US Army Corps of Engineers

Baltimore District
Baltimore, Maryland

NORTHWEST BRANCH SECTION 206 STREAM RESTORATION
PACKAGE NUMBER 2

W912DR-07-D-0008
TASK ORDER NO. 19

Batchellors Run I and II, Sherwood and Woodlawn Sites

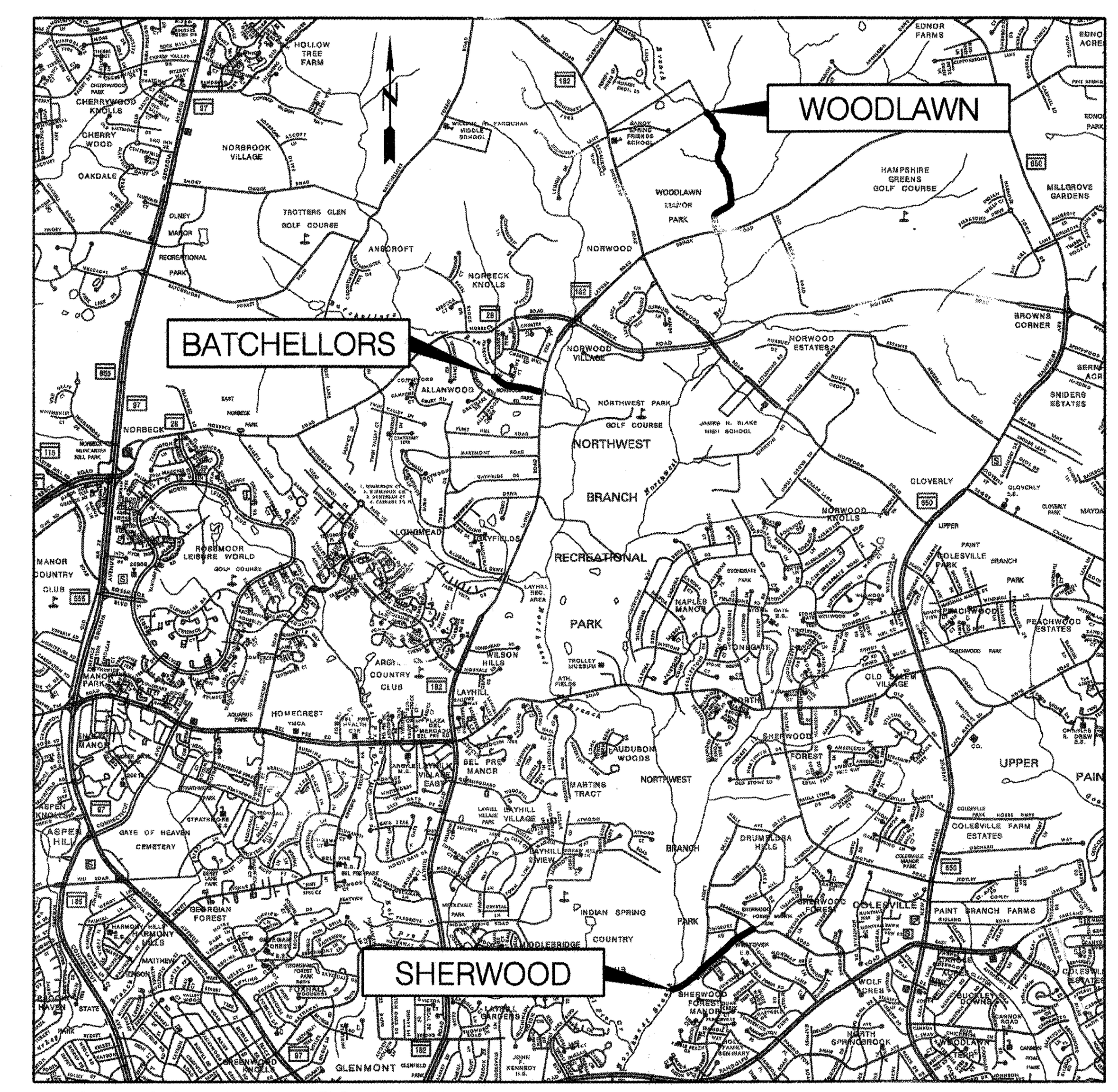
INDEX OF SHEETS

Sheet #	Sheet Title	Dicipline Sheet #	Note
1 of 79	Cover	GN-1	
2 of 79	Geometry	GN-2	
3 of 79	Geometry Tables	GN-3	
4 of 79	Geometry Control	GN-4	
5 of 79	Geometry Control	GN-5	
6 of 79	Geometry Control	GN-6	
7 of 79	Batchellors Run I & II Cover Sheet	BR-1	
8 of 79	Batchellors Run I & II Site Plan	BR-2	
9 of 79	Batchellors Run I & II Site Plan	BR-3	
10 of 79	Batchellors Run I & II Site Plan	BR-4	
11 of 79	Batchellors Run I & II Profile	BR-5	
12 of 79	Batchellors Run I & II Profile	BR-6	
13 of 79	Batchellors Run I & II Typical Sections	BR-7	
14 of 79	Batchellors Run I & II Special Sections	BR-8	
15 of 79	Batchellors Run I & II Special Sections	BR-9	
16 of 79	Batchellors Run I & II Erosion & Sediment Control Plan	BR-10	
17 of 79	Batchellors Run I & II Erosion & Sediment Control Plan	BR-11	
18 of 79	Batchellors Run I & II Erosion & Sediment Control Plan	BR-12	
19 of 79	Batchellors Run I & II Forest Conservation Plan	BR-13	
20 of 79	Batchellors Run I & II Forest Conservation Plan	BR-14	
21 of 79	Batchellors Run I & II Forest Conservation Plan	BR-15	
22 of 79	Batchellors Run I & II Planting Plan	BR-16	
23 of 79	Batchellors Run I & II Planting Plan	BR-17	
24 of 79	Batchellors Run I & II Planting Plan	BR-18	
25 of 79	Batchellors Run I & II Planting Schedules & Details	BR-19	
26 of 79	Sherwood Cover Sheet	SH-1	
27 of 79	Sherwood Site Plan	SH-2	
28 of 79	Sherwood Site Plan	SH-3	
29 of 79	Sherwood Site Plan	SH-4	
30 of 79	Sherwood Profile	SH-5	
31 of 79	Sherwood Profile	SH-6	
32 of 79	Sherwood Typical Sections	SH-7	
33 of 79	Sherwood Special Sections	SH-8	
34 of 79	Sherwood Special Sections	SH-9	
35 of 79	Sherwood Erosion & Sediment Control Plan	SH-10	
36 of 79	Sherwood Erosion & Sediment Control Plan	SH-11	
37 of 79	Sherwood Erosion & Sediment Control Plan	SH-12	
38 of 79	Sherwood Forest Conservation Plan	SH-13	
39 of 79	Sherwood Forest Conservation Plan	SH-14	
40 of 79	Sherwood Forest Conservation Plan	SH-15	
41 of 79	Sherwood Planting Plan & Details	SH-16	
42 of 79	Sherwood Planting Plan	SH-17	
43 of 79	Sherwood Planting Plan & Schedules	SH-18	
44 of 79	Woodlawn Cover Sheet	WL-1	
45 of 79	Woodlawn Site Plan	WL-2	
46 of 79	Woodlawn Site Plan	WL-3	
47 of 79	Woodlawn Site Plan	WL-4	
48 of 79	Woodlawn Site Plan	WL-5	
49 of 79	Woodlawn Profile	WL-6	
50 of 79	Woodlawn Profile	WL-7	
51 of 79	Woodlawn Typical Sections	WL-8	
52 of 79	Woodlawn Special Sections	WL-9	
53 of 79	Woodlawn Special Sections	WL-10	
54 of 79	Woodlawn Erosion & Sediment Control Plan	WL-11	
55 of 79	Woodlawn Erosion & Sediment Control Plan	WL-12	
56 of 79	Woodlawn Erosion & Sediment Control Plan	WL-13	
57 of 79	Woodlawn Erosion & Sediment Control Plan	WL-14	
58 of 79	Woodlawn Forest Conservation Plan	WL-15	
59 of 79	Woodlawn Forest Conservation Plan	WL-16	
60 of 79	Woodlawn Forest Conservation Plan	WL-17	
61 of 79	Woodlawn Forest Conservation Plan	WL-18	
62 of 79	Woodlawn Planting Plan & Details	WL-19	
63 of 79	Woodlawn Planting Plan	WL-20	
64 of 79	Woodlawn Planting Plan	WL-21	
65 of 79	Woodlawn Planting Plans & Schedules	WL-22	
66 of 79	Construction Detail Sheet	GN-7	
67 of 79	Construction Detail Sheet	GN-8	
68 of 79	Construction Detail Sheet	GN-9	
69 of 79	Construction Detail Sheet	GN-10	
70 of 79	Construction Detail Sheet	GN-11	
71 of 79	Construction Detail Sheet	GN-12	
72 of 79	Erosion & Sediment Control General Notes Sheet	GN-13	
73 of 79	Erosion & Sediment Control General Notes Sheet	GN-14	
74 of 79	Erosion & Sediment Control General Notes Sheet	GN-15	
75 of 79	Erosion & Sediment Control General Notes Sheet	GN-16	
76 of 79	Erosion & Sediment Control Details	GN-17	
77 of 79	Erosion & Sediment Control Details	GN-18	
78 of 79	Forest Conservation Details and Notes	GN-19	
79 of 79	Forest Conservation Notes	GN-20	

MDE # 12-SF-0103
NOTE TO CONTRACTORS - SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION

GENERAL NOTES FOR STREAM RESTORATION WORK ON PARKLAND

1. CONSTRUCTION OF IN-STREAM REVETMENTS, INCLUDING GRADE CONTROL AND BANK STABILIZATION, SHALL BE INSPECTED AND APPROVED BY A STREAM RESTORATION PROFESSIONAL. CONTRACTOR SHALL RECEIVE CONFIRMATION OF APPROVAL PRIOR TO SITE DEMOBILIZATION.
2. THE CONTRACTOR SHALL HAVE SURVEY EQUIPMENT AVAILABLE ON-SITE TO LOCATE CRITICAL DESIGN POINTS (STATION AND ELEVATION) ALONG THE STREAM CHANNEL.
3. THE CONTRACTOR SHALL STAKE OUT EACH REVETMENT AND PROVIDE A STREAM RESTORATION PROFESSIONAL WITH THE OPPORTUNITY TO INSPECT AND ADJUST LOCATIONS PRIOR TO CONSTRUCTION.
4. SAME DAY STABILIZATION IS REQUIRED FOR IN-STREAM AREAS IF PUMP-AROUND IS REMOVED AT THE END OF THE DAY IN ACCORDANCE WITH MDE WATERWAY CONSTRUCTION GUIDELINES. WHEN STREAM FLOW IS RE-ESTABLISHED AT THE END OF THE WORK DAY, THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME TO INSPECT THE FLOW PATTERN AND MAKE NECESSARY ADJUSTMENTS BEFORE VACATING THE SITE.
5. THE M-NCPPC CONSTRUCTION INSPECTOR MAY ADJUST THE LIMITS OF THE IN-STREAM STRUCTURES, STREAM BANK STABILIZATION, AND GRADING TO MINIMIZE DISTURBANCE TO TREES AND TREE ROOTS. IN ADDITION, CARE SHALL BE TAKEN TO PROTECT TREE ROOTS DURING CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING A SMOOTH TRANSITION UPSTREAM AND DOWNSTREAM OF WORK AREAS WITHIN THE ACTIVE CHANNEL AND ON THE STREAM BANKS. UPON CONCLUSION OF IN-STREAM WORK IN AN AREA, THE THALWEG SHALL BE ESTABLISHED AT THE DIRECTION OF THE STREAM RESTORATION PROFESSIONAL.
7. UPON THE COMPLETION OF STONE STRUCTURES THAT EXTEND UP STREAMBANKS (INCLUDING STONE TOE, ROCK PACK, AND RIP RAP), SOIL SHOULD BE INTEGRATED INTO THE UPPER PORTIONS OF THE COMPLETED STRUCTURE (ABOVE THE BASEFLOW WATER SURFACE) TO ENCOURAGE VEGETATION ESTABLISHMENT.
8. LARGE VOIDS SHOULD NOT BE LEFT IN ANY COMPLETED ROCK STRUCTURE. BOULDER STRUCTURES SHOULD BE CHINKED BY HAND WITH SMALLER STONE WHERE APPLICABLE.



MONTGOMERY COUNTY

SCALE: 1" = 4000'
4000 0 4000 8000 feet

GENERAL NOTES FOR WORK ON M-NCPPC PROPERTY

1. A PRE-CONSTRUCTION MEETING MUST BE HELD PRIOR TO START OF WORK WITH 72-HOURS PRIOR NOTICE. THE CONTRACTING OFFICER' REPRESENTATIVE AND THE M-NCPPC PARK MANAGER, INSPECTOR, AND ARBORIST SHALL BE REPRESENTED AT THE MEETING.
2. M-NCPPC RESERVES THE RIGHT TO ADJUST AND MODIFY THE LIMITS OF DISTURBANCE IN THE FIELD TO MINIMIZE IMPACTS OF WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFE FACILITY ACCESS THROUGHOUT CONSTRUCTION AND PROVIDE ANY APPROPRIATE DETOURS, TEMPORARY FACILITIES, AND SIGNAGE AS REQUESTED BY THE PARK MANAGER.
4. SITE RESTORATION AND REPAIR/REPLACEMENT OF DAMAGED INFRASTRUCTURE SHALL BE IN ACCORDANCE WITH M-NCPPC DETAILS, STANDARDS, AND SPECIFICATIONS AT THE DIRECTION OF THE M-NCPPC INSPECTOR AT NO COST TO M-NCPPC.
5. TREE PROTECTION FENCING SHOULD BE 14-GAUGE WELDED WIRE TYPE (WITH METAL STAKES AT 10 FEET O.C.) AND MUST BE MAINTAINED THROUGHOUT CONSTRUCTION. TREE SAVE AREA SIGNAGE SHOULD BE POSTED EVERY 30 FEET ALONG FENCING. TREE PROTECTION FENCE SHOULD BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY M-NCPPC ARBORIST PRIOR TO START OF CONSTRUCTION.
6. THE ENTIRE L.O.D. SHALL BE FENCED AS DIRECTED BY THE PARK INSPECTOR. WHERE SILT FENCE, SUPER SILT FENCE, OR TREE PROTECTION FENCE IS NOT REQUIRED, ORANGE BLAZE SAFETY FENCE MAY BE USED.
7. ALL PLANTING SUBSTITUTIONS MUST BE APPROVED BY M-NCPPC HORTICULTURIST. PLANT MATERIALS AND LOCATIONS SHOULD BE INSPECTED BY M-NCPPC HORTICULTURIST PRIOR TO INSTALLATION.
8. PROVIDE 4-FOOT HIGH (1-FOOT MINIMUM DIAMETER) 14-GAUGE WELDED WIRE DEER PROTECTION CAGES WITH MINIMUM OF ONE SUPPORT STAKE FOR ALL REFORESTATION TREES AND SHRUBS TO PREVENT DAMAGE BY DEER. DO NOT USE TUBEX AS A SUBSTITUTE.
9. STAGING AREAS AND ACCESS ROUTES SHALL BE DETERMINED IN FIELD TO MINIMIZE IMPACTS.
10. SPECIAL PROTECTION MEASURES, INCLUDING BUT NOT LIMITED TO 12-INCH THICK MULCH LAYER ACCESS BEDDING, MATTING, TREE PROTECTION FENCING, AND SEDIMENT CONTROLS SHALL BE PROVIDED AS DIRECTED IN FIELD BY M-NCPPC. M-NCPPC RESERVES THE RIGHT TO INSPECT CONDITION OF TREES THROUGHOUT CONSTRUCTION AND MAY REQUIRE REPAIR, REMOVAL, AND/OR REPLACEMENT OF ANY DAMAGED TREES AT NO COST TO M-NCPPC.
11. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR IDENTIFYING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN PROPER CLEARANCES BETWEEN ALL EXISTING AND PROPOSED UTILITIES AT ALL TIMES AS REQUIRED BY THE UTILITY COMPANIES.
12. ANY COST ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF UTILITES DAMAGED BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILTY OF THE CONTRACTOR. ANY DAMAGE MADE TO THE UTILITY SHALL BE REPAIRED ON AN EMERGENCY BASIS PER THE LATEST SPECIFICATIONS OF THE CONCERNED UTILITY AND COMPLETED WORK SHALL BE APPROVED BY THE CONCERNED UTILITY. ANY DAMAGE SHALL BE REPORTED AND DOCUMENTED IMMEDIATELY TO THE M-NCPPC CONSTRUCTION MANAGER. REPAIR APPROVALS SHALL BE PROVIDED TO THE M-NCPPC CONSTRUCTION MANAGER.

APPROVED
Forest Conservation Plan
R Tod Ericson
(authorization)
9-11-2012
(date)
State of Maryland
Forest Conservation Program
FCP # C10-23
NW Branch
Stream Restoration

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC FACILITY CODE
REVIEWER
APPROVED BY: Mike Pedersen
CHIEF, CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # ___ OF ___
THIS IS NOT A PERMIT
TO BEGIN CONSTRUCTION
This approval is for technical review only.
For permit information, contact Jay Childs,
Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:
This is not a permit to begin construction. For permit, contact Jay Childs at (301) 495-2574. A park permit will not be issued until the project has gone through Mandatory Referral.

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDER GROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

APPROVED:
Seyed A. Saadat
A/E DIRECTOR, WATER RESOURCES

SEAL:
STATE OF MARYLAND
SEYED A. SAADAT
No. 16493
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. 16493, EXPIRATION DATE: 5/16/2013"

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

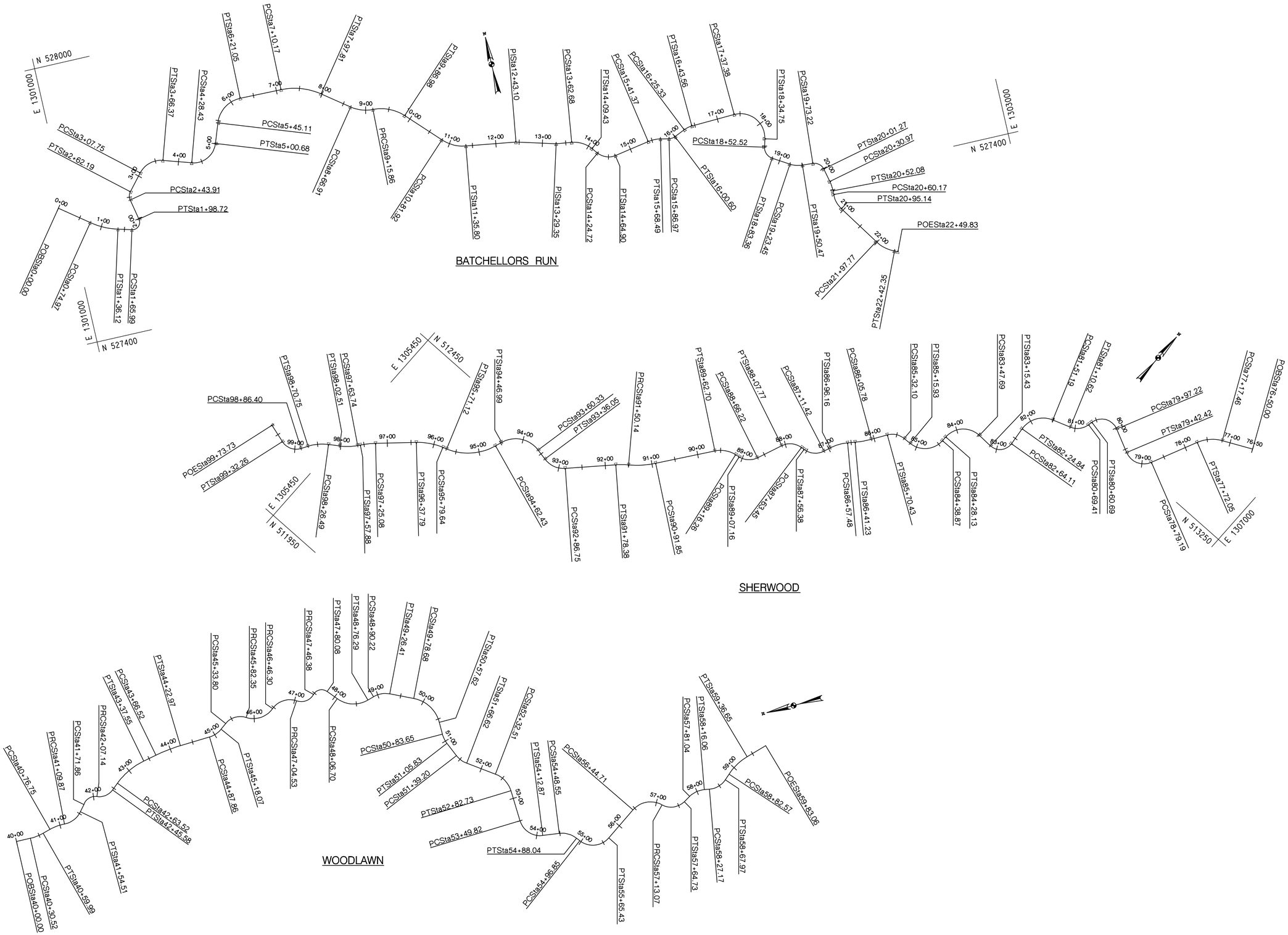
Date: 05/11/12
Design file no.
Drawing code: GN-1
Dwg scale: AS SHOWN

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

W912DR-07-D-0008
Task Order No. 19

COVER SHEET

PLOTTED: Monday, May 14, 2012 AT 05:34 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pGN-0000-nwbr.dgn
BY: rpalmer -



US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: DWB
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: GN-2
Dwg scale: 1"=100'

GEOMETRY

Sheet Number:
2 OF 79

PLOTTED: Saturday, May 12, 2012 AT 07:53 AM
FILE: \\RKKM\z0007\0007\07044_usace\task_6_northwest\cadd\dgn\pGE-0001_nwbr.dgn

BY: rpalmer

BASELINE OF STREAM - BATCHELLORS RUN

DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS
POB	0+00.00	527,697.70	1,300,983.20		CC		527,779.20	1,301,413.98	61.00	PC	14+24.72	527,555.59	1,302,134.25		PT	18+83.36	527,461.60	1,302,496.01	
PC	0+74.97	527,652.40	1,301,042.93		PT	6+21.05	527,840.19	1,301,414.95		PI	14+47.05	527,537.98	1,302,147.97		PC	19+23.45	527,440.73	1,302,530.24		
PI	1+05.92	527,633.70	1,301,067.59		PT	6+21.05	527,840.19	1,301,414.95		CC		527,578.33	1,302,163.44	37.00	PI	19+37.23	527,433.55	1,302,542.01	
CC		527,779.88	1,301,139.62	160.00	PI	7+55.48	527,838.05	1,301,549.36		PT	14+64.90	527,541.91	1,302,169.96		CC		527,488.54	1,302,559.40	56.00
PT	1+36.12	527,625.54	1,301,097.45		CC		527,698.79	1,301,501.83	140.00	PC	15+41.37	527,555.37	1,302,245.23		PT	19+50.47	527,432.66	1,302,555.76	
PC	1+65.99	527,617.66	1,301,126.26		PT	7+97.81	527,810.92	1,301,585.65		PI	15+55.09	527,557.79	1,302,258.74		PC	19+73.22	527,431.18	1,302,578.45	
PI	1+92.20	527,610.76	1,301,151.54		PC	8+66.91	527,769.55	1,301,641.00		CC		527,484.50	1,302,257.91	72.00	PI	19+89.52	527,430.12	1,302,594.72	
CC		527,633.10	1,301,130.48	16.00	PI	8+92.18	527,754.42	1,301,661.24		PT	15+68.49	527,555.07	1,302,272.18		CC		527,409.22	1,302,577.02	22.00
PT	1+98.72	527,636.40	1,301,146.14		CC		527,833.62	1,301,688.90	80.00	PC	15+86.97	527,551.40	1,302,290.30		PT	20+01.27	527,414.25	1,302,598.44	
PC	2+43.91	527,680.62	1,301,136.82		PRC	9+15.86	527,753.66	1,301,686.49		PI	15+94.02	527,550.01	1,302,297.21		PC	20+30.97	527,385.34	1,302,605.22	
PI	2+53.74	527,690.24	1,301,134.79		PI	9+53.30	527,752.54	1,301,723.92		CC		527,572.96	1,302,294.66	22.00	PI	20+41.59	527,375.00	1,302,607.65	
CC		527,684.74	1,301,156.39	20.00	CC		527,661.70	1,301,683.73	92.00	PT	16+00.60	527,552.88	1,302,303.64		CC		527,367.30	1,302,528.31	79.00
PT	2+62.19	527,697.73	1,301,141.17		PT	9+86.98	527,725.60	1,301,749.92		PC	16+25.33	527,562.96	1,302,326.21		PT	20+52.08	527,364.38	1,302,607.26	
PC	3+07.75	527,732.38	1,301,170.75		PC	10+81.92	527,657.29	1,301,815.86		PI	16+34.55	527,566.72	1,302,334.63		PC	20+60.17	527,356.31	1,302,606.96	
PI	3+40.96	527,757.64	1,301,192.31		PI	11+09.87	527,637.18	1,301,835.27		CC		527,519.13	1,302,345.78	48.00	PI	20+78.25	527,338.24	1,302,606.29	
CC		527,699.92	1,301,208.78	50.00	CC		527,714.24	1,301,874.86	82.00	PT	16+43.56	527,567.09	1,302,343.85		CC		527,354.24	1,302,662.92	56.00
PT	3+66.37	527,747.57	1,301,223.94		PT	11+35.80	527,633.12	1,301,862.93		PC	17+37.38	527,570.87	1,302,437.59		PT	20+95.14	527,323.19	1,302,616.32	
PC	4+28.43	527,728.75	1,301,283.09		PI	12+43.10	527,617.51	1,301,969.10		PI	18+08.03	527,573.71	1,302,508.19		PC	21+97.77	527,237.78	1,302,673.22	
PI	4+73.88	527,714.97	1,301,326.39		PI	13+29.35	527,594.60	1,302,052.25		CC		527,518.91	1,302,439.69	52.00	PI	22+20.69	527,218.71	1,302,685.93	
CC		527,773.53	1,301,297.34	47.00	PC	13+62.68	527,590.28	1,302,085.29		PT	18+34.75	527,505.46	1,302,489.92		CC		527,281.03	1,302,738.13	78.00
PT	5+00.68	527,757.78	1,301,341.62		PI	13+87.32	527,587.09	1,302,109.72		PC	18+52.52	527,488.30	1,302,485.32		PT	22+42.35	527,209.54	1,302,706.93	
PC	5+45.11	527,799.64	1,301,356.51		CC		527,530.79	1,302,077.52	60.00	PI	18+70.48	527,470.95	1,302,480.68		POE	22+49.83	527,206.55	1,302,713.79	
PI	5+88.89	527,840.89	1,301,371.18		PT	14+09.43	527,567.65	1,302,124.86		CC		527,482.09	1,302,508.51	24.00					

BASELINE OF STREAM - SHERWOOD

DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS
POB	76+50.00	513,443.28	1,306,927.15		PI	83+99.63	513,080.27	1,306,417.66		PT	88+07.80	512,782.28	1,306,167.25		CC		512,415.57	1,305,594.73	120.00
PC	77+17.46	513,413.84	1,306,866.46		CC		513,028.46	1,306,467.80	50.00	PC	88+66.22	512,728.16	1,306,145.27		PT	95+71.12	512,302.10	1,305,633.80	
PI	77+45.87	513,401.45	1,306,840.89		PT	84+28.13	513,028.33	1,306,417.80		PI	88+88.68	512,707.34	1,306,136.82		PC	95+79.64	512,299.33	1,305,625.75	
CC		513,341.86	1,306,901.36	80.00	PC	84+38.87	513,017.59	1,306,417.83		CC		512,743.21	1,306,108.21	40.00	PI	96+09.14	512,289.73	1,305,597.85	
PT	77+72.05	513,375.71	1,306,828.88		PI	84+87.41	512,969.05	1,306,417.97		PT	89+07.16	512,703.73	1,306,114.65		CC		512,166.96	1,305,671.32	140.00
PC	78+79.19	513,278.63	1,306,783.55		CC		513,017.46	1,306,367.83	50.00	PC	89+16.26	512,702.26	1,306,105.66		PT	96+37.79	512,269.68	1,305,576.20	
PI	79+19.59	513,242.02	1,306,766.46		PT	85+15.93	512,967.48	1,306,369.45		PI	89+40.48	512,698.36	1,306,081.76		PC	97+25.08	512,210.38	1,305,512.16	
CC		513,295.55	1,306,747.31	40.00	PC	85+32.10	512,966.96	1,306,353.28		CC		512,643.04	1,306,115.32	60.00	PI	97+41.52	512,199.21	1,305,500.10	
PT	79+42.42	513,259.47	1,306,730.03		PI	85+52.88	512,966.29	1,306,332.52		PT	89+62.30	512,678.97	1,306,067.26		CC		512,063.63	1,305,648.04	200.00
PC	79+97.22	513,283.15	1,306,680.60		CC		512,926.98	1,306,354.58	40.00	PC	90+91.85	512,575.20	1,305,989.70		PT	97+57.88	512,186.22	1,305,490.02	
PI	80+41.94	513,302.47	1,306,640.27		PT	85+70.43	512,948.91	1,306,321.12		PI	91+21.20	512,551.69	1,305,972.12		PC	97+63.74	512,181.59	1,305,486.43	
CC		513,251.59	1,306,665.48	35.00	PC	86+05.78	512,919.35	1,306,301.74		CC		512,694.93	1,305,829.50	200.00	PI	97+83.29	512,166.14	1,305,474.44	
PT	80+60.69	513,258.68	1,306,631.21		PI	86+23.55	512,904.48	1,306,292.00		PRC	91+50.14	512,534.22	1,305,948.54		CC		512,255.15	1,305,391.62	120.00
PC	80+69.41	513,250.15	1,306,629.44		CC		513,028.99	1,306,134.48	200.00	PI	91+63.90	512,526.02	1,305,937.48		PT	98+02.51	512,155.30	1,305,458.17	
PI	80+92.06	513,227.97	1,306,624.84		PT	86+41.23	512,891.57	1,306,279.79		CC		512,393.59	1,306,052.70	175.00	PC	98+26.49	512,142.00	1,305,438.22	
CC		513,258.26	1,306,590.27	40.00	PC	86+57.48	512,879.77	1,306,268.63		PT	91+77.61	512,516.20	1,305,927.83		PI	98+48.99	512,129.52	1,305,419.50	
PT	81+10.62	513,220.50	1,306,603.46		PI	86+77.07	512,865.54	1,306,255.17		PC	92+85.98	512,438.88	1,305,851.91		CC		512,058.79	1,305,493.68	100.00
PC	81+51.19	513,207.12	1,306,565.17		CC		512,811.16	1,306,341.28	100.00	PI	93+13.34	512,419.36	1,305,832.74		PT	98+70.75	512,110.22	1,305,407.92	
PI	81+94.72	513,192.76	1,306,524.07		PT	86+96.16	512,847.28	1,306,248.07		CC		512,473.91	1,305,816.23	50.00	PC	98+86.40	512,096.80	1,305,399.87	
CC		513,155.20	1,306,583.31	55.00	PC	87+11.42	512,833.05	1,306,242.55		PT	93+36.05	512,424.98	1,305,805.96		PI	99+13.29	512,073.74	1,305,386.04	
PT	82+24.84	513,149.46	1,306,528.61		PI	87+36.61	512,809.57	1,306,233.42		PC	93+60.33	512,429.97	1,305,782.20		CC		512,114.80	1,305,369.86	35.00
PC	82+64.11	513,110.40	1,306,532.71		CC		512,847.54	1,306,205.26	40.00	PI	94+13.19	512,440.82	1,305,730.47		PT	99+32.26	512,081.16	1,305,360.19	
PI	82+98.63	513,076.07	1,306,536.31		PT	87+56.38	512,807.66	1,306,208.30		CC		512,371.25	1,305,769.87	60.00	POE	99+73.73	512,092.62	1,305,320.34	
CC		513,107.27	1,306,502.87	30.00	PC	87+63.45	512,807.12	1,306,201.27		PT	94+46.99	512,390.88	1,305,713.17						
PT	83+15.43	513,077.29	1,306,501.81		PI	87+88.22	512,805.23	1,306,176.57		PC	94+62.43	512,376.30	1,305,708.12						
PC	83+47.69	513,078.43	1,306,469.57		CC		512,767.24	1,306,204.31	40.00	PI	95+20.82	512,321.12	1,305,689.01						

BASELINE OF STREAM - WOODLAWN

DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS	DESCRIPTION	STATION	NORTHING	EASTING	RADIUS
POB	40+00.00	533,407.63	1,306,681.06		PT	44+22.97	533,015.82	1,306,788.73		PI	49+09.15	532,571.44	1,306,788.62		PT	54+88.04	532,247.80	1,306,378.92	
PC	40+30.52	533,377.13	1,306,679.98		PC	44+87.86	532,950.96	1,306,790.68		CC		532,576.07	1,306,735.36	50.00	PC	54+96.85	532,242.50	1,306,371.88	
PI	40+45.36	533,362.30	1,306,679.45		PI	45+03.44	532,935.39	1,306,791.15		PT	49+26.41	532,554.38	1,306,780.41		PI	55+39.79	532,216.70	1,306,337.56	
CC		533,373.59	1,306,779.91	100.00	CC		532,952.46	1,306,840.65	50.00	PC	49+78.68	532,507.28	1,306,757.74		CC		532,206.54	1,306,398.93	45.00
PT	40+59.99	533,347.95	1,306,683.26		PT	45+18.07	532,922.84	1,306,800.38		PI	50+22.94	532,467.40	1,306,738.55		PT	55+65.43	532,181.21	1,306,361.73	
PC	40+76.75	533,331.75	1,306,687.56		PC	45+33.80	532,910.16	1,306,809.70		CC		532,537.64	1,306,694.67	70.00	PC	56+44.71	532,115.68	1,306,406.36	
PI	40+93.46	533,315.59	1,306,691.84		PI	45+61.57	532,887.79	1,306,826.15		PT	50+57.62	532,467.64	1,306,694.29		PI	56+85.44	532,082.02	1,306,429.29	
CC		533,306.10	1,306,590.90	100.00	CC		532,886.46	1,306,777.48	40.00	PC	50+83.65	532,467.78	1,306,668.26		CC		532,087.54	1,306,365.03	50.00
PRC	41+09.87	533,298.92	1,306,690.64		PRC	45+82.35	532,864.56	1,306,810.94		PI	50+94.89	532,467.84	1,306,657.02		PRC	57+13.07	532,052.75	1,306,400.95	
PI	41+33.95	533,274.90	1,306,688.91		PI	46+19.54	532,833.45	1,306,790.58		CC		532,412.78	1,306,667.96	55.00	PI	57+43.21	532,031.10	1,306,379.99	
CC		533,295.48	1,306,738.52	48.00	CC		532,837.17	1,306,852.78	50.00	PT	51+05.83	532,463.48	1,306,646.65		CC		532,024.93	1,306,429.69	40.00
PT	41+54.51	533,259.16	1,306,707.13		PRC	46+46.30	532,804.99	1,306,814.51		PC	51+39.20	532,450.55	1,306,615.89		PT	57+64.73	532,004.98	1,306,395.02	
PC	41+71.86	533,247.81	1,306,720.26		PI	46+80.30	532,778.97	1,306,836.40		PI	51+53.26	532,445.10	1,306,602.92		PC	57+81.04	531,990.84	1,306,403.15	
PI	41+93.16	533,236.27	1,306,738.16		CC		532,776.02	1,306,780.07	45.00	CC		532,404.46	1,306,635.26	50.00	PI	57+99.30	531,975.01	1,306,412.26	
CC		533,226.80	1,306,706.71	25.00	PRC	47+04.53	532,750.81	1,306,817.34		PT	51+66.62	532,433.69	1,306,594.70		CC		531,965.90	1,306,359.82	50.00
PRC	42+07.14	533,216.76	1,306,729.61		PI	47+29.67	532,729.98	1,306,803.25		PC	52+32.51	532,380.23	1,306,556.18		PT	58+16.06	531,957.04	1,306,409.02	
PI	42+28.56	533,197.15	1,306,721.01		CC		532,733.99	1,306,842.19	30.00	PI	52+59.52	532,358.31	1,306,540.39		PC	58+27.17	531,946.11	1,306,407.06	
CC		533,202.71	1,306,761.66	35.00	PRC	47+46.38	532,712.47	1,306,821.29		CC		532,412.38	1,306,511.56	55.00	PI	58+49.09	531,924.53	1,306,403.17	
PT	42+45.58	533,180.57	1,306,734.55		PI	47+68.80	532,696.85	1,306,837.38		PT	52+82.73	532,357.41	1,306,513.39		CC		531,938.13	1,306,451.34	45.00
PC	42+63.52	533,166.67	1,306,745.90		CC		532,698.12	1,306,807.36	20.00	PC	53+49.82	532,355.18	1,306,446.34		PT	58+67.97	531,908.17	1,306,417.76	
PI	43+01.30	533,137.40	1,306,769.80		PT	47+80.08	532,682.65	1,306,820.03		PI	53+87.77	532,353.92	1,306,408.41		PC	58+82.57	531,897.28	1,306,427.48	
CC		533,071.79	1,306,629.73	150.00	PC	48+06.70	532,665.78	1,306,799.43		CC		532,310.21	1,306,447.84	45.00	PI	59+10.08	531,876.75	1,306,445.80	
PT	43+37.55	533,100.31	1,306,776.99		PI	48+46.00	532,640.89	1,306,769.02		PT	54+12.87	532,316.32	1,306,403.26		CC		531,817.39	1,306,337.94	120.00
PC	43+66.52	533,071.87	1,306,782.50		CC		532,619.36	1,306,837.44	60.00	PC	54+48.55	532,280.97	1,306,398.41		PT	59+36.65	531,850.29	1,306,453.34	
PI	43+94.81	533,044.10	1,306,787.88		PT	48+76.29	532,603.06	1,306,779.69		PI	54+69.39	532,260.32	1,306,395.58		POE	59+83.06	531,805.66	1,306,466.07	
CC		533,005.31	1,306,438.89	350.00	PC	48+90.22	532,589.65	1,306,783.48		CC		532,287.76	1,306,348.87	50.00					

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

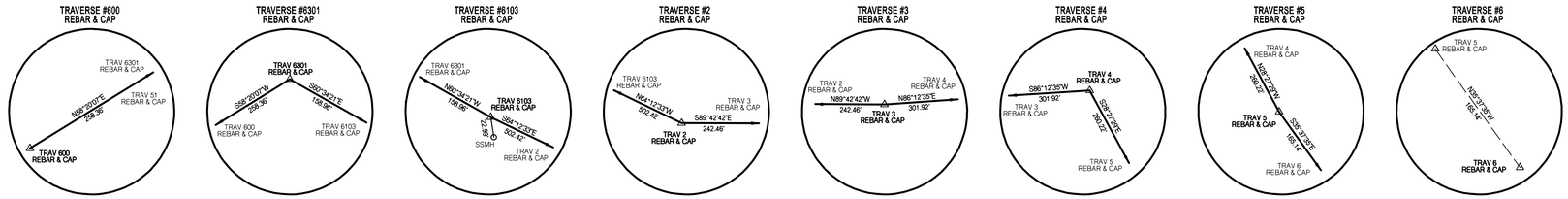
Designed by: DWB
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-3
Dwg scale:

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

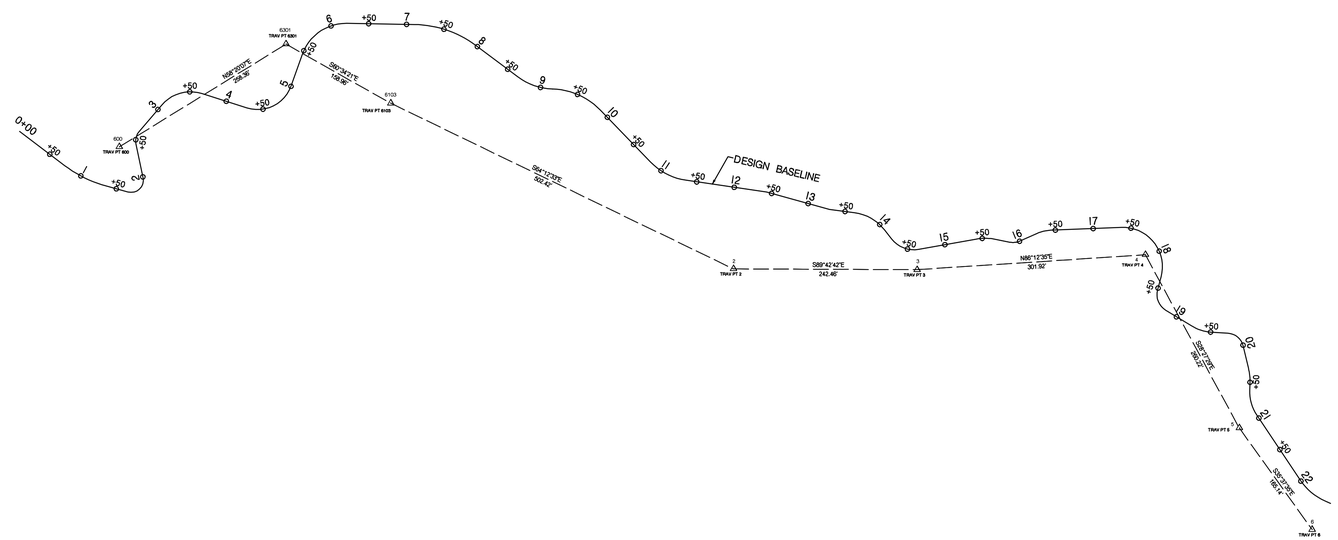
W912DR-07-D-0008
Task Order No. 19

GEOMETRY TABLES

Sheet Number:
3 OF 79



PROJECT DATUM



BACHELORS TRAVERSE DATA TABLE				
TRAVERSE	NORTHING (Y)	EASTING (X)	ELEVATION	DESCTIPTIONS
600	527677.38	1301114.82	343.93	REBAR & CAP
6301	527813.01	1301334.72	344.27	REBAR & CAP
6103	527734.91	1301473.17	343.62	REBAR & CAP
2	527516.31	1301925.54	340.92	REBAR & CAP
3	527515.09	1302168.00	340.31	REBAR & CAP
4	527535.05	1302469.26	338.27	REBAR & CAP
5	527306.27	1302593.26	338.34	REBAR & CAP
6	527172.04	1302689.46	340.76	REBAR & CAP

NOTES:

1. COORDINATES REFERENCED HEREON ARE IN PROJECT DATUM, BASED ON PRIOR WORK DONE BY ANOTHER A/E CONSULTANT UNDER A SEPARATE CONTRACT ISSUED BY USACE IN THE LATE 1990's.
2. NO COORDINATES, REFERENCE SKETCHES,OR ANY OTHER RECOVERY/DATUM INFORMATION WAS AVAILABLE OR PROVIDED TO AB CONSULTANTS, INC., HEREFORE, AB CONSULTANTS, INC. EXTRACTED THE COORDINATES FROM KEY FEATURES IN THE CADD FILES AND RECOVERED SOME OF THESE FEATURES TO ROUGHLY ORIENT OUR NEW WORK WITH THE PRIOR WORK PERFORMED BY OTHERS.

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Date: 05/11/2012
Design file no.
Drawing code: GN-4
Dwg scale: 1":100'
Designed by:
Dwn by:
Ckd by:
Reviewed by:
Submitted by: CVK

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

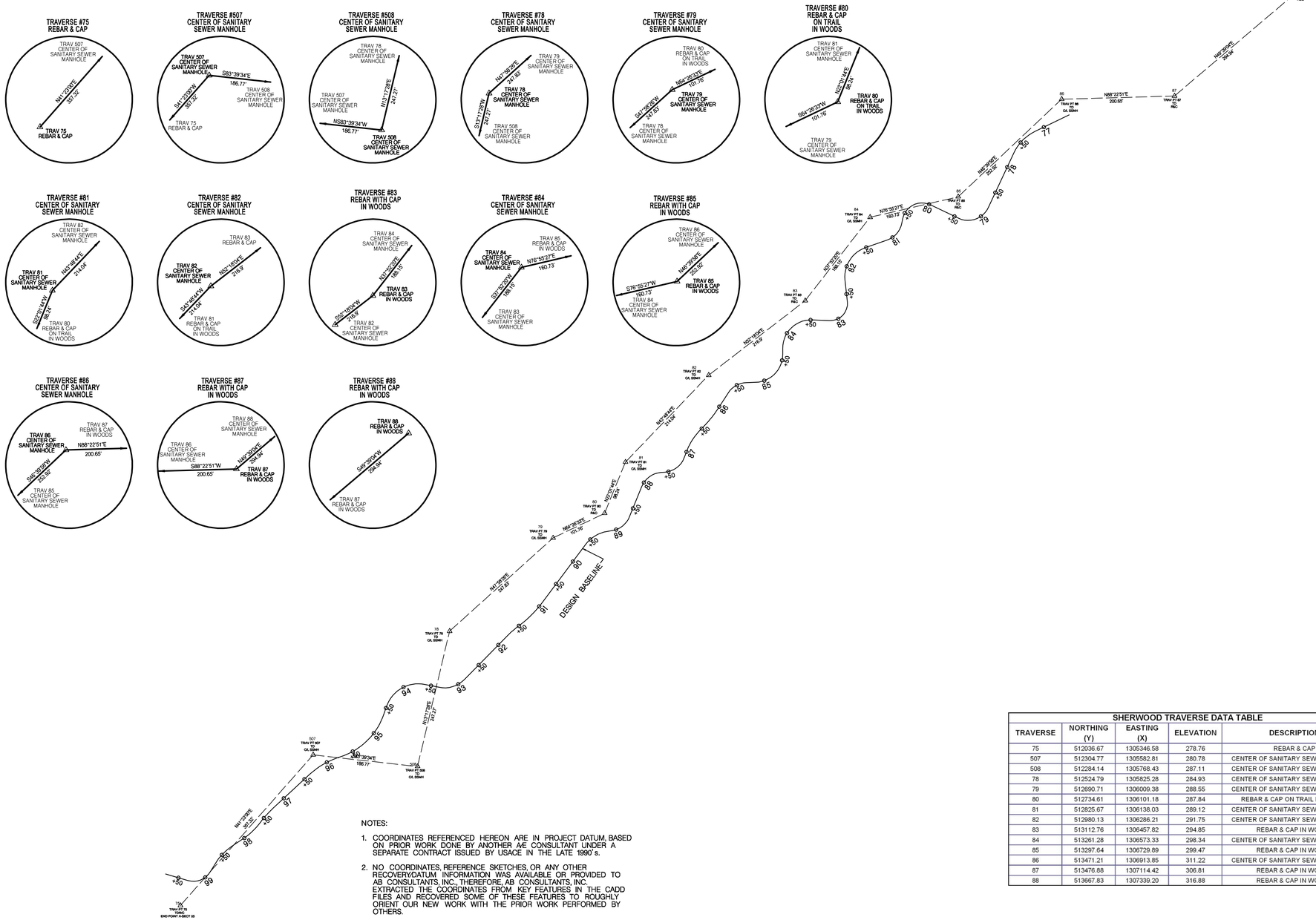
W912DR-07-D-0008
Task Order No. 19

GEOMETRY CONTROL BACHELOR'S RUN

Sheet Number:
4 OF 79

BY: rpalmer –

PLOTTED: Saturday, May 12, 2012 AT 07:34 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTrav-B000-rwbr.dgn



NOTES:

1. COORDINATES REFERENCED HEREON ARE IN PROJECT DATUM, BASED ON PRIOR WORK DONE BY ANOTHER AÆ CONSULTANT UNDER A SEPARATE CONTRACT ISSUED BY USACE IN THE LATE 1990's.

2. NO COORDINATES, REFERENCE SKETCHES, OR ANY OTHER RECOVERY/DATUM INFORMATION WAS AVAILABLE OR PROVIDED TO AB CONSULTANTS, INC., THEREFORE, AB CONSULTANTS, INC. EXTRACTED THE COORDINATES FROM KEY FEATURES IN THE CADD FILES AND RECOVERED SOME OF THESE FEATURES TO ROUGHLY ORIENT OUR NEW WORK WITH THE PRIOR WORK PERFORMED BY OTHERS.

SHERWOOD TRAVERSE DATA TABLE

TRAVERSE	NORTHING (Y)	EASTING (X)	ELEVATION	DESCRIPTION
75	512036.67	1305346.58	278.76	REBAR & CAP
507	512304.77	1305582.81	280.78	CENTER OF SANITARY SEWER MANHOLE
508	512284.14	1305768.43	287.11	CENTER OF SANITARY SEWER MANHOLE
78	512524.79	1305825.28	284.93	CENTER OF SANITARY SEWER MANHOLE
79	512690.71	1306009.38	288.55	CENTER OF SANITARY SEWER MANHOLE
80	512734.61	1306101.18	287.84	REBAR & CAP ON TRAIL IN WOODS
81	512825.67	1306138.03	289.12	CENTER OF SANITARY SEWER MANHOLE
82	512980.13	1306286.21	291.75	CENTER OF SANITARY SEWER MANHOLE
83	513112.76	1306457.82	294.85	REBAR & CAP IN WOODS
84	513261.28	1306573.33	298.34	CENTER OF SANITARY SEWER MANHOLE
85	513297.64	1306729.89	299.47	REBAR & CAP IN WOODS
86	513471.21	1306913.85	311.22	CENTER OF SANITARY SEWER MANHOLE
87	513476.88	1307114.42	306.81	REBAR & CAP IN WOODS
88	513667.83	1307339.20	316.88	REBAR & CAP IN WOODS

100' 0 100' 200'

SCALE: 1" = 100'

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 309-3931
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Designed by:
Dwn by:
Ckd by:
Reviewed by:
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-5
Dwg scale: 1" = 100'

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

W912DR-07-D-0008
Task Order No. 19

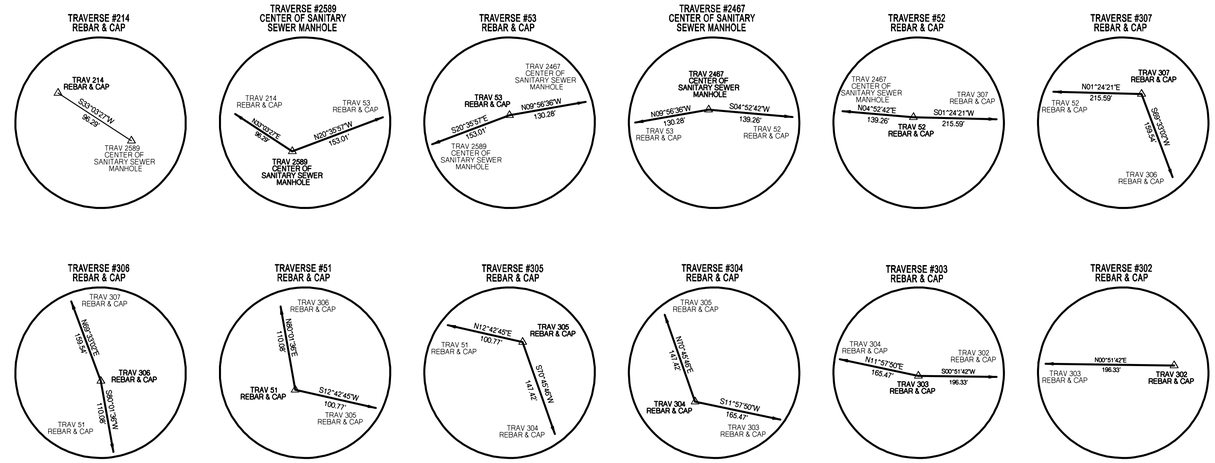
GEOMETRY CONTROL SHERWOOD

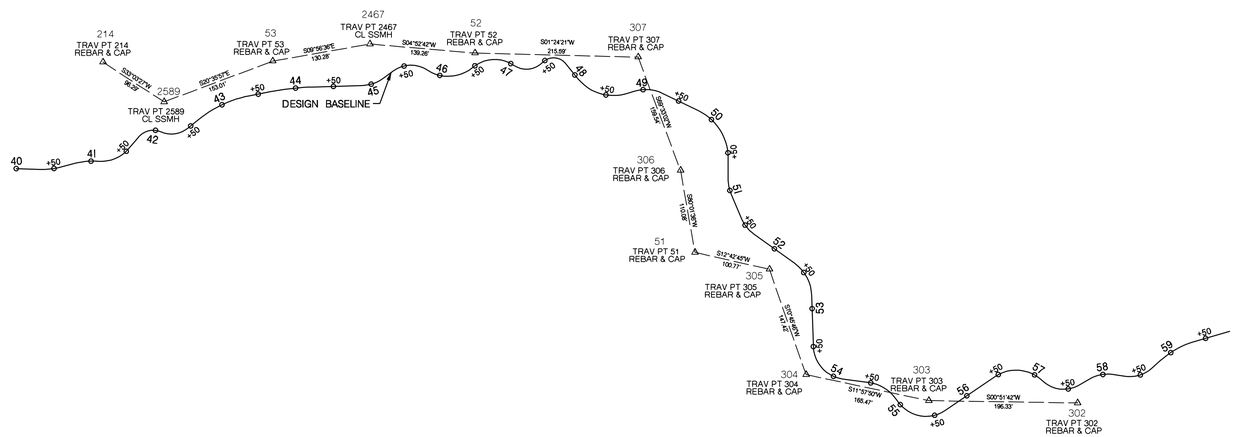
Sheet Number:
5 OF 79

BY: pgalmer

PLOTTED: Saturday, May 12, 2012 AT 07:29 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTrav-s001-nwbr.dgn

PROJECT DATUM





WOODLAWN TRAVERSE DATA TABLE				
TRAVERSE	NORTHING (Y)	EASTING (X)	ELEVATION	DESCRIPTION
214	533292.90	1306821.70	377.02	REBAR & CAP
2589	533212.20	1306769.18	374.95	CENTER OF SANITARY SEWER MANHOLE
53	533068.97	1306823.01	372.89	REBAR & CAP
2467	532940.65	1306845.51	372.98	CENTER OF SANITARY SEWER MANHOLE
52	532801.89	1306833.66	371.34	REBAR & CAP
307	532586.36	1306828.37	370.03	REBAR & CAP
306	532530.62	1306678.89	369.21	REBAR & CAP
51	532511.56	1306570.47	369.22	REBAR & CAP
305	532413.25	1306548.30	368.47	REBAR & CAP
304	532364.68	1306409.10	367.85	REBAR & CAP
303	532202.81	1306374.80	367.03	REBAR & CAP
302	532006.50	1306371.85	367.13	REBAR & CAP

NOTES:

1. COORDINATES REFERENCED HEREON ARE IN PROJECT DATUM, BASED ON PRIOR WORK DONE BY ANOTHER A/E CONSULTANT UNDER A SEPARATE CONTRACT ISSUED BY USACE IN THE LATE 1990's.
2. NO COORDINATES, REFERENCE SKETCHES,OR ANY OTHER RECOVERY/DATUM INFORMATION WAS AVAILABLE OR PROVIDED TO AB CONSULTANTS, INC., HEREFORE, AB CONSULTANTS, INC. EXTRACTED THE COORDINATES FROM KEY FEATURES IN THE CADD FILES AND RECOVERED SOME OF THESE FEATURES TO ROUGHLY ORIENT OUR NEW WORK WITH THE PRIOR WORK PERFORMED BY OTHERS.

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 305-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

Designed by: Dwn by: Ckd by: Reviewed by: Submitted by: CYK
Date: 05/11/2012
Design file no.
Drawing code: GN-6
Dwg scale: 1"= 100'

GEOMETRY CONTROL WOODLAWN

Sheet Number:
6 OF 79

BY: rpalmer –

PLOTTED: Saturday, May 12, 2012 AT 07:44 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTrav-w001-nwbr.dgn

KEY MAP

200 0 200 400 Feet
SCALE: 1"=200'

SITE INFORMATION - BATCHELLORS	
A. TOTAL AREA OF FACILITY (Base, Campus, Park, Etc.)	27.3 Acres
B. TOTAL AREA OF PROJECT SITE	27.3 Acres
C. AREA DISTURBED	4.83 Acres
D. AREA TO BE ROOFED OR PAVED	0.00 Acres
E. TOTAL CUT	9,748 CY
F. TOTAL FILL	2,654 CY
G. OFF-SITE WASTE/BORROW AREA LOCATION	TBD

FOR COMBINED SITE INFORMATION REFER TO DRAWING GN-13

For Commission use only

Permit Application:

Date Received:_____

Park Permit No:___2012.09___

Permit Fee:_____

Review Staff:

Lead Staff:_____

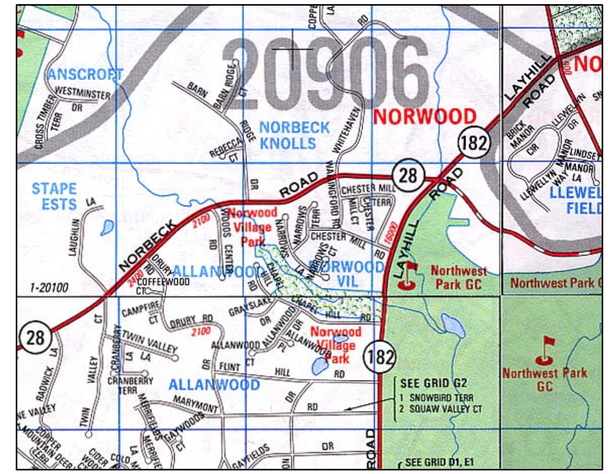
Region Staff:_____

Planning Staff:_____

Inspector:_____

Other:_____

Additional Comments:



VICINITY MAP

Copyright ADC The Map People
Permitted Use No. 21003214
Expiration: 03/13/13

NOTES:

1. PRIOR TO INITIATION OF WORK, THE CONTRACTOR SHALL WALK THE SITE WITH THE CONTRACTING OFFICER'S REPRESENTATIVES AND M-NCPPC TO IDENTIFY THE TREES TO BE PROTECTED.
2. STOCKPILE AREA SHALL BE LOCATED AT AN MDE APPROVED OFF-SITE LOCATION.
3. MAINTENANCE OF TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. HARDWOOD MATS SHALL BE PLACED BY THE CONTRACTOR TO PROTECT CRITICAL ROOT ZONES, SANITARY SEWER LINES, MANHOLES AND SENSITIVE AREAS AS AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL EMPLOY LOW IMPACT CONSTRUCTION TECHNIQUES FOR ALL AREAS WITHIN THE LOD.
6. SILT FENCE AND SUPER SILT FENCE INSTALLED WITHIN CRITICAL ROOT ZONES SHALL NOT BE EMBEDED INTO THE GROUND (I.E. TRENCHED) BUT THE REMAINING GEOTEXTILE SHALL BE SPREAD UPSLOPE OF THE FENCE LINE, STAPLED/STAKED 0N 3 FOOT CENTERS AND COVERED WITH 12 INCHES OF MULCH. THE CHAIN LINK FENCE OF SUPER SILT FENCE SHALL NOT BE EMBEDED BUT CUT AT GROUND LEVEL OR FOLDED UPSLOPE
7. THE WORK IN THIS AREA SHALL BE COMPLETED USING THE METHOD OF SAME DAY STABILIZATION. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORKDAY. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF THE WORKDAY.
8. WORK ACTIVITIES ON THE GOLF COURSE SHALL NOT PREVENT OR UNDULY INTERRUPT THE MOVEMENT OF CART TRAFFIC OR GOLF COURSE PATRONS ACCESS TO, AND PLAY ON, THE TEES, FAIRWAYS AND GREENS OF THE COURSE. THE CONTRACTOR SHALL PROVIDE THE GOLF COURSE SUPERINTENDENT 24 HOURS NOTIFICATION OF ANY WORK ACTIVITIES THAT MAY UNDULY INTERFERE WITH NORMAL GOLF COURSE OPERATIONS.
9. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE EXISTING ASPHALT ROADS RESULTING FROM THE CONSTRUCTION ACTIVITIES.

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION AT (410) 537-3510, THE M-NCPPC PARK MANAGER, AND THE CONTRACTING OFFICER'S REPRESENTATIVE, MR. BRUCE PITTS, AT (301) 677-7433 FOR THE REQUIRED PRE-CONSTRUCTION MEETING AT LEAST SEVEN DAYS BEFORE COMMENCING LAND DISTURBING ACTIVITIES.
2. INSTALL TREE PROTECTION FENCING AS SHOWN ON THE PLAN.
3. COMPLETE TREE REMOVAL AND SELECTIVE TRIMMING AS SHOWN ON THE PLAN OR AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
4. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.

PHASE B-1 (UPSTREAM OF LAYHILL ROAD)

5. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
6. INSTALL STABILIZED CONSTRUCTION ENTRANCES FROM CHAPEL HILL ROAD AND LAYHILL ROAD AND BUILD THE ASSOCIATED TEMPORARY ACCESS ROAD. STABILIZE AT THE END OF EACH WORK DAY. FOR THE ACCESS ROAD WITHIN A WETLAND, PLACE TIMBER MATS TO MINIMIZE IMPACTS.
7. INSTALL SILT FENCE AS DESIGNATED ON THE PLANS.
8. CLEAR AND GRUB REMAINING WORK AREA UPSTREAM OF LAYHILL ROAD. ANY DISTURBANCE CAUSED BY THIS PROCESS SHALL BE STABILIZED BY THE END OF THE DAY.
9. INSTALL PUMP-AROUND FLOW DIVERSION AND DEWATER THE CONSTRUCTION ZONE THROUGH THE APPROVED DEWATERING DEVICE. THE CONTRACTOR SHALL STAGE THE LIMITS OF THE PUMP-AROUND FLOW DIVERSION TO DEWATER ONLY THAT SECTION SCHEDULED FOR THAT DAY'S WORK. AT THE END OF EACH WORK DAY THE WORK AREA SHALL BE STABILIZED, THE PUMP-AROUND PRACTICE REMOVED, AND THE FLOW RESTORED TO THE CHANNEL. WORK SHALL BE COMPLETED ONLY DURING FORECASTED PERIODS OF DRY WEATHER.
10. CONSTRUCT STREAM IMPROVEMENTS ABOVE LAYHILL ROAD BEGINNING UPSTREAM TO DOWNSTREAM. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MINIMIZE UNNECESSARY DISTURBANCE. FOR THE STREAM IMPROVEMENTS, ONLY THAT AMOUNT OF WORK SHALL BE COMPLETED THAT CAN BE STABILIZED BY THE END OF THE DAY.
11. ONCE ALL STREAM WORK UPSTREAM OF LAYHILL ROAD HAS BEEN COMPLETED AND STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE ASSOCIATED ACCESS ROAD. AS THE ROAD IS REMOVED, INSTALL PLANTINGS ACCORDING TO THE PLAN, SCHEDULE AND DETAILS PROVIDED ON THE PLANTING PLAN.
12. WITH THE APPROVAL OF THE MDE INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THESE CONTROLS. INSTALL ANY REMAINING PLANTINGS.

PHASE B-2 (DOWNSTREAM OF LAYHILL ROAD - NORTHWEST GOLF COURSE)

13. CONTACT GOLF COURSE SUPERINTENDENT MR. CHRIS FERNANDES AT (301) 598-6100 TO COORDINATE WORK ACTIVITIES IN AND AROUND THE GOLF COURSE IN-PLAY AREAS.
14. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
15. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND ASSOCIATED ACCESS ROAD FOR WORK AREA DOWNSTREAM OF LAYHILL ROAD. STABILIZE AT THE END OF EACH WORK DAY.
16. CLEAR AND GRUB REMAINING WORK AREA DOWNSTREAM OF LAYHILL ROAD. ANY DISTURBANCE CAUSED BY THIS PROCESS SHALL BE STABILIZED BY THE END OF THE DAY.
17. INSTALL PUMP-AROUND FLOW DIVERSION AND DEWATER THE CONSTRUCTION ZONE THROUGH THE APPROVED DEWATERING DEVICE. THE CONTRACTOR SHALL STAGE THE LIMITS OF THE PUMP-AROUND FLOW DIVERSION TO DEWATER ONLY THAT SECTION SCHEDULED FOR THAT DAY'S WORK. AT THE END OF EACH WORK DAY THE WORK AREA SHALL BE STABILIZED, THE PUMP-AROUND PRACTICE REMOVED, AND THE FLOW RESTORED TO THE CHANNEL. WORK SHALL BE COMPLETED ONLY DURING FORECASTED PERIODS OF DRY WEATHER.
18. CONTINUE STREAM IMPROVEMENTS DOWNSTREAM OF LAYHILL ROAD WORKING FROM DOWNSTREAM TO UPSTREAM. UPON COMPLETION OF THE WORK, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE THE ASSOCIATED ACCESS ROAD. AS THE ROAD IS REMOVED, INSTALL PLANTINGS ACCORDING TO THE PLAN, SCHEDULE AND DETAILS PROVIDED ON THE PLANTING PLAN.
19. WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THESE CONTROLS. INSTALL ANY REMAINING PLANTINGS.

SEQUENCE OF CONSTRUCTION NOTE:

THE PREFERRED TIMING OF CONSTRUCTION ACTIVITIES ON THE GOLF COURSE IS BETWEEN OCTOBER AND MARCH. PHASE B-2 MAY BE COMPLETED PRIOR TO PHASE B-1 TO ACCOMMODATE THIS PERIOD OR MEET OTHER PROJECT REQUIREMENTS.

LEGEND

WUS	WATERS OF THE U.S.
B	WETLAND BUFFER
	WETLAND AREA
	EXIST. STREAM CHANNEL
354	EXISTING CONTOURS
220	PROPOSED CONTOURS
S	EXIST. SAN. SEWER MANHOLE
SD	EXIST. STORMDRAIN MANHOLE
T-122 Tulip Poplar 34"	EXISTING TREE >24" DBH
	TREE TO BE REMOVED
	EXIST. 100-YR FLOODPLAIN LIMIT
	PROP. 100-YR FLOODPLAIN LIMIT
FS XX	LIVE FASCINES
RJ XX	ROCK J-HOOK VANE
CV XX	ROCK CROSS VANE
RGC XX	PROPOSED RIFFLE GRADE CONTROL
BL XX	PROP. BURIED LOG
LV XX	LOG CROSS VANE
LJ XX	LOG J-HOOK VANE
LMP XX	LOG MEANDER PROTECTION STRUCTURE
RW XX	ROOT WAD
LT XX	LOG TOE
	CLAY PLUG

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.
1	FOR ADDENDUM	8/21/12	

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

W912DR-07-D-0008
Task Order No. 19

Designed by: SPB | Date: 05/11/2012
Dwn by: DEA | Ckd by: REP
Reviewed by: TMH | Drawing code: BR-1
Submitted by: CVK | Dwg scale: AS SHOWN

BATCHELLORS RUN I & II COVER SHEET

Sheet Number:
7 OF 79

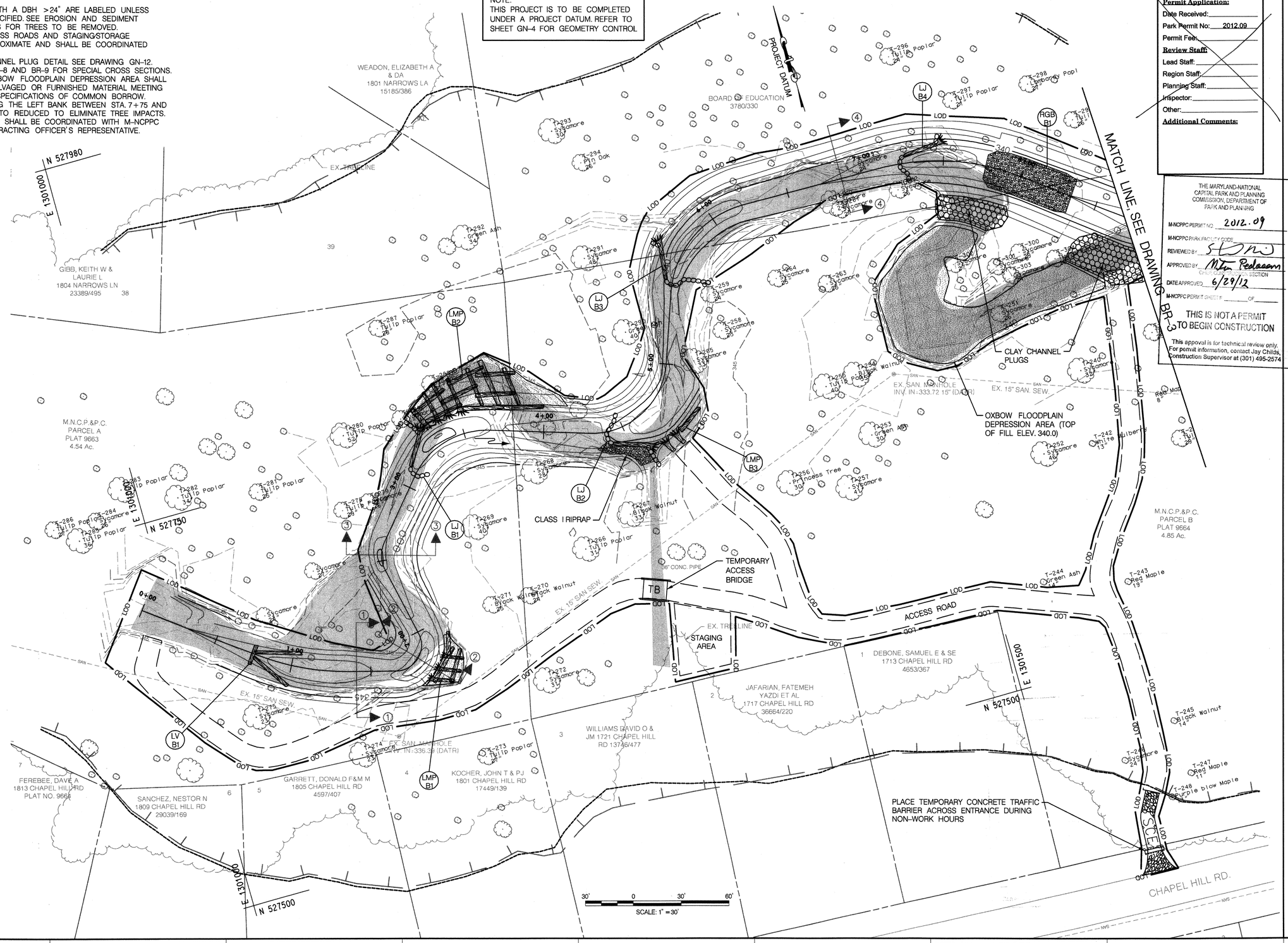
BY: rpallmer –

PLOTTED: Wednesday, August 22, 2012 AT 10:15 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pGN-B000_nwbr_ADD 1.dgn

NOTES:

1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. FOR CLAY CHANNEL PLUG DETAIL SEE DRAWING GN-12.
4. SEE SHEETS BR-8 AND BR-9 FOR SPECIAL CROSS SECTIONS.
5. FILL WITHIN OXBOW FLOODPLAIN DEPRESSION AREA SHALL CONSIST OF SALVAGED OR FURNISHED MATERIAL MEETING THE MATERIAL SPECIFICATIONS OF COMMON BORROW.
6. GRADING ALONG THE LEFT BANK BETWEEN STA. 7+75 AND STA. 9+00 MAY TO REDUCED TO ELIMINATE TREE IMPACTS. GRADING LIMITS SHALL BE COORDINATED WITH M-NCPPC AND THE CONTRACTING OFFICER'S REPRESENTATIVE.

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-4 FOR GEOMETRY CONTROL



For Commission use only

Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, DEVELOPMENT REVIEW SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

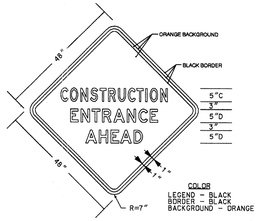
Designed by: REP
Cad by: SPB
Dwn by: DEA
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-2
Dwg scale: 1"=30'

BATCHELLORS RUN I & II SITE PLAN

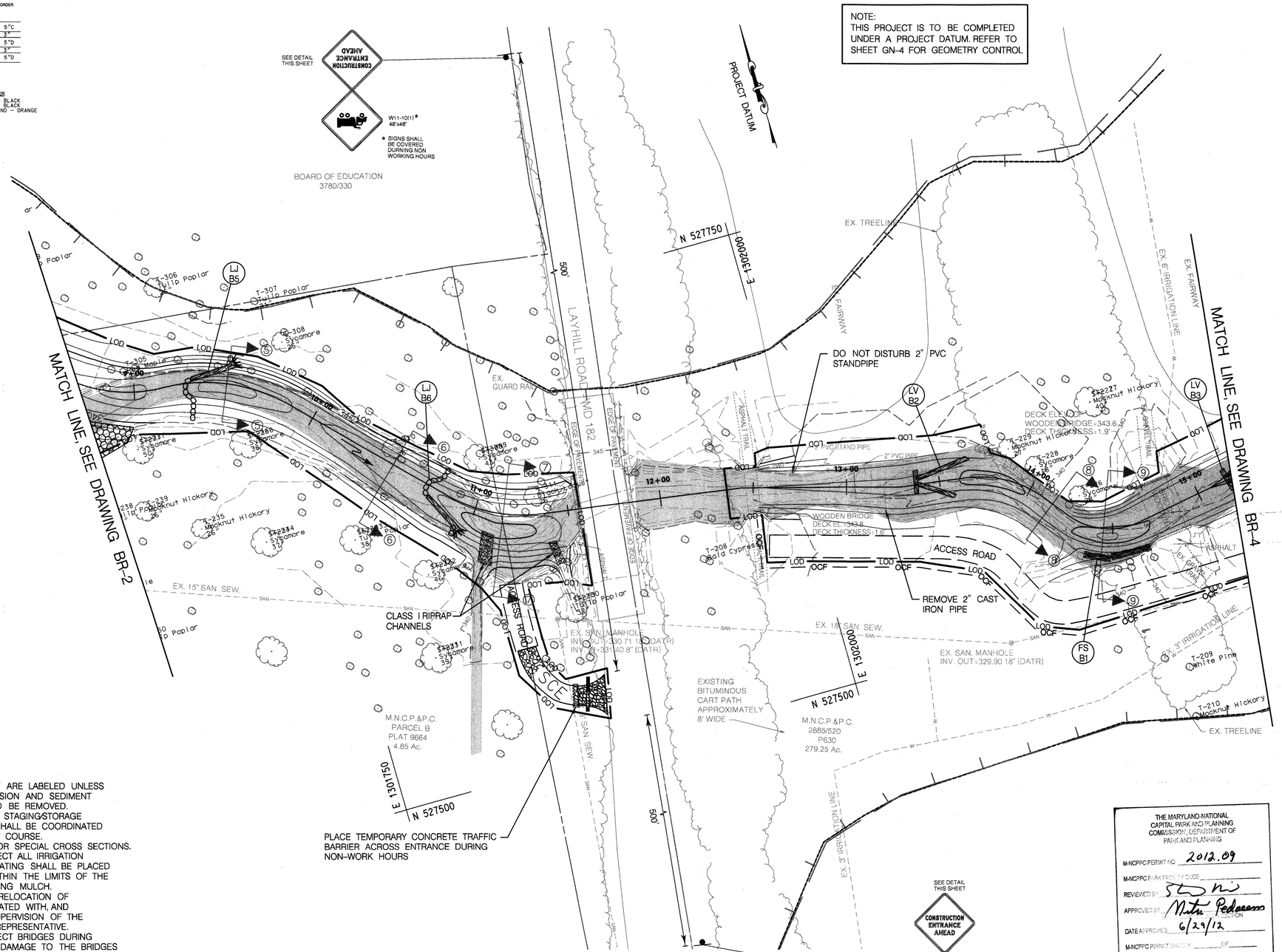
Sheet Number:
8 OF 79

PLOTTED: Tuesday, June 19, 2012 AT 09:05 AM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-B001_rwbr.dgn

BY: rpalmer



WARNING SIGN DETAIL
NOT TO SCALE



PLACE TEMPORARY CONCRETE TRAFFIC BARRIER ACROSS ENTRANCE DURING NON-WORK HOURS

NOTES:

1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC AND THE GOLF COURSE.
3. SEE SHEETS BR-8 AND BR-9 FOR SPECIAL CROSS SECTIONS.
4. THE CONTRACTOR SHALL PROTECT ALL IRRIGATION LINES. STEEL OR COMPOSITE PLATING SHALL BE PLACED OVER ALL IRRIGATION LINES WITHIN THE LIMITS OF THE ACCESS ROAD PRIOR TO PLACING MULCH.
5. ANY REPAIR, REPLACEMENT OR RELOCATION OF IRRIGATION SHALL BE COORDINATED WITH, AND BE COMPLETED UNDER THE SUPERVISION OF THE GOLF COURSE'S DESIGNATED REPRESENTATIVE.
6. THE CONTRACTOR SHALL PROTECT BRIDGES DURING CONSTRUCTION ACTIVITIES. ANY DAMAGE TO THE BRIDGES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE
7. PIPE REMOVAL SHALL EXTEND A MINIMUM OF 1-FOOT INTO THE CHANNEL BANKS.
8. FOR RIPRAP CHANNEL DETAIL SEE SHEET GN-12.
9. THE ORANGE CONSTRUCTION FENCE SHALL BE PLACED COINCIDENT WITH THE LIMIT OF DISTURBANCE. AN 8' BREAK IN THE FENCING SHALL BE PLACED AT ALL GOLF CART CROSSINGS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY Nuta Pedersen
DATE APPROVED 6/29/12
M-NCPPC PERMIT SPECIALIST OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2577

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

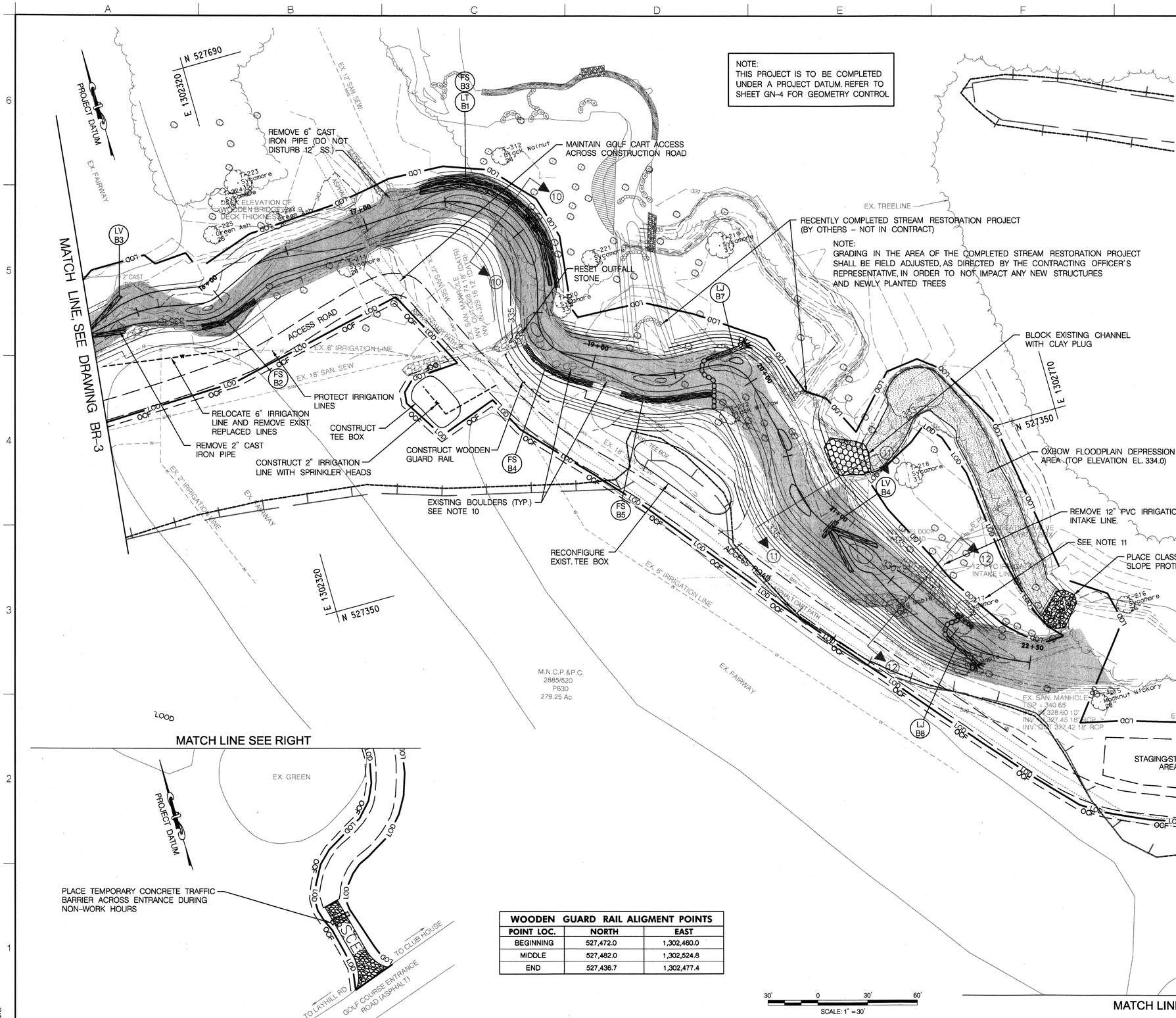
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-3
Dwg scale: 1"=30'

BATCHELLORS RUN I & II SITE PLAN

Sheet Number:
9 OF 79

BY: rpallmer

PLOTTED: Thursday, June 28, 2012 AT 07:44 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-B002_nwbr.dgn



WOODEN GUARD RAIL ALIGMENT POINTS		
POINT LOC.	NORTH	EAST
BEGINNING	527,472.0	1,302,460.0
MIDDLE	527,482.0	1,302,524.8
END	527,436.7	1,302,477.4

NOTES:

1. ONLY TREES WITH A DBH >24" ARE SHOWN UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC AND THE GOLF COURSE.
3. THE CONTRACTOR SHALL PROTECT ALL IRRIGATION LINES. STEEL OR COMPOSITE PLATING SHALL BE PLACED OVER ALL IRRIGATION LINES WITHIN THE LIMITS OF THE ACCESS ROAD PRIOR TO PLACING MULCH.
4. CONSTRUCTION, REPAIR, REPLACEMENT OR RELOCATION OF IRRIGATION SYSTEM SHALL BE COORDINATED WITH, AND BE COMPLETED UNDER, THE SUPERVISION OF THE GOLF COURSE'S DESIGNATED REPRESENTATIVE.
5. THE LOCATION OF TEE BOX SPRINKLER HEADS WILL BE AS DIRECTED BY THE GOLF COURSE'S DESIGNATED REPRESENTATIVE.
6. THE CONTRACTOR SHALL PROTECT BRIDGES DURING CONSTRUCTION ACTIVITIES. ANY DAMAGE TO THE BRIDGES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
7. PIPE REMOVAL SHALL EXTEND A MINIMUM OF 1-FOOT INTO THE CHANNEL BANKS. CAST IRON PIPE SHALL BE CAPPED WITH A FLEXIBLE PVC CAP WITH STAINLESS STEEL CLAMPS. PVC PIPE SHALL BE CAPPED WITH SCHEDULE 40 SLIP CAPS.
8. LIMITS OF TEE BOX RECONFIGURATION AND CONSTRUCTION ARE APPROXIMATE AND SHALL BE COORDINATED WITH THE GOLF COURSE.
9. FOR CLAY CHANNEL PLUG DETAIL SEE DRAWING NO. GN-12.
10. EXISTING BOULDERS WITHIN LIMITS OF THE GRADING SHALL REMAIN UNLESS DIRECTED OTHERWISE BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL NOT DISTURB TREE T-217 (23" SYCAMORE) UNLESS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
12. DAMAGE TO THE EXISTING ASPHALT GOLF COURSE ENTRANCE ROAD OR CART PATH SHALL BE REPAIRED USING TWO (2) EQUAL LIFTS OF HOT MIX ASPHALT SUPERPAVE 9.5MM FOR SURFACE, PG 64-22 LEVEL 2. ANY DAMAGE TO THE ROAD OR CART PATH SHALL BE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
13. CLASS II RIPRAP SLOPE PROTECTION AT STA. 23+50, LT. SHALL HAVE A MINIMUM BLANKET THICKNESS OF 34" AND BE UNDERLAIN BY CLASS PE, TYPE II GEOTEXTILE.
14. FILL WITHIN OXBOW FLOODPLAIN DEPRESSION AREA SHALL CONSIST OF SALVAGED OR FURNISHED MATERIAL MEETING THE MATERIAL SPECIFICATIONS OF COMMON BORROW.
15. FOR TEE BOX CONSTRUCTION DETAIL, SEE DRAWING NO. BR-19.
16. THE ORANGE CONSTRUCTION FENCE SHALL BE PLACED COINCIDENT WITH THE LIMIT OF DISTURBANCE. AN 8' BREAK IN THE FENCING SHALL BE PLACED AT ALL GOLF CART CROSSINGS.
17. AS-BUILT DRAWING NOT AVAILABLE FOR RECENTLY COMPLETED STREAM RESTORATION PROJECT. INFORMATION PROVIDED IS BASED ON DESIGN PLANS AND MAY BE DIFFERENT THAN ACTUAL CONDITIONS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK PERMIT CODE
REVIEWED BY
APPROVED BY
DATE APPROVED 6/29/12
M-NCPPC PARK
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Date: 05/11/2012
Designed by: REP
Design file no.
Drawing code: BR-4
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Dwg scale: 1"=30'
Submitted by: CVK

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

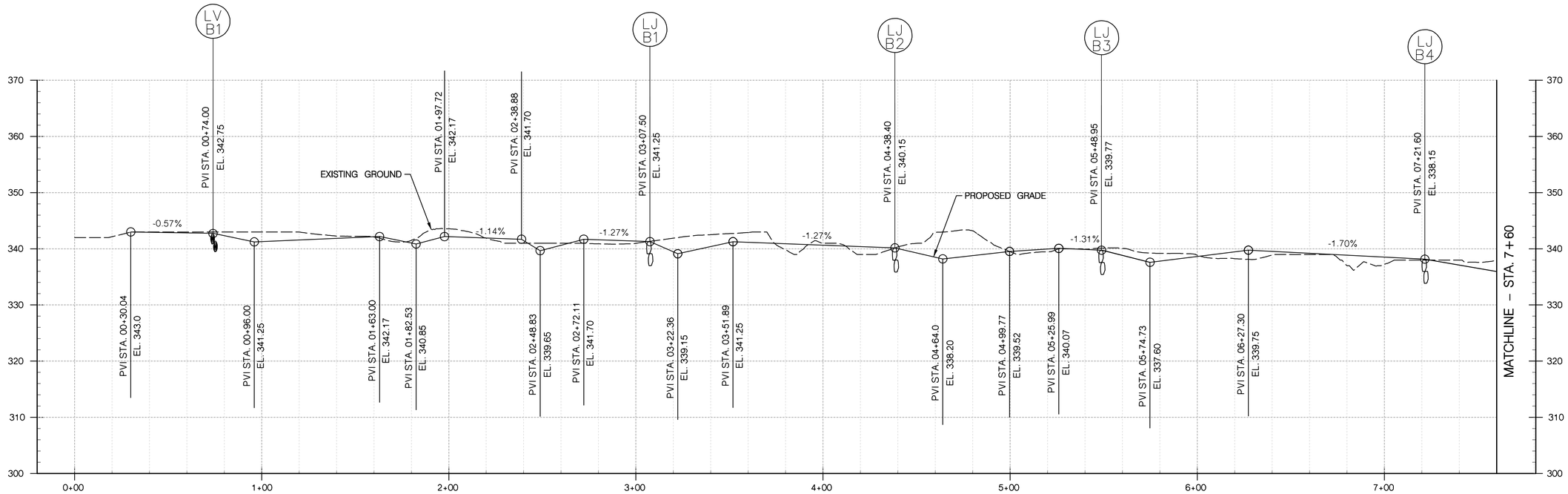
W912DR-07-D-0008
Task Order No. 19

BATCHELLORS RUN I & II
SITE PLAN

Sheet Number:
10 OF 79

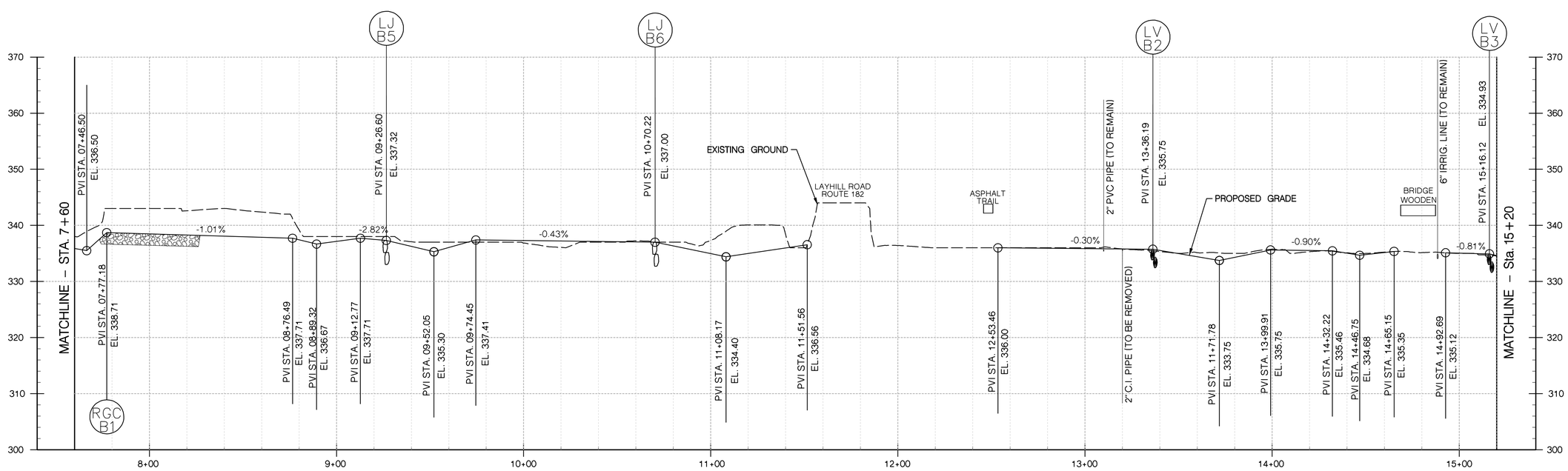
BY: rpalmer

PLOTTED: Thursday, June 28, 2012 AT 07:57 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-B003_nwbr.dgn



STREAM PROFILE – BATCHELLORS RUN STA. 0+00 TO STA. 7+60

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



STREAM PROFILE – BATCHELLORS RUN STA. 7+60 TO STA. 15+20

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

Designed by: SBP
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: BR-5
Dwg scale: AS SHOWN

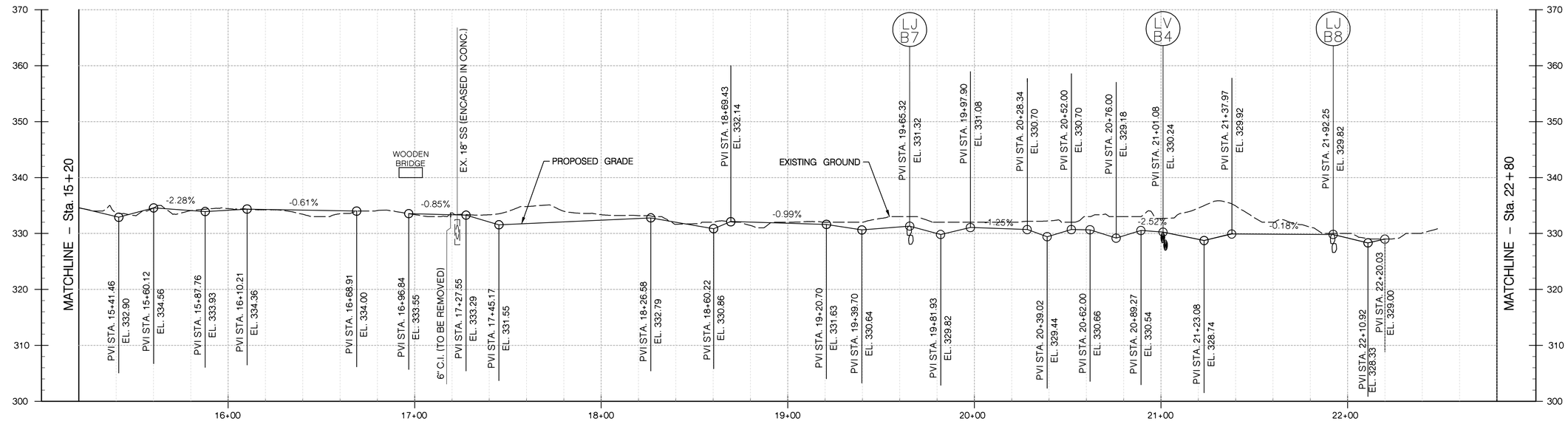
W912DR-07-D-0008
Task Order No. 19

BATCHELLORS RUN I & II
PROFILE
STA. 0+00 TO STA. 15+20

Sheet Number:
11 OF 79

BY: palmer

PLOTTED: Saturday, May 12, 2012 AT 12:04 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-B001_nwbr.dgn



STREAM PROFILE – BATCHELLORS RUN STA. 15+20 TO STA. 22+80

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

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA.
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

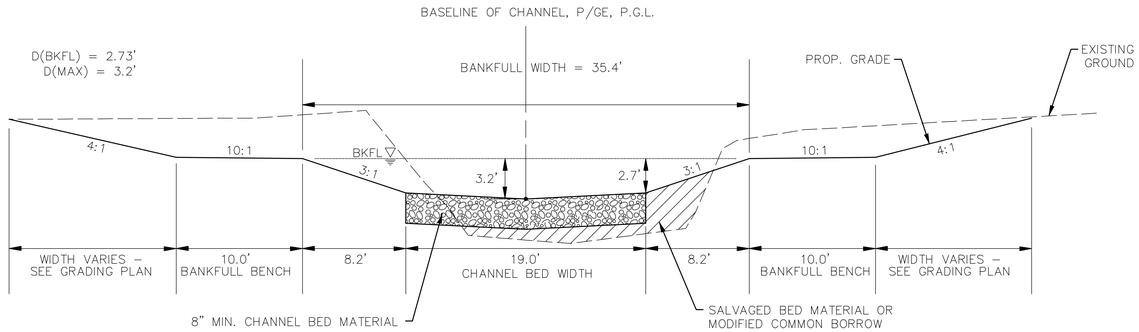
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: BR-6
Dwg scale: AS SHOWN

BATCHELLORS RUN I & II
PROFILE
STA. 15+20 TO STA. 22+80

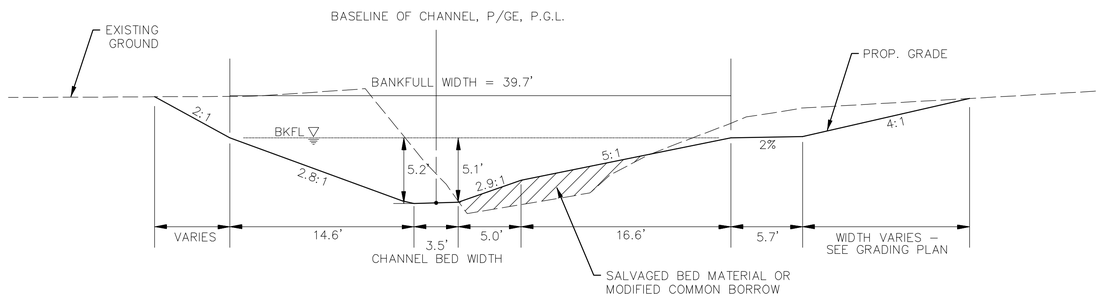
Sheet Number:
12 OF 79

BY: rpalmer

PLOTTED: Saturday, May 12, 2012 AT 12:06 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-B002_nwbr.dgn



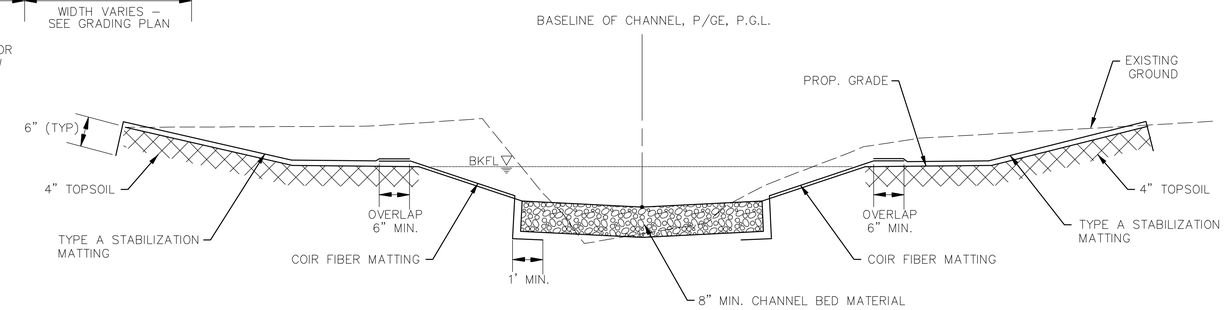
Batchellors Typical Section – Riffle



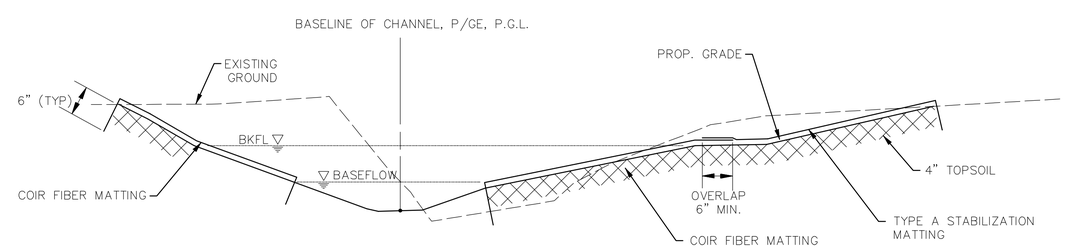
Batchellors Typical Section – Pool

TYPICAL SECTIONS NOTE:

THE ABOVE TYPICAL SECTIONS DEPICT ULTIMATE CHANNEL DIMENSIONS WHEN GRADING IS NOT LIMITED BY TREE IMPACTS. REFER TO SPECIAL CROSS SECTIONS AND CONTOURS ON THE PLANS FOR GRADING REQUIREMENTS WHEN THE PRESENCE OF TREES REQUIRE DEVIATION FROM THE TYPICAL SECTIONS.



Batchellors Stabilization Detail – Riffle



Batchellors Stabilization Detail – Pool

NOTES:

1. IN CASES WHERE AREA BEYOND THE BANKFULL CHANNEL ARE IN FILL, THE FILL SHALL BE PLACED AT A 10:1 SLOPE.
2. SEE DETAIL SHEETS FOR ADDITIONAL CHANNEL STABILIZATION MEASURES.
3. SEE SPECIFICATIONS FOR DESCRIPTION OF MODIFIED COMMON BORROW, CHANNEL BED MATERIAL, COIR FIBER MATTING AND STABILIZATION MATTING.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: SPB	Date: 05/11/2012
Dwn by: DEA	Ckd by: REP
Reviewed by: TMH	Drawing code: BR-7
Submitted by: CVK	Dwg scale: N.T.S.

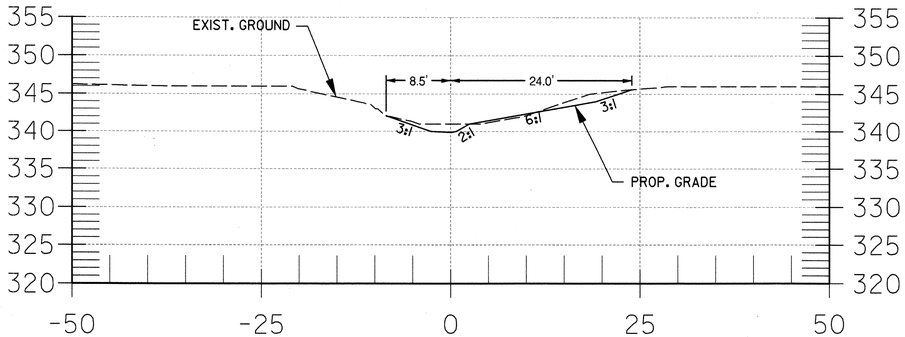
BATCHELLORS RUN I & II TYPICAL SECTIONS

Sheet Number:

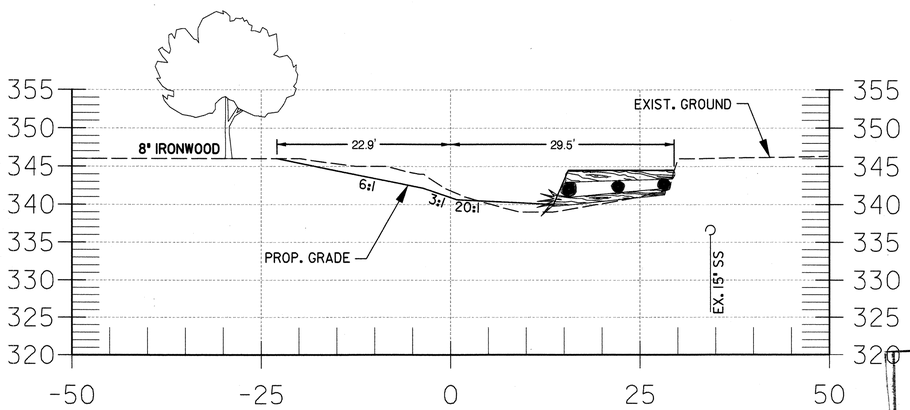
13 OF 79

BY: palmer
PLOTTED: Saturday, May 12, 2012 AT 12:08 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTS-B001_nwbr.dgn

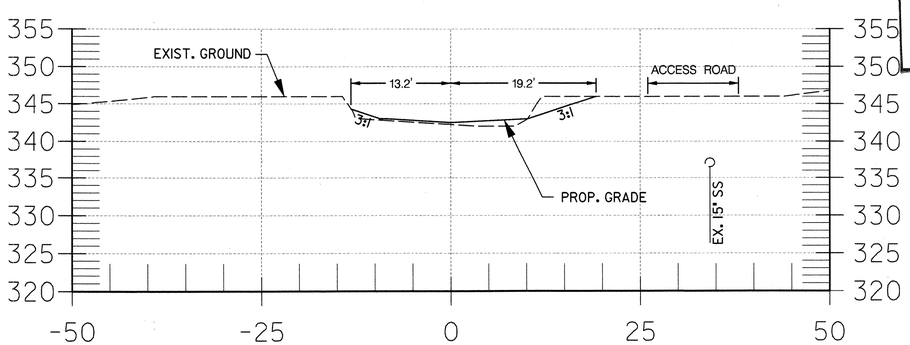
NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



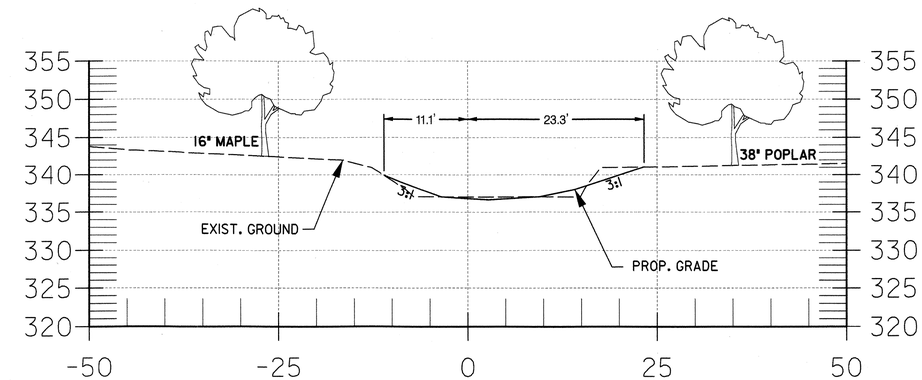
3 CROSS SECTION @ STA. 2+54
SCALE: 1" = 10'



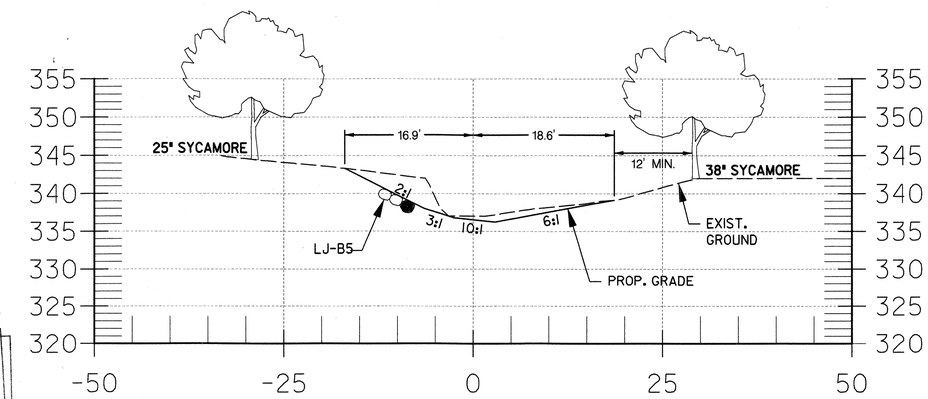
2 CROSS SECTION @ STA. 1+82
SCALE: 1" = 10'



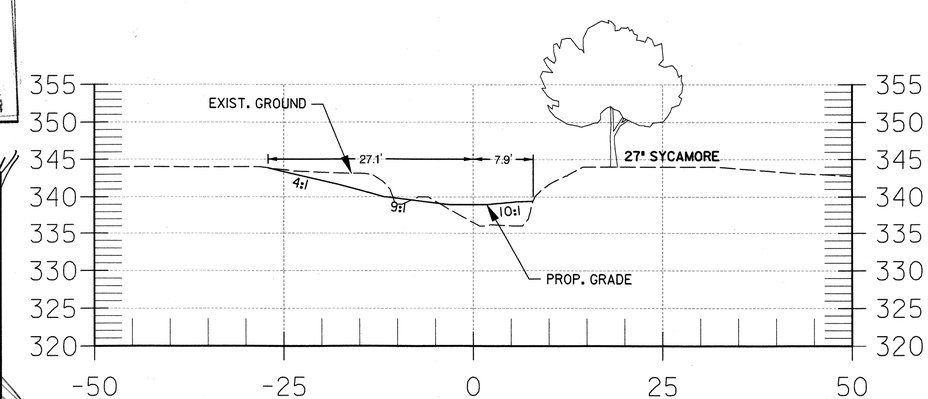
1 CROSS SECTION @ STA. 1+41
SCALE: 1" = 10'



6 CROSS SECTION @ STA. 10+50
SCALE: 1" = 10'



5 CROSS SECTION @ STA. 9+70
SCALE: 1" = 10'



4 CROSS SECTION @ STA. 6+85
SCALE: 1" = 10'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION DEPARTMENT OF PARKS AND RECREATION
MANAGER/PERMITS: 2012.09
MANAGER/PARKS: [illegible]
REVIEWED: [illegible]
APPROVED: Mitch Paderson
CHIEF, DEVELOPMENT REVIEW DIVISION
DATE APPROVED: 6/29/12
MANAGER/CONSTRUCTION: [illegible]
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Chase, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

Designed by: REP | Dwn by: DEA | Ckd by: SPB | Reviewed by: TMR | Submitted by: CVK
Date: 05/11/2012 | Design file no. | Drawing code: BR-8 | Dwg scale: AS SHOWN

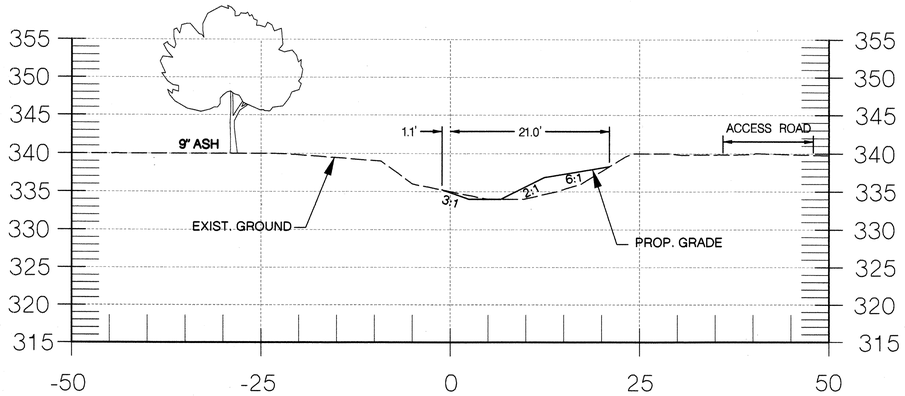
W912DR-07-D-0008
Task Order No. 19

BATCHELLORS RUN I & II
SPECIAL SECTIONS

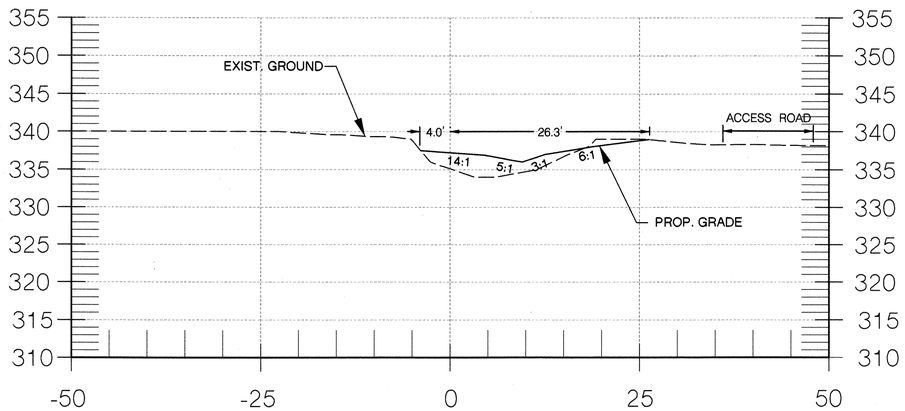
Sheet Number:
14 OF 79

PLOTTED: Monday, May 14, 2012 AT 01:14 PM
FILE: \\RKKM\d2007\2007\07044_usace\task_6_northwest\cadd\dgn\pHC-B001_nwbr.dgn

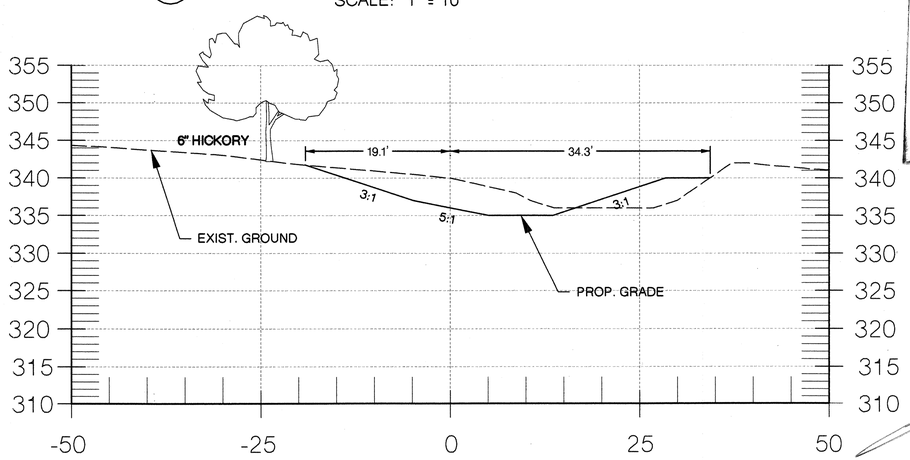
NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



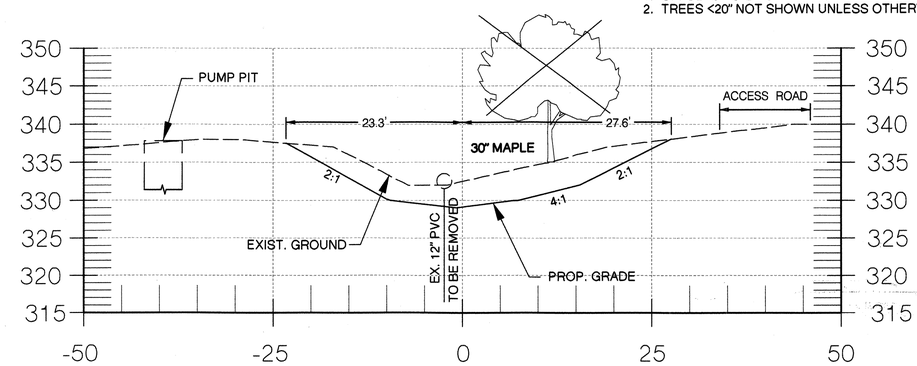
9 CROSS SECTION @ STA. 14+45
SCALE: 1" = 10'



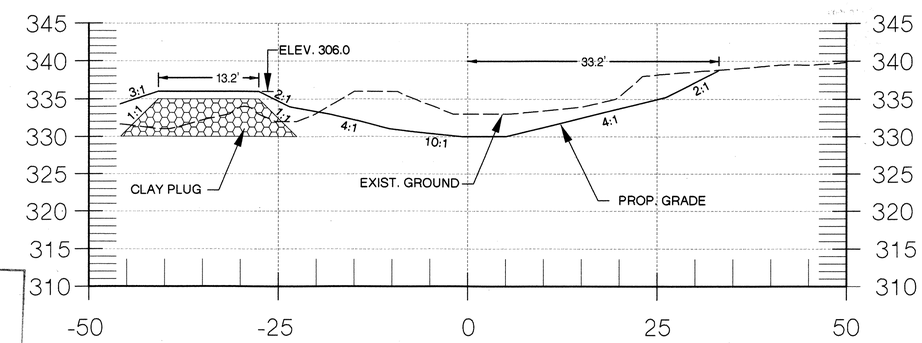
8 CROSS SECTION @ STA. 14+14
SCALE: 1" = 10'



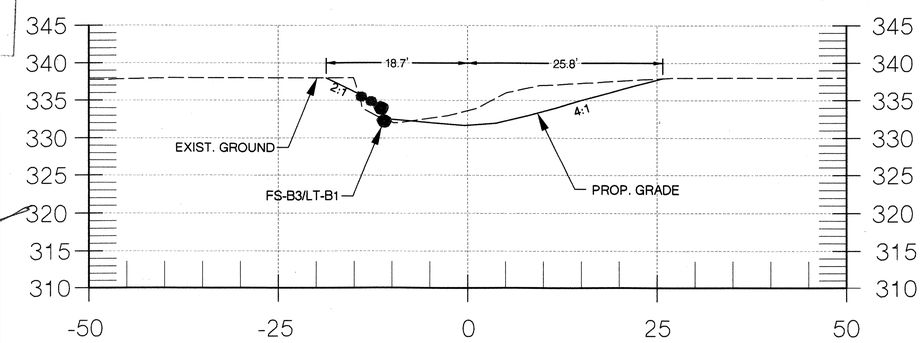
7 CROSS SECTION @ STA. 11+15
SCALE: 1" = 10'



12 CROSS SECTION @ STA. 21+65
SCALE: 1" = 10'



11 CROSS SECTION @ STA. 20+78
SCALE: 1" = 10'



10 CROSS SECTION @ STA. 17+86
SCALE: 1" = 10'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY COST
REVIEWED BY
APPROVED BY Mitch Pedersen
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # OF
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
6302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-8B
Dwg scale: AS SHOWN

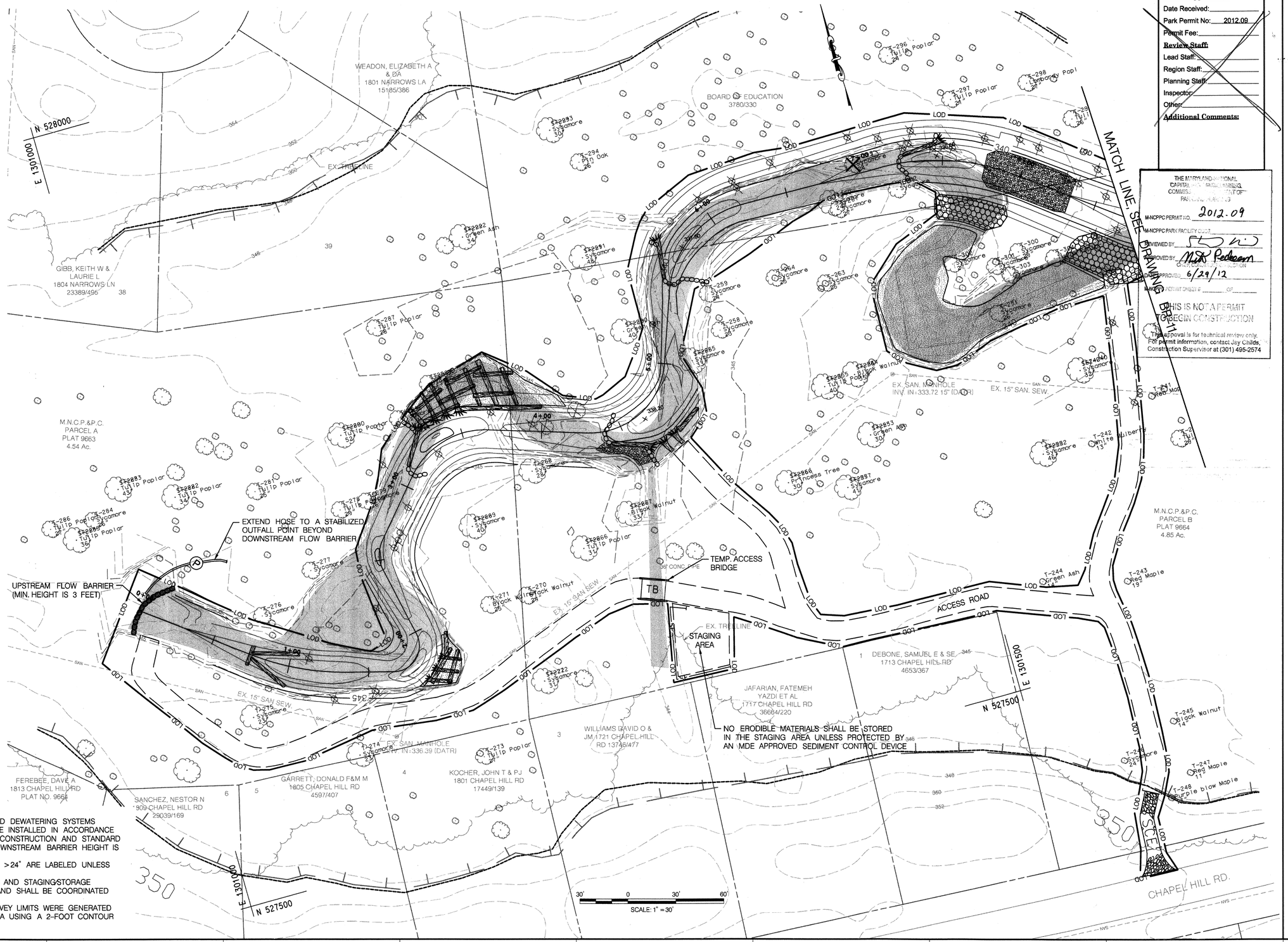
W912DR-07-D-0008
Task Order No. 19

BATCHELLORS RUN I & II
SPECIAL SECTIONS

Sheet Number:
15 OF 79

BY: spalmer

PLOTTED: Tuesday, May 15, 2012 AT 01:34 PM
FILE: \\RKKM\d2007\2007\07044_usace\task_6_northwest\caddd\dgn\pHC-B002_nwbr.dgn



NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. THE MINIMUM DOWNSTREAM BARRIER HEIGHT IS 3 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
4. CONTOURS BEYOND SURVEY LIMITS WERE GENERATED FROM COUNTY LIDAR DATA USING A 2-FOOT CONTOUR INTERVAL.

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION / DEPARTMENT OF PARKS AND RECREATION

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY Mitch Pedersen

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3992
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP	Date: 05/11/2012
Dwn by: DEA	Ckd by: SPB
Reviewed by: TMH	Design file no.
Submitted by: CVK	Drawing code: BR-10
	Dwg scale: 1"=30'

BATCHELLORS RUN I & II EROSION & SEDIMENT CONTROL PLAN

Sheet Number:

16 OF 79

PLOTTED: Saturday, May 12, 2012 AT 03:42 PM
FILE: \\PIKMA\V2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-B001_nwbr.dgn

BY: rpalmer

NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF FLOW BARRIERS ARE 3 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING-STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
4. THE ORANGE CONSTRUCTION FENCE SHALL BE PLACED COINCIDENT WITH THE LIMIT OF DISTURBANCE. AN 8' BREAK IN THE FENCING SHALL BE PLACED AT ALL GOLF CART CROSSINGS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY Mark Pedersen
CHIEF, DEVELOPMENT REVIEW SECTION

DATE APPROVED 6/28/12

M-NCPPC PERMIT SHEET # ___ OF ___

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9456 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Designed by: REP
Date: 05/11/2012
Dwn by: DEA
Ckd by: SPB
Design file no.
Reviewed by: TMH
Submitted by: CVK
Drawing code: BR-11
Dwg scale: 1"=30'

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

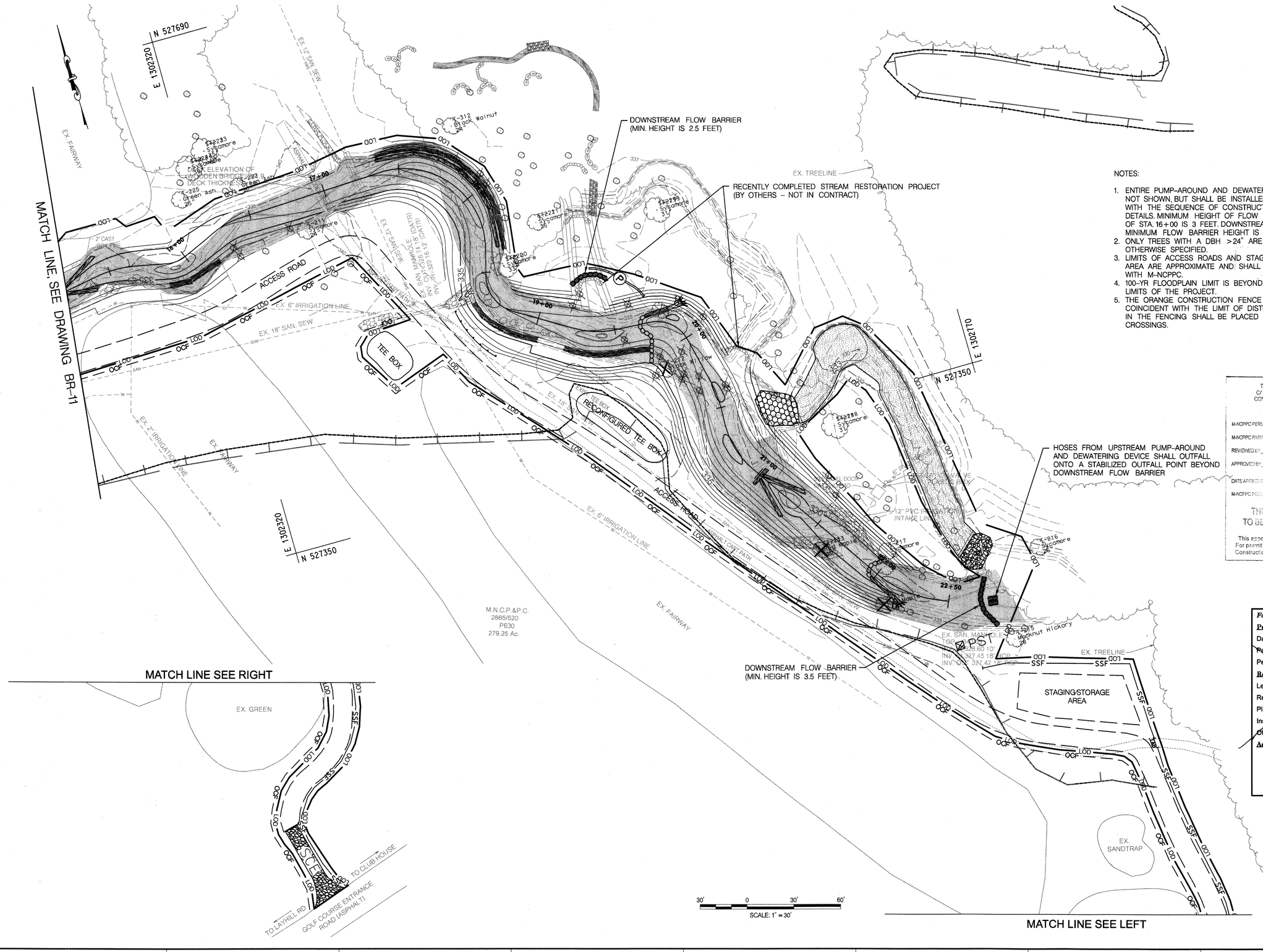
W912DR-07-D-0008
Task Order No. 19

BATCHELLORS RUN I & II EROSION & SEDIMENT CONTROL PLAN

Sheet Number:
17 OF 79

BY: rpalmer

PLOTTED: Tuesday, May 15, 2012 AT 09:23 AM
FILE: \\RKKM\y2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-B002_nwbr.dgn



NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF FLOW BARRIERS UPSTREAM OF STA. 16+00 IS 3 FEET. DOWNSTREAM OF STA. 16+00 THE MINIMUM FLOW BARRIER HEIGHT IS 3.5 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
4. 100-YR FLOODPLAIN LIMIT IS BEYOND THE NORTHERN LIMITS OF THE PROJECT.
5. THE ORANGE CONSTRUCTION FENCE SHALL BE PLACED COINCIDENT WITH THE LIMIT OF DISTURBANCE. AN 8' BREAK IN THE FENCING SHALL BE PLACED AT ALL GOLF CART CROSSINGS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION – DEPARTMENT OF PARKS AND RECREATION

M-NCPPC PERMIT NO. 2012 09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET ___ OF ___

THIS IS A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:

Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:

Additional Comments:

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

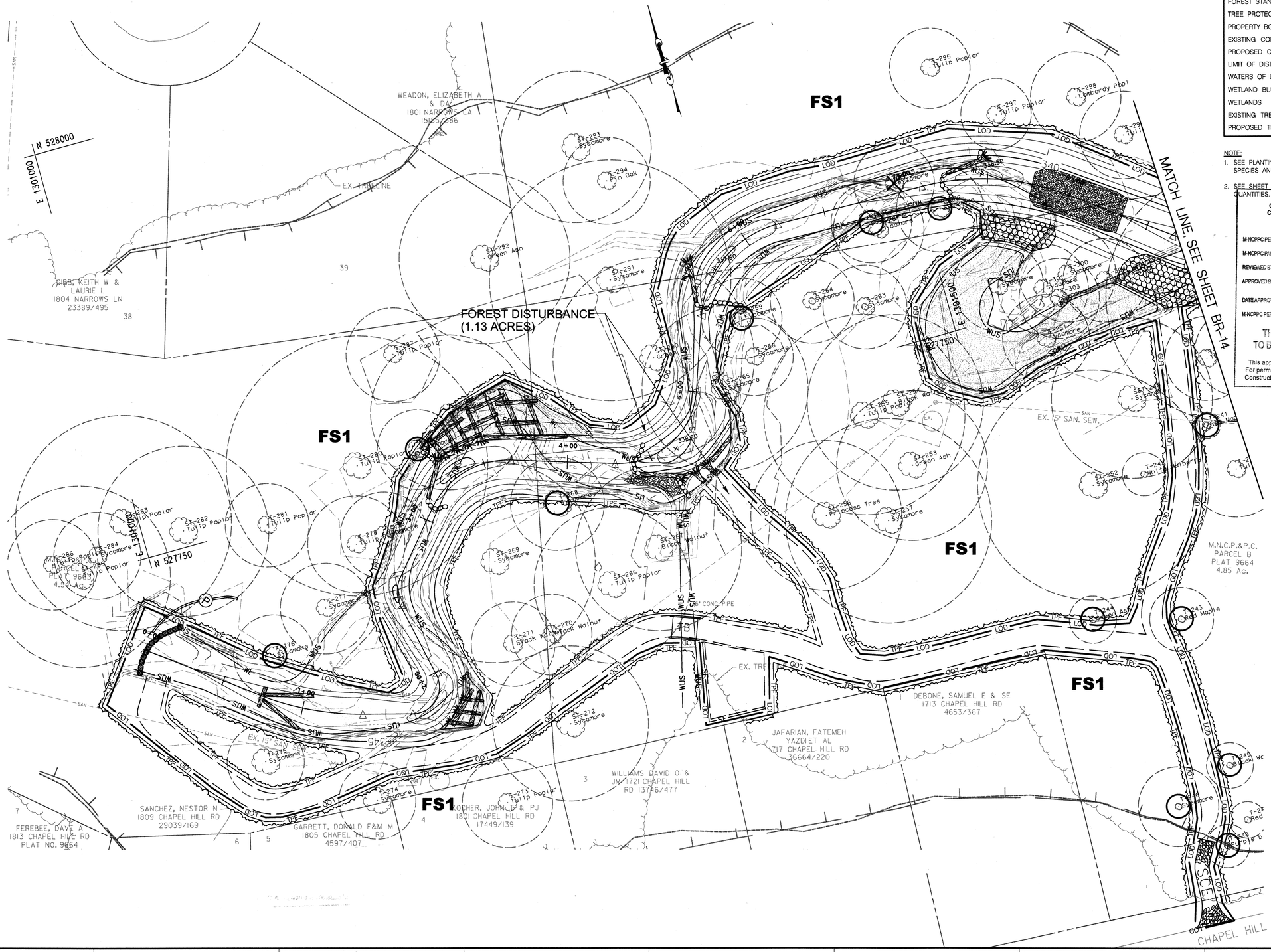
Designed by: REP
Drawn by: DEA
Checked by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 06/11/2012
Design file no.
Drawing code: BR-12
Dwg scale: 1"=30'

BATCHELLORS RUN I & II EROSION AND SEDIMENT CONTROL PLAN

Sheet Number:
18 OF 79

BY: rpalmer –

PLOTTED: Tuesday, June 19, 2012 AT 02:19 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-B003_rwbr.dgn



LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:

1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY
DEVELOPMENT REVIEW DIVISION

DATE APPROVED 6/28/12

M-NCPPC PERMIT SHEET 1 OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childers, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

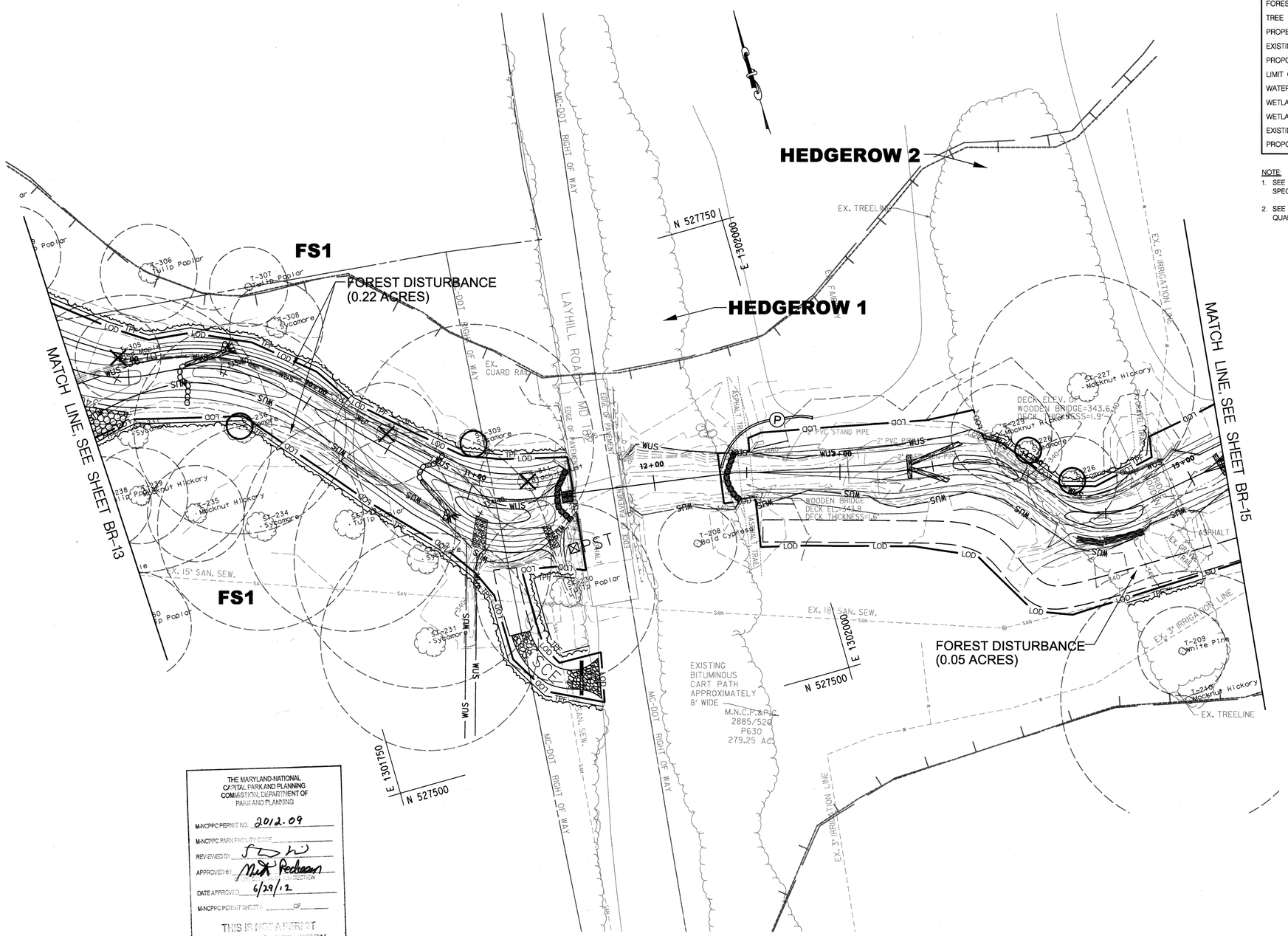
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-13
Dwg scale: 1"=30'

BATCHELLORS RUN I & II FOREST CONSERVATION PLAN

Sheet Number:
19 OF 79

BY: dadams

PLOTTED: Tuesday, May 08, 2012 AT 11:26 AM
FILE: \\rkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-B001_nwbr.dgn



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY Nick Pechman
PARKS & RECREATION DIRECTOR

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

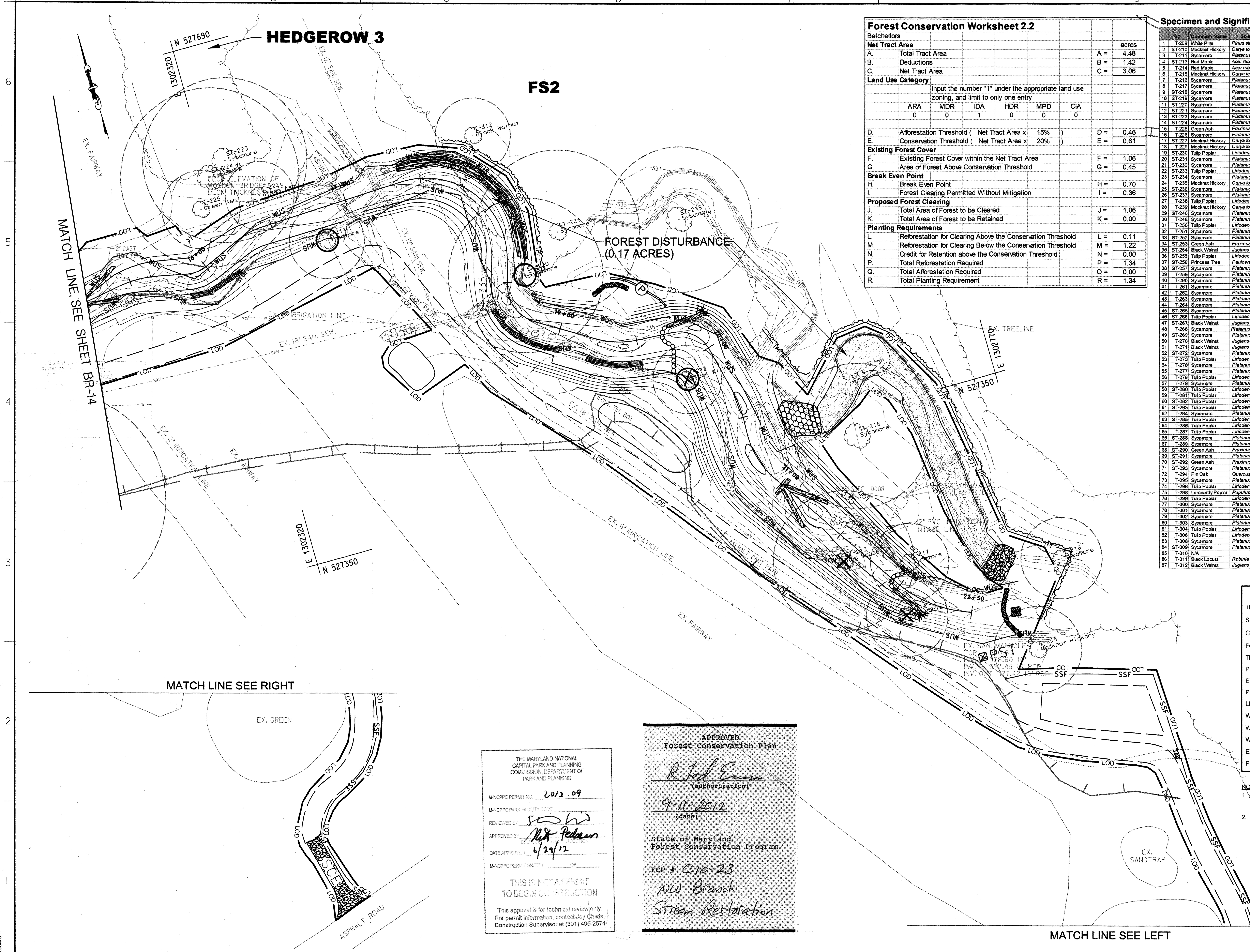
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-14
Dwg scale: 1"=30'

BATCHELLORS RUN I & II FOREST CONSERVATION PLAN

Sheet Number:
20 OF 79

BY: dadkins

PLOTTED: Tuesday, May 08, 2012 AT 11:27 AM
FILE: \\rkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-B002_nwbr.dgn



Forest Conservation Worksheet 2.2

Batchellors							
Net Tract Area							acres
A.	Total Tract Area					A =	4.48
B.	Deductions					B =	1.42
C.	Net Tract Area					C =	3.06
Land Use Category							
		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	
D.	Afforestation Threshold (Net Tract Area x	15%	)			D =	0.46
E.	Conservation Threshold (Net Tract Area x	20%	)			E =	0.61
Existing Forest Cover							
F.	Existing Forest Cover within the Net Tract Area					F =	1.06
G.	Area of Forest Above Conservation Threshold					G =	0.45
Break Even Point							
H.	Break Even Point					H =	0.70
I.	Forest Clearing Permitted Without Mitigation					I =	0.36
Proposed Forest Clearing							
J.	Total Area of Forest to be Cleared					J =	1.06
K.	Total Area of Forest to be Retained					K =	0.00
Planting Requirements							
L.	Reforestation for Clearing Above the Conservation Threshold					L =	0.11
M.	Reforestation for Clearing Below the Conservation Threshold					M =	1.22
N.	Credit for Retention above the Conservation Threshold					N =	0.00
P.	Total Reforestation Required					P =	1.34
Q.	Total Afforestation Required					Q =	0.00
R.	Total Planting Requirement					R =	1.34

Specimen and Significant Tree Table - Batchellors

	ID	Common Name	Scientific Name	DBH (inches)	Specimen Tree?	Condition	Remove?
1	T-209	White Pine	*Pinus strobus*	24	No	Good	No
2	ST-210	Mocknut Hickory	*Carya tomentosa*	46	Yes	Good	No
3	T-211	Sycamore	*Platanus occidentalis*	24	No	Poor	No
4	ST-213	Red Maple	*Acer rubrum*	30	Yes	Good	Yes
5	T-214	Red Maple	*Acer rubrum*	26	No	Good	Yes
6	T-215	Mocknut Hickory	*Carya tomentosa*	28	No	Good	No
7	T-216	Sycamore	*Platanus occidentalis*	26	No	Good	No
8	T-217	Sycamore	*Platanus occidentalis*	25	No	Good	No
9	ST-218	Sycamore	*Platanus occidentalis*	31	Yes	Good	No
10	ST-219	Sycamore	*Platanus occidentalis*	31	Yes	Good	No
11	ST-220	Sycamore	*Platanus occidentalis*	33	Yes	Good/Fair	No
12	ST-221	Sycamore	*Platanus occidentalis*	35	Yes	Good	No
13	ST-223	Sycamore	*Platanus occidentalis*	35	Yes	Good	No
14	ST-224	Sycamore	*Platanus occidentalis*	38	Yes	Excellent	No
15	T-225	Green Ash	*Fraxinus pennsylvanica*	25	No	Good	No
16	T-226	Sycamore	*Platanus occidentalis*	24	No	Good/Fair	No
17	ST-227	Mocknut Hickory	*Carya tomentosa*	40	Yes	Good	No
18	T-229	Mocknut Hickory	*Carya tomentosa*	27	No	Good/Fair	No
19	ST-230	Tulip Poplar	*Liriodendron tulipifera*	32	Yes	Good	No
20	ST-231	Sycamore	*Platanus occidentalis*	39	Yes	Good	No
21	ST-232	Sycamore	*Platanus occidentalis*	46	Yes	Good	No
22	ST-233	Tulip Poplar	*Liriodendron tulipifera*	38	Yes	Good	No
23	ST-234	Sycamore	*Platanus occidentalis*	37	Yes	Good	No
24	T-235	Mocknut Hickory	*Carya tomentosa*	26	No	Good	No
25	ST-236	Sycamore	*Platanus occidentalis*	38	Yes	Good/Fair	No
26	ST-237	Sycamore	*Platanus occidentalis*	50	Yes	Good	No
27	T-238	Tulip Poplar	*Liriodendron tulipifera*	25	No	Good	No
28	T-239	Mocknut Hickory	*Carya tomentosa*	26	No	Good	No
29	ST-240	Sycamore	*Platanus occidentalis*	32	Yes	Good	No
30	T-246	Sycamore	*Platanus occidentalis*	24	No	Good	No
31	T-250	Tulip Poplar	*Liriodendron tulipifera*	29	No	Good	No
32	T-251	Sycamore	*Platanus occidentalis*	26	No	Good	No
33	ST-252	Sycamore	*Platanus occidentalis*	46	Yes	Good	No
34	ST-253	Green Ash	*Fraxinus pennsylvanica*	30	Yes	Good	No
35	ST-254	Black Walnut	*Juglans nigra*	35	Yes	Fair	No
36	ST-255	Tulip Poplar	*Liriodendron tulipifera*	40	Yes	Good	No
37	ST-256	Princess Tree	*Paulownia tomentosa*	30	Yes	Good	No
38	ST-257	Sycamore	*Platanus occidentalis*	41	Yes	Good/Fair	No
39	T-259	Sycamore	*Platanus occidentalis*	24	No	Good	No
40	T-260	Sycamore	*Platanus occidentalis*	24	No	Fair	No
41	T-261	Sycamore	*Platanus occidentalis*	27	No	Good	No
42	T-262	Sycamore	*Platanus occidentalis*	26	No	Fair	No
43	T-263	Sycamore	*Platanus occidentalis*	25	No	Good	No
44	T-264	Sycamore	*Platanus occidentalis*	25	No	Good	No
45	ST-265	Sycamore	*Platanus occidentalis*	33	Yes	Fair	No
46	ST-266	Tulip Poplar	*Liriodendron tulipifera*	31	Yes	Good/Fair	No
47	ST-267	Black Walnut	*Juglans nigra*	33	Yes	Fair	No
48	T-268	Sycamore	*Platanus occidentalis*	28	No	Good	No
49	ST-269	Sycamore	*Platanus occidentalis*	40	Yes	Good/Fair	No
50	T-270	Black Walnut	*Juglans nigra*	24	No	Good	No
51	T-271	Black Walnut	*Juglans nigra*	25	No	Fair	No
52	ST-272	Sycamore	*Platanus occidentalis*	31	Yes	Good	No
53	T-273	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
54	T-276	Sycamore	*Platanus occidentalis*	24	No	Good	No
55	T-277	Sycamore	*Platanus occidentalis*	27	No	Good	No
56	T-278	Tulip Poplar	*Liriodendron tulipifera*	29	No	Good	No
57	T-279	Sycamore	*Platanus occidentalis*	26	No	Fair	No
58	ST-280	Tulip Poplar	*Liriodendron tulipifera*	52	Yes	Good/Fair	No
59	T-281	Tulip Poplar	*Liriodendron tulipifera*	25	No	Good	No
60	ST-282	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Good/Fair	No
61	ST-283	Tulip Poplar	*Liriodendron tulipifera*	43	Yes	Fair	No
62	T-284	Sycamore	*Platanus occidentalis*	26	No	Good	No
63	ST-285	Tulip Poplar	*Liriodendron tulipifera*	36	Yes	Good	No
64	T-286	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
65	T-287	Tulip Poplar	*Liriodendron tulipifera*	28	No	Good	No
66	ST-288	Sycamore	*Platanus occidentalis*	31	Yes	Good	No
67	T-289	Sycamore	*Platanus occidentalis*	24	No	Good	No
68	ST-290	Green Ash	*Fraxinus pennsylvanica*	40	Yes	Fair	No
69	ST-291	Sycamore	*Platanus occidentalis*	48	Yes	Good/Fair	No
70	ST-292	Green Ash	*Fraxinus pennsylvanica*	34	Yes	Good/Fair	No
71	ST-293	Sycamore	*Platanus occidentalis*	30	Yes	Good	No
72	T-294	Pin Oak	*Quercus palustris*	26	No	Good/Fair	No
73	T-295	Sycamore	*Platanus occidentalis*	24	No	Fair	Yes
74	T-296	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good	No
75	T-298	Lombardy Poplar	*Populus nigra*	27	No	Good	No
76	T-299	Tulip Poplar	*Liriodendron tulipifera*	26	No	Good	No
77	T-300	Sycamore	*Platanus occidentalis*	29	No	Good	No
78	T-301	Sycamore	*Platanus occidentalis*	27	No	Good	No
79	T-302	Sycamore	*Platanus occidentalis*	27	No	Good	No
80	T-303	Sycamore	*Platanus occidentalis*	24	No	Fair	No
81	T-304	Tulip Poplar	*Liriodendron tulipifera*	25	No	Good/Fair	No
82	T-306	Tulip Poplar	*Liriodendron tulipifera*	26	No	Good	No
83	T-308	Sycamore	*Platanus occidentalis*	25	No	Fair	No
84	ST-309	Sycamore	*Platanus occidentalis*	43	Yes	Fair	No
85	T-310	N/A		28	No	Dead	Yes
86	T-311	Black Locust	*Robinia pseudoacacia*	26	No	Dead	Yes
87	T-312	Black Walnut	*Juglans nigra*	24	No	Fair	No

LEGEND

TREE TO BE REMOVED	⊗
SPECIAL TREE PROTECTION	○
CRITICAL ROOT ZONE	( )
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:

1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE ______
REVIEWED BY [signature]
APPROVED BY [signature]
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

APPROVED
Forest Conservation Plan

R Tod Ericson [signature]
(authorization)

9-11-2012
(date)

State of Maryland
Forest Conservation Program

FCP # C10-23
NW Branch
Stream Restoration

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

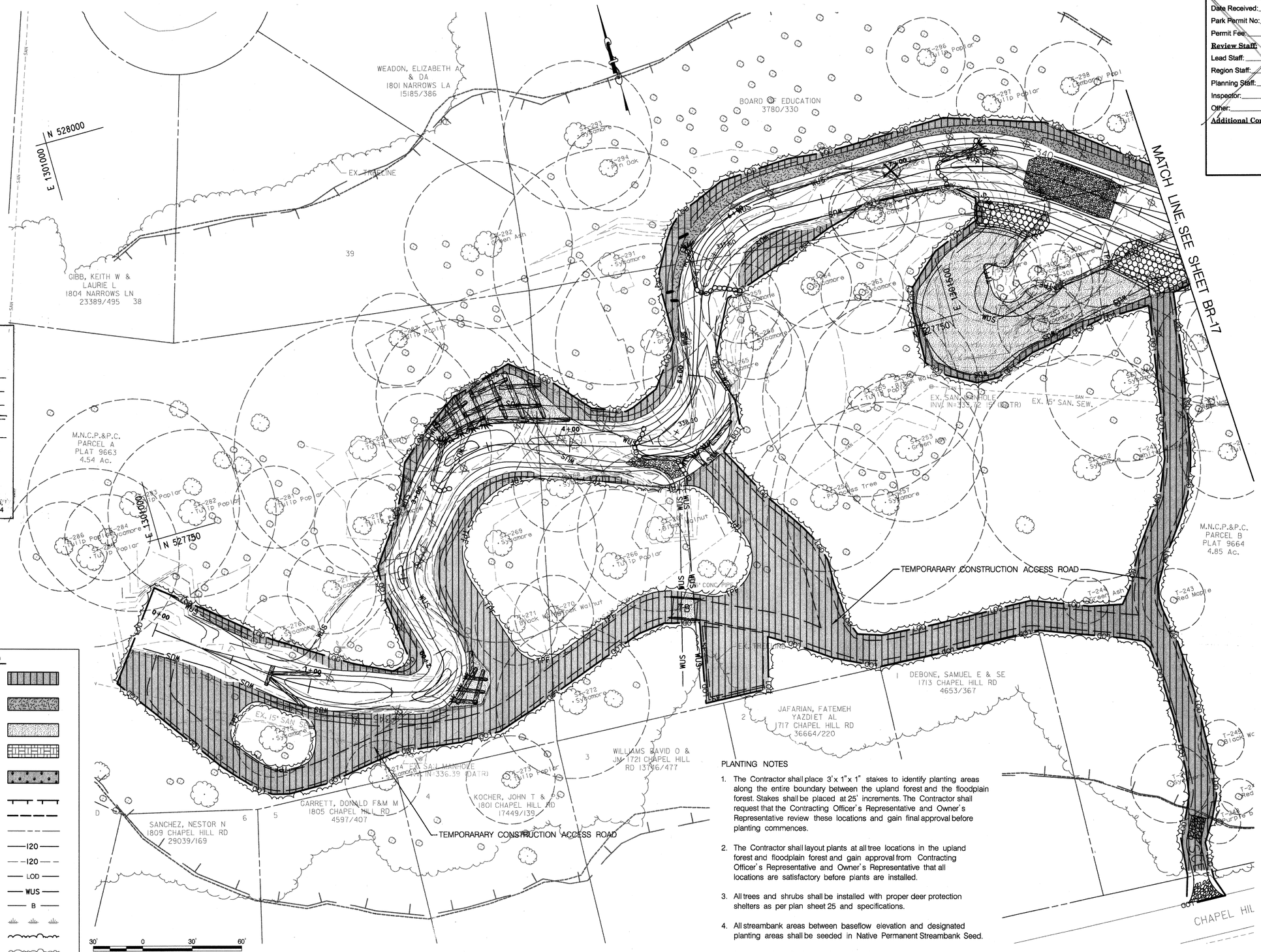
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-15
Dwg scale: 1"=30'

BATCHELLORS RUN I & II FOREST CONSERVATION PLAN

Sheet Number:

PLOTTED: Tuesday, May 08, 2012 AT 11:28 AM
FILE: \\rkkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-B003_nwbr.dgn

BY: dadkins -



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012 09

M-NCPPC PARK FACILITY CODE _____

REVIEWED BY _____

APPROVED BY _____ CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # _____ OF _____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:

Date Received: _____

Park Permit No: 2012.09

Permit Fee: _____

Review Staff:

Lead Staff: _____

Region Staff: _____

Planning Staff: _____

Inspector: _____

Other: _____

Additional Comments:

LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- SOD
- WILDFLOWER SEED
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 25 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See plan sheet 25 for planting schedules.

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM	Date: 05/11/2012
Dwn by: DEA	Ckd by: REP
Reviewed by: TMH	Drawing code: BR-16
Submitted by: CVK	Dwg scale:

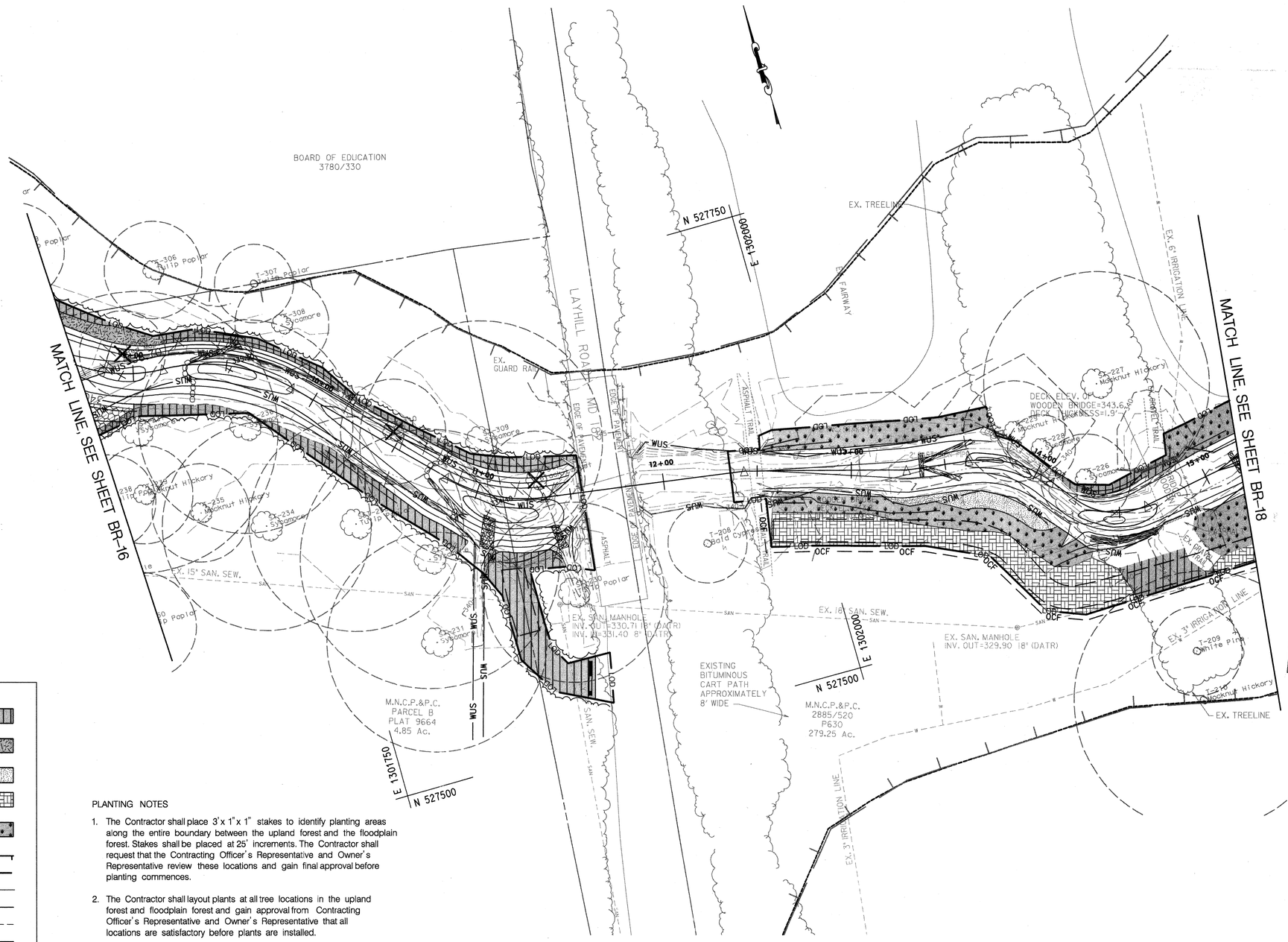
BATCHELLORS RUN I & II PLANTING PLAN

Sheet Number:

22 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 09:42 AM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-B001_nwbr.dgn



LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- SOD
- WILDFLOWER SEED
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 25 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See plan sheet 25 for planting schedules.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET 5 OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:

Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:

Additional Comments:

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

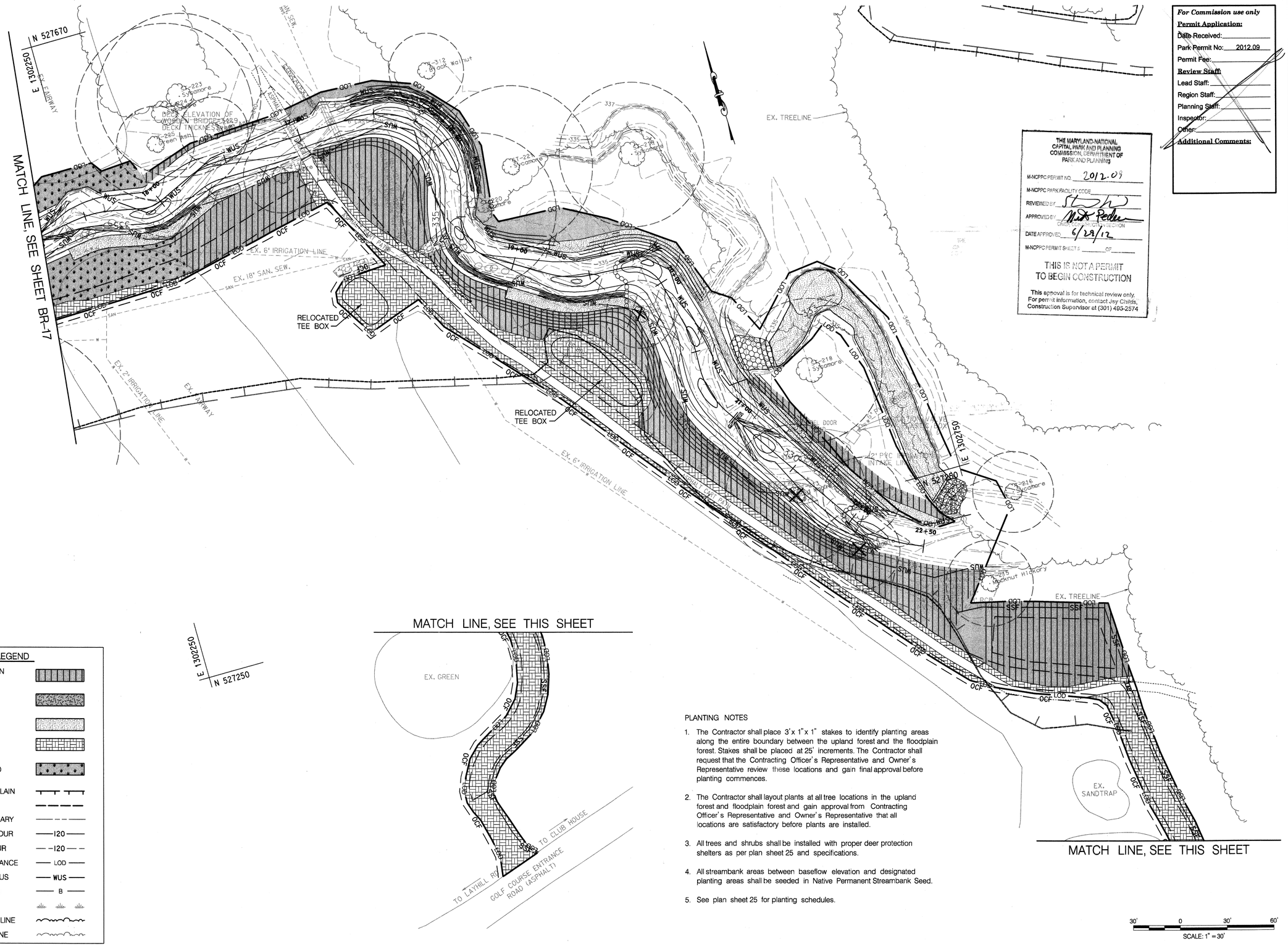
Designed by: WMM
Dwn by:
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
design file no.
Drawing code: BR-17
Dwg scale: 1"=30'

BATCHELLORS RUN I & II PLANTING PLAN

Sheet Number:
23 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 09:51 AM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-B002_rwbr.dgn



For Commission use only

Permit Application:

Date Received: _____

Park Permit No: 2012.09

Permit Fee: _____

Review Staff:

Lead Staff: _____

Region Staff: _____

Planning Staff: _____

Inspector: _____

Other: _____

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE _____

REVIEWED BY _____

APPROVED BY _____ DIRECTOR OR DIRECTOR'S DESIGNEE

DATE APPROVED 6/28/12

M-NCPPC PERMIT SHEET 5 OF _____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- SOD
- WILDFLOWER SEED
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 25 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See plan sheet 25 for planting schedules.

30' 0 30' 60'

SCALE: 1" = 30'

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM		Dates: 05/11/2012	
Dwn by: DEA	Ckd by: REP	Design file no.	
Reviewed by: TMH		Drawing code: BR-18	
Submitted by: CVK		Dwg scale: 1"=30'	

BATCHELLORS RUN I & II PLANTING PLAN

Sheet Number:

24 OF 79

PLOTTED: Wednesday, June 27, 2012 AT 09:55 AM
FILE: T:\07044_USACE\Task_0_Northwest\CADD\dgn\BLD-B003_nwbr.dgn

NATIVE FLOODPLAIN FOREST

Size (acres): 1.47

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
15	200			**TREES**					
		20	59	*Acer rubrum*	Red Maple	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	43	*Liriodendron tulipifera*	Tulip Poplar	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		10	30	*Nyssa sylvatica*	Black Gum	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	59	*Platanus occidentalis*	American Sycamore	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	44	*Quercus palustris*	Pin Oak	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	59	*Quercus rubra*	Northern Red Oak	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		100.0	**294**	**=total**					
10	300			**SHRUBS**					
		25	110	*Cornus amomum*	Silky Dogwood	FACW	18-24" ht.	Cont.	Clustered @ 7' OC
		25	110	*Lindera benzoin*	Spicebush	FACW	18-24" ht.	Cont.	Clustered @ 7' OC
		20	88	*Viburnum acerifolium*	Mapleleaf viburnum	UPL	18-24" ht.	Cont.	Clustered @ 7' OC
		30	133	*Viburnum dentatum*	Southern Arrowwood	FAC	18-24" ht.	Cont.	Clustered @ 7' OC
		100.0	**441**	**=total**					
NA	40			**NATIVE PERMANENT SEED**					
		30	17.6	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		15	8.8	*Elymus canadensis*	Canada Wild Rye	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	11.8	*Elymus riparius*	River Bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	14.7	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	5.9	*Tridens flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**58.8**	**=total**					

NATIVE RIPARIAN FOREST

Size (acres): 0.05

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
15	200			**TREES**					
		25	2	*Acer rubrum*	Red Maple	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	1	*Liriodendron tulipifera*	Tulip Poplar	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	2	*Nyssa sylvatica*	Black Gum	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		25	3	*Platanus occidentalis*	American Sycamore	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	2	*Quercus palustris*	Pin Oak	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		100.0	**10**	**=total**					
7	300			**SHRUBS**					
		25	4	*Cornus amomum*	Silky Dogwood	FACW	18-24" ht.	Cont.	Clustered @ 7' OC
		25	4	*Lindera benzoin*	Spice Bush	FACW	18-24" ht.	Cont.	Clustered @ 7' OC
		30	5	*Viburnum prunifolium*	Blackhaw	FACU	18-24" ht.	Cont.	Clustered @ 7' OC
		20	2	*Viburnum dentatum*	Southern Arrowwood	FAC	18-24" ht.	Cont.	Clustered @ 7' OC
		100.0	**15**	**=total**					
NA	40			**NATIVE PERMANENT SEED**					
		20	0.40	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		20	0.40	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		25	0.50	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		30	0.60	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		5	0.10	*Leersia oryzoides*	Ricecut Grass	OBL	Seed	NA	Lb. of P.L.S. 76%
		100.0	**2.00**	**=total**					

NATIVE RIPARIAN SHRUB

Size (acres): 0.28

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
	400								
		33	37	*Clethra alnifolia*	Sweet Pepperbush	FAC	18-24" ht.	Cont.	Clustered @ 6' OC
		33	37	*Cornus amomum*	Silky Dogwood	FACW	18-24" ht.	Cont.	Clustered @ 8' OC
		34	38	*Ilex verticillata*	Winterberry	FACW	18-24" ht.	Cont.	Clustered @ 8' OC
		100.0	**112**	**=total**					
NA	40			**NATIVE SEED**					
		15	1.7	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		30	3.4	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	2.2	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	2.8	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	1.1	*Tridens Flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**11.2**	**=total**					

WILDFLOWER SEED

Size (acres): 0.18

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	ECOTYPE	Placement
NA	30			**SEED**					
		2	0.11	*Asclepias tuberosa*	Butterfly Milkweed	NI	SEED	NA	LB. of P.L.S. 76%
		10	0.54	*Chamaecrista fasciculata*	Partridge Pea	FACU	SEED	PA	LB. of P.L.S. 76%
		15	0.81	*Elymus riparius*	Riverbank Wild Rye	FACW	SEED	PA	LB. of P.L.S. 76%
		3	0.16	*Monarda fistulosa*	Wild Bergamot	UPL	SEED	NA	LB. of P.L.S. 76%
		6	0.32	*Rudbeckia hirta*	Black Eyed Susan	FACU	SEED	CP NC	LB. of P.L.S. 76%
		25	1.35	*Schizachyrium scoparium*	Little Bluestem	FACU	SEED	E. U.S.	LB. of P.L.S. 76%
		6	0.32	*Senna hebecarpa*	Wild Senna	FAC	SEED	VA & WV	LB. of P.L.S. 76%
		5	0.28	*Senna marilandica*	Maryland Senna	FAC	SEED	NA	LB. of P.L.S. 76%
		10	0.54	*Sorghastrum nutans*	Indiangrass	UPL	SEED	PA	LB. of P.L.S. 76%
		3	0.16	*Tradescantia virginiana*	Virginia Spiderwort	FACU	SEED	SE PA/ N VA	LB. of P.L.S. 76%
		15	0.81	*Tridens flavus*	Purple Top	FACU	SEED	SE VA	LB. of P.L.S. 76%
		100.0	**5.40**	**=total**					

Seed Mix equivalent to ERNMX-172

SOD SIZE (ACRES): 0.38	SIZE (SF): 16,560

NATIVE PERMANENT STREAM BANK SEED

Size (acres): 0.60

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
NA	40			**NATIVE PERMANENT SEED**					
		20	0.40	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		20	0.40	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		25	0.50	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		30	0.60	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		5	0.10	*Leersia oryzoides*	Ricecut Grass	OBL	Seed	NA	Lb. of P.L.S. 76%
		100.0	**12.0**	**=total**					

GENERAL NOTES

1. The landscaping shown on sheets 22-24 must be planted in accordance with the latest edition of Landscape Specification Guidelines, developed by the MD-DC-VA Chapter of the Landscape Contractors Association.
2. All plants must meet the standards of the latest edition of American Standard for Nursery Stock sponsored by the Association of American Nurserymen.
3. Plant type substitutions are permitted with verbal or written approval from the Planning and Code Administration.
4. All trees and shrubs are to be located a minimum distance of 5 feet from all utility boxes and utility lines, 5 feet from a storm drain inlet or manhole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign and at least 30 feet from any intersection.
5. Shrubs to be planted in groups of 7-10 plants.
6. Soil conditions must be tested, verified and adjusted by the landscape contractor to ensure that appropriate soil composition and pH levels are suitable for plant materials specified for that specific location.
7. Any planting within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be carried out in such a way as to avoid any adverse impact to the roots of existing trees.
8. All plant material will be reinspected for survival by the Planning and Code Administration one year following installation. A 10 percent maintenance bond will be retained during this time period.
9. Plant installation shall include a 2 year maintenance period.

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012-09

M-NCPPC PARK FACILITY CODE

REVIEWED BY [signature]

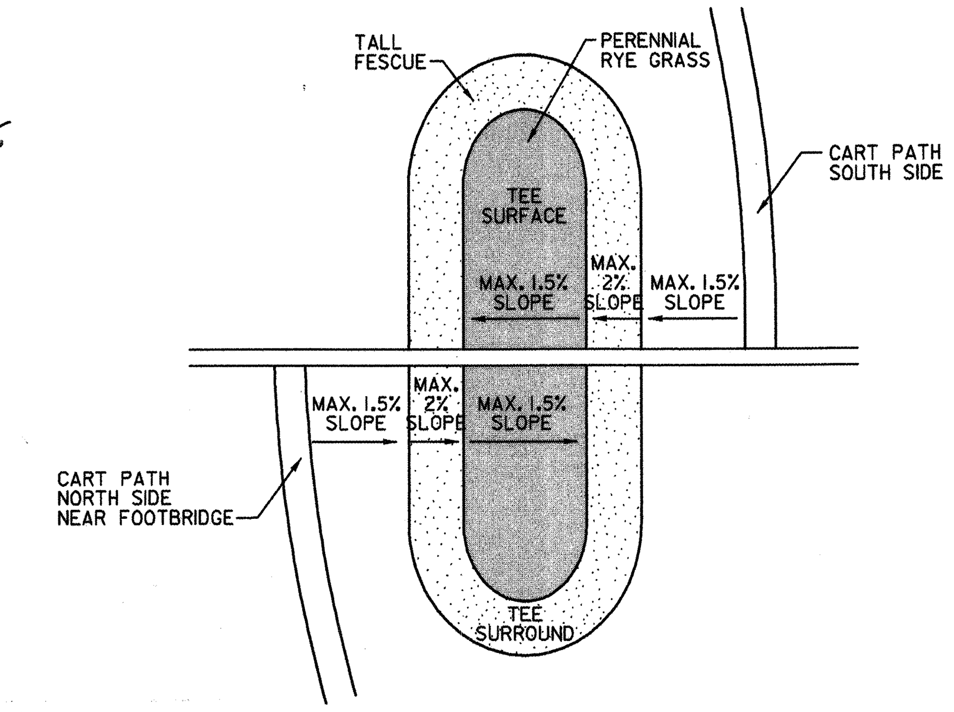
APPROVED BY [signature] CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

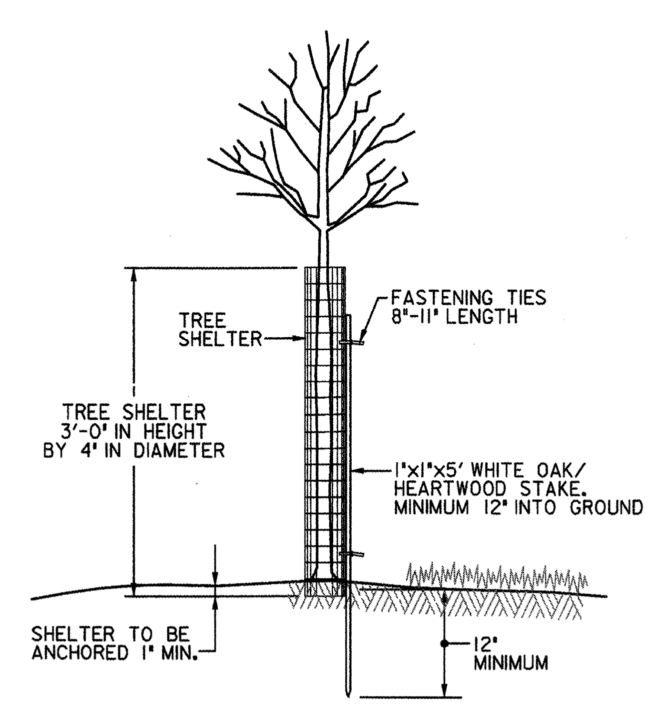
This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574



RELOCATED TEE BOX

N.T.S.

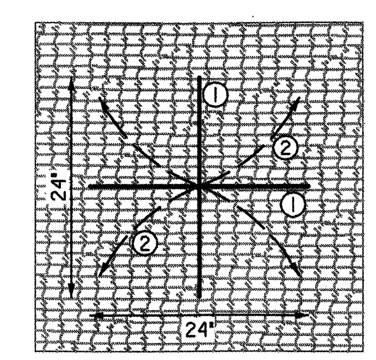
NOTES:
1. DOUBLE SCREENED TOPSOIL USED FOR TEE SURROUND AND TEE SURFACE.
2. IRRIGATION HEADS TO BE RECONFIGURED FOR RELOCATED TEE BOXES. COORDINATE WITH NORTHWEST GOLF COURSE TO DETERMINE LOCATIONS FOR IRRIGATION HEADS.



DEER PROTECTION - TREE

N.T.S.

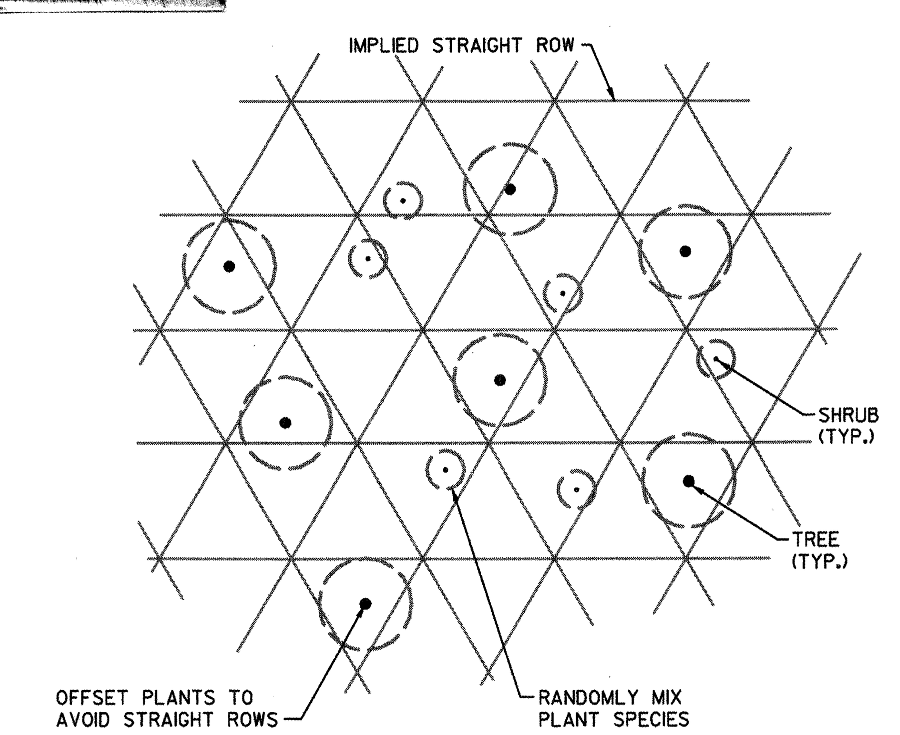
NOTES:
1. UP TO 2" OF SOIL CAN BE MOUNTED AROUND THE OUTSIDE OF TREE SHELTER.
2. REFER TO TREE SHELTER SPECIFICATION FOR ADDITIONAL INFORMATION.



1. Make cut with sharp knife through Coir Fiber Matting - Solid line in diagram
2. Pin back Coir Fiber with 4 staples - dashed line in diagram
3. Install plant through pinned back Coir Fiber. Install plant at proper grade to ground plane
4. Remove 4 staples
5. For tree installations, install tree stakes through Coir Matting
6. Install deer protection
7. Place 4 staples in each of four cut sections. Re-anchor Coir Matting to ground

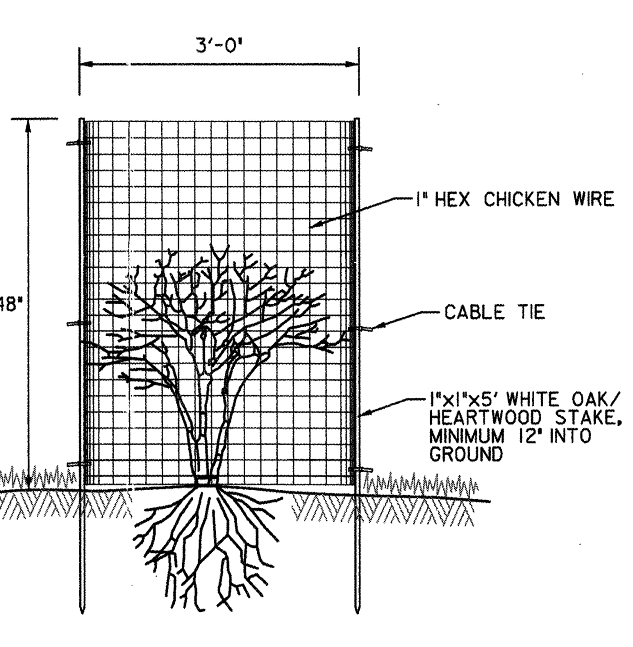
TREE & SHRUB INSTALLATION THROUGH COIR FIBER MATTING

N.T.S.



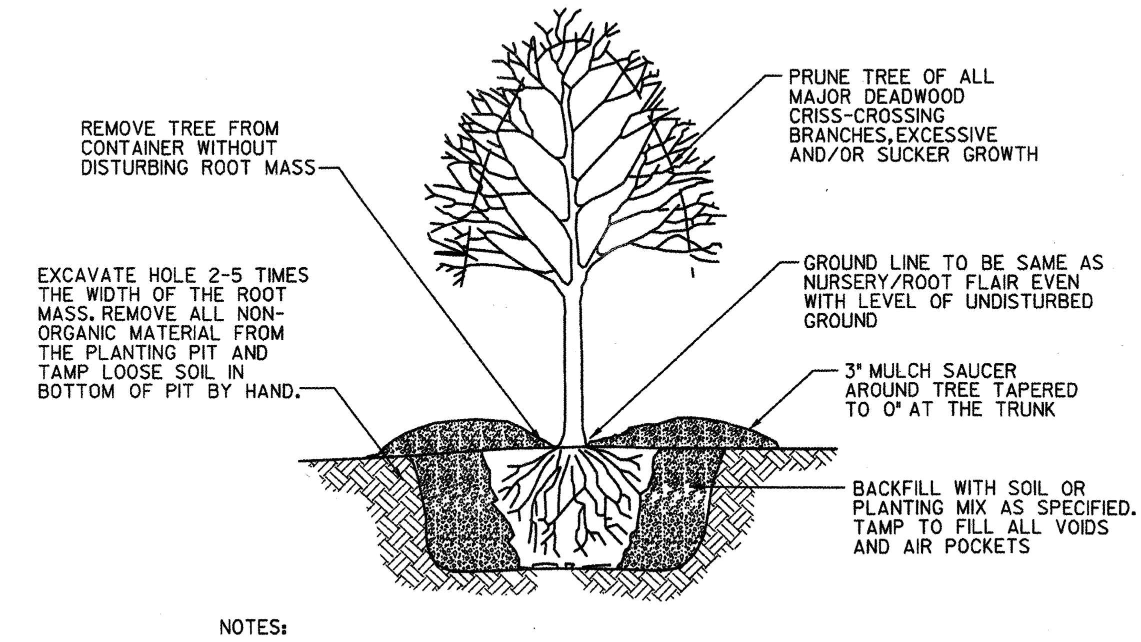
NATURALIZED PLANT SPACING

N.T.S.



DEER PROTECTION - SHRUB

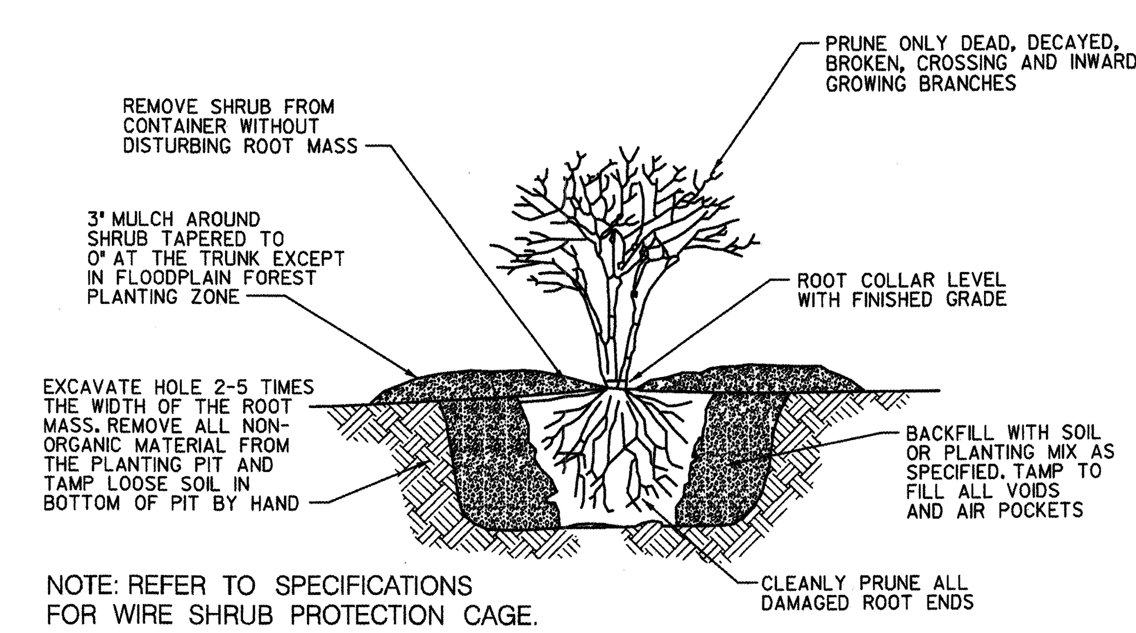
N.T.S.



NOTES:
1. If surrounding soil is compacted as determinded by the engineer, an area up to 5 times the diameter of the root mass shall be excavated or rototilled to a 1'depth.
2. Do not damage or cut leader.

TREE PLANTING - CONTAINER GROWN

N.T.S.



NOTE: REFER TO SPECIFICATIONS FOR WIRE SHRUB PROTECTION CAGE.

SHRUB PLANTING - CONTAINER

N.T.S.

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: BR-19
Dwg scale: N.T.S.

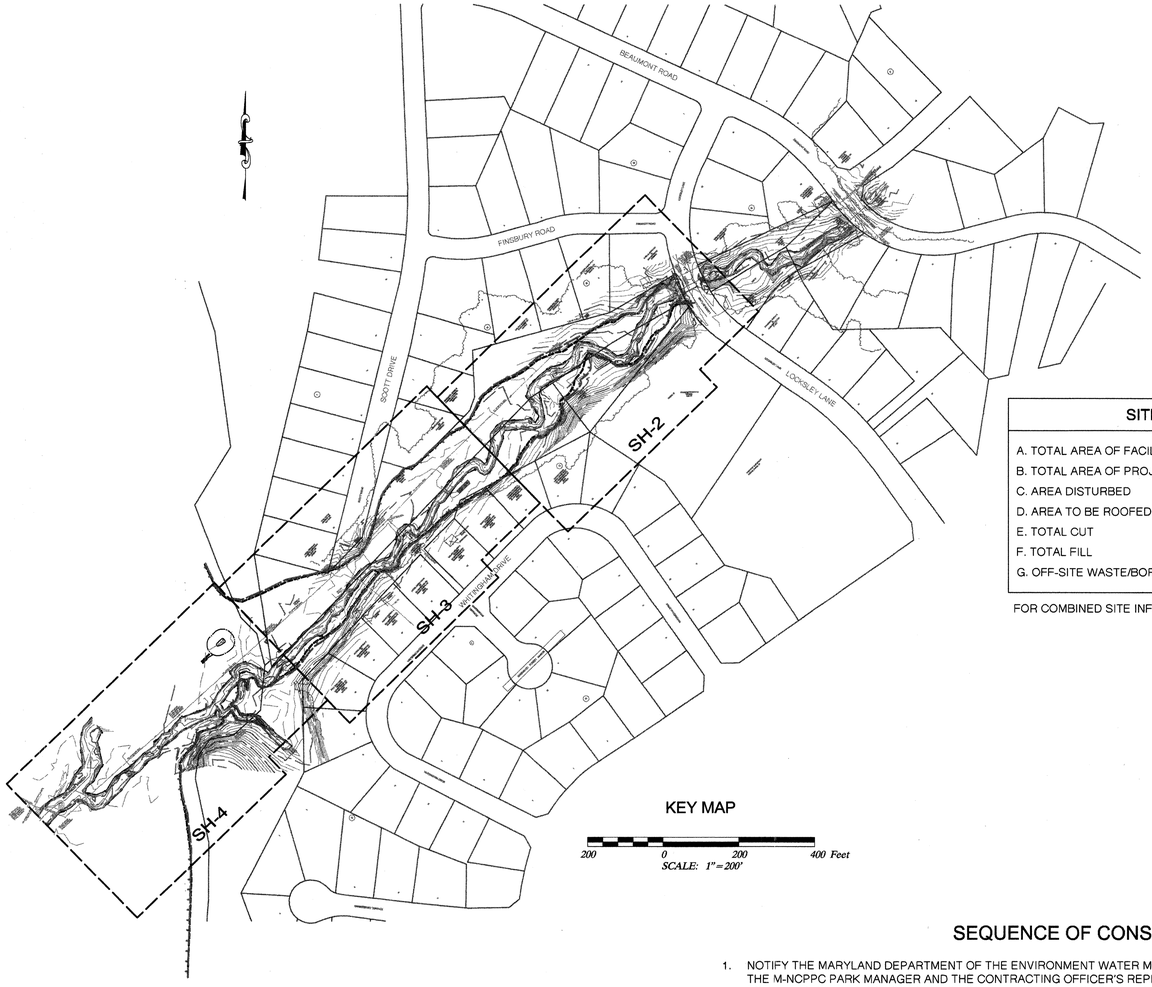
BATCHELLORS RUN I& II PLANTING SCHEDULES & PLANTING DETAILS

Sheet Number:

25 OF 79

BY: rpalmer -

PLOTTED: Wednesday, June 27, 2012 AT 02:08 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-B004_nwbr.dgn



KEY MAP

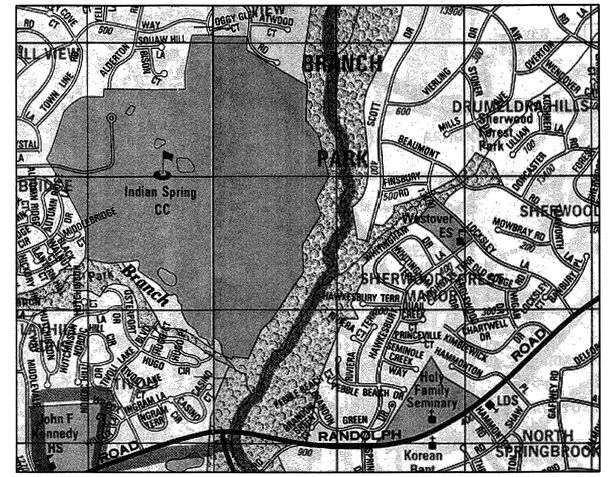
200 0 200 400 Feet
SCALE: 1" = 200'

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

SITE INFORMATION - SHERWOOD

A. TOTAL AREA OF FACILITY (Base, Campus, Park, Etc.)	10.55 Acres
B. TOTAL AREA OF PROJECT SITE	10.55 Acres
C. AREA DISTURBED	3.75 Acres
D. AREA TO BE ROOFED OR PAVED	0.00 Acres
E. TOTAL CUT	1,678 CY
F. TOTAL FILL	1,203 CY
G. OFF-SITE WASTE/BORROW AREA LOCATION	TBD

FOR COMBINED SITE INFORMATION REFER TO DRAWING GN-13



VICINITY MAP

Copyright ADC The Map People
Permitted Use No. 21003214
Expiration: 03/13/13

NOTES:

1. PRIOR TO INITIATION OF WORK, THE CONTRACTOR SHALL WALK THE SITE WITH THE CONTRACTING OFFICER'S REPRESENTATIVES AND M-NCPPC TO IDENTIFY THE TREES TO BE PROTECTED.
2. STOCKPILE AREA SHALL BE LOCATED AT AN MDE APPROVED OFF-SITE LOCATION.
3. MAINTENANCE OF TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. HARDWOOD MATS SHALL BE PLACED BY THE CONTRACTOR TO PROTECT CRITICAL ROOT ZONES, SANITARY SEWER LINES, MANHOLES AND SENSITIVE AREAS AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL EMPLOY LOW IMPACT CONSTRUCTION TECHNIQUES FOR ALL AREAS WITHIN THE LOD.
6. SILT FENCE INSTALLED WITHIN CRITICAL ROOT ZONES SHALL NOT BE EMBEDED INTO THE GROUND (I.E. TRENCHED) BUT THE REMAINING GEOTEXTILE SHALL BE SPREAD UPSLOPE OF THE FENCE LINE, STAPLED/STAKED ON 3 FOOT CENTERS AND COVERED WITH 12 INCHES OF MULCH.
7. THE WORK IN THIS AREA SHALL BE COMPLETED USING THE METHOD OF SAME DAY STABILIZATION. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORKDAY. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF THE WORKDAY.
8. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE EXISTING ASPHALT ROADS RESULTING FROM THE CONSTRUCTION ACTIVITIES.

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION AT (410) 537-3510, THE M-NCPPC PARK MANAGER AND THE CONTRACTING OFFICER'S REPRESENTATIVE, MR. BRUCE PITTS, AT (301) 677-7433 FOR THE REQUIRED PRE-CONSTRUCTION MEETING AT LEAST SEVEN DAYS BEFORE COMMENCING LAND DISTURBING ACTIVITIES.
2. INSTALL TREE PROTECTION FENCING AS SHOWN ON THE PLAN.
3. COMPLETE TREE REMOVAL AND SELECTIVE TRIMMING AS SHOWN ON THE PLAN OR AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
4. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.
5. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
6. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND BUILD THE ASSOCIATED TEMPORARY ACCESS ROAD. STABILIZE AT THE END OF EACH WORK DAY. FOR THE ACCESS ROAD WITHIN A WETLAND, PLACE TIMBER MATS TO MINIMIZE IMPACTS.
7. INSTALL SILT FENCE AS DESIGNATED ON THE PLANS.
8. CLEAR AND GRUB REMAINING WORK AREA. ANY DISTURBANCE CAUSED BY THIS PROCESS SHALL BE STABILIZED BY THE END OF THE DAY.
9. INSTALL PUMP-AROUND FLOW DIVERSION AND DEWATER THE CONSTRUCTION ZONE THROUGH THE APPROVED DEWATERING DEVICE. THE CONTRACTOR SHALL STAGE THE LIMITS OF THE PUMP-AROUND FLOW DIVERSION TO DEWATER ONLY THAT SECTION SCHEDULED FOR THAT DAY'S WORK. AT THE END OF EACH WORK DAY, THE WORK AREA SHALL BE STABILIZED, THE PUMP-AROUND PRACTICE REMOVED, AND THE FLOW RESTORED TO THE CHANNEL. WORK SHALL BE COMPLETED ONLY DURING FORECASTED PERIODS OF DRY WEATHER.
10. CONSTRUCT STREAM IMPROVEMENTS BEGINNING UPSTREAM TO DOWNSTREAM. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MINIMIZE UNNECESSARY DISTURBANCE. FOR THE STREAM IMPROVEMENTS, ONLY THAT AMOUNT OF WORK SHALL BE COMPLETED THAT CAN BE STABILIZED BY THE END OF THE DAY.
11. ONCE ALL STREAM WORK HAS BEEN COMPLETED AND STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE ASSOCIATED ACCESS ROAD. AS THE ROAD IS REMOVED, INSTALL PLANTINGS ACCORDING TO THE PLAN, SCHEDULE AND DETAILS PROVIDED ON THE PLANTING PLAN.
12. WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THESE CONTROLS. INSTALL ANY REMAINING PLANTINGS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION OPEN SPACE DEPARTMENT OF PARKS AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY Mitch Peck
DATE APPROVED 6/28/12
M-NCPPC PERMIT SUFFIX
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only.
For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

LEGEND

WUS	WATERS OF THE U.S.
B	WETLAND BUFFER
	WETLAND AREA
	EXIST. STREAM CHANNEL
354	EXISTING CONTOURS
220	PROPOSED CONTOURS
S	EXIST. SAN. SEWER MANHOLE
SD	EXIST. STORMDRAIN MANHOLE
T=122 Tulip Poplar 34"	EXISTING TREE >24" DBH
	TREE TO BE REMOVED
	EXIST. 100-YR FLOODPLAIN LIMIT
	PROP. 100-YR FLOODPLAIN LIMIT
FS XX	LIVE FASCINES
RJ XX	ROCK J-HOOK VANE
CV XX	ROCK CROSS VANE
RGC XX	PROPOSED RIFFLE GRADE CONTROL
BL XX	PROP. BURIED LOG
LV XX	LOG CROSS VANE
LJ XX	LOG J-HOOK VANE
LMP XX	LOG MEANDER PROTECTION STRUCTURE
RW XX	ROOT WAD
LT XX	LOG TOE
	CLAY PLUG

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-1
Dwg scale: AS SHOWN

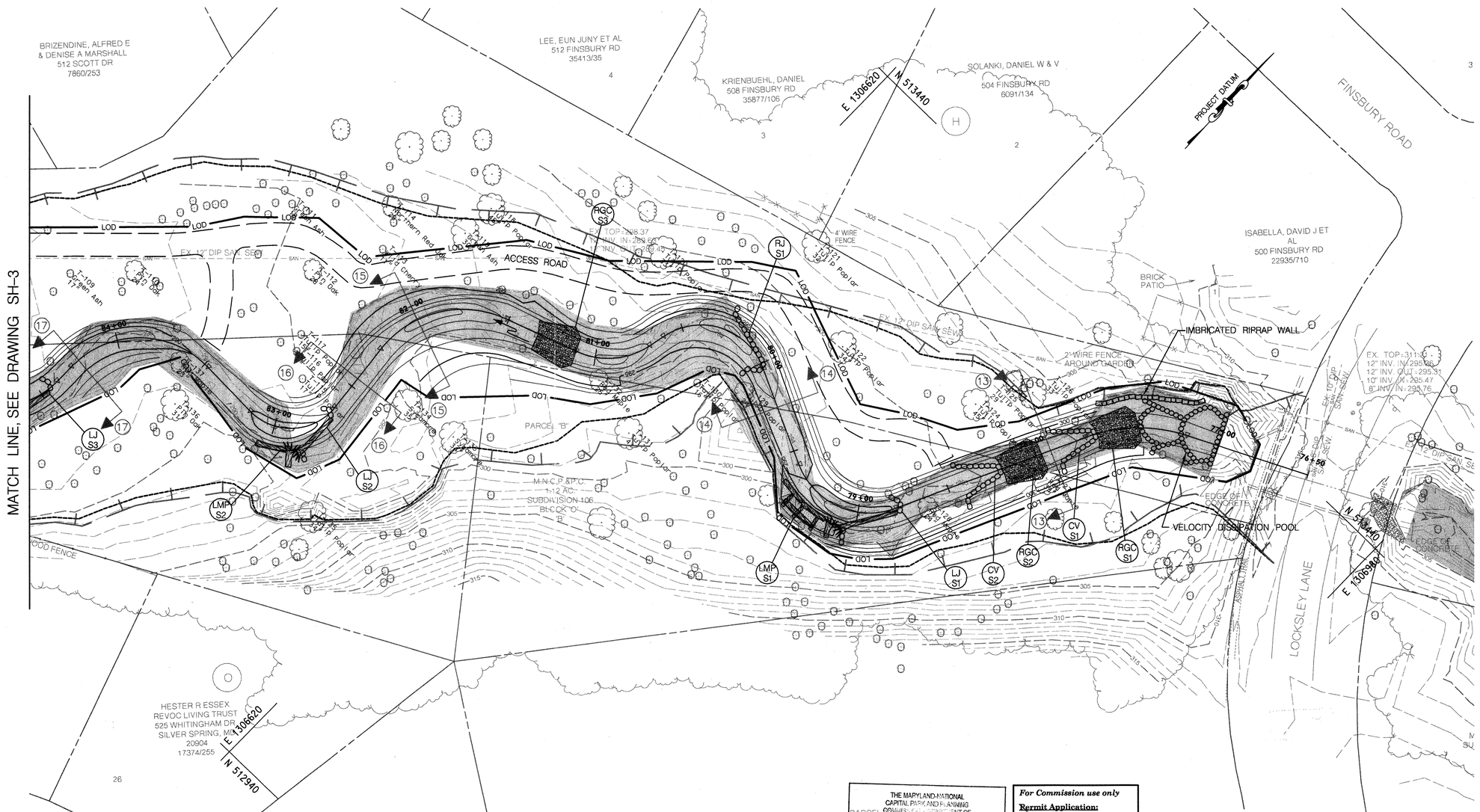
SHERWOOD
COVER SHEET

Sheet Number:
26 OF 79

PLOTTED: Tuesday, June 12, 2012 AT 03:22 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pGN-S000_nwbr.dgn

BY: rpallmer

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-5 FOR GEOMETRY CONTROL



NOTES:
1. ONLY TREES WITH A DBH >24" ARE SHOWN UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC
3. SEE SHEETS SH-8 AND SH-9 FOR SPECIAL CROSS SECTIONS.

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

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING
PARCEL "B"
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY DEVELOPMENT
REVIEWED BY:
APPROVED BY:
DATE APPROVED: 6/29/12
M-NCPPC PERMIT SIGNOFF
BOARD OF
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

IMBRICATED RIPRAP WALL ALIGNMENT POINTS				
POINT LOC.	NORTH	EAST	TOP ELEV.	BOT. ELEV.
STA. 77+13.7 (POB)	513,433.3	1,306,861.3	301.0	297.0
STA. 77+20.0	513,427.0	1,306,856.6	301.2	297.0
STA. 77+30.0	513,419.9	1,306,846.9	301.5	297.0
STA. 77+40.0	513,412.6	1,306,837.6	301.8	297.0
STA. 77+50.0	513,403.9	1,306,829.5	302.1	297.0
STA. 77+60.0	513,393.8	1,306,823.3	302.4	297.0
STA. 77+62.8 (POE)	513,391.6	1,306,820.6	302.5	297.0

NOTE: ALIGNMENT POINTS ARE TO FRONT FACE OF TOP STONE

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-2
Dwg scale: 1"=30'

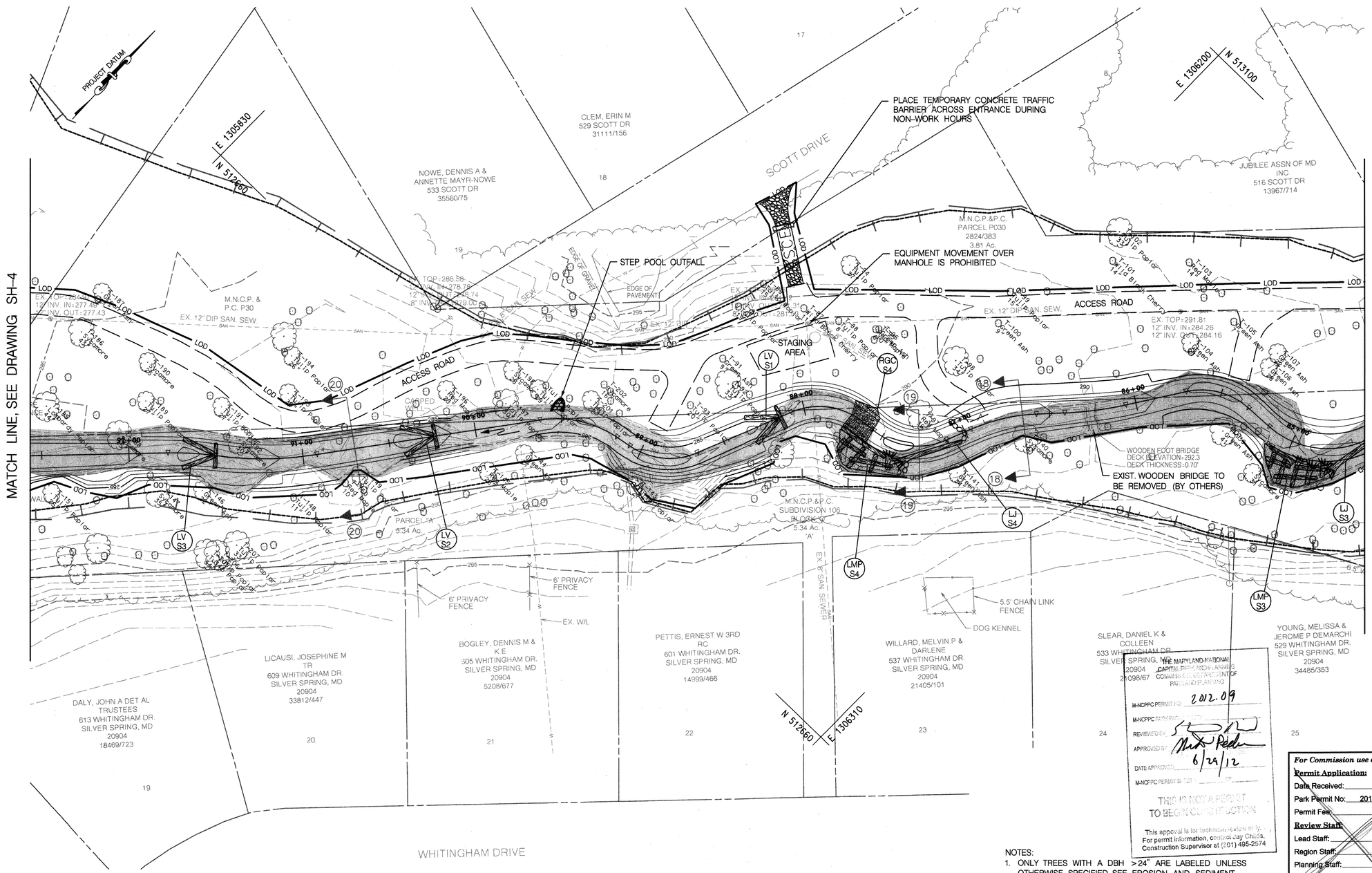
SHERWOOD SITE PLAN

Sheet Number:
27 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 19, 2012 AT 08:44 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_8_northwest\cadd\dgn\pDD-S001_nwbr.dgn

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-5 FOR GEOMETRY CONTROL



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK PROJECT
REVIEWED BY
APPROVED BY Mark Pedar
DATE APPROVED 6/29/12
M-NCPPC PERMIT SITE PLAN
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

NOTES:
1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. SEE SHEETS SH-8 AND SH-9 FOR SPECIAL CROSS SECTIONS.
4. FOR STEP POOL OUTFALL DETAIL SEE SHEET GN-12.

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-3
Dwg scale: 1"=30'

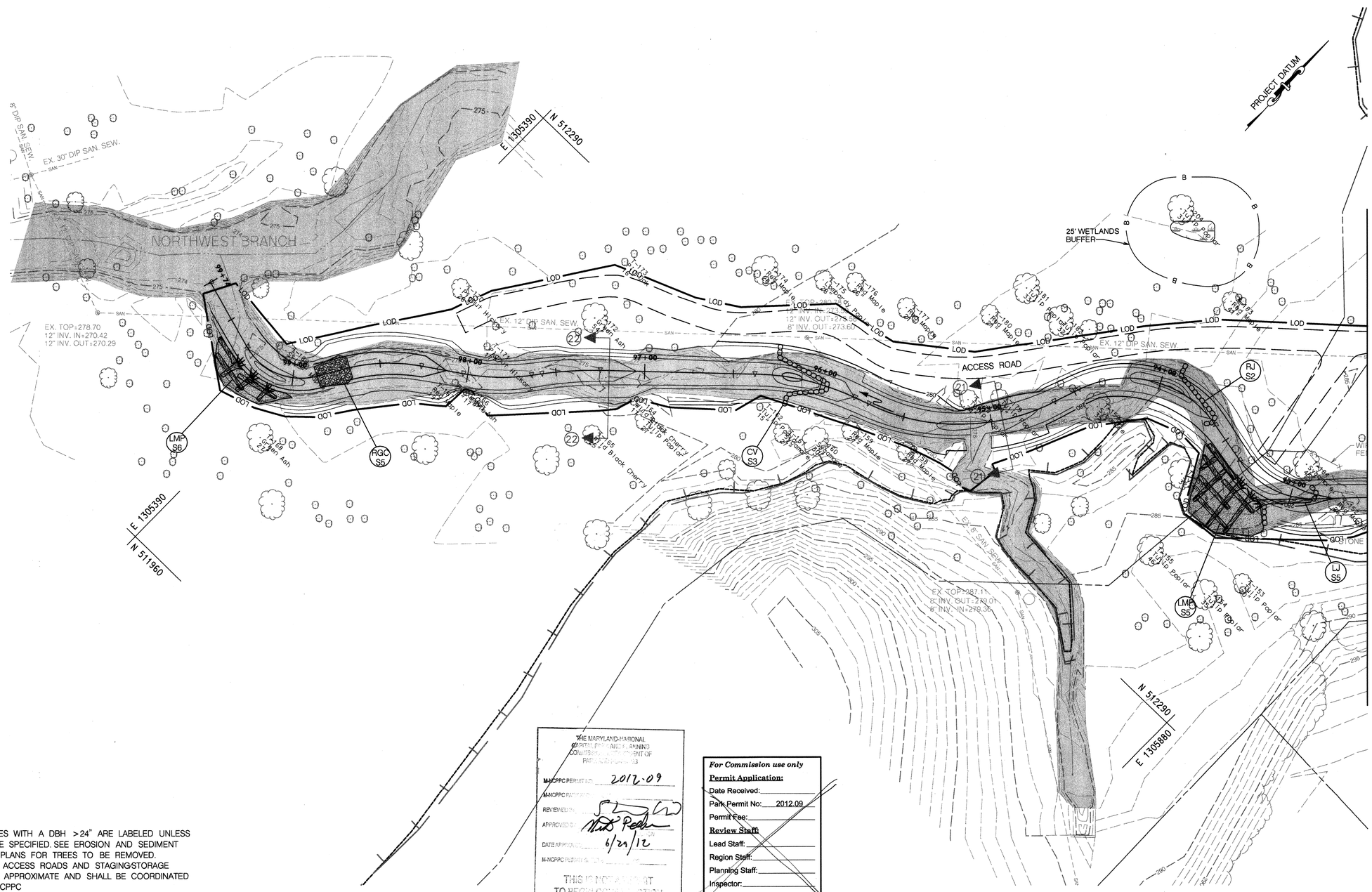
SHERWOOD SITE PLAN

Sheet Number:
28 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 19, 2012 AT 08:40 AM
FILE: \\RKMV\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-S002_nwtr.dgn

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-5 FOR GEOMETRY CONTROL



NOTES:
1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC
3. SEE SHEETS SH-8 AND SH-9 FOR SPECIAL CROSS SECTIONS.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION / DEPARTMENT OF PARKS AND RECREATION
M-NCPPC PERMIT NO. 2012-09
M-NCPPC PERMIT DATE
REVIEWED BY:
APPROVED BY:
DATE APPROVED: 6/21/12
M-NCPPC PERMIT EXPIRATION DATE
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Chilaz, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

A.B. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

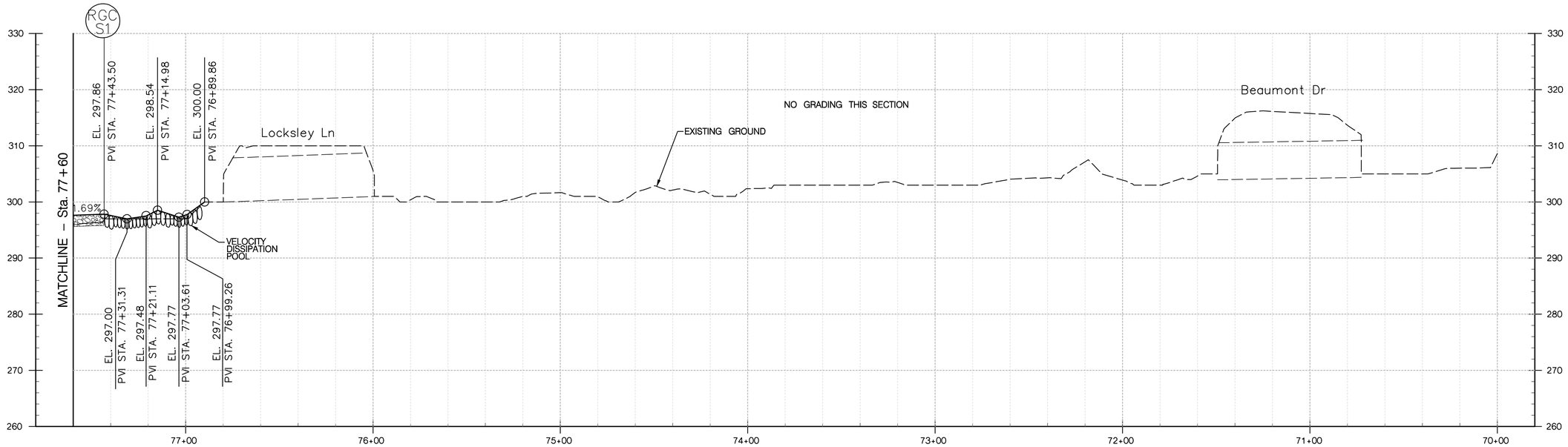
Designed by: REP
Date: 05/11/2012
Dwn by: DEA
Ckd by: SPB
Design file no.
Reviewed by: TMH
Submitted by: CVK
Drawing code: SH-4
Dwg scale: 1"=30'

SHERWOOD SITE PLAN

Sheet Number:
29 OF 79

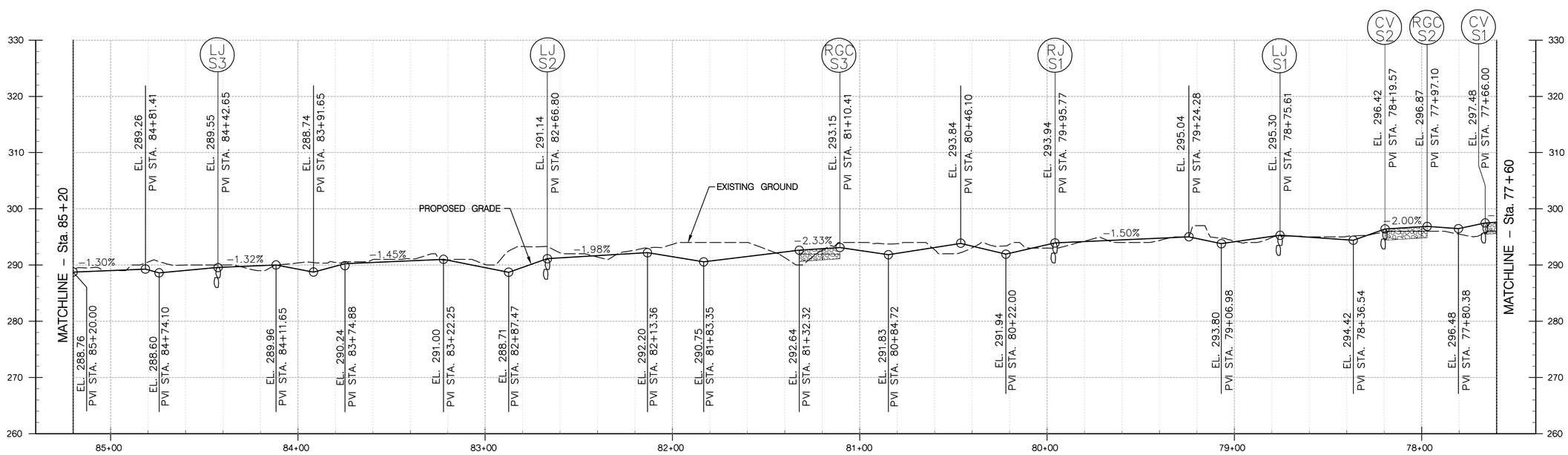
BY: rpalmer

PLOTTED: Thursday, June 28, 2012 AT 08:04 AM
FILE: \\PKKMfs\p0007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-S003_nwbr.dgn



STREAM PROFILE – SHERWOOD STA. 76+80 TO STA. 77+60

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



STREAM PROFILE – SHERWOOD STA. 77+60 TO STA. 85+20

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

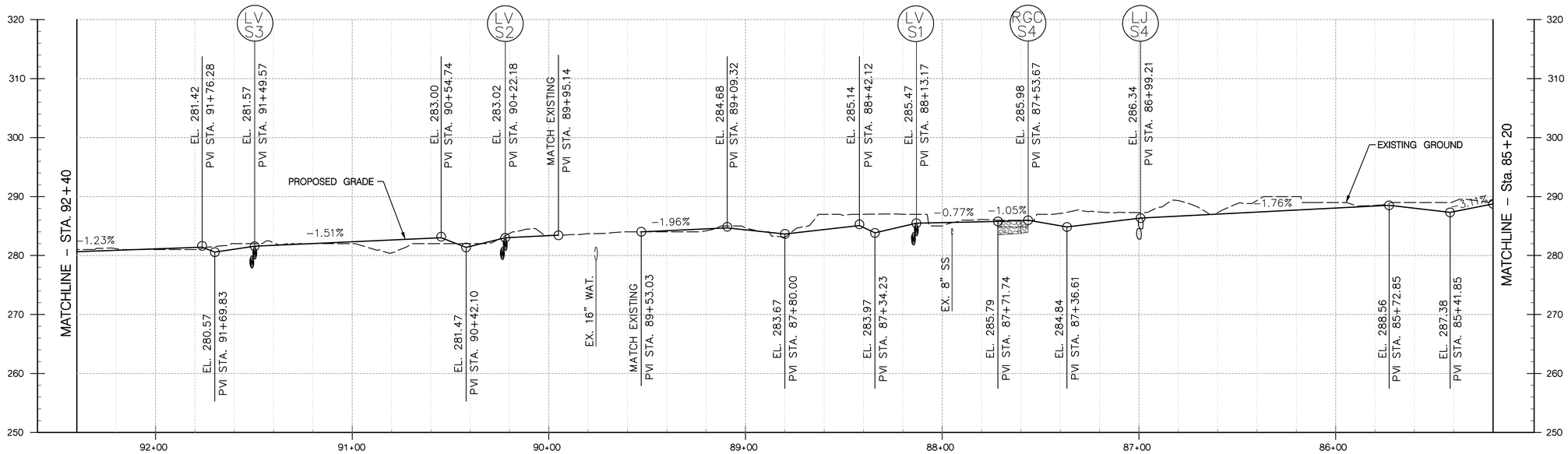
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: SH-5
Dwg scale: AS SHOWN

SHERWOOD
PROFILE
STA. 76+80 TO STA. 85+20

Sheet Number:
30 OF 79

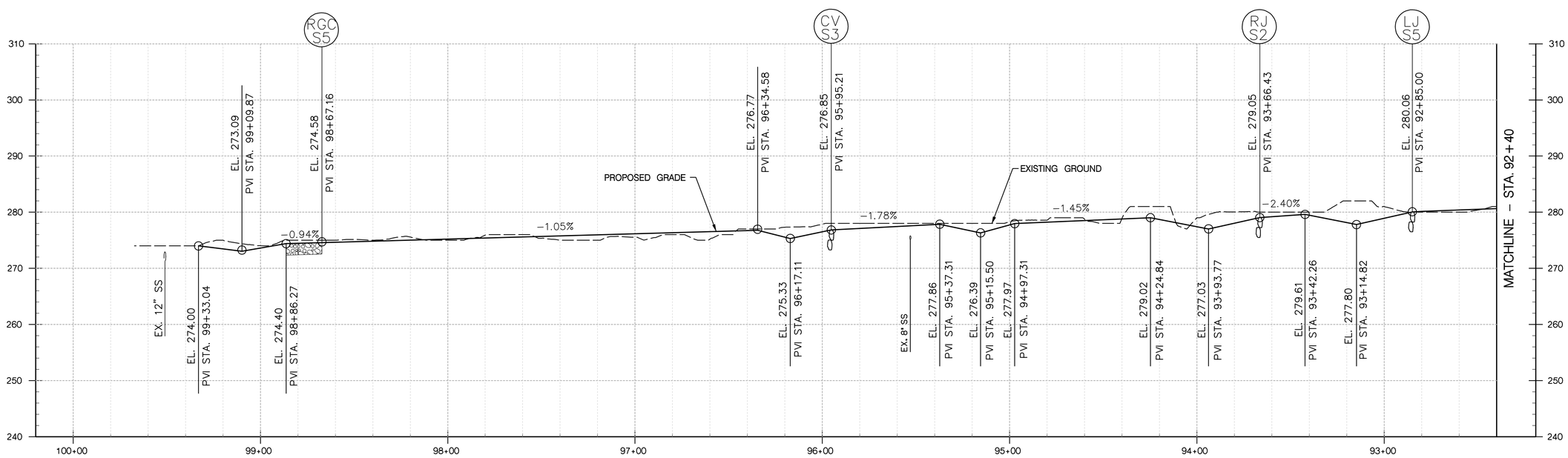
BY: rpalmer

PLOTTED: Saturday, May 12, 2012 AT 03:51 PM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-S001_nwbr.dgn



STREAM PROFILE - SHERWOOD STA. 85+20 TO STA. 92+40

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



STREAM PROFILE - SHERWOOD STA. 92+40 TO STA. 99+60

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

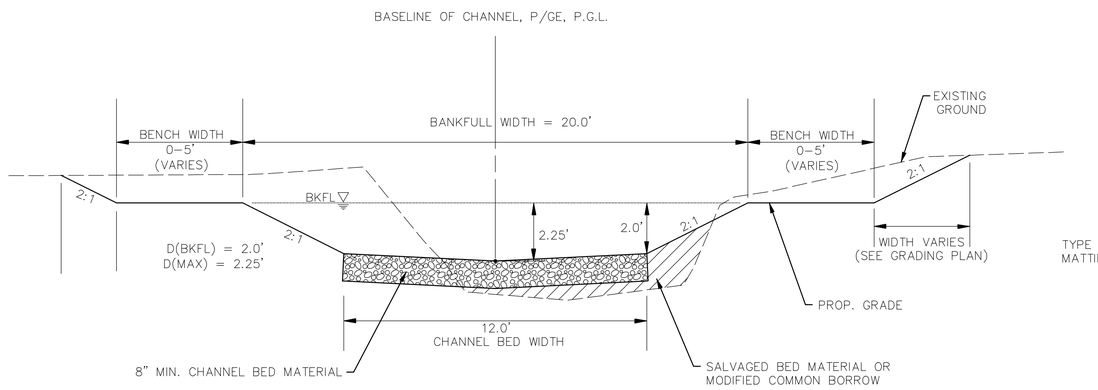
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: SH-6
Dwg scale: AS SHOWN

SHERWOOD
PROFILE
STA. 85+20 TO STA. 99+60

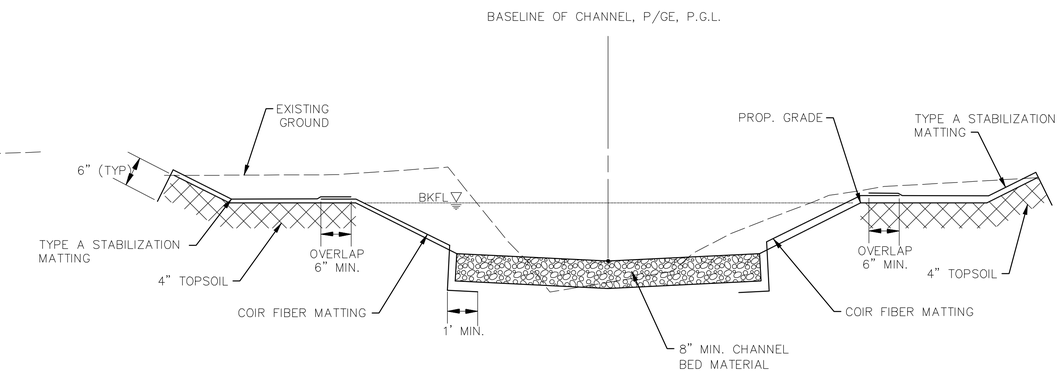
Sheet Number:
31 OF 79

BY: palmer

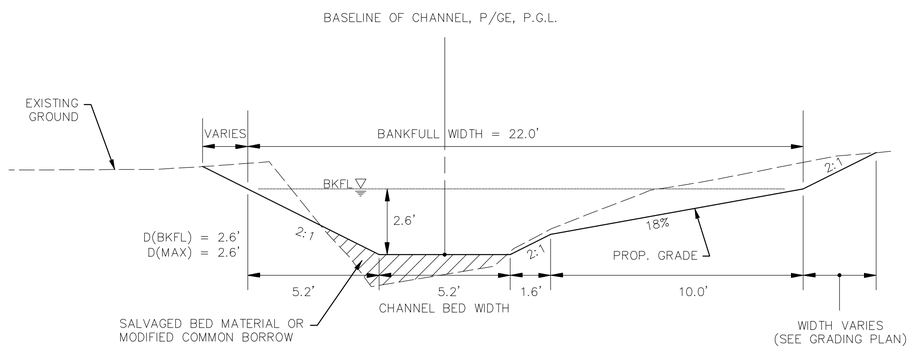
PLOTTED: Saturday, May 12, 2012 AT 03:51 PM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-S002_nwbr.dgn



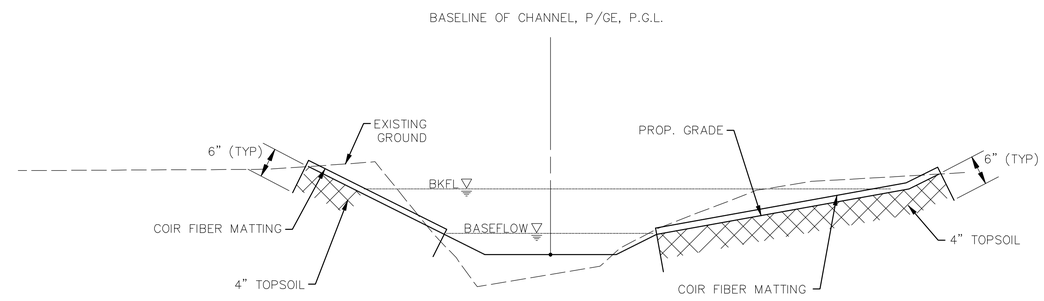
Sherwood Typical Section – Riffle



Sherwood Stabilization Detail – Riffle



Sherwood Typical Section – Pool



Sherwood Stabilization Detail – Pool

TYPICAL SECTIONS NOTE:

THE ABOVE TYPICAL SECTIONS DEPICT ULTIMATE CHANNEL DIMENSIONS WHEN GRADING IS NOT LIMITED BY TREE IMPACTS. REFER TO SPECIAL CROSS SECTIONS AND CONTOURS ON THE PLANS FOR GRADING REQUIREMENTS WHEN THE PRESENCE OF TREES REQUIRE DEVIATION FROM THE TYPICAL SECTIONS.

NOTES:

1. IN CASES WHERE AREA BEYOND THE BANKFULL CHANNEL ARE IN FILL, THE FILL SHALL BE PLACED AT A 10:1 SLOPE.
2. SEE DETAIL SHEETS FOR ADDITIONAL CHANNEL STABILIZATION MEASURES.
3. SEE SPECIFICATIONS FOR DESCRIPTION OF MODIFIED COMMON BORROW, CHANNEL BED MATERIAL, COIR FIBER MATTING AND STABILIZATION MATTING.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Date: 05/11/2012
Design file no.
Drawing code: SH-7
Dwg scale: N.T.S.
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

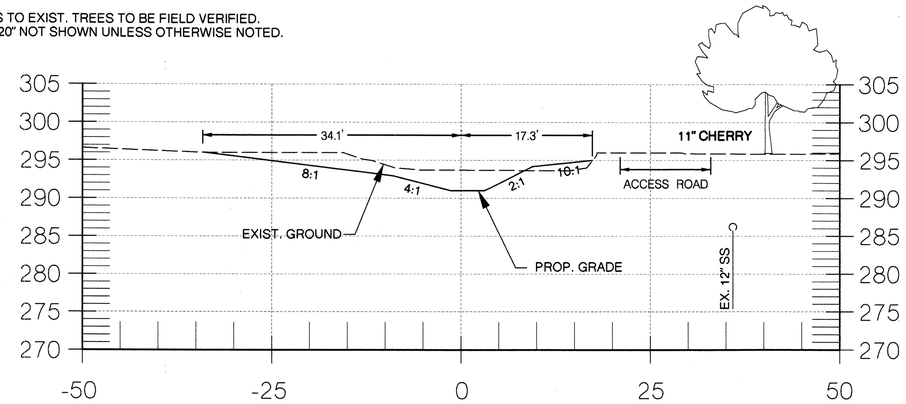
W912DR-07-D-0008
Task Order No. 19

SHERWOOD TYPICAL SECTION

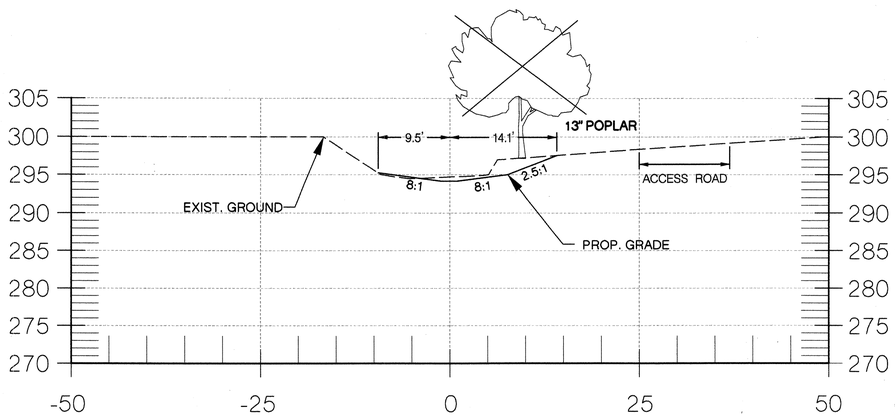
Sheet Number:
32 OF 79

PLOTTED: Tuesday, May 15, 2012 AT 02:09 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTS-S001_nwbr.dgn
BY: rpallmer

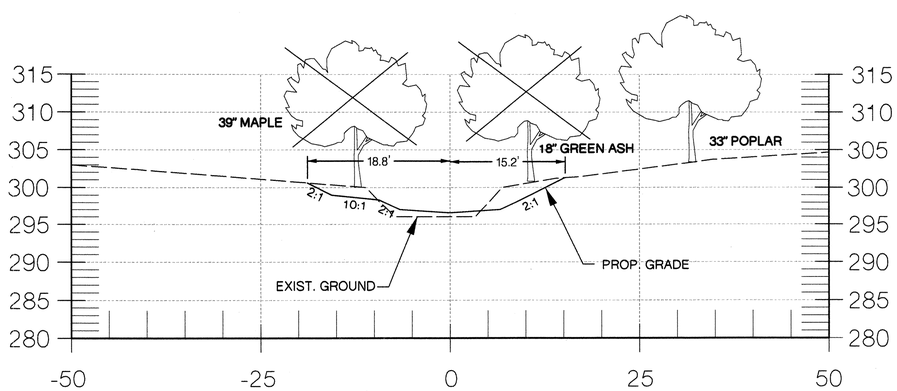
NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



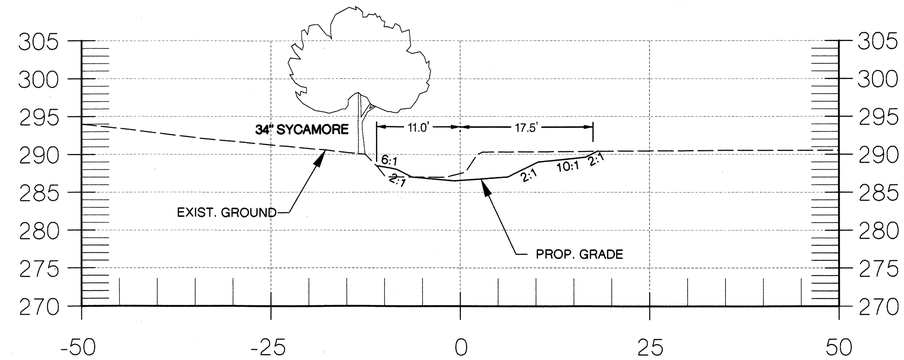
15 CROSS SECTION @ STA. 82+00
SCALE: 1" = 10'



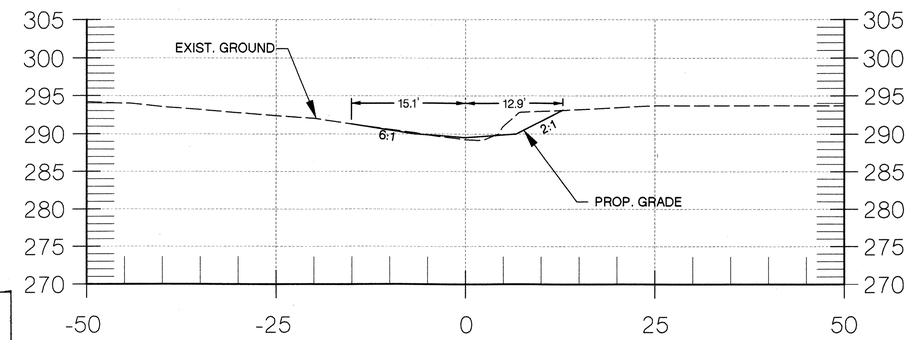
14 CROSS SECTION @ STA. 79+75
SCALE: 1" = 10'



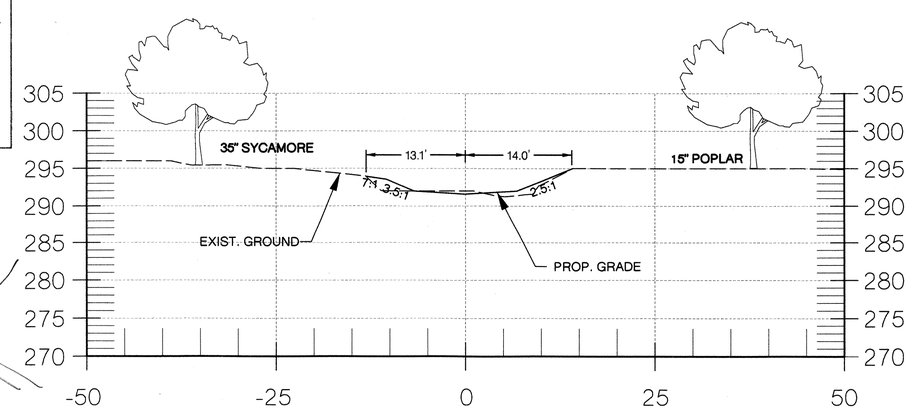
13 CROSS SECTION @ STA. 77+92
SCALE: 1" = 10'



18 CROSS SECTION @ STA. 86+65
SCALE: 1" = 10'



17 CROSS SECTION @ STA. 84+23
SCALE: 1" = 10'



16 CROSS SECTION @ STA. 82+45
SCALE: 1" = 10'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # ____ OF ____
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
5302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

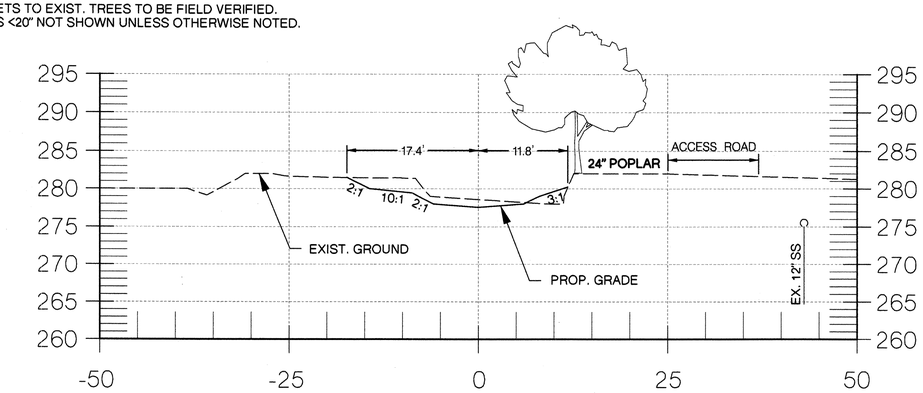
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-8
Dwg scale: AS SHOWN

SHERWOOD
SPECIAL SECTIONS

Sheet Number:
33 OF 79

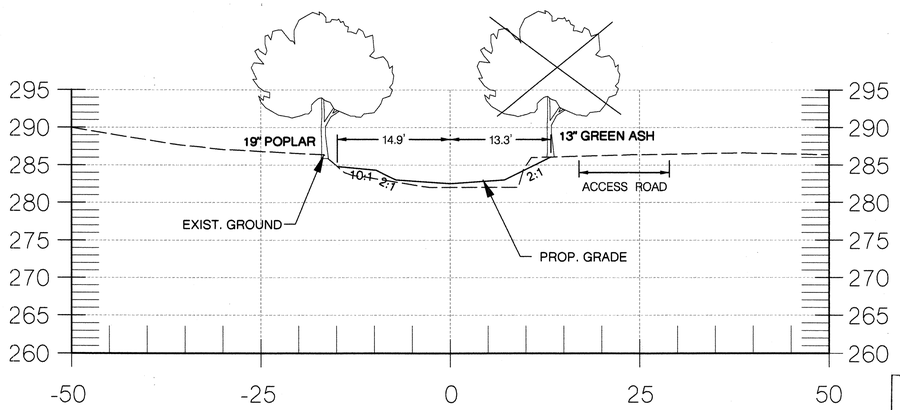
PLOTTED: Saturday, May 12, 2012 AT 06:06 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\caddl\dgn\pHC-S001_nwbr.dgn

NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



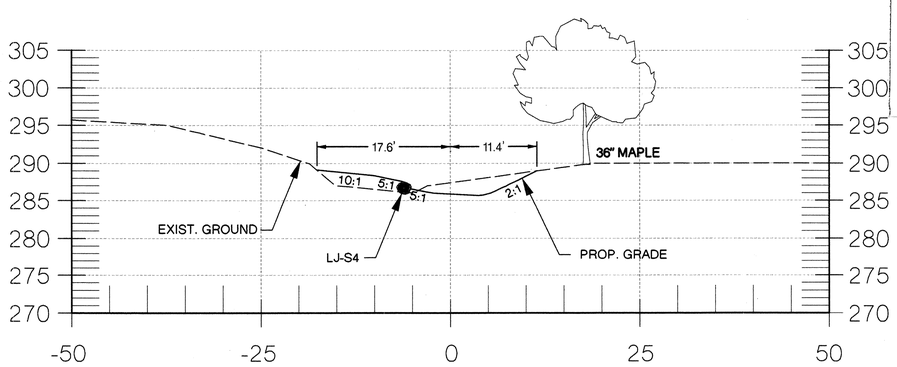
21 CROSS SECTION @ STA. 94+94

SCALE: 1" = 10'



20 CROSS SECTION @ STA. 90+70

SCALE: 1" = 10'



19 CROSS SECTION @ STA. 87+28

SCALE: 1" = 10'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY
CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

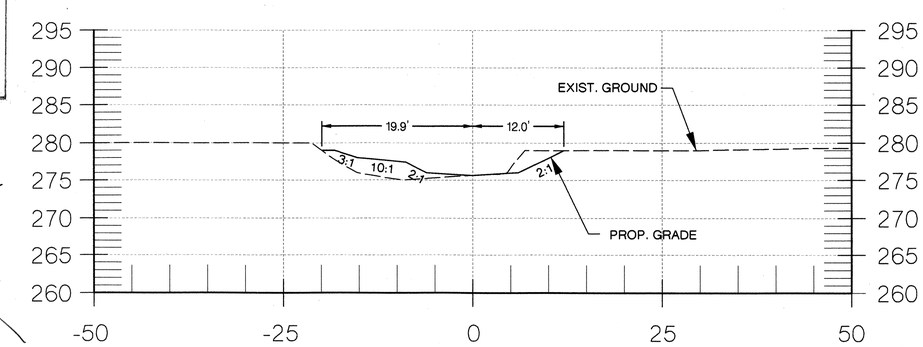
Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:



22 CROSS SECTION @ STA. 97+20

SCALE: 1" = 10'

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

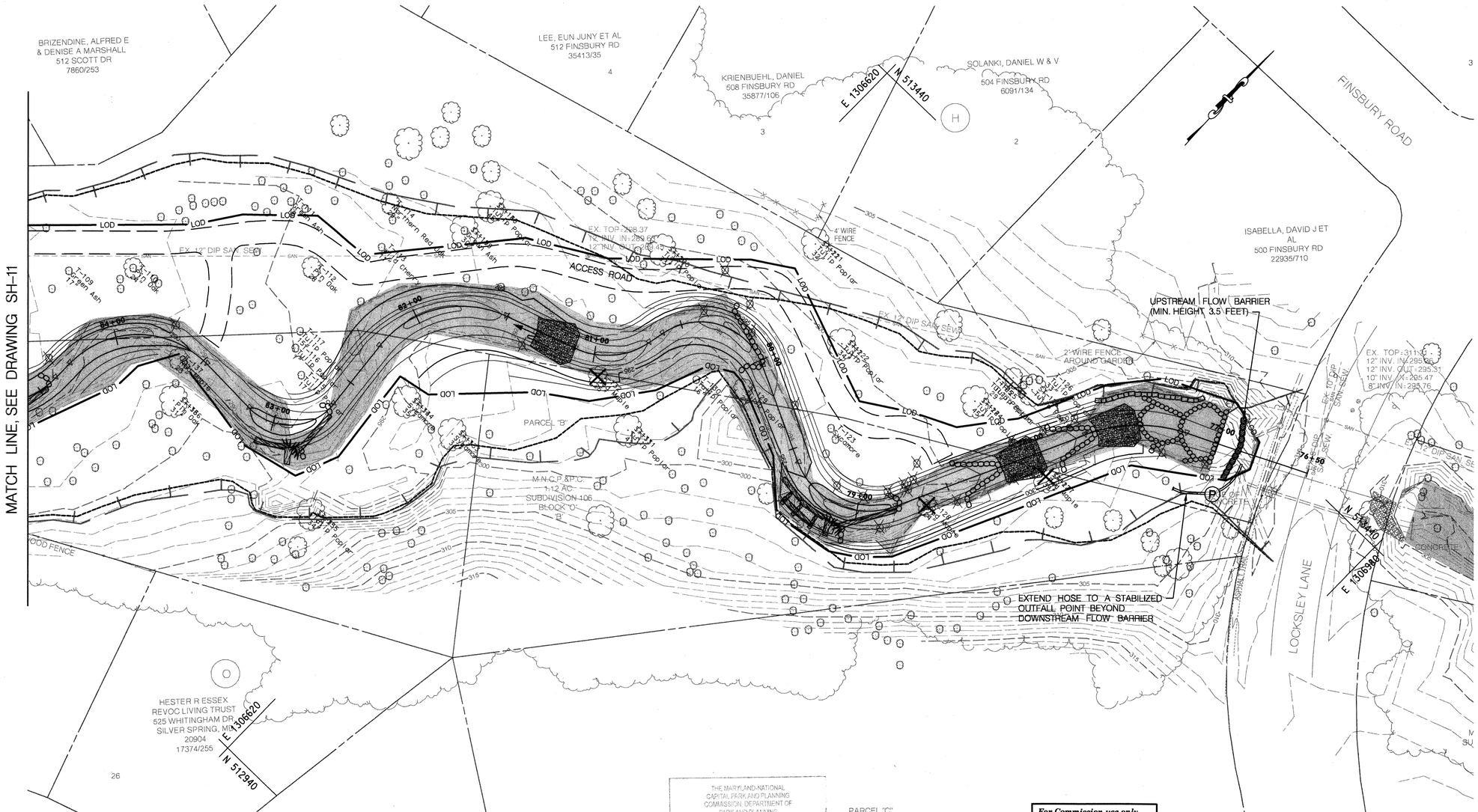
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-9
Dwg scale: AS SHOWN

SHERWOOD
SPECIAL SECTIONS

Sheet Number:
34 OF 79

BY: rpalmer

PLOTTED: Saturday, May 12, 2012 AT 05:07 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\caddl\dgn\pHC-S002_rwbr.dgn



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

30' 0 30' 60'

SCALE: 1" = 30'

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF FLOW BARRIERS IS 3.5 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Date: 06/11/2012
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Design file no.
Drawing code: SH-10
Dwg scale: 1"=30'

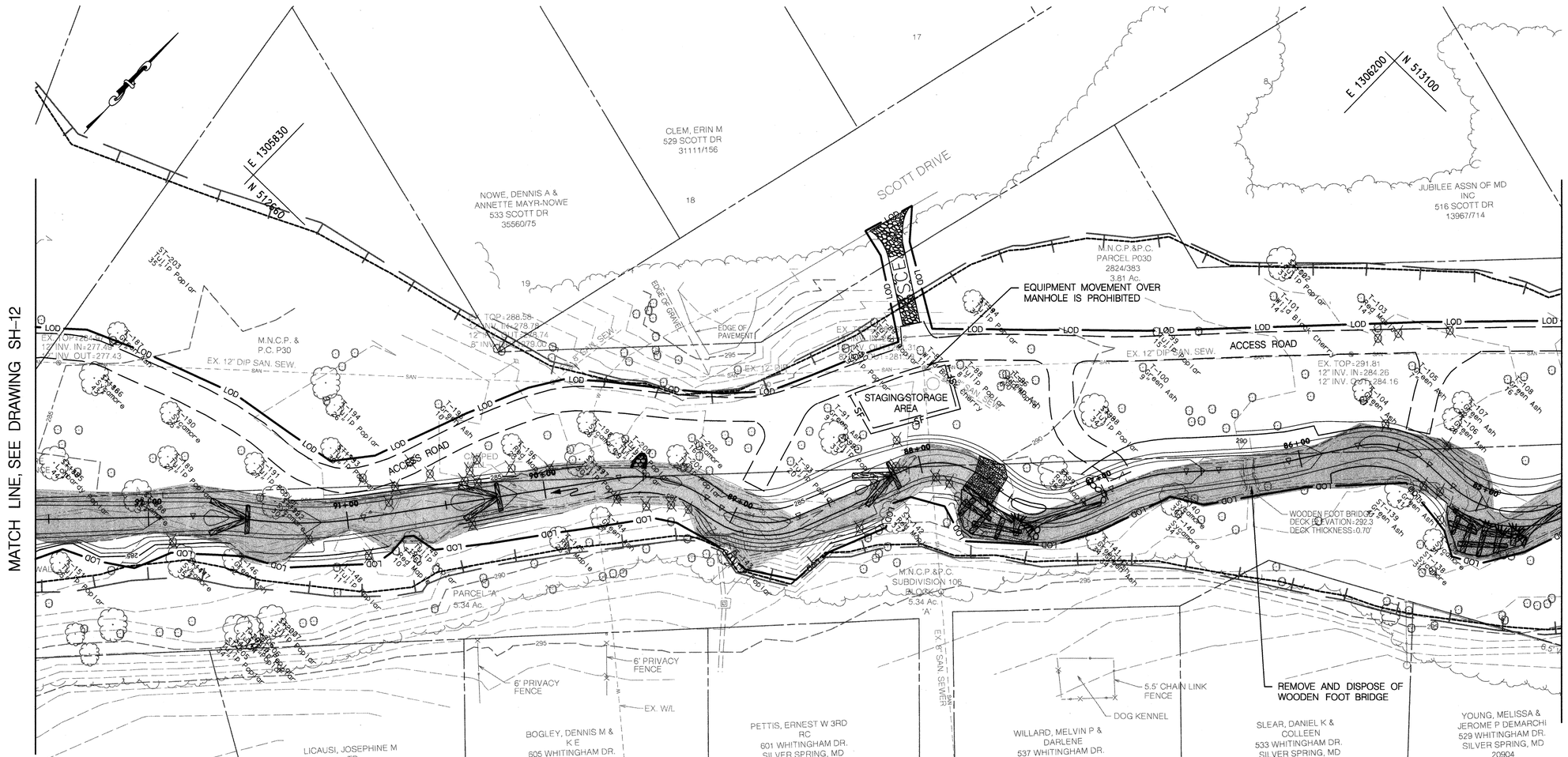
SHERWOOD EROSION & SEDIMENT CONTROL PLAN

Sheet Number:

35 OF 79

BY: rpalmer

PLOTTED: Saturday, May 12, 2012 AT 03:47 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-8001_nwbr.dgn



NOTES:

1. PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF FLOW BARRIERS SHALL BE 3 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
DEPARTMENT OF PARKS AND PLANNING

M-NCPPC PERMIT NO. 2012-09

M-NCPPC PARK FACILITY

REVIEWED BY

APPROVED BY

DATE 6/29/12

DATE APPROVED

M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT
TO BEGIN CONSTRUCTION

This approval is for technical review only.
For permit information, contact Jay Childs, Construction Supervisor at (301) 485-2374

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: SH-11
Dwg scale: 1"=30'

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

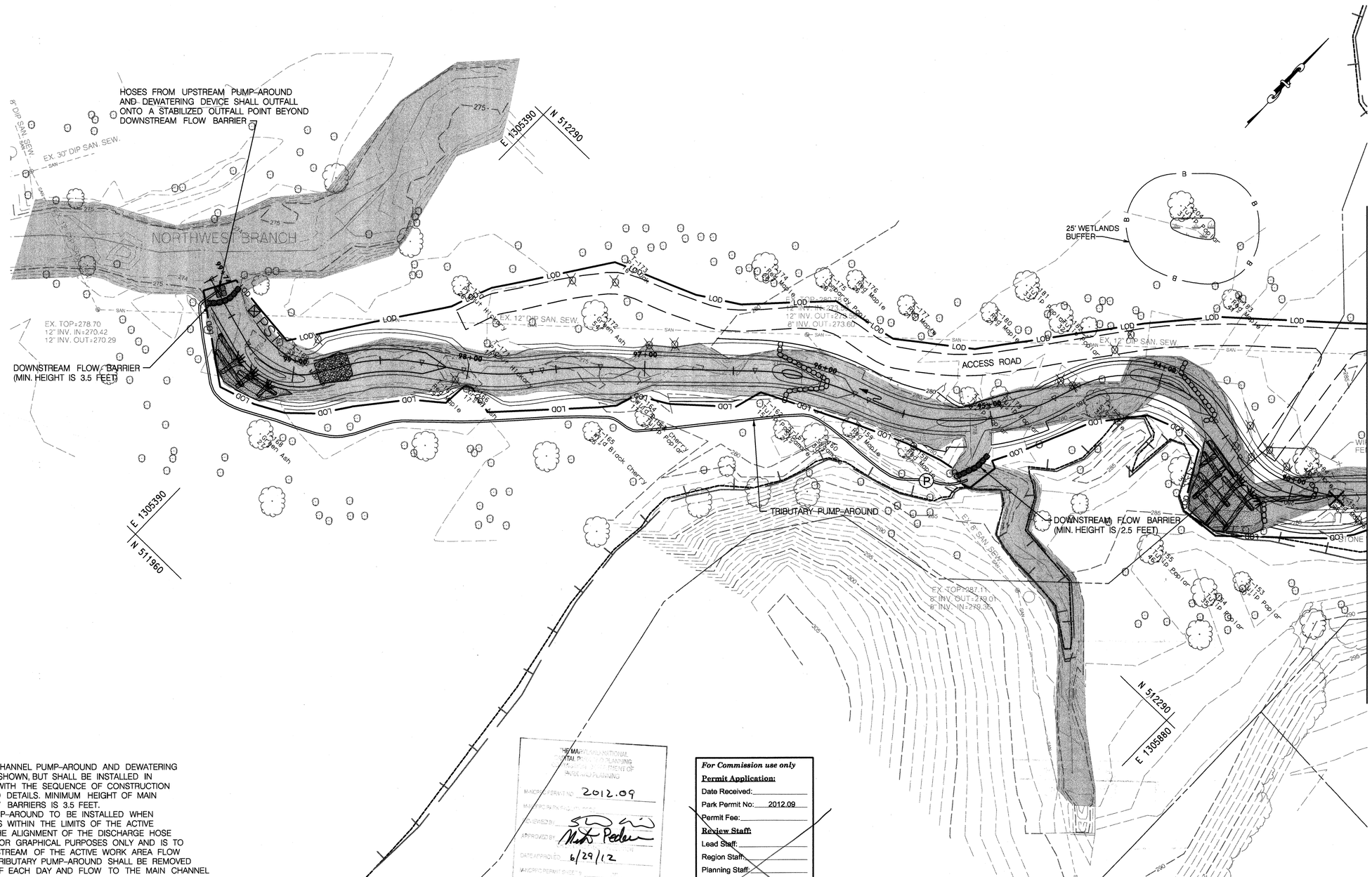
W912DR-07-D-0008
Task Order No. 19

SHERWOOD EROSION & SEDIMENT CONTROL PLAN

Sheet Number:
36 OF 79

PLOTTED: Saturday, May 12, 2012 AT 03:39 PM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-S002_nwbr.dgn

By: rpalmer



NOTES:

1. ENTIRE MAIN CHANNEL PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF MAIN CHANNEL FLOW BARRIERS IS 3.5 FEET.
2. TRIBUTARY PUMP-AROUND TO BE INSTALLED WHEN CONFLUENCE IS WITHIN THE LIMITS OF THE ACTIVE WORK ZONE THE ALIGNMENT OF THE DISCHARGE HOSE IS INCLUDED FOR GRAPHICAL PURPOSES ONLY AND IS TO OUTLET DOWNSTREAM OF THE ACTIVE WORK AREA FLOW BARRIER. THE TRIBUTARY PUMP-AROUND SHALL BE REMOVED AT THE END OF EACH DAY AND FLOW TO THE MAIN CHANNEL RESTORED.
3. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
4. LIMITS OF ACCESS ROADS AND STAGING-STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
5. ENTIRE AREA SHOWN IS WITHIN THE 100-YR FLOODPLAIN LIMIT.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING

M-NCPPC PERMIT NO: 2012.09

M-NCPPC PERMIT SUFFIX:

REVIEWED BY:

APPROVED BY: Mark Pedersen

DATE APPROVED: 6/29/12

M-NCPPC PERMIT SUFFIX:

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Park Permits, Construction Supervisor at (301) 495-2474

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

US Army Corps of Engineers
Baltimore District

A.B. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

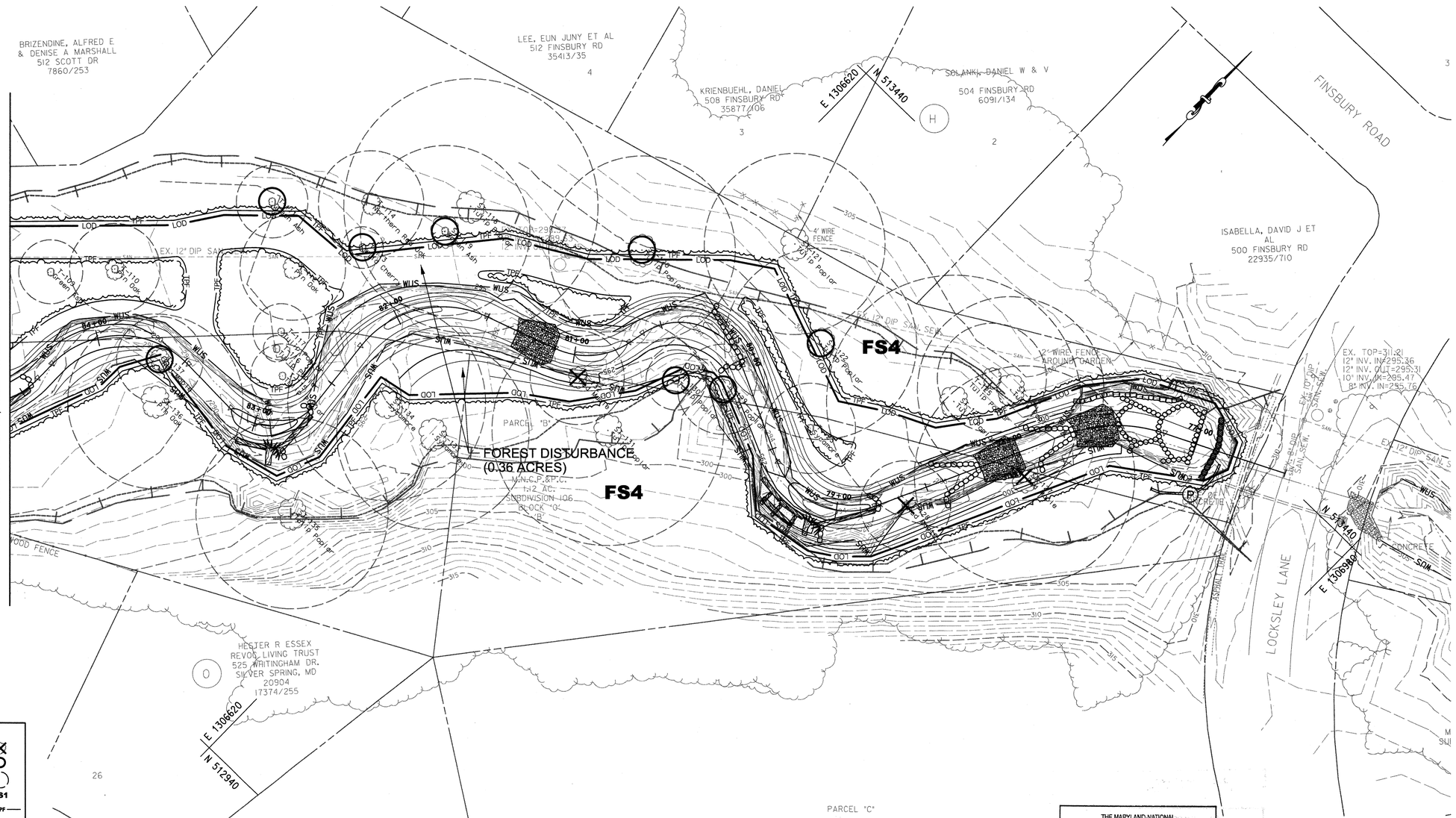
Designed by: REP
Date: 05/11/2012
Drawn by: DEA
Ckd by: SPB
Design file no.
Reviewed by: TMH
Submitted by: CVK
Drawing code: SH-12
Dwg scale: 1"=30'

SHERWOOD EROSION & SEDIMENT CONTROL PLAN

Sheet Number:
37 OF 79

BY: rpalmer

PLOTTED: Tuesday, May 15, 2012 AT 02:06 PM
FILE: \\RKKM\r2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-S003_nwbr.dgn



LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012 09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, CORRIDOR OPERATIONS SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

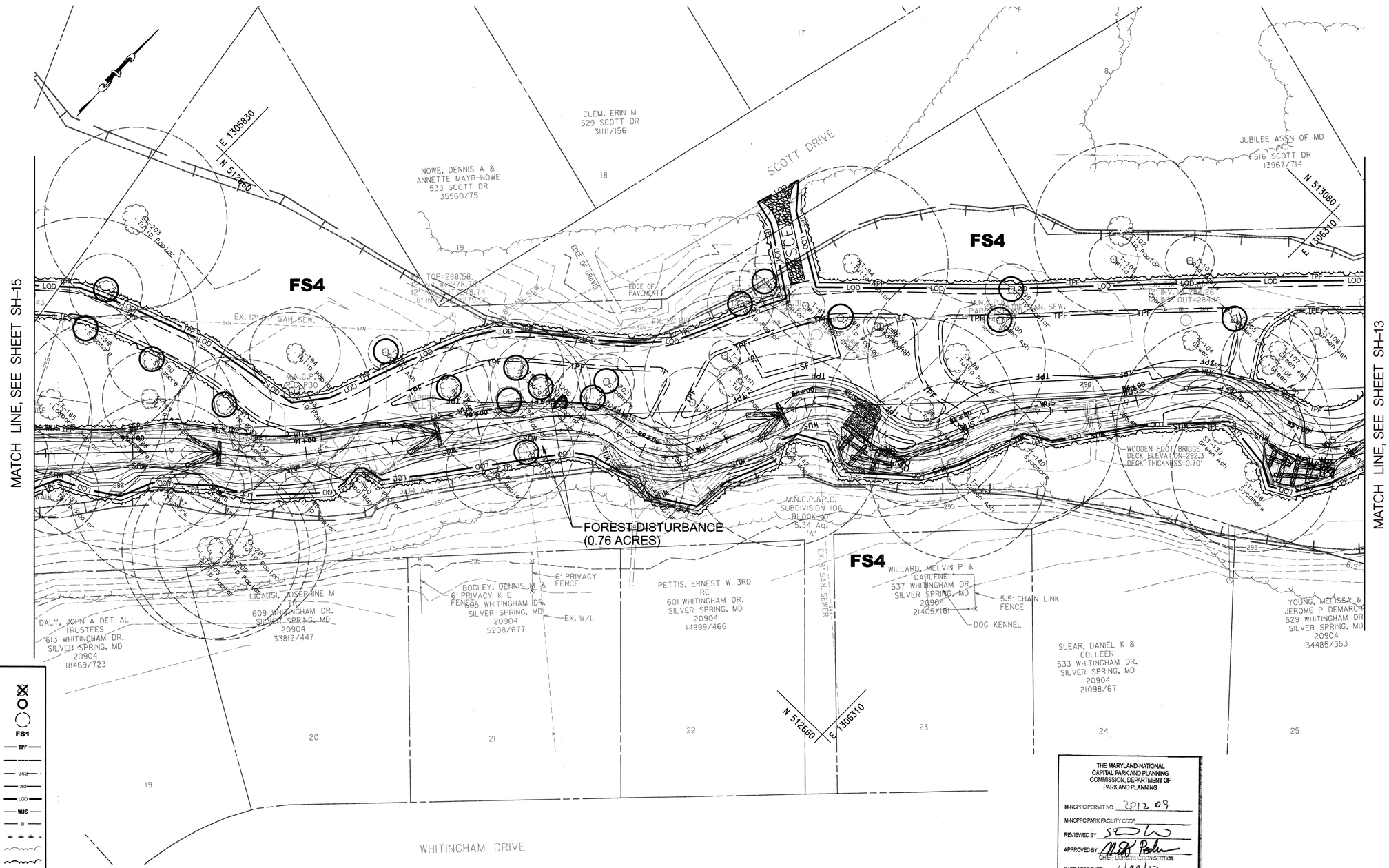
W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-13
Dwg scale: 1"=30'

SHERWOOD FOREST CONSERVATION PLAN

Sheet Number:
38 OF 79

PLOTTED: Tuesday, May 08, 2012 AT 11:29 AM
FILE: \\pikm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-S001_nwbr.dgn



LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:

1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012 09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY
CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 455-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM		Date: 05/11/2012	
Dwn by: DEA	Ckd by: REP	Design file no.	
Reviewed by: TMH		Drawing code: SH-14	
Submitted by: CVK		Dwg scale: 1"=30'	

SHERWOOD FOREST CONSERVATION PLAN

Sheet Number:

39 OF 79

BY: daskins

PLOTTED: Tuesday, May 08, 2012 AT 11:32 AM
FILE: \\rkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-S002_nwbr.dgn

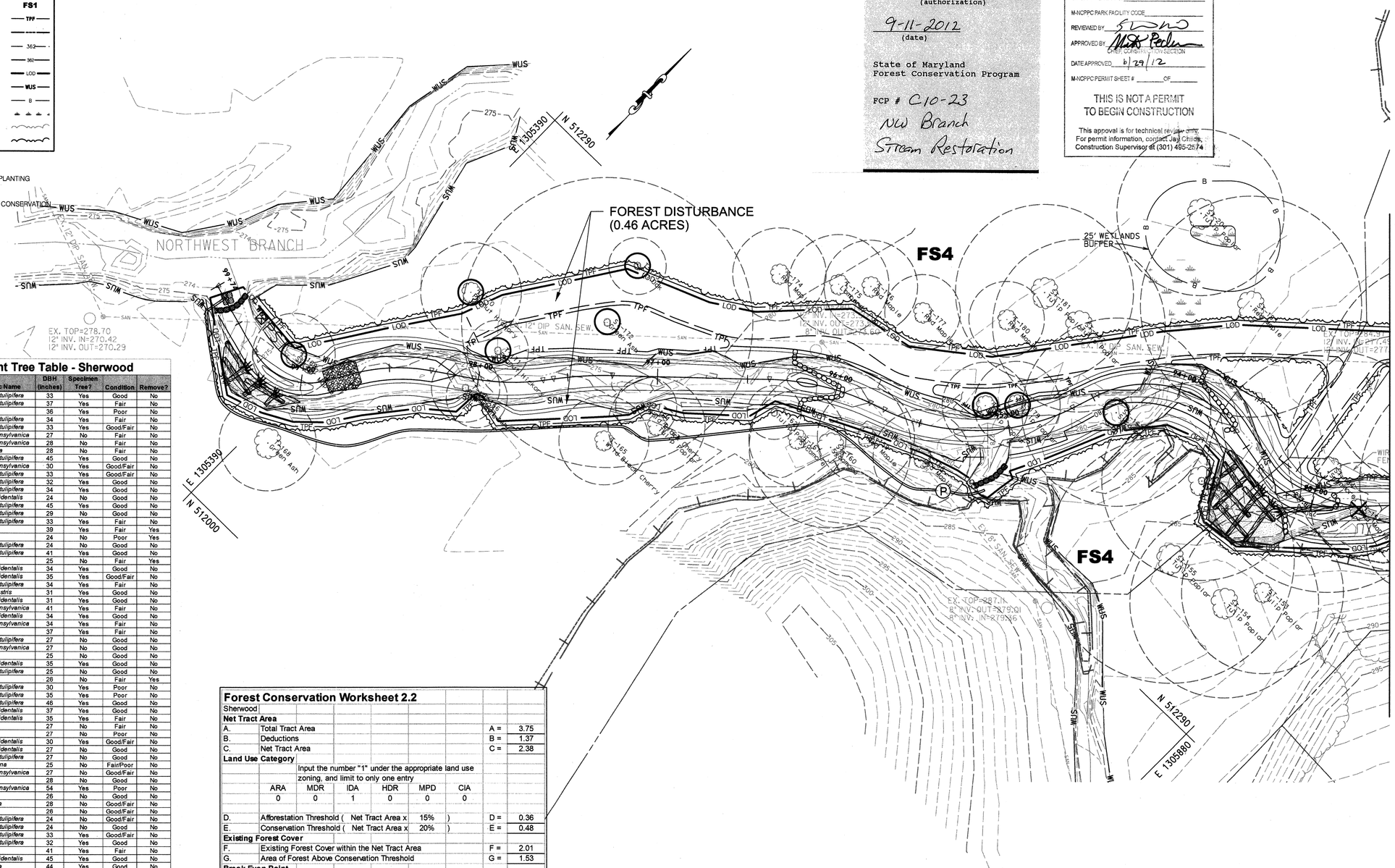
LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

APPROVED
Forest Conservation Plan
R Jod Ensign
(authorization)
9-11-2012
(date)
State of Maryland
Forest Conservation Program
FCP # C10-23
NW Branch
Stream Restoration

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF DIVISION OF INSPECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # ___ OF ___
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574



Specimen and Significant Tree Table - Sherwood

	ID	Common Name	Scientific Name	DBH (inches)	Specimen Tree?	Condition	Remove?
1	ST-92	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Good	No
2	ST-94	Tulip Poplar	*Liriodendron tulipifera*	37	Yes	Fair	No
3	ST-97	Red Maple	*Acer rubrum*	36	Yes	Poor	No
4	ST-98	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Fair	No
5	ST-102	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Good/Fair	No
6	T-104	Green Ash	*Fraxinus pennsylvanica*	27	No	Fair	No
7	T-106	Green Ash	*Fraxinus pennsylvanica*	28	No	Fair	No
8	T-114	Northern Red Oak	*Quercus rubra*	28	No	Fair	No
9	ST-118	Tulip Poplar	*Liriodendron tulipifera*	45	Yes	Good	No
10	ST-119	Green Ash	*Fraxinus pennsylvanica*	30	Yes	Good/Fair	No
11	ST-120	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Good/Fair	No
12	ST-121	Tulip Poplar	*Liriodendron tulipifera*	32	Yes	Good	No
13	ST-122	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Good	No
14	T-123	Sycamore	*Platanus occidentalis*	24	No	Good	No
15	ST-124	Tulip Poplar	*Liriodendron tulipifera*	45	Yes	Good	No
16	T-125	Tulip Poplar	*Liriodendron tulipifera*	29	No	Good	No
17	ST-126	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Fair	No
18	ST-127	Red Maple	*Acer rubrum*	39	Yes	Fair	Yes
19	T-128	Red Maple	*Acer rubrum*	24	No	Poor	Yes
20	T-129	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good	No
21	ST-131	Tulip Poplar	*Liriodendron tulipifera*	41	Yes	Good	No
22	T-132	Red Maple	*Acer rubrum*	25	No	Fair	Yes
23	ST-133	Sycamore	*Platanus occidentalis*	34	Yes	Good	No
24	ST-134	Sycamore	*Platanus occidentalis*	35	Yes	Good/Fair	No
25	ST-135	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Fair	No
26	ST-136	Pin Oak	*Quercus palustris*	31	Yes	Good	No
27	ST-138	Sycamore	*Platanus occidentalis*	31	Yes	Good	No
28	ST-139	Green Ash	*Fraxinus pennsylvanica*	41	Yes	Fair	No
29	ST-140	Sycamore	*Platanus occidentalis*	34	Yes	Good	No
30	ST-141	Green Ash	*Fraxinus pennsylvanica*	34	Yes	Fair	No
31	ST-142	Red Maple	*Acer rubrum*	37	Yes	Fair	No
32	T-143	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
33	T-144	Green Ash	*Fraxinus pennsylvanica*	27	No	Good	No
34	T-145	Red Maple	*Acer rubrum*	25	No	Good	No
35	ST-147	Sycamore	*Platanus occidentalis*	35	Yes	Good	No
36	T-151	Tulip Poplar	*Liriodendron tulipifera*	25	No	Good	No
37	T-152	Red Maple	*Acer rubrum*	28	No	Fair	Yes
38	ST-153	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Poor	No
39	ST-154	Tulip Poplar	*Liriodendron tulipifera*	35	Yes	Poor	No
40	ST-155	Tulip Poplar	*Liriodendron tulipifera*	46	Yes	Good	No
41	ST-156	Sycamore	*Platanus occidentalis*	37	Yes	Good	No
42	ST-157	Sycamore	*Platanus occidentalis*	35	Yes	Fair	No
43	T-158	Red Maple	*Acer rubrum*	27	No	Fair	No
44	T-159	Red Maple	*Acer rubrum*	27	No	Poor	No
45	ST-160	Sycamore	*Platanus occidentalis*	30	Yes	Good/Fair	No
46	T-161	Sycamore	*Platanus occidentalis*	27	No	Good	No
47	T-163	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
48	T-165	Wild Black Cherry	*Prunus serotina*	25	No	Fair/Poor	No
49	T-168	Green Ash	*Fraxinus pennsylvanica*	27	No	Good/Fair	No
50	T-170	Pignut Hickory	*Carya glabra*	28	No	Good	No
51	ST-172	Green Ash	*Fraxinus pennsylvanica*	54	Yes	Poor	No
52	T-174	Red Maple	*Acer rubrum*	26	No	Good	No
53	T-175	Lombardy Poplar	*Populus nigra*	28	No	Good/Fair	No
54	T-176	Red Maple	*Acer rubrum*	26	No	Good/Fair	No
55	T-178	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good/Fair	No
56	T-179	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good	No
57	ST-181	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Good/Fair	No
58	ST-182	Tulip Poplar	*Liriodendron tulipifera*	32	Yes	Good	No
59	ST-183	Red Maple	*Acer rubrum*	41	Yes	Fair	No
60	ST-184	Sycamore	*Platanus occidentalis*	45	Yes	Good	No
61	ST-185	Lombardy Poplar	*Populus nigra*	44	Yes	Good	No
62	ST-186	Sycamore	*Platanus occidentalis*	43	Yes	Fair	No
63	ST-188	Sycamore	*Platanus occidentalis*	45	Yes	Good	No
64	T-189	Tulip Poplar	*Liriodendron tulipifera*	27	No	Fair	No
65	T-190	Sycamore	*Platanus occidentalis*	25	No	Good	No
66	T-191	Tulip Poplar	*Liriodendron tulipifera*	27	No	Fair	No
67	ST-192	Sycamore	*Platanus occidentalis*	30	Yes	Good	No
68	ST-193	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Fair	No
69	T-194	Tulip Poplar	*Liriodendron tulipifera*	26	No	Good	No
70	ST-197	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Poor	No
71	T-198	Sycamore	*Platanus occidentalis*	28	No	Good	No
72	T-199	Tulip Poplar	*Liriodendron tulipifera*	29	No	Good	No
73	ST-203	Tulip Poplar	*Liriodendron tulipifera*	35	Yes	Good	No
74	ST-204	Tulip Poplar	*Liriodendron tulipifera*	31	Yes	Good	No
75	ST-205	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Good	No
76	ST-206	Tulip Poplar	*Liriodendron tulipifera*	34	Yes	Good	No
77	ST-207	Tulip Poplar	*Liriodendron tulipifera*	33	Yes	Good	No

Forest Conservation Worksheet 2.2

Sherwood

Net Tract Area			
A.	Total Tract Area	A =	3.75
B.	Deductions	B =	1.37
C.	Net Tract Area	C =	2.38
Land Use Category			
	Input the number "1" under the appropriate land use zoning, and limit to only one entry		
	ARA 0 / MDR 0 / IDA 1 / HDR 0 / MPD 0 / CIA 0		
D.	Afforestation Threshold (Net Tract Area x 15%)	D =	0.36
E.	Conservation Threshold (Net Tract Area x 20%)	E =	0.48
Existing Forest Cover			
F.	Existing Forest Cover within the Net Tract Area	F =	2.01
G.	Area of Forest Above Conservation Threshold	G =	1.53
Break Even Point			
H.	Break Even Point	H =	0.78
I.	Forest Clearing Permitted Without Mitigation	I =	1.23
Proposed Forest Clearing			
J.	Total Area of Forest to be Cleared	J =	2.01
K.	Total Area of Forest to be Retained	K =	0.00
Planting Requirements			
L.	Reforestation for Clearing Above the Conservation Threshold	L =	0.38
M.	Reforestation for Clearing Below the Conservation Threshold	M =	0.95
N.	Credit for Retention above the Conservation Threshold	N =	0.00
P.	Total Reforestation Required	P =	1.34
Q.	Total Afforestation Required	Q =	0.00
R.	Total Planting Requirement	R =	1.34

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-15
Dwg scale: 1"=30'

SHERWOOD FOREST CONSERVATION PLAN

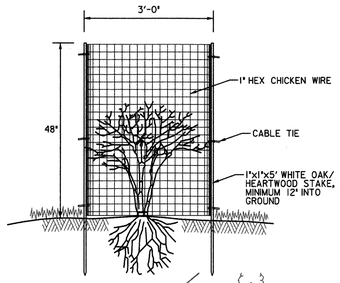
Sheet Number:
40 OF 79

PLOTTED: Tuesday, May 08, 2012 AT 11:36 AM
FILE: \\rkkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-S003_nwbr.dgn

BY: daskins

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the native upland forest and floodplain shrub areas and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 41 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 43 for planting schedules.



DEER PROTECTION - SHRUB
N.T.S.

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING

M-NCPPC PERMIT NO. 2012-09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY — CHIEF CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # ___ OF ___

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:

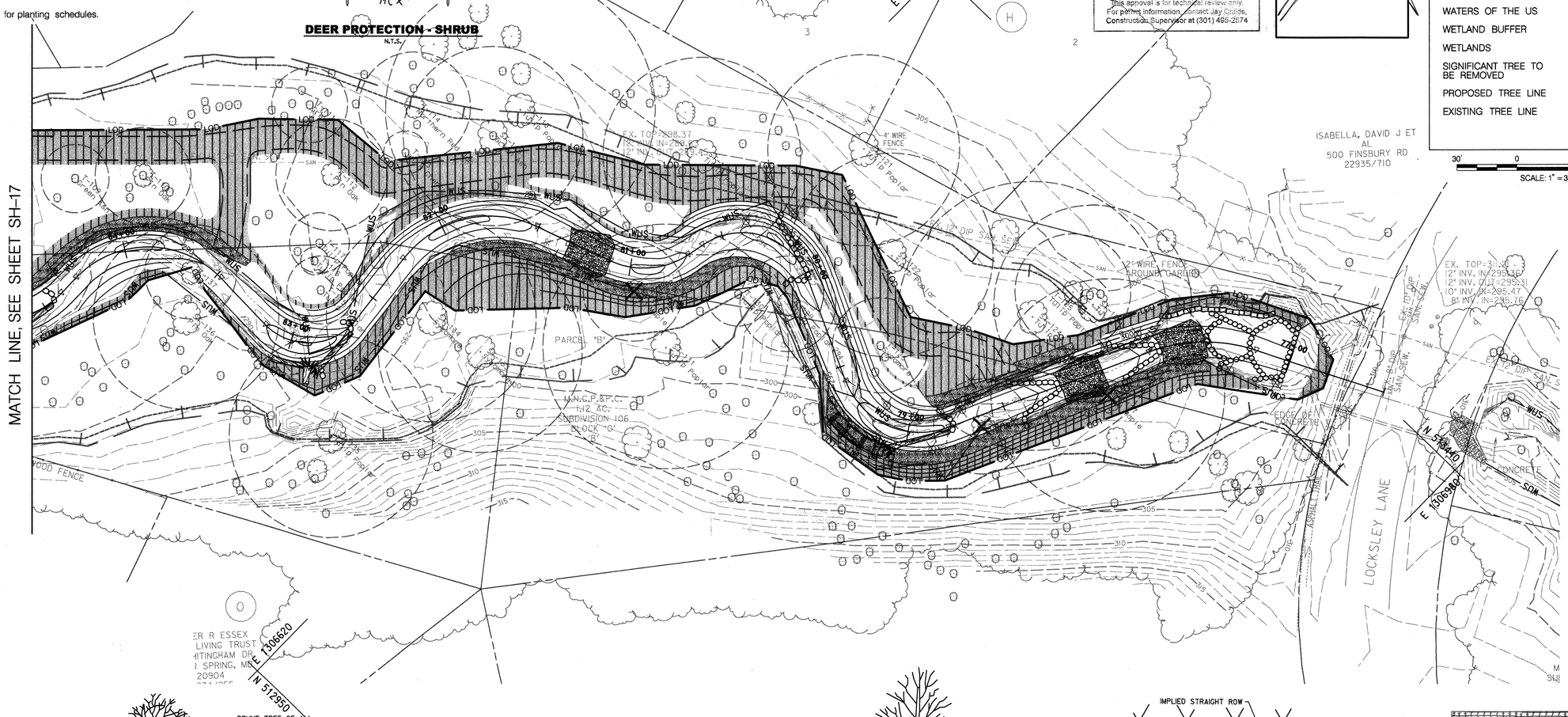
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:

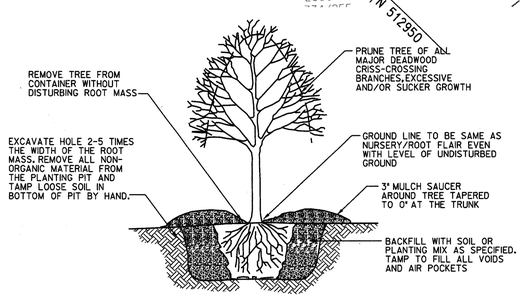
Additional Comments:

LEGEND

NATIVE FLOODPLAIN FOREST	
NATIVE RIPARIAN SHRUB	
100 YEAR FLOODPLAIN	
STUDY AREA	
PROPERTY BOUNDARY	
PROPOSED CONTOUR	120
EXISTING CONTOUR	120
LIMIT OF DISTURBANCE	LOD
WATERS OF THE US	WUS
WETLAND BUFFER	B
WETLANDS	
SIGNIFICANT TREE TO BE REMOVED	
PROPOSED TREE LINE	
EXISTING TREE LINE	

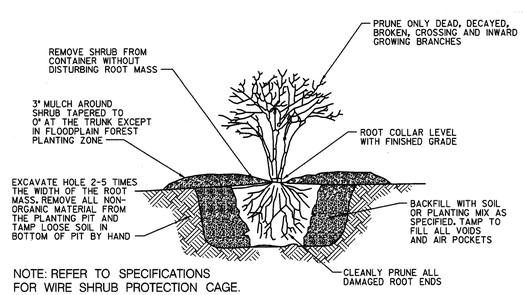
30' 0 30' 60'
SCALE: 1" = 30'





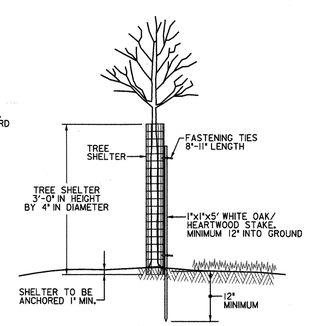
NOTES:
1. If surrounding soil is compacted as determinded by the engineer, an area up to 5 times the diameter of the root mass shall be excavated or rototilled to a 1'depth.
2. Do not damage or cut leader.

TREE PLANTING - CONTAINER GROWN
N.T.S.



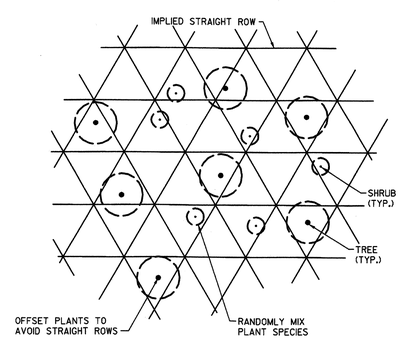
NOTE: REFER TO SPECIFICATIONS FOR WIRE SHRUB PROTECTION CAGE.

SHRUB PLANTING - CONTAINER
N.T.S.

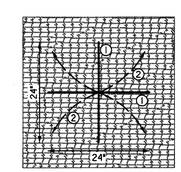


DEER PROTECTION - TREE
N.T.S.

NOTES:
1. UP TO 2" OF SOIL CAN BE MOUNTED AROUND THE OUTSIDE OF TREE SHELTER.
2. REFER TO TREE SHELTER SPECIFICATION FOR ADDITIONAL INFORMATION.



NATURALIZED PLANT SPACING
N.T.S.



1. Make cut with sharp knife through Coir Fiber Matting - Solid line in diagram
2. Pin back Coir Fiber with 4 staples - dashed line in diagram
3. Install plant through pinned back Coir Fiber. Install plant at proper grade to ground plane
4. Remove 4 staples
5. For tree installations, install tree stakes through Coir Matting
6. Install deer protection
7. Place 4 staples in each of four cut sections. Re-anchor Coir Matting to ground

TREE & SHRUB INSTALLATION THROUGH COIR FIBER MATTING
N.T.S.

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9456 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3961
(F) 301 306-3962

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-16
Dwg scale: 1"=30'

SHERWOOD
PLANTING PLAN &
PLANTING DETAILS

Sheet Number:
41 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 02:15 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-S001_nwbr.dgn

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012 09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY

CHIEF, DEVELOPMENT REVIEW SECTION

DATE APPROVED 6/21/12

M-NCPPC PERMIT SHEET OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 496-2574

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

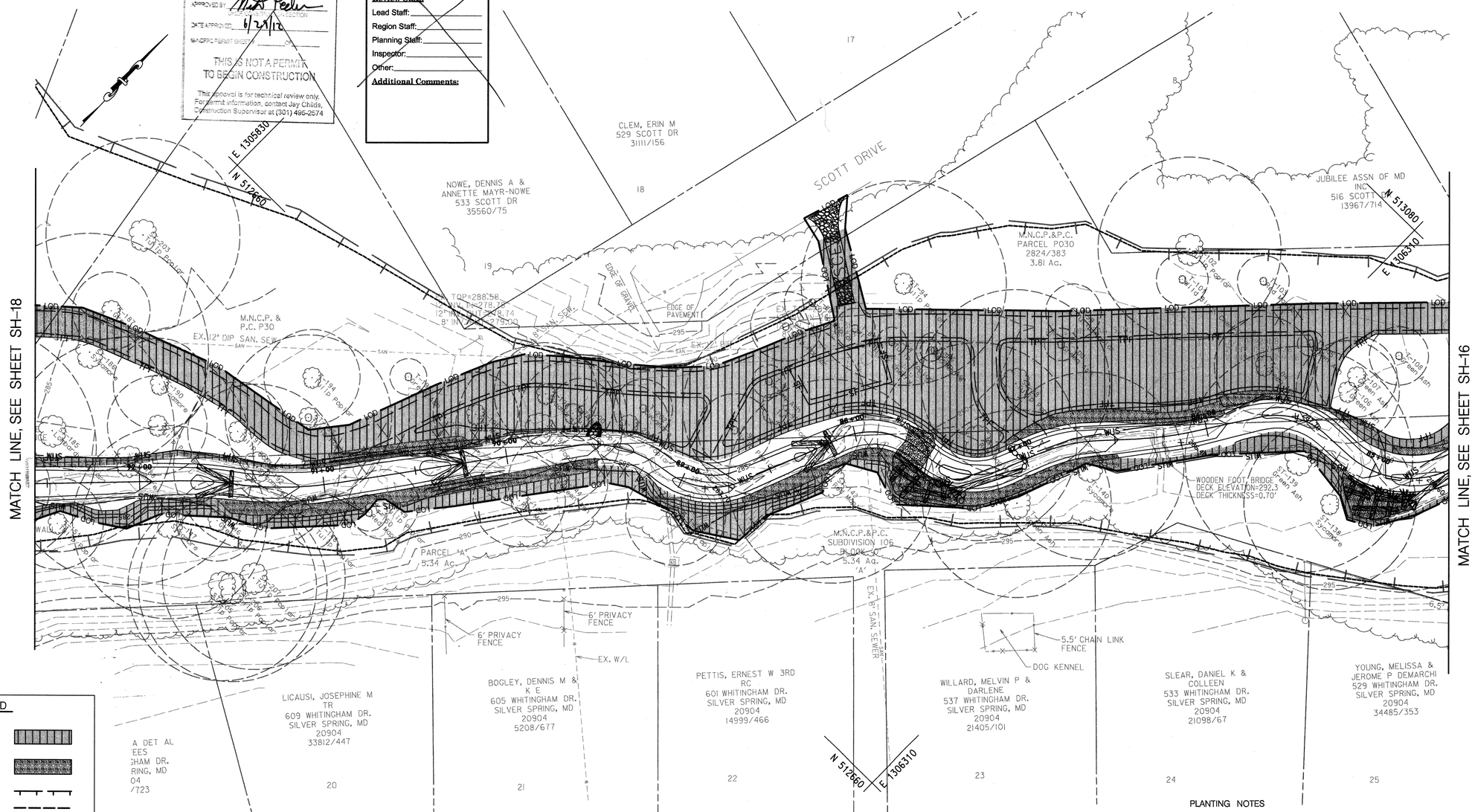
Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:



LEGEND

NATIVE FLOODPLAIN FOREST	
NATIVE RIPARIAN SHRUB	
100 YEAR FLOODPLAIN	
STUDY AREA	
PROPERTY BOUNDARY	
PROPOSED CONTOUR	120
EXISTING CONTOUR	120
LIMIT OF DISTURBANCE	LOD
WATERS OF THE US	WUS
WETLAND BUFFER	B
WETLANDS	
SIGNIFICANT TREE TO BE REMOVED	
PROPOSED TREE LINE	
EXISTING TREE LINE	

30' 0 30' 60'

SCALE: 1" = 30'

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the native upland forest and floodplain shrub areas and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 41 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 43 for planting schedules.

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-17
Dwg scale: 1"=30'

SHERWOOD PLANTING PLAN

Sheet Number:

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 02:19 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-S022_nwbr.dgn

NATIVE RIPARIAN SHRUB

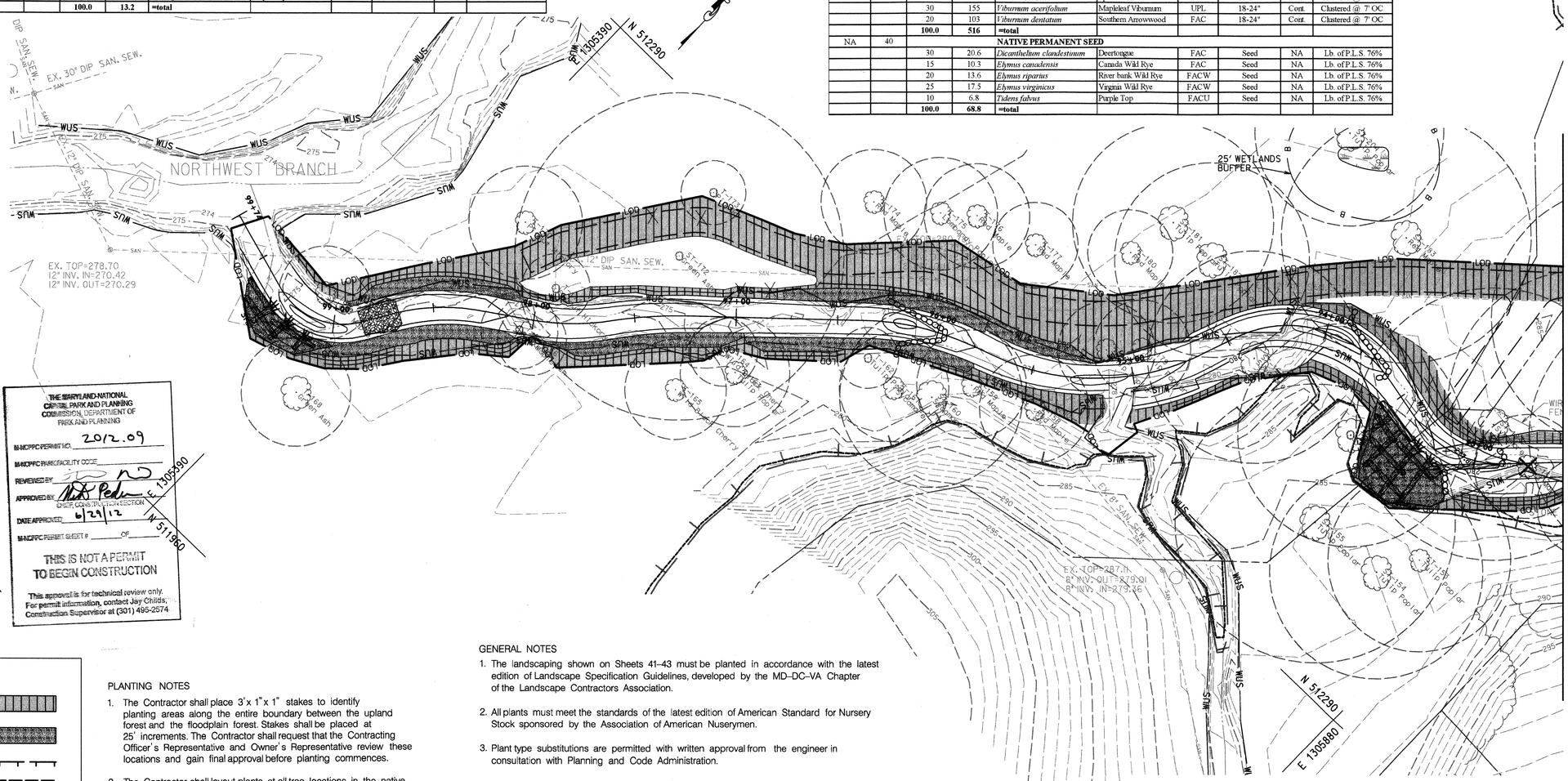
Size (acres): 0.33

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
7	400			**SHRUBS**					
		33	44	*Clethra alnifolia*	Sweet Pepperbush	FAC	18-24"	Cont.	Clustered @ 7' OC
		33	44	*Cornus amomum*	Silky Dogwood	FACW	18-24"	Cont.	Clustered @ 7' OC
		34	44	*Ilex verticillata*	Winterberry	FACW	18-24"	Cont.	Clustered @ 7' OC
		100.0	**132**	**=total**					
NA	40			**NATIVE PERMANENT SEED**					
		15	2.0	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		30	4.0	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	2.6	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	3.3	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	1.3	*Tridens flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**13.2**	**=total**					

NATIVE FLOODPLAIN FOREST

Size (acres): 1.72

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
15	200			**TREES**					
		20	70	*Acer rubrum*	Red Maple	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	50	*Liriodendron tulipifera*	Tulip Poplar	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		10	35	*Nyssa sylvatica*	Black Gum	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	70	*Platanus occidentalis*	American Sycamore	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	49	*Quercus palustris*	Pin Oak	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	70	*Quercus rubra*	Northern Red Oak	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		100.0	**344**	**=total**					
7	300			**SHRUBS**					
		25	129	*Cornus amomum*	Silky Dogwood	FACW	18-24"	Cont.	Clustered @ 7' OC
		25	129	*Lindera benzoin*	Spice Bush	FACW	18-24"	Cont.	Clustered @ 7' OC
		30	155	*Viburnum acerifolium*	Mapleleaf Viburnum	UPL	18-24"	Cont.	Clustered @ 7' OC
		20	103	*Viburnum dentatum*	Southern Arrowwood	FAC	18-24"	Cont.	Clustered @ 7' OC
		100.0	**516**	**=total**					
NA	40			**NATIVE PERMANENT SEED**					
		30	20.6	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		15	10.3	*Elymus canadensis*	Canada Wild Rye	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	13.6	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	17.5	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	6.8	*Tridens flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**68.8**	**=total**					



For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN SHRUB
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- SIGNIFICANT TREE TO BE REMOVED
- PROPOSED TREE LINE
- EXISTING TREE LINE

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the native upland forest and floodplain shrub areas and gain approval from Contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 41 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 43 for planting schedules.

GENERAL NOTES

1. The landscaping shown on Sheets 41–43 must be planted in accordance with the latest edition of Landscape Specification Guidelines, developed by the MD–DC–VA Chapter of the Landscape Contractors Association.
2. All plants must meet the standards of the latest edition of American Standard for Nursery Stock sponsored by the Association of American Nuserymen.
3. Plant type substitutions are permitted with written approval from the engineer in consultation with Planning and Code Administration.
4. All trees and shrubs are to be located a minimum distance of 5 feet from all utility boxes and utility lines, 5 feet from storm drain inlets or manholes, 10 feet from fire hydrants, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign and at least 30 feet from any intersection.
5. Shrubs to be planted in groups of 7–10 plants.
6. Soil conditions must be tested, verified and adjusted by the landscape contractor to ensure that appropriate soil composition and PH levels are suitable for plant materials specified for that specific location.
7. Any planting within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be carried out in such a way as to avoid any adverse impact to the roots of existing trees.
8. All plant material will be reinspected for survival by the Planning and Code Adminstration one year following installation. A 10 percent maintenance bond will be retained during this time period.
9. Planting installation shall include a 2 year maintenance period.

NATIVE PERMANENT STREAM BANK SEED

Size (acres): 0.37

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
NA	40			**NATIVE PERMANENT SEED**					
		20	0.40	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		20	0.40	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		25	0.50	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		30	0.60	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		5	0.10	*Leersia oryzoides*	Ricecut Grass	OBL	Seed	NA	Lb. of P.L.S. 76%
		100.0	**12.0**	**=total**					

30' 0 30' 60'

SCALE: 1" = 30'

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3591
(F) 301 306-3592

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

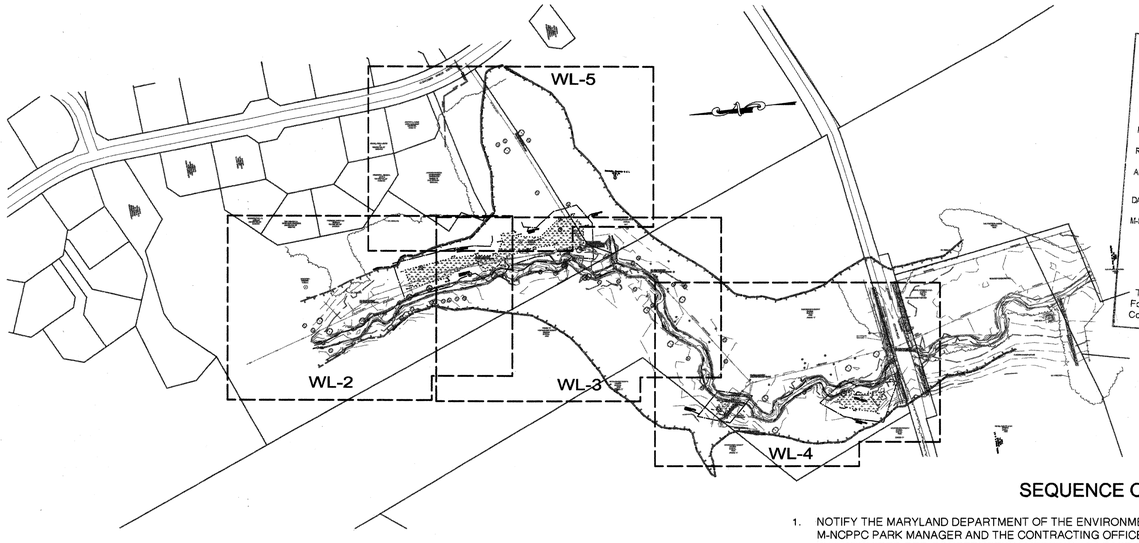
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: SH-18
Dwg scale: 1"=30'

SHERWOOD
PLANTING PLAN &
PLANTING SCHEDULES

Sheet Number:
43 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 02:26 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-S003_nwbr.dgn

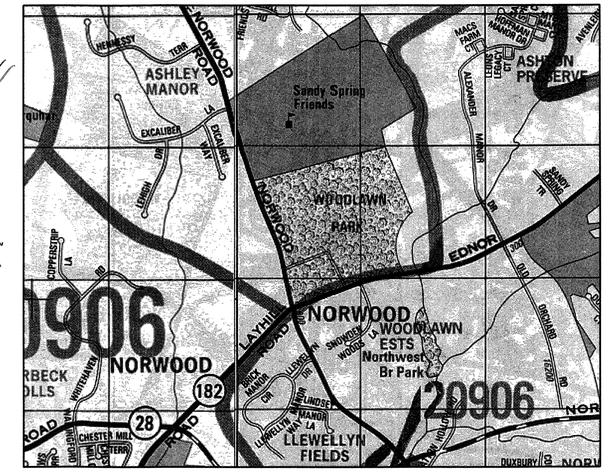


KEY MAP

200 0 200 400 Feet
SCALE: 1" = 200'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012-09
M-NCPPC PARK INSPECTOR
REVIEWED BY: Steve W
APPROVED BY: Matt Pedro
DATE APPROVED: 6/21/12
M-NCPPC PERMIT SPECIALIST
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:



VICINITY MAP

Copyright ADC The Map People
Permitted Use No. 21003214
Expiration: 03/13/13

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION AT (410) 537-3510, THE M-NCPPC PARK MANAGER AND THE CONTRACTING OFFICER'S REPRESENTATIVE, MR. BRUCE PITTS, AT (301) 677-7433 FOR THE REQUIRED PRE-CONSTRUCTION MEETING AT LEAST SEVEN DAYS BEFORE COMMENCING LAND DISTURBING ACTIVITIES.
2. INSTALL TREE PROTECTION FENCING AS SHOWN ON THE PLAN.
3. COMPLETE TREE REMOVAL AND SELECTIVE TRIMMING AS SHOWN ON THE PLAN OR AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
4. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.

PHASE W-1 (STA. 40+00 TO STA. 49+00)

5. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
6. INSTALL STABILIZED CONSTRUCTION ENTRANCE OFF ALEXANDER MANOR DRIVE AND BUILD THE ASSOCIATED TEMPORARY ACCESS ROAD. STABILIZE AT THE END OF EACH WORK DAY. FOR THE ACCESS ROAD WITHIN A WETLAND, PLACE TIMBER MATS TO MINIMIZE IMPACTS.
7. INSTALL SILT FENCE AS DESIGNATED ON THE PLANS.
8. CLEAR AND GRUB REMAINING WORK AREA ABOVE STA. 49+00. ANY DISTURBANCE CAUSED BY THIS PROCESS SHALL BE STABILIZED BY THE END OF THE DAY.
9. INSTALL PUMP-AROUND FLOW DIVERSION AND DEWATER THE CONSTRUCTION ZONE THROUGH THE APPROVED DEWATERING DEVICE. THE CONTRACTOR SHALL STAGE THE LIMITS OF THE PUMP-AROUND FLOW DIVERSION TO DEWATER ONLY THAT SECTION SCHEDULED FOR THAT DAY'S WORK. AT THE END OF EACH WORK DAY THE WORK AREA SHALL BE STABILIZED, THE PUMP-AROUND PRACTICE REMOVED, AND THE FLOW RESTORED TO THE CHANNEL. WORK SHALL BE COMPLETED ONLY DURING FORECASTED PERIODS OF DRY WEATHER.
10. BEGINNING UPSTREAM TO DOWNSTREAM CONSTRUCT PHASE W-1 STREAM IMPROVEMENTS BETWEEN STA. 40+30 TO STA. 45+70. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MINIMIZE UNNECESSARY DISTURBANCE. FOR THE STREAM IMPROVEMENTS, ONLY THAT AMOUNT OF WORK SHALL BE COMPLETED THAT CAN BE STABILIZED BY THE END OF THE DAY.
11. ONCE ALL PHASE W-1 STREAM WORK HAS BEEN COMPLETED BETWEEN STA. 40+30 TO STA. 45+70, REMOVE THE ACCESS ROAD WITHIN THESE LIMITS AND STABILIZE ANY DISTURBANCE RESULTING FROM THIS ACTIVITY.
12. COMPLETE REMAINING PHASE W-1 STREAM IMPROVEMENTS WORKING UPSTREAM TO DOWNSTREAM. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MINIMIZE UNNECESSARY DISTURBANCE. FOR THE STREAM IMPROVEMENTS, ONLY THAT AMOUNT OF WORK SHALL BE COMPLETED THAT CAN BE STABILIZED BY THE END OF THE DAY.
13. ONCE ALL PHASE W-1 STREAM WORK HAS BEEN COMPLETED AND STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE ASSOCIATED ACCESS ROAD. AS THE ROAD IS REMOVED, INSTALL PLANTINGS ACCORDING TO THE PLAN, SCHEDULE AND DETAILS PROVIDED ON THE PLANTING PLAN.
14. WITH THE APPROVAL OF THE MDE INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THESE CONTROLS. INSTALL ANY REMAINING PLANTINGS.

PHASE W-2 (STA. 49+00 TO STA. 59+83)

15. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
16. INSTALL EDNOR ROAD STABILIZED CONSTRUCTION ENTRANCE AND ASSOCIATED ACCESS ROAD FOR WORK AREA DOWNSTREAM OF STA 49+00. STABILIZE AT THE END OF EACH WORK DAY.
17. CLEAR AND GRUB REMAINING WORK AREA BELOW STA. 49+00 AND INSTALL REMAINING EROSION AND SEDIMENT CONTROLS. ANY DISTURBANCE CAUSED BY THIS PROCESS SHALL BE STABILIZED BY THE END OF THE DAY.
18. INSTALL PUMP-AROUND FLOW DIVERSION AND DEWATER THE CONSTRUCTION ZONE THROUGH THE APPROVED DEWATERING DEVICE. THE CONTRACTOR SHALL STAGE THE LIMITS OF THE PUMP-AROUND FLOW DIVERSION TO DEWATER ONLY THAT SECTION SCHEDULED FOR THAT DAY'S WORK. AT THE END OF EACH WORK DAY, THE WORK AREA SHALL BE STABILIZED, THE PUMP-AROUND PRACTICE REMOVED, AND THE FLOW RESTORED TO THE CHANNEL. WORK SHALL BE COMPLETED ONLY DURING FORECASTED PERIODS OF DRY WEATHER.
19. CONTINUE STREAM IMPROVEMENTS DOWNSTREAM OF STA. 49+00 WORKING FROM UPSTREAM TO DOWNSTREAM. ONCE ALL STREAM WORK HAS BEEN COMPLETED AND STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE ASSOCIATED ACCESS ROAD. AS THE ROAD IS REMOVED, INSTALL PLANTINGS ACCORDING TO THE PLAN, SCHEDULE AND DETAILS PROVIDED ON THE PLANTING PLAN.
20. WITH THE APPROVAL OF THE MDE INSPECTOR AND CONTRACTING OFFICER'S REPRESENTATIVE, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THESE CONTROLS. INSTALL ANY REMAINING PLANTINGS.

SITE INFORMATION - WOODLAWN

A. TOTAL AREA OF FACILITY (Base, Campus, Park, Etc.)	18.24 Acres
B. TOTAL AREA OF PROJECT SITE	18.24 Acres
C. AREA DISTURBED	2.90 Acres
D. AREA TO BE ROOFED OR PAVED	0.00 Acres
E. TOTAL CUT	917 CY
F. TOTAL FILL	1,237 CY
G. OFF-SITE WASTE/BORROW AREA LOCATION	TBD

FOR COMBINED SITE INFORMATION REFER TO DRAWING GN-13

NOTES:

1. PRIOR TO INITIATION OF WORK, THE CONTRACTOR SHALL WALK THE SITE WITH THE CONTRACTING OFFICER'S REPRESENTATIVES AND M-NCPPC TO IDENTIFY THE TREES TO BE PROTECTED.
2. STOCKPILE AREA SHALL BE LOCATED AT AN MDE APPROVED OFF-SITE LOCATION.
3. MAINTENANCE OF TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. HARDWOOD MATS SHALL BE PLACED BY THE CONTRACTOR TO PROTECT CRITICAL ROOT ZONES, SANITARY SEWER LINES, MANHOLES AND SENSITIVE AREAS AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL EMPLOY LOW IMPACT CONSTRUCTION TECHNIQUES FOR ALL AREAS WITHIN THE LOD.
6. SILT FENCE AND SUPER SILT FENCE INSTALLED WITHIN CRITICAL ROOT ZONES SHALL NOT BE EMBEDED INTO THE GROUND (I.E. TRENCHED) BUT THE REMAINING GEOTEXTILE SHALL BE SPREAD UPSLOPE OF THE FENCE LINE, STAPLED/STAKED ON 3 FOOT CENTERS AND COVERED WITH 12 INCHES OF MULCH. THE CHAIN LINK FENCE OF SUPER SILT FENCE SHALL NOT BE EMBEDED BUT CUT AT GROUND LEVEL OR FOLDED UPSLOPE
7. THE WORK IN THIS AREA SHALL BE COMPLETED USING THE METHOD OF SAME DAY STABILIZATION. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORKDAY. ALL DISTURBED AREAS SHALL BE STABILIZED BY THE END OF THE WORKDAY.
8. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE EXISTING ASPHALT ROADS RESULTING FROM THE CONSTRUCTION ACTIVITIES.

LEGEND

WUS	WATERS OF THE U.S.
B	WETLAND BUFFER
	WETLAND AREA
	EXIST. STREAM CHANNEL
354	EXISTING CONTOURS
220	PROPOSED CONTOURS
S	EXIST. SAN. SEWER MANHOLE
SD	EXIST. STORMDRAIN MANHOLE
T-122 Tulip Poplar 34"	EXISTING TREE >24" DBH
	TREE TO BE REMOVED
	EXIST. 100-YR FLOODPLAIN LIMIT
	PROP. 100-YR FLOODPLAIN LIMIT
FS XX	LIVE FASCINES
RJ XX	ROCK J-HOOK VANE
CV XX	ROCK CROSS VANE
RGC XX	PROPOSED RIFFLE GRADE CONTROL
BL XX	PROP. BURIED LOG
LV XX	LOG CROSS VANE
LJ XX	LOG J-HOOK VANE
LMP XX	LOG MEANDER PROTECTION STRUCTURE
RW XX	ROOT WAD
LT XX	LOG TOE
	CLAY PLUG

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by:
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 06/11/2012
Design file no.
Drawing code: WL-1
Dwg scale: AS SHOWN

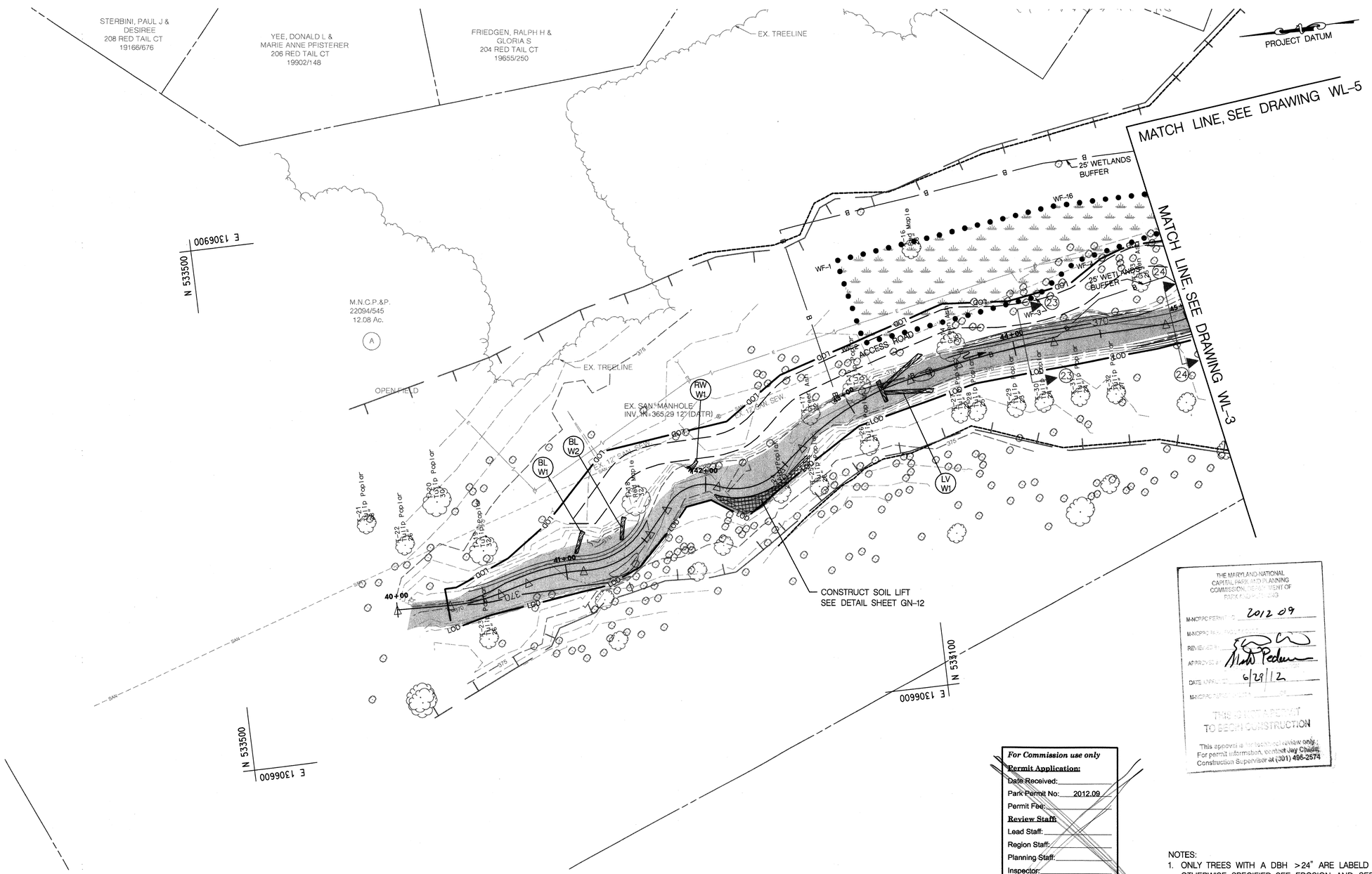
WOODLAWN COVER SHEET

Sheet Number:
44 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 12, 2012 AT 03:21 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pGN-W000_nwbr.dgn

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-6 FOR GEOMETRY CONTROL



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND RECREATION
M-NCPPC PERMIT #: 2012 09
M-NCPPC SIGN-OFF DATE:
REVIEWER:
APPROVED BY: Mark Pedersen
DATE APPROVED: 6/29/12
M-NCPPC INSPECTOR:
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 496-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

NOTES:
1. ONLY TREES WITH A DBH >24" ARE LABELD UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. SEE SHEETS W-9 AND W-10 FOR SPECIAL CROSS SECTIONS.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA.
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: WL-2
Dwg scale: 1"=30'

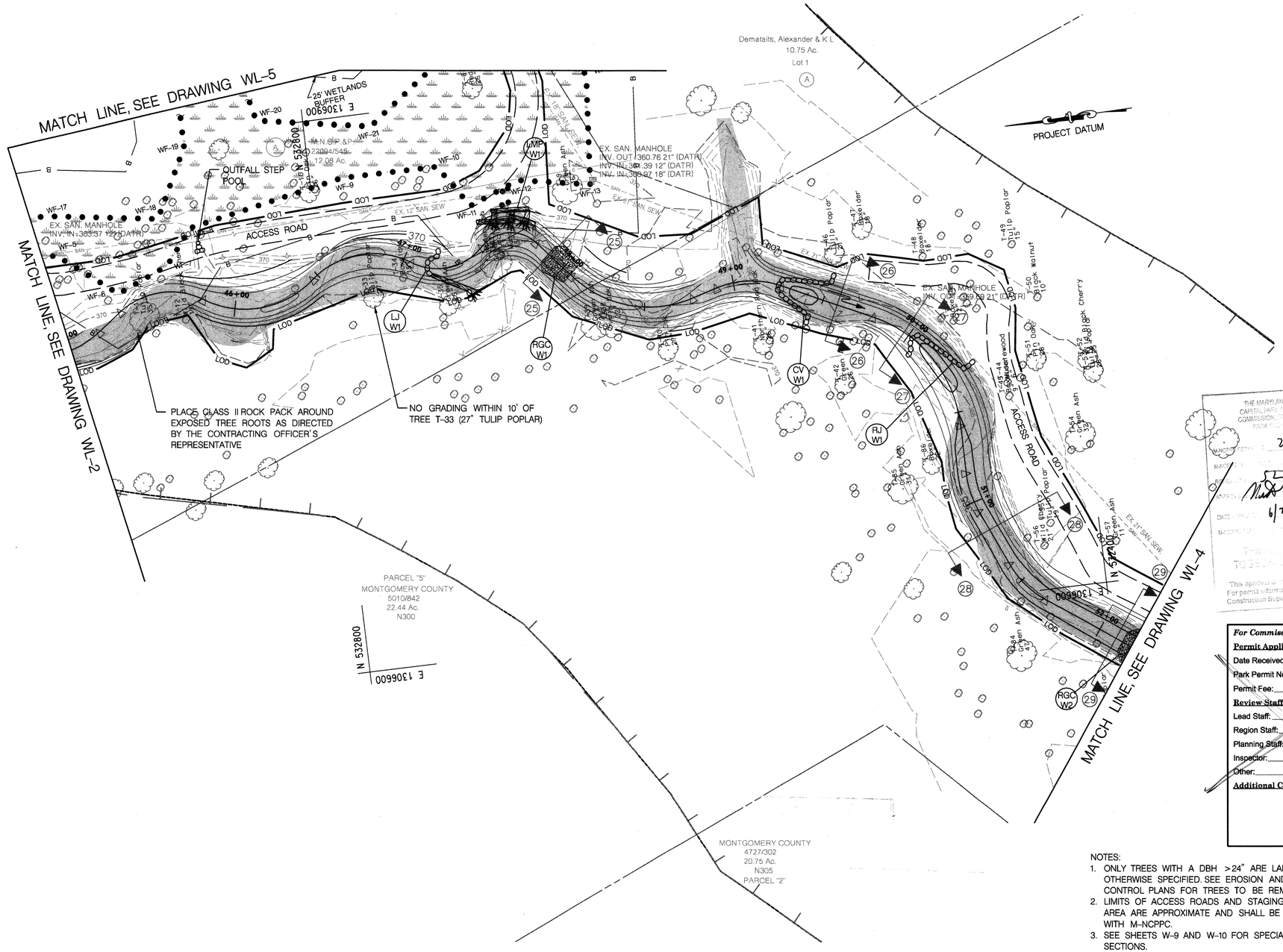
WOODLAWN SITE PLAN

Sheet Number:
45 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 19, 2012 AT 09:14 AM
FILE: \\RKMM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-W001_nwbr.dgn

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-6 FOR GEOMETRY CONTROL.



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
2012.09
6/29/12
THIS PERMIT IS NOT TO BE A CONSTRUCTION
This approval is for preliminary review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2524

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

NOTES:

1. ONLY TREES WITH A DBH >24" ARE LABELD UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. SEE SHEETS W-9 AND W-10 FOR SPECIAL CROSS SECTIONS.
4. SEE SHEET GN-12 FOR STEP POOL OUTFALL DETAIL AND STRUCTURE TABLE. COMPLETE UPSTREAM WORK AND REMOVE UPPER PORTION OF THE ACCESS ROAD PRIOR TO CONSTRUCTION OF THE STEP POOL OUTFALL.
5. THE CONTRACTOR SHALL PLACE TIMBER OR COMPOSITE MATS ATOP THE MULCH ACCESS ROAD IN THE LOCATIONS WHERE THE ACCESS ROAD CROSSES WETLANDS.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA.
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 06/11/2012
Design file no.
Drawing code: WL-3
Dwg scale: 1"=30'
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

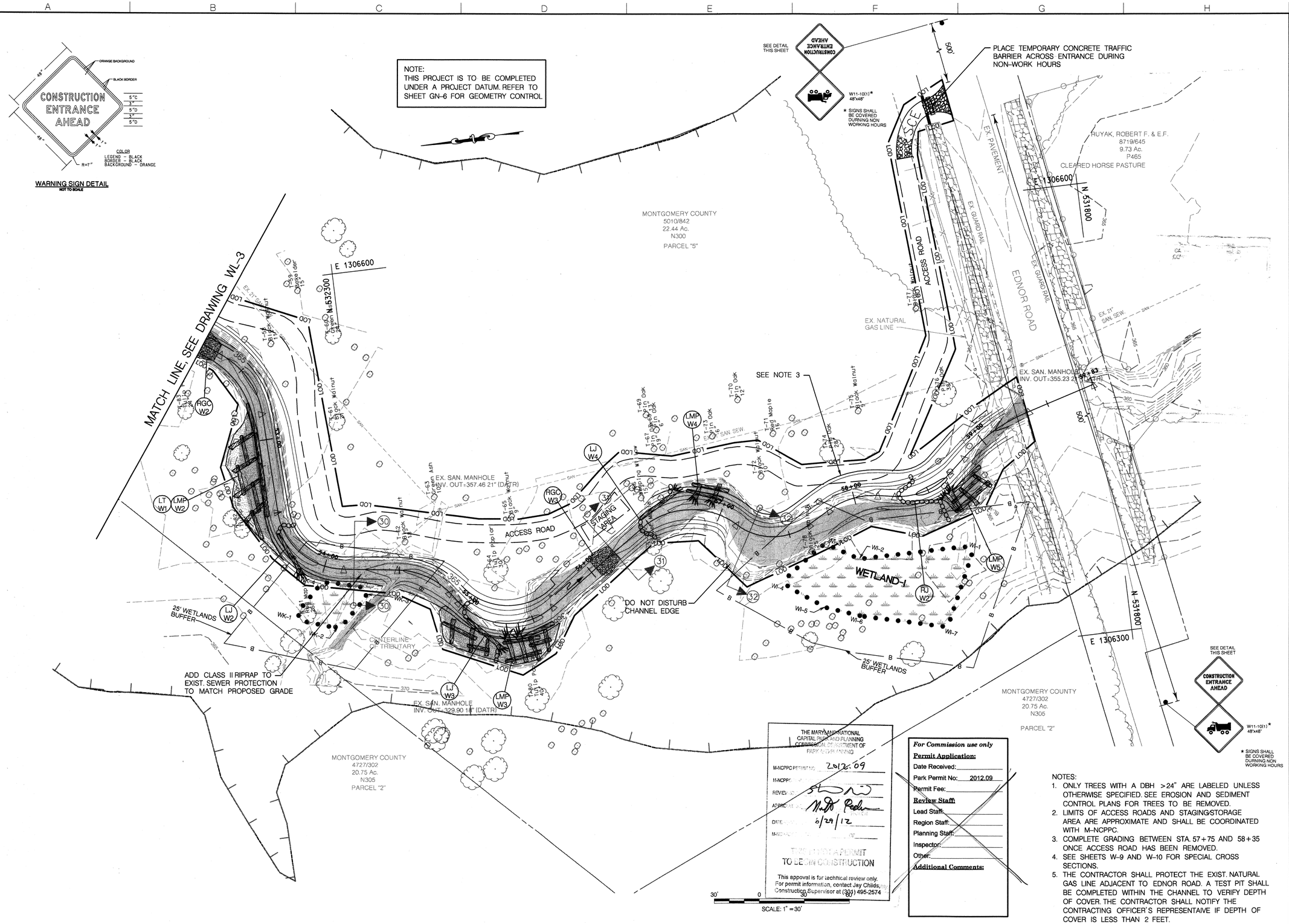
W912DR-07-D-0008
Task Order No. 19

WOODLAWN SITE PLAN

Sheet Number:
46 OF 79

PLOTTED: Tuesday, June 19, 2012 AT 09:16 AM
FILE: \\RKMR\r2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-W002_nwbr.dgn

BY: rpalmer



NOTES:

1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. COMPLETE GRADING BETWEEN STA. 57+75 AND 58+35 ONCE ACCESS ROAD HAS BEEN REMOVED.
4. SEE SHEETS W-9 AND W-10 FOR SPECIAL CROSS SECTIONS.
5. THE CONTRACTOR SHALL PROTECT THE EXIST. NATURAL GAS LINE ADJACENT TO EDNOR ROAD. A TEST PIT SHALL BE COMPLETED WITHIN THE CHANNEL TO VERIFY DEPTH OF COVER. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER'S REPRESENTAIVE IF DEPTH OF COVER IS LESS THAN 2 FEET.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: WL-4
Dwg scale: 1"=30'

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

W9120R-07-D-0008
Task Order No. 19

WOODLAWN SITE PLAN

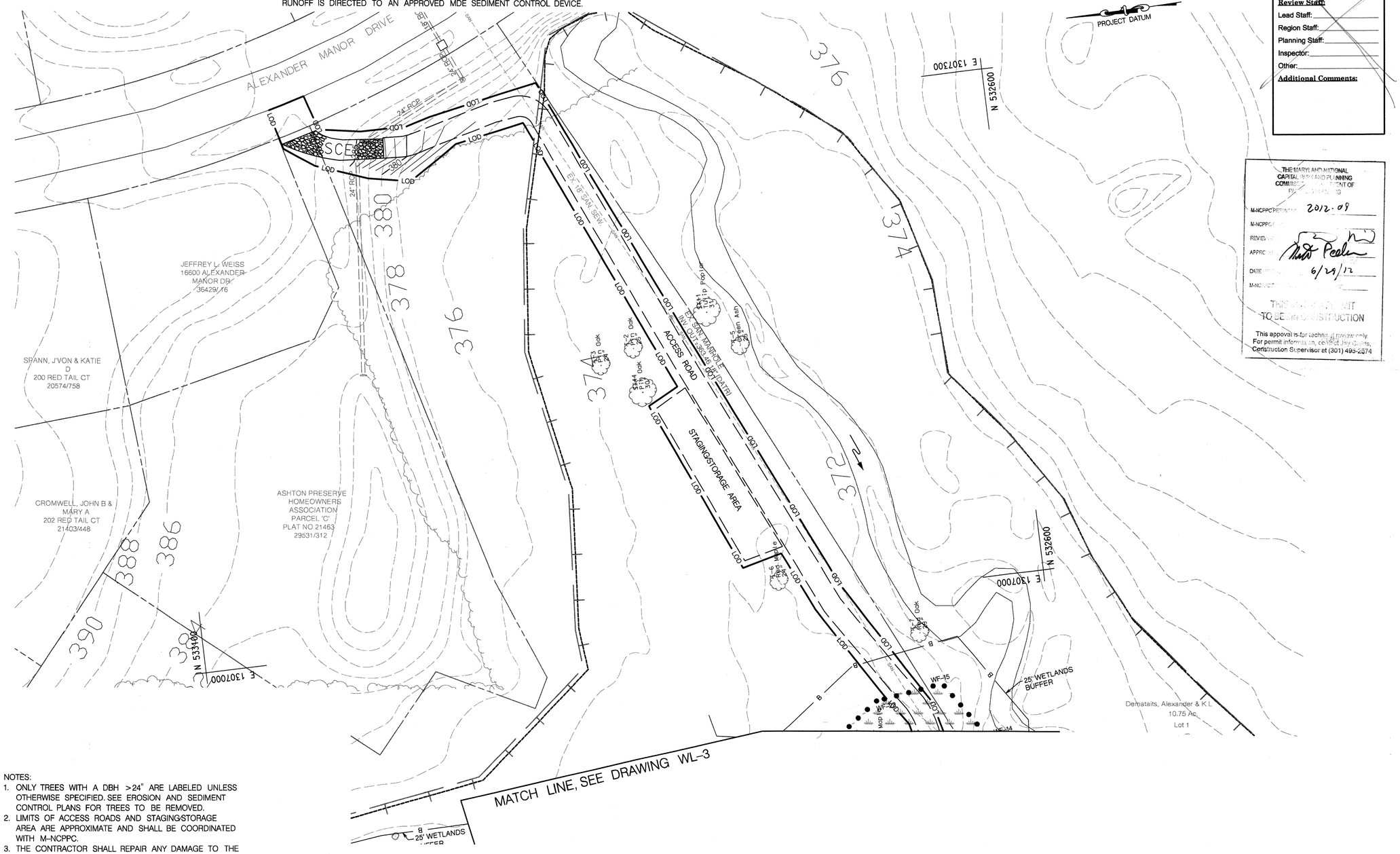
Sheet Number:
47 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 19, 2012 AT 09:17 AM
FILE: \\RKMA\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-W003_nwbr.dgn

NOTE:
THIS PROJECT IS TO BE COMPLETED UNDER A PROJECT DATUM. REFER TO SHEET GN-6 FOR GEOMETRY CONTROL

NOTE: GRADING FOR THE INSTALLATION OF STABILIZED CONTRUCTION ENTRANCE AND ACCESS ROAD SHALL BE COMPLETED UNDER SAME DAY STABILIZATION. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.



NOTES:
1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING-STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE CONCRETE ENTRANCE OFF OF ALEXANDER MANOR DRIVE. REPAIR OR REPLACEMENT SHALL BE COMPLETED AT THE EXPENSE OF THE CONTRACTOR.
4. SEE SHEETS W-9 AND W-10 FOR SPECIAL CROSS SECTIONS.

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

NOTE: TOPOGRAPHY FROM COUNTY 200' SCALE MAPPING WITH 2-FOOT CONTOUR INTERVAL

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION DEPARTMENT OF PARK PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC CASE NO.
REVIEWED BY
APPROVED BY
DATE 6/29/12
M-NCPPC INSPECTOR
THIS PERMIT IS NOT TO BE USED FOR CONSTRUCTION
This appoval is for technical review only. For permit information, contact Park Permits, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

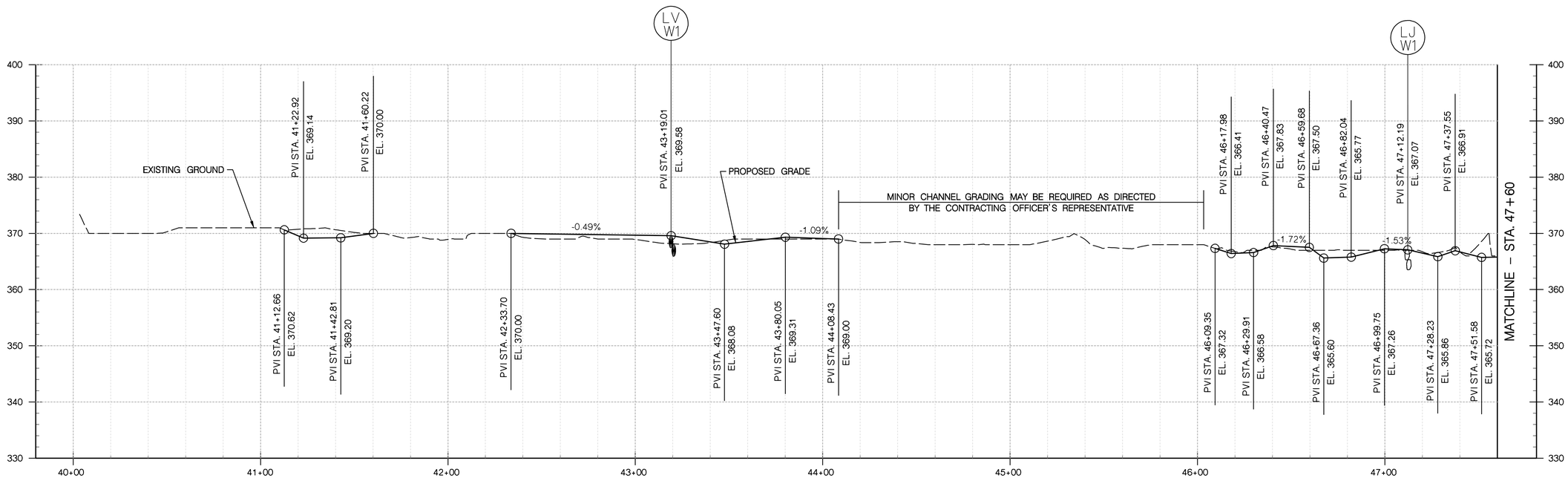
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-5
Dwg scale: 1"=30'

WOODLAWN SITE PLAN

Sheet Number:
48 OF 79

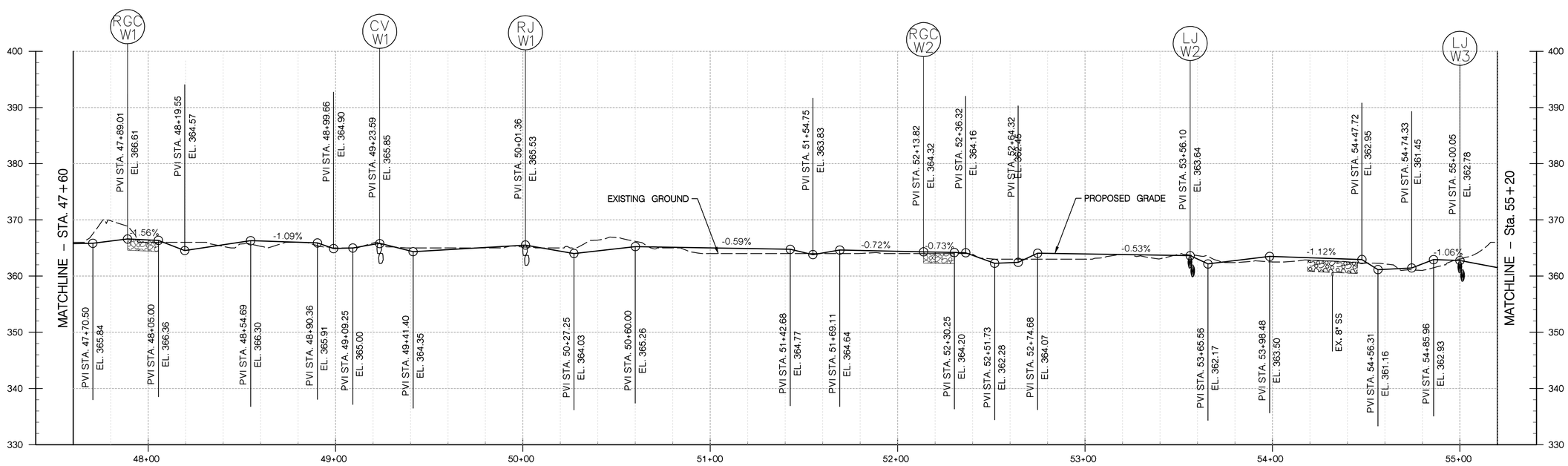
BY: rpalmer

PLOTTED: Tuesday, June 19, 2012 AT 09:20 AM
FILE: \\RKKMf\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-W004_nwbr.dgn



STREAM PROFILE – WOODLAWN STA. 40+00 TO STA. 47+60

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



STREAM PROFILE – WOODLAWN STA. 47+60 TO STA. 55+20

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3591
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

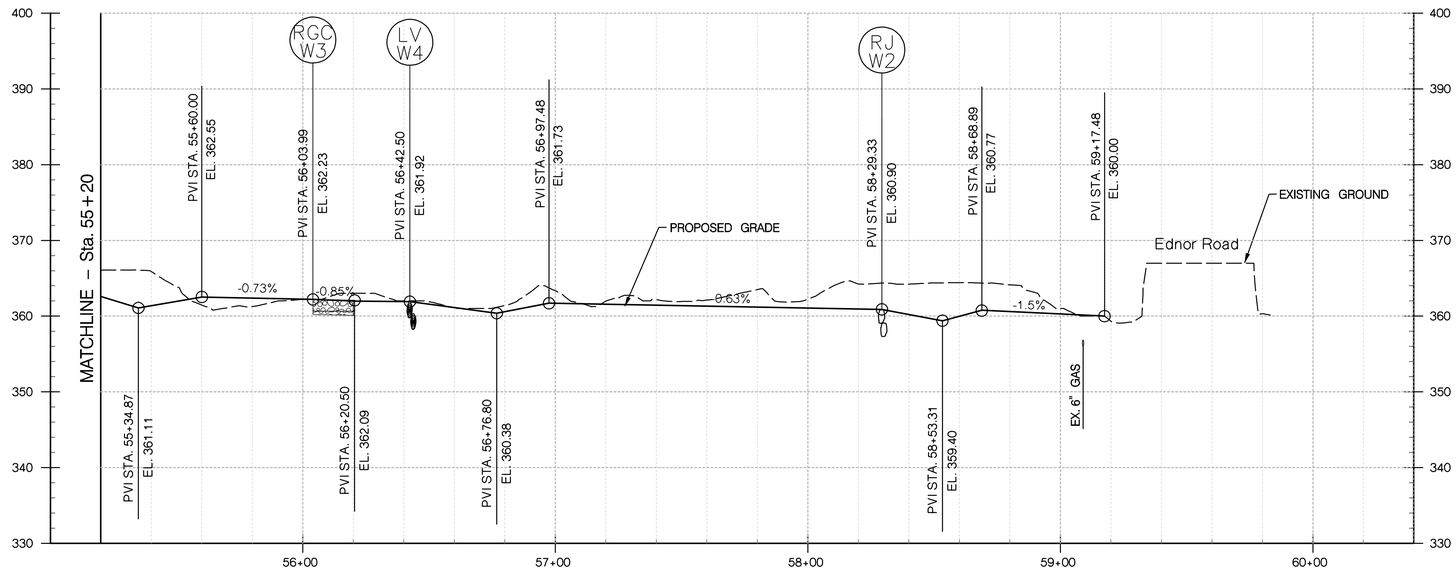
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: WL-6
Dwg scale: AS SHOWN

WOODLAWN
PROFILE
STA. 40+00 TO STA. 55+20

Sheet Number:
49 OF 79

BY: palmer

PLOTTED: Tuesday, June 19, 2012 AT 02:04 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-W001_nwbr.dgn



STREAM PROFILE – WOODLAWN STA. 55+20 TO STA. 58+60

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

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 305-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

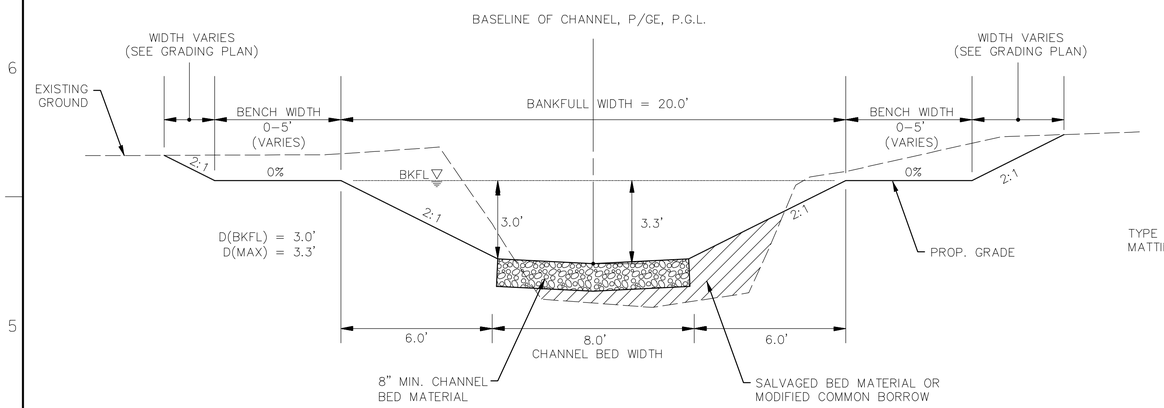
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.:
Drawing code: WL-7
Dwg scale: AS SHOWN

WOODLAWN
PROFILE
STA. 55+20 TO STA. 58+60

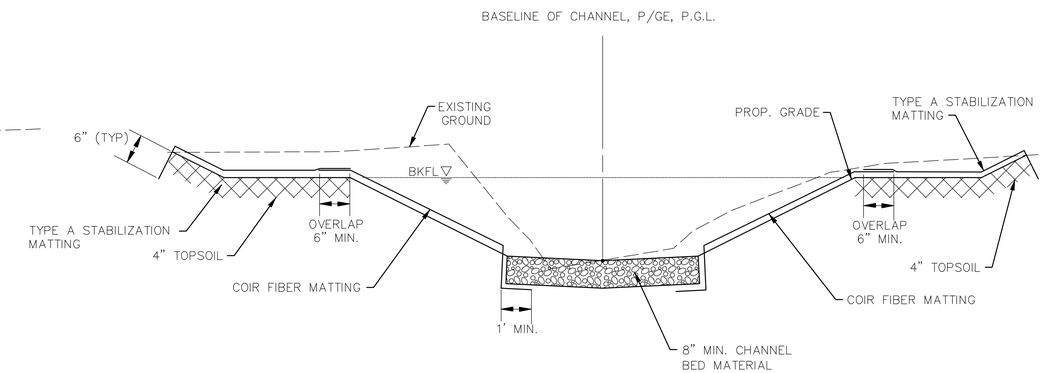
Sheet Number:
50 OF 79

BY: rpalmer –

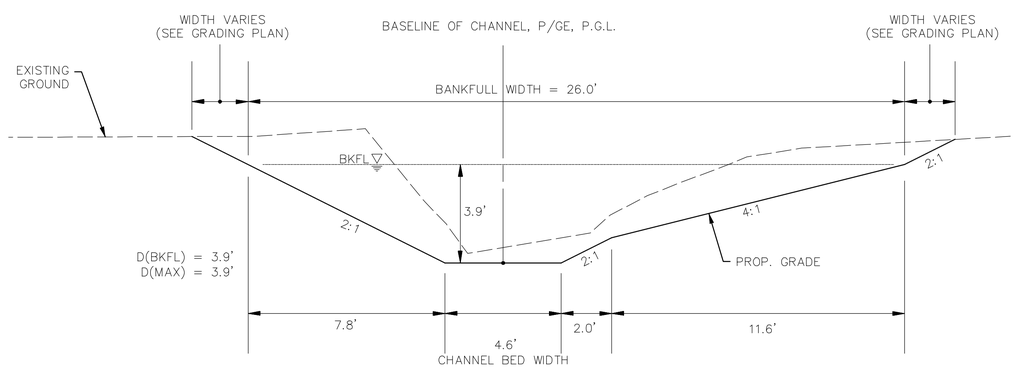
PLOTTED: Friday, June 15, 2012 AT 10:56 AM
FILE: \\RKKMfs\2007\07044_usace\task_6_northwest\cadd\dgn\pPR-W002_rwbr.dgn



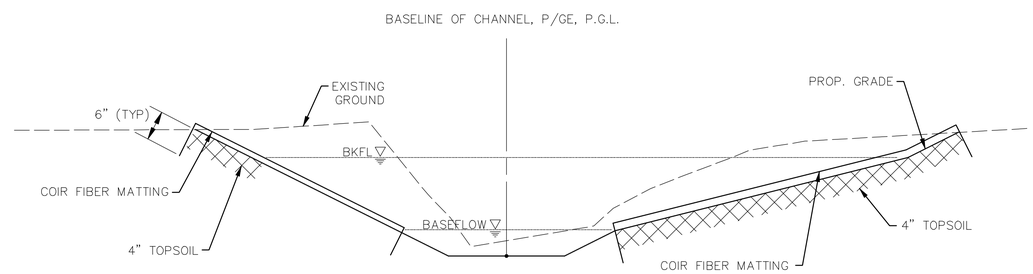
Woodlawn Typical Section – Riffle



Woodlawn Stabilization Detail – Riffle



Woodlawn Typical Section – Pool



Woodlawn Stabilization Detail – Pool

TYPICAL SECTIONS NOTE:

THE ABOVE TYPICAL SECTIONS DEPICT ULTIMATE CHANNEL DIMENSIONS WHEN GRADING IS NOT LIMITED BY TREE IMPACTS. REFER TO SPECIAL CROSS SECTIONS AND CONTOURS ON THE PLANS FOR GRADING REQUIREMENTS WHEN THE PRESENCE OF TREES REQUIRE DEVIATION FROM THE TYPICAL SECTIONS.

NOTES:

1. IN CASES WHERE AREA BEYOND THE BANKFULL CHANNEL ARE IN FILL, THE FILL SHALL BE PLACED AT A 10:1 SLOPE.
2. SEE DETAIL SHEETS FOR ADDITIONAL CHANNEL STABILIZATION MEASURES.
3. SEE SPECIFICATIONS FOR DESCRIPTION OF MODIFIED COMMON BORROW, CHANNEL BED MATERIAL, COIR FIBER MATTING AND STABILIZATION MATTING.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP	Dwn by: DEA	Ckd by: SPB	Date: 05/11/2012
Reviewed by: TMH		Drawing code: WL-8	Design file no.
Submitted by: CVK		Dwg scale: N.T.S	

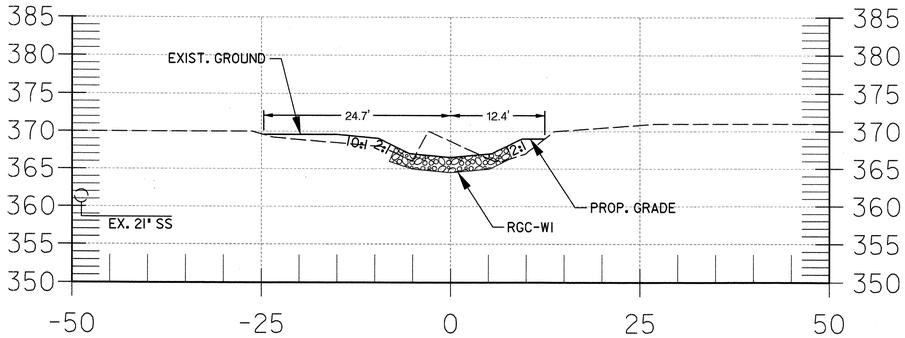
WOODLAWN TYPICAL SECTIONS

Sheet Number:

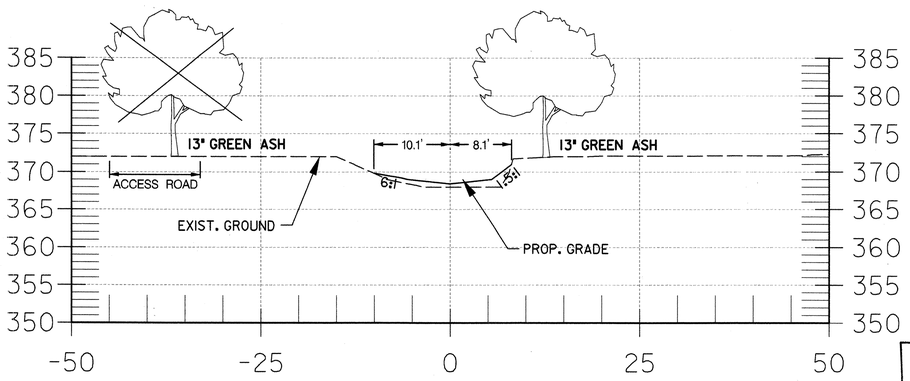
51 OF 79

PLOTTED: Monday, May 14, 2012 AT 01:21 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pTS-W001_nwbr.dgn
BY: rpalmer

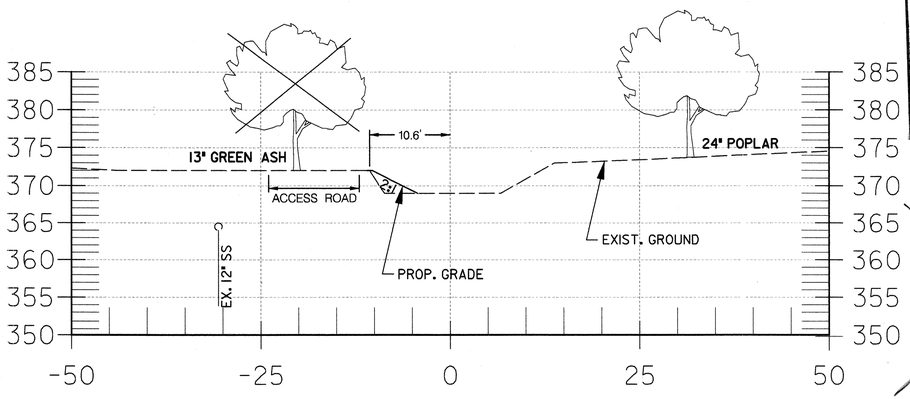
NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



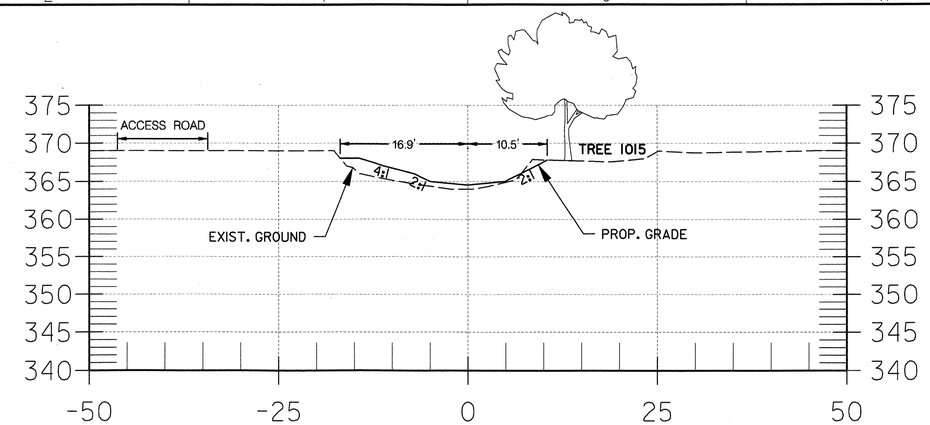
25 CROSS SECTION @ STA. 47+90
SCALE: 1" = 10'



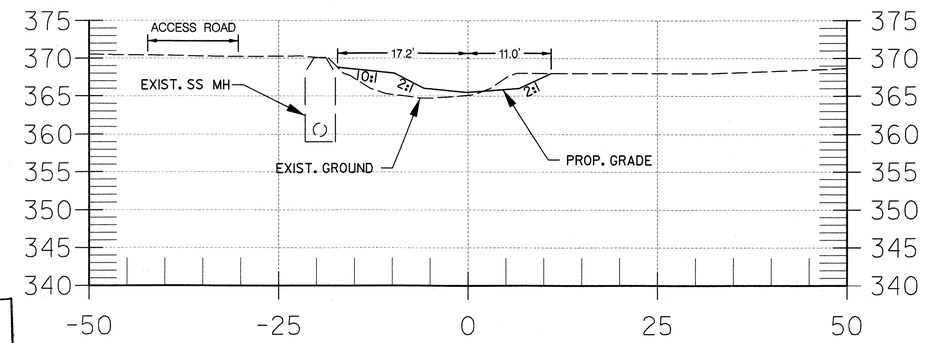
24 CROSS SECTION @ STA. 44+92
SCALE: 1" = 10'



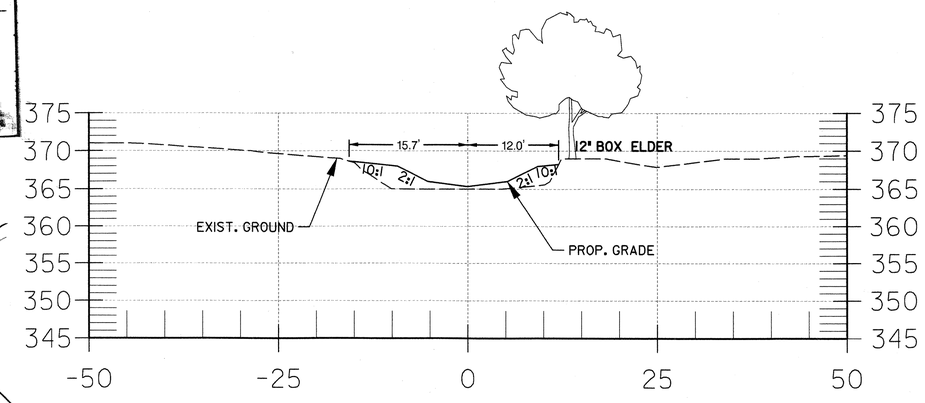
23 CROSS SECTION @ STA. 44+06
SCALE: 1" = 10'



28 CROSS SECTION @ STA. 51+17
SCALE: 1" = 10'



27 CROSS SECTION @ STA. 49+97
SCALE: 1" = 10'



26 CROSS SECTION @ STA. 49+58
SCALE: 1" = 10'

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # OF
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This appoval is for technical review only. For permit information, contact Jay Cliffe, Construction Supervisor at (301) 495-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-9
Dwg scale: AS SHOWN

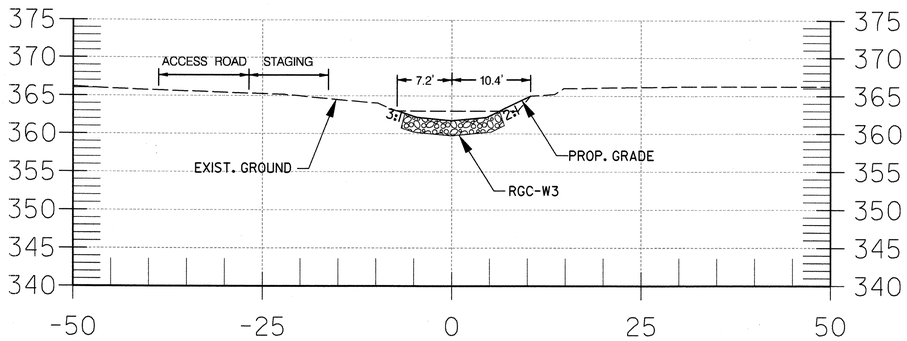
WOODLAWN SPECIAL SECTIONS

Sheet Number:
52 OF 79

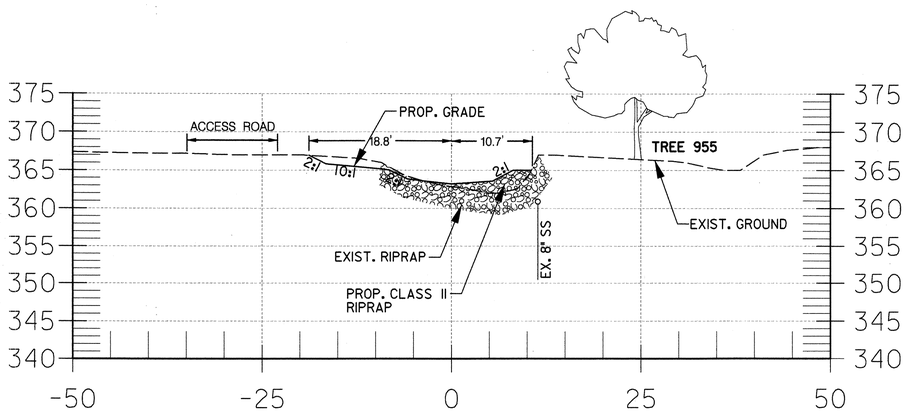
PLOTTED: Monday, May 14, 2012 AT 12:57 PM
FILE: \\PKKMI\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pHC-W001_rwbr.dgn

BY: pgalmer

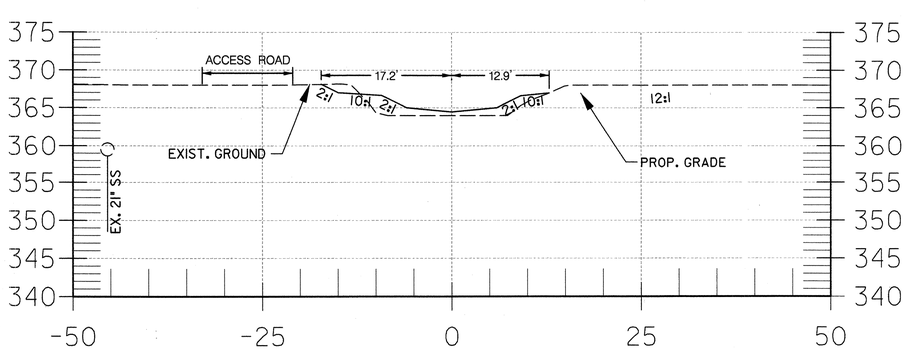
NOTES:
1. OFFSETS TO EXIST. TREES TO BE FIELD VERIFIED.
2. TREES <20" NOT SHOWN UNLESS OTHERWISE NOTED.



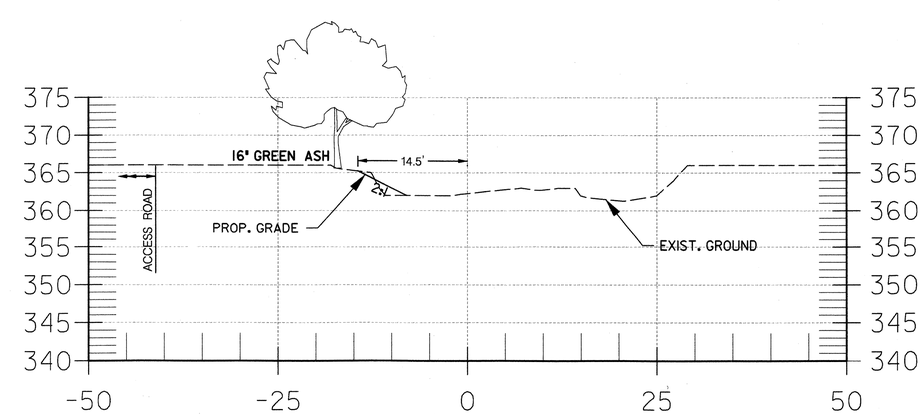
31 CROSS SECTION @ STA. 56+20
SCALE: 1" = 10'



30 CROSS SECTION @ STA. 54+20
SCALE: 1" = 10'



29 CROSS SECTION @ STA. 52+10
SCALE: 1" = 10'



32 CROSS SECTION @ STA. 57+23
SCALE: 1" = 10'

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, CONSTRUCTION SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # OF
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This appoval is for technical review only. For permit information, contact Jay Chiles, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: WL-10
Dwg scale: AS SHOWN
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

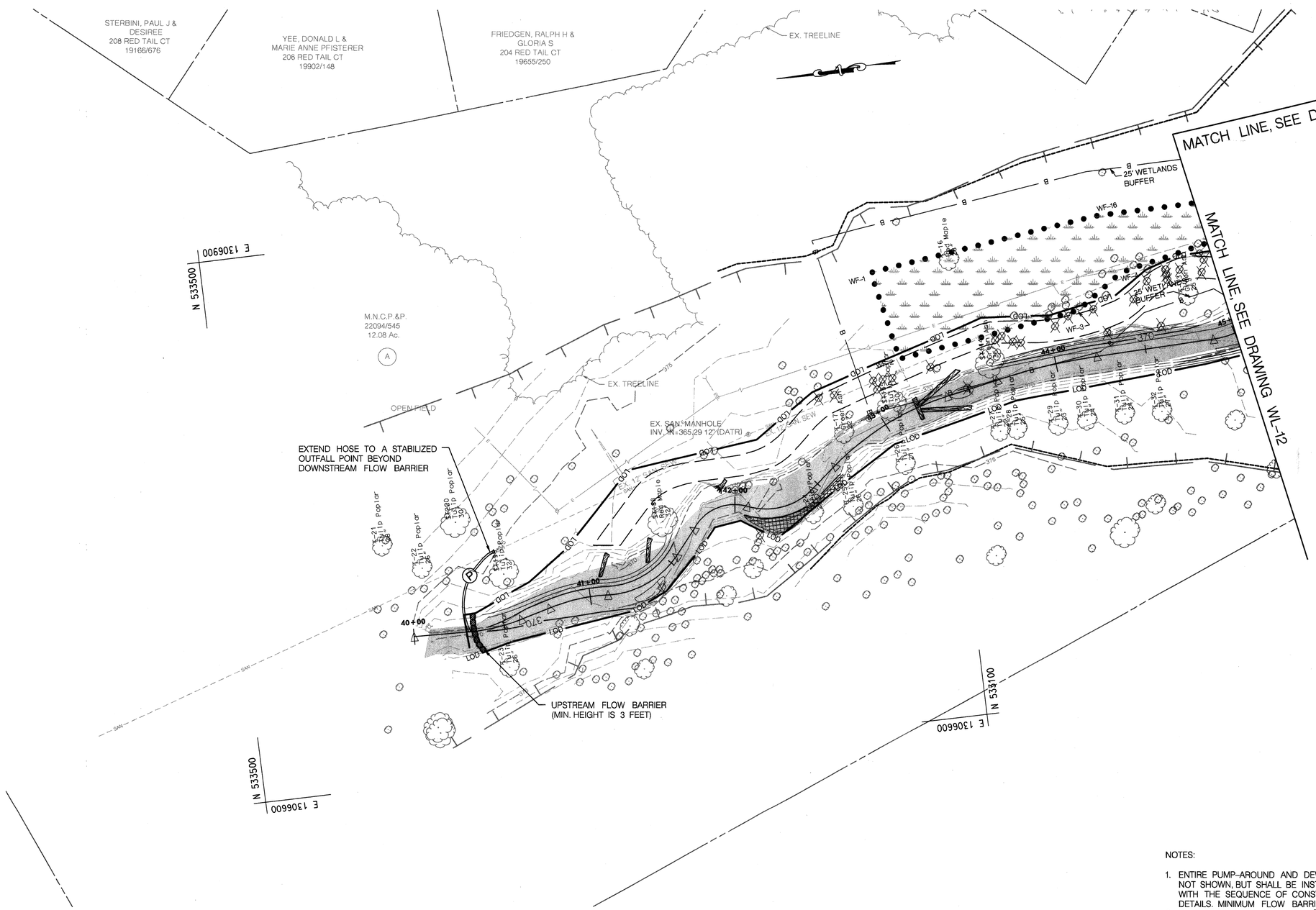
W912DR-07-D-0008
Task Order No. 19

WOODLAWN
SPECIAL SECTIONS

Sheet Number:
53 OF 79

BY: pallner

PLOTTED: Monday, May 14, 2012 AT 01:15 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\caddl\dgn\pHC-W002_nwbr.dgn



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY GUIDE

REVIEWED BY: SW

APPROVED BY: Walter Peden
CHIEF, CONSTRUCTION SECTION

DATE APPROVED: 6/29/12

M-NCPPC PERMIT SHEET # ____ OF ____

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:

Date Received: ____

Park Permit No: 2012.09

Permit Fee: ____

Review Staff:

Lead Staff: ____

Region Staff: ____

Planning Staff: ____

Inspector: ____

Other: ____

Additional Comments:

NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM FLOW BARRIER HEIGHT IS 3 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING-STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 426
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

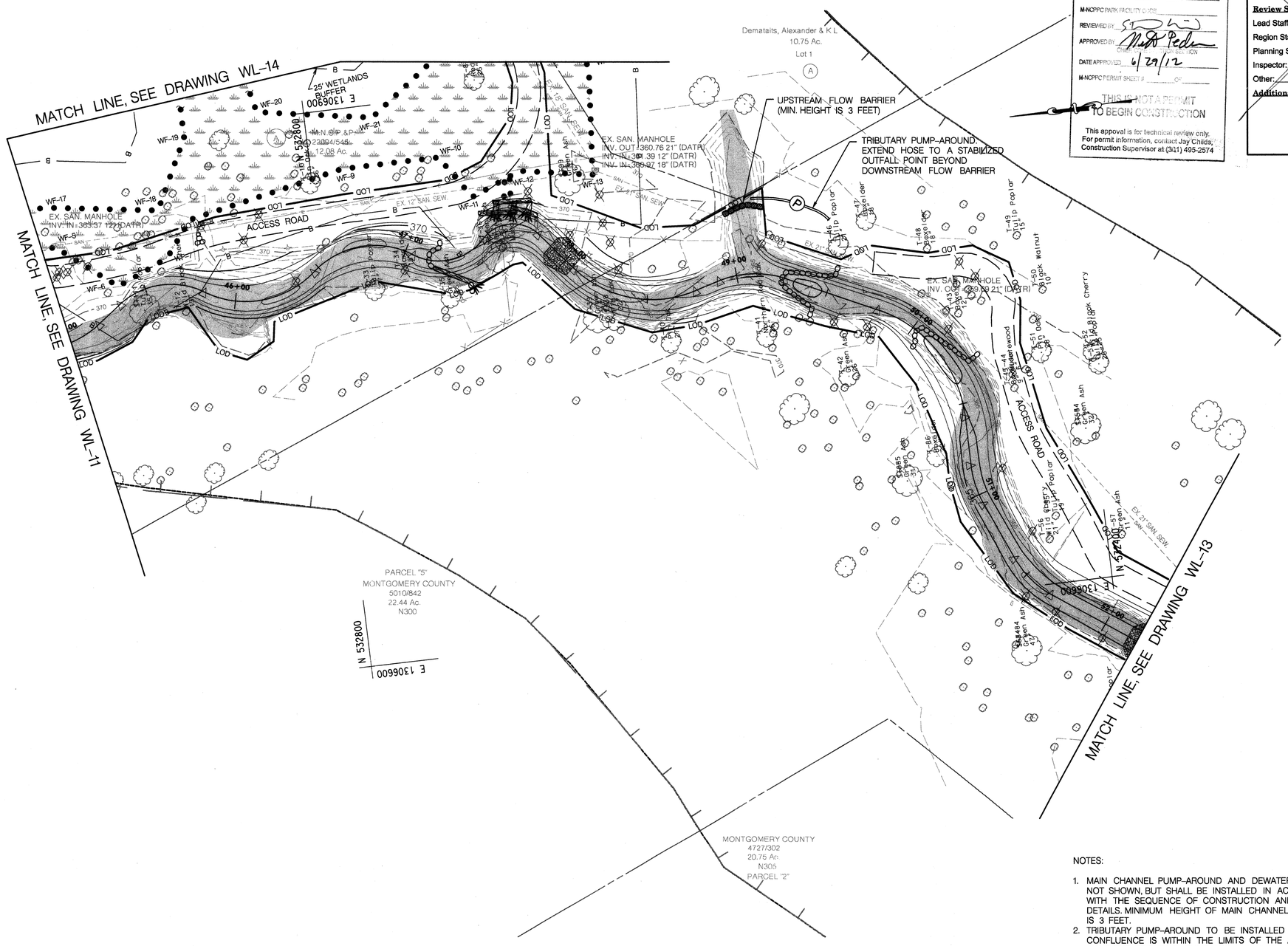
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-11
Dwg scale: 1"=30'

WOODLAWN EROSION & SEDIMENT CONTROL PLAN

Sheet Number:
54 OF 79

BY: rpattner

PLOTTED: Monday, May 14, 2012 AT 07:17 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-W007_nwbr.dgn



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

NOTES:

1. MAIN CHANNEL PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF MAIN CHANNEL FLOW BARRIER IS 3 FEET.
2. TRIBUTARY PUMP-AROUND TO BE INSTALLED WHEN CONFLUENCE IS WITHIN THE LIMITS OF THE ACTIVE WORK ZONE. THE TRIBUTARY PUMP-AROUND SHALL BE REMOVED AT THE END OF EACH DAY AND FLOW TO THE MAIN CHANNEL RESTORED.
3. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
4. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9492 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0628
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WRM
Dwn by: DEA
Ckd by: BEB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-12
Dwg scale: 1"=30'

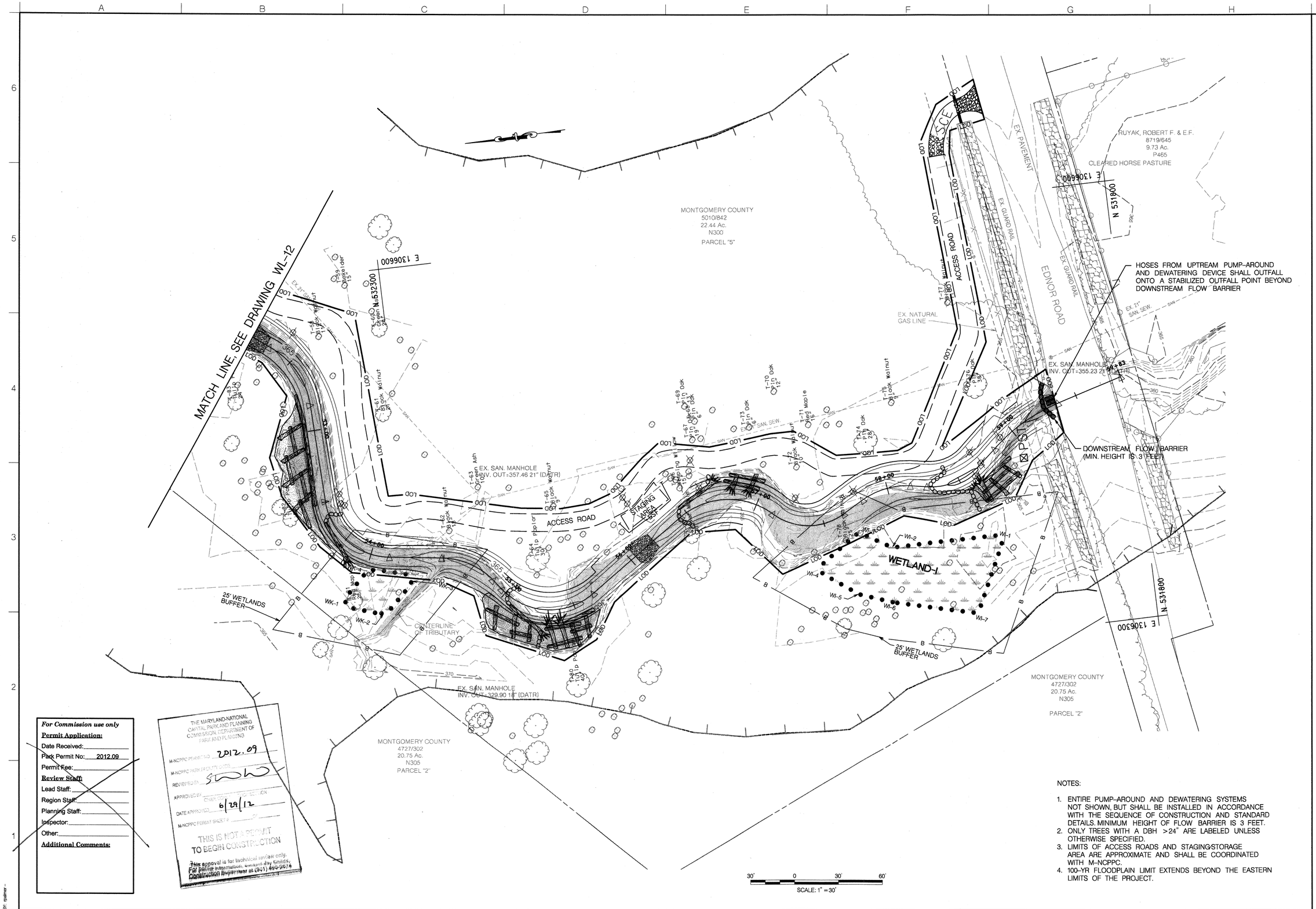
WOODLAWN EROSION & SEDIMENT CONTROL PLAN

Sheet Number:

55 OF 79

PLOTTED: Monday, May 14, 2012 AT 07:55 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-W002_nwbr.dgn

BY: rpalmer



For Commission use only	
Permit Application:	
Date Received:	
Park Permit No:	2012.09
Permit Fee:	
Review Staff:	
Lead Staff:	
Region Staff:	
Planning Staff:	
Inspector:	
Other:	
Additional Comments:	

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING
M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY USES
REVIEWED BY
APPROVED BY
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET #
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This approval is for technical review only. For permit information, contact day to/date Construction Supervisor at (301) 495-2474

NOTES:

1. ENTIRE PUMP-AROUND AND DEWATERING SYSTEMS NOT SHOWN, BUT SHALL BE INSTALLED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AND STANDARD DETAILS. MINIMUM HEIGHT OF FLOW BARRIER IS 3 FEET.
2. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED.
3. LIMITS OF ACCESS ROADS AND STAGING-STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
4. 100-YR FLOODPLAIN LIMIT EXTENDS BEYOND THE EASTERN LIMITS OF THE PROJECT.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA.
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Date: 05/11/2012
Drawn by: DEA
Chkd by: SPB
Reviewed by: TMH
Submitted by: CVK
Design file no.
Drawing code: WL-13
Dwg scale: 1"=30'

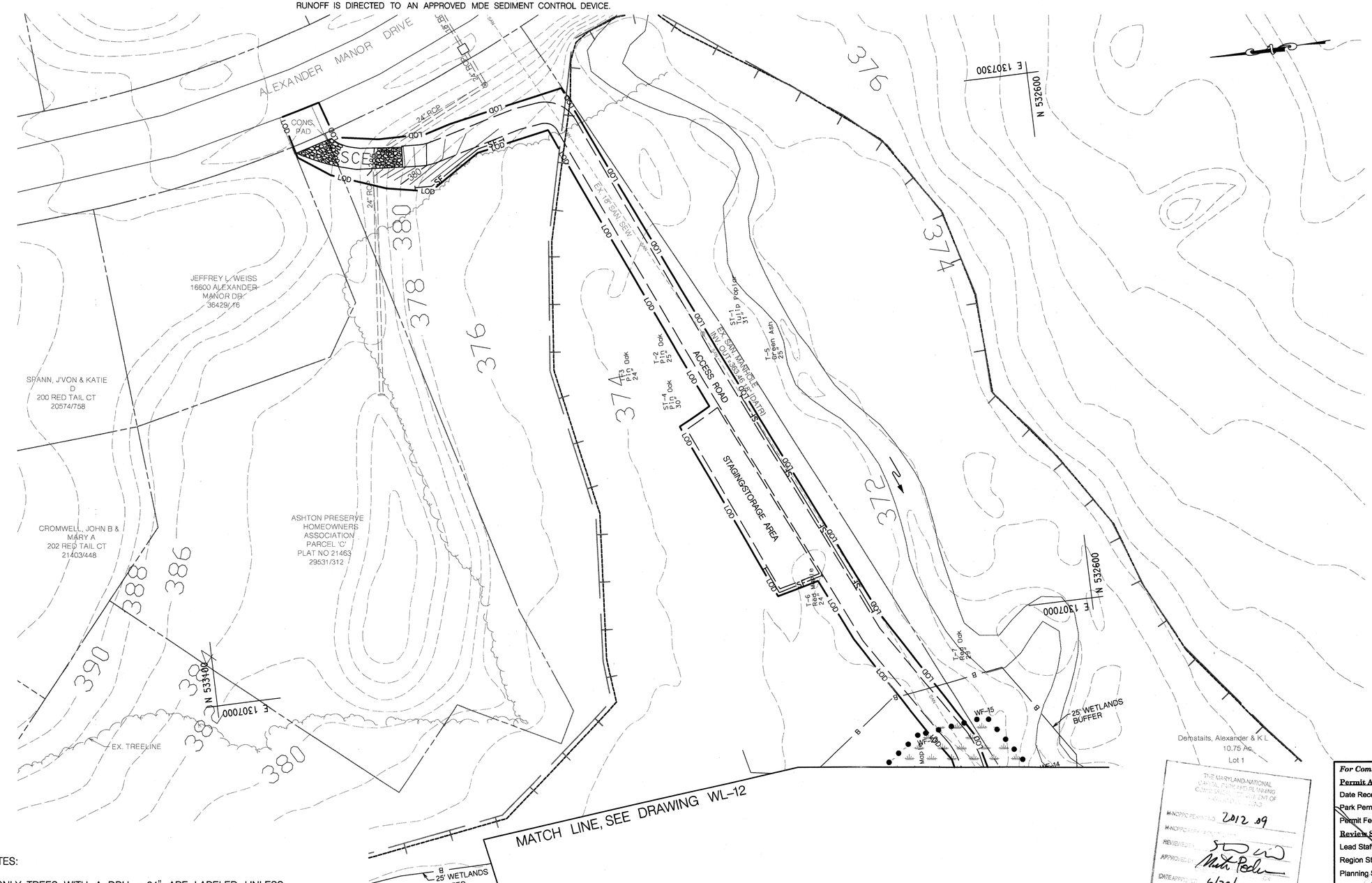
WOODLAWN EROSION & SEDIMENT CONTROL PLAN

Sheet Number:
56 OF 79

BY: rpalmer

PLOTTED: Monday, May 14, 2012 AT 08:49 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-W003_nwbr.dgn

NOTE: GRADING FOR THE INSTALLATION OF STABILIZED CONTRUCTION ENTRANCE AND ACCESS ROAD SHALL BE COMPLETED UNDER SAME DAY STABILIZATION. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED MDE SEDIMENT CONTROL DEVICE.



NOTES:

1. ONLY TREES WITH A DBH >24" ARE LABELED UNLESS OTHERWISE SPECIFIED. SEE EROSION AND SEDIMENT CONTROL PLANS FOR TREES TO BE REMOVED.
2. LIMITS OF ACCESS ROADS AND STAGING/STORAGE AREA ARE APPROXIMATE AND SHALL BE COORDINATED WITH M-NCPPC.
3. TOPOGRAPHY FROM COUNTY 200' SCALE MAPPING WITH 2-FOOT CONTOUR INTERVAL.

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

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
M-NCPPC PERMIT NO. 2012 09
APPROVED: Mark Pedro
DATE APPROVED: 6/29/12
THIS PERMIT IS NOT TO BEGIN CONSTRUCTION
This approval is for technical review only. Contact the appropriate Montgomery County Inspection Agency at 240/499-2574

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012.09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

US Army Corps of Engineers
Baltimore District

A.B. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
5392 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-14
Dwg scale: 1"=30'

WOODLAWN EROSION & SEDIMENT CONTROL PLAN

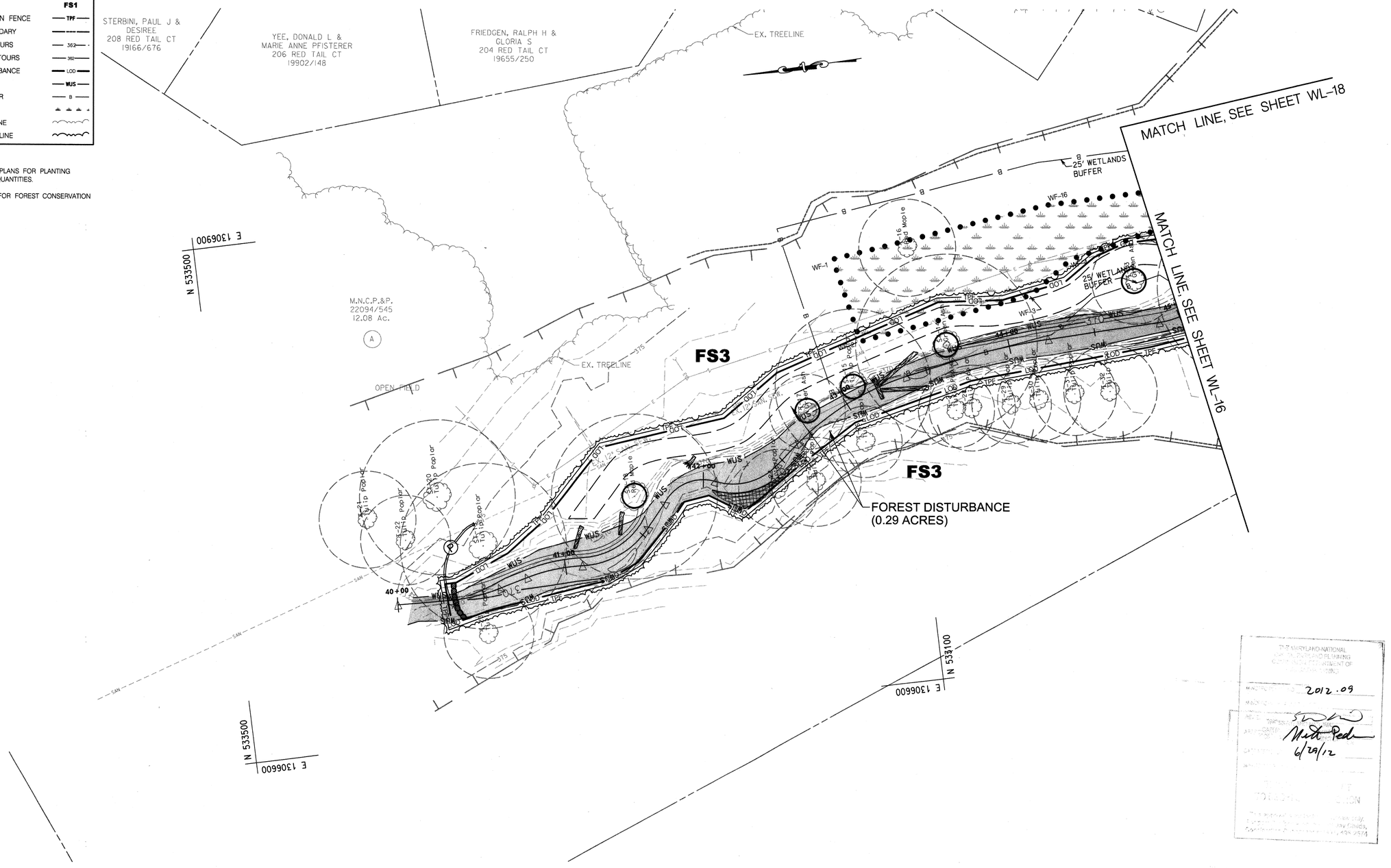
Sheet Number:
57 OF 79

BY: rpalmer

PLOTTED: Tuesday, June 05, 2012 AT 07:50 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-W004_rwbr.dgn

LEGEND	
TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION DEPARTMENT OF PARKS
2012.09
6/29/12

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-5992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-15
Dwg scale: 1"=30'

WOODLAWN
FOREST CONSERVATION PLAN

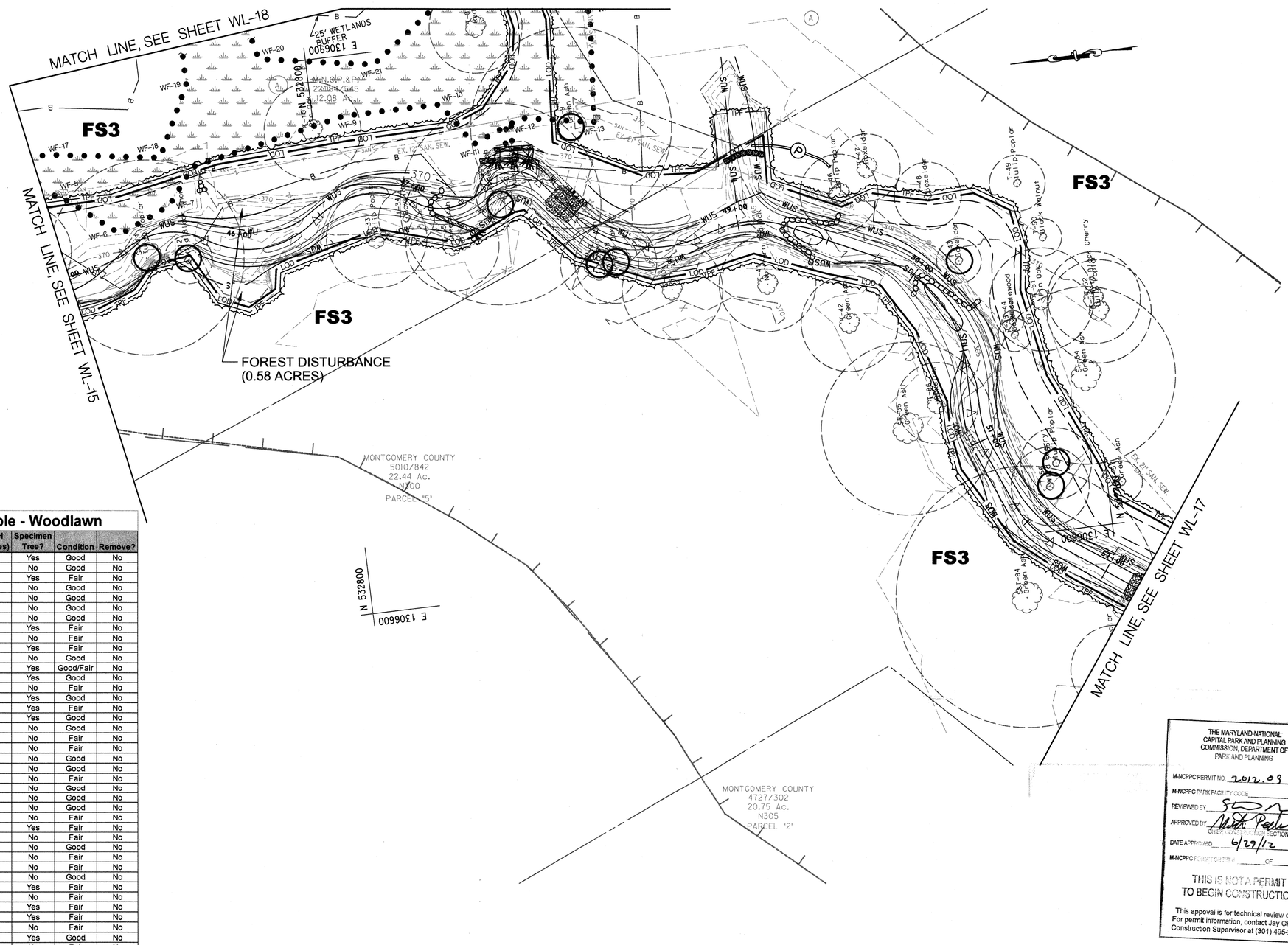
Sheet Number:
58 OF 79

PLOTTED: Tuesday, May 08, 2012 AT 02:43 PM
FILE: \\rkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-W001_nwbr.dgn

BY: daskins

LEGEND	
TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.



Specimen and Significant Tree Table - Woodlawn

	ID	Common Name	Scientific Name	DBH (inches)	Specimen Tree?	Condition	Remove?
1	ST-1	Tulip Poplar	*Liriodendron tulipifera*	31	Yes	Good	No
2	T-2	Pin Oak	*Quercus palustris*	25	No	Good	No
3	ST-4	Pin Oak	*Quercus palustris*	30	Yes	Fair	No
4	T-5	Green Ash	*Fraxinus pennsylvanica*	25	No	Good	No
5	T-6	Red Maple	*Acer rubrum*	24	No	Good	No
6	T-7	Red Oak	*Quercus rubra*	29	No	Good	No
7	T-8	Red Maple	*Acer rubrum*	25	No	Good	No
8	ST-9	Green Ash	*Fraxinus pennsylvanica*	36	Yes	Fair	No
9	T-10	Pin Oak	*Quercus palustris*	26	No	Fair	No
10	ST-11	Tulip Poplar	*Liriodendron tulipifera*	35	Yes	Fair	No
11	T-13	Green Ash	*Fraxinus pennsylvanica*	25	No	Good	No
12	ST-14	Green Ash	*Fraxinus pennsylvanica*	35	Yes	Good/Fair	No
13	ST-15	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Good	No
14	T-16	Red Maple	*Acer rubrum*	28	No	Fair	No
15	ST-18	Red Maple	*Acer rubrum*	32	Yes	Good	No
16	ST-19	Tulip Poplar	*Liriodendron tulipifera*	32	Yes	Fair	No
17	ST-20	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Good	No
18	T-21	Tulip Poplar	*Liriodendron tulipifera*	28	No	Good	No
19	T-22	Tulip Poplar	*Liriodendron tulipifera*	26	No	Fair	No
20	T-23	Tulip Poplar	*Liriodendron tulipifera*	26	No	Fair	No
21	T-25	Tulip Poplar	*Liriodendron tulipifera*	26	No	Good	No
22	T-28	Tulip Poplar	*Liriodendron tulipifera*	25	No	Good	No
23	T-30	Tulip Poplar	*Liriodendron tulipifera*	24	No	Fair	No
24	T-31	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good	No
25	T-32	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
26	T-33	Tulip Poplar	*Liriodendron tulipifera*	27	No	Good	No
27	T-35	Green Ash	*Fraxinus pennsylvanica*	25	No	Fair	No
28	ST-36	Green Ash	*Fraxinus pennsylvanica*	36	Yes	Fair	No
29	T-41	Northern Red Oak	*Quercus rubra*	26	No	Fair	No
30	T-42	Green Ash	*Fraxinus pennsylvanica*	26	No	Good	No
31	T-51	Pin Oak	*Quercus palustris*	28	No	Fair	No
32	T-52	Wild Black Cherry	*Prunus serotina*	25	No	Fair	No
33	T-53	Tulip Poplar	*Liriodendron tulipifera*	28	No	Good	No
34	ST-54	Green Ash	*Fraxinus pennsylvanica*	32	Yes	Fair	No
35	T-60	Green Ash	*Fraxinus pennsylvanica*	24	No	Fair	No
36	ST-64	Tulip Poplar	*Liriodendron tulipifera*	30	Yes	Fair	No
37	ST-76	Pin Oak	*Quercus palustris*	38	Yes	Fair	No
38	T-78	Black Walnut	*Juglans nigra*	25	No	Fair	No
39	ST-80	Tulip Poplar	*Liriodendron tulipifera*	40	Yes	Good	No
40	T-81	Red Maple	*Acer rubrum*	25	No	Fair	No
41	T-83	Tulip Poplar	*Liriodendron tulipifera*	24	No	Good	No
42	ST-84	Green Ash	*Fraxinus pennsylvanica*	47	Yes	Poor	No
43	ST-85	Green Ash	*Fraxinus pennsylvanica*	31	Yes	Good	No

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
CHIEF, DEVELOPMENT REVIEW SECTION
DATE APPROVED 6/29/12
M-NCPPC PERMIT SHEET # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Cimino, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9452 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0038
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-16
Dwg scale: 1"=30'

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

W912DR-07-D-0008
Task Order No. 19

WOODLAWN
FOREST CONSERVATION PLAN

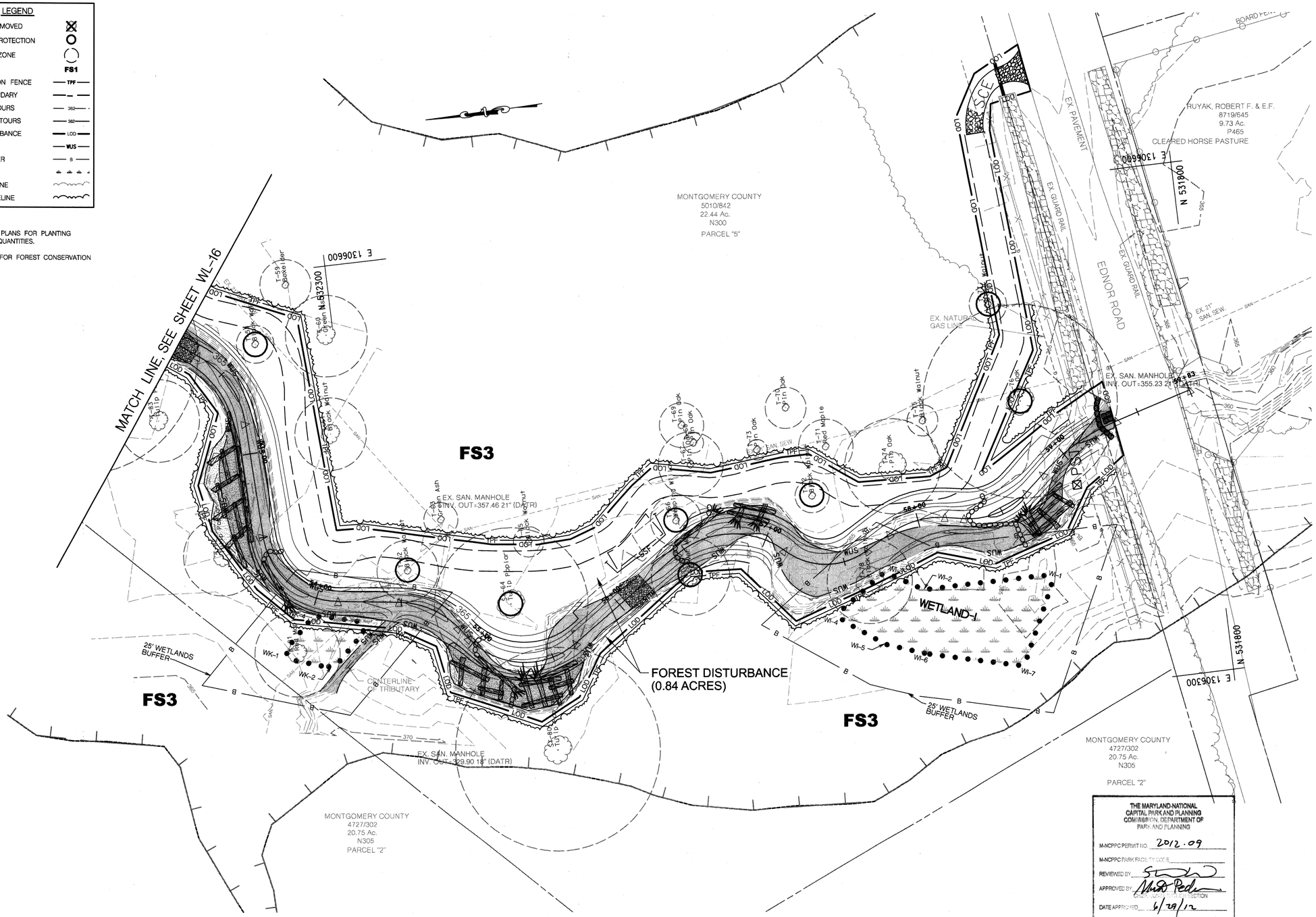
Sheet Number:
59 OF 79

BY: dadkins

PLOTTED: Tuesday, May 08, 2012 AT 02:44 PM
FILE: \\rkkm\v2007\2007\07044_USACE\Task_6_Northwest\CADD\dgn\pFC-W002_nwbr.dgn

LEGEND	
TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	362
PROPOSED CONTOURS	362
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY

DATE APPROVED 6/29/12

M-NCPPC PERMIT NO. ITEM # OF

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM		Date: 05/11/2012	
Dwn by: DEA	Ckd by: REP	Design file no.	
Reviewed by: TMH		Drawing code: WL-17	
Submitted by: CVK		Dwg scale: 1"=30'	

WOODLAWN
FOREST CONSERVATION PLAN

Sheet Number:
60 OF 79

BY: rpalmer

PLOTTED: Tuesday, May 15, 2012 AT 02:18 PM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pFC-W003_nwbr.dgn

LEGEND

TREE TO BE REMOVED	
SPECIAL TREE PROTECTION	
CRITICAL ROOT ZONE	
FOREST STAND	FS1
TREE PROTECTION FENCE	TPF
PROPERTY BOUNDARY	
EXISTING CONTOURS	382
PROPOSED CONTOURS	382
LIMIT OF DISTURBANCE	LOD
WATERS OF US	WUS
WETLAND BUFFER	B
WETLANDS	
EXISTING TREELINE	
PROPOSED TREELINE	

NOTE:
1. SEE PLANTING PLANS FOR PLANTING SPECIES AND QUANTITIES.
2. SEE SHEET 78 FOR FOREST CONSERVATION QUANTITIES.

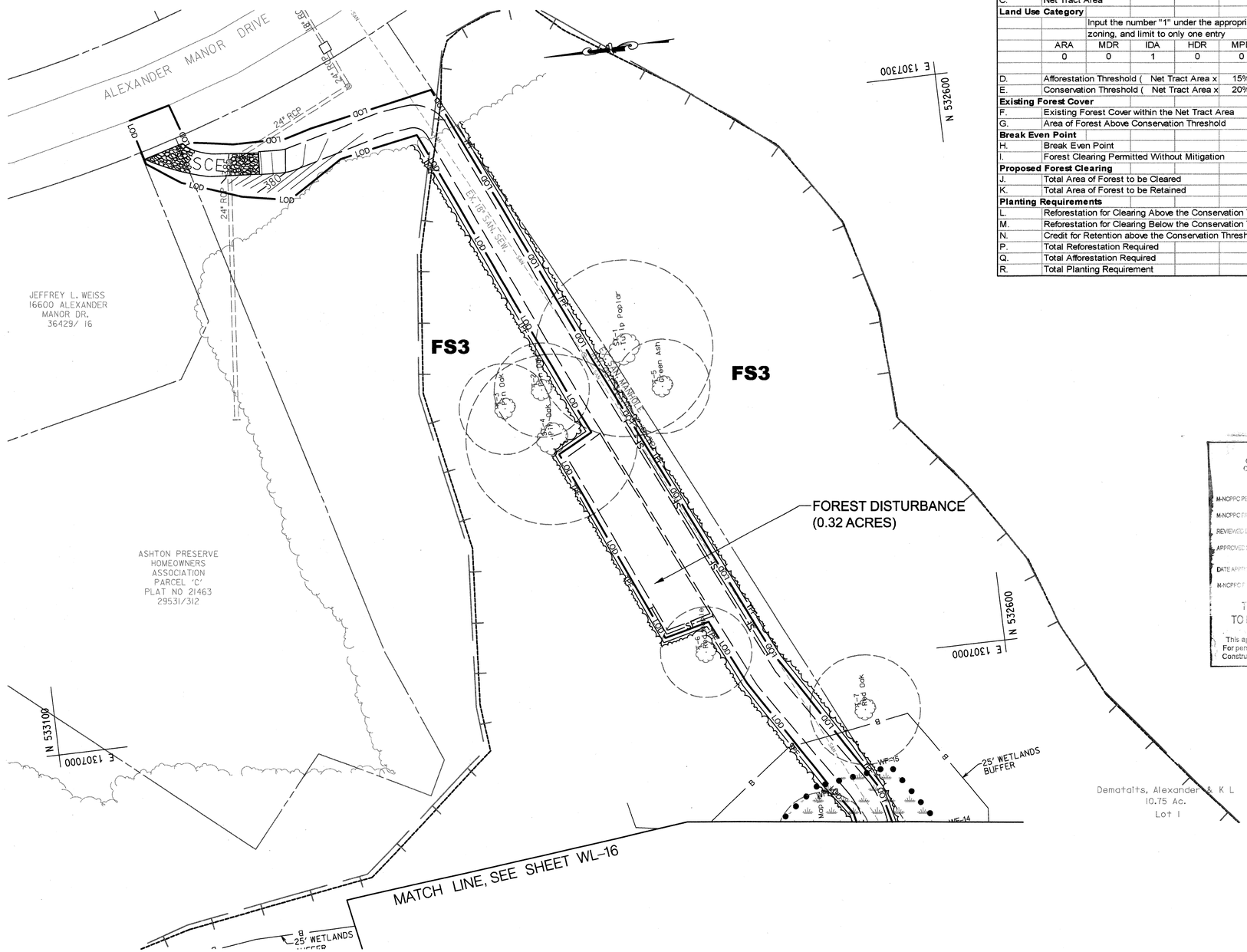
APPROVED
Forest Conservation Plan

R Todd Ernian
(authorization)

9-11-2012
(date)

State of Maryland
Forest Conservation Program

FCP # C10-23
NW Branch
Stream Restoration



Forest Conservation Worksheet 2.2								
Woodlawn								
Net Tract Area								
A.	Total Tract Area						A =	2.97
B.	Deductions						B =	0.89
C.	Net Tract Area						C =	2.08
Land Use Category								
	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		
D.	Afforestation Threshold (Net Tract Area x			15%	)		D =	0.31
E.	Conservation Threshold (Net Tract Area x			20%	)		E =	0.42
Existing Forest Cover								
F.	Existing Forest Cover within the Net Tract Area						F =	2.01
G.	Area of Forest Above Conservation Threshold						G =	1.59
Break Even Point								
H.	Break Even Point						H =	0.73
I.	Forest Clearing Permitted Without Mitigation						I =	1.28
Proposed Forest Clearing								
J.	Total Area of Forest to be Cleared						J =	2.01
K.	Total Area of Forest to be Retained						K =	0.00
Planting Requirements								
L.	Reforestation for Clearing Above the Conservation Threshold						L =	0.40
M.	Reforestation for Clearing Below the Conservation Threshold						M =	0.83
N.	Credit for Retention above the Conservation Threshold						N =	0.00
P.	Total Reforestation Required						P =	1.23
Q.	Total Afforestation Required						Q =	0.00
R.	Total Planting Requirement						R =	1.23

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2612.09
M-NCPPC PARK FACILITY CODE
REVIEWED BY
APPROVED BY
DATE APPROVED 6/29/12
M-NCPPC
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

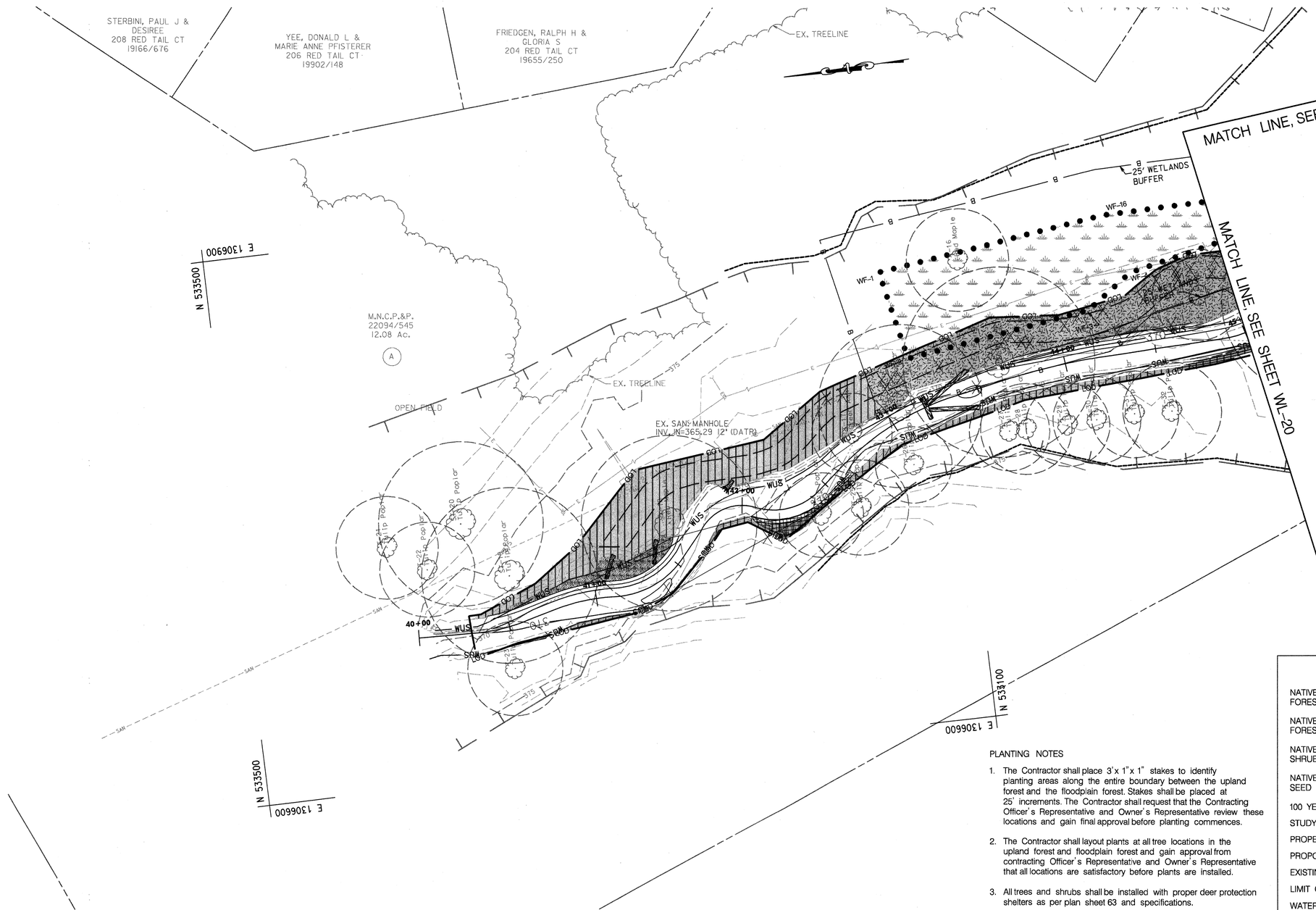
U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
BALTIMORE, MARYLAND

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-18
Dwg scale: 1"=30'

WOODLAWN FOREST CONSERVATION PLAN

Sheet Number:
61 OF 79



PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 63 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 65 for planting schedules.

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

LEGEND

NATIVE FLOODPLAIN FOREST	
NATIVE RIPARIAN FOREST	
NATIVE RIPARIAN SHRUB	
NATIVE PERMANENT SEED	
100 YEAR FLOODPLAIN	
STUDY AREA	
PROPERTY BOUNDARY	
PROPOSED CONTOUR	120
EXISTING CONTOUR	120
LIMIT OF DISTURBANCE	LOD
WATERS OF THE US	WUS
WETLAND BUFFER	B
WETLANDS	
PROPOSED TREE LINE	
EXISTING TREE LINE	

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION - DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK PERMIT NO.

REVIEWED BY:

APPROVED BY:

DATE APPROVED 6/29/12

M-NCPPC

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB CONSULTANTS, INC.
9492 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-19
Dwg scale: 1"=30'

WOODLAWN PLANTING PLAN

Sheet Number:
62 OF 79

PLOTTED: Wednesday, June 27, 2012 AT 02:35 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-W001_nwbr.dgn

BY: rpalmer

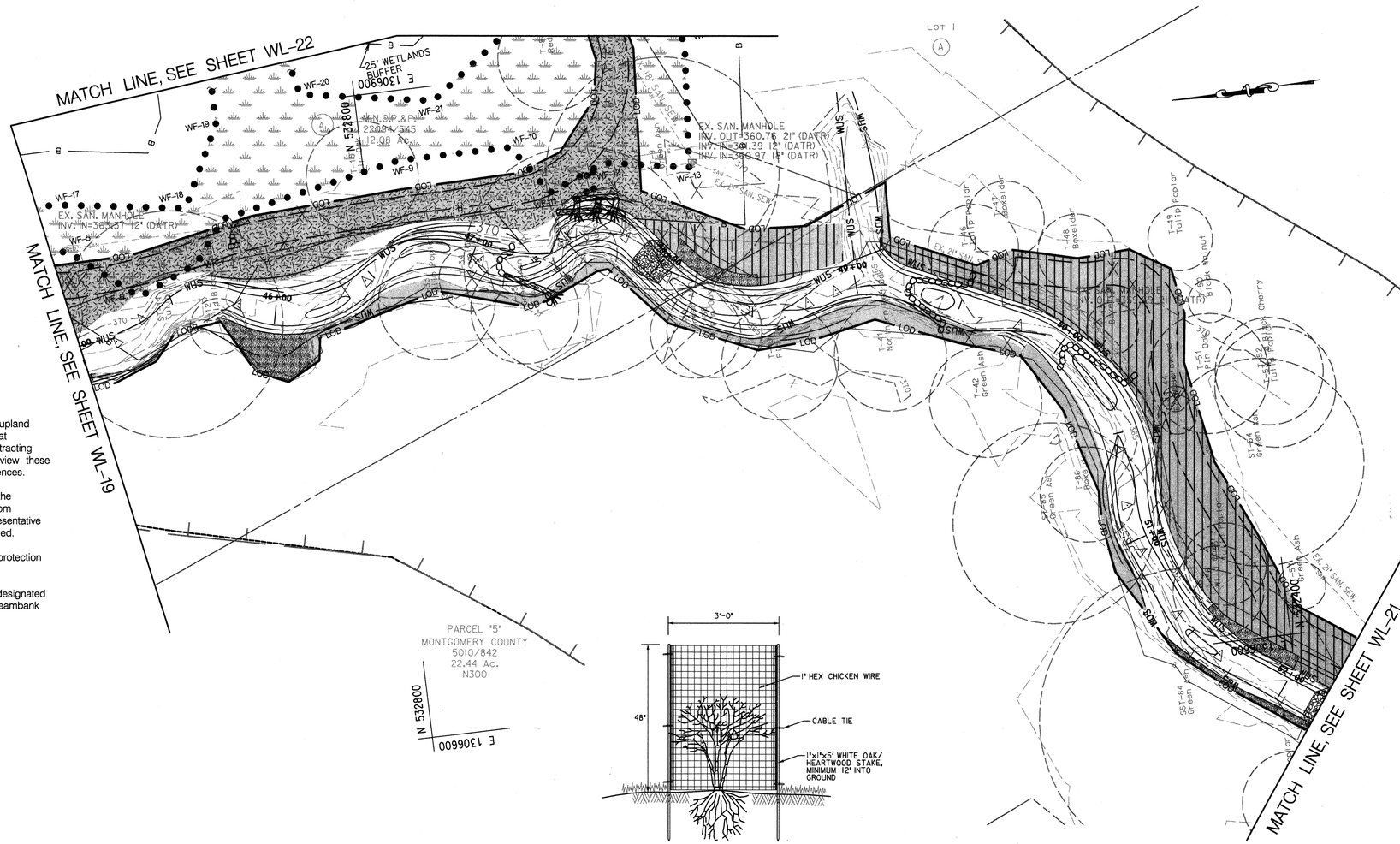
LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- NATIVE PERMANENT SEED
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

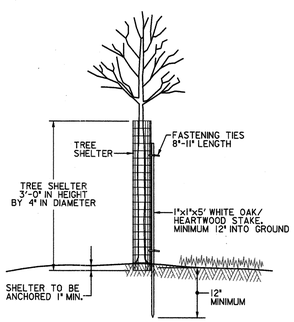
PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 63 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 65 for planting schedules.

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

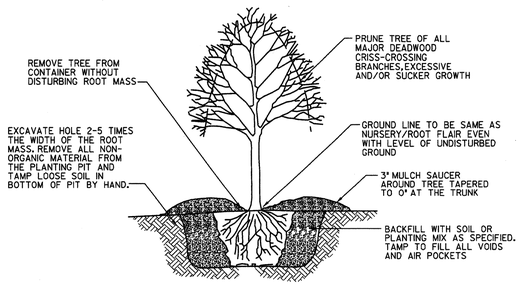


DEER PROTECTION - SHRUB
N.T.S.



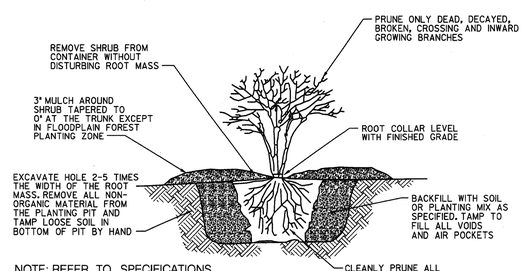
DEER PROTECTION - TREE
N.T.S.

NOTES:
1. UP TO 2" OF SOIL CAN BE MOUNTED AROUND THE OUTSIDE OF TREE SHELTER.
2. REFER TO TREE SHELTER SPECIFICATION FOR ADDITIONAL INFORMATION.



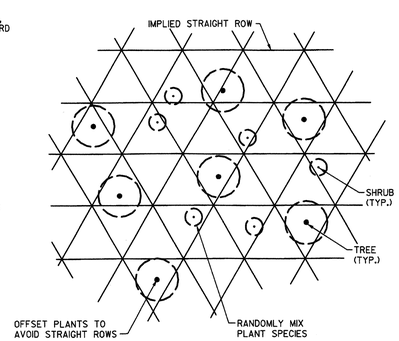
NOTES:
1. If surrounding soil is compacted as determinded by the engineer, an area up to 5 times the diameter of the root mass shall be excavated or rototilled to a 1'depth.
2. Do not damage or cut leader.

TREE PLANTING - CONTAINER GROWN
N.T.S.

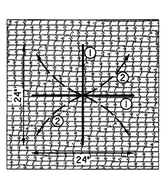


NOTE: REFER TO SPECIFICATIONS FOR WIRE SHRUB PROTECTION CAGE.

SHRUB PLANTING - CONTAINER
N.T.S.



NATURALIZED PLANT SPACING
N.T.S.



1. Make cut with sharp knife through Coir Fiber Matting - Solid line in diagram
2. Pin back Coir Fiber with 4 staples - dashed line in diagram
3. Install plant through pinned back Coir Fiber. Install plant at proper grade to ground plane
4. Remove 4 staples
5. For tree installations, install tree stakes through Coir Matting
6. Install deer protection
7. Place 4 staples in each of four cut sections. Re-anchor Coir Matting to ground

TREE & SHRUB INSTALLATION THROUGH COIR FIBER MATTING
N.T.S.

For Commission use only
Permit Application:
Date Received:
Park Permit No: 2012-09
Permit Fee:
Review Staff:
Lead Staff:
Region Staff:
Planning Staff:
Inspector:
Other:
Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS AND PLANNING
M-NCPPC PERMIT NO. 2012-09
M-NCPPC
REVIEWED
APPROVED
DATE APPROVED 6/29/12
M-NCPPC
THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION
This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

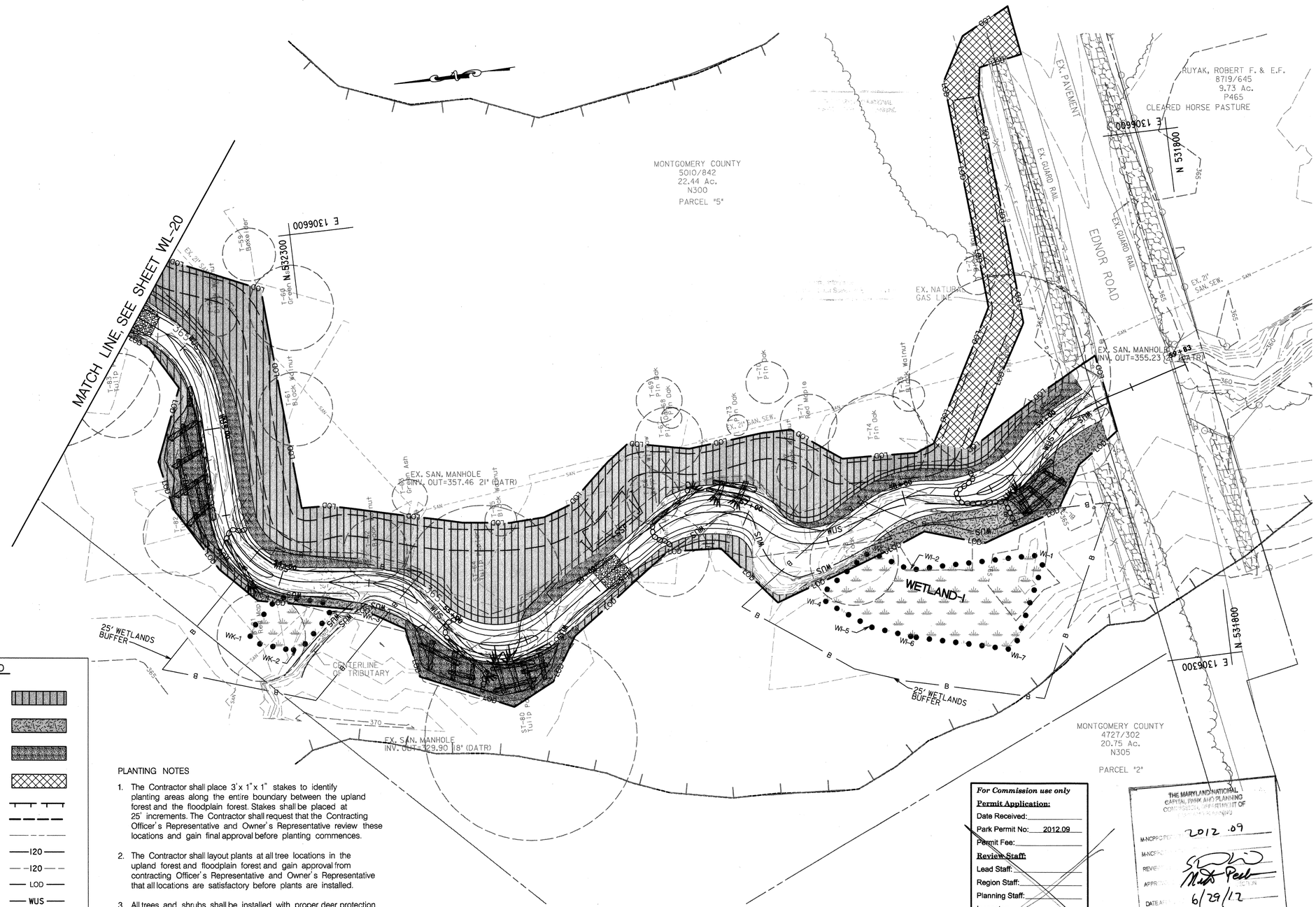
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-20
Dwg scale: 1"=30'

WOODLAWN PLANTING PLAN & PLANTING DETAILS

Sheet Number:
63 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 02:39 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-W002_rwlor.dgn



LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- NATIVE PERMANENT SEED
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 63 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 65 for planting schedules.

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARKS

M-NCPPC PROJ: 2012.09

M-NCPPC REVIEW

APPROVAL

DATE APPROVED: 6/29/12

M-NCPPC

THIS IS YOUR PERMIT TO BEGIN CONSTRUCTION

This approval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3992

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: WL-21
Dwg scale: 1"=30'

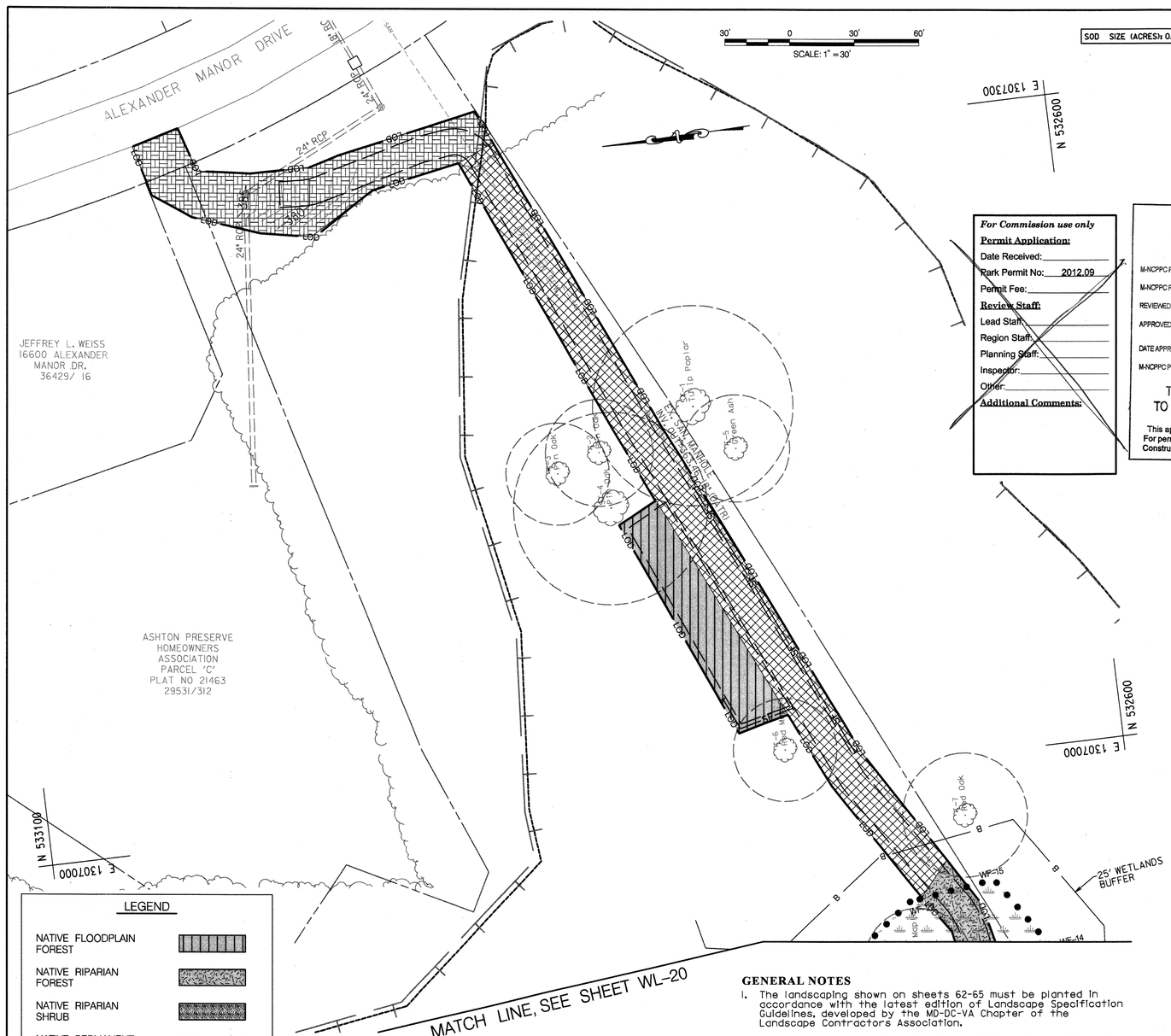
WOODLAWN PLANTING PLAN

Sheet Number:

64 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 02:41 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-W003_nwbr.dgn



SOD SIZE (ACRES): 0.93	SIZE (SF): 4,070

For Commission use only

Permit Application:

Date Received:

Park Permit No: 2012.09

Permit Fee:

Review Staff:

Lead Staff:

Region Staff:

Planning Staff:

Inspector:

Other:

Additional Comments:

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION, DEPARTMENT OF PARK AND PLANNING

M-NCPPC PERMIT NO. 2012.09

M-NCPPC PARK FACILITY CODE

REVIEWED BY

APPROVED BY
CHIEF, CONSTRUCTION SECTION

DATE APPROVED 6/29/12

M-NCPPC PERMIT SHEET # ___ OF ___

THIS IS NOT A PERMIT TO BEGIN CONSTRUCTION

This appoval is for technical review only. For permit information, contact Jay Childs, Construction Supervisor at (301) 495-2574

LEGEND

- NATIVE FLOODPLAIN FOREST
- NATIVE RIPARIAN FOREST
- NATIVE RIPARIAN SHRUB
- NATIVE PERMANENT SEED
- SOD
- 100 YEAR FLOODPLAIN
- STUDY AREA
- PROPERTY BOUNDARY
- PROPOSED CONTOUR — 120 —
- EXISTING CONTOUR — 120 —
- LIMIT OF DISTURBANCE — LOD —
- WATERS OF THE US — WUS —
- WETLAND BUFFER — B —
- WETLANDS
- PROPOSED TREE LINE
- EXISTING TREE LINE

GENERAL NOTES

1. The landscaping shown on sheets 62-65 must be planted in accordance with the latest edition of Landscape Specification Guidelines, developed by the MD-DC-VA Chapter of the Landscape Contractors Association.
2. All plants must meet the standards of the latest edition of American Standard for Nursery Stock sponsored by the Association of American Nurserymen.
3. Plant type substitutions are permitted with verbal or written approval from the Planning and Code Administration.
4. All trees and shrubs are to be located a minimum distance of 5 feet from all utility boxes and utility lines, 5 feet from a storm drain inlet or manhole, 10 feet from a fire hydrant, 15 feet from public street lights, 5 feet from driveway aprons, 20 feet from any traffic control sign and at least 30 feet from any intersection.
5. Shrubs to be planted in groups of 7-10 plants.
6. Soil conditions must be tested, verified and adjusted by the landscape contractor to ensure that appropriate soil composition and PH levels are suitable for plant materials specified for that specific location.
7. Any planting within a forest retention area, as designated on the forest conservation plan and shown on this plan, must be carried out in such a way as to avoid any adverse impact to the roots of existing trees.
8. All plant material will be reinspected for survival by the Planning and Code Administration one year following installation. A 10 percent maintenance bond will be retained during this time period.
9. Plant installation shall include a 2 year maintenance period.

PLANTING NOTES

1. The Contractor shall place 3'x 1"x 1" stakes to identify planting areas along the entire boundary between the upland forest and the floodplain forest. Stakes shall be placed at 25' increments. The Contractor shall request that the Contracting Officer's Representative and Owner's Representative review these locations and gain final approval before planting commences.
2. The Contractor shall layout plants at all tree locations in the upland forest and floodplain forest and gain approval from contracting Officer's Representative and Owner's Representative that all locations are satisfactory before plants are installed.
3. All trees and shrubs shall be installed with proper deer protection shelters as per plan sheet 63 and specifications.
4. All streambank areas between baseflow elevation and designated planting areas shall be seeded in Native Permanent Streambank Seed.
5. See sheet 65 for planting schedules.

NATIVE FLOODPLAIN FOREST

Size (acres): 0.98

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
15	200			**TREES**					
		20	39	*Acer rubrum*	Red Maple	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	30	*Liriodendron tulipifera*	Tulip Poplar	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		10	20	*Nyssa sylvatica*	Black Gum	FAC	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	39	*Platanus occidentalis*	American Sycamore	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		15	29	*Quercus palustris*	Pin Oak	FACW	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		20	39	*Quercus rubra*	Northern Red Oak	FACU	1 - 1 1/2" cal.	B&B	Naturalized @ 15' OC
		100.0	**196**	**=total**					
10	300			**SHRUBS**					
		25	73	*Cornus amomum*	Silky Dogwood	FACW	18-24"	Cont.	Clustered @ 7' OC
		25	74	*Lindera benzoin*	Spicebush	FACW	18-24"	Cont.	Clustered @ 7' OC
		30	88	*Viburnum acerifolium*	Mapleleaf viburnum	UPL	18-24"	Cont.	Clustered @ 7' OC
		20	59	*Viburnum dentatum*	Southern Arrowwood	FAC	18-24"	Cont.	Clustered @ 7' OC
		100.0	**294**	**=total**					
NA	40			**NATIVE PERMANENT SEED**					
		30	11.8	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		15	5.8	*Elymus canadensis*	Canada Wild Rye	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	7.8	*Elymus riparius*	River Bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	9.9	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	3.9	*Tridens flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**39.2**	**=total**					

NATIVE RIPARIAN FOREST

Size (acres): 0.38

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
15	200			**TREES**					
		20	15	*Acer rubrum*	Red Maple	FAC	1 - 1 1/2" cal.	Cont.	Naturalized @ 15' OC
		20	15	*Nyssa sylvatica*	Black Gum	FAC	1 - 1 1/2" cal.	Cont.	Naturalized @ 15' OC
		30	23	*Platanus occidentalis*	American Sycamore	FACW	1 - 1 1/2" cal.	Cont.	Naturalized @ 15' OC
		30	23	*Quercus palustris*	Pin Oak	FACW	1 - 1 1/2" cal.	Cont.	Naturalized @ 15' OC
		100.0	**76**	**=total**					
10	300			**SHRUBS**					
		20	23	*Cornus amomum*	Silky Dogwood	FACW	18-24"	Cont.	Clustered @ 7' OC
		30	34	*Lindera benzoin*	Spicebush	FACW	18-24"	Cont.	Clustered @ 7' OC
		30	34	*Viburnum dentatum*	Arrowwood	FAC	18-24"	Cont.	Clustered @ 7' OC
		20	23	*Viburnum prunifolium*	Blackhaw	FACU	18-24"	Cont.	Clustered @ 7' OC
		100.0	**114**	**=total**					
NA	40		lbs.	**NATIVE SEED**					
		20	3.0	*Carex vulpinoidea*	Fox Sedge	OBL	SEED	NA	LB. of P.L.S. 76%
		20	3.0	*Discanthelium clandestinum*	Deertongue	FAC	SEED	NA	LB. of P.L.S. 76%
		25	3.8	*Elymus riparius*	River Bank Wild Rye	FACW	SEED	NA	LB. of P.L.S. 76%
		30	4.6	*Elymus virginicus*	Virginia Wild Rye	FACW	SEED	NA	LB. of P.L.S. 76%
		5	0.8	*Leersia oryzoides*	Ricecut Grass	OBL	SEED	NA	LB. of P.L.S. 76%
		100.0	**15.2**	**=total**					

NATIVE RIPARIAN SHRUB

Size (acres): 0.17

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
	400								
		33	22	*Clethra alnifolia*	Sweet Pepperbush	FAC	18-24" ht.	Cont.	Clustered @ 6' OC
		33	23	*Cornus amomum*	Silky Dogwood	FACW	18-24" ht.	Cont.	Clustered @ 8' OC
		34	23	*Ilex verticillata*	Winterberry	FACW	18-24" ht.	Cont.	Clustered @ 8' OC
		100.0	**68**	**=total**					
NA	40			**NATIVE SEED**					
		15	1.0	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		30	2.0	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	1.3	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	1.8	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	0.7	*Tridens Flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**6.8**	**=total**					

NATIVE PERMANENT SEED

Size (acres): 0.30

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
NA	40			**NATIVE PERMANENT SEED**					
		30	3.6	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		15	1.8	*Elymus canadensis*	Canada Wild Rye	FAC	Seed	NA	Lb. of P.L.S. 76%
		20	2.4	*Elymus riparius*	River Bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		25	3.0	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		10	1.2	*Tridens flavus*	Purple Top	FACU	Seed	NA	Lb. of P.L.S. 76%
		100.0	**12.0**	**=total**					

NATIVE PERMANENT STREAM BANK SEED

Size (acres): 0.32

Overall Minimum Spacing-feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Wetland Indicator Status	Size	TYPE	Placement
NA	40			**NATIVE PERMANENT SEED**					
		20	0.40	*Carex vulpinoidea*	Fox Sedge	OBL	Seed	NA	Lb. of P.L.S. 76%
		20	0.40	*Dicanthelium clandestinum*	Deertongue	FAC	Seed	NA	Lb. of P.L.S. 76%
		25	0.50	*Elymus riparius*	River bank Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		30	0.60	*Elymus virginicus*	Virginia Wild Rye	FACW	Seed	NA	Lb. of P.L.S. 76%
		5	0.10	*Leersia oryzoides*	Ricecut Grass	OBL	Seed	NA	Lb. of P.L.S. 76%
		100.0	**12.0**	**=total**					

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9452 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3992

RK&K
5302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: WL-22
Dwg scale: 1"=30'
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK

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

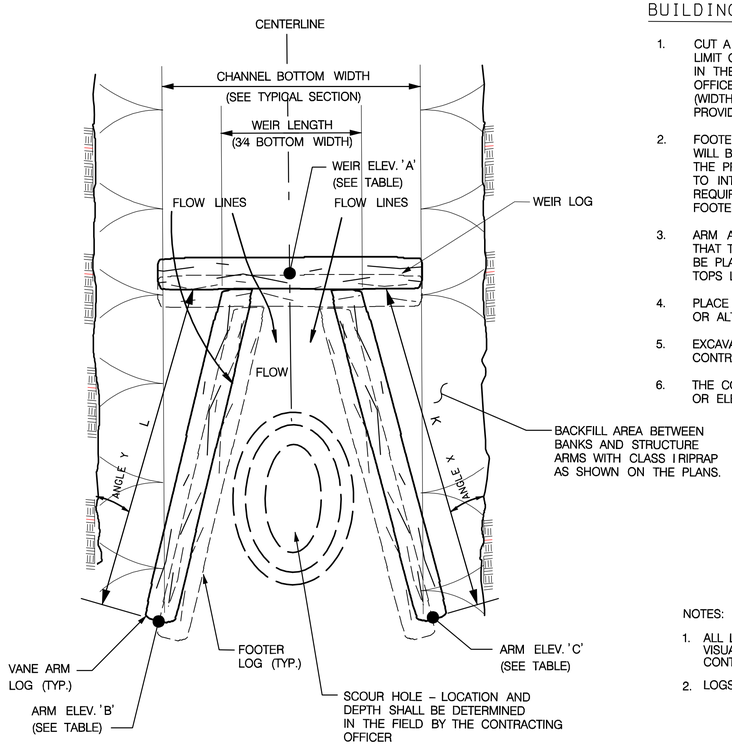
W912DR-07-D-0008
Task Order No. 19

WOODLAWN PLANTING PLAN & PLANTING SCHEDULES

Sheet Number:
65 OF 79

BY: rpalmer

PLOTTED: Wednesday, June 27, 2012 AT 03:00 PM
FILE: T:\07044_USACE\Task_6_Northwest\CADD\dgn\pLD-W004_nwbr.dgn



PLAN VIEW

BUILDING INSTRUCTIONS FOR LOG VANE STRUCTURES

1. CUT A TRENCH FOR THE WEIR AND ARM FOOTER LOGS, FROM OUTWARD LIMIT OF THE STRUCTURE, EXTENDING INTO THE STREAM AT THE ANGLE SPECIFIED IN THE LOG VANE STRUCTURE TABLE OR AS DETERMINED BY THE CONTRACTING OFFICER IN THE FIELD (REFER TO THE DETAIL). THE DIMENSIONS OF THE TRENCH (WIDTH AND DEPTH) SHALL ACCOMMODATE THE DIMENSIONS OF THE LOGS AND PROVIDE THE NECESSARY TOP ELEVATIONS AND ARM SLOPES.
2. FOOTER LOGS SHALL BE PLACED IN THE EXCAVATED TRENCH SUCH THAT THEY WILL BE SPACED ONE THIRD (1/3) THE DIAMETER OF THE LOGS DOWNSTREAM OF THE PROPOSED LOCATION OF THE TOP LOGS, WHICH WILL ALLOW THE ARM LOGS TO INTERLOCK WITH THE FOOTER LOGS. ADDITIONAL FOOTER LOGS MAY BE REQUIRED TO PROVIDE A STABLE FOUNDATION FOR THE TOP LOGS. SECURE FOOTER LOGS WITH REBAR.
3. ARM AND WEIR LOGS SHALL BE PLACED ON TOP OF THE FOOTER LOGS SUCH THAT THEY ARE SKEWED UPSTREAM OF THE FOOTER LOGS. THE LOGS SHALL BE PLACED SUCH THAT THERE ARE NO GAPS BETWEEN THE LOGS. FASTEN THE TOPS LOGS TO THE FOOTER LOGS WITH REBAR.
4. PLACE GEOTEXTILE AND BACKFILL THE STRUCTURE WITH SALVAGED BED MATERIAL OR ALTERNATIVE MATERIAL APPROVED BY THE CONTRACTING OFFICER.
5. EXCAVATE A SCOUR POOL DOWNSTREAM OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE LOCATION /ANGLE, OR ELEVATION OF THE PROPOSED STRUCTURE.

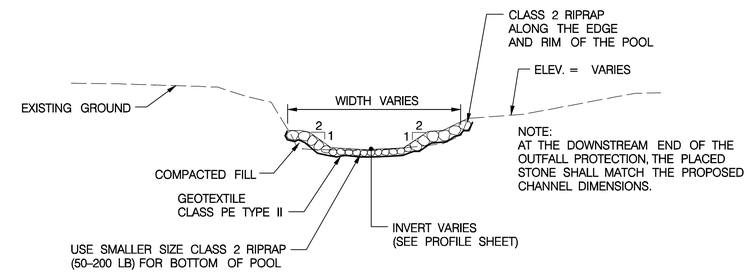
NOTES:

1. ALL LOGS ARE SUBJECT TO VISUAL INSPECTION BY THE CONTRACTING OFFICER
2. LOGS SHOWN ARE NOT TO SCALE

LOG VANE STRUCTURE TABLE

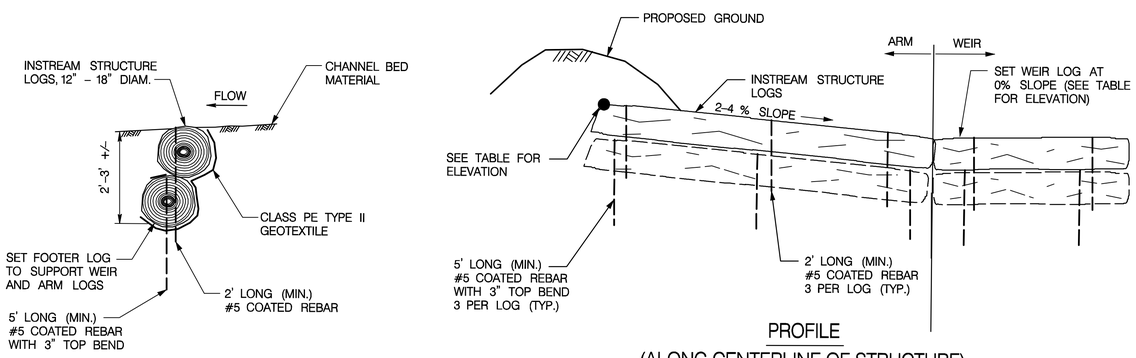
STRUCTURE TYPE/I.D.	STATION	ANGLE X	ANGLE Y	K	L	WEIR LENGTH	SCOUR HOLE DEPTH	LOG WEIR ELEV. A	ARM ELEV. B	ARM ELEV. C
LV-B1	0+74	12°	18°	28.8′	27.4′	5.0′	1.5′	342.75	344.0	343.0
LV-B2	13+36	17°	27.5°	28.9′	21.1′	5.8′	2.0′	335.75	336.7	337.0
LV-B3	15+16	20°	17.5°	28.9′	20.8′	5.5′	1.5′	334.9	335.5	336.5
LV-B4	21+01	17°	19°	28.5′	27.5′	5.5′	1.5′	330.2	331.0	330.7
LV-S1	88+13	23.5°	20.5°	19.1′	19.5′	4.2′	1.5′	285.5	286.0	286.2
LV-S2	90+22	23°	21°	19.3′	19.3′	4.0′	1.0′	283.0	284.0	284.0
LV-S3	91+50	26°	19°	19.5′	19.6′	4.0′	1.0′	281.6	282.5	282.5
LV-W1	43+19	25.5°	21°	28.5′	27.7′	5.5′	1.5′	369.6	371.2	372.1

NOTES:
1. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE ADJUSTED BY THE CONTRACTING OFFICER
2. STATIONING POINT IS UPSTREAM EDGE OF WEIR LOG USING BASELINE OF CONSTRUCTION
3. THE ARM LENGTHS SHOWN DO NOT INCLUDE THE ADDITIONAL BURIED LENGTH OF 5-FEET, EACH END.



CHANNEL SECTION THROUGH POOL

NOT TO SCALE

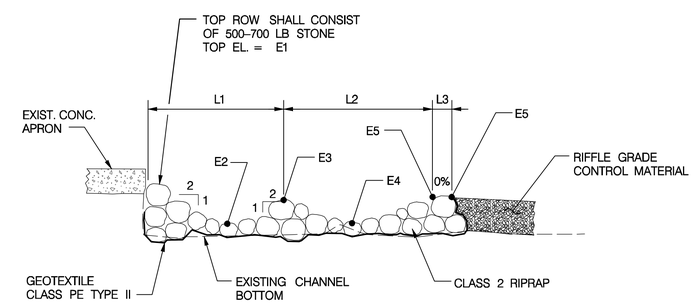


SECTION

PROFILE
(ALONG CENTERLINE OF STRUCTURE)

LOG VANE STRUCTURE

NOT TO SCALE



PROFILE SECTION

NOT TO SCALE

VELOCITY DISSIPATION POOL DETAIL

STA. 77+00 TO STA. 77+40

VELOCITY DISSIPATION POOL STRUCTURE TABLE								
REACH	L1	L2	L3	E1	E2	E3	E4	E5
SHERWOOD	25.3′	26.8′	2.0′	299.0	297.3	298.5	297.0	297.9

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 305-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: SBP
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-7
Dwg scale: AS SHOWN

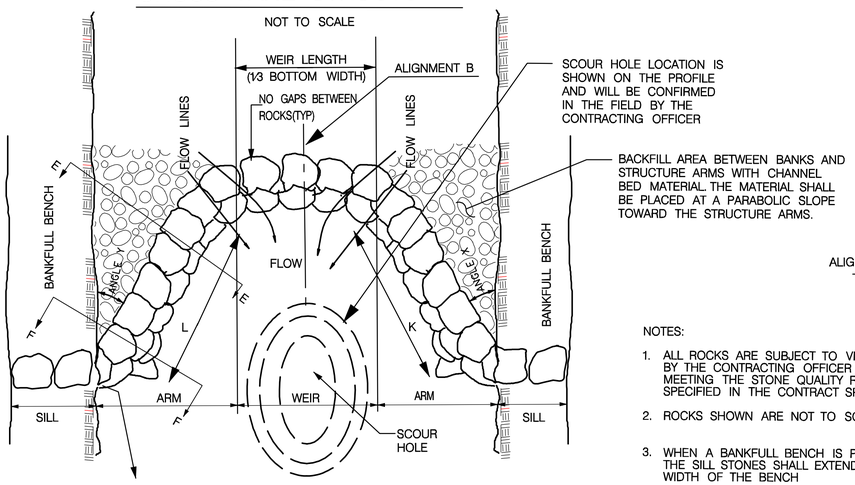
CONSTRUCTION DETAIL SHEET

Sheet Number:
66 OF 79

PLOTTED: Monday, May 14, 2012 AT 01:23 PM
FILE: \\RKKM\r2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D001_rwbr.dgn
By: rpalmer

CROSS VANE STRUCTURE

NOT TO SCALE



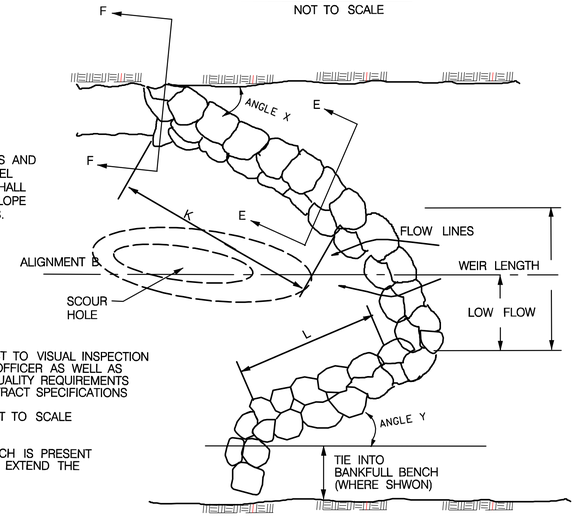
PLAN VIEW

NOTES:

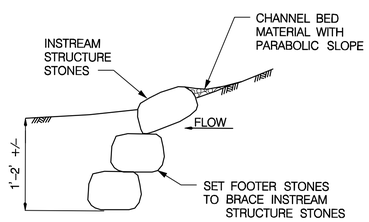
1. ALL ROCKS ARE SUBJECT TO VISUAL INSPECTION BY THE CONTRACTING OFFICER AS WELL AS MEETING THE STONE QUALITY REQUIREMENTS SPECIFIED IN THE CONTRACT SPECIFICATIONS
2. ROCKS SHOWN ARE NOT TO SCALE
3. WHEN A BANKFULL BENCH IS PRESENT THE SILL STONES SHALL EXTEND THE WIDTH OF THE BENCH

J-HOOK VANE

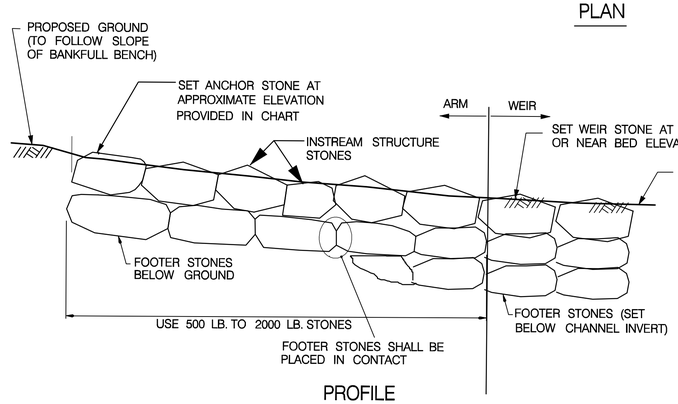
NOT TO SCALE



PLAN

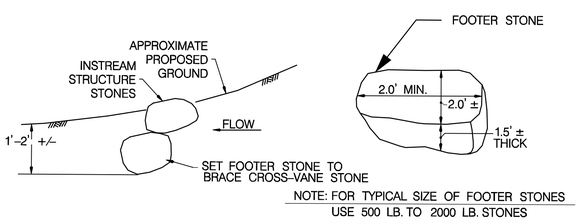


SECTION E-E



PROFILE

(ALONG CENTERLINE OF STRUCTURE)



NOTE: FOR TYPICAL SIZE OF FOOTER STONES USE 500 LB. TO 2000 LB. STONES

SECTION F-F

BUILDING INSTRUCTIONS FOR INSTREAM STONE STRUCTURES

1. CUT A TRENCH FOR ONE OF THE ARMS OF THE STRUCTURE, FROM OUTWARD LIMIT OF THE STRUCTURE, EXTENDING INTO THE STREAM AT THE ANGLE SPECIFIED IN THE INSTREAM STRUCTURE TABLE OR AS DETERMINED BY THE CONTRACTING OFFICER IN THE FIELD (REFER TO THE DETAIL). THE DIMENSIONS OF THE TRENCH (WIDTH AND DEPTH) SHALL ACCOMMODATE THE DIMENSIONS OF THE STONES. EXCAVATION OF THE TRENCH SHALL BE CONDUCTED IN CONJUNCTION WITH THE PLACEMENT OF THE FOOTER AND THE ARM STONES (STONES WHICH ARE PLACED ON TOP OF THE FOOTERS STONES IN THE ARM AND WEIR PORTION OF THE STRUCTURE.)
2. FOOTER STONES SHALL BE PLACED IN THE EXCAVATED TRENCH SUCH THAT THEY ARE SPACED ONE THIRD (1/3) THE DIAMETER OF THE STONES, WHICH WILL ALLOW THE ARM STONES TO INTERLOCK WITH THE FOOTER STONE. ADDITIONAL FOOTER STONES MAY BE REQUIRED FOR PLACEMENT OF THE ARM STONE AT THE REQUIRED ELEVATION.
3. EXCAVATION OF THE TRENCH TO ACCOMMODATE THE DIMENSIONS OF THE STONES TO ALLOW FOR THE PLACEMENT OF THE NEXT SERIES OF ARM STONES, UNTIL THE REQUIRED LENGTH OF THE STRUCTURE IS ACHIEVED.
4. ARM STONES SHALL BE PLACED ON TOP OF THE FOOTER STONES SUCH THAT THEY ARE CONTIGUOUS, STAGGERED OVER THE ADJACENT FOOTER STONES, AND PLACED SKEWED UPSTREAM OF THE FOOTER STONES. THE ARM STONES SHALL BE POSITIONED SUCH THAT THEY SLOPE FIVE (5) TO TEN (10) PERCENT TOWARDS THE STREAM CHANNEL.
5. REPEAT STEPS FIVE (3) AND (4) UNTIL THE STRUCTURE ARM EXTENDS TO THE ELEVATION SPECIFIED. UPON ACHIEVING THE REQUIRED ARM LENGTH, PROCEED WITH THE FOLLOWING INSTRUCTIONS.
6. TO CONSTRUCT THE WEIR PORTION OF THE STRUCTURE, A TRENCH PERPENDICULAR TO THE STREAM CHANNEL SHALL BE EXCAVATED FROM THE END OF THE EXISTING ARM CHANNEL WARD TOWARD THE OPPOSITE CHANNEL BANK, EXTENDING APPROXIMATELY ONE THIRD (1/3) OF THE PROPOSED CHANNEL WIDTH (REFER TO DETAIL). THE EXACT LENGTH TO BE DETERMINED BY THE CONTRACTING OFFICER IN THE FIELD. THE TRENCH SHALL BE EXCAVATED TO A DEPTH WHICH WILL ACCOMMODATE THE FOOTER STONES. CONTINUOUS EXCAVATION OF THE TRENCH PROGRESSIVELY STREAM WARD, IN THE CONJUNCTION WITH THE PLACEMENT OF THE FOOTER AND THE WEIR STONES (STONES WHICH PLACED ON TOP OF THE FOOTERS IN THE WEIR PORTION OF THE STRUCTURE).
7. WEIR STONES SHALL BE PLACED ON TOP OF THE FOOTER STONES SUCH THAT THEY ARE CONTIGUOUS, STAGGERED OVER THE FOOTER STONES, PLACED SKEWED UPSTREAM OF THE FOOTER STONES, AND PLACED FLUSH WITH THE PROPOSED STREAM CHANNEL. THE TOP OF THE WEIR STONES SHALL BE PLACED FLUSH WITH THE PROPOSED STREAM INVERT.
8. UPON COMPLETING THE WEIR PORTION OF THE STRUCTURE A J-HOOK IS COMPLETE, REPEAT STEPS ONE (1) THROUGH EIGHT (8) TO COMPLETE A CROSS-VANE STRUCTURE.
9. EXCAVATE A SCOUR POOL DOWNSTREAM OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.
10. THE CONTRACTING OFFICER'S REPRESENTATIVE RESERVES THE RIGHT TO ADJUST THE LOCATION / ANGLE, OR ELEVATION OF THE PROPOSED STRUCTURE.

INSTREAM STRUCTURE TABLE

STRUCTURE TYPE/I.D.	STATION	ANGLE X	ANGLE Y	K	L	WEIR LENGTH	SCOUR HOLE DEPTH	WEIR ROCK ELEVATION	TOP ROCK ELEV ARM K	TOP ROCK ELEV ARM L
RJ-S1	79+96	18°	44°	29.2′	6.1′	5.5′	2.0′	293.9	295.0	294.5
RJ-S2	93+66	13.5°	49.5°	30.2′	4.0′	5.5′	2.0′	279.0	280.0	279.3
CV-S1	77+66	19°	15°	21.2′	21.4′	5.5′	1.0′	297.5	298.5	298.5
CV-S2	78+20	13.5°	18°	21.2′	21.6′	5.5′	2.0′	296.4	297.3	298.0
CV-S3	95+95	21°	15°	20.0′	29.6′	5.5′	1.5′	276.8	278.0	278.3
RJ-W1	50+01	8°	26°	30.0′	4.0′	6.0′	1.5′	365.5	367.3	366.0
RJ-W2	58+29	6°	27°	23.3′	11.4′	6.7′	1.5′	360.9	363.0	362.0
CV-W1	49+24	14°	19°	24.5′	19.8′	8.4′	1.5′	365.8	367.5	367.0

NOTES:
1. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE ADJUSTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE
2. STATIONING POINT IS UPSTREAM EDGE OF WEIR STONE USING BASELINE OF CONSTRUCTION

CONSTRUCTION NOTES:

1. NOTIFY THE CONTRACTING OFFICER ONE WEEK PRIOR TO STARTING THE INSTREAM GRADING AND STONE STRUCTURES WORK. AN ACCURATE SCHEDULE SHALL BE SUBMITTED TO THE CONTRACTING OFFICER INDICATING THE DAYS TO BE DEDICATED BY THE CONTRACTOR TO PERFORM THE INSTREAM GRADING AND STONE STRUCTURE WORK. THE CONTRACTING OFFICER WILL BE AVAILABLE AT THE SITE DURING THESE DAYS.
2. SEE PROFILE FOR DEPTH OF SCOUR HOLE FOR ALL STRUCTURES.
3. FOOTER STONES SHALL EXTEND TO 2′ BELOW THE SCOUR DEPTH SPECIFIED AT THE WEIR OF THE STRUCTURE.
4. ALL DIMENSIONS SHOWN HERE ARE APPROXIMATE AND SHALL BE INSTALLED AS DIRECTED BY CONTRACTING OFFICER.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

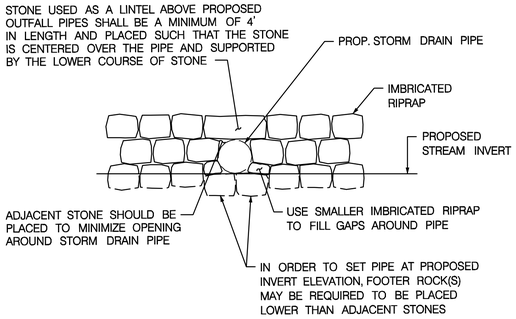
W912DR-07-D-0008
Task Order No. 19

Designed by: SBP
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-8
Dwg scale: AS SHOWN

CONSTRUCTION DETAIL SHEET

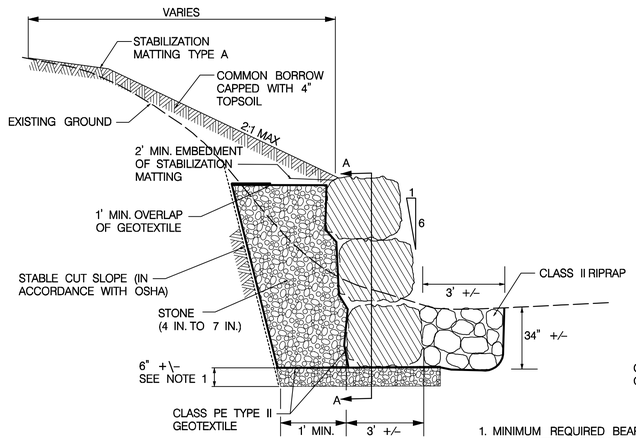
Sheet Number:
67 OF 79

PLOTTED: Tuesday, June 12, 2012 AT 03:03 PM
FILE: \\RKKM\r2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D002_nwbr.dgn
BY: rpalmer



STORM DRAIN OUTFALL THROUGH IMBRICATED WALL

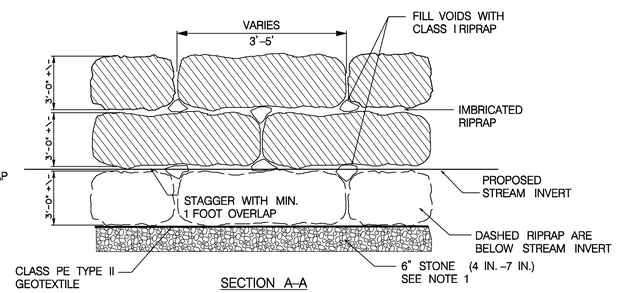
NOT TO SCALE



1. MINIMUM REQUIRED BEARING CAPACITY OF FOOTER SUBGRADE = 3000 PSF.

IMBRICATED RIPRAP WALL SECTION

NOT TO SCALE



SECTION A–A

NOT TO SCALE

IMBRICATED RIPRAP WALL DETAILS

NOT TO SCALE

LIVE FASCINES TABLE

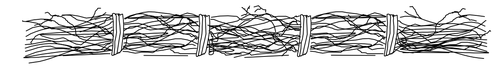
UNIT	STATION	LENGTH	ROWS
FS-B1	14+40	36.5'	4
FS-B2	15+87	36.5'	4
FS-B3	17+37	121.0'	2
FS-B4	18+60	52.5'	4
FS-B5	19+20	56.0'	4

NOTES:

1. LIVE FASCINES SHALL CONSIST OF 50% SILKY WILLOW (Salix sericea) AND 50% SILKY DOGWOOD (Cornus amomum)

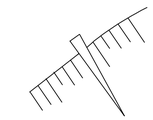
2. FS-B3 SHALL BE CONSTRUCTED ATOP LT-B1

Maryland's Guidelines To Waterway Construction
DETAIL 2.5: LIVE FASCINES

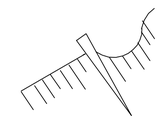


Preliminary Step – prepare fascine bundles as follows: cigar-shaped bundles of live, rootable brush and branches with butts alternating, 4 to 10-inch (10 to 25-cm) diameters, tied 12 to 18 inches (30 to 45 cm) on center

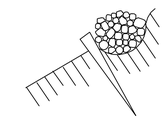
Construction Note: installation begins at the bottom of the slope and proceeds from Step 1 through Step 5
Adapted from Leiser (1983)



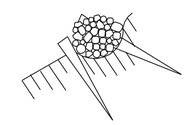
Step 1 – insert stakes on contour



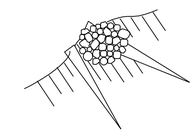
Step 2 – dig trench (1/2 bundle diameter in depth) above the stakes



Step 3 – place bundles in trench



Step 4 – add additional stakes through and below bundles



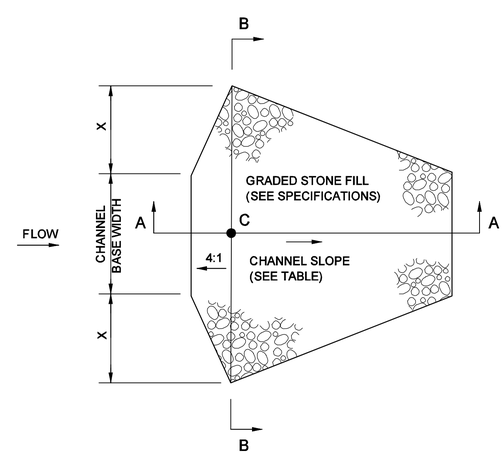
Step 5 – tamp soil into and along sides of bundle leaving the top 2 inches (5 cm) exposed to promote growth

SLOPE PROTECTION AND STABILIZATION TECHNIQUES	*PAGE 2.5 - 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

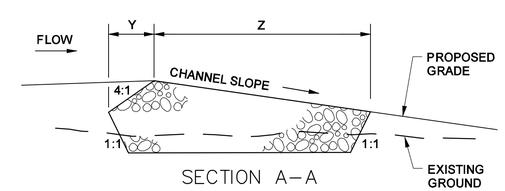
RIFFLE GRADE CONTROL STRUCTURE TABLE

STRUCTURE I.D.	STATION	CHANNEL SLOPE	DIMENSIONS (FT)		
			X	Y	Z
RGC-B1	7+77	1.0%	7.5'	4.0'	50.0'
RGC-S1	77+44	1.7%	3.8'	4.0'	18.5'
RGC-S2	77+97	2.0%	4.0'	4.3'	18.5'
RGC-S3	81+10	2.3%	4.2'	4.8'	18.0'
RGC-S4	87+54	1.0%	3.5'	2.5'	11.0'
RGC-S5	98+67	1.0%	2.7'	4.0'	15.5'
RGC-W1	47+89	1.5%	4.0'	4.0'	13.5'
RGC-W2	52+14	0.7%	4.0'	3.6'	13.5'
RGC-W3	56+04	0.9%	4.0'	4.0'	12.5'

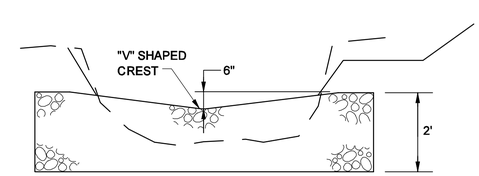
NOTE: STATION REFERENCE TAKEN AT POINT 'C'



TOP VIEW



SECTION A–A



SECTION B–B

RIFFLE GRADE CONTROL STRUCTURE

N.T.S.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: GN-9
Dwg scale: AS SHOWN

Designed by: SBP
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK

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

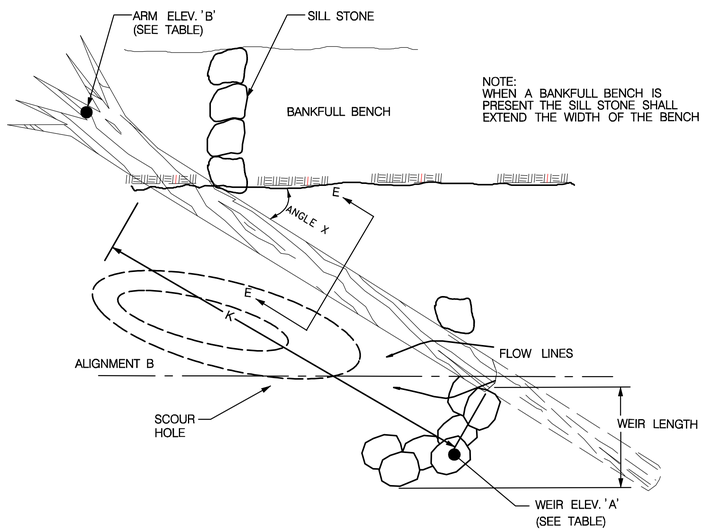
W912DR-07-D-0008
Task Order No. 19

CONSTRUCTION DETAIL SHEET

Sheet Number:
68 OF 79

PLOTTED: Monday, May 14, 2012 AT 01:28 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D003_nwbr.dgn

BY: rpalmer



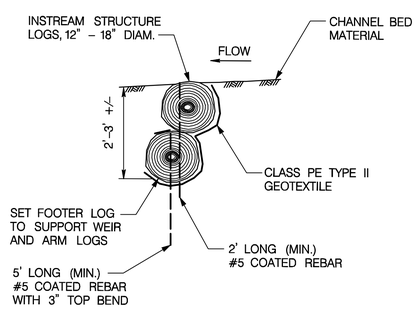
PLAN

1. CUT A TRENCH FOR THE STONE WEIR AND ARM FOOTER LOGS, FROM OUTWARD LIMIT OF THE STRUCTURE, EXTENDING INTO THE STREAM AT THE ANGLE SPECIFIED IN THE COMBO VANE STRUCTURE TABLE OR AS DETERMINED BY THE CONTRACTING OFFICER IN THE FIELD (REFER TO THE DETAIL). THE DIMENSIONS OF THE TRENCH (WIDTH AND DEPTH) SHALL ACCOMMODATE THE DIMENSIONS OF THE STONES/LOGS AND PROVIDE THE NECESSARY TOP ELEVATIONS AND ARM SLOPES.
2. FOOTER STONES/LOGS SHALL BE PLACED IN THE EXCAVATED TRENCH SUCH THAT THEY WILL BE SPACED ONE THIRD (1/3) THE DIAMETER OF THE STONES/LOGS DOWNSTREAM OF THE PROPOSED LOCATION OF THE TOP STONES/LOGS, WHICH WILL ALLOW THE ARM STONES/LOGS TO INTERLOCK WITH THE FOOTER STONES/LOGS. ADDITIONAL FOOTER STONES/LOGS MAY BE REQUIRED TO PROVIDE A STABLE FOUNDATION FOR THE TOP STONES/LOGS. SECURE FOOTER LOGS WITH REBAR.
3. ARM LOGS AND WEIR STONES SHALL BE PLACED ON TOP OF THE FOOTER STONES/LOGS SUCH THAT THEY ARE SKEWED UPSTREAM OF THE FOOTER STONES/LOGS. THE STONES/LOGS SHALL BE PLACED SUCH THAT THERE ARE NO GAPS BETWEEN THE LOGS. FASTEN THE TOPS LOGS TO THE FOOTER LOGS WITH REBAR.
4. PLACE GEOTEXTILE AND BACKFILL THE STRUCTURE WITH SALVAGED BED MATERIAL OR ALTERNATIVE MATERIAL APPROVED BY THE CONTRACTING OFFICER.
5. EXCAVATE A SCOUR POOL DOWNSTREAM OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE LOCATION /ANGLE, OR ELEVATION OF THE PROPOSED STRUCTURE.

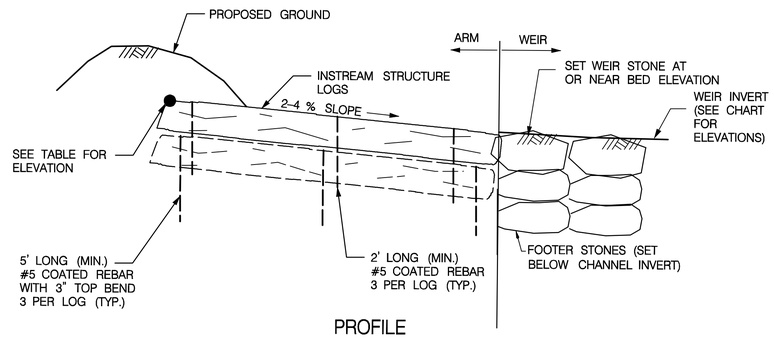
LOG J-HOOK VANE STRUCTURE TABLE

STRUCTURE TYPE/I.D.	STATION	ARM ANGLE X	ARM LENGTH K	WEIR LENGTH	SCOUR HOLE DEPTH	LOG WEIR ELEV. A	ARM ELEV. B
LJ-B1	03+07	24°	28.0′	10.5′	2.0′	341.3	343.0
LJ-B2	04+38	9°	27.1′	8.3′	2.0′′	340.2	341.5
LJ-B3	05+59	27°	24.5′	7.2′	2.6′	339.8	340.8
LJ-B4	07+22	17°	24.5′	7.5′	1.7′	338.2	339.3
LJ-B5	09+27	22°	24.5′	7.5′	1.5′	337.3	338.5
LJ-B6	10+70	16°	24.5′	8.5′	2.6′	337.0	337.8
LJ-B7	19+65	35°	24.5′	9.5′	1.5′	331.3	332.5
LJ-B8	21+92	11°	24.5′	8.5′	1.5′	329.8	331.0
LJ-S1	78+76	28°	31.0′	8.0′	1.5′	295.3	297.0
LJ-S2	82+67	26°	24.5′	5.5′	2.3′	291.1	292.5
LJ-S3	84+43	26°	40.0′	8.5′	1.0′	289.6	290.6
LJ-S4	86+99	22°	35.5′	7.5′	1.5′	286.3	288.0
LJ-S5	92+85	26°	29.5′	8.5′	2.3′	280.0	281.3
LJ-W1	47+12	24°	24.0′	9.0′	1.2′	366.7	368.5
LJ-W2	53+56	22°	28.5′	9.0′	1.0′	363.6	364.5
LJ-W3	55+00	15°	29.5′	9.2′	1.6′	362.8	364.0
LJ-W4	56+43	12°	26.5′	7.5′	1.5′	361.9	363.0

NOTES:
1. ALL DIMENSIONS ARE APPROXIMATE AND MAY BE ADJUSTED BY THE CONTRACTING OFFICER
2. STATIONING POINT IS UPSTREAM EDGE OF WEIR STONE USING BASELINE OF CONSTRUCTION



SECTION



PROFILE
(ALONG CENTERLINE OF STRUCTURE)

LOG J-HOOK VANE

NOT TO SCALE

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

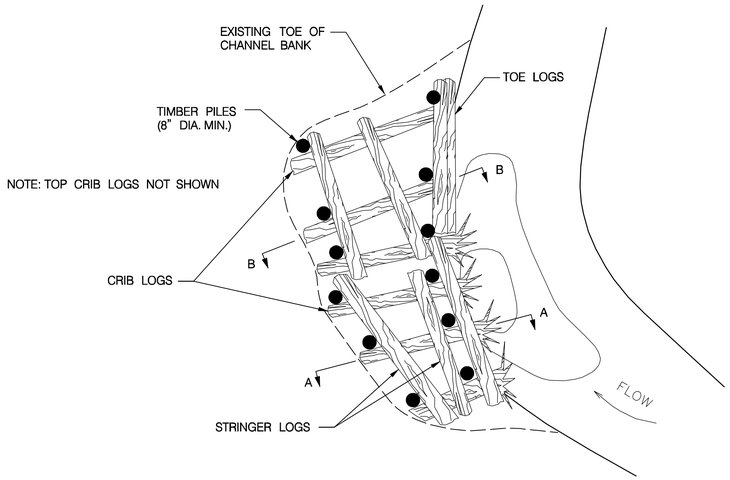
Designed by: SBP
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-10
Dwg scale: AS SHOWN

CONSTRUCTION DETAIL SHEET

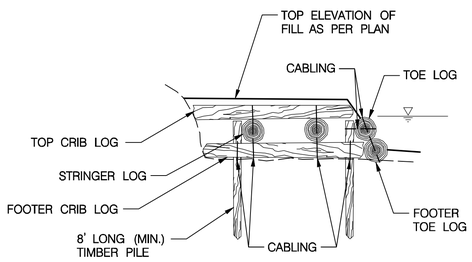
Sheet Number:
69 OF 79

PLOTTED: Monday, May 14, 2012 AT 01:30 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D004_nwbr.dgn

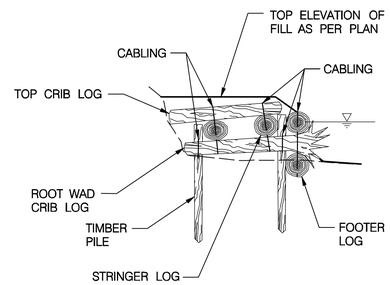
BY: palmer



PLAN VIEW



SECTION B-B
LOG TOE CRIB WALL



SECTION A-A
ROOT WAD CRIB WALL

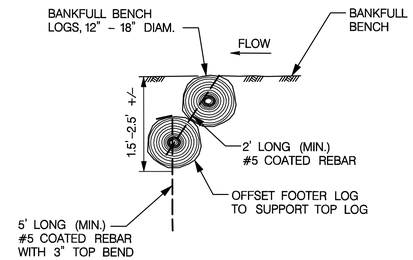
LOG MEANDER PROTECTION STRUCTURE

NOT TO SCALE

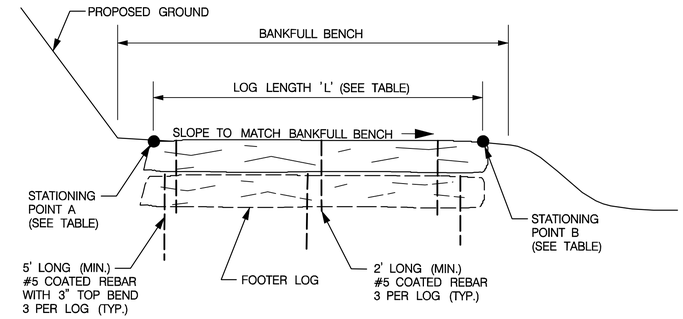
LOG MEANDER BEND PROTECTION STRUCTURE TABLE

STRUCTURE I.D.	START STATION/OFFSET	END STATION/OFFSET	TOP ELEVATION
LMP-B1	02+70, 15.6' R	2+00, 18.4' R	345.0
LMP-B2	03+28, 14.8' L	14+15, 16.2' L	344.0
LMP-B3	04+60, 21.0' R	04+84, 26.5' R	342.0
LMP-S1	79+07, 7.3' L	79+46, 7.8' L	298.0
LMP-S2	82+94, 10.3' L	83+13, 9.8' L	293.0
LMP-S3	84+77, 7.5' L	85+13, 9.0' L	290.5
LMP-S4	87+35, 7.6' L	87+73, 8.2' L	288.0
LMP-S5	93+12, 10.2' L	93+56, 7.9' L	281.5
LMP-S6	99+00, 9.2 L	99+46, 10.0 L	276.5
LMP-W1	47+48, 9.5 L	47+75, 6.3 L	368.0
LMP-W2	52+75, 9.5 R	53+30, 11.7 R	366.5
LMP-W3	54+85, 9.5 R	55+65, 11.5 R	365.0
LMP-W4	56+77, 7.0' L	55+00, 8.1 L	363.0
LMP-W5	58+53, 7.5' R	58+87, 10.3' R	363.0

NOTE: STATION AND OFFSET BASED ON BASELINE OF CONSTRUCTION



SECTION



NOTE: LOGS SHALL BE HARVESTED FROM TREES REMOVED WITHIN THE LIMITS OF DISTURBANCE AND WHICH MEETS THE SPECIES, SIZE AND LENGTH REQUIREMENTS.

PROFILE

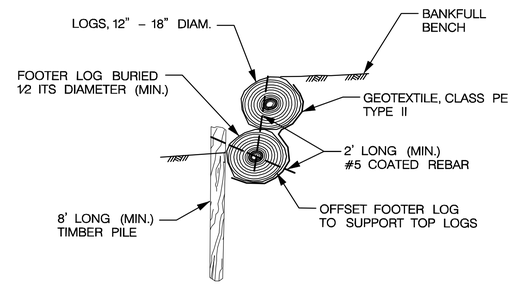
BURIED LOG STRUCTURE TABLE

STRUCTURE I.D.	POINT A STATION/OFFSET	POINT B STATION/OFFSET	LENGTH (L)
BL-W1	41+05, 10.0' L	41+14, 21.8' L	13.5'
BL-W2	41+39, 9.7' L	41+52, 17.5' L	13.5'

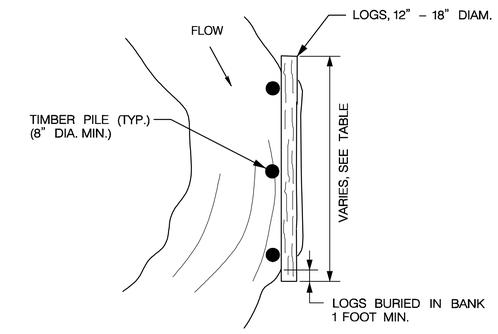
NOTE: STATION AND OFFSET BASED ON BASELINE OF CONSTRUCTION

BANKFULL BENCH BURIED LOG STRUCTURE

NOT TO SCALE



SECTION



TOP VIEW

BUILDING INSTRUCTIONS FOR LOG BANK ARMOR STRUCTURES

1. CUT A TRENCH FOR THE FOOTER LOG. THE TRENCH IS TO BE DUG ALONG THE BASE OF THE BANK TO BE PROTECTED AND SHALL BE TO A DEPTH ABLE TO BURY 1/2 THE FOOTER LOG.
2. LOG(S) SHALL BE PLACED ON TOP OF THE FOOTER LOG WITH A SLIGHT BATTER. THE FINISHED HEIGHT OF THE LOG TOE SHOULD BE THE ELEVATION OF BANKFULL DISCHARGE. WHERE PRESENT, FASCINES SHALL BE PLACED ABOVE THE TOP LOG TO THE HEIGHT REQUIRED TO REACH THE TOP ELEVATION OF THE CHANNEL BANK.
3. THE ENDS OF THE LOGS SHALL BE BURIED WITHIN THE CHANNEL BANKS SO THAT WATER CANNOT FLOW BEHIND THE LOGS.
4. THE LOGS ARE TO TO BE SECURED TOGETHER WITH REBAR. A MINIMUM OF 2 TIMBER PILES SHALL BE PLACED TO SUPPORT THE LOG TOE. THE PILES SHALL BE DRIVEN SUCH THAT THERE IS NO GAP BETWEEN THE PILES AND LOG. THE PILES SHALL BE FASTENED TO THE LOGS WITH REBAR.
5. STAPLE GEOTEXTILE FABRIC TO THE BACKSIDE OF THE LOGS. LOG STRUCTURES SHOULD THEN BE BACK-FILLED WITH COBBLE OR BOULDERS.
6. THE CONTRACTING OFFICER'S REPRESENTATIVE RESERVES THE RIGHT TO ADJUST THE LOCATION /ANGLE, OR ELEVATION OF THE PROPOSED STRUCTURE. CABLING MAY BE REQUIRED TO FURTHER STABILIZE THE LOG TOE. THE CABLING SHALL WRAP AROUND THE LOGS AND BE FASTENED TO A DUCKBILL ANCHOR DRIVEN INTO THE CHANNEL BANK.

LOG TOE PROTECTION TABLE

STRUCTURE I.D.	POINT A STATION/OFFSET	POINT B STATION/OFFSET	LENGTH (L)
LT-W1	52+71, 8.0' R	53+52, 7.5' R	78'
LT-B1	17+38, 8.8' L	18+33, 8.8' L	115'

NOTE: LT-B1 SHALL BE BUILT IN CONJUNCTION WITH FS-B3. THE COMBINED STRUCTURE SHALL CONSIST OF TWO ROWS OF LOGS WITH TWO FASCINE ROWS PLACED ATOP THE LOGS.

LOG TOE PROTECTION

NOT TO SCALE

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

Designed by: REP | Dwn by: DEA | Ckd by: SPB | Reviewed by: TMH | Submitted by: CVK | Date: 05/11/2012 | Design file no. | Drawing code: GN-11 | Dwg scale: AS SHOWN

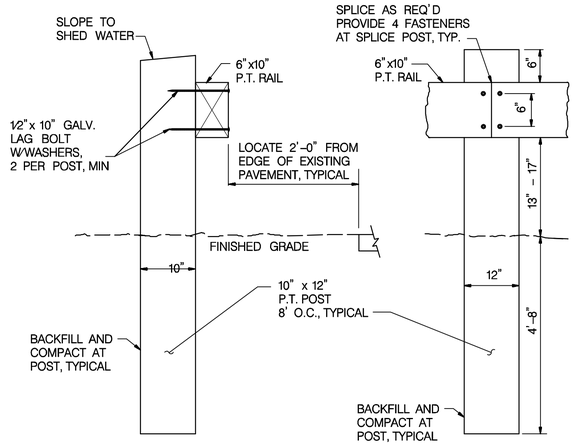
W912DR-07-D-0008
Task Order No. 19

CONSTRUCTION DETAIL SHEET

Sheet Number:
70 OF 79

BY: pgelmer

PLOTTED: Monday, May 14, 2012 AT 01:33 PM
FILE: \\RKKM\c2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D005_nwbr.dgn

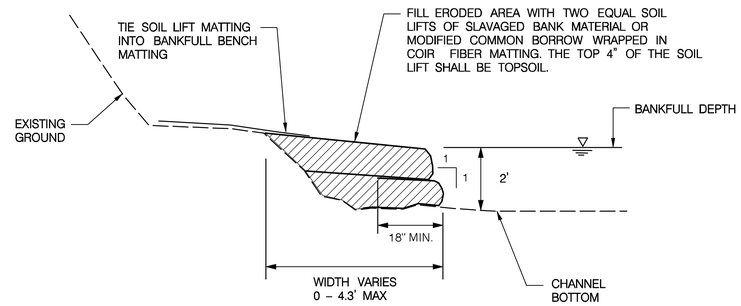


WOODEN GUARD RAIL

NOT TO SCALE

SOIL LIFT STRUCTURE TABLE
STA. 42+07, RT. TO STA. 42+63, RT

NOTES:
1. INDIVIDUAL SOIL LIFTS SHALL NOT EXCEED 2' IN HEIGHT.
2. USE A SINGLE SOIL LIFT WHERE FILL IS LESS THAN 1 FOOT DEEP.
3. PLACE SEED PRIOR TO COVERING WITH MATTING

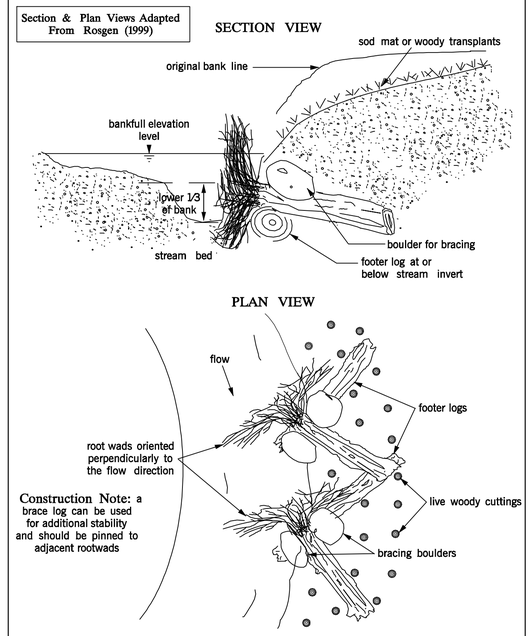


TYPICAL SOIL LIFT DETAIL

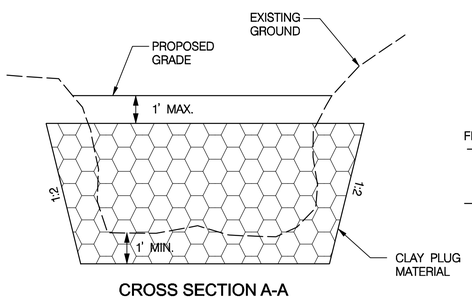
NOT TO SCALE

Maryland's Guidelines To Waterway Construction
DETAIL 2.10(a): ROOT WAD REVETMENT

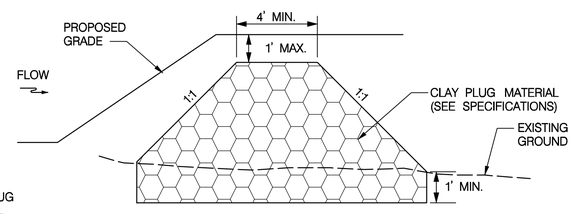
Section & Plan Views Adapted From Rosgen (1999)



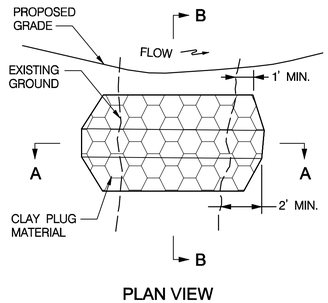
SLOPE PROTECTION AND STABILIZATION TECHNIQUES	*REVISED NOVEMBER 2000* *PAGE 2.10 – 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CROSS SECTION A-A



LONGITUDINAL SECTION B-B



PLAN VIEW

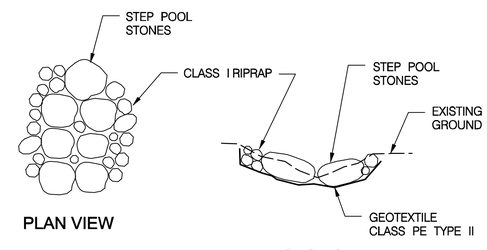
CLAY PLUG STRUCTURE TABLE
STA. 7+44, 29' RT. TO STA. 8+01, 26' RT
STA. 8+44, 31' RT. TO STA. 9+00, 24' RT
STA. 20+50, 36' LT. TO STA. 20+93, 35' LT

NOTE: STA./OFFSET FROM CENTERLINE OF CLAY PLUG

CLAY CHANNEL PLUG

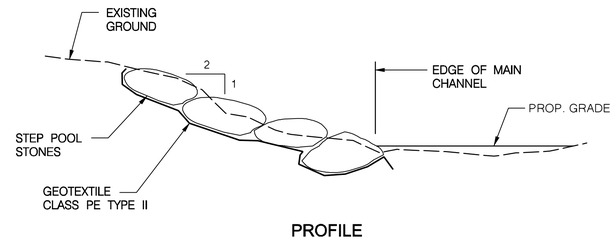
NOT TO SCALE

STEP POOL OUTFALL STRUCTURE TABLE		
LOCATION	W	L
STA. 45+74, LT.	5.3'	6.6'
STA. 89+53, RT.	6.5'	7.8'



PLAN VIEW

SECTION

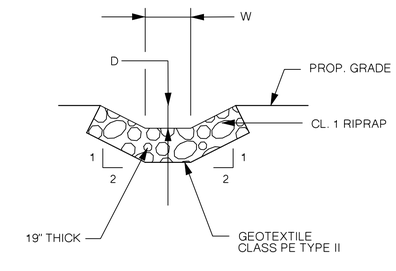


PROFILE

OUTFALL STEP POOL DETAIL

NOT TO SCALE

RIPRAP CHANNEL DIMENSION TABLE		
LOCATION	W	D
STA. 4+50, RT.	1.0'	1.0'
STA. 11+10, RT.	2.0'	1.0'
STA. 11+40, RT.	2.0'	0.5'



RIPRAP CHANNEL DETAIL

NOT TO SCALE

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Date: 05/11/2012
Design file no.
Drawing code: GN-12
Dwg scale: AS SHOWN
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

W912DR-07-D-0008
Task Order No. 19

CONSTRUCTION DETAIL SHEET

Sheet Number:
71 OF 79

BY: rpallmer –

PLOTTED: Thursday, June 28, 2012 AT 08:14 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pDD-D006_nwbr.dgn

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE ADMINISTRATION (WMA) 537-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE ADMINISTRATION, SHALL BE REQUIRED TO HOLD A PRECONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF WMA.

2. THE CONTRACTOR MUST NOTIFY WMA IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:

A. THE REQUIRED PRE-CONSTRUCTION MEETING.

B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.

C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.

D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.

F. PRIOR TO FINAL ACCEPTANCE.

3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE AGENCY INSPECTOR OR WMA INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE FROM WMA INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM WMA INSPECTOR AND AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND WMA APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION. .

4. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM WMA INSPECTOR AND AGENCY INSPECTOR.

6. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPE, PERMITTED DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD OR SEED AND ANCHORED STRAY MULCH, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN SEVEN (7) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT FOR STABILIZATION MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

7. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN SEVEN (7) CALENDAR DAYS AFTER ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.

9. THE SITE'S APPROVAL LETTER. APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF WMA AND THE AGENCY RESPONSIBLE FOR PROJECT.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF A CUT OR FILL SLOPE UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED. AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH APPROVED EROSION CONTROL MATTING, RIP-RAP, OR BY OTHER APPROVED STABILIZATION MEASURES.

12. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF WMA INSPECTOR AND AGENCY INSPECTORS, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.

15. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION THAT EXISTS OR IS UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.

16. THE WMA INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.

17. ALL TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS MUST HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.

18. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING. PERMANENT SEEDING, MULCHING SODDING, AND GROUND COVERS.

19. SEDIMENT SHALL BE REMOVED AND THE TRAP OR BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE QUARTER OF THE TOTAL DEPTH OF THE TRAP OR BASIN. TOTAL DEPTH SHALL BE MEASURED FROM THE TRAP OR BASIN BOTTOM TO THE CREST OF THE OUTLET.

20. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.

21. ALL WATER REMOVED FROM EXCAVATED AREAS (E.G. UTILITY TRENCHES) SHALL BE PASSED THROUGH AN APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE FROM THE SITE (I.E. VIA FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE).

22. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR WMA INSPECTOR:

A. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.

B. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.

C. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY. UNLESS:

D. TEMPORARILY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

23. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE IS SAFETY REQUIREMENTS. WHERE SAFETY FENCE DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES. THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AND AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

24. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY WMA AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES: OTHERWISE APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

25. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE. ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.

26. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

27. SITE INFORMATION:
A. TOTAL AREA OF FACILITY (BASE, CAMPUS, PARK, ETC.) - 53.3 ACRES
B. TOTAL AREA OF PROJECT SITE - 53.3 ACRES
C. AREA DISTURBED - 11.48 ACRES
D. AREA TO BE ROOFED OR PAVED - 0.0 ACRES
E. TOTAL CUT - 12,343 CUBIC YARDS
F. TOTAL FILL - 5,094 CUBIC YARDS
G. OFF-SITE WASTE/BORROW AREA LOCATION --TO BE DETERMINED

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND FOURTEEN (14) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNER'S / DEVELOPER'S CERTIFICATION:

"I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, AND OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

Pamela Judkins (signature) — OWNER/DEVELOPER SIGNATURE
6/21/12 — DATE

Pamela Judkins Project Engineer — PRINTED NAME AND TITLE

29190 — CARD NO.

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY.

6/6/12 — DATE
Seyed A. Saadat (signature) — DESIGNER'S SIGNATURE

MD. REGISTRATION NO. 16493
P.E., R.L.S., OR R.A. (CIRCLE ONE)

SEYED A. SAADAT — PRINTED NAME

"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. 16493, EXPIRATION DATE: 5/13/2013"

SUPPLEMENTAL EROSION AND SEDIMENT CONTROL NOTES

1. STAGING AND STOCKPILING:
THE CONTRACTOR SHALL ESTABLISH STAGING AND STOCKPILE AREAS AT LOCATIONS APPROVED BY THE CONTRACTING OFFICER'S REPRESENTATIVE AND WMA INSPECTOR. THESE AREAS SHALL BE ESTABLISHED SUCH THAT WETLAND, WETLAND BUFFERS, FORESTED AREAS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS ARE NOT IMPACTED. EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILT FENCE SHALL BE INSTALLED DOWNGRADE OF THE STAGING AND STOCKPILING AREAS AS DIRECTED BY THE CONTRACTING OFFICER'S REPRESENTATIVE AND WITH THE APPROVAL OF THE MDE INSPECTOR.

2. STABILIZED CONSTRUCTION ENTRANCE LOCATIONS:
THE LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES ON THE PLANS ARE RECOMMENDED AND HAVE BEEN APPROVED BY MDE. THE CONTRACTOR MAY DETERMINE OTHER LOCATIONS FOR INGRESS/EGRESS TO THE CONSTRUCTION SITE WITH THE APPROVAL OF THE CONTRACTING OFFICER'S REPRESENTATIVE AND WMA INSPECTOR.

3. STORM DRAIN AND DITCH CONSTRUCTION:
STORM DRAIN SYSTEMS AND PERMANENT DITCHES/SWALES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE CONTRACTING OFFICER'S REPRESENTATIVE.

4. COORDINATION WITH MAINTENANCE OF TRAFFIC PLAN:
THE SEDIMENT AND EROSION CONTROL SEQUENCES SHALL BE COORDINATED WITH THE MAINTENANCE OF TRAFFIC PLANS TO MAINTAIN CONTINUITY OF THE PRACTICES DURING ALL PHASES OF THE PROPOSED WORK. CONCURRENT CONSTRUCTION WITHIN THE VARIOUS PHASES MAY BE UNDERTAKEN IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC PLAN. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING CONCURRENT WORK. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF THEIR INTENDED FUNCTION. PERMANENT STABILIZATION OF CONTRIBUTORY DRAINAGE AREA AND PRIOR APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. SEDIMENT AND EROSION CONTROL MEASURES NECESSARY FOR SUBSEQUENT PHASE OF THE WORK SHALL BE MAINTAINED AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.

5. DEWATERING:
ANY EFFLUENT FROM DEWATERING FOUNDATIONS, TRENCHES AND OTHER DISTURBED AREAS MUST BE TREATED BY AN APPROVED SEDIMENT CONTROL DEVICE BEFORE BEING DISCHARGED.

6. SEQUENCE OF CONSTRUCTION:
THE SEQUENCE OF CONSTRUCTION INCLUDED IN THESE PLANS IS APPROVED BY THE MDE. THIS SEQUENCE OF CONSTRUCTION MAY BE MODIFIED BY THE CONTRACTOR. HOWEVER, THE CONTRACTOR MUST OBTAIN MDE AND THE CONTRACTING OFFICER'S APPROVAL FOR ANY MODIFICATIONS PRIOR TO IMPLEMENTING A REVISED SEQUENCE OF CONSTRUCTION IN THE FIELD.

7. END OF DAY STABILIZATION:
ONLY THAT AMOUNT OF WORK SHALL BE COMPLETED THAT CAN BE STABILIZED BY THE END OF THE DAY. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MINIMIZE UNNECESSARY DISTURBANCE. USE TEMPORARY STABILIZATION MEASURES, AS NEEDED, TO ENSURE END OF THE DAY STABILIZATION. TEMPORARY MEASURES TO PREVENT SEDIMENT-LADEN RUNOFF FROM ENTERING THE CHANNEL MAY INCLUDE, BUT NOT LIMITED TO, STRAW MULCH, SILT FENCE, IMPERVIOUS SHEETING, ETC., AND SHALL BE APPROVED BY THE CONTRACTING OFFICER'S REPRESENTATIVE AND MDE INSPECTOR. IF TEMPORARY STABILIZATION MEASURES ARE WASHED AWAY OR OTHERWISE RENDERED INEFFECTIVE, THEY ARE TO BE REPLACED OR REPAIRED THE NEXT DAY.

8. STABILIZATION DURING CHANNEL FORMATION:
THE CONSTRUCTION OF THE IN-STREAM STRUCTURES AND BANKFULL BENCH IS AN INTEGRAL PART OF STABILIZING THE CHANNEL DURING EXCAVATION AND FILL OPERATIONS WITHIN THE CHANNEL. ACCORDINGLY, THE IN-STREAM STRUCTURES AND PLACEMENT OF BENCH MATERIAL SHOULD OCCUR AT THE SAME TIME AS CHANNEL EXCAVATION.

SEQUENCE OF CONSTRUCTION

FOR SEQUENCE OF CONTRUCTION SEE SITE SPECIFIC SEQUENCE ON COVER SHEET DRAWINGS

ALL CONTACT AND APPROVALS REQUIRED BY THESE EROSION AND SEDIMENT CONTROL NOTES SHALL ALSO INCLUDE COORDINATION WITH THE CONTRACTING OFFICER'S REPRESENTATIVE

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP | Dwn by: DEA | Ckd by: SPB | Reviewed by: TMH | Submitted by: CVK
Date: 05/11/2012 | Design file | Drawing code: GN-13 | Dwg scale: N.T.S.

EROSION & SEDIMENT CONTROL GENERAL NOTES

PLOTTED: Tuesday, May 15, 2012 AT 03:21 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-N001_nwbr.dgn

BY: rpalmer -

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

(1994 MARYLAND DEPARTMENT OF THE ENVIRONMENT)

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. SITE PREPARATION

I. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.

II. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.

III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF THE DISTRICT OF COLUMBIA OR A CERTIFIED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

II. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTEE OF THE PRODUCER.

III. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 98 - 100% WILL PASS THROUGH A #20 MESH SIEVE.

IV. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION

I. TEMPORARY SEEDING

a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" 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 SHOULD NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION 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 - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

II. PERMANENT SEEDING

a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:

1. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.

2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).

3. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE

4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.

5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 OF THE 1994 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STANDARD AND SPECIFICATION FOR TOPSOIL.

b. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 - 5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE. SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.

c. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.

d. MIX SOIL AMENDMENTS INTO THE TOP 3- 5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS

I. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.

II. INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON 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 75-80 F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHOD OF SEEDING

I. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.:

a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS): 200 LBS/AC; K20 (POTASSIUM): 200 LBS/AC.

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 ANYONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

II. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING TABLES ON SHEET 12. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

III. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)

I. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED BY THE MARYLAND SEED LAW.

II. WOOD CELLULOSE FIBER MULCH (WCFM)

a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
b. WCFM SHALL 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.

c. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

d. WCFM MATERIALS SHALL 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 SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

e. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

f. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

I. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

II. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.

III. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:

I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (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 THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY MANUFACTURER TO ACHOR MULCH.

IV. THE USE PLASTIC NETTING TO SECURE STRAW MULCH IS PROHIBITED.

I. INCREMENTAL STABILIZATION - CUT SLOPES

I. ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15'.

II. CONSTRUCTION SEQUENCE (REFER TO FIGURE 4 BELOW):

a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY RUNOFF FROM THE EXCAVATION.

b. PERFORM PHASE I EXCAVATION, DRESS, AND STABILIZE.

c. PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE I AREAS AS NECESSARY.

d. PERFORM FINAL PHASE EXCAVATION, DRESS, 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.

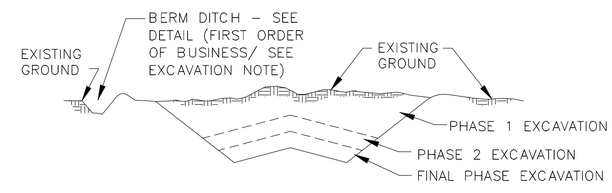


FIGURE 4 INCREMENTAL STABILIZATION – CUT

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3951
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W9120R-07-D-0008
Task Order No. 19

Designed by: REP | Dwn by: DEA | Ckd by: SPB | Reviewed by: TMH | Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-14
Dwg scale: N.T.S.

EROSION & SEDIMENT CONTROL GENERAL NOTES

Sheet Number:
73 OF 79

BY: rpalmer -
PLOTTED: Monday, May 14, 2012 AT 01:39 PM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-N002_nwbr.dgn

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION (CONTINUED)

J. INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES

i. EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS.

ii. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15'. OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.

iii. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER TO A SEDIMENT TRAPPING DEVICE.

iv. CONSTRUCTION SEQUENCE: REFER TO FIGURE 5 (BELOW).

a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5. UNLESS OTHER METHODS ON THE PLANS ADDRESS THIS AREA.

b. PLACE PHASE I EMBANKMENT, DRESS AND STABILIZE.

c. PLACE PHASE 2 EMBANKMENT, DRESS AND STABILIZE.

d. PLACE FINAL PHASE EMBANKMENT, DRESS AND STABILIZE. OVERSEED PREVIOUSLY SEEDED 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.

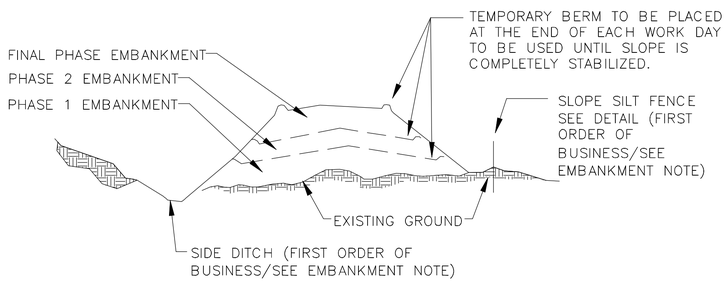


FIGURE 5 INCREMENTAL STABILIZATION – FILL

SECTION II - TEMPORARY SEEDING

VEGETATION - ANNUAL GRASS OR GRAIN USED TO PROVIDE COVER ON DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SEEDING IS REQUIRED.

A. SEED MIXTURES - TEMPORARY SEEDING

i. THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 5) AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY ON SHEET 75, ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS.

ii. FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THE TABLE ON SHEET 75 SHALL BE FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE TESTING AGENCY SHALL BE WRITTEN IN. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING. (SEE TEMPORARY SEEDING SUMMARY ON SHEET 75)

SECTION III: PERMANENT SEEDING

SEEDING GRASS AND LEGUMES TO ESTABLISH GROUND COVER FOR A MINIMUM PERIOD OF ONE YEAR ON DISTURBED AREAS GENERALLY RECEIVING LOW MAINTENANCE.

A. SEED MIXTURES - PERMANENT SEEDING

i. APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 6 OF 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL) AND ENTER THEM IN THE PERMANENT SEEDING SUMMARY ON SHEET 12, ALONG WITH APPLICATION RATES AND SEEDING DATES. SEEDING DEPTHS CAN BE ESTIMATED USING TABLES ON SHEET 12. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAMBANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-SCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342-CRITICAL AREA PLANTING. FOR SPECIAL LAWN MAINTENANCE AREAS, SEE SECTIONS IV SOD AND V TURFGRASS.

ii. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE WRITTEN IN.

iii. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREAFORM FERTILIZER (46-0-0) AT 3½LBS/ 1000 SQ. FT. (150 LBS/AC), IN ADDITION TO THE ABOVE SOIL AMENDMENTS SHOWN IN THE TABLE BELOW, TO BE PERFORMED AT THE TIME OF SEEDING. (SEE PERMANENT SEEDING SUMMARY ON SHEET 12)

SECTION IV - SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

A. GENERAL SPECIFICATIONS

i. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

ii. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾". PLUS OR MINUS ¼", AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

iii. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

iv. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

v. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B. SOD INSTALLATION

i. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.

ii. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS, WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

iii. WHEREVER POSSIBLE, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND TO ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

iv. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

C. SOD MAINTENANCE

i. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

ii. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

iii. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

SECTION V - TURFGRASS ESTABLISHMENT

AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. AREAS TO RECEIVE SEED SHALL BE TILLED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVELED AND RAKED TO PREPARE A PROPER SEEDBED. STONES AND DEBRIS OVER 1½INCHES IN DIAMETER SHALL BE REMOVED. THE RESULTING SEEDBED SHALL BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

NOTE: CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY.

A. TURFGRASS MIXTURES

i. KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. A MINIMUM OF THREE BLUEGRASS CULTIVARS SHOULD BE CHOSEN RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

ii. 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/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10% TO 35% OF THE MIXTURE BY WEIGHT.

iii. TALL FESCUE/KENTUCKY BLUEGRASS - FULL SUN MIXTURE - FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95-100%, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0- 5%. SEEDING RATE: 5 TO 8 LB/L000 SF. ONE OR MORE CULTIVARS MAY BE BLENDED.

iv. 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 30-40% AND CERTIFIED FINE FESCUE AND 60-70%. SEEDING RATE: 1 1/2- 3 LBS/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

NOTE: TURFGRASS VARIETIES SHOULD BE SELECTED FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MIMEO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

B. IDEAL TIMES OF SEEDING

WESTERN MD: MARCH 15-JUNE 1, AUGUST 1 - OCTOBER 15
(HARDINESS ZONES - 5b, 6a)
CENTRAL MD: MARCH 1 - MAY 15, AUGUST 15-OCTOBER 15
(HARDINESS ZONE -6b)
SOUTHERN MD, EASTERN SHORE: MARCH 1 - MAY 15, AUGUST 15 -OCTOBER 15
(HARDINESS ZONES - 7a, 7b)

C. IRRIGATION

IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2"-1" 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.

D. REPAIRS AND MAINTENANCE

INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

i. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED.

ii. IF THE STAND PROVIDES LESS THAN 40% GROUND COVERAGE, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER, SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS.

iii. IF THE STAND PROVIDES BETWEEN 40% AND 94% GROUND COVERAGE, OVERSEEDING AND FERTILIZING USING HALF OF THE RATES ORIGINALLY APPLIED MAY BE NECESSARY.

iv. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE 24. FOR LAWNS AND OTHER MEDIUM TO HIGH MAINTENANCE TURFGRASS AREAS, REFER TO THE UNIVERSITY OF MARYLAND PUBLICATION "LAWN CARE IN MARYLAND" BULLITIN NO. 171.

US Army Corps of Engineers
Baltimore District

AB. CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-15
Dwg scale: N.T.S.

EROSION & SEDIMENT CONTROL GENERAL NOTES

Sheet Number:
74 OF 79

BY: palmer

PLOTTED: Monday, May 14, 2012 AT 01:39 PM
FILE: \\WKNM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-N003_nwbr.dgn

SUPPLEMENTAL SYMBOLS

SANDBAG DIVERSION
ORANGE CONSTRUCTION FENCE — OCF
WATERS OF THE U.S. — WUS
WETLAND BOUNDARY
WETLAND BUFFERS — B
100-YEAR FLOODPLAIN

STANDARD SYMBOLS

SILT FENCE — SF
SUPER SILT FENCE — SSF
PORTABLE SEDIMENT TANK — PST
TEMPORARY ACCESS BRIDGE — TB
TEMPORARY ACCESS BERM — TAB

STANDARD SYMBOLS

STABILIZED CONSTRUCTION ENTRANCE — SCE
PLACED RIPRAP DITCH
LIMIT OF DISTURBANCE — LOD
EXISTING CONTOURS — 100
PROPOSED CONTOURS — 100

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION (CONTINUED)

PERMANENT SEEDING SUMMARY

SEED MIXTURE (FOR HARDINESS ZONE 6b) (FROM TABLE 25)					FERTILIZER RATE (10-20-20)		
MIX	[1]SPECIES	APPLICATION RATE (LBS/ACRE)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20
1	75% TALL FESCUE 10% CANADA BLUEGRASS 10% KENTUCKY BLUEGRASS 5% RED TOP	150	3/1 TO 5/15 8/15 TO 10/15	1"	90 LB/AC (2.0 LB/ 1000 SF)	175 LB/AC (4.0 LB/ 1000 SF)	175 LB/AC (4.0 LB/ 1000 SF)
7	83% TALL FESCUE 2% WEEPING LOVEGRASS 15% SERECIA LESPEDEZA	110 3 20	3/1 TO 11/15 5/16 TO 8/14 8/15 TO 10/15	1"			

TEMPORARY SEEDING SUMMARY

SEED MIXTURE (FOR HARDINESS ZONE 6b) (FROM TABLE 26)					FERTILIZER RATE (10-10-10)	LIME RATE
MIX	SPECIES	APPLICATION RATE (LBS/ACRE)	SEEDING DATES	SEEDING DEPTHS		
N/A	RYE PLUS FOXTAIL MILLET	150	3/1 TO 11/15	1"	600 LB/AC (15 LB/1000 SF)	2 TONS / AC (100 LB / 1000 SF)

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5. REPAIR AND MAINTAIN SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.

6. RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

7. ALL STABILIZATION IN THE NONTIDAL WETLANDS AND NONTIDAL WETLAND BUFFERS SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM), OATS (UNIOLA), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLAND AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS: CLASS IV WATERS: IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD OF MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE OF THE ACTIVITY IS TO IMPOUND WATER.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3921
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

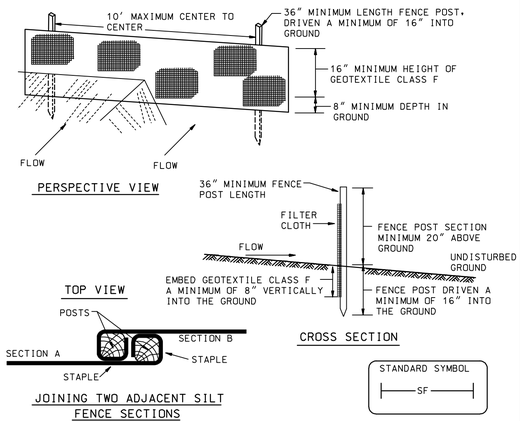
W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-16
Dwg scale: N.T.S.

EROSION & SEDIMENT CONTROL GENERAL NOTES

Sheet Number:
75 OF 79

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 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound 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:

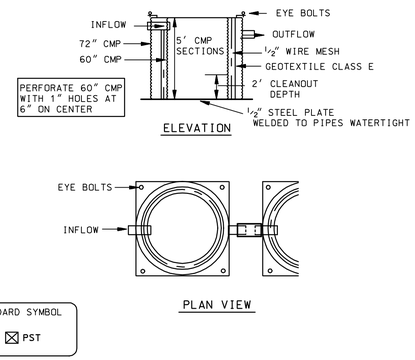
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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

DETAIL 21 – PORTABLE SEDIMENT TANK



Construction Specifications

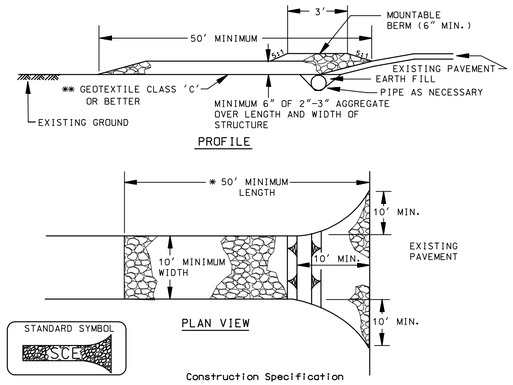
1. The following formula should be used in determining the storage volume of the sediment tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity.

2. An example of a typical sediment tank is shown above. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency.

3. Tanks may be connected in series.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D – 14 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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

SILT FENCE

Silt Fence Design Criteria

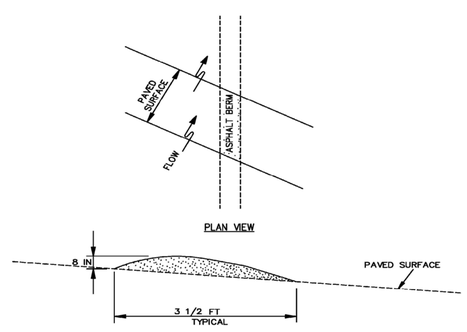
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

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

DETAIL C-5 TEMPORARY ASPHALT BERM

STANDARD SYMBOL
TAB



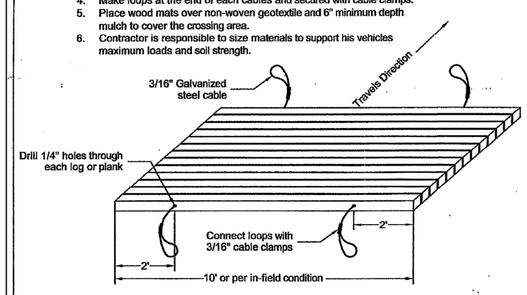
CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3½ FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
6. UPON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

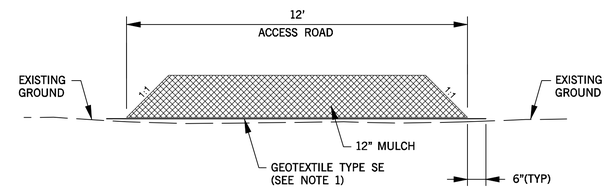
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Notes:
1. Planks to be 10' x 4" x 4" min. Logs, if used, shall be 6" min. diameter and 10' long.
2. Drill 1/4 " holes through each log or plank.
3. String logs/woodstogether with 3/4" Galvanized steel cable.
4. Make loops at the end of each cables and secured with cable clamps.
5. Place wood mats over non-woven geotextile and 6" minimum depth mulch to cover the crossing area.
6. Contractor is responsible to size materials to support his vehicles maximum loads and soil strength.



TEMPORARY WOOD MATS

n.t.s.



NOTES:

1. IN FORESTED AREAS, GEOTEXTILE SHALL NOT BE USED.
2. SEE FOREST CONSERVATION PLANS FOR AREAS WHERE TREE PROTECTION FENCE SHALL BE USED IN CONJUNCTION WITH THE ACCESS ROAD.

TYPICAL SECTION FOR TEMPORARY ACCESS ROAD

NOT TO SCALE

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 305-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

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

W912DR-07-D-0008
Task Order No. 19

Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-17
Dwg scale: N.T.S.

EROSION & SEDIMENT CONTROL DETAILS

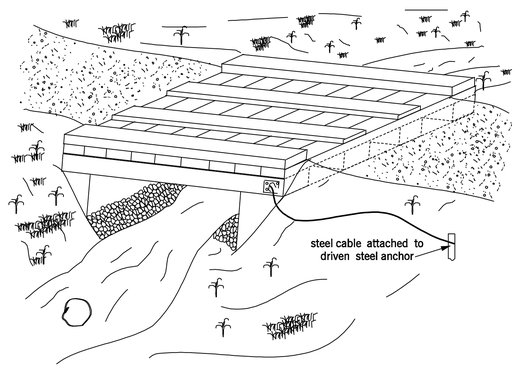
Sheet Number:
76 OF 79

BY: rpalmer –

PLOTTED: Tuesday, June 05, 2012 AT 07:38 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-D001_nwbr.dgn

Maryland's Guidelines To Waterway Construction
DETAIL 4.8: TEMPORARY ACCESS BRIDGE

SKETCH



Maryland's Guidelines To Waterway Construction
DETAIL 4.8: TEMPORARY ACCESS BRIDGE

DESCRIPTION

A temporary access bridge is a stream crossing made of wood, metal, or other materials designed to limit the amount of disturbance to the stream banks and bed.

EFFECTIVE USES & LIMITATIONS

Temporary access bridges are the preferred method of waterway crossing since they typically cause the least disturbance to the waterway bed and banks, pose the least chance for interference with fish migration, and can be quickly removed and reused.

MATERIAL SPECIFICATIONS

- Stringers: Stringers should either be logs, sawn timber, prestressed concrete beams, metal beams, or other approved materials.
- Deck Materials: Deck materials should be of sufficient strength to support the anticipated load.

CONSTRUCTION SEQUENCE

All erosion and sediment control devices, including stream diversions, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Dewatering basins should be built as needed and swales or ditches should be used to prevent surface drainage from entering the stream via the bridge crossing. (See the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.) The proposed construction, maintenance, and removal sequence is as follows:

1. Abutments should be placed parallel to, and on, stable banks such that the structure is at or above bankfull depth to prevent the entrapment of floating materials and debris.

2. Temporary access bridges should be constructed to span the entire channel. If the bankfull channel width exceeds 8 feet (2.5 meters), then a footing, pier, or other bridge support may be constructed within the waterway. No support will be permitted within the channel for waterways less than 8 feet wide. One additional bridge support will be permitted for each additional 8-foot width of the channel.

3. All decking members should be placed perpendicularly to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway.

4. Although run planks are optional, they may be necessary to properly distribute loads. One run plank should be provided for each track of the equipment wheels and should be securely fastened to the length of the span.

5. Curbs or fenders may be installed along the outer sides of the deck to provide additional safety.

6. Bridges should be securely anchored at one end using steel cable or chain to prevent the bridge from floating downstream and possibly causing an obstruction to the flow. Anchoring at only one end will prevent channel obstruction in the event that flood waters float the bridge. Acceptable anchors are large trees, boulders, or driven steel anchors. Temporary stream crossing intended for minimum corridor disturbance

7. All areas disturbed during installation should be stabilized within 7 calendar days in accordance with a revegetation plan approved by the WMA.

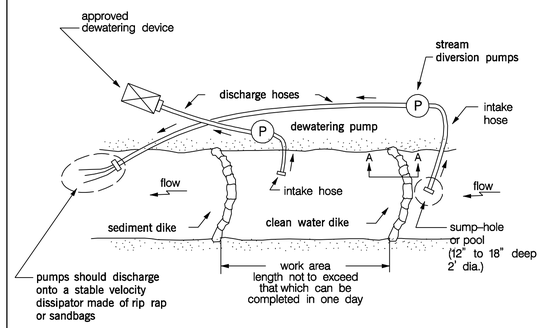
8. Periodic inspection should be performed by the user to ensure that the bridge, streambed, and stream banks are maintained and not damaged.

9. Maintenance should be performed as needed to ensure that the structure complies with all standards and specifications. This should include the removal of trapped sediment and debris which should then be disposed of and stabilized outside the floodplain.

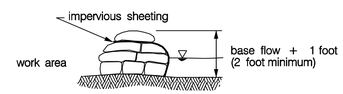
10. When the temporary bridge is no longer needed, all structures including abutments and other bridging materials should be removed within 14 calendar days. In all cases, the bridge materials should be removed within 1 year of installation. Removal of the bridge and clean-up of the area, including protection and stabilization of disturbed stream banks, should be accomplished without the use of construction equipment in the waterway.

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE

PLAN VIEW



SECTION A–A



cross section of sandbag dike

LOCATION	MIN. BARRIER HEIGHT (FT.)	2–YR DISCHARGE (CFS)
BATCHELLORS	3.0*	586
SHERWOOD	3.5	310
WOODLAWN	3.0	685

* SEE NOTES ON PLANS

Maryland's Guide to Waterway Construction
DETAIL 1.2: PUMP–AROUND PRACTICE

The work should consist of installing a temporary pump around and supporting measures to divert flow around instream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.

2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.

3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of Disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.

5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.

6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.

8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).

9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.

10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.

11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.

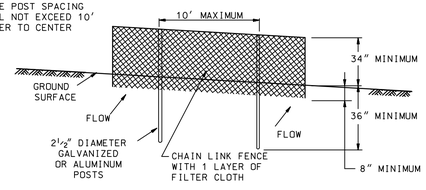
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.

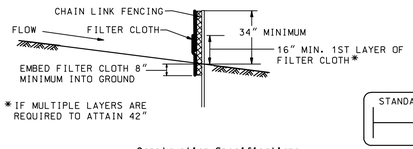
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

DETAIL 33 – SUPER SILT FENCE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER





* IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 42"

STANDARD SYMBOL
SSF

Construction Specifications

1. Fencing shall be 42" in height.

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:

Tensile Strength	50 lbs/in (min.)
Tensile Modulus	20 lbs/in (min.)
Flow Rate	0.3 gal/ft /minute (max.)
Filtering Efficiency	75% (min.),

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

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 305-3091
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

Date: 05/11/2012
Design file no.
Drawing code: GN-18
Dwg scale: N.T.S.
Designed by: REP
Dwn by: DEA
Ckd by: SPB
Reviewed by: TMH
Submitted by: CVK

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

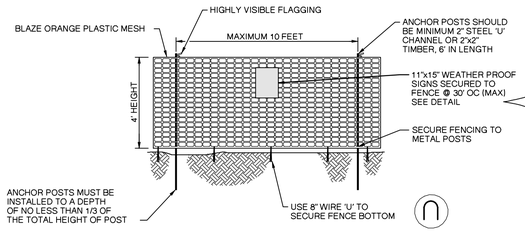
W912DR-07-D-0008
Task Order No. 19

EROSION & SEDIMENT CONTROL DETAILS

Sheet Number:
77 OF 79

BY: rpallmer –

PLOTTED: Tuesday, June 05, 2012 AT 07:40 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pES-D002_nwbr.dgn



TREE PROTECTION AREA

NO DISTURBANCE PERMITTED BEYOND THIS POINT

AREA DE PROTECCION DE ARBOLES

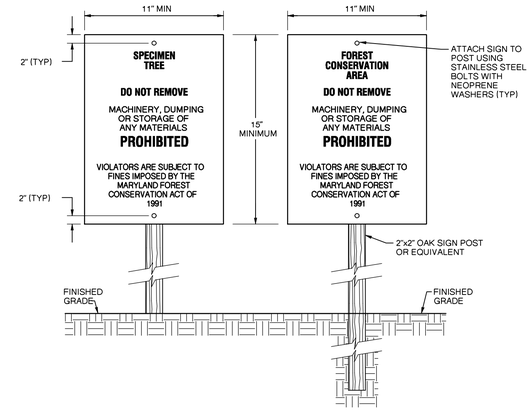
NO SE PERMITE TRABAJAR NI DEJAR MATERIALES EN EL AREA ATRAS DE ESTE ROTULO

NOTES:

1. Boundaries of retention area should be staked and flagged prior to installing deviced.
2. Root damage should be avoided.
3. Device should be maintained throughout construction.
4. Protective signage is required.
5. Location and limits of fencing shall be coordinated in field with arborist.

TREE PROTECTION FENCE

N.T.S.

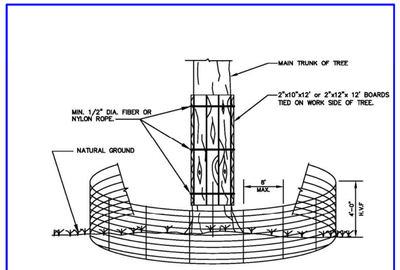


TREE PROTECTION SIGN DETAILS

N.T.S.

Notes:
1. Bottom of signs 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 tree is prohibited.
4. Maximum sign spacing permitted is 150 feet apart.

Source: Adapted from Forest Conservation Manual, 1991



SPECIAL TREE PROTECTION DETAIL

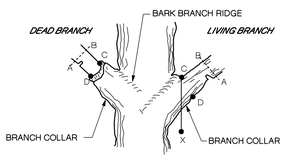
NOTES:
1. TIE WITH 1/2" DIAMETER ROPE (FIBER OR NYLON), SUFFICIENT 2"x10"x12' OR 2"x12"x12' BOARDS AROUND MAIN TRUNK OR TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION.
2. ADDITIONAL HIGH VISIBILITY FENCE (H.V.F.) WILL BE PLACED 5' FROM THE TRUNK WHERE SILT FENCE IS NOT SPECIFIED.
3. SILT FENCE IS ONLY TO BE INSTALLED ON THE TRENCH SIDE OF TREES.
4. H.V.F FENCE POST MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE POST HEIGHT.

STP

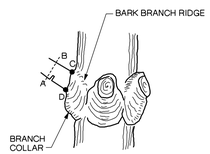
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: JULY 1, 2005 Chief Engineer	STANDARD DETAIL SPECIAL TREE PROTECTION	SC 19.0

SC190

HARDWOODS



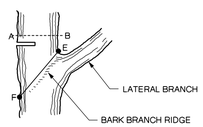
CONIFERS-FOR LIVING OR DEAD BRANCH



Notes:
1. Remove branch weight by undercutting at A and remove limb by cutting through AB.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar)
3. If D is difficult to find on hardwoods, angle of CD to trunk should be the reflective angle of the bark branch ridge to the trunk.
4. Only prune at specified times.
5. Remove no more than 30% of crown at one time.

PRUNING A BRANCH

N.T.S.

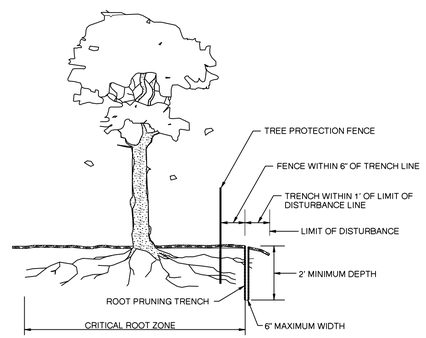


Notes:
1. Remove top weight by undercutting at A and remove limb by cutting through AB.
2. Remove stub at EF parallel to the bark branch ridge.
3. Only prune at specified times.
4. No more than 30% of the crown to be removed at one time.
5. Diameter of lateral branch should be no less than 30% of the diameter of the leader.

PRUNING A LEADER TO REDUCE SIZE

N.T.S.

Source: Adapted from Steve Clark & Associates/ACRT, Inc.

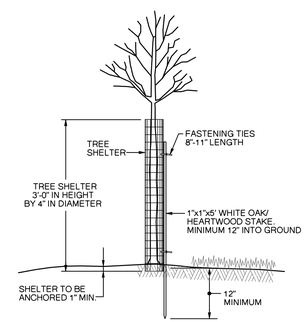


Notes:
1. Retention Areas to be established as part of the forest conservation plan review process.
2. Boundaries of Retention Areas to be staked, flagged and/or fenced prior to trenching.
3. Exact location of trench should be identified.
4. Trench should be immediately backfilled with soil removed or organic soil.
5. Roots should be cleanly cut using vibratory knife or other acceptable equipment.

ROOT PRUNING DETAIL

N.T.S.

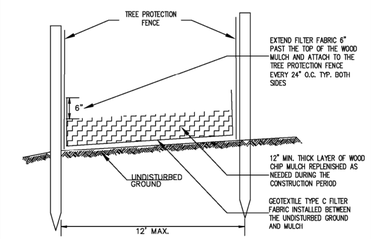
Source: Adapted from Steve Clark & Associates/ACRT, Inc, and Forest Conservation Manual, 1991



DEER PROTECTION - TREE

N.T.S.

NOTES:
1. UP TO 2" OF SOIL CAN BE MOUNTED AROUND THE OUTSIDE OF TREE SHELTER.
2. REFER TO TREE SHELTER SPECIFICATION FOR ADDITIONAL INFORMATION.



NOTES:
1. ACCESS ROUTES TO BE FIELD LOCATED WITH M-NCPPC AND MCDPS AT PRE-CONSTRUCTION MEETING.
2. FILTER FABRIC SHALL BE A SINGLE PIECE ACROSS WIDTH. OVERLAP FABRIC BY 18" MINI. ALONG LENGTH OF ROUTE.
3. FILTER FABRIC MAY ONLY BE ELIMINATED AT DIRECTION OF M-NCPPC ARBORIST.
4. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. MULCH SHALL BE DISPOSED OF OFF-SITE UNLESS OTHERWISE APPROVED BY M-NCPPC.

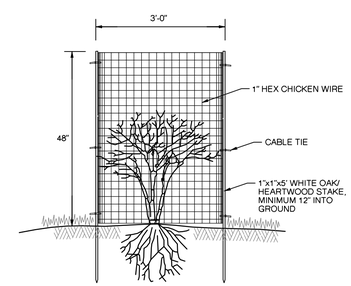
MULCH MAT DETAIL

NOT TO SCALE

Forest Conservation Worksheet 2.2

Batchellors, Sherwood, and Woodlawn

Net Tract Area			acres
A.	Total Tract Area	A =	11.20
B.	Deductions	B =	3.61
C.	Net Tract Area	C =	7.59
Land Use Category			
	Input the number "1" under the appropriate land use zoning, and limit to only one entry		
	ARA 0 / MDR 0 / IDA 1 / HDR 0 / MPD 0 / CIA 0		
D.	Afforestation Threshold (Net Tract Area x 15%)	D =	1.14
E.	Conservation Threshold (Net Tract Area x 20%)	E =	1.52
Existing Forest Cover			
F.	Existing Forest Cover within the Net Tract Area	F =	5.08
G.	Area of Forest Above Conservation Threshold	G =	3.56
Break Even Point			
H.	Break Even Point	H =	2.23
I.	Forest Clearing Permitted Without Mitigation	I =	2.85
Proposed Forest Clearing			
J.	Total Area of Forest to be Cleared	J =	5.08
K.	Total Area of Forest to be Retained	K =	0.00
Planting Requirements			
L.	Reforestation for Clearing Above the Conservation Threshold	L =	0.89
M.	Reforestation for Clearing Below the Conservation Threshold	M =	3.04
N.	Credit for Retention above the Conservation Threshold	N =	0.00
P.	Total Reforestation Required	P =	3.93
Q.	Total Afforestation Required	Q =	0.00
R.	Total Planting Requirement	R =	3.93



DEER PROTECTION - SHRUB

N.T.S.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR.

Date: 05/11/2012
Design file no.:
Drawing code: GN-19
Dwg scale: AS SHOWN
Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK

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

W912DR-07-D-0008
Task Order No. 19

FOREST CONSERVATION DETAILS AND NOTES

Sheet Number:
78 OF 79

BY: rpalmer –

PLOTTED: Saturday, May 12, 2012 AT 08:34 AM
FILE: \\RKKM\v2007\2007\07044_usace\task_6_northwest\cadd\dgn\pLD-D002_nwbr.dgn

FOREST CONSERVATION NOTES

1) FOREST CONSERVATION PLAN PREPARED BY WILLIAM MORGANTE, QP.

2) FLOODPLAIN DATA OBTAINED FROM FEMA/FIRM MAPPING. THE PROJECT AREA IS NOT LOCATED WITHIN THE SPA OR PMA.

3) ALL TREE PRESERVATION SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 120 – TREE PRESERVATION AREA OF THE MD STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS – JULY 2008.

4) MD DNR AND USFWS DETERMINED THAT NO RECORDS OF RTE'S AND RTE HABITAT EXISTS WITHIN THE PROJECT LIMITS. MD DNR INFORMED US THAT FORESTED AREAS ON THE WOODLAWN SITE CONTAIN FOREST INTERIOR DWELLING BIRD SPECIES HABITAT (FIDS). NO RTE'S OR RTE HABITAT WAS OBSERVED DURING FIELD INVESTIGATIONS.

5) THE FORST CONSERVATION WORKSHEETS ARE SHOWN ON SHEET 18 FOR BATCHELLORS, SHEET 38 FOR SHERWOOD, SHEET 62 FOR WOODLAWN. A COMBINED WORKSHEET FOR THE THREE SITES COMBINED IS FOUND ON SHEET 77.

6) SPECIMEN TREE TABLES ARE SHOWN ON SHEET 18 FOR BATCHELLORS, SHEET 38 FOR SHERWOOD, AND SHEET 60 FOR WOODLAWN.

7) FOREST CONSERVATION DETAILS ARE SHOWN ON SHEET 77.

8) FOREST CONSERVATION NOTES ARE SHOWN ON SHEET 78.

9) TREE PROTECTION SIGNS INCLUDING SIGNS TO PROTECT BOTH SPECIMEN TREES AND FOREST SHALL BE INSTALLED IMMEDIATELY AFTER TREE PROTECTION FENCE (TPF) IS INSTALLED.

10) ROOT PRUNE ALONG LOD PRIOR TO LAND DISTURBANCE UNDER DIRECTION OF MD LTE.

11) CONSTRUCTION ACCESS SHALL BE LIMITED ADJACENT TO SPECIMEN TREES. ALL WORK ACTIVITIES NEAR SPECIMEN TREES SHALL BE SUPERVISED AND DIRECTED BY THE PROJECT MD LTE. SUPPLEMENTAL STRESS REDUCTION MEASURES MAY BE REQUIRED PER THE DIRECTION OF THE MD LTE.

12) ALL AREAS OUTSIDE OF THE LOD SHALL BE CONSIDERED TREE PRESERVATION AREAS AND SHOULD BE LEFT UNDISTURBED.

INSPECTIONS

All field inspections must be requested by the applicant. Inspections must be conducted as follows:

Tree Save Plans and Forest Conservation Plans without Planting Requirements

1. After the limits of disturbance have been staked and flagged, but before any clearing or grading begins
2. After necessary stress reduction measures have been completed and protection measures have been installed, but before any clearing and grading begin.
3. After completion of all construction activities, but before removal of tree protection fencing, to determine the level of compliance with the provision of the forest conservation.

Additional Requirements for Plans with Planting Requirements

4. Before the start of any required reforestation and afforestation planting
5. After the required reforestation and afforestation planting has been completed to verify that the planting is acceptable and prior to the start the maintenance period.
6. At the end of the maintenance period to determine the level of compliance with the provisions of the planting plan, and if appropriate, release of the performance bond.

Forest Conservation Worksheet 2.2

Batchellors, Sherwood, and Woodlawn

Net Tract Area								acres
A.	Total Tract Area		(LOD)				A =	11.20
B.	Deductions		(WUS+Wetlands)				B =	3.68
C.	Net Tract Area						C =	7.52
Land Use Category								
	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		
D.	Afforestation Threshold (	Net Tract Area x		15%	)		D =	1.13
E.	Conservation Threshold (	Net Tract Area x		20%	)		E =	1.50
Existing Forest Cover								
F.	Existing Forest Cover within the Net Tract Area						F =	5.08
G.	Area of Forest Above Conservation Threshold						G =	3.58
Break Even Point								
H.	Break Even Point						H =	2.22
I.	Forest Clearing Permitted Without Mitigation						I =	2.86
Proposed Forest Clearing								
J.	Total Area of Forest to be Cleared						J =	5.08
K.	Total Area of Forest to be Retained						K =	0.00
Planting Requirements								
L.	Reforestation for Clearing Above the Conservation Threshold						L =	0.89
M.	Reforestation for Clearing Below the Conservation Threshold						M =	3.01
N.	Credit for Retention above the Conservation Threshold						N =	0.00
P.	Total Reforestation Required						P =	3.90
Q.	Total Afforestation Required						Q =	0.00
R.	Total Planting Requirement						R =	3.90

TREE CONDITION ASSESSMENT GUIDELINES:

EXCELLENT – healthy tree with exceptional growth form; no visible defects; well–formed crown; few minor dead branches acceptable; this tree condition is rare.

GOOD – healthy tree; very minor defects/decay acceptable with callous forming/complete; well–formed crown; minor lean and/or few minor/major dead branches acceptable; vines may be growing along trunk but not present within crown.

FAIR – health questionable/stress evident; structurally sound tree; defects present that do not affect structural integrity; moderate lean; minor/major dead branches may be present; crown not broken out but not necessarily well formed or even; vines may be growing along trunk and within crown.

Ex. Fair tree could be experiencing insect damage, or exhibit a growth form that makes it very susceptible to wind damage in an open setting.

POOR – significant health problems; may be structurally unsound; may be dead or dying; may contain significant decay; may have broken or missing top/crown; may have heavy lean; vines may be significantly affecting tree health.

Note: These guidelines were developed in–house based on the professional judgment of our Certified Arborists and other senior environmental staff. These guidelines should be incorporated into documents (such as FSD's) whenever a tree assessment is conducted.

SEQUENCE OF EVENTS FOR PROPERTY OWNERS REQUIRED TO COMPLY WITH FOREST CONSERVATION AND/OR TREE-SAVE PLANS

Pre–Construction

1. An on–site pre–construction meeting is required after the limits of disturbance have been staked and flagged, but before any clearing or grading begins. The property owner should contact the Montgomery County Planning Department inspection staff before construction to verify the limits of disturbance and discuss tree protection and tree care measures. The developer's representative, construction superintendent, ISA certified arborist or Maryland–licensed tree expert that will implement the tree protection measures, forest conservation inspector, and Department of Permitting Services (DPS) sediment control inspector should attend this pre–construction meeting. The work on this project will be phased in multiple segments and the prior installation of all protective devices may not be practical/desirable. Therefore, multiple pre–construction meetings with the M–NCPPC Forest Conservation Inspector my be necessary.

2. No clearing or grading shall begin before stress–reduction measures have been implemented. Appropriate measures may include, but are not limited to:
   a. Root pruning
   b. Crown reduction or pruning
   c. Watering
   d. Fertilizing
   e. Vertical mulching
   f. Root aeration matting

   Measures not specified on the forest conservation plan may be required as determined by the forest conservation inspector in coordination with the arborist.

3. A Maryland–licensed tree expert or an International Society of Arboriculture– certified arborist must perform all stress reduction measures. Documentation of stress reduction measures must be either observed by the forest conservation inspector or sent to the inspector at 8787 Georgia Avenue, Silver Spring, MD 20910. The forest conservation inspector will determine the exact method to convey the stress reductions measures during the pre–construction meeting.

4. Temporary tree protection devices shall be installed per the Forest Conservation Plan/Tree Save Plan and prior to any construction activities. Tree protection fencing locations should be staked prior to the pre–construction meeting. The forest conservation inspector, in coordination with the DPS sediment control inspector, may make field adjustments to increase the survivability of trees and forest shown as saved on the approved plan. Temporary tree protect devices may include:
   a. Chain link fence (four feet high)
   b. Super silt fence with wire strung between support poles (minimum 4 feet high) with high visibility flagging.
   c. 14 gauge 2 inch x 4 inch welded wire fencing supported by steel T–bar posts (minimum 4 feet high) with high visibility flagging.

5. Temporary protection devices shall be maintained and installed by the contractor for the duration of construction project and must not be altered without prior approval from the forest conservation inspector. No equipment, trucks, materials, or debris may be stored within the tree protection fence areas during the entire construction project. No vehicle or equipment access to the fenced area will be permitted. Tree protection shall not be removed without prior approval of forest conservation inspector.

6. Forest retention area signs shall be installed as required by the forest conservation inspector, or as shown on the approved plan.

7. Long–term protection devices will be installed per the Forest Conservation Plan/Tree Save Plan and attached details. Installation will occur at the appropriate time during the construction project. Refer to the plan drawing for long–term protection measures to be installed.

During Construction

8. Periodic inspections by the forest conservation inspector will occur during the construction project. Corrections and repairs to all tree protection devices, as determined by the forest conservation inspector, must be made within the timeframe established by the inspector.

Post–Construction

9. After construction is completed, an inspection shall be requested. Corrective measures may include:
   a. Removal and replacement of dead and dying trees
   b. Pruning of dead or declining limbs
   c. Soil aeration
   d. Fertilization
   e. Watering
   f. Wound repair
   g. Clean up of retention areas

10. After inspection and completion of corrective measures have been undertaken, all temporary protection devices shall be removed from the site. Removal of tree protection devices that also operate for erosion and sediment control must be coordinated with both the Department of Permitting Services and the forest conservation inspector. No additional grading, sodding, or burial may take place after the tree protection fencing is removed.

US Army Corps of Engineers
Baltimore District

AB, CONSULTANTS, INC.
9450 ANNAPOLIS ROAD
LANHAM, MARYLAND 20706
(P) 301 306-3991
(F) 301 306-3092

RK&K
9302 LEE HIGHWAY, SUITE 425
HUNTERS BRANCH 2
FAIRFAX, VA
(P) 703 246-0028
(F) 703 246-0123

MARK	DESCRIPTION	DATE	APPR

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

W912DR-07-D-0008
Task Order No. 19

Designed by: WMM
Dwn by: DEA
Ckd by: REP
Reviewed by: TMH
Submitted by: CVK
Date: 05/11/2012
Design file no.
Drawing code: GN-20
Dwg scale: AS SHOWN

FOREST CONSERVATION NOTES

PLOTTED: Friday, May 18, 2012 AT 03:26 PM
FILE: \\RKKM\r2007\2007\07044_usace\task_6_northwest\cadd\dgn\pLD-D003_nwbr.dgn
BY: rpalmer