

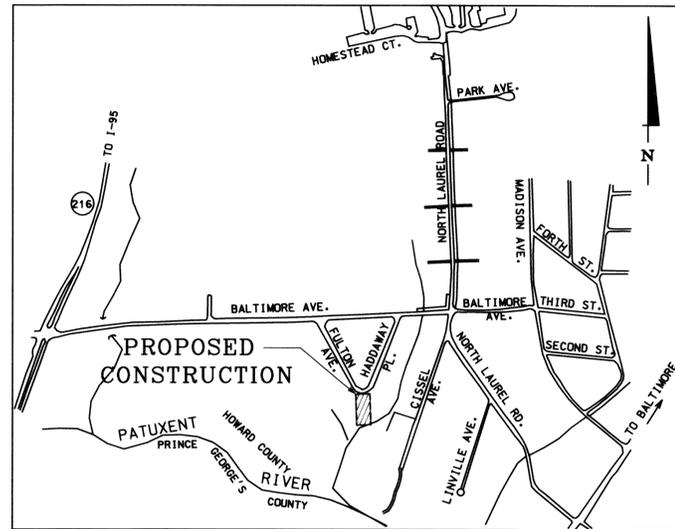
SHEET INDEX

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3. DITCH PROFILE (AS-BUILT)
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8. EROSION AND SEDIMENT CONTROL NOTES
9. CROSS SECTIONS (AS-BUILT)
10. CROSS SECTIONS (AS-BUILT)

LEGEND

- EX. TREES
- EXIST. MAJOR CONTOUR
- EXIST. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. MINOR CONTOUR
- EXIST. PROPERTY LINE
- WETLANDS
- ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- CLEAN WATER DIVERSION FENCE
- SUPER SILT FENCE
- SILT FENCE
- RPS
REMOVABLE PUMPING STATION
- DD
SILT BAG DEWATERING DEVICE
- ED-A2
EARTH DIKE
- INTAKE & DISCHARGE HOSES
- DIVERSION PIPE
- SANDBAG DAM
- SAVE TREE
- REMOVE TREE
- TRY TO SAVE TREE
- EXISTING FLOODPLAIN
- PROPOSED FLOODPLAIN
- EX. WATER LINE
- EX. SEWER LINE (VITRIFIED CLAY PIPE)
- EX. STORM DRAIN
- EX. OVERHEAD ELECTRIC
- EX. UNDERGROUND CABLE TV
- EX. UNDERGROUND TELEPHONE
- EX. GAS LINE

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
FULTON AVE
HOWARD COUNTY, MARYLAND
CAPITAL PROJECT No. D-1146



SCALE: 1" = 600'

SPECIAL CONSTRUCTION NOTES

THE CONTRACTOR SHALL STAY 5' AWAY HORIZONTALLY FROM THE EXISTING 8" VCP SANITARY LINE TO THE EXTENT POSSIBLE DURING CONSTRUCTION. WHEN THIS IS NOT POSSIBLE THE FOLLOWING PRECAUTIONS SHALL BE TAKEN:

1. EQUIPMENT AND MATERIALS SHALL NOT BE PARKED, STORED, OR STOCKPILED WITHIN 5' OF THE SANITARY LINE.
2. WORK NEAR THE SANITARY LINE SHALL BE LIMITED TO A GRADALL (APPROXIMATELY 40,000 LBS), A RUBBER TIRE LOADER (APPROXIMATELY 16,000 LBS), AND A SMALL DOZER (APPROXIMATELY 16,000 LBS). A LARGE EXCAVATOR (APPROXIMATELY 85,000 LBS) SHALL NOT BE USED FOR THIS PROJECT.
3. THE CONTRACTOR SHALL CREATE A PATH DOWN THE CENTER OF THE PROPOSED CHANNEL FOR THE GRADALL TO RUN AND SHALL PLACE WOOD MATS ALONG THIS PATH TO HELP DISTRIBUTE THE LOADS OF THE MACHINE AND TO HELP HIM GET AROUND MORE EASILY. THE SMALL DOZER SHALL BE USED ON THE SIDE OF THE CHANNEL WITH THE SANITARY LINE TO PUSH SOIL TO BE EXCAVATED DOWN TO WHERE THE GRADALL CAN REACH IT. THE GRADALL SHALL LOAD THE SOIL TO THE RUBBER TIRE LOADER AT THE CHANNEL BOTTOM AND THEN THE LOADER SHALL LOAD THE SOIL INTO DUMP TRUCKS.

4. IF THE DOZER NEEDS TO DRIVE OVER THE SANITARY LINE IT SHALL BE DONE PERPENDICULAR TO THE SANITARY LINE.
5. IF THE EDGE OF THE GRADALL WILL BE CLOSER THAN 2' HORIZONTAL OR 6' VERTICAL TO THE SANITARY LINE, THE CONTRACTOR SHALL NOTIFY THE COUNTY PROJECT MANAGER TO REQUEST PERMISSION TO EXCEED THE 2' AND 6' LIMITS NOTED HEREIN.

AS-BUILT
JUNE 28, 2007

OWNER'S/DEVELOPER'S CERTIFICATION

"I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND 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.

5-30-06
DATE

Howard E. Saltzman
OWNER/DEVELOPER SIGNATURE

Howard E. Saltzman, Chief, Stormwater Mgmt Division
PRINTED NAME AND TITLE

DESIGN CERTIFICATE

I HEREBY 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 IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

05/25/06
DATE

Saifuddin Ahmed
DESIGNER'S SIGNATURE

MARYLAND REGISTRATION NO. 27015
(P.E., R.L.S., OR R.L.A.)

SAIFUDDIN AHMED
PRINTED NAME

DES: SA			
DRN: BH			
CHK: JK			
DATE: 2/24/06	BY	NO.	REVISION

TITLE SHEET

DATE 600' SCALE MAP NO. BLOCK NO.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
3. THE DEPARTMENT OF PLANNING AND ZONING HAS DETERMINED THAT THE DISTURBANCE WITHIN THE FLOODPLAIN, STREAM, AND WETLANDS IS ESSENTIAL IN ORDER TO CONSTRUCT THIS PROJECT.
4. THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
5. 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.
6. SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANT, INC.-MAY 2005
7. WETLANDS WERE DELINEATED BY KCI APRIL 2005. THE DELINEATION WAS VERIFIED BY THE U. S. ARMY CORPS OF ENGINEERS AND MDE AS ACCURATE ON JULY 15, 2005.
8. THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY HOWARD COUNTY SURVEY DIVISION AND AB CONSULTANTS.
9. STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT WILL NOT ADD IMPERVIOUS AREA NOR WILL IT CHANGE THE EXISTING HYDROLOGY OF THE SITE.
10. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
11. A JOINT PERMIT APPLICATION HAS BEEN SUBMITTED TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 200564506)
12. THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. THE HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
13. HTI CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO HTI'S OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
14. SHOULD HTI DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, HTI SHALL NOTIFY KCI TECHNOLOGIES, INC. IMMEDIATELY TO RESOLVE THE SITUATION.
15. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
16. HTI IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
17. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING'S 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.
18. TRAFFIC CONTROL SHALL BE PROVIDED DURING CONSTRUCTION. HOWARD COUNTY STANDARD DETAIL TE-11 SHALL APPLY.
19. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES AND AFTER COMPLETING THE CONSTRUCTION, TV TEST WILL BE PERFORMED OF THE EXISTING 8" SANITARY SEWER FROM EX. MANHOLE (EX SMH 1) TO EX. MANHOLE (EX SMH 2). THREE MORE TV TESTS WILL BE PERFORMED DURING THE CONSTRUCTION OF PROPOSED DITCH. THREE TV TESTS CAN BE SPACED BETWEEN THREE EQUAL LENGTH OF THE PROPOSED DITCH. CONTRACTOR SHALL SUSPEND ALL WORK AND NOTIFY BUREAU OF UTILITIES IMMEDIATELY IF THE TV TEST SHOWS ANY DAMAGE TO THE EXISTING SANITARY SEWER.
20. CONTRACTOR SHALL MARK THE CENTERLINE OF THE EXISTING 8" SANITARY LINE PRIOR TO BEGINNING CONSTRUCTION. ALL HEAVY CONSTRUCTION EQUIPMENT'S AND TRUCKS MOVEMENT SHALL BE PERPENDICULAR TO THE EXISTING SANITARY LINE. ALL HEAVY CONSTRUCTION EQUIPMENTS AND TRUCKS SHALL NOT BE LEFT WITHIN FIVE (5) FEET ALONG THE MARKED CENTER LINE OF THE EXISTING 8" SANITARY LINE FOR EXTENDED PERIOD OF TIME AND OVER NIGHT.
21. CONTRACTOR SHALL NOTIFY BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
22. CONTRACTOR SHALL REPAIR OR REPLACE THE EXISTING 8" SANITARY SEWER IN CASE IT IS DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE THE EXISTING SANITARY SEWER IF IT IS DETERMINED THAT DAMAGED WAS CAUSED DUE TO CONTRACTOR'S NEGLIGENCE.

PLOTTED: 07:52 AM on Thursday, May 25, 2006
By: Ahmed Division: Water Resources
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John R. Roberts 6/5/06
DIRECTOR OF PUBLIC WORKS DATE

Howard E. Saltzman 5-30-06
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

John J. O'Hara 5/30/06
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES' DATE

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

10 North Park Drive
Hunt Valley, MD 21030
PHONE: (410) 316-7800
FAX: (410) 316-7817
www.kci.com

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
FULTON AVE. AND HADDAWAY PLACE
CHANNEL STABILIZATION

SCALE
SHEET
1 OF 10

SURVEY CONTROL

TRAVERSE	NORTHING	EASTING	ELEVATION
101	525731.7097	1356316.8687	176.41
102	525579.7044	1356158.7788	171.78
103	525760.6553	1356255.1936	177.50

FULL DEPTH PATCHING
SEE DETAIL ON THIS SHEET
STA. 0+48 RT TO STA. 0+63 RT - 17 SY

COMBINATION CURB AND GUTTER
HO. CO. STD. R-3.01
STA. 50+48, 19.88' RT TO STA. 50+55, 31.13' RT - 17 LF
STA. 50+60, 32.58' RT TO STA. 50+63, 28.71' RT - 6 LF

DEPRESSED CURB AND GUTTER
HO. CO. STD. R-3.01
STA. 50+55, 31.13' RT TO STA. 50+60, 32.58' RT - 9 LF

GRIMES, FRANK W., CYNTHIA
LIBER 955, FOLIO 603
"NORTH LAUREL"
PLAT BOOK 3 AT PLAT 59
BLOCK 11, LOT 14

HOWARD COUNTY MARYLAND
DEPT. OF PUBLIC WORKS
LIBER 2358, FOLIO 226
"NORTH LAUREL"
PLAT BOOK 3 AT PLAT 59
BLOCK 11, LOT 17

GRIMES, FRANK W., CYNTHIA
LIBER 955, FOLIO 603
"NORTH LAUREL"
PLAT BOOK 3 AT PLAT 59
BLOCK 11, LOT 15

MORGAN, VIOLA B.
LIBER 561, FOLIO 555
"NORTH LAUREL"
PLAT BOOK 3 AT PLAT 59
BLOCK 12, LOTS 7 & 39

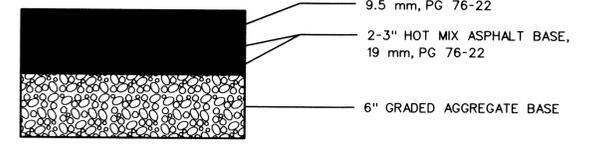
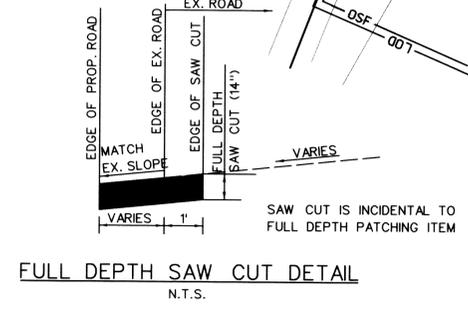
BOWEN, DANIEL M.,
ELIZABETH R. T/E
LIBER 5110, FOLIO 124
"NORTH LAUREL"
PLAT BOOK 3 AT PLAT 59
BLOCK 12, LOT 8

TREE DISPOSITION LEGEND

- SAVE
- REMOVE
- TRY TO SAVE

LEGEND

- EX. TREES
- EXIST. MAJOR CONTOUR
- EXIST. MINOR CONTOUR
- EXIST. PROPERTY LINE
- WUS WETLANDS
- EX. TREELINE
- EX. HEDGE ROW
- FULL DEPTH PATCHING



CONTRACTOR SHALL USE EXTREME CAUTION TO EX. CLEAN OUT ON BOWEN'S DRIVEWAY. CONTRACTOR SHALL BE RESPONSIBLE TO FIX ANY DAMAGE CAUSED DURING CONSTRUCTION

AT THE END OF EACH WORKING DAY CONTRACTOR SHALL INSURE THAT DRIVEWAY CAN BE USED BY OWNER

PLOTTED: 09:57 AM on Thursday, May 25, 2006
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REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer
DATE: 6/12/06

USDA - NATURAL RESOURCE CONSERVATION SERVICE

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

John R. Johnston
DATE: 6/12/06

HOWARD SCD

KCI TECHNOLOGIES

ENGINEERS
PLANNERS
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CONSTRUCTION MANAGERS

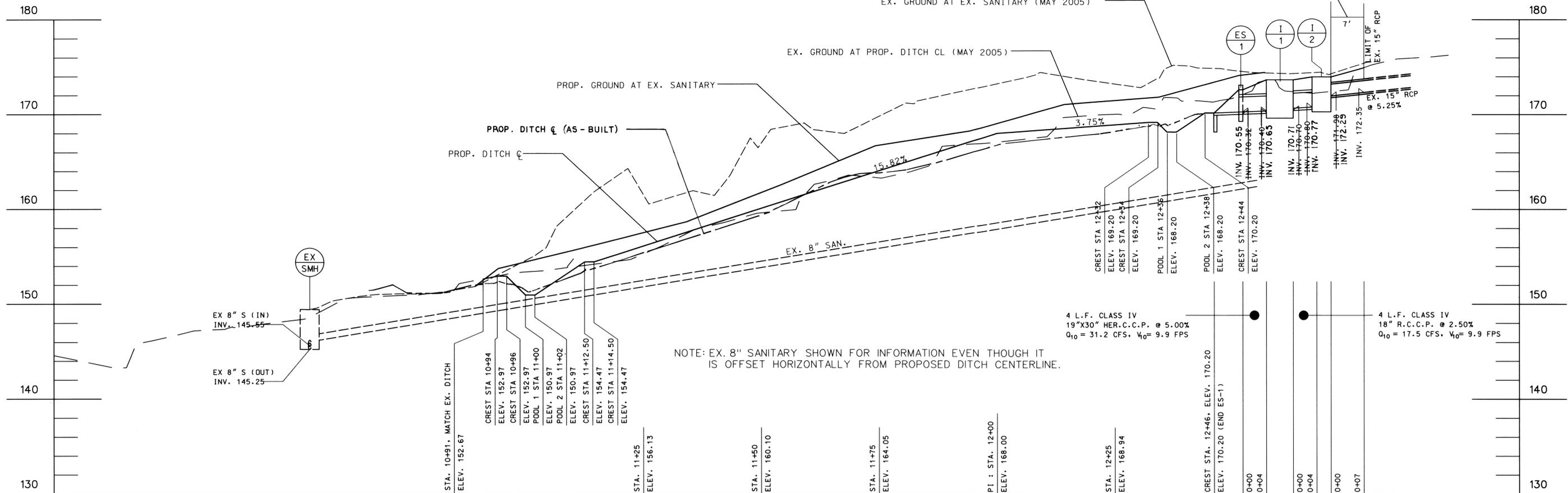
10 North Park Drive
Hunt Valley, MD 21030
Phone: (410) 316-7800
Fax: (410) 316-7817
www.kci.com

DES: SA					
DRN: BH					
CHK: JK					
DATE: 5/25/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

SITE PLAN

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
FULTON AVE. AND HADDAWAY PLACE
CHANNEL STABILIZATION

SCALE: 1" = 10'
SHEET: 2 OF 10



NOTE: EX. 8" SANITARY SHOWN FOR INFORMATION EVEN THOUGH IT IS OFFSET HORIZONTALLY FROM PROPOSED DITCH CENTERLINE.

4 L.F. CLASS IV
19"X30" HER.C.C.P. @ 5.00%
Q₁₀ = 31.2 CFS, V₁₀ = 9.9 FPS

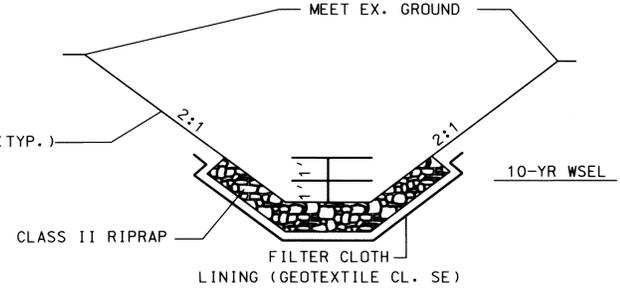
4 L.F. CLASS IV
18" R.C.C.P. @ 2.50%
Q₁₀ = 17.5 CFS, V₁₀ = 9.9 FPS

SCALE : 1" = 10' (HOR.)
1" = 5' (VER.)

STRUCTURE SCHEDULE

NO.	TYPE	HOWARD CO. STD. NO.	LOCATION **		TOP ELEV.	INV. OUT	REMARKS
			STATION	OFFSET			
ES-1	TYPE "O" HEADWALL ELLIPTICAL PIPE	SD 5.42	STA. 50+57	36.10' RT.	172.78	-	
I-1	DOUBLE TYPE "S" INLET	SD 4.23	STA. 50+58	30.10' RT.	173.70	170.40	
I-2	SINGLE WR INLET	SD 4.37	STA. 50+54	25.50' RT.	173.85	170.80	DEPTH FROM INLET TOP TO INVERT IS 3.05'

** STATION AND OFFSET ARE TO CENTER OF STRUCTURE.



6' BOTTOM PROPOSED DITCH

N.T.S.
STA. 10+91 TO STA. 10+94
STA. 11+14.50 TO STA. 12+32

NATURAL FIBER MATTING MUST MEET THE FOLLOWING SPECIFICATIONS:
 MATERIAL: WOVEN COIR FIBER YARN OR TWINE
 MINIMUM THICKNESS: 0.25 IN.
 ELONGATION (DRY/WET): 9%/ 35% (APPROXIMATE)
 MINIMUM WEIGHT: 20 OZ/SY
 MAXIMUM OPEN AREA: 50%
 MAXIMUM ALLOWABLE FLOW VELOCITY: 8 FT/SEC OR GREATER
 MAXIMUM ALLOWABLE SHEAR STRESS: 4.5 LBS/SF
 LIFE EXPECTANCY: 3 YEARS

STAPLES SHALL BE U- OR T-SHAPED STEEL WIRE HAVING MINIMUM GAUGES OF NO. 11 AND NO. 8, RESPECTIVELY. THE U-SHAPED STAPLES SHALL AVERAGE 1 TO 1-1/2 INCHES WIDE. THE T-SHAPED STAPLES SHALL HAVE A 4" WIDE HEAD. MINIMUM LENGTHS OF THE WIRES SHALL BE 6" FOR THE U-SHAPED STAPLE AND 8" FOR THE T-SHAPED STAPLE.

AS-BUILT
JUNE 28, 2007

PLOTTED: 10:58 AM on Thursday, May 25, 2006
By: Ahmed, Division: Water Resources
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KCI TECHNOLOGIES
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 SCIENTISTS
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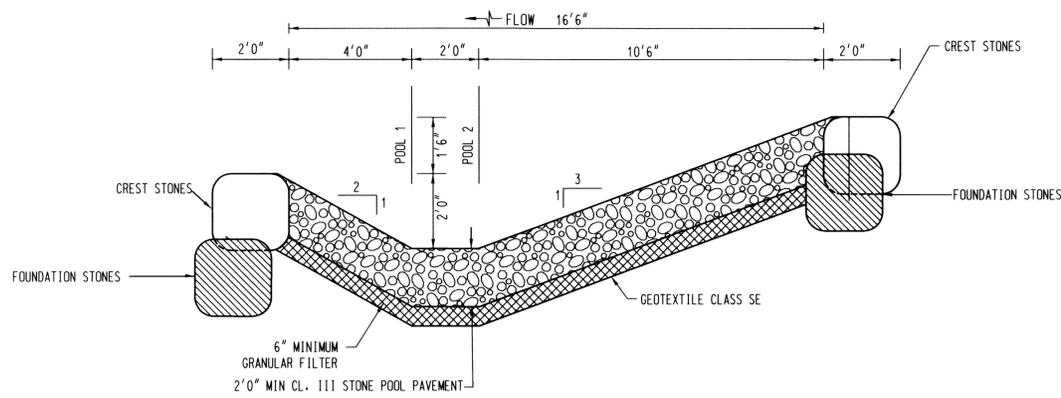
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DRN: BH				
CHK: JK				
DATE: 5/25/06	BY	NO.	REVISION	DATE

DITCH PROFILE

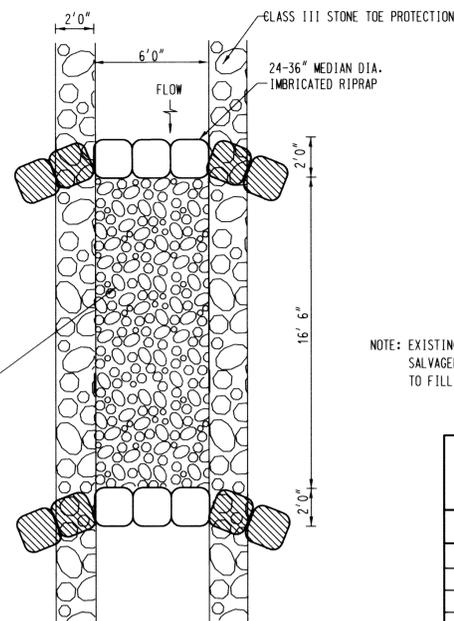
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 FULTON AVE. AND HADDAWAY PLACE
 CHANNEL STABILIZATION

SCALE
 SHEET
 3 OF 10

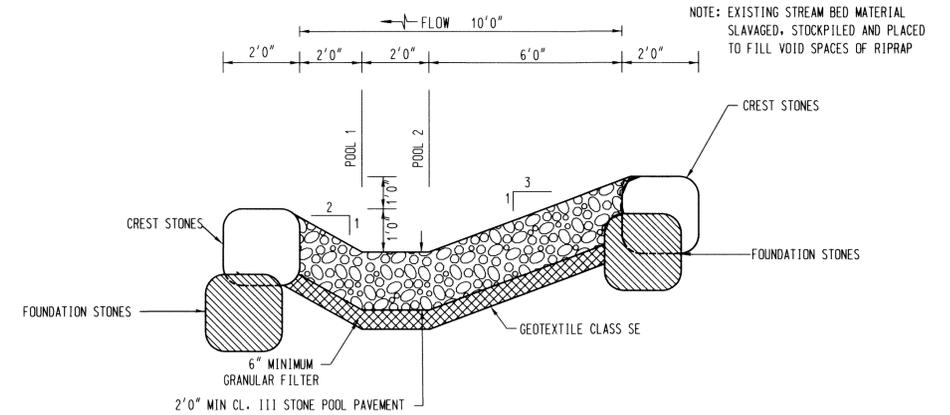
NOTE: EXISTING STREAM BED MATERIAL SLAVAGED, STOCKPILED AND PLACED TO FILL VOID SPACES OF RIPRAP



TYPICAL PROFILE THROUGH STEP-POOL
STATION 10+94 TO STATION 11+14.5



TYPICAL PLAN VIEW OF STEP-POOL
STATION 10+94 TO STATION 11+14.5

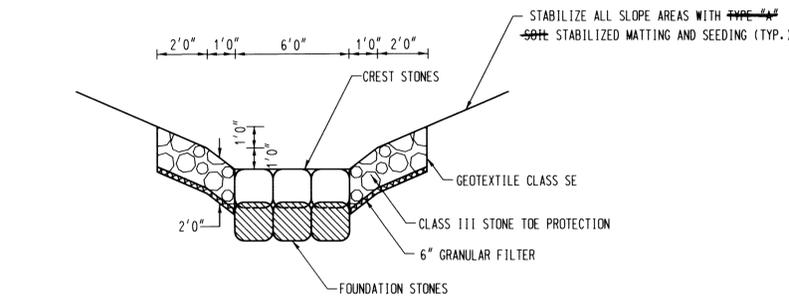


TYPICAL PROFILE THROUGH STEP-POOL
STATION 12+32 TO STATION 12+46

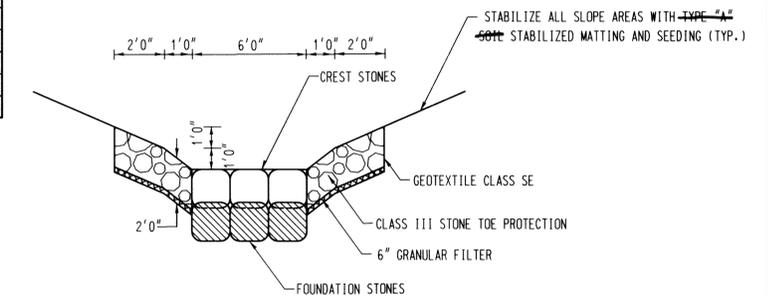
GRANULAR FILTER MATERIAL GRADING SPECIFICATIONS	
PERCENT FINER THAN	U.S. STANDARD SIEVE SIZE
100	2 1/2 IN (64 MM)
85-100	1 IN (25 MM)
60-100	1/2 IN (13 MM)
35-70	NO. 10
20-50	NO. 40
3-20	NO. 200

NOTE: THIS GRADATION CAN BE ACHIEVED THROUGH THE FOLLOWING RECIPE: *57 STONE CANNOT BE USED AS A REPLACEMENT:

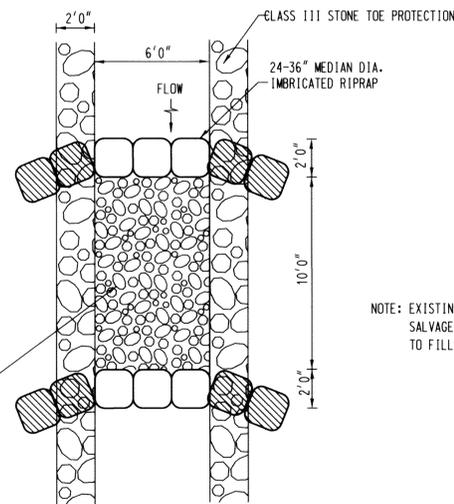
50% FINE AGGREGATE SAND (MSHA STANDARD)
25% AASHTO M43-8
25% AASHTO M43-5



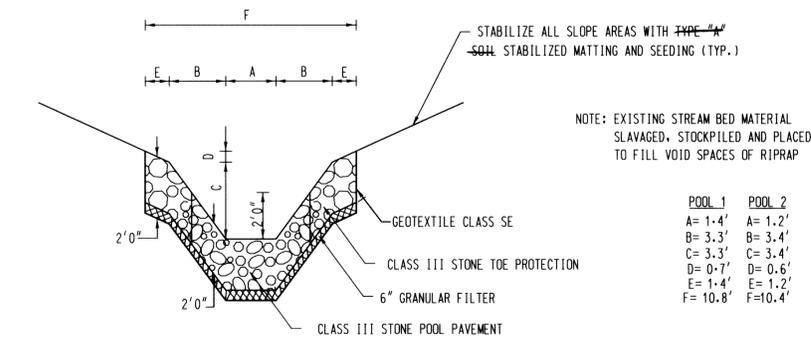
TYPICAL CROSS SECTION OF STEP-POOL CREST
STATION 10+94 TO STATION 10+96
STATION 11+12.50 TO STATION 11+14.50



TYPICAL CROSS SECTION OF STEP-POOL CREST
STATION 12+32 TO STATION 12+34
STATION 12+44 TO STATION 12+46

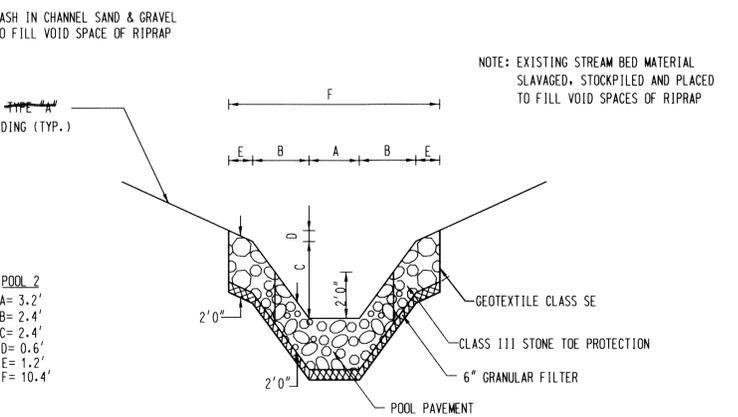


TYPICAL PLAN VIEW OF STEP-POOL
STATION 12+32 TO STATION 12+46



TYPICAL CROSS SECTION OF POOL
STATION 10+96 TO STATION 11+12.50

POOL 1	POOL 2
A= 1.4'	A= 1.2'
B= 3.3'	B= 3.4'
C= 3.3'	C= 3.4'
D= 0.7'	D= 0.6'
E= 1.4'	E= 1.2'
F= 10.8'	F= 10.4'



TYPICAL CROSS SECTION OF POOL
STATION 12+34 TO STATION 12+44

NOTE: ALL FOUNDATION AND CREST STONES ARE IMBRICATED RIPRAP WITH 24"-36" MEDIAN DIA.

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By: Ahmed, Division: Water Resources
FILE: M:\2005\0525\0525.dwg



DES: SA				
DRN: BH				
CHK: JK				
DATE: 5/25/06	BY	NO.	REVISION	DATE

STEP-POOL DETAILS

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
FULTON AVE. AND HADDAWAY PLACE
CHANNEL STABILIZATION

SCALE
N.T.S.
SHEET
4 OF 10



HOWARD COUNTY MARYLAND
 DEPT. OF PUBLIC WORKS
 LIBER 2358, FOLIO 226
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 11, LOT 17

GRIMES, FRANK W., CYNTHIA
 LIBER 955, FOLIO 603
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 11, LOT 15

GRIMES, FRANK W., CYNTHIA
 LIBER 955, FOLIO 603
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 11, LOT 14

MORGAN, VIOLA B.
 LIBER 561, FOLIO 555
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 12, LOTS 7 & 39

BOWEN, DANIEL M.,
 ELIZABETH R. T/E
 LIBER 5110, FOLIO 124
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 12, LOT 8

PLANTING SCHEDULE					
PLANTING ZONE	QUANTITY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING
RIPARIAN SHRUB ZONE	4	Arrow-wood Viburnum	Viburnum dentatum	24-36" Container	8' O.C.
	5	Flowering Dogwood	Cornus florida	24-36" Container	8' O.C.
	4	Spicebush	Lindera benzoin	24-36" Container	8' O.C.
		Seeding- Riparian Formula			Seed Entire Area
RIPARIAN TREE ZONE	14-17	Red Maple	Acer rubrum	5' Container	8' O.C.
	14	Green Ash	Fraxinus pennsylvanica	5' Container	8' O.C.
	16-12	Pin Oak	Quercus palustris	5' Container	8' O.C.
		Seeding- Riparian Formula			Seed Entire Area
HEDGEROW ZONE	40-11	Wintergreen-Boxwood	Buxus-Microphylla-Wintergreen	10-16" Container	2' O.C.
		Fraxinophytia	Phytolphia Fraseri	5-4" Container	Seed Entire Area

NOTE: DISTURBED AREAS WITHIN THE LOD NOT WITHIN PLANTING ZONES SHOWN ABOVE SHALL BE STABILIZED AS PER EROSION AND SEDIMENT CONTROL PLAN SHEET 6 OF 10.

- LEGEND**
- EX. TREES
 - EXIST. MAJOR CONTOUR
 - EXIST. MINOR CONTOUR
 - EXIST. PROPERTY LINE
 - WUS WETLANDS
 - EX. TREELINE
 - EX. HEDGE ROW
 - FULL DEPTH PATCHING

- TREE DISPOSITION LEGEND**
- SAVE
 - REMOVE
 - TRY TO SAVE

Riparian Formula Seed Mix (0.12 ac.)
 Complete Seed Mix to be applied at a rate of 50 LBS/AC

Total Qty	Unit	Botanical Name	Common Name	Type	Condition	Spacing/Rate	Ind. Status
0.4	Lbs	Riverbank wild rye	Elymus riparius	Cool Season	Seed	5 Lbs/Ac-10%	FACW
0.4	Lbs	Virginia wild rye	Elymus virginicus	Cool Season	Seed	5 Lbs/Ac-10%	FACW
1.7	Lbs	Annual ryegrass	Lolium multiflorum	N/A	Seed	20 Lbs/Ac-40%	NI
0.4	Lbs	Switchgrass	Panicum virgatum	Warm Season	Seed	5 Lbs/Ac-10%	FAC
0.4	Lbs	Big Bluestem	Andropogon gerardi	Warm Season	Seed	5 Lbs/Ac-10%	FAC
0.9	Lbs	Canadian Wild Rye	Elymus canadensis	Cool Season	Seed	10 Lbs/Ac- 20%	FAC
						50 Lbs/Ac	TOTAL MIX

PLOTTED: 10:29 AM on Tuesday, May 30, 2006
 By: Ahmed, Division: Water Resources
 FILE: M:\2004\0104\3223\02\Drawings\LSO\FULTON_01.dwg

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE

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

DATE: _____

DATE: _____

KCI TECHNOLOGIES

ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS

10 North Park Drive
 Hunt Valley, MD 21030
 Phone: (410) 316-7800
 Fax: (410) 316-7817
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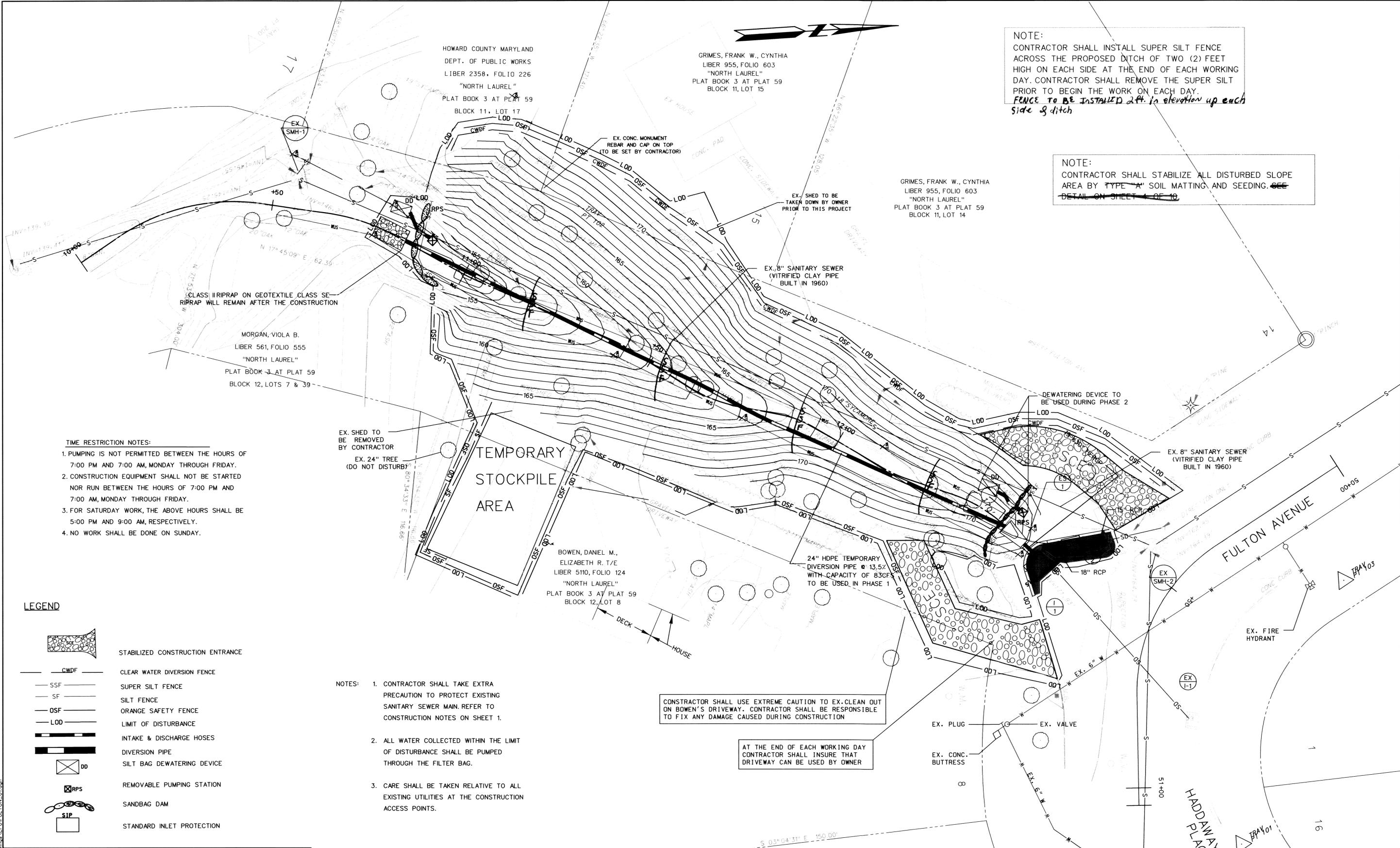
DES: SA			
DRN: BH			
CHK: JK			
DATE: 5/25/06	BY NO.	REVISION	DATE

LANDSCAPE PLAN

600' SCALE MAP NO. _____ BLOCK NO. _____

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 FULTON AVE. AND HADDAWAY PLACE
 CHANNEL STABILIZATION

SCALE
 1" = 10'
 SHEET
 5 OF 10



NOTE:
 CONTRACTOR SHALL INSTALL SUPER SILT FENCE
 ACROSS THE PROPOSED DITCH OF TWO (2) FEET
 HIGH ON EACH SIDE AT THE END OF EACH WORKING
 DAY. CONTRACTOR SHALL REMOVE THE SUPER SILT
 FENCE TO BE INSTALLED 2 ft. in elevation up each
 side of ditch

NOTE:
 CONTRACTOR SHALL STABILIZE ALL DISTURBED SLOPE
 AREA BY TYPE "A" SOIL MATTING AND SEEDING. SEE
 DETAIL ON SHEET 4 OF 10

- TIME RESTRICTION NOTES:
1. PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
 2. CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
 3. FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE 5:00 PM AND 9:00 AM, RESPECTIVELY.
 4. NO WORK SHALL BE DONE ON SUNDAY.

EX. SHED TO BE REMOVED BY CONTRACTOR
 EX. 24" TREE (DO NOT DISTURB)

TEMPORARY STOCKPILE AREA

BOWEN, DANIEL M.,
 ELIZABETH R. T/E
 LIBER 5110, FOLIO 124
 "NORTH LAUREL"
 PLAT BOOK 3 AT PLAT 59
 BLOCK 12, LOT 8

24" HDPE TEMPORARY DIVERSION PIPE @ 13.5% WITH CAPACITY OF 83CF TO BE USED IN PHASE 1

CONTRACTOR SHALL USE EXTREME CAUTION TO EX. CLEAN OUT ON BOWEN'S DRIVEWAY. CONTRACTOR SHALL BE RESPONSIBLE TO FIX ANY DAMAGE CAUSED DURING CONSTRUCTION

AT THE END OF EACH WORKING DAY CONTRACTOR SHALL INSURE THAT DRIVEWAY CAN BE USED BY OWNER

- NOTES:
1. CONTRACTOR SHALL TAKE EXTRA PRECAUTION TO PROTECT EXISTING SANITARY SEWER MAIN. REFER TO CONSTRUCTION NOTES ON SHEET 1.
 2. ALL WATER COLLECTED WITHIN THE LIMIT OF DISTURBANCE SHALL BE PUMPED THROUGH THE FILTER BAG.
 3. CARE SHALL BE TAKEN RELATIVE TO ALL EXISTING UTILITIES AT THE CONSTRUCTION ACCESS POINTS.

LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- CLEAR WATER DIVERSION FENCE
- SUPER SILT FENCE
- SILT FENCE
- ORANGE SAFETY FENCE
- LIMIT OF DISTURBANCE
- INTAKE & DISCHARGE HOSES
- DIVERSION PIPE
- SILT BAG DEWATERING DEVICE
- REMOVABLE PUMPING STATION
- SANDBAG DAM
- STANDARD INLET PROTECTION

PLOT: 10/22/06, Rev. on Tuesday, May 30, 2006
 File: H:\2004\1014\3223\02\3rd\erob3\EROSION AND SEDIMENT CONTROL PLAN.dwg

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 6/12/06
 USDA NATURAL RESOURCES CONSERVATION SERVICE
 DATE

John R. Blunt 6/12/06
 HOWARD SCD
 DATE

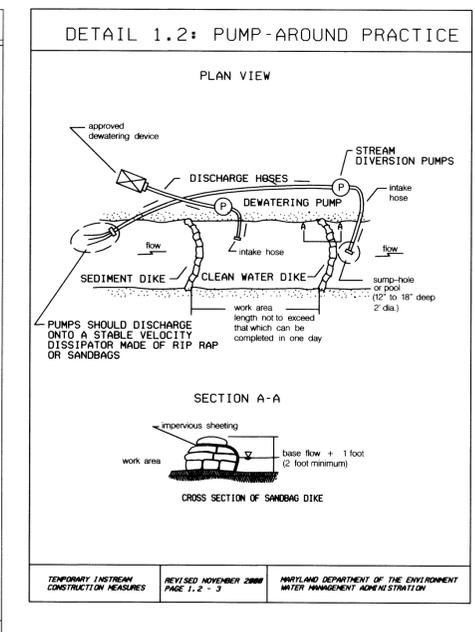
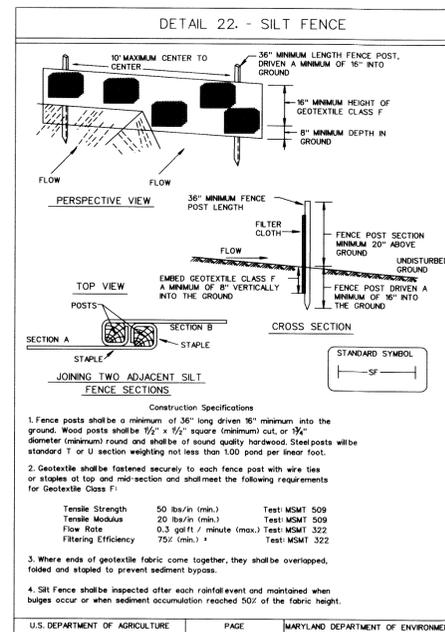
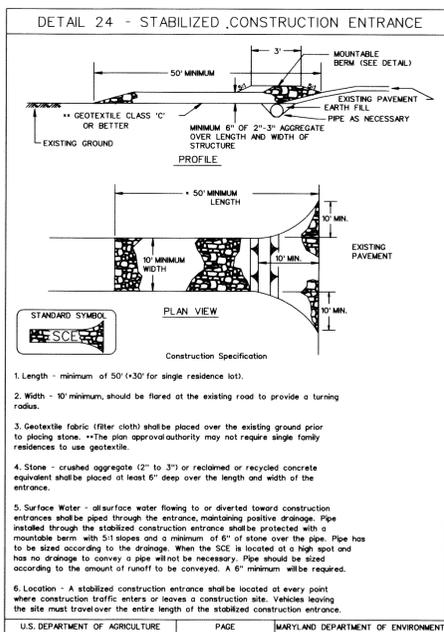
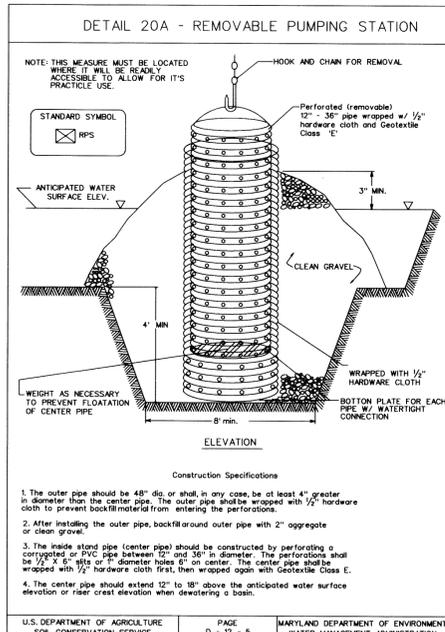
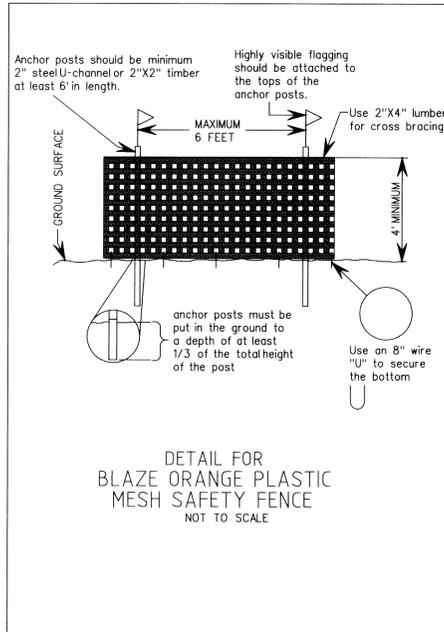
KCI TECHNOLOGIES
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 HUNT VALLEY, MD 21030
 PHONE (410) 316-7800
 FAX (410) 316-7817
 WWW.KCI.COM

DES: SA					
DRN: BH					
CHK: JK					
DATE: 5/25/06	BY	NO.	REVISION	DATE	600' SCALE MAP NO.

EROSION AND SEDIMENT CONTROL PLAN

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 FULTON AVE. AND HADDAWAY PLACE
 CHANNEL STABILIZATION

SCALE
 1"=10'
 SHEET
 6 OF 10

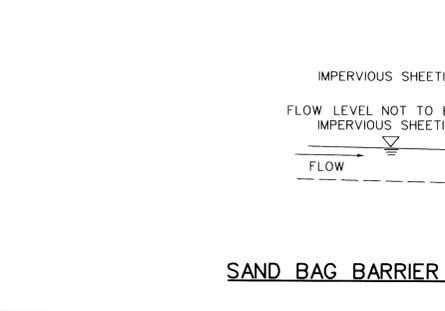
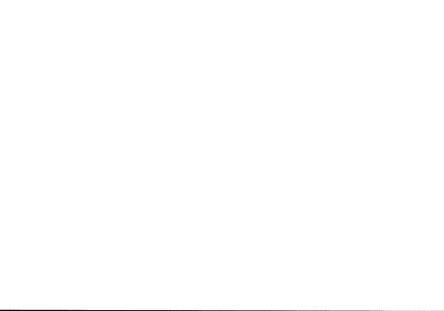
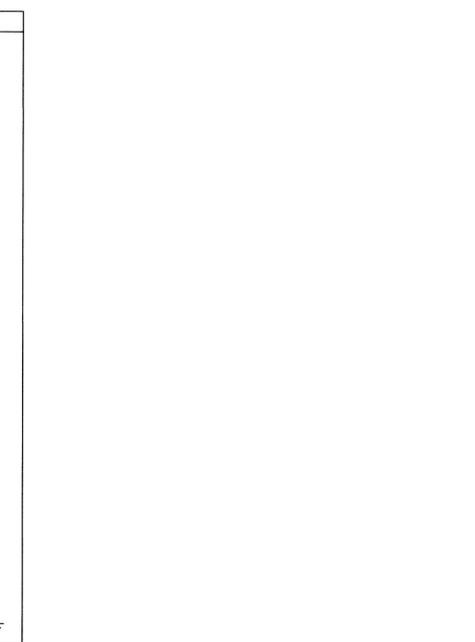
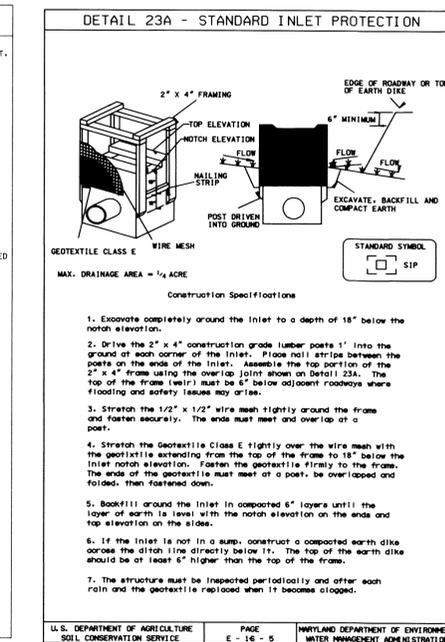
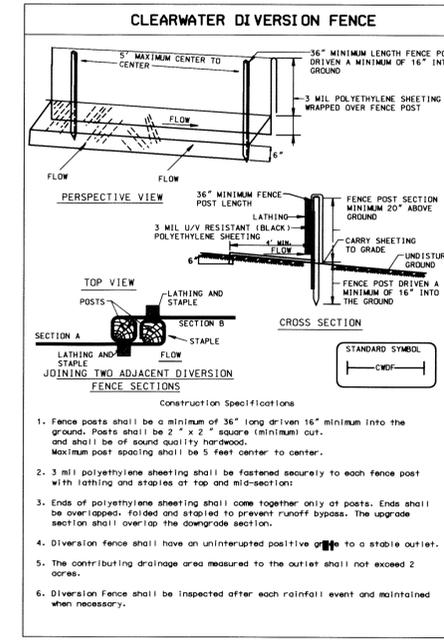
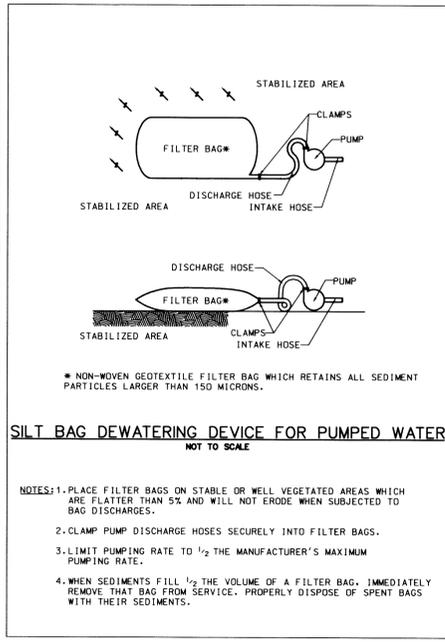
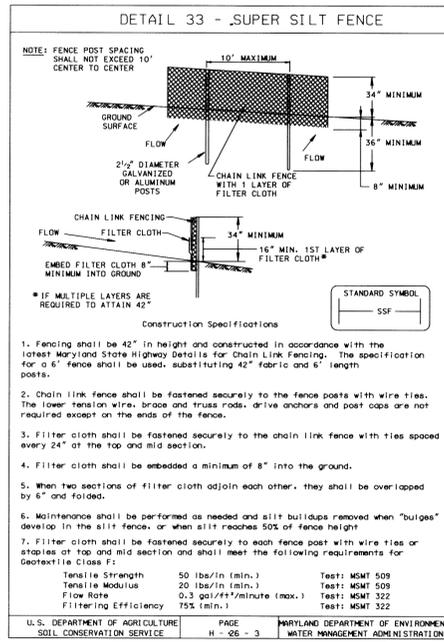


MOWC 1.2: PUMP-AROUND PRACTICE
 Temporary measure for dewatering in-channel construction sites.

DESCRIPTION:
 The work should consist of installing a temporary pump-around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE:
 Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 23):

1. Construction activities including the installation of erosion and sediment control measures should not begin until necessary easements and/or right-of-way have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should also bring all utility records to the meeting. The sequence of construction must be reviewed. The participants will also designate the contractor's stopping areas and flag all trees within the limit of disturbance, which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stipulate the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
5. Upon installation of all sediment control measures and approved by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the construction site and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work if it can be completed by the end of the day including the removal of the dewatering device. At the end of each day, the work area must be stabilized and the pump-around removed from the channel. Work should not be conducted in the channel during rain events.
6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipator made of rip rap or sandbags.
7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water does not flow into the channel below the construction access.
8. Traversing a channel/reach with equipment within the work area where no reach is proposed should be avoided. If equipment has to traverse such a reach (or access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specifications. (See Section 4.3, Stream Crossings, Maryland Guidelines to Waterway Construction.)
9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
10. After an area is completed and stabilized, the clean water dike should be removed. After the final pump-around is completed, the clean water dike should be removed. The stream flow around the work area. This water should discharge onto the same velocity dissipator used for the main stem pump-around.
11. A pump-around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipator used for the main stem pump-around.
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump-around practices, should follow the same sequence as the main stem. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area.
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.



NOTE: ALL WATER COLLECTED WITHIN THE LIMIT OF DISTURBANCE (WITH THE EXCEPTION OF WATER DIVERTED AROUND THE WORK AREA) SHALL BE PUMPED THROUGH THE FILTER BAG.

CONSTRUCTION SPECIFICATIONS:

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1" into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh within the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Magnus 6/12/06
 DATE

USDA - NATURAL RESOURCES CONSERVATION SERVICE

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

John R. Roberts 6/12/06
 DATE

HOWARD SCD

ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS

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 www.kci.com

DES:	SA				
DRN:	BH				
CHK:	JK				
DATE:	5/25/06	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

600' SCALE MAP NO. _____ BLOCK NO. _____

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 FULTON AVE. AND HADDAWAY PLACE
 CHANNEL STABILIZATION

SCALE SHEET 7 OF 10

PLOTTED: 09:32 AM on Thursday, May 25, 2006
 BY: Ahmed, Division: Water Resources
 FILE: M:\2004\1014322\102\Drawings\EPD\FULTON.dgn

SEQUENCE OF CONSTRUCTION

21.0 STANDARD AND SPECIFICATIONS

1 DAY	1. OBTAIN GRADING PERMIT AND MDE PERMIT.
1 WEEK	2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE. THE CONTRACTOR OR DEVELOPER SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410-313-1880) A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES (410-313-4900) AND MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR (301-665-2850) 5 DAYS PRIOR TO THE START OF CONSTRUCTION.
1 DAY	3. CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION, AND A REPRESENTATIVE FROM BUREAU OF UTILITY.
1 WEEK	4. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTION FENCES, SILT FENCE AND CLEAN WATER DIVERSION FENCE AS SHOWN ON THE PLAN.
3 DAYS	5. CLEAR AND GRUB THOSE AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRED TO ESTABLISH THE PROPOSED SEDIMENT CONTROL MEASURES. INSTALL SEDIMENT CONTROL DEVICES ALONG THE PROPOSED STOCK PILE AREA AS SHOWN ON THE PLAN.
2 DAYS	PHASE 1 (DITCH GRADING) 1. INSTALL TEMPORARY DIVERSION PIPE, SAND BAGS AND OTHER EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN. UPSTREAM SANDBAGS WILL BE INSTALLED AROUND STA. 12+38. INSTALL SUPER SILT FENCE ON THE UPSTREAM SIDE OF THE BOTH END SAND BAGS.
10 DAYS	2. GRADE EXISTING DITCH FROM STA. 10+91 TO STA. 10+94, INSTALL THE STEP POOLS AT STA. 10+94 TO STA. 11+40, GRADE EXISTING DITCH FROM STA. 11+40 TO STA. 12+32 AND INSTALL STEP POOL FROM STA. 12+32 TO STA. 12+36 AS SHOWN ON THE PLAN.
1 DAY	3. STABILIZE ALL DISTURBED AREAS TO FINAL GRADE WITH THE PERMISSION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THIS ACTIVITY AND PROCEED WITH PHASE 2.
2 DAYS	PHASE 2 (REMAINING DITCH GRADING AND STORM DRAIN CONSTRUCTION) 1. REMOVE SAND BAGS FROM STA. 12+36 TO STA. 12+30 AND INSTALL DEWATERING DEVICE AND REMOVABLE PUMP AROUND STA. 12+30.
3 DAYS	2. REGRADE EX DITCH AND INSTALL STEP POOL FROM STA. 12+36 TO 12+46 AS SHOWN ON THE PLAN.
5 DAYS	3. INSTALL THE PROPOSED STORM DRAIN SYSTEM FROM ES-1 TO I-2 AS SHOWN ON THE PLAN.
1 DAY	4. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS TO ITS FINAL GRADE AT THE END OF EACH WORKING DAY.
2 DAYS	5. STABILIZE ALL DISTURBED AREAS FINAL GRADE WITH THE PERMISSION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS BY THIS ACTIVITY.

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

I. This practice is limited to areas having 2:1 or flatter slopes where:

- The texture of the exposed subsoil/parent materials not adequate to produce vegetative growth.
- The soil materials 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 soils so acidic that treatment with limestone is not feasible.

II. 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

I. 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 Experiment Station.

II. 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, 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, Johnson grass, nuttall, poison ivy, thistle, or others as specified.
- Where the subsoils are 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 disturbed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section - Vegetative Stabilization Methods and Materials.

IV. 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 as elapsed (14 days min.) to permit dissipation of phytotoxic 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.

ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps.
- 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 pockets.
- Topsoil shall not be placed while the topsoil or subsoils in a frozen or muddy condition, when the subsoils are excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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 lbs/acre 10-10-10 fertilizer (14 lbs/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 ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 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 sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool. No asphalt emulsion shall be used for anchoring. Only a non-toxic, latex backing material is allowed.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
- Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/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 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 - July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/100sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2 - Use sod. Option 3 - Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool. No asphalt emulsion shall be used for anchoring. Only a non-toxic, latex tacking material is allowed.

Maintenance - Inspect all seeding areas and make needed repairs, replacements and reseeding.

SOILS COMPACTION NOTES:

In general, existing on-site soils free from environmental contamination, building debris, frozen, organic or wet materials and with a Unified Soils Classification of CL-ML, or more granular, with a plasticity index less than 12 can be reused as compacted fill. On-site soils with a Unified Soils Classification of CL, CH, or MH or with liquid limits greater than 40 and plastic indices greater than or equal to 12 are not suitable as structural fill. If imported materials are required it should have a Unified Soils Classification of SM or more granular and less plastic and a maximum dry density of at least 105-pcf in accordance with the modified proctor test method (ASTM D-1557) or as approved by the Engineer.

Fill should be placed in horizontal, eight-inch maximum loose lifts and compacted to at least 92 percent of the Modified Proctor maximum dry density (ASTM D-1557). The moisture content of the fill should be properly controlled during placement. Fill being placed on hillsides should be benched to prevent a sliding failure plane.

In-place density tests should be performed by an engineering technician on a full-time basis under the supervision of a geotechnical engineer licensed in the State of Maryland to verify that the proper degree of compaction is being obtained.

TABLE 28 STONE SIZE

NUMBER	SIZE RANGE	D 50	D 100	AASHTO	HEIGHT
NUMBER 57*	3/8"-1 1/2"			M-43	N/A
NUMBER 1	2"-3"	3"		M-43	N/A
RIP-RAP**	4"-7"	7"		N/A	N/A
CLASS I	N/A		15"	N/A	150 LB. MAX.
CLASS II	N/A		24"	N/A	700 LB. MAX.
CLASS III	N/A		34"	N/A	2000 LB. MAX.

* THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE OUTLETS AND CHECK DAMS.
** THIS CLASSIFICATION IS TO BE USED WHENEVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DESIGNATION FOR THIS STONE IS STONE FOR GABIONS (905.01.04).

24.0 MATERIALS AND SPECIFICATIONS
TABLE 27 GEOTEXTILE FABRICS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSIMIN.
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40 - 0.80 *	90	190

* US STD. SIEVE CW-02215 ** .50 MM. MAX. FOR SUPER SILT FENCE

THE PROPERTIES SHALL BE DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
- APPARENT OPENING SIZE MSMT 323

- GRAB TENSILE STRENGTH ASTM D 1682 4"x8" SPECIMEN 1"x2" CLAMPS, 12"/ MIN. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILE FABRIC.

- BURST STRENGTH ASTM D 3786

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS, AND COMPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS, POLYESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE.

IN ADDITION CLASSES A THROUGH E SHALL HAVE A 0.01 CM/SEC. MINIMUM PERMEABILITY WHEN TESTED IN ACCORDANCE WITH MSMT 507, AND AN APPARENT MINIMUM ELONGATION OF 20 PERCENT (20%) WHEN TESTED IN ACCORDANCE WITH THE GRAB TENSILE STRENGTH REQUIREMENTS LISTED ABOVE.

SILT FENCE
CLASS F GEATEXTILE FABRICS FOR ALL SILT FENCE SHALL HAVE A 50LB./IN. MINIMUM TENSILE STRENGTH AND A 20 LB/IN MINIMUM TENSILE MODULES WHEN TESTED IN ACCORDANCE WITH MSMT 509. MATERIAL SHALL ALSO HAVE A 0.3 GAL./FT. SQUARED/MIN. FLOW RATE AND SEVENTY-FIVE PERCENT (75%) MINIMUM FILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

GEOTEXTILE FABRICS USED IN THE CONSTRUCTION OF THE SILT FENCE SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE. THE FABRIC SHALL CONTAIN SUFFICIENT AMOUNTS OF ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 12 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 DEGREES F.

MATERIALS SPECIFICATIONS

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, THE NONTIDAL WETLAND BUFFER, WATERS OF THE STATE, AND 100-YEAR FLOODPLAIN

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain. 2) Place materials in a location and manner that does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain. 3) Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance. 4) Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain. 5) Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill. 6) Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction. 7) All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed. 8) After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas. 9) To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:

Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.

- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway. 11) Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Jim Maguire
USDA - NATURAL RESOURCES CONSERVATION SERVICE
DATE: 6/12/06

John R. Roberts
HOWARD SCD
DATE: 6/12/06

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

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

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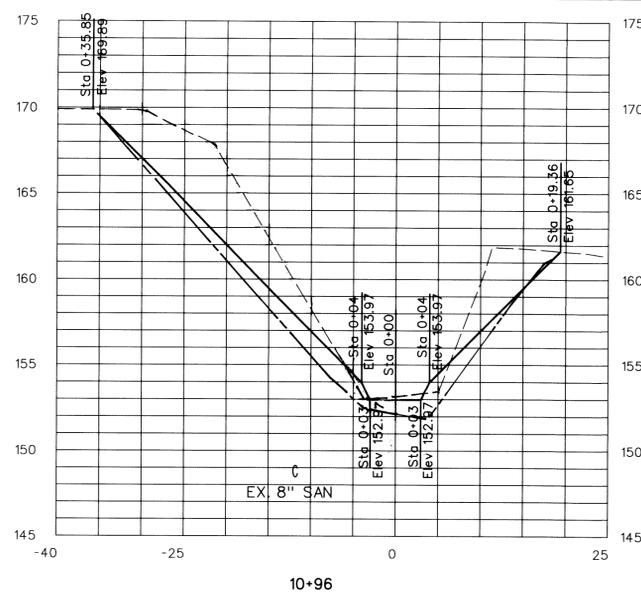
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EROSION AND SEDIMENT CONTROL NOTES

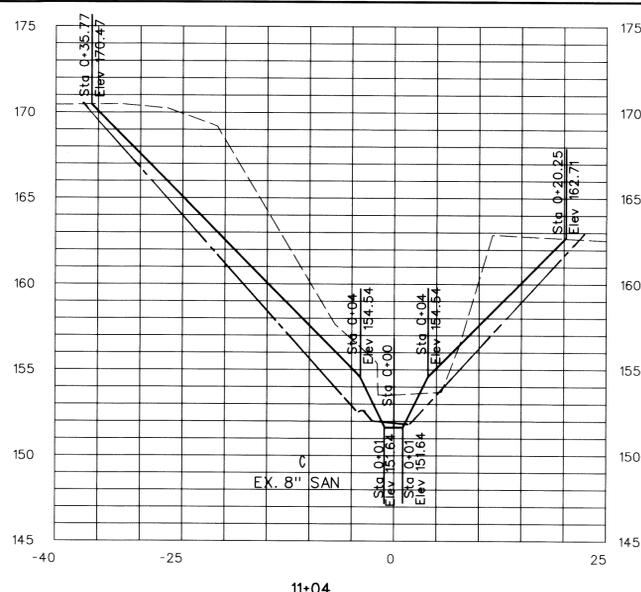
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
FULTON AVE. AND HADDAWAY PLACE
CHANNEL STABILIZATION

SCALE
SHEET
8 OF 10

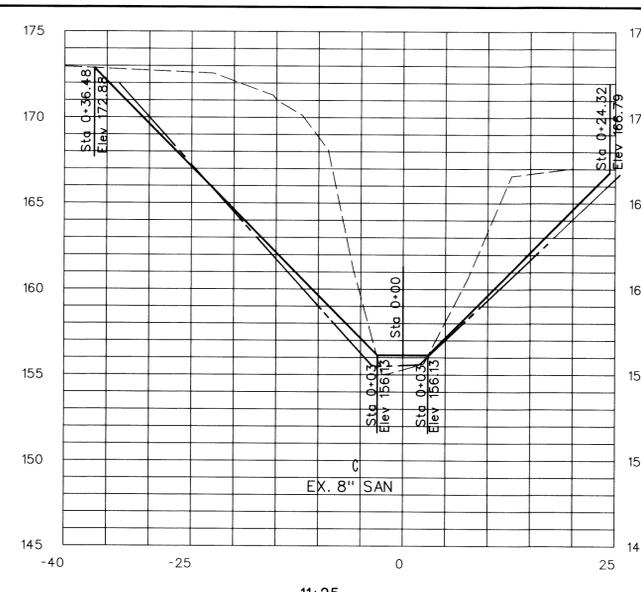
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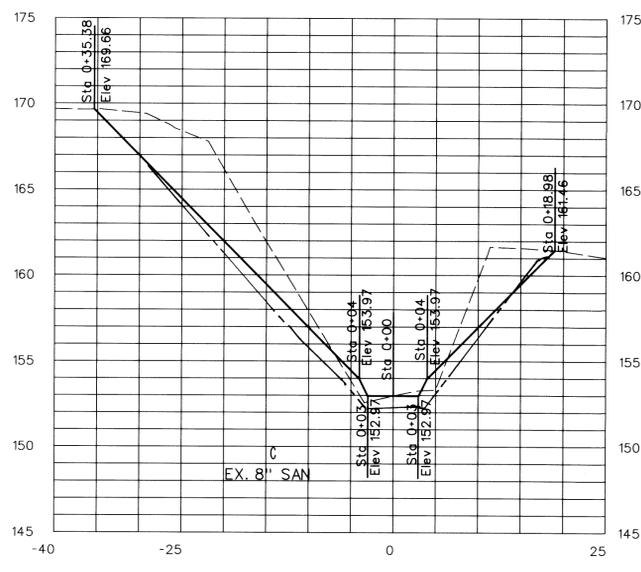
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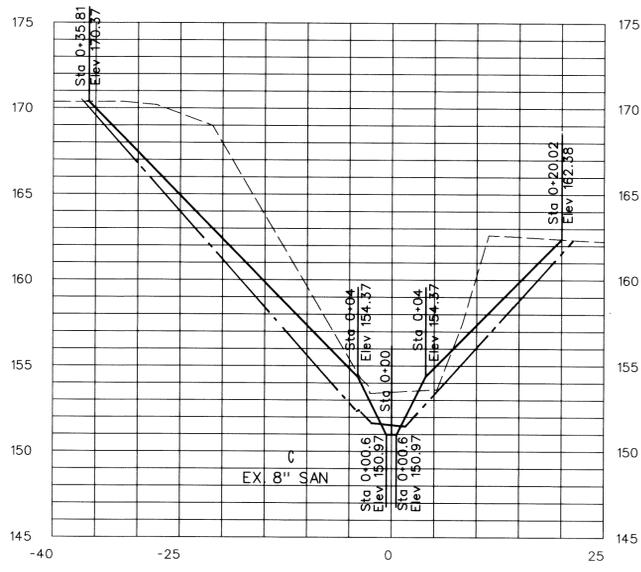
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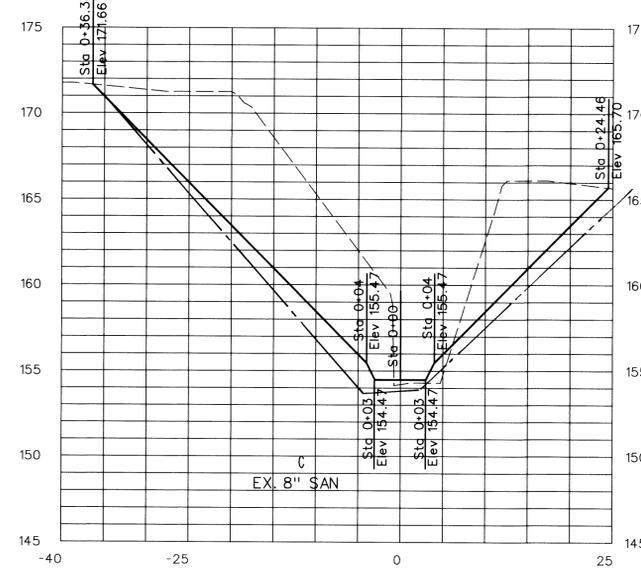
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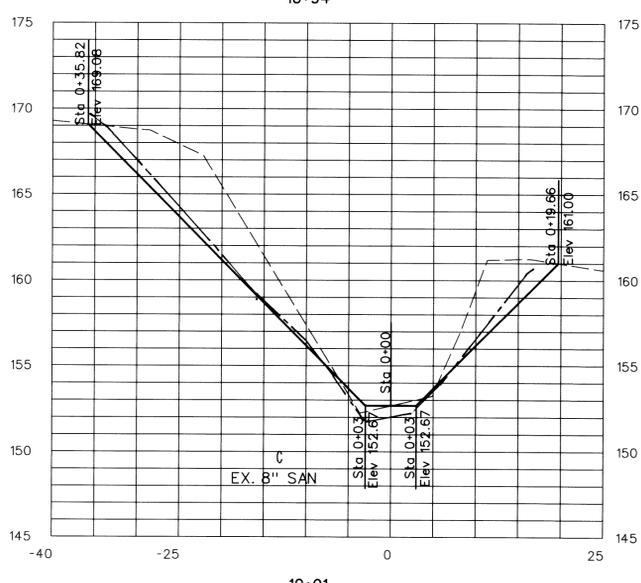
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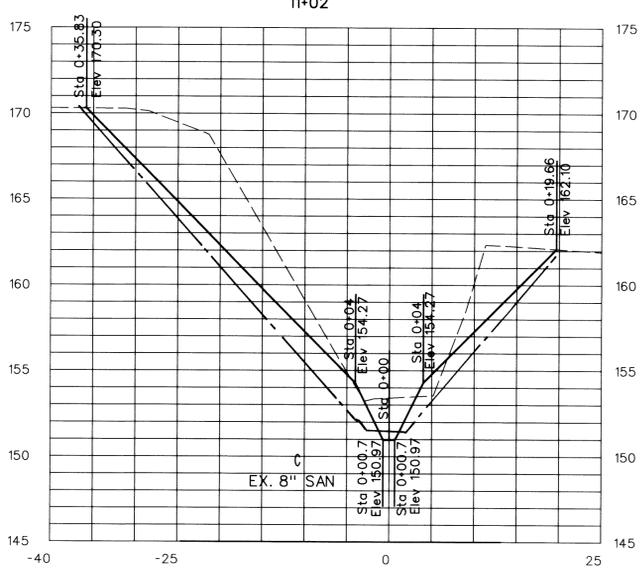
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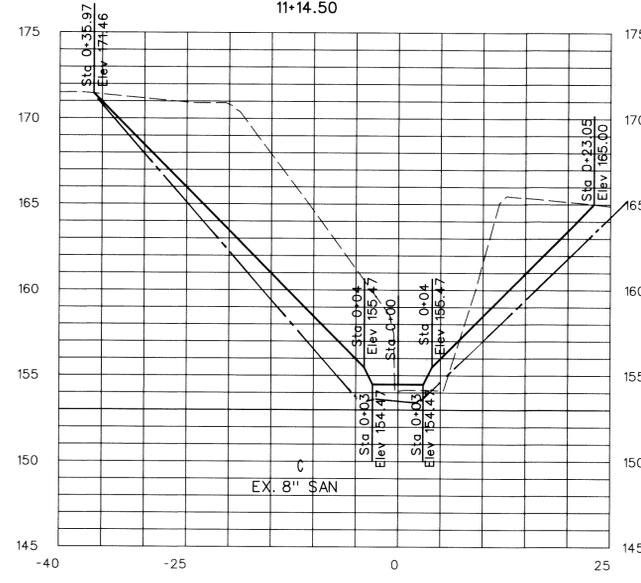
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11+00



11+12.50

--- (AS-BUILT)

- - - - - EXISTING GRADE
 ——— PROPOSED GRADE

AS-BUILT
 JUNE 28, 2007

SCALE: 1" = 10' (HOR.)
 1" = 5' (VER.)

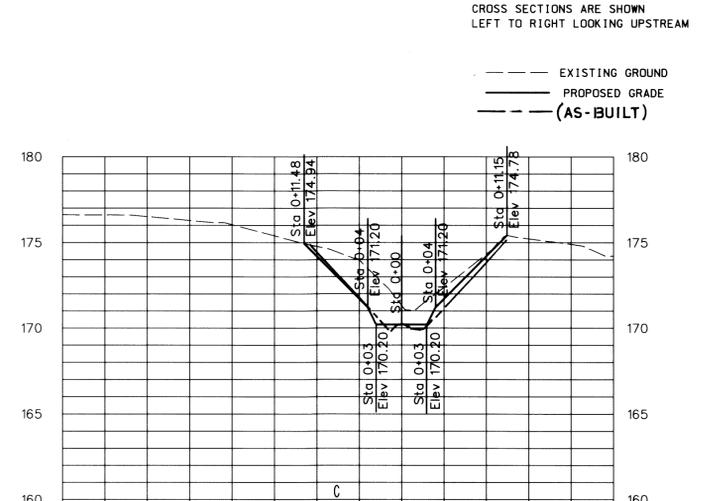
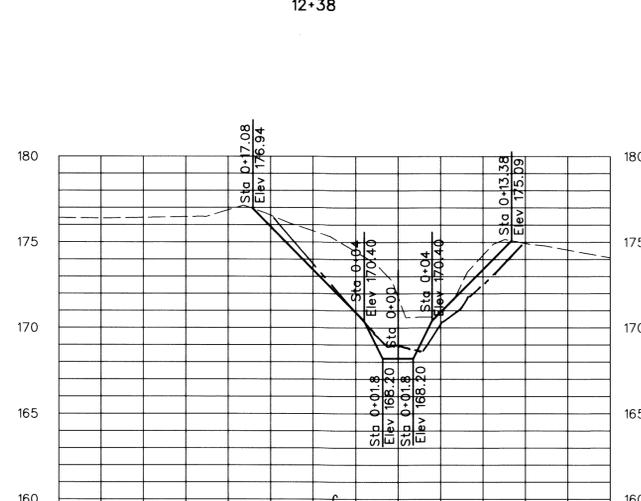
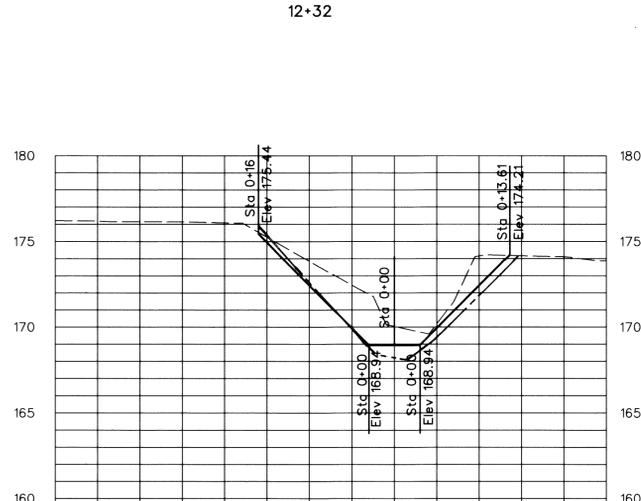
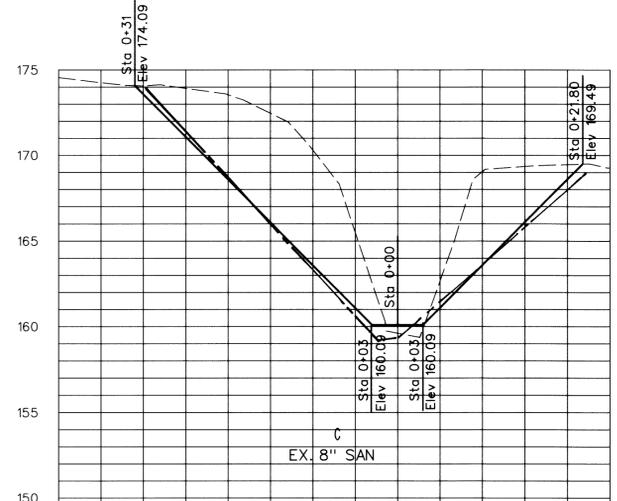
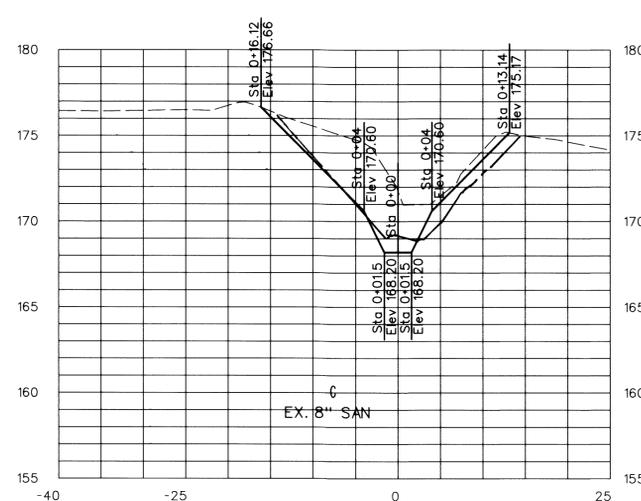
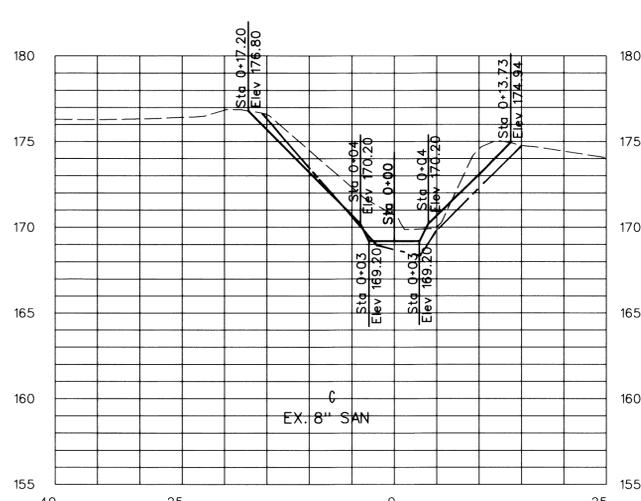
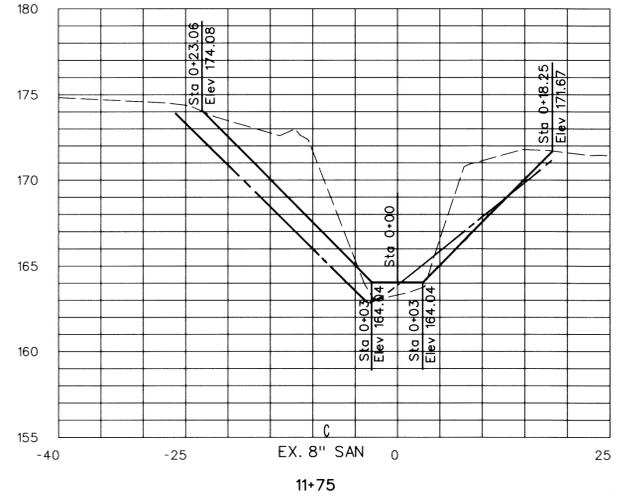
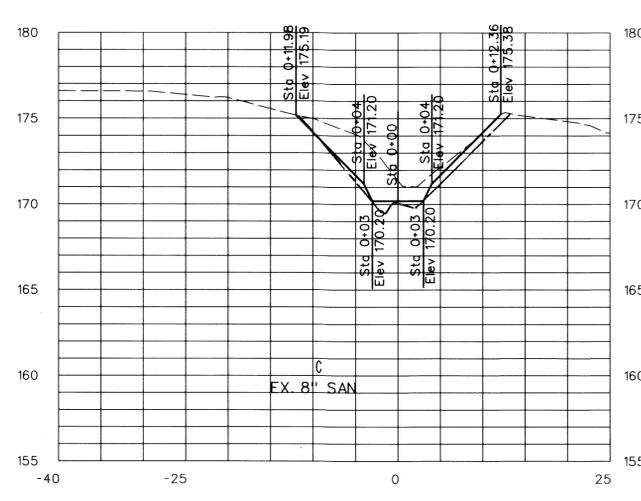
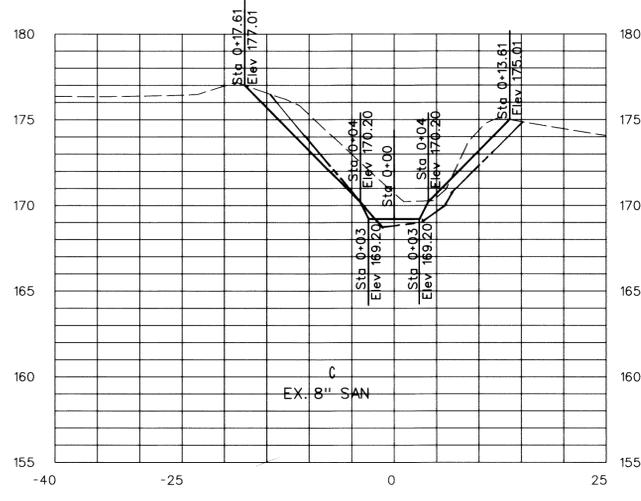
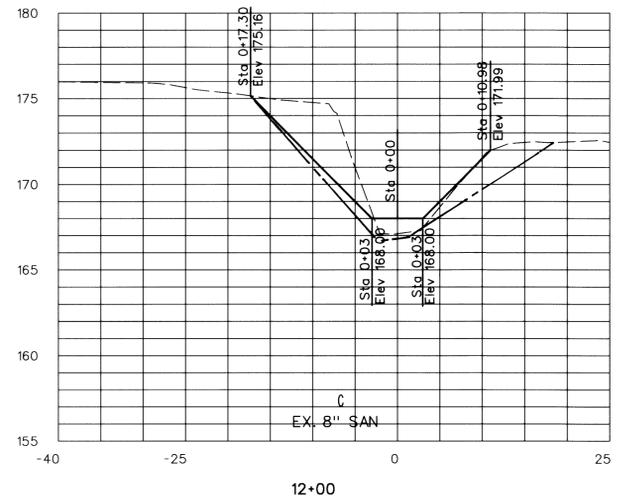
KCI
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 WWW.KCI.COM

DES: SA					
DRN: BH					
CHK: JK					
DATE: 5/25/06	BY	NO.	REVISION	DATE	600' SCALE MAP NO. BLOCK NO.

CROSS SECTIONS

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 FULTON AVE. AND HADDAWAY PLACE
 CHANNEL STABILIZATION

PLOTTED: 10:28 PM on Tuesday, May 30, 2006
 BY: Ahmed, Division: Water Resources
 FILE: M:\2004\101043223\02.drawing\as01fulton.dgn



AS-BUILT
JUNE 28, 2007

CROSS SECTIONS ARE SHOWN
LEFT TO RIGHT LOOKING UPSTREAM

- - - EXISTING GROUND
 - - - PROPOSED GRADE
 - - - (AS-BUILT)

SCALE: 1" = 10' (HOR.)
1" = 5' (VER.)

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