		SHEET INDEX
Sheet Number	Sheet Description	Sheet Title
1	TS-01	TITLE SHEET
2	EC-01	EXISTING CONDITIONS PLAN
3	GP-01	GRADING PLAN
4	PR-01	POND PROFILES
5	DE-01	GABION WALL AND PATH DETAILS
6	ST-01	RISER DEMOLITION (S-4)
7	ST-02	RISER DEMOLITION (S-5)
8	ST-03	RISER MODIFICATION (S-4)
9	ST-04	RISER MODIFICATION (S-5)
10	ST-05	RISER NOTES AND DETAILS
11	DA-01	DRAINAGE AREA MAP
12	SC-01	EROSION AND SEDIMENT CONTROL OVERALL
13	SC-02	EROSION AND SEDIMENT CONTROL PLAN
14	SC-03	EROSION AND SEDIMENT CONTROL DETAILS
15	SC-04	EROSION AND SEDIMENT CONTROL NOTES
16	LS-01	LANDSCAPE PLAN
17	LS-02	LANDSCAPE NOTES AND DETAILS

# LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

HOWARD COUTY, MARYLAND - DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENVIRONMENTAL SERVICES, STORMWATER MANAGEMENT DIVISION - CAPITAL PROJECT NO. D-1160

LOT 93

VILLAGE OF LONG REACH

SECTION 3, AREA 2

HOWARD COUNTY, MARYLAND

SCALE: 1"=2000'

HOWARD COUNTY

ADC MAP 4936 GRID A-8

- RE-GRADING/EXCAVATING THE EAST QUALITY POND TO INCREASE WATER QUALITY STORAGE
- ESTABLISHING OF A PERMANENT POOL IN THE EAST QUALITY POND
- MODIFYING THE RISER STRUCTURES IN THE EAST QUALITY AND WEST QUANTITY PONDS LANDSCAPING THE EAST QUALITY POND
- INSTALLING A PATH ALONG THE TOP OF THE BERM BETWEEN THE EAST QUALITY AND WEST QUANTITY PONDS

LANE (TO THE SOUTH) AND SNOWDEN RIVER PARKWAY (TO THE EAST). THE SITE IS BORDERED TO THE WEST BY EXISTING DELINEATED FOREST STANDS AND TO THE

THIS PROJECT DOES NOT ALTER THE EXISTING CONDITION FLOW PATTERNS OF THE SITE

THIS PROJECT WILL INCREASE THE IMPERVIOUS SURFACE OF THE LONG REACH HIGH SCHOOL CAMPUS PROPERTY VIA INSTALLATION OF THE PATH BETWEEN THE EAST QUALITY POND AND WEST QUANTITY POND. HOWEVER, IT WIL REDUCE EROSION ALONG THE TOP OF THE BERM DUE TO STUDENT USE AN INFORMAL FOOTPATH IN THAT

SITE IS AN EXISTING POND (AND THEREFORE A SUMP AREA), BYPASSING CLEAN WATER AROUND THE SITE IS THE MOST EFFECTIVE WAY OF PREVENTING SEDIMENT DISCHARGE INTO DOWNSTREAM WATERS. THE SEQUENCE OF CONSTRUCTION CALLS FOR TWO DIVERSION STRUCTURES WHICH DIVERT WATER INTO THE EAST QUALITY SNOWDEN RIVER PARKWAY AS WELL AS FROM THE SITE ITSELF. THEREFORE, DEWATERING IS PROPOSED FIRST ACITVELY VIA PUMPING SYSTEMS USING SUMP PITS AND FILTER BAGS UNTIL THE PROPOSED POND DRAIN PIPE IS INSTALLED, AND THEN PASSIVELY USING A VERTICAL DRAW DOWN DEVICE TO DEWATER SEDIMENT LADEN RUNOFF PRIOR TO DISCHARGING IT TO THE DOWNSTREAM STORM DRAIN SYSTEM. SILT FENCE IS PROPOSED TO FILTER WATER FROM THE SMALL AREAS ALONG THE PERIMETER OF THE SITE WHERE RUN OFF TRAVELS OFFSITE, PRIMLARILY ALONG THE SOUTH AND EAST SIDES AS WELL AS AROUND THE STAGING AND STOCKPILE AREA TEMPORARY STABILIZATION MATTING IS PROPOSED FOR ALL SLOPED SEEDED AREAS FOR RAPID STABILIZATION

## IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES

THIS SITE IS ALREADY DEVELOPED AND THE PROJECT OBJECTIVE IS TO RETROFIT AN EXISTING FACILITY. THEREFORE, ESD PLANNING TECHNIQUES AND PRACTICES ARE NOT RELEVANT TO THIS PROJECT.

# REQUEST FOR DESIGN MANUAL AND WAIVER PETITION FOR ENVIRONMENTAL AND STORMWATER DESIGN

THIS SITE IS ALREADY BUILT OUT AND THE PROJECT SCOPE IS THE RETROFIT OF AN EXISTING STORMWATER STRUCTURE. THE PROJECT SEEKS TO ADHERE TO STANDARD HOWARD COUNTY REGULATIONS, DESIGN MANUAL GUIDELINES AND STANDARDS AS MUCH AS POSSIBLE. A WAIVER IS REQUESTED AS DETAILED IN THE JUSTIFICATION SECTION OF THIS NARRATIVE.

## DESIGN CERTIFICATION

HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGN IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT 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 WI AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

HOMAS TURNER, JR., SENIOR VICE PRESIDENT RINTED NAME & TITLE

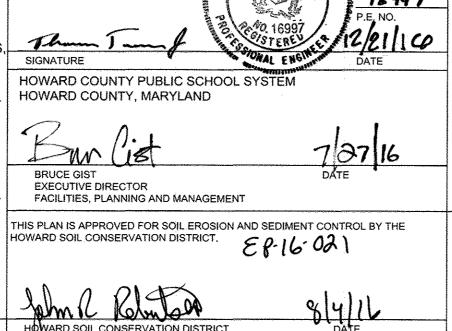
MD REGISTRATION NO. P.E., P.L.S., OR R.L.A. (CIRCLE ONE)

OWNER/DEVELOPER'S CERTIFICATION I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS AND THAT THE REPSONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT, <del>I SHALL</del> ENGAGE A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE I POND CONSTRUCTION, AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE THE POND WITHIN 30 DAYS OF

COMPLETION. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

MARK S. RICHMOND, CHIEF SWM DIVISION PRINTED NAME & TITLE

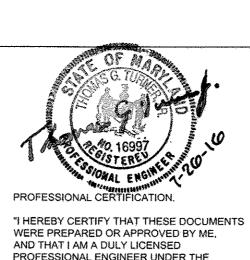
DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD 7/27/16



S-BUILT CERTIFICATION
ERTIFY THAT THE FACILITY SHOWN ON THIS PEAR WAS

ON THE 'AS-BUILT' PLANS AND MEETS T

PERMIT INFORMATION CHART VILLAGE OF LONG REACH | SECTION 3, AREA 2 AT# OR L/F GRID# ZONING TAX MAP NO. ELECT. DISTR. CENSUS TRACT 7 NT 36 6TH 6067.03 ATER CODE 3530000



LAWS OF THE STATE OF MARYLAND."

LICENSE NO.: 16997

EXPIRATION DATE: 07/19/2018

FLOODPLAIN AREA 0.00 FLOODPLAIN BUFFER AREA 0.00 FOREST STAND AREA 0.00 STEEP SLOPES (>=15%) 0.57 ACRES **ERODIBLE SOILS ERODIBLE SOILS AREA** 0.00 ACRES DISTURBED AREA 1.27 ACRES PROPOSED SITE USE 2,050 SF PROPOSED IMPERVIOUS AREA 0.05 ACRES

SITE AREA

WETLAND AREA

WETLAND BUFFER AREA

SITE ANALYSIS DATA SHEET (LOD)

1.27

0.00

0.00

ACRES

**ACRES** 

**ACRES** 

**ACRES** 

ACRES

ACRES

NONE

**SWM** 

NOTE: SEE SHEETS EC-01, GP-01, AND SC-01 FOR PLAN **LEGENDS** OURSEADY OF THURSONIESTAL HARAOTO

	SUMMARY OF ENVIRONMENTAL IMPACTS						
REE REMOVAL (EA)	STREAM Disturbance (LF)	WETLAND DISTURBANCE (SF)	LIMIT OF DISTURBANCE (SF)	LIMIT OF DISTURBANCE (AC)	CUT (CY)	FILL (CY)	NET (CY)
10	0	0	55,295	1.27	3,100	2,050	1,050 (CUT)

### **GENERAL NOTES:**

- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410.313.1880 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1.800.257.7777 AT LEAST TWO (2) WORKING DAYS BEFORE STARTING WORK
- THE HORIZONTAL AND VERTICAL CONTROL FOR THESE PLANS ARE BASED ON THE MARYLAND STATE SYSTEM OF PLANE COORDINATES AS ESTABLISHED FROM THE FOLLOWING HOWARD COUNTY CONTROL POINTS.
- 36F1 NORTHING 560287.912 EASTING 1364530.276 ELEVATION 426.213 NORTHING 558667.508 EASTING 1366857.542 ELEVATION 379.793 2.3. 37DB NORTHING 560307.393 EASTING 1366898.240 ELEVATION 395.472
- THE SYSTEM OF COORDINATES USED IS BASED ON THE FOLLOWING DATUMS: HORIZONTAL: MARYLAND STATE PLANE NAD OF 1983/2011
- 3.2. VERTICAL: NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 GEOID 12A 4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- TOPOGRAPHIC SURVEYS WERE PERFORMED BY AB CONSULTANTS IN DECEMBER 201
- PROPERTY LINES AND EASEMENTS SHOWN ON THIS PLAN ARE APPROXIMATE AND
- SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS. THE COUNTY IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE COUNTY. THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
- 8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS TECHNIQUES. SEQUENCES. PROCEDURES, AND SAFETY PRECAUTIONS AND
- AVAILABLE PLANS, RECORDS, AND/OR FIELD RECONNAISSANCE. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO LOCATE AND 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
- 9.1. UTILITY CONTACTS: BALTIMORE GAS AND ELECTRIC - ELECTRIC: 410,597,7920 BALTIMORE GAS AND ELECTRIC - GAS: 410.224.9285
- 9.1.4. COMCAST 301.630.7094 10. THE WETLAND DELINEATION FOR THIS SITE WAS PERFORMED BY CENTURY **ENGINEERING IN NOVEMBER 2014.**
- 11. A WETLANDS PERMIT IS NOT REQUIRED FOR THIS PROJECT. 12. THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS HAS NO OBLIGATION OF
- REFORESTATION ON THIS PROJECT. 13. ALL SPECIFIED OR PROPRIETARY PRODUCTS SHOWN HEREON MAY BE SUBJECT TO SUBSTITUTION WITH OTHER PRODUCTS RECOMMENDED BY THE CONTRACTOR SUBJECT TO WRITTEN REVIEW AND APPROVAL BY THE COUNTY.

- THIS WORK TAKES PLACE IN USE I WATERS. IN-STREAM WORK IS PROHIBITED BETWEEN MARCH 1 AND JUNE 15 OF ANY CALENDAR YEAR INCLUSIVE.
- 2. NO REGULATED FEMA FLOOD PLAINS ARE LOCATED IN THE AREA (FEMA FIRM
- 240270160D EFFECTIVE NOVEMBER 2013) 3. NATURAL RESOURCES DELINEATED ON THIS PLAN WERE FIELD VERFIEID BY CENTURY ENGINEERING UNDER THE DIRECTION OF REBECCA HARRIS, A MARYLAND
- DEPARTMENT OF NATURAL RESOURCES QUALIFIED PROFESSIONAL IN NOVEMBER/DECEMBER 2014. 4. THE SITE IS NOT LOCATED IN NOR DOES IT DISCHARGE TO A TIER II WATERBODY. THE SITE IS LOCATED IN THE LITTLE PATUXENT RIVER WATERSHED. THIS PORTION OF THE WATERSHED IS NOTED AS IMPAIRED BY THE MARYLAND DEPARTMENT OF THE
- ENVIRONMENT FOR THE FOLLOWING POLLUTANTS: TOTAL SUSPENDED SOLIDS, 6. THE CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER FORECASTS DURING
- WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS. 7. THE CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES THAT INVOLVE CUTTING, FILLING, OR GRADING IN THE VICINITY OF TREES THAT ARE TO REMAIN. THESE ACTIVITIES SHALL BE PERFORMED IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE WITHIN THE DRIP LINE OF THE TREE. PROTECTIVE ORANGE FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF THE CRITICAL ROOT
- ZONE PRIOR TO CONSTRUCTION. 8. THE CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS, AND/OR SUPPLIES
- BEYOND THE ORANGE FENCING SHOWN ON THE PLANS. 9. 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. 10. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN BY THE CONTRACTOR.
- 11. TREES WITHIN THE "NO WOODY VEGETATION ZONE" SHOWN ON THE PLANS SHALL BE REMOVED ACCORDING TO TECHNICAL NOTE 705, "OPERATIONS AND MAINTENANCE ALTERNATIVES FOR REMOVING TREES ON DAMS". ALL OTHER TREES TO BE REMOVED SHALL BE CUT AT THE BASED WITH A SAW AND NOT PUSHED OVER. TREE STUMPS
- MAY BE LEFT IN PLACE, UNLESS OTHERWISE DIRECTED ON THE PLANS. 12. ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE. REMOVED TREES AND BRUSH MAY BE REDISTRIBUTED ON SITE AT THE DISCRETION OF THE COUNTY.
- 13. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXITING THE PROJECT SITE AND PAY CLOSE ATTENTION TO PEDESTRIANS WALKING NEAR THE PROJECT SITE.

14. WORKING HOURS ARE 7AM TO 7PM MONDAY THROUGH FRIDAY

- 15. THE CONTRACTOR SHALL AVOID TRACKING HEAVY EQUIPMENT OVER THE CRITICAL ROOT ZONE OF SPECIMEN TREES. IF UNAVOIDABLE, SPECIAL PRECAUTIONS SHOULD BE USED WHEN TRACKING OVER THE CRITICAL ROOT ZONES

CALL "MISS UTILITY" AT 1.800.257.7777, 48 HOURS PRIOR TO THE START OF WORK, THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF THE PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.

**HOWARD COUNTY** DEPARTMENT OF PUBLIC WORKS BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143 PHONE: 410.313.6413

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

LAND OWNER:

10910 CLARKSVILLE PIKE

PHONE: 410,313,6600

ELLICOTT CITY, MARYLAND 21042

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SITE INFORMATION

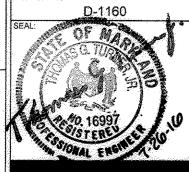
STREET ADDRESS: 6101 OLD DOBBIN LANE COLUMBIA, MARYLAND 21045

VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 **ELECTION DISTRICT: 6** ZONING: NEW TOWN PLAT NO.: 11270-11273

**CONSULTING ENGINEERS - PLANNERS** 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

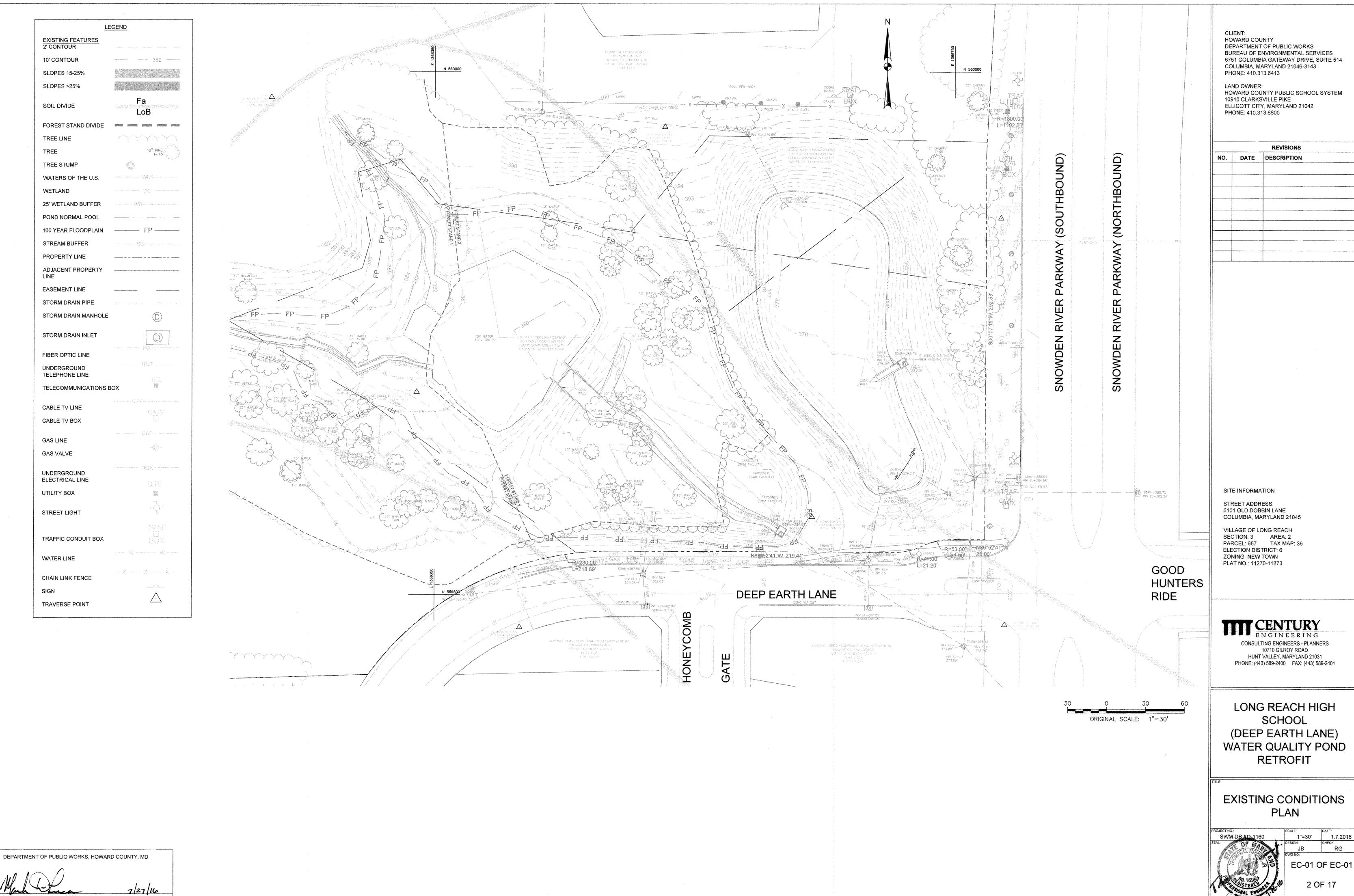
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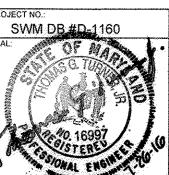
TS-01 OF TS-01 1 OF 17

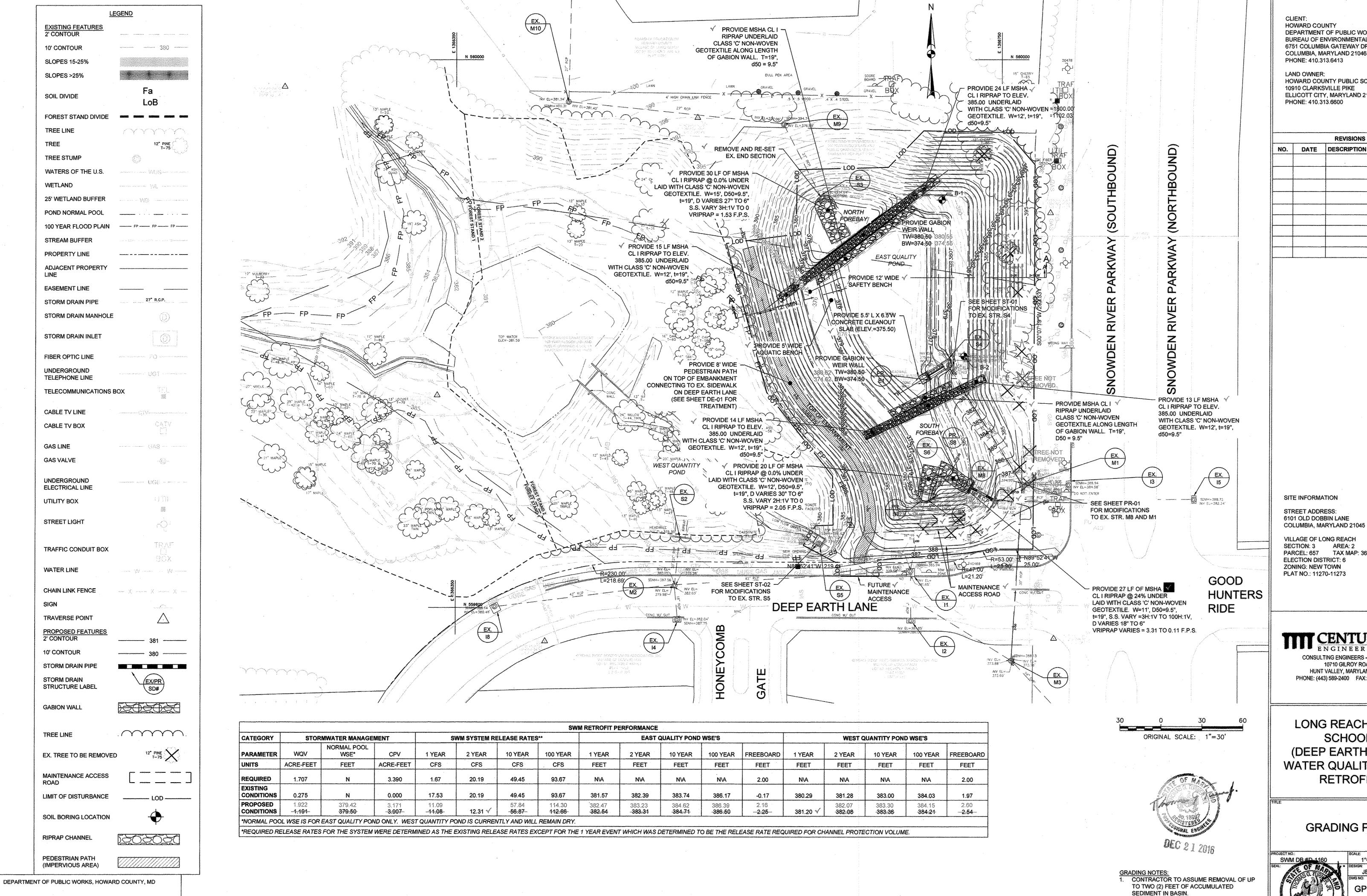
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EP-16-021



CHIEF, BUREAU OF ENVIRONMENTAL SERVICES





DEPARTMENT OF PUBLIC WORKS BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143

HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 CLARKSVILLE PIKE ELLICOTT CITY, MARYLAND 21042

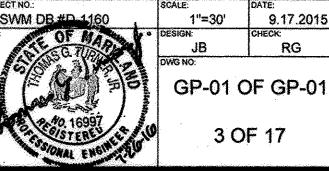
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PARCEL: 657 TAX MAP: 36

**CONSULTING ENGINEERS - PLANNERS** 10710 GILROY ROAD **HUNT VALLEY, MARYLAND 21031** PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

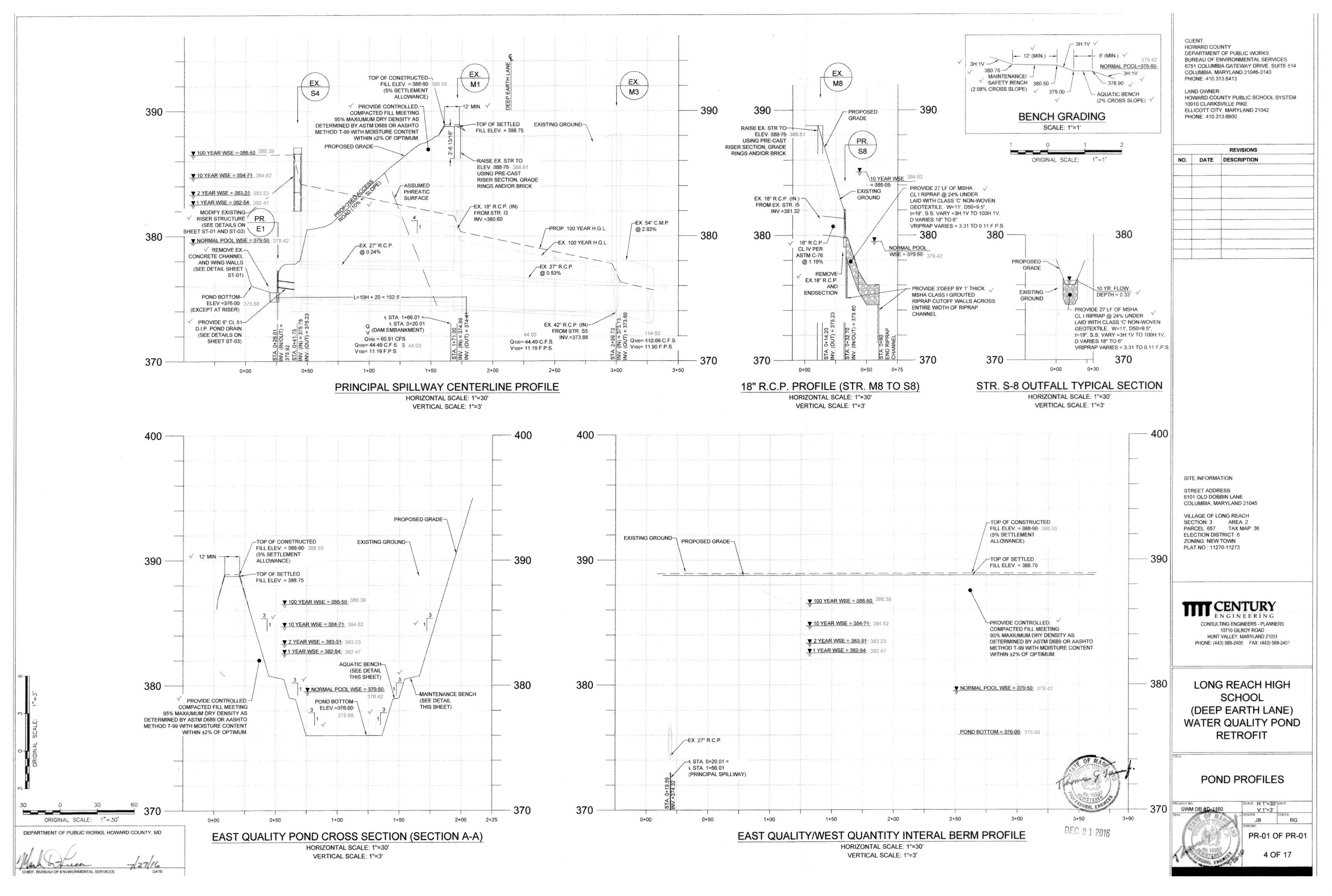
**GRADING PLAN** 

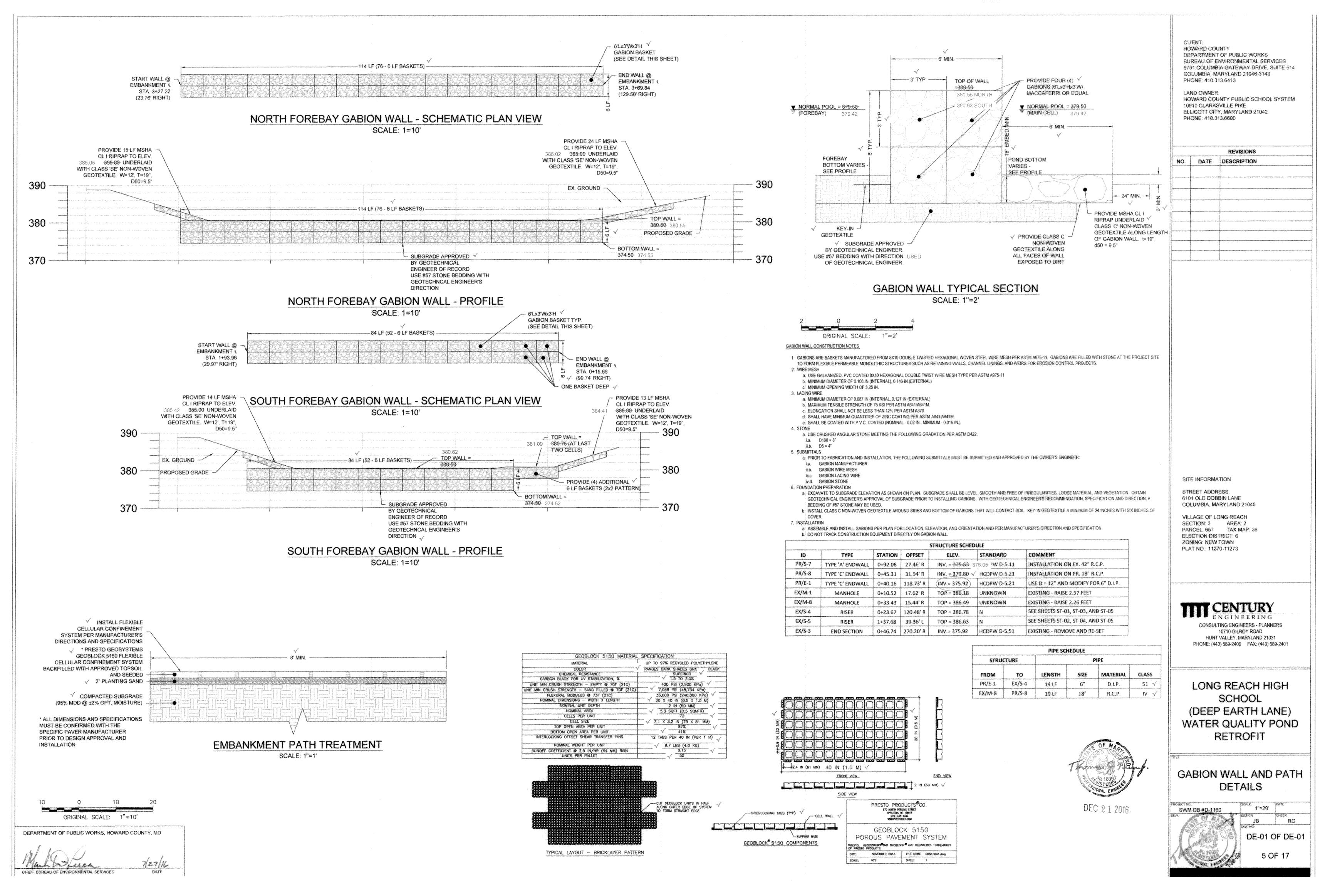


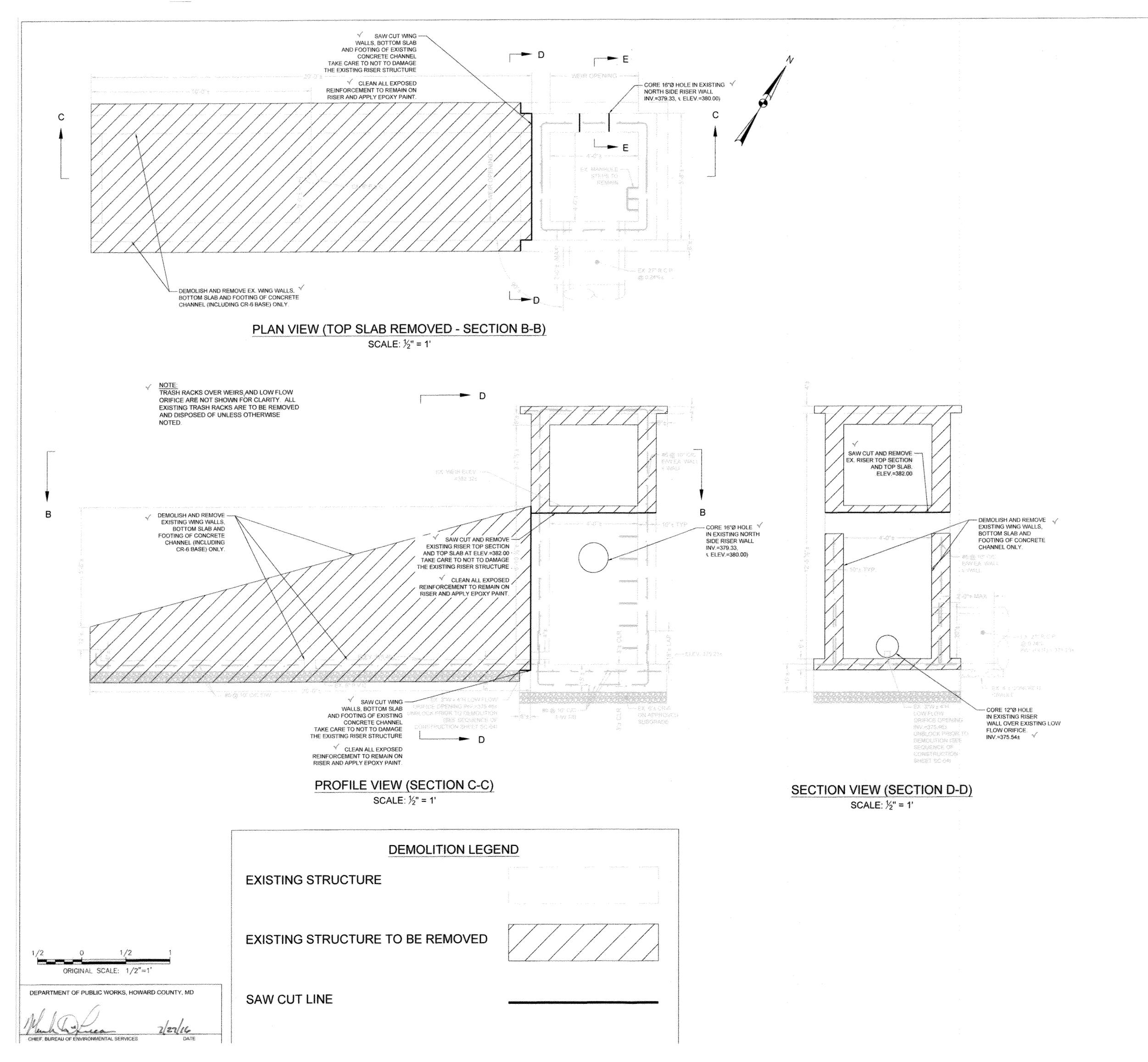
2. IF CONTRACTOR ENCOUNTERS ROCK DURING GRADING OPERATIONS,

COURSE OF ACTION.

CONTRACTOR SHALL CONTACT THE **ENGINEER IMMEDIATELY TO DETERMINE** 







CLIENT:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MARYLAND 21046-3143
PHONE: 410.313.6413

LAND OWNER:
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 CLARKSVILLE PIKE
ELLICOTT CITY, MARYLAND 21042
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SITE INFORMATION

STREET ADDRESS: 6101 OLD DOBBIN LANE COLUMBIA, MARYLAND 21045

VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 ELECTION DISTRICT: 6 ZONING: NEW TOWN PLAT NO.: 11279-11273

# THE CENTURY ENGINEERING

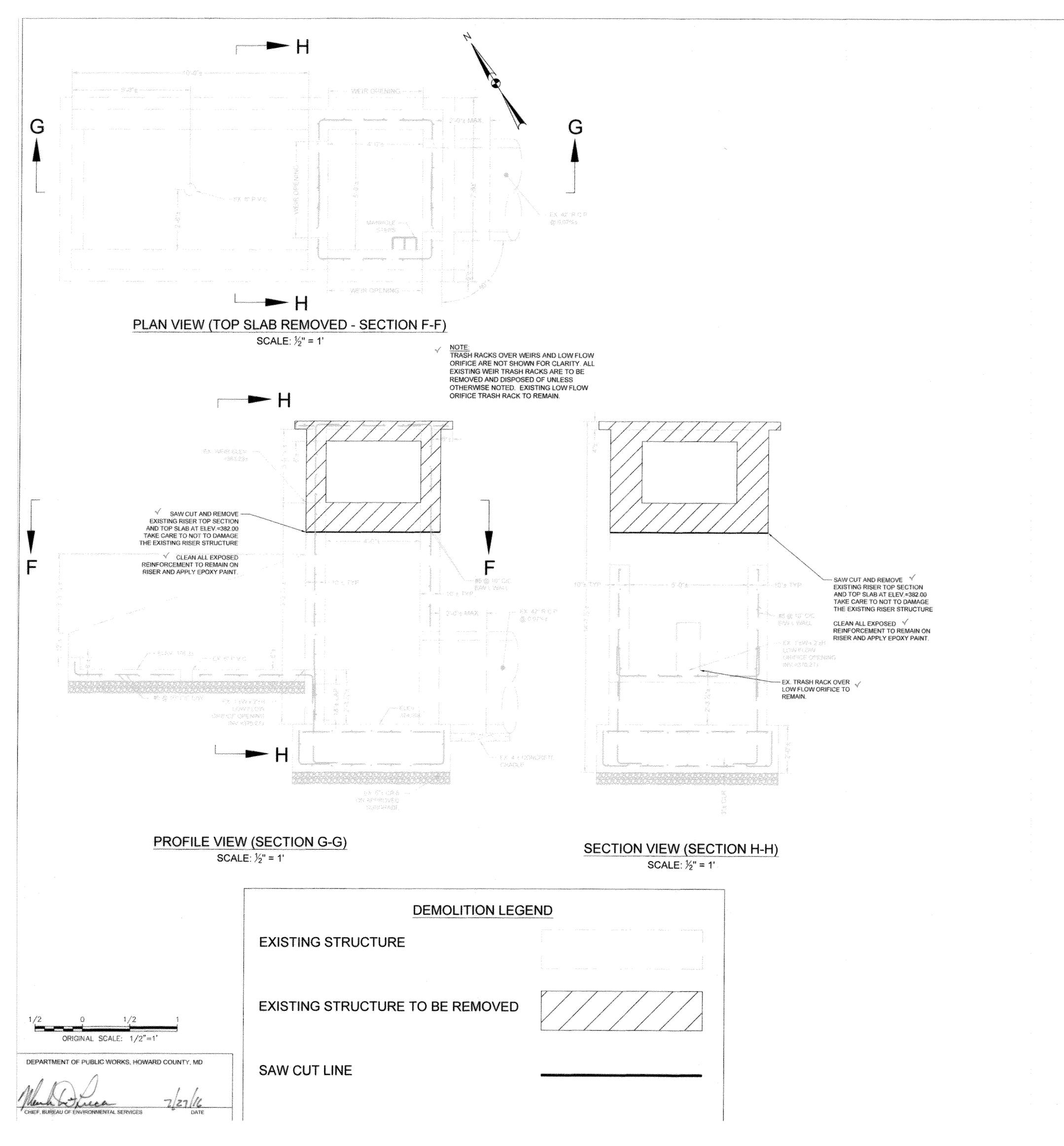
CONSULTING ENGINEERS - PLANNERS 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH
SCHOOL
(DEEP EARTH LANE)
WATER QUALITY POND
RETROFIT

RISER DEMOLITION (S-4)



DEC 21 2016



CLIENT:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MARYLAND 21046-3143
PHONE: 410.313.6413

LAND OWNER:
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VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 ELECTION DISTRICT: 6 ZONING: NEW TOWN PLAT NO.: 11270-11273

# THE CENTURY

E N G I N E E R I N G
CONSULTING ENGINEERS - PLANNERS
10710 GILROY ROAD
HUNT VALLEY, MARYLAND 21031
PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

RISER DEMOLITION (S-5)

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SWM DB #D-1160

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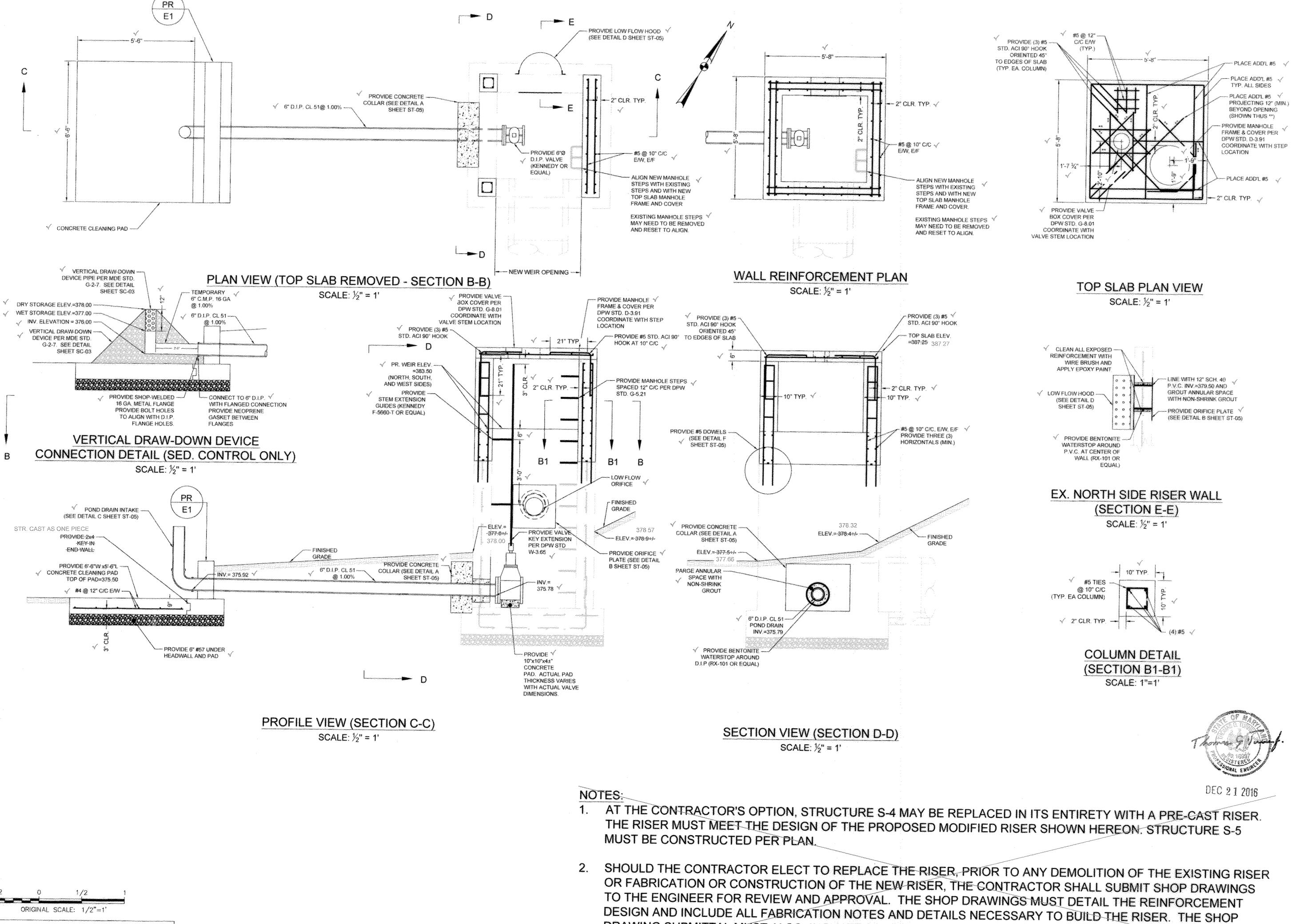
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DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

THEF, BUREAU OF ENVIRONMENTAL SERVICES

DRAWING SUBMITTAL MUST ALSO INCLUDE SUPPORTING DESIGN CALCULATIONS AND ANALYSIS FOR THE

REINFORCEMENT AND THE GLOBAL STABILITY OF RISER AGAINST FLOATATION WITH A MINIMUM FACTOR OF

CLIENT:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MARYLAND 21046-3143

PHONE: 410.313.6413

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ELLICOTT CITY, MARYLAND 21042
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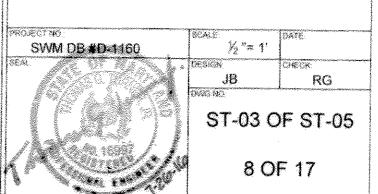
VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 ELECTION DISTRICT: 6 ZONING: NEW TOWN PLAT NO.: 11270-11273

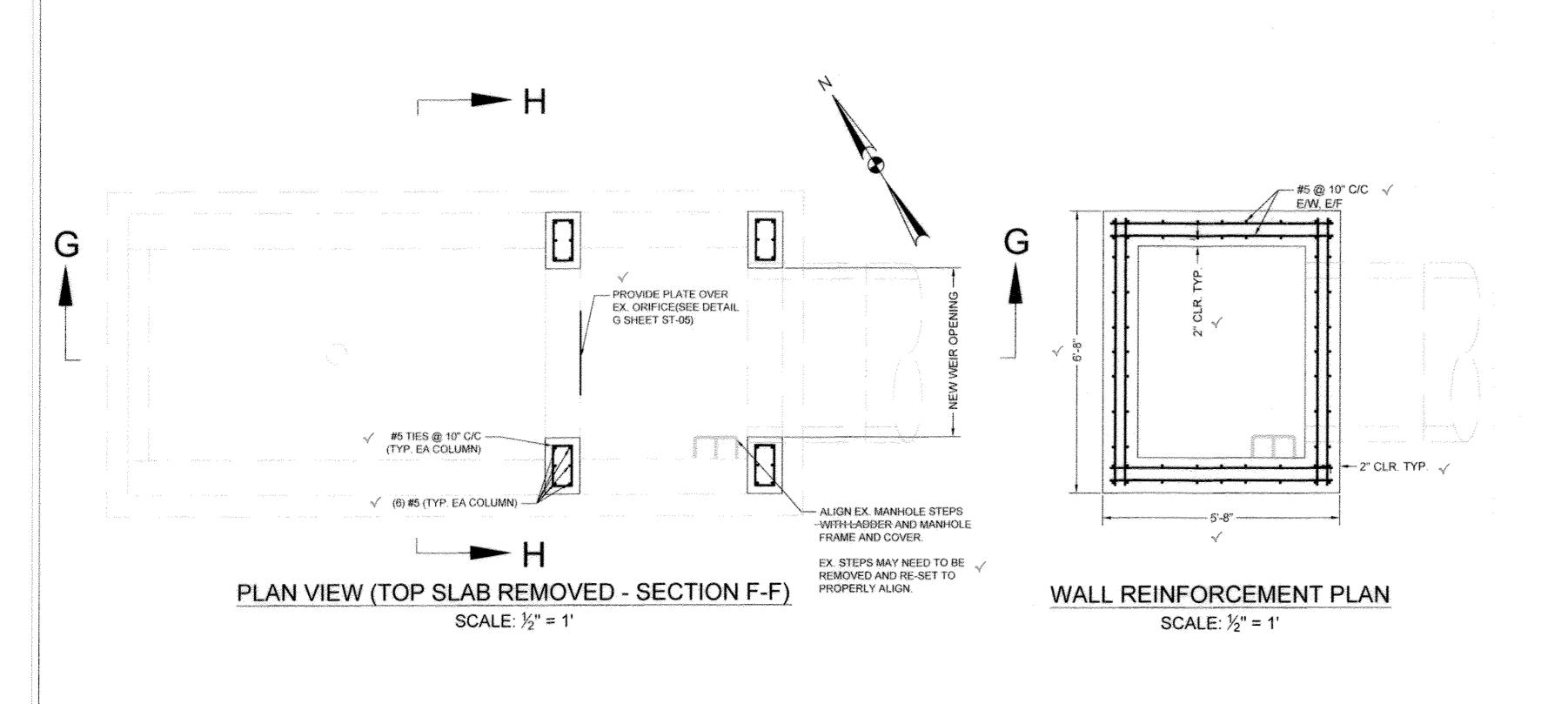
# THE CENTURY ENGINEERING

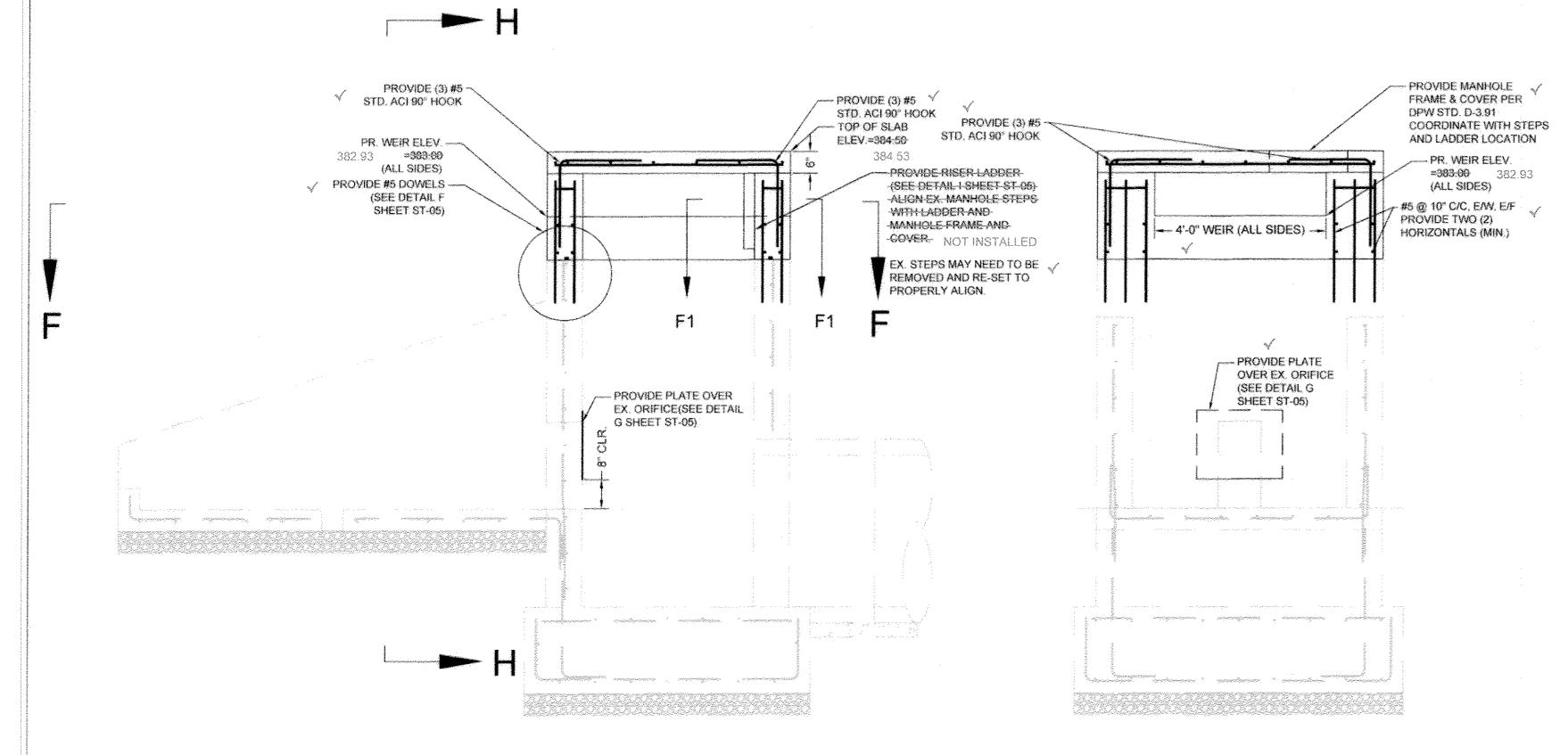
CONSULTING ENGINEERS - PLANNERS
10710 GILROY ROAD
HUNT VALLEY, MARYLAND 21031
PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

RISER MODIFICATION (S-4)



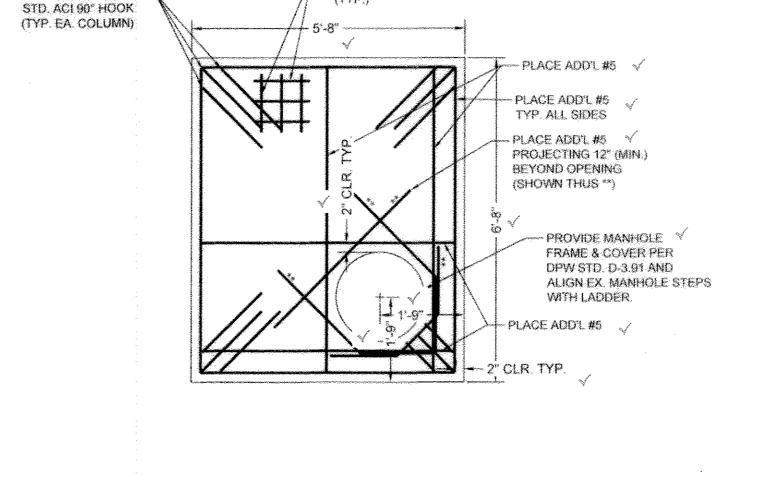




PROFILE VIEW (SECTION G-G)

SCALE: ½" = 1"

SECTION VIEW (SECTION H-H)
SCALE: ½" = 1'



— #5 @ 12" C/C E/W (TYP.)

▼ PROVIDE (3) #5 -

TOP SLAB PLAN VIEW

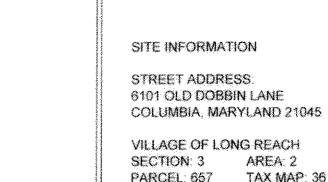
SCALE: 1/2" = 1'

#5 TIES @ 10" C/C
(TYP. EA COLUMN)

(6) #5
(TYP. EA COLUMN)

COLUMN DETAIL (SECTION F1-F1)

SCALE: 1"=1"



VILLAGE OF LONG REACH
SECTION: 3 AREA: 2
PARCEL: 657 TAX MAP: 36
ELECTION DISTRICT: 6
ZONING: NEW TOWN
PLAT NO:: 11270-11273

CLIENT:

HOWARD COUNTY

PHONE: 410.313.6413

10910 CLARKSVILLE PIKE

PHONE: 410.313.6600

LAND OWNER:

DEPARTMENT OF PUBLIC WORKS

COLUMBIA, MARYLAND 21046-3143

ELLICOTT CITY, MARYLAND 21042

DATE DESCRIPTION

BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

REVISIONS

# CENTURY ENGINEERING

CONSULTING ENGINEERS - PLANNERS

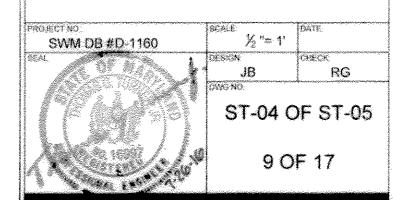
10710 GILROY ROAD

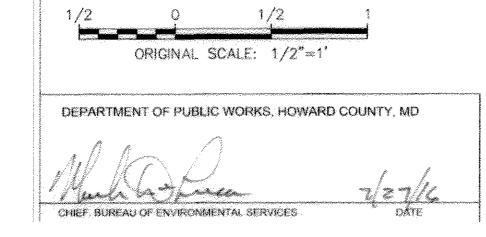
HUNT VALLEY, MARYLAND 21031

PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH
SCHOOL
(DEEP EARTH LANE)
WATER QUALITY POND
RETROFIT

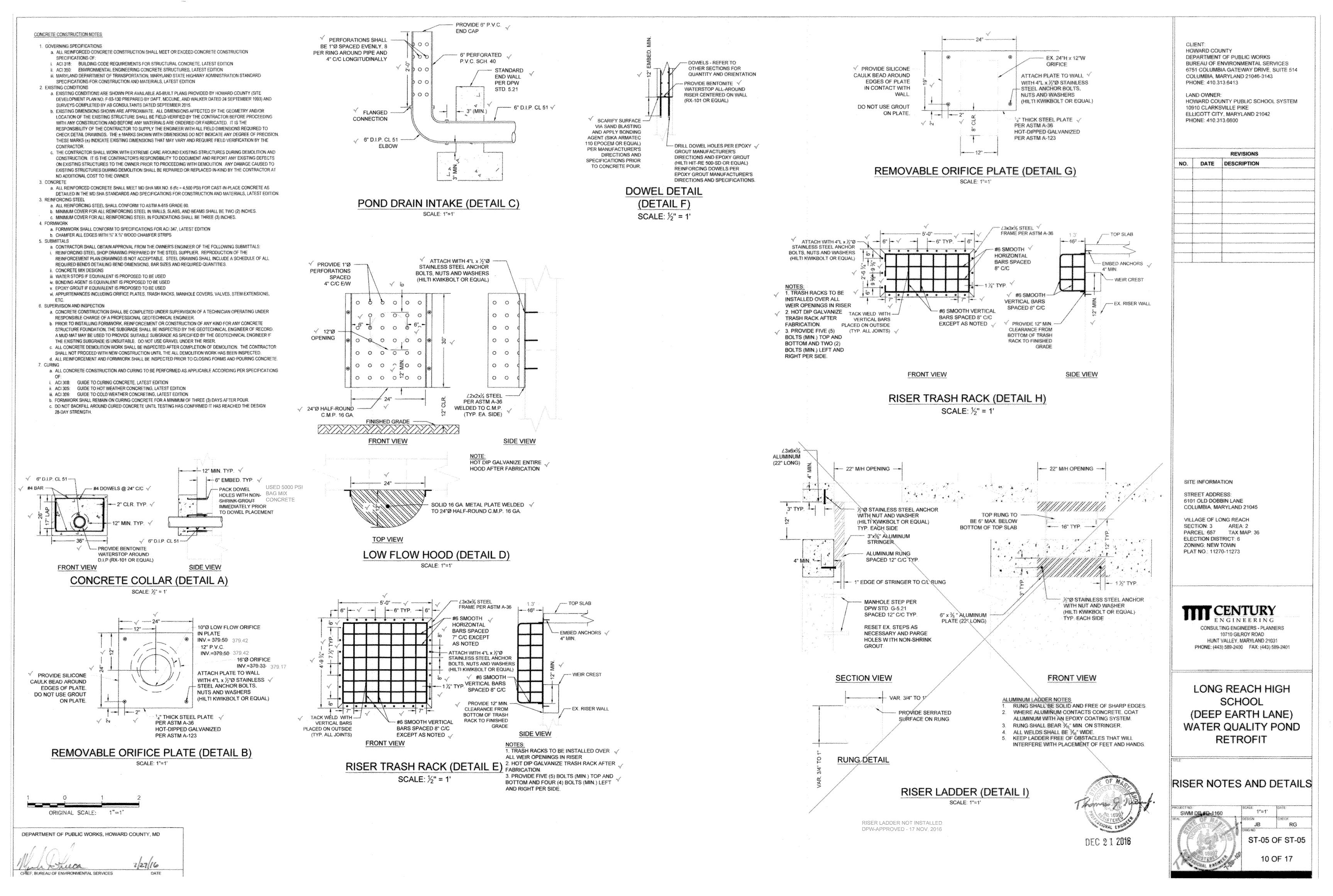
RISER MODIFICATION (S-5)

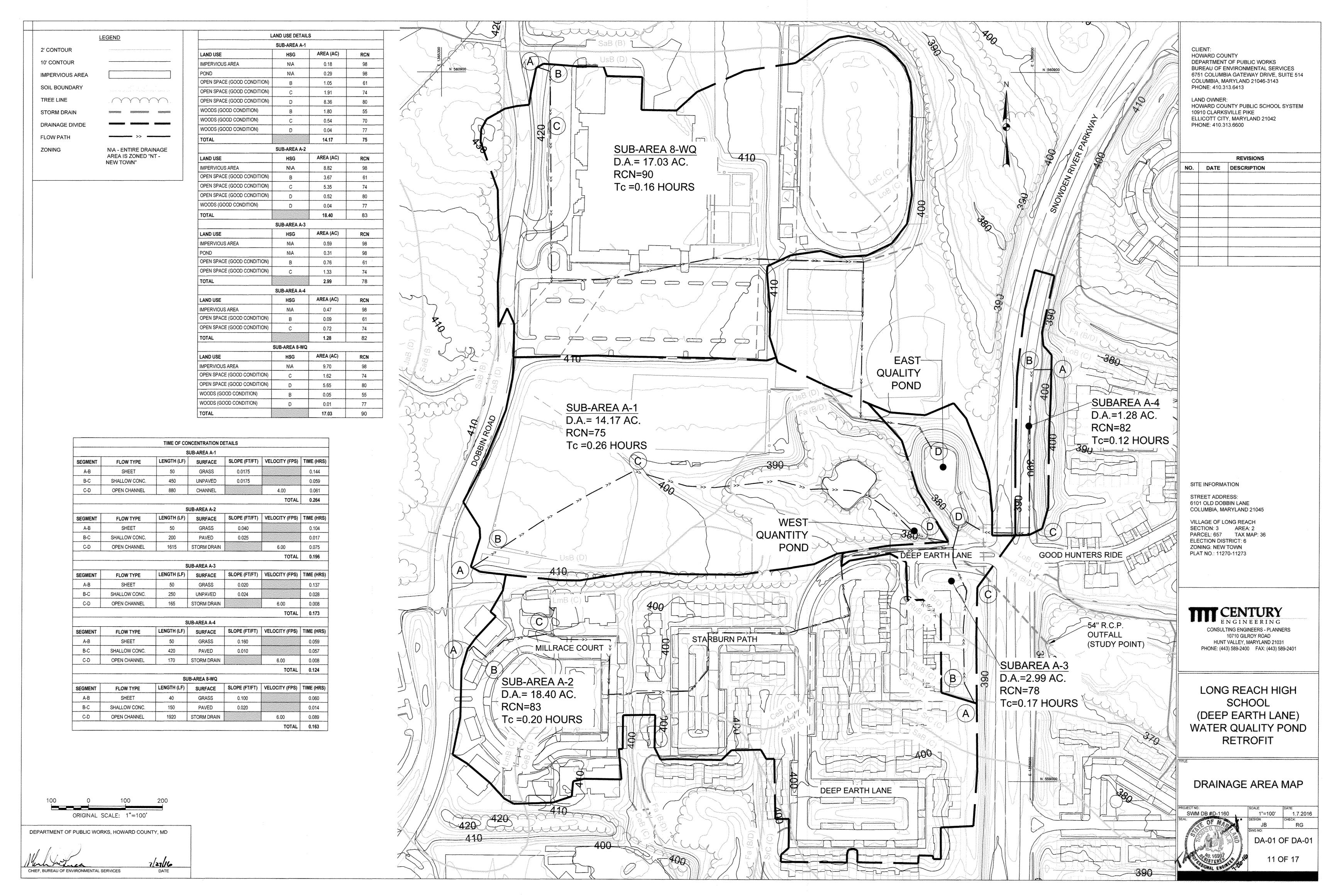


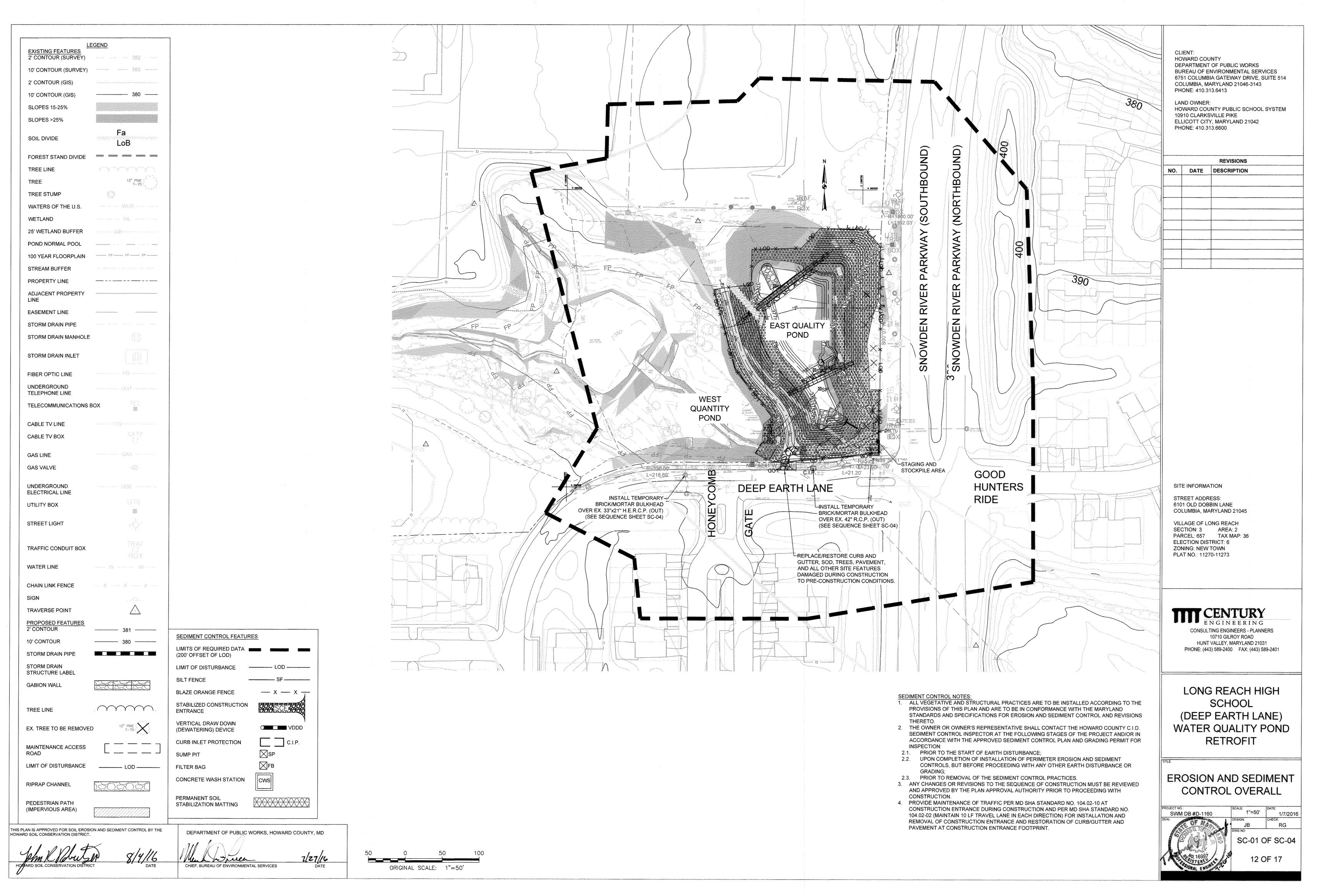


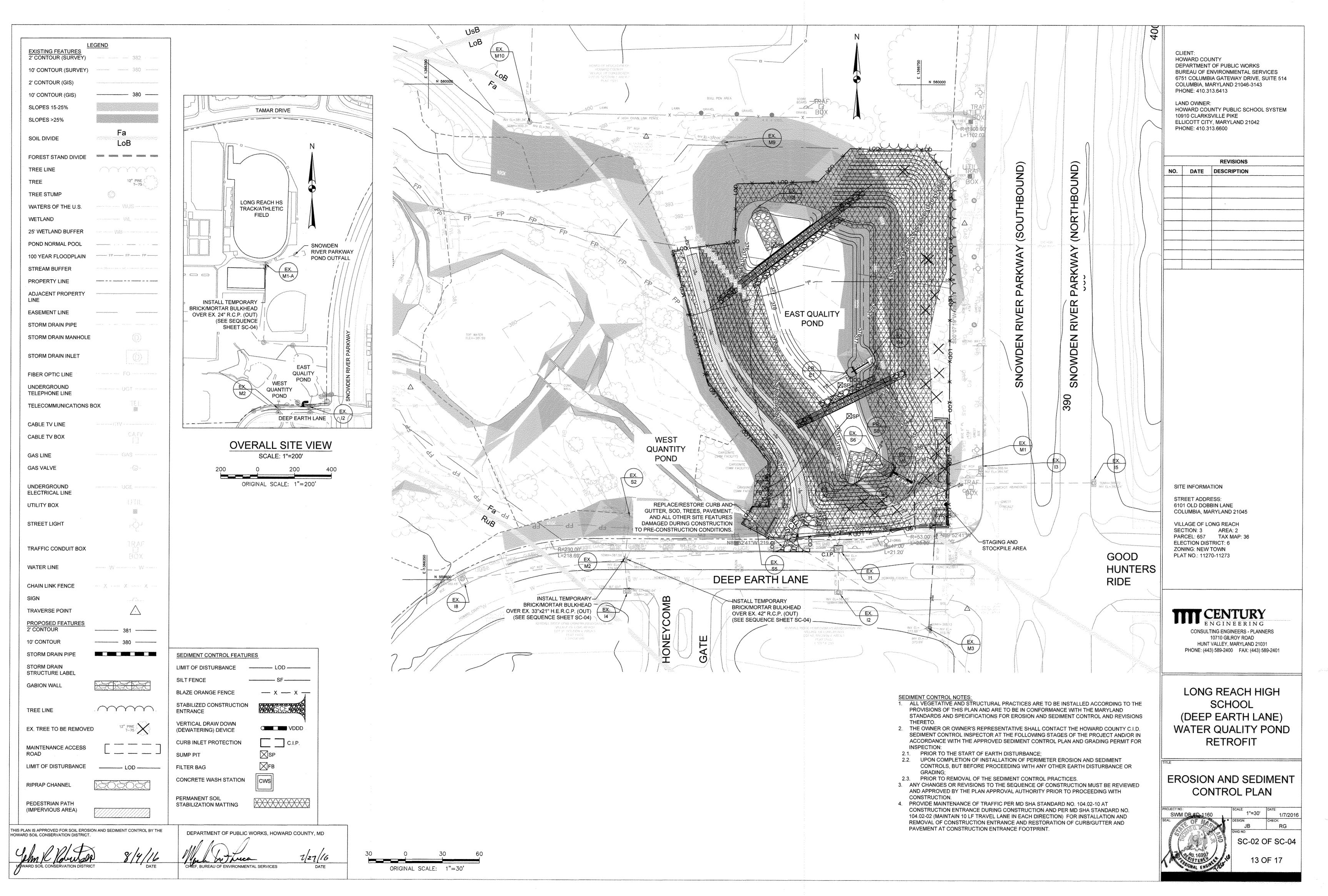


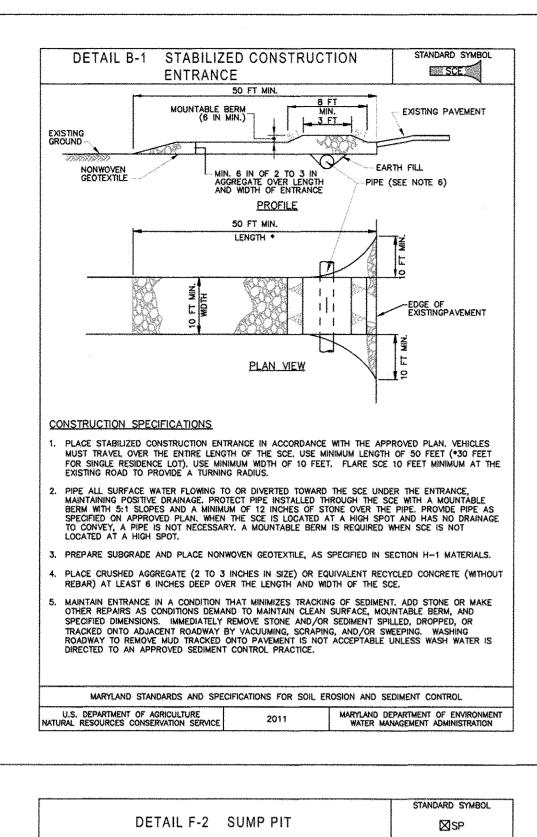
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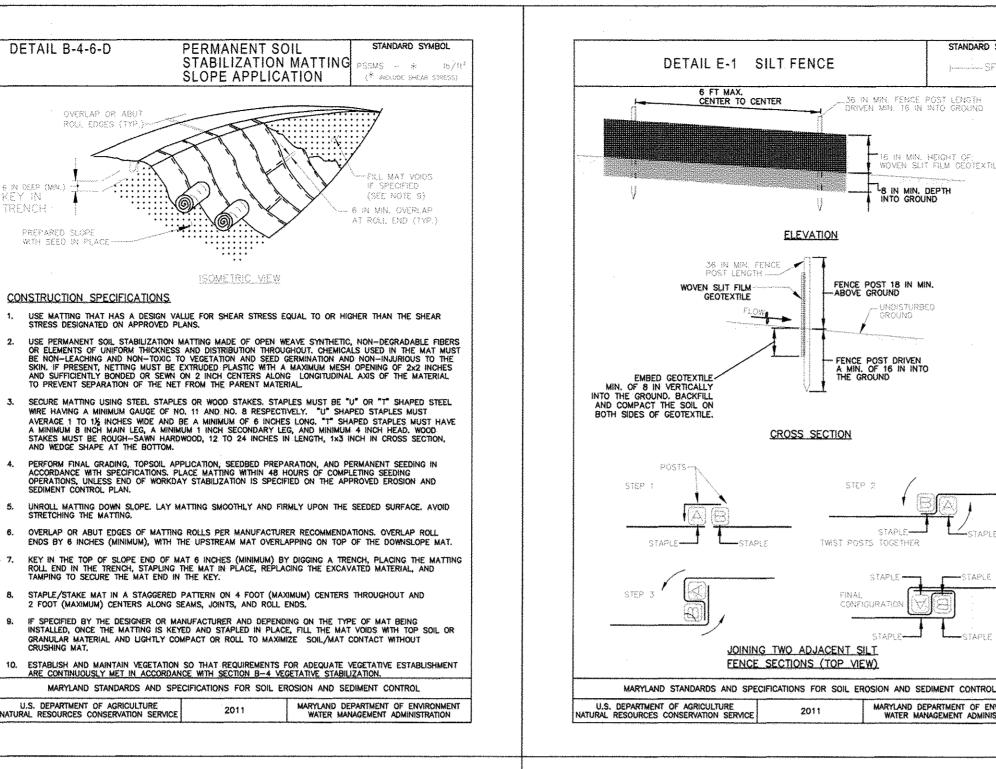


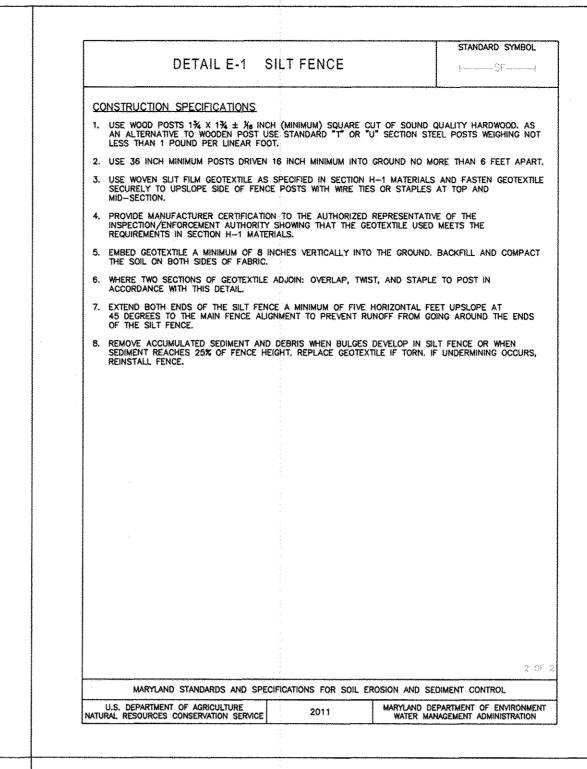


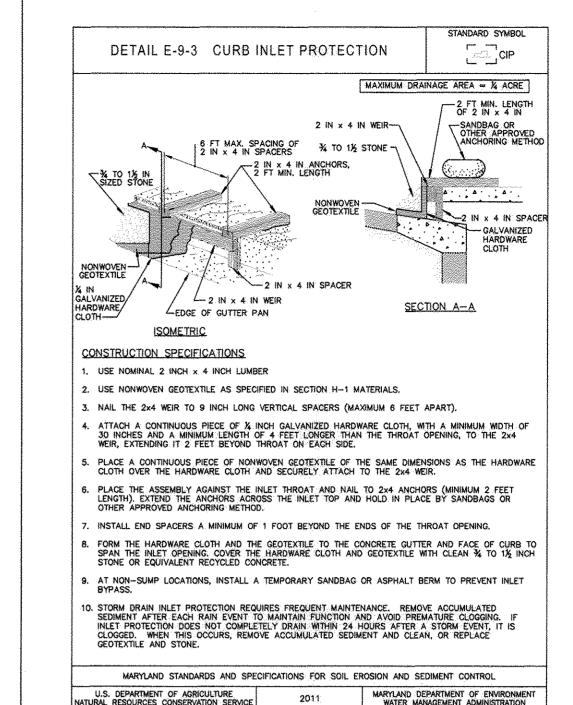


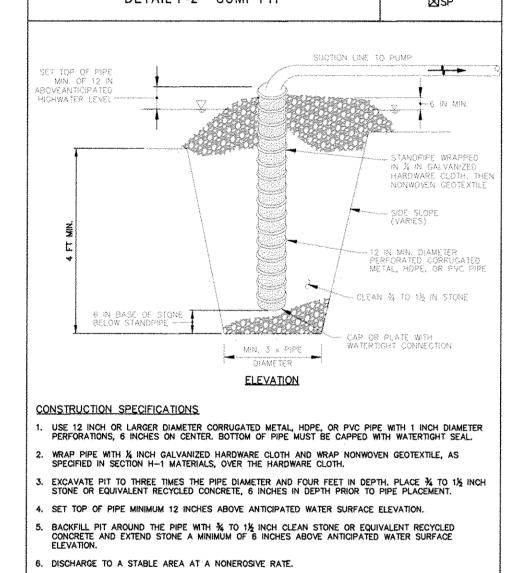


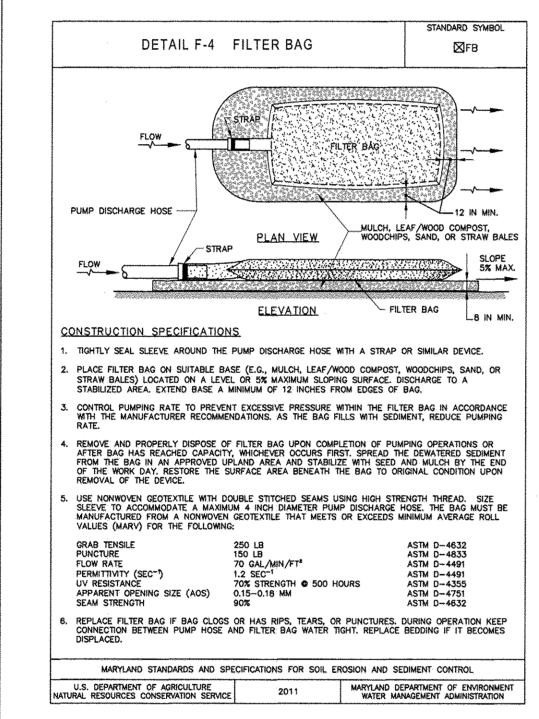


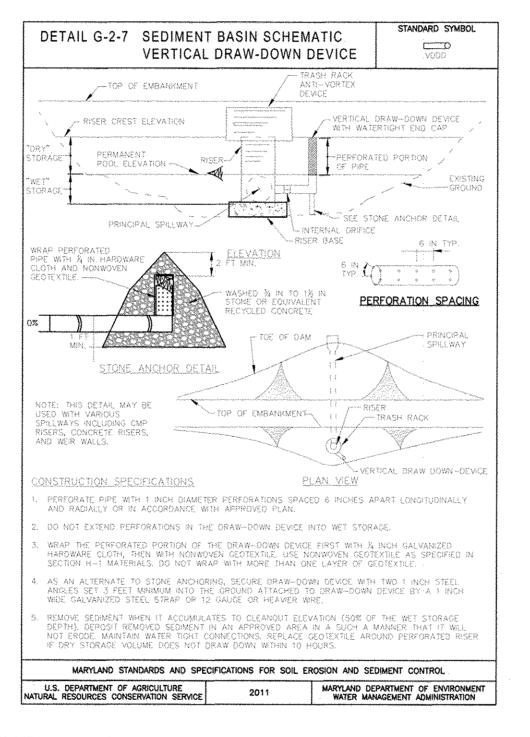




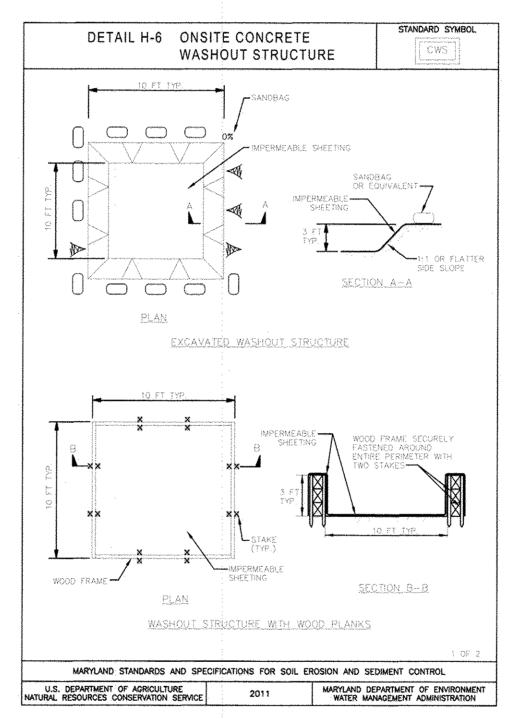


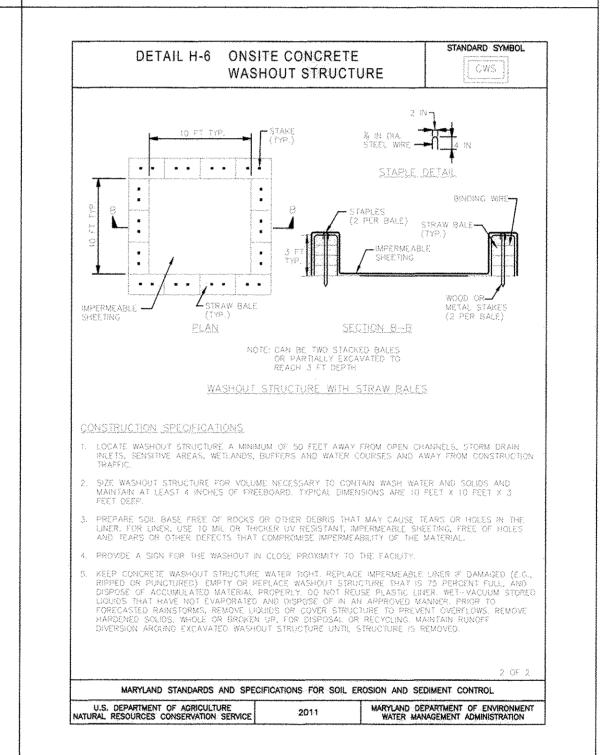


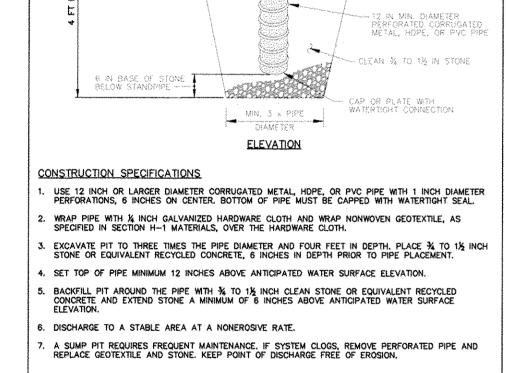




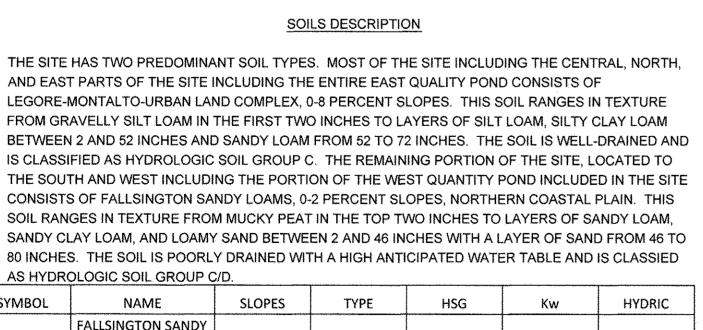
DIVERSION STRUCTURE EX. M-2





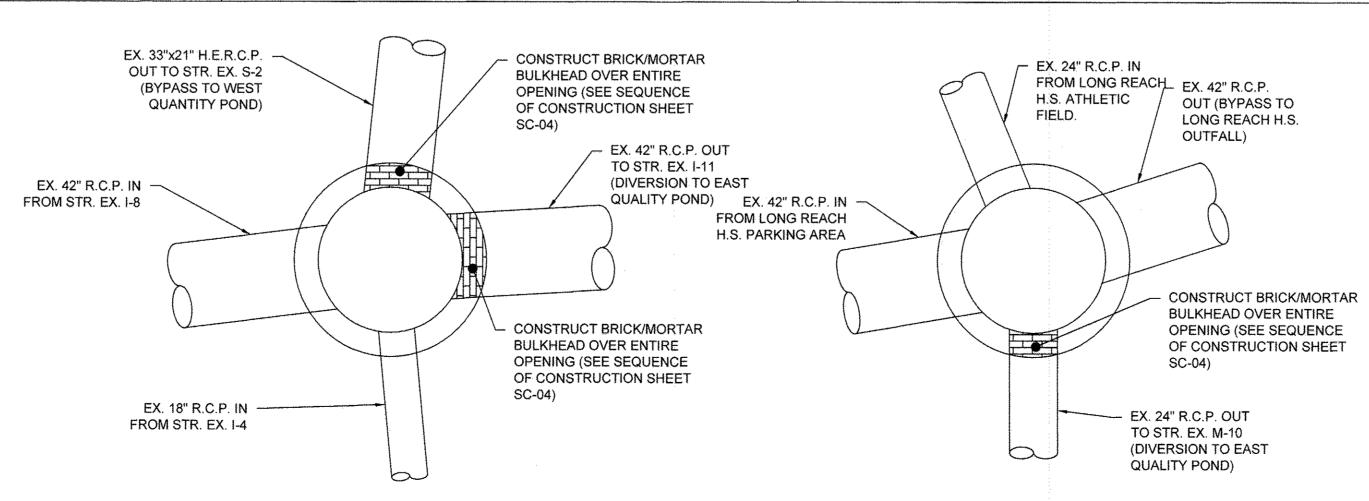


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

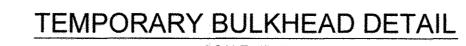


MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

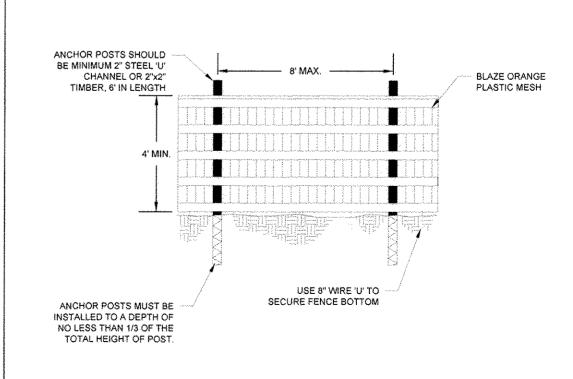
SYMBOL	NAME	SLOPES	TYPE	HSG	Kw	HYDRIC
Fa	FALLSINGTON SANDY LOAM	0-2%	SANDY LOAM	C/D	0.2400	YES
LoB	LEGORE-MONTALTO- URBAN LAND COMPLEX	0-8%	SILTY LOAM - SILTY CLAYEY LOAM	С	0.3200	NO



James S. P. S. P.



**DIVERSION STRUCTURE EX. M-1A** 



## BLAZE ORANGE PLASTIC FENCE

1. PROTECTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS. 2. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED AND FLAGGED PRIOR

NOT TO SCALE

TO INSTALLING DEVICES. 3. AVOID DAMAGE TO CRITICAL ROOT ZONES. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING.

4. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

CLIENT: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143 PHONE: 410.313,6413

LAND OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 CLARKSVILLE PIKE ELLICOTT CITY, MARYLAND 21042 PHONE: 410.313.6600

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NO.	DATE	DESCRIPTION	
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SITE INFORMATION

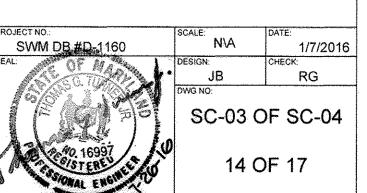
STREET ADDRESS: 6101 OLD DOBBIN LANE COLUMBIA, MARYLAND 21045

VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 **ELECTION DISTRICT: 6** ZONING: NEW TOWN PLAT NO.: 11270-11273

CONSULTING ENGINEERS - PLANNERS 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

**EROSION AND SEDIMENT CONTROL DETAILS** 



7/27/16 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

HOWARD SOIL CONSERVATION DISTRICT STANDARD EROSION AND SEDIMENT CONTROL NOTES A PRE-CONSTRUCTION MEETING MUST BE CONDUCTED WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (C.I.D.), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO C.I.D. MUST BE GIVEN AT THE FOLLOWING STAGES: PRIOR TO THE START OF EARTH DISTURBANCE, 1.2. UPON COMPLETION OF THE INSTALLATION OF PERIMETER SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER

FOR THOSE AREAS UNDER ACTIVE GRADING. 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 TOPSOIL (SEC. B-4-2), 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 APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6). 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 C.I.D.

THAN 3H:1V; AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT

SITE ANALYSIS: TOTAL AREA OF SITE: 55,295 SF (1.27 ACRES) AREA DISTURBED 55,295 SF (1.27 ACRES) AREA TO BE ROOFED OR PAVED 2,050 SF (0.05 ACRES) AREA TO BE VEGETATIVELY STABILIZED 39,345 SF (0.90 ACRES (AREA ABOVE NORMAL POOL) 3,100 CY TOTAL FILL 2,050 CY

OFFSITE WASTE/BORROW AREA LOCATION TBD BY CONTRACTOR\* ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

ANY SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE C.I.D. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)

8.3.

8.12.

NAME AND TITLE OF INSPECTOR WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)

BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G. PERCENT COMPLETE) AND/OR CURRENT

8.6. **EVIDENCE OF SEDIMENT DISCHARGES** 8.7. **IDENTIFICATION OF PLAN DEFICIENCIES** 

IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE 8.8. IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS 8.9. 8.10.

COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS 8.11. **PHOTOGRAPHS** 

8.13. MAINTENANCE AND/OR CORRECTIVE ACTION REQUIRED OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER 8.14. ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE)

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION, MINOR REVISIONS MAY BE ALLOWED BY THE C.I.D. PER THE LIST OF HSCD-APPROVED FIELD CHANGES. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. 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 C.I.D. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THEC.I.D., NO MORE

THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UP BY 2' IN ELEVATION. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS

(INCLUSIVE):

USE I AND I-P (MARCH 1 - JUNE 15) 15.2. USE III AND III-P (OCTOBER 1 - APRIL 30)

MONITORING/SAMPLING

15.3. USE IV (MARCH 1 - MAY 31) A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

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

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

A. SOIL PREPARATION A.1. TEMPORARY STABILIZATION

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

THE CONTOUR OF THE SLOPE. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER A.1.c. SUITABLE MEANS.

A.2. PERMANENT STABILIZATION A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

SOIL PH BETWEEN 6.0 AND 7.0. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM) A.2.a.∙

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. A.2.a.∙ SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT,

SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

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

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.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.

B.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.

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

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

THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE

B.4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA: TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY

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 SUB-SOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.

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. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR B.5.d. SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN

LIEU OF NATURAL TOPSOIL. B.6. TOPSOIL APPLICATION

EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESSOF 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

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) C.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. 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 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.

C.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.

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.

SUPPLEMENTAL REQUIREMENTS 1. TOPSOIL SHALL CONTAIN 50-75% SAND, 15-25% SILT, AND 10-20% CLAY AND NOT LESS THAN 2.5% ORGANIC MATTER BY WEIGHT. TOPSOIL SHALL NOT HAVE A pH VALUE LESS THAN 5.8.

			PERMANEN	IT SEEDING SUI	MMARY			
	SEED MIXTURE	(HARDINESS ZONE	6B) FROM TABLE B.3		FERT	ILIZER RATE (10-2	0-20)	
NO.	SPECIES	APPLICATION RATE (LB/AC.)	SEEDING DATES	SEEDING DEPTHS	N	P2O5	К2О	LIME RATE
	SWITCH GRASS	120						
1	CREEPING RED FESCUE	181	1 MARCH TO 15 MAY.		THE PARTY AND TH		THE ACT CONTINUES AND ACT CONT	THE STATE OF THE S
	PARTRIDGE PEA	49	1 MARCH TO 15 MAY; 16 MAY TO 15 JUNE		march reserve envis	navera andre and andre andre and andre andre and andre andre and andre	narri-representation	ARRAMININA HAPALII
	DEER TONGUE	131	WITH ADDITIONAL			And the second s		Workship of the same of the sa
3	CREEPING RED FESCUE	175	WATERING		45LB/AC	0018/40	0018/46	2 TONS/AC
	VIRGINIA WILD RYE	43		1/4" TO 1/2"	(1 LB/1,000 SF)	90 LB/AC (2 LB/1,000 SF)	90 LB/AC (2 LB/1,000 SF)	2 TONS/AC (90 LB/1000 SF)
	TALL FESCUE	175						The state of the s
9	KENTUCKY BLUEGRASS	117	15 AUGUST TO 15 OCTOBER		The second property of	The state of the s	Antonia	PER
	PERENNIAL RYE	58			defendencia circuminativa di constituto di c	-	devented and the second and the seco	

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

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE

A. SEEDING

A.1. SPECIFICATIONS

A.1.a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT, REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING

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

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

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

A.2. APPLICATION A.2.a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. INCORPORATE SEED INTO THE SOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

A.2.b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH

CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

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

IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.

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

MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. A.2.c.• A.2.c.◆ WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL

B. MULCHING B.1. MULCH MATERIALS (IN ORDER OF PREFERENCE).

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

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

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

B.1.b.● WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. B.1.b.◆ WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

B.1.b.● WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

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

B.2. APPLICATION

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

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

B.3. ANCHORING PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY

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

CONTOUR. B.3.a.● WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW, APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

B.3.a.• SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II. TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED

LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

		TEI	MPORARY SEEDING SUM	IMARY		
	SEED MIXTURE	(HARDINESS ZON	IE 6B) FROM TABLE B.1		FEDTUIZED DATE	
NO.	SPECIES	APPLICATION RATE (LB/AC.)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-10-10)	LIME RATE
1	ANNUAL RYEGRASS	40	1 MARCH TO 31 MAY 1 AUG. TO 15 OCT.	1"	436 LB/AC (10 LB/1,000 SF)	2 TONS/AC (90 LB/1000 SF
2	BARLEY	96	1 MARCH TO 31 MAY 1 AUG. TO 15 OCT.	1/2"	436 LB/AC (10 LB/1,000 SF)	2 TONS/AC (90 LB/1000 SF
3	FOXTAIL MILLET	30	16 MAY TO 31 JULY	1/2"	436 LB/AC (10 LB/1,000 SF)	2 TONS/AC (90 LB/1000 SF

NOTE: IF PERMANENT STABILIZATION IS REQUIRED OUTSIDE OF SPECIFIED SEEDING DATES, THE CONTRACTOR SHALL PROVIDE TEMPORARY STABILIZATION MEASURES (SEED AND MULCH) UNTIL THE APPROPRIATE SEEDING DATES FOR THE SPECFIED SEED MIXES OCCUR. THE CONTRACTOR SHALL PROVIDE PERMANENT STABILIZATION SEEDING WITHIN THE SPECIFIED SEEDING DATES.

MDE STANDARD B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS. CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL

ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE

CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE

WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION

REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

SEQUENCE OF CONSTRUCTION

1. OBTAIN ALL PERMITS (HOWARD COUNTY GRADING, MDE NPDES DISCHARGE) PRIOR TO

2. (DAY 1) PRIOR TO CLEARING, GRUBBING, OR LAND DISTURBANCE OF ANY KIND, THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING ON-SITE TO REVIEW THE LIMITS OF DISTURBANCE, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE SEQUENCE OF CONSTRUCTION WITH THE FOLLOWING PARTIES:

 SEDIMENT AND EROSION CONTROL INSPECTOR - HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (C.I.D.) (410.313.1855 - 48 HOURS' NOTICE)

 MARYLAND DEPARTMENT OF THE ENVIRONMENT INSPECTOR (NPDES - FIVE DAYS' NOTICE) OWNER - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENVIRONMENTAL SERVICES ENGINEER (410.313.6467 - 48 HOURS' NOTICE).

• LAND OWNER - HOWARD COUNTY PUBLIC SCHOOL SYSTEM (410.313.6600 - 48 HOURS'

 OWNER'S ENGINEER - CENTURY ENGINEERING, INC. (443.589.2400 - 48 HOURS' NOTICE) THE MEETING WILL ALSO SERVE AS A FORUM TO VERIFY THE LOCATION OF ANY STAGING/STOCKPILE AREAS AND TO FLAG ANY TREES WITHIN THE LIMITS OF DISTURBANCE TO BE REMOVED FOR CONSTRUCTION AND ACCESS. THE LIMITS OF DISTURBANCE SHALL BE

3. (DAYS 2-3) WITH THREE-DAY CLEAR WEATHER FORECAST (E.G. NO PRECIPITATION), CLEAR AND GRUB FOR INSTALLATION OF CONSTRUCTION SAFETY FENCING, PERIMETER SEDIMENT CONTROLS AND CONSTRUCTION ENTRANCE.

 (DAYS 4-7) INSTALL STABILIZED CONSTRUCTION ENTRANCE, BLAZE ORANGE FENCING, PERIMETER SEDIMENT CONTROLS AND SUMP PIT/PUMP/FILTER BAG SYSTEMS.

5. (DAY 8) OBTAIN APPROVAL FROM THE C.I.D. INSPECTOR OF EROSION AND SEDIMENT CONTROLS BEFORE PROCEEDING WITH ANY FURTHER CLEARING, GRUBBING, GRADING, OR OTHER CONSTRUCTION ACTIVITIES.

RISER MODIFICATIONS - EAST QUALITY POND (STRUCTURE S-4

FIELD-MARKED PRIOR TO HOLDING THIS MEETING.

6. (DAY 9) TEMPORARILY BRICK SHUT 42" R.C.P. OUT AT STRUCTURE M-2 AND 24" R.C.P. (OUT) AT STRUCTURE M-1-A TO ALLOW STORM WATER TO BYPASS SITE TO EXISTING QUANTITY CONTROL PONDS LOCATED BETWEEN THE RUNNING TRACK AND THE EXISTING STORM DRAIN OUTFALL NEAR SNOWDEN RIVER PARKWAY AND TO THE IMMEDIATE WEST OF THE EAST QUALITY POND.

7. (DAYS 10-14) IF RISER LOW FLOW ORIFICE IS BLOCKED, UNBLOCK ORIFICE AND ALLOW POND TO DRAIN TO NORMAL CONDITIONS (NO NORMAL POOL).

8. (DAYS 15-20) SELECTIVELY DEMOLISH RISER STRUCTURE S-4 AS SHOWN ON THE RISER DEMOLITION PLAN FOR STRUCTURE S-4. (DAYS 21-28) INSTALL POND DRAIN PIPE, CONCRETE COLLAR, STRUCTURE E-1 AND CLEAN-OUT

SLAB. DO NOT INSTALL TURN UP ELBOW OR INTAKE PIPE AT THIS TIME. 10. (DAY 29) INSTALL DEWATERING DEVICE TO ELEVATION 379,00 AND CONNECT TO POND DRAIN PIPE USING A WATER-TIGHT FLANGED CONNECTION.

11. (DAYS 30-36) INSTALL REINFORCEMENT AND FORM WORK FOR RISER WALL AND COLUMN MODIFICATIONS INCLUDING LOW FLOW ORIFICE AND POUR CONCRETE. 12. (DAYS 37-40) INSTALL REINFORCEMENT AND FORMWORK FOR TOP SLAB AND POUR

(DAYS 41-45) INSTALL RISER APPURTENANCES AT STRUCTURE S-4.

18" R.C.P. BETWEEN EXISTING STRUCTURES M-8 AND S-6.

EAST QUALITY POND EXCAVATION AND GRADING 14. (DAYS 46-48) WITH PERMISSION OF THE C.I.D. INSPECTOR, COMPLETE REMAINING CLEARING AND GRUBBING AS SHOWN ON THE PLANS.

15. (DAYS 49-69) COMPLETE EXCAVATION AND GRADING OF BASIN TO FINISHED GRADE SHOWN ON THE PLANS. THE CONTRACTOR SHALL STABILIZE (TEMPORARILY AT MINIMUM) NEWLY GRADED AREAS AS THEY ARE PLACED ON GRADE. (DAYS 70-84) EXCAVATE AND INSTALL GABION WALLS PER MANUFACTURER'S INSTRUCTIONS.

DIRECTIONS, AND SPECIFICATIONS. COVER GABION WALLS WITH NON-WOVEN GEOTEXTILE UPON COMPLETION OF INSTALLATION UNTIL BASIN IS PERMANENTLY STABILIZED. 17. (DAYS 85-86) DEMOLISH AND REMOVE EXISTING STRUCTURES S-6 AND S-1 AND EXISTING

18. DAYS 87-90) INSTALL STRUCTURES S-7, S-8 AND 18" R.C.P. BETWEEN STRUCTURES M-8 AND S-8 19. (DAY 91) INSTALL RIP-RAP OUTFALL CHANNELS AT OUTFALLS IN NORTH AND SOUTH FOREBAYS.

20. (DAYS 92-100) INSTALL COMPACTED FILL ON INTERNAL BERM BETWEEN EAST QUALITY POND AND WEST QUANTITY POND.

21. (DAYS 101-105) INSTALL PEDESTRIAN PATH ON INTERNAL BERM BETWEEN EAST QUALITY POND AND WEST QUANTITY POND. 22. (DAYS 106-108) PERMANENTLY STABILIZE INTERNAL SLOPES OF EAST QUALITY POND WITH

SEED/MULCH AND STABILIZATION MATTING. ONCE STABILIZATION HAS BEEN ACHIEVED AND

WITH THE APPROVAL OF THE C.I.D. INSPECTOR, REMOVE THE DEWATERING DEVICE AND INSTALL THE POND DRAIN INTAKE. 23. (DAY 109) WITH PERMISSION OF THE C.I.D. INSPECTOR, REMOVE BRICKING FROM DIVERSION

PIPES AT STRUCTURES M-2 AND M-1-A.

RISER MODIFICATIONS - WEST QUANTITY POND (STRUCTURE S-24. (DAY 110) TEMPORARILY BRICK SHUT 33"x21" H.E.R.C.P. AT STRUCTURE M-2 TO ALLOW STORM WATER TO BYPASS TO EXISTING EAST QUALITY POND.

25. (DAYS 111-115) SELECTIVELY DEMOLISH RISER STRUCTURE S-5 AS SHOWN ON THE RISER

26. (DAYS 115-120) INSTALL REINFORGEMENT AND FORM WORK FOR RISER WALL AND COLUMN MODIFICATIONS AND POUR CONCRETE 27. (DAYS 121-125) INSTALL REINFORCEMENT AND FORM WORK FOR TOP SLAB AND POUR

28. (DAYS 126-128) INSTALL RISER APPURTENANCES AT STRUCTURE S-5.

29. (DAY 129) WITH PERMISSION OF THE C.I.D. INSPECTOR, REMOVE BRICKING FROM STRUCTURE

PROJECT COMPLETION 30. (DAYS 130-136) COMPLETE IN-KIND RESTORATION OF ANY DAMAGE TO EXISTING

DEMOLITION PLAN FOR STRUCTURE S-5.

INFRASTRUCTURE EITHER ON-SITE OR OFF-SITE. THIS INCLUDES BUT IS NOT LIMITED TO: SIDEWALK, CURB AND GUTTER, PAVEMENT, UTILITY APPURTENANCES, TREES, SIGNS, ETC.) 31. (DAYS 137-139) COMPLETE FINAL PERMANENT VEGETATIVE STABILIZATION OF SITE

32. (DAY 140) WITH THE APPROVAL OF THE C.I.D. INSPECTOR, REMOVE REMAINING SEDIMENT CONTROLS AND STABILIZE ANY REMAINING DISTURBED AREAS.

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS **BUREAU OF ENVIRONMENTAL SERVICES** 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143 PHONE: 410.313.6413

LAND OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 CLARKSVILLE PIKE ELLICOTT CITY, MARYLAND 21042 PHONE: 410.313.6600

REVISIONS

NO.	DATE	DESCRIPTION
***************************************		
1		}

SITE INFORMATION

STREET ADDRESS: 6101 OLD DOBBIN LANE COLUMBIA, MARYLAND 21045

VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 **ELECTION DISTRICT: 6** ZONING: NEW TOWN PLAT NO.: 11270-11273

ENGINEERING

**CONSULTING ENGINEERS - PLANNERS** 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

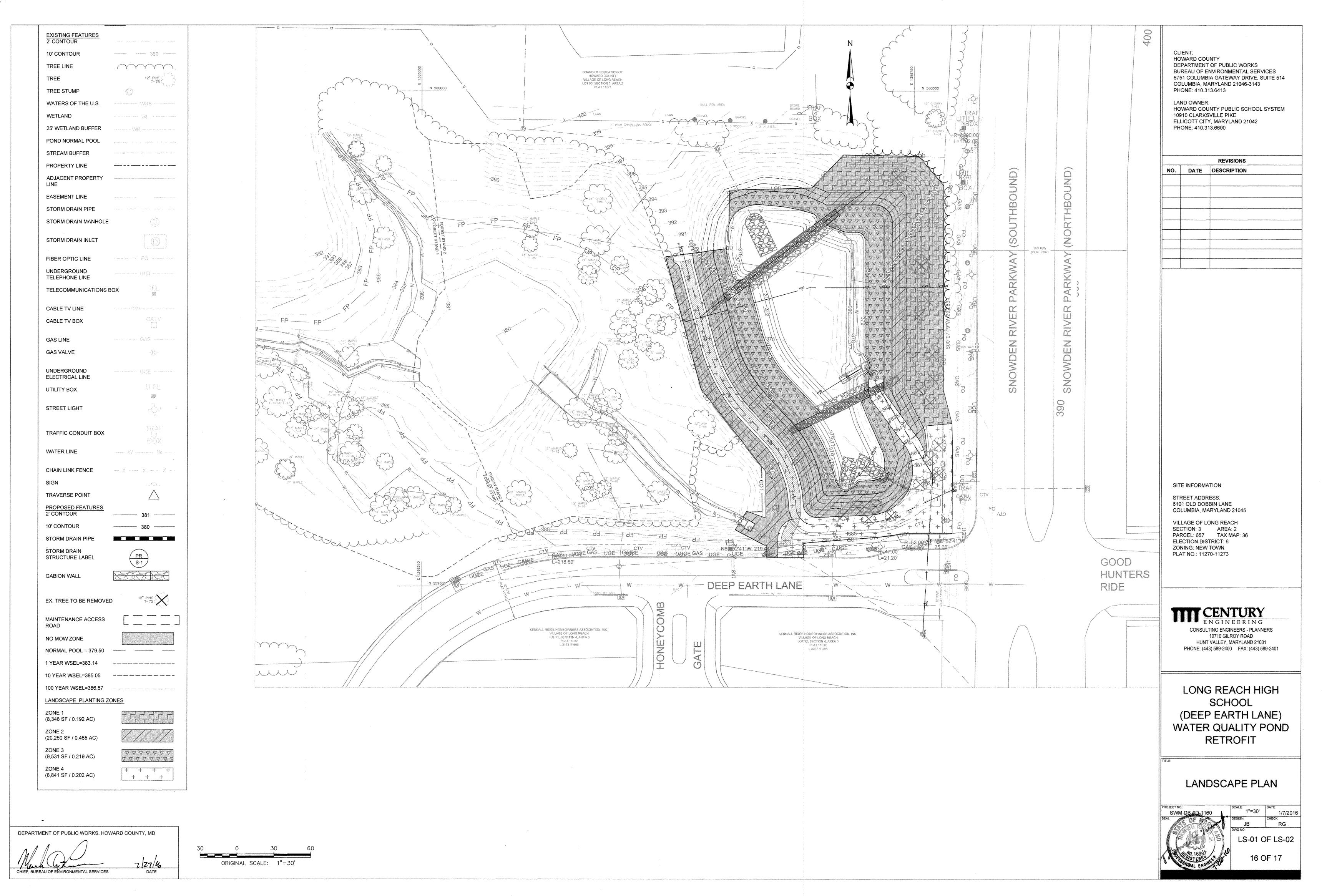
**EROSION AND SEDIMENT CONTROL NOTES** 

1 P	ROJECT NO.;	SCALE:	DATE:
	SWM DB #D-1160	N/A	1/7/2
s	EAL:	DESIGN:	CHECK:
		JB	RG
		DWG NO:	
***************************************		SC-04 C	F SC-0
•	CONAL ENGINE TO	15 C	)F 17

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

myspuch CHIEF, BUREAU OF ENVIRONMENTAL SERVICES



(8,348 SF / 0.192 A

Botanical Name	Common Name	Strata*	Size	Form	Spacing	Z1 Quantities
Quercus palustris	Pin oak	T-C	1" Caliper	Container	16-18' O.C.	7
Fagus grandifolia	American beech	T-C	1" Caliper	Container	16-18' O.C.	7
Liriodendron tulipifera	Tulip tree	T-C	1" Caliper	Container	16-18' O.C.	6
Cercis canadensis	Eastern redbud	T-US	1" Caliper	Container	10-12' O.C.	10
Ilex opaca	American holly	T-US	1" Caliper	Container	10-12' O.C.	10
T-C = Canopy Tree T-US =	Understory Tree				Total QT	7 40

PLANT COMPOSITION SCHEDULE - RIPARIAN SEED MIX (TOTAL AREA: 0.465 AC)

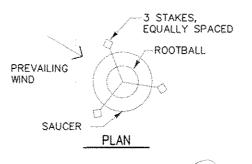
ZONE 1

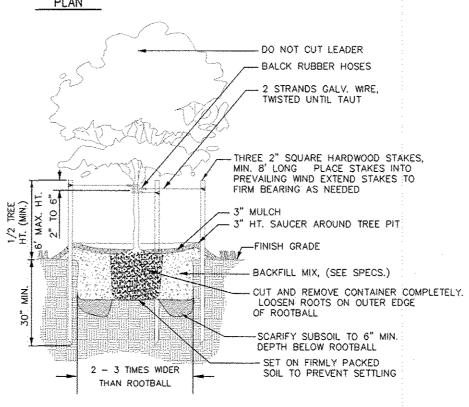
(8,348 SF / 0.192 AC

(11,910 SF / 0.273 AC)

Botanical Name	Common Name	Quantity Per Acre (lbs)	Application Rate (lbs/ac)	% Seed Mix	Z1 Quantity (lbs)	Z2 Quantity (lbs)
Elymus virginicus	Virginia Wild Rye	40	6	20	1.15	1.64
Elymus histrix	Bottle Brush Grass		4.5	15	0.86	1.23
Sorghastrum nutans	Indiangrass		3.6	12	0.69	0.98
Andropogon gerardii	Big Bluestem		3.6	12	0.69	0.98
Panícum clandestinum	Deer Tongue Grass	·	3.6	12	0.69	0.98
Panicum virgatum	Switchgrass		3	10	0.58	0.82
Schizachyrium scoparium	Little Bluestem		2.1	7	0.40	0.57
Eutrochium maculatum	Spotted Joe Pye Weed		1.5	5	0.29	0.41
Rudbeckia hirta	Blackeyed Susan		0.9	3	0.17	0.25
Eutrochium fistulosum	Trumpetweed		0.6	2	0.12	0.16
Euthamia graminifolia	Grassleaf Goldenrod		0.3	1	0.06	0.08
Lobelia siphilitica	Great Blue Lobelia		0.3	1	0.06	0.08
			TOTAL	100	5.76	8.19

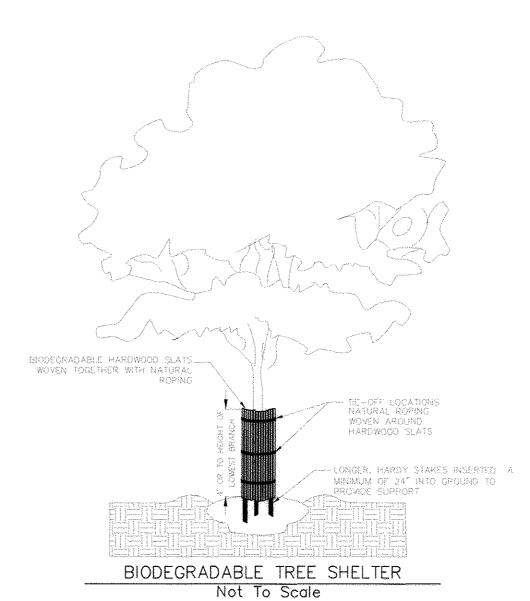
Total Application Rate of 40 lbs/ac with 15 lbs/ac of Perennial Ryegrass (Lolium perenne), and 60 lbs/ac of Hard Festcue (Festuca trachyphylla) during the TOTAL QUANTITY: periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet (Setaria italica) if during May 16 to July 31. Cummulative application rate of 115 lbs/ac (Seed + Hard Fescue + cool or warm season grass stabilization).





DECIDUOUS TREE PLANTING

1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING STAKES.
2. WATER THOROUGHLY AFTER INSTALLATION.
3. REMOVE ALL HOSE, WIRE, AND STAKES AT THE END OF GUARANTEE PERIOD.



NOTE: TO BE INSTALLED AROUND EACH DECIDUOUS TREE.

ZONE 3

V V V V V V V I 57 57 57 57 57 57 57 (9,539 SF / 0,219 AC)

PLANT COMPOSITION SCH	HEDULE - EMERGENT WETL	AND SEED MIX (TOT	AL AREA: 0.219 AC)		
Botanical Name	Common Name	Quantity Per Acre (lbs)	Application Rate (lbs/ac)	% Seed Mix	Z3 Quantity (lbs)
Scirpus cyperinus	Wool Grass	40	9.1	26	1.99
Elymus virginicus	Virginia Wild Rye		9.1	26	1.99
Juncus effusus	Soft Rush		4,2	12	0.92
Dichanthelium clandestinum	Deertongue		4,2	12	0.92
Tridens flavus	Purpletop		1.4	4	0.31
Eutrochium fistulosum	Trumpetweed	·	1.4	4	0.31
Bidens aristosa	Showy Tickseed Sunflower		1.4	4	0.31
Asclepias incarnata	Swamp Milkweed		1.4	4	0.31
Verbena urticifolia	White Vervain		1.4	4	0.31
Bidens cernua	Nodding Beggartick		-1,4	4	0.31
			TOTAL	100	7.67

Total Application Rate of 40 lbs/ac with 15 lbs/ac of Perennial Ryegrass (Lolium perenne), and 60 lbs/ac of Hard Festcue (Festuca trachyphylla) during the periods of March 1 to May 15 and August 1 to October 15 or 60 lbs/ac of Foxtail Millet (Setaria italica) if during May 16 to July 31.

ZONE 3

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PLANT COMPOSITION SCHEDULE - EMERGENT WETLAND PLUGS (TOTAL AREA: 0.219 AC)

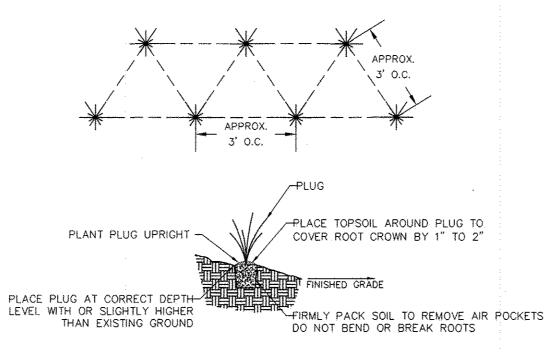
Botanical Name	Common Name	Strata*	Size	Form	Spacing	Z1 Quantities
Sagittaria latifolia	Duck potato	Н	2" plug	Plug	3, O.C.	212
Scirpus cyperinus	Woolgrass	Н	2" plug	Plug	3' O.C.	212
Juncus effusus	Soft rush	. Н	2" plug	Plug	3' O.C.	212
Pontederia cordata	Pickerelweed	: H	2" plug	Plug	3' O.C.	212
ris versicolor	Blue flag	Н	2" plug	Plug	3' O.C.	212
		<del></del>			Total QT	Y 1060

ZONE 4 + + +

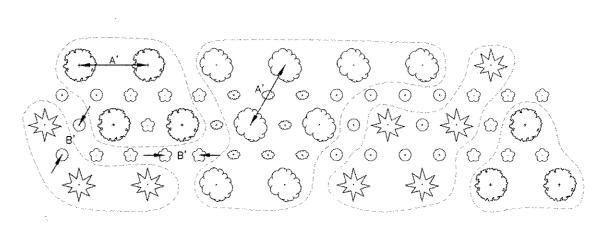
TURFGRASS (TOTAL AREA: 0.202 AC)

+ + +	Seed Mix No.	Z4 Qty (Ibs)
	See E&S Plan Permanent Seeding Summary Table	70,7
(8,841 SF / 0.202 AC	Total Application Rate of 350 lbs/ac	

Total Application Rate of 350 lbs/ac



2" PERENNIAL PLUG DETAIL Not To Scale



- TREE CANOPY SPECIES (T-C) 💮 🕜 - TREE UNDERSTORY (T-US) A' - T-C SPACING PER PLANT SCHEDULE B' - T-US SPACING PER PLANT SCHEDULE

1. THIS PLANTING IS TO MIMIC NATURAL SEED DISPERSAL.
2. EACH SPECIES IS TO BE PLANTED IN A GROUP OF COMMON VEGETATION SPECIES.
3. THE MINIMUM CLUSTER IS A GROUP OF 3 TREES OF THE SAME SPECIES.
4. THE MAXIMUM CLUSTER IS A OF 15 TREES OF THE SAME SPECIES. CLUSTER PLANTING DETAIL Not To Scale

CLIENT: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143 PHONE: 410.313.6413

LAND OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 CLARKSVILLE PIKE ELLICOTT CITY, MARYLAND 21042 PHONE: 410.313.6600

REVISIONS			
NO.	DATE	DESCRIPTION	
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SITE INFORMATION

STREET ADDRESS: 6101 OLD DOBBIN LANE COLUMBIA, MARYLAND 21045

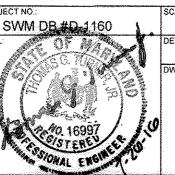
VILLAGE OF LONG REACH SECTION: 3 AREA: 2 PARCEL: 657 TAX MAP: 36 **ELECTION DISTRICT: 6** ZONING: NEW TOWN PLAT NO.: 11270-11273

CONSULTING ENGINEERS - PLANNERS

10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 PHONE: (443) 589-2400 FAX: (443) 589-2401

LONG REACH HIGH SCHOOL (DEEP EARTH LANE) WATER QUALITY POND RETROFIT

LANDSCAPE NOTES AND **DETAILS** 



NVA 1/7/2016 RG LS-02 OF LS-02 17 OF 17

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD CHIEF, BUREAU OF ENVIRONMENTAL SERVICES