

THE JOHNS HOPKINS UNIVERSITY

APPLIED PHYSICS LABORATORY PARKING LOT EXPANSION

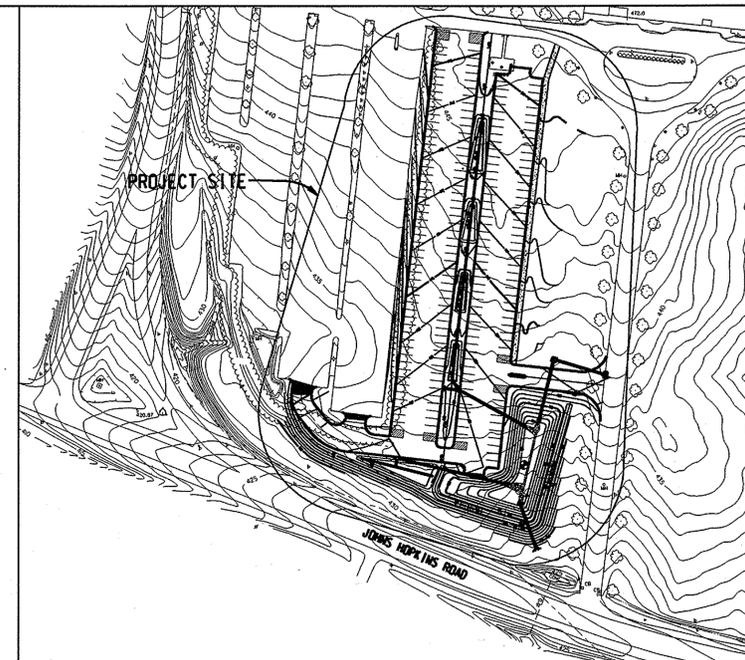
GENERAL NOTES NON-RESIDENTIAL SITE DEVELOPMENT PLAN

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
 - ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE (1) FOOT CONTOUR INTERVALS PREPARED BY WHITMAN REQUARDT AND ASSOCIATES, LLP, DATED NOVEMBER, 1997.
 - THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. ELEVATIONS SHOWN ARE BASED ON THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY (JHU-APL) DATUM. JHU-APL DATUM EQUALS HOWARD COUNTY DATUM PLUS 0.94'.
 - WATER IS PRIVATE.
 - SEWER IS PRIVATE.
 - STORMWATER MANAGEMENT PROVIDED BY EXISTING AND PROPOSED DETENTION PONDS AND BIORETENTION FACILITIES. THE DEVELOPER OWNS AND MAINTAINS THE FACILITIES.
 - EXISTING UTILITIES ARE BASED ON PUBLIC RECORD AND FIELD SURVEY.
 - THERE IS NO FLOODPLAIN ON THIS SITE.
 - THERE ARE NO WETLANDS ON THIS SITE.
 - NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
 - PROJECT BACKGROUND INFORMATION TAX MAP 41, PARCEL 123, ZONING PEC, ELECTION DISTRICT 5TH., SITE AREA 366 AC.
- WAIVERS APPROVED OR DENIED (DPW AND DPZ) CONCERNING THIS TRACT.
 WP 98-54 TO WAIVE SDP. APPROVED NOVEMBER 25, 1997.
 WP 98-54 AMENDMENT TO APPROVEMENT ALTERNATE STABILIZATION METHOD APPROVED DECEMBER 30, 1997.
 DESIGN MANUAL WAIVER TO ALLOW DIRECT CONNECTION TO OFFSITE OUTFALL AND ELIMINATE POND FOREBAY.
 APPROVED JANUARY 9, 1998.
- REFER TO SHEET 5 OF 13 FOR SIDEWALK IMPROVEMENTS AND IT DUCT LINE HORIZONTAL ALIGNMENT.
 - THE POND CONSTRUCTED UNDER SDP-88-06 PROVIDES THE SWM CAPACITY FOR THE IMPROVEMENT PROPOSAL UNDER THIS REDLINE. AVAILABLE CAPACITY WAS CONFIRMED DURING THE REVIEW AND APPROVAL OF SDP-03-174.



2 SITE DATA

TOTAL PROJECT AREA	366 ACRES
AREA OF PLAN SUBMISSION	3.0 ACRES
LIMIT OF DISTURBED AREA	2.5 ACRES
PRESENT ZONING	PEC
PROPOSED USE	200 PARKING SPACES
NUMBER OF PARKING SPACES REQUIRED BY ZONING	2450
NUMBER OF PARKING SPACES PROVIDED ON SITE(INCLUDING UNIVERSAL PARKING SPACES AND THIS PROPOSAL	3398 + 27 UNIVERSAL SPACES
MAXIMUM NUMBER OF EMPLOYEES ON SITE	3500
OPEN SPACE ON SITE, ACRES	297
OPEN SPACE ON SITE, PERCENT OF GROSS AREA	GREATER THAN 25%
BUILDING COVERAGE OF SITE, ACRES	15.5
BUILDING COVERAGE OF SITE, PERCENT OF GROSS AREA	5%
APPLICABLE DPZ FILE REFERENCES	SDP 85-100 SDP 03-174 SDP 83-21 SDP 99-11 SDP 86-149 SDP 99-11 SDP 86-225 SDP 88-03 SDP 98-33 SDP 88-06 WP 98-54 WP 98-54 AMENDED GP 98-73



VICINITY MAP
SCALE: 1" = 100'

2 SHEET INDEX

SHEET NO.	DRAWING NO.	TITLE
1.	PLEC1.0	COVER SHEET
2.	PLEC2.0	LOCATION PLAN / BORING LOGS
2A.	PLEC2.1	SITE DEMOLITION PLAN
3.	PLEC3.0	SITE DEVELOPMENT PLAN
3A.	PLEC3.1	SITE DEVELOPMENT PLAN
4.	PLEC4.0	DETAILS AND STORM DRAIN PROFILES
4A.	PLEC4.1	DETAILS AND UTILITY PROFILES
5.	PLEC5.0	DRAINAGE AREA MAP
6.	PLEC6.0	STORM WATER MANAGEMENT PLAN AND SPECIFICATIONS
7.	PLEC6.1	STORM WATER MANAGEMENT DETAILS AND PROFILES
8.	PLEC7.0	WATER QUALITY MANAGEMENT PLAN, PROFILE, SECTION AND DETAIL
9.	PLEC8.0	LANDSCAPE PLAN AND PLANT LIST
9A.	PLEC8.0A	LANDSCAPE PLAN AND PLANT LIST
10.	PLEC8.1	LANDSCAPE / BIORETENTION SCHEDULE, DETAILS AND SPECIFICATIONS
11.	PLEC9.0	EROSION AND SEDIMENT CONTROL PLAN AND BASIN DETAILS
11A.	PLEC9.0A	EROSION AND SEDIMENT CONTROL PLAN
12.	PLEC9.1	EROSION AND SEDIMENT CONTROL DETAILS, NOTES AND TOP SOILS SPECIFICATIONS
13.	PLEC9.2	EROSION AND SEDIMENT CONTROL SEEDING SPECIFICATIONS
13A.	PLEC9.2A	EROSION AND SEDIMENT CONTROL SEEDING SPECIFICATIONS

MODIFIED BY Christopher Canselante HD. ON 5/24/10



AS BUILT DATE 12/20/00

ADDRESS CHART	
PARCEL	STREET ADDRESS
P. 123	11100 JOHNS HOPKINS ROAD
LAUREL, MD. 20723-6099	

SUBDIVISION NAME	J.H.U. APPLIED PHYSICS LAB	SECT./AREA	N/A	LOT/PARCEL	50 & 123
PLAT # OF LOTS/BLK	234/304	BLK #	16	ZONING	PEC
TAX MAP NO.	41	ELECT. DIST.	5th	SECURITY TRACT	6051
WATER CODE		SEWER CODE			

PURPOSE STATEMENT:
THE REDLINE OF THIS SHEET IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

REVISIONS		
1	REDLINED TO INCLUDE SIDEWALK AND IT DUCTS	2/24/2010
2	REVISE SHEET INDEX & SITE DATA	11/4/14

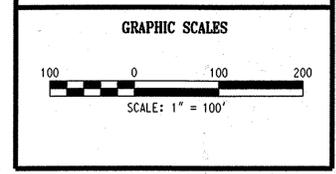
APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSF GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION

REVISED SITE DEVELOPMENT PLAN



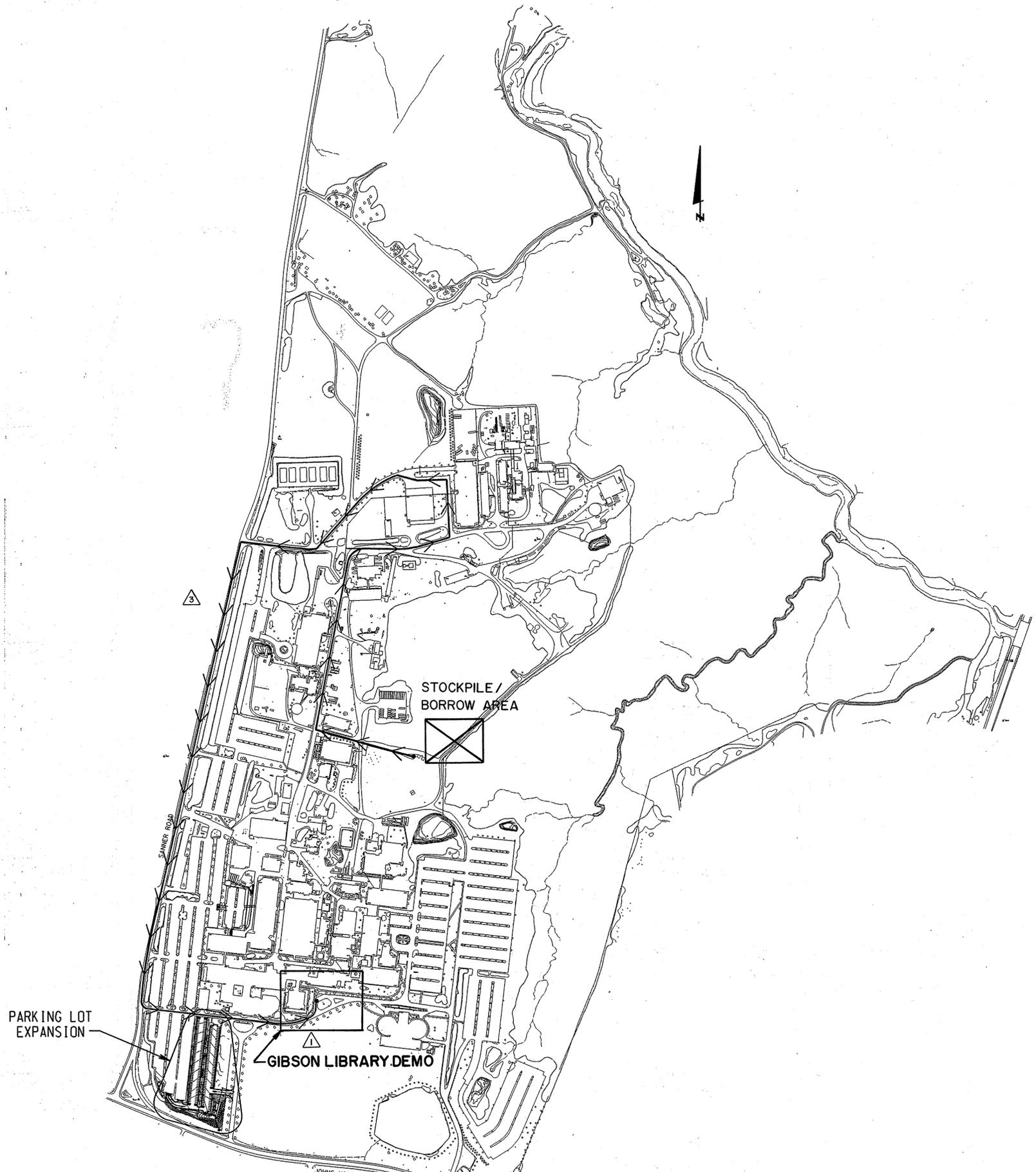
WHITMAN, REQUARDT AND ASSOCIATES, LLP
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 235 - 3450

COVER SHEET	
	DRAWING NO.
	C1.0
SHEET 1 OF 13	
SCALE: 1" = 50'	
DES: L.K.	CHECK: R.M. DATE: 06/24/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Frank Rutter</i>	8/4/98
DIRECTOR	DATE
<i>William Dammann</i>	7/16/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Cady Hamilton</i>	8/1/98
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

SOIL BORING LOG									
Client: Whitman, Reardon & Assoc.		Boring # B-1		Project Name: Johns Hopkins University / APL Parking Lot		Job # MD-80389		Location: Johns Hopkins Road / Columbia MD	
Date: 8/1/98		Order: P. Sullivan		Hammer Type: Safety		Boring Method: HSA		Surf. Elev.: 4.31.5	
Date Started: 11/20/97		Inspector: Daniel Sutton		Sampler Type: SPT		Borehole Diameter: 3.25 in.		Date Completed: 11/20/97	
Rod Size: 1.5 in.		Rock Core Size: N/A							
DEPTH (FT)	SOIL DESCRIPTION	REMARKS	SPT	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
0.0									
1.0	Brown to reddish brown, dry, medium stiff, silty clay with a little mica.		1	2-2-4	6"				
2.0			2	12-12-14	8"				11 No water encountered
3.0	Reddish brown, dry, medium dense to dense, micaceous sil.		3	12-12-8	10"				
4.0			4	13-13-8	10"				
5.0									
BOTTOM OF TEST BORING AT 5.0 FT									
BORING METHOD: HSA - HOLLOW STEEL AUGERS; SPT - STANDARD PENETRATION TEST; SPT SPLIT SPOON; ST - SHELBY TUBE; AS - AUGER SAMPLE; RC - ROCK CORE									

SOIL BORING LOG									
Client: Whitman, Reardon & Assoc.		Boring # B-2		Project Name: Johns Hopkins University / APL Parking Lot		Job # MD-80389		Location: Johns Hopkins Road / Columbia MD	
Date: 8/1/98		Order: P. Sullivan		Hammer Type: Safety		Boring Method: HSA		Surf. Elev.: 4.55.7	
Date Started: 11/20/97		Inspector: Daniel Sutton		Sampler Type: SPT		Borehole Diameter: 3.25 in.		Date Completed: 11/20/97	
Rod Size: 1.5 in.		Rock Core Size: N/A							
DEPTH (FT)	SOIL DESCRIPTION	REMARKS	SPT	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
0.0									
1.0	Brown to reddish brown, dry, medium stiff, silty clay with a little mica.		1	1-2-2	6"				
2.0			2	8-8-11	11"				11 No water encountered
3.0	Reddish brown, dry, medium dense to dense, micaceous sil.		3	10-10-12	11"				
4.0			4	10-10-5	12"				
5.0									
BOTTOM OF TEST BORING AT 5.0 FT									
BORING METHOD: HSA - HOLLOW STEEL AUGERS; SPT - STANDARD PENETRATION TEST; SPT SPLIT SPOON; ST - SHELBY TUBE; AS - AUGER SAMPLE; RC - ROCK CORE									



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 8/1/98
DIRECTOR DATE

William Reardon 7/16/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hamilton 8/13/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

LOCATION PLAN
SCALE: 1" = 300'

PURPOSE STATEMENT:
THE REDLINE OF THIS SHEET IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

AS BUILT DATE 12/20/00

REVISIONS		
1	REVISE LOCATION MAP	11/4/14
2	ADD STOCKPILE HAUL ROUTE	3/13/15

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION
REVISED SITE DEVELOPMENT PLAN

GRAPHIC SCALES
300 0 300 600
SCALE: 1" = 300'

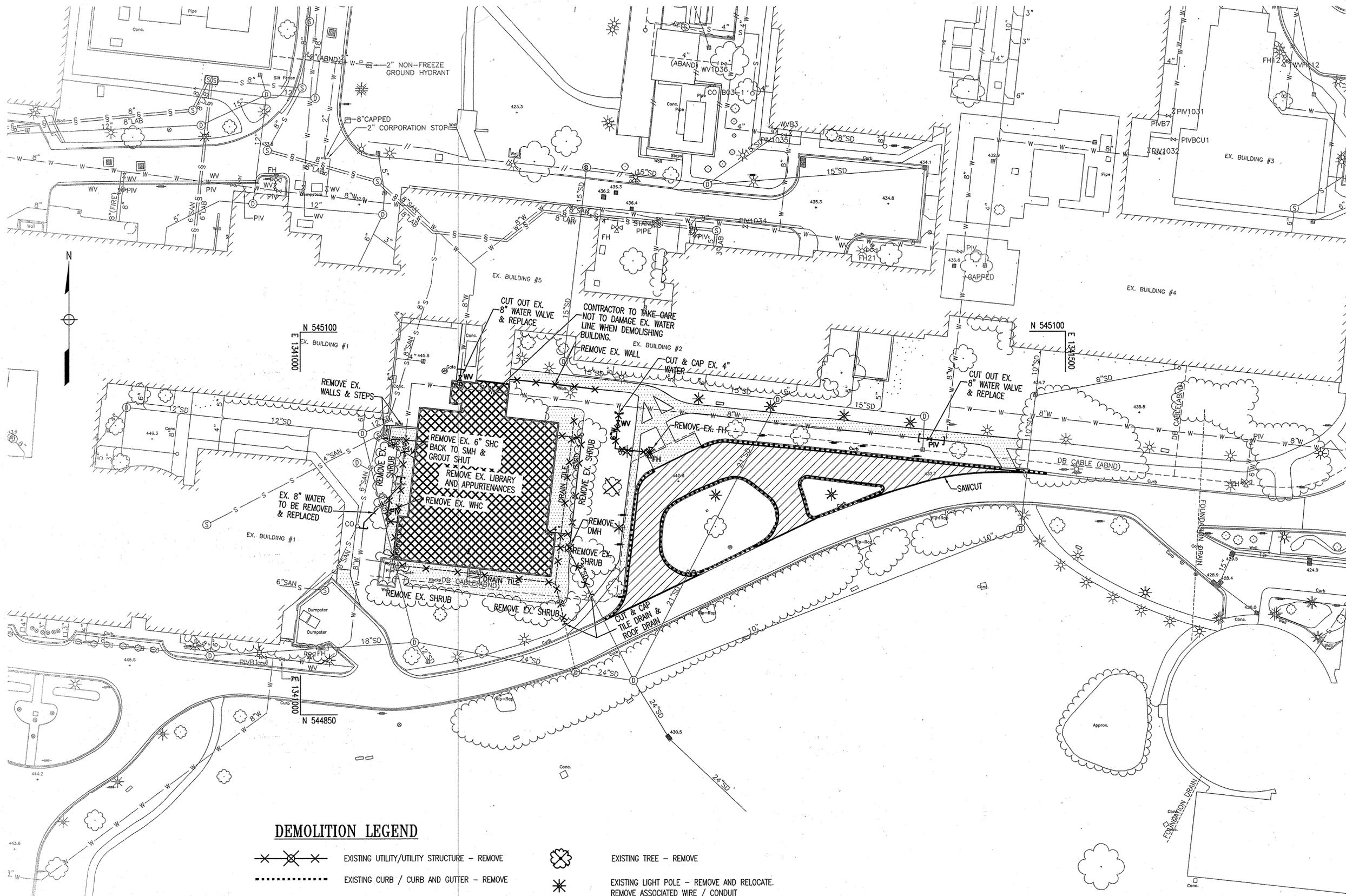
WR&A
WHITMAN, REARDON AND ASSOCIATES, LLP
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 235 - 3450

LOCATION PLAN BORING LOGS

DRAWING NO. C2.0
SHEET 2 OF 13

SCALE: 1" = 300'

DES: L.K. CHECK: R.M. DATE: 06/24/98



REVISIONS		
1	REDLINED TO INCLUDE SIDEWALK AND IT DUCTS	2-24-2010
2	ADD DEMOLITION SHEET	11-25-2014

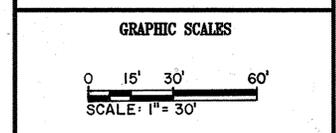
APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TIF GROUP	
SURVEY OFFICER	
DIRECTOR'S OFFICER	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION
 REVISED SITE DEVELOPMENT PLAN

PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2015



WR&A
 WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

SITE DEMOLITION PLAN

APPROVED BY: [Signature] DATE: 11/25/14
 DRAWING NO. C2.1
 SHEET 2A OF 13
 SCALE: 1" = 30'
 DES: JTD CHECK: AUO DATE: 11/25/14

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

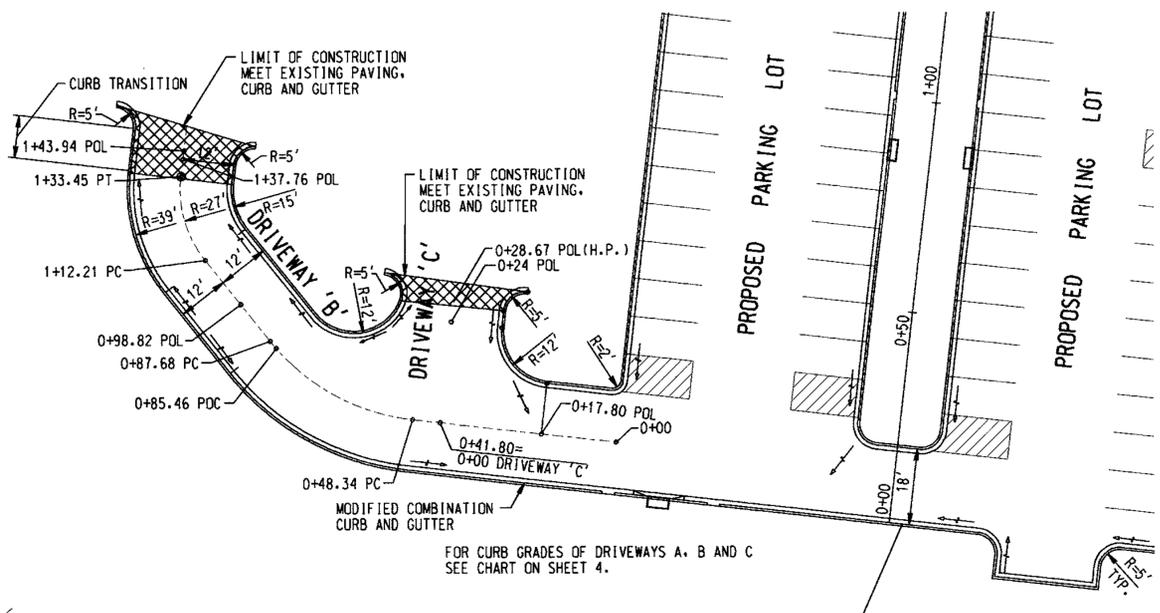
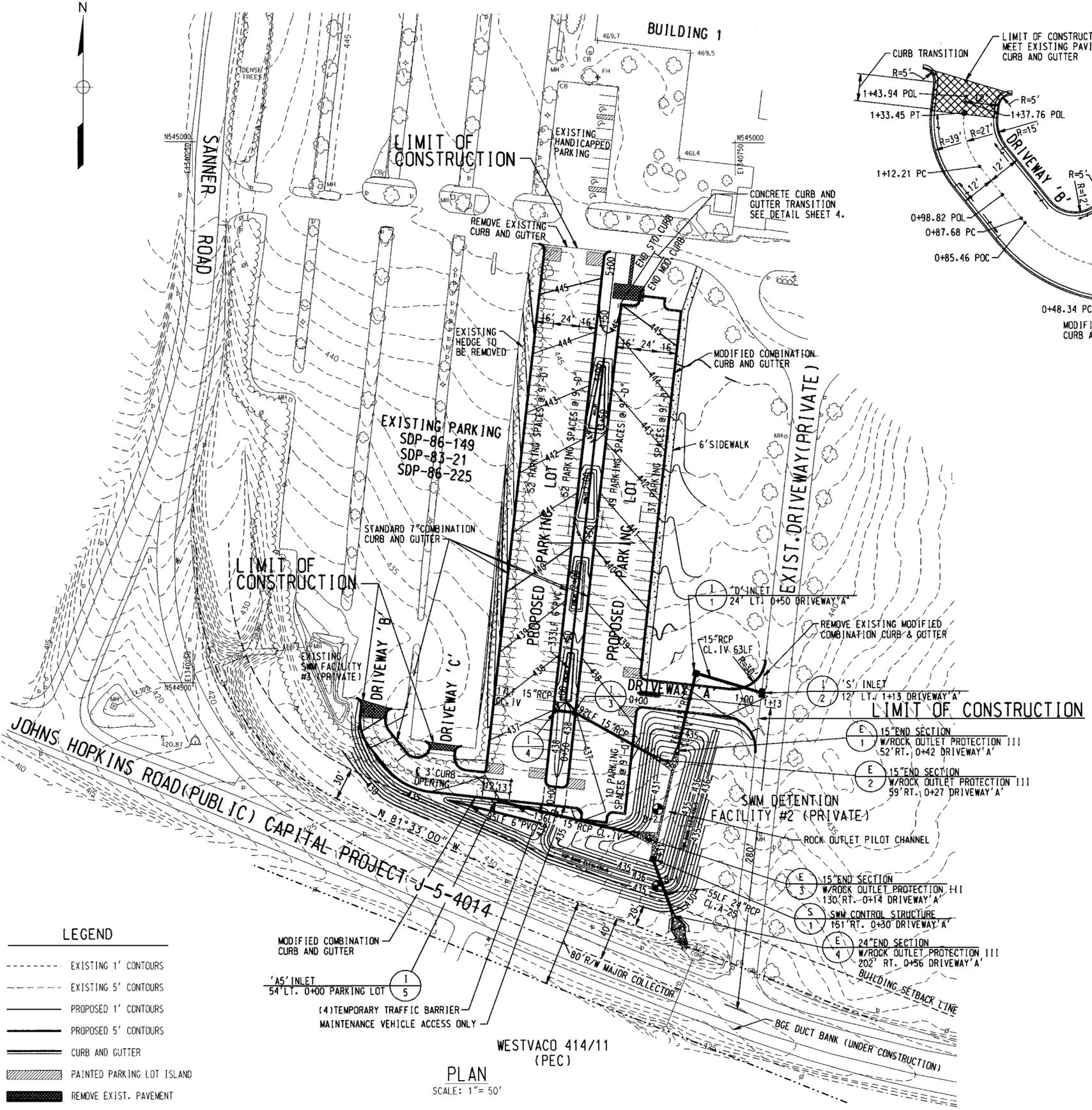
[Signature] 1-14-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 1/20/15
 DIRECTOR DATE

DEMOLITION LEGEND

- EXISTING UTILITY/UTILITY STRUCTURE - REMOVE
- EXISTING CURB / CURB AND GUTTER - REMOVE
- SAWCUT
- BUILDING DEMOLITION
- PAVEMENT DEMOLITION
- SIDEWALK DEMOLITION
- GRAVEL APRON DEMOLITION
- EXISTING TREE - REMOVE
- EXISTING LIGHT POLE - REMOVE AND RELOCATE. REMOVE ASSOCIATED WIRE / CONDUIT
- SIGN - REMOVE
- HYDRANT - REMOVE
- SHRUBS - REMOVE

PURPOSE STATEMENT:
 THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.



PARTIAL PLAN DRIVEWAY 'B' AND 'C'
SCALE: 1"=20'

CENTERLINE STATION	WEST BAY		EAST BAY		NOTES
	W.W. CURB* (66' WEST)	E.W. CURB (10' WEST)	W.E. CURB (10' EAST)	E.E. CURB* (66' EAST)	
0+00	436.16				ON SOUTH CURB @ 0+00 DRIVE 'B'
0+00	436.26				D/S 54' TO C 1-5
0+24	436.67				D/S 68' TO T.C.P.C. R=2'
0+26	436.67				D/S 66' TO T.C.P.C. R=2'
0+18		437.01*			D/S 5' TO T.C.P.C. R=5'
0+23		437.01			T.C.P.C. R=5'
0+18			437.13*		D/S 5' TO T.C.P.C. R=5'
0+23			437.17		P.T. R=5'
0+00	437.36				D/S 41' TO C CURB OPENING
0+00			437.05		D/S 21' TO T.C.P.C. R=5'
0-05			437.28		D/S 26' TO T.C.P.C. R=5'
0-10			437.30		D/S 26' TO CORNER
0-10			437.54		D/S 50' TO CORNER
0+05			437.44		D/S 50' TO P.T. R=5'
0+00			437.39		D/S 55' TO P.C. R=5'
0+00				437.50	CORNER
0+86.92			437.80		C 1=3
0+87.28		437.77			C 1=4
0+99.92			437.93		C 3' CURB OPENING
1+00.28		437.93			C 3' CURB OPENING
0+95				438.45	P.T. R=5' = 0+00 DRIVE 'A'
1+31.28				439.10	P.C. R=5' = 0+00 DRIVE 'A'
1+84.28		439.55	439.55		C 3' CURB OPENING
2+68.28		441.23	441.23		C 3' CURB OPENING
3+52.28		442.91	442.91		C 3' CURB OPENING
4+68			445.60	446.00	W.E. END TRANSITION
4+68		445.44			BEGIN TRANSITION FROM MOD. CURB TO ST'D. CURB D/S 21' P.T. R=5'
4+73			445.60		D/S 26' P.C. R=5'
4+78			445.70		D/S 26' CORNER
4+78				446.00	D/S 50'
4+73				445.90	D/S 50' P.T. R=5'
4+68				445.87	D/S 55' P.C.
4+68				446.00	CORNER
5+11	445.90			446.10	P.T. R=5'
5+16					P.T. MATCH EXIST. CURB

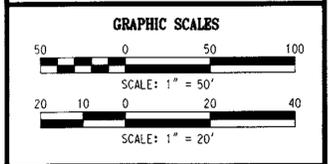
REVISIONS	

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSC GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION



WHITMAN, REQUARDT AND ASSOCIATES, LLP
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 235 - 3450

SITE DEVELOPMENT PLAN

DRAWING NO. **C3.0**

SHEET 3 OF 13

SCALE: 1" = 50'

DES: C.J.K. CHECK: R.M. DATE: 06/24/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 8/14/98 DATE
Chris Hanilton 7/16/98 DATE
Chris Hanilton 8/3/98 DATE

AS BUILT DATE 12/20/00

REVISIONS

1	REDLINED TO INCLUDE SIDEWALK AND IT DUCTS	2-24-2010
2	ADD SITE DEVELOPMENT PLAN SHEET	11-25-2014
3	REMOVE MICRO-BIORETENTION	3-13-15

APPROVALS

REQUESTER	
PLANT FACILITIES	
CHIEF ENGINEER	
CODE COMPLIANCE	
REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

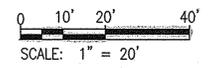


PARKING LOT EXPANSION

REVISED SITE DEVELOPMENT PLAN

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2015

GRAPHIC SCALES



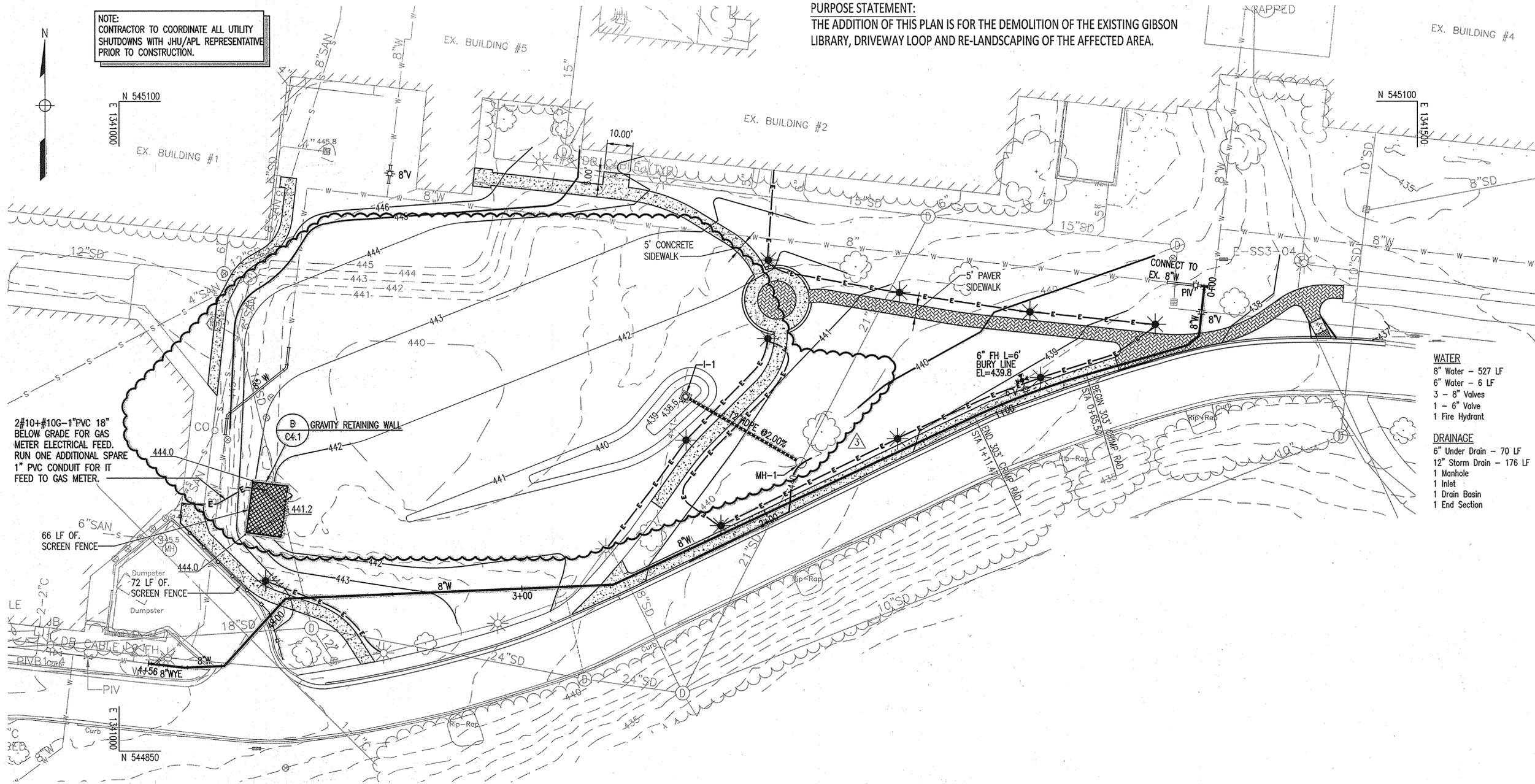
WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21201

SITE DEVELOPMENT PLAN

	DRAWING NO.
	C3.1
SHEET 3A OF 13	
SCALE: 1" = 20'	
DES: JTD CHECK: AUO DATE: 11/25/14	

PURPOSE STATEMENT:
 THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

NOTE:
 CONTRACTOR TO COORDINATE ALL UTILITY SHUTDOWNS WITH JHU/APL REPRESENTATIVE PRIOR TO CONSTRUCTION.



- WATER**
 8" Water - 527 LF
 6" Water - 6 LF
 3 - 8" Valves
 1 - 6" Valve
 1 Fire Hydrant
- DRAINAGE**
 6" Under Drain - 70 LF
 12" Storm Drain - 176 LF
 1 Manhole
 1 Inlet
 1 Drain Basin
 1 End Section

2#10+#10G-1" PVC 18" BELOW GRADE FOR GAS METER ELECTRICAL FEED. RUN ONE ADDITIONAL SPARE 1" PVC CONDUIT FOR IT FEED TO GAS METER.

66 LF OF 6" SAN SCREEN FENCE
 72 LF OF 6" SAN SCREEN FENCE
 1/4" 56 8" WYE
 18" SD
 8" W
 24" SD
 2" 2-C

LEGEND

- PAVER SIDEWALK
- 4" CONCRETE SIDEWALK
- FULL DEPTH P-2 PAVEMENT
- 2" MILL & OVERLAY
- NEW ELECTRIC
- NEW STORM DRAIN
- NEW UNDER DRAIN
- NEW WATER
- NEW LIGHT POLE
- NEW STORM DRAIN INLET / MANHOLE
- NEW WATER VALVE / HYDRANT

DETAIL REFERENCE TABLE

DISCRPTION	DETAIL REFERENCE
*5" CONCRETE SIDEWALK	HOWARD COUNTY STD DETAIL R-3.05
PAVER SIDEWALK	SEE SHEET C4.1
SIDEWALK RAMP	HOWARD COUNTY STD DETAIL R-4.05
SOLID WASTE ENCLOSURE	HOWARD COUNTY STD DETAIL R-8.03 & R-8.04
P-2 PAVEMENT	HOWARD COUNTY STD DETAIL R-2.01
CURB & GUTTER	HOWARD COUNTY STD DETAIL R-3.01
EX. ROADWAY WIDENING STRIP	HOWARD COUNTY STD DETAIL R-1.08
FIRE HYDRANT	HOWARD COUNTY STD DETAIL W-1.11
YARD INLET	HOWARD COUNTY STD DETAIL D-4.14
DOG HOUSE MANHOLE	HOWARD COUNTY STD DETAIL G-5.14
RETAINING WALL	SEE SHEET C4.1
SCREENING WALL	SEE SHEET C4.1
FENCING	SEE SHEET C4.1
TREE PLANTING	SEE SHEET C8.0A
*MICRO-BIORETENTION FACILITY	SEE SHEET C3.1

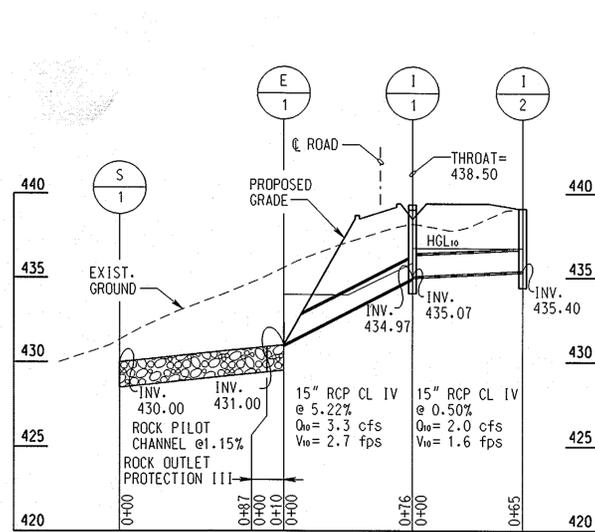
*5" THICK CONCRETE ON 6" THICK AGGREGATE BASE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Chubb 5-21-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

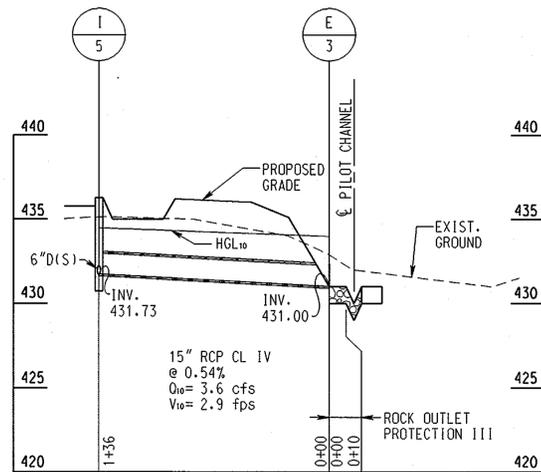
Vanessa DeLeon 5-22-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W. A. Mackay, Jr. 5-28-2015
 ACTING DIRECTOR DATE



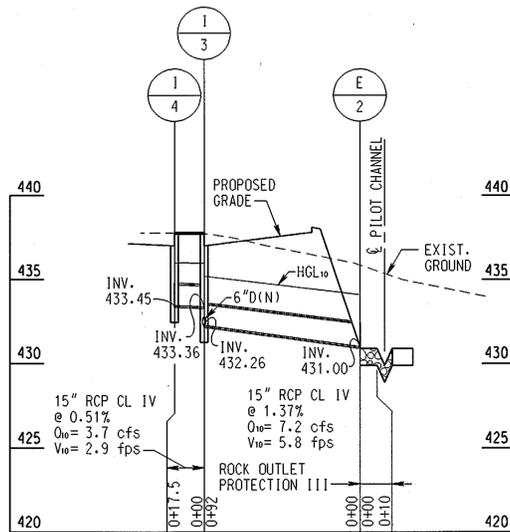
PROFILE-15" RCP FROM E-1 TO I-2

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 5'



PROFILE-15" RCP FROM I-5 TO E-3

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 5'



PROFILE-15" RCP FROM I-4 TO E-2

SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 5'

STRUCTURE SCHEDULE

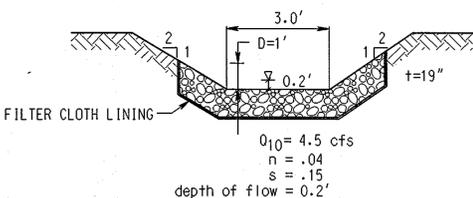
STRUCTURE NO.	TYPE	INVERT		TOP ELEVATION	HOWARD COUNTY STANDARD DETAIL	NOTES
		IN	OUT			
I-1	"D" INLET	435.07	434.97	439.33	SD 4.11	24' LT OF 0+50 DRIVEWAY 'A'
I-2	"S" INLET	—	435.40	439.10	SD 4.22	13' LT OF 1+13 DRIVEWAY 'A'
I-3	A-10 INLET	433.36 432.26	432.26	437.80	SD 4.02	8.5' RT OF PARKING LOT
I-4	A-10 INLET	—	433.45	437.80	SD 4.02	8.5' LT OF PARKING LOT
I-5	A-5 INLET	431.73	431.73	436.26	SD 4.01	54' LT OF 0+00 PARKING LOT
E-1	END SECTION	431.00	—	—	SD 5.51	52' RT OF 0+42 DRIVEWAY 'A'
E-2	END SECTION	431.00	—	—	SD 5.51	59' RT OF 0+27 DRIVEWAY 'A'
E-3	END SECTION	431.00	—	—	SD 5.51	130' RT OF 0+14 DRIVEWAY 'A'

CENTERLINE STATION	LT. TC.	CROSS SLOPE	℄ ELEV.	CROSS SLOPE	RT. TC.	NOTES
0+00	439.18	-1.90	438.84	1.90	438.45	T.C. -18' FROM ℄ (P.C. OF 5' CURB RETURN)
0+02	439.07	2%	439.46	-2%	439.00	P.C. OF CURB RETURN R=12' END SPILLING CURB
0+18	439.82	-2.00	439.62	2.00	439.50	℄ INT. W/DRIVE 'C'
0+83	439.82	-2.00	439.45	2.00	439.50	P.C. R=50'
1+13	440.29	—	439.45	—	437.46	P.O.C. BEGIN CATCHING CURB ON RIGHT

CENTERLINE STATION	LT. TC. (MOD. C&G)	CROSS SLOPE*	℄ ELEV.	CROSS SLOPE	RT. TC. (ST'D. C&G)	NOTES
0+00	435.89	2%	435.82	-2%*	436.60	ON THE LINE OF W.W. CURB (SUMP)
0+17.80	436.07	2%	436.00	-2%	436.84	P.C. OF CURB RETURN R=12' END SPILLING CURB
0+41.80	437.38	2%	436.56	-2%	437.17	℄ INT. W/DRIVE 'C'
0+48.34	436.88	0%	436.62	0%	437.17	P.C. R=50'
0+85.46	436.90	0%	436.57	0%	437.17	P.O.C. BEGIN CATCHING CURB ON RIGHT
0+87.68	437.25	-2.6%	436.63	2.6%	436.90	P.T. HIGH POINT LT. CURB
0+98.82	436.47	-2.2%	436.49	2.2%	436.23	P.C. R=27'
1+12.21	434.70	2.6%	435.71	-2.6%	435.63	P.T. BEGIN CURB TRANS. P.C. R=27'
1+33.45	434.70	2.6%	435.71	-2.6%	435.63	P.C. CURB RETURN R=5'
1+37.76	434.42	—	435.41	—	435.41	P.C. CURB RETURN R=5' END CURB TRANS.

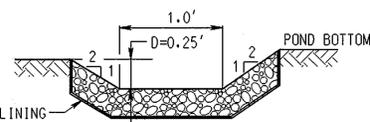
CENTERLINE STATION	LT. TC.	CROSS SLOPE*	℄ ELEV.	CROSS SLOPE	RT. TC.	NOTES
0+00	—	—	436.56	—	—	℄ INT. W/DRIVE 'B'
0+12	—	—	436.80	—	—	℄ INT. W/DRIVE 'B' CURB LINE
0+19	437.42	.71	436.99	—	—	HI POINT LT. CURB
0+24	437.13	5.92	437.13	5.75	437.02	P.T. CURB RETURN R=12'
0+28.67	437.13	5.92	437.26	—	437.07	P.C. C. LT. TC. CENTERLINE HIGH POINT

*SPILLING CURB IS NEGATIVE, CATCHING CURB IS POSITIVE.



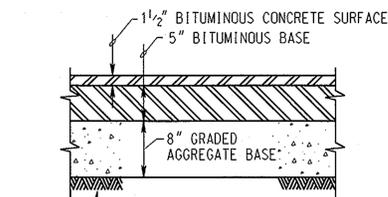
OUTLET CHANNEL

SCALE: NOT TO SCALE
SEE SHEET 6 AND 7



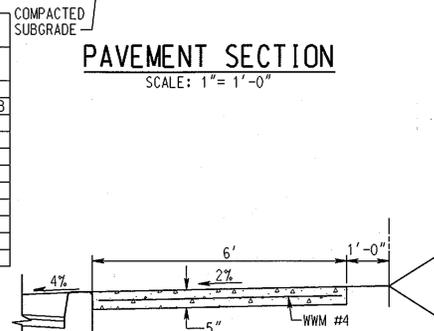
ROCK PILOT CHANNEL

SCALE: NOT TO SCALE



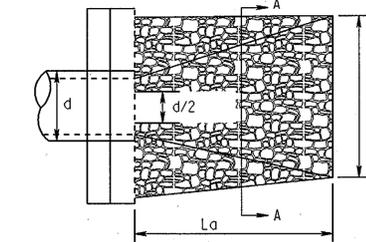
PAVEMENT SECTION

SCALE: 1" = 1'-0"

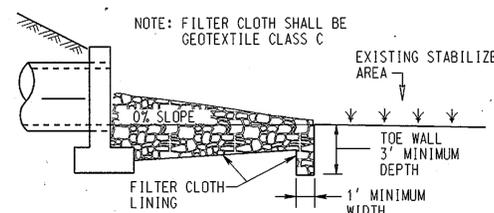


CONCRETE SIDEWALK

SCALE: 1/2" = 1'-0"

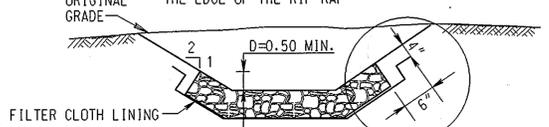


PLAN VIEW



ELEVATION

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C
EXISTING STABILIZED AREA
TOE WALL 3" MINIMUM DEPTH
1' MINIMUM WIDTH

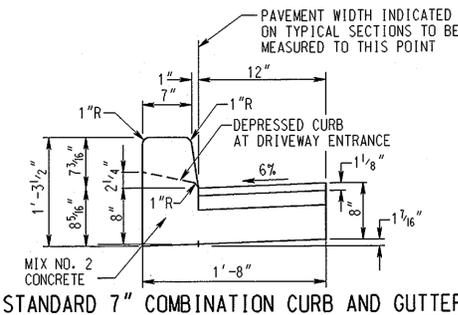


ROCK OUTLET PROTECTION III

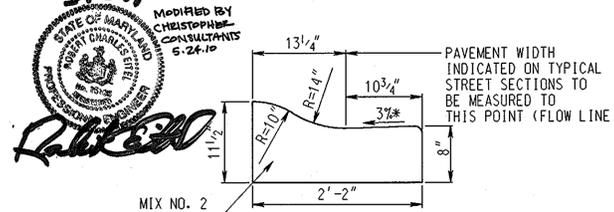
SCALE: NOT TO SCALE

STRUCTURE	Lg.	.4	d	w	TAILWATER CONDITION	COMMENT
E-1	10	4'	2.5	6.5'	MAX.	
E-2	10	4'	2.5	6.5'	MAX.	
E-3	10	4'	2.5	6.5'	MAX.	USE L=14
E-4	10	—	4.0	14'	MAX.	TO OUTLET CHANNEL

ALL ROCK SHALL CONFORM TO RIPRAP SPECIFICATIONS ON SHEET 6.
CLASS 1 RIPRAP SHALL BE USED. FILTER CLOTH SHALL BE GEOTEXTILE CLASS C.



STANDARD 7" COMBINATION CURB AND GUTTER

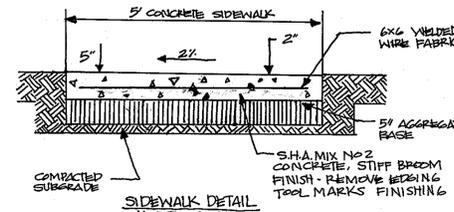


MODIFIED COMBINATION CURB AND GUTTER

*GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

HOWARD COUNTY STANDARD DETAIL R-3.01
COMBINATION CURB AND GUTTER

SCALE: 1" = 1'-0"



SIDEWALK DETAIL

NOTES:
1. PROVIDE LATERAL EXPANSION JOINTS AT 15' O.C. (MAX.)
2. PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C.
3. INTERVALS BETWEEN EXPANSION JOINTS
4. SIDEWALK TO BE SCURED IN 5' MAX SQUARES
5. SEE HOWARD COUNTY STANDARD DETAIL R-3.05 FOR MORE INFORMATION.

AS BUILT DATE 12/20/00

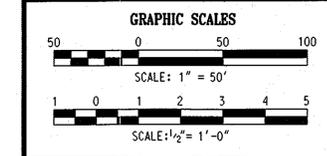
NO.	DESCRIPTION	DATE
1	REQUIRED TO INCLUDE SIDEWALK AND IT DETAILS	2-24-2010

REQUESTER	DATE
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



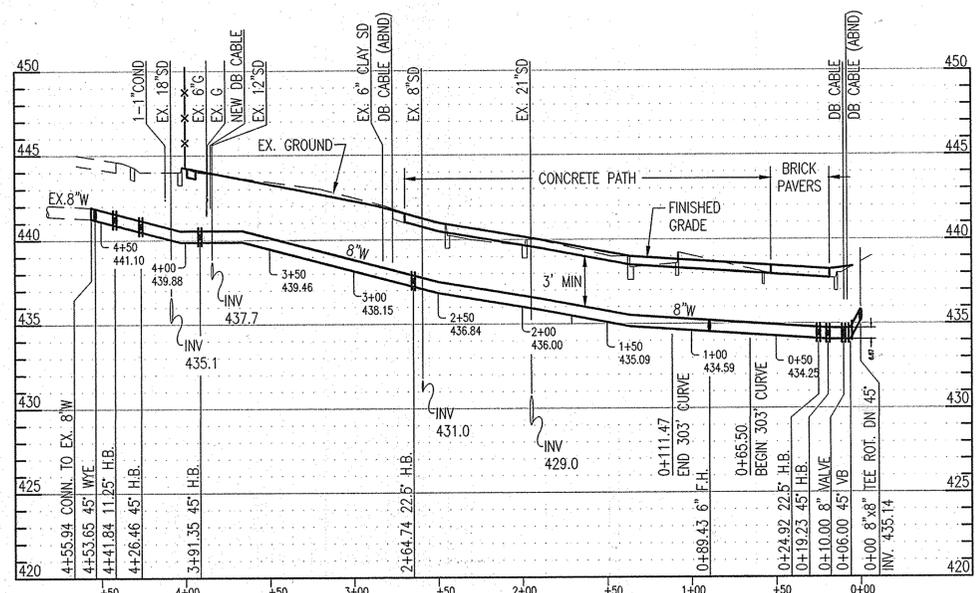
PARKING LOT EXPANSION



WHITMAN, REARDON AND ASSOCIATES, LLP
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 235 - 3450

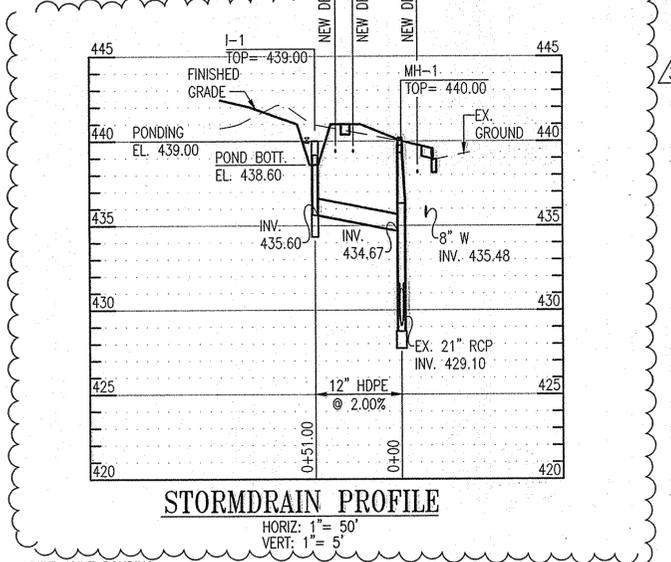
	DRAWING NO.
	C4.0
SHEET 4 OF 13	
SCALE: AS SHOWN	
DES: L.K. CHECK: R.M. DATE: 06/24/98	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/4/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 2/16/98
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 8/15/98



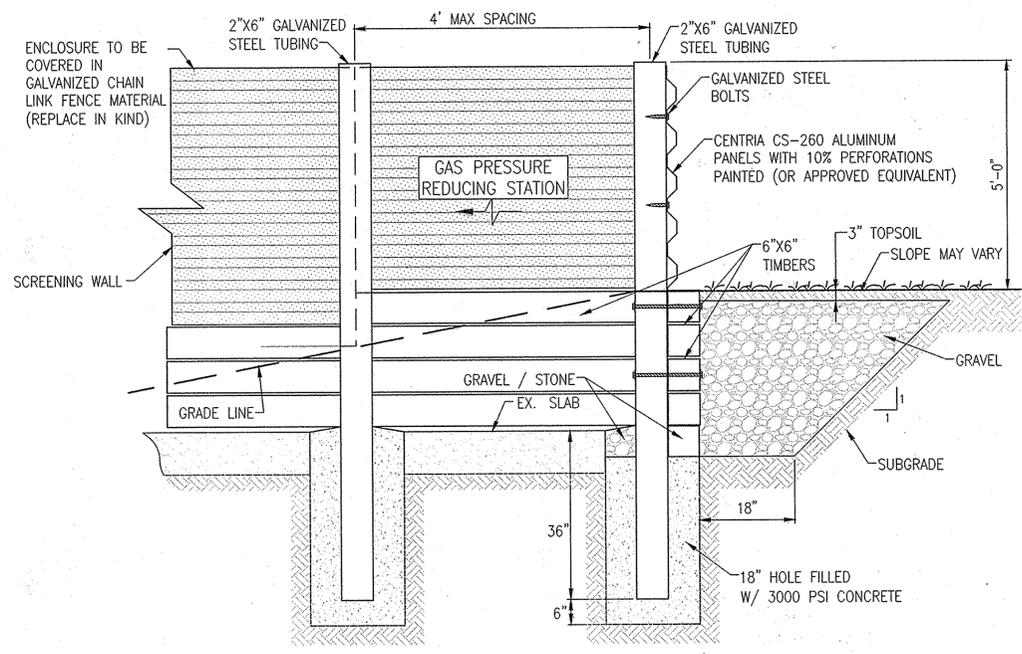
PROFILE - 8" WATER
 HORIZ: 1" = 50'
 VERT: 1" = 5'

NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIGGING TEST PITS, OR OTHER MEANS APPROVED BY THE OWNER, TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY CROSSINGS AND CONNECTIONS. ANY DAMAGE TO EXISTING FACILITIES, UTILITIES OR PAVING SHALL BE CORRECTED TO THE OWNERS SATISFACTION, AT THE CONTRACTOR'S EXPENSE.

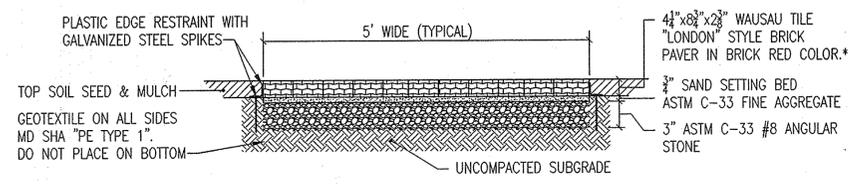


STORMDRAIN PROFILE
 HORIZ: 1" = 50'
 VERT: 1" = 5'

- PIPE JOINT BONDING**
1. ALL PIPE JOINTS SHALL BE BONDED TO INSURE ELECTRICAL CONTINUITY. BONDING MAY BE ACCOMPLISHED EITHER WITH SHOP WELDED COPPER TERMINAL STRAPS AND COPPER JUMPER STRAPS WITH CORROSION RESISTANT BOLTS, WITH COPPER WIRE EXOTHERMIC WELDED IN THE FIELD, OR BRASS WEDGES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 2. ALL BONDING BETWEEN JOINTS FOR PIPE, FITTINGS, VALVES, AND SPECIALS SHALL BE TESTED FOR ELECTRICAL CONTINUITY. EACH JOINT SHALL BE INSPECTED BY JHU/APL AND RESISTANCE TESTED PRIOR TO COATING AND BACKFILLING. NO RESISTANCE WILL BE PERMISSIBLE ACROSS ANY JOINT.
 3. ALL BONDED JOINTS SHALL BE COATED WITH A RUST-INHIBITIVE PAINT.

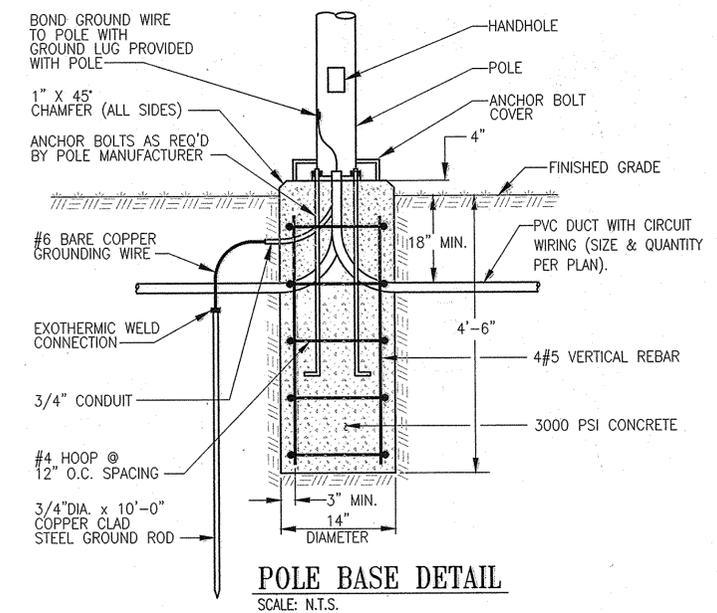


GRAVITY RETAINING WALL & SCREENING WALL
 SCALE: NO SCALE
 REF:

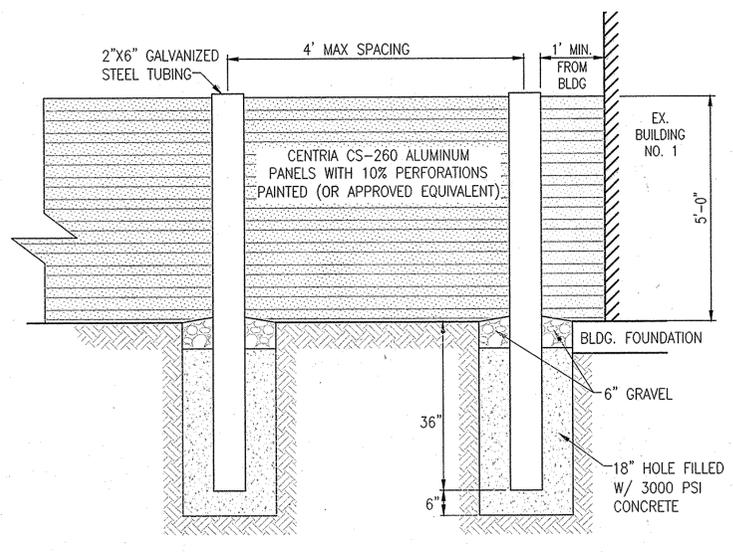


PROPOSED PAVER SIDEWALK DETAIL
 SCALE: N.T.S.

* REMOVE AND STORE EXISTING PAVERS DURING GRADING OPERATIONS. WHEN LAYING NEW WALKS USE SALVAGED PAVERS ON PROPOSED WALK NEAR BUILDING #4.



POLE BASE DETAIL
 SCALE: N.T.S.



SCREEN WALL DETAIL
 SCALE: N.T.S.

REVISIONS		
1	REDLINED TO INCLUDE SIDEWALK AND UTILITY DUCTS	2-24-2010
2	ADD DETAILS & PROFILES SHEET	11-25-2014
3	REVISE SD PROFILES, REMOVE DETAILS	3-13-15

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSF GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION
 REVISED SITE DEVELOPMENT PLAN

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2015

GRAPHIC SCALES



WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21201

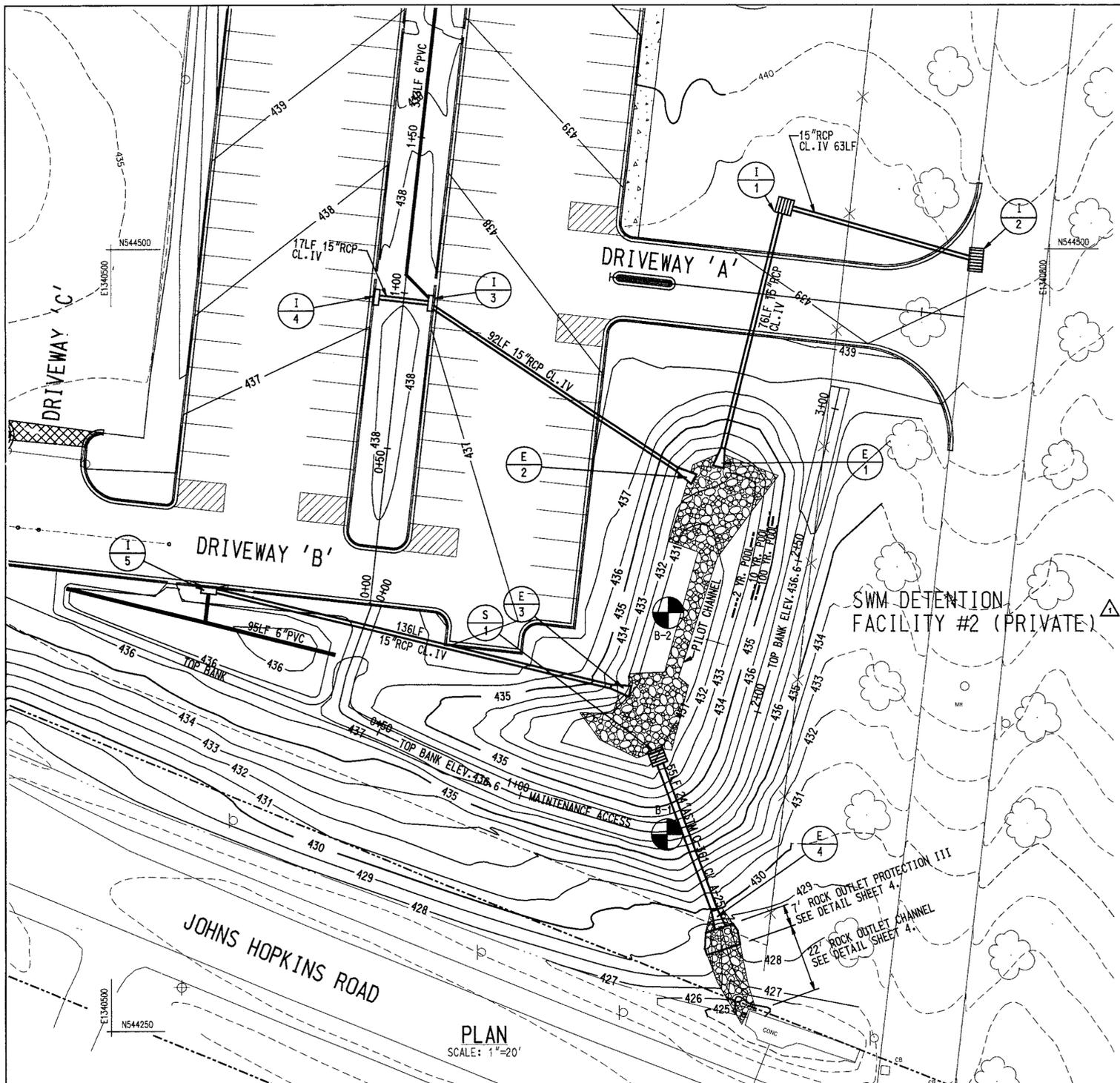
DETAILS AND UTILITY PROFILES

	DRAWING NO.
	C4.1
SHEET 4A OF 13	

SCALE: AS SHOWN
 DES: JTD CHECK: AUO DATE: 11/25/14

5-21-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 5-26-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 5-28-2015
 DIRECTOR

PURPOSE STATEMENT:
 THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.



POND SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION
 AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OR ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL
 MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6" FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY THE GEOTECHNICAL ENGINEER.

PLACEMENT - AREAS ON WHICH FILLS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. MATERIALS SHALL BE PLACED IN MAXIMUM 8" THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

CUT OFF TRENCH - THE CUT OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACKFILL
 BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

PIPE CONDUITS
 ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.
 REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.
2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6" INCHES, OR AS SHOWN ON THE DRAWINGS.

MAINTENANCE SCHEDULE

- ROUTINE MAINTENANCE**
1. THE FACILITIES SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE PONDS ARE FUNCTIONING PROPERLY. THE FACILITIES SHALL BE INSPECTED IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA-NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378)". THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE PONDS AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THERE OF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.
 2. THE TOP AND SIDE SLOPES OF THE EMBANKMENTS SHALL BE MOWED A MINIMUM OF TWO(2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
 3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 4. VISIBLE SIGNS OF EROSIONS IN THE PONDS AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
1. STRUCTURAL COMPONENTS OF THE PONDS SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
 2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY LEAST COUNTY'S DEPARTMENT(S) OF PUBLIC WORKS ZONING.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.
4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

CONCRETE
 CONCRETE SHALL MEET THE REQUIREMENT OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP
 ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311 AND 901.02.

FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

THE TEST FOR SOUNDNESS SHALL BE PERFORMED ACCORDING TO ASTM C 88.
 THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCKS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT THE RIPRAP SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE Voids BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENT OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE PERMANENT WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPED AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTION OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

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

EROSION AND SEDIMENT CONTROL

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

GENERAL NOTES:

1. THIS FACILITY IS PRIVATELY OWNED AND SHALL BE PRIVATELY MAINTAINED.
2. THIS FACILITY LIES WITHIN THE MIDDLE PATUXENT RIVER WATERSHED.
3. THIS FACILITY IS HAZARD CLASS A.

INSPECTION SCHEDULE

- PRIOR NOTIFICATION SHALL BE GIVEN TO THE ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES:
1. UPON COMPLETION OF EXCAVATION TO SUBFOUNDATION AND WHERE REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO:
 - A) CORE TRENCHES FOR STRUCTURAL EMBANKMENTS
 - B) INLET-OUTLET STRUCTURES AND ANTI-SEEP STRUCTURES, WATERFIGHT CONNECTIONS ON PIPES; AND
 - C) TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES.
 2. DURING PLACEMENT OF STRUCTURAL FILL, CONCRETE, AND INSTALLATION OF PIPING AND CATCH BASINS;
 3. DURING BACKFILL OF FOUNDATIONS AND TRENCHES;
 4. DURING EMBANKMENT CONSTRUCTION; AND
 5. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- NO WORK SHALL PROCEED UNTIL ENGINEER INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED.

REVISIONS	
SHOW FACILITY #2 AS BUILT	09/01/2000

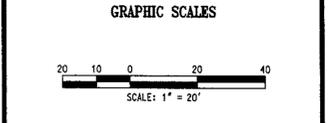
APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICER	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION

NOTE:
 THE PURPOSE OF THIS REVISED PLAN IS TO GRAPHICALLY PORTRAY THE STORMWATER MANAGEMENT AND BIORETENTION FACILITIES AS MODIFIED DURING CONSTRUCTION DUE TO CHANGED CONDITIONS IN THE FIELD.



WHITMAN, REQUARDY AND ASSOCIATES, LLP
 2315 SAINT PAUL STREET
 BALTIMORE, MARYLAND
 410 - 235 - 3450

REVISED STORM WATER MANAGEMENT PLAN AND SPECIFICATIONS

STATE OF MARYLAND PROFESSIONAL ENGINEER

C6.0
 SHEET 6 OF 13
 SCALE: 1"=20'
 DES: L.K. CHECK: R.M. DATE: 02/01/00

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 C. Richard Lortz
 PE NO. 4870
 DATE: 9/5/00

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 J. G. Linsfield
 HOWARD SOIL CONSERVATION DISTRICT
 DATE: 9/10/00
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 J. G. Linsfield
 HOWARD SOIL CONSERVATION SERVICE
 DATE: 9/10/00

POND SPECIFICATIONS
 IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUT-OFF TRENCH INSTALLATION DEEPER THAN FOUR (4) FEET, IT WILL BE NECESSARY TO EXTEND THE CUT-OFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. FILL MATERIAL FOR THE CUT-OFF TRENCH AND IMPERVIOUS CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 James E. Loesch
 DATE: 10/19/00
 Chief, Development Engineering Division MK
 Condy Linsfield
 DATE: 10/13/00
 Chief, Division of Land Development

DEVELOPERS CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT AN ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION AND AUTHORIZE PERIODIC ON SITE INSPECTIONS BY THE HOWARD SOIL CONSTRUCTION DISTRICT.
 James E. Loesch
 DATE: 9/8/00

ENGINEERS CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSTRUCTION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
 C. Richard Lortz
 DATE: 9/5/00

PEAK FLOW SUMMARY

PEAK FLOW (cfs)	DESIGN POINT 1		DESIGN POINT 2	
	2 YEARS	10 YEARS	2 YEARS	10 YEARS
EXISTING				
CONTROLLED: IN/OUT			6.22/4.93	11.84/7.71
UNCONTROLLED	1.61	5.10	9.63	19.77
TOTAL*	1.61	5.10	12.39	26.75
DEVELOPED				
CONTROLLED: IN/OUT	5.21/0.88	11.05/4.48	5.80/4.46	10.44/7.39
UNCONTROLLED	0.95	2.28	9.56	19.3
TOTAL*	1.97	4.82	11.74	25.90

* HYDROGRAPH PEAK

DESIGN SUMMARY

	FACILITY 2			FACILITY 3 (EXISTING)		
	2 YEARS	10 YEARS	100 YEARS	2 YEARS	10 YEARS	100 YEARS
PROPOSED INFLOW (CFS)	5.24	1.11	17.9	5.80	10.4	15.5
ALLOWABLE RELEASE (CFS)	NA	NA	NA	NA	NA	NA
PROPOSED OUTFLOW (CFS)	0.90	4.53	14.7	4.33	7.70	9.0
WATER SURFACE ELEVATION (FT)	432.63	433.93	434.35	431.38	431.94	432.57
STORAGE PROVIDED (AC-FT)	0.14	0.29	0.53	0.071	0.11	0.18
STRUCTURE TYPE	DETENTION			DETENTION		
STRUCTURE HAZARD CLASSIFICATION	URBAN			URBAN		
STRUCTURE LOCATION	URBAN			URBAN		
WATER SHED AREA (FACILITY)	0.89AC					
MAXIMUM HEIGHT OF FILL	6					
MINIMUM TOP OF DAM WIDTH	6					
FREEBOARD PROVIDED	2.2'					

AS BUILT DATE 12/20/00

ELLIPTICAL TRASH RACK #1:
 $R_1 = 1'-7\frac{1}{2}"$, $R_2 = 1'-11\frac{1}{2}"$, $L = 3'-8"$
 DEEP #4 BENT BARS @ 6" O.C.
 *SEE NOTE THIS SHEET

TOP OF RISER
 ELEV. 436.0

6" TYP.
 E.W.

SIDE AND REAR WEIR
 CREST ELEV. 434.0

#4 @ 12" EACH FACE

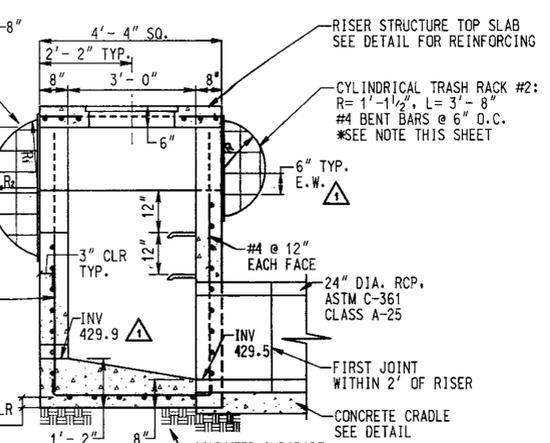
3" CLR TYP.

INV 429.9

3" CLR TYP.

1'-2" 8"

COMPACTED SUBGRADE

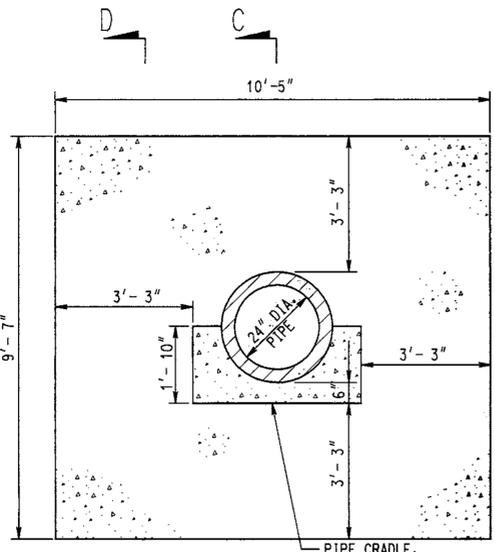


*NOTE:
 BARS WELDED TO 2"x2" L CHANNEL.
 BOLT L CHANNEL TO TOP SLAB AND WALLS. (TRASH
 RACK #3, WALLS ONLY). WITH 4 1/2"x6" HEXHEAD
 GALVANIZED BOLTS. TRASH RACK TO BE HOT DIPPED
 GALVANIZED AFTER FABRICATION AND PAINTED
 BATTLESHIP GREY.

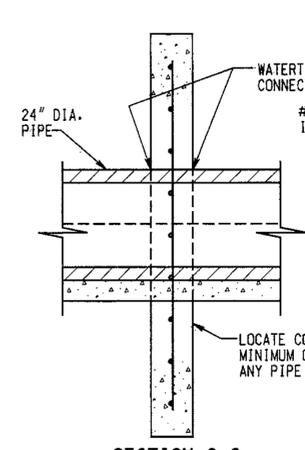
SECTION A-A

NOTES:

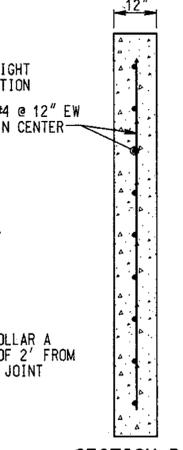
1. CONCRETE TO BE SHA MIX NO. 3.
2. $F_c = 3500$ PSI.
3. POUR COLLAR WITH PIPE IN PLACE.
4. BACKFILL EVENLY ON BOTH SIDES OF COLLAR PER SPECIFICATIONS.
5. LOCATE COLLAR A MINIMUM OF 2' FROM PIPE JOINTS.
6. ALL PIPE JOINTS IN THE PRINCIPAL SPILLWAY SHALL BE SEALED WITH MASTIC JOINT SEALER. SEE DETAIL, THIS SHEET.



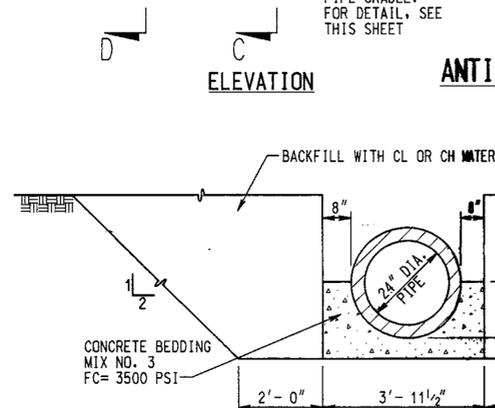
ELEVATION



SECTION C-C



SECTION D-D



PIPE CRADLE DETAIL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 10/19/00 DATE

[Signature] 10/12/00 DATE

[Signature] 10/13/00 DATE

DEVELOPER'S CERTIFICATE

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

[Signature] 9/8/00 DATE

JAMES E. LOESCH

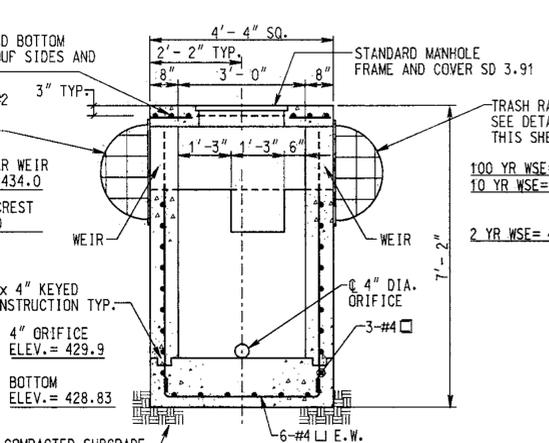
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

[Signature] DATE

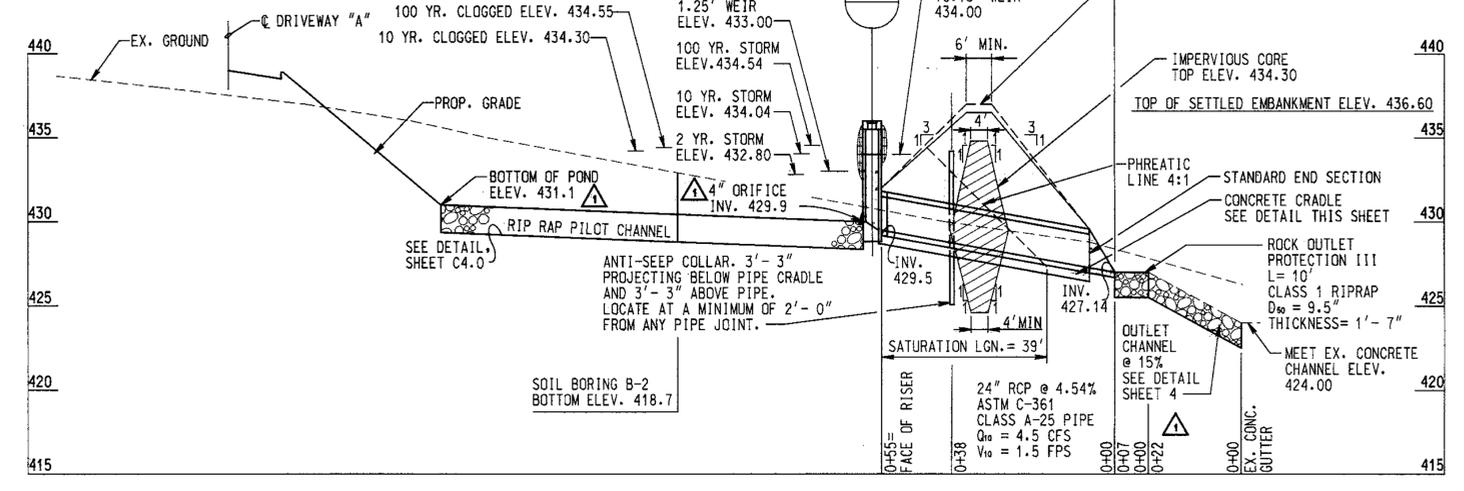
USDA-NATURAL RESOURCES CONSERVATION SERVICE



SECTION B-B

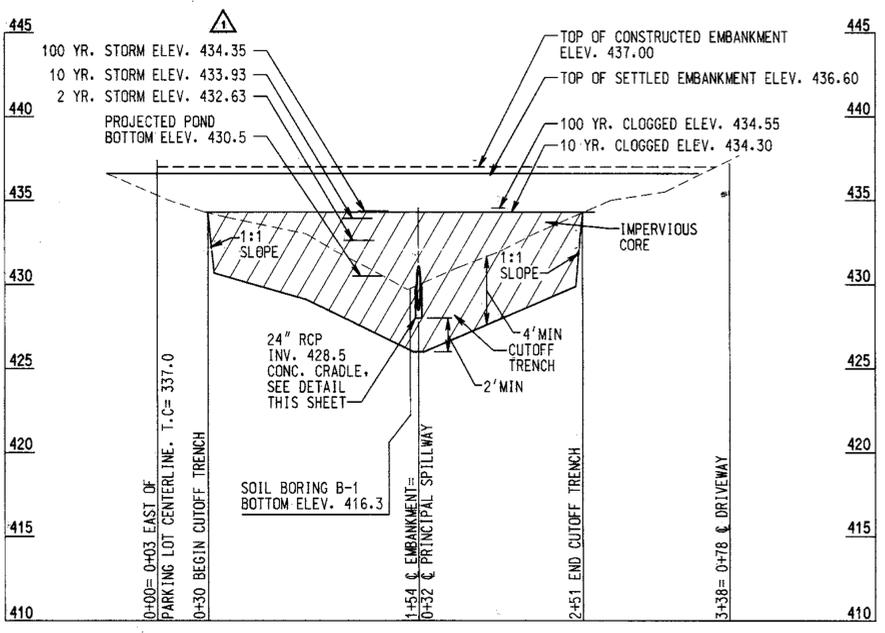
POND PRINCIPAL SPILLWAY RISER DETAIL WITH BAR SCREENS

SCALE: 1/2" = 1'-0"



PRINCIPAL SPILLWAY PROFILE

SCALE: HORIZ.: 1" = 20'
 VERT.: 1" = 5'



PROFILE ALONG THE TOP OF DAM

SCALE: HORIZ.: 1" = 20'
 VERT.: 1" = 5'

AS BUILT DATE 12/20/00

REVISIONS	
SHOW FACILITY #2 AS BUILT	03/01/2000

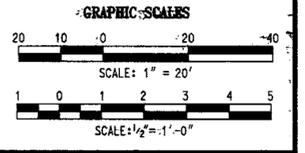
APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
INSPECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-8099



PARKING LOT EXPANSION

NOTE:
 THE PURPOSE OF THIS REVISED PLAN IS TO GRAPHICALLY PORTRAY THE STORMWATER MANAGEMENT AND "BIORETENTION" FACILITIES AS MODIFIED DURING CONSTRUCTION DUE TO CHANGED CONDITIONS IN THE FIELD.



WHITMAN, REARDON AND ASSOCIATES, LLP
 2315 SAINT PAUL STREET
 BALTIMORE, MARYLAND
 410 - 235 - 3450

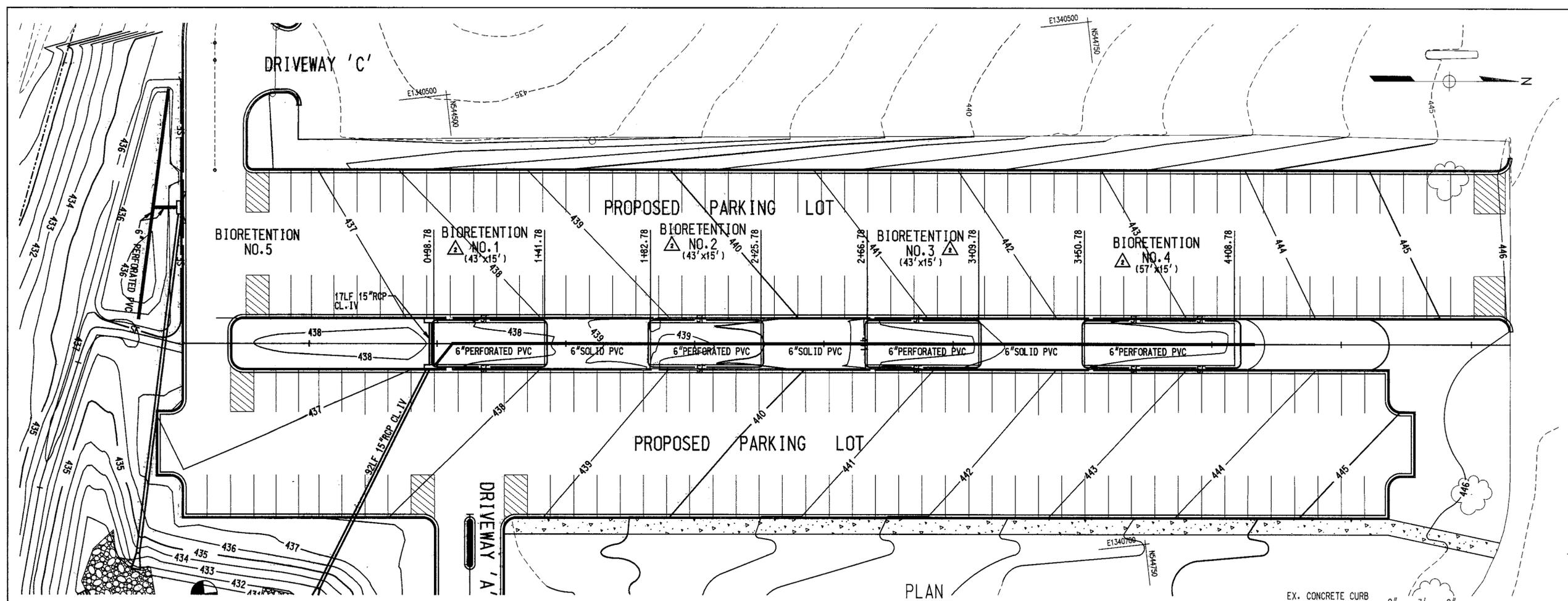
REVISED STORM WATER MANAGEMENT DETAILS AND PROFILES

DRAWING NO. **C6.1**

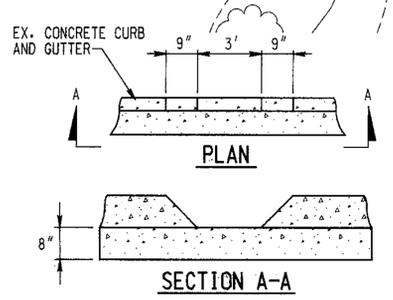
SHEET 7 OF 13

SCALE: AS SHOWN

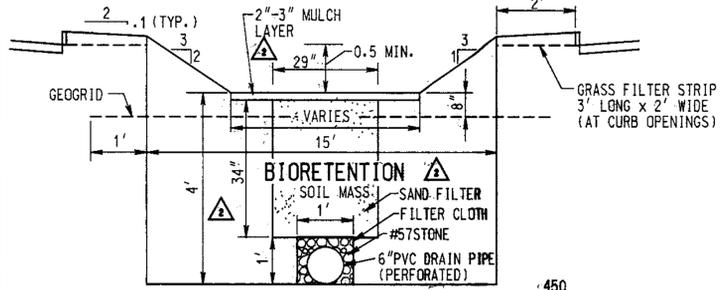
DBS: L.K. CHECK: R.M. DATE: 02/01/00



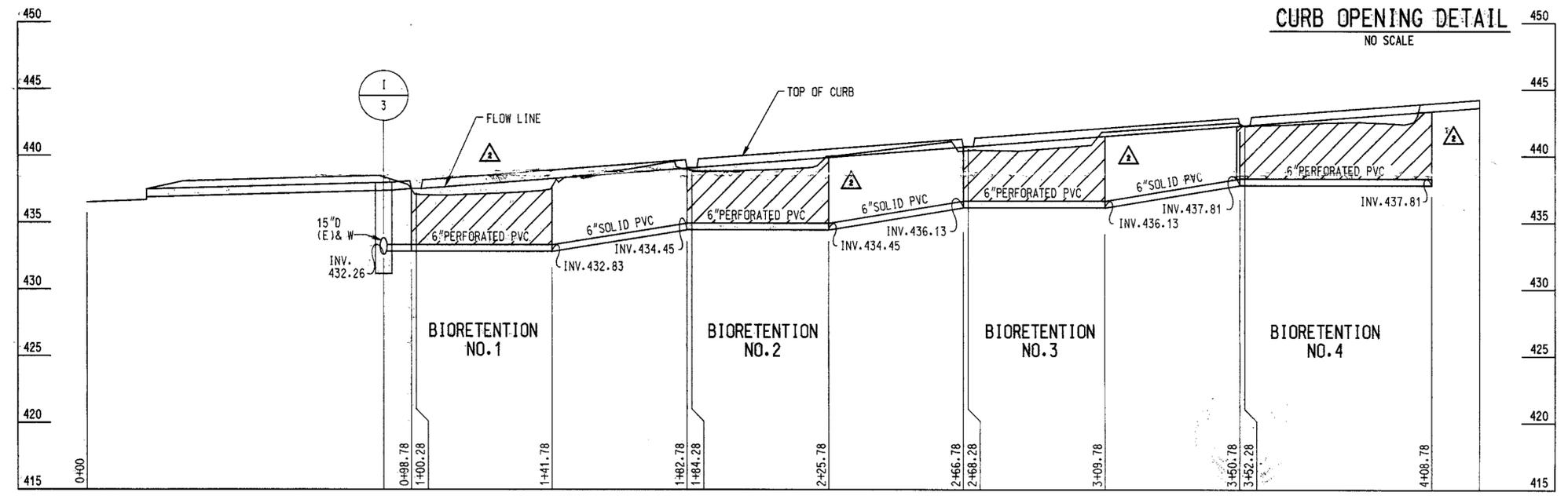
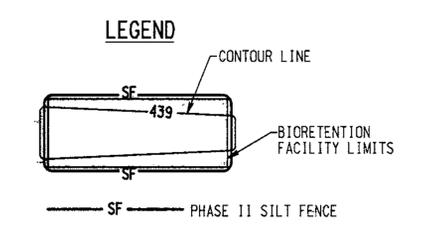
PLAN
SCALE: 1"=20'



CURB OPENING DETAIL
NO SCALE



SECTION THROUGH
BIORETENTION FACILITY
NOT TO SCALE



PROFILE
SCALE: HORIZ. 1"=20'
VERT. 1"=5'

APPROVED:	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
<i>[Signature]</i>	10/12/00
DIRECTOR	DATE
<i>[Signature]</i>	10/12/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE
<i>[Signature]</i>	10/14/00
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

AS BUILT DATE 12/20/00

REVISIONS	
SHOW FACILITY #2 AS BUILT	09/01/2000

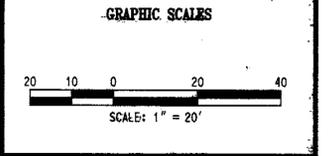
APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
INSPECTORS OFFICER	
COORDINATOR	
SENIOR LEADER	

THE JOHNS
HOPKINS UNIVERSITY
**APPLIED PHYSICS
LABORATORY**
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



**PARKING LOT
EXPANSION**

NOTE:
THE PURPOSE OF THIS REVISED PLAN IS TO GRAPHICALLY PORTRAY THE STORMWATER MANAGEMENT AND BIORETENTION FACILITIES AS MODIFIED DURING CONSTRUCTION DUE TO CHANGED CONDITIONS IN THE FIELD.



WHITMAN, REARDON AND ASSOCIATES, LLP
2816 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 595 - 3450

**REVISED WATER QUALITY
MANAGEMENT PLAN, PROFILES
SECTION AND DETAIL**

	DRAWING NO.
	C7.0
	SHEET 8 OF 13
	SCALE: 1"=20'
DES: L.K. CHECK: R.M. DATE: 02/01/00	

END PERIMETER ①

100E

LANDSCAPE STATISTICS

ITEM	PLANTING REQUIRED ACCORDING TO HOWARD COUNTY LANDSCAPE MANUAL SCHEDULE A, B AND D	PLANTING INDICATED AS BEING PROVIDED IN SCHEDULE A, B AND D	PLANTING AS SHOWN ON THE PROPOSED LANDSCAPE PLAN	PLANTING AS-BUILT
SHADE TREES	31	36	37	37
EVERGREEN TREES	20	26	26	21
EVERGREEN SHRUBS	50	100	100	150
DECIDUOUS SHRUBS	0	0	56	56



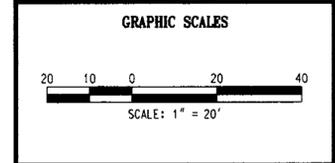
REVISIONS	
REV	LANDSCAPE AROUND SWM PERIMETER 06/12/1998

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



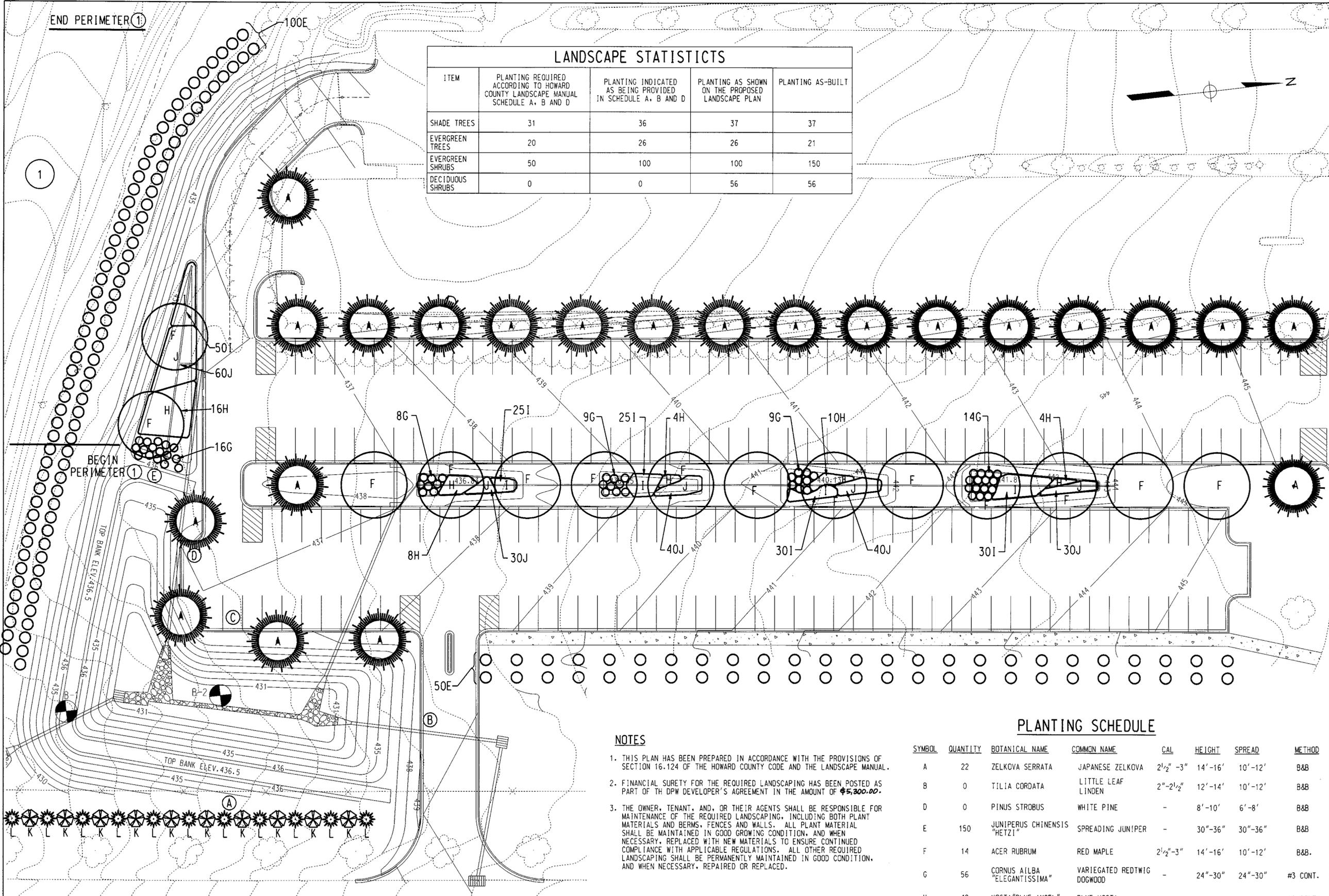
PARKING LOT EXPANSION



WR&A
 WHITMAN, REQUARDY AND ASSOCIATES, LLP
 2315 SAINT PAUL STREET
 BALTIMORE, MARYLAND
 410 - 235 - 3450

LANDSCAPE PLAN DETAILS AND SCHEDULE

DRAWING NO.	C8.0
SHEET 9 OF 13	
SCALE: 1" = 20'	
DES: L.K. CHECK: R.M. DATE: 06/24/98	



NOTES

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$5,300.00.
3. THE OWNER, TENANT, AND, OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIAL SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

PLANTING SCHEDULE

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	CAL	HEIGHT	SPREAD	METHOD
A	22	ZELKOVA SERRATA	JAPANESE ZELKOVA	2 1/2" - 3"	14' - 16'	10' - 12'	B&B
B	0	TILIA CORDATA	LITTLE LEAF LINDEN	2" - 2 1/2"	12' - 14'	10' - 12'	B&B
D	0	PINUS STROBUS	WHITE PINE	-	8' - 10'	6' - 8'	B&B
E	150	JUNIPERUS CHINENSIS "HETZI"	SPREADING JUNIPER	-	30" - 36"	30" - 36"	B&B
F	14	ACER RUBRUM	RED MAPLE	2 1/2" - 3"	14' - 16'	10' - 12'	B&B
G	56	CORNUS ALBA "ELEGANTISSIMA"	VARIEGATED REDTWIG DOGWOOD	-	24" - 30"	24" - 30"	#3 CONT.
H	42	HOSTA "BLUE ANGEL"	BLUE HOSTA	-	-	-	#2 CONT.
I	160	IRIS SIBERICA "CEASAR'S BROTHER"	BLUE IRIS	-	-	-	#1 CONT.
J	200	ASTILBE ARUNDINIFOLIA "FEDERSEE"	PINK ASTILBE	-	-	-	#1 CONT.
K	10	TSUGA CANADENSIS	HEMLOCK	-	5' - 6'	-	B&B
L	11	ILEX OPACA	HOLLY	-	5' - 6'	-	B&B

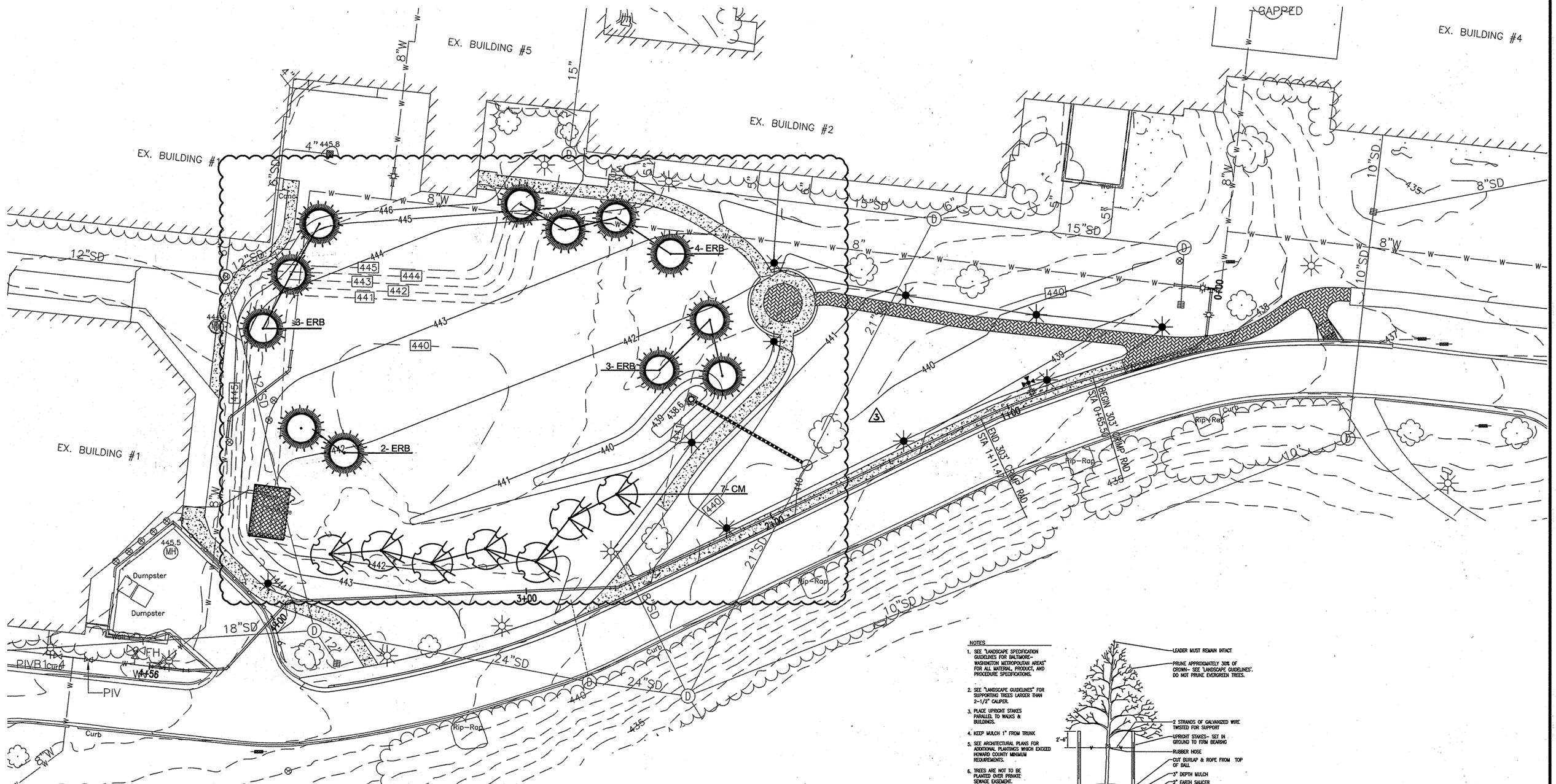
DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

James E. Leach 4/19/01
 NAME DATE

PLAN
 SCALE: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i> 6/1/01	DATE
<i>[Signature]</i> 5/17/01	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
<i>[Signature]</i> 5/14/01	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	



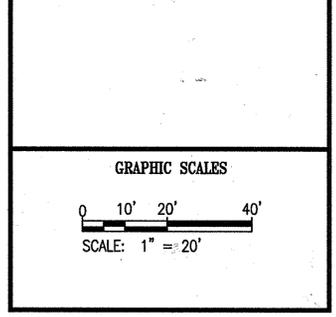
REVISIONS		
1	REDLINED TO INCLUDE SIDEWALK AND IT DUCTS	2-24-2010
2	ADD LANDSCAPE PLAN & PLANT LIST	11-05-2014
3	REMOVE MICRO-BIORETENTION	3-13-15

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION
 REVISED SITE DEVELOPMENT PLAN

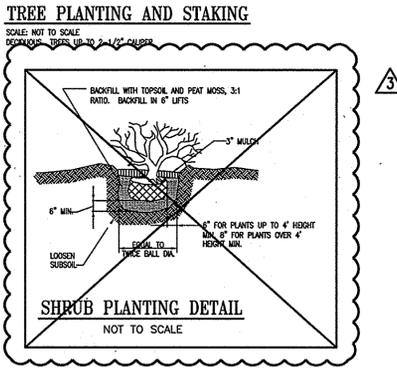
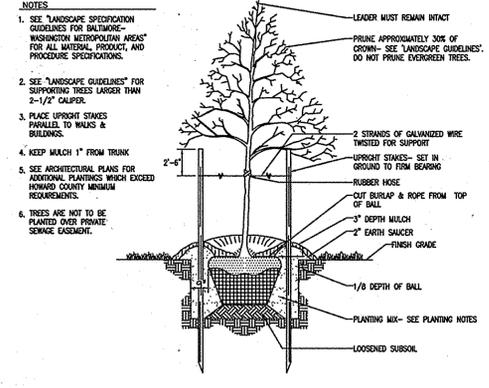


WR&A
 WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

LANDSCAPE PLAN AND PLANT LIST

DRAWING NO. **C8.0A**
 SHEET 9A OF 13
 SCALE: 1" = 20'
 DES: JTD CHECK: AVO DATE: 11/25/14

NOTE: THE SWM FEATURE SHOWN ON THESE PLANS IS BEING PROVIDED AS A LANDSCAPE FEATURE AND IS NOT A REGULATORY DEVICE TO MEET SWM REQUIREMENTS.



LEGEND

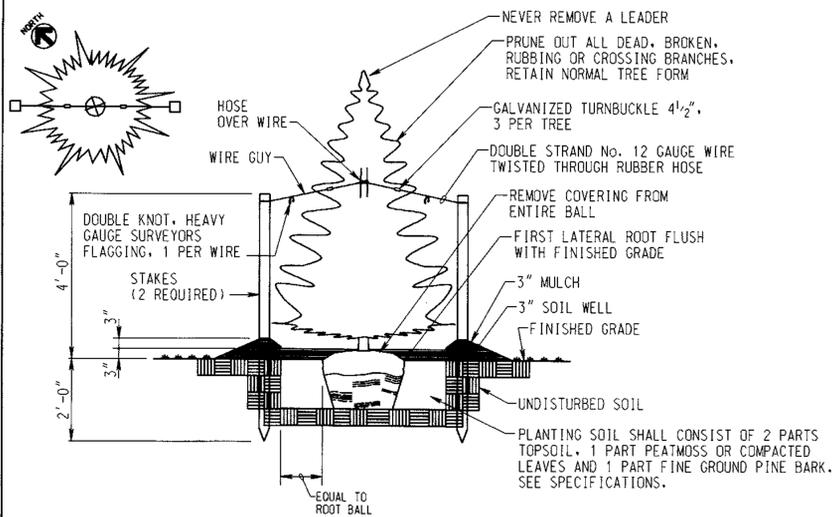
- CONCRETE SIDEWALK
- PAVER SIDEWALK

LANDSCAPE PLANTING SCHEDULE					
KEY	CALL OUT	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
	ERB	12	CERCIS CANADENSIS/EASTERN REDBUD	1.5"-2" CAL	B&B SPACE 20' O.C.
	CM	7	LAGERSTROEMIA INDICA X FAURIEI HYBRIDS / CRAPEMYRTLES	1.5"-2" CAL	B&B / MULTI-STEM TREES SPACE 20' O.C.
	LB	3	LANDSCAPE BOULDER	3'-4'	FOUND ONSITE

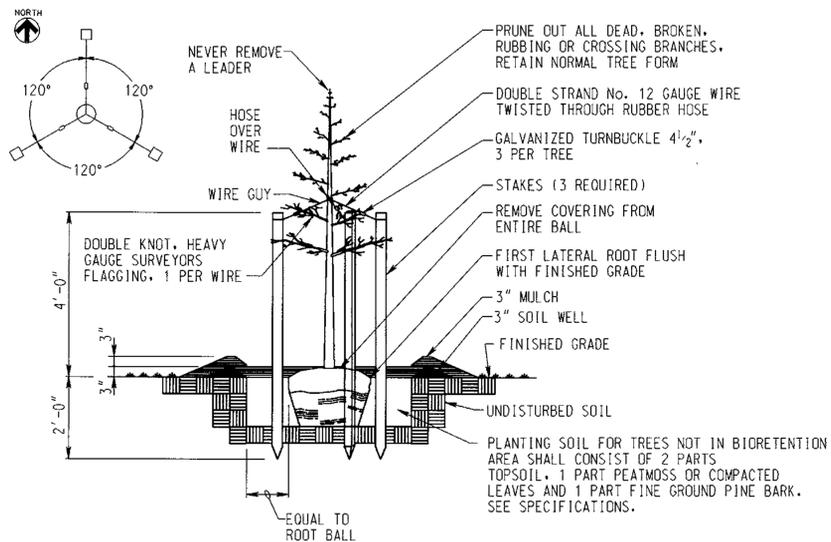
PURPOSE STATEMENT:
 THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5-21-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 5-26-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 5-28-2015
 DIRECTOR

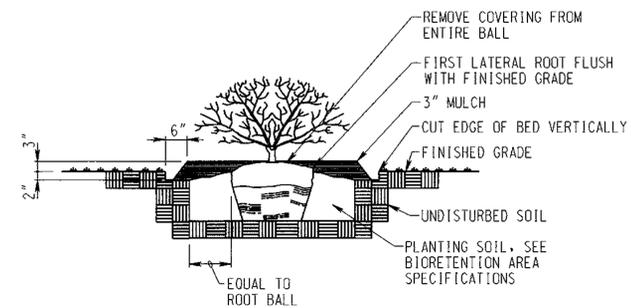
DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 [Signature] 1 May 2015
 DEVELOPER DATE



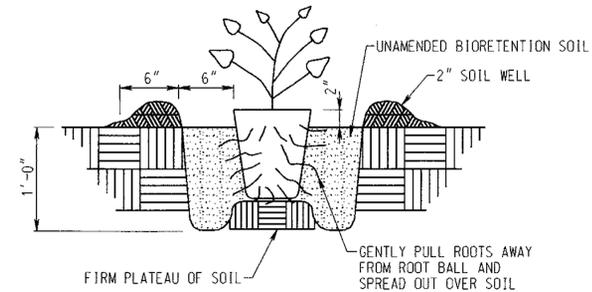
PLANTING DETAIL - EVERGREEN TREE
NO SCALE



PLANTING DETAIL - DECIDUOUS TREE
NO SCALE



PLANTING DETAIL - SHRUB
NO SCALE



PLANTING DETAIL - CONTAINER PLANT
NO SCALE

GENERAL NOTES:

1. PLANTS SHALL BE GUARANTEED 12 MONTHS FOLLOWING FINAL ACCEPTANCE BY OWNER.
2. FOR ADDITIONAL GUIDANCE, INSTALLATION PRACTICES SHALL BE PERFORMED IN ACCORDANCE WITH SHA STANDARD SPECIFICATIONS.

BIORETENTION AREA SEQUENCE OF CONSTRUCTION

1. INSTALL PHASE II SILT FENCE.
2. GRADE EACH SITE AS SHOWN. CONSTRUCT CURB OPENINGS. BLOCK CURB OPENINGS.
3. STABILIZE GRADING WITHIN LIMIT OF DISTURBANCE EXCEPT FOR BIORETENTION AREA.
4. EXCAVATE BIORETENTION AREA TO PROPOSED DEPTH.
5. FILL BIORETENTION AREA WITH PLANTING SOIL ACCORDING TO PLANS AND SPECIFICATIONS. INSTALL AND ANCHOR GEOGRID ONE (1) FOOT INTO SURROUNDING SOIL. OVERLAP GEOGRID ONE (1) FOOT.
6. PLANT VEGETATION ACCORDING TO THE PLANS AND SPECIFICATIONS.
7. UNBLOCK CURB OPENINGS AND REMOVE SILT FENCE UPON STABILIZATION.

BIORETENTION AREA SPECIFICATIONS

MATERIALS AND METHODS

A. PLANTING SOIL

SOIL USED IN THE BIORETENTION AREA SHALL HAVE A SANDY LOAM OR LOAMY SAND COMPOSITION CONTAINING 5-10% CLAY AND A MINIMUM OF 35% SAND. ONE GRAIN SIZE ANALYSIS SHALL BE PERFORMED PER BIORETENTION AREA. IN ADDITION, THE FURNISHED PLANTING SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, STUMPS, ROOTS, OR SIMILAR OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH OR A HINDERANCE TO PLANTING OR MAINTENANCE OPERATIONS.

THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY AND CANADA THISTLE. IT SHALL BE FREE OF TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH.

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

ITEM	STANDARD	TEST FREQUENCY
pH	5.5 - 6.5	1/BIORETENTION AREA
ORGANIC MATTER	1.5 - 3.0%	1/BIORETENTION AREA
MAGNESIUM	35 LBS./ACRE	1/BORROW AREA
PHOSPHORUS	100 LBS./ACRE	1/BORROW AREA
POTASSIUM	85 LBS./ACRE	1/BORROW AREA
SOLUBLES SALTS	#500 PPM	1/BORROW AREA

B. MULCH LAYER

A MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. AN ACCEPTABLE MULCH LAYER SHALL INCLUDE SHREDDED HARDWOOD OR SHREDDED WOOD CHIPS OR OTHER SIMILAR PRODUCT THAT HAS BEEN STOCKPILED FOR AT LEAST 12 MONTHS, UNIFORM IN COLOR AND FREE OF FOREIGN MATERIAL, INCLUDING FOREIGN PLANT MATERIAL.

C. COMPACTION

SOIL SHALL BE PLACED IN 12" LIFTS AND LIGHTLY COMPACTED BY TAMPING WITH A BACKHOE BUCKET OR EQUAL.

BIORETENTION AREA PLANT SPECIFICATION

MATERIALS AND METHODS

TREE AND SHRUB

1. ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE UNTIL PLANTED.
2. WALLS OF PLANTING PIT SHALL BE DUG VERTICAL.
3. THE DIAMETER OF THE PLANTING PIT MUST BE AT LEAST SIX INCHES (6") LARGER THAN THE ROOT BALL.
4. THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW 3/4 OF THE BALL TO BE BELOW GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE HAND TAMPED.
5. THE REQUIRED FERTILIZER SHALL BE PLACED IN THE PLANTING PIT.
6. THE PLANT SHALL BE REMOVED FROM NON-BIODEGRADABLE CONTAINERS. IT SHALL BE MOVED BY SUPPORTING THE BALL, NEVER BY LIFTING THE BRANCH OR TRUNK.
7. THE PLANT SHALL BE CENTERED AND SET VERTICALLY IN THE PIT. 1/4 OF THE ROOT BALL SHALL BE ABOVE EXISTING GRADE.
8. BACKFILL THE PLANTING PIT WITH BIORETENTION SOIL, KEEPING THE PLANT VERTICAL. MOUND THE SOIL AROUND THE BALL, LEAVING THE TOP OF THE BALL EXPOSED.
9. TREES SHALL BE BRACED USING WHITE OAK STAKES, PLACED IN SUCH A WAY THAT THEY WILL NOT BE A HAZARD TO PEDESTRIANS. STAKES SHALL BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. SUPPORT THE TREE USING HOSE AND WIRE.

GROUND COVER

1. THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH.
2. BEFORE PLANTING, BIODEGRADABLE POTS SHALL BE SPLIT AND NON-BIODEGRADABLE POTS SHALL BE REMOVED. ROOT SYSTEMS OF ALL POTTED PLANTS SHALL BE SPLIT OR CRUMBLED.
3. THE GROUND COVER SHALL BE PLANTED SO THAT THE ROOTS ARE SURROUNDED BY SOIL BELOW THE MULCH. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. THE ROOTS OF BARE ROOT PLANTS SHALL BE COVERED TO THE CROWN. ALL PLANTS SHALL BE INSTALLED GREEN SIDE UP.
4. THE MULCHED AND PLANTED GROUND COVER BED SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE.
5. THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED AFTER PLANTING.

FERTILIZATION

1. TREE AND SHRUB FERTILIZER SHALL BE ACCORDING TO NURSERYMEN'S SPECIFICATIONS
2. GROUND COVER FERTILIZER SHALL BE A WET APPLICATION OF 10-6-4 ANALYSIS FERTILIZER AT A RATE OF 3 LBS. PER 100 SQUARE FEET OF THE BIORETENTION AREA PRIOR TO PLANTING.

**SCHEDULE D
STORM WATER MANAGEMENT
AREA LANDSCAPING**

PERIMETER	LENGTH	TYPE	TREES REQ'D	BUFFER TYPE
(A)	210	SWM		B
(B)	120	SWM		B
(C)	110	SWM		B
(D)	70	SWM		B
(E)	90	SWM		B
(F)	180	SWM		B
TOTAL	780 LF			
		REQ'D		
		1 SHADE TREE/50'	16	
		1 EVERGREEN/40'	20	
		PROVIDED		
		5 EXIST. SHADE TREES		
		12 EXCESS PARKING		
		5 NEW SHADE TREES		
		22 EVERGREEN*		
		50 SHRUBS**		

* 2 EVERGREENS ARE BEING SUBSTITUTED IN LIEU OF 1 SHADE TREE.
** 50 SHRUBS ARE BEING SUBSTITUTED IN LIEU OF 5 SHADE TREES.

**SCHEDULE A
NON-RESIDENTIAL
PERIMETER LANDSCAPE EDGE**

PERIMETER	LENGTH	TYPE	TREES REQ'D	EDGE TYPE
(1)	200'	PARKING TO ROAD		E
		REQ'D		
		1 SHADE TREE/40'	5	
		1 SHRUB/4'	50	
		PROVIDED		
		3 SHADE TREES		
		4 EVERGREEN*		
		50 SHRUBS		

* 4 EVERGREEN TREES ARE BEING SUBSTITUTED IN LIEU OF 2 SHADE TREES.

**SCHEDULE B
NON-RESIDENTIAL PARKING LOT-
INTERNAL LANDSCAPE**

NUMBER OF NEW PARKING SPACES - 200
INTERNAL ISLAND REQUIRED (10sf/PARKING SPACE) = 2000sf
INTERNAL ISLAND PROVIDED 20' x 440' = 8800sf

SHADE TREES REQUIRED - 1/20 PARKING SPACES 10
SHADE TREES PROVIDED - 28 - 18 EXCESS

REVISIONS		
REV	DESCRIPTION	DATE
001	ISSUED FOR PERMITS	06/12/1998

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSE GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

PARKING LOT EXPANSION

GRAPHIC SCALES

WRA
WHITMAN, REQUARDT AND ASSOCIATES, LLP
2915 SAINT PAUL STREET
BALTIMORE, MARYLAND
410 - 235 - 3450

LANDSCAPE / BIORETENTION SCHEDULES, DETAILS AND SPECIFICATIONS

DRAWING NO. **C8.1**

SHEET 10 OF 13

SCALE: 1" = 20'

DES: L.K. CHECK: R.M. DATE: 06/24/98

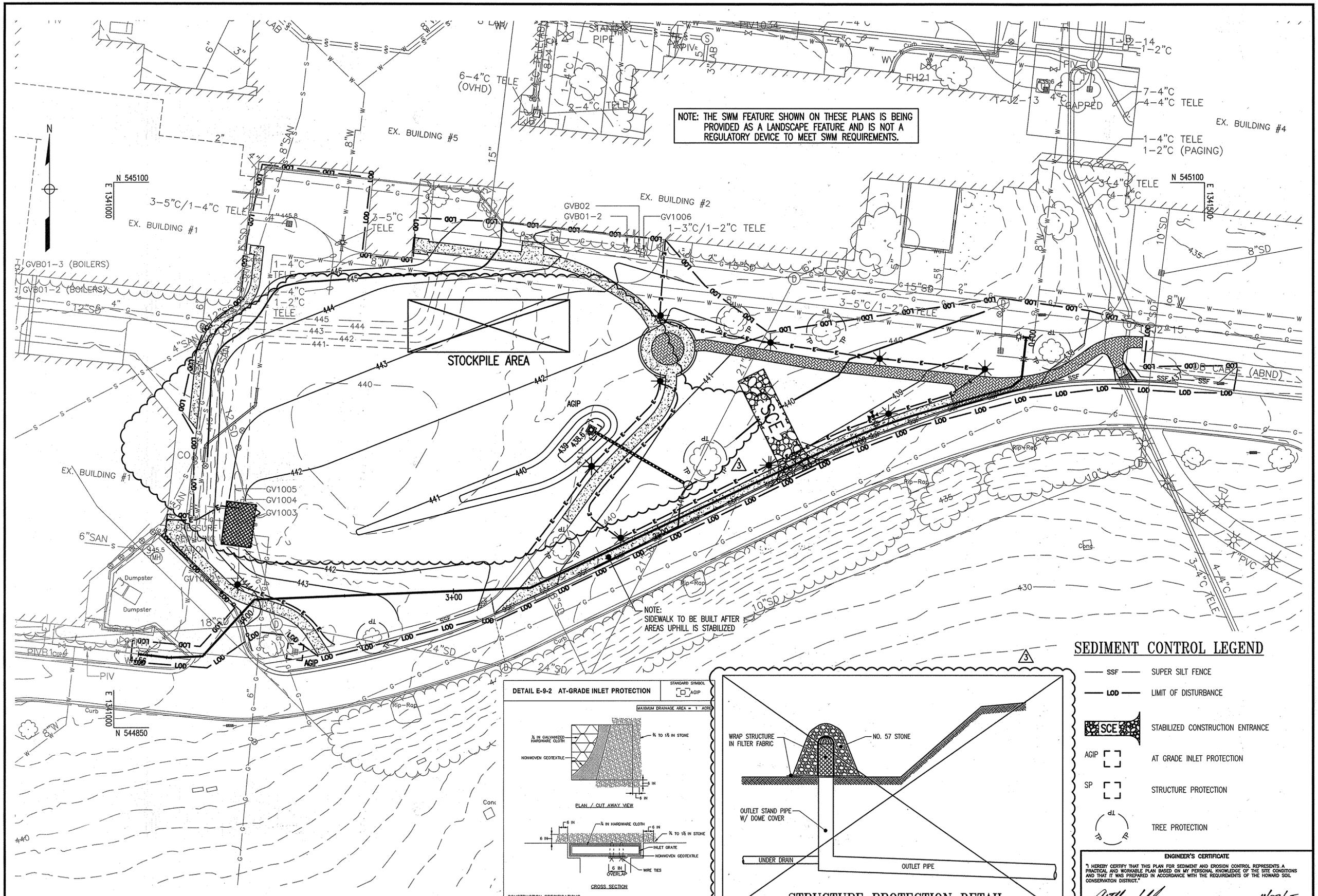
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 8/14/98 DATE

Chief Development Engineering 7/16/98 DATE

Chief, Division of Land Development 8/15/98 DATE

AS BUILT DATE 12/20/00

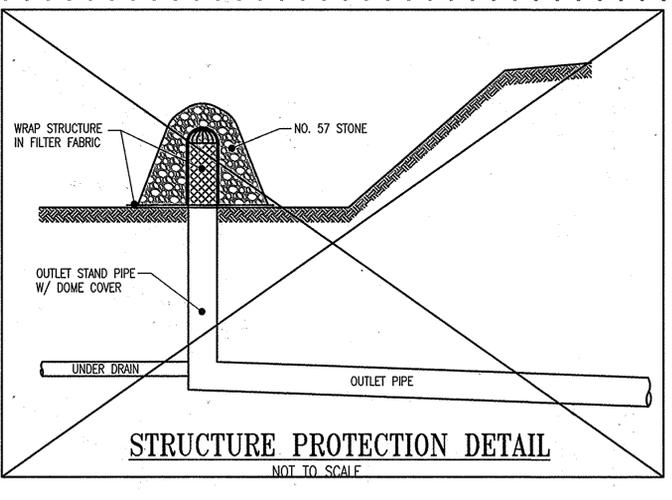
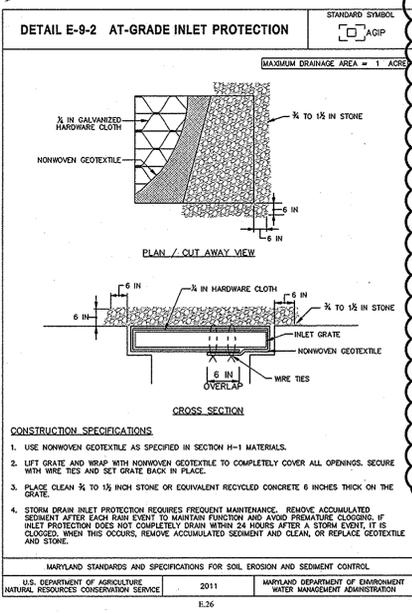


NOTE: THE SWM FEATURE SHOWN ON THESE PLANS IS BEING PROVIDED AS A LANDSCAPE FEATURE AND IS NOT A REGULATORY DEVICE TO MEET SWM REQUIREMENTS.

NOTE: SIDEWALK TO BE BUILT AFTER AREAS UPHILL IS STABILIZED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5-21-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 5-26-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 5-28-2015
 DIRECTOR

PURPOSE STATEMENT:
 THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.



SEDIMENT CONTROL LEGEND

- SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- [Symbol] SCE — STABILIZED CONSTRUCTION ENTRANCE
- [Symbol] AGIP — AT GRADE INLET PROTECTION
- [Symbol] SP — STRUCTURE PROTECTION
- [Symbol] DL — TREE PROTECTION

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 4/23/15
 ENGINEER

DEVELOPER'S CERTIFICATE
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 1 May 2015
 DEVELOPER

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 5/14/15
 HOWARD SCD

REVISIONS

1	REDLINED TO INCLUDE SIDEWALK AND UTILITY	8-24-2010
2	ADD EROSION & SEDIMENT CONTROL SHEET FOR LIBRARY DEMO	11-25-2014
3	REMOVE MICRO-BIORETENTION	8-13-15

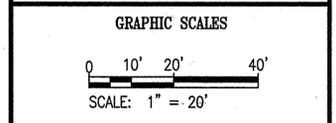
APPROVALS

REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSF GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

PARKING LOT EXPANSION
 REVISED SITE DEVELOPMENT PLAN

PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2015



WR&A
 WHITMAN, REQUARDT & ASSOCIATES, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

EROSION AND SEDIMENT CONTROL PLAN

ANTHONY V. OSHEN, P.E.
 [Signature] 5/14/15
 PROFESSIONAL ENGINEER

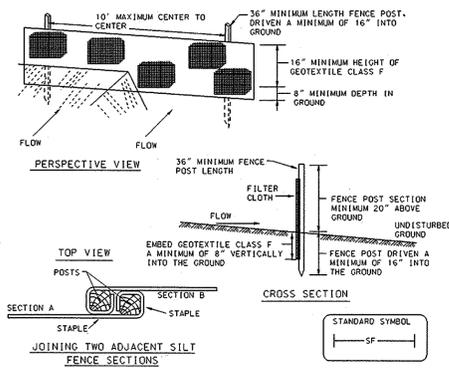
DRAWING NO. **C9.0A**

MARYLAND REGISTRATION NO. 19376 SHEET 11A OF 13
 SCALE: 1" = 20'
 DES: JTD CHECK: AUO DATE: 11/25/14

SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION. (410-313-2437)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES GREATER THAN 3:1; b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	ACRES	3
AREA DISTURBED	ACRES	2.85
AREA TO BE ROOFED OR PAVED	ACRES	1.7
AREA TO BE VEGETATIVELY STABILIZED	ACRES	1.15
TOTAL CUT	CU. YDS.	5,000
TOTAL FILL	CU. YDS.	2,500
OFFSITE WASTE/BORROW AREA LOCATION	CU. YDS.	2,500 CU. YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

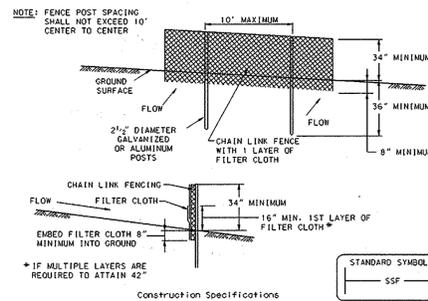


Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/2" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

DETAIL 22 - SILT FENCE
E - 15 - 3

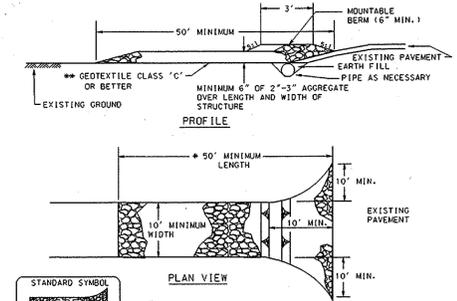


Construction Specifications

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- 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.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt bulges removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

DETAIL 33 - SUPER SILT FENCE
H - 26 - 3



Construction Specifications

- Length - minimum of 50' x 30' for single residence lot.
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- 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.
- 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.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be sized through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a moundside 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.
- 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.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE
F - 17 - 3

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - pH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE pH TO 6.5 OR HIGHER.
 - ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- TOPSOIL APPLICATION**
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SUPER SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER ROCKETS.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
 - ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
 - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A pH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB./1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATIONS RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING MD-VA. PUB. #1; COOPERATIVE EXTENSION SERVICE UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

AS BUILT DATE 12/20/00

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 8/4/98
 DIRECTOR
 [Signature] 7/16/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 8/2/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

PURPOSE STATEMENT:
 THE REDLINE OF THIS SHEET IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] 6/29/98
 C. RICHARD LORTZ DATE

BY THE DEVELOPER:
 "I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] 6/25/98
 JAMES E. LOESCH DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.
 [Signature] 7/14/98
 USDA-Natural Resources Conservation Service DATE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 7/14/98
 HOWARD S.C.D. DATE

REVISIONS

ADJUST SOC & SITE ANALYSIS	11/4/14
X	12/22/1998

APPROVALS

REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICES	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6009



PARKING LOT EXPANSION

REVISED SITE DEVELOPMENT PLAN

SEQUENCE OF CONSTRUCTION (SOC) DURATION

1) APPLY FOR AND OBTAIN A GRADING PERMIT.	1 WEEK
2) NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION.	
3) INSTALL SEDIMENT CONTROL DEVICES.	1 WEEK
4) CLEAR AND GRUB THE SITE.	1 WEEK
5) COMPLETE SITE GRADING.	1 WEEK
6) INSTALL STORM DRAINS, BLOCK INLETS.	2 WEEKS
7) CONSTRUCT SWM FACILITIES.	1 WEEK
8) STABILIZE SITE WITH PAVING AND PERMANENT STABILIZATION.	3 WEEKS
9) REMOVE SEDIMENT CONTROL DEVICES UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.	1 WEEK

OWNER'S/DEVELOPERS 7 AND 14 DAY STABILIZATION CERTIFICATION:
 FOLLOWING INITIAL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: SEVEN (7) DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1) AND B) FOURTEEN (14) DAYS AS TO THE ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

SIGNATURE: _____ DATE: _____
 NAME: _____ PRINTED TITLE: _____ PHONE NO.: _____
 AGENCY: _____ ADDRESS: _____



WHITMAN, REQUARDT AND ASSOCIATES, LLP
 2315 SAINT PAUL STREET
 BALTIMORE, MARYLAND
 410 - 235 - 3450

EROSION AND SEDIMENT CONTROL DETAILS, NOTES & TOP SOILS SPECIFICATIONS

	DRAWING NO.
	C9.1
	SHEET 12 OF 13
	SCALE: NO SCALE
DES: L.K. CHECK: R.M. DATE: 06/24/98	

20.0 STANDARDS AND SPECIFICATIONS

VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

OBJECTS

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and are likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are: temporary stockpiles, cleared areas being left idle between construction phases, earth ditches, etc. and for Permanent Seeding are: lawns, dunes, cut and fill slopes and other areas of final grade, former stockpiles and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

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

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

Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
2. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
3. 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)

1. 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 Maryland or a recognized chemical laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizer shall be applied to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 90% total alkalies (calculated as CaO) and 10% magnesium. Limestone shall be ground to such fineness that at least 90% will pass through a #100 mesh sieve and 30% - 100% will pass through a #20 mesh sieve.
4. Incorporate lime and fertilizer into the top 3 - 5" of soil by disk or other suitable means.

C. Seeded Preparation

1. Temporary Seeding
 - a. Seeded 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 graded 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 disk or other suitable means.

II. Permanent Seeding

1. 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 300 parts per million (ppm).
 3. The soil shall contain less than 40% clay but enough fine grained material (60% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if coverage or surface impedance is to be placed, then a sandy soil (40% silt plus clay) would be acceptable.
 4. Soil shall contain at least 1% 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 Standards and Specification for Topsoil.
2. 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 banding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
3. Apply soil amendments as per soil test or as included on the plans.
4. Mix soil amendments into the top 3 - 5" of topsoil by disk or other suitable means. Low areas should be re-graded to match the surface, remove large objects, tree stumps and branches, and re-prepare the area for seed application. Where site conditions will not permit normal seeded 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 - 2" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to retesting by a recognized seed laboratory. All seed used shall have been tested within six 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.

2. 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 lower 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 cool as possible until used. Temperatures above 75 - 80°F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

1. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a outpoker 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/acre; K2O (potassium) 200 lbs/acre.
2. Lime - use only ground agricultural limestone, 1/4 to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding of any one time. Do not use burnt or hydrated lime when hydroseeding.
3. 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.

1. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the temporary or Permanent Seeding Summary or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
2. Where practical, seeds should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

III. Drill or Outpoker Seeding: Mechanized seeders that apply and cover seed with soil.

1. Outpoker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm other planting.
2. 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)

1. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

2. 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 liquid materials to form a homogeneous slurry. The mulch material shall form a blotter like ground cover on application, having moisture absorption and retention 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 phytotoxic.
 - f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. (diameter approximately) 1mm, pH range of 4.0 to 8.5, ash content of 1-5% maximum and water holding capacity of 30% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

3. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 - a. 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.

1. 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 covering ratio is to be used, the rate should be increased to 2.5 tons/acre.

2. 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.

4. 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:
 1. 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 be used on the contour if possible.

1. 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.

5. Application of liquid binders shall be heavier at the edge where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should be covered uniform after binder application. Synthetic binders - such as Acrylic BIR (Acrulon), DCA-70, Polysol, Terra Top II, Terra Top III or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

1. Lightweight plastic netting may be stapled over the mulch according to manufacturer's instructions. Netting is usually available in rolls 4' to 15' feet wide and 300 to 5,000 feet long.

I. Incremental Stabilization - Cut Slopes

1. 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'.
 1. 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 1 excavation, dress, and stabilize.
 - c. Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 area 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.

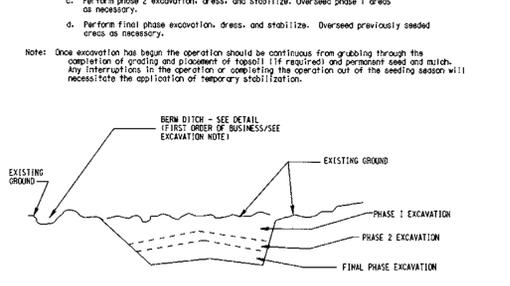


Figure 4. Incremental Stabilization - Cut

J. Incremental Stabilization of Embankments - Fill Slopes

1. Embankments shall be constructed in lifts as prescribed on the plans.
 1. 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.

2. 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.

III. Construction sequence: Refer to Figure 5 (below).

1. 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 shown on the plans address this area.
2. Place phase 1 embankment, dress and stabilize.
3. Place phase 2 embankment, dress and stabilize.
4. Place final phase embankment, dress and stabilize. Overseed previously seeded areas 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.

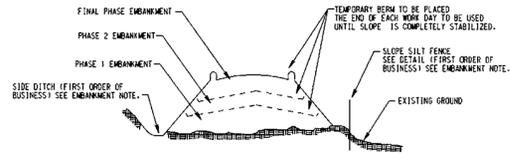


Figure 5. Incremental Stabilization - Fill

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

1. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, this Table 26 must be put on the plans.
2. 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.

TEMPORARY SEEDING SUMMARY

SEED MIXTURE HARDINESS ZONE FROM TABLE 26				SEEDING DATES	SEEDING DEPTHS	RATE (10-10-10)	LIME RATE
NO.	SPECIES	APPL. RATE (lb/1000)	RATE				
3	ANNUAL Ryegrass	140	3/1 - 4/30	1/4" - 1/2"	600 lb/acre (15 lb/1000 sq ft)	1 ton/acre (46 lb/1000 sq ft)	
	WHEATING LOVEGRASS	150	5/1 - 6/14	1"			

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

1. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding dates can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. 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 SD-505 Technical Field Office Guide, Section 342 - Critical Area Planning, for special use shall be written.

time of seeding.

PERMANENT SEEDING SUMMARY

Seed Mixture (for Hardiness Zone 7A) (from Table 25)				Seeding Dates	Seeding Depth	Fertilizer Rate (10-10-10)	Lime Rate
NO.	SPECIES	Application Rate (lb/1000)	RATE				
1	TALL FESCUE	60	3/1 - 4/30	1/2"	1,000 lb/acre	2 tons/acre 100 lb/1000 sq ft	
2	TALL FESCUE 85% WHEATING LOVEGRASS 15%	2	5/1 - 7/31	1/2"			
6	TALL FESCUE	60	10/16 - 2/28	1/2"			

Table 24 Maintenance fertilization for Permanent Seedings

Use Soil Test Results or Rates Shown Below

Seeding Mixture	Type	lb/acre	lb/1000 sq ft	Time	Mowing
Fall Fescue makes up 70% or more of cover	10-10-10 or 20-10-10	500	11.5	Yearly or as needed. Fall	Not closer than 3" if occasional mowing is desired.
Crownvetch Sericea Lespedeza Birdsfoot Trefoil	0-20-0	400	9.2	Spring, the year following establishment and every 4-5 years thereafter	Do not mow crownvetch
Fairly uniform stand of tall fescue and sericea lespedeza, or birdsfoot trefoil	50-10-10	500	11.5	Fall the year following establishment and every 4-5 years thereafter	Not required, no closer than 4" in fall after seed has matured.
Wheating lovegrass and sericea lespedeza fairly uniform plant distribution	5-10-10	500	11.5	Spring, the year following establishment and every 3-4 years thereafter	Not required, not closer than 4" in fall after seed has matured.
Red & chewing fescue, Kentucky bluegrass, hard fescue mixture	20-10-10	250 100	5.8 2.3	September, 30 days later October, May 20, June 30, if needed	Not no closer than 2" for red fescue and 4" for bluegrass 3" for fescue.

Section IV - Sod To provide quick cover on disturbed areas (2:1 grade or flatter).

A. General Specifications

1. Class of turfgrass sod shall be Maryland or Virginia Stone Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
2. Sod shall be machine cut to a uniform soil thickness of 1/2" plus or minus 1/8", at the time of cutting. Measurement for thickness shall exclude top growth and roots. Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard width and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
3. 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.
4. Sod shall not be harvested or transplanted when moisture content (soil moisture dry or wet) may adversely affect its survival.
5. 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

1. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
2. 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. Loose sods that are not secured or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
3. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggered joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between soil roots and the underlying soil surface.
4. 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

1. 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.
2. After the first week, sod watering is required as necessary to maintain adequate moisture content.
3. 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 IV - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will require a medium to high level of maintenance. Areas to receive seed shall be filled by disk or other approved methods to a depth of 2 to 4 inches, leveled and rolled to prepare a proper seedbed. Stones and debris over 1/4 inch in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

NOTE: Where applicable material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of cultivar protection and assures a pure genetic line.

A. Turfgrass Mixtures

1. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 1.5 to 2.0 tons/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.
2. Kentucky Bluegrass/Perennial Ryegrass - 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/Certified Kentucky Bluegrass Seeding Rates: 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.
3. Full sun 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/1000 sq ft. One or more cultivars will be blended.
4. 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 lb/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 Misc. #77, "Turfgrass Cultivar Recommendations for Maryland".

B. Ideal times of seeding

1. Western MD: March 15 - June 1, August 1 - October 1
2. Hardiness Zone - 5a-6a
3. Central MD: March 1 - May 15 - October 15
4. Hardiness Zone - 6a
5. Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15
6. Hardiness Zone - 7a-7b

C. Irrigation

If soil moisture is deficient, apply 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 abnormal dry or hot seasons, or on adverse sites.

D. Repair and Maintenance

1. Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season.
2. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
3. If the stand provides less than 95% ground cover, reestablish following original time, fertilizer, seeded preparation and seeding recommendations.
4. If the stand provides between 40% and 95% ground cover, overseeding and fertilizing using half of the rates originally applied may be necessary.

iv. Maintenance fertilizer rates for permanent seedings are shown in Table 24. For laws and other media to high maintenance turfgrass areas, refer to the University of Maryland publication "Low Care in Maryland" Bulletin No. 111.

AS BUILT DATE 12/20/00

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE 8/4/98
 [Signature] DATE 7/16/00
 [Signature] DATE 8/3/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE ENGINEER:
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] DATE 6/29/98
 C. RICHARD LORTZ

BY THE DEVELOPER:
 "I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
 [Signature] DATE 6/25/98
 JAMES E. LOESCH

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.
 [Signature] DATE 7/16/98
 USA-Natural Resources Conservation Service
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] DATE 7/16/98
 HOWARD S.C.D. DATE

REVISIONS	
1	2/23/1998
2	11/20/1998
3	12/15/1998
4	12/15/1998
5	12/15/1998

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



PARKING LOT EXPANSION

GRAPHIC SCALES



WH

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (213-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereof.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days to all other disturbed or graded areas on the project site.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent stabilization (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	4.24	Acres
Area to be seeded or paved	4.02	Acres
Area to be vegetatively stabilized	2.15	Acres
Total Cut	300	Cu. Yds.
Total Fill	300	Cu. Yds.

 Off-site waste/borrow are location
- Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.
- A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the enforcement authority. Unless otherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.

HOWARD SOIL CONSERVATION DISTRICT
TEMPORARY SEEDING NOTES

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

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

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

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

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

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

SEQUENCE OF CONSTRUCTION

- APPLY FOR AND OBTAIN GRADING PERMIT. 1 WEEK
- NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE AND ARRANGE A PRECONSTRUCTION MEETING. 2 DAYS
- AFTER PRECONSTRUCTION MEETING PLACE ALL SEDIMENT CONTROL MEASURES AS SHOWN ON THE APPROVED SEDIMENT CONTROL PLAN AND HAVE SEDIMENT CONTROL INSPECTOR APPROVE PRIOR TO COMMENSURING CONSTRUCTION ACTIVITIES. 1 WEEK
- BUILD SIDEWALKS CONSTRUCTION ON EAST SIDE OF BUILDING #1 AND KEEP ACCESS OPEN DURING THE ENTIRE PROJECT. 3 DAYS
- CONTACT UTILITY COMPANIES TO SHUT DOWN VARIOUS UTILITIES PRIOR TO DEMOLITION. START UTILITY DEMOLITION. REMOVE AREA LIGHTING AND STORE IN SECURE AREA UNTIL THEY CAN BE REINSTALLED. 2 WEEKS
- ONCE ALL UTILITIES SERVICING THE LIBRARY HAVE BEEN DISCONNECTED, COMMENCE BUILDING DEMOLITION. 2 WEEKS
- WHEN UTILITIES AND BUILDING ARE COMPLETELY DEMOLISHED, START GRADING SITE AND INSTALLING NEW UTILITIES AND THE MICRO BIOTRETMENT FACILITY. DO NOT REROUTE THE 12" ROOF DRAIN FROM FROM BUILDING INTO THIS FACILITY UNTIL JUST BEFORE THE SITE IS READY TO BE STABILIZED. 3 WEEKS
- INSTALL NEW CONCRETE AND PAVEMENT SIDEWALK AND STABILIZE ALL GRADED AREAS PER THE PERMANENT SEEDING NOTES. 2 WEEKS
- WHEN ALL AREAS ARE STABILIZED, CONTACT THE SEDIMENT CONTROL INSPECTOR FOR APPROVAL TO REMOVE SEDIMENT CONTROL DEVICES. 2 DAYS
- REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING UNSTABILIZED AREAS. 2 DAYS

PURPOSE STATEMENT:
THE ADDITION OF THIS PLAN IS FOR THE DEMOLITION OF THE EXISTING GIBSON LIBRARY, DRIVEWAY LOOP AND RE-LANDSCAPING OF THE AFFECTED AREA.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John K. Houston 12/23/14
HOWARD SOCD DATE

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

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

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

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

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

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

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

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

B-4 STANDARDS AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.

Purpose
To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

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

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

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment
Inspect areas used for vegetative establishment and make necessary repairs, replacements, and reseeding within the planting season.

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

B-4-1 STANDARDS AND SPECIFICATIONS
FOR
INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.

Purpose
To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria
A. Incremental Stabilization - Cut Slopes

- Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.

2. Construction sequence example (Refer to Figure B.1)

- Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
- Perform Phase 1 excavation, prepare seedbed, and stabilize.
- Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
- Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

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

3. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.

- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.

3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosedding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.

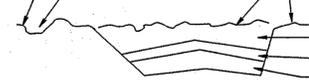
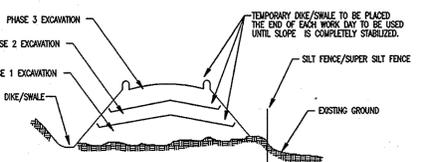


Figure B.1: Incremental Stabilization - Cut

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

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



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

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria
A. Soil Preparation

- Temporary Stabilization
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization

A. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

- a.a. Soil pH between 6.0 and 7.0.
- a.b. Soluble salts less than 500 parts per million (ppm).
- a.c. Soil contains less than 40 percent silt clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: If lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
- a.d. Soil contains 1.5 percent minimum organic matter by weight.
- a.e. Soil contains sufficient pore space to permit adequate root penetration.

b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

f. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

g. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

h. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

i. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

j. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

k. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

l. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

m. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

n. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

o. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

p. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

q. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

r. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

s. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

t. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

u. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

v. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

w. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

x. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

y. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

z. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

aa. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

ab. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

ac. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

ad. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

ae. Graded areas must be scarified in a true and even grade as specified on the approved plan, then moistened or otherwise loosened to a depth of 3 to 5 inches.

af. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

ag. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take care to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

ah. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria
A. Seeding

- Temporary Stabilization
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tests must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydrosedding. Note: It is very important to keep inoculants as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculants less effective.
 - Soil or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

2. Application

a. Dry Seeding: This includes use of conventional drag or broadcast spreaders.

- Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
- Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
- Drill or topdressing seeders: Mechanized seeders that apply and cover seed with soil.
- Topdressing 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.
- Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- Hydrosedding: Apply seed uniformly with hydroseder (slurry includes seed and fertilizer).

ca. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

cb. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydrosedding). Normally, not more than 2 tons are applied by hydrosedding at any one time. Do not use burnt or hydrated lime when hydrosedding.

cc. Mix seed and fertilizer on site and seed immediately and without interruption.

cd. When hydrosedding do not incorporate seed into the soil.

B. Mulching

- Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WSFM is to be dry and contain a green dye in the package that will be applied in an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WSFM, including dye, must contain no germination or growth inhibiting factors.
 - WSFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WSFM material must not contain elements or compounds of concentration levels that will be phytotoxic.
 - WSFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, cation content of 1.5 percent maximum and water holding capacity of 90 percent minimum.

2. Application

a. Apply mulch to all seeded areas immediately after seeding.

b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

d. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.

Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer