LONG MEADOW POND REPAIR

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
CAPITAL PROJECT D-1159

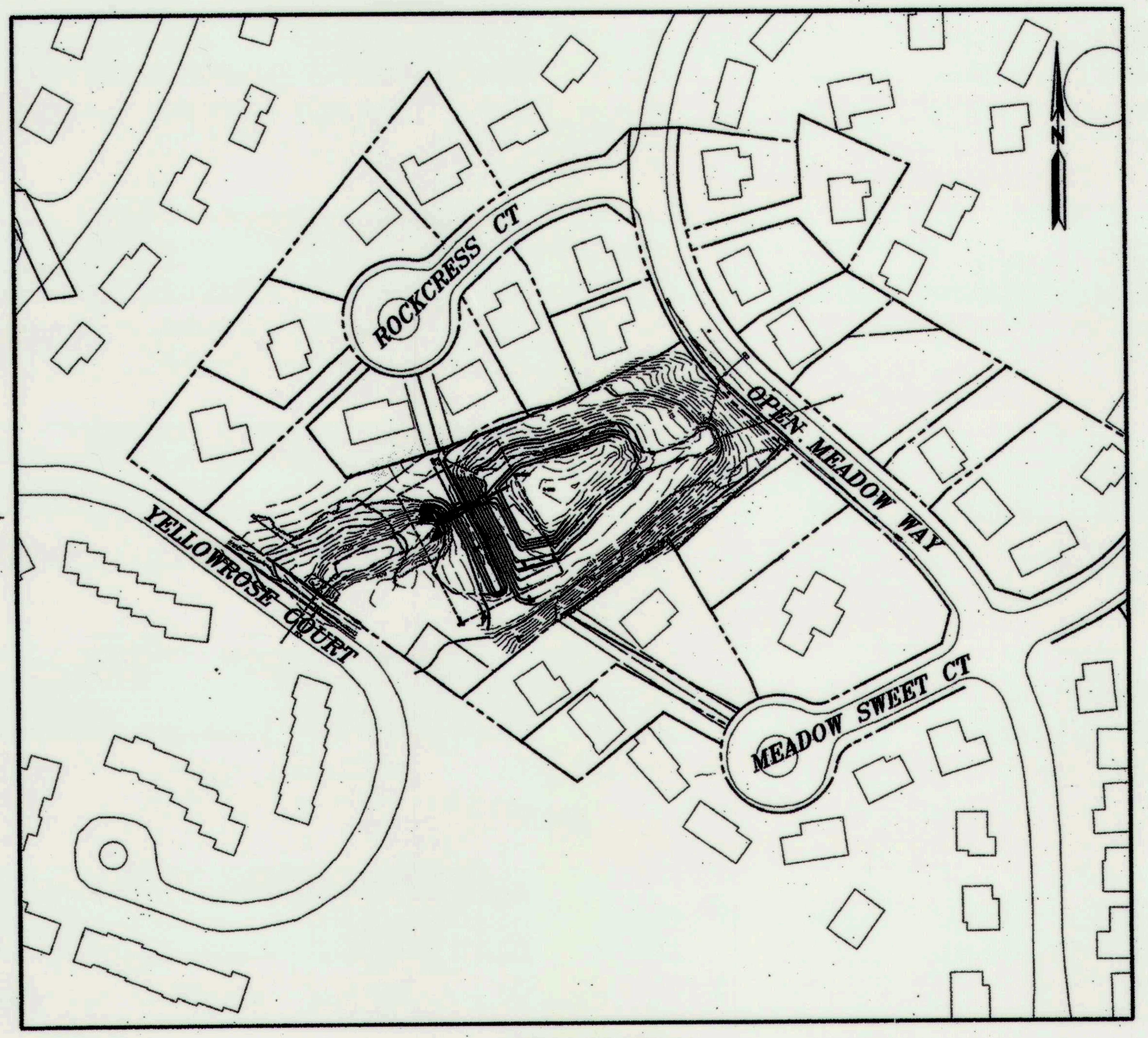
INDEX OF SHEETS

LEGEND

LIMIT OF DISTURBANCE	— LOD —
EXISTING MAJOR CONTOURS	— 380 —
EXISTING MINOR CONTOURS	
PROPOSED CONTOURS	— 387 —
EXISTING WOODSLINE	
PROPERTY LINE	
EASEMENT BOUNDARY	
EXISTING STORM DRAIN	— SD —
EXISTING STORM DRAIN INLET	
EXISTING STORM DRAIN MANHOLE	SD
EXISTING UTILITY POLE	
EXISTING SEWER LINE	— S —
EXISTING SEWER MANHOLE	SS
EXISTING EDGE OF PAVEMENT	
EXISTING RIPRAP	
PROPOSED RIPRAP	
SANDBAG DAM	
PUMP AROUND AND HOSES	
SUMP PIT	SP
FILTER BAG	FB
SILT FENCE	— SF —
ORANGE SAFETY FENCE	— OSF —
STABILIZED CONSTRUCTION ENTRANCE	SCE
EXISTING WATERS OF THE U.S.	— WUS —
EXISTING 50' STREAM BUFFER	— SB —
EXISTING WETLAND BOUNDARY	
EXISTING 25' WETLAND BUFFER	— WB —
WOODY-FREE ZONE BOUNDARY	
100-YR WSE	
SOILS BOUNDARY	

HOWARD COUNTY SURVEY CONTROL

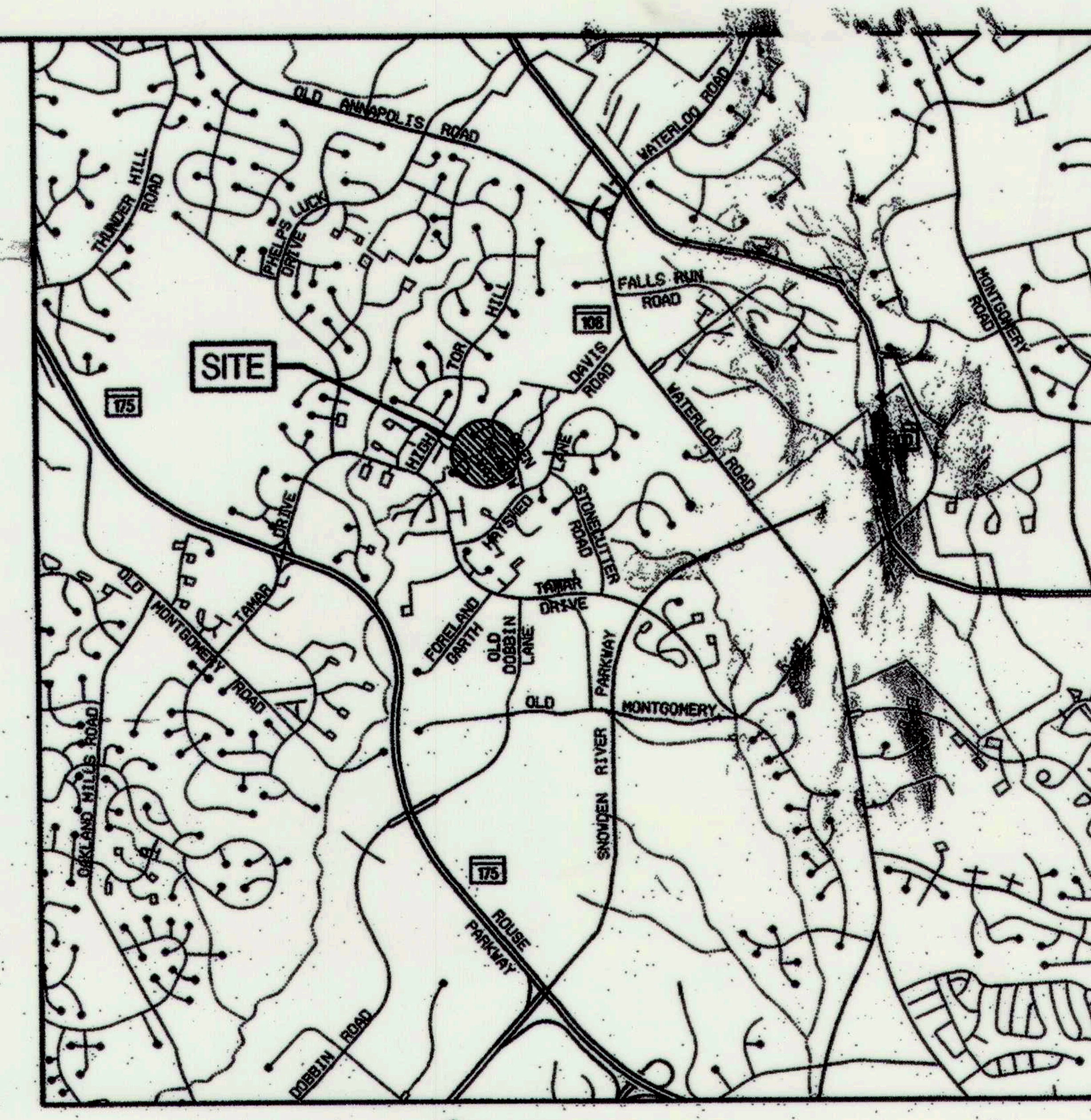
DESIGNATION	NORTHING	EASTING	ELEVATION
36CA	562262.5707	1361002.9222	430.043
36AB	561137.3764	1369891.8437	390.394



SITE LOCATION
SCALE: 1" = 100'

SPECIAL CONTRACTOR NOTES

1. CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS AND/OR SUPPLIES BEYOND THE LIMIT OF DISTURBANCE SHOWN ON THE PLANS.
2. UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.
3. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN.



VICINITY MAP
SCALE: 1" = 2000'
NORTH

GENERAL INFORMATION

1. EXISTING FACILITY WAS CONSTRUCTED UNDER HOWARD COUNTY, MARYLAND STORMWATER MANAGEMENT AS-BUILT PLAN F-86-203, DATED 12-06-1990, AS ACCEPTED BY HOWARD SOIL CONSERVATION DISTRICT.
2. A JOINT PERMIT APPLICATION HAS BEEN SUBMITTED TO MDE FOR THIS PROJECT (TRACKING NUMBER #201-360530/AI140082). UNDER THIS PERMIT, NO INSTREAM WORK IS PERMITTED MARCH 1 THROUGH MAY 31, INCLUSIVE OF ANY YEAR.
3. THERE ARE NO KNOWN BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS,
5. BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 24 HOURS IN ADVANCE OF ANY WORK BEING DONE.
6. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
7. THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
8. WATER IS PUBLIC.
9. SEWER IS PUBLIC.
10. EXISTING UTILITIES ARE BASED ON FIELD SURVEYS AND AVAILABLE RECORD DRAWINGS. CONTRACTOR TO VERIFY INFORMATION TO HIS/HER OWN SATISFACTION.
11. KCI PERFORMED A SITE VISIT ON OCTOBER 14, 2012 TO VERIFY THE PRESENCE OF WETLANDS AND "WATERS OF THE U.S." AT THE SITE.
12. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT
13. CONTOUR INTERVALS PREPARED BY AB CONSULTANTS, INC., IN OCTOBER 2012. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
14. 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. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
15. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

AS-BUILT JULY 2017

STATE OF MARYLAND · JAMES A. TOMLINSON · No. 31201 · PROFESSIONAL ENGINEER

12/20/13

PROFESSIONAL CERTIFICATION. I HERERBY 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. 31201. EXPIRATION DATE: JANUARY 24, 2015

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA		PARCEL #
LONG MEADOW			SECTION 1		263
PLAT # or L/F	GRID #	ZONING	TAX MAP NO.	ELECT. DISTR.	CENSUS TRACT
7010	6	R-12	36		
WATER CODE			SEWER CODE		
PUBLIC			PUBLIC		

OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046
410-313-6444

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

DIRECTOR OF PUBLIC WORKS — DATE 3/13/14

Mark DeLuca — CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 2/28/14

Mark S. Richmond — ACT. CHIEF, STORMWATER MANAGEMENT DIVISION — DATE 2/3/14

ENGINEER'S CERTIFICATE

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

P.E. # 31201 — DATE 12/20/13
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)
JAMES A. TOMLINSON, PE

DEVELOPER'S CERTIFICATE

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

Mark S. Richmond — DATE 2/3/14
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)
Mark S. Richmond

AS-BUILT CERTIFICATION

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

SIGNATURE — PE NO. 31201 — DATE 7/31/2017

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John R. Robertson (EP-15-003) — HOWARD SCD — DATE 12/23/15

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2008\01081795.91

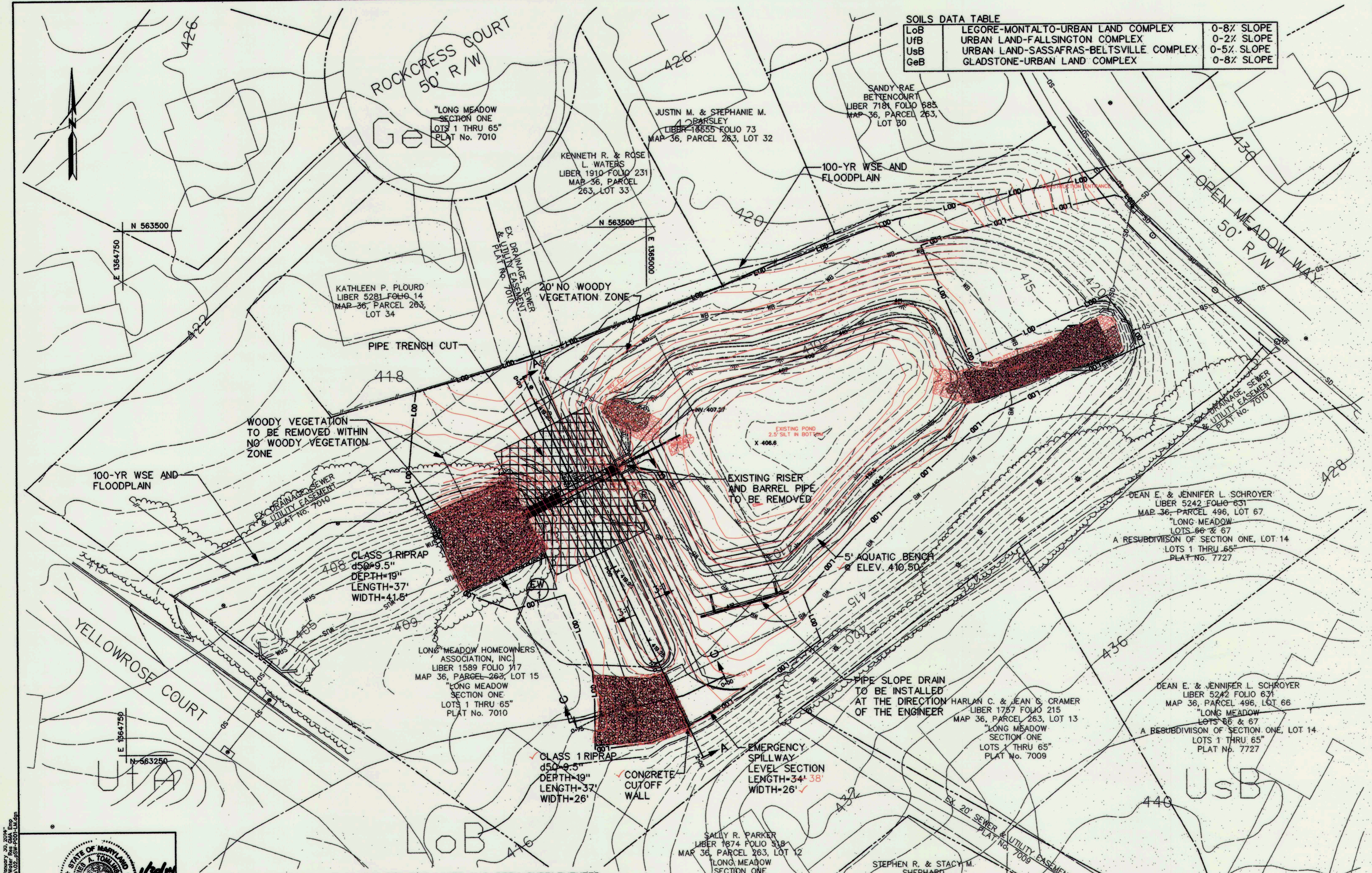
KCI TECHNOLOGIES
936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

LONG MEADOW SWM POND REPAIR
CAPITAL PROJECT D-1159
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

AS-BUILT
TITLE SHEET

SCALE:	AS SHOWN
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

BY: Jacquelyn Kroyenvenger Division: P053 Water Res GMA Emp
FILE: M:\2008\01081795.91\drawings\01_T101-LM.dgn


ROCKCRESS COURT
50' R/W
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7010
GeB
KENNETH R. & ROSE L. WATERS
LIBER 1910 FOLIO 231
MAP 36, PARCEL 263, LOT 33
JUSTIN M. & STEPHANIE M. PARSLEY
LIBER 13555 FOLIO 73
MAP 36, PARCEL 263, LOT 32
SANDY RAE BETTENCOURT
LIBER 7181 FOLIO 685
MAP 36, PARCEL 263, LOT 30
100-YR WSE AND FLOODPLAIN
OPEN MEADOW WAY
50' R/W
N 563500
E 1364750
E 1365000
KATHLEEN P. PLOURD
LIBER 5281 FOLIO 14
MAP 36, PARCEL 263, LOT 34
EX. DRAINAGE, SEWER & UTILITY EASEMENT PLAT No. 7010
20' NO WOODY VEGETATION ZONE
PIPE TRENCH CUT
WOODY VEGETATION TO BE REMOVED WITHIN NO WOODY VEGETATION ZONE
100-YR WSE AND FLOODPLAIN
EXISTING POND
2.5' SILT IN BOTTOM
EXISTING RISER AND BARREL PIPE TO BE REMOVED
CLASS 1 RIPRAP
d50=9.5"
DEPTH=19"
LENGTH=37'
WIDTH=41.5'
5' AQUATIC BENCH @ ELEV. 410.50
DEAN E. & JENNIFER L. SCHROYER
LIBER 5242 FOLIO 631
MAP 36, PARCEL 496, LOT 67
"LONG MEADOW
LOTS 66 & 67
A RESUBDIVISON OF SECTION ONE, LOT 14
LOTS 1 THRU 65"
PLAT No. 7727
YELLOWROSE COURT
LONG MEADOW HOMEOWNERS ASSOCIATION, INC.
LIBER 1589 FOLIO 117
MAP 36, PARCEL 263, LOT 15
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7010
PIPE SLOPE DRAIN TO BE INSTALLED AT THE DIRECTION OF THE ENGINEER
HARLAN C. & JEAN G. CRAMER
LIBER 1757 FOLIO 215
MAP 36, PARCEL 263, LOT 13
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
DEAN E. & JENNIFER L. SCHROYER
LIBER 5242 FOLIO 631
MAP 36, PARCEL 496, LOT 66
"LONG MEADOW
LOTS 66 & 67
A RESUBDIVISION OF SECTION ONE, LOT 14
LOTS 1 THRU 65"
PLAT No. 7727
CLASS 1 RIPRAP
d50=9.5"
DEPTH=19"
LENGTH=37'
WIDTH=26'
CONCRETE CUTOFF WALL
EMERGENCY SPILLWAY LEVEL SECTION
LENGTH=34' 38'
WIDTH=26'
UfA
LoB
UsB
E 1364750
N 563250
SALLY R. PARKER
LIBER 1874 FOLIO 518
MAP 36, PARCEL 263, LOT 12
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
STEPHEN R. & STACY M. SHEPHARD
LIBER 13780 FOLIO 265
MAP 36, PARCEL 263, LOT 11
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
EX. 20' SEWER & UTILITY EASEMENT PLAT No. 7009
MEADOWSWEET COURT
50' R/W

SOILS DATA TABLE

LoB	LEGORE-MONTALTO-URBAN LAND COMPLEX	0-8% SLOPE
UfB	URBAN LAND-FALLSINGTON COMPLEX	0-2% SLOPE
UsB	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX	0-5% SLOPE
GeB	GLADSTONE-URBAN LAND COMPLEX	0-8% SLOPE

NOTE: FIELD RUN SURVEY WITHIN THE PROJECT LIMITS HAS BEEN SUPPLEMENTED WITH AERIAL TOPOGRAPHY PROVIDED BY HOWARD COUNTY.

STATE OF MARYLAND · JAMES A. TOMLINSON · PROFESSIONAL ENGINEER
1/30/14

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — DATE 12/23/15

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 2/28/14

PLOTTED: "08:20 AM on Thursday, January 30, 2014" BY: James Tomlinson Division: P053 Water Res GMA Emp FILE: M:\2008\01081795.91\drawings\02_pSW-P001-LM.dgn

AS-BUILT JULY 2017

NO.	REVISIONS DESCRIPTION	DATE

KCIFILE: M:\ 2008 \ 01081795.91 \

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com
KCI TECHNOLOGIES

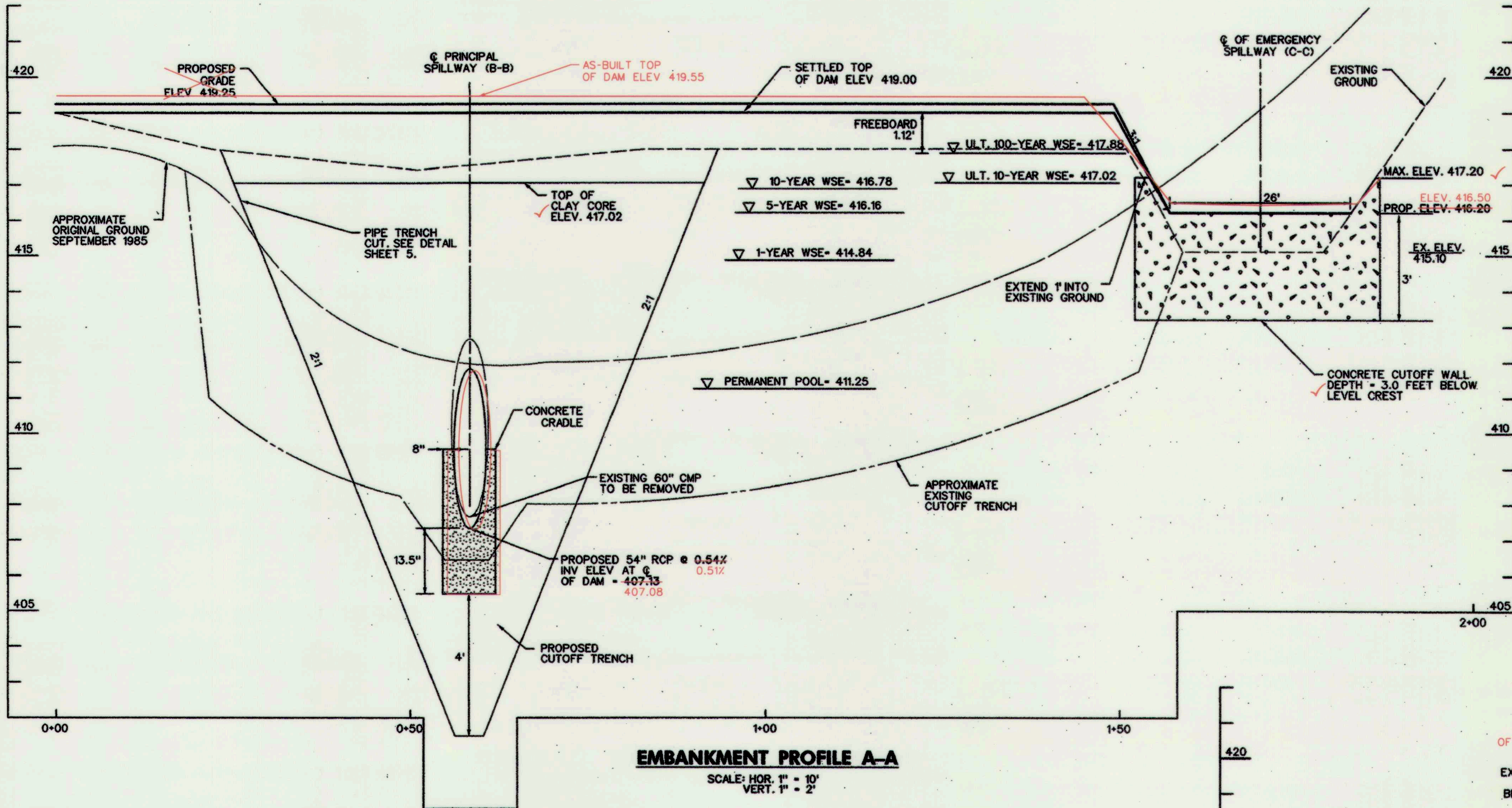
LONG MEADOW
SWM POND REPAIR

CAPITAL PROJECT D-1159

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

AS-BUILT
STORMWATER MANAGEMENT GRADING PLAN

SCALE:	1"= 20'
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	



EMBANKMENT PROFILE A–A

SCALE: HOR. 1" = 10'
VERT. 1" = 2'

	DISCHARGE (CFS)	STORAGE (AC-FT) VOLUME	WATER SURFACE ELEVATION (FT)
1-YEAR	44	1.84	414.87
5-YEAR	148	2.83	416.20
10-YEAR	205	3.33	416.83
10-YEAR CLOGGED*	239	3.49	417.02
100-YEAR CLOGGED*	385	4.25	417.88

* ASSUMES 12" LOW-FLOW ORIFICE IS CLOGGED WITH DEBRIS

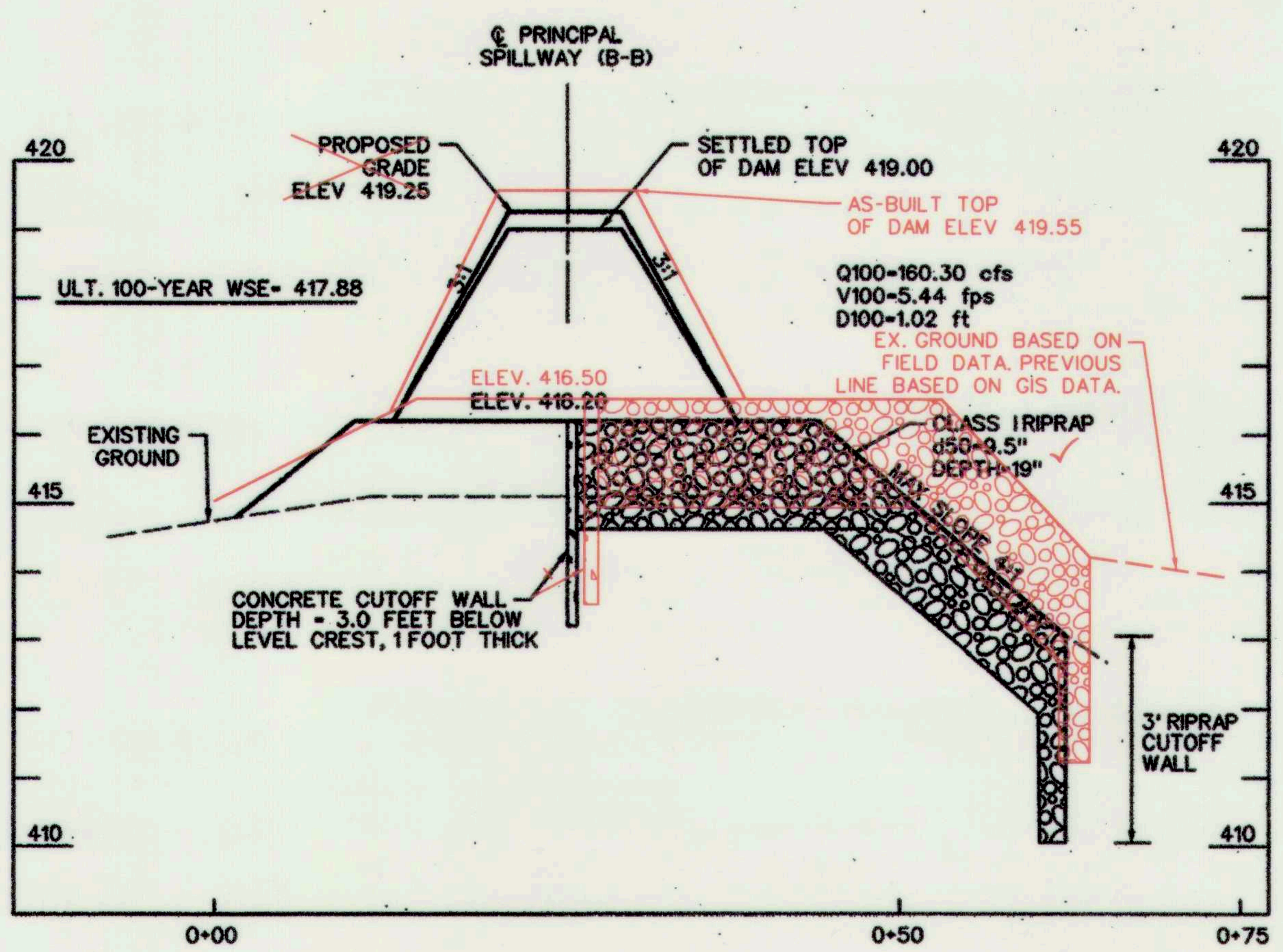
WATER QUALITY VOLUME REQUIRED	75,311 CU. FT.
WATER QUALITY VOLUME PROVIDED	47,045 CU. FT.

STRUCTURE TABLE

ID	STANDARD	TOP ELEV.	INVERT IN	INVERT OUT
R-1	CONCRETE RISER	~~417.50~~ 417.80	✓411.25	~~407.40~~ 407.30
EW-1	MD 354.01	✓412.71	--	~~407.15~~ 406.95

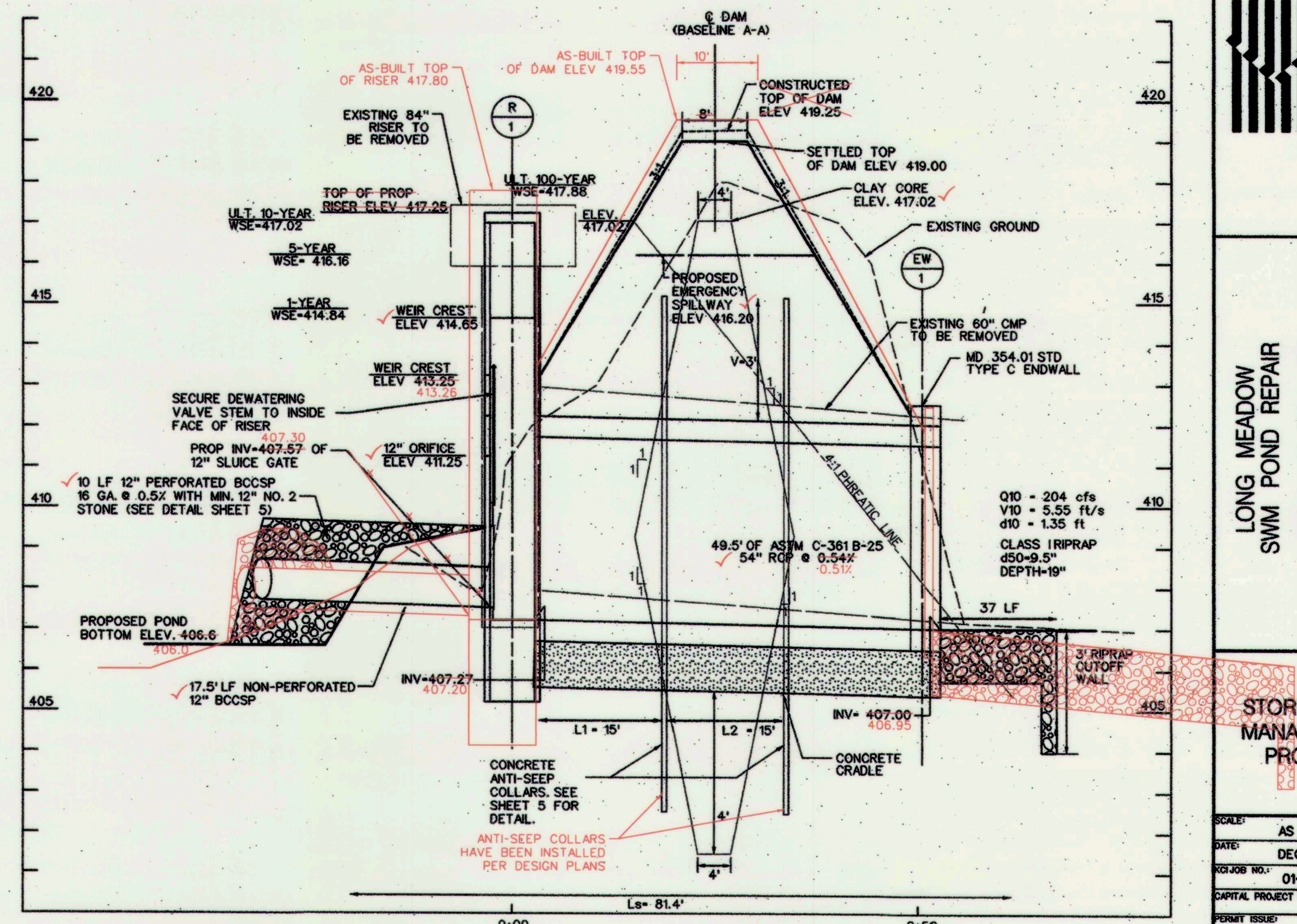
PIPE SCHEDULE

FROM	TO	SIZE	TYPE	INVERT IN	INVERT OUT	LENGTH
R-1	EW-1	✓54"	ASTM 361 C-25	~~407.40~~ 407.20	~~407.15~~ 406.95	~~43.5~~ FT 49.5



EMERGENCY SPILLWAY PROFILE C–C

SCALE: HOR. 1" = 10'
VERT. 1" = 2'



PRINCIPAL SPILLWAY PROFILE B–B

SCALE: HOR. 1" = 10'
VERT. 1" = 2'

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

(Seal: STATE OF MARYLAND — JAMES A. TOMLINSON — PROFESSIONAL ENGINEER) 12/20/13

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — DATE 12/23/15

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 2/28/14

AS-BUILT JULY, 2017

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

KCI TECHNOLOGIES

NO.	REVISIONS DESCRIPTION	DATE

KCIFILE: MA \ 2008 \ 01081795.91 \

LONG MEADOW SWM POND REPAIR

CAPITAL PROJECT D-1159

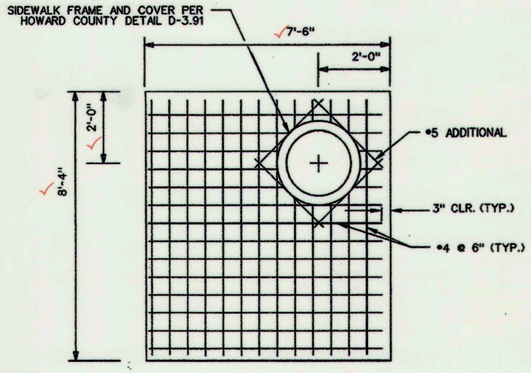
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

AS-BUILT

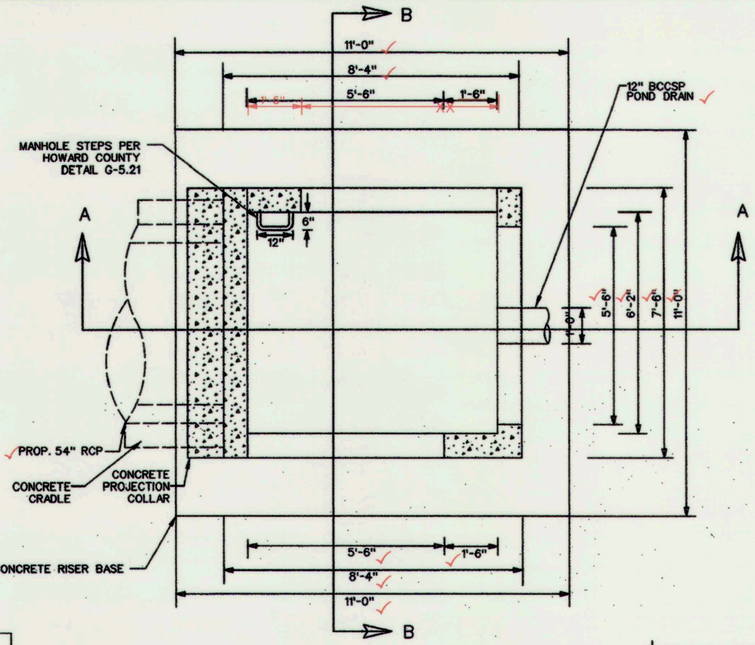
STORMWATER MANAGEMENT PROFILES

SCALE:	AS SHOWN
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

BY: Jacquelyn Kreamweger Division: P053 Water Res GMA Emp



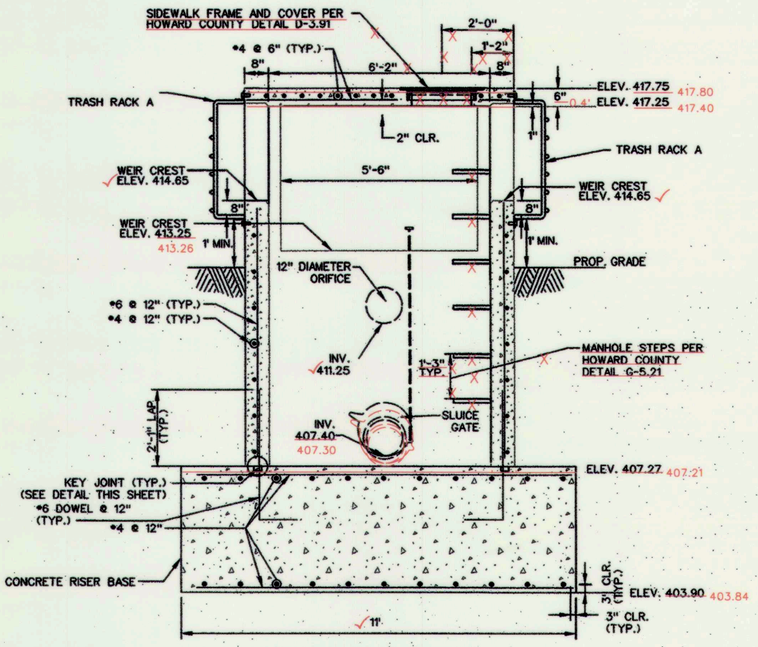
TOP SLAB DETAIL
SCALE: 1"=2'



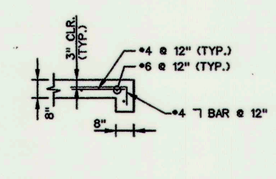
RISER PLAN VIEW
SCALE: 1"=2'

1. CONCRETE UNLESS OTHERWISE NOTED SHALL BE MIX. NO. 6 (4500 PSI).
2. REINFORCING STEEL SHALL CONFORM TO A 615, GRADE 60.
3. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED.

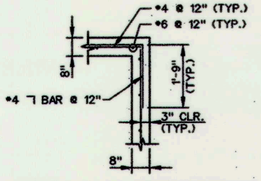
RISER STRUCTURAL NOTES



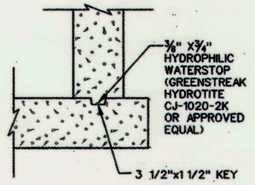
RISER CROSS SECTION B-B
SCALE: 1"=2'



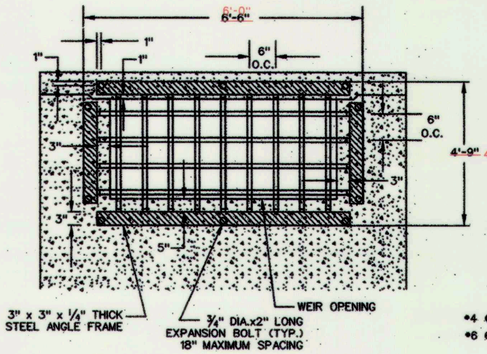
TYPICAL CORNER DETAIL ABOVE WEIRS
NOT TO SCALE



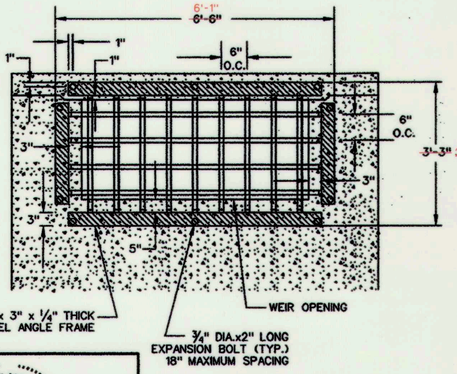
TYPICAL CORNER DETAIL BELOW WEIRS
NOT TO SCALE



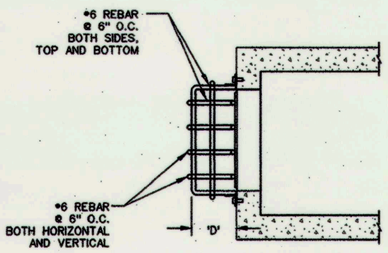
KEY JOINT DETAIL
NOT TO SCALE



TRASH RACK B FRONT VIEW
NOT TO SCALE

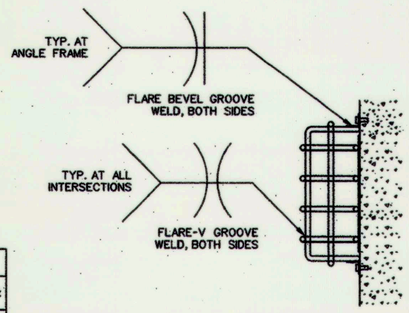


TRASH RACK A FRONT VIEW
NOT TO SCALE

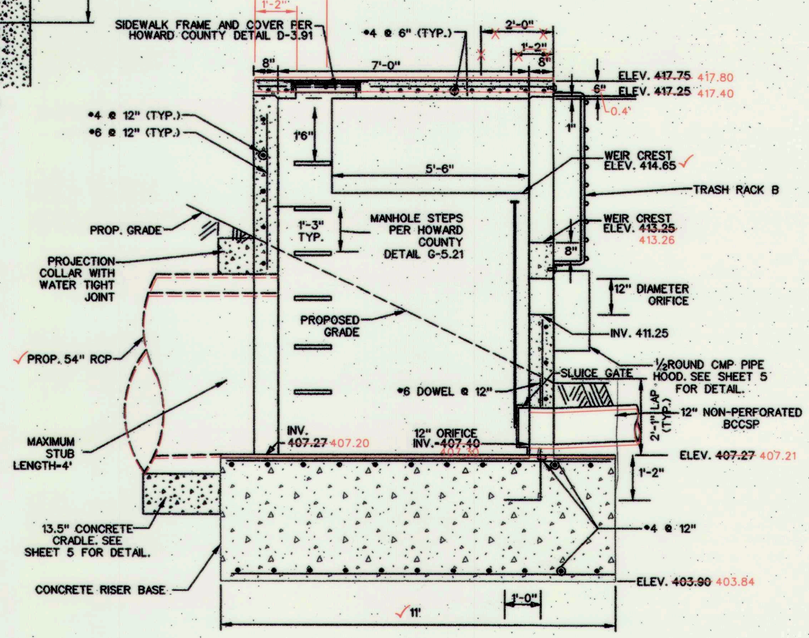


	'D'	Area of Trashrack	Area of Weir
TRASH RACK A	2'3"	14.63 sqft	12.93 sqft
TRASH RACK B	3'9"	24.38 sqft	20.63 sqft

TRASH RACKS SIDE VIEW



WELDING DETAIL



RISER CROSS SECTION A-A
SCALE: 1"=2'

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

STATE OF MARYLAND — JAMES A. TOMLINSON — PROFESSIONAL ENGINEER

12/20/13

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — 12/23/15 DATE

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — 2/28/14 DATE

NOTES:
1. ENTIRE TRASH RACK ASSEMBLY SHALL BE SHOP FABRICATED AND HOT-DIPPED GALVANIZED PER ASTM A-123 AFTER FABRICATION.
2. STEEL SHALL CONFORM TO ASTM A-35.
3. TRASH RACK SHALL BE CENTERED OVER EACH OPENING.
4. REBAR SHALL BE WELDABLE STEEL CONFORMING TO ASTM A-706.

AS-BUILT JULY 2017

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2008\01081795.91\

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com
KCI TECHNOLOGIES

LONG MEADOW SWM POND REPAIR
CAPITAL PROJECT D-1159
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

AS-BUILT
STORMWATER MANAGEMENT DETAILS

SCALE:	AS SHOWN
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SHEET NO.: 4 OF 8

BY: Jacquelyn Kroyenvenger Division: P053 Water Res GMA Emp
FILE: M:\2008\01081795.91\Drawings\04_pSW-P004-L4.dgn

STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS (MARYLAND CODE 378 POND - JANUARY 2000)

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

SITE PREPARATION

AREAS DISIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAT 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

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

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CALSSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OFTHE EMBANKMENT.

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

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTIANED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

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

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

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

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

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIDGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION ON M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION ON M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETLEY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12 INCH WIDE STANDARD LAP TYPE BAND WITH 12 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE. HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

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

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

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

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

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

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIAL - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4"-10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M2 52 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

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

DRAINAGE DIAPHRAGMS - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311. GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

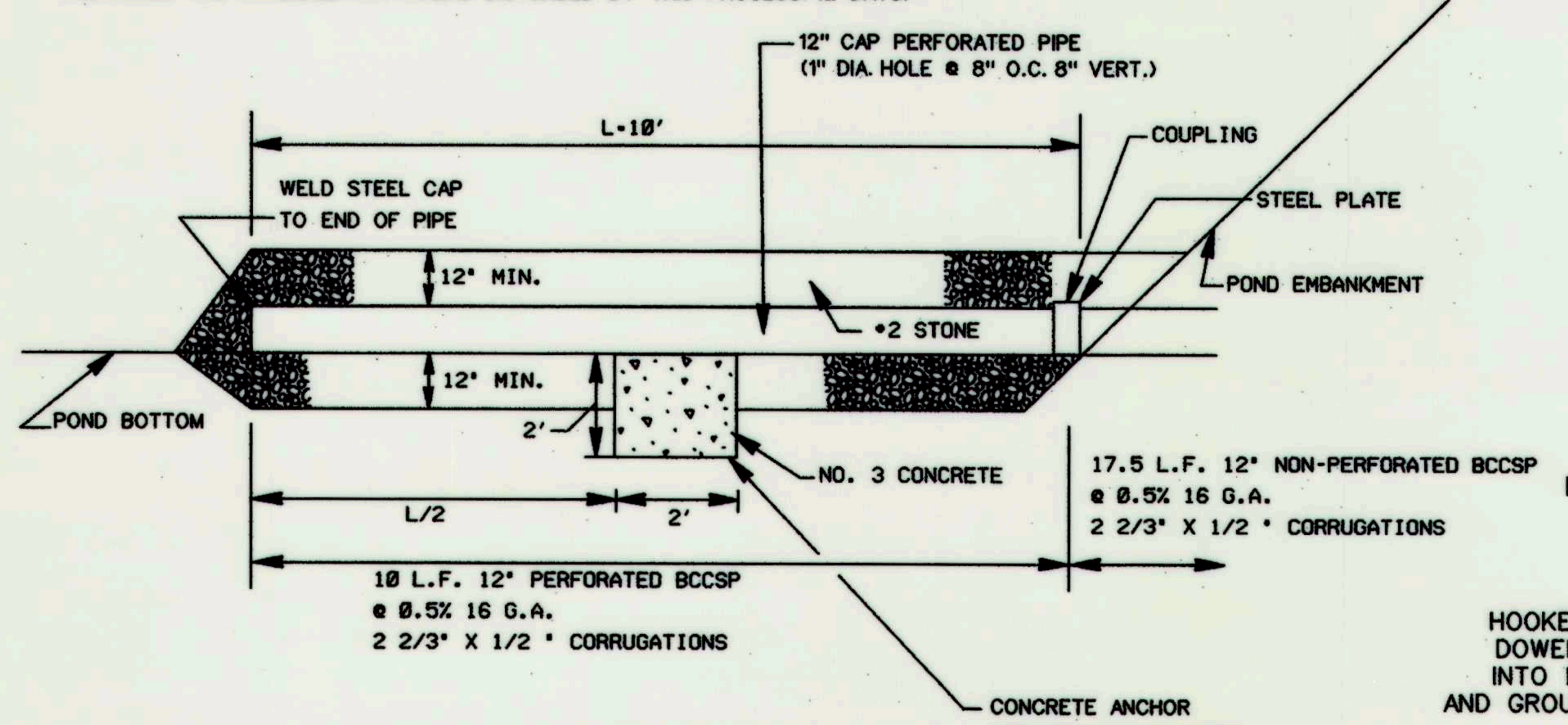
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

WOODY VEGETATION NOTE

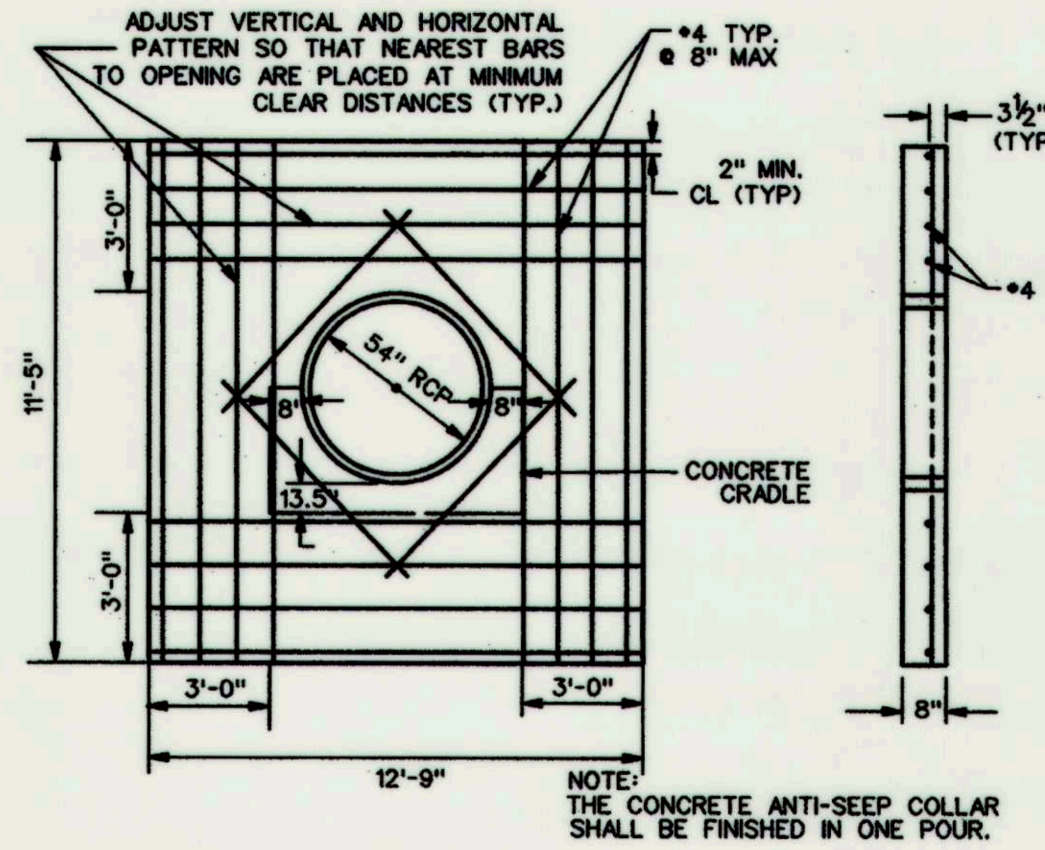
TREES, SHRUBS, OR OTHER WOODY VEGETATION WILL NOT BE ALLOWED WITHIN A 25' RADIUS OF THE INLET STRUCTURE IN THE POOL AREA, AND NOT ALLOWED ON, OR WITHIN 15' OF ANY PORTION OF THE EMBANKMENT.

SEQUENCE OF CONSTRUCTION

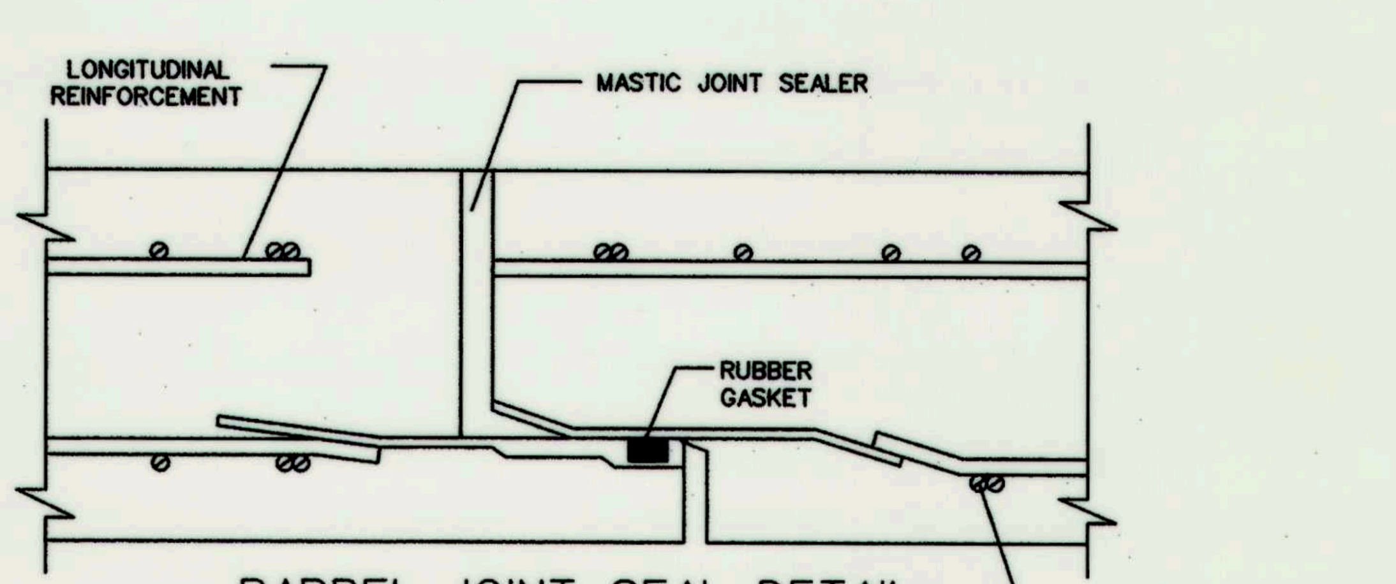
1. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION IN WRITING AND LEAST THREE (3) DAYS PRIOR TO DOING ANY WORK (410-313-1855).
2. CONTRACTOR SHALL COORDINATE AN ONSITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION. (1 DAY)
3. NOTIFY CERTIFYING ENGINEER 5 WORKING DAYS PRIOR TO BEGINNING STORMWATER MANAGEMENT CONSTRUCTION. (5 DAYS)
4. INSTALL SEDIMENT CONTROL MEASURES INCLUDING PUMP AROUND, ORANGE CONSTRUCTION FENCE, SILT FENCE, SUMP PIT NEAR RISER, FILTER BAG, AND STABILIZED CONSTRUCTION ENTRANCE ACCORDING TO APPROVED SEDIMENT CONTROL PLAN. INSTALL THE TEMPORARY PIPE FROM THE SUMP PIT TO THE FILTER BAG. (5 DAYS)
5. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION UPON COMPLETION OF INSTALLATION. (1 DAY)
6. INSTALL SANDBAG DIVERSION AROUND RISER STRUCTURE. (1 DAY)
7. WITH 5 DAY CLEAR FORECAST, EXCAVATE THE EMBANKMENT AS SHOWN ON THE DETAIL. REMOVE THE EXISTING RISER AND BARREL PIPE. (5 DAYS)
8. INSTALL THE PROPOSED CONCRETE BOX RISER, 54" RCP BARREL PIPE, ANTI-SEEP COLLARS, CLAY CORE, AND CONCRETE CRADLE IN THE EMBANKMENT TRENCH. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, POND GRADING MAY BE PERFORMED CONCURRENTLY. (25 DAYS)
9. CONSTRUCT THE REMAINDER OF THE EMBANKMENT TO MATCH THE PROPOSED GRADING PLAN. INSTALL CONCRETE CUTOFF WALL AND RIPRAP AT EMERGENCY SPILLWAY. (5 DAYS)
10. PERFORM GRADING OF POND AS SHOWN ON THE PLANS IF NOT ALREADY COMPLETED. INSTALL ADDITIONAL RIPRAP AT CULVERT OUTFALL. INSTALL PIPE SLOPE DRAIN NEAR EMERGENCY SPILLWAY. (5 DAYS)
11. UPON COMPLETION AND WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES, INCLUDING THE TEMPORARY STOCKPILE AREAS. (2 DAYS)
12. INSTALL PLANTINGS, MULCH, AND SEED ALL DISTURBED AREAS EXCEPT FOR THE PERIMETER SEDIMENT CONTROL MEASURES. (3 DAYS)
13. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE ANY AREAS DISTURBED BY THIS PROCESS. (2 DAYS)



POND DEWATERING DEVICE
NOT TO SCALE



CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



BARREL JOINT SEAL DETAIL
NOT TO SCALE

CONTRACTOR'S AS-BUILT NOTE

AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED FOR THIS STORM WATER MANAGEMENT FACILITY. THIS MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. AFTER FINAL ACCEPTANCE OF THE FACILITY, THE AS-BUILT PLANS AND CERTIFICATION WILL BE PREPARED BY THE ENGINEER FOR SUBMISSION TO HOWARD COUNTY.

TO PREPARE THE REQUIRED AS-BUILT PLANS AND CERTIFICATION, THE STORM WATER MANAGEMENT FACILITY MUST BE INSPECTED BY THE ENGINEER AT SPECIFIC STAGES DURING THE CONSTRUCTION AS REQUIRED BY THE CURRENT HOWARD COUNTY STORM WATER MANAGEMENT POLICY AND DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.

CONSTRUCTION NOTE

UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH:

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, 2011, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIAL.

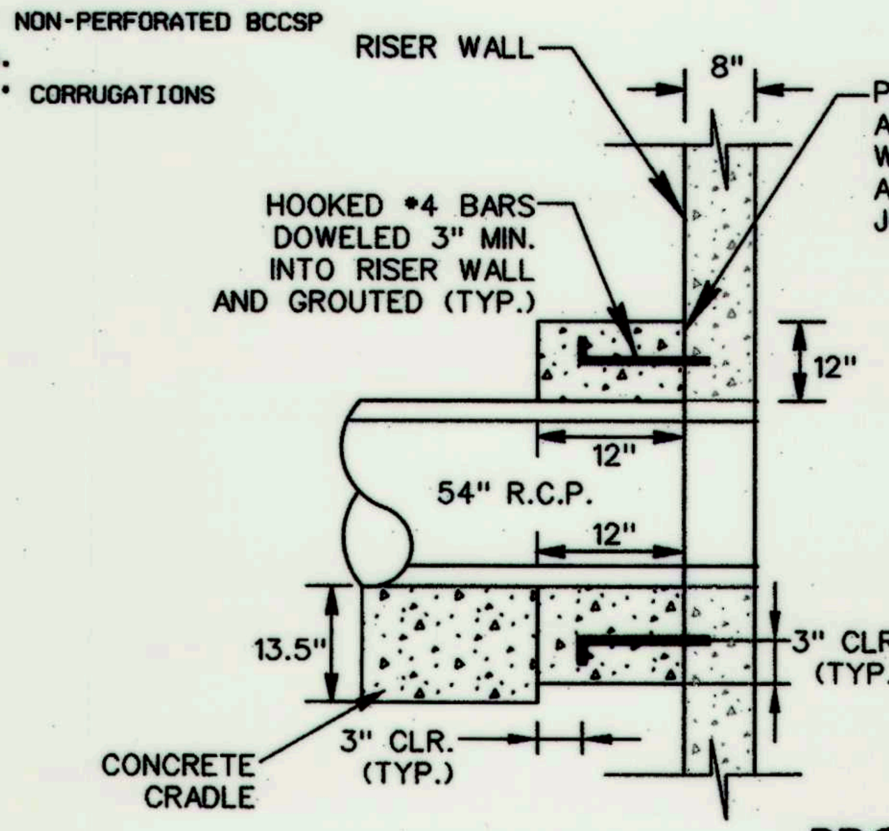
OPERATION AND MAINTENANCE SCHEDULE

ROUTINE MAINTENANCE:

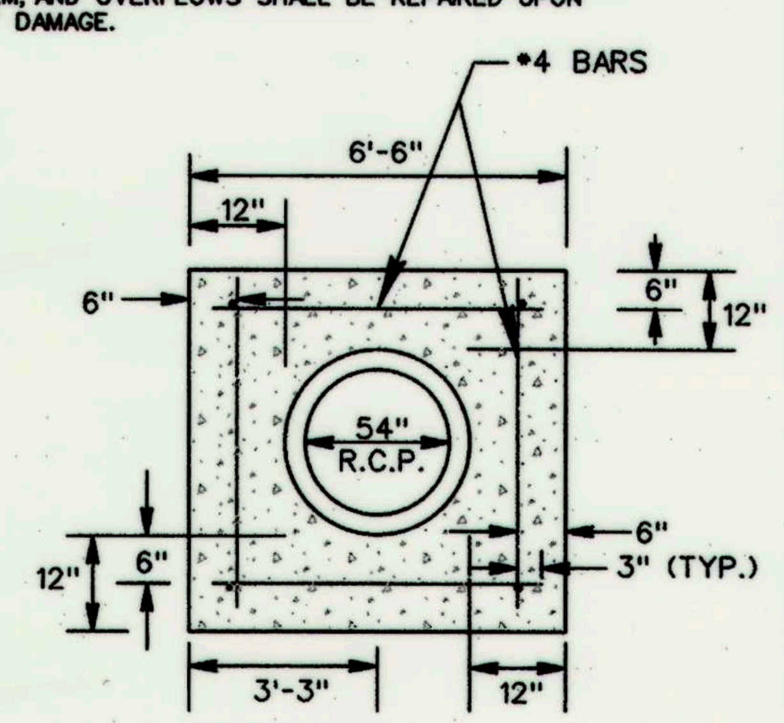
1. FACILITY SHALL BE INSPECTED ONCE EVERY THREE YEARS. INSPECTIONS SHALL BE PERFORMED DURING OR SHORTLY AFTER WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP SPILLWAY AND OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
5. PLANTINGS SHALL BE REPLACED AS NEEDED TO ENSURE A SIGNIFICANT NUMBER OF SHRUBS ARE PRESENT AND FULL HERBACEOUS COVERAGE EXISTS WITHIN THE FACILITY.

NON-ROUTINE MAINTENANCE:

1. STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE EMBANKMENT, DEWATERING SYSTEM, AND OVERFLOWS SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE.

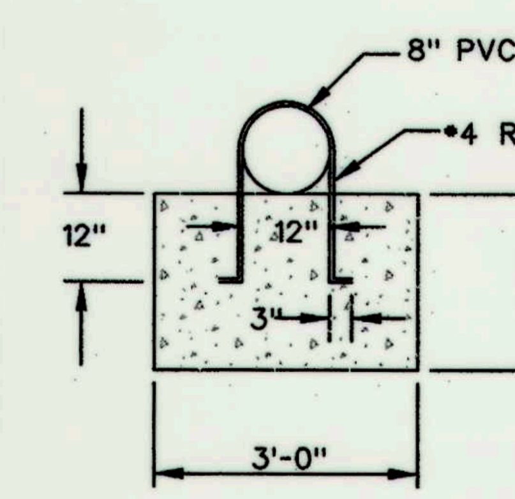


SIDE VIEW

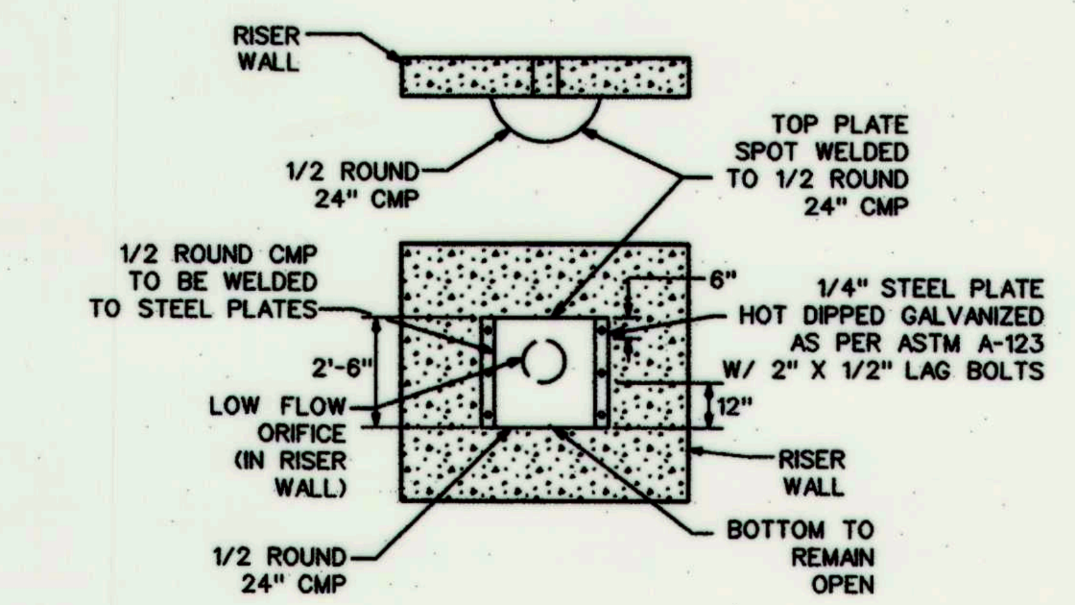


FRONT VIEW

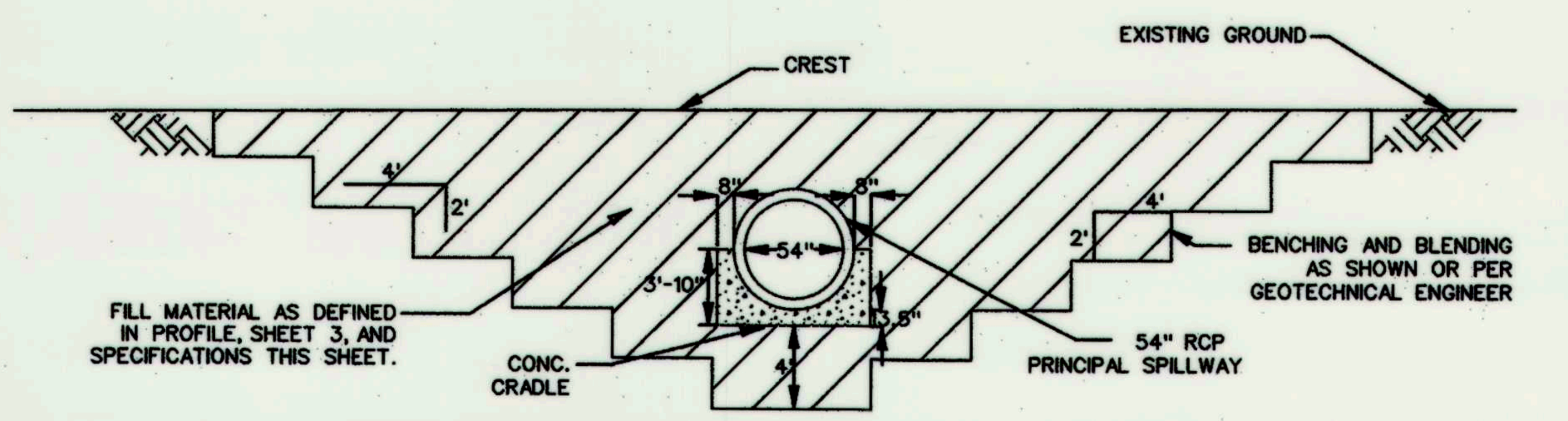
PROJECTION COLLAR DETAIL
NOT TO SCALE



CONCRETE ANCHOR
NOT TO SCALE



½ ROUND CMP PIPE HOOD
NOT TO SCALE



PIPE TRENCH AND CONCRETE CRADLE DETAIL
NOT TO SCALE

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John R Robertson — 12/23/15
HOWARD SCD — DATE

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

2/28/14
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE

NO.	REVISIONS DESCRIPTION	DATE

KCIFILE: M:\ 2008 \ 01081795.91 \

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

KCI TECHNOLOGIES

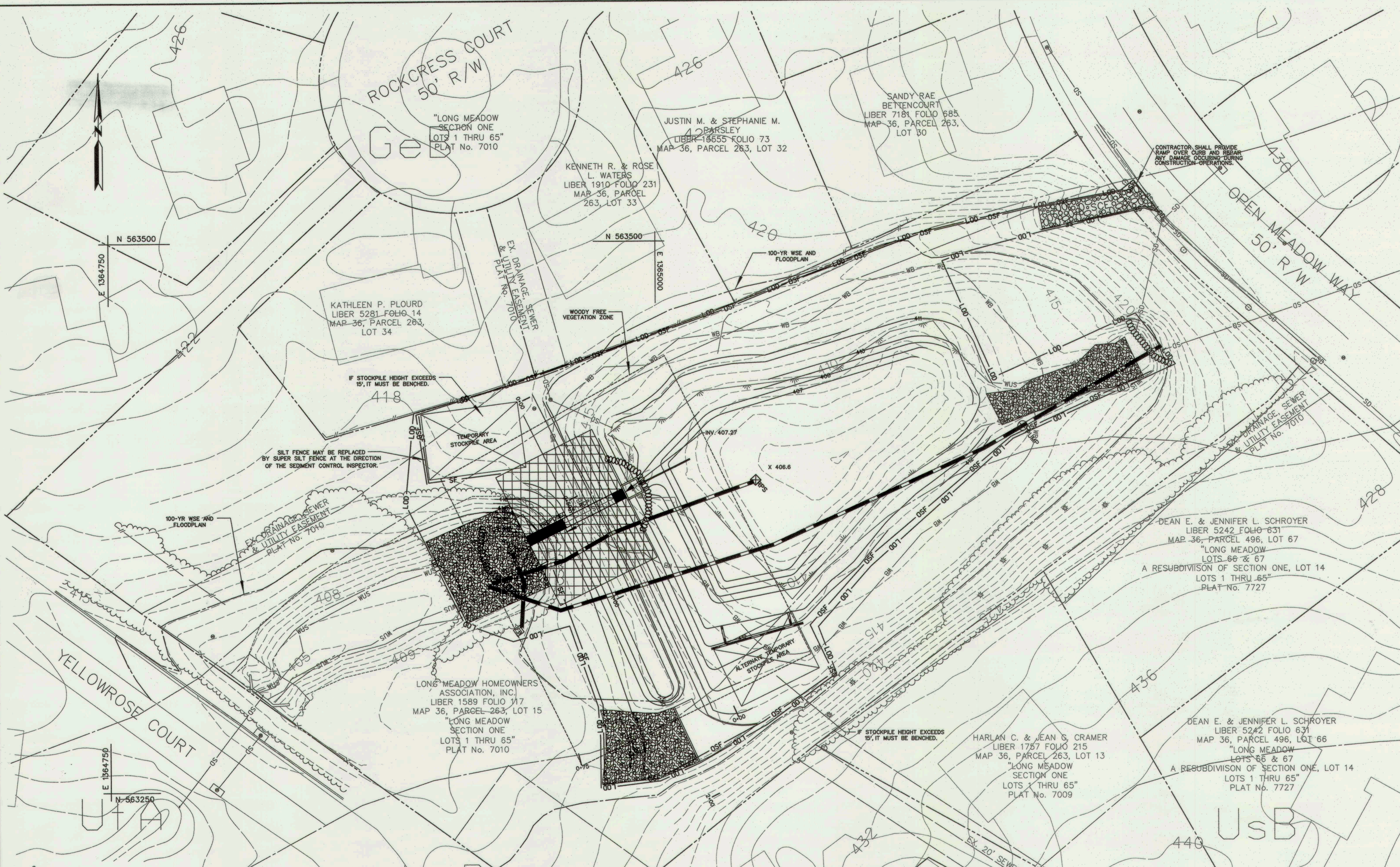
LONG MEADOW
SWM POND REPAIR
CAPITAL PROJECT D-1159

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

STORMWATER MANAGEMENT NOTES & DETAILS

SCALE:	N/A
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

BY: Jacquelyn Krayenvenger Division: P053 Water Res GMA Emp
FILE: M:\2008\01081795.91\drawings\05_pSW-P005-LM.dgn



ROCKCRESS COURT
50' R/W
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7010
GeB
JUSTIN M. & STEPHANIE M.
PARSLEY
LIBER 13555 FOLIO 73
MAP 36, PARCEL 263, LOT 32
SANDY RAE
BETTENCOURT
LIBER 7181 FOLIO 685
MAP 36, PARCEL 263,
LOT 30
KENNETH R. & ROSE
L. WATERS
LIBER 1910 FOLIO 231
MAP 36, PARCEL
263, LOT 33
CONTRACTOR SHALL PROVIDE RAMP OVER CURB AND REPAIR ANY DAMAGE OCCURING DURING CONSTRUCTION OPERATIONS.
OPEN MEADOW WAY
50' R/W
N 563500
E 1364750
E 1365000
EX. DRAINAGE, SEWER & UTILITY EASEMENT PLAT No. 7010
100-YR WSE AND FLOODPLAIN
KATHLEEN P. PLOURD
LIBER 5281 FOLIO 14
MAP 36, PARCEL 263,
LOT 34
WOODY FREE VEGETATION ZONE
IF STOCKPILE HEIGHT EXCEEDS 15', IT MUST BE BENCHED.
TEMPORARY STOCKPILE AREA
SILT FENCE MAY BE REPLACED BY SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
INV. 407.27
X 406.6
100-YR WSE AND FLOODPLAIN
EX. DRAINAGE, SEWER & UTILITY EASEMENT PLAT No. 7010
DEAN E. & JENNIFER L. SCHROYER
LIBER 5242 FOLIO 631
MAP 36, PARCEL 496, LOT 67
"LONG MEADOW
LOTS 66 & 67
A RESUBDIVIISON OF SECTION ONE, LOT 14
LOTS 1 THRU 65"
PLAT No. 7727
ALTERNATE TEMPORARY STOCKPILE AREA
YELLOWROSE COURT
LONG MEADOW HOMEOWNERS
ASSOCIATION, INC.
LIBER 1589 FOLIO 117
MAP 36, PARCEL 263, LOT 15
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7010
IF STOCKPILE HEIGHT EXCEEDS 15', IT MUST BE BENCHED.
HARLAN C. & JEAN C. CRAMER
LIBER 1757 FOLIO 215
MAP 36, PARCEL 263, LOT 13
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
DEAN E. & JENNIFER L. SCHROYER
LIBER 5242 FOLIO 631
MAP 36, PARCEL 496, LOT 66
"LONG MEADOW
LOTS 66 & 67
A RESUBDIVIISON OF SECTION ONE, LOT 14
LOTS 1 THRU 65"
PLAT No. 7727
E 1364750
N 563250
UtA
LoB
UsB
EX. 20' SEWER & UTILITY EASEMENT PLAT No. 7009
SALLY R. PARKER
LIBER 1874 FOLIO 518
MAP 36, PARCEL 263, LOT 12
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
STEPHEN R. & STACY M.
SHEPHARD
LIBER 13780 FOLIO 265
MAP 36, PARCEL 263, LOT 11
"LONG MEADOW
SECTION ONE
LOTS 1 THRU 65"
PLAT No. 7009
MEADOWSWEET COURT
50' R/W

NOTE: FIELD RUN SURVEY WITHIN THE PROJECT LIMITS HAS BEEN SUPPLEMENTED WITH AERIAL TOPOGRAPHY PROVIDED BY HOWARD COUNTY.

STATE OF MARYLAND · JAMES A. TOMLINSON · PROFESSIONAL ENGINEER

12/24/13

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — DATE 12/23/15

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 2/28/14

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

KCI TECHNOLOGIES

LONG MEADOW SWM POND REPAIR

CAPITAL PROJECT D-1159

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

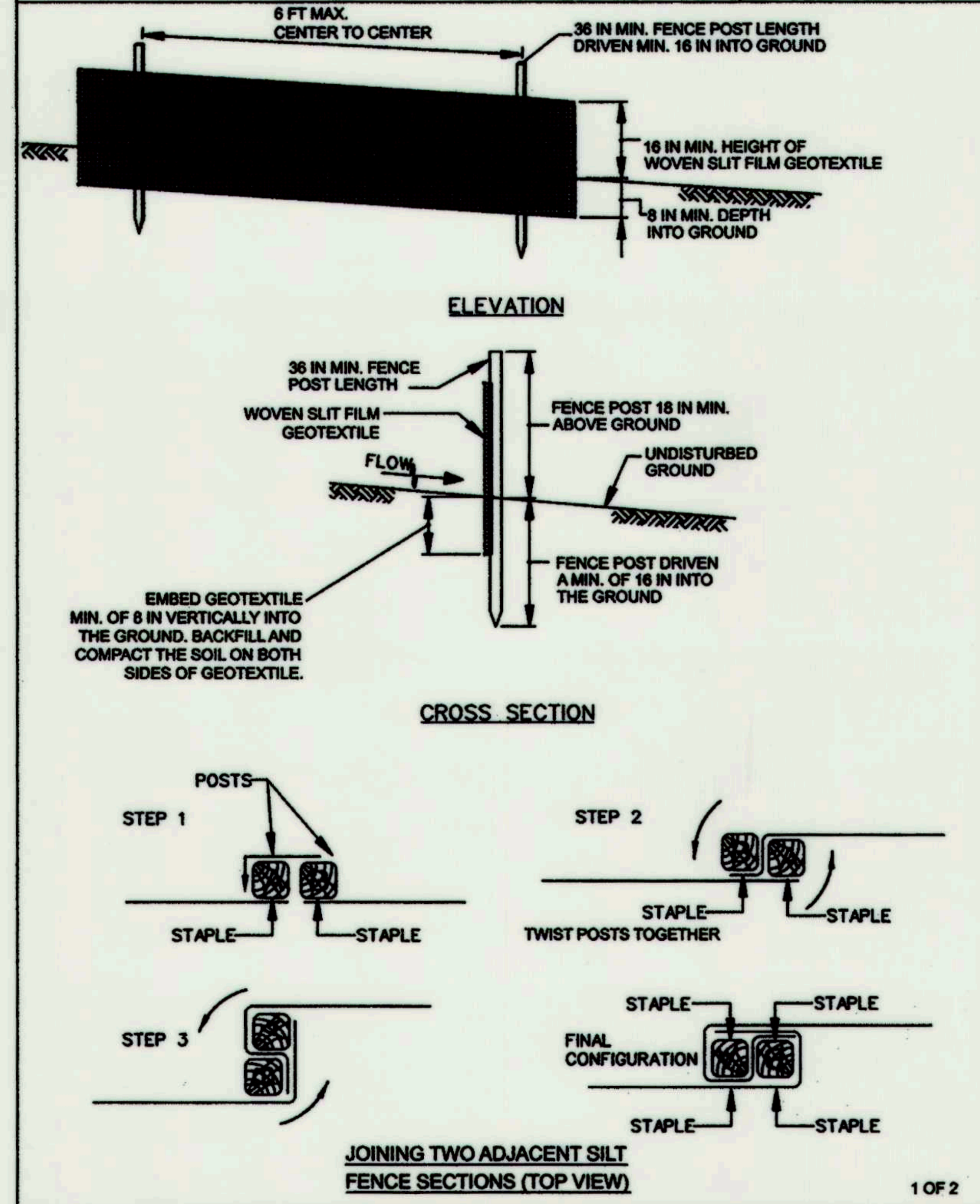
EROSION & SEDIMENT CONTROL PLAN

SCALE:	1"= 20'
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SHEET NO.: 6 OF 8

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
|——SF——|



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

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 E-1 SILT FENCE

STANDARD SYMBOL
|——SF——|

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅙ 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.

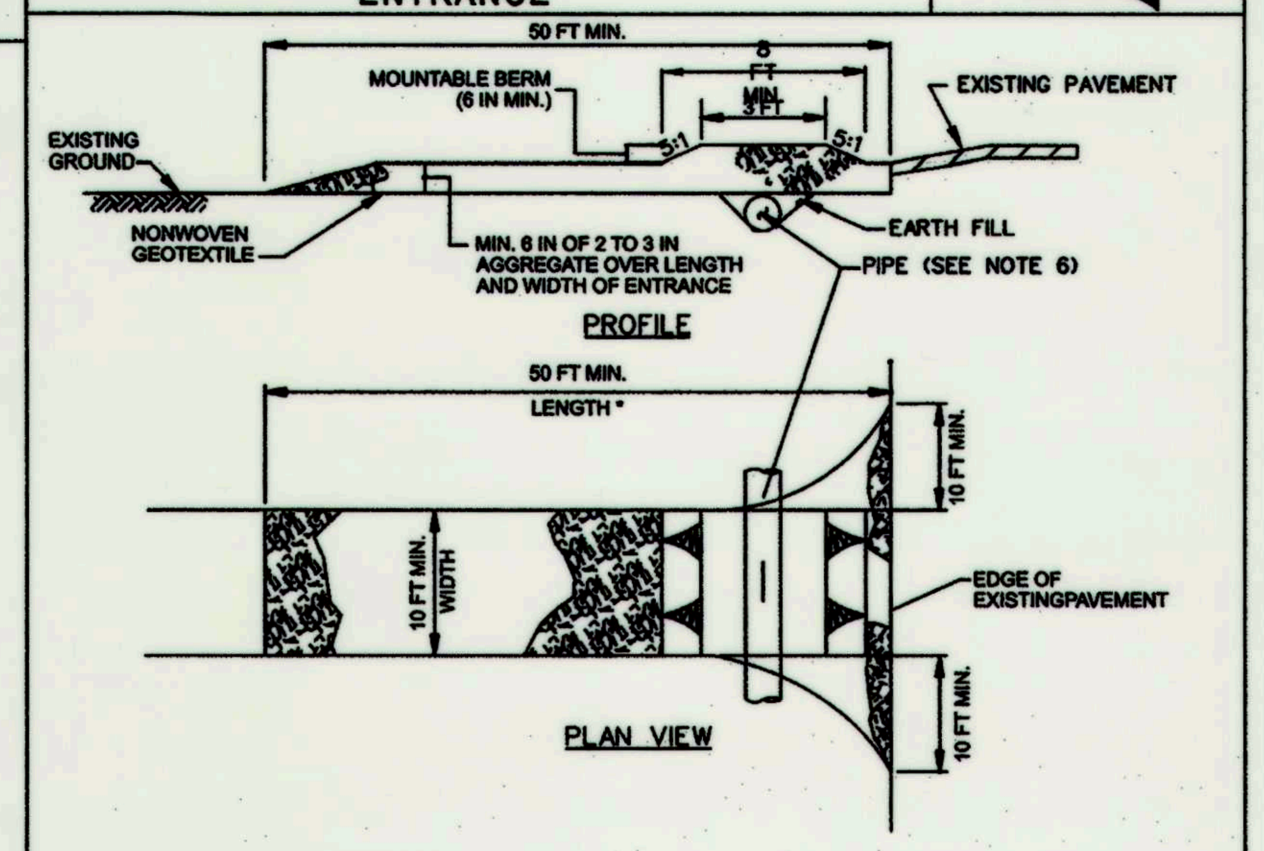
2 OF 2

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

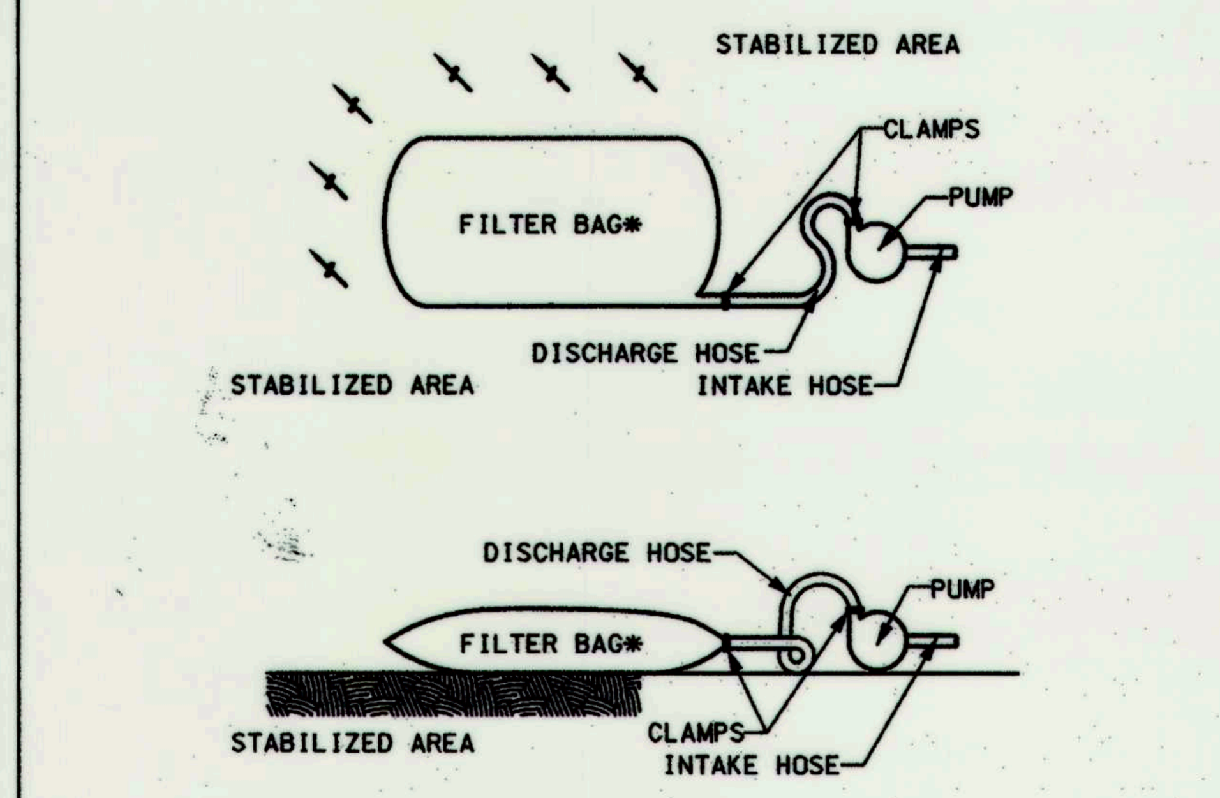


CONSTRUCTION SPECIFICATIONS

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



* NON-WOVEN GEOTEXTILE FILTER BAG WHICH RETAINS ALL SEDIMENT PARTICLES LARGER THAN 150 MICRONS.

FILTER BAG DEWATERING DEVICE FOR PUMPED WATER

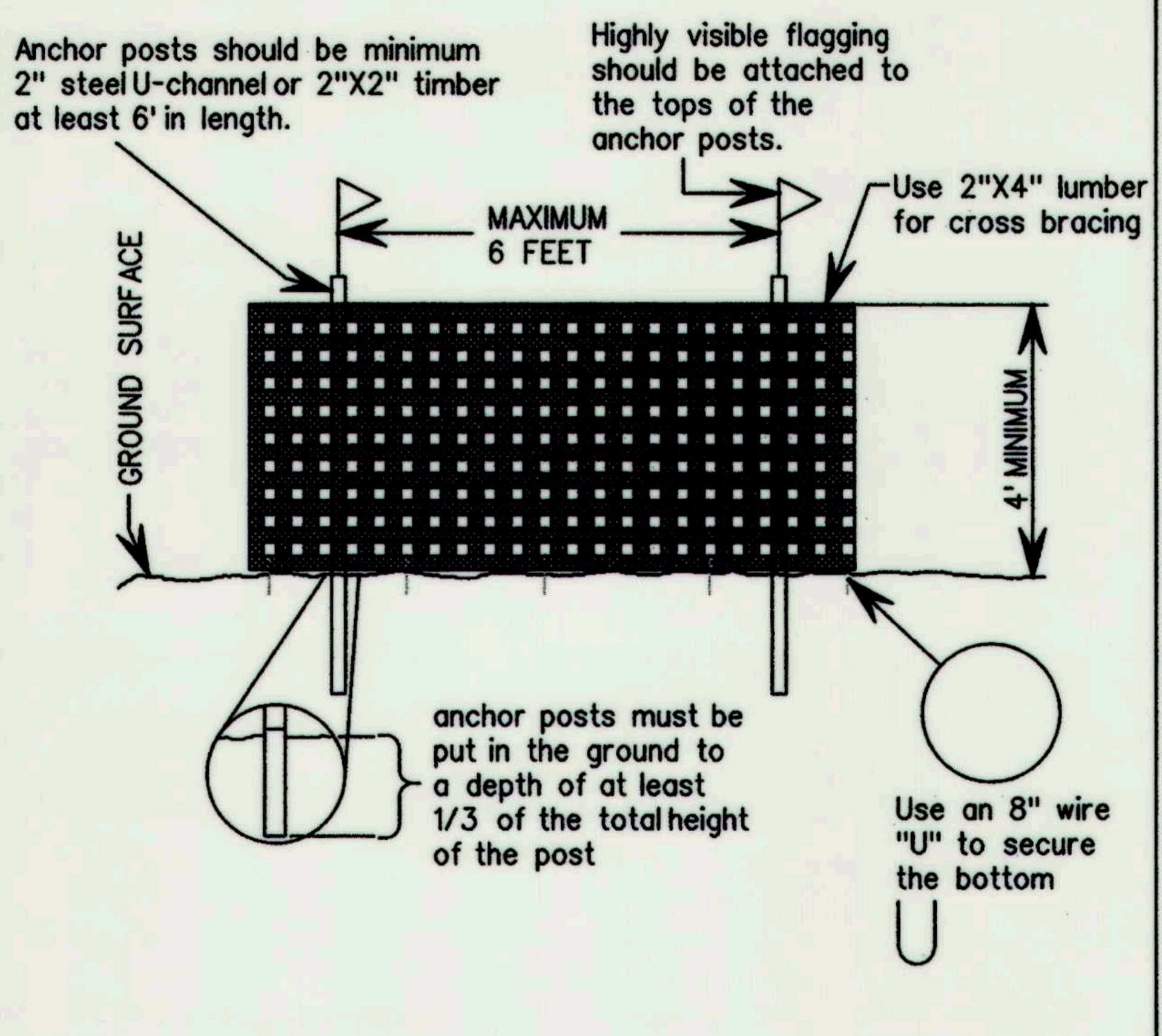
NOT TO SCALE

NOTES:
1. PLACE FILTER BAGS ON STABLE OR WELL VEGETATED AREAS WHICH ARE FLATTER THAN 5% AND WILL NOT ERODE WHEN SUBJECTED TO BAG DISCHARGES.
2. CLAMP PUMP DISCHARGE HOSES SECURELY INTO FILTER BAGS.
3. LIMIT PUMPING RATE TO ½ THE MANUFACTURER'S MAXIMUM PUMPING RATE.
4. WHEN SEDIMENTS FILL ½ THE VOLUME OF A FILTER BAG, IMMEDIATELY REMOVE THAT BAG FROM SERVICE. PROPERLY DISPOSE OF SPENT BAGS WITH THEIR SEDIMENTS.

FILTER BAG SPECIFICATIONS

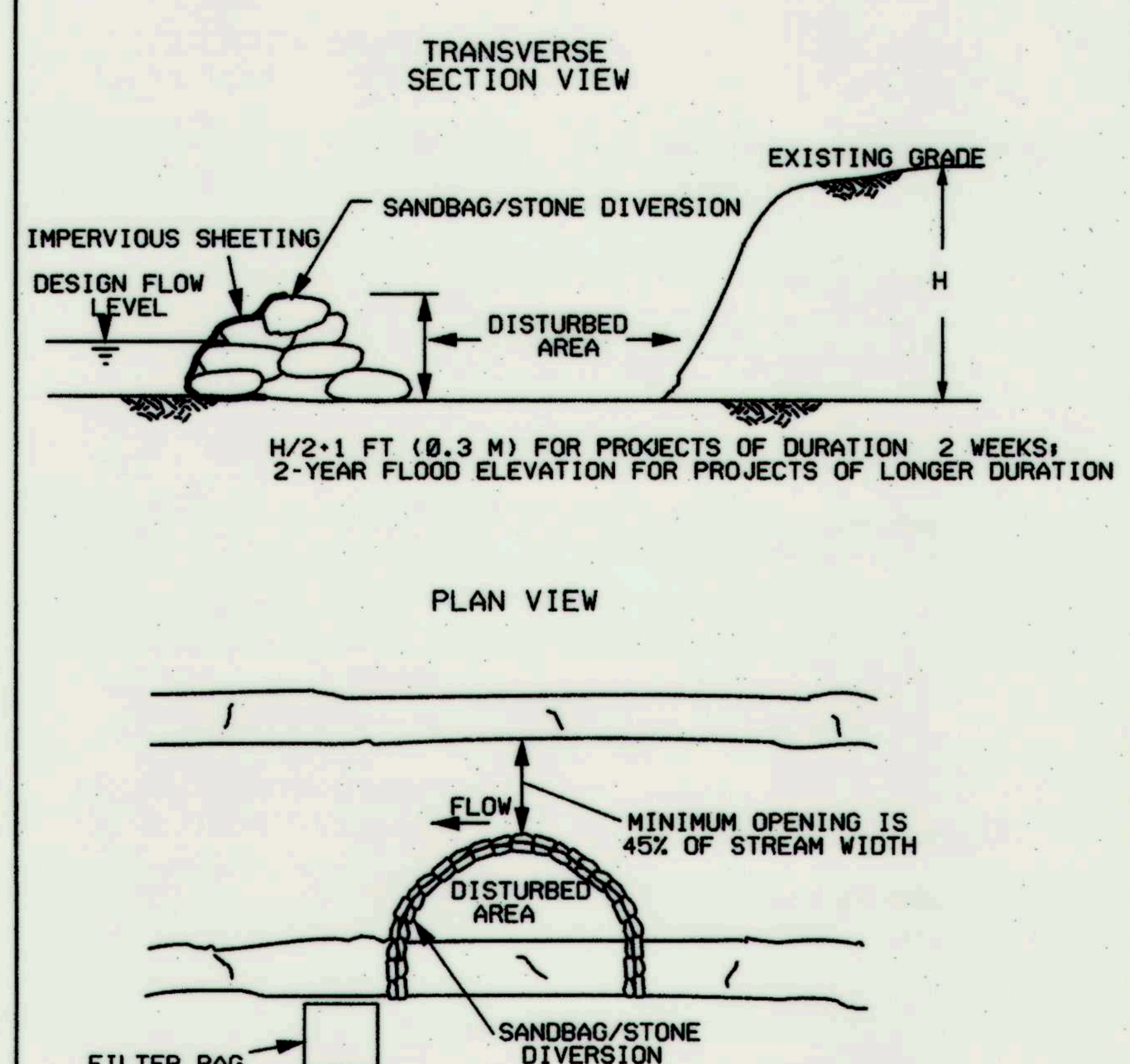
1. FILTER BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET PER SIDE.
2. ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. SEAM STRENGTH SHALL WITHSTAND 100 LB/IN USING ASTM D-4884 TEST METHOD.
3. FILTER BAG SHALL HAVE A NOZZLE LARGE ENOUGH TO ACCOMMODATE A FOUR(4) INCH DIAMETER PUMP DISCHARGE HOSE.
4. NOZZLE SHALL BE SEALED TIGHTLY AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE TO PREVENT UNFILTERED WATER FROM ESCAPING.
5. FILTER BAG SHALL BE PLACED ON A LEVEL OR GENTLY SLOPING (5% MAXIMUM) AREA.
6. FILTER BAG SHALL BE PLACED UPON A BASE OF STRAW BALES OR THREE (3) INCHES OF CLEAN STONE TO PROMOTE DEWATERING THROUGH BOTTOM SURFACE OF THE FILTER BAG.
7. PUMPING RATES SHALL BE CONTROLLED TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG. AS THE BAG BECOMES FILLED WITH SEDIMENT THE PUMPING RATE SHALL BE REDUCED.
8. THE FILTER BAG SHALL BE DEWATERED, REMOVED AND DISPOSED OF UPON COMPLETION OF PUMPING OPERATIONS OR AFTER IT HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. THE DEWATERED SEDIMENT FROM THE BAG SHALL BE SPREAD IN AN UPLAND AREA AND STABILIZED WITHIN 24 HOURS.
9. THE GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS WITH PROPERTIES DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

WEIGHT	10 OZ/YD	ASTM D-3776
GRAB TENSILE	210 LBS.	ASTM D-4632
PUNCTURE	150 LBS.	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT2	ASTM D-4491
PERMITIVITY (SEC)	1.3	ASTM D-4991
UV RESISTANCE	70%	ASTM D-4355
APPARENT OPENING SIZE (AOS)	40-80	ASTM D-4751



DETAIL FOR
BLAZE ORANGE PLASTIC
MESH SAFETY FENCE
NOT TO SCALE

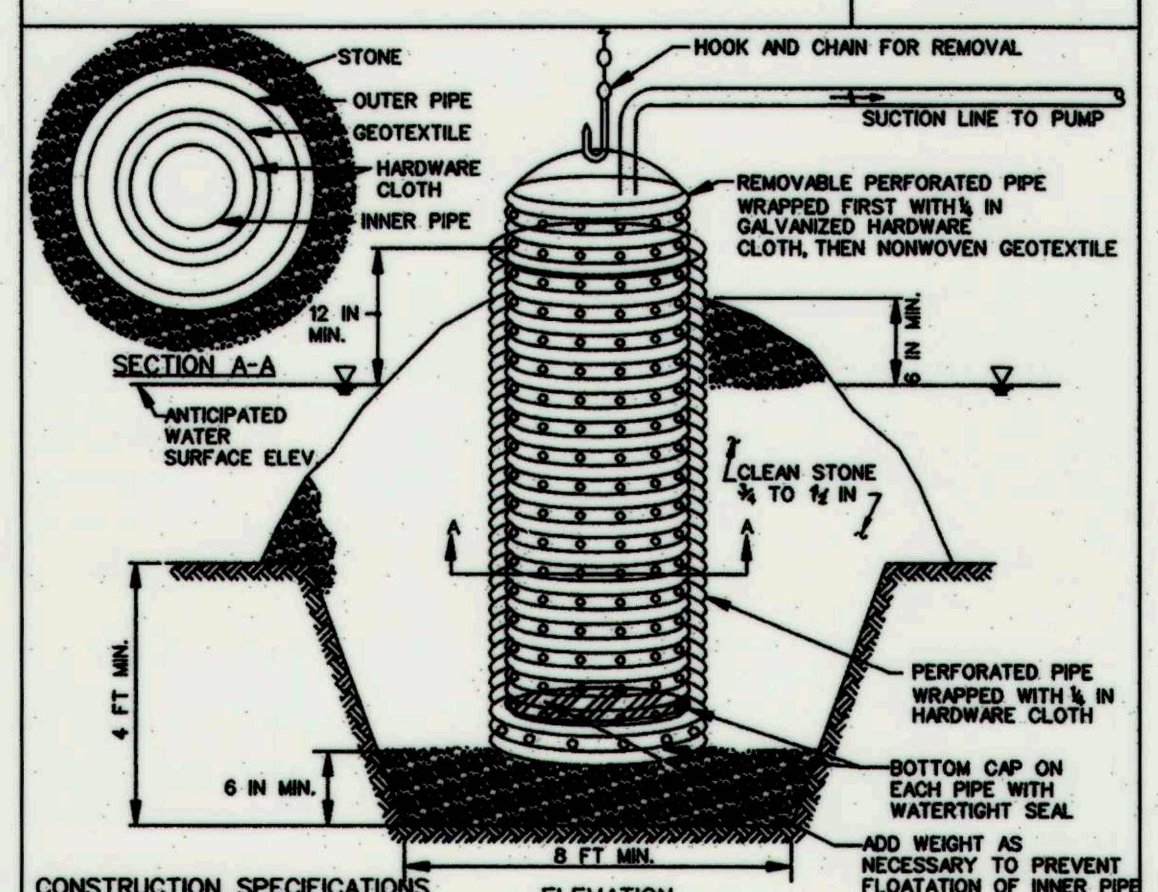
DETAIL 1.5: SANDBAG/STONE DIVERSION



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.5 - 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL
☒RPS



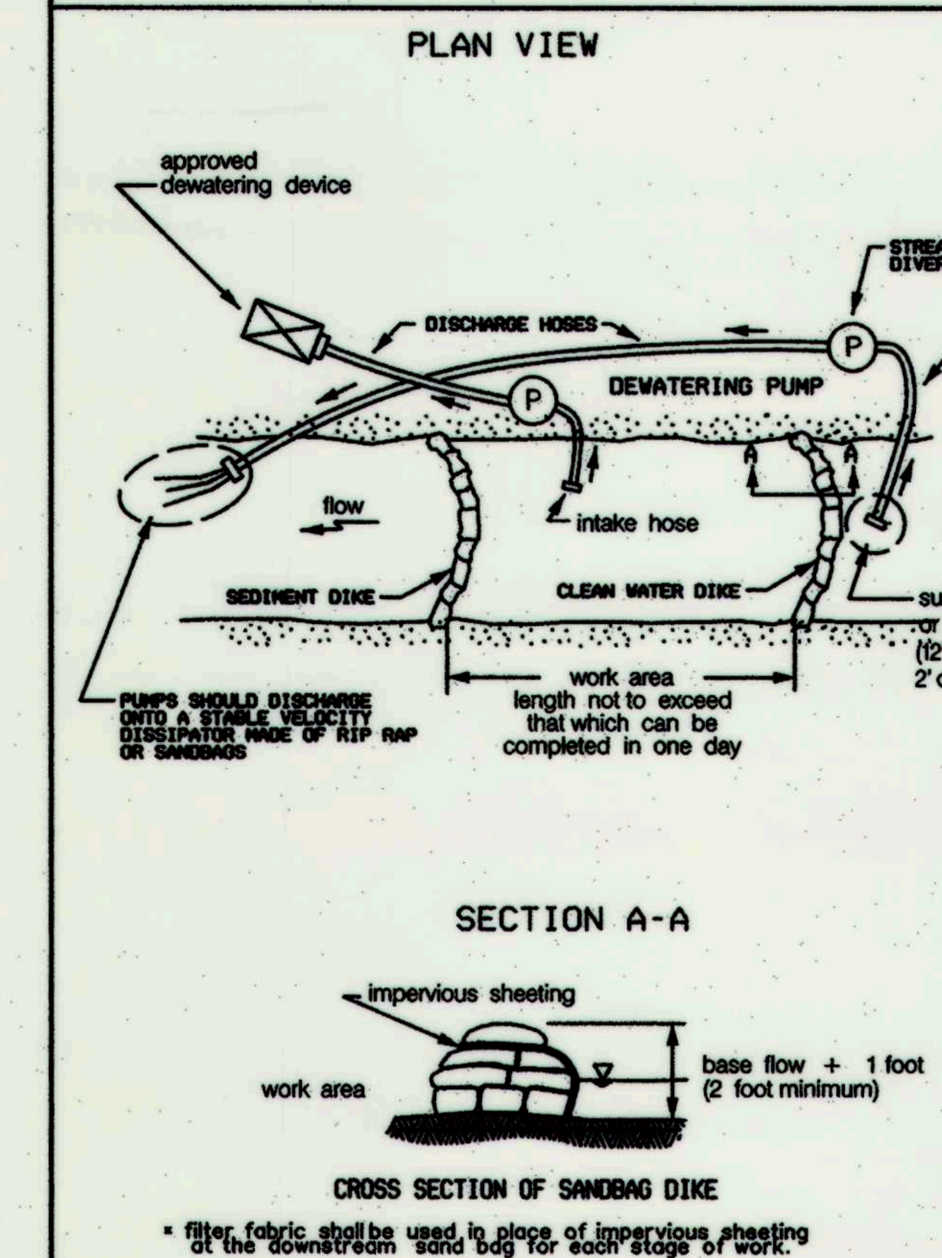
CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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

MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 1.2: PUMP-AROUND PRACTICE



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.2 - 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 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 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.

2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.

3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance, which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.

5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each workday, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.

6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.

8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).

9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.

10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.

11. A pump around must be installed on any tributary or storm drain outfall, which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.

12. If a tributary is to be restored, construction should take place on the tributary before work on the main steam reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.

13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

STATE OF MARYLAND
JAMES A. TOMLINSON
No. 31201
PROFESSIONAL ENGINEER

12/20/13

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — 12/23/15 DATE

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — 2/25/14 DATE

BY: Jacquelyn Krayenvenger Division: P053 Water Res GMA Emp
FILE: M:\2008\01081795.91\drawings\07_pES-N001-LM.dgn

NO.	REVISIONS DESCRIPTION	DATE

KCIFILE: M:\2008\01081795.91\

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

KCI TECHNOLOGIES

LONG MEADOW SWM POND REPAIR

CAPITAL PROJECT D-1159

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

EROSION AND SEDIMENT CONTROL DETAILS

SCALE:	AS SHOWN
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

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

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

Purpose
To provide a suitable soil medium for vegetative growth.

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

Criteria
A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
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 1 1/2 inches in diameter.
b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
a. Erosion and sediment control practices must be maintained when applying topsoil.
b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will 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.

B-4-5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

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

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

c. Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

PERMANENT SEEDING SUMMARY

Hardiness Zone (from Figure B.3): 6B Seed Mixture (from Table B.3):					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
Mix #3	Deertongue	20	Mar 1-June 15	1/4-1/2 in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
	Canada Wild Rye	3						
	Redtop	1						
	Common Lespedeza	10						
Mix #10	Orchard Grass	25	Mar 1-May 15 Aug 1-Oct 15	1/4-1/2 in				
	Creeping Red Fescue	10						
	Redtop	1						
	Alsike Clover	3						
	White Clover	3						
	Foxtail	2	May 16-July 31					
Mix #12	Foxtail	4	May 16-July 31	1/4-1/2 in				
	Creeping Red Fescue	25	Mar 1-May 15 Aug 1-Oct 15					
	Hard Fescue	25						
	Sheep Fescue	25						
	White Clover	3						
	Red Clover	3						

B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABILIZATION

Definition

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

Purpose

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

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1):					Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
	Annual Ryegrass	40	3/1-5/15, 8/1-10/15	0.5	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Barley	96	3/1-5/15, 8/1-10/15	1.0		
	Foxtail Millet	30	5/16-7/31	0.5		
	Pearl Millet	20	5/16-7/31	0.5		

HOWARD COUNTY CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

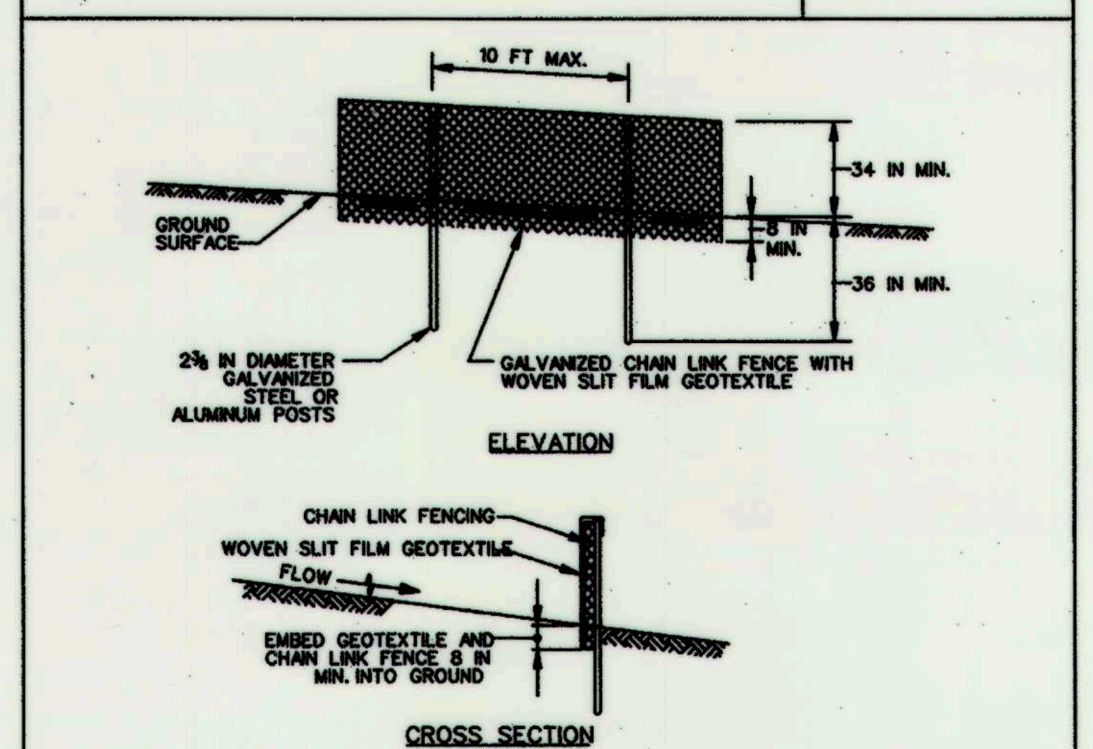
1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days as to all other disturbed or graded areas on the project site.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
5. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
6. Site Analysis:

LONG MEADOW POND	
Total Area of Site	0.89 Acres
Area Disturbed	0.89 Acres
Area to be roofed or paved	0.0 Acres
Area to be vegetatively stabilized	0.89 Acres
Total Cut	0 Cu. Yds.
Total Fill	0 Cu. Yds.
Offsite waste/borrow area location and permit	To Be Determined*

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
—SSF—



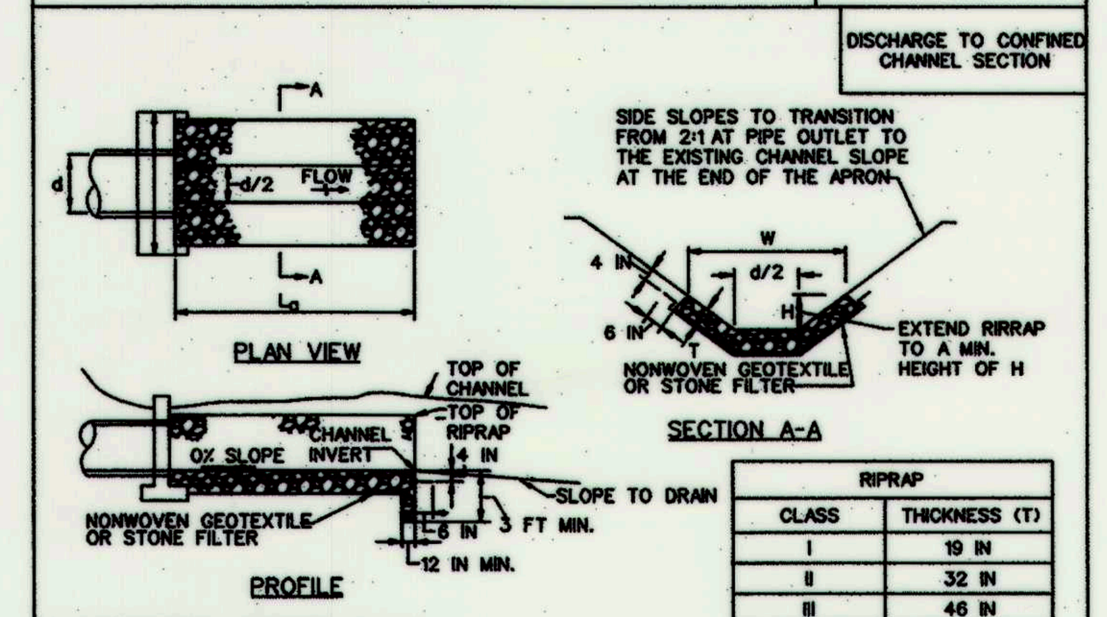
CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (6 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER 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 SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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 D-4-1-B ROCK OUTLET PROTECTION II

STANDARD SYMBOL
ROPII



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO ½ INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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

STATE OF MARYLAND
JAMES A. TOMLINSON
No. 31201
PROFESSIONAL ENGINEER
12/30/13

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. 31201, EXPIRATION DATE: JANUARY 24, 2015

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD — DATE 12/23/15

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 2/28/14

BY: Jacquelyn Krayenvenger Division: P053 Water Res GMA Emp
FILE: M:\2008\01081795.91\drawings\08_pES-N002-LM.dgn

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com
KCI TECHNOLOGIES

NO.	REVISIONS DESCRIPTION	DATE

KCI FILE: M:\2008\01081795.91\

LONG MEADOW SWM POND REPAIR
CAPITAL PROJECT D-1159
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

EROSION AND SEDIMENT CONTROL NOTES

SCALE:	AS SHOWN
DATE:	DECEMBER 2013
KCI JOB NO.:	01-081795.91
CAPITAL PROJECT NO.:	D-1159
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	