GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

DEPARTMENT OF PARKS & RECREATION

HARFORD COUNTY, MD

BID NO. 16-265

July 2016

Site Analysis:

Total Site Area	1,627,837 Sq. Ft./ 37.37. Ac.
Total disturbed Area	302,020 Sq. Ft./ 6.4 Ac.
Area to be paved	0.0 Sq. Ft./Ac.
Area to be stabilized	302,020 Sq. Ft/. 6.4/c.
Cut	4300 Cu. Yd.
Fill	4300 Cu. Yd.
Topsoil	0.0 Cu. Yd.

NPDES ID PT. N:_631,035 E:1,496,426

BEFORE YOU DIG CALL
1-800-257-7777 OR DIAL 811

MISS UTILITY — CALL BEFORE YOU DIG

GENERAL NOTES

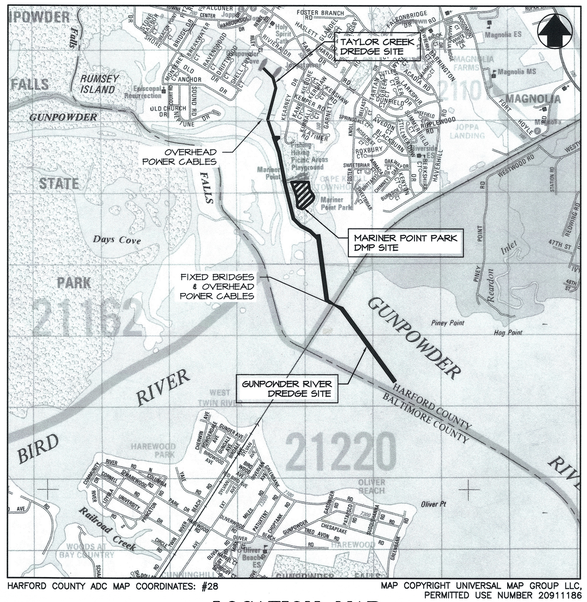
1. MEAN TIDAL RANGE IS 1.25 FEET.
2. HYDROGRAPHIC SURVEY OF GUNPOWDER RIVER WAS PERFORMED BY BAYLAND CONSULTANTS ON OCTOBER 27, 2015. BATHYMETRIC SURVEY OF TAYLOR CREEK PERFORMED BY BAYLAND ON JANUARY 27, 2010. EXISTING SHORELINE, BULKHEAD, AND PIER LOCATIONS WERE BASED ON HARFORD COUNTY PLANIMETRICS.
3. HORIZONTAL CONTROL IS BASED UPON THE MARYLAND STATE COORDINATE SYSTEM (NAD83/1991).
4. VERTICAL CONTROL IS BASED UPON THE EXISTING BENCHMARK (B.M.) SET BY MARYLAND DEPARTMENT OF NATURAL RESOURCES (DNR). B.M. IS 4 P.K. NAILS SET AT ELEVATION OF +4.0' MLW, AS SHOWN ON THE PLANS.
5. NO DREDGING SHALL BE PERFORMED BETWEEN FEBRUARY 15 AND OCTOBER 15 AS SPECIFIED IN THE PERMITS.
6. FOR GUNPOWDER RIVER: MARYLAND WETLANDS LICENSE NO. 16-WL-0145 & U.S. ARMY CORPS OF ENGINEERS PERMIT – MARYLAND STATE PROGRAMMATIC GENERAL PERMIT (TRACKING NO. 2016-60250-M18). FOR TAYLOR CREEK: MARYLAND WETLANDS LICENSE NO. 11-WL-0865 & U.S. ARMY CORPS OF ENGINEERS PERMIT – MARYLAND STATE PROGRAMMATIC GENERAL PERMIT (TRACKING NO. 2011-60832-M12).

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS "STANDARD DETAILS & SPECIFICATIONS" UNLESS OTHERWISE NOTED.
2. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS AND ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT HIS OWN EXPENSE.
3. CABLE AREA AND BRIDGE CLEARANCE SHOWN ON PLANS ARE BASED ON NOAA CHART 12274.
4. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
5. THE CONTRACTOR SHALL CALL "MISS UTILITY" (1-800-257-7777) A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES.
6. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ANY TREES, STUMPS, TIRES OR OTHER DEBRIS ENCOUNTERED WITHIN THE CHANNEL TEMPLATE. THIS DEBRIS WILL NOT BE PERMITTED TO BE PLACED IN OR NEAR THE WATERWAYS OR AT THE DMP SITE.
7. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES INCLUDING BULKHEAD, BOAT RAMP, PIERS AND MOORING PILES FROM DAMAGE. CONTRACTOR MAY NOT REMOVE ANY PIERS OR PILINGS WITHOUT PRIOR APPROVAL OF THE OWNER AND THE COUNTY.

SEQUENCE OF OPERATIONS

PHASE 1 –	CONTRACTOR IS TO NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING DREDGING WORK, AND M.D.E. INSPECTIONS AND COMPLIANCE (410-537-3510) AT LEAST TEN (10) DAYS PRIOR TO COMMENCING DREDGING WORK.	1 DAY
PHASE 2 –	VIDEO TAPE ALL PROJECT AREAS, INCLUDING BUT NOT LIMITED TO THE DREDGE AREA, TRANSFER SITE, PIPELINE ACCESS ROUTES, ACCESS ROADS, AND MARINER POINTE PARK DMP SITE.	1 DAY
PHASE 3 –	INSTALL ANY REQUIRED SEDIMENT CONTROL DEVICES AT THE CONTRACTOR PROVIDED MATERIAL TRANSFER SITE. OBTAIN APPROVAL FROM COUNTY SEDIMENT CONTROL INSPECTOR. (MECHANICAL UNLOADING ONLY)	1 DAY
PHASE 4 –	INSPECT THE EXISTING APPROVED DMP SITE. INSTALL, REPAIR AND/OR REPLACE WEIR BOARDS, OUTFALL PIPE AND OUTFALL PAD AS NECESSARY. WRAP THE WEIR BOX WITH IMPERMEABLE LINER TO PROVIDE A WATER-TIGHT SEAL BELOW THE MAXIMUM WEIR ELEVATION.	1 DAY
PHASE 5 –	INSTALL STABILIZED CONSTRUCTION ENTRANCE AND REPAIR THE EXISTING ACCESS ROAD AS NECESSARY (FOR MECHANICAL UNLOADING ONLY). INSTALL DREDGE INFLOW PIPE (HYDRAULIC PLACEMENT ONLY). INSTALL BLAZE ORANGE FENCING.	5 DAYS
PHASE 6 –	DREDGE GUNPOWDER RIVER AND TAYLOR CREEK CHANNELS AND PLACE DREDGED MATERIAL INTO PLACEMENT SITE. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 2' FREEBOARD.	90 DAYS
PHASE 7 –	AT THE COMPLETION OF THE DREDGING OPERATIONS, CONTINUE MONITORING WATER QUALITY AND DEWATER THE DMP SITE PER SPECIFICATIONS.	20 DAYS
PHASE 8 –	PERMANENTLY STABILIZE THE TRANSFER SITE AND RESTORE THE MARINER POINT PARK DMP SITE ACCORDING TO THE SPECIFICATIONS.	5 DAYS
	TOTAL:	124 DAYS



HARFORD COUNTY ADC MAP COORDINATES: #28

LOCATION MAP

SCALE: 1"=2000'

LEGEND

PROPOSED CHANNEL
SOUNDING –4.5
BENCHMARK (DNR)
STAKEOUT POINT 2000
APPROXIMATE SHORELINE
APPROXIMATE PROPERTY LINE
EX. PIER
EX. BOAT RAMP
WETLANDS/SAV
EX. WOOD FENCE
TREE LINE
SILT FENCE SF SF
HIGH VISIBILITY FENCE HVF
STABILIZED CONSTRUCTION ENTRANCE SCE
TEMPORARY CONSTRUCTION ACCESS ROAD

SHEET LIST TABLE

ENGINEER'S CERTIFICATION

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. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, DATED 2011.

Sepehr Baharlou 7/25/16
ENGINEER'S SIGNATURE DATE

SEPEHR BAHARLOU 21194
PRINTED NAME MD P.E. REGISTRATION NO.

MD P.E. LICENSE # 21194
NAME SEPEHR BAHARLOU
FIRM NAME BAYLAND CONSULTANTS & DESIGNERS, INC.
ADDRESS 7455 NEW RIDGE ROAD, SUITE T
CITY HANOVER STATE MD ZIP CODE 21076

APPROVALS

HARFORD COUNTY DEPARTMENT OF PARKS AND RECREATION APPROVED:

Paul Mgrace
BY: Paul Mgrace TITLE: Deputy Director DATE: 7/26/2016

HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS APPROVED:

BY: TITLE: DATE:

AS-BUILT CERTIFICATION

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

ENGINEER'S SIGNATURE DATE

PRINTED NAME MD P.E. REGISTRATION NO.

STANDARD RESPONSIBILITY NOTES

1. I (WE) CERTIFY THAT:
   a. ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN AND THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HARFORD SOIL CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.
   b. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

   RESPONSIBLE PERSONNEL ON SITE: DAVID GOODWIN
2. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHT, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THE PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS, AND/OR RIGHT-OF-WAY THAT MAY BE REQUIRED FOR THE GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT AND/OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. THE GRADING AND SEDIMENT CONTROL APPROVALS ON THIS PLAN EXTENDS ONLY TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE.
5. THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH FEDERAL, STATE OR COUNTY REQUIREMENTS PERTAINING TO ENVIRONMENTAL ISSUES.
6. STABILIZATION SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND CONTROL".
7. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE REQUIRED ON COMPLETIBON OF INSTALLATION OF PERIMETER EROSION AND SEDIMENTATION CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDINGS OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE DEPARTMENT OF PLANNING AND CODE ENFORCEMENT IS GIVEN.
8. APPROVAL FROM THE INSPECTOR MUST BE REQUESTED ON FINAL STABILIZATION OF ALL SITES PRIOR TO REMOVAL OF SEDIMENT AND EROSION CONTROLS.

David Goodwin 7/26/16
SIGNATURE OF DEVELOPER/OWNER DATE

PRINT: NAME: DAVID GOODWIN
TITLE: PROJECT MANAGER
AFFILIATION: HARFORD COUNTY DEPARTMENT OF PARKS & RECREATION
ADDRESS: 1809 FALLSTON ROAD, FALLSTON, MARYLAND 21047
TELEPHONE:
EMAIL ADDRESS:

EROSION AND SEDIMENT CONTROL
PLAN # 59825
RECOMMENDED FOR APPROVAL

8-4-16
HARFORD COUNTY DPW

TECHNICAL CONCURRENCE

8-5-16
HARFORD SOIL CONSERVATION DISTRICT

APPROVED

8/8/16
HARFORD SOIL CONSERVATION DISTRICT

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. 21194, EXPIRATION DATE: 04/20/2018.

STATE OF MARYLAND · SEPEHR BAHARLOU · NO. 21194 · REGISTERED PROFESSIONAL ENGINEER
7/18/16

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160738

SCALE: 1 inch

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
7455 New Ridge Road, Suite T Phone: (410) 694-9401
Hanover, Maryland 21076 Fax: (410) 694-9405
Website: www.baylandinc.com

BAYLAND JOB NO. 4_0903

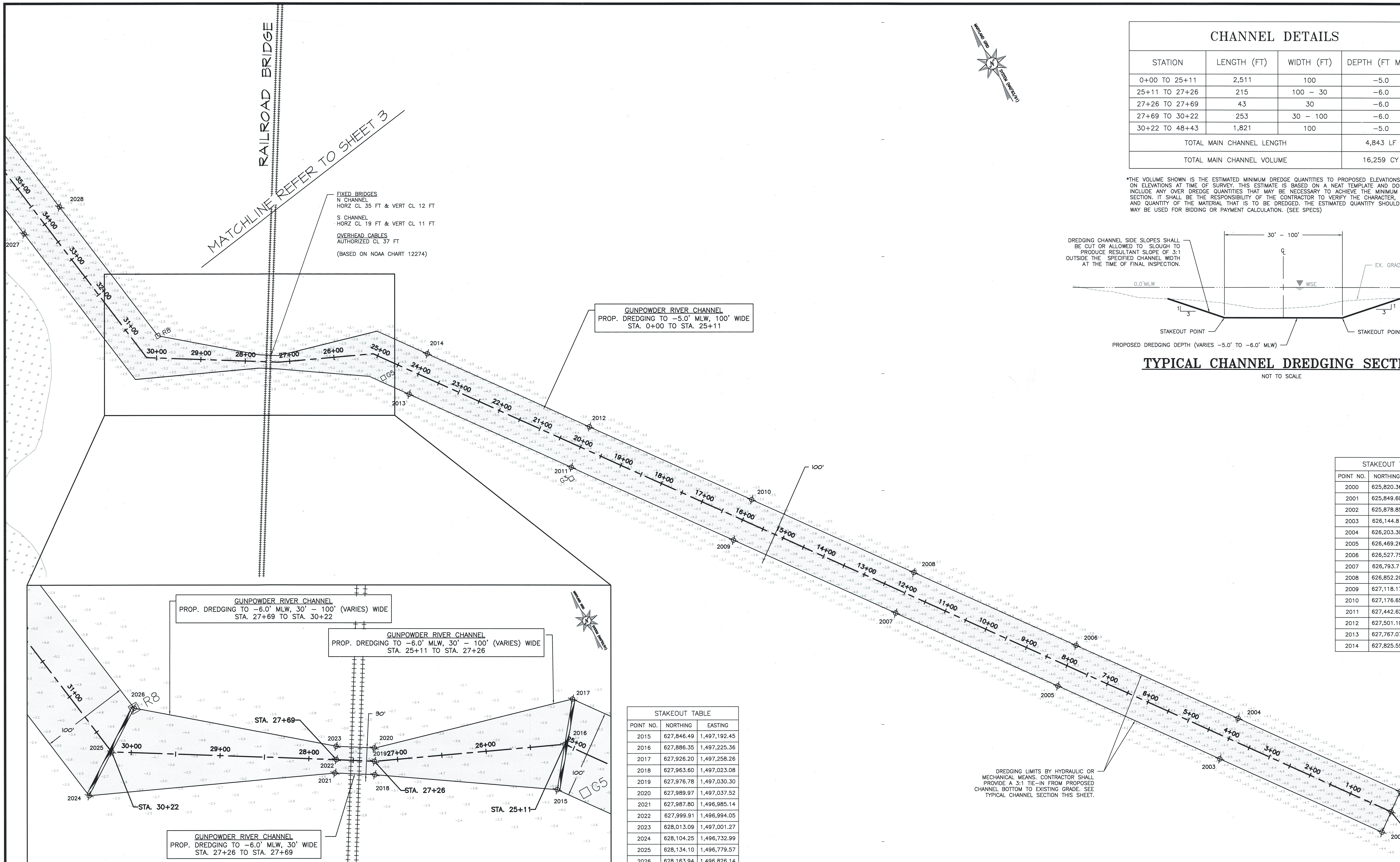
HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED DATE	BY

SCALE: AS SHOWN	
DRAWN BY: JKL	07/25/16
CHECKED BY: SB	07/25/16
SHEET NO. 1 OF 9	
BID NUMBER: 16-265	

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

COVER SHEET



PROPOSED DREDGE STA. 25+24 TO STA. 30+08 INSET

SCALE: 1" = 50'

STAKEOUT TABLE		
POINT NO.	NORTHING	EASTING
2015	627,846.49	1,497,192.45
2016	627,886.35	1,497,225.36
2017	627,926.20	1,497,258.26
2018	627,963.60	1,497,023.08
2019	627,976.78	1,497,030.30
2020	627,989.97	1,497,037.52
2021	627,987.80	1,496,985.14
2022	627,999.91	1,496,994.05
2023	628,013.09	1,497,001.27
2024	628,104.25	1,496,732.99
2025	628,134.10	1,496,779.57
2026	628,163.94	1,496,826.14

CHANNEL DETAILS

STATION	LENGTH (FT)	WIDTH (FT)	DEPTH (FT MLW)
0+00 TO 25+11	2,511	100	-5.0
25+11 TO 27+26	215	100 - 30	-6.0
27+26 TO 27+69	43	30	-6.0
27+69 TO 30+22	253	30 - 100	-6.0
30+22 TO 48+43	1,821	100	-5.0
TOTAL MAIN CHANNEL LENGTH			4,843 LF
TOTAL MAIN CHANNEL VOLUME			16,259 CY

*THE VOLUME SHOWN IS THE ESTIMATED MINIMUM DREDGE QUANTITIES TO PROPOSED ELEVATIONS BASED ON ELEVATIONS AT TIME OF SURVEY. THIS ESTIMATE IS BASED ON A NEAT TEMPLATE AND DOES NOT INCLUDE ANY OVER DREDGE QUANTITIES THAT MAY BE NECESSARY TO ACHIEVE THE MINIMUM DESIGN SECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE CHARACTER, QUALITY AND QUANTITY OF THE MATERIAL THAT IS TO BE DREDGED. THE ESTIMATED QUANTITY SHOULD IN NO WAY BE USED FOR BIDDING OR PAYMENT CALCULATION. (SEE SPECS)

DREDGING CHANNEL SIDE SLOPES SHALL BE CUT OR ALLOWED TO SLOUGH TO PRODUCE RESULTANT SLOPE OF 3:1 OUTSIDE THE SPECIFIED CHANNEL WIDTH AT THE TIME OF FINAL INSPECTION.
30' - 100'
EX. GRADE
0.0'MLW
WSE
STAKEOUT POINT
STAKEOUT POINT
PROPOSED DREDGING DEPTH (VARIES -5.0' TO -6.0' MLW)

TYPICAL CHANNEL DREDGING SECTION

NOT TO SCALE

STAKEOUT TABLE		
POINT NO.	NORTHING	EASTING
2000	625,820.36	1,498,653.41
2001	625,849.60	1,498,693.96
2002	625,878.85	1,498,734.52
2003	626,144.81	1,498,419.46
2004	626,203.30	1,498,500.57
2005	626,469.26	1,498,185.51
2006	626,527.75	1,498,266.62
2007	626,793.71	1,497,951.56
2008	626,852.20	1,498,032.68
2009	627,118.17	1,497,717.62
2010	627,176.65	1,497,798.73
2011	627,442.62	1,497,483.67
2012	627,501.10	1,497,564.78
2013	627,767.07	1,497,249.72
2014	627,825.55	1,497,330.83

NOTES:
1. BATHYMETRIC SURVEY PERFORMED BY BAYLAND ON OCTOBER 27, 2015.
2. BATHEMETRIC SURVEY PERFORMED WITH:
   HYDROLITE-TM POTABLE INTEGRATED HYDROGRAPHIC SURVEY SYSTEM
   SONARMITE BT 2100-KHZ ECHOSOUNDER ACCURATE TO 1CM/0.1% OF DEPTH
   TRIMBLE GEOXT GPS WITH SUBMETER REAL TIME ACCURACY
3. BASEMAP COMPILED FROM HARFORD COUNTY GIS DATA.
4. SOUNDINGS REFER TO MLW AS ESTABLISHED BY DNR WITH BENCMARK AT MARINER POINT PARK AS SHOWN ON PLANS. HORIZONTAL DATUM IS MD NAD83.

0 50 100 200
1 Inch = 100 Feet

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160739

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BAYLAND JOB NO. 4_0903

STATE OF MARYLAND — SPERO BAHARLOU — REGISTERED PROFESSIONAL ENGINEER — NO. 21194
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED		SCALE:	1" = 100'	GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING
DATE	BY	DRAWN BY: JKL	07/25/16	
		CHECKED BY: SB	07/25/16	
		SHEET NO.	2 OF 9	GUNPOWDER RIVER CHANNEL PLAN
		BID NUMBER: 16-265		

STAKEOUT TABLE		
POINT NO.	NORTHING	EASTING
2027	628,513.53	1,496,680.33
2028	628,526.30	1,496,779.51
2029	628,910.26	1,496,629.28
2030	628,923.02	1,496,728.47
2031	629,306.99	1,496,578.24
2032	629,319.75	1,496,677.42
2033	629,703.72	1,496,527.19
2034	629,716.48	1,496,626.37
2035	629,933.82	1,496,497.58
2036	629,940.21	1,496,547.17
2037	629,946.59	1,496,596.76

NOTES:
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   SONARMITE BT 2100-KHZ ECHOSOUNDER ACCURATE TO 1CM/0.1% OF DEPTH
   TRIMBLE GEOXT GPS WITH SUBMETER REAL TIME ACCURACY
3. BASEMAP COMPILED FROM HARFORD COUNTY GIS DATA.
4. SOUNDINGS REFER TO MLW AS ESTABLISHED BY DNR WITH BENCMARK AT MARINER POINT PARK AS SHOWN ON PLANS. HORIZONTAL DATUM IS MD NAD83.

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160740

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STATE OF MARYLAND SEPEHR BAHARLOU NO. 21194 REGISTERED PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED			
DATE	BY	SCALE: 1" = 100'	
		DRAWN BY: JKL	07/25/16
		CHECKED BY: SB	07/25/16
		SHEET NO. 3 OF 9	
		BID NUMBER: 16-265	

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

GUNPOWDER RIVER CHANNEL PLAN

PROPOSED DREDGING TO -5.0' MLW
75' WIDE, STA 0+00 TO STA 32+46

MATCHLINE REFER TO SHEET 5

STA: 32+46
3024

STA: 27+85
3016

STA: 18+25
3013

STA: 8+88
3010

STA: 5+99
3007

STA: 3+00
3004

STA: 0+00
3001

MARINER POINT PARK
EXISTING DREDGE
MATERIAL PLACEMENT
(DMP) SITE

APPROXIMATE
SHORELINE

FOSTER BRANCH
FLOOD
EBB

TAYLOR CREEK
FLOOD
EBB

GUNPOWDER RIVER
FLOOD
EBB

DNR BENCHMARK
4 P.K. NAILS & TIDE BOARD
@ +4.0' ABOVE 0.0' MLW

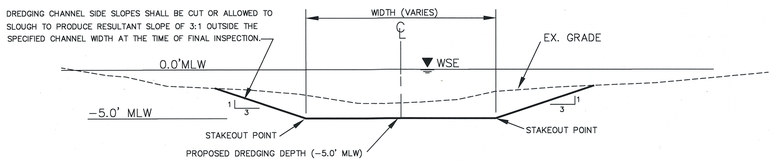
DREDGING LIMITS BY HYDRAULIC OR MECHANICAL MEANS. CONTRACTOR SHALL PROVIDE A 3:1 TIE-IN FROM PROPOSED CHANNEL BOTTOM TO EXISTING GRADE. SEE TYPICAL CHANNEL SECTION THIS SHEET.

PR. DREDGING TO -5.0' MLW
75' WIDE, STA 0+00 TO STA 32+46

STAKEOUT COORDINATE TABLE

Number	Northing	Easting
3000	629848.24	1496582.59
3001	629874.76	1496609.11
3002	629901.27	1496635.63
3003	630117.30	1496419.60
3004	630086.89	1496396.98
3005	630056.48	1496374.35
3006	630198.13	1496111.30
3007	630228.54	1496133.92
3008	630258.94	1496156.54
3009	630452.12	1495963.37
3010	630433.01	1495929.44
3011	630413.90	1495895.52
3012	631334.99	1495669.52
3013	631343.04	1495706.16
3014	631351.09	1495742.79
3015	632295.39	1495559.31
3016	632285.66	1495523.00
3017	632275.93	1495486.69
3018	632597.83	1495455.16
3019	632659.22	1495516.32
3020	632659.18	1495541.32
3021	632733.65	1495541.45
3022	632733.88	1495408.31
3023	632729.81	1495396.49
3024	632721.67	1495372.85
3025	632713.53	1495349.21
3026	632709.46	1495337.39
3027	633201.80	1495233.95
3028	633200.77	1495207.86
3029	633199.74	1495181.78
3030	634076.60	1495459.56
3031	634076.39	1495433.69
3032	634076.19	1495407.81
3033	634381.91	1495375.65
3034	634368.91	1495353.30
3035	634355.91	1495330.95
3036	634648.43	1495109.14
3037	634630.75	1495091.46
3038	634613.33	1495073.53

DREDGING CHANNEL SIDE SLOPES SHALL BE CUT OR ALLOWED TO SLOUGH TO PRODUCE RESULTANT SLOPE OF 3:1 OUTSIDE THE SPECIFIED CHANNEL WIDTH AT THE TIME OF FINAL INSPECTION.



TYPICAL CHANNEL DREDGING SECTION

NOT TO SCALE

MAIN CHANNEL

STATION	WIDTH (FT)	DEPTH (MLW)
0+00 TO 31+00	75	-5.0'
31+00 TO 32+46	VARIES	-5.0'
32+46 TO 53+31 (ADD ALT. BID ITEM)	50	-5.0'
ESTIMATED NEAT VOLUME BASE BID		2,500 CY
ADD ALTERNATE BID ITEM VOLUME		1,800 CY
TOTAL ESTIMATED VOLUME		4,300 CY

* THE VOLUMES SHOWN ARE THE ESTIMATED MINIMUM DREDGE QUANTITIES TO PROPOSED ELEVATIONS. THIS ESTIMATE IS BASED ON A NEAT TEMPLATE AND DOES NOT INCLUDE ANY OVER DREDGE QUANTITIES THAT MAY BE NECESSARY TO ACHIEVE THE MINIMUM DESIGN SECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE CHARACTER, QUALITY AND QUANTITY OF MATERIAL THAT IS TO BE DREDGED. THE ESTIMATED QUANTITY SHOULD IN NO WAY BE USED FOR BIDDING OR PAYMENT CALCULATIONS. (SEE SPECS)

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 16074I

NOTES:
1. BATHYMETRIC SURVEY PERFORMED BY BAYLAND ON JANUARY 27, 2010.
2. BATHEMETRIC SURVEY PERFORMED WITH:
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   SONARMITE BT 2100-KHZ ECHOSOUNDER ACCURATE TO 1CM/0.1% OF DEPTH
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4. SOUNDINGS REFER TO MLW AS ESTABLISHED BY DNR WITH BENCMARK AT MARINER POINT PARK AS SHOWN ON PLANS. HORIZONTAL DATUM IS MD NAD83.

0 50 100 200
1 Inch = 100 Feet

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BAYLAND JOB NO. 4_0903

STATE OF MARYLAND
PETER BARFORD
NO. 21194
REGISTERED
PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED DATE	BY

SCALE: 1" = 100'
DRAWN BY: JKL 07/25/16
CHECKED BY: SB 07/25/16
SHEET NO. 4 OF 9
BID NUMBER: 16-265

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

TAYLOR CREEK CHANNEL PLAN

INE REFER TO SHEET 4

STAKEOUT COORDINATE TABLE

Number	Northing	Easting
3000	629848.24	1496582.59
3001	629874.76	1496609.11
3002	629901.27	1496635.63
3003	630117.30	1496419.60
3004	630086.89	1496396.98
3005	630056.48	1496374.35
3006	630198.13	1496111.30
3007	630228.54	1496133.92
3008	630258.94	1496156.54
3009	630452.12	1495963.37
3010	630433.01	1495929.44
3011	630413.90	1495895.52
3012	631334.99	1495669.52
3013	631343.04	1495706.16
3014	631351.09	1495742.79
3015	632295.39	1495559.31
3016	632285.66	1495523.00
3017	632275.93	1495486.69
3018	632597.83	1495455.16
3019	632659.22	1495516.32
3020	632659.18	1495541.32
3021	632733.65	1495541.45
3022	632733.88	1495408.31
3023	632729.81	1495396.49
3024	632721.67	1495372.85
3025	632713.53	1495349.21
3026	632709.46	1495337.39
3027	633201.80	1495233.95
3028	633200.77	1495207.86
3029	633199.74	1495181.78
3030	634076.60	1495459.56
3031	634076.39	1495433.69
3032	634076.19	1495407.81
3033	634381.91	1495375.65
3034	634368.91	1495353.30
3035	634355.91	1495330.95
3036	634648.43	1495109.14
3037	634630.75	1495091.46
3038	634613.33	1495073.53

NOTES:
1. BATHYMETRIC SURVEY PERFORMED BY BAYLAND ON JANUARY 27, 2010.
2. BATHEMETRIC SURVEY PERFORMED WITH:
   HYDROLITE–TM POTABLE INTEGRATED HYDROGRAPHIC SURVEY SYSTEM
   SONARMITE BT 2100–KHZ ECHOSOUNDER ACCURATE TO 1CM/0.1% OF DEPTH
   TRIMBLE GEOXT GPS WITH SUBMETER REAL TIME ACCURACY
3. BASEMAP COMPILED FROM HARFORD COUNTY GIS DATA.
4. SOUNDINGS REFER TO MLW AS ESTABLISHED BY DNR WITH BENCMARK AT MARINER POINT PARK AS SHOWN ON PLANS. HORIZONTAL DATUM IS MD NAD83.

0 50 100 200
1 Inch = 100 Feet

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160742

BayLand Consultants & Designers, Inc.
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Website: www.baylandinc.com

BAYLAND JOB NO. 4_0903

STATE OF MARYLAND SEPEHR BAHARLOU NO. 21194 REGISTERED PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

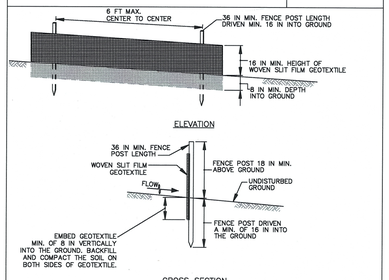
REVISED				
DATE	BY	SCALE:	1" = 100'	
		DRAWN BY: JKL	07/25/16	
		CHECKED BY: SB	07/25/16	
		SHEET NO.	5 OF 9	
		BID NUMBER: 16-265		

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

TAYLOR CREEK CHANNEL PLAN

DETAIL E-1 SILT FENCE

STANDARD SYMBOL — SF



CONSTRUCTION SPECIFICATIONS

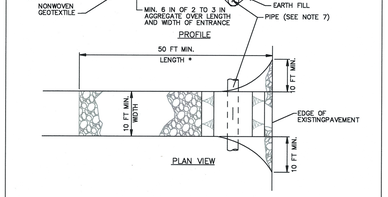
1. USE WOOD POSTS 1⅜ X 1⅜ ± X₈ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL — SCE

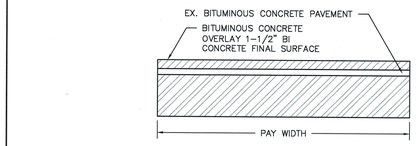


CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*)30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

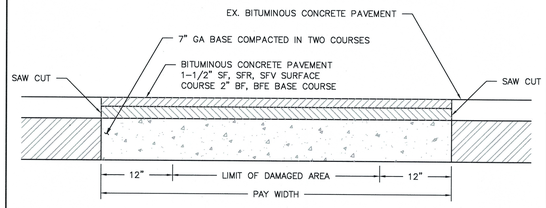
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



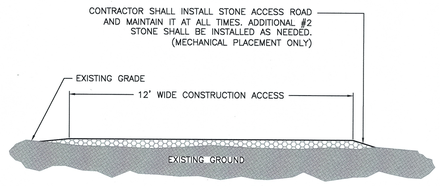
BITUMINOUS CONCRETE PAVEMENT RESURFACING DETAIL

SCALE: NTS



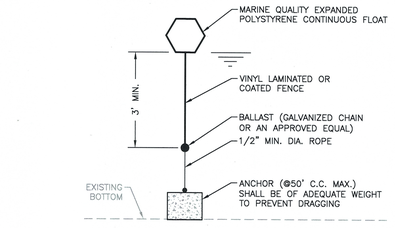
BITUMINOUS CONCRETE PAVEMENT PATCHING DETAIL

SCALE: NTS



PROPOSED ACCESS ROAD

SCALE: NTS



TURBIDITY CURTAIN DETAIL

NOT TO SCALE

NOTE: TURBIDITY CURTAIN TO PROTECT ACTIVE SHORELINE WORK AREA – LIMITED TO 400' AT ANY ONE TIME.

GENERAL DMP NOTES:

1. THE CONTRACTOR WILL BE REQUIRED TO INSPECT THE CONDITION OF THE CONTAINMENT DIKE AND OUTLET STRUCTURE AND PIPE THROUGHOUT THE CONTRACT PERIOD. THE CONTRACTOR SHALL INCLUDE IN HIS BASE BID ALL WORK AND MATERIALS NECESSARY TO MAINTAIN THE DMP SITE.
2. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO THE EXISTING CONTAINMENT DIKE.
3. CONTRACTOR SHALL PLACE THE MATERIAL AS FAR AWAY FROM THE WEIR BOX AS POSSIBLE AT THE DISCRETION OF THE COUNTY.
4. SITE ACCESS IS TO BE SECURED AT THE END OF EACH WORK DAY.
5. THE UNLOADING AREA AND THE DMP ARE LOCATED WITHIN AN ACTIVELY USED COUNTY PARK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE SITE TO ITS ORIGINAL CONDITION. ALL AREAS OUTSIDE OF THE DMP THAT ARE NOT PAVED WILL BE VEGETATIVELY STABILIZED. ALL PAVED AREAS WILL BE RESTORED TO THEIR ORIGINAL CONDITION.
6. CONTRACTOR SHALL MAINTAIN SECURITY OF SITE AT ALL TIMES AND LIMIT SITE ACCESS. GATES SHALL REMAIN CLOSED AND LOCKED DURING OFF HOURS.
7. CONTRACTOR SHALL INSTALL BLAZE ORANGE FENCE ALONG THE TEMPORARY DMP ACCESS ROAD AND HYDRAULIC INFLOW PIPE LOCATION WITHIN THE ACTIVELY USED PARK AREA.
8. THE CONTRACTOR IS MADE AWARE OF THE EXISTING STRUCTURES, UTILITY POLES, FENCES AND TREES ALONG THE TEMPORARY DMP ACCESS ROAD. CONTRACTOR SHALL FIELD LOCATE AND AVOID CAUSING DAMAGE TO THESE AND ANY OTHER STRUCTURES THAT MAY BE AT THE SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY HIS ACTIVITIES AND SHALL BE RESPONSIBLE FOR MAKING ALL REPAIRS OR REPLACEMENTS AS NECESSARY TO RESTORE THE SITE TO ITS ORIGINAL CONDITION. ANY DAMAGE TO THE SITE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. NO EQUIPMENT SHALL BE PERMANENTLY MOORED OR STORED AT THE UNLOADING AREA. THE BARGES SHALL BE MOVED IMMEDIATELY PRIOR TO AND FOLLOWING THE TRANSFER OF MATERIALS TO MINIMIZE OBSTRUCTIONS OF THE EXISTING BOAT RAMPS.
11. DREDGED MATERIAL IS NOT TO BE STOCKPILED OUTSIDE OF THE DMP SITE.

MECHANICAL PLACEMENT:

1. LOW GROUND PRESSURE GRADING EQUIPMENT SHALL BE PROVIDED AT THE DMP SITE AS REQUIRED TO SPREAD DREDGED MATERIAL OVER THE DESIGNATED PLACEMENT AREA AND TO MAINTAIN POSITIVE DRAINAGE TOWARD THE OUTFALL STRUCTURE.
2. AT THE COMPLETION OF PLACEMENT OPERATIONS, MATERIAL SHALL BE GRADED WITH POSITIVE DRAINAGE TOWARD THE OUTLET STRUCTURE.

HYDRAULIC PLACEMENT:

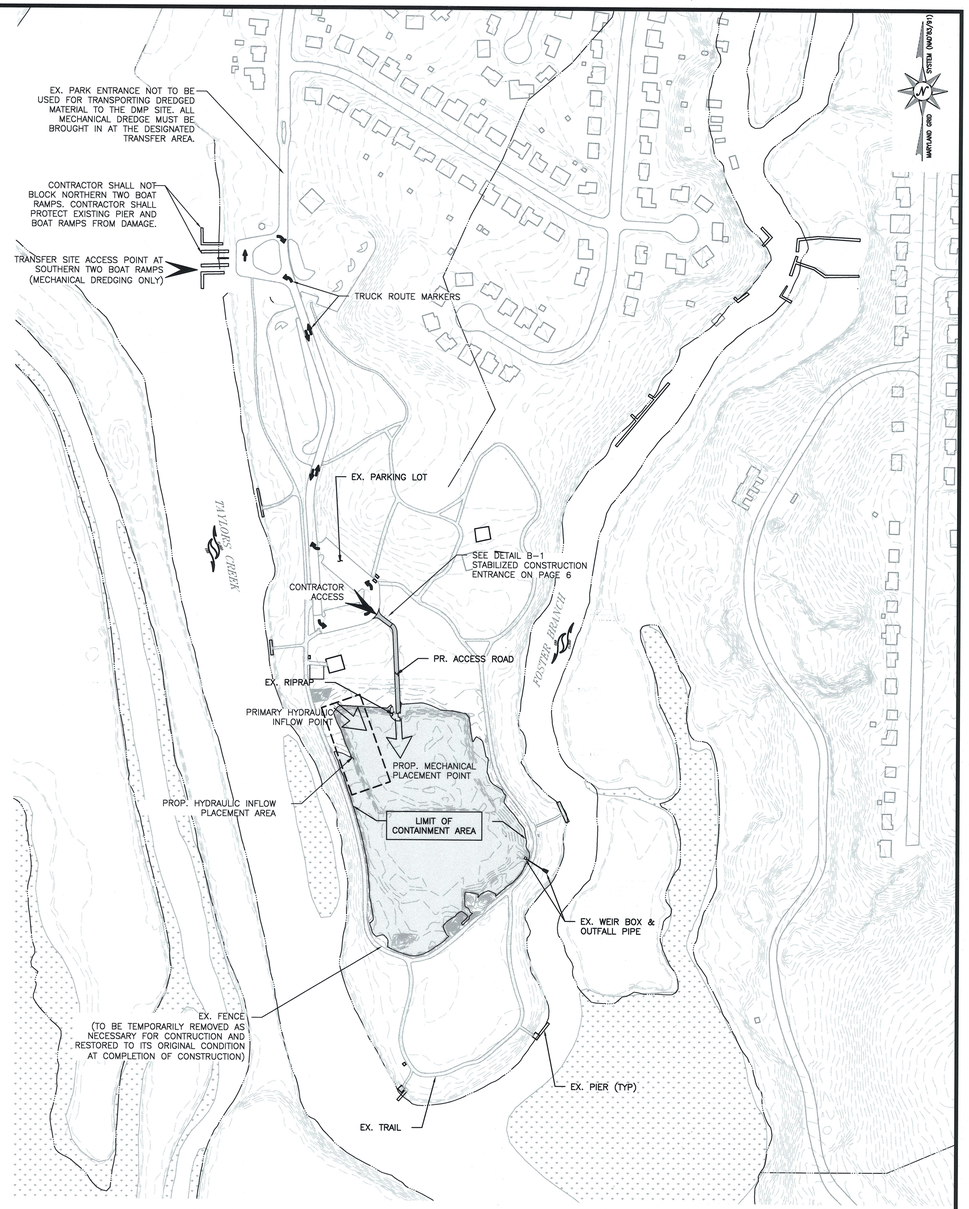
1. LOW GROUND PRESSURE GRADING EQUIPMENT SHALL BE PROVIDED AT THE DMP SITE AS REQUIRED TO GRADE MATERIAL ACCUMULATED NEAR THE INFLOW PIPE, TO CONTROL AND DIRECT MATERIAL PLACEMENT AND FLOW FROM THE INFLOW PIPE, OR AS DIRECTED BY THE COUNTY.
2. THE CONTRACTOR SHALL PLACE THE INFLOW PIPE AT LOCATION SHOWN ON THE PLANS AS THE PRIMARY INFLOW POINT. THE CONTRACTOR SHALL HAVE SUFFICIENT PIPE, EQUIPMENT, MATERIALS AND PERSONNEL ON SITE TO RELOCATE THE INFLOW PIPE WITHIN THE DESIGNATED INFLOW AREA WITHIN 24 HOURS AS DIRECTED BY THE COUNTY.

WATER QUALITY NOTES

1. MONITORING OF TURBIDITY OF THE OUTFLOW FROM THE DREDGE DISPOSAL FACILITY WILL BE MADE HOURLY AND RESULTS FURNISHED TO THE COUNTY ON A WEEKLY BASIS. EFFLUENT DISCHARGED FROM THE OUTLET STRUCTURE MAY NOT EXCEED A SUSPENDED SOLIDS LEVEL OF 400 PPM IN ACCORDANCE WITH THE WATER QUALITY CERTIFICATION.
2. HYDRAULIC DREDGING – THE CONTRACTOR SHALL HAVE A REPRESENTATIVE PRESENT AT THE DISPOSAL FACILITY AT ALL TIMES DURING THE DREDGE/PLACEMENT OPERATIONS AND DURING INITIAL DEWATERING OF THE DREDGED MATERIAL (SEE SPECIFICATIONS). THE CONTRACTOR'S REPRESENTATIVE MUST BE ABLE TO MAINTAIN CONTINUOUS COMMUNICATION WITH THE DREDGE OPERATIONS BY RADIO.
3. MECHANICAL DREDGING – THE CONTRACTOR SHALL HAVE A REPRESENTATIVE PRESENT AT THE DISPOSAL FACILITY AT ALL TIMES DURING THE PLACEMENT OPERATIONS.
4. ANY MATERIAL MISPLACED DURING CONSTRUCTION, DREDGING, OR DEWATERING PHASES OF THE OPERATION SHALL BE REMOVED BY THE CONTRACTOR IMMEDIATELY AND THE AREA STABILIZED IN ACCORDANCE WITH APPROVED PLANS.
5. ADDITIONAL SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY THE M.D.E. ENFORCEMENT DIVISION TO PREVENT DAMAGE TO STATE WATER AND/OR ADJOINING PROPERTIES.

TRANSFER SITE NOTES

1. CONTRACTOR SHALL USE THE SOUTHERN TWO BOATS RAMPS LOCATED AT THE MARINER POINTE PARK DMP SITE AS THE DESIGNATED TRANSFER SITE.
2. CONTRACTOR SHALL NOT BLOCK THE NORTHERN TWO BOAT RAMPS AT ANY TIME AND MAY ONLY TEMPORARILY BLOCK THE SOUTHERN TWO BOAT RAMPS DURING THE UNLOADING PROCESS.
3. THE CONTRACTOR SHALL AVOID DAMAGING THE EXISTING CONCRETE BOAT RAMP, ADJACENT BULKHEADS, PIERS, AND PILINGS AT THE UNLOADING AREA. CONTRACT SHALL RESTORE ANY DAMAGED AREA BACK TO ITS ORIGINAL CONDITION.
4. UPON COMPLETION OF DREDGING OPERATIONS, ALL DISTURBED AREAS ARE TO BE STABILIZED. ALL SEDIMENT CONTROL DEVICES ARE TO BE REMOVED.
5. NO EQUIPMENT SHALL BE PLACED WITHIN 5 FEET OF THE EXISTING BULKHEADS, PIERS, AND STONE STRUCTURES. CONTRACTOR SHALL TAKE ALL NECESSARY ACTIONS TO PROTECT THE EXISTING STRUCTURES AND MARSH VEGETATION FROM DAMAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL STRUCTURES AND REPAIR ANY DAMAGES.



DMP FACILITY DATA

DREDGE QUANTITY:	
GUNPOWDER RIVER	16,259 CY
TAYLORS CREEK	4,000 CY
AVAILABLE VOLUME:	53,260 CY
MAX. INFLOW RATE:	13 CFS

GRAPHIC SCALE
0 100 200 400
(IN FEET)
1 inch = 200 feet

SEDIMENT & EROSION CONTROL PLAN

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160743

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
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Hanover, Maryland 21076 Fax: (410) 694-9405
Website: www.baylandinc.com

BAYLAND JOB NO. 4_0903

STATE OF MARYLAND — STEPHEN B. HARRIS — NO. 21194 — REGISTERED PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED DATE	BY

SCALE:	1" = 200'
DRAWN BY: JKL	07/25/16
CHECKED BY: SB	07/25/16
SHEET NO.	6 OF 9
BID NUMBER: 16-265	

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

DMP SITE NOTES & DETAILS

NOTE:
PRIOR TO START OF DREDGING OPERATIONS SEDIMENT CONTROL INSPECTOR AND CONTRACTOR SHALL INSPECT EXISTING WEIR BOX TO DETERMINE ITS SUITABILITY TO PERFORM ITS DESIGN FUNCTION. CONTRACTOR TO REPAIR OR REPLACE COMPONENTS NOT MEETING DESIGN DETAIL ON SHEET 9 OF 9.

NOTE:
SURVEY OF DMP SITE WAS CONDUCTED BY BAYLAND ON DECEMBER 12, 2015.

SEDIMENT & EROSION CONTROL PLAN

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160744

BayLand Consultants & Designers, Inc.
"Integrating Engineering and Environment"
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Hanover, Maryland 21076 Fax: (410) 694-9405
Website: www.baylandinc.com
BAYLAND JOB NO. 4_0903

STATE OF MARYLAND
SEPEHR BAHARLOU
NO. 21194
REGISTERED PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

REVISED			
DATE	BY	SCALE: 1" = 40'	
		DRAWN BY: JKL	07/25/16
		CHECKED BY: SB	07/25/16
		SHEET NO. 7 OF 9	
		BID NUMBER: 16-265	

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

DMP SITE PLAN

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, SEDIMENT CONTROL INSPECTOR AT (410) 901-4020 AND HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS SEDIMENT CONTROL INSPECTOR AT (410) 996-5265 AT LEAST 48 HOURS PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES AND, UNLESS WAIVED BY THE SEDIMENT CONTROL NSPECTOR, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING AT THE PROJECT SITE. THE CONTRACTOR MUST PROVIDE THE NAME OF THE PERSON ON THE SITE WHO IS RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES, AND A COPY OF THEIR GREEN CARD TO THE SEDIMENT CONTROL INSPECTOR.

2. ALL "PROJECTS WITH CONSTRUCTION ACTIVITIES DISTURBING 1 ACRE OR MORE ARE REQUIRED TO SUBMIT A NOTICE OF INTENT (NOI) TO MDE TO COMPLY WITH THE GENERAL PERMIT-FOR CONSTRUCTION ACTIVITY FOR STORMWATER DISCHARGES. THE NOI SHOULD BE SUBMITTED AFTER E&SC/SWM APPROVAL HAS BEEN ISSUED AND PRIOR TO BEGINNING CONSTRUCTION.

3. THE LIMITS OF CONSTRUCTION SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION MEETING OR ANY GRADING ACTIVITIES TO ENSURE COMPLIANCE WITH THE APPROVED PLAN.

4. THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE KEPT AT THE PROJECT SITE.

5. THE HARFORD SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO MODIFY THE EROSION AND SEDIMENT CONTROL PLAN.

6. THE HARFORD SOIL CONSERVATION DISTRICT MAY REVOKE THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL PLAN IF WORK PERFORMED AT THE PROJECT SITE DOES NOT CONFORM TO THE PROVISIONS OF THE GRADING PERMIT, THE APPROVED PLAN OR TO ANY WRITTEN INSTRUCTIONS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS OR THE HARFORD SOIL CONSERVATION DISTRICT

7. THE CONTRACTOR MUST REQUEST THAT THE MDE SEDIMENT CONTROL INSPECTOR APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT AND THE HARFORD COUNTY EROSION AND SEDIMENT CONTROL ORDINANCE AT THE FOLLOWING POINTS OF PROJECT DEVELOPMENT:

7.A. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES, 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 MDE IS MADE.

7.B. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

7.C. UPON FINAL STABILIZATION OF THE SITE AND PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL MEASURES.

8. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND, SHALL HAVE THEM INSPECTED AND APPROVED BY THE MDE SEDIMENT CONTROL INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES.

9. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE MDE SEDIMENT CONTROL INSPECTOR.

10. THE FOLLOWING MINOR PLAN MODIFICATIONS MAY BE APPROVED BY THE INSPECTOR IN THE FIELD:

10.1. MOVING ANY SEDIMENT CONTROL STRUCTURES (EXCEPT BASINS) TO MEET THE EXISTING CONTOURS AND FIELD CONDITIONS, WHEN MOVING OF THESE STRUCTURES WOULD HAVE NO IMPACT ON THEIR FUNCTION OR DESIGN CRITERIA.

10.2. CHANGES IN TRAP DIMENSIONS MAY BE MADE TO MEET FIELD CONDITIONS PROVIDED THE DESIGNED CAPACITY IS MAINTAINED OR EXCEEDED.

10.3. SUBSTITUTION OF PERIMETER CONTROL MEASURES MAY BE MADE PROVIDED THE MEASURE SUBSTITUTED IS EQUIVALENT (I.E., SILT FENCE FOR STRAW BALES) OR IS AN UPGRADE OF THE ORIGINAL MEASURE (I.E., SILT FENCE TO A PERIMETER BERM WITH PROPERLY SIZED OUTLET).

10.4. ADDITIONS AND EXTENSION OF PERIMETER CONTROLS (INCLUDING STONE ON CONSTRUCTION ENTRANCES) MAY BE MADE TO MEET FIELD CONDITIONS. ANY MODIFICATIONS TO THE PLAN WHICH ARE NOT LISTED ABOVE REQUIRE THE PLAN TO BE SUBMITTED TO THE HARFORD SOIL CONSERVATION DISTRICT FOR REVIEW AND APPROVAL.

ANY MODIFICATIONS TO THE PLAN WHICH ARE NOT LISTED ABOVE REQUIRE THE PLAN TO BE RESUBMITTED TO THE HARFORD SOIL CONSERVATION DISTRICT FOR REVIEW AND APPROVAL.

11. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATEDLY.

12. ON-SITE TEMPORARY STOCKPILE AREAS MUST BE PLACED AS SHOWN ON THE APPROVED PLAN. OFF-SITE STOCKPILE AREAS MUST HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES. IF THE CONSTRUCTION SCHEDULE IS TO EXCEED 14 DAYS, THE STOCKPILE AREAS MUST BE STABILIZED. UPON THE COMPLETION OF THE USE OF THE STOCKPILE AREA, EXISTING GROUND SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS AND PERMANENTLY STABILIZED.

13. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE MDE SEDIMENT CONTROL INSPECTOR.

14. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

14.A. THREE CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES EQUAL TO OR GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND

14.B. SEVEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

THE ABOVE REQUIREMENTS DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED OR TO INTERIOR AREAS OF A SURFACE MINE SITE WHERE THE STABILIZATION MATERIAL WOULD CONTAMINATE THE RECOVERABLE RESOURCE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT THE STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

15. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE ENTIRE CONTRIBUTING AREA TO THE PRACTICE HAS BEEN STABILIZED TO THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR. SEDIMENT CONTROLS MAY ONLY BE REMOVED WITH THE AUTHORIZATION OF THE SEDIMENT CONTROL INSPECTOR.

16. ALL AREAS DISTURBED BY THE REMOVAL OF SEDIMENT CONTROL DEVICES MUST BE IMMEDIATELY STABILIZED.

17. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

18. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATION STABILIZATION.

19. ALL FLOW LINES ARE TO BE STABILIZED WITH SOD OR SEED WITH EROSION CONTROL MATTING TOTA DEPTH OF FLOW OF 1 FOOT.

20. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.

21. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP. SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF (1/2) THE DEPTH BETWEEN THE DEWATERING ELEVATION AND THE BOTTOM OF THE BASIN.

22. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR FOREST RETENTION AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.

23. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISHED GRADE ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.

24. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

25. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO ANY CONSTRUCTION ACTIVITIES. FURTHER, THE ISSUANCE OF A GRADING PERMIT DOES NOT RELIEVE THE DEVELOPER OF THE RESPONSIBILITY TO OBTAIN ANY ADDITIONAL LOCAL, STATE OR FEDERAL PERMITS.

HARFORD COUNTY SEDIMENT CONTROL NOTES

1. A GRADING UNIT OF 20 ACRES IS THE MAXIMUM CONTIGUOUS AREA ALLOWED TO BE GRADED AT A GIVEN TIME.

2. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY DPW. NO MORE THAN THIRTY ACRES CUMULATIVELY MAY BE DISTURBED AT ANY GIVEN TIME.

3. THE CONTRACTOR/OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. FURTHER, NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE UNTIL ALL REQUIRED PERMITS HAVE BEEN OBTAINED.

4. THE LIMITS OF DISTURBANCE SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO GRADING OF THE SITE TO ENSURE COMPLIANCE WITH APPROVED PLANS. ALL FOREST RETENTION AREAS WILL BE DELINEATED WITH BLAZE ORANGE FENCE AS WELL AS ANY SWM INFILTRATION PRACTICE PRIOR TO ANY CLEARING. WORK BEYOND THE LIMITS OF DISTURBANCE AND IN ANY AREA INSIDE THE FOREST RETENTION AND SWM INFILTRATION AREA IS CONSIDERED TO BE A VIOLATION OF THIS PLAN.

5. ALL SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. UPON COMPLETION OF THE INSTALLATION OF PERIMETER SEDIMENT CONTROL PRACTICES THE SITE MUST BE INSPECTED BY THE DEPARTMENT OF PUBLIC WORKS (DPW). NO ADDITIONAL CONSTRUCTION ACTIVITY WILL BE AUTHORIZED WITHOUT THE APPROVAL FROM DPW.

6. ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT TRACKING OF MUD INTO PUBLIC WAYS. DURING CONSTRUCTION, EVERY MEANS WILL BE TAKEN TO CONTROL SOIL EROSION AND SILTATION. IF NECESSARY A WASH RACK MAY NEED TO BE ESTABLISHED.

7. EARTH DIKES, SEDIMENT TRAPS, ETC. WILL BE LOCATED AS SHOWN ON THESE DRAWINGS. FIELD CHANGES AND MINOR ADJUSTMENTS ARE PERMISSIBLE AS LONG AS THE INSTALLATION FUNCTIONS AND CONFORMS TO SPECIFICATIONS. THE SITE INSPECTOR PRIOR TO INSTALLATION MUST APPROVE ALL SUCH CHANGES. MAJOR CHANGES TO THE APPROVED PLAN WILL REQUIRE RE-APPROVAL BY THE HARFORD SOIL CONSERVATION DISTRICT.

8. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

A) THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1, ALL WATERWAYS AND TO THE SURFACE OF ALL PERIMETER CONTROLS.
B) SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS OF THE PROJECT SITE.

9. DUST CONTROL MUST BE MANAGED AS PART OF ALL SEDIMENT CONTROL PLANS. FAILURE TO DO SO IS A VIOLATION OF THIS PLAN.

10. SEDIMENT BASINS MUST BE BUILT TO DESIGN SPECIFICATIONS SHOWN ON THE PLAN. IF THE BASIN IS TO BE USED AS A FUTURE SWM FACILITY, THE BASIN WILL BE BUILT IN ACCORDANCE WITH THE LATEST MD-378 STANDARDS AND SPECIFICATIONS. SPECIFIED MATERIALS MUST BE USED. NO CHANGES OR MODIFICATIONS WILL BE MADE WITHOUT WRITTEN AUTHORIZATION OF THE HARFORD SOIL CONSERVATION DISTRICT.

11. TEMPORARY FENCING SHALL BE PLACED AROUND ALL SEDIMENT BASINS, TRAPS, AND PONDS DURING CONSTRUCTION AND SITE GRADING.

12. AT THE END OF EACH WORKING DAY ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT OPERATIONAL. A WEEKLY LOG WILL BE KEPT IN ACCORDANCE WITH NOI/NPDES REGULATIONS. A COPY OF THE APPROVED SEDIMENT CONTROL PLANS SHALL BE AVAILABLE AT THE SITE AT ALL TIMES.

13. ENSURE POSITIVE DRAINAGE TO ALL ROAD INLETS DURING ALL PHASES OF ROAD CONSTRUCTION TO ENSURE POSITIVE FLOW TO TRAPS AND OR BASINS.

14. CUT AND/OR FILL SHALL BE DONE IN CONFORMANCE WITH 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS FOR LAND GRADING.

15. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY CONVEY WATER DOWN SLOPES WITHOUT CAUSING EROSION.

16. OFF-SITE WASTE OR BORROW AREAS SHALL HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE IMPORT OR EXPORT OF MATERIAL TO/FROM THE PROJECT SITE.

17. ALL MATERIAL ORIGINATING FROM THE DEVELOPMENT OF THE PROPERTY AND DEPOSITED ON THE PUBLIC RIGHT-OF-WAY SHALL BE IMMEDIATELY REMOVED.

18. STORM DRAIN INLETS AND OUTLETS SHALL BE PROTECTED PER 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.

19. TOPSOIL, LIMING, FERTILIZING, SEEDING, MULCHING, SOD, ETC. ARE ALL ESSENTIAL PARTS OF THE SEDIMENT CONTROL PLAN AND MUST BE COMPLETED ALONG WITH ALL OTHER PRACTICES.

20. TRAPS TO BE REMOVED SHALL BE DEWATERED AS PER THE 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.

21. PRIOR TO REMOVAL OF TRAPS OR CONVERSION OF SEDIMENT BASINS TO SWM FACILITIES, THE STORM DRAINS WILL BE FLUSHED.

22. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL ALL DISTURBED AREAS FOR WHICH THE PRACTICES WERE INSTALLED HAVE BEEN STABILIZED. SEDIMENT CONTROL PRACTICES MAY BE REMOVED ONLY WITH THE AUTHORIZATION OF THE DPW INSPECTOR. ALL DISTURBED AREAS RESULTING FROM THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE STABILIZED IMMEDIATELY. REMOVAL PRIOR TO INSPECTOR'S APPROVAL CONSTITUTES A VIOLATION.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.3)					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
1	SWITCHGRASS CREEPING RED FESCUE BUSH CLOVER	10 15 2	2/15 – 4/30 8/15 – 10/31	½" – ¼"	45 lb/ac (1.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
3	DEERTONGUE SHEEP FESCUE COMMON LESPEDEZA	20 20 10	2/15 – 4/30 8/15 – 10/31	½" – ¼"				

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 7a SEED MIXTURE (FROM TABLE B.1)					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
1	ANNUAL RYEGRASS	40 (1lb/1000 sf)	2/15 – 4/30 8/15 – 11/30	0.5"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
2	BARLEY	96 (2.2lb/1000 sf)	2/15 – 4/30 8/15 – 11/30	0.5"		
3	OATS	72 (1.7lb/1000 sf)	2/15 – 4/30 8/15 – 11/30	0.5"		
4	RYE	112 (2.8lb/1000 sf)	2/15 – 4/30 8/15 – 11/30	0.5"		
5	FOXTAIL MILLET	30 (0.7lb/1000 sf)	5/1 – 8/14	0.5"		

NOTES:
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

i. SOIL PH BETWEEN 6.0 AND 7.0.

ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

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

6. TOPSOIL APPLICATION

a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. 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.

5. 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.

STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

A. SEEDING

1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

i. 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.

ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

i. 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 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.

ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

iii. WCFM 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.

iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRATACK 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.

iv. 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.

SCALE : 1 inch

SEDIMENT & EROSION CONTROL PLAN
S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160745

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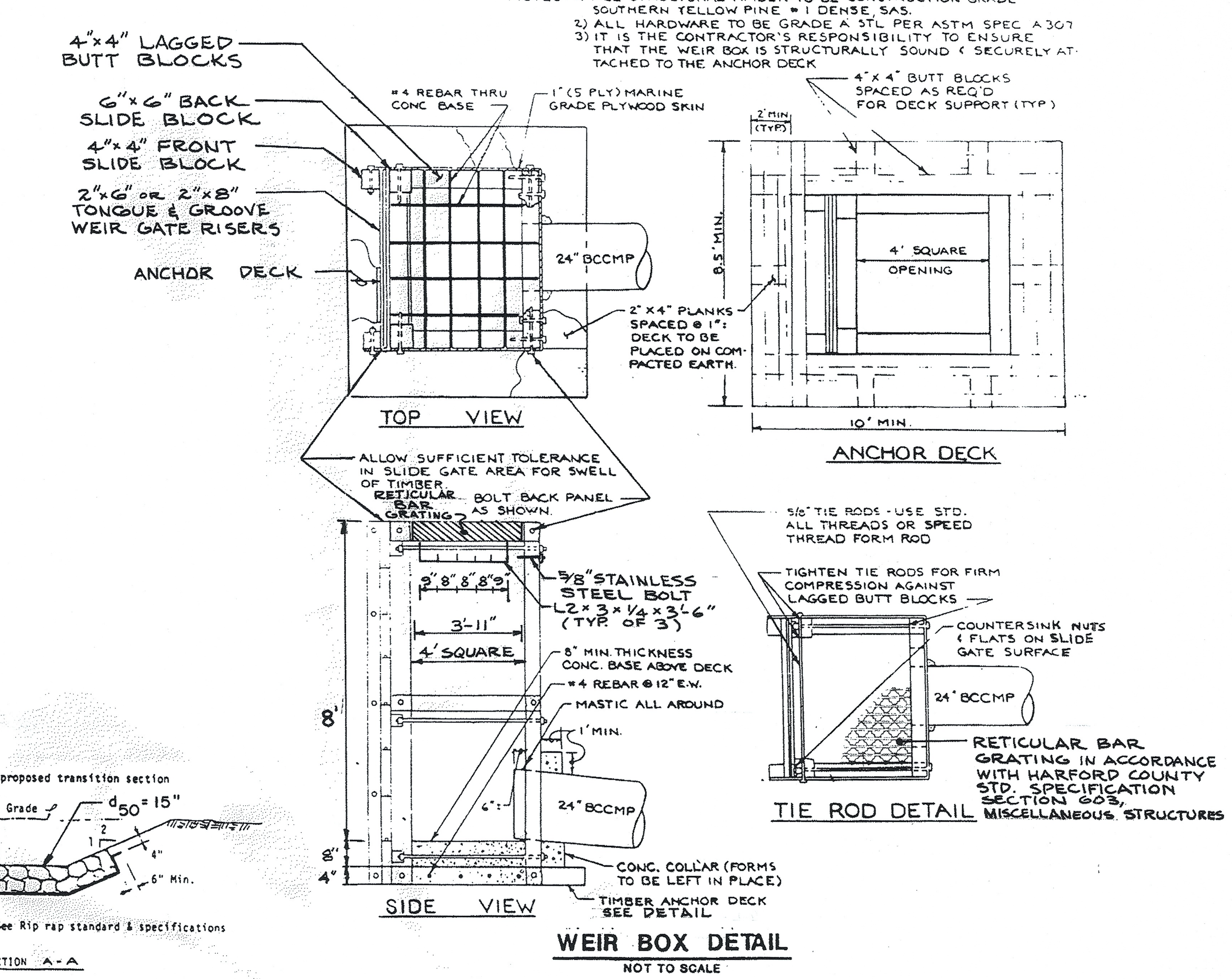
BAYLAND JOB NO. 4_0903

STATE OF MARYLAND · SEPEHR BAHARLOU · NO. 21194 · REGISTERED PROFESSIONAL ENGINEER
7/18/16

HARFORD COUNTY
DEPARTMENT OF PARKS & RECREATION

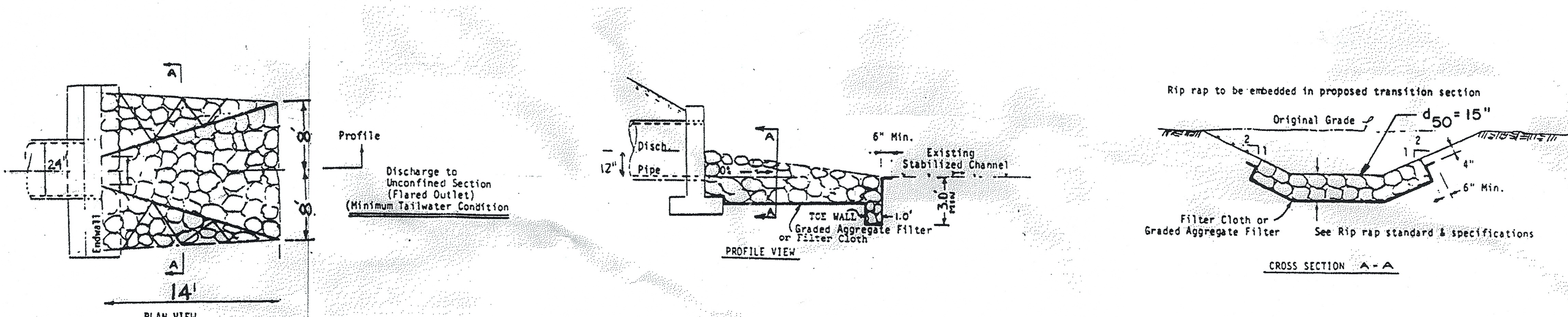
REVISED				
DATE	BY	SCALE: NOT APPLICABLE		GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING
		DRAWN BY: JKL	07/25/16	
		CHECKED BY: SB	07/25/16	
		SHEET NO. 8 OF 9		SEDIMENT & EROSION CONTROL NOTES
		BID NUMBER: 16-265		

NOTES: 1) ALL STRUCTURAL TIMBER TO BE CONSTRUCTION GRADE SOUTHERN YELLOW PINE #1 DENSE, SAS.
2) ALL HARDWARE TO BE GRADE A STL PER ASTM SPEC A307
3) IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE WEIR BOX IS STRUCTURALLY SOUND & SECURELY ATTACHED TO THE ANCHOR DECK



WEIR BOX DETAIL

NOT TO SCALE



RIP-RAP OUTFALL PROTECTION

NOT TO SCALE

I. EARTH FILL

Material

The fill material shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the top of berm elevation as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

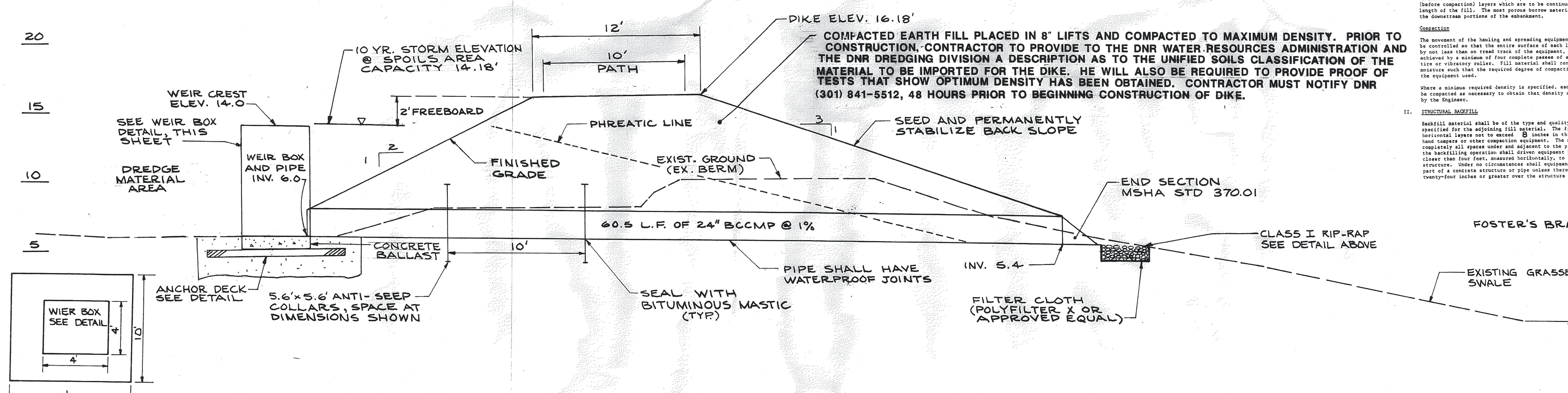
Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than on tread track of the equipment, or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer.

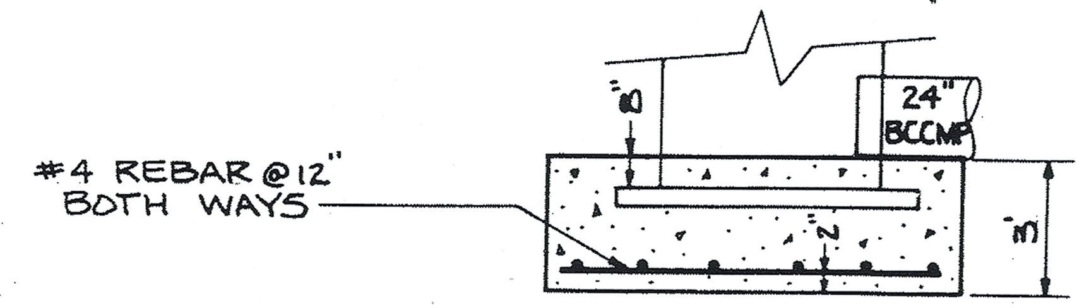
II. STRUCTURAL BACKFILL

Backfill material 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 8 inches in thickness and compacted by hand tampers or other 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 twenty-four inches or greater over the structure or pipe.



PROFILE – DREDGE SPOILS OUTFALL AND DIKE

SCALE : 1" = 4'



ANCHOR DECK DETAIL

N.T.S.

NOTE:
THIS SHEET IS A REPRODUCED COPY OF THE ORIGINAL DESIGN SHEET FOR THE MARINER POINT PARK PHASE C DMP SITE APPROVED BY HARFORD SOIL CONSERVATION DISTRICT ON 04-11-89. THIS SHEET SHALL ASSIST THE CONTRACTOR IN DETERMINING ANY NESSECARY REPAIRS TO THE EXISTING WEIR OUTFALL STRUCTURE.

SEDIMENT & EROSION CONTROL PLAN

S/C PLAN #59825 GRADING PERMIT #GRA11630-2016 160746

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STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 7/18/16

HARFORD COUNTY

DEPARTMENT OF PARKS & RECREATION

REVISED				
DATE	BY	SCALE:	AS SHOWN	
		DRAWN BY: JKL	07/25/16	
		CHECKED BY: SB	07/25/16	
		SHEET NO.	9 OF 9	
		BID NUMBER: 16-265		

GUNPOWDER RIVER & TAYLOR CREEK MAINTENANCE DREDGING

ORIGINAL DMP SITE DESIGN PLAN