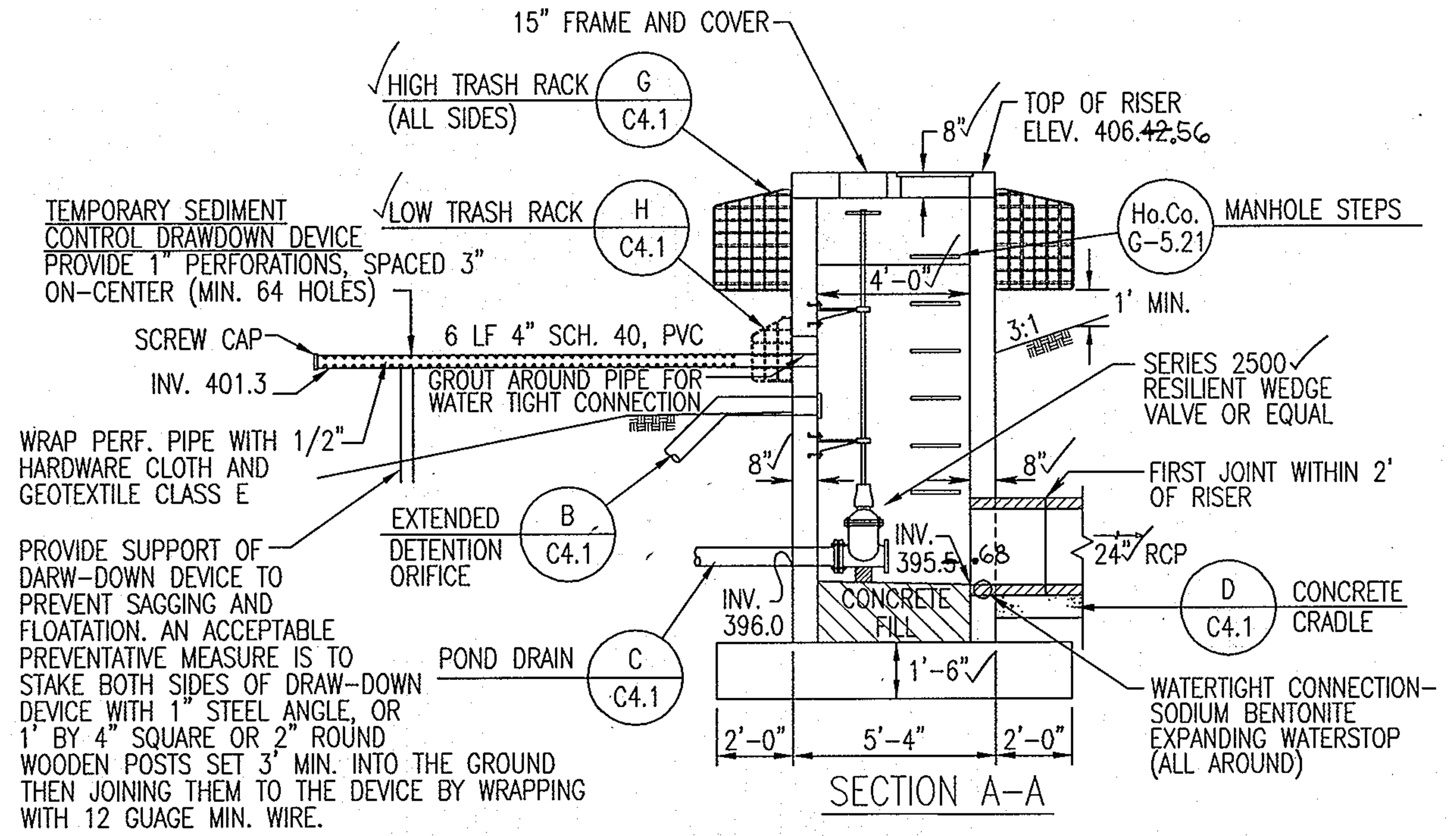
STORMWATER MANAGEMENT POND PLAN

Drawing No.
C3.3

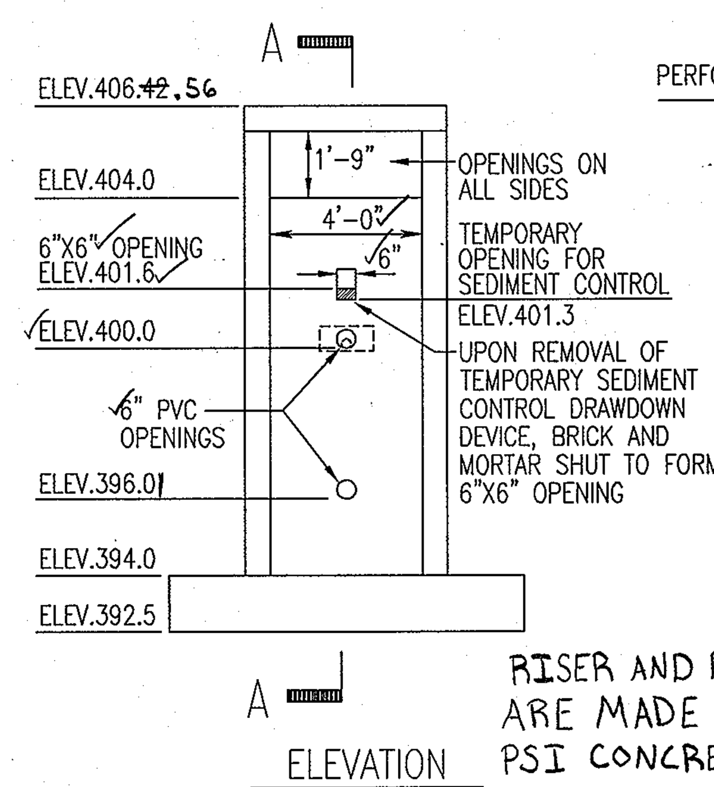
Scale: AS SHOWN		
Date: 02/19/10	Sheet 26 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

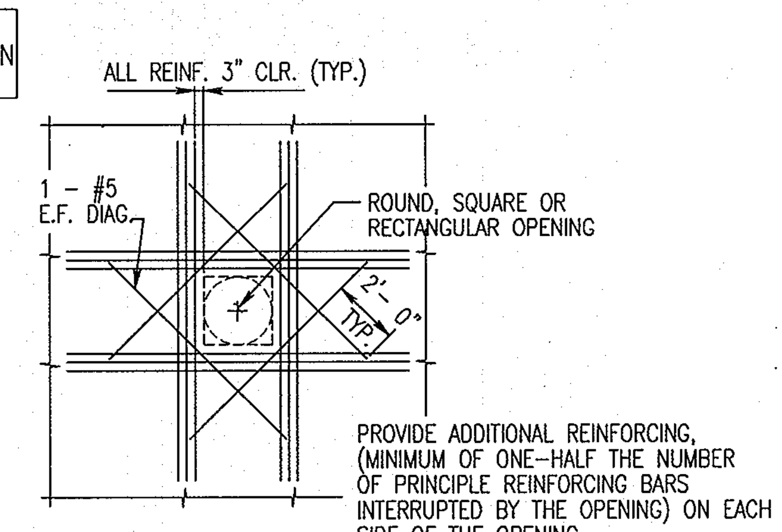
PLOT DATE: 2/19/2010 9:49:51 AM PAGE SETUP: SETS 024X360 PLOT STYLE: WRA_BW.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)
FILENAME: W:\4200B-001\CADD\4200B001C903.DWG



NOTE: CONTRACTOR SHALL KEEP EXTENDED DETENTION ORIFICE OPENING SHUT AND DRAIN VALVE CLOSED DURING CONSTRUCTION.



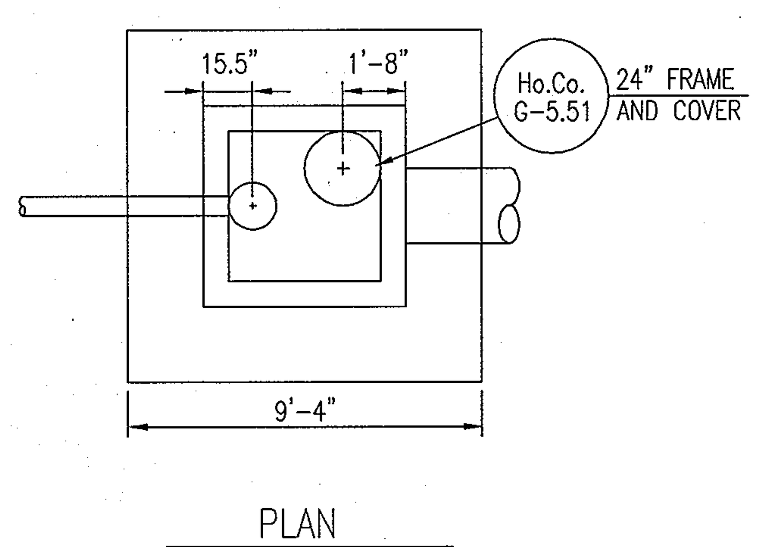
RISER AND RISER BASE ARE MADE FROM 4,500 PSI CONCRETE

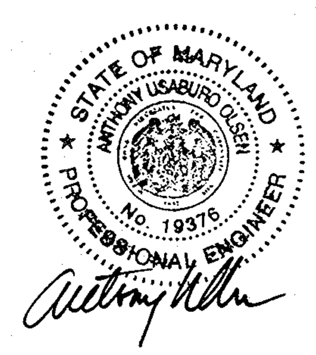


NOTE:
FOR OPENINGS LESS THAN 12" DIA., NO ADDITIONAL REINFORCING IS REQUIRED PROVIDED NO REINFORCING IS INTERRUPTED BY THE OPENING

PROVIDE ADDITIONAL REINFORCING, (MINIMUM OF ONE-HALF THE NUMBER OF PRINCIPLE REINFORCING BARS INTERRUPTED BY THE OPENING) ON EACH SIDE OF THE OPENING.

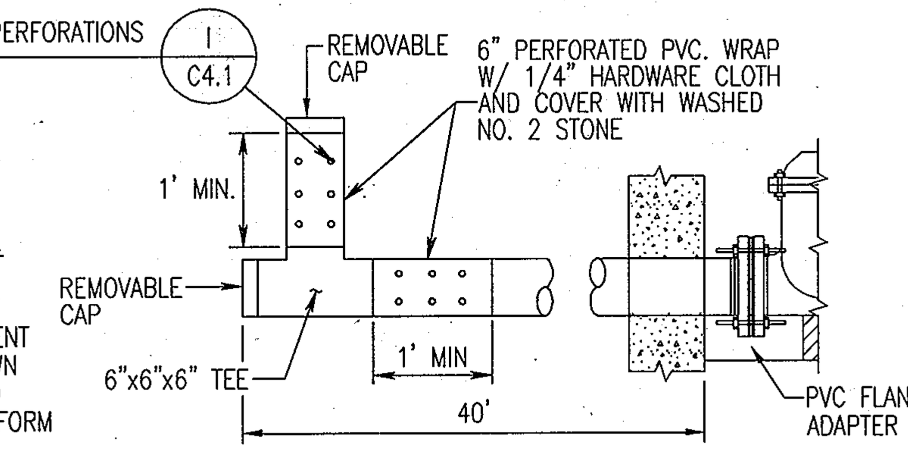
ADDITIONAL REINFORCING AROUND OPENINGS
NO SCALE



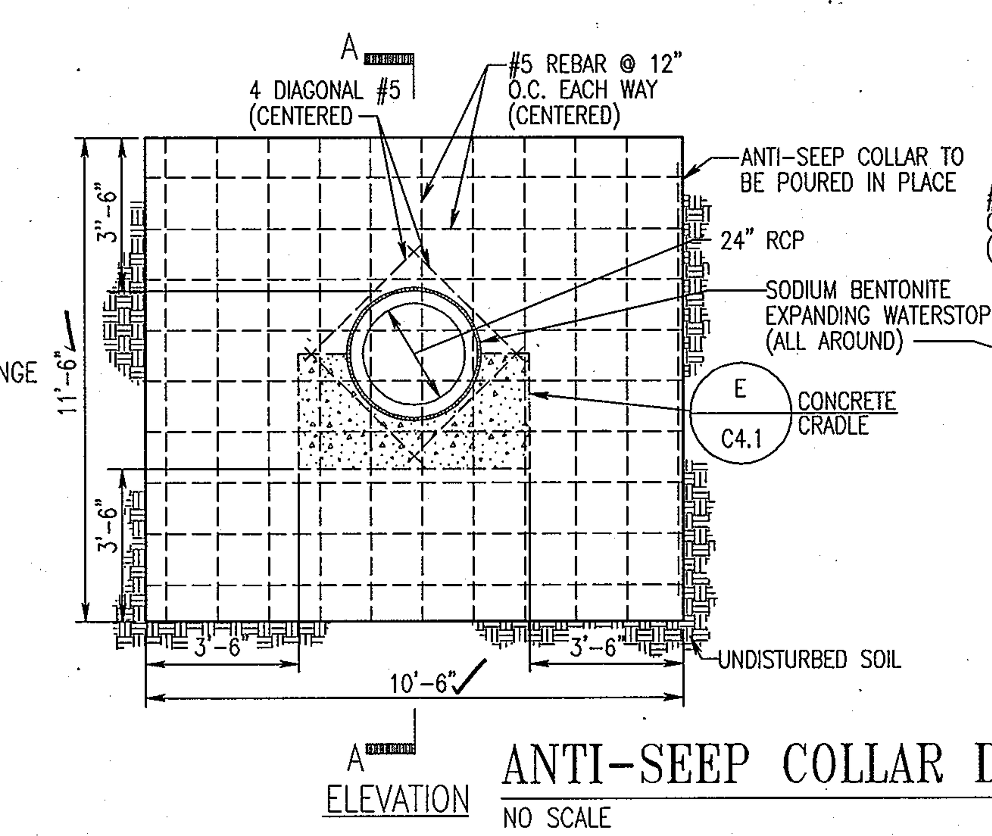


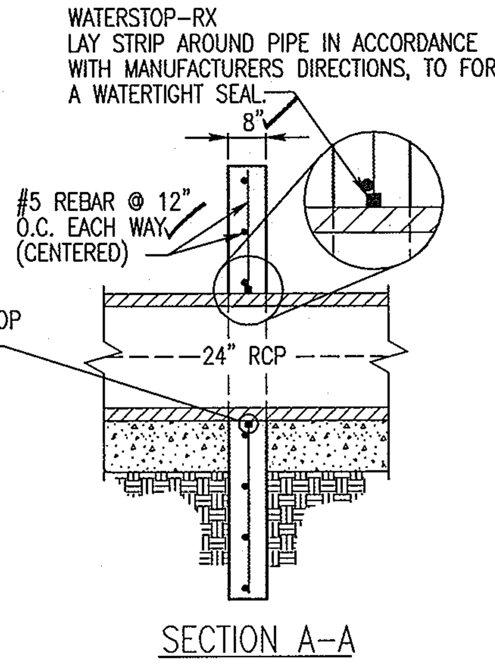
NOTE: SEE SHEET C5.5 FOR POND CONSTRUCTION SPECIFICATIONS AND RISER STRUCTURAL SPECIFICATIONS

POND RISER SWM-1 DETAIL (A / C4.1)
SCALE: 1/4" = 1'-0"

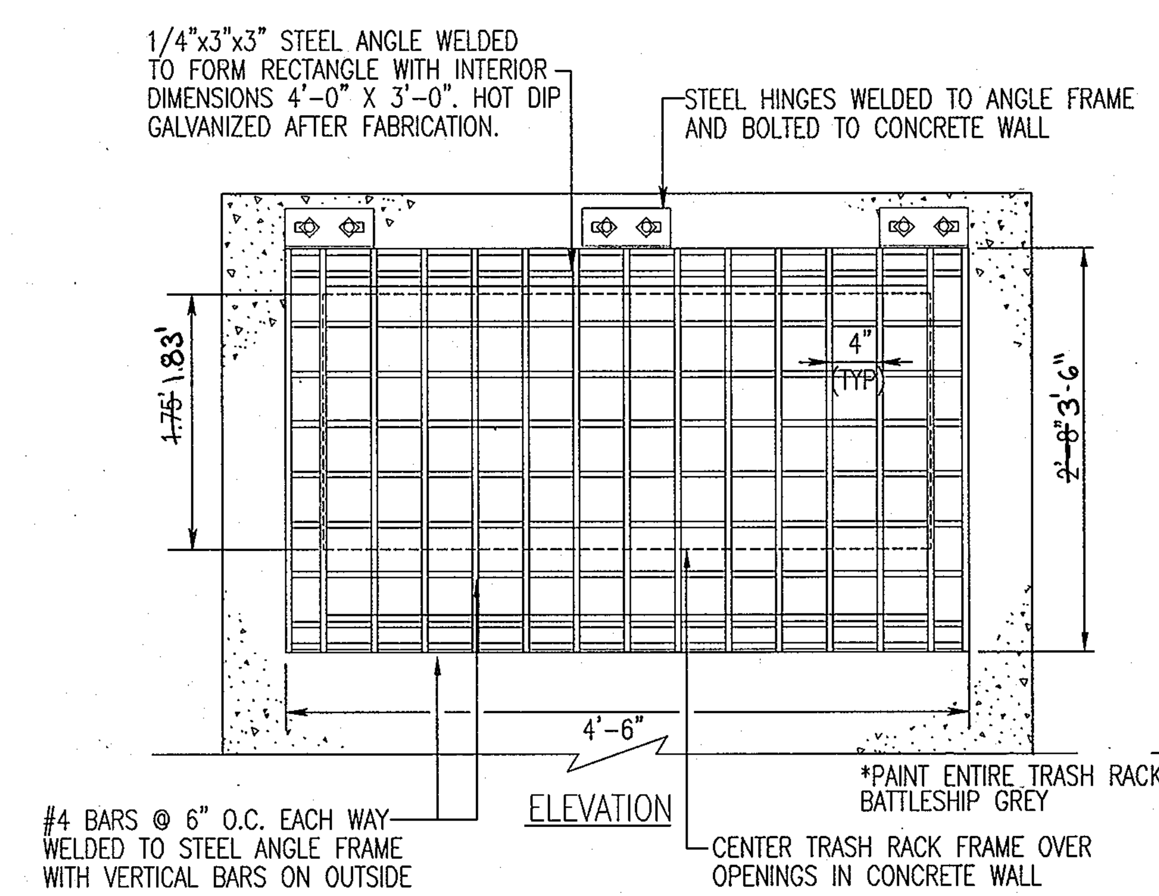


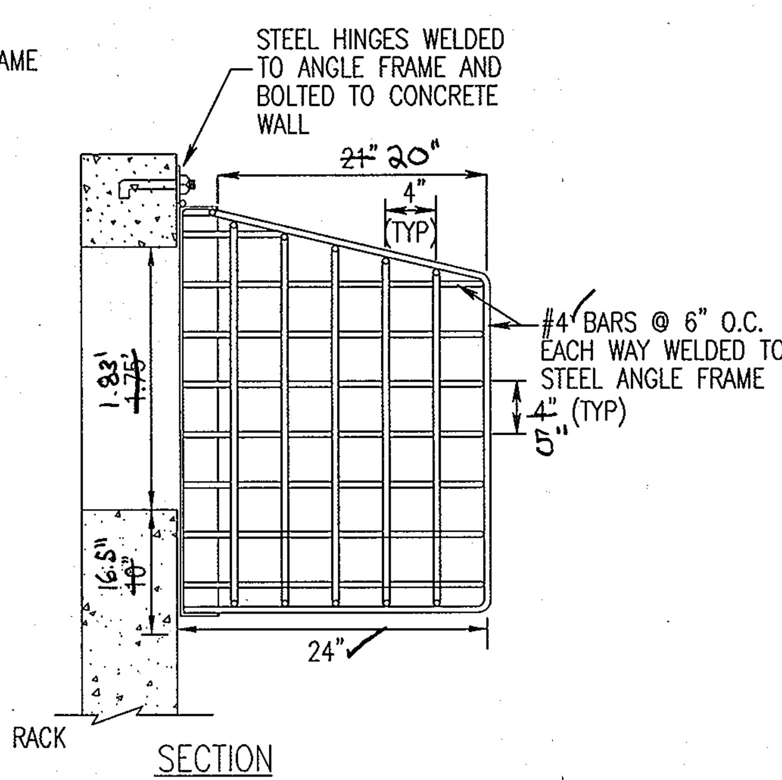
POND DRAIN (C / C4.1)
NO SCALE



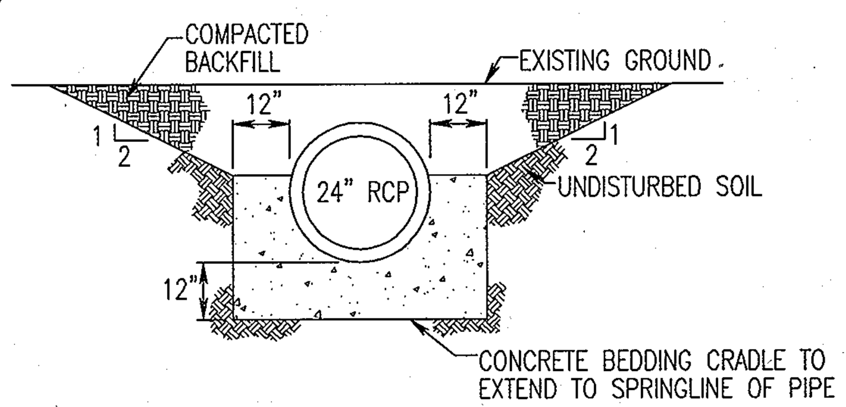


ANTI-SEEP COLLAR DETAIL (F / C4.1)
NO SCALE

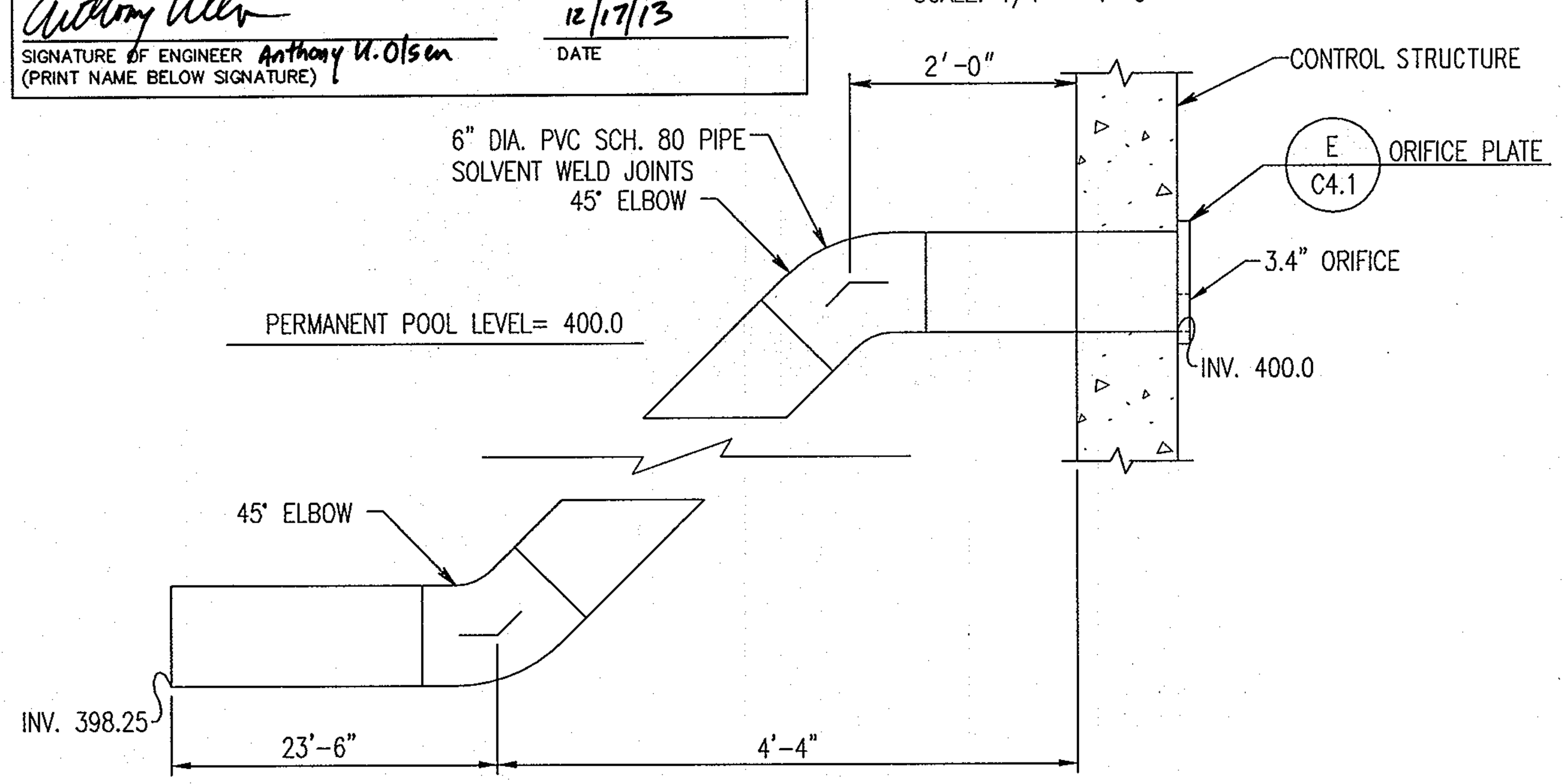




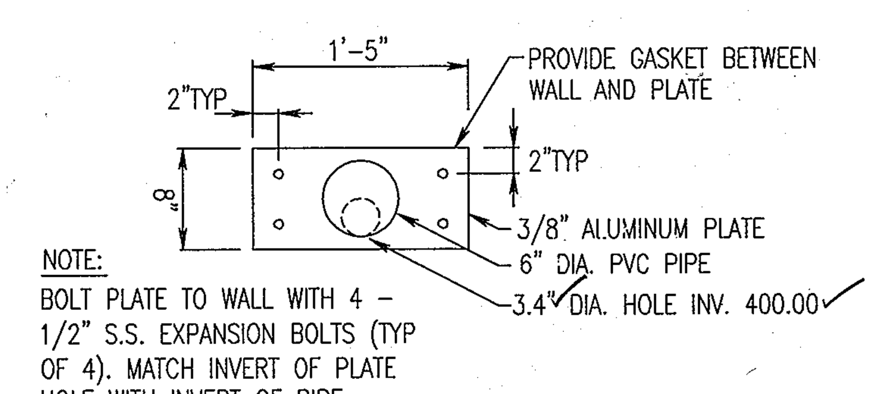
HIGH TRASH RACK DETAIL (G / C4.1)
NO SCALE



CONCRETE CRADLE (D / C4.1)
SCALE: 3/8"= 1'-0"

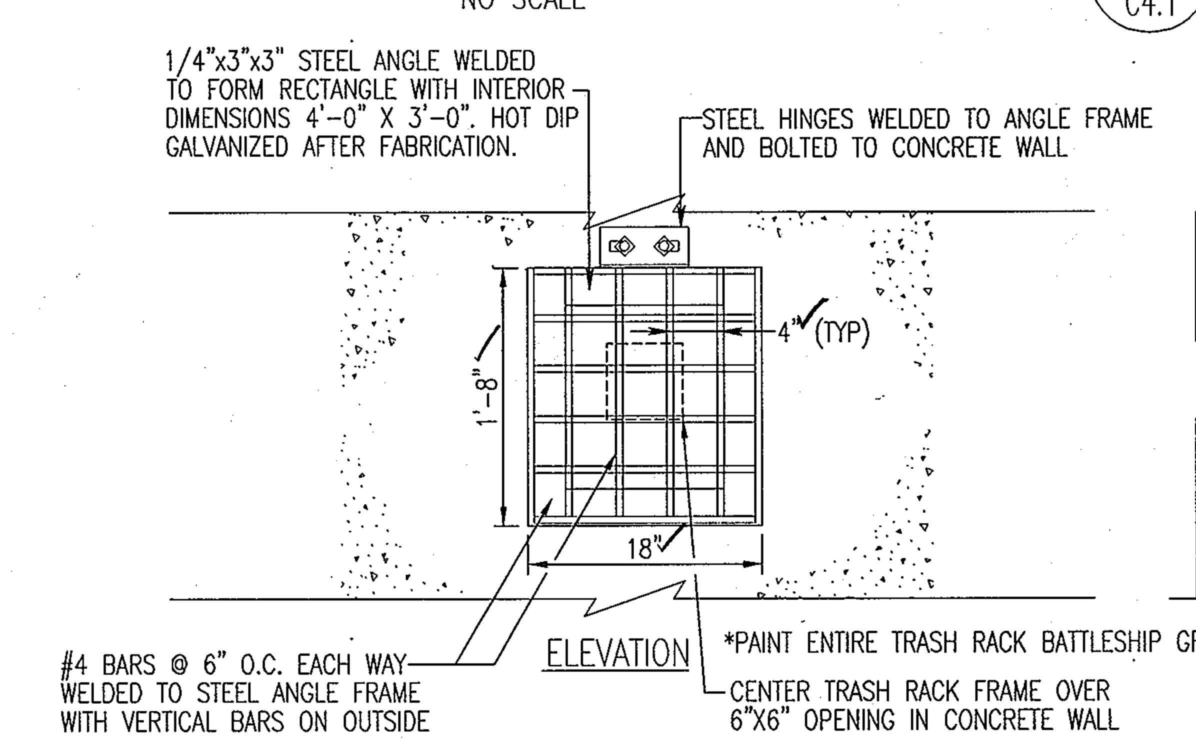


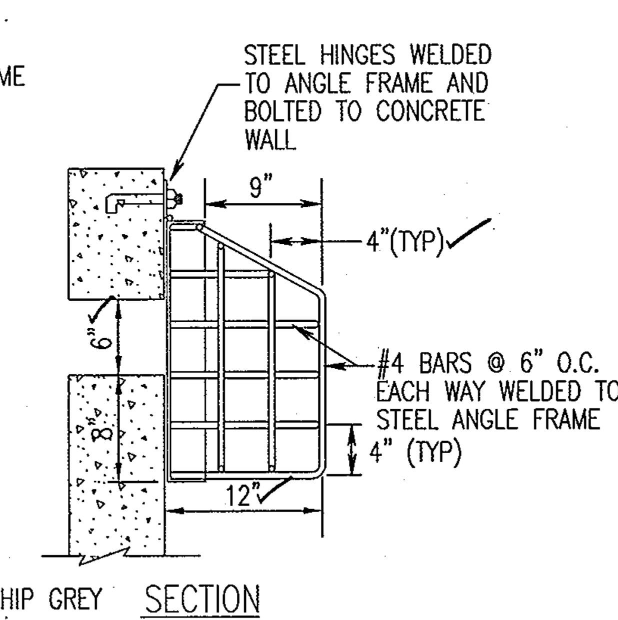
EXTENDED DETENTION ORIFICE DETAIL (B / C4.1)
SCALE : NO SCALE



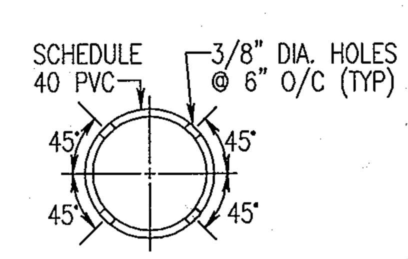
NOTE:
BOLT PLATE TO WALL WITH 4 - 1/2" S.S. EXPANSION BOLTS (TYP OF 4). MATCH INVERT OF PLATE HOLE WITH INVERT OF PIPE.

ORIFICE PLATE DETAIL (E / C4.1)
SCALE : 1" = 1' -0"

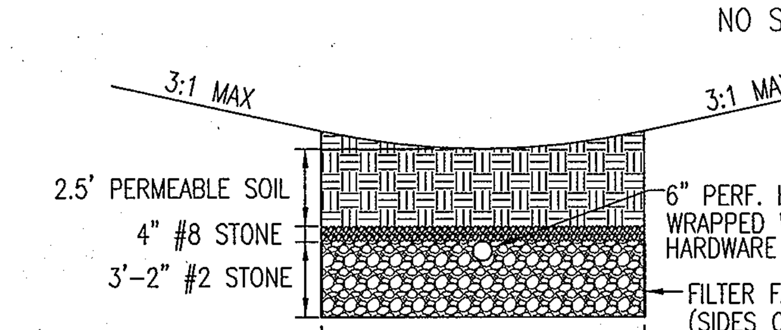




LOW TRASH RACK DETAIL (H / C4.1)
NO SCALE



PERFORATED PVC (I / C4.1)
NO SCALE



DRY SWALE (J / C4.1)
NO SCALE

THE PERMEABLE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE DRY SWALE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

PERMEABLE SOIL SPECIFICATIONS
SAND 35 - 60%
SILT 30 - 55%
CLAY 10 - 25%
NOTE: USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

PH RANGE 5.2 - 7.0
ORGANIC MATTER 1.5 - 4% (BY WEIGHT)
MAGNESIUM 35 LB./AC
PHOSPHORUS (PHOSPHATE - P_2O_5) 75 LB./AC
POTASSIUM (POTASH - K_2O) 85 LB./AC
SOLUBLE SALTS NOT TO EXCEED 500 PPM

AS-BUILT CERTIFICATION
"I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS."
SIGNATURE OF ENGINEER Anthony U. Olsen — DATE 12/17/13
(PRINT NAME BELOW SIGNATURE)

ENGINEER'S CERTIFICATION
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."
SIGNATURE OF ENGINEER Anthony U. Olsen — DATE 2/19/10
(PRINT NAME BELOW SIGNATURE)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION CE — DATE 3/5/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10
DIRECTOR — DATE 4/8/10

DEVELOPER'S CERTIFICATION
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."
SIGNATURE OF DEVELOPER — DATE 2/22/10
(PRINT NAME BELOW SIGNATURE) Ronald G. Lepson

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS
B Nixon for Peter Beilenson — DATE 3/31/2010
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

REVISIONS		

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046
DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3,72
ZONING: RC-DEO
ELECTION DISTRICT 3/7

GRAPHIC SCALES
SCALE: 1/4" = 1'-0" (0, 2', 4', 8')
SCALE: 3/8" = 1'-0" (0, 1', 2', 3', 5')
SCALE: 1" = 1'-0" (0, 6", 1', 2')

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

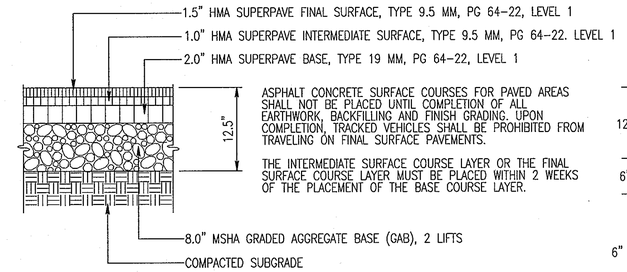
STORMWATER MANAGEMENT DETAILS

Drawing No.
C4.1

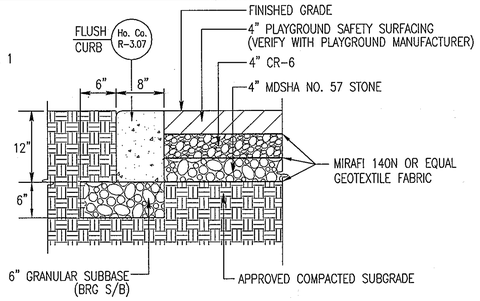
Scale: AS SHOWN		
Date: 02/19/10	Sheet 27 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

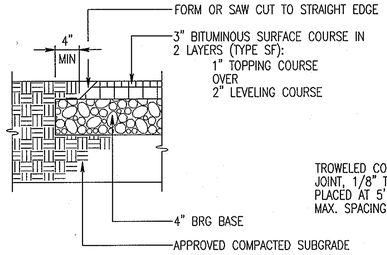
FILENAME: N:\42038-001\CADD\42038001C401.DWG
PLOT DATE: 2/19/2010 9:50:04 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



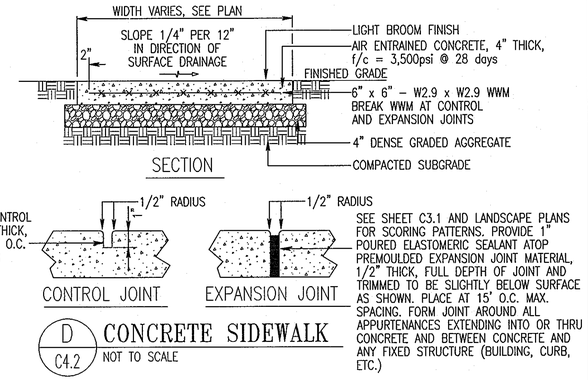
A C4.2 BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE



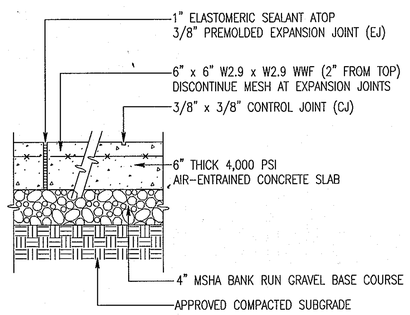
B C4.2 PLAYGROUND SURFACE
NOT TO SCALE



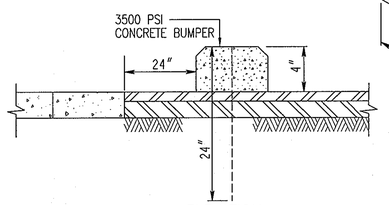
C C4.2 BITUMINOUS SIDEWALK
NOT TO SCALE

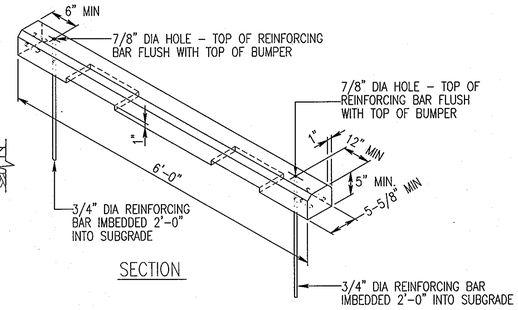


D C4.2 CONCRETE SIDEWALK
NOT TO SCALE

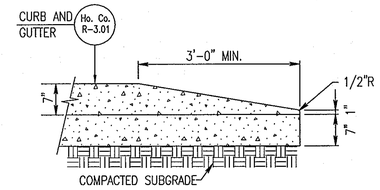


E C4.2 HEAVY-DUTY CONCRETE PAVEMENT
NOT TO SCALE

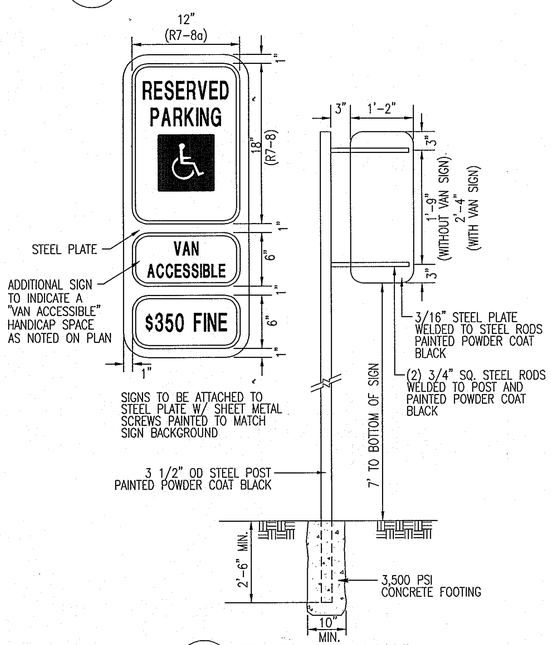




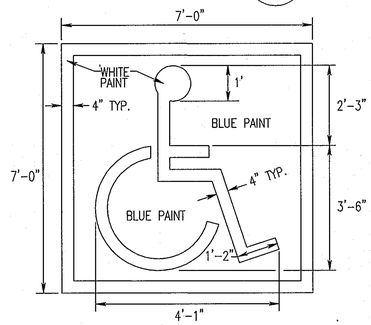
F C4.2 PARKING BUMPER
NOT TO SCALE



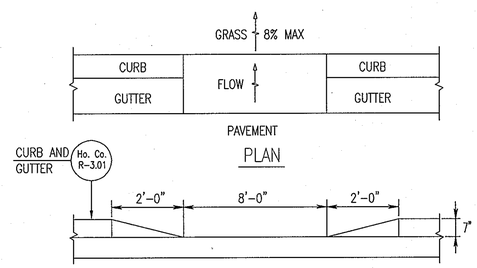
G C4.2 NOSE DOWN CURB
NOT TO SCALE



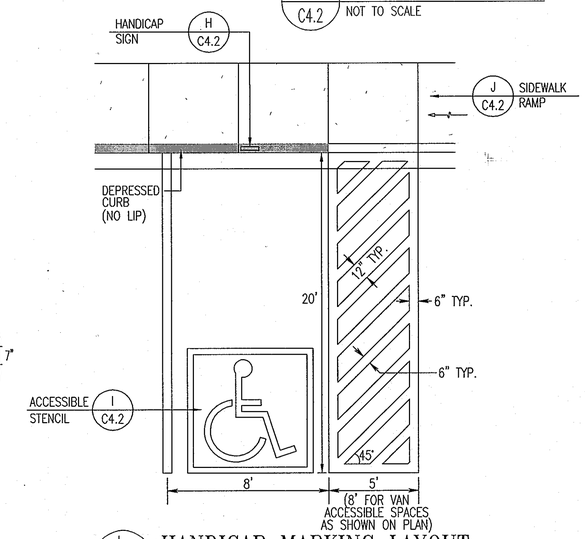
H C4.2 HANDICAP SIGN
NOT TO SCALE



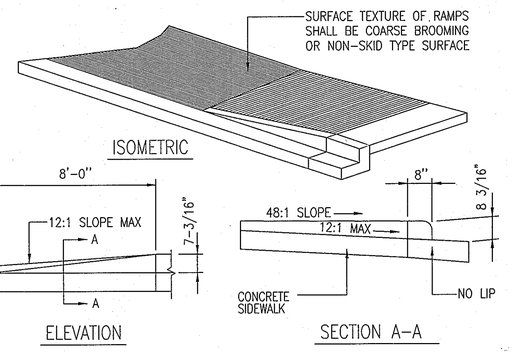
I C4.2 ACCESSIBLE STENCIL
NOT TO SCALE



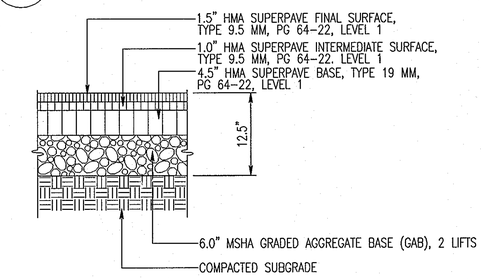
K C4.2 CURB CUT DETAIL
NOT TO SCALE



L C4.2 HANDICAP MARKING LAYOUT
NOT TO SCALE



J C4.2 SIDEWALK RAMP DETAIL
NO SCALE



BYPASS LANE BITUMINOUS CONCRETE PAVEMENT
M C4.2 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/02/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE 3/31/2010

FILENAME: NV42028-REVCADD\V42028D02C402.DWG

PLOT DATE: 2/19/2010 9:50:14 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND ANTHONY U. OLIVA PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

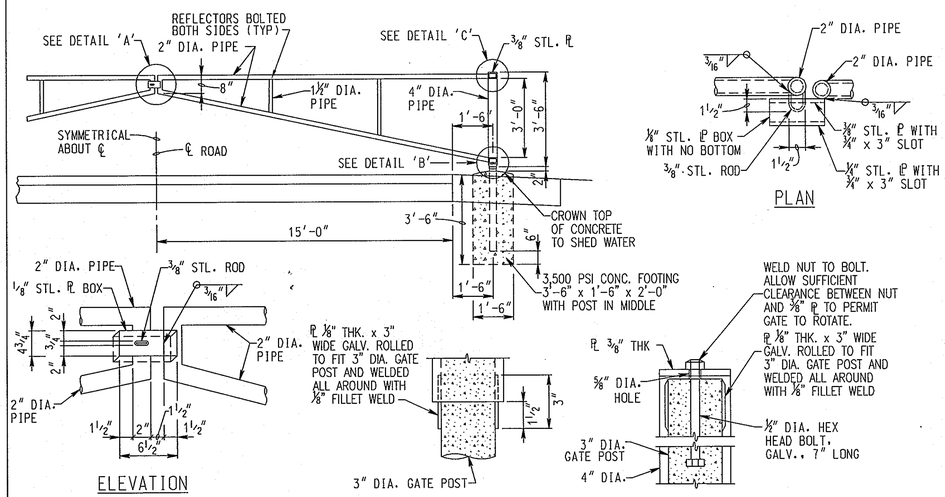
BLANDAIR REGIONAL PARK - PHASE 1

SITE DETAILS

Drawing No.
C4.2

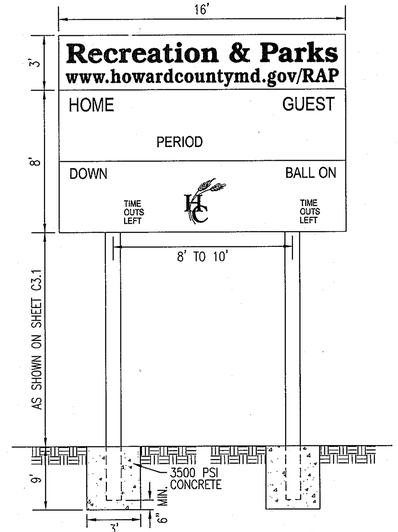
Scale: NONE		
Date: 02/19/10	Sheet 28 of 51	
Des: CYH	Drawn: CJK	Check: AUO

SDP-10-007

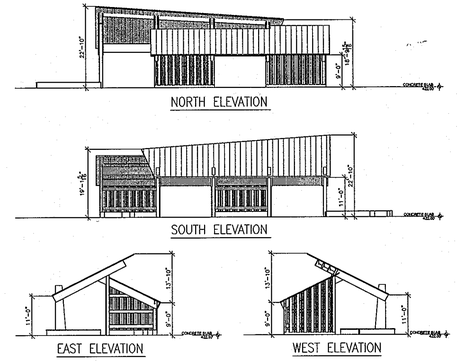


1. ALL METAL USED IN THE MANUFACTURE OF THE PIPE GATE TO BE HOT DIP GALVANIZED.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
4. PADLOCK TO BE FURNISHED BY OWNER.
5. CONTRACTOR TO FURNISH AND INSTALL AN ADDITIONAL 3" DIA. POST WITH 3/8" ROD. LOCATE TO HOLD GATE IN AN OPEN POSITION 90° FROM THAT SHOWN ON THE PLAN.
6. PAINT GATES AND POST WITH TWO(2) COATS OF GLOSS BLACK, POLYURETHANE PAINT, PRIME FIRST.
7. SUBMIT SHOP DRAWINGS FOR OWNERS APPROVAL PRIOR TO FABRICATION.

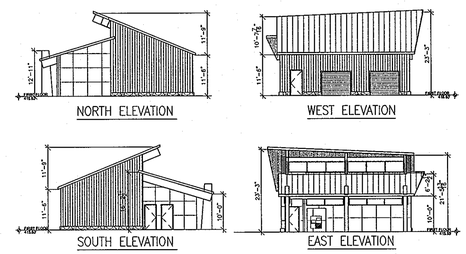
A / C4.3 PIPE GATE
NOT TO SCALE



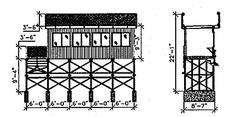
SCOREBOARD ELEVATION H / C4.3
NOT TO SCALE



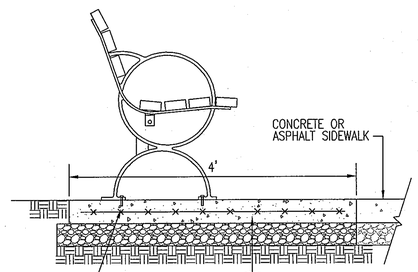
D / C4.3 PICNIC SHELTER ELEVATIONS
SCALE: 1" = 20'

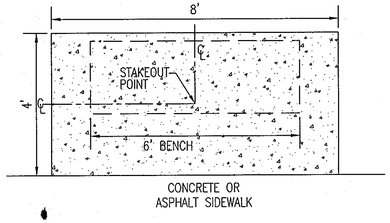


E / C4.3 COMFORT STATION ELEVATIONS
SCALE: 1" = 20'

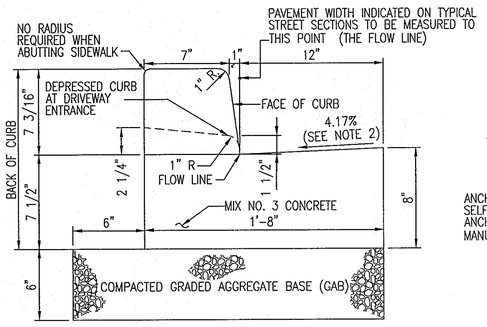


F / C4.3 PRESS BOX ELEVATIONS
1" = 20'





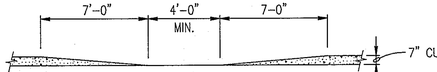
B / C4.3 BENCH DETAIL
NO SCALE



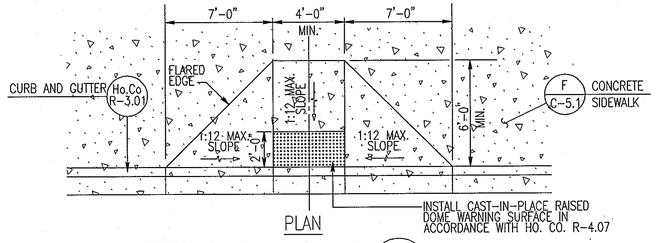
NOTES:

1. A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
2. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
3. A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.
5. DETAIL PROVIDED FOR REFERENCE ONLY. SEE HOWARD COUNTY STANDARD DETAILS.

Ho. Co. R-3.01 HOWARD CO. 7" CURB
NOT TO SCALE

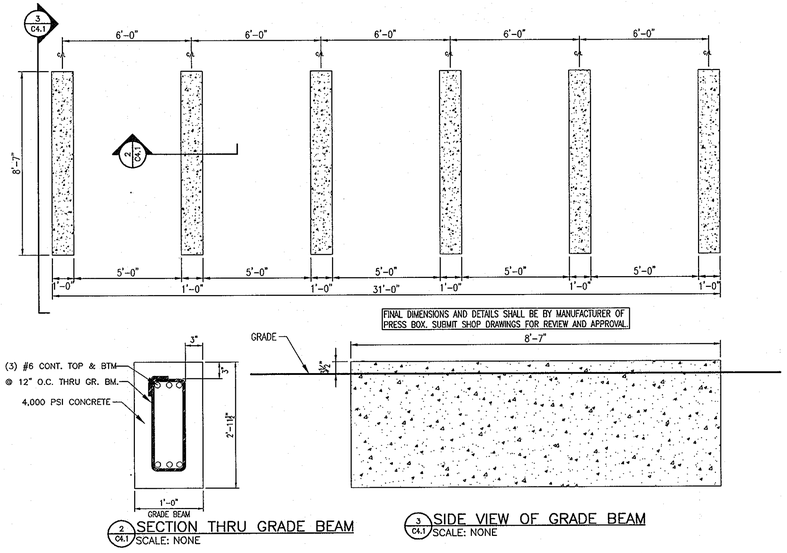


ELEVATION



PLAN

TYPE B CURB RAMP C / C4.3
NOT TO SCALE



2 / C4.1 SECTION THRU GRADE BEAM
SCALE: NONE

3 / C4.1 SIDE VIEW OF GRADE BEAM
SCALE: NONE

G / C4.3 PRESS BOX FOUNDATION DETAIL
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 10' 20' 40'
SCALE: 1" = 20'-0"

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

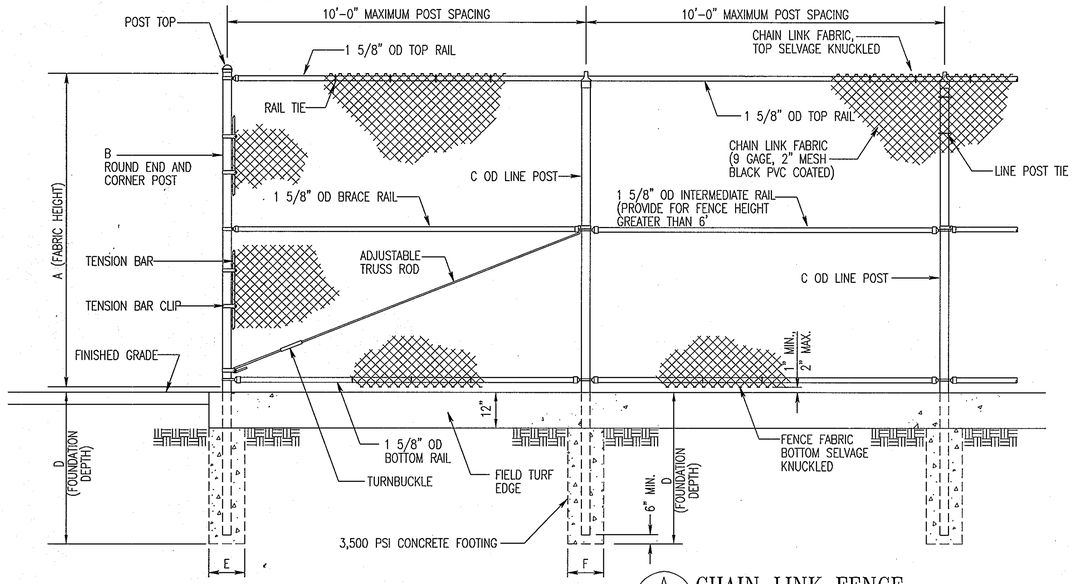
SITE DETAILS

Drawing No.
C4.3

Scale: AS SHOWN		
Date: 02/19/10	Sheet 29 of 51	
Des: CYH	Drawn: CJK	Check: AUO

SDP-10-007

FILENAME: N:\2028-001\CADD\4203800IC4D3.DWG
PLOT DATE: 2/19/2010 9:50:40 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_BW96CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)



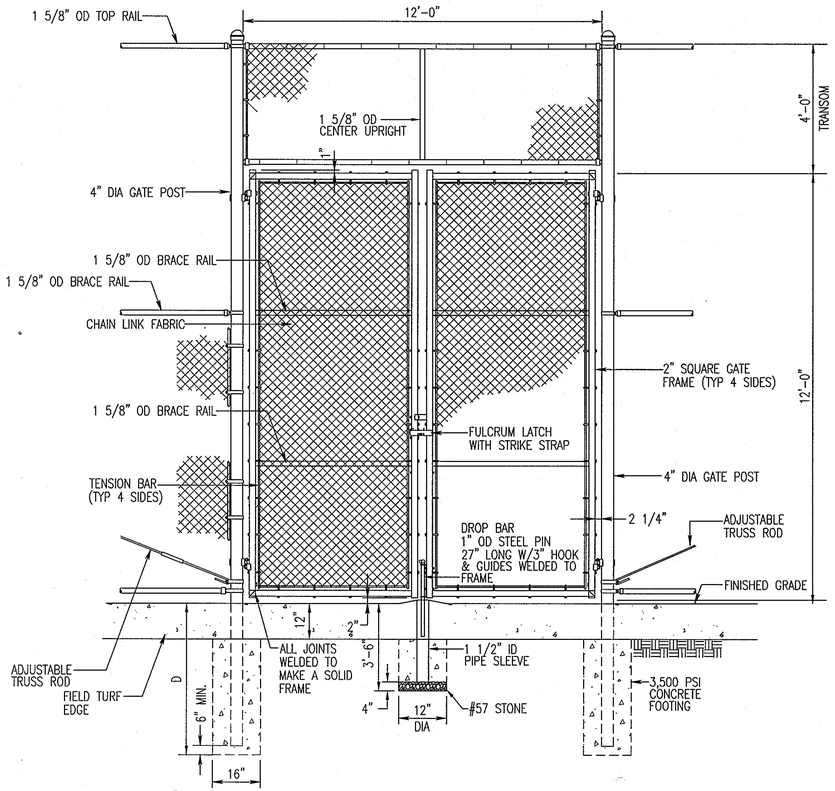
A (FENCE HEIGHT AS SHOWN ON PLAN)	4'-0"/6'-0"	8'-0"	12'-0"	16'-0"
B (END AND CORNER POST DIA.)*	2 1/2"	3"	3"	4"
C (LINE POST DIA.)	2"	2 1/2"	3"	3"
D (FOUNDATION DEPTH)	3'-0"	3'-6"	4'-6"	5'-6"
E (END AND CORNER POST FOUNDATION DIA.)	12"	15"	15"	18"
F (LINE POST FOUNDATION DIA.)	10"	12"	15"	15"

ALL RAILS AND POSTS SHALL BE BLACK PVC COATED

* WHERE FENCES WITH DIFFERENT HEIGHTS MEET, PROVIDE END/CORNER POST WITH LARGEST DIAMETER

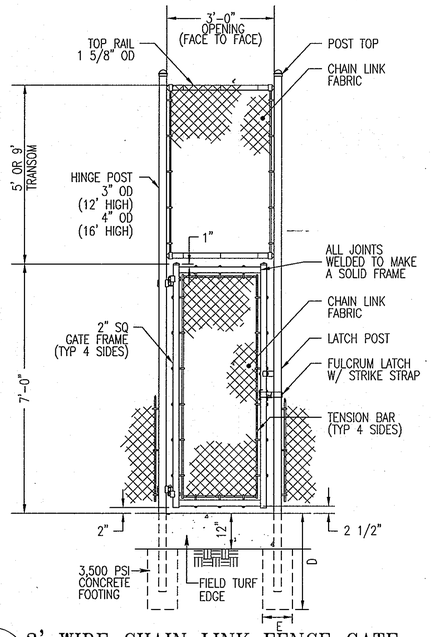
A C4.4 CHAIN LINK FENCE

NOT TO SCALE



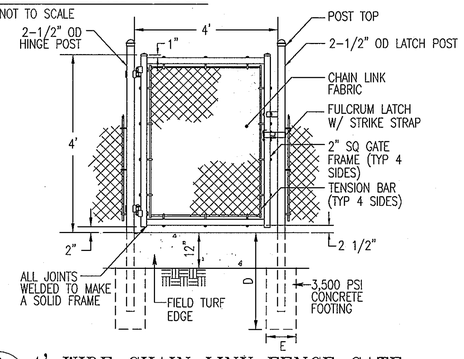
B C4.4 12' WIDE, 16' HIGH CHAIN LINK FENCE GATE

NOT TO SCALE



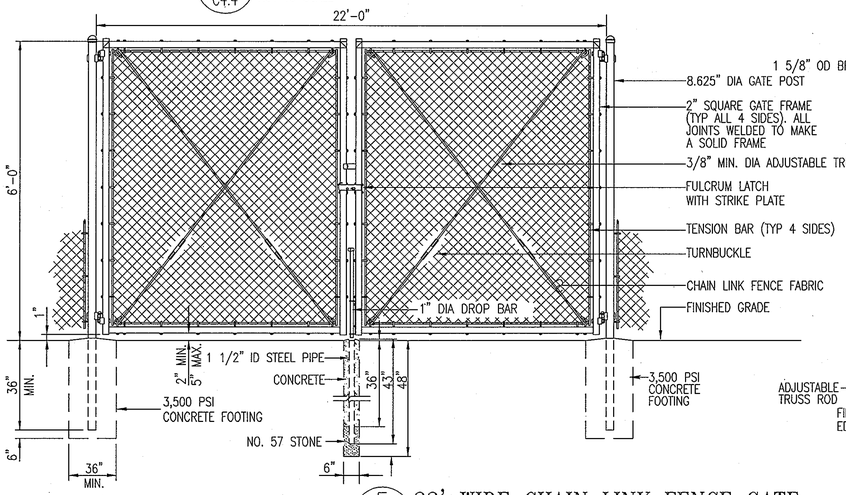
C C4.4 3' WIDE CHAIN LINK FENCE GATE

NOT TO SCALE



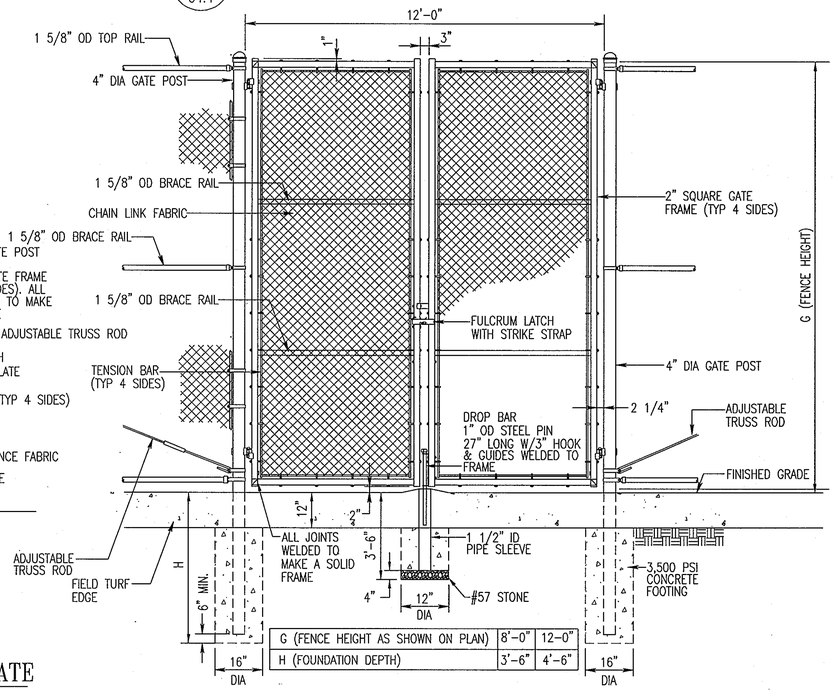
D C4.4 4' WIDE CHAIN LINK FENCE GATE

NOT TO SCALE



E C4.4 22' WIDE CHAIN LINK FENCE GATE

NOT TO SCALE



G (FENCE HEIGHT AS SHOWN ON PLAN)	8'-0"	12'-0"
H (FOUNDATION DEPTH)	3'-6"	4'-6"

F C4.4 12' WIDE, 8' OR 12' HIGH CHAIN LINK FENCE GATE

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/03/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

FILENAME: M:\4828-06\CADD\4828D01C4.DWG

PLOT DATE: 2/19/2010 9:56:49 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

SITE DETAILS

Drawing No.

C4.4

Scale: NONE		
Date: 02/19/10	Sheet 30 of 51	
Des: CYH	Drawn: CJK	Check: AUO

SDP-10-007

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL 1. CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

   TOTAL AREA OF SITE: 25.1 ACRES
   AREA DISTURBED: 25.1 ACRES
   AREA TO BE ROOFED OR PAVED ACRES: 4.3 ACRES
   AREA TO BE VEGETATIVELY STABILIZED ACRES: 20.8 ACRES
   TOTAL CUT CU. YDS.: 102,000 CU. YDS.
   TOTAL FILL: 87,000 CU. YDS.
   OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED BY CONTRACTOR
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.

HOWARD SOIL CONSERVATION DISTRICT
TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: -- APPLY 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.).

SEEDING: -- FOR PERIODS MARCH 1 -- APRIL 30 AND FROM AUGUST 15 -- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 IBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 -- AUGUST 14, SEED WITH 3 IBS/ACRE OF WEEPING LOVEGRASS (.07 IBS/1000 SQ. FT.). FO~ THE PERIOD NOVEMBER 16 -- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: -- APPLY L-1/2 TO 2 TONS/ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1994 MAR4AND STANDARDS AND SPECIFICATIONS FOR SOL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1. PREFERRED -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 IBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 IBS/1000 SQ. FT.)
2. ACCEPTABLE -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 1000 IBS/ACRE 10-10-10 FERTILIZER (23 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 -- APRIL 30, AND AUGUST 1 -- OCTOBER 15, SEED WITH 60 IBS/ACRE (1.4 IBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 -- JULY 31, SEED WITH 60 IBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 IBS/ACRE (.05 IBS/100() SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY:
  OPTION 1 - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
  OPTION 2 -USE SOD.
  OPTION 3 - SEER: WITH 60 IBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.
Purpose
To promote the establishment of vegetation on exposed soil.
Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.
Effects on Water Quality and Quantity
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.
Adequate Vegetative Establishment
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.
Purpose
To provide timely vegetative cover on cut and fill slopes as work progresses.
Conditions Where Practice Applies
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.
Criteria
A. Incremental Stabilization - Cut Slopes
  1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
  2. Construction sequence example (Refer to Figure B.1)
    a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
    b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
    c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
    d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

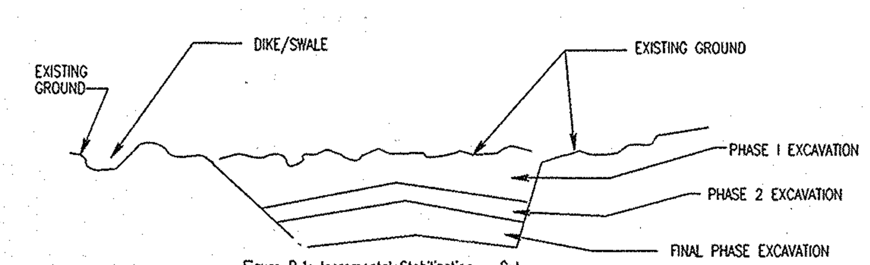


Figure B.1: Incremental Stabilization - Cut

B. Incremental Stabilization - Fill Slopes
  1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
  2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
  3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
  4. Construction sequence example (Refer to Figure B.2):
    a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
    b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
    c. Place Phase 1 fill, prepare seedbed, and stabilize.
    d. Place Phase 2 fill, prepare seedbed, and stabilize.
    e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded area as necessary.

Note: Once the placement of fill has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

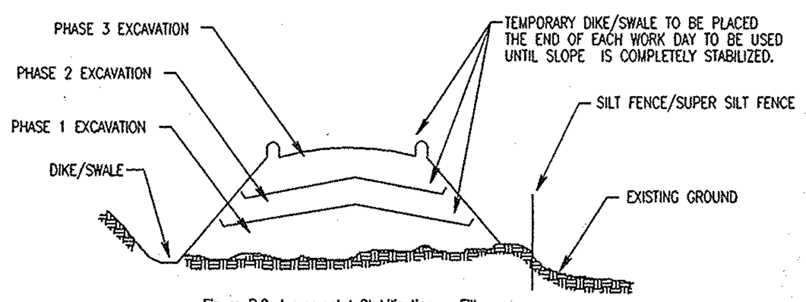


Figure B.2: Incremental Stabilization - Fill

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.
Purpose
To provide a suitable soil medium for vegetative growth.
Conditions Where Practice Applies
Where vegetative stabilization is to be established.
Criteria
A. Soil Preparation
  1. Temporary Stabilization.
    a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
    b. Apply fertilizer and lime as prescribed on the plans.
    c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
  2. Permanent Stabilization
    a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      a.a. Soil pH between 6.0 and 7.0.
      a.b. Soluble salts less than 500 parts per million (ppm).
      a.c. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      a.d. Soil contains 1.5 percent minimum organic matter by weight.
      a.e. Soil contains sufficient pore space to permit adequate root penetration.
    b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
    c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
    d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
    e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
  1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
  2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
  3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
    a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
    b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
    c. The original soil to be vegetated contains material toxic to plant growth.
    d. The soil is so acidic that treatment with limestone is not feasible.
  4. Areas having slopes steeper than 2:1 require special consideration and design.
  5. Topsoil specifications: Soil to be used as topsoil must meet the following criteria:
    a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
    b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
    c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
  6. Topsoil Application
    a. Erosion and sediment control practices must be maintained when applying topsoil.
    b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets
    c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
  1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pas through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
  3. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
  4. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition
The application of seed and mulch to establish vegetative cover.
Purpose
To protect disturbed soils from erosion during and at the end of construction.
Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.
Criteria
A. Seeding
  1. Specifications
    a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
    b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
    c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
    d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
  2. Application
    a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a.a. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      a.b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
    b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      b.a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least ¼ inch of soil covering. Seedbed must be firm after planting.
      b.b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
    c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      c.a. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorous), 200 pounds per acre; K20 (potassium), 200 pounds per acre.
      c.b. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      c.c. Mix seed and fertilizer on site and seed immediately and without interruption.
      c.d. When hydroseeding do not incorporate seed into the soil.

B. Mulching
  1. Mulch Materials (in order of preference)
    a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where on species of grass is desired.
    b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b.a. WSFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      b.b. WSFM, including dye, must contain no germination or growth inhibiting factors.
      b.c. WSFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absoption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      b.d. WSFM material must not contain elements or compounds at concentration leveles that will be phyto-toxic.
      b.e. WSFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
  2. Application
    a. Apply mulch to all seeded areas immediately after seeding.
    b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
    c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  3. Anchoring
    a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
      a.a. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
      a.b. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mis the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      a.c. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heaver at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
      a.d. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.
Purpose
To use fast growing vegetation that provides cover on disturbed soils.
Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.
Criteria
1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. if this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1):					Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
	Annual Ryegrass	40	3/1-5/15 8/1-10/15	½"	436 lb/ac (10lb/1000sf)	2 tons/ac (90 lb/1000sf)
	Foxtail Millet	30	5/16-7/31	½"		

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition
To stabilize disturbed soils with permanent vegetation.
Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.
Criteria
A. Seed Mixtures
  1. General Use
    a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be place don the plan.
    b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
    c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
    d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
  2. Turfgrass Mixtures
    a. Areas where turfgrass may be desired include lawns, parks, playground, and commercial sites which will receive a medium to high level of maintenance.
    b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be place don the plan.
      b.a. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      b.b. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 sqaure feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      b.c. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiveing low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescure Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      b.d. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.

      Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

      Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
    c. Ideal Times of Seeding for Turf Grass Mixtures
      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
    d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
    e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1): 11				Fertilizer Rate (10-20-20)			Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
Creeping Red Fescue	30	3/1-10/15	¼"-½"	45 lb/ac (1.0lb/1000sf)	90 lb/ac (2lb/1000sf)	90 lb/ac (2lb/1000sf)	2 tons/ac (90 lb/1000sf)
Chewings Fescue	30	3/1-10/15	¼"-½"				
Kentucky Bluegrass	15	3/1-10/15	¼"-½"				

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

[signature] 2/12/14
SIGNATURE OF ENGINEER Anthony U. Olsen DATE
(PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

[signature] 3/12/14
SIGNATURE OF DEVELOPER DATE
(PRINT NAME BELOW SIGNATURE)

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

BNifran for Maura Rossman 4/28/2014
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Edmonds 3.11.14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[signature] 5.06.14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[signature] 5/6/14
DIRECTOR DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 4/15/14
HOWARD SOIL CONSERVATION DISTRICT DATE

FILENAME: N:\42038-001\CADD\42038001C501.DWG

REVISIONS		
	PARKING LOT EXPANSION	08/07/13

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2015

BLANDAIR REGIONAL PARK - PHASE 1

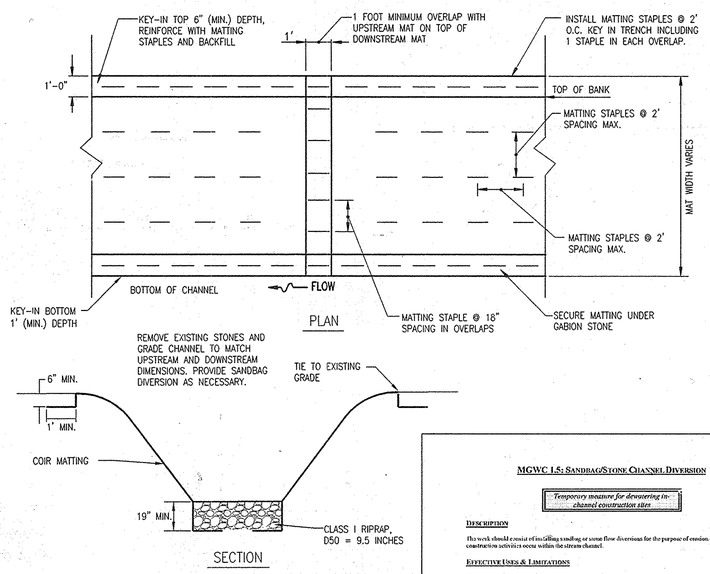
EROSION AND SEDIMENT CONTROL - NOTES

Drawing No.

C5.1

Scale: NONE		
Date: 11/16/2012	Sheet 31 of 65	
Des: RBC	Drawn: CJK	Check: AUO

SDP-10-007



A C5.2 STREAM RESTORATION DETAIL
NO SCALE

MGWC 1.4: Diversion Pipe

Temporary measure for dewatering in-channel construction sites

Description

This work should consist of installing *low diversion* pipes in combination with sandbag or stone diversions when construction activities occur within the stream channel.

Effective Uses & Limitations

Diversion pipes with an insufficient flow capacity can cause the channel diversion to fail thereby resulting in severe erosion of the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low flow.

Material Specifications

Materials for stream diversions should meet the following requirements:

- *Riprap:* Stone should be washed and have a minimum diameter of 6 inches (15 centimeters).
- *Sandbags:* Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
- *Sheeting:* Sheeting should consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

Installation Guidelines

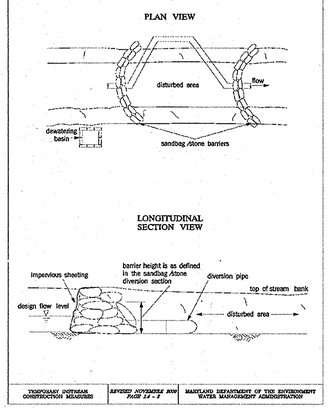
All erosion and sediment control devices, including dewatering basins, should be installed as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during low flow conditions. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Diversion pipes with sandbag or stone barriers should be completed as follows (refer to Detail 1.4).

1. Sandbag/stone barriers should be sized and installed as detailed in MGWC 1.5: Sandbag/Stone Diversion. The materials should be sized to withstand baseflow velocities.
2. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
3. Sediment-laden water from the construction area should be pumped to a dewatering basin.
4. The diversion pipe should have a minimum capacity sufficient to convey the 2-year flow for projects with a duration of two weeks or greater. For projects of shorter duration, the capacity of the pipe can be reduced accordingly.
5. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.
6. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal.

Temporary Instream Construction Measures — *Maryland Department of the Environment Waterway Construction Guidelines* — *Revised November 2000* — *Page 1.4 - 1*

Maryland's Guidelines To Waterway Construction
DETAIL 1.4: DIVERSION PIPE



Temporary Instream Construction Measures | Revised November 2000 Page 1.4 - 2 | Maryland Department of the Environment Water Management Administration

MGWC 1.5: Sandbag/Stone Channel Diversion

Temporary measure for dewatering in-channel construction sites

Description

This work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

Effective Uses & Limitations

Diversions are used to isolate work areas from flow due to the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

Material Specifications

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap:* Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- *Sandbags:* Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- *Sheeting:* Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

Installation Guidelines

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the measured bank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.

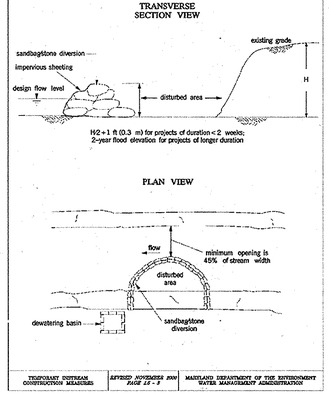
Temporary Instream Construction Measures — *Maryland Department of the Environment Waterway Construction Guidelines* — *Revised November 2000* — *Page 1.5 - 1*

MGWC 1.5: Sandbag/Stone Channel Diversion

5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the unobstructed section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

Temporary Instream Construction Measures — *Maryland Department of the Environment Waterway Construction Guidelines* — *Revised November 2000* — *Page 1.5 - 2*

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION



Temporary Instream Construction Measures | Revised November 2000 Page 1.5 - 3 | Maryland Department of the Environment Water Management Administration

MGWC 4.2: Utility Crossing

Temporary in-stream construction

Description

This work should consist of installing erosion control devices in and adjacent to the construction of utility crossings.

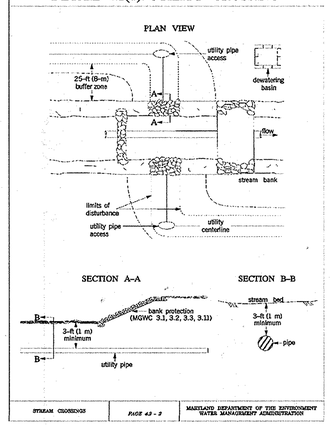
Installation Guidelines

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. (See the *1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control*). The proposed construction sequence is as follows (refer to Detail 4.2):

1. The contractor should install a continuous perimeter control barrier in place to minimize the amount of pollutants entering the flow. A diversion pipe as shown in MGWC 1.4: Diversion Pipe or other measures should be installed and sandbag or stone barriers as shown in MGWC 1.5: Sandbag/Stone Diversion should be constructed according to specifications to divert the streamflow.
2. Excavated topsoil and subsoil should be kept separate - placed on the upland side of the excavation, and replaced in their natural order.
3. All construction should take place during stream low flows. The length of construction time should be limited to a maximum of 5 consecutive days for each crossing.
4. All utility crossings should be placed a minimum of 3 feet (1 meter) beneath the stream bed unless an alternative section is specifically approved by the WMA. For instances where a 3-foot cover is not viable, two alternate stabilization options are given in the Detail 4.2. A low flow channel shall be constructed through all riprap placements across the stream bed.
5. The stream should be diverted by an approved temporary stream diversion, the construction area should be dewatered, and any disturbed banks should be stabilized. The contractor may elect to construct the utility crossing in two ways. In this case, a WMA approved flow barrier may be constructed to keep the construction area dry.
6. Once the crossing is completed, the diversion should be removed from upstream to downstream. Sediment control devices, including perimeter erosion controls, are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspection authority approves the removal.

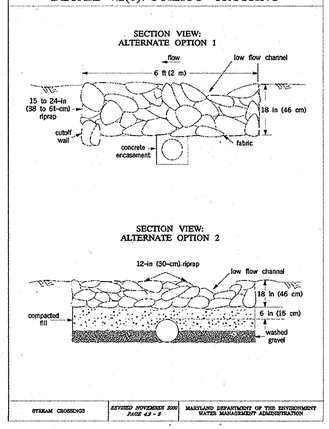
Stream Crossings — *Maryland Department of the Environment Waterway Construction Guidelines* — *Revised November 2000* — *Page 4.2 - 1*

Maryland's Guidelines To Waterway Construction
DETAIL 4.2(a): UTILITY CROSSING



Stream Crossings | Page 4.2 - 2 | Maryland Department of the Environment Water Management Administration

Maryland's Guidelines To Waterway Construction
DETAIL 4.2(b): UTILITY CROSSING



Stream Crossings | Revised November 2000 Page 4.2 - 3 | Maryland Department of the Environment Water Management Administration

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER Anthony U. Olsen — DATE 2/12/14
(PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 3/12/14
(PRINT NAME BELOW SIGNATURE)

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 4/28/2014
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3·11·14
N.Y.
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/16/14
DIRECTOR — DATE 5/6/14

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/15/14

REVISIONS		
	PARKING LOT EXPANSION	08/07/13

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2015

BLANDAIR REGIONAL PARK - PHASE 1

EROSION AND SEDIMENT CONTROL NOTES/DETAILS

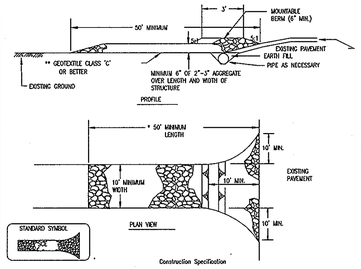
Drawing No.

C5.2

Scale: NONE		
Date: 11/16/2012	Sheet 32 of 65	
Des: RBC	Drawn: CJK	Check: AUO

SDP-10-007

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).

2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

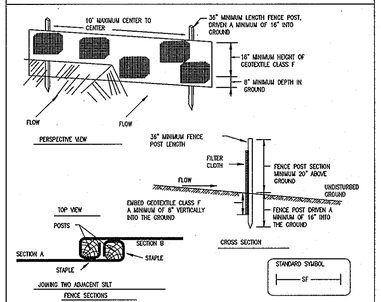
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 17 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1½" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

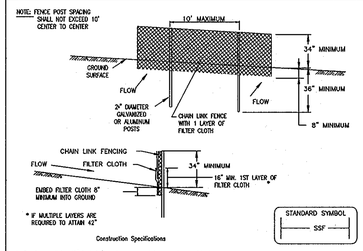
SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 – 10%	0 – 10:1	Unlimited	Unlimited
10 – 20%	10:1 – 5:1	200 feet	1,500 feet
20 – 33%	5:1 – 3:1	100 feet	1,000 feet
33 – 50%	3:1 – 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H – 26 – 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

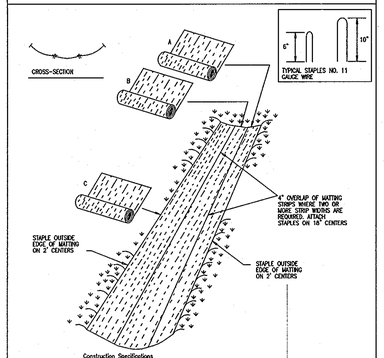
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H – 26 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 – EROSION CONTROL MATTING



Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using on 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

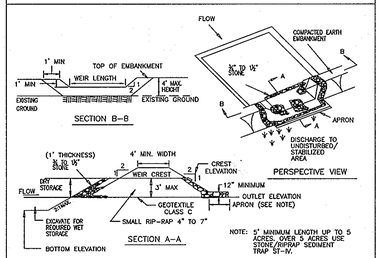
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4', staggered fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area affected by the flow must be keyed-in.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G – 22 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 9 – STONE OUTLET SEDIMENT TRAP – ST II



Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of ¾" to 1½" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STONE OUTLET SEDIMENT TRAP – ST II

6. The structure shall be inspected periodically and after each rain and repairs made as needed.

7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.

8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

9. Refer to Section D for specifications concerning trap dewatering.

10. Minimum trap depth shall be measured from the weir elevation.

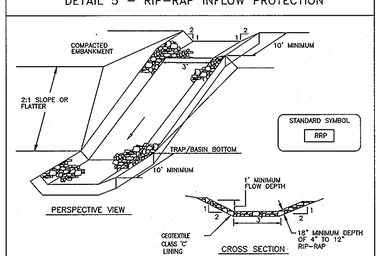
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.

12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.

13. Outlet – An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 10A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 5 – RIP-RAP INFLOW PROTECTION



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

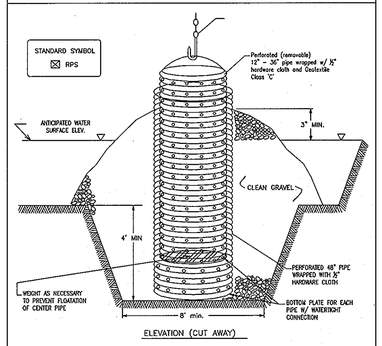
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 6 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A – REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with ½" hardware cloth to prevent backfill material from entering the perforations.

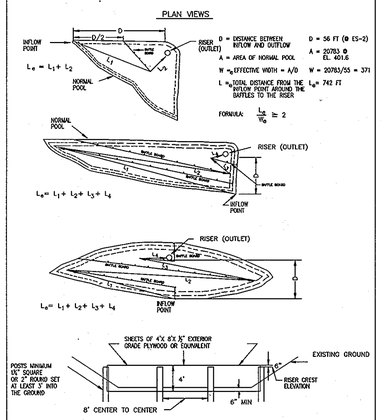
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be ½" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with ½" hardware cloth first, then wrapped again with Geotextile Class E.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

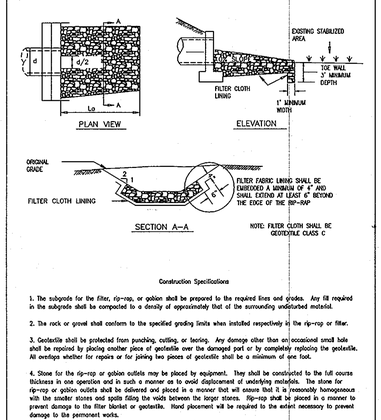
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D – 12 – 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 2B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 – ROCK OUTLET PROTECTION III



Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

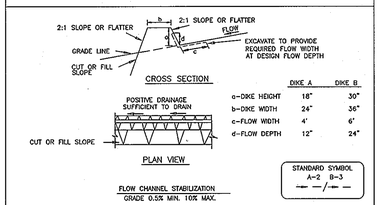
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 18 – 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

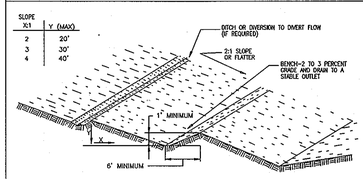
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A – 1 – 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 28 – BENCHED SLOPES

SLOPE X:1	Y (MAX)
2	20'
3	30'
4	40'



Construction Specifications

1. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.

2. All fill shall be placed and compacted in layers not to exceed 8" in thickness.

3. Except for approved landfills or nonstructural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fills.

4. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills. Fill shall not be placed on a frozen foundation.

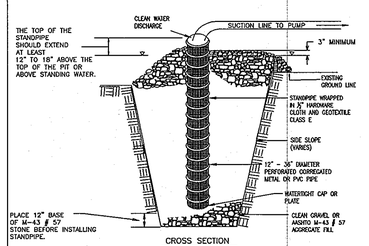
5. All benches shall be kept free of sediment during all phases of development.

6. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain or other approved methods.

7. All graded areas shall be permanently stabilized immediately following finished grading.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 19 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20B – SUMP PIT



Construction Specifications

1. Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter.

2. The standpipe should be constructed by perforating a 12" to 24" diameter corrugated or PVC pipe. Then wrapping with ½" hardware cloth and Geotextile Class E. The perforations shall be ½" x 6" slits or 1" diameter holes.

3. A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe should then be backfilled with the same filter material.

4. The standpipe should extend 12" to 18" above the lip of the pit or the riser crest elevation (basin dewatering only) and the filter material should extend 3" minimum above the anticipated standing water elevation.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D – 13 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE 3/8/10

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER Anthony W. Olsen DATE 2/19/10
(PRINT NAME BELOW SIGNATURE)

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 4/08/10
DIRECTOR DATE 4/8/10

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER Ronald G. Lapson DATE 2/22/10
(PRINT NAME BELOW SIGNATURE)

REVISIONS		

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

EROSION AND SEDIMENT CONTROL – DETAILS

Drawing No.

C5.3

Scale: NONE		
Date: 02/19/10	Sheet 33 of 51	
Des: RBC	Drawn: CJK	Check: AUO

SDP-10-007

PLOT DATE: 2/19/2010 9:51:45 AM PAGE SETUP: SETS (24X36) PLOT STYLE: VRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)

E2CR, Inc. — BORING LOG — BP-1

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-1 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 433.692' | Coordinates: N562311.7268 E1358324.6165 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 14.2' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
433.7	Tan, Brown, Silty CLAY, Moist, trace Sand (CL)	S-1	18"	3-3-4	DS	10"	5" Top soil
		S-2	18"	4-4-5	DS	18"	
427.7	Tan, Brown, SILT, trace Sand, Micaceous (ML)	S-3	18"	4-5-5	DS	18"	
		S-4	18"	5-7-8	DS	18"	
		S-5	18"	6-8-9	DS	18"	
416.2	Gray, Brown, White, SILT, little Sand, Micaceous (ML)	S-6	18"	8-12-15	DS	18"	
413.7	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — BP-2

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-2 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 430.555' | Coordinates: N562320.3996 E1358599.8710 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 14.1' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
430.6	Tan, Red, Sandy CLAY (CH)	S-1	18"	3-6-7	DS	14"	5" Top soil
427.6	Tan, Brown, Red, Moist, Sandy SILT, trace to Little Clay (ML)	S-2	18"	7-9-10	DS	18"	
422.6	Gray, Brown, White, Moist, Sandy SILT (ML)	S-3	18"	5-6-7	DS	18"	
		S-4	18"	8-12-14	DS	14"	
419.1	Orange, Gray, Brown, Moist, Sandy SILT (ML)	S-5	18"	7-8-11	DS	18"	
		S-6	18"	31-34-39	DS	18"	
410.6	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — BP-3

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-3 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 426.321' | Coordinates: N562534.0214 E1358269.4645 | Depth Water Enc.: Dry | Caved Depth: 14.0' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
426.3	Tan, Brown, Moist, Silty CLAY, trace Sand (CL)	S-1	18"	2-5-4	DS	4"	5" Top soil
423.3	Brown, Clayey SILT, trace to Little Sand, Micaceous (ML)	S-2	18"	8-6-6	DS	6"	
420.8	Orange, Light Brown, White, Moist, Sandy SILT, Micaceous (Residual) (ML)	S-3	18"	6-5-7	DS	18"	
		S-4	18"	7-10-10	DS	18"	
		S-5	18"	5-7-7	DS	14"	
		S-6	17"	27-21-50/5"	DS	14"	DECOMPOSED ROCK
406.3	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — BP-4

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-4 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 412.455' | Coordinates: N562709.1590 E1358484.9389 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 12.3' | Depth of Boring: 16.5 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
412.5	Brown, Moist, Silty CLAY, trace Sand, Micaceous (CL)	S-1	18"	2-2-3	DS	12"	5" Top soil
		S-2	18"	6-5-5	DS	18"	
407.0	Brown, Gray, Moist, Silty SAND, Micaceous (SM)	S-3	18"	10-9-10	DS	15"	
		S-4	12"	41-43-50/0"	DS	12"	DECOMPOSED ROCK
		S-5	4"	50/4"	DS	4"	DECOMPOSED ROCK Auger Refusal @ 17.0'
396.0	Bottom of boring at 17.0 foot						

E2CR, Inc. — BORING LOG — BP-5

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-5 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 407.382' | Coordinates: N562839.1252 E1358193.2253 | Depth Water Enc.: Dry | Caved Depth: 5.0' | Depth of Boring: 8 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
407.4	Dark Brown, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-1	18"	2-3-3	DS	14"	5" Top soil
404.4	Brown, Orange, Moist, Sandy SILT, Micaceous (ML)	S-2	18"	5-3-4	DS	14"	
401.9	Gray, Moist, Sandy SILT, weathered Rock, Micaceous, DECOMPOSED ROCK (ML)	S-3	18"	3-22-29	DS	14"	Auger Refusal @ 8.0'
399.4	Bottom of boring at 8.0 foot						

E2CR, Inc. — BORING LOG — BP-5A

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-5A | Begun: 4-9-09 | Completed: 4-9-09 | Depth Water Enc.: None | At End Drill: Dry | Caved Depth: 8.0' | Depth of Boring: 8.5 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Remarks
0.0	Blank Auger	Auger Refusal @ 6.5'
-8.5	Bottom of boring @ 8.5	

E2CR, Inc. — BORING LOG — BP-6

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-6 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 409.001' | Coordinates: N562974.5389 E1358515.4014 | Depth Water Enc.: Dry | Caved Depth: 5.5' | Depth of Boring: 8 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
409.0	Tan, Brown, Moist, Sandy CLAY, Micaceous (CL)	S-1	18"	2-2-2	DS	12"	6" Top soil
406.5	Dark Gray, Brown, Moist, Sandy SILT, Micaceous (ML)	S-2	18"	5-35-38	DS	18"	DECOMPOSED ROCK
		S-3	18"	31-24-28	DS	12"	Auger Refusal @ 8'
401.0	Bottom of boring at 8.0 foot						

E2CR, Inc. — BORING LOG — BP-6A

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-6A | Begun: 4-9-09 | Completed: 4-9-09 | Depth Water Enc.: None | At End Drill: Dry | Caved Depth: 7.5' | Depth of Boring: 8.5 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Remarks
0.0	Blank Auger	Auger Refusal @ 6.5
-8.5	Bottom of boring at 8.5 feet	

E2CR, Inc. — BORING LOG — BP-7

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-7 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 413.317' | Coordinates: N562602.6078 E1358760.0593 | Depth Water Enc.: Dry | At End Drill: Dry | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
413.3	Tan, Brown, Gray, Moist, Sandy SILT, trace to little Clay, Micaceous (ML)	S-1	18"	3-5-6	DS	16"	
		S-2	18"	3-5-7	DS	18"	
		S-3	18"	4-4-6	DS	18"	
405.3	Gray, Brown, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-4	18"	5-8-7	DS	18"	
		S-5	18"	4-5-8	DS	18"	
396.8	Tan, Brown, Gray, Moist, Sandy SILT, Little Clay, Micaceous (ML)	S-6	18"	7-8-8	DS	18"	
393.3	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — BP-8

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-8 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 424.687' | Coordinates: N562336.8808 E1358736.1558 | Depth Water Enc.: Dry | Caved Depth: 14.0' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
424.7	Tan, Brown, Moist, Sandy SILT, trace to little Clay (ML)	S-1	18"	3-3-3	DS	12"	5" Top soil
421.7	Tan, Moist, Clayey SILT, trace to little Sand (SM)	S-2	18"	4-8-8	DS	15"	
419.2	Tan, Orange, Black, Moist, Sandy SILT, trace Clay, Micaceous (SM)	S-3	18"	4-6-7	DS	18"	
		S-4	18"	7-9-13	DS	14"	
413.2	Orange, Brown, White, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-5	18"	12-9-10	DS	16"	
		S-6	18"	10-12-11	DS	15"	
404.7	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — BP-9

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-9 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 413.493' | Coordinates: N562457.7690 E1358937.1229 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 6.4' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
413.5	Tan, Brown, Moist, Sandy CLAY (CL)	S-1	18"	3-4-4	DS	10"	5" Top soil
		S-2	18"	7-9-7	DS	2"	
408.5	White, Orange Brown, Moist, Sandy SILT, trace Clay, Weathered Rock, (Residual) (ML)	S-3	18"	4-4-5	DS	18"	
405.0	White, Light Brown, Sandy SILT (ML)	S-4	18"	6-8-7	DS	18"	
403.5	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-10

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-10 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 416.312' | Coordinates: N562365.0215 E1359049.4156 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 6.4' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
416.3	Tan, Brown, Moist, Silty CLAY Little Sand (CL)	S-1	18"	2-7-9	DS	12"	5" Top soil
413.3	Tan, Brown, White, Moist, Clayey SILT, Little to trace Sand, Micaceous (ML)	S-2	18"	4-5-5	DS	18"	
		S-3	18"	4-4-5	DS	18"	
408.3	Orange, Tan, Black, Moist, Clayey SILT, Little to trace Sand, Micaceous (ML)	S-4	18"	4-5-9	DS	18"	
406.3	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-11

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-11 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 421.289' | Coordinates: N562285.8737 E1358905.5227 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 5.8' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
421.3 / 420.3	Tan, Brown, Moist, Sandy CLAY (SM)	S-1	18"	3-4-6	DS	12"	5" Top soil
418.3	Tan, Brown, Moist, Sandy SILT, trace Clay, Micaceous (MH)	S-2	18"	4-6-7	DS	18"	
415.8	Light Brown, Moist, Sandy SILT (ML)	S-3	18"	4-5-6	DS	18"	
		S-4	18"	3-3-4	DS	16"	
411.3	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-12

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-12 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 423.541' | Coordinates: N562139.7682 E1358830.7758 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 6.1' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
423.5	Tan, Moist, Silty CLAY, Little Sand (CL)	S-1	18"	1-4-5	DS	12"	5" Top soil
420.5	Tan, Moist, Clayey SILT, trace Sand (ML)	S-2	18"	4-5-8	DS	18"	
418.0	Tan, Brown, Black, Moist, Sandy SILT, trace Clay (ML)	S-3	18"	5-4-6	DS	18"	
		S-4	18"	6-7-7	DS	16"	
413.5	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-13

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-13 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 422.476' | Coordinates: N562222.8588 E1359034.8312 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 5.10' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
422.5	Tan, Brown, Moist, Silty CLAY, trace Sand (CL)	S-1	18"	2-3-3	DS	16"	5" Top soil
419.5	Tan, Brown, Moist, Clayey SILT, trace Sand (ML)	S-2	18"	3-4-6	DS	18"	
		S-3	18"	4-6-7	DS	15"	
		S-4	18"	3-4-6	DS	18"	
412.5	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-14

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-14 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 420.024' | Coordinates: N562048.0509 E1359021.0532 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 5.4' | Depth of Boring: 10 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
420.0	Tan, Brown, Moist, Silty CLAY, Little to trace Sand (CL)	S-1	18"	2-5-5	DS	14"	5" Top soil
417.0	Tan, Brown, Moist, Clayey SILT, trace Sand (ML)	S-2	18"	7-10-15	DS	18"	
414.5	Tan, Brown, Moist, Sandy SILT, trace Clay (ML)	S-3	18"	5-7-8	DS	15"	
		S-4	18"	4-4-7	DS	18"	
410.0	Bottom of boring at 10.0 foot						

E2CR, Inc. — BORING LOG — BP-15

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-15 | Begun: 3-30-09 | Completed: 3-30-09 | Ground Elevation: 400.969' | Coordinates: N562826.0782 E1358808.9620 | Depth Water Enc.: 14.0' | At End Drill: 9.8' | Caved Depth: 11.2' | Depth of Boring: 15 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
401.0	Brown, Moist, Sandy CLAY (CL)	S-1	18"	2-3-3	DS	15"	5" Top soil
397.5	Gray, Brown, Moist, Sandy SILT, trace, trace Clay (ML)	S-2	18"	6-7-6	DS	18"	
395.5	Gray, Brown, Moist, Sandy SILT (ML)	S-3	18"	3-2-3	DS	18"	
		S-4	18"	2-4-5	DS	18"	
389.5	Gray, Moist, Sandy SILT, trace Clay (ML)	S-5	18"	13-27-37	DS	16"	DECOMPOSED ROCK
386.0	Bottom of boring at 15.0 foot						

E2CR, Inc. — BORING LOG — BP-16

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-16 | Begun: 4-1-09 | Completed: 4-1-09 | Ground Elevation: 393.445' | Coordinates: N563198.0840 E1358831.9505 | Depth Water Enc.: 13.0' | At End Drill: 9.1' | Caved Depth: 11.0' | Depth of Boring: 14 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
393.4	Brown, Moist, Clayey SILT, Little Sand, Micaceous (ML)	S-1	18"	2-6-9	DS	14"	5" Top soil
388.9	Tan, Brown, Moist, Silty SAND (SM)	S-2	18"	18-11-9	DS	12"	
387.9	White, Light Brown, Moist, Silty SAND, trace Clay, (SM)	S-3	18"	9-14-14	DS	18"	
		S-4	18"	11-12-21	DS	16"	
		S-5	6"	50/6"	DS	6"	DECOMPOSED ROCK
379.4	Bottom of boring at 14.0 foot						

E2CR, Inc. — BORING LOG — BP-17

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-17 | Begun: 4-1-09 | Completed: 4-1-09 | Ground Elevation: 390.067' | Coordinates: N563243.7704 E1358637.2677 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 11.0' | Depth of Boring: 15 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
390.1	Brown, Gray, Moist, Clayey SILT, trace Sand (ML)	S-1	18"	4-7-20	DS	14"	5" Top soil
387.1	Orange, Brown, Moist, Silty SAND, trace Clay, Micaceous (SM)	S-2	18"	16-10-9	DS	18"	
		S-3	18"	14-15-13	DS	18"	
382.1	Dark Brown, Moist, Clayey SILT trace Sand, Micaceous (ML)	S-4	18"	5-10-12	DS	14"	
		S-5	18"	11-19-18	DS	18"	
375.1	Bottom of boring at 15.0 foot						

E2CR, Inc. — BORING LOG — BP-18

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-18 | Begun: 4-1-09 | Completed: 4-1-09 | Ground Elevation: 385.738' | Coordinates: N563460.7522 E1358401.9104 | Depth Water Enc.: 5.6' | At End Drill: 6.0' | Caved Depth: 8.0' | Depth of Boring: 12 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
385.7	Gray, Brown, Moist, Clayey SILT, trace Sand (ML)	S-1	18"	4-5-6	DS	14"	
382.7	Brown, Moist, SAND and GRAVEL, Little Silt, Micaceous (SP)	S-2	18"	14-15-11	DS	18"	
380.2	Dark, Grey, Moist, SILT, trace Sand, trace Clay, Micaceous (ML)	S-3	18"	8-8-9	DS	18"	
377.7	Orange, Gray, White Silty SAND, (crushed rock) (SM)	S-4	18"	12-29-35	DS	14"	DECOMPOSED ROCK Auger Refusal @ 12.0
373.7	Bottom of boring at 12.0 foot						

E2CR, Inc. — BORING LOG — BP-19

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-19 | Begun: 4-2-09 | Completed: 4-2-09 | Ground Elevation: 378.999' | Coordinates: N563667.4896 E1358107.6653 | Depth Water Enc.: NONE | At End Drill: 11.3' | Caved Depth: 11.4' | Depth of Boring: 14 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
379.0	Brown, Moist, Silty CLAY, Little Sand, Micaceous (CL)	S-1	18"	2-3-5	DS	12"	5" Top soil
375.6	White, Tan, Moist, Clayey SAND, trace Silt, Micaceous (SC)	S-2	18"	2-7-9	DS	18"	
373.5	White, Light Brown, Moist, Silty SAND, trace Clay, Micaceous (SM)	S-3	18"	9-14-13	DS	12"	
371.0	Dark Grey, Orange, Moist, Sandy SILT, Micaceous (ML)	S-4	18"	6-9-11	DS	18"	
		S-5	6"	50/6"	DS	6"	
365.0	Bottom of boring at 14.0 foot						

E2CR, Inc. — BORING LOG — BP-20

Project: Blandair Park | Project No.: 09512-03 | Boring No.: BP-20 | Begun: 4-2-09 | Completed: 4-2-09 | Ground Elevation: 382.951' | Coordinates: N563844.2165 E1357853.4306 | Depth Water Enc.: Dry | At End Drill: Dry | Caved Depth: 9.5' | Depth of Boring: 15 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
383.0	Brown, Moist, Silty CLAY, Little Sand, Micaceous (CL)	S-1	18"	4-6-5	DS	14"	5" Top soil
380.0	Gray, Brown, Tan, SILT, trace Sand Micaceous (ML)	S-2	18"	4-6-7	DS	18"	
		S-3	18"	7-7-9	DS	8"	
375.0	Reddish Brown, Tan, Moist, SILT, Micaceous (ML)	S-4	18"	6-6-9	DS	18"	
371.5	Tan, Brown, SILT, Micaceous (ML)	S-5	18"	8-9-11	DS	18"	
368.0	Bottom of boring at 15.0 foot						

E2CR, Inc. — BORING LOG — SWM-4

Project: Blandair Park | Project No.: 09512-03 | Boring No.: SWM-4 | Begun: 4-1-09 | Completed: 4-1-09 | Ground Elevation: 396.341' | Coordinates: N562953.9181 E1358825.0507 | Depth Water Enc.: 8.4' | At End Drill: Dry | Caved Depth: 14.7' | Depth of Boring: 18.1 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
396.3	Brown, Moist, Silty Clay, trace Sand (CL)	S-1	24"	1-2-5-3	DS	12"	4" Top soil
394.3	Gray, Brown, Moist, Clayey SILT (ML)	S-2	24"	5-8-11-12	DS	21"	
392.3	Brown, Tan, Moist, Silty SAND, Micaceous (SM)	S-3	24"	6-8-9-9	DS	22"	
390.3	Gray, Orange, Brown, Moist, Silty SAND, Micaceous (SM)	S-4	24"	9-10-9-8	DS	16"	
388.3	Gray, Orange, White, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-5	24"	6-5-7-8	DS	20"	
386.3	Gray, Orange, White, Moist, SILT, trace Sand, Micaceous (ML)	S-6	24"	4-5-8-15	DS	14"	
		S-7	24"	16-21-18-22	DS	20"	
382.3	Light Gray, White, Orange, Moist, Silty SAND, Micaceous (SM)	S-8	24"	20-22-32-38	DS	18"	DECOMPOSED ROCK
380.3	Gray, White, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-9	17"	28-32-50/5"	DS	17"	
		S-10	1"	50/1"	DS	1"	
378.2	Bottom of boring at 18.1 foot						

E2CR, Inc. — BORING LOG — SWM-5

Project: Blandair Park | Project No.: 09512-03 | Boring No.: SWM-5 | Begun: 3-31-09 | Completed: 3-31-09 | Ground Elevation: 397.557' | Coordinates: N562969.0258 E1358959.7306 | Depth Water Enc.: 14.0' | At End Drill: 9.5' | At 24 Hrs: 3.0' | Caved Depth: 8.3' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
397.8	Orange, Brown, Gray, Moist, Sandy SILT, trace Clay, Micaceous (ML)	S-1	24"	3-6-5-9	DS	17"	4" Top soil
		S-2	24"	10-12-10-7	DS	19"	
393.6	Light Gray, Orange, White, Clayey Silty SAND, Micaceous (SC-SM)	S-3	24"	3-4-4-4	DS	19"	
		S-4	24"	8-5-5-6	DS	22"	
		S-5	24"	4-5-5-7	DS	23"	
		S-6	24"	4-6-5-7	DS	16"	
		S-7	24"	7-8-8-10	DS	12"	
383.6	Gray, Brown, White, Moist, Silty SAND, Micaceous (SM)	S-8	24"	4-5-6-7	DS	21"	
		S-9	24"	5-5-6-8	DS	16"	
379.6	Orange, Tan, Brown, Moist, Silty SAND, Fine Gravel, trace Clay, Micaceous (SM)	S-10	24"	3-5-6-8	DS	14"	
377.6	Bottom of boring at 20.0 foot						

E2CR, Inc. — BORING LOG — SWM-6

Project: Blandair Park | Project No.: 09512-03 | Boring No.: SWM-6 | Begun: 4-1-09 | Completed: 4-1-09 | Ground Elevation: 398.587' | Coordinates: N562859.4612 E1358865.9041 | Depth Water Enc.: 10.0' | At End Drill: 10.2' | At 24 Hrs: 5.6' | Caved Depth: 9.5' | Depth of Boring: 20 | Driller: S. Lyons | Logged By: K. Habib | Page No.: 1 of 1

Strata Elev./Depth	Description	Sample No.	Sample Length	N-Value/RQD (%)	Sample Type and Diameter	Sample Recovery	Remarks
398.6	Dark Brown, Moist, Sandy CLAY (CL)	S-1	24"	2-3-2-4	DS	17"	Top soil 6"
396.6	Brown, Moist, Silty CLAY, Little Sand (CL)	S-2	24"	5-6-7-9	DS	18"	
394.6	Brown, Moist, Silty SAND, trace Clay (SM)	S-3	24"	10-8-7-7	DS	20"	
		S-4	24"	9-8-9-8	DS	14"	
390.6	Brown, Gray, Orange, Moist, Silty SAND, trace Clay, Micaceous (SM)	S-5	24"	5-4-5-5	DS	24"	
		S-6	24"	3-4-5-6	DS	14"	
		S-7	24"	7-9-10-11	DS	14"	
		S-8	24"	6-7-9-11	DS	16"	
		S-9	24"	12-13-15-16	DS	14"	
		S-10	24"	6-7-6-9	DS	12"	
378.6	Bottom of boring at 20.0 foot						

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/9/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10

DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B Nyon for Peter Beilenson 3/31/2010

COUNTY HEALTH OFFICER — DATE
HOWARD COUNTY HEALTH DEPARTMENT

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 372

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

BORING LOGS

Drawing No. C5.4

Scale: NONE
Date: 02/19/10 | Sheet 34 of 51
Des: CYH | Drawn: CYH | Check: AUO

SDP-10-007

PLOT DATE: 2/19/2010 9:51:24 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)
FILENAME: N:\42038-001\CADD\42038001C504.DWG

POND 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. 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 TREAD 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 THE 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, ROLLERS, 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 PH 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, 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:

1. MATERIALS – REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. 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.

3. 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.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

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 AREAS FREE FROM WATER. 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- FORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

RISER STRUCTURAL NOTES

CONCRETE NOTES

1. REINFORCED CONCRETE SHALL BE DETAILED AND CONSTRUCTED IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE, (ACI 301) "SPECIFICATION FOR STRUCTURAL CONCRETE".
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615, DEFORMED, GRADE 60.
3. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL SUBMIT SHOP DETAILS OF REINFORCING STEEL BEFORE PROCEEDING WITH FABRICATION.
5. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI DETAILING MANUAL.
6. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF FOOTING, WHICH SHALL HAVE 3" MINIMUM COVER
7. CONCRETE SLAB AND WALLS SHALL BE POURED BETWEEN INDICATED JOINTS ALLOWING A MINIMUM PERIOD OF 3 DAYS TO ELAPSE BETWEEN ADJACENT POURS.
8. CONSTRUCTION JOINTS SHALL BE AS DETAILED ON THE DRAWINGS AND NO ADDITIONAL JOINTS SHALL BE USED NOR ANY OMITTED EXCEPT BY WRITTEN AUTHORIZATION OF THE ENGINEER. ENGINEER APPROVED ADDITIONAL CONSTRUCTION JOINTS SHALL NOT RESULT IN ADDITIONAL EXPENSE TO THE OWNER.
9. CONCRETE SHALL BE IN ACCORDANCE WITH MSHA STANDARD SPECIFICATIONS SECTION 420, AND SHALL BE 4000 PSI.
10. PVC PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH MSHA STANDARD SPECIFICATIONS SECTION 905. ALL EXPOSED PVC PIPE SHALL BE GRAY IN COLOR

DESIGN LOADS

1. DEAD LOADS – ACTUAL WEIGHT OF STRUCTURE. WEIGHT OF SOIL – 100 P.C.F. TO RESIST UPLIFT. 120 P.C.F. DEAD LOAD
2. ALL STRUCTURES DESIGNED TO RESIST UPLIFT WITH WATER LEVEL AT 100 YEAR ELEVATION, WITH FACTOR OF SAFETY OF 1.5.

FOUNDATION NOTES

1. ALL EXCAVATION SHALL BE KEPT DRY. STANDING WATER SHALL NOT BE ALLOWED IN EXCAVATIONS.
2. BEFORE PLACING ANY CONCRETE ON SUBGRADE, THE CONTRACTOR SHALL NOTIFY THE INSPECTOR.
3. FOOTINGS SUBGRADE SHALL CONSIST OF UNDISTURBED SOIL UNLESS SOFT UNSUITABLE MATERIAL IS ENCOUNTERED.
4. ALL SOFT AND UNSUITABLE SOIL BELOW FOOTINGS AND SLABS SHALL BE UNDERCUT AND REPLACED WITH CONTROLLED, COMPACTED FILL OF GRADED AGGREGATE BASE MATERIAL.
5. FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-99.

E2CR, Inc. BORING LOG

PROJECT	PROJECT NO.	BORING NO.	SITE	BEGUN	COMPLETED	HOLE SIZE	GROUND ELEVATION	COORDINATES	DEPTH WATER ENC.	AT END DRILL	AT 24 HRS	CAVED DEPTH	DRILLER	WEIGHT OF HAMMER	HEIGHT OF FALL	TYPE OF CORE	DEPTH OF BORING	TYPE OF DRILL RIG & METHOD	DEPTH TO ROCK	LOGGED BY:	PAGE NO.
Blandair Park	09512-03	SWM-1		4-2-09	4-2-09		403.677'	N563230.6775 E1358152.3157	Dry	Dry		14.7'	S. Lyons				18.1			K. Habib	1 of 1

DEPTH	STRATA ELE/ DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N-VALUE/ RQD (%)	SAMPLE TYPE AND DIAMETER	SAMPLE RECOVERY	REMARKS:
0	403.7 401.7	Brown, Moist, Sity SAND, trace clay (SM)	S-1	24"	1-2-5-8	DS	16"	
	399.7	Orange, Brown, Silty SAND, trace Clay (SM)	S-2	24"	6-8-12-14	DS	14"	
5		Gray, Brown, Sity SAND, trace Clay (SM)	S-3	24"	10-11-10-9	DS	24"	
			S-4	24"	11-13-19-22	DS	18"	
			S-5	24"	11-19-27-50	DS	16"	Decomposed Rock
10			S-6	12"	21-50/6"	DS	12"	
			S-7	4"	50/4"	DS	4"	
15			S-8	4"	50/4"	DS	4"	
			S-9	1"	50/1"	DS	1"	
	385.6	Bottom of boring at 18.1 feet	S-10	1"	50/1"	DS	1"	
20								
25								
30								
35								

E2CR, Inc. BORING LOG

PROJECT	PROJECT NO.	BORING NO.	SITE	BEGUN	COMPLETED	HOLE SIZE	GROUND ELEVATION	COORDINATES	DEPTH WATER ENC.	AT END DRILL	AT 24 HRS	CAVED DEPTH	DRILLER	WEIGHT OF HAMMER	HEIGHT OF FALL	TYPE OF CORE	DEPTH OF BORING	TYPE OF DRILL RIG & METHOD	DEPTH TO ROCK	LOGGED BY:	PAGE NO.
Blandair Park	09512-03	SWM-2		4-2-09	4-2-09		398.566'	N563126.9661 1358183.9872	15.0'	11.5'		13.5'	S. Lyons				18.2			K. Habib	1 of 1

DEPTH	STRATA ELE/ DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N-VALUE/ RQD (%)	SAMPLE TYPE AND DIAMETER	SAMPLE RECOVERY	REMARKS:
0	398.6 396.6	Brown, Moist, Clayey SAND, trace Silt (SC)	S-1	24"	1-2-4-6	DS	16"	6" Top soil
		Gray, Light Brown, Slity SAND, trace Clay (SM)	S-2	24"	8-12-14-16	DS	14"	
5			S-3	24"	7-5-5-10	DS	24"	
			S-4	24"	12-17-24-21	DS	15"	
			S-5	24"	14-12-16-25	DS	18"	
10			S-6	17"	19-21-50/5"	DS	15"	Decomposed Rock
			S-7	10"	23-50/4"	DS	10"	
15			S-8	9"	27-50/3"	DS	9"	
			S-9	4"	50/4"	DS	4"	
	380.4	Bottom of boring at 18.2 feet	S-10	2"	50/2"	DS	2"	
20								
25								
30								
35								

E2CR, Inc. BORING LOG

PROJECT	PROJECT NO.	BORING NO.	SITE	BEGUN	COMPLETED	HOLE SIZE	GROUND ELEVATION	COORDINATES	DEPTH WATER ENC.	AT END DRILL	AT 24 HRS	CAVED DEPTH	DRILLER	WEIGHT OF HAMMER	HEIGHT OF FALL	TYPE OF CORE	DEPTH OF BORING	TYPE OF DRILL RIG & METHOD	DEPTH TO ROCK	LOGGED BY:	PAGE NO.
Blandair Park	09512-03	SWM-3		4-2-09	4-2-09		402.238'	N563088.6779 E1358149.0297	18.0'	11.4'		13.0'	S. Lyons				18.1			K. Habib	1 of 1

DEPTH	STRATA ELE/ DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N-VALUE/ RQD (%)	SAMPLE TYPE AND DIAMETER	SAMPLE RECOVERY	REMARKS:
0	402.2 400.2	Brown, Moist, Silty CLAY, trace Sand (CL)	S-1	24"	4-11-9-9	DS	16"	4" Top soil
	398.2	Dark Brown, Black, Moist, Clayey SILT, trace Sand, (ML)	S-2	24"	6-6-9-10	DS	18"	
5	396.2	Tan, Brown, Moist, SILT, trace Sand, Micaceous (ML)	S-3	24"	4-6-8-9	DS	24"	
		Dark Gray, Brown, Moist, Silty SAND,Micaceous (SM)	S-4	24"	7-9-11-15	DS	15"	
			S-5	24"	16-23-25-36	DS	18"	DECOMPOSED ROCK
10			S-6	24"	30-23-29-33	DS	20"	
	388.2		S-7	24"	24-32-44-40	DS	24"	
15		Gray, Brown, Orange, Moist,Silty SAND (SM)	S-8	21"	22-19-26-50/3"	DS	15"	
			S-9	4"	50/4"	DS	4"	
	384.1	Bottom of boring at 18.1 feet	S-10	1"	50/1"	DS	1"	
20								
25								
30								
35								

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/9/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10

DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

ENGINEER'S CERTIFICATION

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) Anthony U Olsen — DATE 2/19/10

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) Ronald G. Lepson — DATE 2/22/10

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 372

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLSEN — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

SWM CONSTRUCTION NOTES AND SWM BORINGS

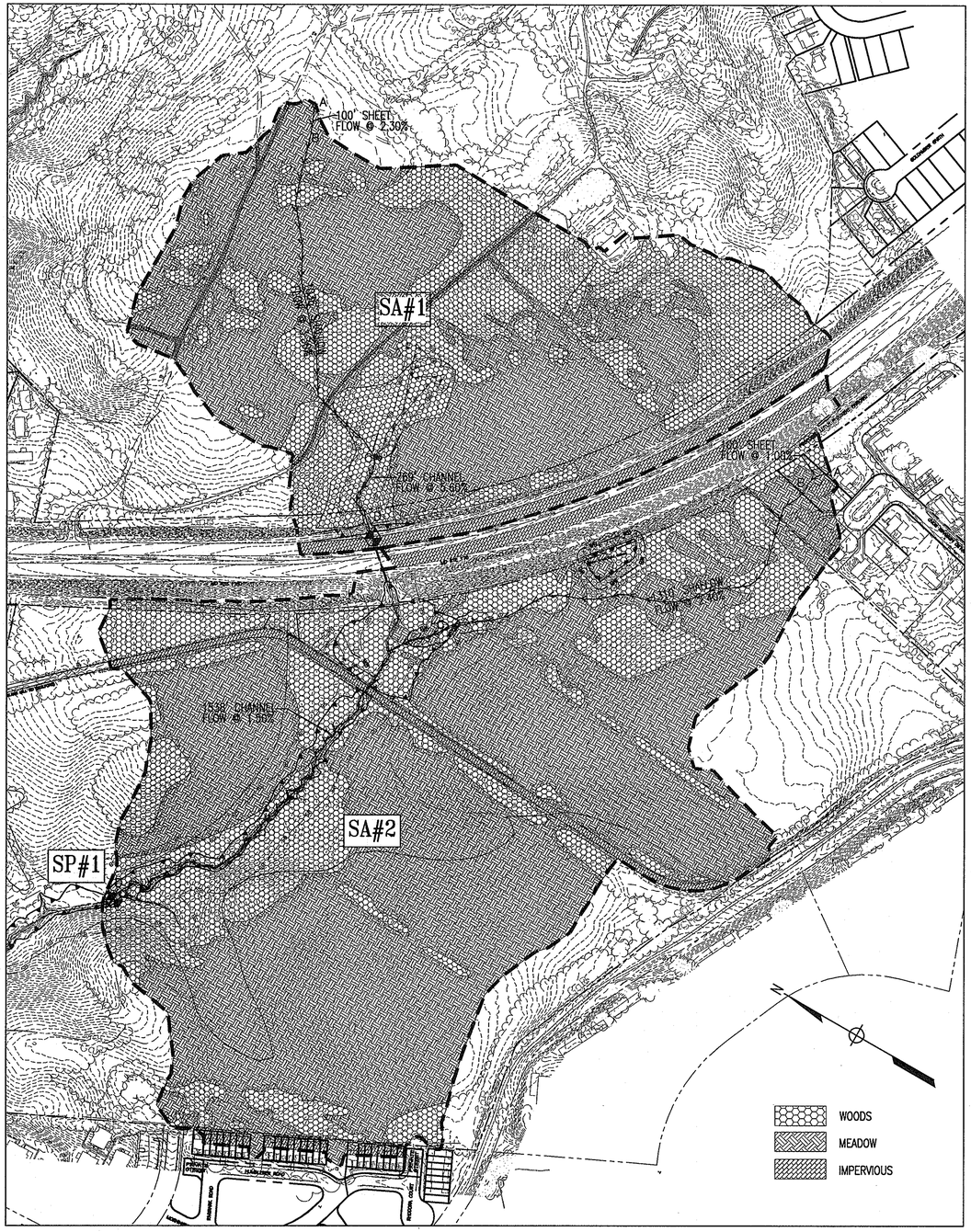
Drawing No.

C5.5

Scale: NONE		
Date: 02/19/10	Sheet 35 of	51
Des: CYH	Drawn: CYH	Check: AUO

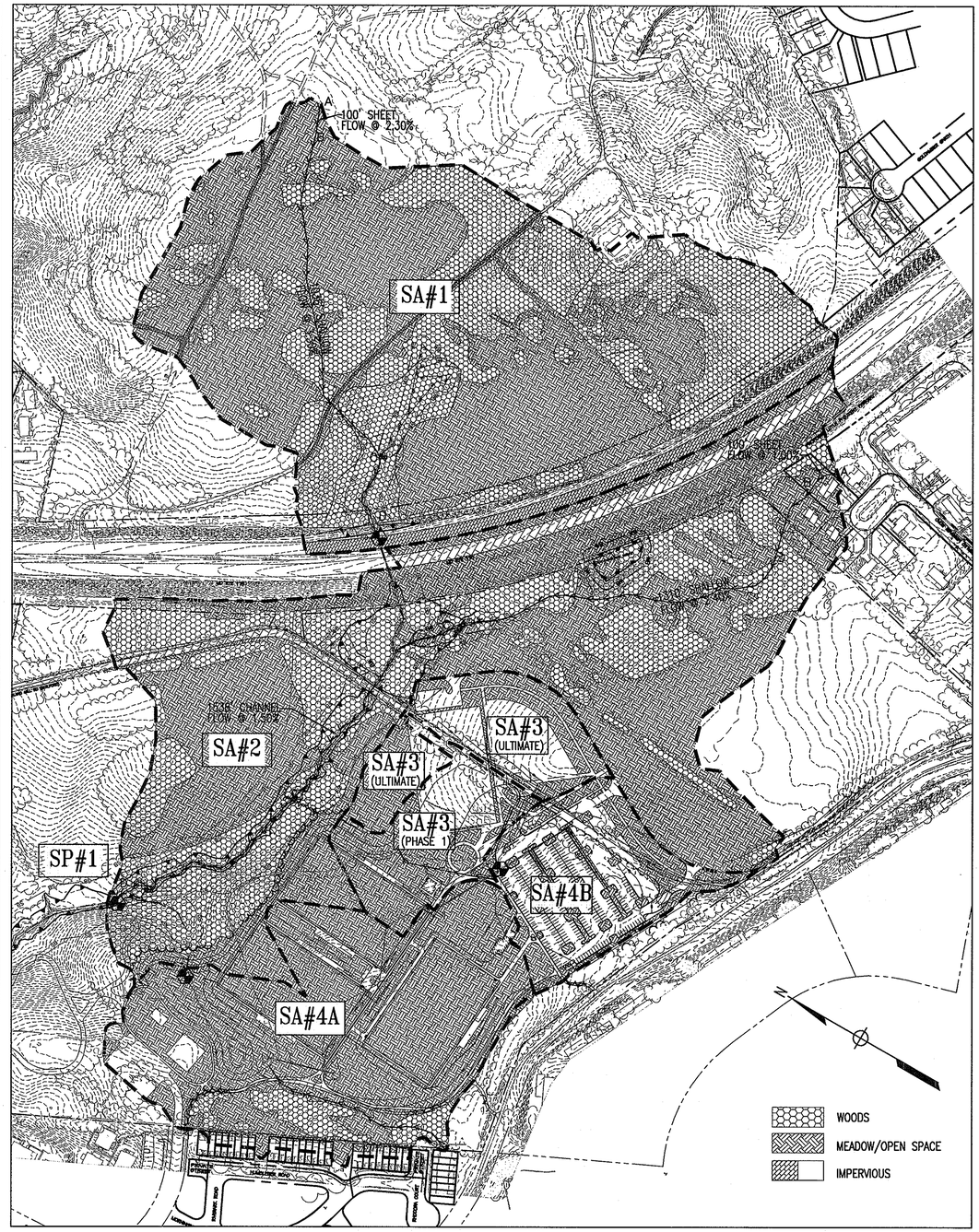
SDP-10-007

PLOT DATE: 2/19/2010 9:51:31 AM PAGE SETUP: SETS (24X36) PLOT STYLE: WRA_2006.CTB PAPER SIZE:ARCH D (36.00 X 24.00 INCHES)
FILENAME: N:\42038-001\CADD\42038001C505.DWG



EXISTING DRAINAGE AREA

1" = 200'



PROPOSED DRAINAGE AREA

1" = 200'

Soil Symbol	HSG	Soil Description
GnB	C	Glenville–Baile silt loams, 0–8% slopes
GgB	B	Glenelg loam, 3–8% slopes
GhB	B	Glenelg–Urban land complex, 0–8% slopes
MaC	B	Manor loam, 8–15% slopes
RuB	C	Russett and Beltsville soils, 2–5% slopes

STUDY ID	EXISTING CONDITIONS				PROPOSED CONDITIONS				ULTIMATE CONDITIONS			
	DA (ac)	tc (min)	Impervious (ac)	RCN	DA (ac)	tc (min)	Impervious (ac)	RCN	DA (ac)	tc (min)	Impervious (ac)	RCN
SA 1	38.92	0.34	1.99	61	38.92	0.34	1.99	61	38.92	0.34	1.99	61
SA 2	69.17	0.43	3.02	67	45.85	0.43	1.89	71	41.3	0.43	1.89	70
SA 3	-	-	-	-	4.34	0.18	0.55	69	8.75	0.18	4.05	83
SA 4A	-	-	-	-	15.24	0.20	1.62	67	16.53	0.20	2.69	67
SA 4B	-	-	-	-	4.22	0.10	2.71	85	5.94	0.10	3.82	86
SP 1	108.09	-	5.01	-	108.57	-	8.76	-	111.44	-	14.44	-

STUDY ID	EXISTING CONDITIONS				PROPOSED CONDITIONS				ULTIMATE CONDITIONS			
	1-yr	2-yr	10-yr	100-yr	1-yr	2-yr	10-yr	100-yr	1-yr	2-yr	10-yr	100-yr
SA 1	4.22	12.00	53.17	112.00	4.22	12.00	53.17	112.00	4.22	12.00	53.17	112.00
SA 2	17.79	35.95	112.23	213.46	18.58	32.91	88.71	159.51	15.10	27.51	79.65	139.65
SA 3	-	-	-	-	2.16	3.98	11.12	20.28	11.58	16.48	32.80	51.49
SA 4A	-	-	-	-	4.63	9.72	31.47	60.96	6.49	12.54	37.51	70.48
SA 4B	-	-	-	-	7.90	10.92	20.81	31.81	11.68	15.95	29.95	45.42
POND	-	-	-	-	0.30	0.49	1.90	14.48	0.36	0.87	2.32	34.13
SP 1	22.00	47.82	164.74	324.64	23.99	47.25	150.60	288.70	28.24	53.30	159.67	319.59

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 372

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 200' 400'
SCALE: 1" = 200'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. OLIVA — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

OVERALL DRAINAGE AREA MAPS

Drawing No.

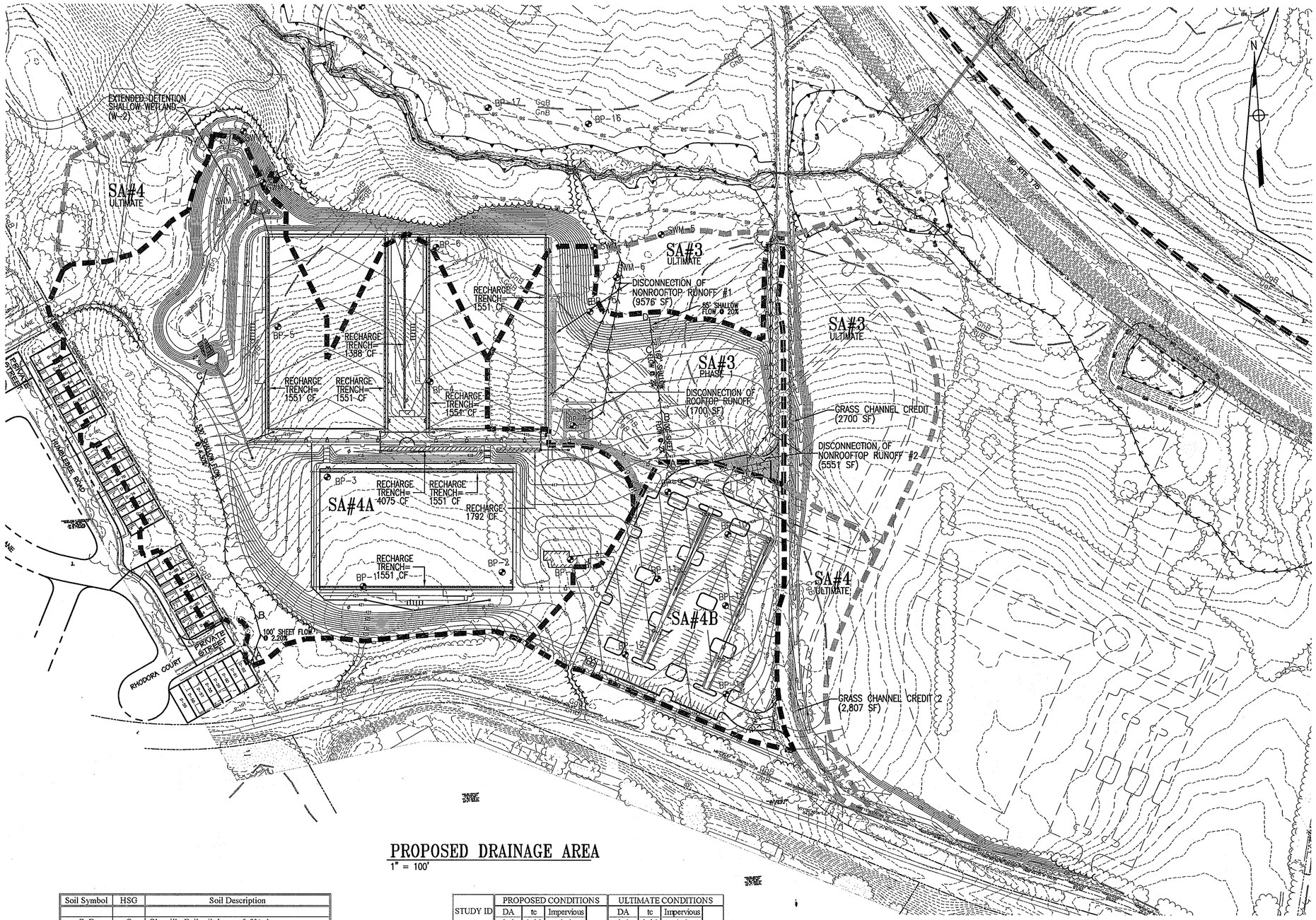
C6.1

Scale: 1" = 200'		
Date: 02/19/10	Sheet 36 of	51
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007

FILENAME: W:\42958-001\CADD\42958001C5401.DWG

PLOT DATE: 2/19/2010 9:58:07 AM PAGE SETUP: SETS (42X36) PLOT STYLE: VPA_2006.CTB PAPER SIZE:ANSI D (36.00 X 24.00 INCHES)



PROPOSED DRAINAGE AREA

1" = 100'

Soil Symbol	HSG	Soil Description
GnB	C	Glenville-Baile silt loams, 0-8% slopes
GgB	B	Glenelg loam, 3-8% slopes
GhB	B	Glenelg-Urban land complex, 0-8% slopes
MaC	B	Manor loam, 8-15% slopes
RuB	C	Russett and Beltsville soils, 2-5% slopes

STUDY ID	PROPOSED CONDITIONS				ULTIMATE CONDITIONS			
	DA (ac)	tc (min)	Impervious (ac)	RCN	DA (ac)	tc (min)	Impervious (ac)	RCN
SA 3	4.34	0.18	0.55	69	8.75	0.18	4.05	83
SA 4A	15.24	0.20	1.62	67	16.53	0.20	2.69	67
SA 4B	4.22	0.10	2.71	85	5.94	0.10	3.82	86

DISCONNECTION CREDIT SUMMARY (SHADED AREAS)

	AREA (SF)	DISCONNECTION LENGTH (FT)	AVG. SLOPE
NON-ROOFTOP DISCONNECTION CREDIT #1	9576	510	5.0%
NON-ROOFTOP DISCONNECTION CREDIT #2	5551	597	3.4%
ROOFTOP DISCONNECTION CREDIT	1700	541	5.0%

GRASS CHANNEL CREDIT #1 2700 AC: WATER QUALITY STORM, V=0.82FPS
GRASS CHANNEL CREDIT #2 2807 AC: WATER QUALITY STORM, V=0.93FPS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/31/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/02/10
DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

FILENAME: W:\2935-301\CADD\1629380\C5G2.DWG

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

STATE OF MARYLAND — ANTHONY T. CLEAR — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK – PHASE 1

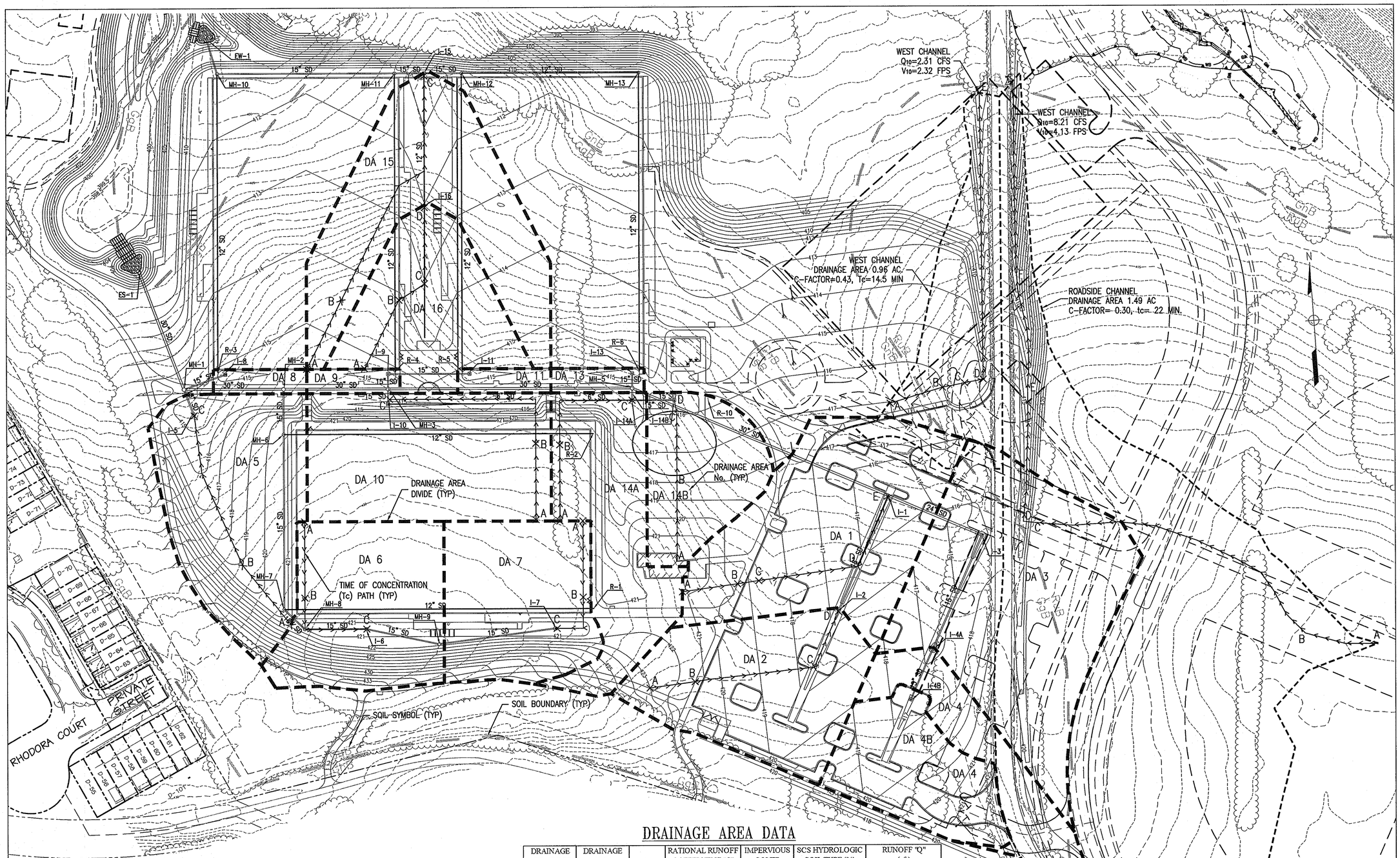
STORMWATER DRAINAGE AREA PLAN

Drawing No.

C6.2

Scale: 1" = 100'		
Date: 02/19/10	Sheet 37 of 51	
Des: CYH	Drawn: CYH	Check: AUO

SDP-10-007



DRAINAGE AREA DATA

DRAINAGE AREA/INLET No.	DRAINAGE AREA (ac)	tc (min)	RATIONAL RUNOFF COEFFICIENT "C" 10-yr	100-yr	IMPERVIOUS COVER (%)	SCS HYDROLOGIC SOIL TYPE (%) B	C	RUNOFF "Q" (cfs) 10-yr	100-yr
1	1.42	13.20	0.67	0.75	72.5	93.0	7.0	5.52	9.63
2	1.12	9.72	0.67	0.75	72.3	100.0	0.0	5.18	8.86
3	1.90	13.20	0.57	0.65	58.4	65.3	34.7	6.28	11.16
4A	1.34	12.60	0.57	0.65	59.0	93.3	6.7	4.62	8.15
4B	0.69	5.00	0.58	0.65	59.4	100.0	0.0	3.40	5.72
5	1.24	15.18	0.23	0.28	10.5	100.0	0.0	1.55	2.92
6	1.01	26.04	0.24	0.29	11.9	100.0	0.0	0.98	1.82
7	0.92	25.56	0.24	0.29	12.0	100.0	0.0	0.91	1.69
8	0.09	5.00	0.47	0.54	44.4	100.0	0.0	0.36	0.62
9	0.09	5.00	0.47	0.54	44.4	100.0	0.0	0.36	0.62
10	1.22	27.24	0.21	0.26	7.4	100.0	0.0	1.02	1.94
11	0.09	5.00	0.47	0.54	44.4	100.0	0.0	0.36	0.62
13	0.09	5.00	0.47	0.54	44.4	100.0	0.0	0.36	0.62
14A	1.70	26.52	0.25	0.30	12.9	100.0	0.0	1.63	2.75
14B	0.65	8.24	0.19	0.24	4.6	100.0	0.0	1.12	1.73
15	1.29	21.18	0.20	0.25	6.2	100.0	0.0	1.18	2.25
16	0.86	19.26	0.36	0.41	27.9	100.0	0.0	1.50	2.61

STORM DRAIN DESIGNED TO CAPTURE 100-YEAR STORM. TIME OF CONCENTRATION (Tc) PATH FROM ATHLETIC TURF WILL SHEET FLOW DUE TO OVER FLOW OF UNDERDRAIN DURING 100-YEAR STORM.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/5/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/05/10
DIRECTOR	DATE 4/5/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

FILENAME: W:\4203S-001\CADD\4203S001C6C3.DWG

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 30' 60' 120'
SCALE: 1" = 60'

SIGNATURE

STATE OF MARYLAND — ANTHONY U. BLENDA — No. 19376 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
EXPIRATION DATE: 09/22/2011

BLANDAIR REGIONAL PARK - PHASE 1

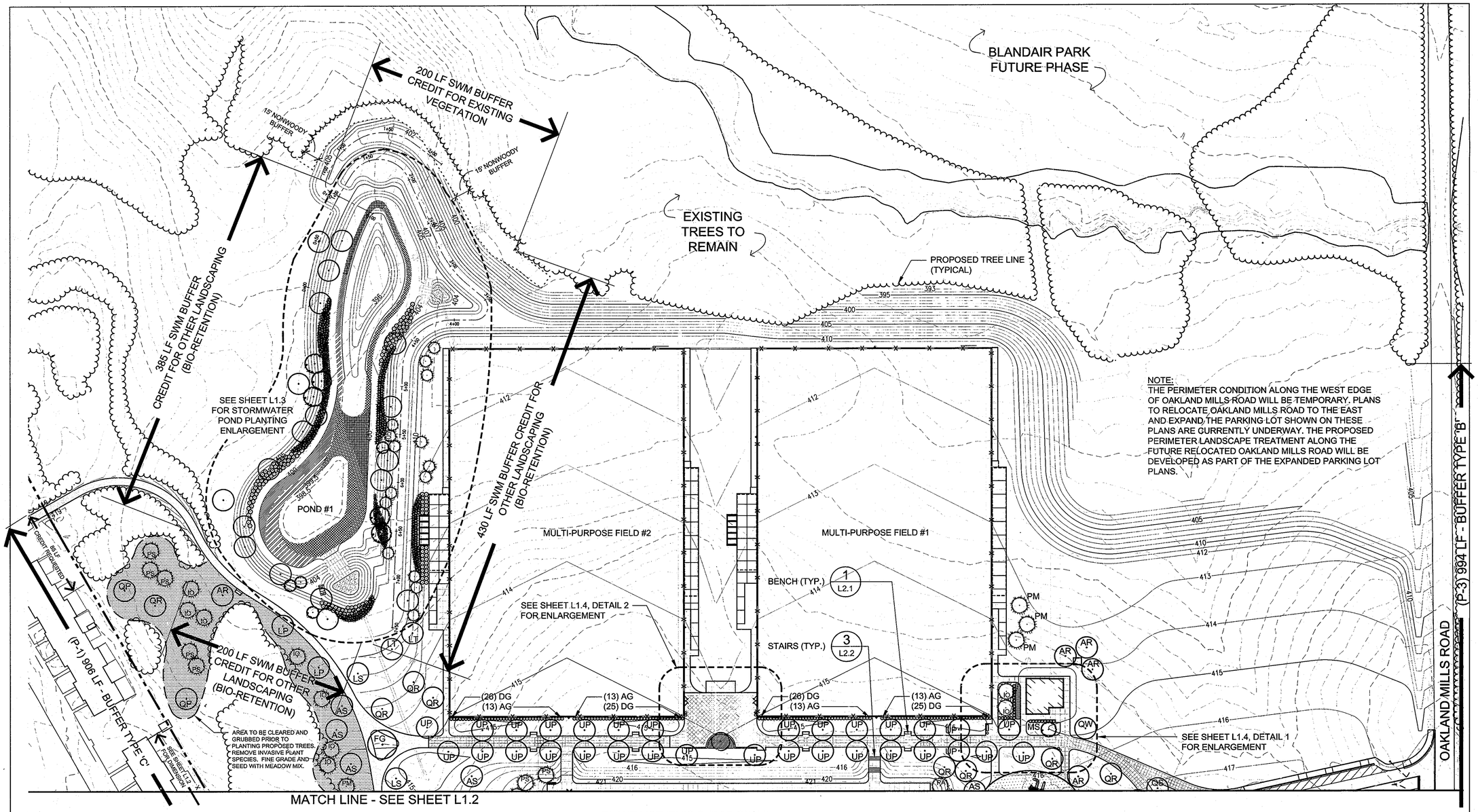
INLET DRAINAGE AREA MAP

Drawing No.

C6.3

Scale: 1" = 60'		
Date: 02/19/10	Sheet 38 of 51	
Des: MAT	Drawn: MAT	Check: AUO

SDP-10-007



NOTE:
THE PERIMETER CONDITION ALONG THE WEST EDGE OF OAKLAND MILLS ROAD WILL BE TEMPORARY. PLANS TO RELOCATE OAKLAND MILLS ROAD TO THE EAST AND EXPAND THE PARKING LOT SHOWN ON THESE PLANS ARE CURRENTLY UNDERWAY. THE PROPOSED PERIMETER LANDSCAPE TREATMENT ALONG THE FUTURE RELOCATED OAKLAND MILLS ROAD WILL BE DEVELOPED AS PART OF THE EXPANDED PARKING LOT PLANS.

NOTE:
1. FOR MINIMUM LANDSCAPE REQUIREMENT CHARTS (PERIMETER BUFFER, STORM WATER MANAGEMENT POND AND PARKING LOT), SEE SHEET L2.5
2. ALL PLANT LOCATIONS TO BE MARKED IN THE FIELD AND APPROVED BY HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS REPRESENTATIVE PRIOR TO PLANTING.
3. SEE SHEET L2.5 FOR PLANTING SCHEDULES.

SHADED TREES REPRESENT PLANTS REQUIRED BY HOWARD COUNTY LANDSCAPE MANUAL

PLANT LIST (THIS SHEET ONLY)

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		SHADE TREES			
5	AR	Acer rubrum 'Red Sunset'/ Red Sunset Maple	2-1/2" Cal.	B&B	Full
5	AS	Acer saccharum 'Green Mountain'/ Green Mountain Sugar Maple	2-1/2" Cal.	B&B	Full
1	FG	Fagus grandifolia / American Beech	2-1/2" Cal.	B&B	Full
2	LP	Platanus acerifolia 'Bloodgood'/ Bloodgood London Plane Tree	2-1/2" Cal.	B&B	Full
2	LS	Liquidambar styraciflua 'Rotondiloba' / Round Lobed Sweetgum	2-1/2" Cal.	B&B	Full
2	LT	Liriondendron tulipifera/ Tulip Tree	2-1/2" Cal.	B&B	Full
2	QP	Quercus palustris / Pin Oak	2-1/2" Cal.	B&B	Full
8	QR	Quercus rubra / Red Oak	2-1/2" Cal.	B&B	Full
1	QS	Quercus coccinea / Scarlet Oak	2-1/2" Cal.	B&B	Full
1	QW	Quercus phellos / Willow Oak	2-1/2" Cal.	B&B	Full
29	UP	Ulmus parvifolia 'Allee' / Allee Elm	2-1/2" Cal.	B&B	Full

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		EVERGREEN TREES			
9	IO	Ilex opaca / American Holly	6' Ht.	B&B	Full
1	PA	Picea abies / Norway Spruce	6' Ht.	B&B	Full
4	PM	Pseudotsuga menziesii / Douglas Fir	6' Ht.	B&B	Full
7	PS	Pinus strobus/ White Pine	6' Ht.	B&B	Full
		UNDERSTORY TREES			
1	MS	Magnolia x soulangian / Saucer Magnolia	10' Ht.	B&B	Multi-Stem, Full
		SHRUBS			
52	AG	Abelia x 'Edward Goucher' / Edward Goucher Abelia	24" Spd./Ht.	#5	Full
102	DG	Deutzia gracilis / Slender Deutzia	24" Spd./Ht.	#5	Full

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10
DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3,72
ZONING: RC-DEO
ELECTION DISTRICT 3/7

GRAPHIC SCALES
0 25 50 100

SIGNATURE

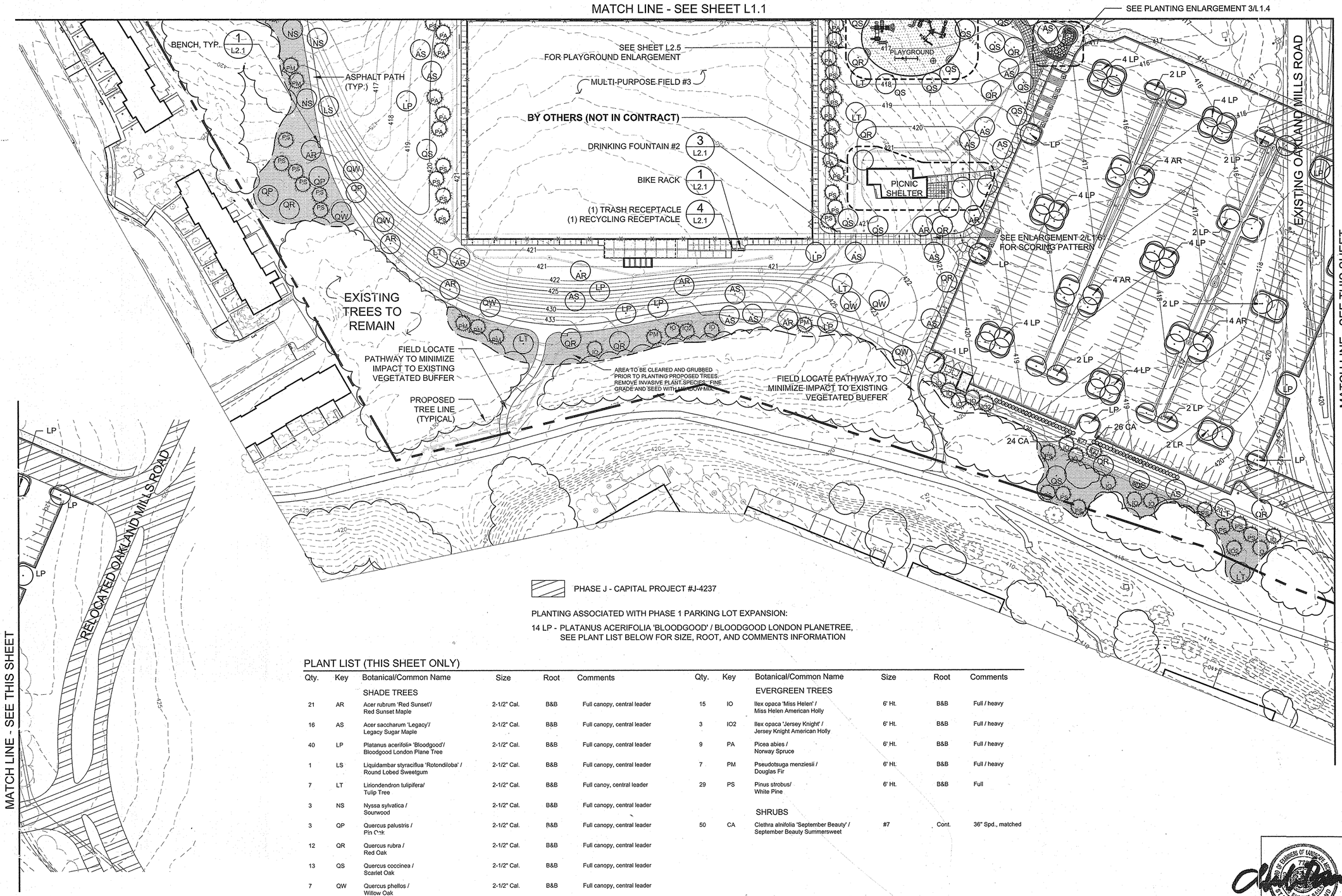
BLANDAIR REGIONAL PARK - PHASE 1

Site Landscape Plan

Drawing No.
L1.1

Scale: 1" = 50'
Date: 02/19/10 | Sheet 39 of 51
Des: CB | Drawn: NS | Check: CB

SDP-10-007



PHASE J - CAPITAL PROJECT #J-4237

PLANTING ASSOCIATED WITH PHASE 1 PARKING LOT EXPANSION:

14 LP - PLATANUS ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANETREE, SEE PLANT LIST BELOW FOR SIZE, ROOT, AND COMMENTS INFORMATION

PLANT LIST (THIS SHEET ONLY)

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		SHADE TREES			
21	AR	Acer rubrum 'Red Sunset'/ Red Sunset Maple	2-1/2" Cal.	B&B	Full canopy, central leader
16	AS	Acer saccharum 'Legacy'/ Legacy Sugar Maple	2-1/2" Cal.	B&B	Full canopy, central leader
40	LP	Platanus acerifolia 'Bloodgood'/ Bloodgood London Plane Tree	2-1/2" Cal.	B&B	Full canopy, central leader
1	LS	Liquidambar styraciflua 'Rotondiloba' / Round Lobed Sweetgum	2-1/2" Cal.	B&B	Full canopy, central leader
7	LT	Liriondendron tulipifera/ Tulip Tree	2-1/2" Cal.	B&B	Full canoy, central leader
3	NS	Nyssa sylvatica / Sourwood	2-1/2" Cal.	B&B	Full canopy, central leader
3	QP	Quercus palustris / Pin Oak	2-1/2" Cal.	B&B	Full canopy, central leader
12	QR	Quercus rubra / Red Oak	2-1/2" Cal.	B&B	Full canopy, central leader
13	QS	Quercus coccinea / Scarlet Oak	2-1/2" Cal.	B&B	Full canopy, central leader
7	QW	Quercus phellos / Willow Oak	2-1/2" Cal.	B&B	Full canopy, central leader

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		EVERGREEN TREES			
15	IO	Ilex opaca 'Miss Helen' / Miss Helen American Holly	6' Ht.	B&B	Full / heavy
3	IO2	Ilex opaca 'Jersey Knight' / Jersey Knight American Holly	6' Ht.	B&B	Full / heavy
9	PA	Picea abies / Norway Spruce	6' Ht.	B&B	Full / heavy
7	PM	Pseudotsuga menziesii / Douglas Fir	6' Ht.	B&B	Full / heavy
29	PS	Pinus strobus/ White Pine	6' Ht.	B&B	Full
		SHRUBS			
50	CA	Clethra alnifolia 'September Beauty' / September Beauty Summersweet	#7	Cont.	36" Spd., matched

NOTE:
1. ALL PLANT LOCATIONS TO BE MARKED IN THE FIELD AND APPROVED BY HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS REPRESENTATIVE PRIOR TO PLANTING.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3-11-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 5-06-14
DIRECTOR	DATE 5/6/14

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 4/28/2014

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS		
	PARKING EXPANSION	07/12/13
	BID SET	07/09/10
	BID REVIEW SET	05/28/10

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25 50 100

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1 SITE CONTRACT

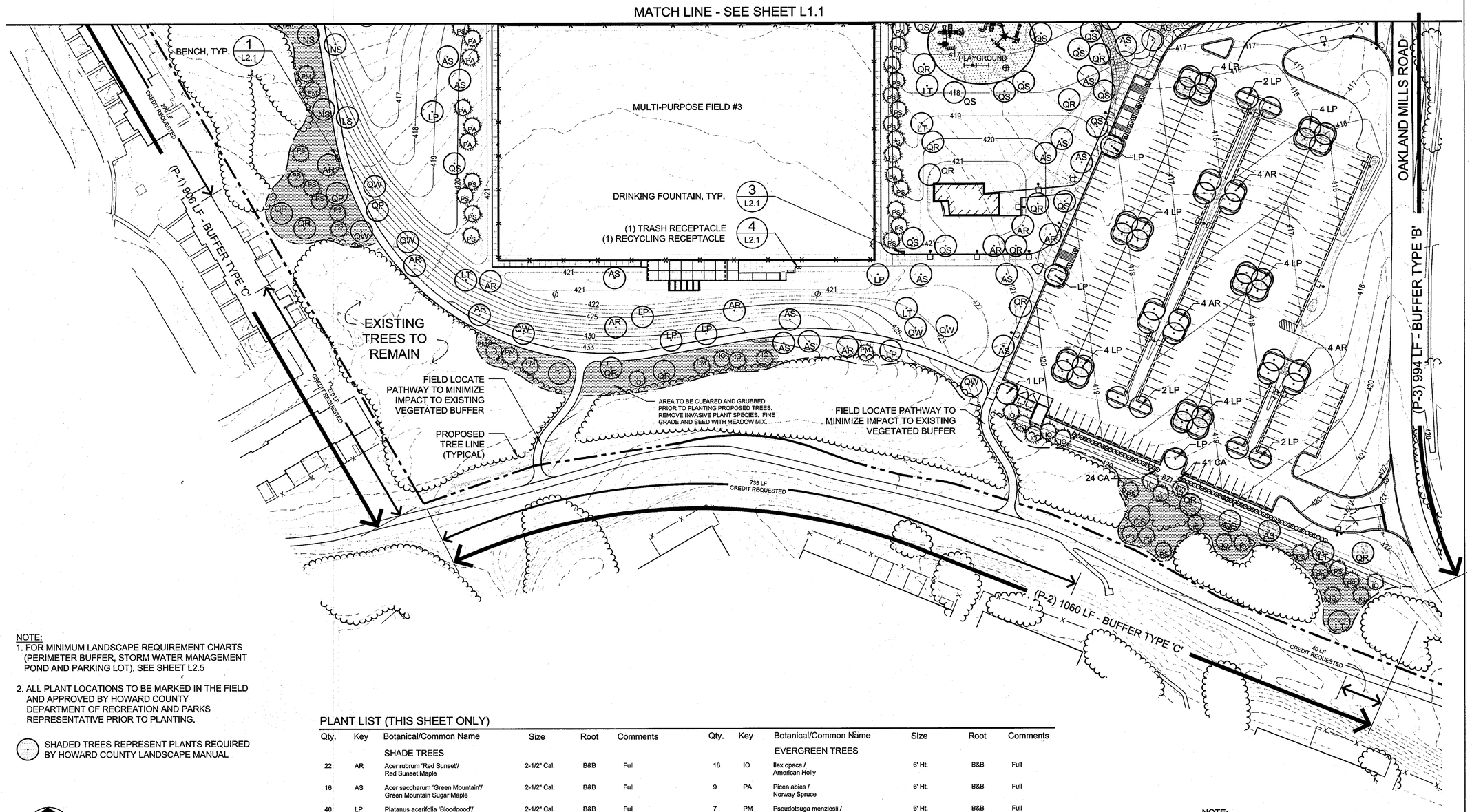
Site Landscape Plan

Drawing No.

L1.2

Scale: 1" = 50'		
Date: 07/09/2010	Sheet 40 of 65	
Des: CB	Drawn: NS	Check: CB

SDP-10-007



NOTE:
1. FOR MINIMUM LANDSCAPE REQUIREMENT CHARTS (PERIMETER BUFFER, STORM WATER MANAGEMENT POND AND PARKING LOT), SEE SHEET L2.5
2. ALL PLANT LOCATIONS TO BE MARKED IN THE FIELD AND APPROVED BY HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS REPRESENTATIVE PRIOR TO PLANTING.

SHADED TREES REPRESENT PLANTS REQUIRED BY HOWARD COUNTY LANDSCAPE MANUAL

PLANT LIST (THIS SHEET ONLY)

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		SHADE TREES			
22	AR	Acer rubrum 'Red Sunset'/ Red Sunset Maple	2-1/2" Cal.	B&B	Full
16	AS	Acer saccharum 'Green Mountain'/ Green Mountain Sugar Maple	2-1/2" Cal.	B&B	Full
40	LP	Platanus acerifolia 'Bloodgood'/ Bloodgood London Plane Tree	2-1/2" Cal.	B&B	Full
1	LS	Liquidambar styraciflua 'Rotondiloba' / Round Lobed Sweetgum	2-1/2" Cal.	B&B	Full
7	LT	Liriondendron tulipifera/ Tulip Tree	2-1/2" Cal.	B&B	Full
3	NS	Nyssa sylvatica / Sourwood	2-1/2" Cal.	B&B	Full
3	QP	Quercus palustris / Pin Oak	2-1/2" Cal.	B&B	Full
14	QR	Quercus rubra / Red Oak	2-1/2" Cal.	B&B	Full
14	QS	Quercus coccinea / Scarlet Oak	2-1/2" Cal.	B&B	Full
7	QW	Quercus phellos / Willow Oak	2-1/2" Cal.	B&B	Full

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		EVERGREEN TREES			
18	IO	Ilex opaca / American Holly	6' Ht.	B&B	Full
9	PA	Picea abies / Norway Spruce	6' Ht.	B&B	Full
7	PM	Pseudotsuga menziesii / Douglas Fir	6' Ht.	B&B	Full
29	PS	Pinus strobus/ White Pine	6' Ht.	B&B	Full
		SHRUBS			
65	CA	Clethra alnifolia 'September Beauty' / September Beauty Summersweet	36" Spd./Ht.	#3	Full

NOTE:
THE PERIMETER CONDITION ALONG THE WEST EDGE OF OAKLAND MILLS ROAD WILL BE TEMPORARY. PLANS TO RELOCATE OAKLAND MILLS ROAD TO THE EAST AND EXPAND THE PARKING LOT SHOWN ON THESE PLANS ARE CURRENTLY UNDERWAY. THE PROPOSED PERIMETER LANDSCAPE TREATMENT ALONG THE FUTURE RELOCATED OAKLAND MILLS ROAD WILL BE DEVELOPED AS PART OF THE EXPANDED PARKING LOT PLANS.

BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS 776 EUGENE BALL STATE OF MARYLAND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE 3/31/2010

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 25 50 100

SIGNATURE

BLANDAIR REGIONAL PARK – PHASE 1

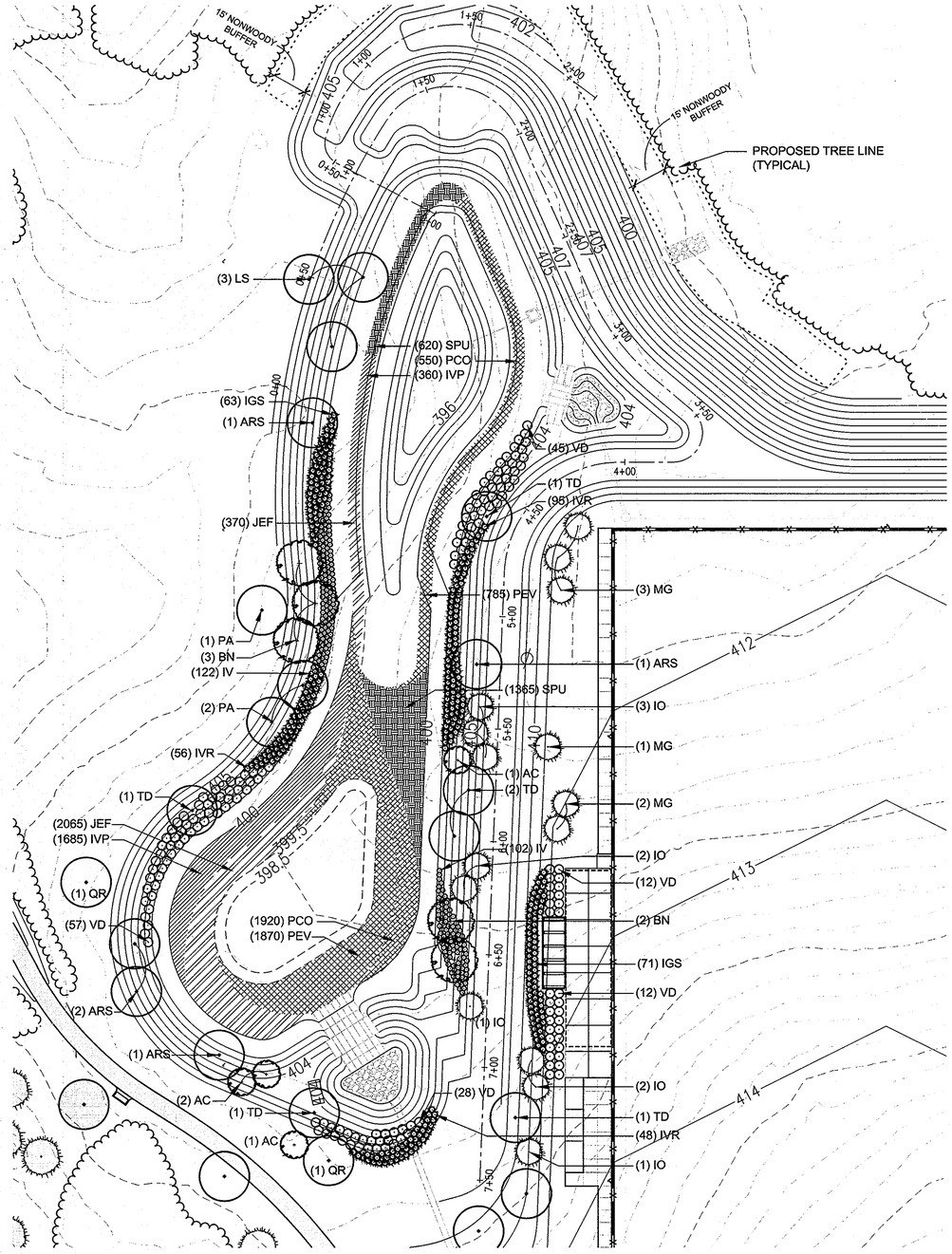
Site Landscape Plan

Drawing No.

L1.2

Scale: 1" = 50'		
Date: 02/19/10	Sheet 40 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007



1 Stormwater Management Pond A Planting Plan

1"=30'

PLANT LIST (THIS SHEET ONLY)

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		SHADE TREES			
5	ARS	Acer rubrum 'Red Sunset' / Red Sunset Maple	2-1/2" Cal.	B+B	Central Leader, Full Canopy
3	LS	Liquidambar styraciflua 'Rotondiloba' / Round Lobed Sweetgum	2-1/2" Cal.	B+B	Central Leader, Full Canopy
3	PA	Platanus x acerifolia 'Bloodgood' / Bloodgood Planetree	2-1/2" Cal.	B+B	Central Leader, Full Canopy
6	TD	Taxodium distichum / Bald Cypress	2-1/2" Cal.	B+B	Central Leader, Full Canopy
1	QR	Quercus rubra / Red Oak	2-1/2" Cal.	B+B	Central Leader, Full Canopy
		EVERGREEN TREES			
9	IO	Ilex opaca 'Jersey Princess'/ Jersey Princess American Holly	8' Ht.	B+B	Full to Base, Central Leader
7	MG	Metasequoia glyptostroboides / Dawn Redwood	8' Ht.	B+B	Full Canopy, Central Leader
		UNDERSTORY TREES			
4	AC	Amelanchier canadensis / Serviceberry	8' Ht.	B+B	Clump, 3-5 Canes, Full Canopy
5	BN	Betula nigra / River Birch		B+B	
		SHRUBS			
134	IGS	Ilex glabra 'Shamrock' / Shamrock Inkberry Holly	#5	Cont.	30" Ht, Full
224	IV	Itea virginica 'Little Henry'/ Little Henry Sweetspire	#3	Cont.	18" Ht, Full
154	VD	Viburnum dentatum 'Synnestvedt' / Chicago Lustre Arrowwood Viburnum	#5	Cont.	30" Ht, Full
199	IVR	Ilex verticillata 'Red Sprite' / Red Sprite Winterberry	#5	Cont.	24" Ht, Full
		HERBACEOUS			
2045	IVP	Iris versicolor / Blueflag Iris	-	Plug	12" O.C.
2435	JEF	Juncus effusus / Soft Rush	-	Plug	12" O.C.
2470	PCO	Pontederia cordata / Pickerel Weed	-	Plug	12" O.C.
2655	PEV	Peltandra virginica / Arrow Arum	-	Plug	12" O.C.
1985	SPU	Scirpus pungens / Common Three-Square	-	Plug	12" O.C.

NOTE:
SEE SHEET L2.5 FOR STORMWATER MANAGEMENT AREA LANDSCAPING REQUIREMENTS.

PLANTING DESIGN FOR STORMWATER MANAGEMENT POND BASED ON "LANDSCAPING GUIDANCE FOR STORMWATER BMP'S" PROVIDED BY MDE. THE LANDSCAPING STRATEGY FOR THE POND ATTEMPTS TO CREATE AN ENVIRONMENTAL AND AESTHETIC AMENITY THE FITS WITHIN ITS PARKLAND CONTEXT INSTEAD OF SCREENING ITS VIEW FROM PARK USERS AS SUGGESTED IN THE COUNTY LANDSCAPE MANUAL. INCORPORATION OF NATIVE AND ADAPTED WETLAND SPECIES HELPS TREAT STANDING WATER AT SEVERAL POOL ELEVATIONS AND CONTRIBUTES TO A SUSTAINABLE ENVIRONMENT FOR WATERFOWL, INSECTS AND AQUATIC LIFE. TREES AND SHRUBS ARE LOCATED TO PROMOTE SOIL STABILITY, INTEGRATE THE POND INTO ADJACENT WOODED AREAS AND PROVIDE AN AESTHETICALLY-PLEASING BACKDROP FOR VIEWS TO THE POND.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/4/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-5450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 15 30 60

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

SWM Landscape Plan Enlargement

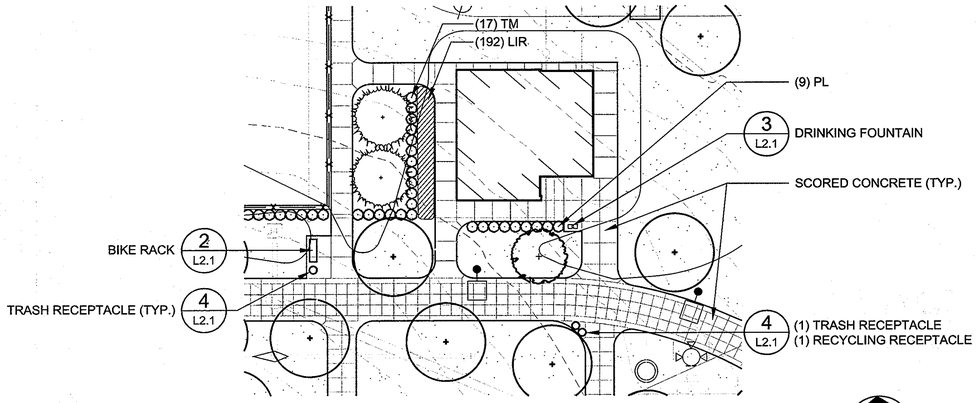
Drawing No.

L1.3

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

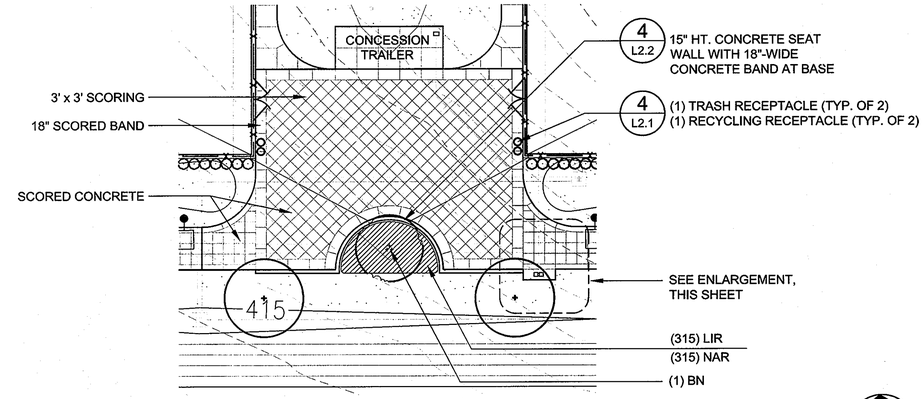
Scale: AS SHOWN		
Date: 02/19/10	Sheet 41 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007



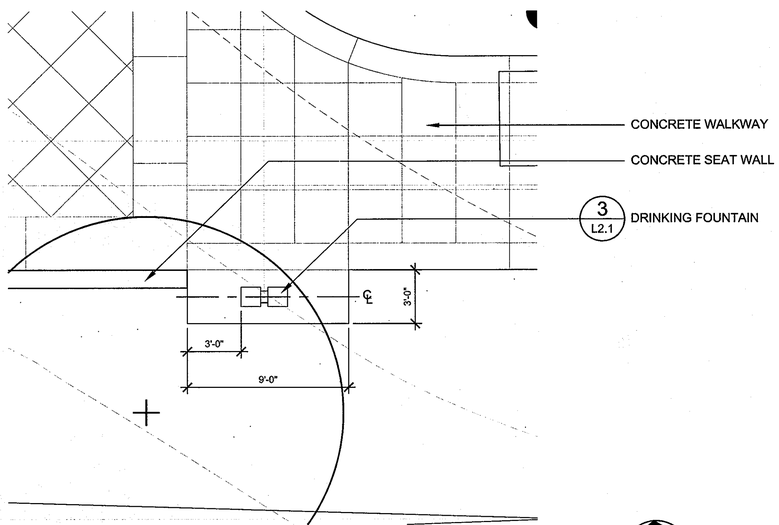
1 Comfort Station Enlargement

1"=20'



2 Field Entry Plaza Enlargement

1"=20'



3 Drinking Fountain Enlargement

1/4"=1'

PLANT LIST (THIS SHEET ONLY)

Qty.	Key	Botanical/Common Name	Size	Root	Comments
		UNDERSTORY TREES			
1	BN	Betula nigra 'Duraheat' Duraheat River Birch	12' Ht.	B&B	Multi-Stem; 3 cane min., 5 cane max. Specimen
		SHRUBS			
9	PL	Prunus laurocerasus 'Otto Luyken'/ Otto Luyken Cherry Laurel	24" Ht./Spd.	B&B or Cont.	Full
17	TM	Taxus x media 'Densiformis' / Dense Yew	30" Ht./Spd.	B&B	Full
		GROUNDCOVER			
507	LIR	Liriope muscari 'Big Blue' / Big Blue Lirlope	#1	Cont.	12" O.C.
		BULBS			
315	NAR	Narcissus 'Marieke' Marieke Daffodil	DN1	Bulb	12" O.C.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/5/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10

DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010

HOWARD COUNTY HEALTH DEPARTMENT

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

Landscape Plan Enlargements

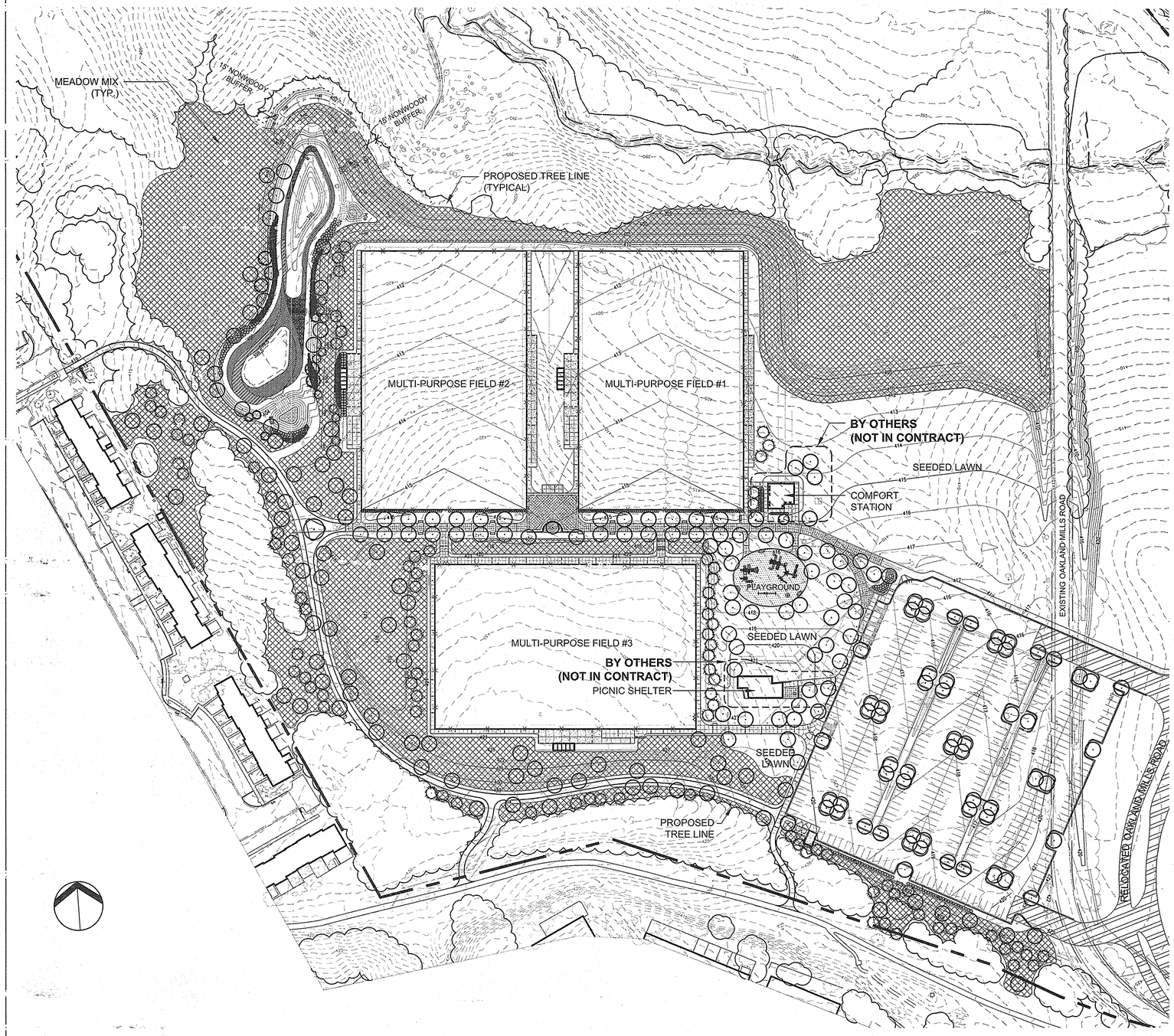
Drawing No.

L1.4

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

Scale: AS SHOWN		
Date: 02/19/10	Sheet 42 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007



MEADOW MIX

NATIVE UPLAND WILDLIFE FORAGE AND COVER MEADOW MIX: ERNMX-123

% of Total	Botanical Name	Common Name
20.00%	*Elymus virginicus*	Virginia Wild Rye
20.00%	*Schizachyrium scoparium, PA Ecotype*	Little Bluestem, PA Ecotype
10.00%	*Panicum virgatum, 'Shelter'*	'Shelter' Switchgrass
12.00%	*Sorghastrum nutans, PA Ecotype*	Indiangrass, PA Ecotype
10.00%	*Tripsacum dactyloides*	Eastern Gamma Grass
5.00%	*Chamaecrista fasciculata*	Patridge Pea
5.00%	*Coreopsis tinctoria*	Plains Coreopsis
5.00%	*Panicum amarum, 'Atlantic'*	'Atlantic' Coastal Panic Grass
3.00%	*Rudbeckia hirta*	Black Eyed Susan
4.00%	*Andropogon gerardii, 'Niagara'*	'Niagara' Big Bluestem
5.00%	*Poa palustris*	Fowl Bluegrass
1.00%	*Ascelpias syriaca*	Common Milkweed
100.00%	Total	

Seeding Rate: 15 lb per acre or 1/3-1/2 lb per 1,000 sq ft
Use: Meadow sites

SEED MIX BY ERNST

9006 MERCER PIKE
MEADVILLE, PA 16335
(814) 336-2404

LEGEND

MEADOW MIX (OPEN FIELD MEADOW)

NOTE: ALL OTHER DISTURBED AREAS TO BE SEEDED WITH STANDARD TURF MIX.

PHASE J - CAPITAL PROJECT #J-4237

REVISIONS		
	PARKING EXPANSION	07/12/13
	BID SET	07/09/10
	BID REVIEW SET	05/28/10

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 40 80 160

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1 SITE CONTRACT

Seeding Plan

Drawing No.
L1.5

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3.11.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 5/06/14
DIRECTOR	DATE 5/6/14

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 4/28/2014

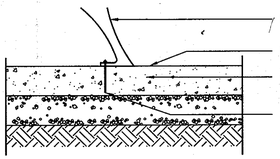
MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

Scale: 1"=80'		
Date: 07/09/2010	Sheet 43 of 65	
Des: CB	Drawn: NS	Check: CB

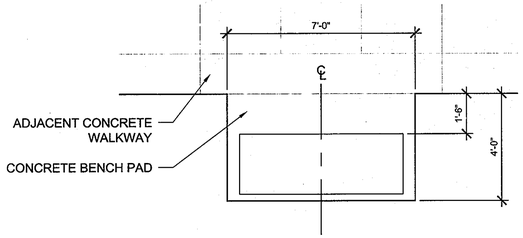
SDP-10-007

MANUFACTURER INFORMATION:
Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MD 20754
1-800-368-2573
www.victorstanley.com

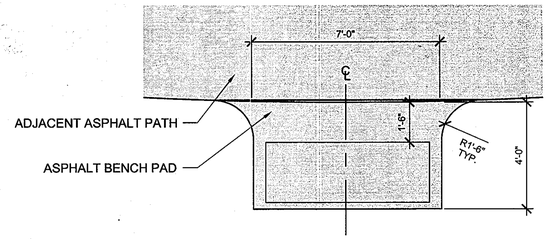
Classic Series by Victor Stanley
6' bench
Casting #196 with 2nd Site System
Frame color: bronze
Recycled plastic slats, color: maple



3/8" DIA. x 6" NON-CORROSIVE SLEEVE ANCHOR WITH ROUND HEAD. PLACE THROUGH 3/8" DIA. HOLE DRILLED INTO PAVING USING A CARBIDE BIT. FASTEN ANCHOR SNUG AGAINST SITE FURNITURE.



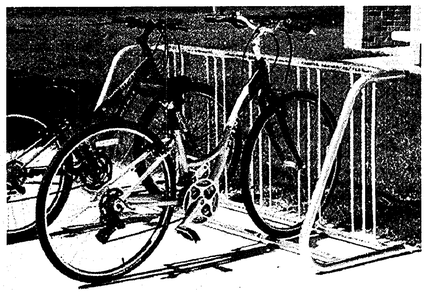
BENCH ON CONCRETE



NOTE:
ANCHOR BENCH MIN. 6" FROM EDGE OF BENCH PAD

BENCH ON ASHPALT

1 Bench
NTS

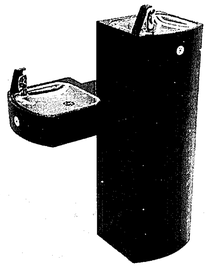


MANUFACTURER INFORMATION:

Pilot Rock / R.J. Thomas
Manufacturing Co., Inc.
PO Box 946
5648 Hwy. 59 South
Cherokee, Iowa 51015
1-800-762-5002
www.pilotrock.com

Model BR205SS/CA by Pilot Rock
Single-sided bike rack (holds 5 bikes)
Powder coat finish, color: gray
Anchor to concrete with heavy duty kit #ANC2-4 provided by manufacturer

2 Bike Rack
NTS

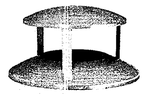


MANUFACTURER INFORMATION:

Murdock-Super Secur
PO Box 3527
City of Industry, CA 91744
1-800-453-7465
www.murdock-supersecur.com

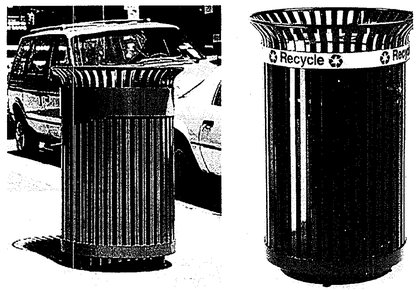
Model GSM55 by Murdock-Super Secur
Bi-level pedestal mount, square steel
Color: bronze
Accessories
HB3: hose bib, loose key, vandal resistant, with hose threaded outlet/VB
JF2: jug filler, recessed
NP2: non-pollutable, freeze resistant valve

3 Drinking Fountain
NTS



MANUFACTURER INFORMATION:

Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MD 20754
1-800-368-2573
www.victorstanley.com



Ironsites Series Model S-45 by Victor Stanley
45-gallon capacity litter receptacle
Rain bonnet lid
Color: bronze
Black plastic liner, four leveling feet, bottom recessed
pedestal (Anchor per manufacturer's recommendations)

4 Trash Receptacle
NTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

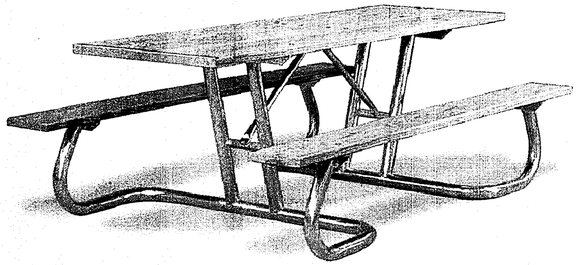
Hardscape Details

Drawing No.

L2.1

Scale: NONE		
Date: 02/19/10	Sheet 44 of 51	
Des: CB	Drawn: NS	Check: CB

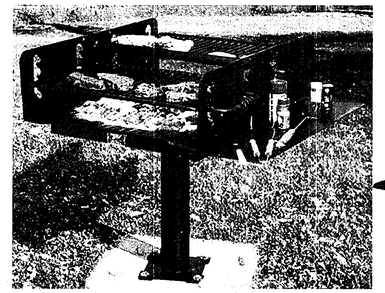
SDP-10-007

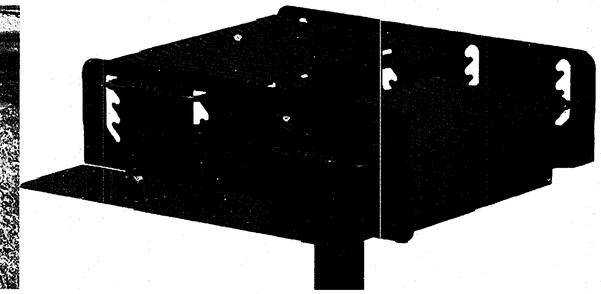


Model WXTH/CB-8UP by Pilot Rock
8' accessible park table
Recycled plastic boards, color: cedar
Frame color: stainless steel

1 Picnic Table

NTS





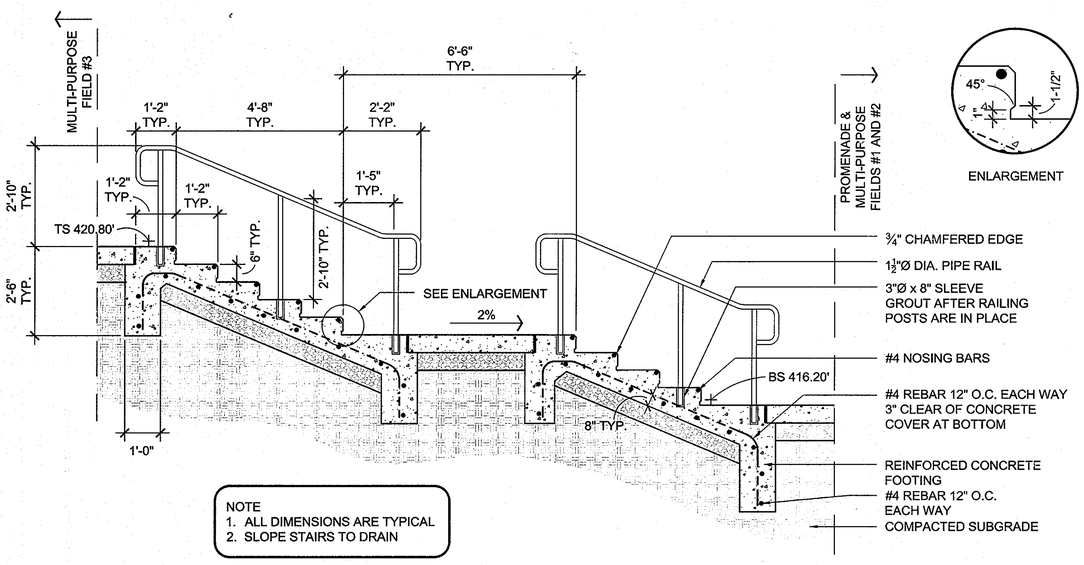
Model P-1000/S B7 by Pilot Rock
Surface mounted with one standard shelf
Mount per manufacturer's recommendation

MANUFACTURER INFORMATION:

Pilot Rock / R.J. Thomas Manufacturing Co., Inc.
PO Box 946
5648 Hwy. 59 South
Cherokee, Iowa 51015
1-800-762-5002
www.pilotrock.com

2 Grill

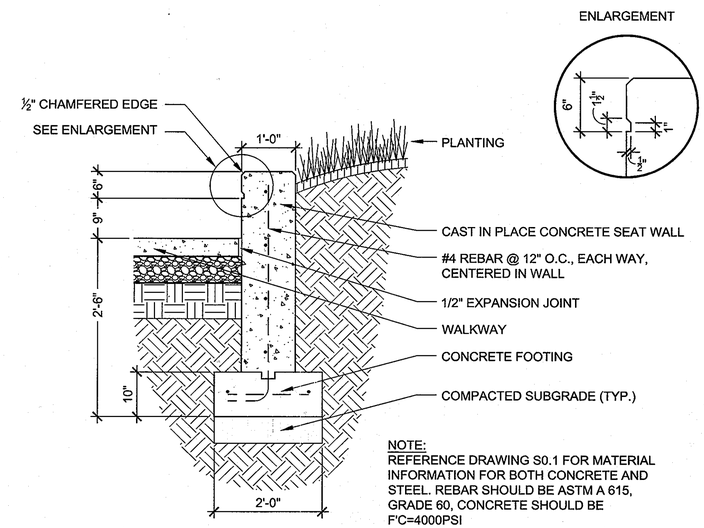
NTS



NOTE
1. ALL DIMENSIONS ARE TYPICAL
2. SLOPE STAIRS TO DRAIN

3 Stairs and Handrail

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



NOTE:
REFERENCE DRAWING S0.1 FOR MATERIAL INFORMATION FOR BOTH CONCRETE AND STEEL. REBAR SHOULD BE ASTM A 615, GRADE 60, CONCRETE SHOULD BE F'C=4000PSI

4 Concrete Seat Wall

Scale; 3/4"=1'-0"

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/31/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER — DATE 3/31/2010
HOWARD COUNTY HEALTH DEPARTMENT

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

Hardscape Details

Drawing No.

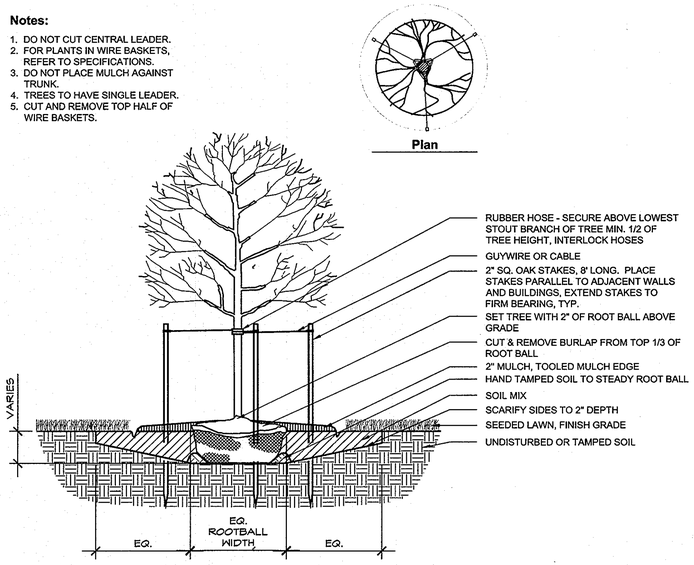
L2.2

Scale: AS SHOWN		
Date: 12/18/09	Sheet 45 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007

Notes:

1. DO NOT CUT CENTRAL LEADER.
2. FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
3. DO NOT PLACE MULCH AGAINST TRUNK.
4. TREES TO HAVE SINGLE LEADER.
5. CUT AND REMOVE TOP HALF OF WIRE BASKETS.

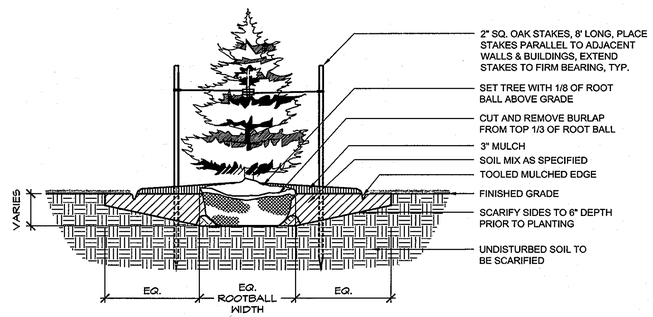


1 Typical Deciduous Tree Planting

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

Notes:

1. NEVER CUT CENTRAL LEADER.
2. FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
3. TREES TO HAVE SINGLE LEADER.
4. CUT AND REMOVE TOP HALF OF WIRE BASKETS.
5. DO NOT PLACE MULCH AGAINST TRUNK.

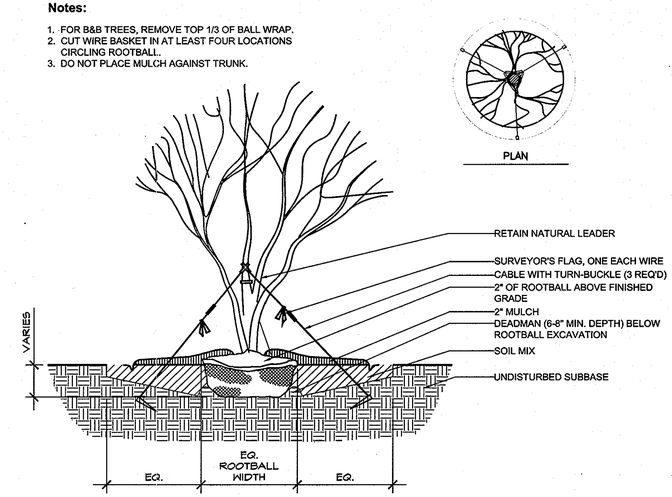


2 Typical Evergreen Tree Planting

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

Notes:

1. FOR B&B TREES, REMOVE TOP 1/3 OF BALL WRAP.
2. CUT WIRE BASKET IN AT LEAST FOUR LOCATIONS CIRCLING ROOTBALL.
3. DO NOT PLACE MULCH AGAINST TRUNK.

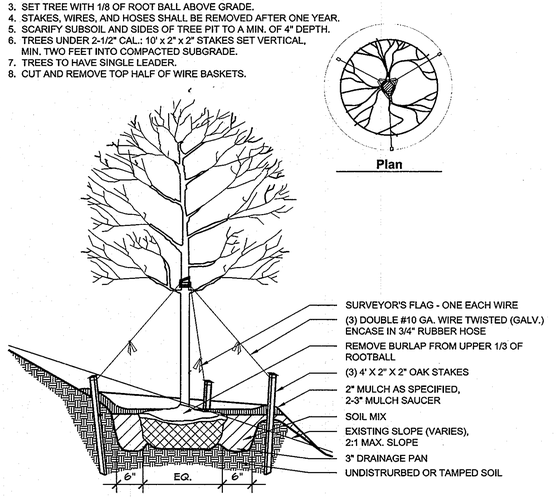


3 Typical Flowering Tree Planting

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

Notes:

1. NEVER CUT CENTRAL LEADER.
2. NEVER MULCH AGAINST TRUNK.
3. SET TREE WITH 1/8 OF ROOT BALL ABOVE GRADE.
4. STAKES, WIRES, AND HOSES SHALL BE REMOVED AFTER ONE YEAR.
5. SCARIFY SUBSOIL AND SIDES OF TREE PIT TO A MIN. OF 4" DEPTH.
6. TREES UNDER 2-1/2" CAL.: 10' x 2" x 2" STAKES SET VERTICAL, MIN. TWO FEET INTO COMPACTED SUBGRADE.
7. TREES TO HAVE SINGLE LEADER.
8. CUT AND REMOVE TOP HALF OF WIRE BASKETS.

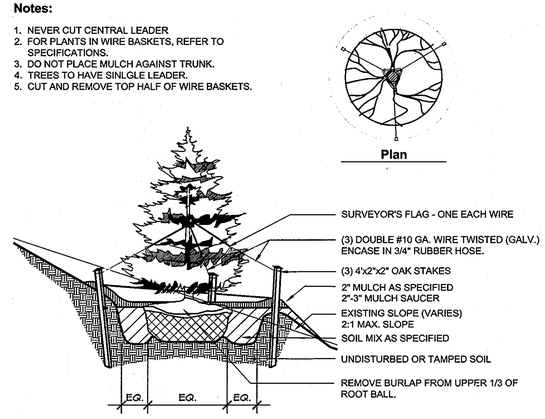


4 Typical Deciduous Tree Planting on Slope

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

Notes:

1. NEVER CUT CENTRAL LEADER
2. FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
3. DO NOT PLACE MULCH AGAINST TRUNK.
4. TREES TO HAVE SINLGLE LEADER.
5. CUT AND REMOVE TOP HALF OF WIRE BASKETS.

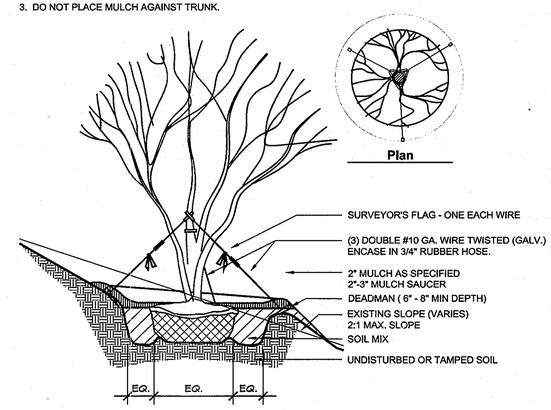


5 Typical Evergreen Tree Planting on Slope

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

Notes:

1. FOR B&B TREES, REMOVE TOP 1/3 OF BALL WRAP.
2. CUT WIRE BASKET IN AT LEAST FOUR LOCATIONS CIRCLING ROOTBALL.
3. DO NOT PLACE MULCH AGAINST TRUNK.



6 Typical Flowering Tree Planting on Slope

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS	
COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

Planting Details

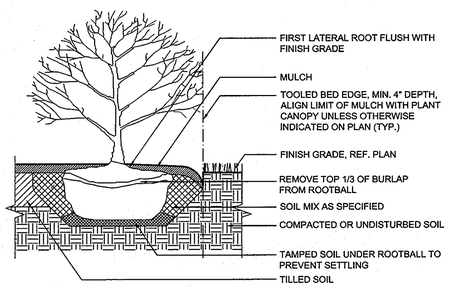
Drawing No.
L2.3

Scale: AS SHOWN		
Date: 12/18/09	Sheet 46 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007

SEQUENCE OF CONSTRUCTION (GENERAL), REFER TO SPECIFICATIONS

1. STAKE OUT PLANT/BED LOCATIONS.
2. CUT EDGE OF PLANT BED.
3. TILL SOIL AND APPLY AMENDMENTS TO ENTIRE PLANTING AREA.
4. APPLY PRE-EMERGENT HERBICIDE (TWO WEEKS PRIOR TO PLANTING).
5. INSTALL PLANTS.
6. INSTALL FERTILIZER TABLETS IN EACH PLANT PIT.
7. PLACE BACKFILL.
8. WATER EACH INDIVIDUAL PLANT THOROUGHLY.
9. PLACE MULCH OVER ENTIRE PLANT BED.
10. WATER ENTIRE PLANT BED THOROUGHLY.

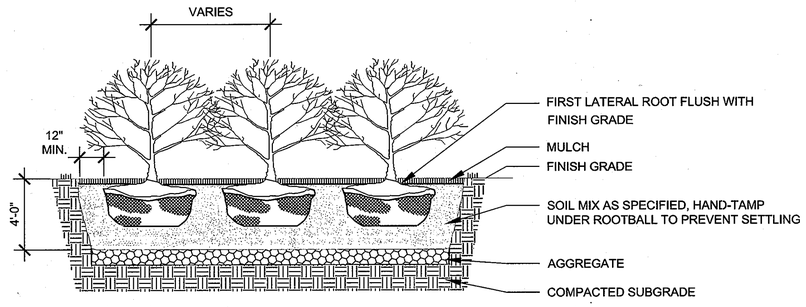


1 Typical Shrub Planting

3/8" = 1'

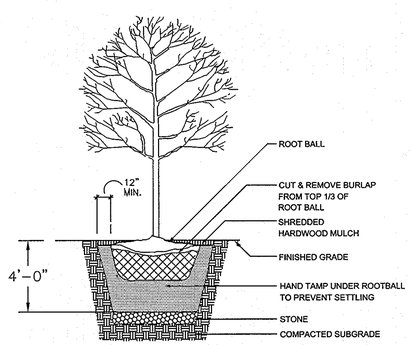
Note:

1. CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL AS SHOWN



2 Shrub Planting - Bio-Retention Area

N.T.S.



3 Tree Planting - Bio-Retention Area

N.T.S.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B. Wilson for Peter Beilenson 3/31/2010
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT MB

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

Planting Details

Drawing No.
L2.4

Scale: AS SHOWN		
Date: 12/18/09	Sheet 47 of 51	
Des: CB	Drawn: NS	Check: CB

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

SDP-10-007

SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO PERIMETER AND ROADWAYS		
Perimeter	P-1	P-2	P-3
Perimeter/Frontage Designation Landscape Type	C	C	B
Linear Feet of Roadway Frontage/Perimeter	906	1060	994
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	Yes 625	Yes 775	* SEE NOTE BELOW
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No
Subtotal (linear feet of perimeter - credits)	281	285	0
Number of Plants Required Shade Trees Evergreen Trees Shrubs	 1:40=7 1:20=14 -	 1:40=7 1:20=14 -	 - - -
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 Substitution) Shrubs (10:1 Substitution) Describe Plant Substitution Credits Below if needed	 7 14 - -	 7 14 - -	 - - - -

* NOTE:
PERIMETER BUFFER P-3 WILL BE A TEMPORARY CONDITION. PLANS TO RELOCATE OAKLAND MILLS ROAD TO THE EAST AND EXPAND THE PARKING LOT SHOWN ON THESE PLANS ARE CURRENTLY UNDERWAY. THE PROPOSED PERIMETER LANDSCAPE TREATMENT ALONG THE FUTURE RELOCATED OAKLAND MILLS ROAD WILL BE DEVELOPED AS PART OF THE EXPANDED PARKING LOT PLANS.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
Number of parking spaces	278
Number of trees required (1 TREE: 20 SPACES)	14
Number of trees provided Shade Trees Other Trees (2:1 Substitution)	 14 -

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
Stormwater Management Pond	POND 1
Linear feet of perimeter	1215
Credit for existing vegetation	YES 200
Credit for other landscaping (see *Note below)	YES 1015
Subtotal (linear feet of perimeter - credits)	0
Number of trees required Shade Trees (1:50) Evergreen Trees (1:40)	 0 0
Number of trees provided Shade Trees Other Trees (2:1 Substitution) Evergreen Trees	 0 0 0

* NOTE:
PLANTING DESIGN FOR STORMWATER MANAGEMENT POND BASED ON "LANDSCAPING GUIDANCE FOR STORMWATER BMP'S" PROVIDED BY MDE. THE LANDSCAPING STRATEGY FOR THE POND ATTEMPTS TO CREATE AN ENVIRONMENTAL AND AESTHETIC AMENITY THE FITS WITHIN ITS PARKLAND CONTEXT INSTEAD OF SCREENING ITS VIEW FROM PARK USERS AS SUGGESTED IN THE COUNTY LANDSCAPE MANUAL. INCORPORATION OF NATIVE AND ADAPTED WETLAND SPECIES HELPS TREAT STANDING WATER AT SEVERAL POOL ELEVATIONS AND CONTRIBUTES TO A SUSTAINABLE ENVIRONMENT FOR WATERFOWL, INSECTS AND AQUATIC LIFE. TREES AND SHRUBS ARE LOCATED TO PROMOTE SOIL STABILITY, INTEGRATE THE POND INTO ADJACENT WOODED AREAS AND PROVIDE AN AESTHETICALLY-PLEASING BACKDROP FOR VIEWS TO THE POND.

At the time of plant installation, all shrubs and trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from the approved Landscape Plan may result in denial or delay in the final release of the landscape plan until such time as all required materials are planted and/or revisions are made to the applicable plans

The owner, tenants, and/or their agents shall be responsible for maintenance of the required landscaping including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

This plan has been prepared in accordance with Section 16.124 of the Howard County Code and Landscape Manual with 203 shade trees, 11 ornamental trees, 100 evergreen trees and 956 shrubs.

Developer's/Owner's Landscape Certificate

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Developer's/Owner's Name Ronald G. Lepson 2/22/10

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

B. Wilson for Peter Beilenson 3/31/2010
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

MAHAN RYKIEL ASSOCIATES, INC.
Landscape Architecture, Urban Design, Planning
800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 USA
Tel. 410.235.6001 Fax. 410.235.6002

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WR&A
WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

SIGNATURE

BLANDAIR REGIONAL PARK - PHASE 1

Plant Schedules

Drawing No.

L2.5

Scale: NONE		
Date: 12/18/09	Sheet 48 of 51	
Des: CB	Drawn: NS	Check: CB

SDP-10-007

FCP TABLES

*This sheet Phase 1 only. See sheet 08 of 08 for overall phase and future estimated totals.

Phase 1 Forest to be Cleared	
Area 1	2310.8 SF
Area 2	14008.7 SF
Area 3	590.8 SF
Area 4	50633.1 SF
Area 5	97.9 SF
Area 6	168.6 SF
Area 7	9766.2 SF
Area 8	2748.5 SF
Area 9	1935.8 SF
Area 10	1064.1 SF
Area 11	5758.2 SF
Total	89102.7 SF / 2.04 Acres

Phase 1 Forest to be Retained	
Area 1	27,044.0 SF
Area 2	32,803.0 SF
Area 3	23,855.7 SF
Total	83,702.7 SF / 1.92 Acres

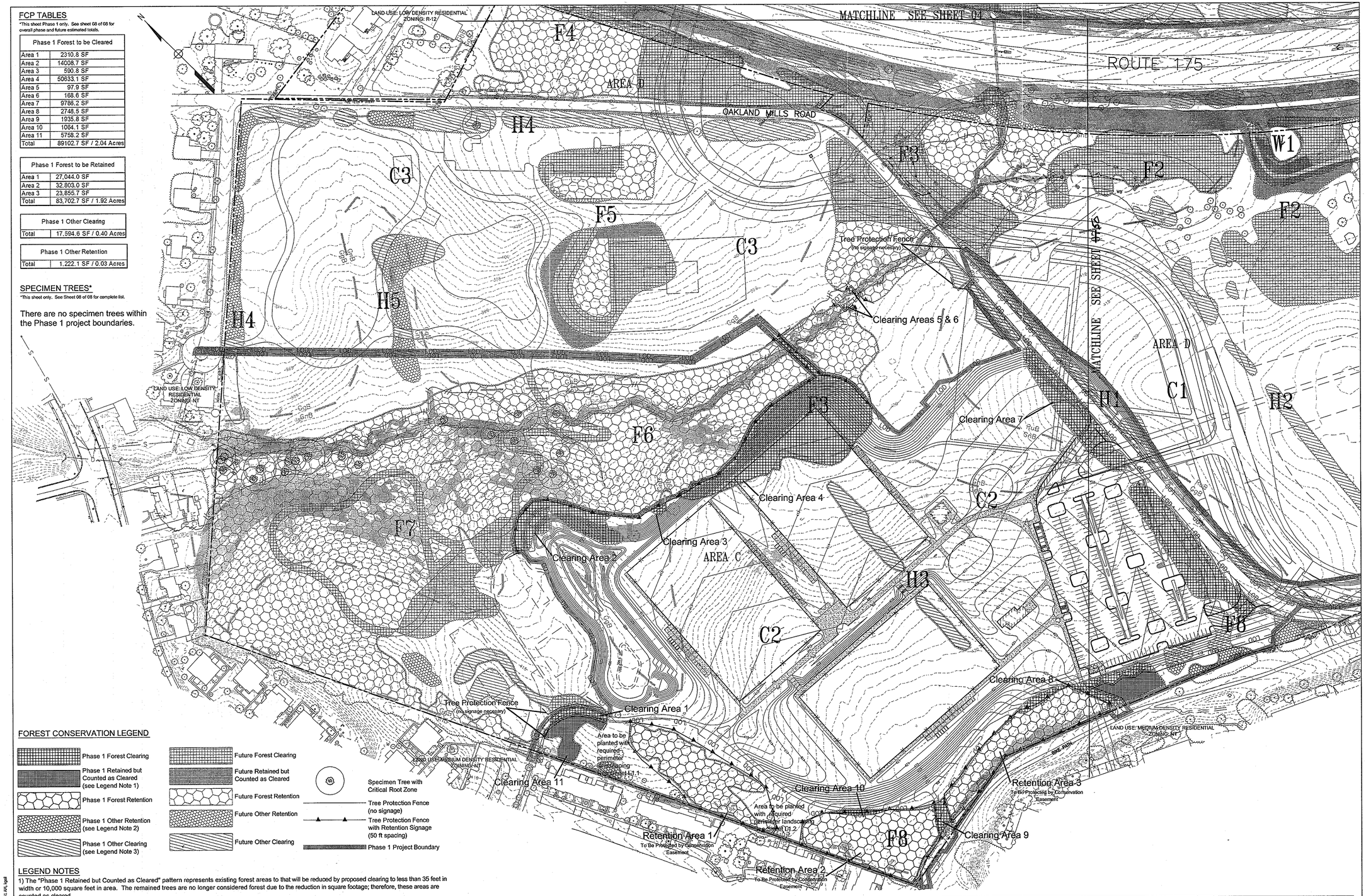
Phase 1 Other Clearing	
Total	17,594.6 SF / 0.40 Acres

Phase 1 Other Retention	
Total	1,222.1 SF / 0.03 Acres

SPECIMEN TREES*

*This sheet only. See Sheet 08 of 08 for complete list.

There are no specimen trees within the Phase 1 project boundaries.



FOREST CONSERVATION LEGEND

- Phase 1 Forest Clearing
- Phase 1 Retained but Counted as Cleared (see Legend Note 1)
- Phase 1 Forest Retention
- Phase 1 Other Retention (see Legend Note 2)
- Phase 1 Other Clearing (see Legend Note 3)
- Future Forest Clearing
- Future Retained but Counted as Cleared
- Future Forest Retention
- Future Other Retention
- Future Other Clearing
- Specimen Tree with Critical Root Zone
- Tree Protection Fence (no signage)
- Tree Protection Fence with Retention Signage (50 ft spacing)
- Phase 1 Project Boundary

LEGEND NOTES

1) The "Phase 1 Retained but Counted as Cleared" pattern represents existing forest areas to that will be reduced by proposed clearing to less than 35 feet in width or 10,000 square feet in area. The remained trees are no longer considered forest due to the reduction in square footage; therefore, these areas are counted as cleared.

2) The "Phase 1 Other Retention" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be retained. These areas are not counted as cleared, nor are they counted as retained.

3) The "Phase 1 Other Clearing" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be cleared.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

H:\2008-009\ADD\Environmental\EIA-\02\2008-FCP.dwg, 2/19/2010 8:44:41 AM, kgill

LEGEND

- Treeline
- Shrubline
- Incidividual Trees/Shrubs
- Existing Reforestation Plantings
- Gravel Path/Driveway
- Wetland
- Stream
- Wetland Buffer
- Stream Buffer
- Floodplain Line
- Grass Trail
- 15%< Slopes <25%
- Slopes >25%
- Property Line
- Soil Boundary
- Existing Structure

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

KERRIE L. GEIL — DATE 2/19/10
MD DNR QUALIFIED PROFESSIONAL

BLANDAIR REGIONAL PARK - PHASE 1

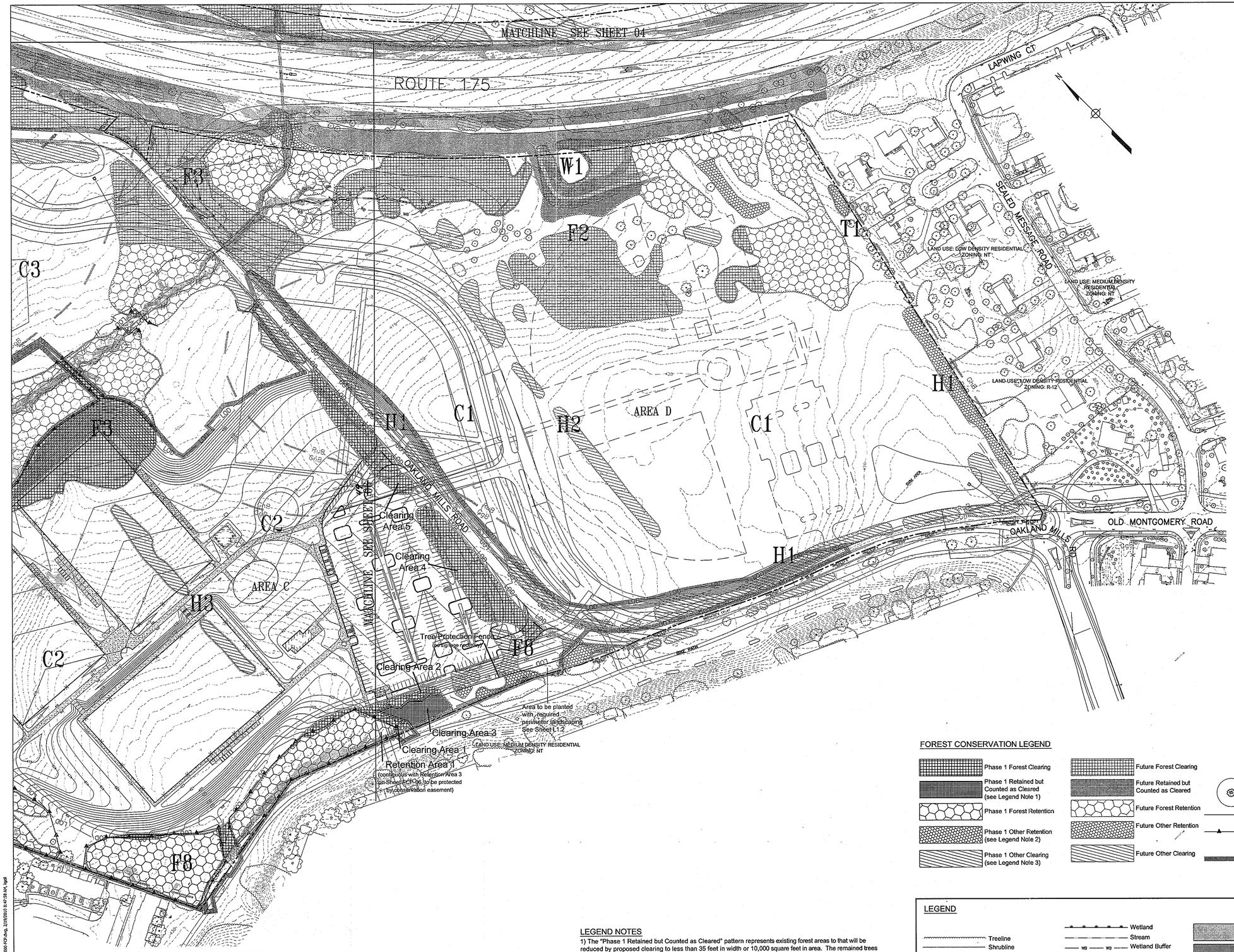
FOREST CONSERVATION PLAN

Drawing No.

F1.1

Scale: 1" = 100'		
Date: 02/19/10	Sheet 49 of 51	
Des: KLG	Drawn: KLG	Check: ATD

SDP-10-007



FCP TABLES

*This sheet Phase 1 only. See sheet 08 of 08 for overall phase and future estimated totals.

Phase 1 Forest to be Cleared	
Area 1	1,382.8 SF
Area 2	2,203.7 SF
Area 3	6,194.2 SF
Area 4	21,423.1 SF
Area 5	4,869.8 SF
Total	36,073.6 SF / 0.83 Acres

Phase 1 Forest to be Retained	
Area 1	1,047.7 SF
Total	1,047.7 SF / 0.02 Acres

Phase 1 Other Clearing	
Total	28,375.9 SF / 0.65 Acres

Phase 1 Other Retention	
Total	3,339.7 SF / 0.08 Acres

SPECIMEN TREES*

*This sheet only. See Sheet 08 of 08 for complete list.

There are no specimen trees within the Phase 1 project boundaries.

FOREST CONSERVATION LEGEND

- Phase 1 Forest Clearing
- Phase 1 Retained but Counted as Cleared (see Legend Note 1)
- Phase 1 Forest Retention
- Phase 1 Other Retention (see Legend Note 2)
- Phase 1 Other Clearing (see Legend Note 3)
- Future Forest Clearing
- Future Retained but Counted as Cleared
- Future Forest Retention
- Future Other Retention
- Future Other Clearing
- Specimen Tree with Critical Root Zone
- Tree Protection Fence (no signage)
- Tree Protection Fence with Retention Signage (50 ft spacing)
- Phase 1 Project Boundary

LEGEND

- Treeline
- Shrubline
- Individual Trees/Shrubs
- Reforestation Plantings
- Gravel Path/Driveway
- Wetland
- Stream
- WB — Wetland Buffer
- SB — Stream Buffer
- Floodplain Line
- Grass Trail
- 15%< Slopes <25%
- Slopes >25%
- Property Line
- GgB GgC — Soil Boundary
- Existing Structure

LEGEND NOTES

1) The "Phase 1 Retained but Counted as Cleared" pattern represents existing forest areas to that will be reduced by proposed clearing to less than 35 feet in width or 10,000 square feet in area. The remained trees are no longer considered forest due to the reduction in square footage; therefore, these areas are counted as cleared.

2) The "Phase 1 Other Retention" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be retained. These areas are not counted as cleared, nor are they counted as retained.

3) The "Phase 1 Other Clearing" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be cleared.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/31/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/08/10
DIRECTOR	DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	DATE 3/31/2010

REVISIONS		

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

KERRIE L. GEIL — DATE 2/19/10
MD DNR QUALIFIED PROFESSIONAL

BLANDAIR REGIONAL PARK – PHASE 1

FOREST CONSERVATION PLAN

Drawing No.

F1.2

Scale: 1" = 100'		
Date: 02/19/10	Sheet 50 of 51	
Des: KLG	Drawn: KLG	Check: ATD

SDP-10-007

N:\4308-005\CADD\Environmental\EH-4323\8000-FCP.dwg, 2/19/2010 8:47:39 AM, kgeil

CONSTRUCTION PERIOD PROTECTION PROGRAM

1. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL LOCATE THE LIMITS OF DISTURBANCE (LOD) IN THE FIELD

2. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, BLAZE ORANGE FENCING SHALL BE INSTALLED AS PER DETAIL THIS SHEET ALONG ALL LIMITS OF DISTURBANCE ADJACENT TO WOODLANDS AND AS INDICATED ON FOREST CONSERVATION PLAN SHEETS FCP02 THROUGH FCP06.

3. PROTECTIVE SIGNAGE SHALL BE INSTALLED AS PER DETAIL THIS SHEET AND AS INDICATION ON FOREST CONSERVATION PLAN SHEETS FCP02 THROUGH FCP06.

4. TREES TO BE REMOVED SHALL BE TAKEN OUT WITHOUT DAMAGING PROTECTED TREES.

5. ALL EQUIPMENT AND MACHINERY SHALL BE KEPT INSIDE THE BLAZE ORANGE FENCING AND WITHIN THE LOD.

6. ANY TYPE OF DISTURBANCE BEYOND THE LOD IS STRICTLY PROHIBITED.

7. PLACEMENT OF EXCAVATED/BACKFILL MATERIAL AND STORAGE OF EQUIPMENT/MACHINERY SHALL BE AVOIDED WITHIN THE CRITICAL ROOT ZONE AREAS OF SPECIMEN TREES IN ORDER TO MINIMIZE SOIL COMPACTION IN THESE SENSITIVE AREAS.

8. ROOT PRUNING AS PER DETAIL THIS SHEET SHALL BE UTILIZED FOR PROTECTION OF SPECIMEN TREES IN AREAS WHERE SPECIMEN TREE CRITICAL ROOT ZONES ARE LOCATED INSIDE THE LOD.

9. QUALIFIED PROFESSIONAL(S) RESPONSIBLE FOR MONITORING FOREST CONSERVATION REQUIREMENTS AND PERFORMING ANY NECESSARY CONSTRUCTION PERIOD MANAGEMENT SHALL VISIT THE PROJECT SITE ON TWO OCCASSIONS:
- THE FIRST VISIT SHALL VERIFY PROPER INSTALLATION OF PROTECTIVE DEVICES AND COMPLETION OF OTHER PROTECTIVE MEASURES AND SHALL OCCUR BEFORE ANY CONSTUCTION BEGINS.
- THE SECOND VISIT SHALL VERIFY CONTINUED COMPLIANCE WITH THE FOREST CONSERVATION PLAN AND ACCESS THE NEED FOR ADDITIONAL PROTECTIVE MEASURES TO MAINTAIN THE HEALTH OF THE RETENTION AREAS. THIS VISIT WILL OCCUR DURING THE CONSTRUCTION PERIOD.

POST-CONSTRUCTION PERIOD PROTECTION PROGRAM

A POST CONSTRUCTION PROTECTION PROGRAM IS REQUIRED TO GIVE THE FOREST RESOURCES SAVED OR PLANTED AS PART OF THE DEVELOPMENT PROPOSAL A HIGH PROBABILITY OF ACHIEVING THE SURVIVAL RATES REQUIRED FOR RELEASE OF SURETY, AS WELL AS LONG-TERM SURVIVAL. THE POST-CONSTRUCTION PROTECTION PROGRAM PERIOD SHALL BE FOR A MINIMUM OF TWO GROWING SEASONS, AS SPECIFIED IN THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

PRESERVATION REQUIREMENTS

THE AREAS FOR FOREST RETENTION, REFORESTATION OR AFFORESTATION BY AN APPROVED FOREST CONSERVATION PLAN MUST BE PERMANENTLY PROTECTED AND RECORDED AS EITHER NON-DEVELOPABLE OPEN SPACE OR AS CONSERVATION EASEMENTS.

FOREST CONSERVATION WORKSHEET
VERSION 1.0
(Enter in Yellow Cells)

NET TRACT AREA:

A. Total tract area.....=	299.57
B. Area within 100 year floodplain .....=	3.40
C. Area to remain in agricultural production.....=	0.00
D. Net tract area.....=	296.17

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	1	0	0	0

E. Afforestation Threshold.....	15% x D =	44.43
F. Conservation Threshold.....	20% x D =	59.23

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain).....=	105.64
H. Area of forest above afforestaion threshold .....=	61.21
I. Area of forest above conservation threshold .....=	46.41

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation.....=	68.52
K. Clearing permitted without mitigation.....=	37.12

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared.....=	41.79	Phase 1 clearing = 2.87 acres. The remaining acreage is future estimated clearing.
M. Total area of forest to be retained.....=	63.85	Phase 1 retention = 1.94 acres. The remaining acreage is future estimated retention.

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold...=	10.45
P. Reforestation for clearing below conservation threshold...=	0.00
Q. Credit for retention above conservation threshold.....=	4.62
R. Total reforestation required.....=	5.83
S. Total afforestation required.....=	0.00
T. Total reforestation and afforestation required.....=	5.83

PHASE 1 FOREST CONSERVATION TABLE		
Total Forest Cleared	125,176.3	SF / 2.87 Acres
Total Forest Retained	84,750.4	SF / 1.94 Acres
Total Other Clearing	45,970.5	SF / 1.05 Acres
Total Other Retention	4,561.8	SF / 0.10 Acres
Total Forest to be Protected by Conservation Easement	84,750.4	SF / 1.94 Acres

PHASE J FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 2 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 3 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 4 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 5 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 6 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

PHASE 7 FOREST CONSERVATION TABLE		
Total Forest Cleared		SF / Acres
Total Forest Retained		SF / Acres
Total Other Clearing		SF / Acres
Total Other Retention		SF / Acres
Total Forest to be Protected by Conservation Easement		SF / Acres

OVERALL FOREST CONSERVATION TABLE		
Total Forest Cleared	125,176.3	SF / 2.87 Acres
Total Forest Retained	84,750.4	SF / 1.94 Acres
Total Other Clearing	45,970.5	SF / 1.05 Acres
Total Other Retention	4,561.8	SF / 0.10 Acres
Total Forest to be Protected by Conservation Easement	84,750.4	SF / 1.94 Acres

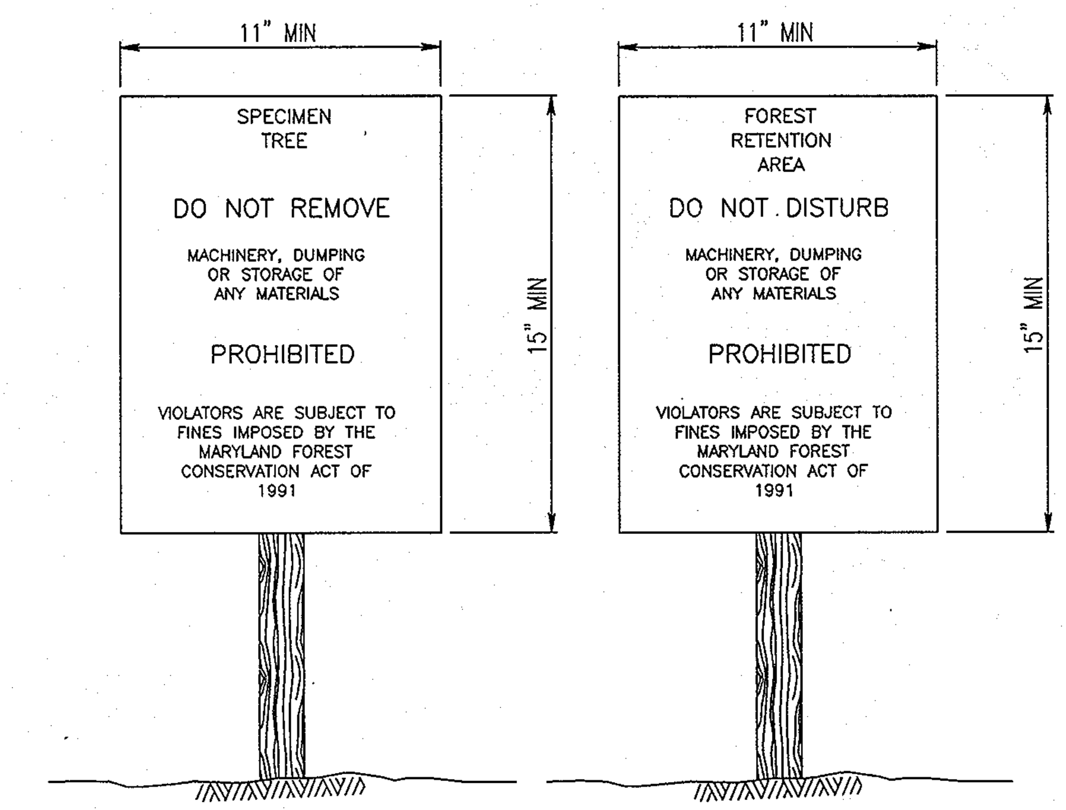
SPECIMEN TREE TABLE

Label	Common Name	Scientific Name	DBH	Condition	Stand*	Save or Remove
T1	Tulip Poplar	*Liriodendron tulipifera*	44.0"	Fair	offsite	S
T2	White Oak	*Quercus alba*	34.5"	Fair	1	S
T3	White Oak	*Quercus alba*	36.2"	Fair	1	S
T4	White Oak	*Quercus alba*	32.5"	Fair	1	S
T5	Black Oak	*Quercus velutina*	32.4"	Good	1	S
T6	Tulip Poplar	*Liriodendron tulipifera*	35.0"	Good	1	S
T7	Tulip Poplar	*Liriodendron tulipifera*	31.9"	Excellent	1	S
T8	Tulip Poplar	*Liriodendron tulipifera*	32.0"	Good	1	S
T9	Tulip Poplar	*Liriodendron tulipifera*	42.1"	Fair	1	S
T10	Tulip Poplar	*Liriodendron tulipifera*	32.0"	Excellent	1	S
T11	White Oak	*Quercus alba*	37.6"	Good	1	S
T12	Tulip Poplar	*Liriodendron tulipifera*	34.9"	Good	1	S
T13	White Oak	*Quercus alba*	32.5"	Good	1	S
T14	White Oak	*Quercus alba*	30.7"	Excellent	1	S
T15	Black Oak	*Quercus velutina*	44.0"	Poor	offsite	S
T16	Tulip Poplar	*Liriodendron tulipifera*	36.4"	Good	1	S
T17	White Oak	*Quercus alba*	35.3"	Fair	offsite	S
T18	Tulip Poplar	*Liriodendron tulipifera*	33.5"	Good	1	S
T19	Black Oak	*Quercus velutina*	38.3"	Poor/Dead	1	S
T20	Tulip Poplar	*Liriodendron tulipifera*	43.1"	Good	1	S
T21	Tulip Poplar	*Liriodendron tulipifera*	31.0	Good	1	S
T22	Northern Red Oak	*Quercus rubra*	38.5"	Good	offsite	S
T23	Black Oak	*Quercus velutina*	36.3"	Fair	1	S
T24	White Oak	*Quercus alba*	33.0"	Good	1	S
T25	Tulip Poplar	*Liriodendron tulipifera*	30.5"	Fair	1	S
T26	Tulip Poplar	*Liriodendron tulipifera*	31.3"	Good	1	S
T27	Tulip Poplar	*Liriodendron tulipifera*	30.3"	Good	1	S
T28	Tulip Poplar	*Liriodendron tulipifera*	45.2"	Good	6	S
T29	Tulip Poplar	*Liriodendron tulipifera*	36.4"	Good	6	S
T30	Tulip Poplar	*Liriodendron tulipifera*	38.8"	Fair	6	S
T31	Black Cherry	*Prunus serotina*	35.8"	Fair	6	S
T32	Tulip Poplar	*Liriodendron tulipifera*	38.0"	Excellent	1	S
T33	Tulip Poplar	*Liriodendron tulipifera*	33.8"	Good	1	S
T34	Tulip Poplar	*Liriodendron tulipifera*	34.0"	Fair	1	S
T35	White Oak	*Quercus alba*	31.8"	Poor	1	S
T36	Red Maple	*Acer rubrum*	44.7"	Poor	10	S
T37	White Oak	*Quercus alba*	34.0"	Good	10	S
T38	Tulip Poplar	*Liriodendron tulipifera*	33.0"	Good	6	S
T39	Tulip Poplar	*Liriodendron tulipifera*	33.5"	Good	6	S
T40	Red Maple	*Acer rubrum*	43.5"	Fair	13	S
T41	Red Maple	*Acer rubrum*	30.7"	Fair	12	S
T42	Red Maple	*Acer rubrum*	34.5"	Poor	12	S
T43	Pin Oak	*Quercus palustris*	34.5"	Fair	12	S
T44	Red Maple	*Acer rubrum*	39.0"	Fair	12	S
T45	Red Maple	*Acer rubrum*	36.0"	Fair	12	S
T46	Tulip Poplar	*Liriodendron tulipifera*	35.3"	Good	12	S
T47	Tulip Poplar	*Liriodendron tulipifera*	35.3"	Good	12	S
T48	Tulip Poplar	*Liriodendron tulipifera*	38.9"	Good	12	S
T49	Tulip Poplar	*Liriodendron tulipifera*	37.2"	Good	12	S
T50	Tulip Poplar	*Liriodendron tulipifera*	34.5"	Excellent	offsite	S
T51	Tulip Poplar	*Liriodendron tulipifera*	32.4"	Good	1	S
T52	Tulip Poplar	*Liriodendron tulipifera*	31.4"	Fair	offsite	S

SPECIMEN TREE TABLE CONT'D

Label	Common Name	Scientific Name	DBH	Condition	Stand*	Save or Remove
T53	Tulip Poplar	*Liriodendron tulipifera*	30.9"	Good	1	S
T54	Black Oak	*Quercus velutina*	32.3"	Fair	1	S
T55	White Oak	*Quercus alba*	32.4"	Fair	offsite	S
T56	Tulip Poplar	*Liriodendron tulipifera*	30.5"	Good	1	S
T57	Tulip Poplar	*Liriodendron tulipifera*	30.0"	Excellent	offsite	S
T58	Tulip Poplar	*Liriodendron tulipifera*	31.2"	Good	offsite	S
T59	Tulip Poplar	*Liriodendron tulipifera*	31.5"	Good	1	S
T60	Tulip Poplar	*Liriodendron tulipifera*	31.5"	Good	offsite	S
T61	Black Oak	*Quercus velutina*	33.5"	Good	1	S
T62	White Oak	*Quercus alba*	35.5"	Fair	offsite	S
T63	White Oak	*Quercus alba*	30.5"	Fair	offsite	S
T64	Tulip Poplar	*Liriodendron tulipifera*	35.8"	Fair	offsite	S
T65	Black Cherry	*Prunus serotina*	47.0"	Fair	11	S
T66	Red Maple	*Acer rubrum*	30.0"	Poor	10	S
T67	White Oak	*Quercus alba*	32.3"	Fair	10	S
T68	White Oak	*Quercus alba*	30.5"	Good	10	S
T69	Black Cherry	*Prunus serotina*	39.3"	Poor	10	S
T70	Silver Maple	*Acer saccharinum*	46.5"	Fair	T2	S
T71	Red Maple	*Acer rubrum*	30.4"	Fair	13	S
T72	Tulip Poplar	*Liriodendron tulipifera*	32.5"	Good	12	S
T73	Tulip Poplar	*Liriodendron tulipifera*	43.3"	Poor	1	S
T74	Tulip Poplar	*Liriodendron tulipifera*	40.5"	Good	offsite	S
T75	Tulip Poplar	*Liriodendron tulipifera*	33.0"	Good	offsite	S
T76	Black Cherry	*Prunus serotina*	34.4"	Fair	10	S
T77	Tulip Poplar	*Liriodendron tulipifera*	30.2"	Fair	1	S
T78	Tulip Poplar	*Liriodendron tulipifera*	34.0"	Good	1	S
T79	Tulip Poplar	*Liriodendron tulipifera*	32.5"	Good	1	S
T80	Tulip Poplar	*Liriodendron tulipifera*	34.6"	Good	1	S
T81	Tulip Poplar	*Liriodendron tulipifera*	36.0"	Fair	1	S
T82	Tulip Poplar	*Liriodendron tulipifera*	33.5"	Good	1	S
T83	White Oak	*Quercus alba*	30.5"	Good	1	S
T84	White Oak	*Quercus alba*	30.4"	Fair	1	S
T85	Red Maple	*Acer rubrum*	31.0"	Fair	H4	R
T86	Pitch Pine	*Pinus rigida*	25.5"	Good	6	S
T87	Pitch Pine	*Pinus rigida*	24.8"	Good	6	S
T88	Pitch Pine	*Pinus rigida*	25.3"	Good	6	S
T89	Pitch Pine	*Pinus rigida*	26.7"	Good	6	S
T90	Pitch Pine	*Pinus rigida*	24.4"	Good	6	S
T91	Pitch Pine	*Pinus rigida*	23.5"	Good	6	S
T92	Pitch Pine	*Pinus rigida*	23.0"	Good	6	S
T93	Pitch Pine	*Pinus rigida*	24.0"	Good	6	S
T94	Pitch Pine	*Pinus rigida*	25.5"	Good	6	S
T95	Pitch Pine	*Pinus rigida*	23.0"	Good	6	S
T96	Pitch Pine	*Pinus rigida*	24.0"	Good	6	S
T97	Pitch Pine	*Pinus rigida*	22.0"	Good	6	S
T98	Pitch Pine	*Pinus rigida*	22.2"	Good	6	S
T101	Tulip Poplar	*Liriodendron tulipifera*	35.9"	Good	12	S
T102	Tulip Poplar	*Liriodendron tulipifera*	30.3"	Good	12	S
T103	Tulip Poplar	*Liriodendron tulipifera*	34.8"	Good	12	S
T104	Tulip Poplar	*Liriodendron tulipifera*	35.2"	Good	12	S
T105	Red Maple	*Acer rubrum*	34.4"	Fair	10	S
T106	Red Maple	*Acer rubrum*	30.1"	Good	10	S

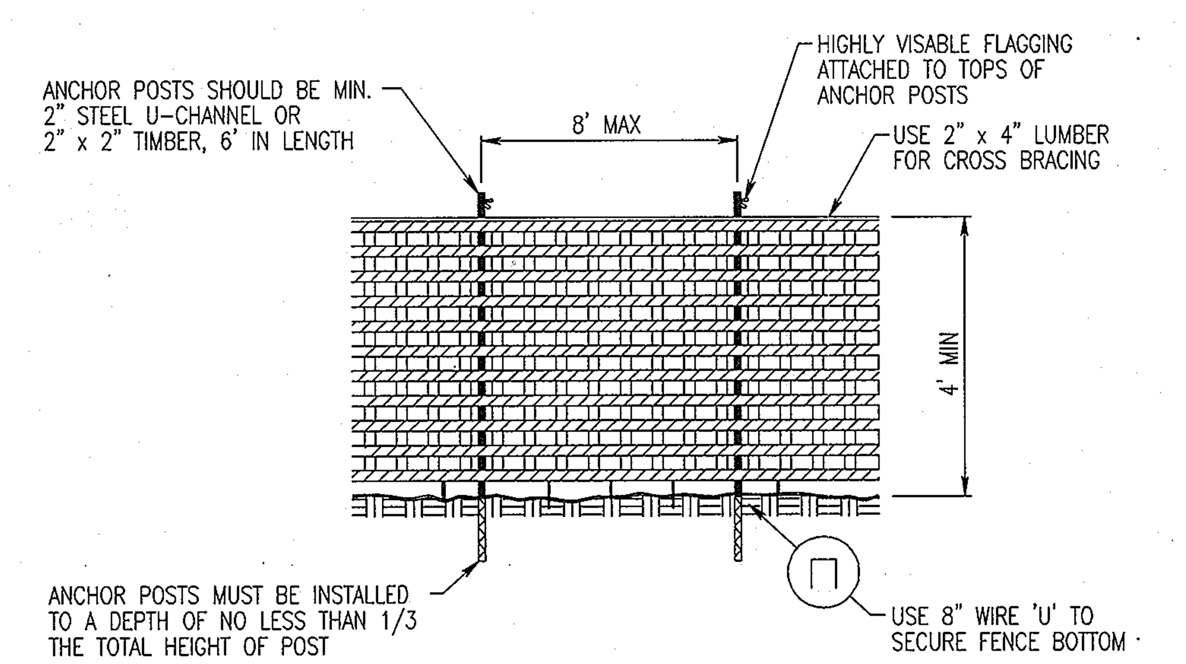
*stand "offsite" means tree is located within the first 100 ft beyond the property line



NOTES:
1. BOTTOM OF SIGN TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50' APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

CONSTRUCTION SIGNS

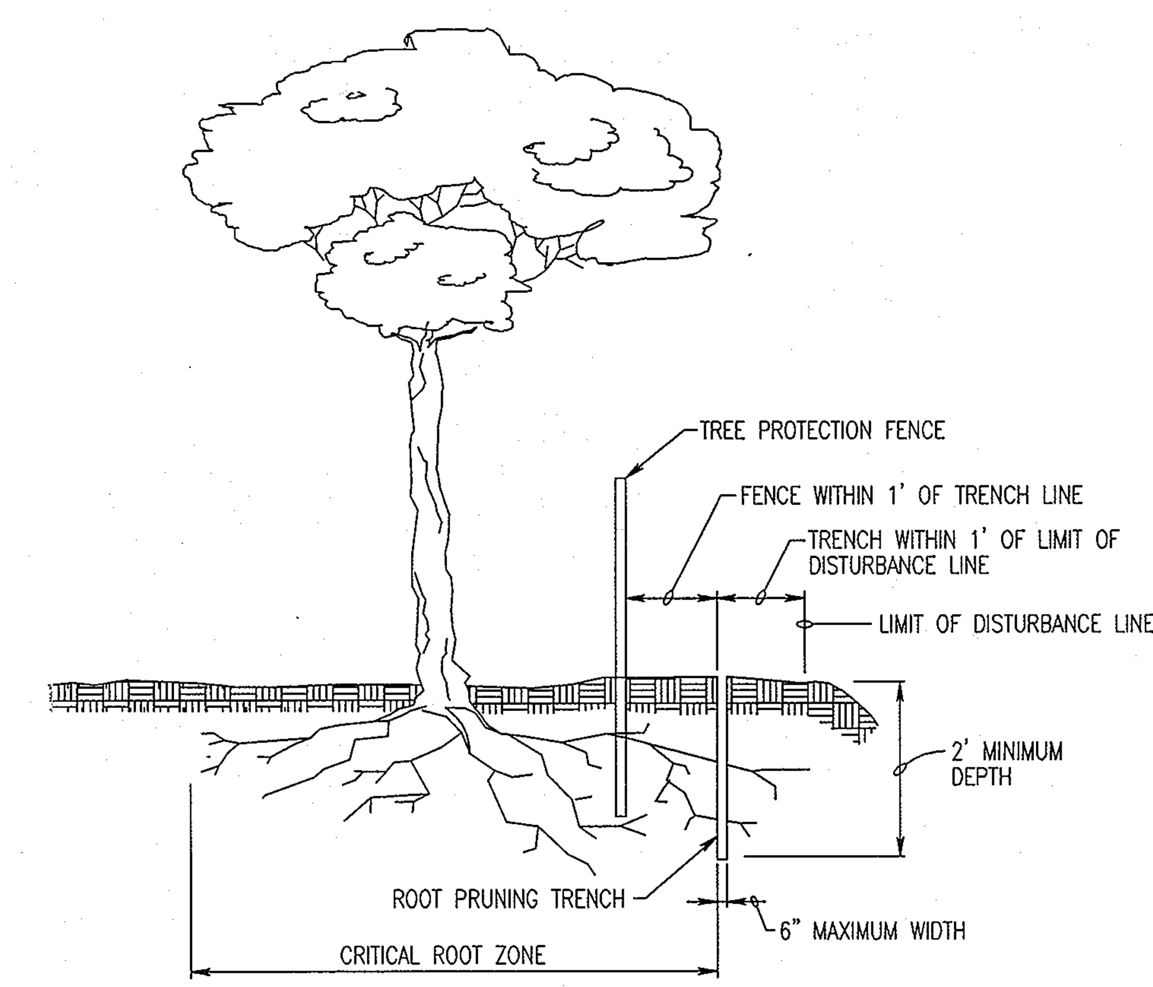
NO SCALE



NOTES:
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF RETENTION 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 SIGNAGE IS REQUIRED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

PLASTIC MESH TREE PROTECTION FENCE

NO SCALE



NOTES:
1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED AND FLAGGED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHALL 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.

ROOT PRUNING

NO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/9/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/08/10

DIRECTOR — DATE 4/8/10

APPROVED: FOR PUBLIC WATER AND ~~PRIVATE~~ PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT — DATE 3/31/2010

N:\42038-000\CADD\Environmental\EN-42038000-FCP.dwg, 2/19/2010 8:56:55 AM, kgeil

REVISIONS

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
9250 BENDIX ROAD
ELLICOTT CITY, MD 21043

WHITMAN, REQUARDT & ASSOCIATES, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3,72

ZONING: RC-DEO

ELECTION DISTRICT 3/7

GRAPHIC SCALES

0 50' 100' 200'
SCALE: 1" = 100'

SIGNATURE

KERRIE L. GEIL — DATE 2/19/10
MD DNR QUALIFIED PROFESSIONAL

BLANDAIR REGIONAL PARK - PHASE 1

FOREST CONSERVATION PLAN
DETAILS

Drawing No.
F1.3

Scale: n/a		
Date: 02/19/10		Sheet 51 of 51
Des: KLG	Drawn: KLG	Check: ATD

SDP-10-007