

NOTE:
 PERIMETER LANDSCAPING DUE TO RED LINE REVISION SHALL BE PROVIDED AS SHOWN ON THIS SHEET. SURETY IN THE AMOUNT OF \$4,710.00 FOR 4 SHADE TREES, 5 ORNAMENTALS, 16 EVERGREENS & 12 SHRUBS SHALL BE POSTED WITH THE GRADING PERMIT.

PERIMETER LANDSCAPE SCHEDULE			
SYM	SPECIES	QTY	SIZE
○	OCTOBER GLORY RED MAPLE (ACER RUBRUM OCTOBER GLORY) (RM)	4	2-1/2" CAL.
○	WHITE FLOWERING DOGWOOD (CORNUS FLORIDA) (WD)	5	8' HT.
○	WHITE PINE (WP)	16	6'-8' HT.
⊗	PRITZER JUNIPER (PJ)	12	2 1/2' HT.
⊗	JUNIPERUS CHINENSIS 'FITZGERIANA'		

N/F LOT 5
 G.K. & S.S. KRON
 L. 1258 F. 430
 T.M. 24 PCL. 1120
 ZONING: R20

DEVELOPER'S/BUILDER'S CERTIFICATE
 I certify that the landscaping shown on this plan will be done according to the plan, SECTION 16.124 of the Howard County Code and the Howard County Landscape Manual. I further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.
 Name: *Wayne A. Newton* Date: 11/9/99

NOTE:
 The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

NOTE:
 FOR PLANTING DETAIL SEE SHEET 4 OF 6.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES (NEW)	0
NUMBER OF TREES REQUIRED	0
NUMBER OF TREES PROVIDED	2
SHADE TREES	2
OTHER TREES (2:1 substitution)	7

INTERIOR PARKING LANDSCAPE SCHEDULE		
SPECIES	QTY.	SIZE
OCTOBER GLORY RED MAPLE (Acer rubrum 'october glory')	2	2 1/2" cal.
RED FLOWERING DOGWOOD (Cornus Florida 'rubra')	4	8' ht.
WHITE FLOWERING DOGWOOD (Cornus Florida)	3	8' ht.

NOTE:
 BASED ON A SITE VISIT WITH HOWARD COUNTY ENVIRONMENTAL HEALTH, IT WAS DETERMINED THAT:
 1. THERE ARE NO SIGNS OF AN EXISTING SEPTIC FIELD ON SITE; AND
 2. THE EXISTING CONCRETE STRUCTURE SOUTH OF THE EXISTING SLO MAY BE A WELL AND THAT THE OWNER/CONTRACTOR WILL EXPLORE THE STRUCTURE TO COUNTY'S SATISFACTION DURING CONSTRUCTION TO DETERMINE IF THE EXISTING STRUCTURE IS A WELL.
 STRUCTURE EXPLORATION/ABANDONMENT
 THE CONTRACTOR WITH OVERSIGHT BY HOWARD COUNTY ENVIRONMENTAL HEALTH DEPARTMENT SHALL REMOVE DEBRIS FROM AND PROVIDE EXPLORATORY TESTS TO DETERMINE IF THE SUSPECT CONCRETE STRUCTURE IS A WELL. BASED ON THE RESULTS OF THE TESTS, THE STRUCTURE CAN BE ABANDONED AS FOLLOWS:
 1. IF THE STRUCTURE IS A WELL, THE CONTRACTOR SHALL ABANDON THE WELL IN-PLACE IN ACCORDANCE WITH HOWARD COUNTY GUIDELINES.
 2. IF THE STRUCTURE PROVES NOT TO BE A WELL, THEN THE CONTRACTOR SHALL REMOVE/COLLAPSE THE CONCRETE BOX AND REMOVE THE ACCUMULATED DEBRIS, THEN BACKFILL THE EXCAVATION WITH CLEAN FILL MATERIAL.

8/28/15 #3 Added Intersections & new sheets 7-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Director: *John Smith* 11/12/99
 Chief, Development Engineering Division: *John Smith* 11/12/99
 Chief, Division of Land Development: *Chris Hamilton* 11/12/99

OWNER/DEVELOPER
 BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH
 3291 ST. JOHN'S LANE
 ELLICOTT CITY, MD. 21042
 ATTN: MARK COLLETTE

PROJECT
 BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH

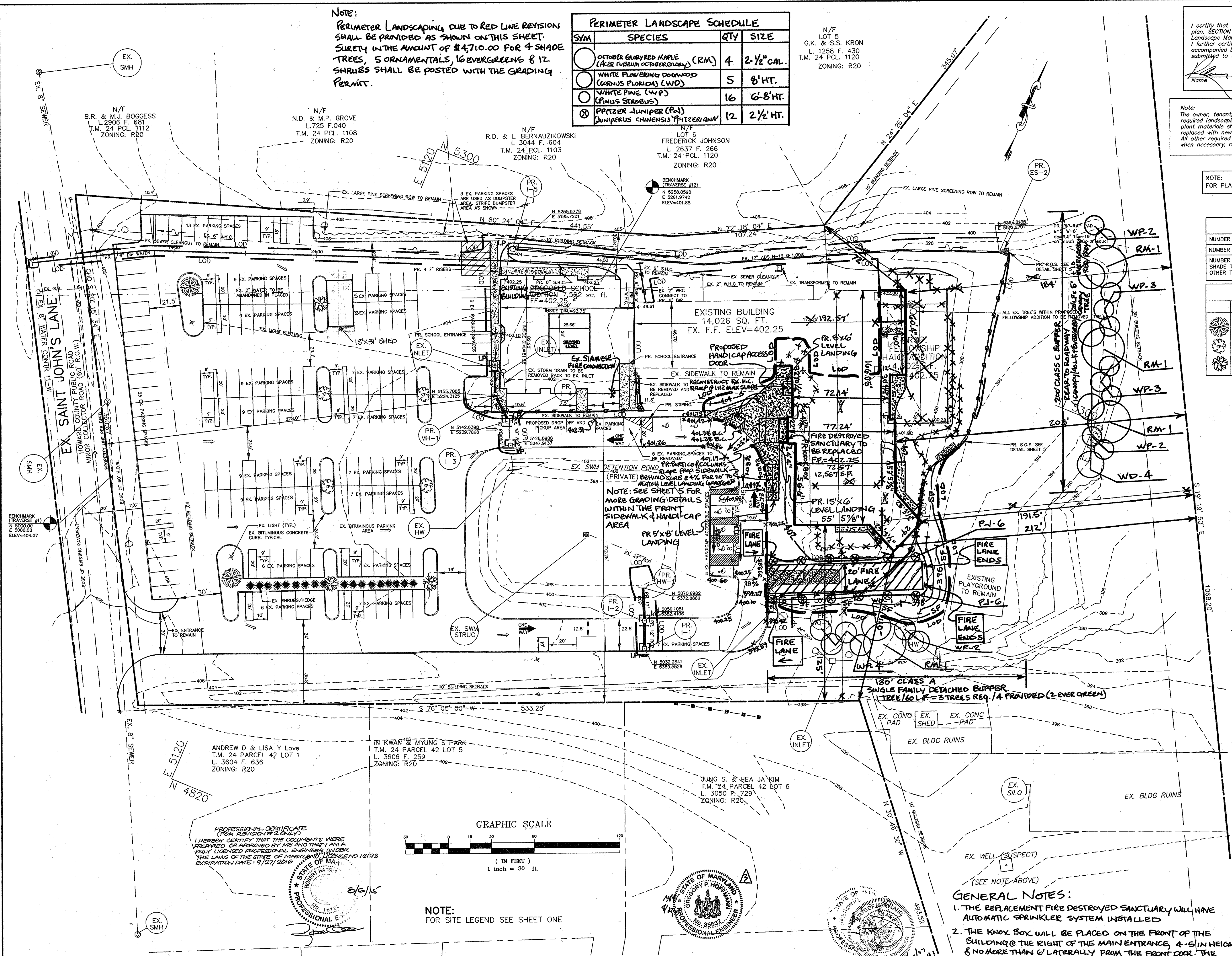
AREA
 TAX MAP 24, PARCEL 21, ZONED R-20
 2nd ELECTION DISTRICT

TITLE
SITE DEVELOPMENT PLAN

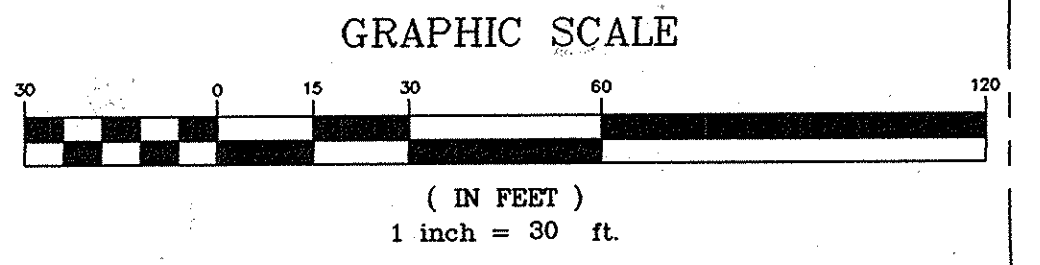
MESSICK & ASSOCIATES
 CONSULTING ENGINEERS
 31 OLD SOLOMONS ISLAND RD., SUITE 201
 ANNAPOLIS, MARYLAND 21401
 (410) 266-3212

DESIGNED BY: DJV
 DRAWN BY: BPO
 PROJECT NO:
 DATE: APRIL 9, 1999
 SCALE: AS SHOWN
 DRAWING NO.: 2 OF 12

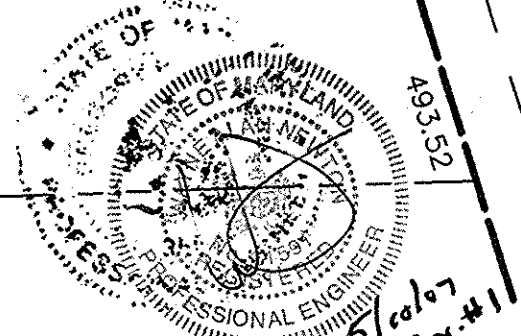
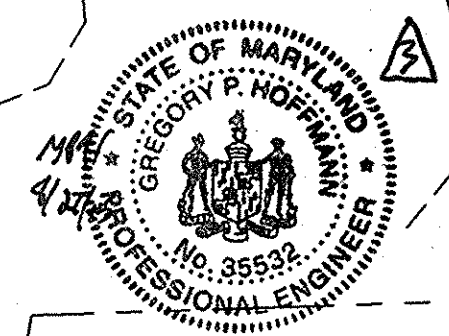
SOP 99-129



PROFESSIONAL CERTIFICATE (FOR REVISION #2 ONLY)
 I HEREBY CERTIFY THAT THE DOCUMENTS WERE PREPARED OR SUPERVISED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 16193 EXPIRATION DATE: 9/27/2016
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 WAYNE A. NEWTON
 No. 16193



NOTE:
 FOR SITE LEGEND SEE SHEET ONE



GENERAL NOTES:
 1. THE REPLACEMENT FIRE DESTROYED SANCTUARY WILL HAVE AUTOMATIC SPRINKLER SYSTEM INSTALLED
 2. THE KNOX BOX WILL BE PLACED ON THE FRONT OF THE BUILDING @ THE RIGHT OF THE MAIN ENTRANCE, 4'-5" IN HEIGHT & NO MORE THAN 6' LATERALLY FROM THE FRONT DOOR. THE KNOX BOX WILL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER WHEN IT IS BEING ACCESSED.

STORM DRAIN DRAINAGE AREA CHART

DRAINAGE AREA	AREA (AC)	% IMPERV.	WEIGHTED "C"
AREA TO EX. I-1	0.72	69%	0.64
AREA TO PR. I-4	0.05	60%	0.57
AREA TO PR. I-3	0.94	97%	0.85
AREA TO PR. I-2	1.00	100%	0.95
AREA TO PR. I-1	0.91	88%	0.77
AREA TO PR. I-5	0.16	5%	0.20

SWM SUMMARY TABLE

DRAINAGE AREA TO POND= 3.00 ACRES

STORM	2YR	10YR	100YR
ALLOWABLE RELEASE RATE (cfs)	3.66	6.75	23.42
INFLOW (cfs)	8.81	15.79	23.42
DISCHARGE (cfs)	2.62	3.46	5.98
DISCHARGE ELEVATION (ft)	397.76	398.62	399.44
STORAGE (Ac - Ft)	0.169	0.344	0.332

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
James Zhou 11/2/99
 DEVELOPER DATE

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Jim C. Robinson 11/1/99
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
Clayton Simmons 11-8-99
 NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Jim C. Robinson 11-8-99
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Paul S. Smith 11/1/99
 DIRECTOR DATE

Clayton Simmons 11/1/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hemmelt 11/10/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1/05/07 1 DELETED FUTURE FELLOWSHIP HALLS SHOW REPLACEMENT OF FIRE DESTROYED SANCTUARY
 7/11/15 2 ADD 18'X31' SHED
 OWNER/DEVELOPER REVISION

PROJECT **BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH**
 3291 ST. JOHN'S LANE
 ELLICOTT CITY, MD. 21042
 ATTN: MARK COLLETTE

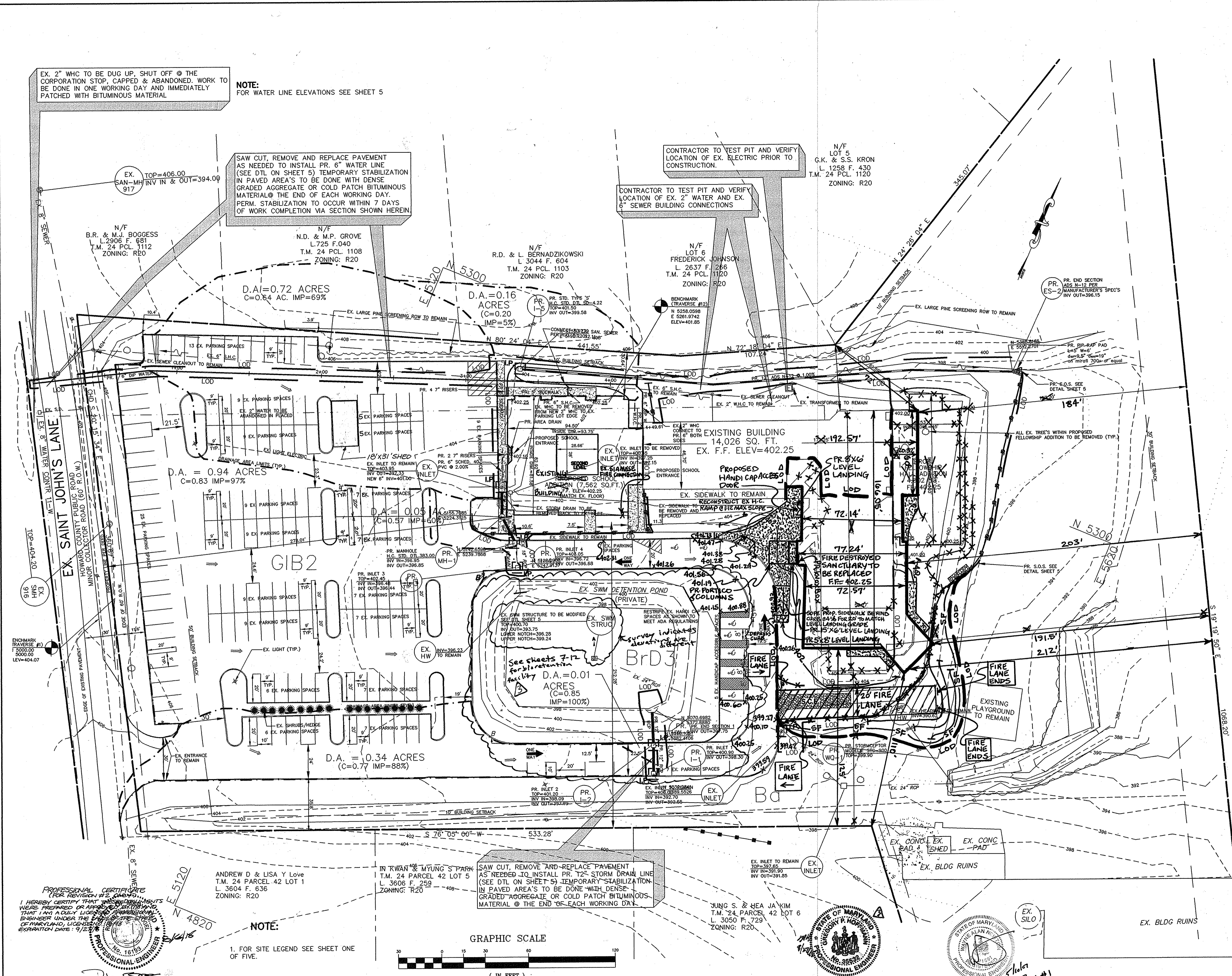
AREA TAX MAP 24, PARCEL 21, ZONED R-20
 2nd ELECTION DISTRICT

TITLE **STORM DRAIN GRADING & SEDIMENT CONTROL PLAN**

MESSICK & ASSOCIATES CONSULTING ENGINEERS
 31 OLD SOLOMONS ISLAND RD., SUITE 201
 ANNAPOLIS, MARYLAND 21401
 (410) 266-3212

DESIGNED BY: DJV
 DRAWN BY: BPO
 PROJECT NO:
 DATE: APRIL 9, 1999
 SCALE: AS SHOWN
 DRAWING NO.: 3 OF 12
 WAYNE A. NEWTON #21591

8/128/15 #3 Albed directed in + new sheets 7-12



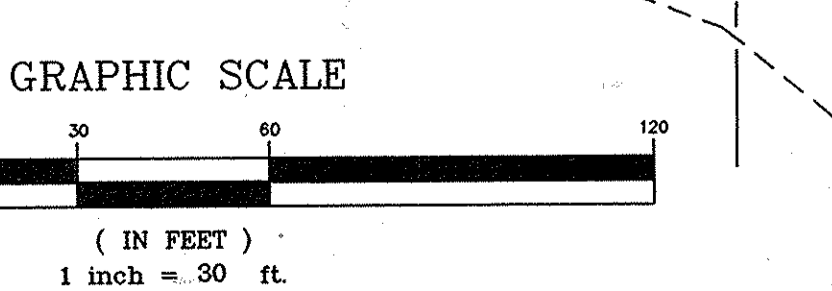
NOTE:
FOR WATER LINE ELEVATIONS SEE SHEET 5

SAW CUT, REMOVE AND REPLACE PAVEMENT AS NEEDED TO INSTALL PR. 6" WATER LINE (SEE DTL ON SHEET 5) TEMPORARY STABILIZATION IN PAVED AREAS TO BE DONE WITH DENSE GRADED AGGREGATE OR COLD PATCH BITUMINOUS MATERIAL @ THE END OF EACH WORKING DAY. PERM. STABILIZATION TO OCCUR WITHIN 7 DAYS OF WORK COMPLETION VIA SECTION SHOWN HEREIN.

CONTRACTOR TO TEST PIT AND VERIFY LOCATION OF EX. 2" WATER AND EX. 6" SEWER BUILDING CONNECTIONS

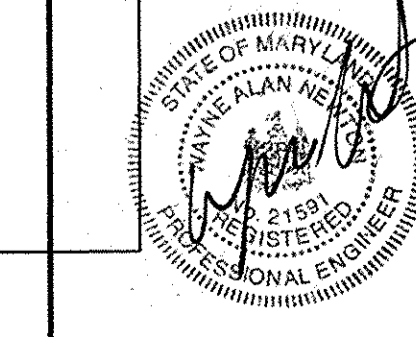
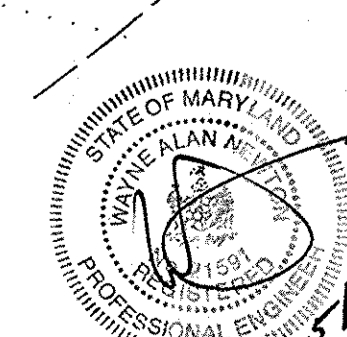
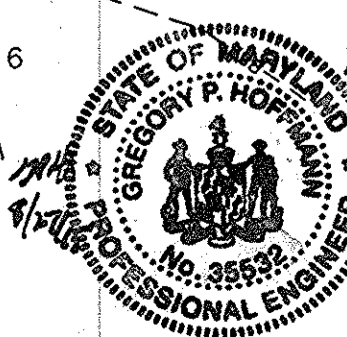
SAW CUT, REMOVE AND REPLACE PAVEMENT AS NEEDED TO INSTALL PR. T2" STORM DRAIN LINE (SEE DTL ON SHEET 5) TEMPORARY STABILIZATION IN PAVED AREAS TO BE DONE WITH DENSE GRADED AGGREGATE OR COLD PATCH BITUMINOUS MATERIAL @ THE END OF EACH WORKING DAY.

NOTE:
1. FOR SITE LEGEND SEE SHEET ONE OF FIVE.



EX. 2" WHO TO BE DUG UP, SHUT OFF @ THE CORPORATION STOP, CAPPED & ABANDONED. WORK TO BE DONE IN ONE WORKING DAY AND IMMEDIATELY PATCHED WITH BITUMINOUS MATERIAL.

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THE PLANS AND SPECIFICATIONS WERE PREPARED OR APPROVED BY ME AS A QUALIFIED LICENSED PROFESSIONAL ENGINEER UNDER THE ENGINEERING BOARD OF MARYLAND, LICENSING BOARD SEPARATION DATE: 9/12/88
 WAYNE A. NEWTON
 PROFESSIONAL ENGINEER



SDP 99-129

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (410) 313-1855.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL, AND ALL SUBSEQUENT REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; (B) 14 DAYS AS TO OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDINGS (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	8.97895	ACRES
AREA DISTURBED	0.905	ACRES
AREA TO BE ROOFED OR PAVED	0.37	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.535	ACRES
TOTAL CUT	590	CU. YARDS* * CONTRACTOR NOT TO USE
TOTAL FILL	590	CU. YARDS* THESE QUANTITIES FOR PRICING WASTE TO BE DISPOSED OF ON A SITE WITH AN OPEN GRADING PERMIT
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
- CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL, OR EMBANKMENT MATERIALS, NOR DO THEY REFLECT CONSIDERATION OF UNDESCRIBED OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- BORROW SITE TO BE PRE-APPROVED BY THE SEDIMENT CONTROL INSPECTOR, OR IN CASE OF EXCESS MATERIAL AN APPROVED SEDIMENT CONTROL PLAN WILL BE NEEDED TO DEPOSIT EXCESS OFF-SITE.

SEQUENCE OF CONSTRUCTION

Several items below may be done concurrently with other items.

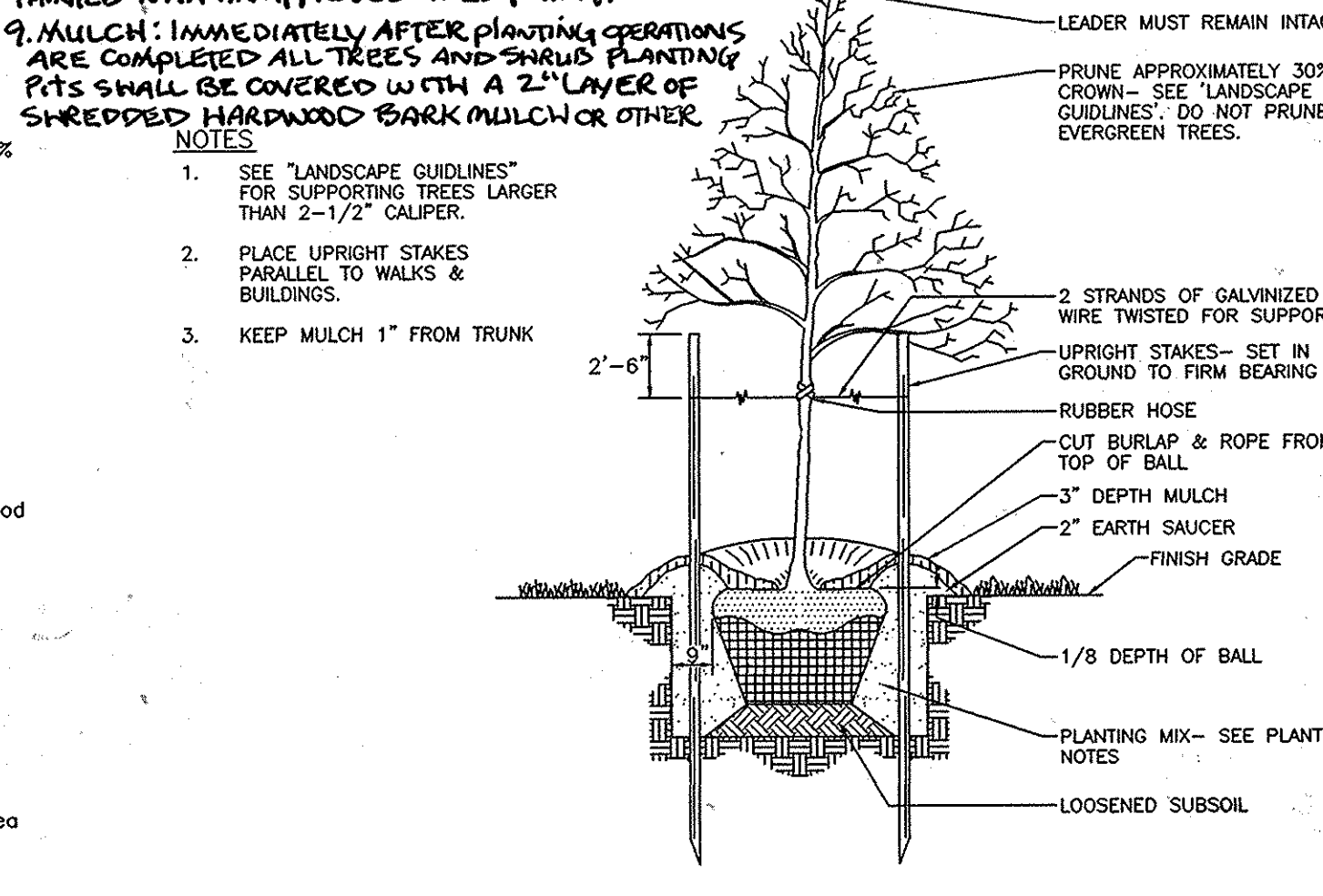
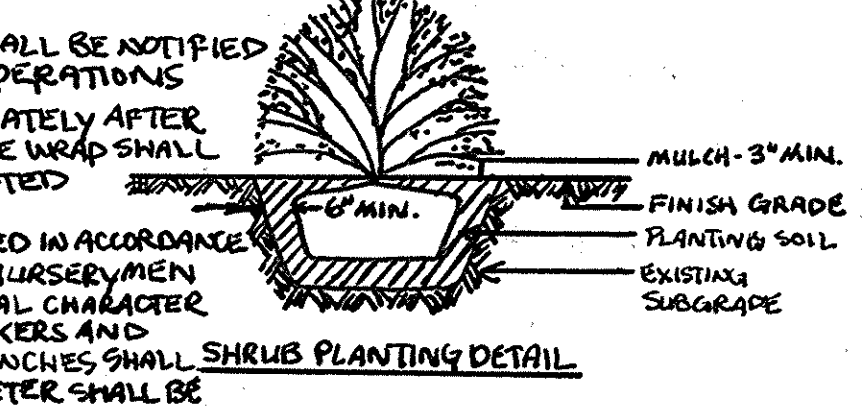
- Obtain all necessary approvals, permits, and easements. The contractor must notify the Howard County Department of inspection and permits, Maryland Department of the Environment, and miss utility at least 48 hours prior to beginning work.
 - The contractor shall schedule a pre-construction meeting with the respective agencies to review the plans and permits. 1 day
 - Clear only for, grade, and install stabilized construction entrance, if required. 1 day
 - Clear only for and install perimeter sediment control measures (i.e. silt fence, inlet protection, etc.) as shown on the approved plans. 2 days
 - Remove and replace existing storm drain system with proposed storm drain system. 1 week
 - Install inlet protection and rip-rap outlet protection, as shown on the approved plans. 2 days
 - Rough grade site. Excavate for footings and construction structure(s). 1 Year.
 - Install new 6" ductile iron fire/domestic water service. (Do not connect to main line). Pressure test and chlorinate new service. 4 days
 - Once obtaining approval, install water meter vault and connect to existing water main. 2 days
 - Install water and sanitary sewer connections into buildings. . . 2 days
 - Fine Grade Site, stabilize disturbed areas with seed and mulch, and install sidewalks. 1 week
 - Install stormceptor water quality manhole as shown. 1 day
 - Vegetatively stabilize all remaining disturbed areas with seed and mulch. 1 day
 - Once the site is stabilized and with the approval of the MDE inspector, remove all sediment control measure. Re-stabilize areas disturbed do to the removal of the sediment control devices. . . 2 days
- Notes:
- Small temporary stockpiles may be created within the limits of disturbance provided that the stockpiles are perimetered by silt fence. maximum height = 6', side slopes 3H:1V.

DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

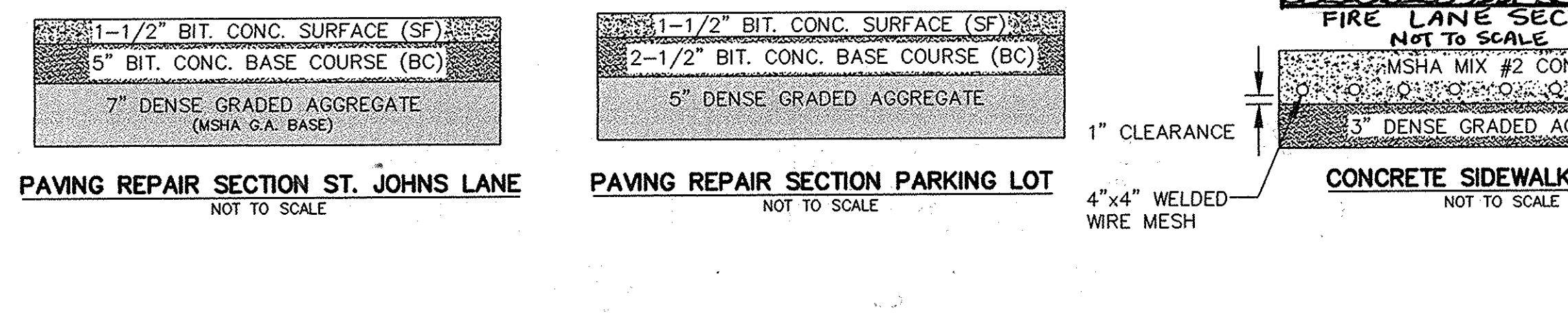
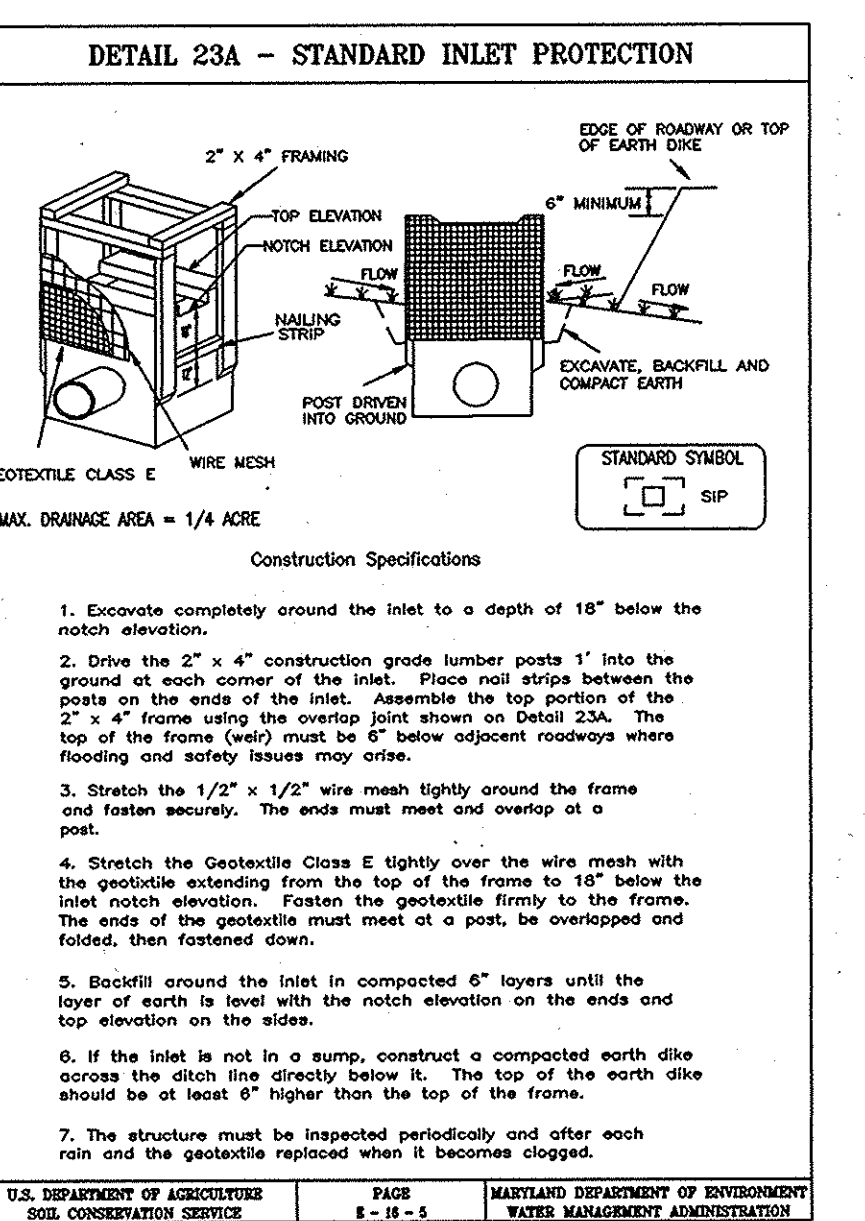
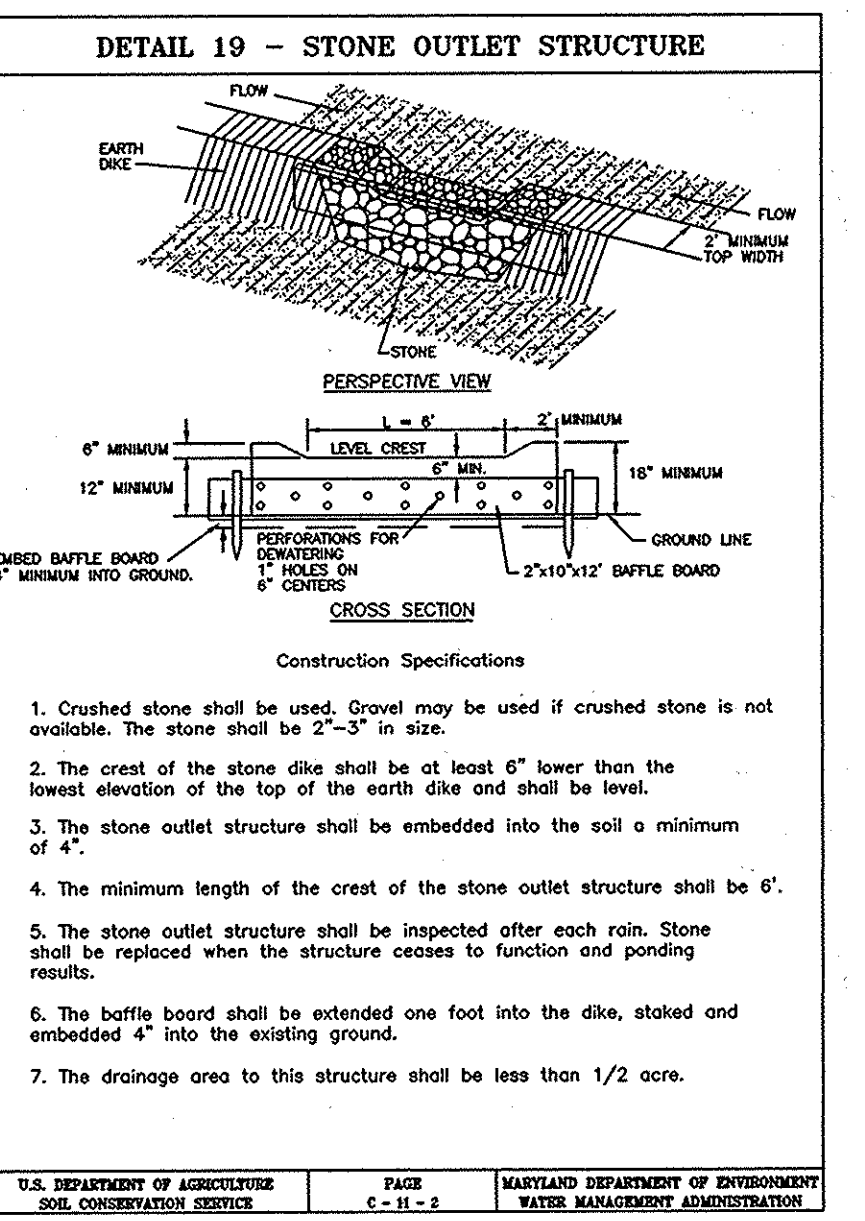
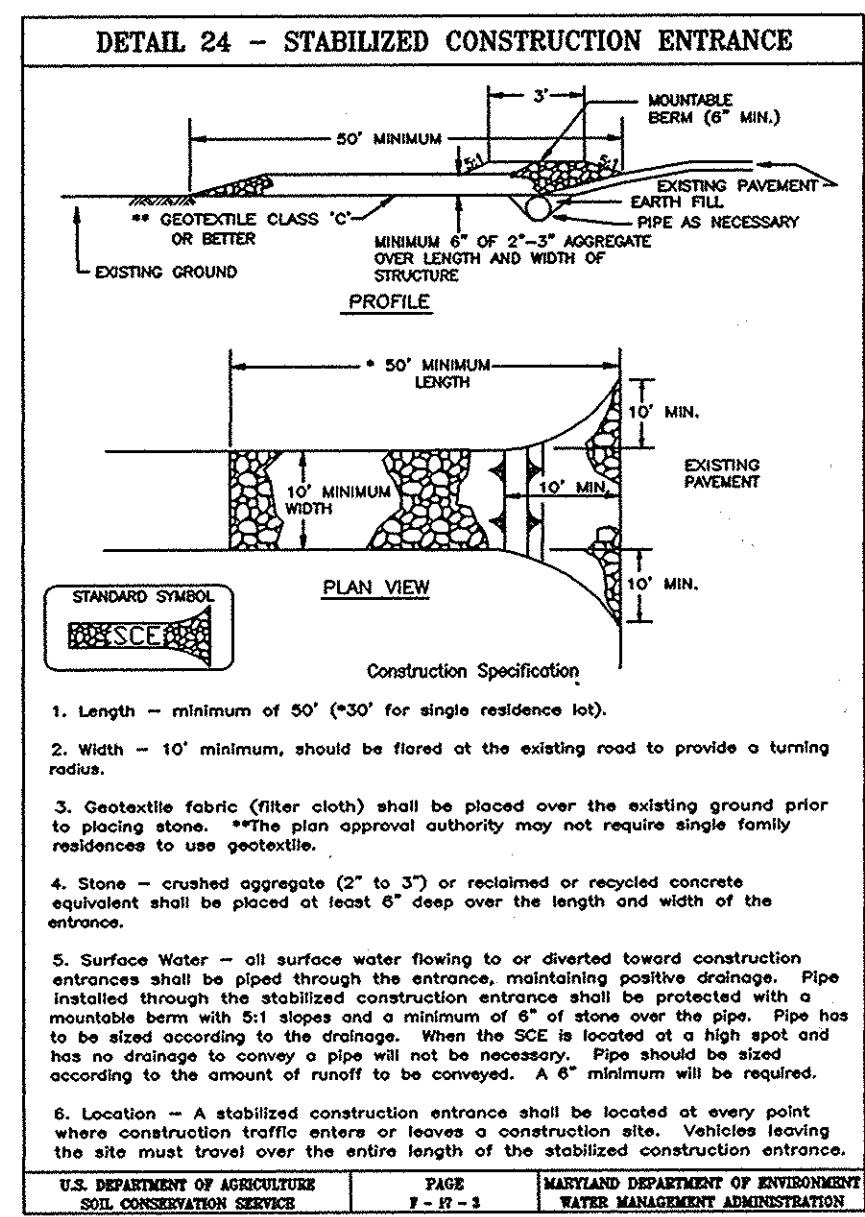
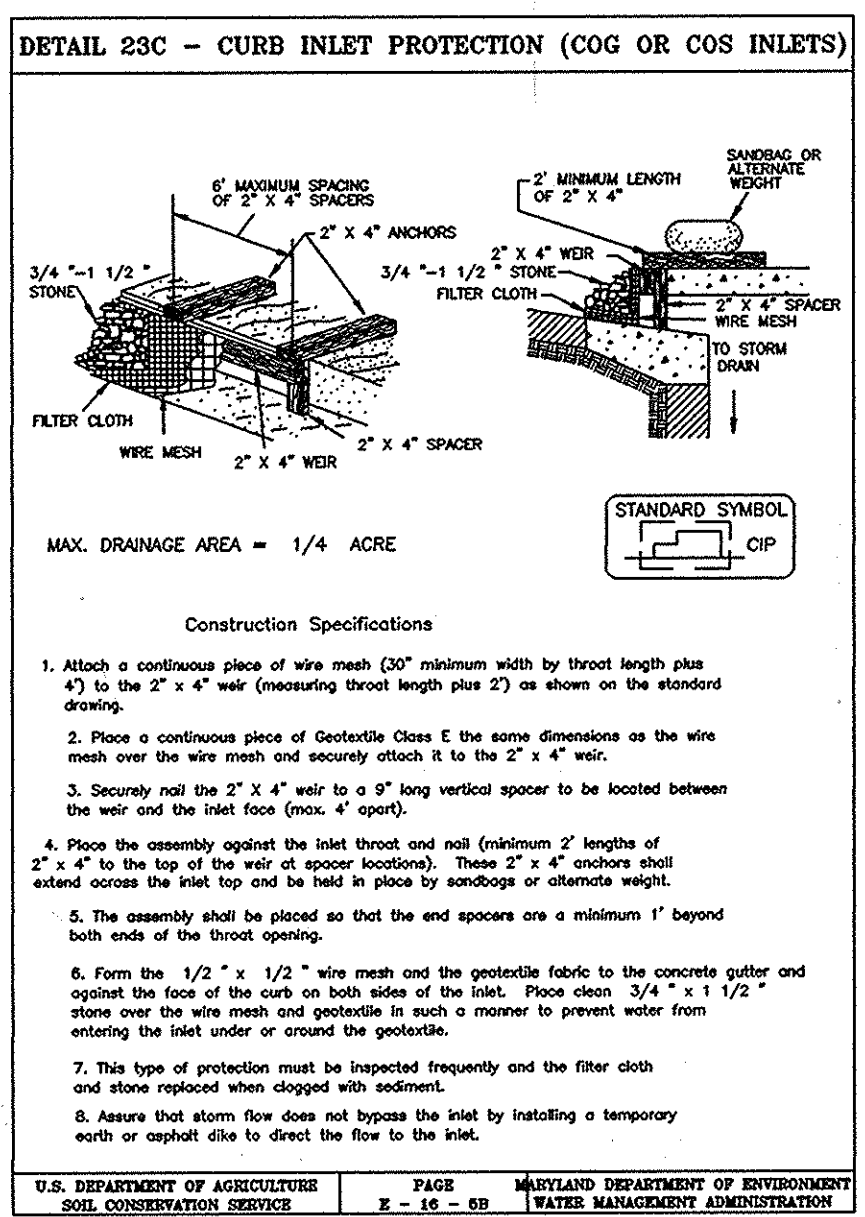
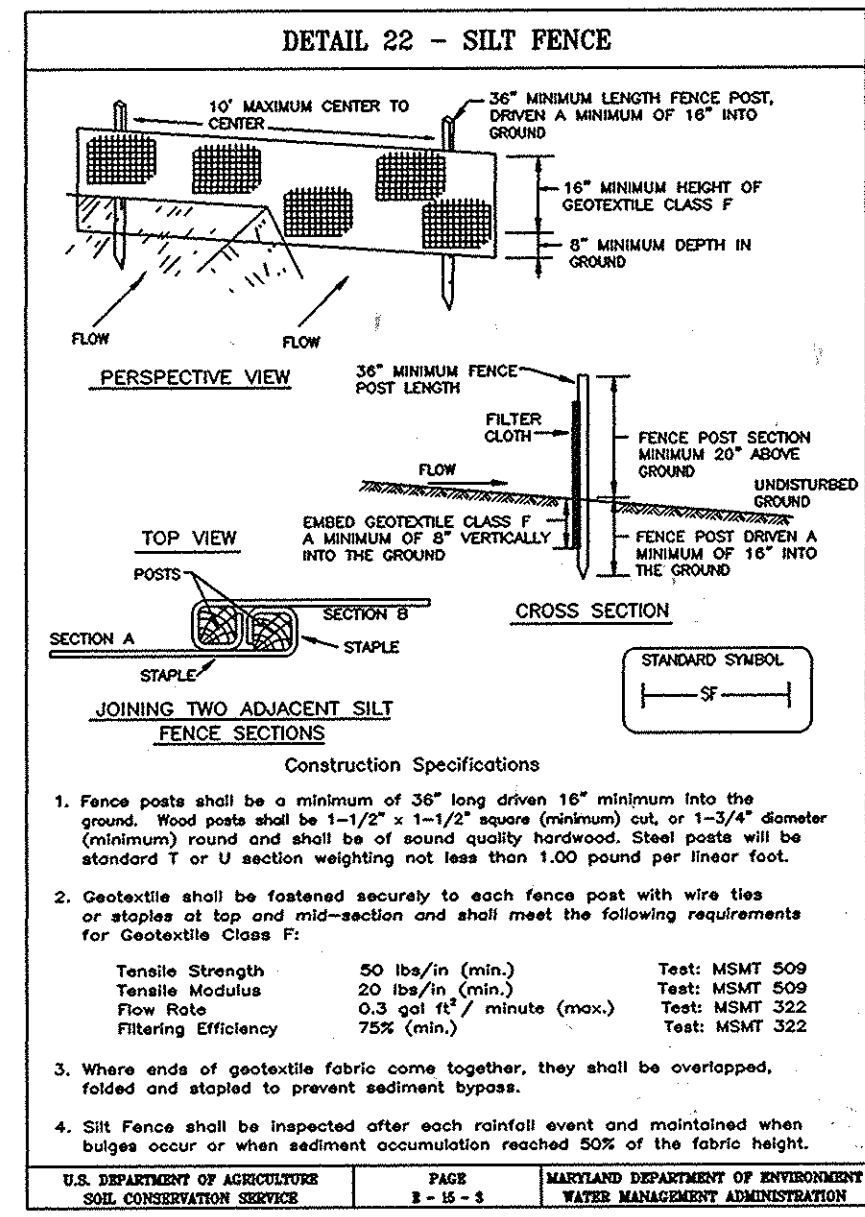
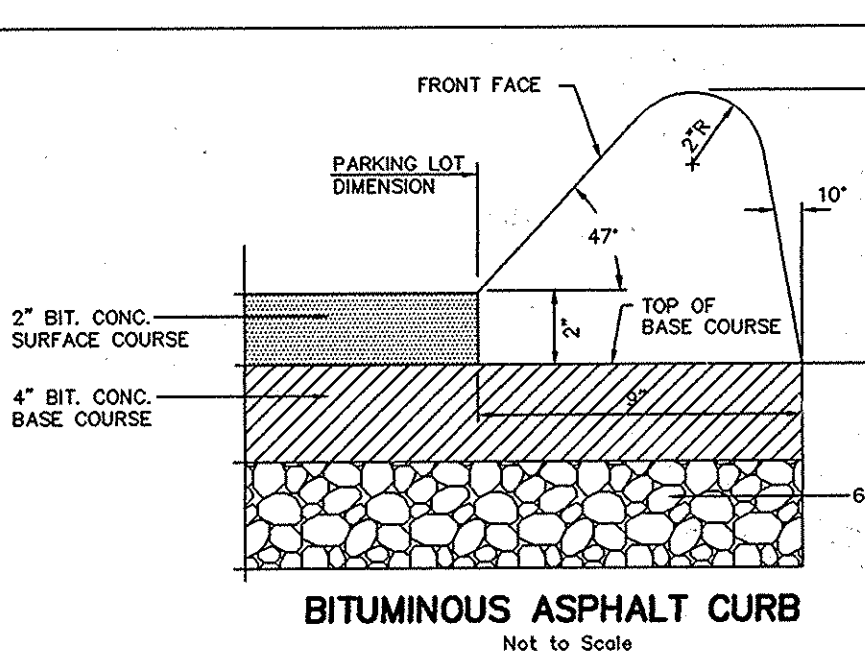
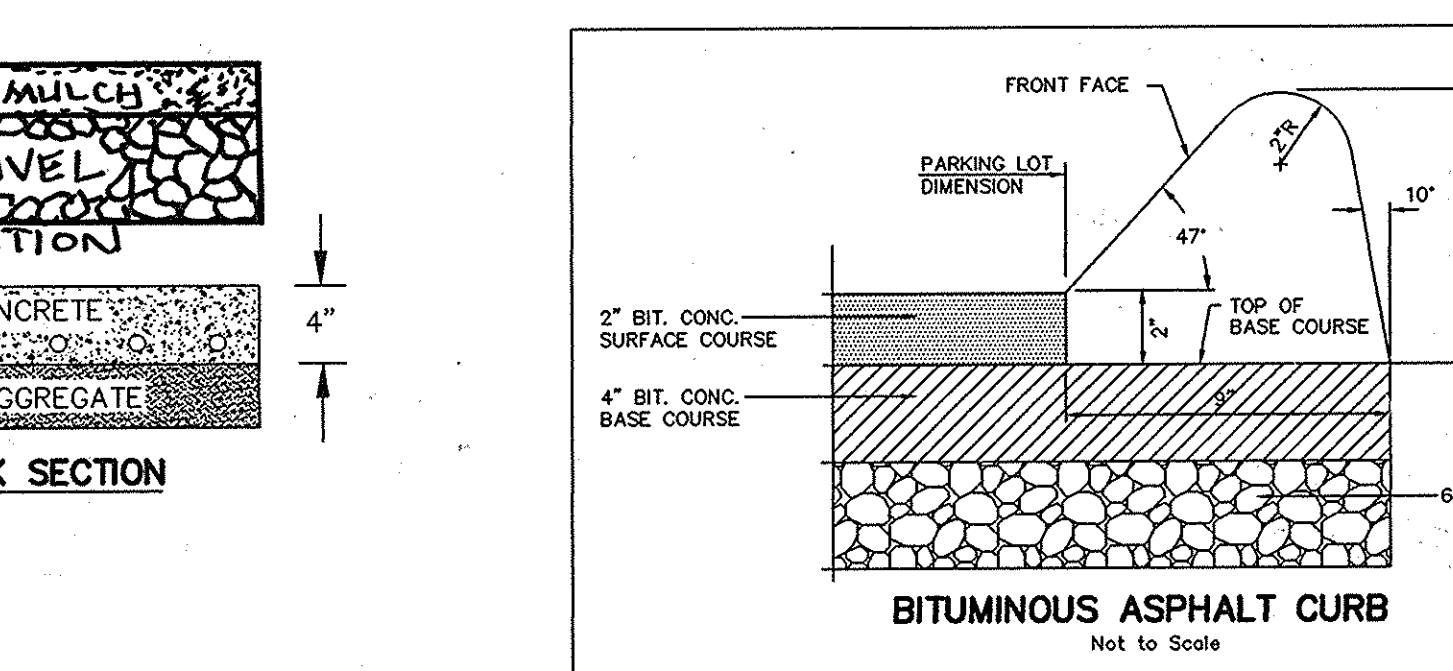
Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within seven calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3:1 horizontal to 1 vertical (3:1) and fourteen days for all other disturbed or graded areas on the project site.

- Permanent Seeding:
 - Soil Test: Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of rough grading. Rates and analyses will be provided to the grading inspector as well as the contractor.
 - Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6 week incubation period to allow oxidation of sulfates.
 - Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3". The top layer shall be loosened by raking, diskling or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds of dolomitic limestone and 21 pounds of 10-20-20 fertilizer per 1,000 square feet. For sites greater than 5 acres, apply fertilizer to the soil to a depth of at least 3" on slopes flatter than 3:1.
 - Seeding: Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder drill, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be 1/4" in clayey soils and 1/2" in sandy soils when using other than the hydroseeder method. Irrigate if soil moisture is deficient to support adequate growth, until vegetation is firmly established. If other seed mixes are to be used, select from Table 25, entitled "Permanent Seeding For Low Maintenance Areas" from the 1994 Standards and Specifications for Soil Erosion and Sediment Control. Mixes suitable for this area are 1, 3, and 5-7. Mixes 5-7 are suitable in non-movable situations.
- Mulching: Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading.
 - Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). If a mulch anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.
 - Securing Straw Mulch: Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:
 - Use a mulch anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Liquid binders may be used and applied heavier at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 1994 Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
 - Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

- ALL PLANTS SHALL BE NURSERY GROWN.
- ALL PLANTS SHALL CONFORM TO THE STANDARDS FOR AN. THEY SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH. THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL-BRANCHED AND DENSELY LEAFED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS, OR LARVAE. THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.
- NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT.
- BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH FIRM NATURAL BALLS OF EARTH, OF DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. CONTAINER GROWN STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO BE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. AND PLANTS SHALL BE LOOSE IN THE CONTAINER.
- ROOT BALLS OF ALL PLANTS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES FROM SUN AND DRYING WINDS OR FROST.
- OWNER OR HIS REPRESENTATIVE SHALL BE NOTIFIED PRIOR TO BEGINNING PLANTING OPERATIONS.
- ALL TREES SHALL BE WRAPPED IMMEDIATELY AFTER THEY ARE PLANTED. APPROVED TREE WRAP SHALL BE INSTALLED ACCORDING TO ACCEPTED INDUSTRY PRACTICE.
- EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL DEAD WOOD OR SUCKERS AND ALL BROKEN OR BADLY BRUISED BRANCHES SHALL BE REMOVED. CUTS OVER 1" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED TREE PAINT.
- MULCH: IMMEDIATELY AFTER PLANTING OPERATIONS ARE COMPLETED ALL TREES AND SHRUBS PLANTING PITS SHALL BE COVERED WITH A 2" LAYER OF SHREPPED HARDWOOD BARK MULCH OR OTHER NOTES

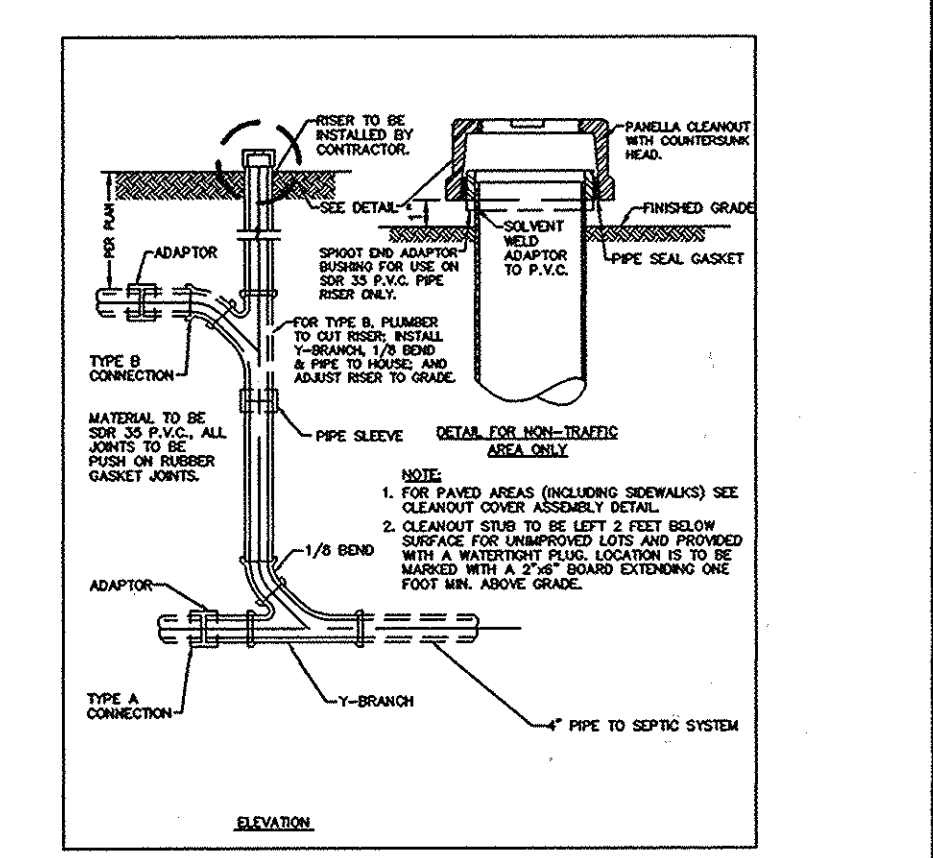


TREE PLANTING AND STAKING - LESS THAN 4" CAL.



PROPOSED 6" WATER LINE TABLE

STATION	EX. GRADE ELEV.	TOP OF PIPE	CUT
0+00	MATCH TO EX. WATER PIPE		
0+50	406.00	402.00	4'
1+00	405.60	401.60	4'
1+50	405.35	401.35	4'
2+00	405.05	401.05	4'
2+50	404.72	400.72	4'
3+00	404.40	400.40	4'
3+50	402.00	398.00	4'
4+00	402.35	398.35	4'
4+49	402.25	398.25	4'



BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
Kevin King 11/2/99 DATE

BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Wayne Newton 11/1/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL NATURAL RESOURCES CONSERVATION SERVICE DATE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR *Bob Smith* 11/10/99 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT *Cindy Hamilton* 11/10/99 DATE

11/05/07 1 DELETED FUTURE FELLOWSHIP HALL, ADDS REARRANGEMENT OF FUTURE PRESBYTERIAN CHURCH AND GARAGE PLANTING NOTES.
11/28/13 3 DETAILS Added bio-retention + new sheets 7-12

OWNER/DEVELOPER
BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH
3291 ST. JOHN'S LANE
ELLICOTT CITY, MD. 21042
ATTN: MARK COLLETTE

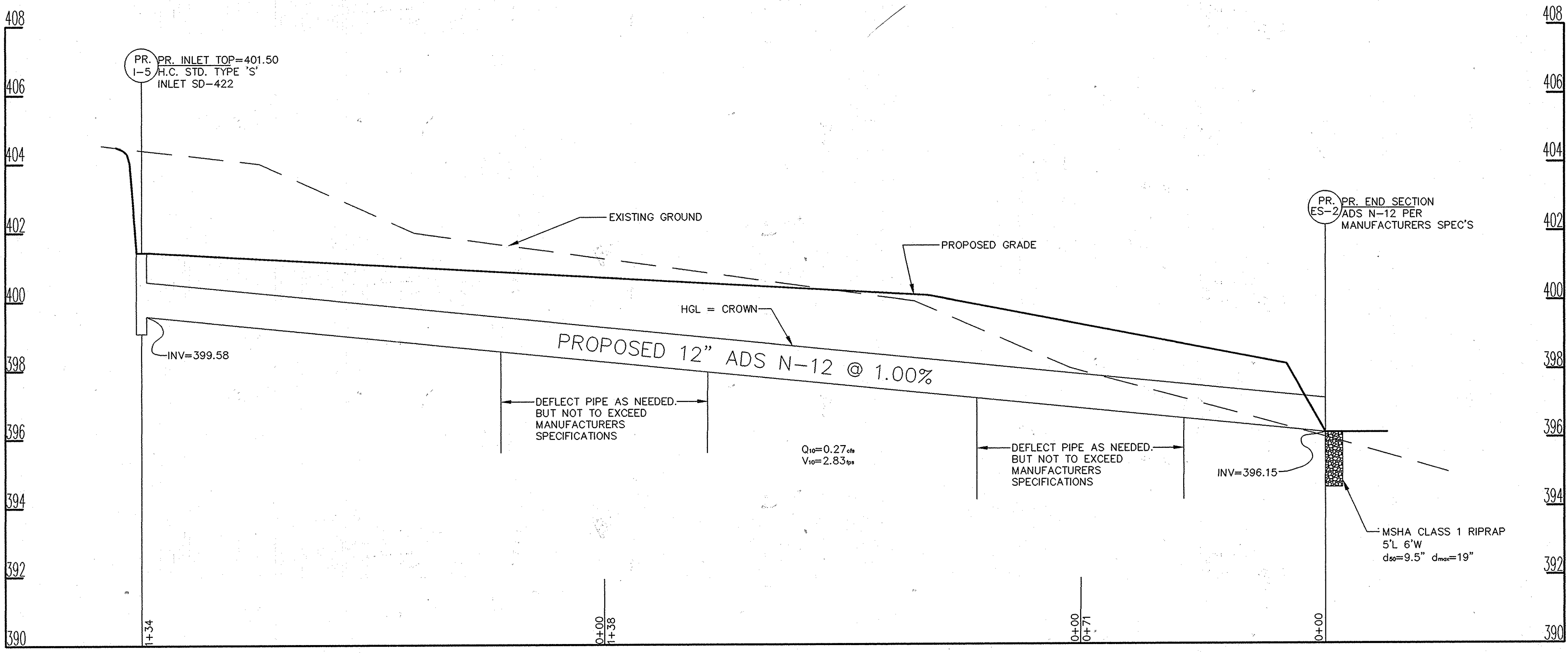
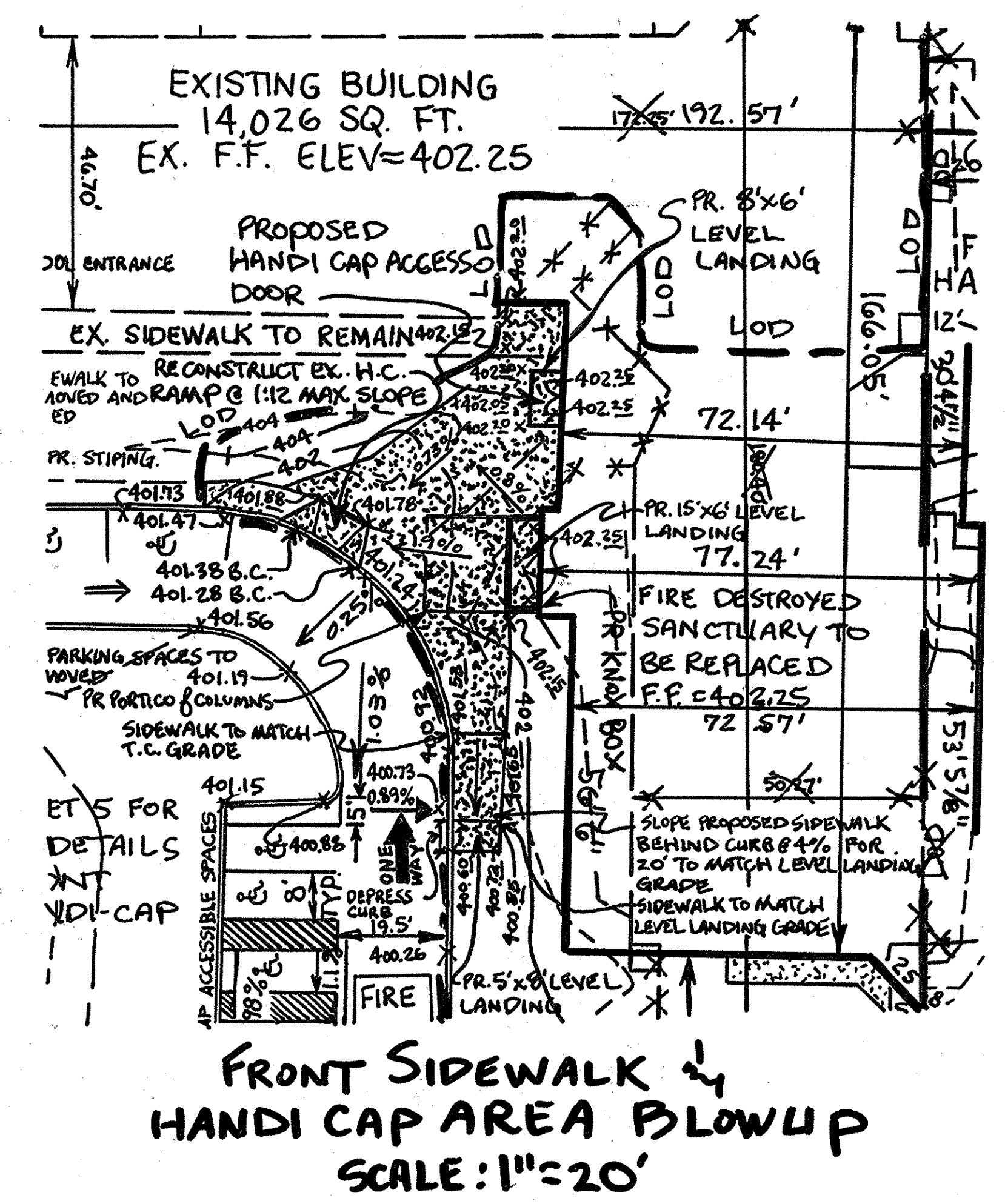
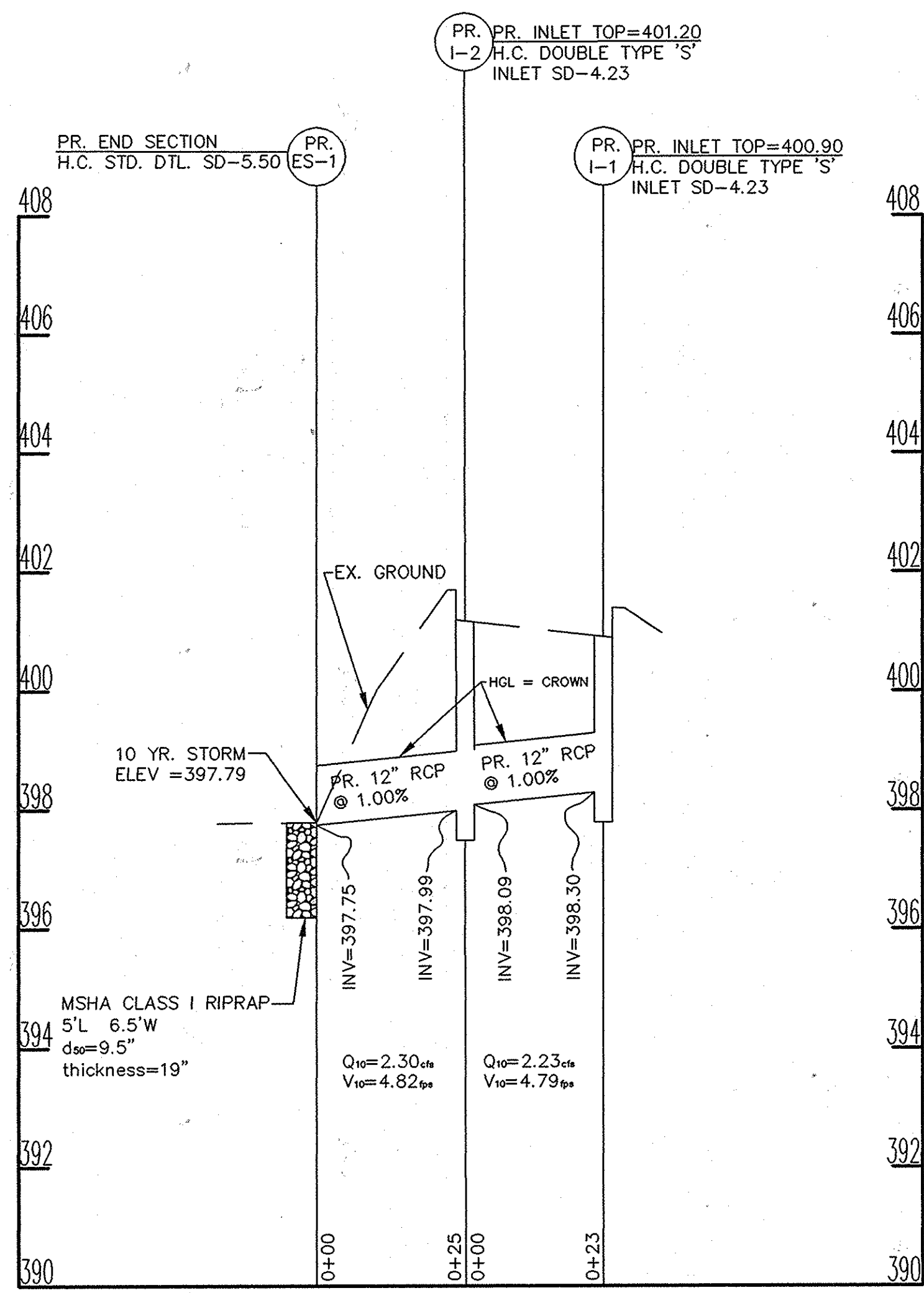
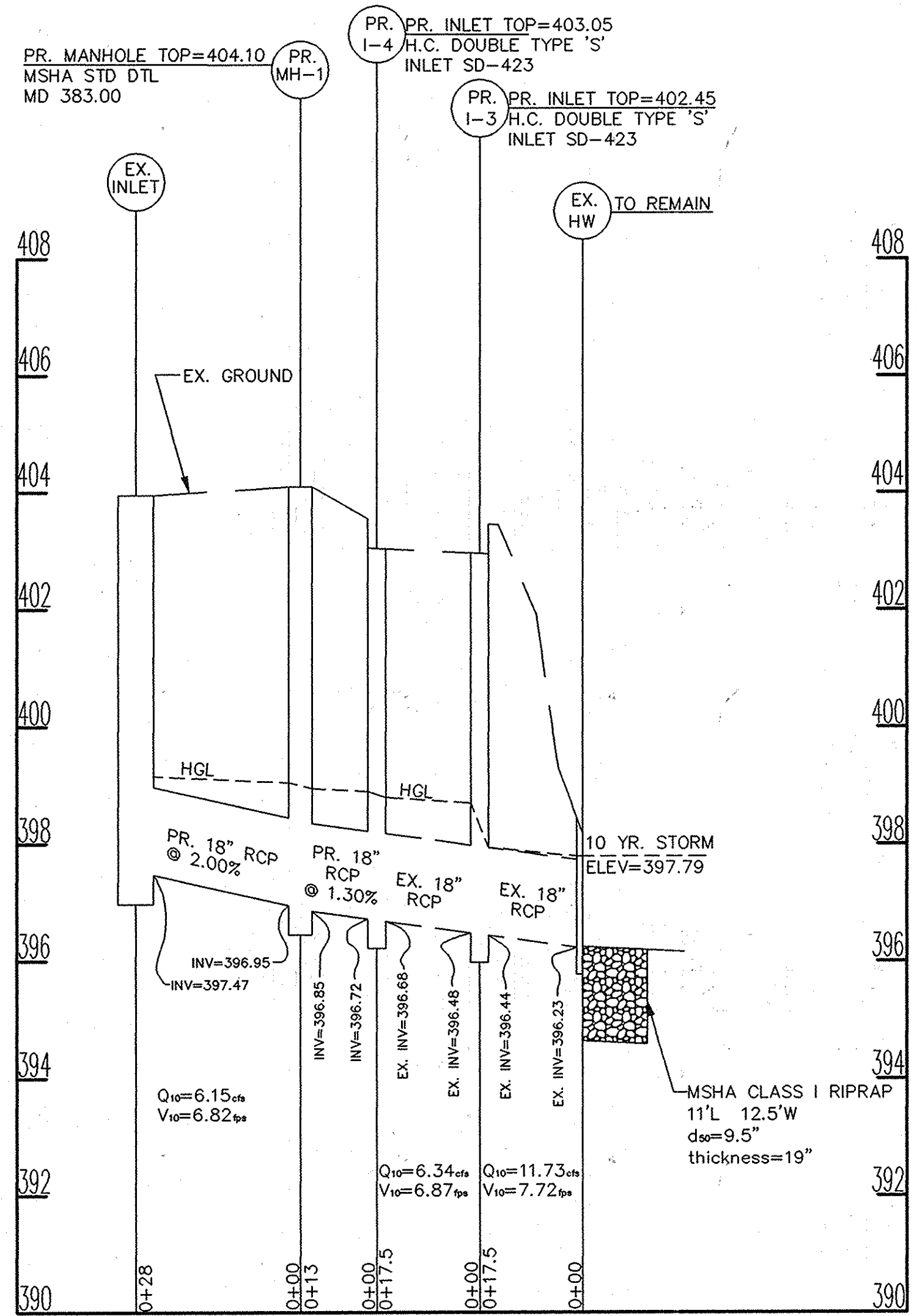
PROJECT BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH
AREA TAX MAP 24, PARCEL 21, ZONED R-20
2nd ELECTION DISTRICT

TITLE NOTES AND DETAILS

MESSICK & ASSOCIATES CONSULTING ENGINEERS
31 OLD SOLOMONS ISLAND RD., SUITE 201
ANNAPOLIS, MARYLAND 21401
(410) 266-3212

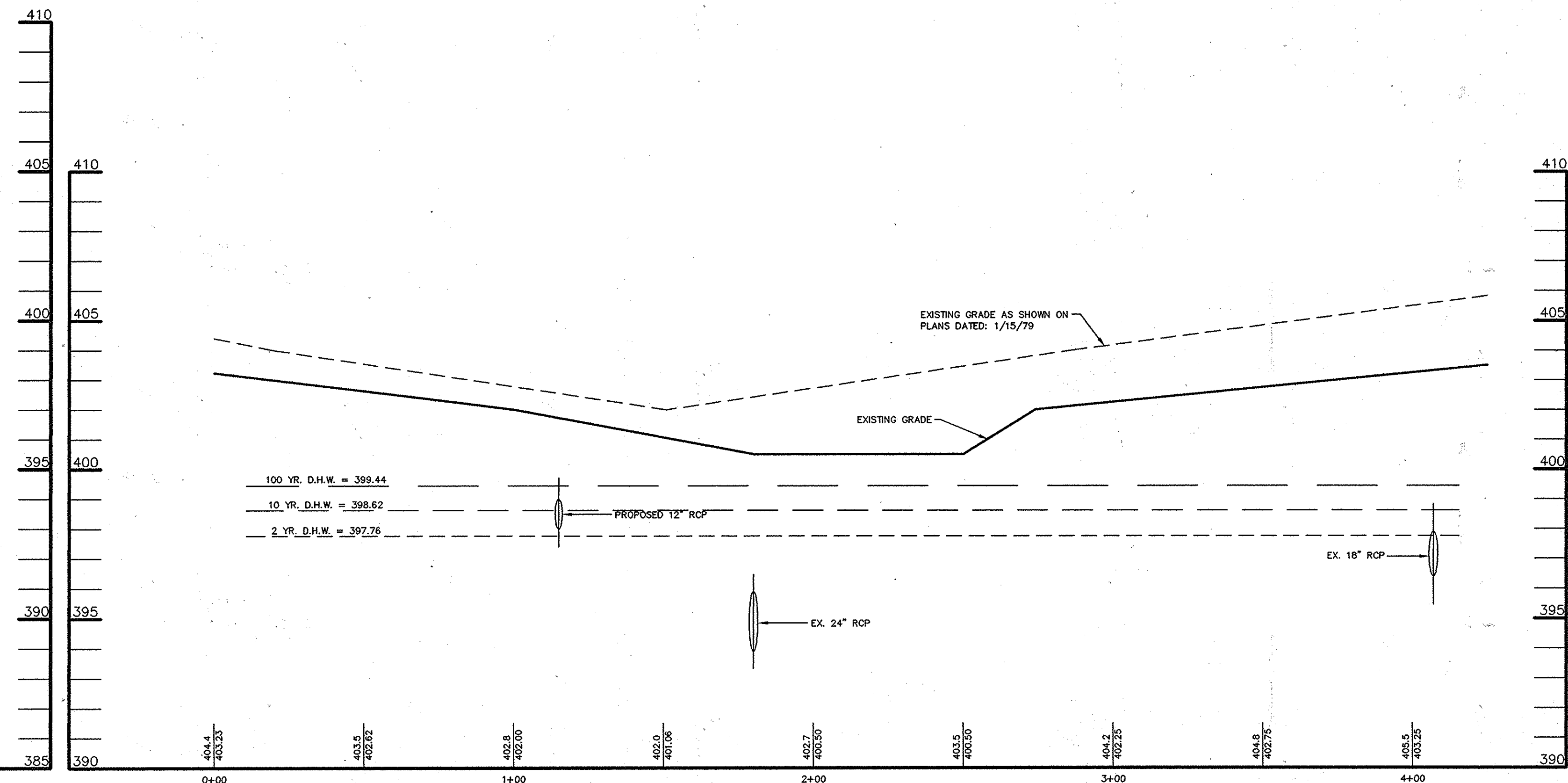
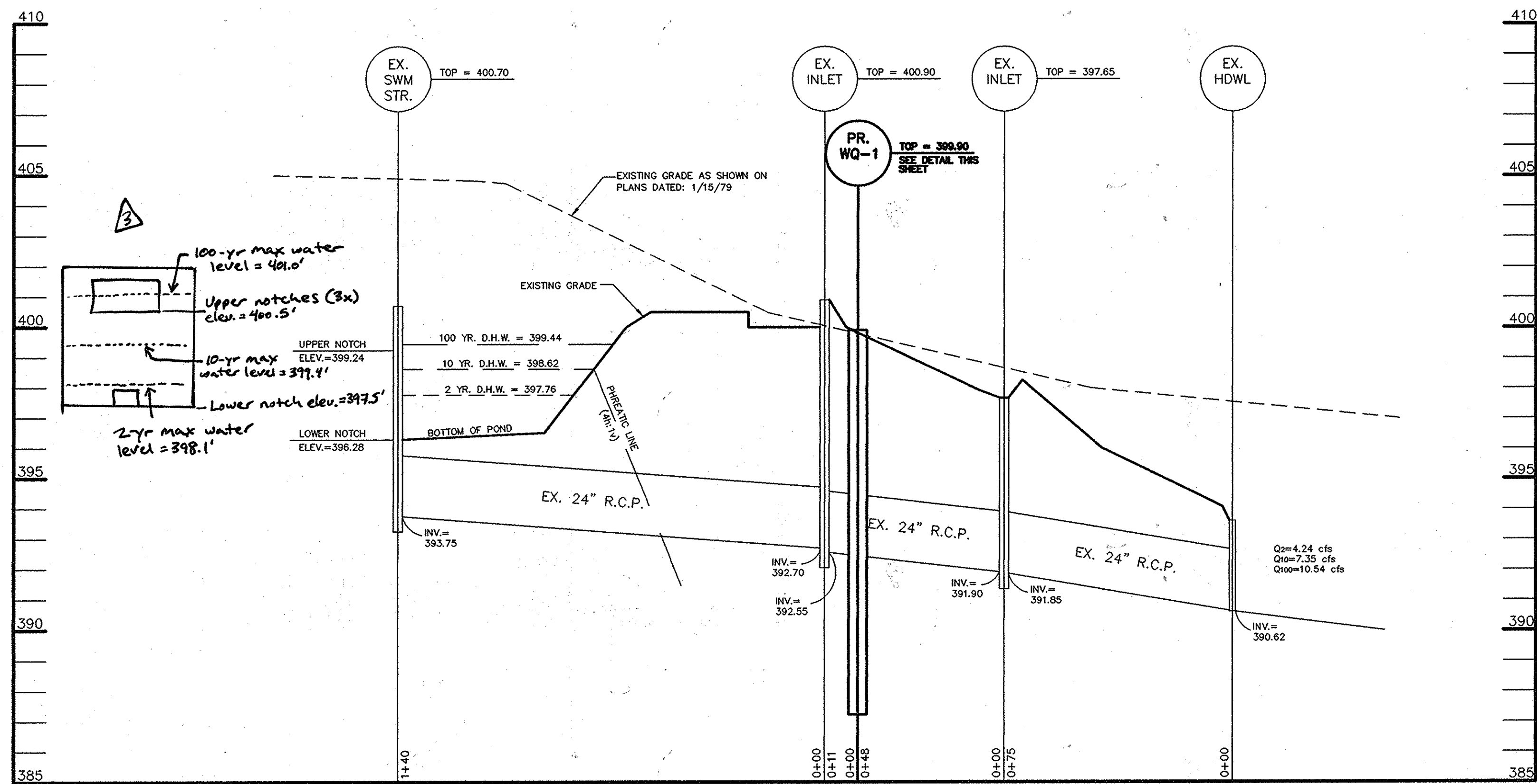
DESIGNED BY: DJV
DRAWN BY: BPO
PROJECT NO:
DATE: APRIL 9, 1999
SCALE: AS SHOWN
DRAWING NO.: 4 OF 12

SDP 99-129



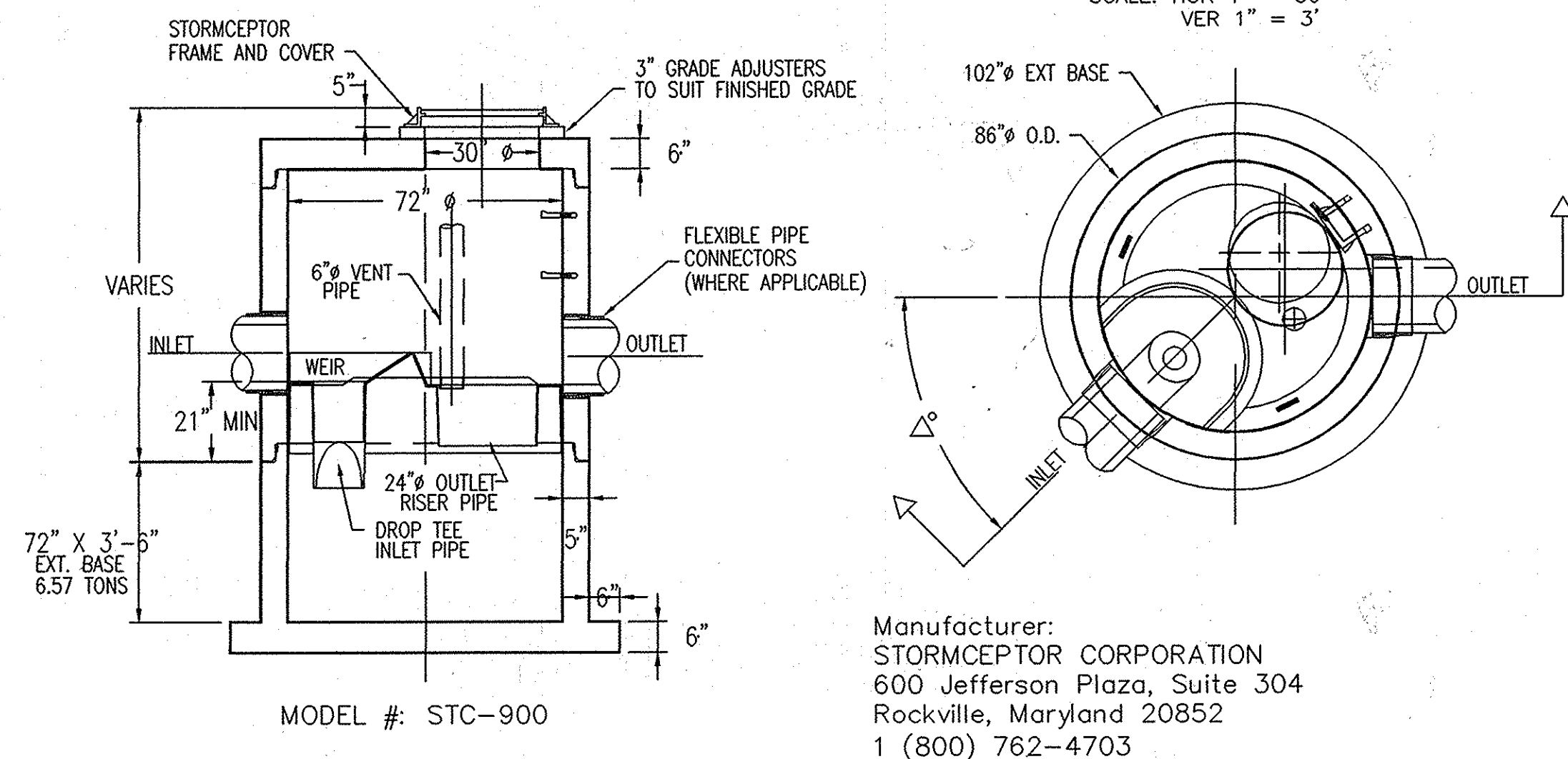
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Gregory P. Hoffman</i> DIRECTOR	11/14/99 DATE
<i>Gregory P. Hoffman</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	11/10/99 DATE
<i>Conita Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/10/99 DATE
1/05/07 1. COLLECTED FUTURE BELLWETHER HALL (SHOW) REPLACEMENT OF FIRE DESTROYED SANCTUARY 8/12/13 2. Added bioretention + new sheets 7-12	
DATE NO.	REVISION
OWNER/DEVELOPER	
BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH 3291 ST. JOHN'S LANE ELLCOTT CITY, MD. 21042 ATTN: MARK COLLETTE	
PROJECT	
BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH	
AREA TAX MAP 24, PARCEL 21, ZONED R-20 2nd ELECTION DISTRICT	
TITLE	
STORM DRAIN PROFILES	
MESSICK & ASSOCIATES CONSULTING ENGINEERS 31 OLD SOLOMONS ISLAND RD., SUITE 201 ANNAPOLIS, MARYLAND 21401 (410) 266-3212	
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	DESIGNED BY: DJV
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	DRAWN BY: BPO
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	PROJECT NO:
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	DATE: APRIL 9, 1999
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	SCALE: AS SHOWN
<i>Wayne A. Newton</i> DATE 11/10/99 DATE	DRAWING NO.: 5 OF 12

SDP 99-129



PROFILE A-A
EXISTING PRINCIPAL SPILLWAY PROFILE
STORMWATER MANAGEMENT
SCALE: HOR 1" = 30'
VER 1" = 3'

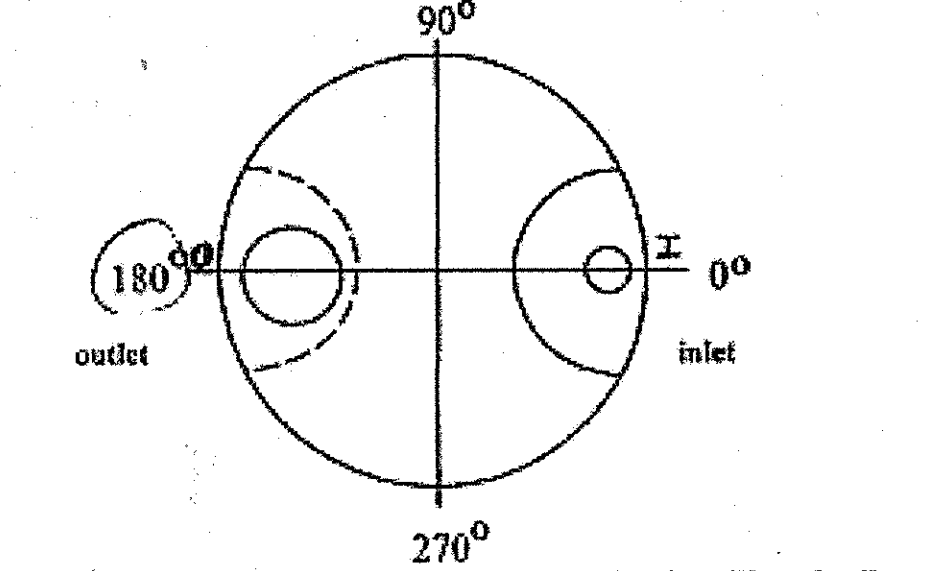
PROFILE B-B
EXISTING EMBANKMENT PROFILE
STORMWATER MANAGEMENT
SCALE: HOR 1" = 30'
VER 1" = 3'



PROPOSED STORMCEPTOR
(PR. WQ-1)
SCALE: 1" = 3'

Stormceptor® Order Form

This document is to be included on SWM Plan by the designer



Draw the orientation of inlet (max 2) and outlet pipes (1) on the diagram. Clearly mark the inlet pipe with an "I" and the outlet pipe with an "O". *Be sure to provide the inlet/outlet pipe angle in degrees.

Stormceptor Model # (Circle One): 450 (900) 1200 1800 2400 3600 4800 6000 7200
 Install. Type (Circle One): Commercial Industrial (Residential) Highway/DOT Gas Station Mun/Govt
 Other (Be specific as possible): Church (Project by Howard County)
 (Circle One): Single Inlet Multiple Inlet Impervious Drainage Area (in acres)
 This installation is... (Circle One): New Construction or RETIRO

Contractor Information:
 Contractor: (To Be Determined) Contact Person _____
 Phone () _____ Fax () _____

Owner (Maintainer) Information:
 Owner: Baltimore First Seventh Day Adventist Church Contact Person: REV. BEN BOYD
 Phone: (410) 465-6864 Fax () _____

Project Details:
 Name of Project: Baltimore First Seventh Day Adventist Church Design Firm: Messick & Associates
 Deliver insert by (date): Contractor
 Address of Installation: 3291 St. John's Lane City: Ellicott City State: MD
 Designer Contact: Daniel Veeney Phone: (410) 266-3212 Fax: (410) 266-3532
 Approving Agency: Howard County Contact: Thomas Aveyan Phone: (410) _____
 *Please include all significant details about this project for consideration in press releases or feature articles below (use extra sheets if required)

Please fax this sheet back to: Stormceptor Corp. at (301) 762-4190
 Attention: Vincent H. Berg, P.E. (301) 762-8361
 For technical assistance please call Stormceptor Corporation toll free at (800) 762-4703
 All lifting apparatus to be provided by the installation contractor

OPERATION AND MAINTENANCE SCHEDULE FOR
STORMCEPTOR WATER QUALITY DEVICE

Stormceptor water quality structures shall be inspected, cleaned, and maintained periodically to maintain optimal operation and function.

Inspection
 The Stormceptor unit shall be inspected every three (3) months for the first year and at minimum, once a year or as required by Howard County, thereafter. Also, the Stormceptor shall be inspected immediately after each petroleum spill. The inspection shall include but not limited to:

1. Checking both inlet and outlet pipes for obstructions. If obstructions are found, remove immediately.
2. Check oil/grease and sediment depth in the structure. These items can be checked using a clear plastic sampling tube to extract a column of water and sediment.
3. Check internal structure for obstructions or cracks.

The inspection shall be documented utilizing the Stormceptor Inspection/Monitoring Form. The owner shall retain and make the inspection and monitoring forms available to Howard County officials upon request.

Maintenance

The stormceptor shall be maintained as needed to provide optimal operation and function.

1. Obstructions - remove immediately upon inspection.
2. Sediment, debris, and Oil Accumulation - The unit shall be cleaned if sediment exceeds 6 inches in depth, or if debris and/or floating hydrocarbons prevent the structure from functioning properly. The unit shall be cleaned by a vacuum truck to remove water, sediment, debris, and floating hydrocarbons.

Any liquid and/or solid matter removed from the unit shall be disposed of at a state licensed disposal facility. Contact the appropriate regulatory agencies for assistance and regulatory compliance.

3. Cracks/Structural Problems - Consult manufacturer for repair services and/or details.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Director: Scott Smith DATE: 11/10/99
 Chief, Development Engineering Division: Scott Smith DATE: 11/10/99
 Chief, Division of Land Development: Cindy Hamilton DATE: 11/10/99

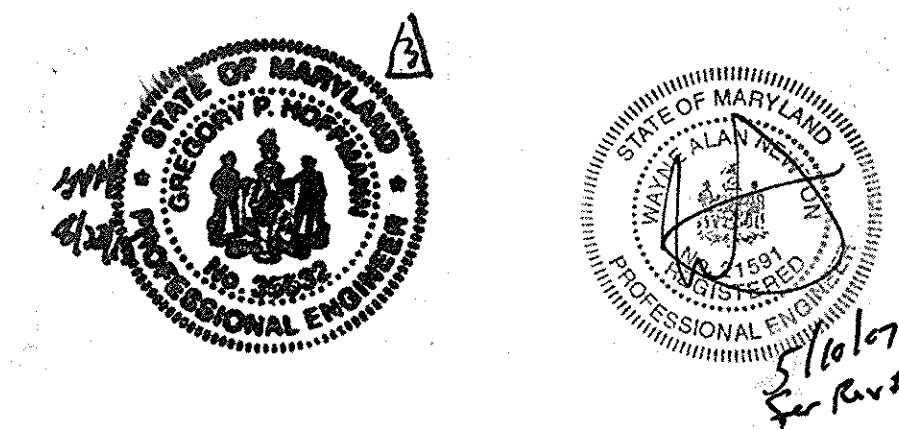
8/18/15 3 Added bio-retention + new sheets 7-12
 OWNER/DEVELOPER
 BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH
 3291 ST. JOHN'S LANE
 ELLICOTT CITY, MD. 21042
 ATTN: MARK COLLETTE

PROJECT: BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH
 AREA: TAX MAP 24, PARCEL 21, ZONED R-20
 2nd ELECTION DISTRICT

TITLE: STORMWATER MANAGEMENT PROFILES AND DETAILS

MESSICK & ASSOCIATES
 CONSULTING ENGINEERS
 31 OLD SOLOMONS ISLAND RD., SUITE 201
 ANNAPOLIS, MARYLAND 21401
 (410) 266-3212

DESIGNED BY: DJV
 DRAWN BY: BPO
 PROJECT NO:
 DATE: APRIL 9, 1999
 SCALE: AS SHOWN
 DRAWING NO.: 6 OF 12



SDP 99-129

General Notes

- All construction shall be in accordance with the Maryland State Highway Administration Standards and Specifications unless otherwise noted.
- The existing utilities and obstructions shown are from the best available records and shall be verified by the contractor to their satisfaction prior to construction. Necessary precautions shall be taken by the contractor to protect existing services and mains. Any damage to them shall be repaired immediately at the contractor's expense.
- It shall be distinctly understood that failure to mention specifically any work which would naturally be required to complete the project shall not relieve the contractor of their responsibility to complete such work.
- The contractor shall call "Miss Utility" (1-800-257-7777) a minimum of 48 hours in advance of any excavation, boring, pile driving, and/or digging for the location of utility lines.
- Base contours are from completed survey.
- The construction of this project will not result in the development of any new impervious surfaces. This project is a stormwater retrofit that treats a previously developed area and improves the water quality through construction of a bioretention area.
- Any sediment control measures disturbed by construction must be repaired the same day.

Construction Sequence

- Notify Soil Conservation District 24 hours prior to the start of construction (410-479-1202, ext. 3). Obtain approval before proceeding further.
- Have all utilities marked at the site.
- Mark the limits of the bioretention with orange spray paint, stakes, or flags.
- Install stabilized construction entrance, temporary stockpile area, and associated erosion and sediment control devices as shown in construction drawings and outlined in the construction specifications.
- Stabilized construction entrances shall be provided at exits from all temporary construction access points onto main paved areas.
- Install orange construction/safety fence at the limits of disturbance (LOD) and silt fence around stockpiles as shown on the construction plans.
- Dirt tracked onto existing pavement must be cleaned up by the end of the work day or before the next rain event (whichever is sooner).
- Excavate the bioretention areas to the depths indicated on the plans and scarify the existing soil surfaces. Do not compact the in-situ materials. Haul excess soil offsite.
- Backfill 3 inches of #57 stone as bedding. Install underdrain system and clean out.
- Backfill additional 7 or 9 inches of #57 stone followed by choker stone (7 inches for Bioretention 1 and 9 inches for Bioretention 2).
- Backfill bioretention areas with bioretention soil mixture as shown in the plans and detailed in the specifications. Overfilling is recommended to account for settlement.
- Install Class 1 Riprap in bioretention areas as shown on plan. Use geotextile between soil and riprap.
- Plant the bioretention areas with the seed mix shown on the planting plan.
- Permanently stabilize any disturbed areas outside of the bioretention surface areas. Water the seeded areas.
- After completion of all work, remove construction entrances and temporary stockpile areas.
- When site is completely stabilized, notify the sediment control inspector and obtain approval to remove sediment and erosion control. Remove silt fence, inlet protection, and orange safety fence.

Bioretention Material Specifications

Gravel for Underdrain - Underdrain gravel shall be 1 - 1 1/2 inch in diameter (Double washed, AASHTO #57 stone). River-run, washed gravel is preferred. Placement of the gravel over the underdrain must be done with care. Avoid dropping the gravel from high levels from a backhoe or front-end loader bucket. Spill directly over underdrain and spread manually.

Choker Stone - Clean, washed #8 or #89 stone.

Perforated 4 inch PVC Underdrain - Rigid Schedule 40 PVC pipe either drilled or bought in a commonly available perforated style (e.g. 3/4 or 1/2 inch perforations, 6 inch center to center, along four longitudinal rows). Perforated pipe shall be double-wrapped in 1/4" mesh hardware cloth.

Solid 4 inch PVC Cleanouts - Rigid Schedule 40 PVC

PVC Pipe Fittings, Connections, and Cleanout - Pipe sections shall be coupled using suitable connection rings and flanges. Cleanouts shall be attached to underdrain with 45 degree connection and capped with screw top.

Filter Media - Soil mixture shall be 80-85% sand; 1% leaf compost or organic matter; and 14% - 19% topsoil (loam). The soil shall be uniform mix, free of stones, stumps, roots, weeds, or other similar objects larger than two inches. The planting soil shall be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthumb, or other noxious weeds as specified under COMAR 15.08.01.05. The soil should also be free of allelopathic species (such as *Juglans spp.*, *Plantanus occidentalis*, etc). Provide clean sand, free of deleterious materials. Sand shall meet AASHTO M-6 or ASTM C-33 with grain size of 0.02-0.04 inch. The filter media should be tested for phosphorous content and the P-index of the media should not exceed 30 (22.5 mg P per kg soil).

The filter media for the bioretention area shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported then a texture analysis shall be performed for each location where the topsoil was excavated. Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility. Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

Mulch - Acceptable mulch shall be shredded hardwood only. It shall consist of bark from hardwood trees which have been milled and screened to a maximum of 4 inches particle size and provide a uniform texture free from sawdust, toxic substances, and foreign materials including plant material. Mulch must be aged 6 months, minimum. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Mulch must be 3 inches in depth.

Riprap - Class 0 riprap: Per NRCS and MD SHA standards - D50 = 4" (10 lb.), 100% less than 7" or 33 lb., 0-10% less than 2" or 1 lb.

Geotextile - Opening size of #40 sieve, non-woven.

Temporary Soil Stabilization Matting - Use temporary soil stabilization matting made of degradable (lasts 6 months minimum) natural or man-made fibers (mostly organic). Mat must have uniform thickness and distribution of fibers throughout and be smolder resistant. Chemicals used in the mat must be non-leaching and non-toxic to vegetation and seed germination and non-injurious to the skin. If present, netting must be extruded plastic with a maximum mesh opening of 2x2 inches and sufficiently bonded or sewn on 2 inch centers along longitudinal axis of the material to prevent separation of the net from the parent material.

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS FOR AREAS OUTSIDE BIORETENTION AREAS

- Soil Preparation**
 - Temporary Stabilization
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - 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).
 - 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.
 - 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.
- Topsoiling**
 - 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.
 - 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.
 - 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.
 - 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 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.
 - 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 soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
 - 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 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.
 - 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.
- Soil Amendments (Fertilizer and Lime Specifications)**
 - 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 be all 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.
 - 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.

SEEDING AND MULCHING OUTSIDE BIORETENTION AREAS

- Seeding**
 - Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when 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.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil B.16
 - Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - 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 hydroseeding.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.
- Mulching**
 - Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - 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 spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - 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.
 - WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
 - 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.
 - 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.
 - 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.
 - 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.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

Bioretention	
Drainage Area, DA	106,305 s.f. (2.44 ac.)
Imperviousness, I	70% (1.69 ac.)
Runoff Coefficient, Rv = 0.009(I)+0.05	0.68
Design Storm, P	1.0 in.
Water Quality Volume, WQv = P*RV*DA	6,023 c.f.
Avg. Depth of Filter Bed, df	24 in.
Maximum Ponding Depth, hmax	12 in.
WQv Treated by Bioretention	5,305 c.f.
Percentage WQv Treated	88%
Surface Area of Bioretention	3,565 s.f.
Total Area Disturbed for Construction	15,580 s.f.

Stormwater calculations were derived using the bioretention design guidelines specified in the MDE 2009 Stormwater Manual.

Pipe from new inlet to pond

Parameter	Value	Formula / Source
Diameter (in)	8	
Elevation change (ft)	3.70	Survey / CAD
Pipe length (ft)	116.0	Survey / CAD
Slope (#/ft)	0.032	Elevation change / Pipe length
Material	PVC	
Manning's Coefficient	0.01	www.engineeringtoolbox.com
Max flow rate at 94% full (cfs)	3.02	V = (k/n)*R ^{2.48} S ^{1/2}
Peak 100-year flow rate (cfs)	1.69	TR-55

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 9/4/15
HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Shel Chubb 9-10-15
Chief, Development Engineering Division Date

Wesley Leonard 9-10-15
Chief, Division of Land Development Date

Nancy J. Jagan 9-11-15
Director Date

EXISTING UTILITIES

THE TYPE AND LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTACT "MISS UTILITY" AT 1-800-257-7777 A MINIMUM OF 48 HOURS PRIOR TO START OF WORK

Temporary Seeding Summary						
Hardiness Zone: 6b						
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths (inches)	Fertilizer Rate (10-20-20)	Lime Rate
1	Barley	96	3-1 to 5-15;	1	436 lb/ac	2 tons/ac
2	Oats	72	8-1 to 11-15	1	(10 lb/1000sf)	(90 lb/1000sf)
3	Rye	112		1		

Note: Use of this information does not preclude meeting all of the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control

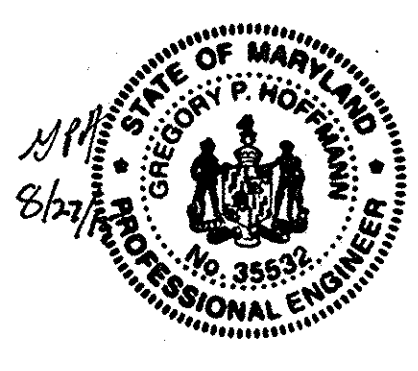
Permanent Seeding Summary						
Seed Mixture (Hardiness Zone:6b): 11 (Table B3 in Maryland Guidebook)						
No.	Species	Application Rate (lb/ac)	Seeding Depths (inches)	Fertilizer Rate		Lime Rate
				N	P2O5	K2O
1	Creeping Red Fescue	30	1/2 to 1"			
2	Chewings Fescue	30	1/2 to 1"	45 lb/ac	90 lb/ac	2 ton/ac
3	Kentucky Bluegrass	20	1/2 to 1"	(1 lb/1000 sf)	(2 lb/1000 sf)	(90 lb/1000 sf)
4	Optional - Rough Bluegrass	15	1/2 to 1"			

DATE: May 15, 2015
SCALE:
DESIGN BY: Name
DRAWN BY: Name
CHECKED BY: Name
PROJECT ID: W-14-016
SHEET NUMBER: 7 OF 12

SURVEY COMPLETED BY:
Carl F. Kreutter, L.S.
C.F. Kreutter & Associates, Inc.
1613 Fulleton Rd.
Edgewater, MD 21037
(Phone) 301-974-3065

OWNER:
Baltimore First Seventh-Day Adventist Church
3291 Saint Johns Lane
Ellicott City, MD 21042
410-465-6864

PREPARED FOR:
Jim Caldwell
Howard County Office of Environmental Health
3430 Court House Drive
Ellicott City, MD 21043
410-313-0700



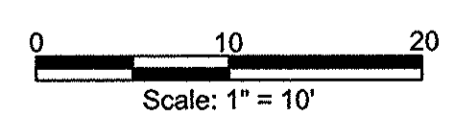
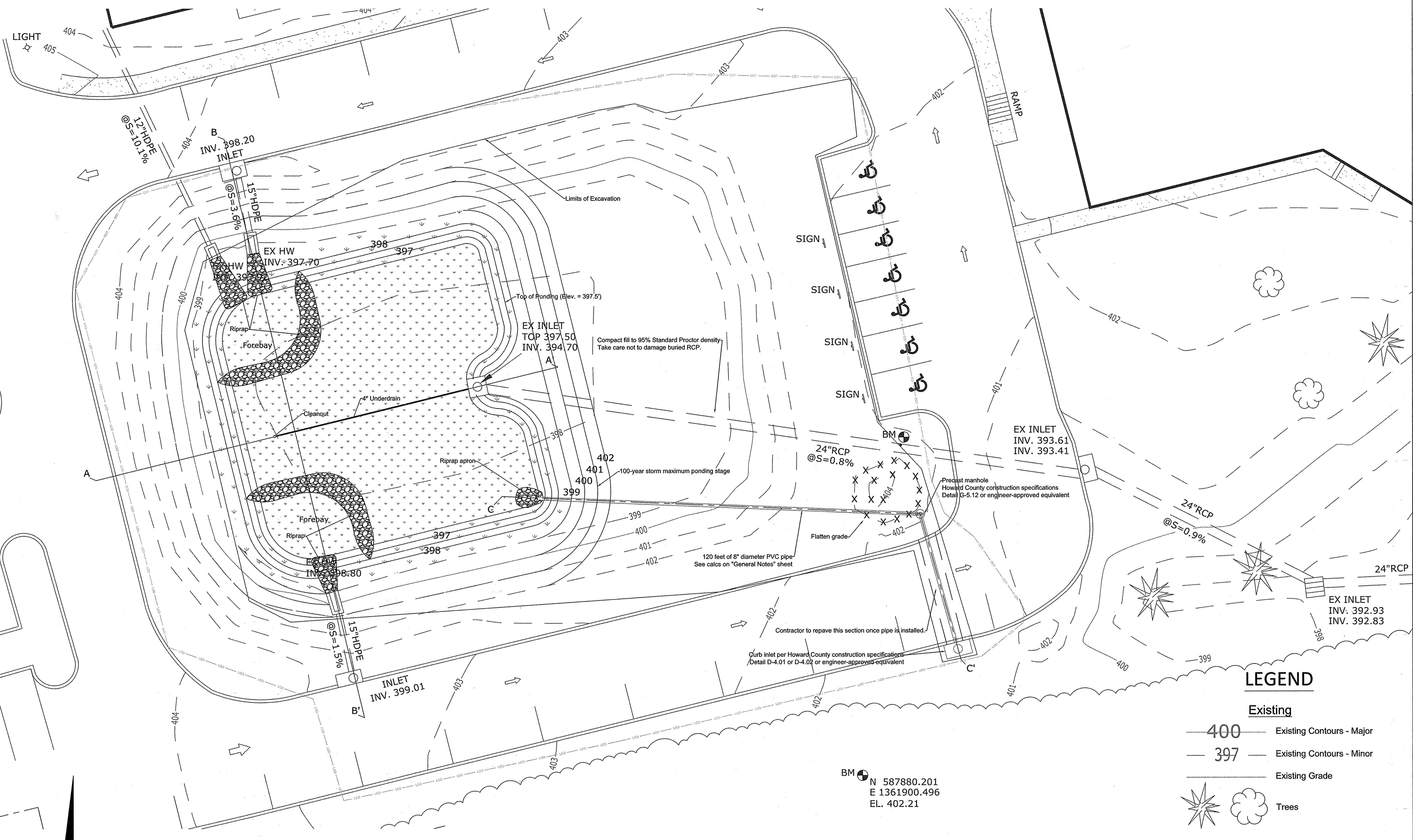
PREPARED BY:
The Center for Watershed Protection
3230 North Ridge Rd Ste 290
Ellicott City, MD 21043
www.cwp.org
(410) 461-8323

CENTER FOR WATERSHED PROTECTION

General Notes

Baltimore First Seventh-Day Adventist Church

Ellicott City, Maryland



This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 9/4/15
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 9-10-15
 Chief, Development Engineering Division 4 Date

Chief, Division of Land Development 9-10-15
 Chief, Division of Land Development 2/5 Date

Director 9-11-15
 Director Date



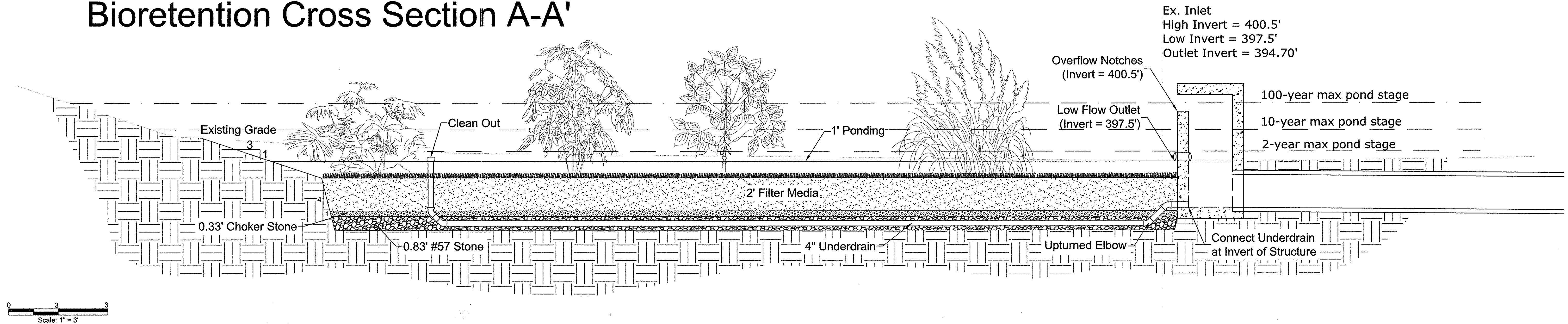
LEGEND

- Existing**
- 400 — Existing Contours - Major
 - 397 — Existing Contours - Minor
 - — Existing Grade
 - ☀ ☁ Trees
- Proposed**
- 400 — Proposed Contours
 - — Proposed Grade
 - — Limits of Excavation
 - SF — SF — Silt Fence
 - — Tree Protection
 - — Limits of Disturbance
 - — Proposed Practice

BM N 587880.201
 E 1361900.496
 EL. 402.21

DATE: May 15, 2015	SCALE: 1 inch = 10 feet	DESIGN BY: None	DATE: May 15, 2015
REVISION DATE: None	DESIGN TYPE: None	DRAWN BY: None	PROJECT ID: W-14-016
REVISION TYPE: None	CHECKED BY: None	PROJECT ID: W-14-016	SHEET NUMBER: 8 OF 12
SURVEY COMPLETED BY: Carl F. Kreutter, L.S. C.F. Kreutter & Associates, Inc. 1613 Fullerton Rd. Edgewater, MD 21037 (Phone) 301-974-9065			
OWNER: Baltimore First Seventh-Day Adventist Church 3291 Saint Johns Lane Ellicott City, MD 21042 410-465-6864			
PREPARED FOR: Jim Caldwell Howard County Office of Environmental Sustainability 3400 Central Expressway Ellicott City, MD 21043 410-313-0700			
PREPARED BY: The Center for Watershed Protection 3290 North Ridge Rd Ste 290 Ellicott City, MD 21043 www.cwp.org (410) 461-8323			
CENTER FOR WATERSHED PROTECTION			
Proposed Conditions Baltimore First Seventh-Day Adventist Church Ellicott City, Maryland			

Bioretention Cross Section A-A'



Ex. Inlet
 High Invert = 400.5'
 Low Invert = 397.5'
 Outlet Invert = 394.70'

DATE:	May 15, 2015	SCALE:	As shown
REVISION DATE:	None	DESIGN BY:	None
REVISION TYPE:	None	DRAWN BY:	None
REVISION DATE:	None	CHECKED BY:	None
REVISION TYPE:	None	PROJECT ID:	W-14-016
REVISION DATE:	None	PROJECT NAME:	Baltimore First Seventh-Day Adventist Church
REVISION TYPE:	None	PROJECT LOCATION:	1613 Fullerton Rd, Ellicott City, MD 21042
REVISION DATE:	None	PROJECT NUMBER:	301-974-9065
REVISION TYPE:	None	SHEET NUMBER:	9 of 12

SURVEY COMPLETED BY:
 Carl F. Kreutter, L.S.
 C.F. Kreutter & Associates, Inc.
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 (Phone) 301-974-9065

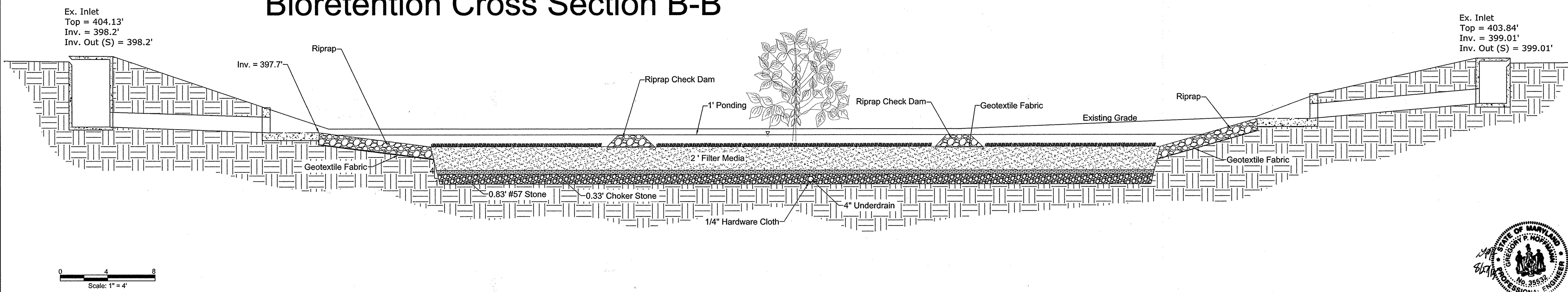
OWNER:
 Baltimore First Seventh-Day Adventist Church
 3291 Saint Johns Lane
 Ellicott City, MD 21042
 410-465-6864

PREPARED FOR:
 Howard County Office of Environmental Sustainability
 3290 North Ridge Rd, Ste 290
 Ellicott City, MD 21043
 www.hcp.org
 410-313-0700

PREPARED BY:
 The Center for Watershed Protection
 3290 North Ridge Rd, Ste 290
 Ellicott City, MD 21043
 www.cwp.org
 (410) 461-8323



Bioretention Cross Section B-B'

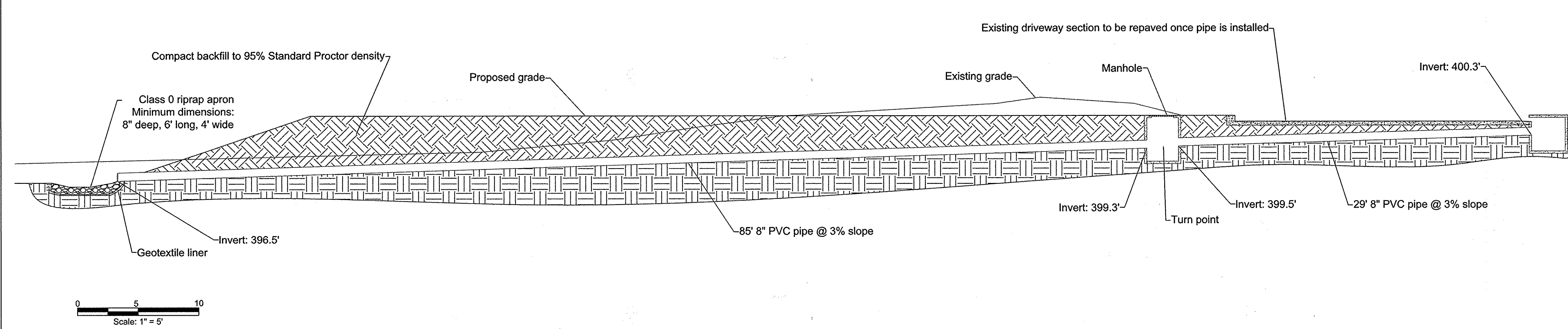


Ex. Inlet
 Top = 404.13'
 Inv. = 398.2'
 Inv. Out (S) = 398.2'

Ex. Inlet
 Top = 403.84'
 Inv. = 399.01'
 Inv. Out (S) = 399.01'

Scale: 1" = 4'

Proposed Catch Basin and Conveyance Profile C-C'



Scale: 1" = 5'

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John C. Roberts
 HOWARD SCD
 9/9/15
 Date

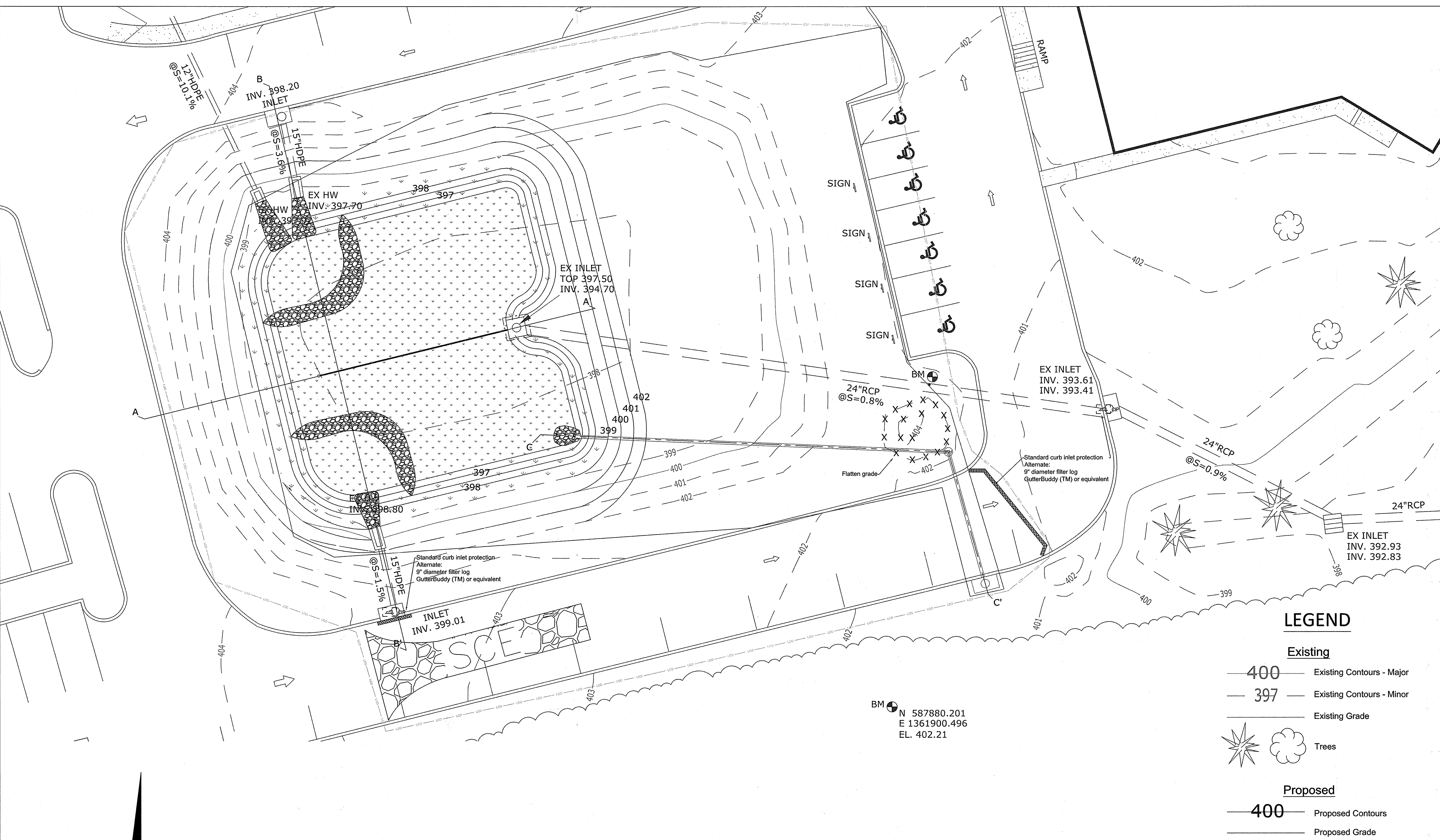
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
 9-10-15
 Date

Chief, Division of Land Development
 9-10-15
 Date

Director
 9-11-15
 Date

Cross Sections
 Baltimore First Seventh-Day Adventist Church
 Ellicott City, Maryland



SCALE:	1 inch = 10 feet
DATE:	May 15, 2015
REVISION DATE:	None
DESIGN BY:	None
REVISION TYPE:	None
DRAWN BY:	None
CHECKED BY:	None
PROJECT ID:	W-14-016
SHEET NUMBER:	10 of 12

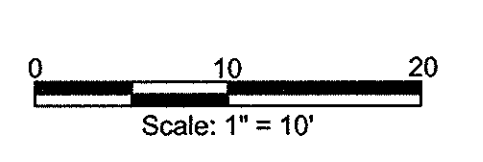
SURVEY COMPLETED BY:
 Carl F. Kreutter, L.S.
 C.F. Kreutter & Associates, Inc.
 1513 Fullerton Rd.
 Edgewater, MD 21037
 (Phone) 301-974-9065

OWNER:
 Baltimore First Seventh-Day Adventist Church
 3291 Saint Johns Lane
 Ellicott City, MD 21042
 410-466-6864

PREPARED FOR:
 Jim Caldwell
 Howard County Office of Environmental Sustainability
 10000 Ellicott City Rd.
 Ellicott City, MD 21042
 410-313-0770

LEGEND

- Existing**
- 400 — Existing Contours - Major
 - 397 — Existing Contours - Minor
 - — Existing Grade
 - ☼ ☼ Trees
- Proposed**
- 400 — Proposed Contours
 - — Proposed Grade
 - — Limits of Excavation
 - - - - Silt Fence
 - ○ ○ ○ Tree Protection
 - — — — Limits of Disturbance
 - — — — Proposed Practice
 - — — — Stabilized Construction Entrance



This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John K. Robertson 9/4/15
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

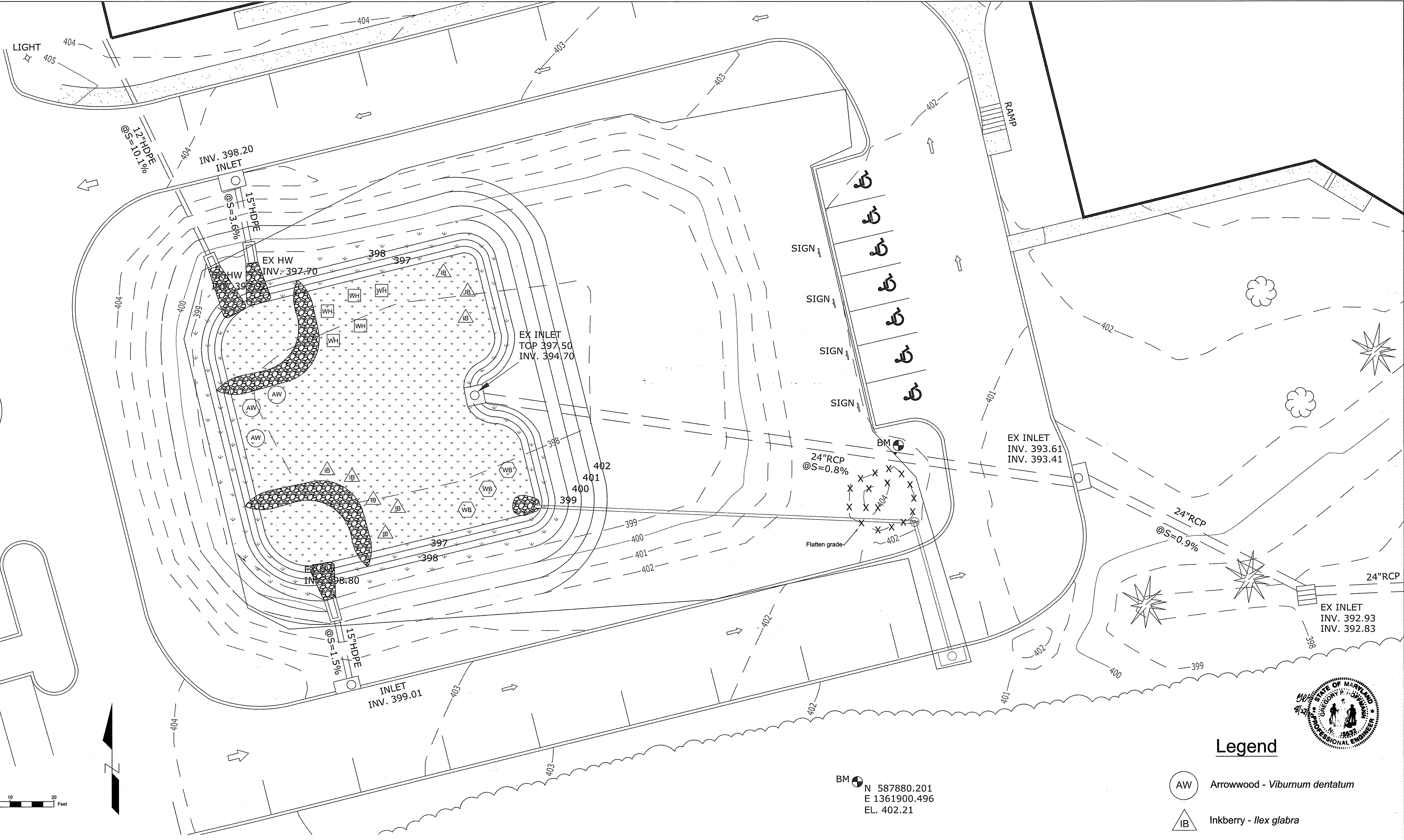
Paul Edwards 9-10-15
 Chief, Development Engineering Division Date

Kurt Schumacher 9-10-15
 Chief, Division of Land Development Date

Nancy J. Garcia 9-11-15
 Director Date



CENTER FOR WATERSHED PROTECTION
 Erosion and Sediment Control
 Baltimore First Seventh-Day Adventist Church
 Ellicott City, Maryland



SCALE:	1 inch = 10 feet
DATE:	May 15, 2015
REVISION DATE:	None
REVISION TYPE:	None
DESIGN BY:	None
DRAWN BY:	LLG
CHECKED BY:	None
PROJECT ID:	W-14-016
SHEET NUMBER:	12 OF 12

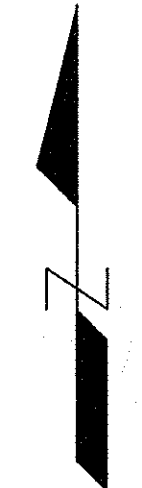
SURVEY COMPLETED BY:
 Carl F. Kreuter, L.S.
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 Howard County Office of
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 330 North Ridge Rd. Ste 290
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PREPARED BY:
 The Center for Watershed
 Protection
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Planting Plan
 Baltimore First Seventh-Day Adventist Church
 Ellicott City, Maryland



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 9-10-15 Date

Chief, Division of Land Development 9-10-15 Date

Director 9-11-15 Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R. Roberts 9/14/15 Date

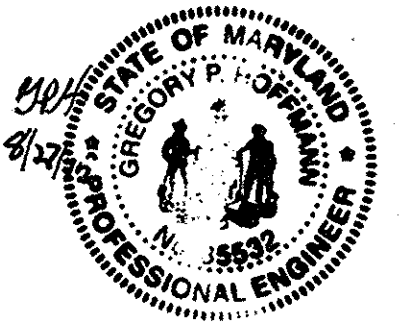
HOWARD SCD

Planting Schedule				
Key	Common Name	Botanical Name	Spacing	Quantity
AW	Arrowwood	Viburnum dentatum	5-7'	3
IB	Inkberry	Ilex glabra	5-7'	8
WB	Winterberry	Ilex verticillata	5-7'	3
WH	Witch Hazel	Hamamelis virginiana	8-10'	5

Turfgrass seed mix shall match that specified for permanent seeding on Sheet 2 - General Notes, but be applied without any fertilizer. The seed quality shall conform to Maryland State Highway Administration standards and specifications, specifically, MD SHA 920.06.06 - Standards for Seed Species, and the mix, purity, weed content, and minimum germination proportions shall conform to those species listed in the table, "TURFGRASS SEED SPECIES".

Legend

- Arrowwood - *Viburnum dentatum*
- Inkberry - *Ilex glabra*
- Winterberry - *Ilex verticillata*
- Witch Hazel - *Hamamelis virginiana*
- Turfgrass - see notes to left, and on Sheet 2 - General Notes



BM N 587880.201
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