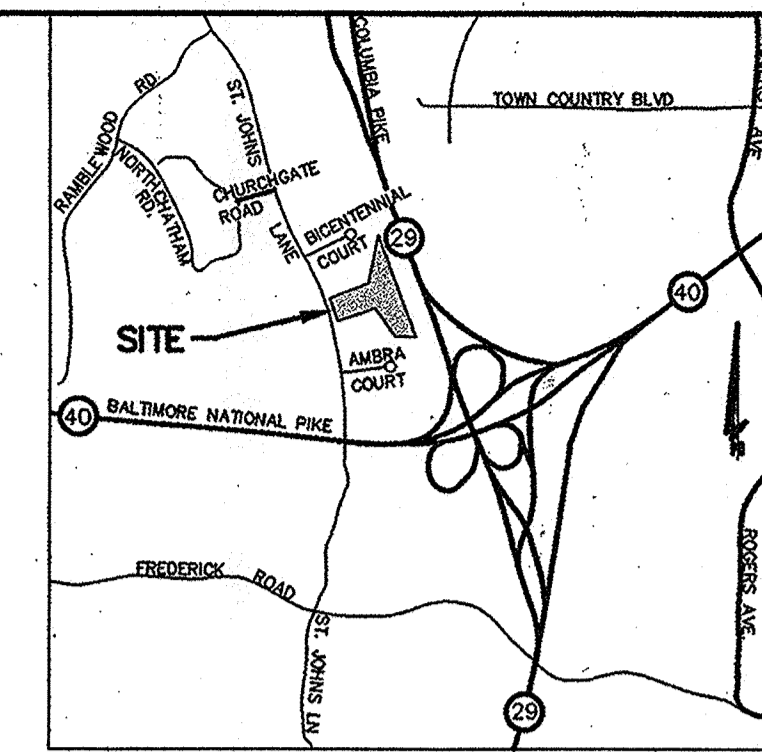


SITE DEVELOPMENT PLAN

FOR BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH BUILDING ADDITION 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1"=2000'

SITE ANALYSIS

TOTAL AREA OF SITE	= 8.97 AC.
LIMIT OF DISTURBED AREA	= 0.37 AC. 1.27 AC.
PRESENT ZONING:	R-20
EXISTING USE:	12,567
CHURCH COVERAGE	= 3,890 SQ. FT.
SCHOOL COVERAGE	= 5,172 SQ. FT.
(PRE-KINDERGARTEN - 8TH GRADE)	
PROPOSED USE:	
SCHOOL ADDITION COVERAGE	= 7,562 SQ. FT.
(84'x84')	
FELLOWSHIP/SANCTUARY COVERAGE	= 5,962 SQ. FT.
(48'x106')	
TOTAL LOT COVERAGE:	25,901
(EXISTING AND PROPOSED)	29,228 SQ. FT.
PERCENTAGE OF LOT COVERED W/STRUCTURES	64%
(NOT TO EXCEED 25% INCLUDES 18'x31' SHED)	= 10%
PARKING REQUIRED	
CHURCH (1 SPACE/3 SEATS)	= 103 SPACES.
PROPERTY LINE	
LENGTH OF PEWING PER SEAT PER 2' OF PEW LENGTH	
NO. OF SEATS = 184' x 2' x 38 SEATS PER ROW = 324 TOTAL SEATS	
38 SEATS PER ROW x 8 ROWS = 304 SEATS	
NO. OF SPACES = 304 SEATS ÷ 3 SEATS = 101 SPACES	
SCHOOL, PRIVATE ACADEMIC	= 20 SPACES
(1 SPACE/6 STUDENTS/120 STUDENTS)	
TOTAL SPACES REQUIRED:	123
TOTAL SPACES PROVIDED:	178 SPACES
(INCLUDES 7 HANDICAPPED SPACES)	

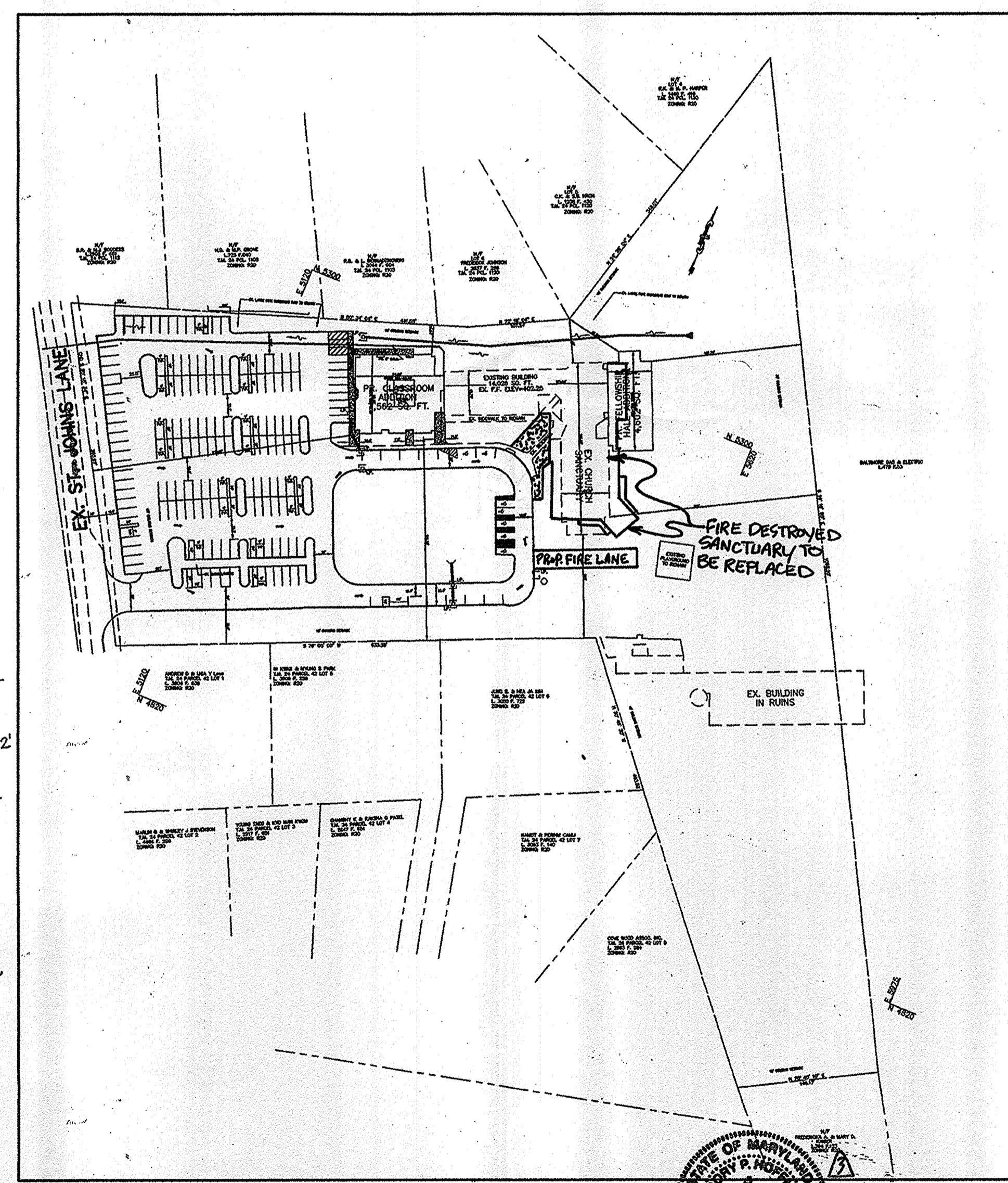
PROFESSIONAL CERTIFICATE
(FOR REVISION #2 ONLY)
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18415, EXPIRATION DATE 09-27-2016

BENCHMARKS

TRAVERSE #1 N 5,000.00 E 5,000.00 ELEV. 404.07 GALVANIZED STEEL SPIKE	TRAVERSE #2 N 5,258.0598 E 5,261.9742 ELEV. 401.85 GALVANIZED STEEL SPIKE
---	---

LEGEND

42	EXISTING CONTOURS
---	EXISTING CURB & GUTTER
---	PROPERTY LINE
o	EXISTING LIGHT POLE
---	EXISTING POWER POLE
---	EXISTING BUILDING
---	EXISTING CONCRETE SIDEWALK
---	EXISTING STORM DRAIN
---	EXISTING SEWER
---	EXISTING TREELINE
o	EXISTING TREE/SHRUB
---	EXISTING OVERHEAD POWER LINE
---	PROPOSED BUILDING ADDITION
---	PROPOSED CONTOUR
---	PROPOSED SPOT SHOT
---	PROPOSED SIDEWALK
---	PROPOSED STORM DRAIN
---	PROPOSED FENCE
---	LIMIT OF DISTURBANCE
---	INLET PROTECTION
---	STABILIZED CONSTRUCTION ENTRANCE
→	TRAFFIC FLOW ARROW
→	DRAINAGE FLOW ARROW
---	DRAINAGE AREA LINE
△	MAIN ENTRANCE LOCATION



PLAN VIEW 1"=100'

SHEET INDEX

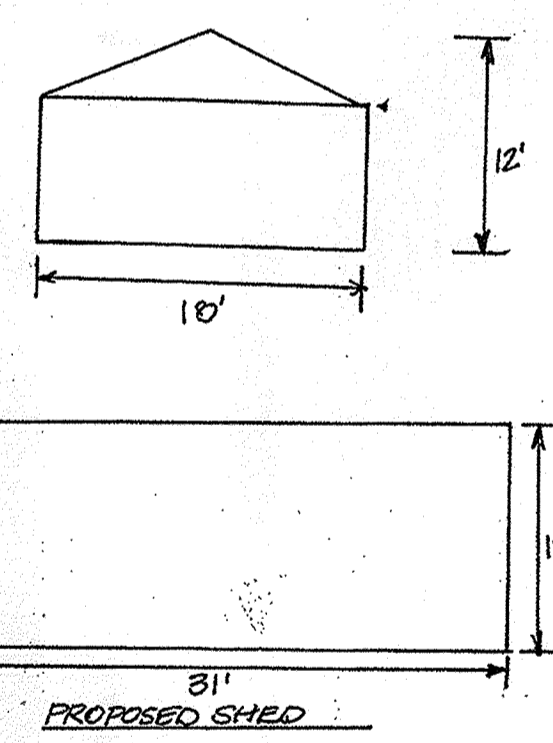
- TITLE SHEET
- SITE DEVELOPMENT PLAN
- STORM DRAIN, GRABING & SEDIMENT CONTROL PLAN
- NOTES AND DETAILS
- STORM DRAIN PROFILES
- STORMWATER MANAGEMENT PROFILES AND DETAILS.
- General Notes
- Proposed Conditions
- Cross Sections
- Erosion and Sediment Control
- Ensoin and Sediment Control Details
- Planting Plan

CONSTRUCTION NOTES

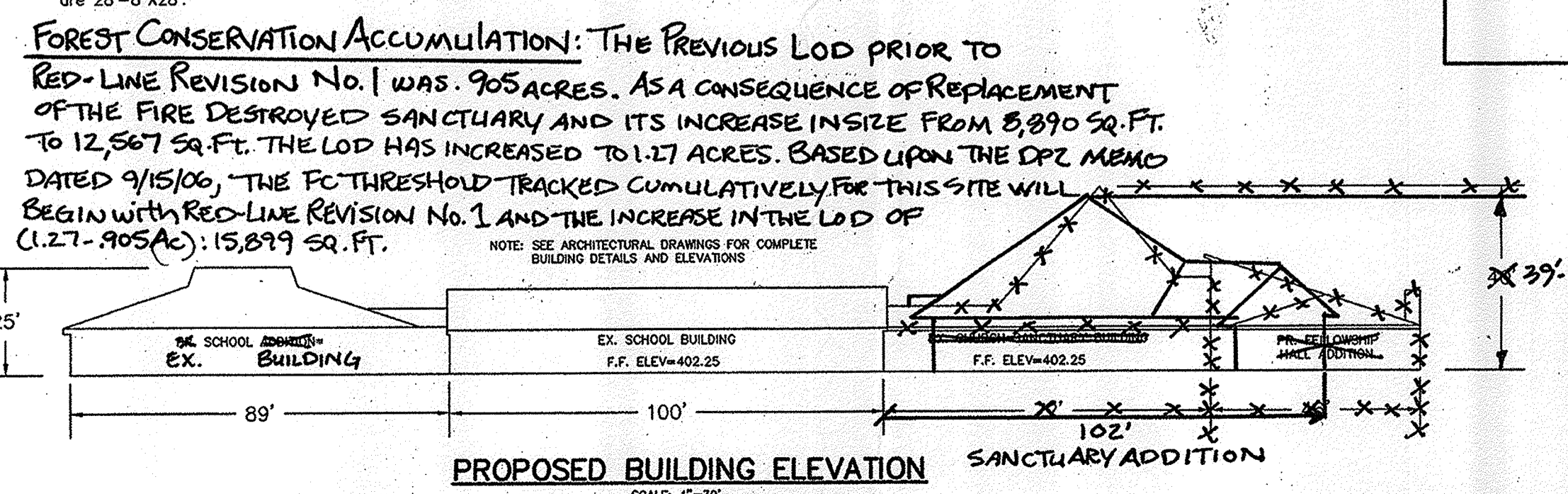
- No sediment and erosion control devices may be removed without prior approval from the Howard County Inspector.
- Stabilize any disturbed area as soon as possible by permanent or temporary means.
- All temporary stock piles and excess material shall be removed to an approved spoil site. All borrow material shall be obtained from an approved site.
- It shall be the responsibility of the contractor or subcontractor to notify the engineer of any deviation to these plans prior to any change being made. Any change in these plans without the written authorization for said change from the engineer shall be the responsibility of the contractor or subcontractor.
- Utilities shown on these plans are in accordance with the best information available for the contractor. The contractor shall be responsible for locating and protecting all existing services and mains (public or private). The contractor shall obtain the services of a private utility locator to locate all existing private services and mains. The owners and engineer assume no responsibility for accuracy or completeness of the information shown. Existing mains and services shall be carefully protected and any damage to them caused by the work shall be immediately reported to the satisfaction of the engineer by the contractor at the contractor's expense, using materials of the kinds damaged.
- The contractor shall call "MISS UTILITY", 1-800-257-7777, a minimum of 48 hours in advance of any excavation, boring, and/or digging to determine the location of underground utilities.
- The contractor shall grade all areas within the area of construction and shall warp paving as necessary to insure positive drainage.
- The Contractor shall be responsible for coordination of his construction with the construction by other contractors and subcontractors.
- All soil erosion control measures shall be in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Failure to specifically mention items which would normally be required to complete the work and develop this site in accordance with the approved plans, shall not relieve the contractor from performing such work. This work shall be part of the contractor's base bid.

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications, as applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to any work being done in the public road.
- All plan dimensions are to face of curb and face of building unless otherwise noted.
- The coordinates shown hereon are based upon an assumed coordinate system. Bench marks are provided hereat.
- Water is public, existing in St. Johns Lane.
- Sewer is public, existing in St. Johns Lane. The Drainage Area is Patapsco.
- Storm water management for this project is provided on-site in the existing pond. The pond was designed by Louis A. Spattel, Inc., Consulting Engineers Dated: January 15, 1979.
- A 100-year flood plain study is not required for this project.
- A noise study is not required for this project.
- No geotechnical study is required for this project.
- The boundary for this project is based on the deed of record (394/123).
- The property is zoned R-20.
- All elevations shown are based on the existing manhole top elevation of 404.2 as shown on SDP 79-58.
- See Department of Planning and Zoning file nos. SDP-79-58, BA 956, BA 95-70E&V, and BA 98-53E.
- Per the decision rendered in BA Case No. 98-53E see conditions listed below:
 - The special exception shall apply only to the elementary school (pre-kindergarten through the eighth grade), as described in the amended petition and as depicted on the special exception plan submitted on December 10, 1998, and not to any other activities, uses, or structures on the property.
 - The maximum number of enrolled students shall not exceed 120 children.
 - The hours of operation of the elementary school shall be limited to 7:00 a.m. through 6:00 p.m., Monday through Friday.
 - Any additional outdoor lighting shall be shielded and directed so that it does not illuminate adjacent residential properties, nor produce glare in any direction.
 - The addition and gymnasium height shall not exceed the roofline of the existing one-story multi-purpose building.
 - The Petitioner shall comply with all applicable Federal, State, and county laws and regulations.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- All storm drain pipe bedding shall be Class 'C' as shown in Fig. 11.4, Volume 1 of Howard County Design Manual unless otherwise noted.
- All inlets shall be constructed in accordance with Howard County Standards.
- All pipe elevations shown are invert elevations.
- Storm drain trenches within road right-of-way shall be backfilled and compacted in accordance with the Howard County Design Manual, Volume IV, i.e., Standard Specifications and Details for Construction including the latest amendments.
- All fill areas within roadway and under structures to be compacted to a minimum of 95% compaction of AASHTO T180.
- No public notice posters are required since no roadway entrances are proposed, and no wetland mitigation areas are proposed.
- This plan has been prepared in accordance with the Forest Conservation Act and Manual per Section 16.1204 with the filing of a Declaration of Intent for a single lot exemption, clearing less than 40,000 sq. ft. of forest. SEE FOREST CONSERVATION ACCUMULATION NOTE BELOW.
- All outdoor lighting shall conform to Section 134 of the Zoning Regulations. All exterior lighting shall be shielded and directed towards this site. However, no outdoor lighting is proposed.
- The additions shall not exceed the roofline of the existing one-story multipurpose building.
- Perimeter landscaping is required for the new construction only, however, existing landscaping is credited towards the requirement and interior parking landscaping will be provided. No surety is required. SEE SHEET 2 FOR REQUIRED RED-LINE REVISION LANDSCAPING.
- The proposed school addition shown hereon is 2 stories tall. The dimension of the 2nd story are 28'-8"x28'.



CASE # BA-07-0076
APPROVED BY EXAMINER
4/16/07



PROPOSED BUILDING ELEVATION
SCALE: 1"=30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DIRECTOR: [Signature] DATE: 11/10/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 11/10/99
CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 11/10/99

1/03/07	1	DELETE FUTURE FELLOWSHIP HALL & ADD REPLACEMENT OF FIRE DESTROYED SANCTUARY & INCREASE PREVIOUSLY SHOWN LOD.
7/11/15	2	ADD 18'x31' SHED
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 SHEET

MESSICK & ASSOCIATES
CONSULTING ENGINEERS
31 OLD SOLOMONS ISLAND RD., SUITE 201
ANNAPOLIS, MARYLAND 21401
(410) 286-3212

DESIGNED BY: DJV
DRAWN BY: BPO
PROJECT NO.:
DATE: APRIL 9, 1999
SCALE: AS SHOWN
DRAWING NO.: 1 OF 12

ADDRESS CHART

PARCEL	STREET ADDRESS
21	3291 ST. JOHN'S LANE

SUBDIVISION NAME -	N/A	SECT./AREA -	21
DEED REF -	L-2012 F.107	BLOCK # -	5
ZONING -	R-20	TAX MAP NO. -	24
ELECT. DIST. -	2nd	CENSUS TRACT -	6022
WATER CODE -	F06	SEWER CODE -	1403700

SDP 99-129

Zoning District: R20 and Address: 3291 St Johns Ln, Ellicott City, MD 21042
 The church has approximately 148 parking spots and Persons' First, Inc. will occupy 12 parking spaces Monday - Friday 9 AM - 3 PM.

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')	4	2 1/2" CAL.
○	WHITE FLOWERING DOGWOOD (CORNUS FLORIDA 'WD')	5	8' HT.
○	WHITE PINE (W.P.) (PINUS STROBUS)	16	6-8' HT.
⊗	PFTZER JUNIPER (PAJ) JUNIPERUS CHINENSIS 'PFTZERIANA'	12	2 1/2" HT.

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: *[Signature]* Date: 11/4/99

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 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 SILO 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Director: *[Signature]* 11/4/99
 Chief, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 11/10/99
 Chief, DIVISION OF LAND DEVELOPMENT: *[Signature]* 11/10/99

10/5/07 1 DELETED FUTURE FELLOWSHIP HALL ADD REPLACEMENT OF FIRE DESTROYED SANCTUARY PERIMETER LANDSCAPING
 7/11/15 2 ADD 16'x31' SILO
 DATE NO. REVISION

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

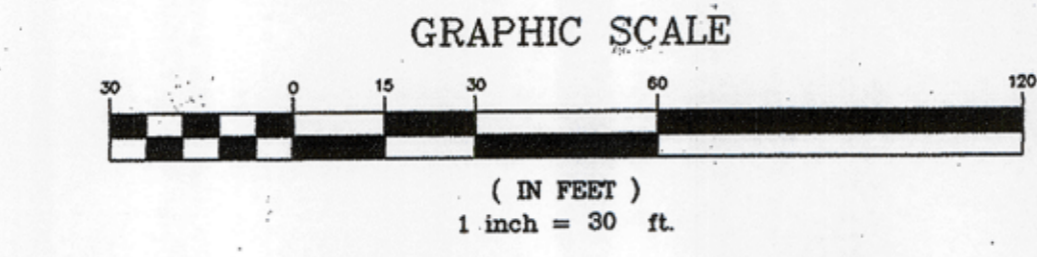
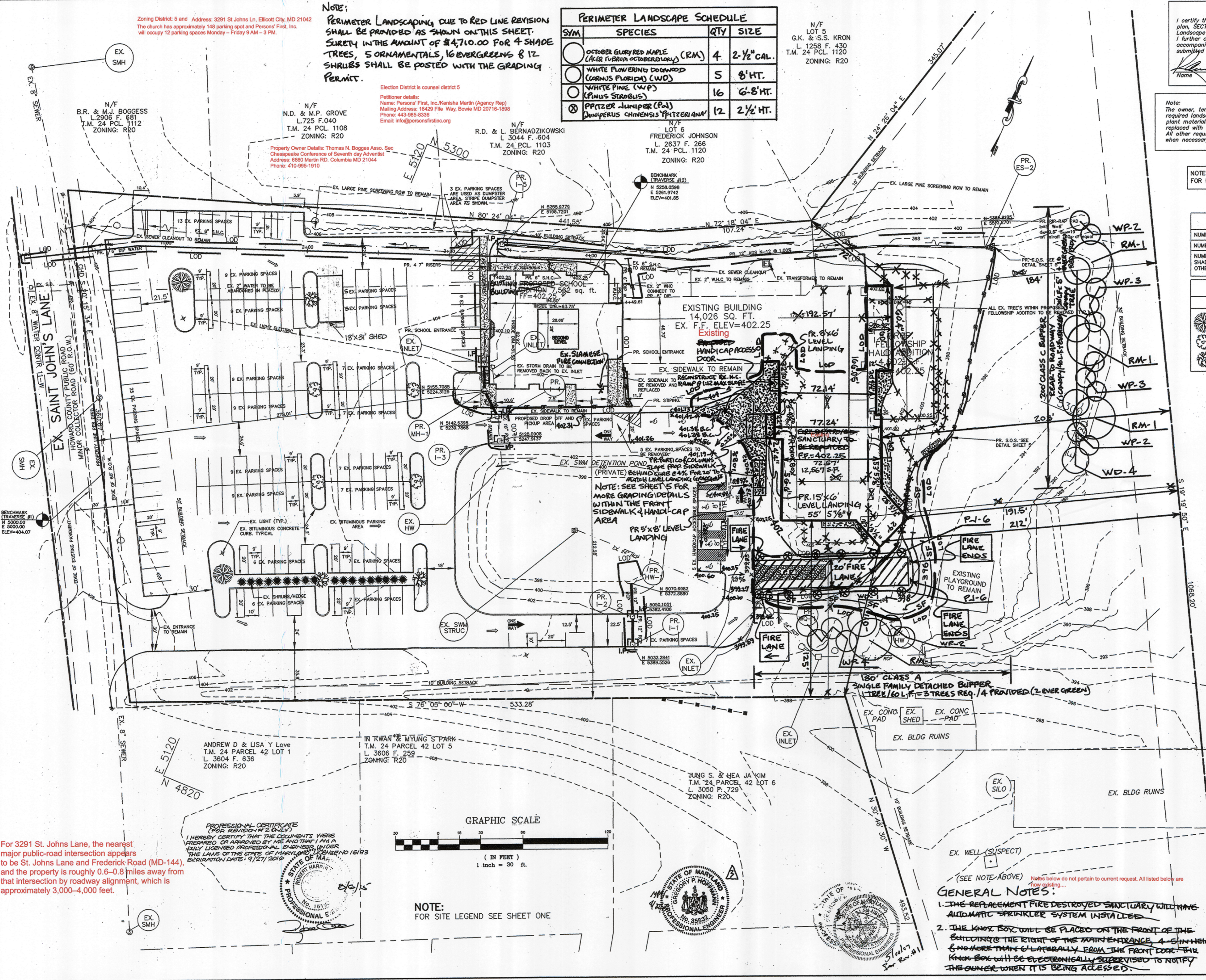
PROJECT
 BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH

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) 286-3212

DATE: 11/19/99
 DESIGNED BY: DJV
 DRAWN BY: BPO
 PROJECT NO:
 DATE: APRIL 9, 1999
 SCALE: AS SHOWN
 DRAWING NO.: 2 OF 12
 WAYNE A. NEWTON #21591



PROFESSIONAL CERTIFICATE
 (FOR REVISION #2 ONLY)
 I HEREBY CERTIFY THAT THE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18133 EXPIRATION DATE: 9/1/2019
 [Signature]
 PROFESSIONAL ENGINEER



For 3291 St. Johns Lane, the nearest major public-road intersection appears to be St. Johns Lane and Frederick Road (MD-144), and the property is roughly 0.6-0.8 miles away from that intersection by roadway alignment, which is approximately 3,000-4,000 feet.

STORM DRAIN DRAINAGE AREA CHART

DRAINAGE AREA	AREA (AC)	% IMPERV.	WEIGHTED "C"
AREA TO EX. 1-1	0.72	69%	0.84
AREA TO PR. 1-4	0.05	60%	0.57
AREA TO PR. 1-3	0.94	97%	0.85
AREA TO PR. 1-2	0.31	100%	0.89
AREA TO PR. 1-1	0.34	88%	0.77
AREA TO PR. 1-5	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 Khoo 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. Kauter 11/6/99
 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 Summers 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. Kauter 11-8-99
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Paul Smith 11/10/99
 DIRECTOR DATE

Cheryl Summers 11/10/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

1/05/07 1 DELETED FIRE FELLOWSHIP HALL SHED
 7/1/15 2 ADD 18'x31' SHED
 DATE NO. REVISION

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
STORM DRAIN GRADING & SEDIMENT CONTROL PLAN

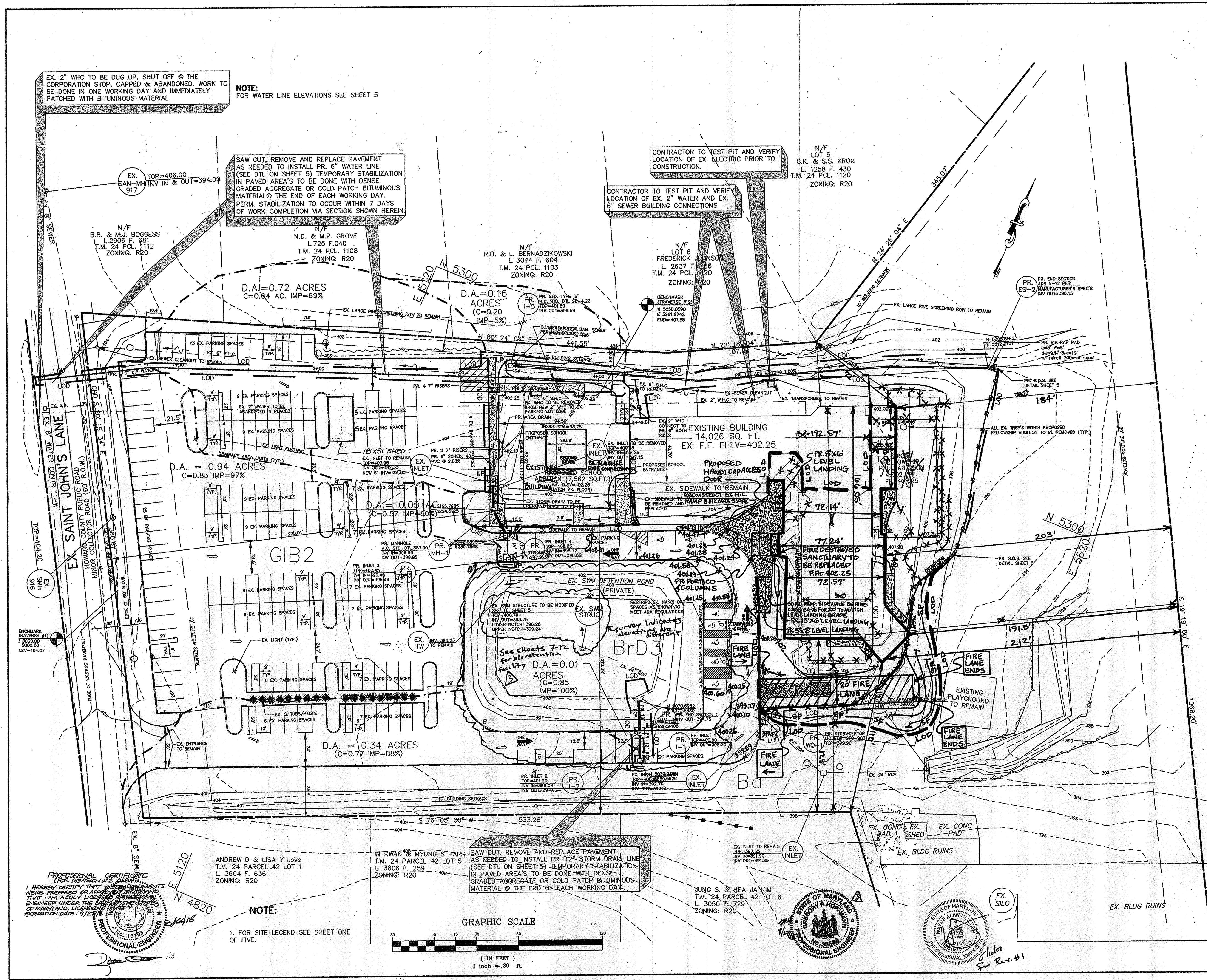
MESSICK & ASSOCIATES
 CONSULTING ENGINEERS
 31 OLD SOLOMONS ISLAND RD., SUITE 201
 ANNAPOLIS, MARYLAND 21401
 (410) 266-3212

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

WAYNE A. NEWTON #21591
 PROFESSIONAL ENGINEER

11/15/99
 PROFESSIONAL ENGINEER

SDP 99-189



8/126/15 #3 Added hatched in + new sheets 7-12

6. VACUUMET ARCHIVE ST. JOHN'S (GRADUATED) DWS Mon Nov 01 08:50:10 1999

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION 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 THERE TO.
- 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; 8) 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 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	8,978.95	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	990	CU. YARDS*
TOTAL FILL	990	CU. YARDS*

* CONTRACTOR NOT TO USE 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 MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING 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 SITE 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 EMERGENCY, 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.
- Clear only for, grade, and install stabilized construction entrance, if required.
- Clear only for and install perimeter sediment control measures (i.e. silt fence, inlet protection, etc.) as shown on the approved plans.
- Remove and replace existing storm drain system with proposed storm drain system.
- Install inlet protection and rip-rap outlet protection, as shown on the approved plans.
- Rough grade site. Excavate for footings and construction structure(s).
- Install new 6" ductile iron fire/domestic water service. (Do not connect to main line). Pressure test and chlorinate new service.
- Once obtaining approval, install water meter vault and connect to existing water main.
- Install water and sanitary sewer connections into buildings.
- Fine Grade Site, stabilize disturbed areas with seed and mulch, and install sidewalks.
- Install stormceptor water quality manhole as shown.
- Vegetatively stabilize all remaining disturbed areas with seed and mulch.
- Once the site is stabilized and with the approval of the MDE inspector, remove all sediment control measures. Re-stabilize areas disturbed do to the removal of the sediment control devices.

Notes:
 a) 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 horizontal to 1 vertical (3:1) and fourteen days for all other disturbed or graded areas on the project site.

1. 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, disking 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 non or disk lime and fertilizer into the soil to a depth of at least 3" on slopes flatter than 3:1.
- Seeding:** Apply 5-8 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 hydroseder (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 hydroseder 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-mowable 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 with any other than 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.

2. Temporary Seeding:

- Lime:** 100 pounds of dolomitic limestone per 1,000 square feet.
- Fertilizer:** 15 pounds of 10-10-10 per 1000 square feet.
- Seed:** Perennial rye - 0.92 pounds per 1000 square feet (February 1 through April 30 or August 15 through November 1)
 Millet - 0.92 pounds per 1000 square feet (May 1 through August 15)

Mulch: Same as 1 D and E above.

No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8". All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Code - Article 21, Section 2-209, and compacted to 90% density compaction to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within building area is to be compacted to a minimum of 95% as determined by methods previously mentioned. Fills for pond embankments shall be compacted as per MD-278 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

4. Permanent Sod:

Installation of sod should follow permanent seeding dates. Permanent sod is to be full touse, state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes greater than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be applied on frozen ground. Sod shall not be harvested or transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to insure established sod.

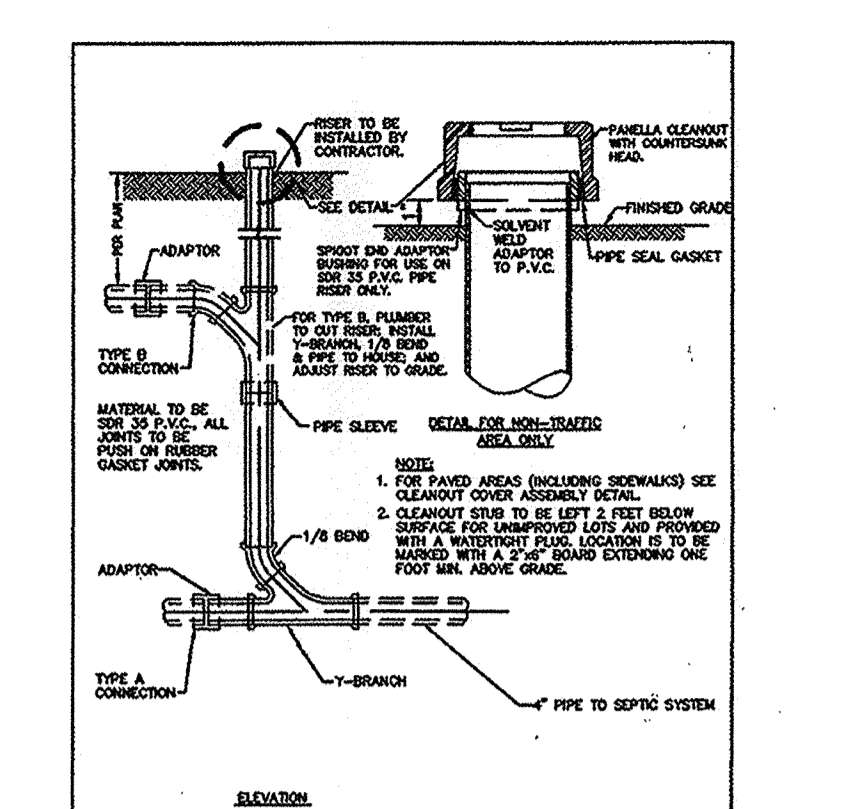
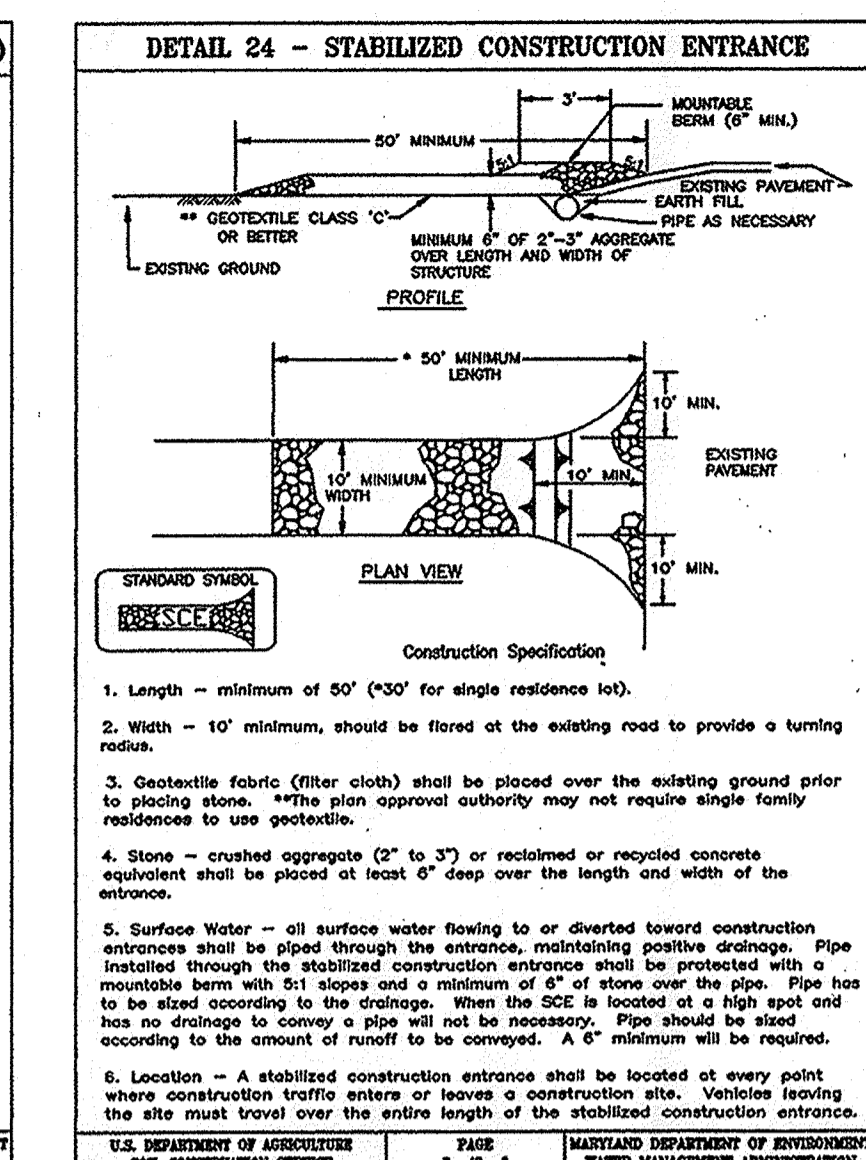
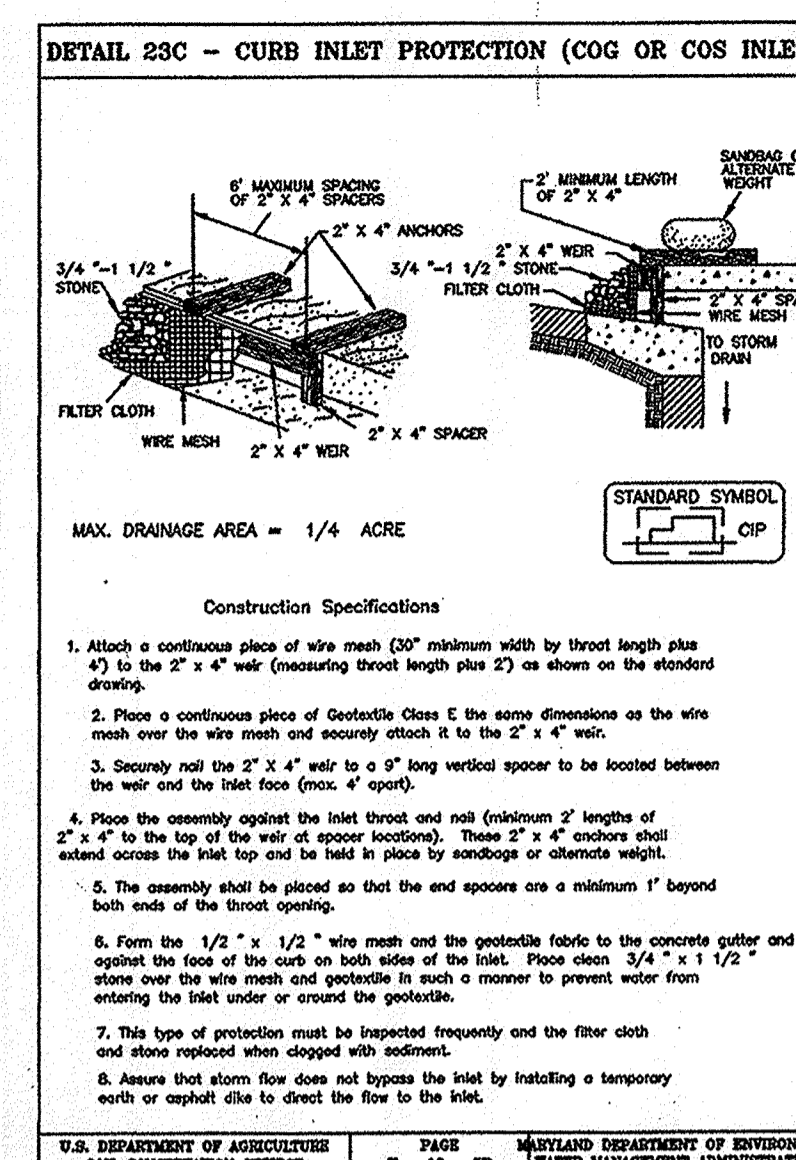
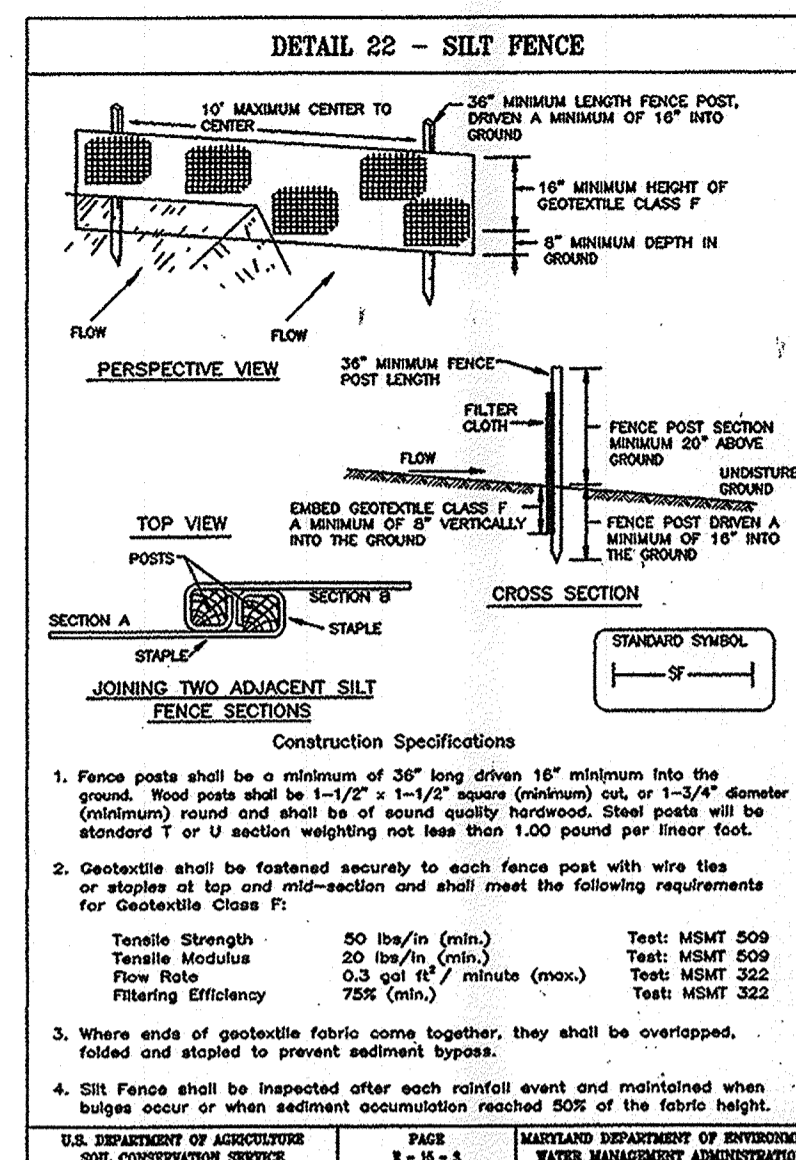
5. Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and mixtures:

For seeding dates of:
 February 1 through April 30 and August 15 through October 31 use seed mixture of tall fescue at the rate of 2 pounds per 1000 square feet and sericea lespedeza at the rate of 0.5 pounds per 1000 square feet.

For seeding dates of May 1 through August 14 use seed mixture of tall fescue at the rate of 2 pounds per 1000 square feet and weeping lovegrass at the rate of 0.1 pounds per 1000 square feet.

NOTE: Use of this information does not preclude meeting all of the requirements of the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.



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.

John R. [Signature] 11/2/99 DATE
 DEVELOPER

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.

John R. [Signature] 11/1/99 DATE
 ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

John R. [Signature] 11-8-99 DATE
 NATURAL RESOURCES CONSERVATION SERVICE

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

John R. [Signature] 11-8-99 DATE
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John R. [Signature] 11/1/99 DATE
 DIRECTOR

John R. [Signature] 11/1/99 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

John R. [Signature] 11/1/99 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

10/5/07 1 DELETED FUTURE FELLOWSHIP HALL, ADD REVISION OF FIRE ESCAPE SANITARY & ABOVE PLANTING

8/28/13 3 DETAILS Added, deleted and new sheets 7-12

DATE NO. REVISION

OWNER/DEVELOPER

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

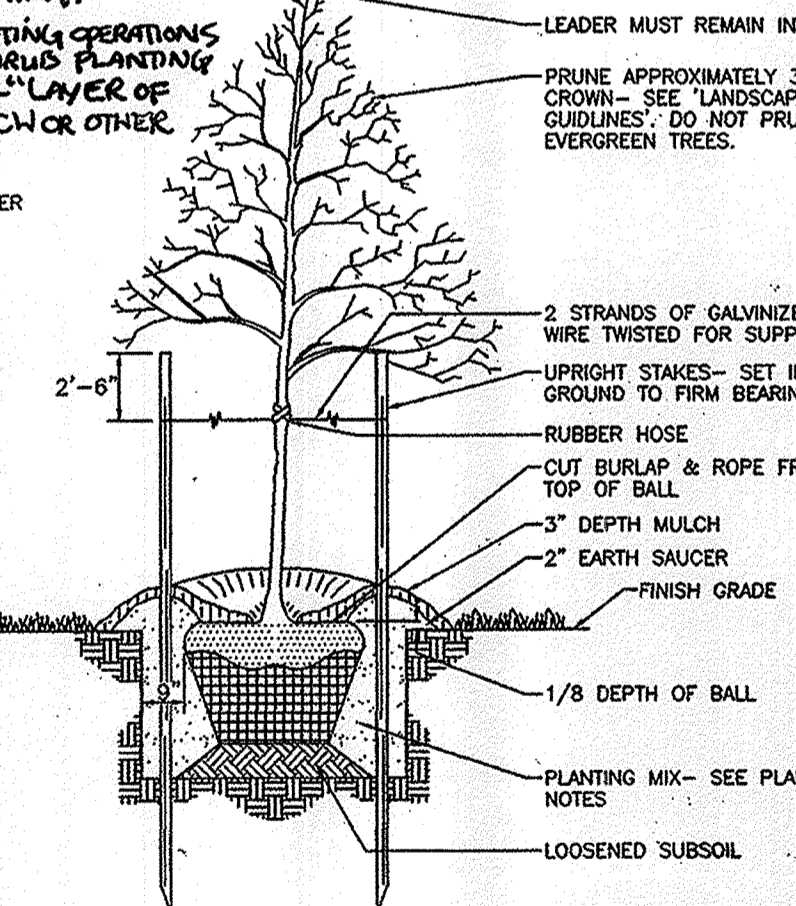
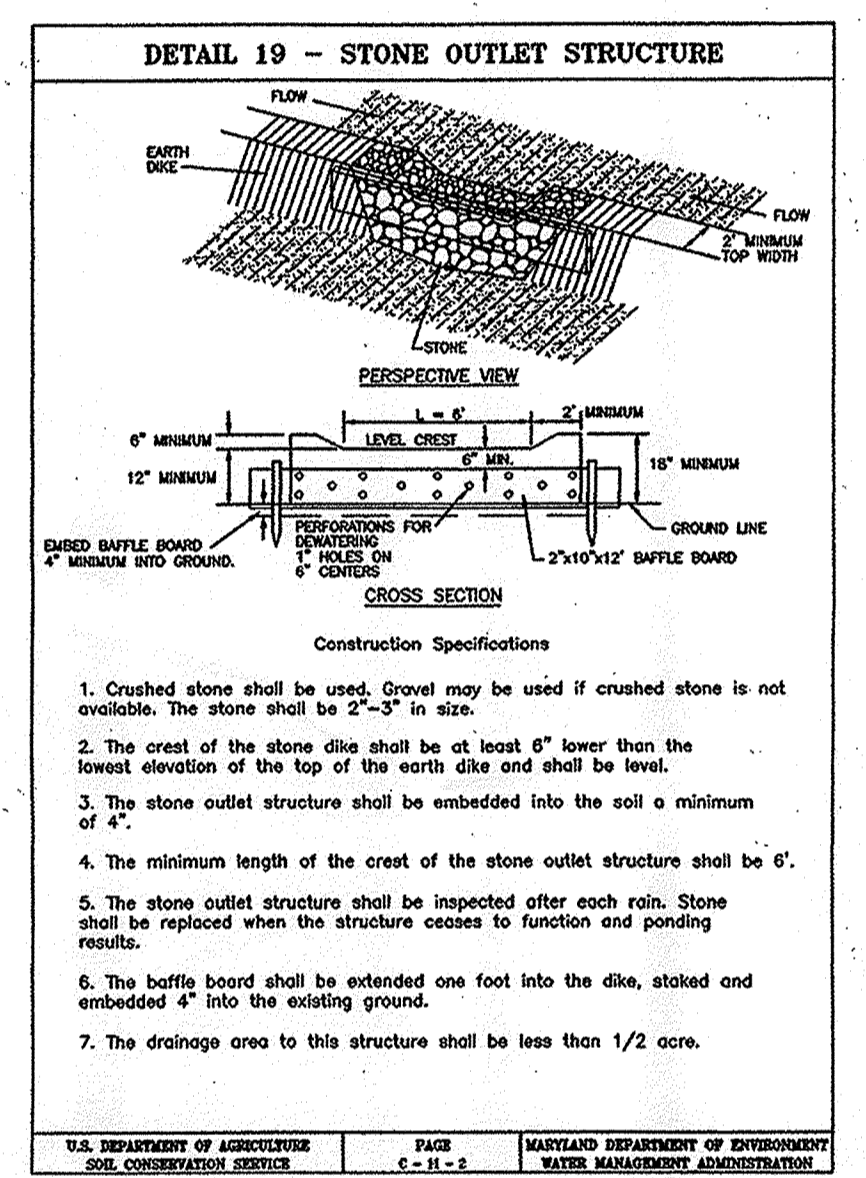
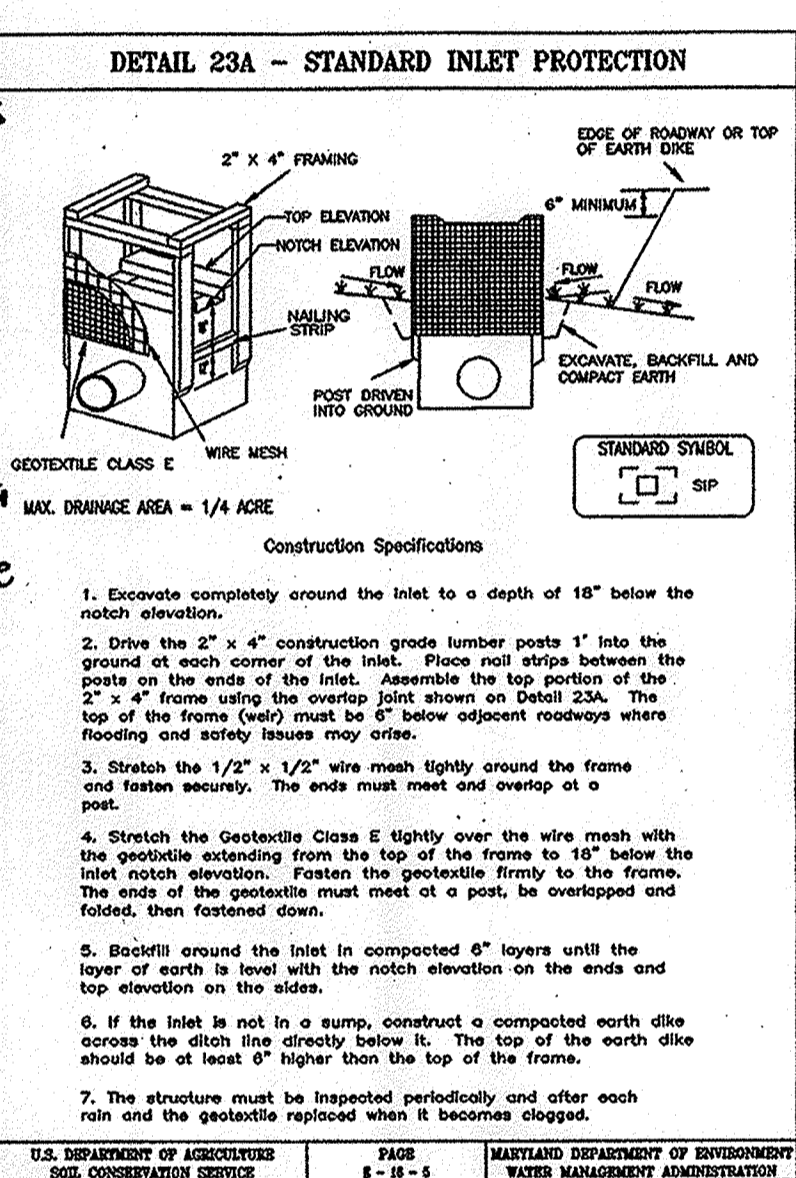
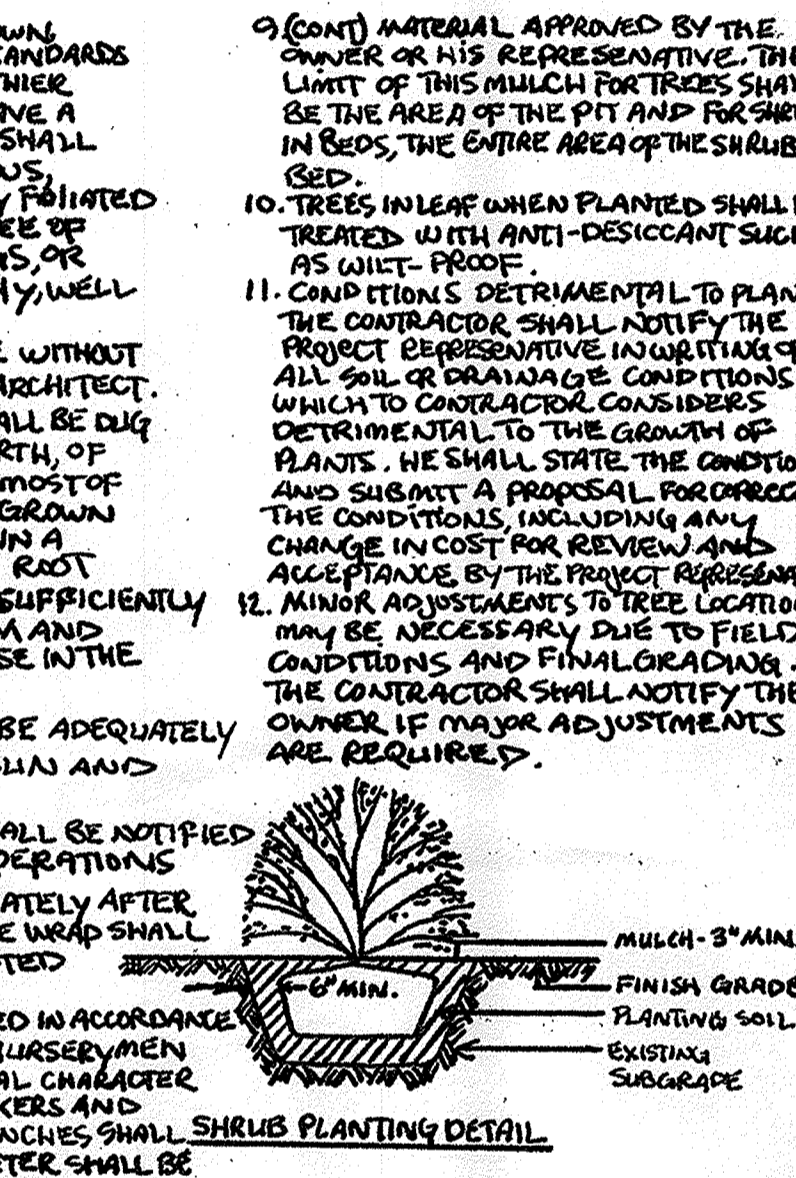
PROJECT **BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH**

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

TITLE **NOTES AND DETAILS**

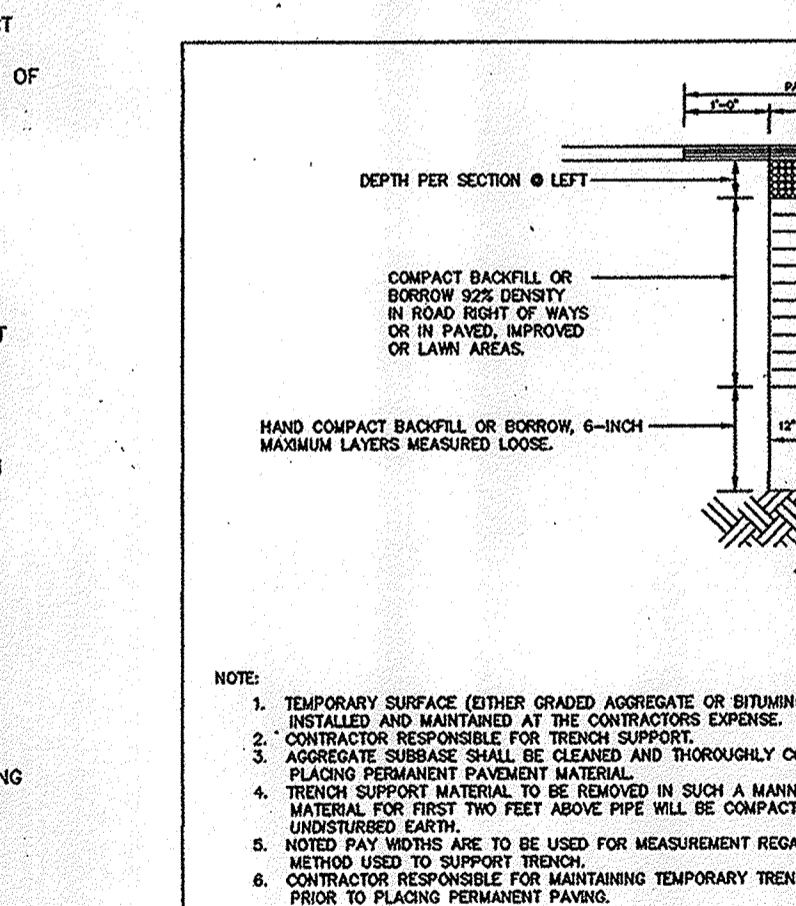
MESSICK & ASSOCIATES
 CONSULTING ENGINEERS
 31 OLD SOLOMONS ISLAND RD., SUITE 201
 ANNAPOLIS, MARYLAND 21401
 (410) 266-3212

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



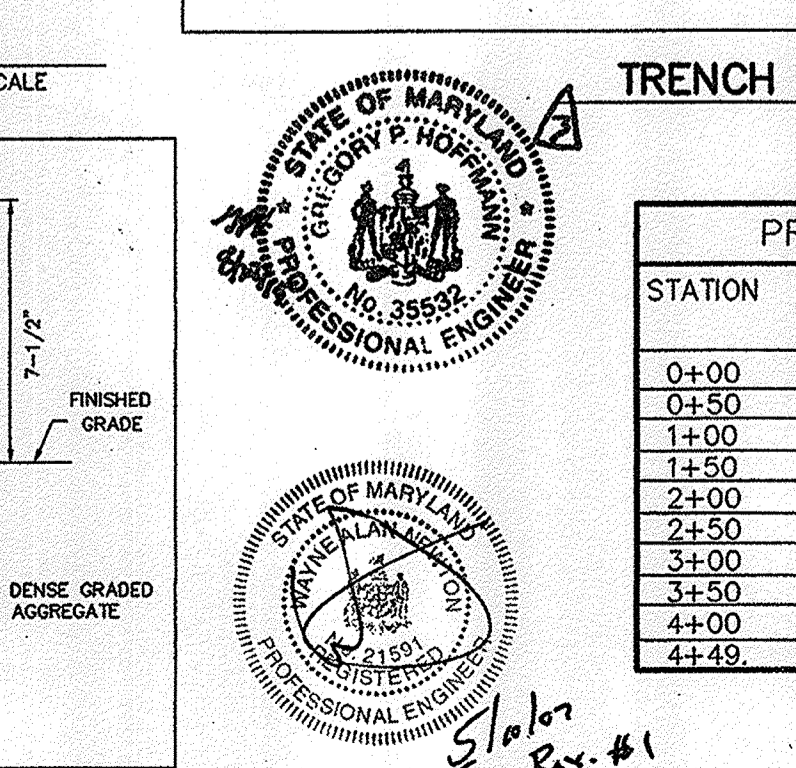
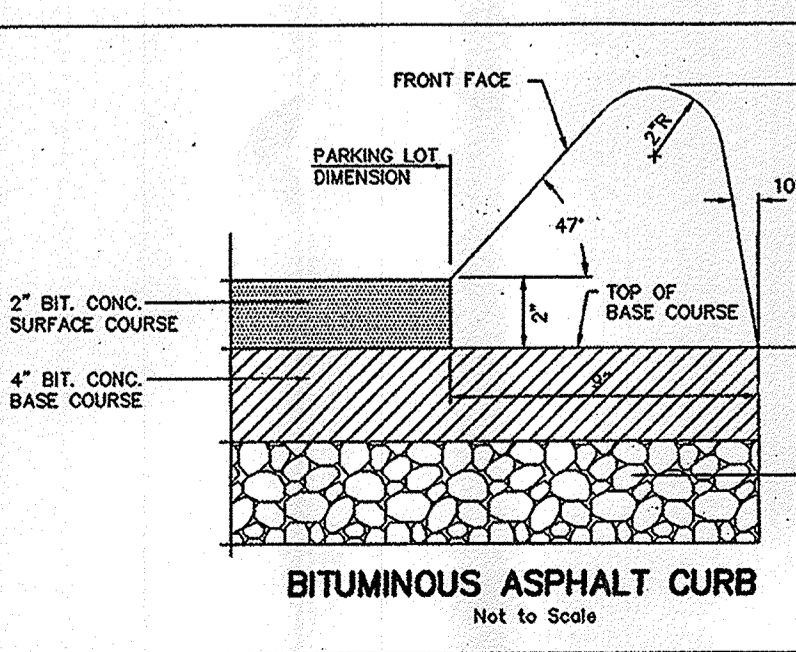
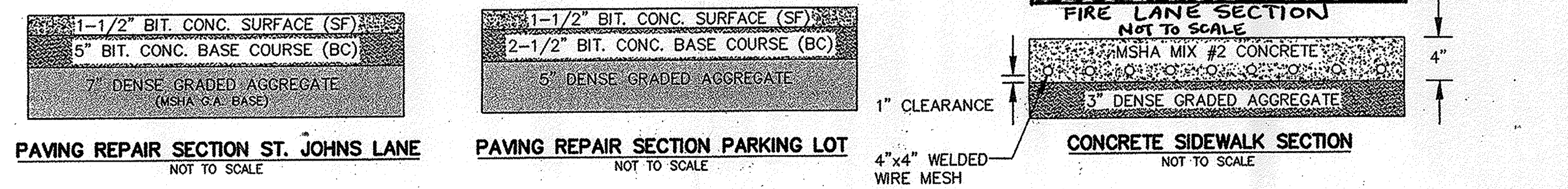
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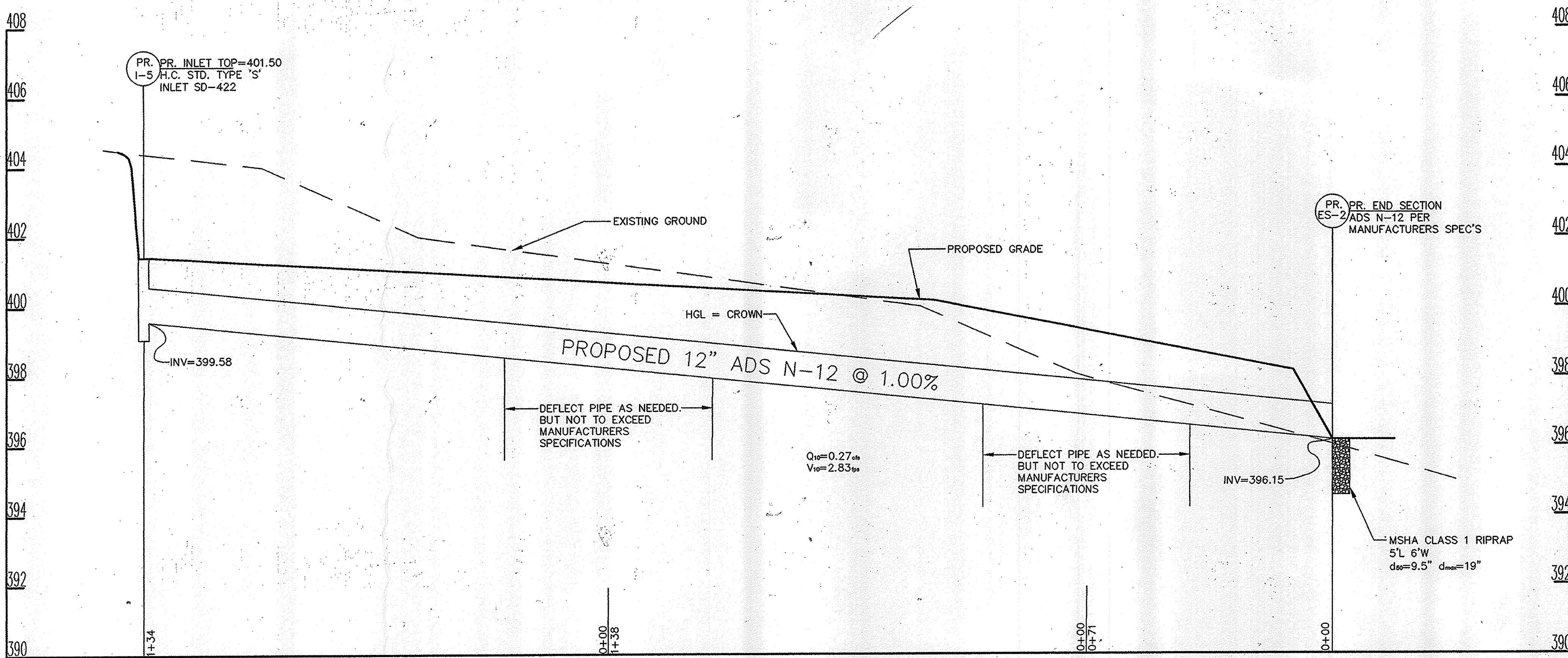
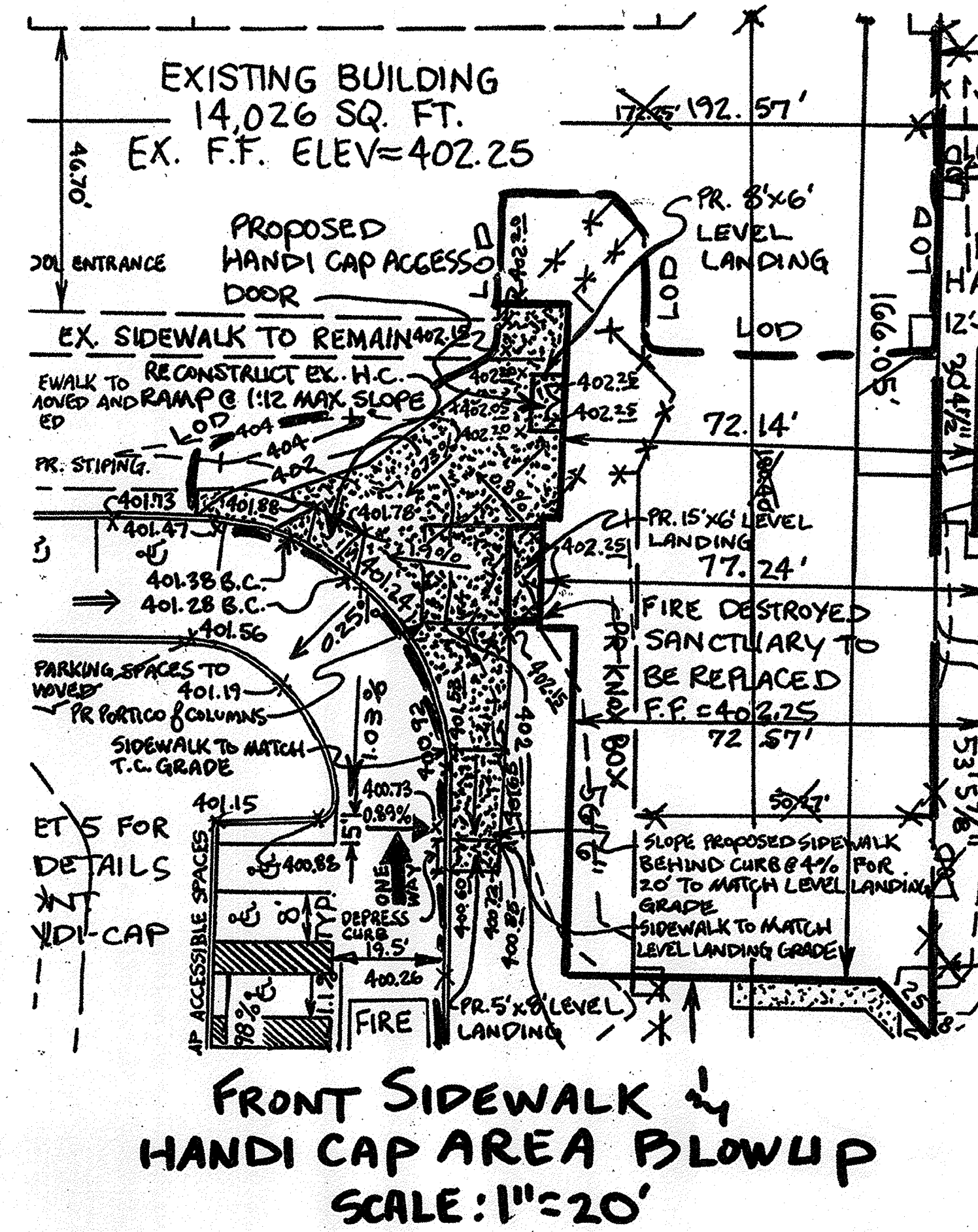
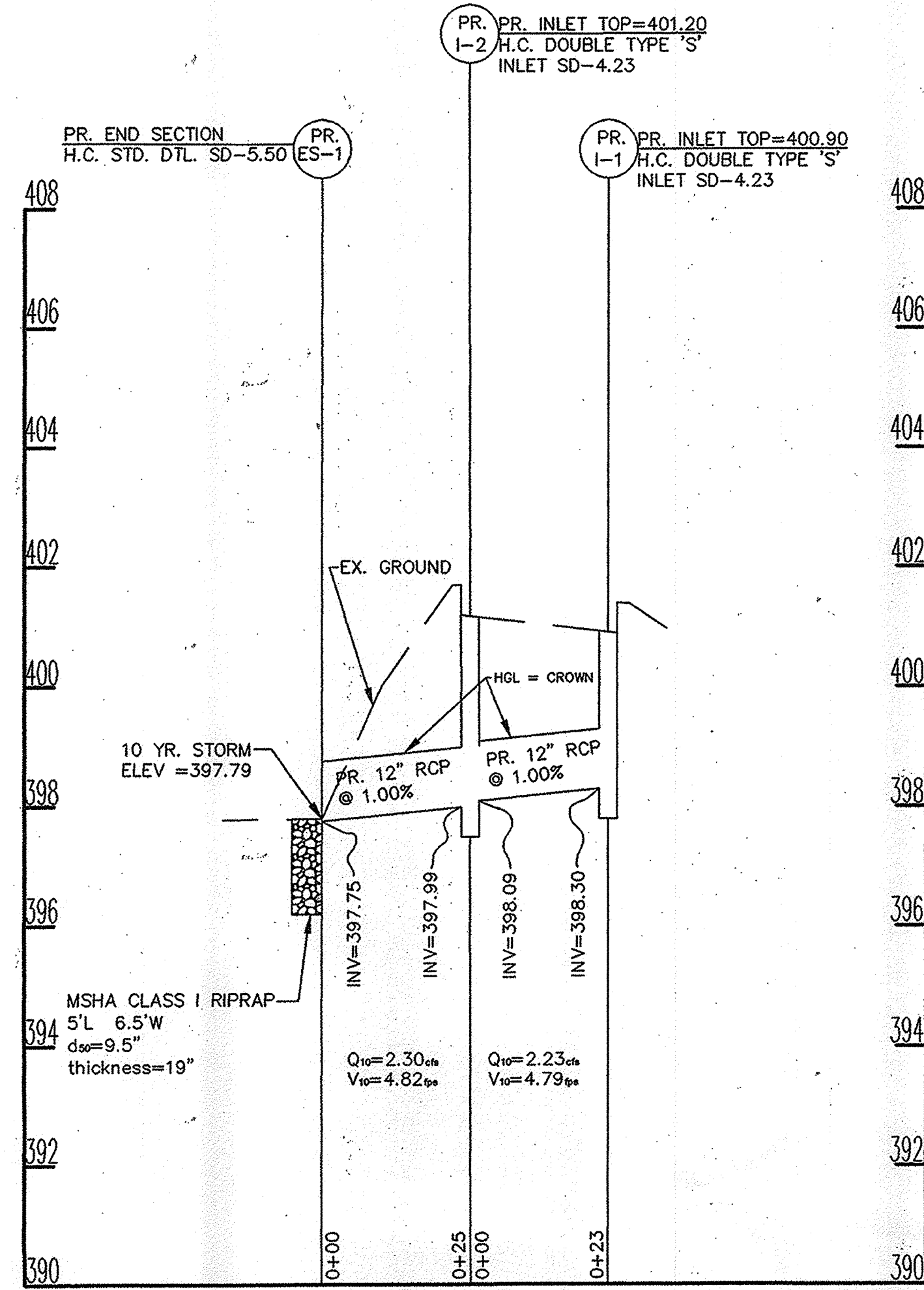
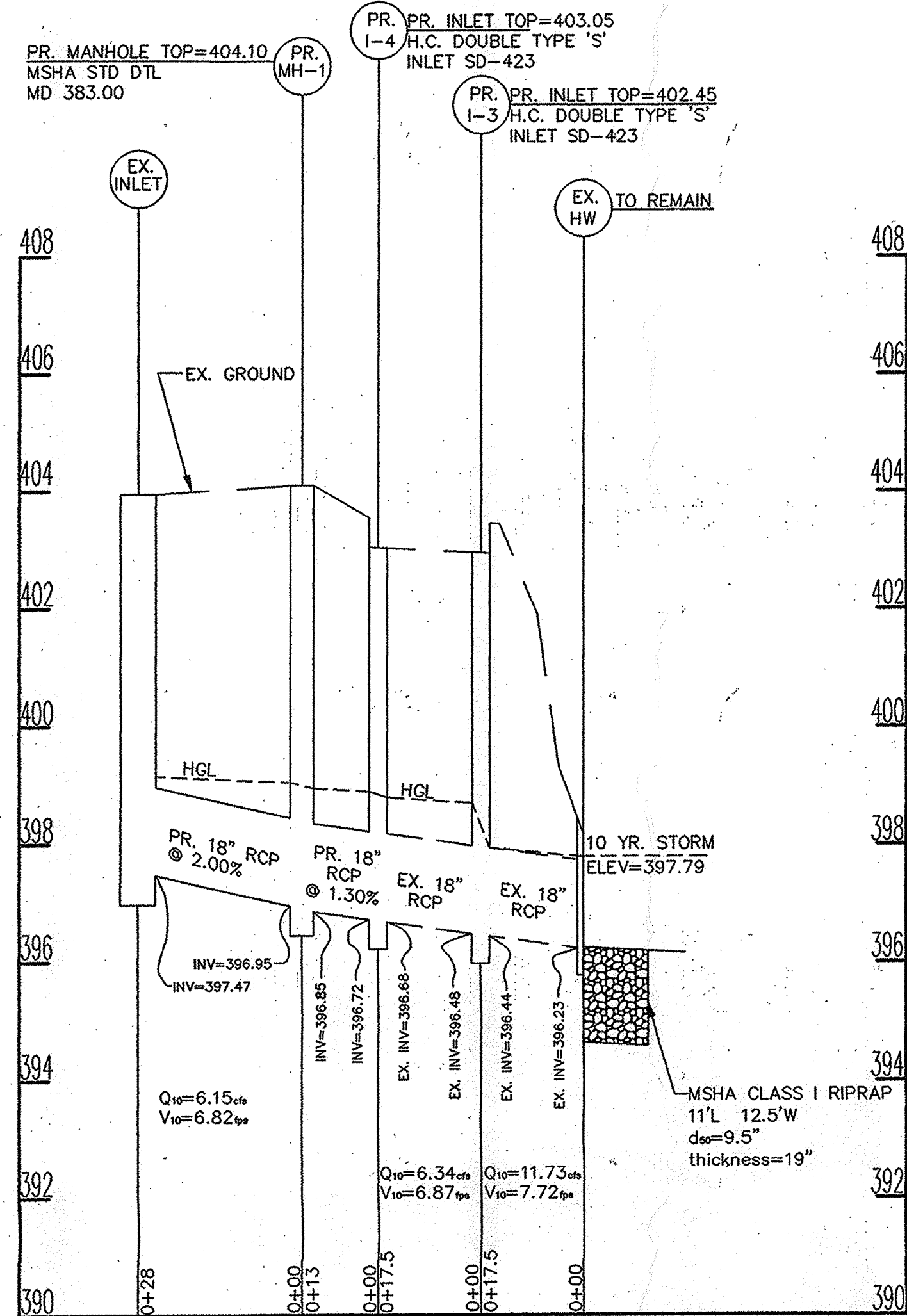
Not to Scale



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"





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *[Signature]* DATE: 11/10/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 11/10/99

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 11/10/99

1/05/07 1 DELETED FUTURE FELLOWSHIP HALL & SHOW ROOM REPLACEMENT OF FIRE DESTROYED SANCTUARY

6/28/15 7 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

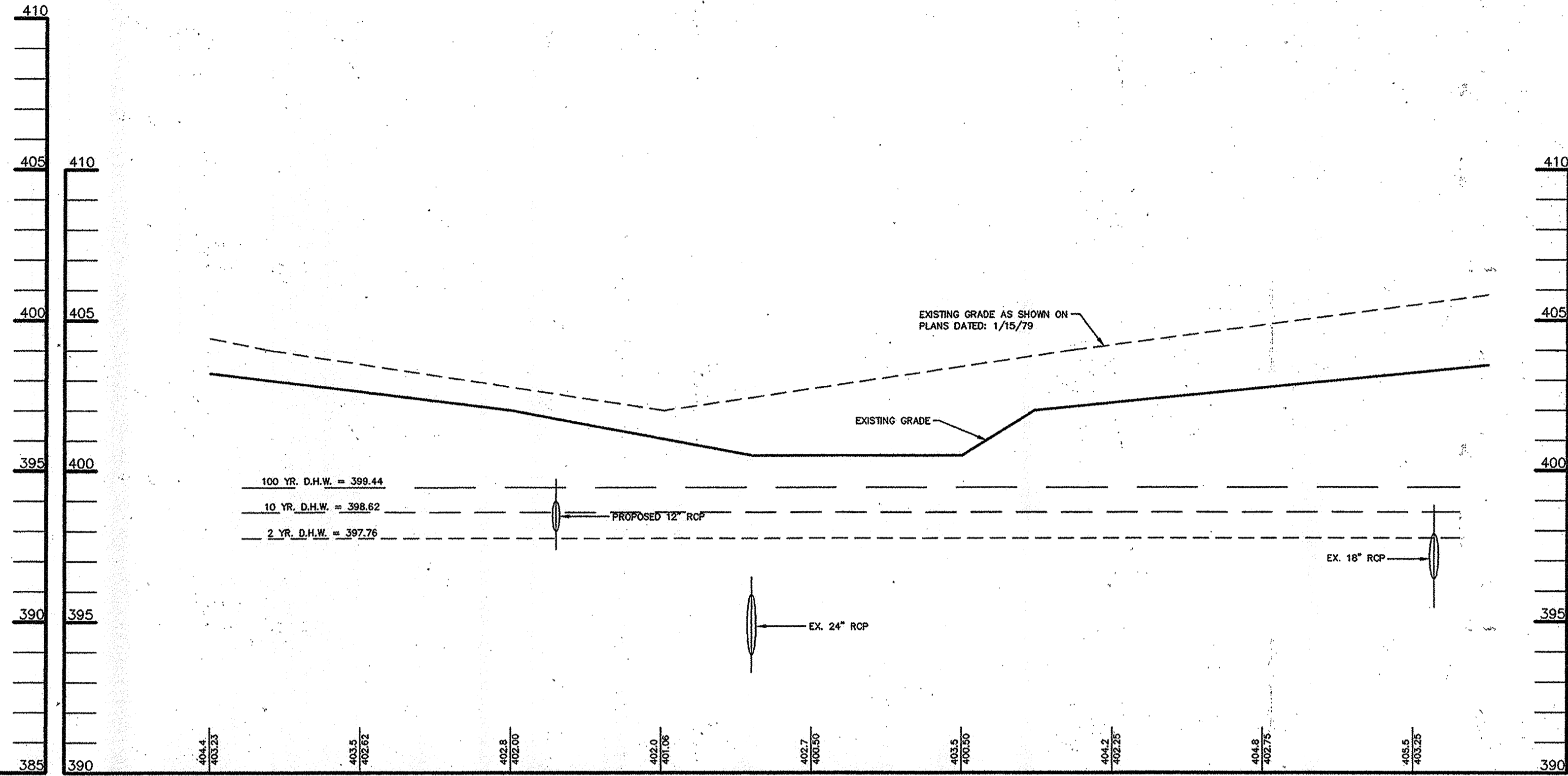
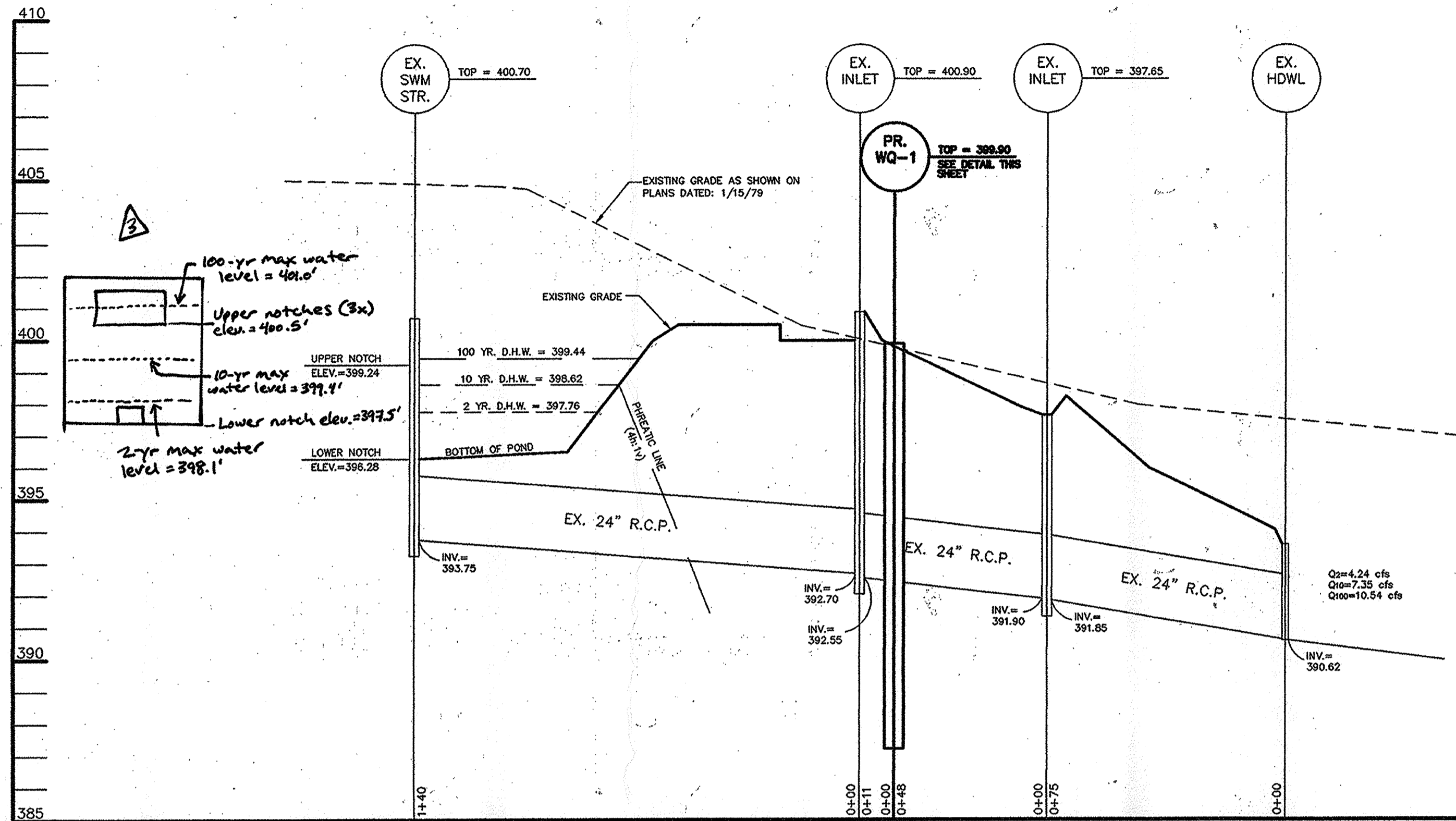
AREA TAX MAP 24, PARCEL 21, ZONED R-20
2nd ELECTION DISTRICT

TITLE STORM DRAIN PROFILES

MESSICK & ASSOCIATES
CONSULTING ENGINEERS
31 OLD SOLOMONS ISLAND RD., SUITE 201
ANNAPOLIS, MARYLAND 21401
(410) 286-3212

DESIGNED BY: DJV
DRAWN BY: BPO
PROJECT NO:
DATE: APRIL 9, 1999
SCALE: AS SHOWN
DRAWING NO.: 5 OF 12

WAYNE A. NEWTON, #21591
SDP 99-129

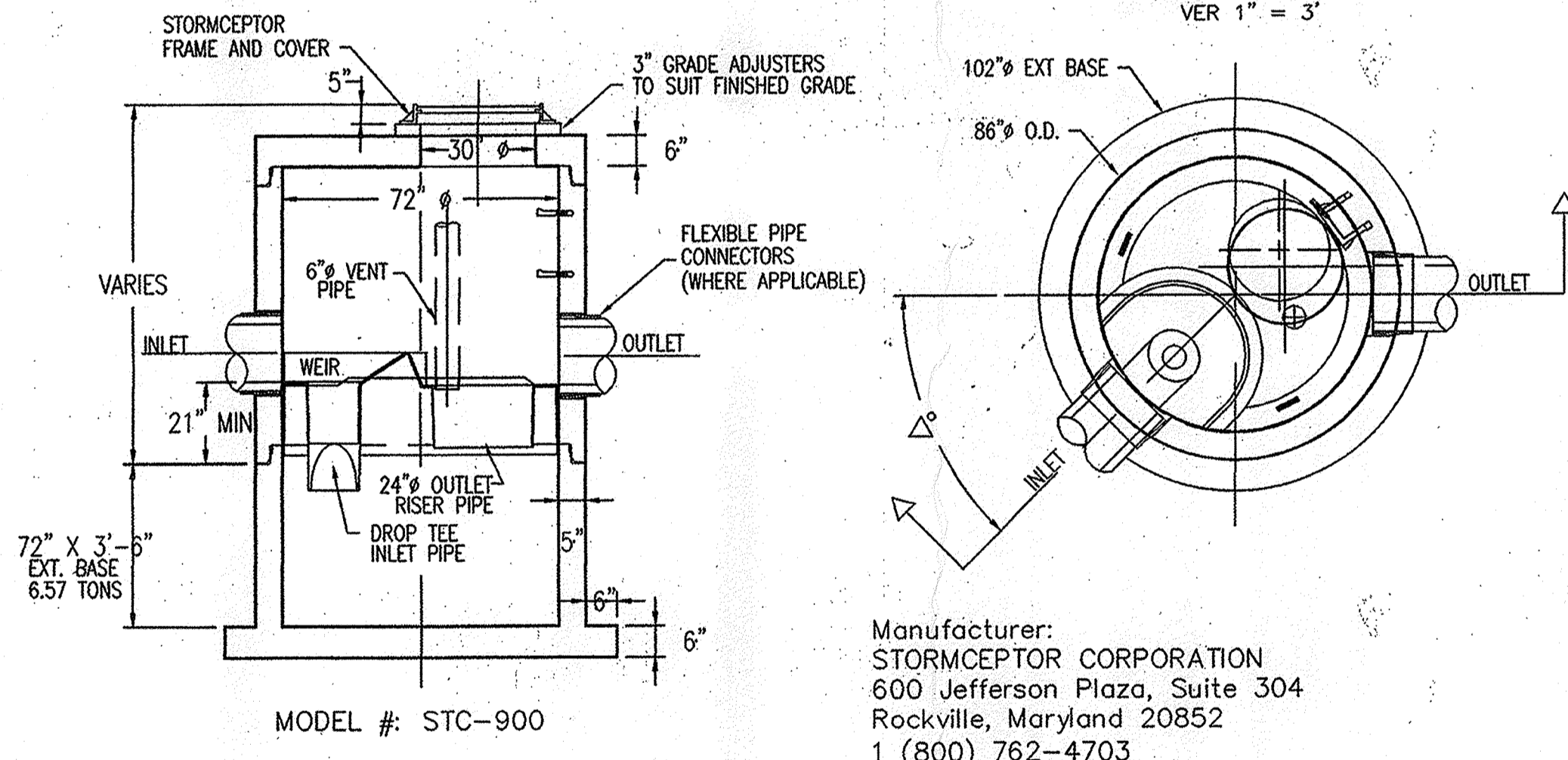


**PROFILE A-A
EXISTING PRINCIPAL SPILLWAY PROFILE
STORMWATER MANAGEMENT**

SCALE: HOR 1" = 30'
VER 1" = 3'

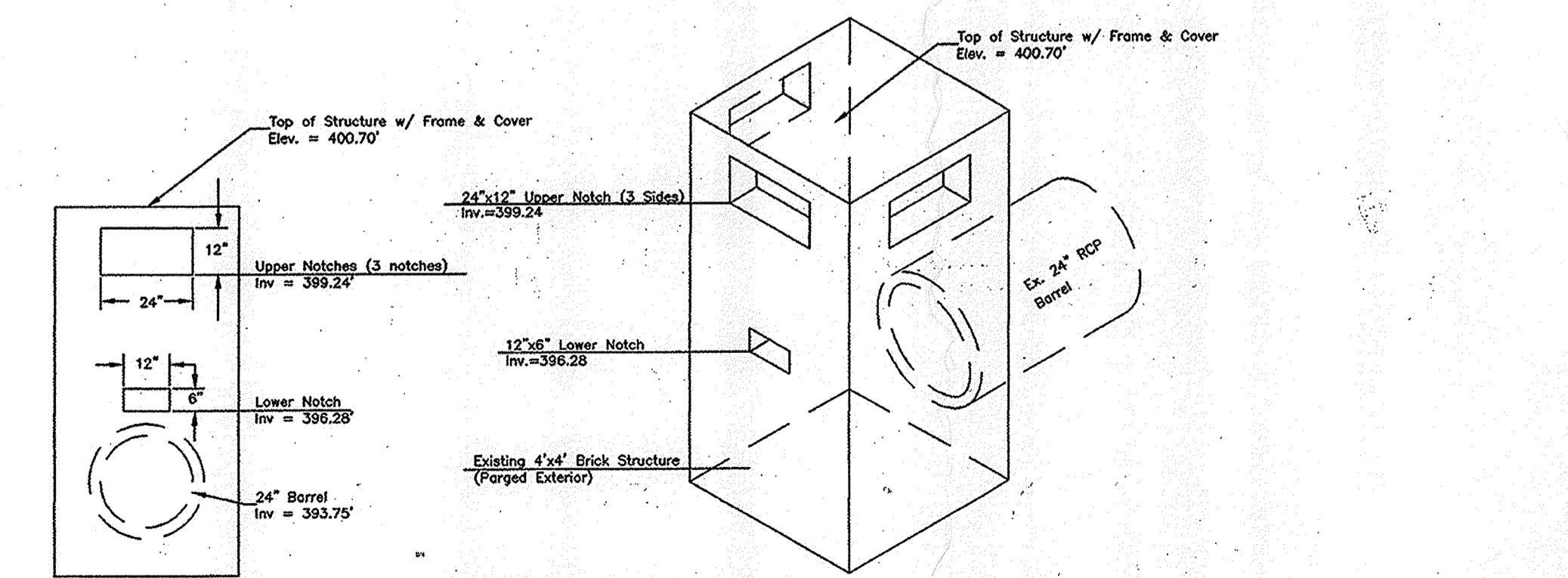
**PROFILE B-B
EXISTING EMBANKMENT PROFILE
STORMWATER MANAGEMENT**

SCALE: HOR 1" = 30'
VER 1" = 3'



**PROPOSED STORMCEPTOR
(PR. WQ-1)**

SCALE: 1" = 3'

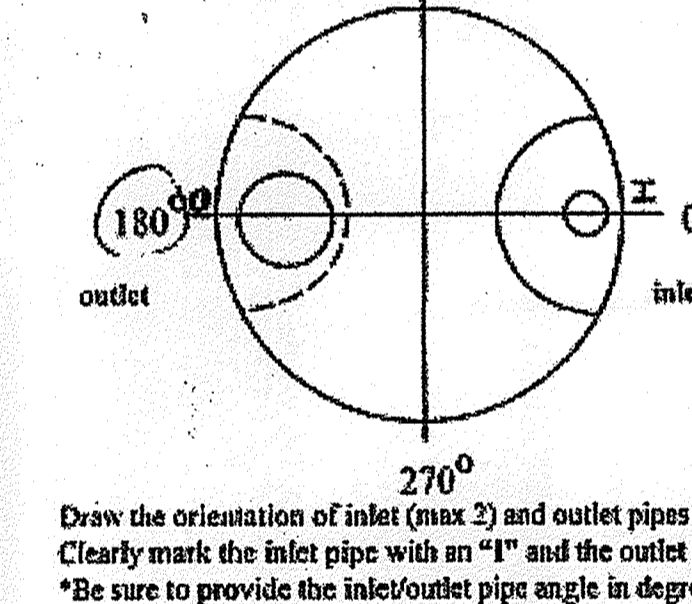


EXISTING SWM STRUCTURE

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): 4500 (900) 1200 1800 2400 3600 4800 6000 7200
Install. Type (Circle One): Commercial Industrial (Residential) Highway/DOT Gas Station Man/Govt
 Other (Be specific as possible): Church (Parish) General Residential
(Circle One): Single Inlet Multiple Inlet Impervious Drainage Area (in acres)
 This installation is... (Circle One): New Construction or Retrofit

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

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

Project Details:
 Name of Project: Par. of Seventh Day Adventist Church Design Firm: Messick & Associates
 Deliver insert by (date): CONTRACT 2/2/99
 Address of Installation: 3291 ST. JOHN'S LANE City: ELLICOTT CITY State: MD
 Designer Contact: Daniel Vannoy Phone: (410) 266-3212 Fax: (410) 266-3535
 Approving Agency: Howard County Contact: Thomas Auzan Phone: (410) _____
 Please include all pertinent details about this project for consideration in press releases or feature articles below (see 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

For Office Use Only
 Order # _____ Date _____

Which plant will be manufacturing the unit:
ROXELL, MARYLAND

Manhole #	<u>100-1</u>
Finish Top elevation (ft)	<u>399.70</u>
Top slab elevation (ft)	<u>399.23</u>
Inlet pipe invert (ft)	<u>399.46</u>
Outlet pipe invert (ft)	<u>392.31</u>
Pipe Type	<u>R.C.P.</u>
Inlet Pipe Inside Dia. (in) [ID]	<u>24"</u>
Inlet Pipe Outside Dia. (in) [OD]	<u>30"</u>
Outlet Pipe Inside Dia. (in) [ID]	<u>24"</u>
Outlet Pipe Outside Dia. (in) [OD]	<u>30"</u>

**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

Paul Smith 11/10/99
 DIRECTOR 85 DATE
John P. ... 11/10/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Chris ... 11/10/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/28/15 3 Added bid retention + new sheets 7-12

DATE NO. REVISION

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

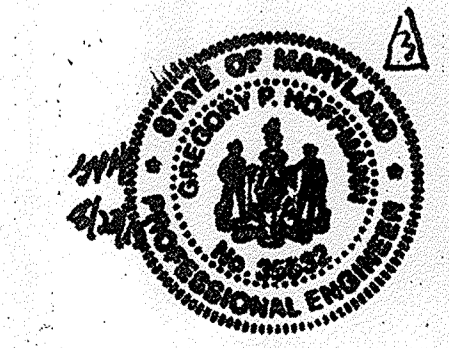
PROJECT BALTIMORE FIRST SEVENTH DAY ADVENTIST CHURCH

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

11/19/99 DATE
 DESIGNED BY: DJV
 DRAWN BY: BPO
 PROJECT NO.:
 DATE: APRIL 9, 1999
 SCALE: AS SHOWN
 WAYNE A. NEWTON #21591
 DRAWING NO.: 6 OF 12



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. 1/4 or 1/2 inch perforations, 6 inch center to center, along four longitudinal rows). Perforated pipe shall be double-wrapped in 1/2" 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 silt-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 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.
 - 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.

Temporary Seeding Summary						
Hardness Zone: B3						
No.	Species	Application Rate (lb/acre)	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	Guts	72	8-1 to 11-15	1	(10 lb/1000 sf)	(90 lb/1000 sf)
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

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; P205 (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, 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.

Permanent Seeding Summary							
Seed Mixture (Hardness Zone: B3): 11 (Table B3 in Maryland Guidebook)							
No.	Species	Application Rate (lb/acre)	Seeding Depths (inches)	Fertilizer Rate			Lime Rate
				N	P205	K2O	
1	Creeping Red Fescue	30	1/2 to 3/4	45 lb/ac (11 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 ton/ac (90 lb/1000 sf)
2	Chewings Fescue	30	1/2 to 3/4				
3	Kentucky Bluegrass	20	1/2 to 3/4				
4	Optional - Rough Bluegrass	15	1/2 to 3/4				

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/h)*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

Chief, Development Engineering Division 9-10-15
 Chief, Division of Land Development 9-10-15
Director 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

GPH: LUG
 W-14-016
 SHEET NUMBER: 7 OF 12

SCALE: May 16, 2015
 DESIGN BY: Name
 DRAWN BY: Name
 CHECKED BY: Name
 PROJECT ID: Name
 REVISION DATE: Name
 REVISION TYPE: Name
 REVISION DATE: Name
 REVISION TYPE: Name

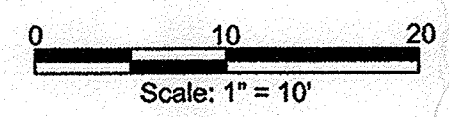
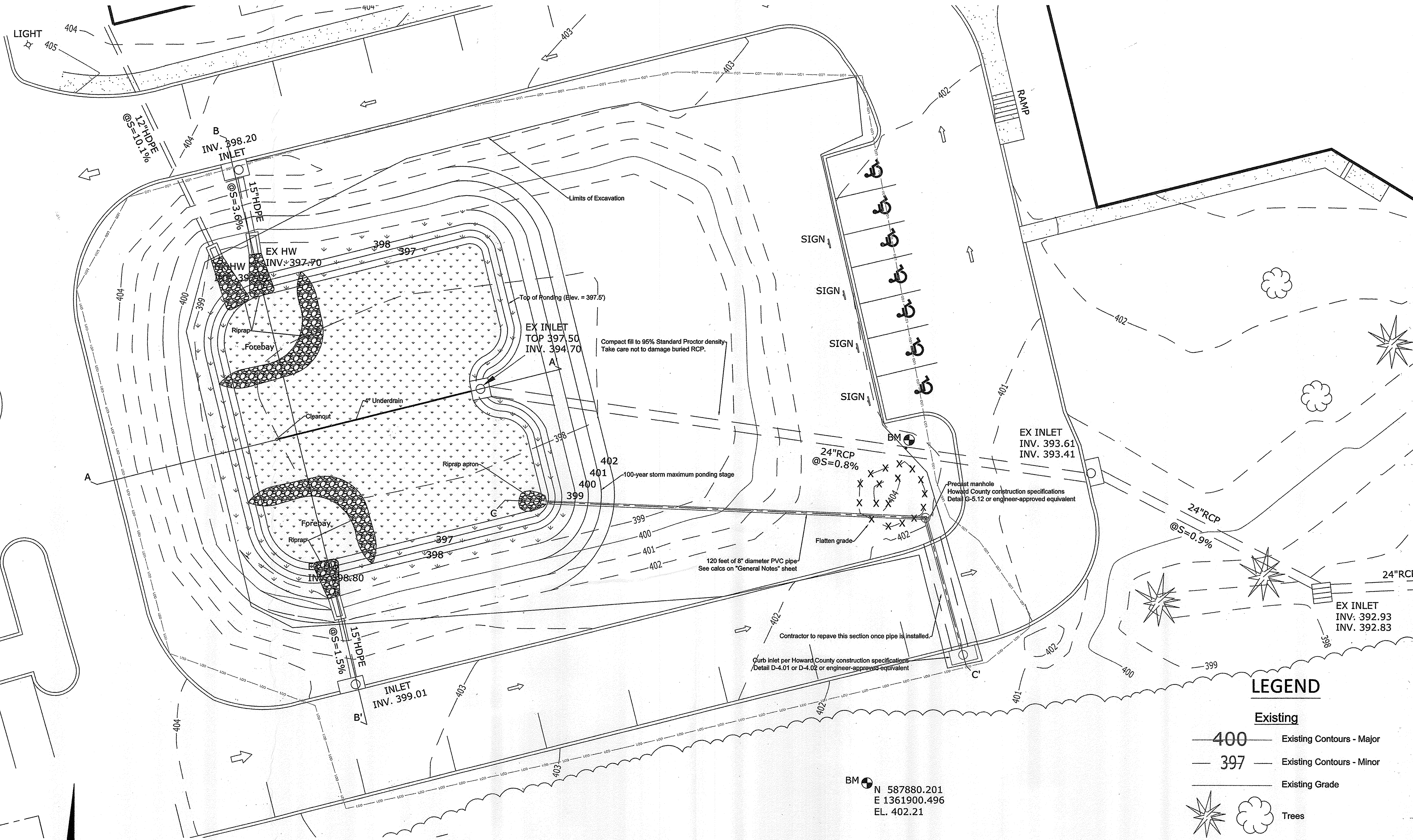
SURVEY COMPLETED BY: Carl F. Kreutter, L.S., C.F. Kreutter & Associates, Inc.
 1613 Fullerton Rd., Edgewater, MD 21037
 (Phone) 301-974-9065

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

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

PREPARED BY: The Center for Watershed Protection, 3290 North Ridge Rd, Site 290, Ellicott City, MD 21043
 www.cwp.org (410) 461-8523

GENERAL NOTES
Baltimore First Seventh-Day Adventist Church
WATERSHED PROTECTION
Ellicott City, Maryland



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

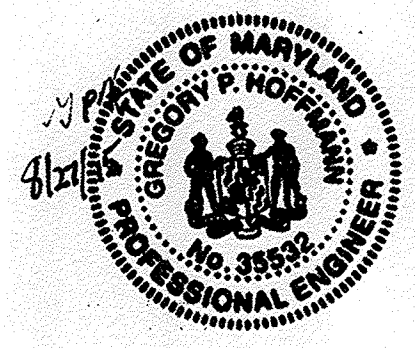
John R. Robertson
 HOWARD SCD
 Date: 9/4/15

APPROVED: DEPARTMENT OF PLANNING AND ZONING

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

Karl S. ... 9-10-15
 Chief, Division of Land Development 55 Date

Val ... 9-11-15
 Director Date



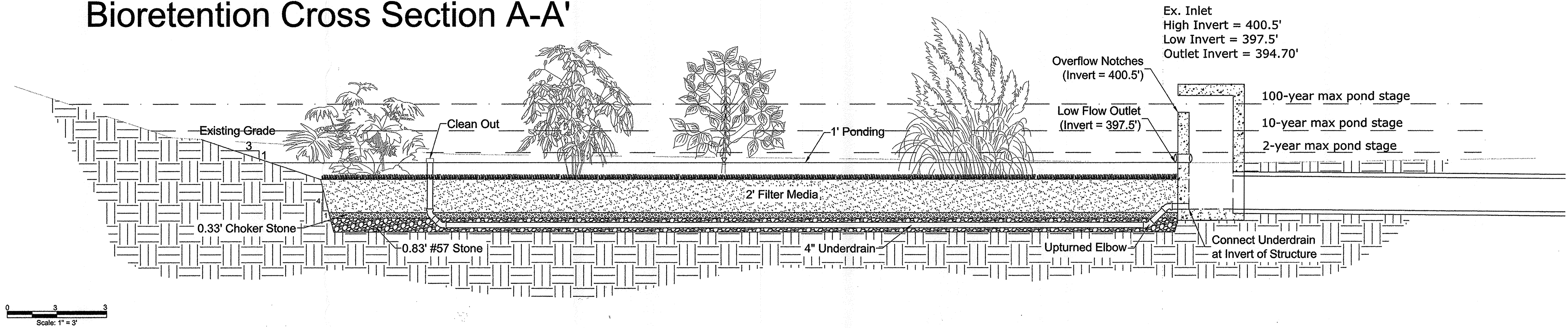
- ### LEGEND
- Existing**
- 400 — Existing Contours - Major
 - 397 — Existing Contours - Minor
 - — Existing Grade
 - Trees
- Proposed**
- 400 — Proposed Contours
 - — Proposed Grade
 - — Limits of Excavation
 - — Silt Fence
 - — Tree Protection
 - — Limits of Disturbance
 - — Proposed Practice

BM N 587880.201
 E 1361900.496
 EL. 402.21

PREPARED FOR: Jim Caldwell, Howard County Office of Facility Planning, 3430 Court House Drive, Ellicott City, MD 21043, 410-313-0700
 PREPARED BY: The Center for Watershed Protection, 3200 North Ridge Rd, Ste 200, Ellicott City, MD 21043, www.cwp.org, (410) 461-8323
 OWNER: Baltimore First Seventh-Day Adventist Church, 3291 Saint Johns Lane, Ellicott City, MD 21042, 410-465-6664
 SURVEY COMPLETED BY: Carl F. Kreutter, L.S., C.F. Kreutter & Associates, Inc., 1613 Fullerton Rd, Edgewater, MD 21037, (Phone) 301-974-9065
 DATE: May 15, 2015
 SCALE: 1 inch = 10 feet
 DESIGN BY: None
 DRAWN BY: None
 CHECKED BY: None
 PROJECT ID: W-14-016
 SHEET NUMBER: 8 OF 12

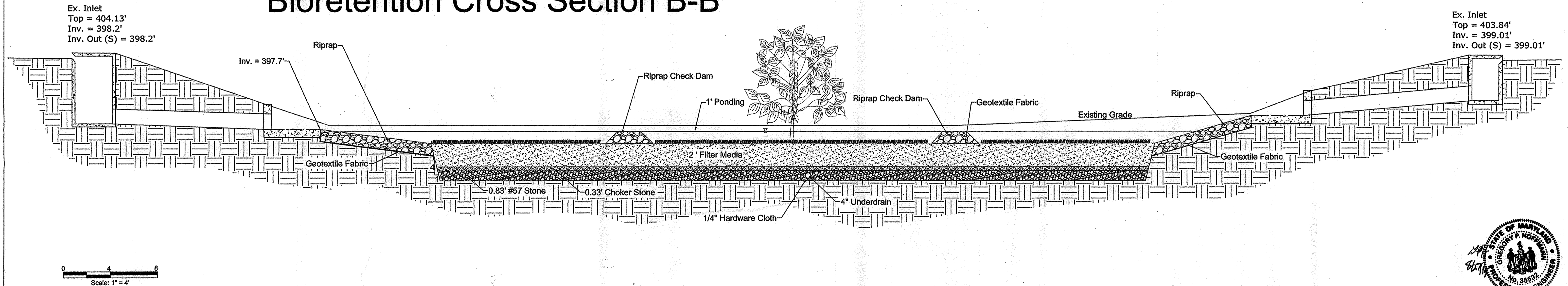
Proposed Conditions
 Baltimore First Seventh-Day Adventist Church
 Ellicott City, Maryland

Bioretention Cross Section A-A'



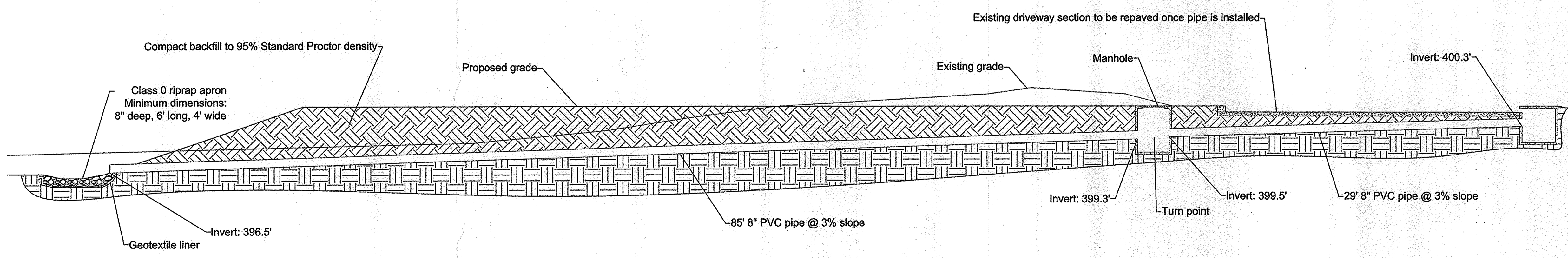
Scale: 1" = 3'

Bioretention Cross Section B-B'



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 B. [Signature] 9/10/15
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

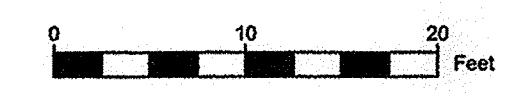
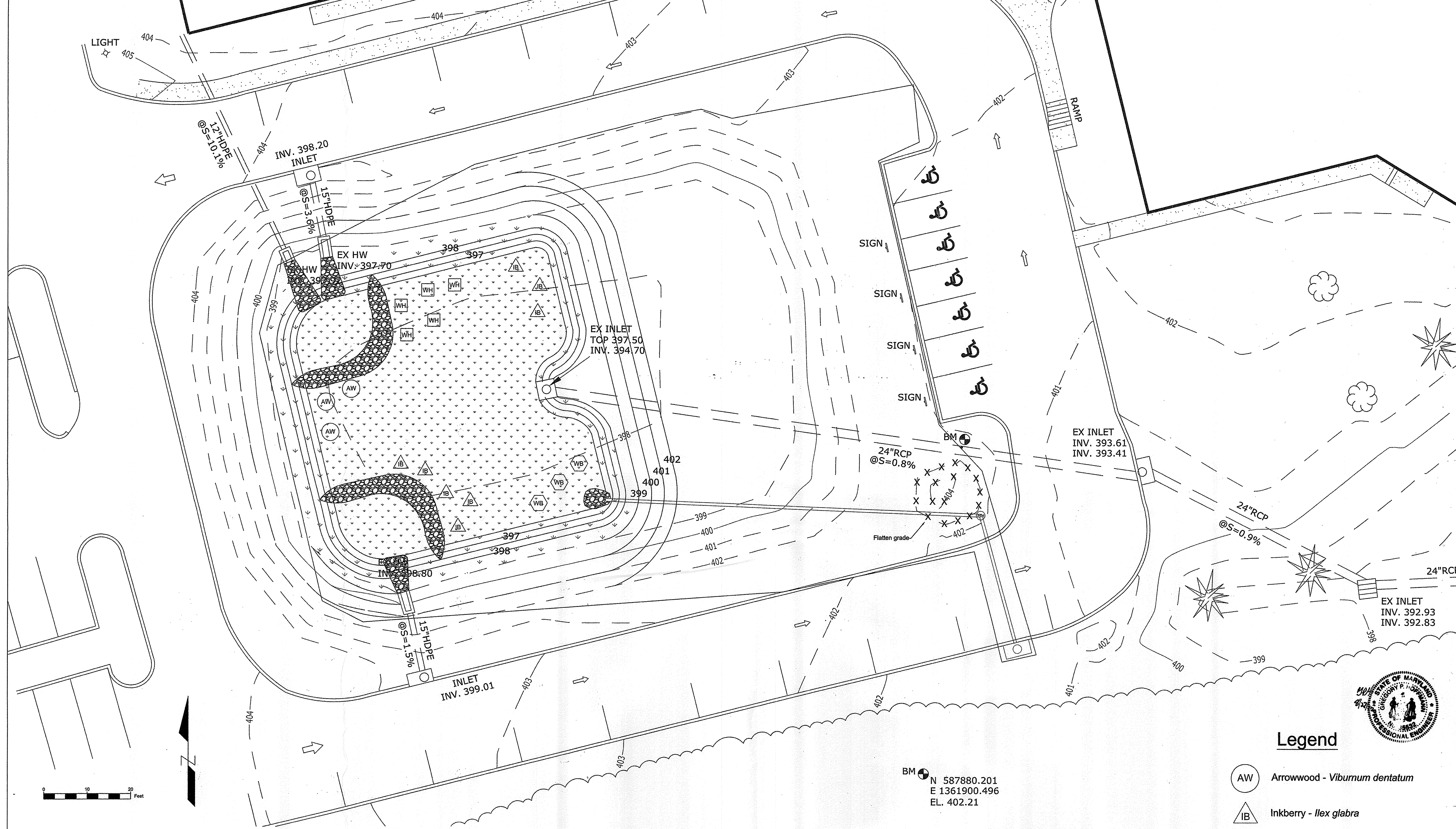
[Signature] 9-10-15
 Chief, Development Engineering Division Date

[Signature] 9-10-15
 Chief, Division of Land Development Date

[Signature] 9-11-15
 Director Date



DATE: May 15, 2015	DESIGN BY: None	AS SHOWN: GPH
REVISION DATE: None	DRAWN BY: None	LLG
REVISION TYPE: None	CHECKED BY: None	GPH
REVISION DATE: None	PROJECT ID: W-14-016	W-14-016
REVISION TYPE: None	PROJECT ID: W-14-016	W-14-016
SURVEY COMPLETED BY: Carl F. Kreutter & Associates, Inc.	1513 Fullerton Rd Edgewater, MD 21037 (Phone) 301-974-9065	SHEET NUMBER: 9 of 12
OWNER: Baltimore First Seventh-Day Adventist Church 3291 Saint Johns Lane Ellicott City, MD 21042 410-485-8864	PREPARED FOR: Jim Caldwell Howard County Office of Environmental Sustainability 5300 Ellicott City Rd 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		
Cross Sections		
Baltimore First Seventh-Day Adventist Church Ellicott City, Maryland		



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

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

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

John R. Robertson 9/14/15
 HOWARD SCD Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 9-10-15
 Chief, Division of Land Development 9-10-15
 Director 9-11-15