ROADWAY AND STORM DRAIN PLANS ORCHARD ESTATE

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCHOOLEY MILL PARK VICINITY MAP

SCALE: 1"=2000'

HOWARD COUNTY CONTROL

HOWARD COUNTY CONTROL

V 543290.6332

STATION 41GB N 544580.3747 E 1330741.3820 ELEV. 475.304

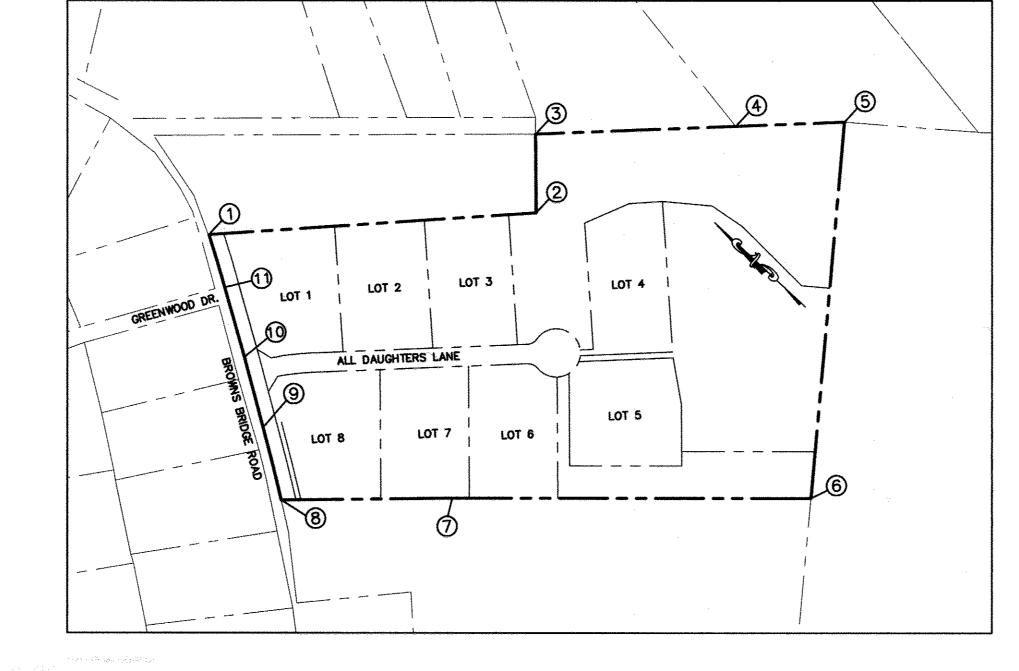
GENERAL NOTES

21 OFFSITE FINAL FOREST CONSERVATION PLAN

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- 2. 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.
- 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AY LEAST 48 HOURS PRIOR TO ANY EXCAVATION
- 4. 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 THE
- 5. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPT. 2004.
- 6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND COORDINATE SYSTEM NAD 83 (MCS). HOWARD COUNTY MONUMENT NOS. 41CG AND 41GB.
- 7. PRIVATE WELLS WILL BE USED TO SERVE THIS PROPERTY.
- 8. PRIVATE INDIVIDUAL SEPTIC AREAS WILL BE USED TO SERVE THIS PROPERTY
- 9. STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY ONE DRY EXTENDED DETENTION POND AND TWO BIO-RETENTION FACILITIES. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.
- 10. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE, EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- 11. THERE ARE NO WETLANDS ON-SITE STUDY FOR THIS PROJECT AS DETERMINED BY PATTON HARRIS RUST AND ASSOCIATES FIELD WALKED, DATED DECEMBER 2004. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.
- 12. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS INC. DATED DECEMBER 2004.
- 13. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- 14. THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPTEMBER 2004.
- 15. SUBJECT PROPERTY ZONED RR-DEO PER 2-02-04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.
- 16. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- 17. SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S.: SP 05-15. RE 06-007.
- 18. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE
- 19. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 20. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- 21. DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III. ALL 40' RIGHT OF WAYS 25 M.P.H.
- 22. ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
- 23. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE STREAM OR REQUIRED BUFFER, AND FOREST CONSERVATION EASEMENT AREAS.
- 24. BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- 25. THE FOREST CONSERVATION OBLIGATION FOR THE PROPOSED SITE DEVELOPMENT HAS BEEN MET BY PLACING 1.56± AC (67,953.60 SF±) OF FOREST IN AN ON-SITE FOREST RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$13,590.72 (67,953.60 SF X \$0.20/SF) WILL BE POSTED.
- THE REMAINING OBLIGATION OF 2.15 AC (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101, AND TAX MAP 8, PARCEL 4 (F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$37,461.60 (187,308 x \$0.20/SF) WILL BE POSTED.
- 26. PRESERVATION PARCELS A, B & C HAVE NO FURTHER SUBDIVISION POTENTIAL.
- 27. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- 28. LAND DEDICATED TO HOWARD COUNTY, MARYLAND, FOR PURPOSES OF A PUBLIC ROAD IS 1.1071 ACRES.
- 29. PARCELS A,B, & C WILL BE PRIVATELY OWNED. THE EASEMENT HOLDERS FOR PARCELS A, B, & C WILL BE THE HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY.

TUBE SLEEVE (12 GA.) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

- 30. 95% COMPACTION IS REQUIRED IN FILL AREAS UNDER ROADS AND PROPOSED STORM DRAIN PIPES
- PER AASHTO T-180 STANDARDS. 31. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GA.) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE
- 32. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS/PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING/GRADING PERMIT APPLICATIONS.
- 33. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,550.00 FOR 74 SHADE TREES, 0 ORNAMENTAL TREES, 29 EVERGREEN TREES, AND <u>Q</u> SHRUBS.



34. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS/PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING/GRADING PERMIT APPLICATIONS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITY SHOWN ON THIS PLANS WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED

OF THE STATE OF MARYLAND, LICENSE NO. 36896 EXPIRATION DATE: 2-15-19

PROFESSIONAL ENGINEER UNDER THE LAWS

BY ME, AND THAT I AM A DULY LICENSED

MD. P.E. NO.

WATER AND SEWER GENERAL NOTES:

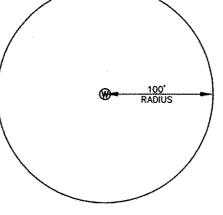
THIS AREA DESIGNATES A PRIVATE SEPTIC EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.

2. PERC HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED BY PATTON HARRIS RUST AND ASSOCIATES, PC IN AUGUST 2004.

- DENOTES PASSING PERC TEST.
- 4. PRO DENOTES FAILED PERC TEST.
- WELLS AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY BOUNDARY HAVE BEEN SHOWN TO THE BEST OF OUR KNOWLEDGE AND INFORMATION FROM AVAILABLE COUNTY
- 6. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARLAND DEPARTMENT OF THE ENVIRONMENT AND HOWARD COUNTY.
- 7. DENOTES WELL (NOT TO SCALE)

DEPARTMENT SIGNATURE OF THE RECORD PLAT.





ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT APPROVAL. IT IS THE DEVELOPER'S

RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL

NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH

FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRTA

COORDINATE LIST

N 545,449.73 | E 1,328,318.94

N 544.979.55 | E 1,328,814.70

N 545,090.87 | E 1,328,933.29

N 544,795.48 | E 1,329,228.27

N 544,635.17 | E 1,329,388.08

N 544,158.91 | E 1,328,769.82

N 544,707.98 | E 1,328,262.93 N 544,966.70 | E 1,328,018.45 N 545,096.19 | E 1,328,102.52

N 545,223.42 | E 1,328,182.95

N 545,351.35 | E 1,328,260.99

GROSS AREA OF PROPERTY

AREA OF STEEP SLOPE

AREA OF RIGHT OF WAY

PRESERVATION PARCELS

MINIMUM LOT SIZE SELECTED

NUMBER OF BUILDABLE LOTS

NUMBER OF OPEN SPACE LOTS

PROPOSED WATER AND SEWER

UNITS TO THIS PARCEL.

AREA OF REQUIRED OPEN SPACE

AREA IN 100 YR. FLOODPLAIN

AREA OF PROPOSED BUILDABLE LOTS

AREA OF PROPOSED NON-BUILDABLE

NUMBER OF BUILDABLE PRESERVATION PARCELS

NUMBER OF NON-BUILDABLE PRESERVATION PARCELS

BASE DENSITY = 18.57 AC/4.25 = 4.36 OR 4 UNITSDEO OPTION DENSITY = 18.36 AC/2 = 9 UNITS

TOTAL DEO UNITS REQUIRED = 9-4=5 UNITS

* DENSITY EXCHANGE OPTION WILL BE USED TO IMPORT DENSITY

LOCATION

N 544936

E 1328089

N 544612

E 1328374

N 544571

E 1328388

(EX. FENCE)

EXISTING ZONING

NET TRACT AREA

SITE TABULATION

RR-DEO

O AC

0.21 AC

18.36 AC

1.11 AC

12.45 AC

5.01 AC

47,000 SF

18.57 AC (809.079 SF)

PRIVATE WELL AND SEPTIC

REMOVE/RETAIN

REMOVE

REMOVE

RETAIN

ASBUILT DATE OF SURVEY: 11.08.17

	MINIMUM	LOT SIZ	E CHART
LOT NO.	GROSS AREA	PIPESTEM AREA	MIN LOT SIZE
1	52,439	-	52,439
2	49,245	÷	49,245
3	47,077	- 1	47,077
4	49,747	327	49,420
5	49,938	-	49,938
6	49,896	-	49,896
7	49,677		49,677
8	54,347		54,347
Α	140,111	2,332	137,779

EXISTING STRUCTURE LIST

USE FOR

PROTECT

PROPERTY LINE

ALL AREAS SHOWN ABOVE ARE IN SQUARE FEET

PRESERVATION PARCEL A, B & C - JUSTIFICATION THREE PRESERVATION PARCELS HAVE BEEN CREATED IN THIS CLUSTER SUBDIVISION. THE NON-BUILDABLE PRESERVATION PARCEL B HAS BEEN CREATED TO PRESERVE THE ON-SITE FOREST RESOURCES. PRESERVATION PARCEL A HAS BEEN CREATED TO PROVIDE A BUILDABLE HOUSE SITE. IN ADDITION, ALL OF THE PROJECT'S WATER QUALITY AND QUANTITY MANAGEMENT FACILITIES WILL BE LOCATED ON THE NON-BUILDABLE PRESERVATION PARCE B & C. THE EXISTING HEDGEROWS AND VEGETATION ALONG THE PROPERTY BOUNDARIES ARE BEING PRESERVED.

APPRO	VED	: HOWARD COUNTY DEPARTMENT WORKS.	OF PUBLIC
نىنايىلىكى ئىنىد		BUREAU OF HIGHWAYS HE	//-20-07 DATE
APPRO	VED	: HOWARD COUNTY DEPARTMENT AND ZONING.	OF PLANNING
	CHI	EF, DIVISION OF LAND BC DEVELOPMENT	///30/07 / DATE
		HIEF, DEVELOPMENT UY	(1/27/0) DATE
Amain's Serve (Shi Sharin me Shering)			
DATE	NO.	REVISION	
OWNE	R		
		CARLTON E HEYSER, JR	
		14526 NEW HAMPSHIRE AVENU	
		SILVER SPRING, MD 20904	

410-531-5539

DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228

CLARKSVILLE, MARYLAND 21029 410-365-0414 AS - BUILT - ORCHARD ESTATES

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE SHEET Patton Harris Rust & Associates.pc

Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 **F** 410.997.9282

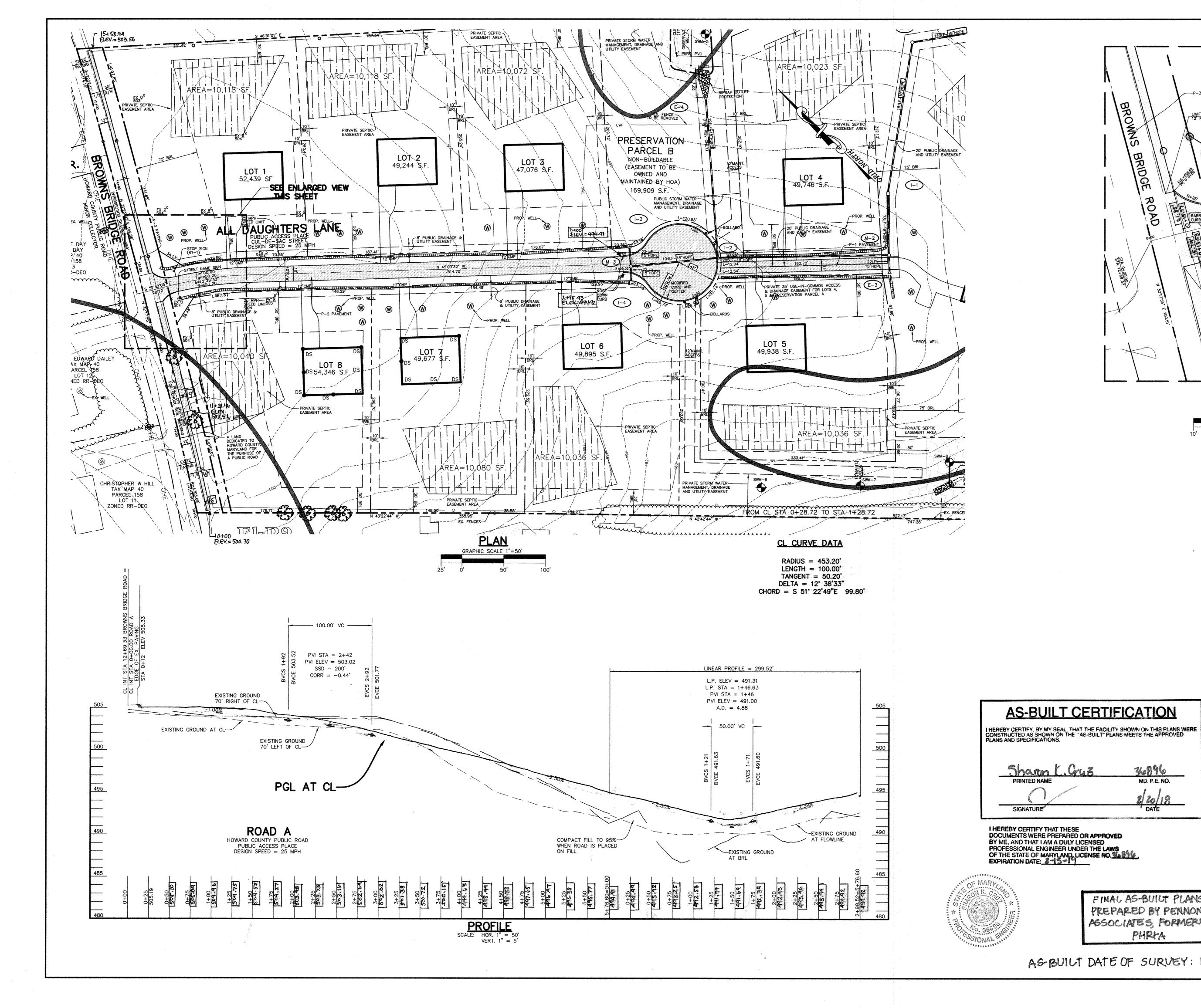
CHECKED BY: DWC DESIGNED BY: NS

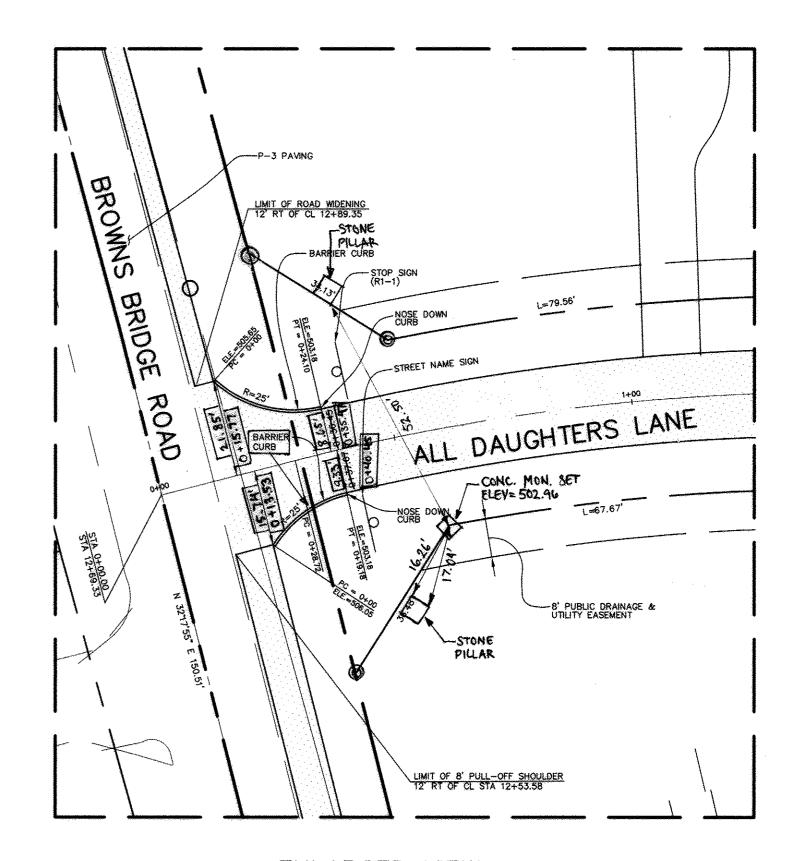
DRAWN BY: EMR/JMK PROJECT NO: 13043/1-0/ENGR/PLANS
/FINAL/C000COV.DWG DATE: NOVEMBER 6, 2007

SCALE : AS SHOWN

DOMENICK W. COLANGETO #27200 DRAWING NO. 1 OF 21

F - 07 - 005





ENLARGED VIEW

11-2007 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DEVELOPMENT CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE NO. REVISION CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. DEVELOPER P.O. BOX 228

CLARKSVILLE, MARYLAND 21029

A10-365-0414

AS-BULCT ORCHARD ESTATES

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PLAN AND PROFILE OF ALL DAUGHTERS LANE

Patton Harris Rust & Associates, pc

Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282

CHECKED BY: DWC

DESIGNED BY : NS

DRAWN BY: EMR\JMK PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C400ROAD.DWG

DATE: NOVEMBER 6, 2007 SCALE : AS SHOWN

DOMENICK W. COLANGELO #27200 DRAWING NO. 2 OF 21 F-07-005

AS-BUILT DATE OF SURVEY: 11.08.17

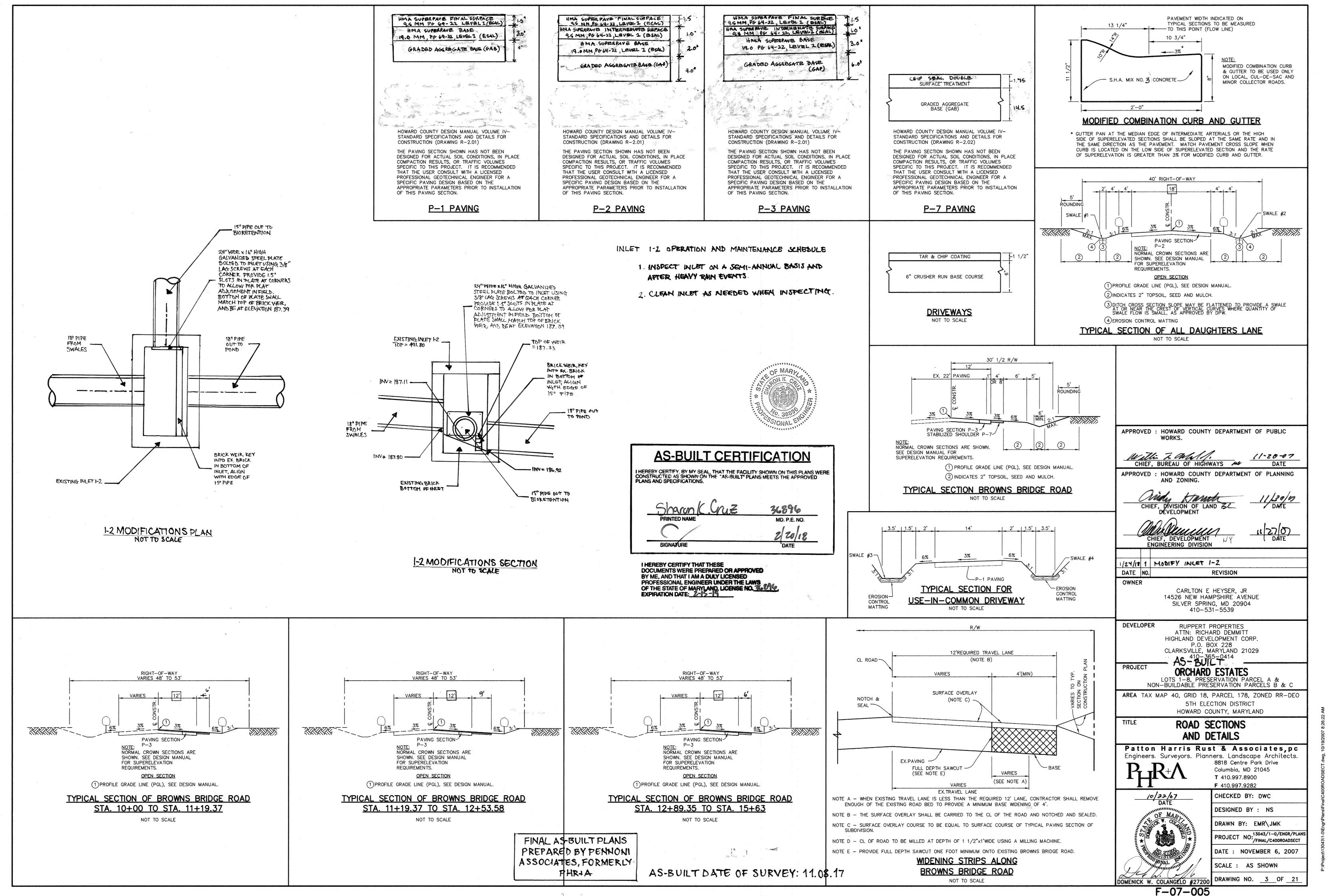
MD. P.E. NO.

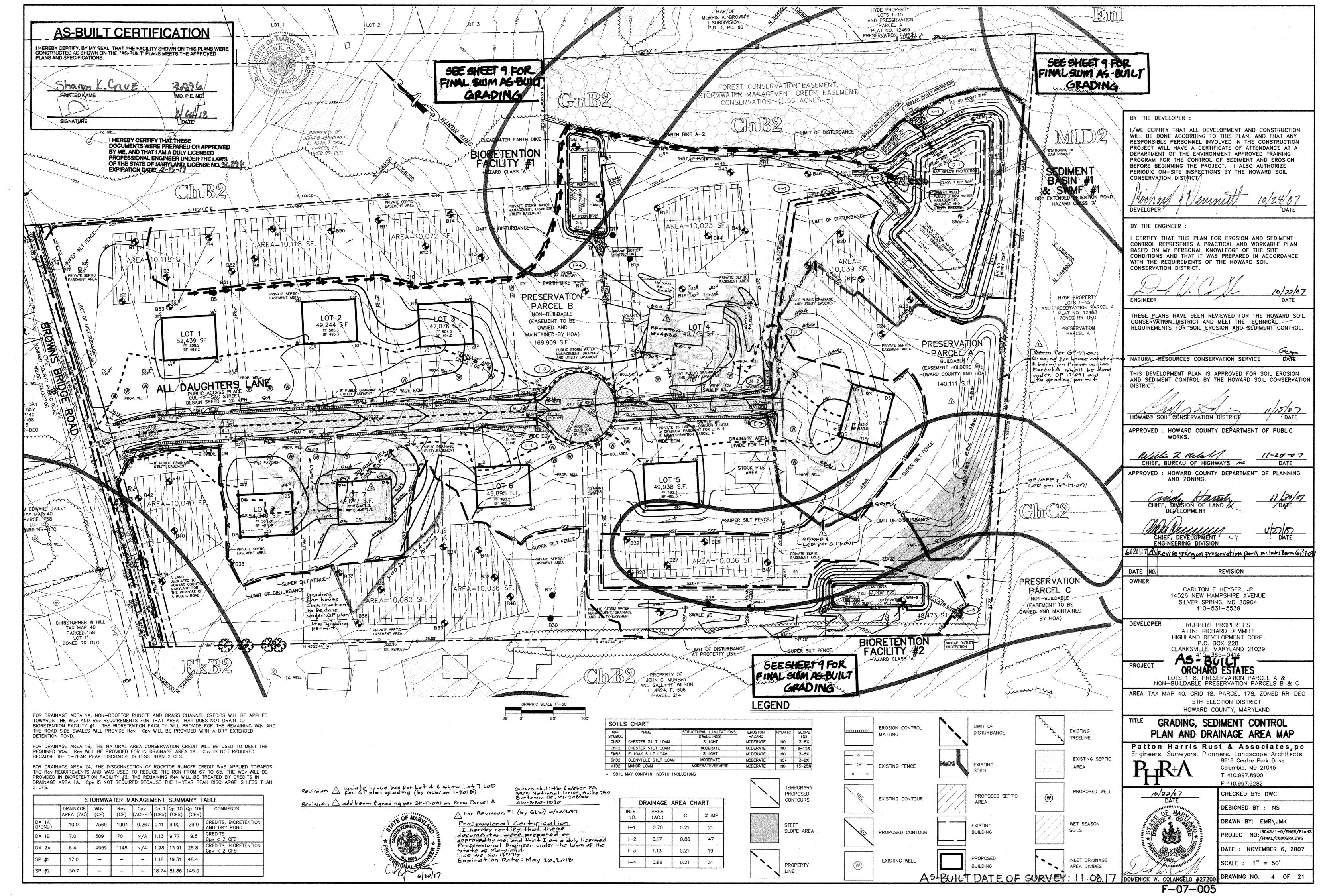
FINAL AS-BUILT PLANS

PREPARED BY PENNON!

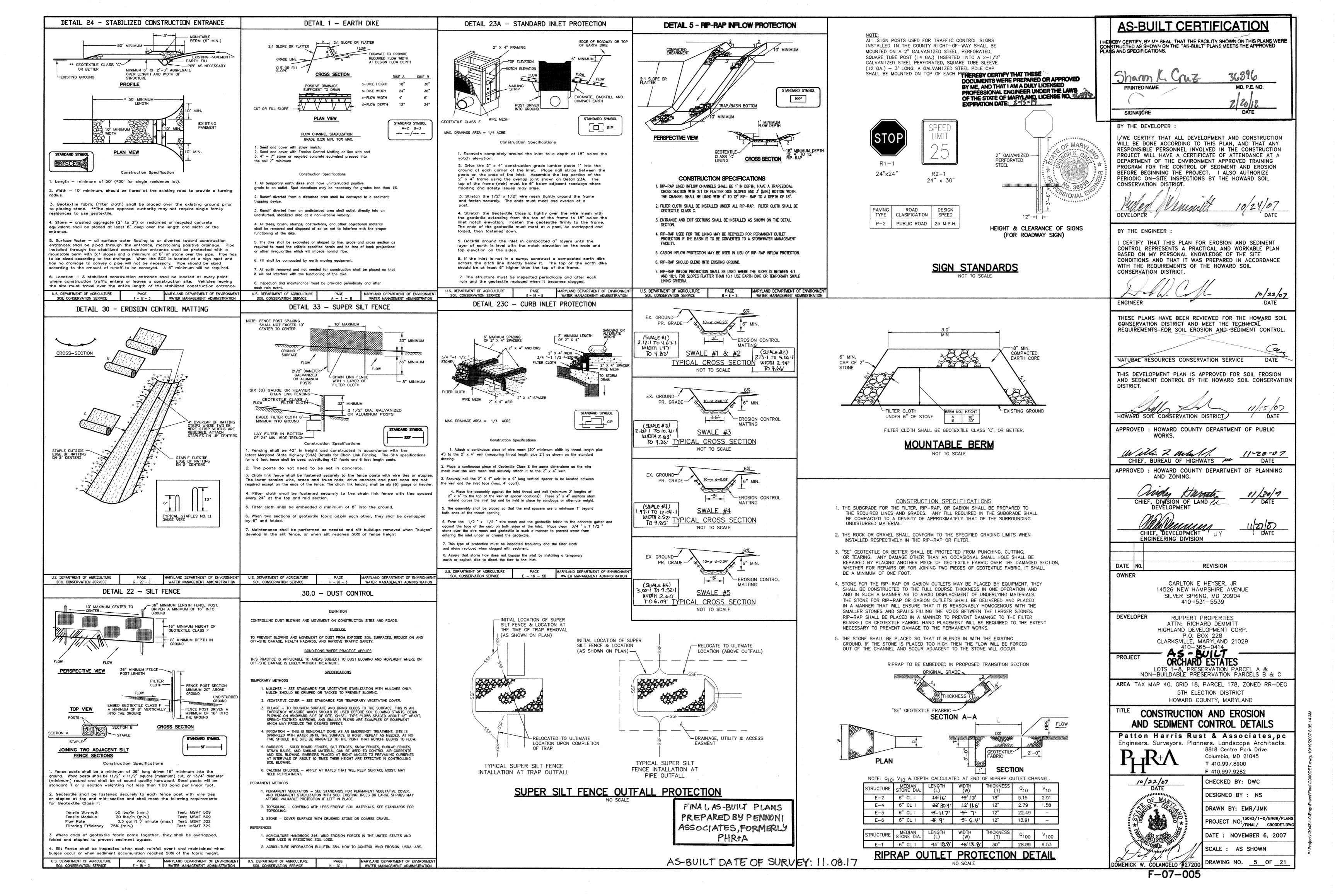
ASSOCIATES, FORMERUY

PHREA





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Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks

shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed

within 15 feet of the toe of the embankment. Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25 foot

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL Material — The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration

may be given to the use of other materials in the embankment if designed by a

geotechnical engineer. Such special designs must have construction supervised by

Placement — Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8—inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment

Compaction — The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. fill material shall contain sufficient moisture so that if formed into a ball it

will not crumble yet not be so wet that water can be squeezed out. When required by the reviewing agency the mimimum required density shall not be ess than 95% of maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cutoff Trench — The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall compacted with construction equipment, rollers, or hand tampers to assure maximum density and maximum permeability.

Embankment Core — The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment. STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2000 ohm—cm. Material shal be placed such that a minimum of 6" (measured perpendicular to the pipe) of flowable ll shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inched in thickness and compacted by hand tampers or other compaction equipment. The material shall comp adiacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured norizontally, to any part of a structure. Under no circumstances shall equipme be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

PIPE CONDUITS

All pipes shall be circular in cross section.

Corrugated Metal Pipe — All of the following criteria shall apply for corrugated Materials — (Polymer Coated steel pipe) — Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M—245 & M—246 with watertight coupling bands or flanges.

Materials — (Aluminum Coated Steel Pipe) — This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M—274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or

Materials — (Aluminum Pipe) — This pipe and its appurtenances shall conform to to the requirements of AASHTO Specifications M—196 or M—211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts mat be used for connections, the pH of the surrounding soils shall be between 4

- Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coted as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at
- Connections All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter; flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flance bolt circular sandwiched between adjacent flances; a 12 inch wide the flange bolt circle, sandwiched between adjacent flanges; a 12 inch wide standard lap type band with 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with o—ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation lepth. Pipes 24 inches in diameter and larger shall be connected by a inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe ends. A 24 inch wide by 3/8 inch thick closed cell circular neoprene gasket will be installed with 12 inch on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

- Bedding The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill."
- Other details (anti-seep collars, valves, etc.) shall be as shown on the

Reinforced Concrete Pipe — All of the following criteria shall apply for reinforced concrete pipe

- Materials Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
- Bedding All reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the side of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this stanard. Gravel bedding

- Laying pipe Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet
- 4. Backfilling shall conform to "Structure Backfill."
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the

Plastic Pipe — The following criteria shall apply for pipe:

- Materials PVC pipe shall be PVC—1120 or PVC—1220 conforming to ASTM D—1785 or ASTM D—2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4 10 inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" shall meet the requirements of AASHTO M294 Type S.
- Joints and connections to anti-seep collars shall be completely watertight.
- 3. Bedding The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- 4. Backfilling shall conform to Structure "Backfill"
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the

CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C. CARE OF WATER DURING CONSTRUCTION

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped. **STABILIZATION**

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

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

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short—term vegetative cover is needed.

<u>Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously</u>

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sa.ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon a possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring. Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long—lived vegetative cover is needed Seedbed Preparation: Loosen upper three inches of soil by raking discing or other acceptable means before seeding, if not previously loosened.

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

- Preferred Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).
- 2) Acceptable Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into

Seeding: For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, see with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 2 tons per acre of well—anchored mulch straw and seed as soon as possible in the spring.
- Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring. Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

> FINAL AS-BUILT PLANS PREPARED BY PENNONI associates, formerly PHRIA

AS-BUILT PATE OF SURVEY: 11.08.17

OPERATION, MAINTENANCE AND INSPECTION

NSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (MD378). THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION. SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture

content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

- CONDITIONS WHERE PRACTICE APPLIES
- I. This practice is limited to areas having 2:1 or flatter slopes where: The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth. b. The soil material is so shallow that the rooting zone is not deep enough to support plants or
- furnish continuing supplies of moisture and plant nutrients. c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.
- II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.
- CONSTRUCTION AND MATERIAL SPECIFICATIONS I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimentation Station.
- II. Topsoil Specifications Soil to be used as topsoil must meet the following:

nutsedge, poison ivy, thistle, or others as specified.

- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting extured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11" in diameter.
- ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass,
- iii. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- II. For sites having disturbed areas under 5 acres: i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative

Stabilization - bSection I - Vegetative Stabilization Methods and Materials.

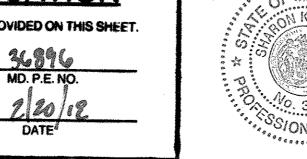
- III. For sites having disturbed areas over 5 acres:
- 1. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
- a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher
- . Organic content of topsoil shall be not less than 1.5 percent by weight. Topsoil having soluble salt content greater than 500 parts per million shall not be used. d. No sod or seed shall be placed on soil which has been treated with soil sterilants or
- chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
- Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.
- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - BSection I - Vegetative Stabilization Methods and Materials.
- V. Topsoil Application
 - When topsoiling, maintain needed erosion and sediment control practices such as diversions. Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" 8" higher in elevation.
 - iii. Topsoil shall be uniformly distributed in a 4" 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 - iv. Topsoil shall not be placed while 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.
- VI. Alternative for Permanent Seeding instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements: a. Composted sludge shall be supplied by, or originate from, a person or persons that are
- permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06. b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements,
- the appropriate constituents must be added to meet the requirements prior to use. c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet. d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND MAINTAINED BIORETENTION FACILITIES

- ANNUAL MAINTENANCE OF MULCH LAYER, SAND FILTER, PLANTING SOIL AND GRAVEL IS REQUIRED. MAINTENANCE OF MULCH, PLANTING SOIL AND SAND FILTER LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. 2. REMOVE DEBRIS AND UNUSED SEDIMENT MATERIAL. MATERIAL SHOULD BE REMOVED
- 3. REPLACE GEO-TEXTILE FABRIC EVERY 2 YEARS AND REPLACE AFTER HEAVY STORM.

AS-BUILT CERTIFICATION NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. Sharon K. Gruz



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.... EXPIRATION DATE:

SIGNATURE

WITHIN 3-4 DAYS AFTER EACH STORM.

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A)7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THÉ PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED OF GRASSES.
- 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7. SITE ANALYSIS:
- TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAVED

AREA TO BE VEGETATIVELY STABILIZED

18.57 ACRES 10.77 ACRES 1.45 ACRES 9.32 ACRES

- OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT. *QUANTITIES ARE FOR COUNTY FEE PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ACTUAL QUANTITIES.
- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED. IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER
- 12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- 13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
- 14. 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.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT POND

ROUTINE MAINTENANCE BY HOA:

SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

1. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.

2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED. 3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, AND UPON APPROVAL

FROM THE DEPARTMENT OF PUBLIC WORKS, SEDIMENT SHALL BE REMOVED FROM 4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA

NON-ROUTINE MAINTENANCE BY HOWARD COUNTY: 1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEQUENCE OF CONSTRUCTION

OBTAIN GRADING PERMIT

2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND BYPASS SWALE. CONTRACTOR TO CONSTRUCT ONLY THE PORTION OF THE SWALE THAT DOES NOT DRAIN INTO THE BASIN AND IS TO STABILIZE BYPASS SWALE IMMEDIATELY.

- 3. INSTALL SEDIMENT BASIN. (3 WEEKS).
- 4. UPON ACCEPTANCE BY THE COUNTY INSPECTOR, CONTRACTOR TO PROCEED WITH ROUGH GRADING OF ENTIRE SITE. (1 WEEK) CONTRACTOR TO PROVIDE DUST CONTROL AS NECESSARY AND AS DIRECTED BY THE INSPECTOR.
- 5. INSTALL WATER, SEWER AND STORM DRAINS AS SUBGRADE ELEVATIONS ARE REACHED. (3 WEEKS)
- 6. INSTALL CURB AND GUTTER AND PAVE. (1 WEEK)
- 7. PERFORM FINE GRADING, SIDEWALK, LIGHTING AND LANDSCAPING. (1 WEEK)
- 8. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. 9. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT
- CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO PERMANENT STORM WATER MANAGEMENT FACILITIES. CONVERT FACILITY IN THE FOLLOWING STEPS: A. PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION. (2 DAYS) B. REMOVE ACCUMULATED SEDIMENT AND FILL IN BOTTOM OF SEDIMENT BASIN TO MEET PROPOSED
- BOTTOM ELEVATION OF SWMF #1. (2 DAYS) C. REMOVE TEMPORARY DRAW DOWN DEVICE AND PLYWOOD COVERING OUTLET WEIR. (1 DAY) D. LOWER TOP OF SEDIMENT BASIN EMBANKMENT TO MEET PROPOSED ELEVATIONS OF SWMF #1
- EMBANKMENT. (2 DAYS) E. INSTALL POND DRAIN AND ORIFICE METAL PLATE. (3 DAYS) F. INSTALL FOREBAY AND CLAY LINER. (5 DAYS) G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.

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 PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT./

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.

10/22/07 **ENGINEER**

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

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. 11/15/00

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC

HOWARD SOIL CONSERVATION DISTRICT

WORKS. Wills Z Waln /. 11-20-07

CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING

AND ZONING.

NGINEERING DIVISION

DATE NO.

CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904

RUPPERT PROPERTIES

AS - BUILT ORCHARD ESTATES **PROJECT**

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES Patton Harris Rust & Associates, pc

Engineers. Surveyors. Planners. Landscape Architects.

10/22/07

T 410.997.8900 F 410.997.9282 CHECKED BY: DWC

Columbia, MD 21045

8818 Centre Park Drive

DESIGNED BY : NS DRAWN BY: EMR/JMK

PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C900DET2.DWG DATE: NOVEMBER 6, 2007

SCALE : AS SHOWN

DRAWING NO. 6 OF 21

F-07-005

DOMENICK W. COLANGELO #27200

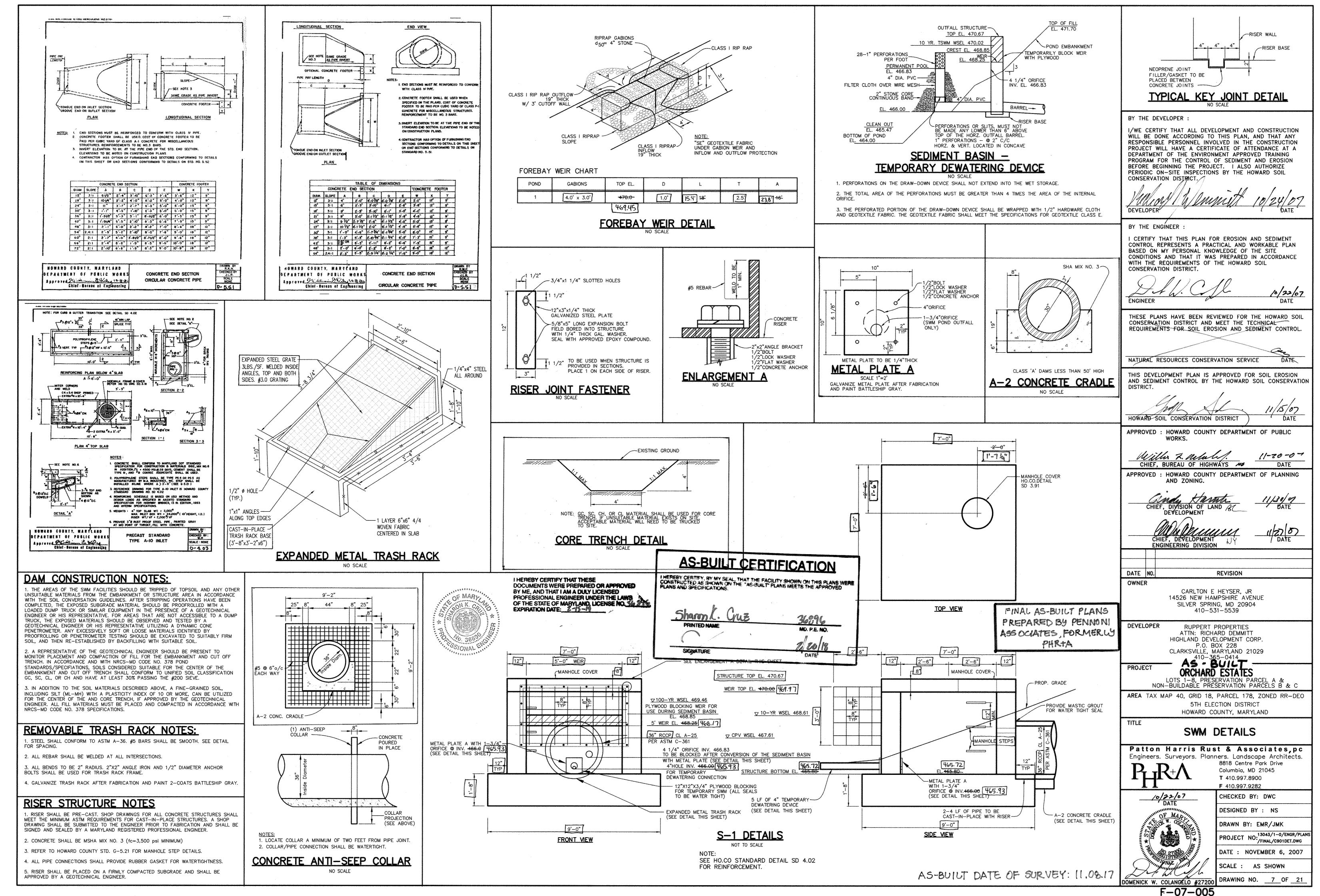
DEVELOPMENT

REVISION

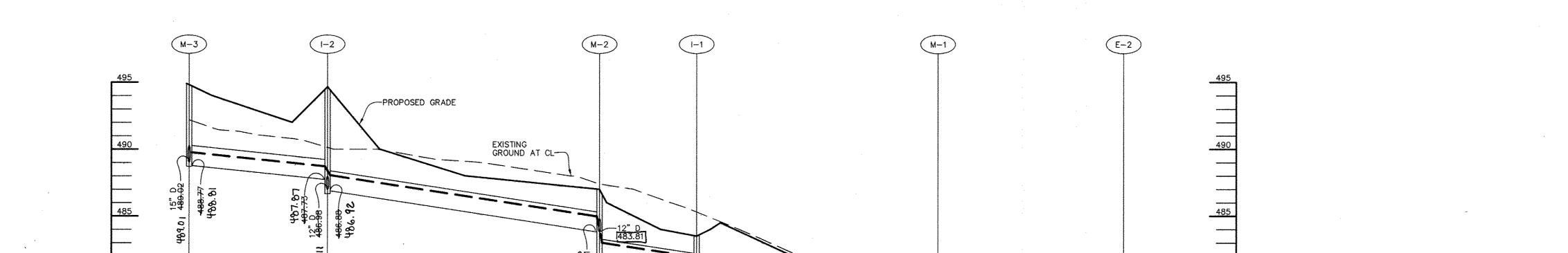
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ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228

CLARKSVILLE, MARYLAND 21029

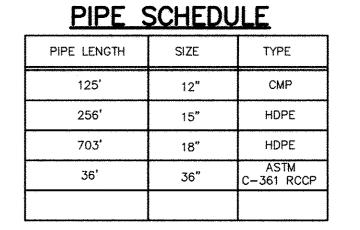


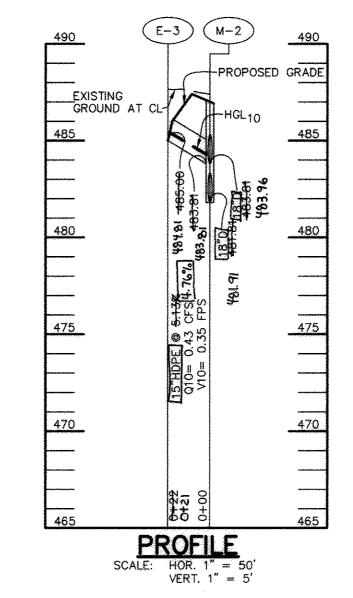
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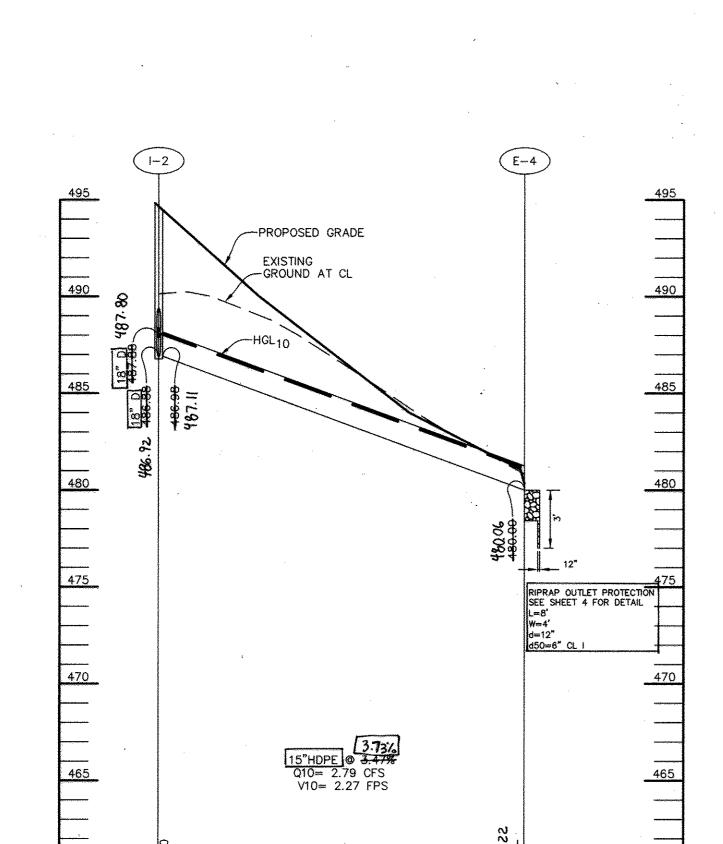


18"HDPE @ 1.49% Q10= 3.75 CFS V10= 2.12 FPS

PROFILE
SCALE: HOR. 1" = 50'
VERT. 1" = 5'

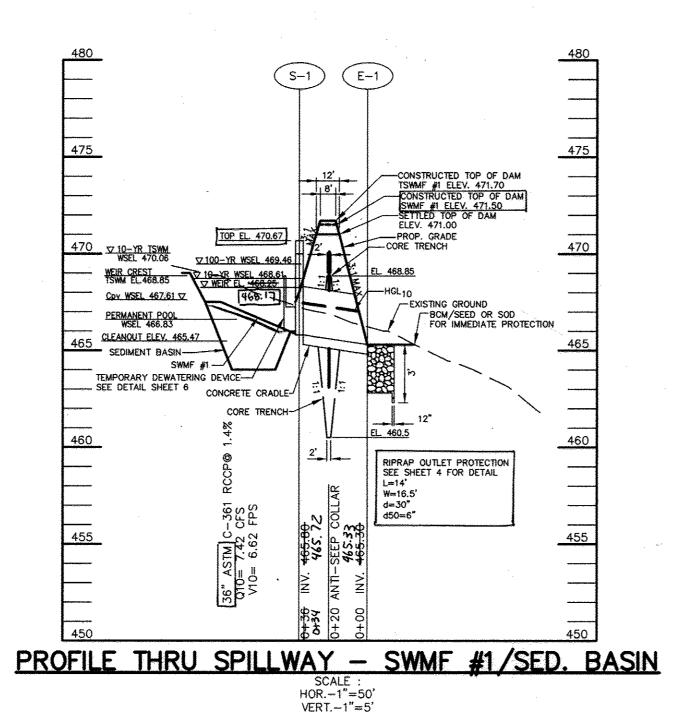






0.9/2 18"HDPE @ 1.00% Q10= 2.79 CFS V10= 1.58 FPS

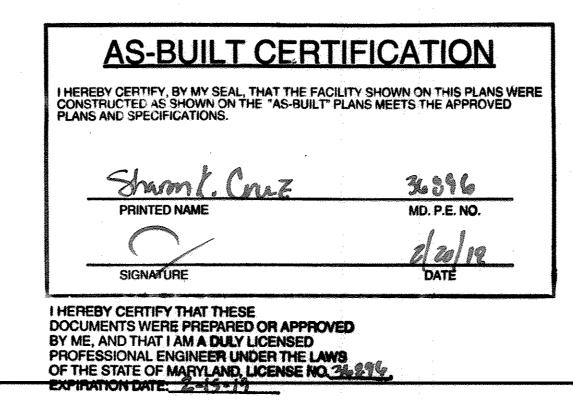
EXISTING GROUND AT CL-



			1		1	
TRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
11	YARD INLET	N 544627 E 1328861	480.94 ^{80.72}	478.9 ^{478.72}	483.50 483.73	HOCO STD. DETAIL D-4.14
l 2	A-5 INLET	N 544723 E 1328665	1 4071	4 86.98 (E-4) 2 486.88 (M-2)	• •	HOCO STD. DETAIL D-4.01
1-3	TYPE S INLET	N 544808 E 1328603	<u>-</u>	489.3 ^{489.24}	492.2 <mark>492.00</mark>	HOCO STD. DETAIL D-4.22
1-4	TYPE S INLET	N 544777 E 1328573	-	489.2 ^{489.24}	491.94 ^{492.0} 0	HOCO STD. DETAIL D-4.22
M-1	4' DIA. MANHOLE	N 544729 E 1329011	474.4 ^{474.20}	472.46	478.14 77.00	HOCO STD. DETAIL G-5.12
M-2	4' DIA. MANHOLE	N 544576 E 1328809 483.	483.81 (E-3) 483.81 (I-2)	481.4 181.81	487.71 ^{487.00}	HOCO SID. DETAIL G -5.12
M-3	4' DIA. MANHOLE	N 544791 E 1328588		488.77 (1-3 AND 1-4) 4 28 .71	;	HOCO STD. DETAIL G -5.12
E-1	END SECTION	N 544636 E 1329263	-			HOCO. STD. DETAIL D-5.51
E-2	END SECTION	N 544645 E 1329121	-	468.3 ^{468.00}		HOCO, STD. DETAIL D-5,51
E-3	END SECTION	N 544561 E 1328794	485.00 484.81	483.81		HOCO. STD. DETAIL D-5.51
E-4	END SECTION	N 544862 E 1328793	£	480.00		HOCO. STD. DETAIL ,D-5,51
S-1	MODIFIED STRUCTURE	N 544610 E 1329241		465.7 265.00	470.67	SEE SHEET 6

RIPRAP OUTLET PROTECTION
SEE SHEET 4 FOR DETAIL
L=9'
W=5'
d=18"
d50=6" CL |

2.9(7) 18"HDPE @ 3.00%-Q10= 5.15 CFS V10= 2.91 FPS





FINAL AS BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRIA

AS-BUILT DATE OF SURVEY: 11.08.17 DOMENICK W. COLANGECO #27200 F-07-005

CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND CHIEF, DEVELOPMENT CHIEF, DEVELOP	APPRO	VED	: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.			
CHIEF, DIVISION OF LAND CHIEF, DEVELOPMENT CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	<i></i>		· · · · · · · · · · · · · · · · · · ·			
CHIEF, DEVELOPMENT UY ENGINEERING DIVISION DATE OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.					
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DATE NO. REVISION OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	*** . *** oh******* *		HEF, DEVELOPMENT UY DATE			
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ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	OWNE	R	14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904			
PROJECT OPCHAPD ECTATES	DEVEL	OPER	ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029			
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C	PROJE		ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A &			

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

STORM SEWER AND POND PROFILES

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects.

8818 Centre Park Drive

Columbia, MD 21045 T 410.997.8900 F 410.997.9282

CHECKED BY: DWC

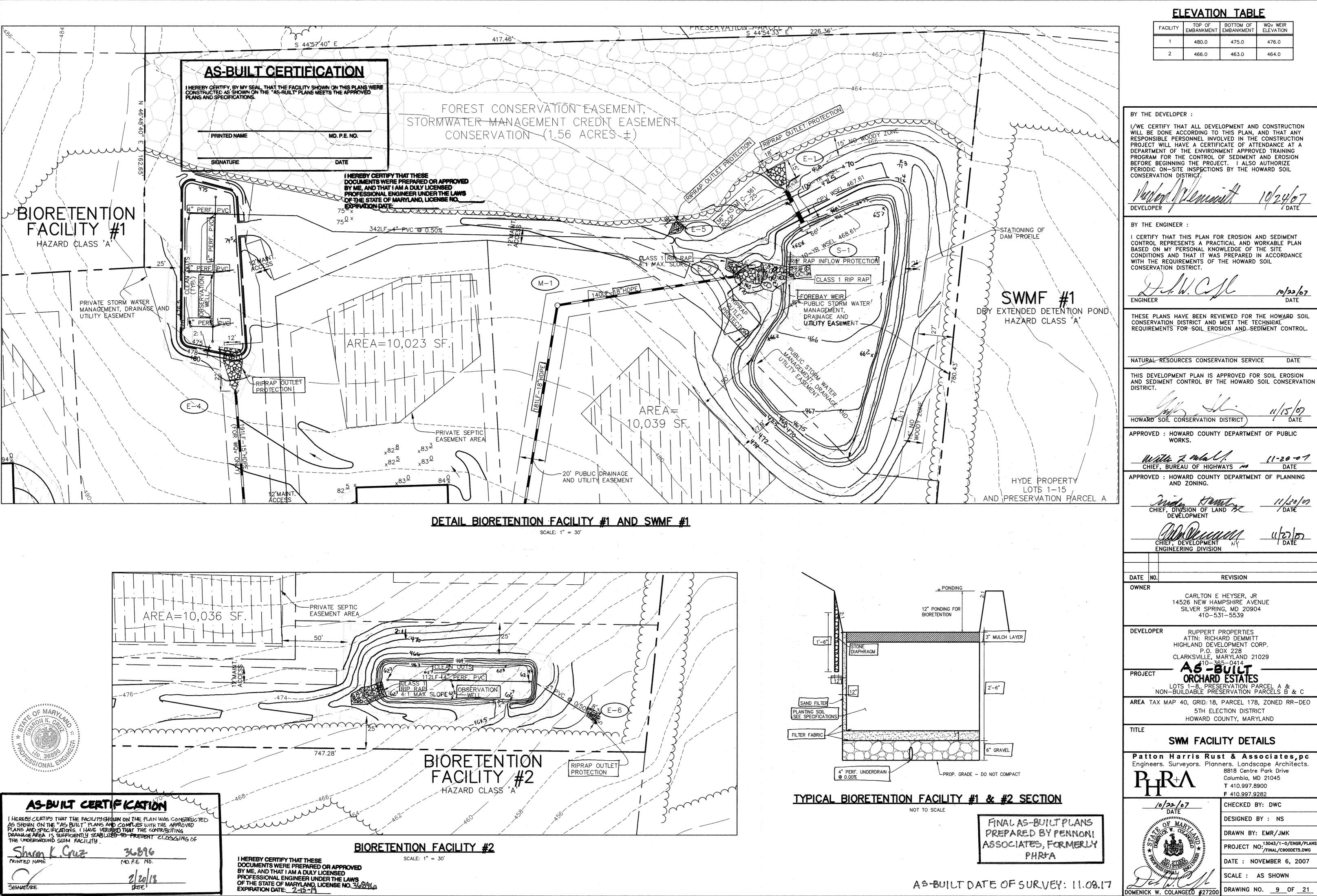
DESIGNED BY : NS

SCALE : AS SHOWN

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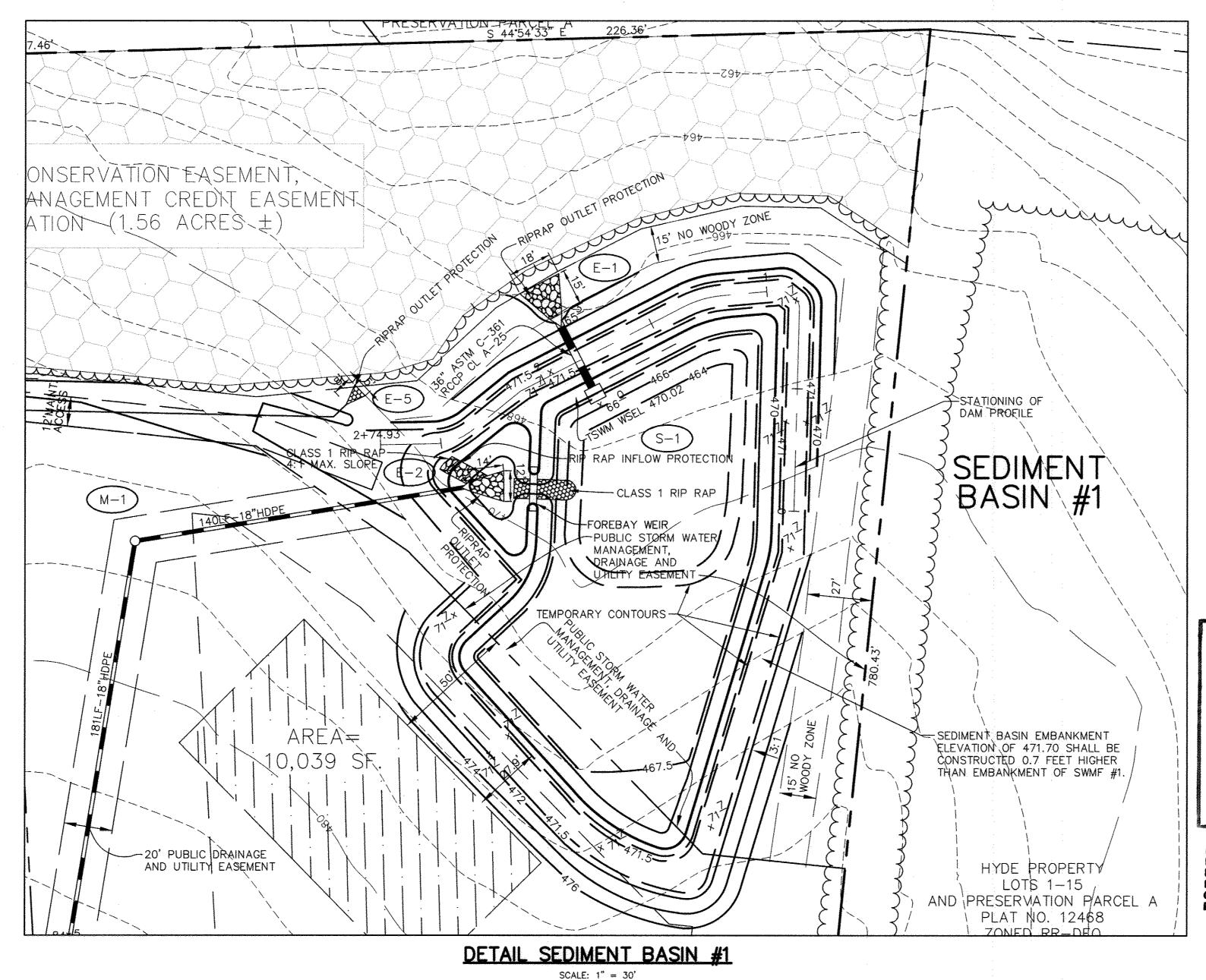
DRAWING NO. 8 OF 21

PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C500PRO.DWG DATE: NOVEMBER 6, 2007



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COLANGERO #27200 F-07-005



SEE SHEET 9 FOR FINAL SWM AS-BUILT GRADING

AS-BUILT CERTIFICATION

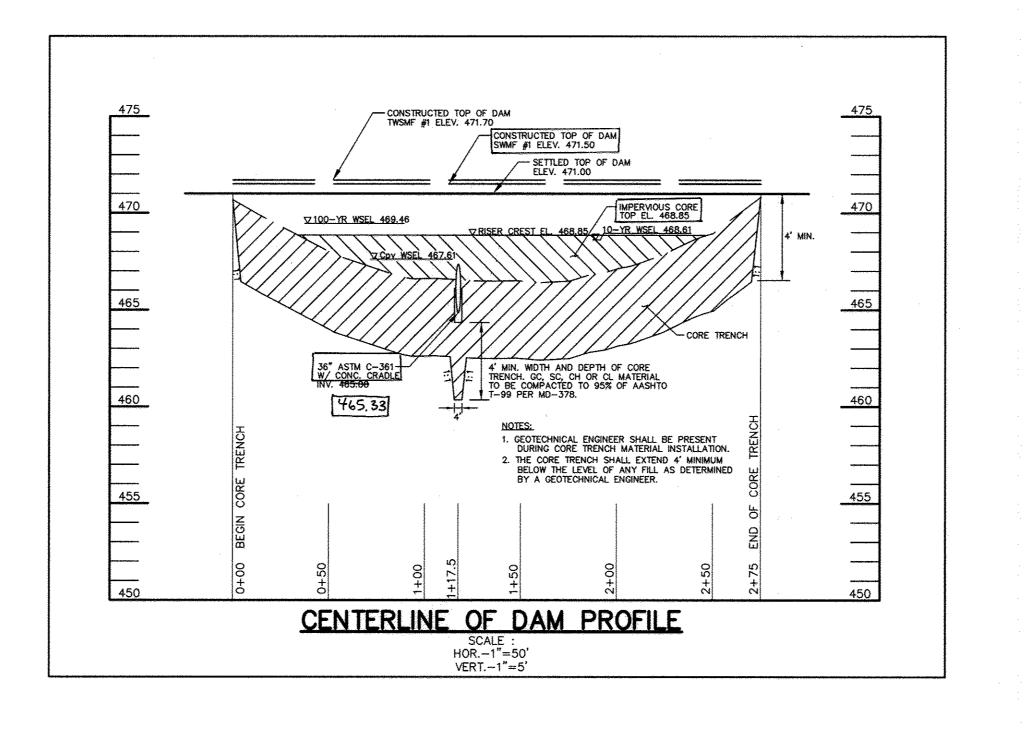
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITY SHOWN ON THIS PLANE WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS MEETS THE APPROVED PLANS AND SPECIFICATIONS.

768K MO. P.E. NO.

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. 2017



TR-20 EI	LEVATION SI	JMMARY
	TABLE	
	TSWM Elv. (ft)	SWM WSEL Elv. (ft)
1-YR	468.83	467.61
10-YR	470.06	468.61
100-YR	N/A	469.46
Cleanout	465.47	N/A
Permanent Pool	466.83	N/A
Bottom of Basin	464.00	466.00 465.13
Weir Elv.	468.85	468.25 [468.17]



SEDIMENT BASIN SCHEDULE						
	BA	\SIN #1				
Drainage Area Exist (Ac.)	15.50	Weir Crest Elv. (ft)	468.85			
Drainage Area Prop (Ac.)	8.20	TSWM Perm Pool Elv.(ft)	466.83			
Storage Required (cf)	65,673	TSWM Perm Pool Vol.(cf)	14,442			
Elev. @ Req. Storage (ft)	470.06	Cleanout Elv. (ft)	465.47			
Storage Provided (cf)	85,939	Bottom Elv. (ft)	464.00			
Elev. @ Prov. Storage (ft)	471.00	Q ₁ Exist (cfs)	0.60			
Weir Length #1 (ft.)	5.00	Q ₁ Bare Soil (cfs)	0.60			
Riser Size (in.)	N/A	Q ₁ Post (cfs)	0.10			
Depth Below Outlet Elv.(ft.)	1.80	Embankment Elv. (ft)	471.70			

FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRTA

AS-BUILT DATE OF SURVEY: 11.08.17

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 PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON—SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.	
Milley / Mensall 10/24/07 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.	-
ENGINEER 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. HOWARD SOIL CONSERVATION DISTRICT DATE	٧
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
Willin Z Male 11-20-07 CHIEF, BUREAU OF HIGHWAYS ME DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	-
Chief, Division of LAND & DATE DEVELOPMENT	
CHIEF, DEVELOPMENT DATE ENGINEERING DIVISION	
	-
DATE NO. REVISION	
OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539	
DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	
PROJECT ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C	
AREA TAX MAP 40. GRID 18. PARCEL 178. ZONED RR-DEO	1

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

SWM AND SEDIMENT BASIN FACILITY DETAILS

Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive

T 410.997.8900 F 410.997.9282 CHECKED BY: DWC

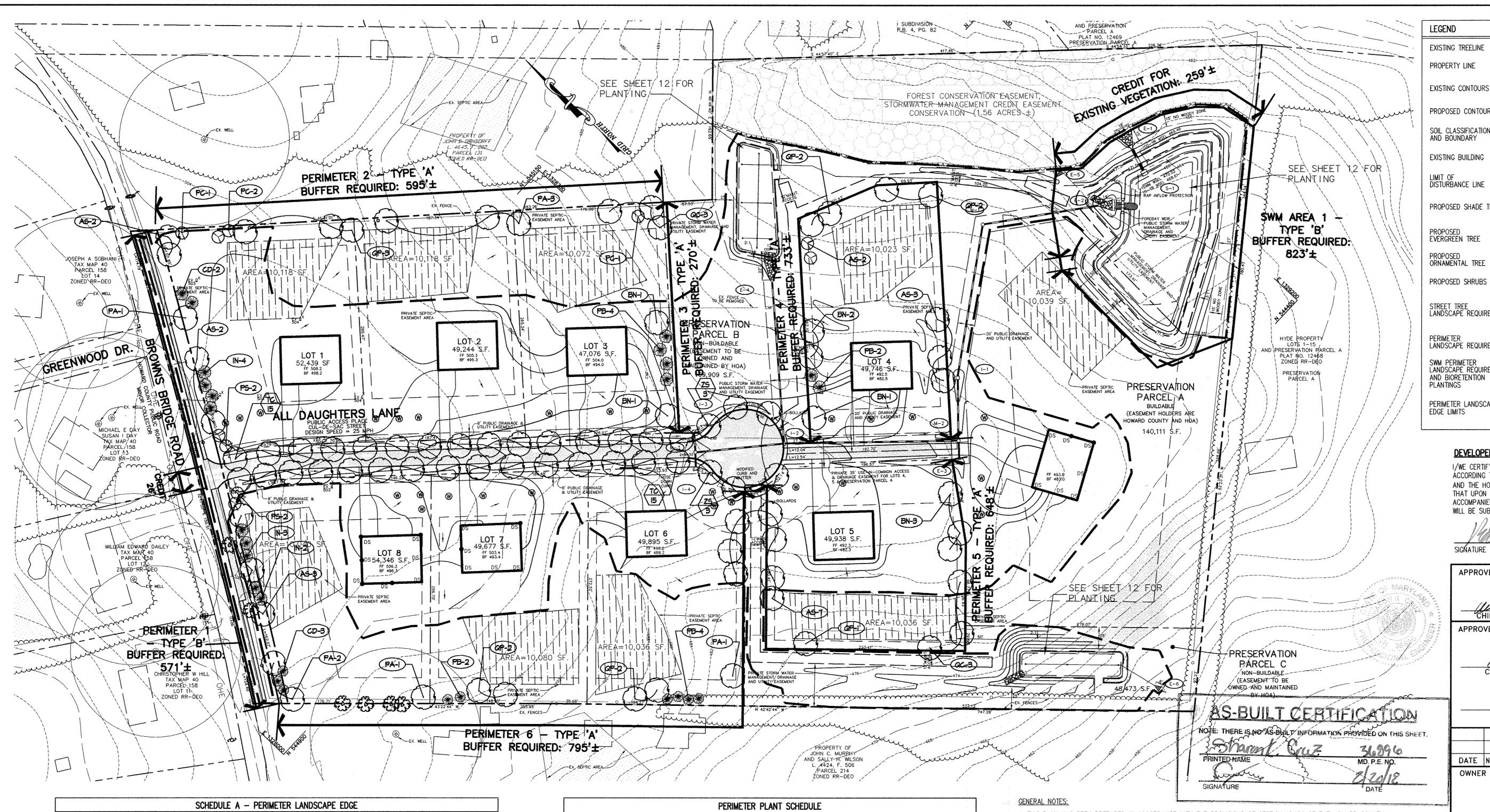
Columbia, MD 21045

DESIGNED BY : NS DRAWN BY: EMR/JMK PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C900DET6.DWG

SCALE: AS SHOWN

F-07-005

DATE: NOVEMBER 6, 2007 DOMENICK W. COLANGELO #27200 DRAWING NO. 10 OF 21



	SCHEDULE A	- PERIMETE	r Landscape	EDGE			
	-	ADJACENT TO PERIMETER PROPERTIES					
PERIMETER	2	3	4	5	6	1	
LANDSCAPE TYPE	A	A	A	A	A	В	
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	595'±	270'±	733'±	648'±	795'±	571'±	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO -	NO -	NO -	NO -	NO -		
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO -	NO -	NO -	NO -	NO -	YEŞ 26'	
LINEAR FEET REMAINING	595'±	270'±	733'±	648'±	795'±	545'±	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	10 0 0	5 0 0	12 0 0	11 0 0	13 0 0	11 14 0	
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES ORNAMENTAL TREES	8 0 4	3 4 0	10 2 2	11 0 0	10 6 0	9 14 4	

* REGULATIONS DO NOT REQUIRE LANDSCAPE EDGES, BUFFERING, OR SCREENING BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT. (PAGE 17 OF THE HOWARD COUNTY LANDSCAPE MANUAL)

SUBSTITUTION NOTES:

- 1. FOR PERIMETER 1, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
- 2. FOR PERIMETER 2, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES. 3. FOR PERIMETER 3, FOUR (4) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
- 4. FOR PERIMETER 4, TWO (2) ORNAMENTAL TREES AND TWO (2) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
- 5. FOR PERIMETER 6, SIX (6) EVERGREEN TREES WERE SUBSTITUTED FOR THREE (3) SHADE TREES.

		PERIMETER PLAN	NT SCHEDULE		
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
SHADE TR	EES				
AS	17	ACER SACCHARUM 'GREEN MOUNTAIN' GREEN MOUNTAIN SUGAR MAPLE	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
QP	12	QUERCUS PHELLOS WILLOW OAK	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
₿N	8	BETULA NIGRA 'HERITAGE' HERITAGE CLUMP RIVER BIRCH	10'-12' HT.	B & B	MULTI-STEM
QC	6	QUERCUS COCCINEA SCARLET OAK	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
PA	8	PLATANUS x ACERIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
	A CONTRACTOR OF THE CONTRACTOR				
ORNAMENT	AL TREES				
PC	4	PRUNUS CERASIFERA ATROPUPUREA 'THUNDERCLOUD' THUNDERCLOUD PURPLELEAF PLUM	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
PS	4	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
AG	2	ACER GRISEUM PAPERBARK MAPLE	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
EVERGREE	N TREES				
IN	9	ilex 'nellie r. stevens' Nellie stevens holly	5'-6' HT.	B & B	PLANT AS SHOWN
CD	5	CEDRUS DEODARA DEODAR CEDAR	6'-8' HT.	B & B	PLANT AS SHOWN
PB	12	PICEA ABIES NORWAY SPRUCE	6'-8' HT.	B & B	PLANT AS SHOWN

,	STREET TREE PLANT SCHEDULE							
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS			
SHADE TRI	EES							
TC	30	TILIA CORDATA 'GREENSPIRE' GREENSPIRE LITTLELEAF LINDEN	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN			
ZS	6	ZELKOVA SERRATA 'VILLAGE GREEN' VILLAGE GREEN JAPANESE ZELKOVA	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN			

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,550.

74 SHADE TREES @ \$300 = \$22,200

O ORNAMENTAL TREES @ \$150 = \$0 29 EVERGREEN TREES @ \$150 = \$4,350

0 SHRUBS @ \$30 = \$0 3. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

AND SAFETY PRECAUTIONS AND PROGRAMS.

4. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES,

5. ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR

NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. 6. ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF

"LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION. 7. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD

REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.

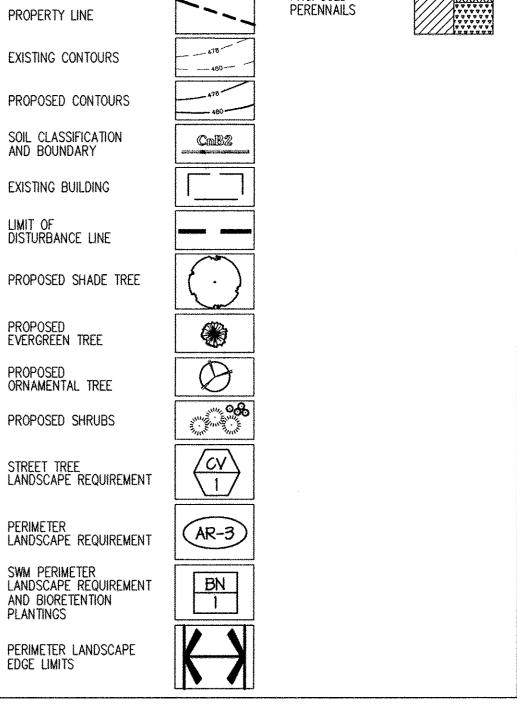
8. NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.

9. SEE SHEET 11, FINAL LANDSCAPE NOTES, DETAILS AND TABULATIONS FOR ENLARGED PLANS WITH STORMWATER MANAGEMENT PERIMETER PLANTINGS, BIORETENTION FACILITIES PLANTINGS, AND THEIR ASSOCIATED SCHEDULES.

STREET TREE CALCULATIONS ROAD A 1423'/40 36 LARGE TREES TOTAL TREES REQUIRED 36 LARGE TREES

FINAL AS-BUILT PLANS PREPARED BY PENNONI ASSOCIATES, FORMERLY PHRHA

AS-BUILT DATE OF SURVEY: 11.08.17



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#### DEVELOPER'S/BUILDER'S CERTIFICATE:

I/WE 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/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS,

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. Willi Z. Mlass. CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING

CHIEF, DIVISION OF LAND BY DEVELOPMENT

REVISION

CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539

DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP.

P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414 ORCHARD ESTATES PROJECT

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

FINAL LANDSCAPE PLAN, NOTES

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects.



**F** 410.997.9282 CHECKED BY: DWC DESIGNED BY : NS

DRAWN BY: BCL PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/ L200LND.DWG DATE: NOVEMBER 6, 2007

11-20-07

AND ZONING.

CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO.

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

AND SCHEDULES

8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900

SCALE : 1" = 60'DRAWING NO. <u>11</u> OF <u>21</u>

PETER J. STONE # 3068

F-07-005

#### PLANTING SPECIFICATIONS

- 1. PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION, AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. WHERE DISCREPANCIES EXIST BETWEEN STANDARDS & GUIDELINES REFERENCED WITHIN THESE SPECIFICATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL, THE LATTER TAKES PRECEDENCE.
- 2. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, THAT IS NOT NURSERY GROWN, UNIFORMLY BRANCHED, DOES NOT HAVE A VIGOROUS ROOT SYSTEM, AND DOES NOT CONFORM TO THE MOST RECENT EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS WILL BE REJECTED. PLANT MATERIAL THAT IS NOT HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUNSCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS WILL BE REJECTED. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL BE REJECTED. ALL B & B PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS OR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- 3. UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE "LANDSCAPE SPECIFICATION GUIDELINES BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MD, DC, & VA", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.
- 4. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION ON THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AND APPROPRIATE UTILITY COMPANIES, UTILITY CONTRACTORS, AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. MAJOR CHANGES WILL REQUIRE THE APPROVAL OF THE LANDSCAPE ARCHITECT. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- 6. PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED VIA THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE AT THE DRIP LINE, SEE DETAIL.
- 7. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION. DO NOT PLANT PINUS STROBUS OR XCUPRESSACYPARIS LEYLANDII BETWEEN NOVEMBER 15 AND MARCH 15. LANDSCAPE PLANTS ARE NOT TO BE INSTALLED BEFORE SITE IS GRADED TO FINAL GRADE.
- 8. CONTRACTOR TO REGRADE, FINE GRADE, SOD, HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED BY THEIR WORK.
- 9. BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM ACTUAL SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

10. PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE. WHERE DISCREPANCIES ON THE PLAN EXIST BETWEEN THE SYMBOLS AND THE CALLOUT LEADER, THE NUMBER OF SYMBOLS TAKE

11. ALL SHRUBS AND GROUNDCOVER AREAS SHALL BE PLANTED IN CONTINUOUS PLANTING BEDS, PREPARED AS SPECIFIED, UNLESS OTHERWISE INDICATED ON PLANS. (SEE SPECIFICATION 13). BEDS TO BE MULCHED WITH MINIMUM 2" AND MAXIMUM 3" OF COMPOSTED, DOUBLE-SHREDDED HARDWOOD MULCH THROUGHOUT.

12. POSITIVE DRAINAGE SHALL BE MAINTAINED ON PLANTING BEDS (MINIMUM 2 PERCENT SLOPE).

13. BED PREPARATION SHALL BE AS FOLLOWS: TILL INTO A MINIMUM DEPTH OF 6" 1 YARD OF COMPRO OR LEAFGRO PER 200 SF OF PLANTING BED, AND 1 YARD OF TOPSOIL PER 100 SF OF BED. ADD 3 LBS OF STANDARD 5-10-5 FERTILIZER PER CUBIC YARD OF PLANTING MIX AND TILL. ERICACEOUS PLANTS (AZALEAS, RHODODENDRONS, ETC.): TOP DRESS AFTER PLANTING WITH IRON SULFATE OR COMPARABLE PRODUCT ACCORDING TO PACKAGE DIRECTIONS. TAXUS BACCATA REPANDENS' (ENGLISH WEEPING YEWS): TOP DRESS AFTER PLANTING WITH 1/4 TO 1/2 CUP LIME EACH.

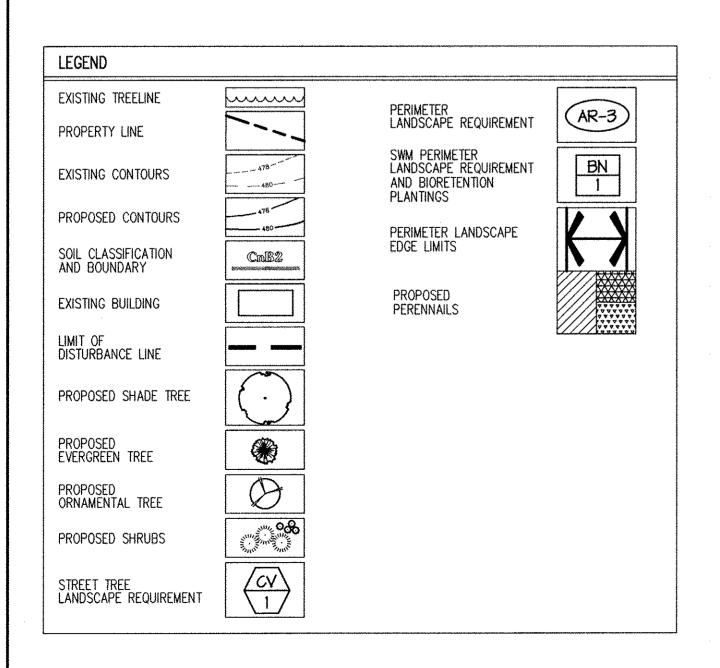
14. PLANTING MIX: FOR TREES NOT IN A PREPARED BED, MIX 50% COMPRO OR LEAFGRO WITH 50% SOIL FROM TREE HOLE TO USE AS BACKFILL, SEE TREE PLANTING DETAIL.

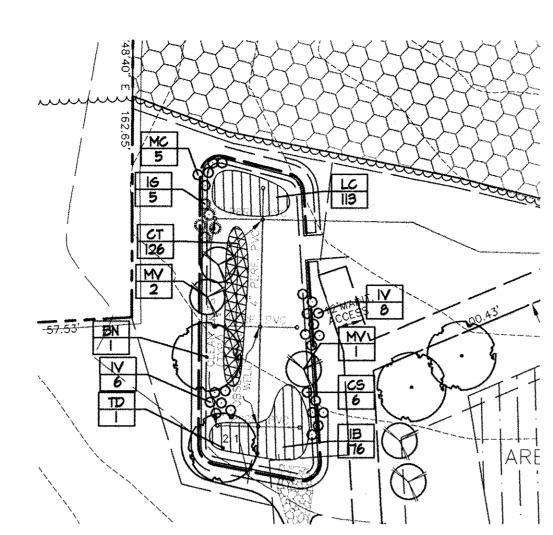
15. WEED & INSECT CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. FOR TREE PLANTING, APPLY A PRE-EMERGENT ON TOP OF SOIL AND ROOT BALL BEFORE MULCHING. CAUTION: FOR AREAS TO BE PLANTED WITH A GROUND COVER, BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUNDCOVER TO BE TREATED. MAINTAIN THE MULCH WEED-FREE FOR THE EXTENT OF THE WARRANTY PERIOD. UNDER NO CIRCUMSTANCES IS A PESTICIDE CONTAINING CHLORPYRIFOS TO BE USED AS A MEANS OF PEST CONTROL.

16. WATER: ALL PLANT MATERIAL PLANTED SHALL BE WATERED THOROUGHLY THE DAY OF PLANTING. ALL PLANT MATERIAL NOT YET PLANTED SHALL BE PROPERLY PROTECTED FROM DRYING OUT UNTIL PLANTED. AT A MINIMUM, WATER UNPLANTED PLANT MATERIAL DAILY AND AS NECESSARY TO AVOID DESSICATION.

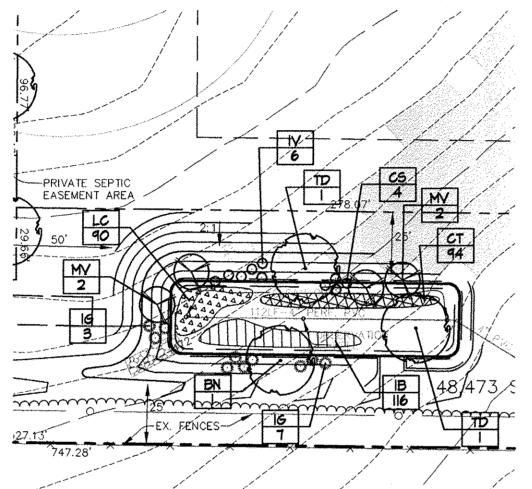
17. PRUNING: DO NOT HEAVILY PRUNE TREES AND SHRUBS AT PLANTING. PRUNE ONLY BROKEN, DEAD, OR DISEASED BRANCHES.

18. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED, GRASS SEED PLANTED, AND COVERED WITH STRAW MULCH.





BIORETENTION FACILITY #1 SCALE: 1" = 40'



FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRTA

AS-BUILT DATE OF SURVEY

SWM PERIMETER PLANTING - ENLARGED PLAN

SCALE: 1" = 40'

THIS IS TO CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF

SIGNATURE

THAT ALL LANDSCAPING ON THE ABOVE REFERENCED SITE IS IN SUBSTANTIAL

ACCORDANCE WITH THE PERMIT AND THE APPROVED PLANS CATED . EXCEPT AS NOTED.

1: SEE PLANTING SPECIFICATIONS FOR PREPARATION OF

2. DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING.

PRUNE ONLY BROKEN, DAMAGED, OR DISEASED BRANCHES.

3. DIG PLANTING PIT 12" WIDER THAN THE DIAMETER O

THE TOP OF THE ROOT BALL WITH A MINIMUM

BURLAP FROM TOP OF ROOT BALL.
5. ALL CONTAINERS SHALL BE REMOVED BEFORE

PLANTING PIT DIAMETER OF 18"

PETER I STONE

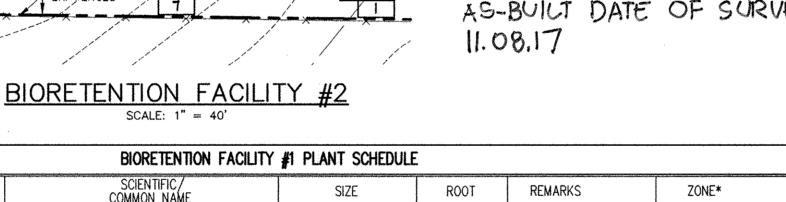
MARYLAND REGISTRATION No.

ワイ・アンドが、アンス

FOREST, CONSERVATION EASEMENT AREA

SEE SHEET 13 FOR FOREST

CONSERVATION PLAN



RAINAGE EASEMENT

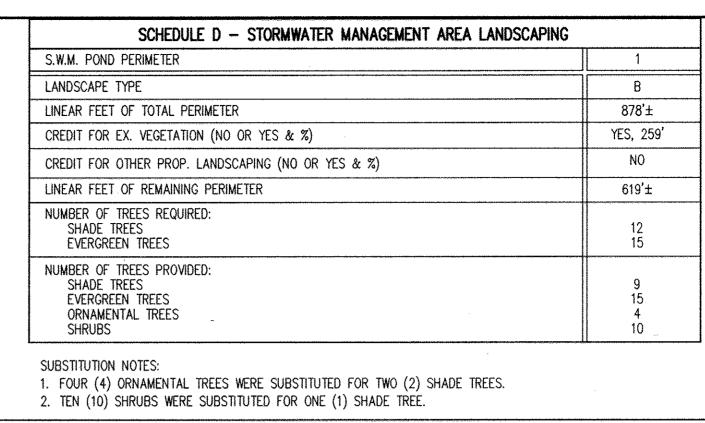
| SYMBOL         | QTY.      | SCIENTIFIC/<br>COMMON NAME                                                             | SIZE           | ROOT  | REMARKS        | ZONE*      |
|----------------|-----------|----------------------------------------------------------------------------------------|----------------|-------|----------------|------------|
| SHADE TR       | EES       |                                                                                        |                |       |                |            |
| BN             | 2+        | BETULA NIGRA 'HERITAGE'<br>HERITAGE CLUMP RIVER BIRCH                                  | 10-12' HT.     | B & B | MULTI-STEM     | (2,3),4    |
| <del>-10</del> | 1-1-      | TAXODIUM DISTICHUM<br>BALD CYPRESS                                                     | 2 1/2"-3" CAL. | B & B | PLANT AS SHOWN | (1,2) 3    |
| ORNAMEN1       | TAL TREES |                                                                                        |                |       |                |            |
| MV             | 3         | MAGNOLIA VIRGINIANA<br>SWEETBAY MAGNOLIA                                               | 1 1/2"-2" CAL. | B & B | PLANT AS SHOWN | **         |
| SHRUBS         |           |                                                                                        |                |       |                |            |
| CS             | 6         | CORNUS SERICEA<br>RED TWIG DOGWOOD                                                     | 18"-24' HT.    | CONT. | PLANT AS SHOWN | **         |
| IG             | 5         | ilex glabra<br>Inkberry                                                                | 18"-24" HT.    | CONT. | PLANT AS SHOWN | (2,3), 4   |
| IV             | 14        | ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY'<br>RED SPRITE AND JIM DANDY WINTERBERRY | 18'-24" HT.    | CONT. | SEE NOTE 1     | 1,(2,3)    |
| MC             | 5         | MYRICA CERIFERA<br>SOUTHERN BAYBERRY                                                   | 18'-24" HT.    | CONT. | PLANT AS SHOWN | (2,3,4,),5 |
| PERENNIAL      | LS        |                                                                                        |                |       |                |            |
| CT             | 126       | CAREX TYPHINA<br>CAT—TAIL SEDGE                                                        | 1 GAL.         | CONT. | 24" O.C.       | (2,3),4    |
| IB             | [176]     | IRIS VERSICOLOR 'BLUE FLAG'<br>BLUE FLAG IRIS                                          | 1 GAL.         | CONT. | 24" O.C.       | (1,2),3    |
| LC             | 113       | LOBELIA CARDINALIS<br>CARDINAL FLOWER                                                  | 1 GAL.         | CONT. | 24" O.C.       | 1(2,3),4   |

|               | ······································ | BIORETENTION FACILITY                                                                  | #2 PLANT SCHEDULE | erre and develope quare fundament from the section of the section |                                                                                                      |          |
|---------------|----------------------------------------|----------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------|
| SYMBOL        | QTY.                                   | SCIENTIFIC/<br>COMMON NAME                                                             | SIZE              | ROOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | REMARKS                                                                                              | ZONE*    |
| SHADE TR      | EES                                    |                                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | makoni (gari) mari i ing Usaran ara (ili arangi ing mari ing a sa s |          |
| BN            | +[3]                                   | BETULA NIGRA 'HERITAGE'<br>HERITAGE CLUMP RIVER BIRCH                                  | 10-12' HT.        | B & B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MULTI-STEM                                                                                           | (2,3),4  |
| <del>TD</del> | 2-                                     | TAXODIUM DISTICHUM<br>BALD CYPRESS                                                     | 2 1/2"-3" CAL.    | B & B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PLANT AS SHOWN                                                                                       | (1,2) 3  |
| ORNAMENT      | TAL TREES                              |                                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                      |          |
| MV .          | 4                                      | MAGNOLIA VIRGINIANA<br>SWEETBAY MAGNOLIA                                               | 1 1/2"-2" CAL.    | B & B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PLANT AS SHOWN                                                                                       | **       |
| SHRUBS        |                                        |                                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                      |          |
| CS            | 4                                      | CORNUS SERICEA<br>RED TWIG DOGWOOD                                                     | 18"-24' HT.       | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PLANT AS SHOWN                                                                                       | **       |
| IG            | 10                                     | ilex glabra<br>inkberry                                                                | 18"-24" HT.       | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PLANT AS SHOWN                                                                                       | (2,3), 4 |
| IV            | -65                                    | ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY'<br>RED SPRITE AND JIM DANDY WINTERBERRY | 18'-24" HT.       | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SEE NOTE 1                                                                                           | 1,(2,3)  |
| PERENNIAL     | LS                                     |                                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                      |          |
| CT            | 94                                     | CAREX TYPHINA<br>CAT—TAIL SEDGE                                                        | 1 GAL.            | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 24" O.C.                                                                                             | (2,3),4  |
| IB            | 116                                    | IRIS VERSICOLOR 'BLUE FLAG'<br>BLUE FLAG IRIS                                          | 1 GAL.            | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 24" O.C.                                                                                             | (1,2),3  |
| LC            | 190                                    | LOBELIA CARDINALIS<br>CARDINAL FLOWER                                                  | 1 GAL.            | CONT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 24" O.C.                                                                                             | 1(2,3),4 |

PLANT LIST NOTES:

- \* HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.
- \*\* KNOWN TO TOLERATE INNUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.

1. PLANT ONE JIM DANDY WINTERBERRY PER EVERY 5 RED SPRITE WINTERBERRIES.



|                |                                         | STORMWATER MANAGEMENT F                                 | PERIMETER PLANT SC | HEDULE                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|-----------------------------------------|---------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL         | QTY.                                    | SCIENTIFIC/<br>COMMON NAME                              | SIZE               | ROOT                                                                                                            | REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ZONE*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| SHADE TR       | EES                                     |                                                         |                    |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| AR             | 4                                       | RED DAK -OCTOBER GLORY RED MAPLE                        | 2 1/2"-3" CAL.     | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| BN             | <del>-2</del> 6                         | Service Month Services                                  | 10-12' HT.         | B & B                                                                                                           | MULTI-STEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | (2,3),4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <del>-TD</del> | +                                       | TAXODIUM DISTICHUM<br>BALD CYPRESS                      | 2 1/2"-3" CAL.     | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (1,2) 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RNAMEN         | TAL TREES                               | 5                                                       | <u></u>            |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <del>1933 - 1110 - 122 - 123 - 123 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124 - 124</del> |
| PS             | -34                                     | PRUNUS SERRULATA 'KWANZAN'<br>KWANZAN CHERRY            | 1 1/2"-2" CAL.     | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| -CV            | 1                                       | CRATAEGUS VIRDIS 'WINTER KING'<br>WINTER KING HAWTHORNE | 1 1/2"-2" CAL.     | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | and the state of t           |
| MV             | [3]                                     | MAGNOLIA VIRGINIANA<br>SWEETBAY MAGNOLIA                | 1 1/2"-2" CAL.     | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | **                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| VERGREE        | N TREES                                 |                                                         |                    |                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Comments of the state of the st           |
| CD             | [5] <del>8</del>                        | PINESPECIES CEDRUS DEODARA DEODAR CEDAR                 | 6'-8' HT.          | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <del>-IN</del> | 7-                                      | ILEX 'NELLIE R. STEVENS'<br>NELUE STEVENS HOLLY         | 6'-8' HT.          | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | and the second s           |
| SHRUBS         | *************************************** | A                                                       |                    | \$4.32                                                                                                          | 100 m |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| CS             | 6                                       | CORNUS SERICEA<br>RED TWIG DOGWOOD                      | 18"-24' HT.        | CONT.                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | **                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IG             | [7]                                     | ILEX GLABRA<br>INKBERRY                                 | 18"-24" HT.        | CONT.                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (2,3), 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| VR             | 3                                       | VIBURNUM RHYTIDOPHYLLUM<br>LEATHERLEAF VIBURNUM         | 2 1/2'-3' HT.      | B & B                                                                                                           | PLANT AS SHOWN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| PERENNIAL      | .S                                      |                                                         |                    | 100 to |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| AO             | 298                                     | ALTHAEA OFFICINALIS<br>COMMON MARSH-MALLOW              | 1 GAL.             | CONT.                                                                                                           | 24" O.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (1,2,3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| СТ             | 49                                      | CAREX TYPHINA<br>CAT-TAIL SEDGE                         | 1 GAL.             | CONT.                                                                                                           | 24" O.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (2,3),4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| HU             | 77                                      | HYDROCOTYLE UMBELLETA PENNYWORT                         | 1 GAL.             | CONT.                                                                                                           | 24" O.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (1,2),3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SL             | 135                                     | PLANTED, NOT SAGGITARIA LATIFOLIA VIG (BLE ARROWHEAD    | 1 GAL.             | CONT.                                                                                                           | 24" O.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (4,5),6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

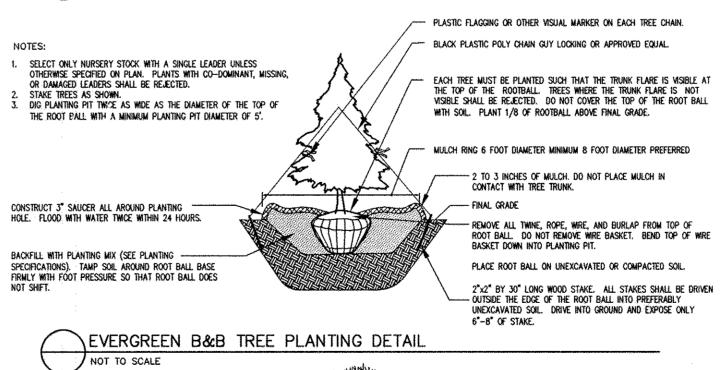
HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000. \*\* KNOWN TO TOLERATE INNUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.

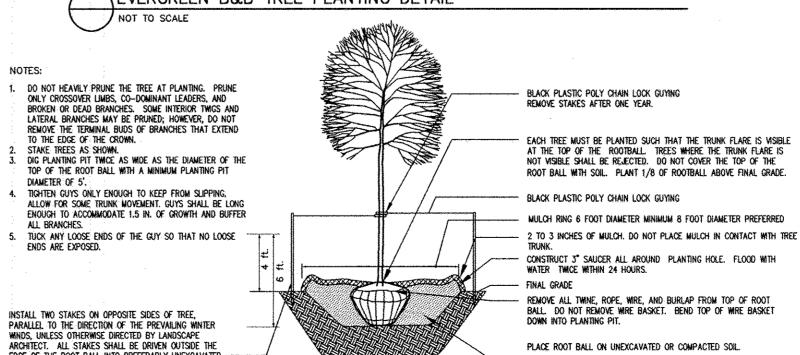
BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP

SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.

DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE 2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH SHRUB TRUNK OR BRANCHES. - TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THE ROOT BALL DOES NOT SHIFT SCARIFY ROOT BALL TO A DEPTH OF 3/4" ON ALL SIDES OR BUTTERFLY CUT CONTAINER PLANTS. PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.

SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS





DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER) NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. 11-20-07 Wille Z. Wall CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DEVELOPMENT ENGINEERING DIVISION DATE NO. REVISION OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539

DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT

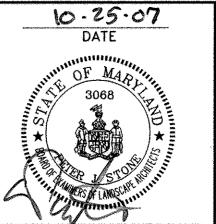
HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414

ORCHARD ESTATES PROJECT LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE FINAL SWM PLANTING, LANDSCAPE NOTES, DETAILS AND SCHEDULES

Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900



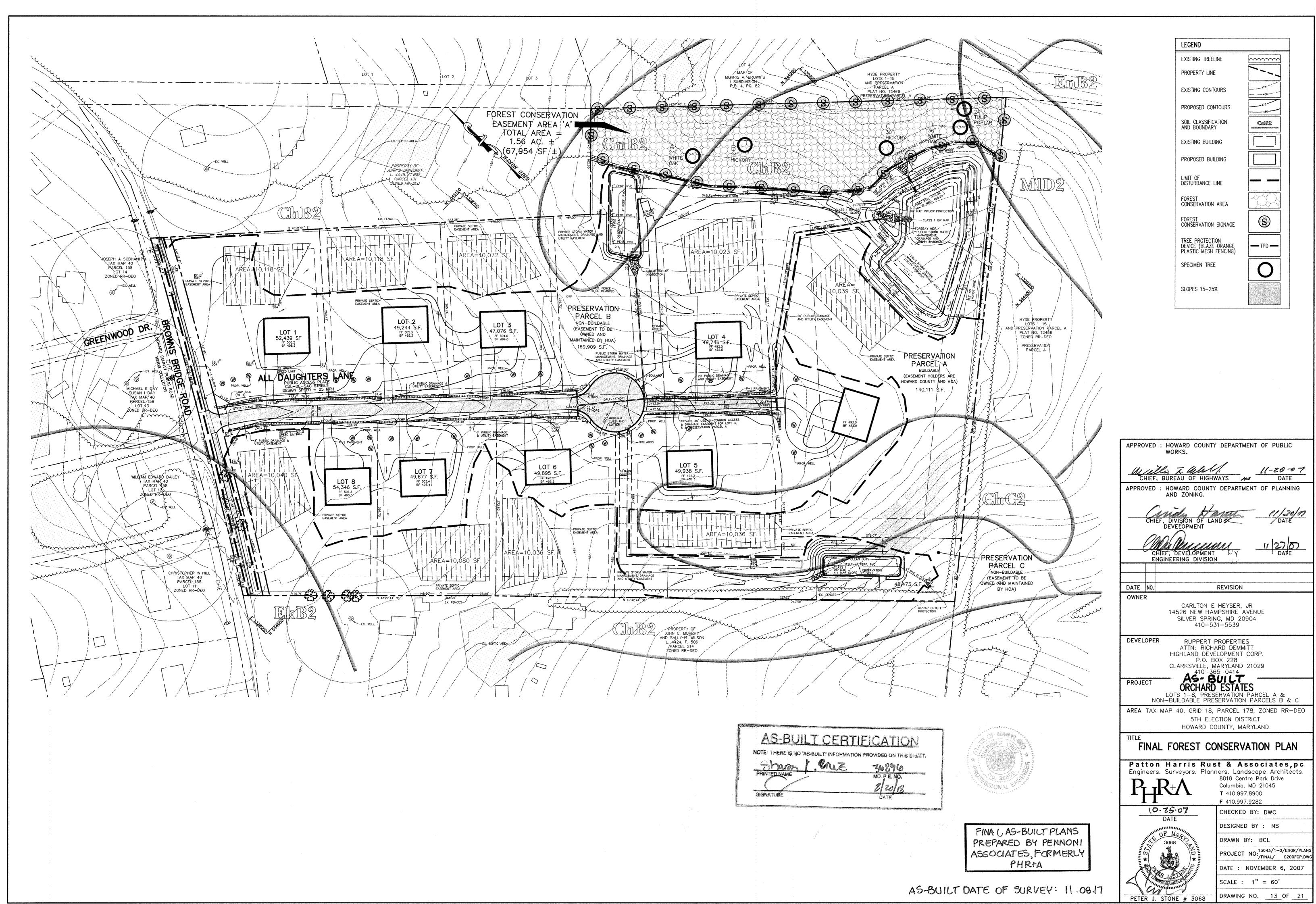
**F** 410.997.9282 CHECKED BY: DWC DESIGNED BY : NS DRAWN BY: BCL

PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/ L201LND.DWG DATE: NOVEMBER 6, 2007 SCALE: AS SHOWN

F-07-005

DRAWING NO. <u>12</u> OF <u>21</u>

PETER J. STONE # 3068



F-07-005

#### SEQUENCE OF OPERATIONS

#### PRE-CONSTRUCTION SITE PREPARATION

- FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.
- 2. REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL
- 3. INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
- 4. CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED REFORESTATION AREA. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES' ARE NOT DISTURBED. GRIND STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.
- 5. DO NOT ATTEMPT TO SAVE TREES WITHIN 25' FROM THE L.O.D. UNLESS, IN THE OPINION OF THE CONSULTING ARBORIST, THEY HAVE A 75% CHANCE OR BETTER OF SURVIVAL.
- 6. PRUNE AND FERTILIZE DESIRABLE 'EDGE TREES' AS PER CONSULTING ARBORIST'S RECOMMENDATIONS.
- 7. THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER.
- 8. REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOXIOUS PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARTHUMB, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
- 9. INSTALL TREE PROTECTION SIGNAGE.
- 10. STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

#### FOREST CONSERVATION SEQUENCE OF OPERATIONS

1. PRIOR TO BEGINNING ANY GRADING OPERATIONS ON THIS SITE OR ON A RESPECTIVE LOT, THERE SHALL BE A PRECONSTRUCTION MEETING HELD AT THE SITE WHICH IS TO INCLUDE THE CONTRACTOR AND REPRESENTATIVES FROM PATTON HARRIS RUST & ASSOCIATES, INC. (PHR+A). THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (DPZ) AND THE OWNER WILL BE NOTIFIED BY THE CONTRACTOR AS TO THE TIME AND PLACE OF THE FIELD MEETING. SHOULD THEY WISH TO SEND A REPRESENTATIVE. THE PURPOSE OF THIS MEETING WILL BE TO REVIEW THE APPROVED FCP AND TO FIELD VERIFY THE CORRECT LIMITS OF DISTURBANCE (LOD).

2. THE LIMITS OF DISTURBANCE (LOD) PERTINENT TO THE PRESERVATION OF WOODED AREAS SHALL BE STAKED IN THE FIELD WITH FINAL ADJUSTMENTS BEING MADE AS NECESSARY TO INSURE ADEQUATE PROTECTION OF THE CRITICAL ROOT ZONE OF TREES DESIGNATED FOR RETENTION. STAKES TO BE USED SHALL BE THOSE SPECIFIED FOR THE "TREE PROTECTION DEVICE" TO WHICH APPROVED PROTECTIVE MATERIAL WILL BE ATTACHED. ALTERNATE MEANS OF DEFINING THE LOD MAY BE USED IF APPROVED BY THE DPZ.

- 3. ALL FOREST RETENTION AREAS SHALL BE PROTECTED BY HIGHLY VISIBLE, WELL ANCHORED TEMPORARY PROTECTION DEVICES (SEE DETAIL), WHICH SHALL BE SECURELY IN PLACE PRIOR TO ANY CLEARING OR GRADING OPERATIONS.
- 4. GRADING OPERATIONS OR OTHER CONSTRUCTION OPERATIONS WHICH COULD DISLODGE OR OTHERWISE DAMAGE THE PROTECTIVE DEVICES SHALL BE AVOIDED ALONG THE EDGES OF THE LOD LINES IF POSSIBLE. ANY PROTECTIVE DEVICES WHICH ARE DAMAGED DURING SITE CONSTRUCTION OPERATIONS SHALL BE PROPERLY REPAIRED IMMEDIATELY BY THE
- 5. AFTER SITE GRADING, UTILITY ACCESS ROAD, AND DRIVEWAY CONSTRUCTION HAVE BEEN COMPLETED, ALL TREES ADJACENT TO THE LOD LINE SHALL BE INSPECTED FOR INDICATIONS OF CROWN DIE-BACK (SUMMER INDICATOR), DAMAGE WITHIN RESPECTIVE CRITICAL ROOT ZONES OR ANY DEAD WOOD OR OTHER CONDITIONS WHICH MIGHT BE HAZARDOUS TO PEDESTRIANS, BUILDINGS, UTILITY LINES VEHICULAR ACCESS WAYS OR PARKED VEHICLES.
- 6. SHOULD THERE BE EVIDENCE OF ANY DAMAGE TO TREE TRUNKS, BRANCHES OR THE CRITICAL ROOT ZONE OF TREES WITHIN THE PROTECTED AREAS, OR TO ISOLATED SPECIMEN TREES TO BE PRESERVED, THE DAMAGE SHALL BE EXAMINED WITHIN A PERIOD OF TWO (2) DAYS FROM THE DATE OF OBSERVANCE BY A LICENSED TREE CARE PROFESSIONAL. EXPOSED ROOTS SHOULD BE COVERED IMMEDIATELY TO A DEPTH OF 6 - 8 INCHES WITH SOIL, PREFERABLY MIXED WITH 50% PEAT MOSS OR LEAF MOLD.
- REMOVE DAMAGED, DEAD OR DYING TREES OR LIMBS ONLY IF THE TREES OR LIMBS POSE AN IMMEDIATE SAFETY HAZARD TO BUILDINGS, UTILITY LINES, VEHICLES, OR ACCESS AND EGRESS DRIVES OR PEDESTRIAN AREAS. TREES DESIGNATED FOR PRUNING OR REMOVAL SHALL BE PRUNED OR REMOVED USING EQUIPMENT AND METHODS WHICH WILL NOT DAMAGE OR DESTROY ADJACENT LARGE TREES OR UNDERSTORY TREES OR SHRUBS DESIGNATED FOR RETENTION.
- 8. ALL TEMPORARY FOREST PROTECTION DEVICES WILL BE CAREFULLY REMOVED AFTER ALL GENERAL CONSTRUCTION. NECESSARY TREE SURGERY, REMOVAL OF DEBRIS, ETC. REGRADING AND RESEEDING OF SEDIMENT AND EROSION CONTROL DISTURBANCE HAVE BEEN COMPLETED AND ACCEPTANCE AND APPROVAL OF THE WORK AND SITE CONDITIONS HAVE BEEN GIVEN BY THE DPZ.

#### FOREST CONSERVATION PROGRAM

- IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS.
- FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.
- III. GENERAL CONSTRUCTION NOTE:
- THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.
- IV. POST CONSTRUCTION MANAGEMENT PRACTICE: A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO
- ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:
- 1-MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES
- 2-PREVENT UNWARRANTED INTRUSION AND DAMAGE.
- 3-CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER
- 4-ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

#### Howard County Forest Conservation Worksheet

**Orchard Estates** 

| County F | ile #:           |                           |                                   |
|----------|------------------|---------------------------|-----------------------------------|
| (        | Date:            |                           | October 29, 2004                  |
| Alad Tua |                  |                           |                                   |
| Net Trac | CL Area          | •                         |                                   |
| A.       | Total Tract Area | ì                         |                                   |
| B.       | Other Deduction  | 1\$                       |                                   |
| C.       | Net Tract Area   | Net Tract Area = (A-B-C)  |                                   |
| Land Us  | e Category:      |                           | _Residential Rural Medium Density |
| D        |                  | reshold (Net Tract Area X | 20%                               |

| D.       | Arrorestation Threshold (Net Tract Area A _ 20%                                           | Ų | =           | 3./1 |
|----------|-------------------------------------------------------------------------------------------|---|-------------|------|
| E.       | Conservation Threshold (Net Tract Area X 25%                                              | Ε | =           | 4.64 |
| Existing | Forest Cover                                                                              |   |             |      |
| F.       | Existing Forest Cover within the Net Tract Area                                           | F | =           | 1.56 |
| G.       | Area of Forest Above Conservation Threshold                                               | G | =           | 0.00 |
|          | If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then         |   |             |      |
|          | G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0               |   |             |      |
| Break E  | ven Point                                                                                 |   |             |      |
| H.       | Break Even ( Amount of forest that must be retained so that no mitigation is required)    | Н | =           | 1.56 |
|          | (1) If the area of forest above the Conservation Threshold (G) is greater than zero, then |   | <del></del> |      |
|          | H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation        |   |             |      |
|          | Threshold (E)                                                                             |   |             |      |
|          | (2) If the area of forest above the Conservation Threshold (G) is equal to zero, then     |   |             |      |
|          | H = Existing Forest Cover (F)                                                             |   |             |      |
| 1.       | Forest Clearing Permitted Without Mitigation                                              | 1 | =           | 0.00 |

| Forest Gearing Permitted Without Willigation                                                | 1 = 0.00                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I = Existing Forest Cover (F) - Break Even Point (H)                                        |                                                                                                                                                                                                                             |
| ed Forest Clearing                                                                          |                                                                                                                                                                                                                             |
| Total Area of Forest to be Cleared                                                          | J = 0.00                                                                                                                                                                                                                    |
| Total Area of Forest to be Retained                                                         | K = 1.56                                                                                                                                                                                                                    |
| K = Existing Forest Cover (F) - forest to be cleared (J)                                    |                                                                                                                                                                                                                             |
| g Requirements                                                                              |                                                                                                                                                                                                                             |
| tal Area of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is | required and no                                                                                                                                                                                                             |
|                                                                                             | I = Existing Forest Cover (F) - Break Even Point (H)  ed Forest Clearing  Total Area of Forest to be Cleared  Total Area of Forest to be Retained  K = Existing Forest Cover (F) - forest to be cleared (J)  g Requirements |

| further o | calculations are necessary (L=0, M=0, N=0, P=0);                                                   |   |   |      |
|-----------|----------------------------------------------------------------------------------------------------|---|---|------|
| If not, c | alculate the planting requirement below:                                                           |   |   |      |
| L.        | Reforestation for Clearing Above the Conservation Threshold                                        | L | = | 0.00 |
|           | (1) if the total area of forest to be retained (K) is greater than the                             |   |   |      |
|           | Conservation Threshold (E), then                                                                   |   |   |      |
|           | L = the area of forest to be cleared (J) X 0.25: or                                                |   |   |      |
|           | (2) If the forest to be retained (K) is less than or equal to the Consenation, Threshold (F), then |   |   |      |

|    | L = the area of forest to be cleared (J) X 0.25: or                                                |                            |  |  |
|----|----------------------------------------------------------------------------------------------------|----------------------------|--|--|
|    | (2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then |                            |  |  |
|    | L = area of forest above Conservation Threshold (G) X 0.25                                         |                            |  |  |
| M. | Reforestation for Clearing Below the Conservation Threshold                                        | ) and the eshold (E), then |  |  |
|    | (1) if Existing Forest Cover (F) is greater than Conservation Threshold (E) and the                |                            |  |  |
|    | forest to be retained (K) is less than or equal to the Conservation Threshold (E), then            |                            |  |  |
|    | M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K))                         |                            |  |  |
|    | (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then           |                            |  |  |

|     | (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then   |     |      |
|-----|--------------------------------------------------------------------------------------------|-----|------|
| N.  | M = 2.0 X Forest to be cleared (J).  Credit for Retention Above the Conservation Threshold | N = | 0.00 |
| 14. | If the area of forest to be retained (K) is greater than the Conservation Threshold (E),   | 14  | 0.00 |
|     | then N = K - E                                                                             |     |      |
| P.  | Total Reforestation Required P = L + M - N                                                 | P = | 0.00 |
| Q.  | Total Afforestation Required                                                               | Q = | 2.15 |
|     | (1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then         |     |      |
|     | Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)                        |     |      |

R = 2.15

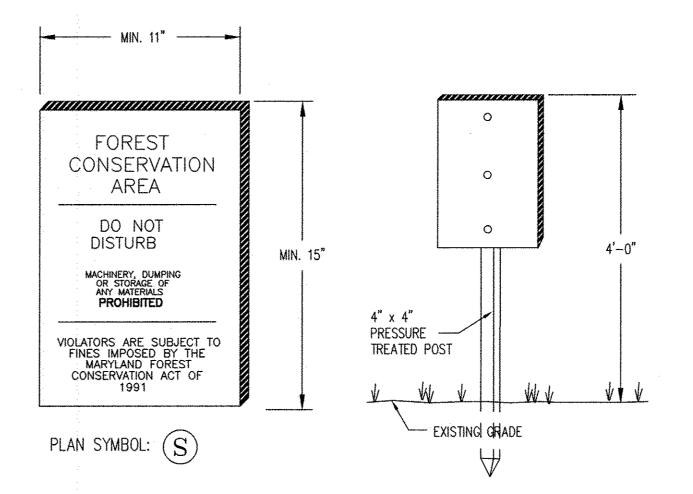
#### GENERAL NOTES:

Total Planting Requirement R = P + Q

Project Name:

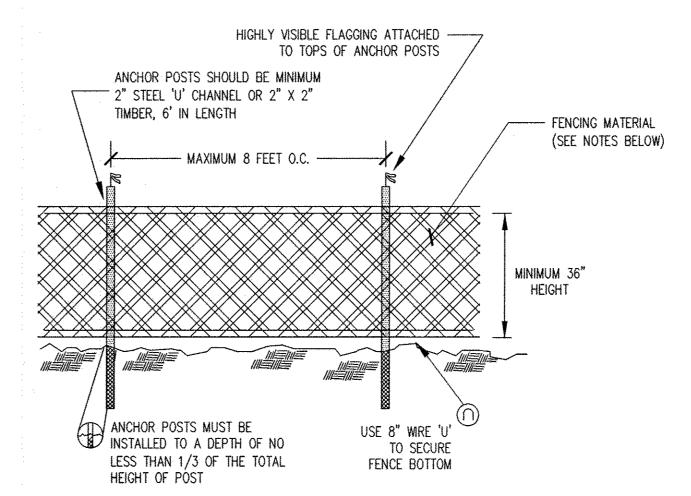
- 1. THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING PHR+A FIELD RUN TOPOGRAPHY. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
- 2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- 3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE
- 4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
- 5. THERE ARE TWO EXISTING STRUCTURES ON THE SITE AS SHOWN. STRUCTURES ARE PROPOSED AS SHOWN.
- 6. THIS SITE CONTAINS ONE SOIL WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2). 7. THE FSD, DATED JULY 7, 2004, HAS BEEN PREPARED BY PATTON HARRIS RUST & ASSOCIATES IN
- CONJUNCTION WITH THESE PLANS. 8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE
- MANUAL AND THESE PLANS. 9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
- 10. THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN SATISFIED BY THE CREATION OF A 1.56 ACRE (67,953.60 SF) ONSITE RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$13,590.72 (67,953.60 x \$0.20/SF) WILL BE POSTED.
- THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS LOCATED ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101 AND TAX MAP 8, PARCEL 4 (COUNTY FILE F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$37,461.60 (187,308 x \$0.20/SF) WILL BE POSTED.
- 11. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- 12. BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A SUBDIVISION PLAT.

| FOREST CONSERVATION AREA | AREA (IN ACRES) |
|--------------------------|-----------------|
| A                        | 1.56 AC ±       |
| TOTAL                    | 1.56 AC ±       |



1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER. 2. SEE PLAN FOR SPACING.

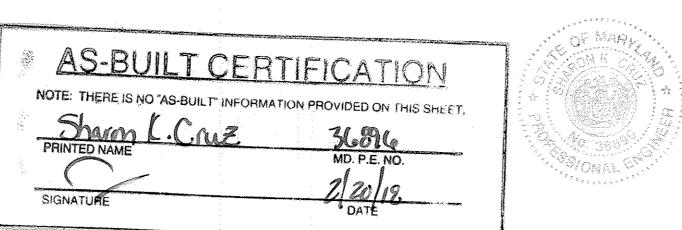
> FOREST CONSERVATION SIGN DETAIL NOT TO SCALE



1. BLAZE ORANGE MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY. 2. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL. 3. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS. 4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

> TREE PROTECTION FENCING NOT TO SCALE

|     | SPECIMEN TREE CHART                   |      |             |                  |
|-----|---------------------------------------|------|-------------|------------------|
| KEY | SPECIES                               | SIZE | CONDITION   | REMAIN OR REMOVE |
| Α   | WHITE OAK (Quercus alba)              | 24"  | FAIR / GOOD | REMAIN           |
| В   | HICKORY                               | 24"  | FAIR / GOOD | REMAIN           |
| С   | HICKORY                               | 30"  | FAIR / GOOD | REMAIN           |
| D   | WHITE OAK (Quercus alba)              | 36"  | FAIR / GOOD | REMAIN           |
| E   | TULIP POPLAR (Lirodendron tulipifera) | 24"  | FAIR / GOOD | REMAIN           |



FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRIA

AS-BUILT DATE OF SURVEY: 11.08.17

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. Willi 2. Well. 11.20-07 CHIEF, BUREAU OF HIGHWAYS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DEVELOPMENT CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE NO. **REVISION** OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 RUPPERT PROPERTIES

DEVELOPER

ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 AS-BUILT
ORCHARD ESTATES

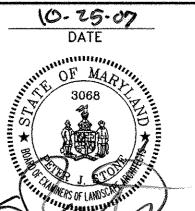
PROJECT

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FOREST CONSERVATION NOTES AND DETAILS

Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900



**F** 410.997.9282 CHECKED BY: DWC DESIGNED BY : NBR+A DRAWN BY: BCL

PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/ C201FCP.DWG DATE: NOVEMBER 6, 2007 SCALE: AS SHOWN

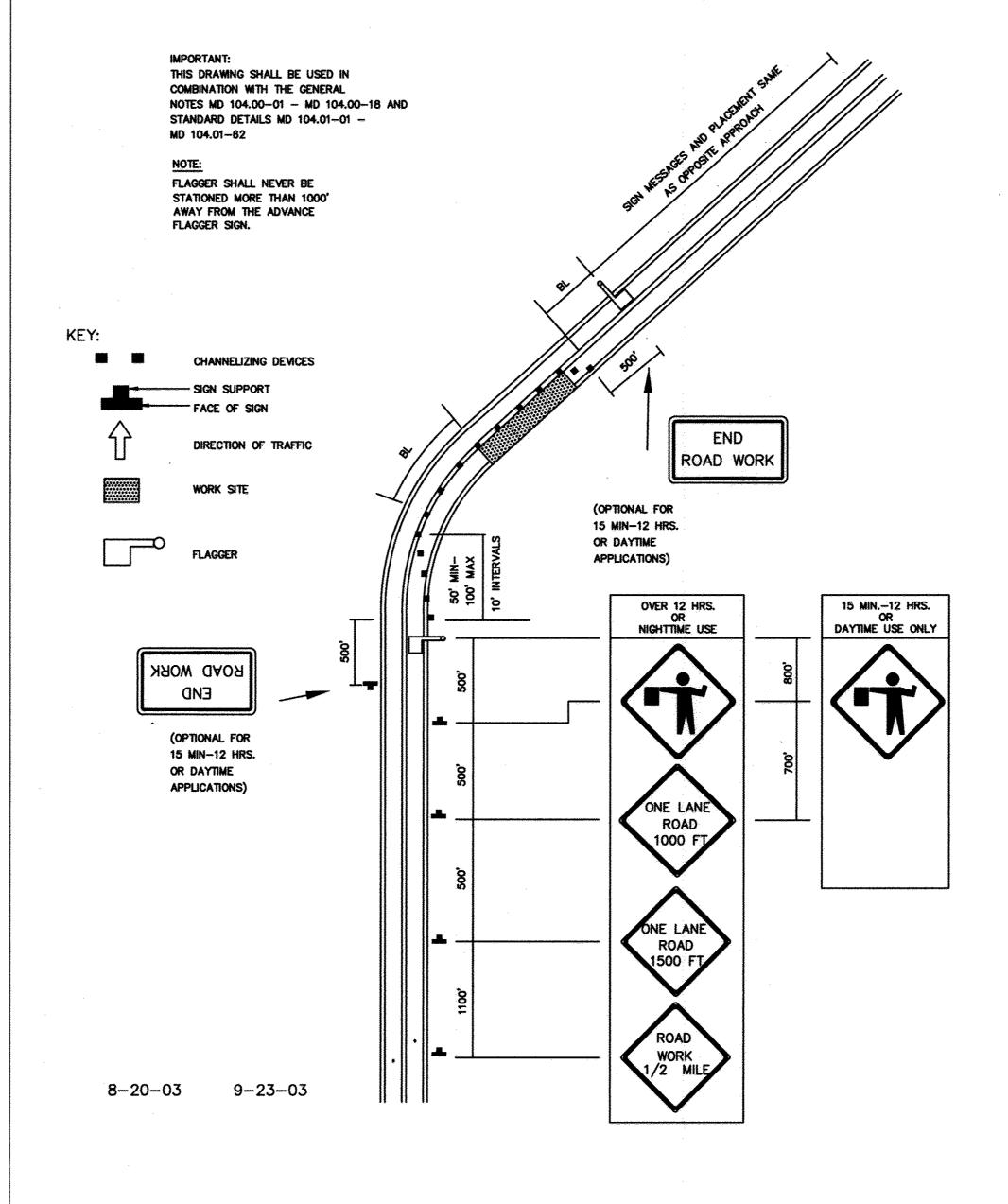
DRAWING NO. <u>14</u> OF <u>21</u>

PETER J. STONE # 3068

F-07-005

MD. 104.02-02 SHOULDER WORK, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH

### TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



MD. 104.02–10
FLAGGING OPERATION, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH

NOTES

1. BROWN'S BRIDGE ROAD IS AN EXISTING 2 LANE, 2-WAY

- ROAD.

  2. REFER TO MDSHA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES,
- REFER TO MDSHA STANDARD MD 104.00-10.

  3. REFER TO MDSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

11-20-07 DATE APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE NO. REVISION OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029
410-365-0414
AS-BUILT
ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND MOT PLAN Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC

AS-BUILT CERTIFICATION

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

Sharm L. Cruz 34916

PRINTED NAME MD. P.E. NO.

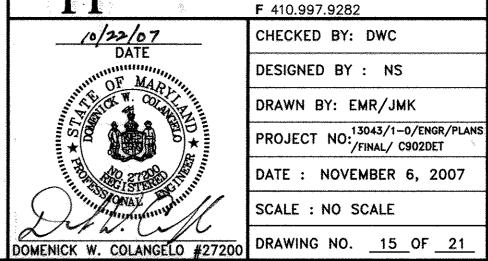
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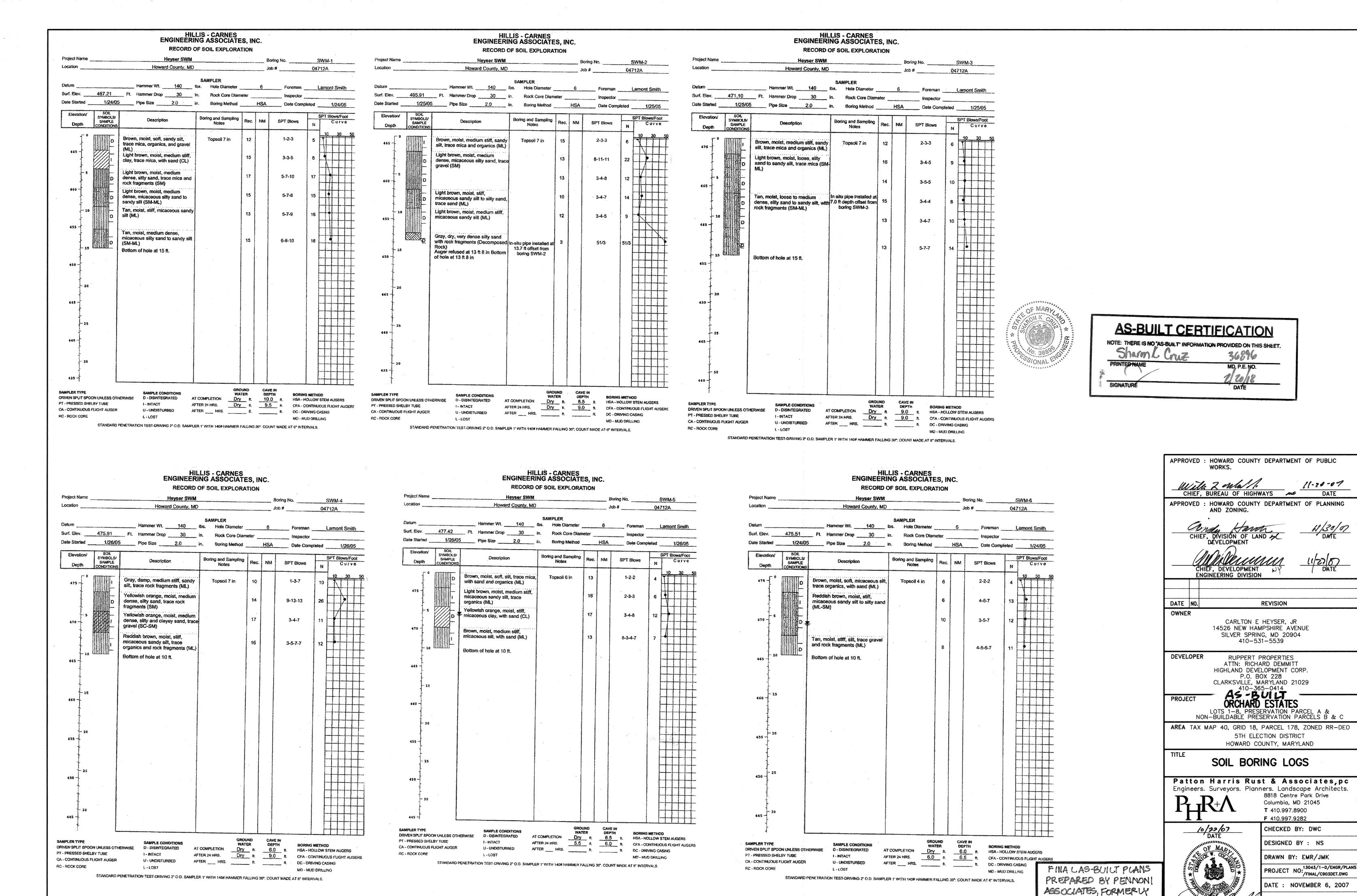
FINAL AS-BUILT PLANS
PREPARED BY PENNONI
ASSOCIATES, FORMERLY
PHRTA

AS-BUILT DATE OF SURVEY: 11.08.17



F-07-005

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DOMENICK W. COLANGELO #27200 DRAWING NO. 16 OF 21

F-07-005

PHRHA

AS-SUILT DATE OF SURVEY: 11.08.17

SCALE: AS SHOWN

I-INTACT

CA - CONTINUOUS FLIGHT AUGER

RC - ROCK CORE

#### HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

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                                                         | sand (ML) Light brown, moist, loose to medium dense, silty sand to sandy silt, trace mica (SM-ML)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

U - UNDISTURBED AFTER HRS. ft. ft. DC - DRIVING CASING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

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| APLER TYPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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                                                                                              | SAMPLE CONDITIONS                                        |                         | GRO!<br>WAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| VEN SPLIT SPOON UN<br>PRESSED SHIELBY TU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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HSA-H  | IOLLOW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | STEM            |                     |              |   |
| CONTINUOUS FLIGHT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I - INTACT<br>U - UNDISTURBED                            | AFTER                   | HRS. Dry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | A.<br>A.                               | 11.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| ROCK CORE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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                                                                                                                                                                                                                                                                                                                                                                                     | wing            |                     |              |   |

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

MD - MUD DRILLING

AS-BUILT CERTIFICATION

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. 34.076 MD. P.E. NQ. SIGNATURE



FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY PHRTA

AS-BUILT DATE OF SURVEY: 11.08.17

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE NO. REVISION OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539 RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228 DEVELOPER CLARKSVILLE, MARYLAND 21029
410-365-0414

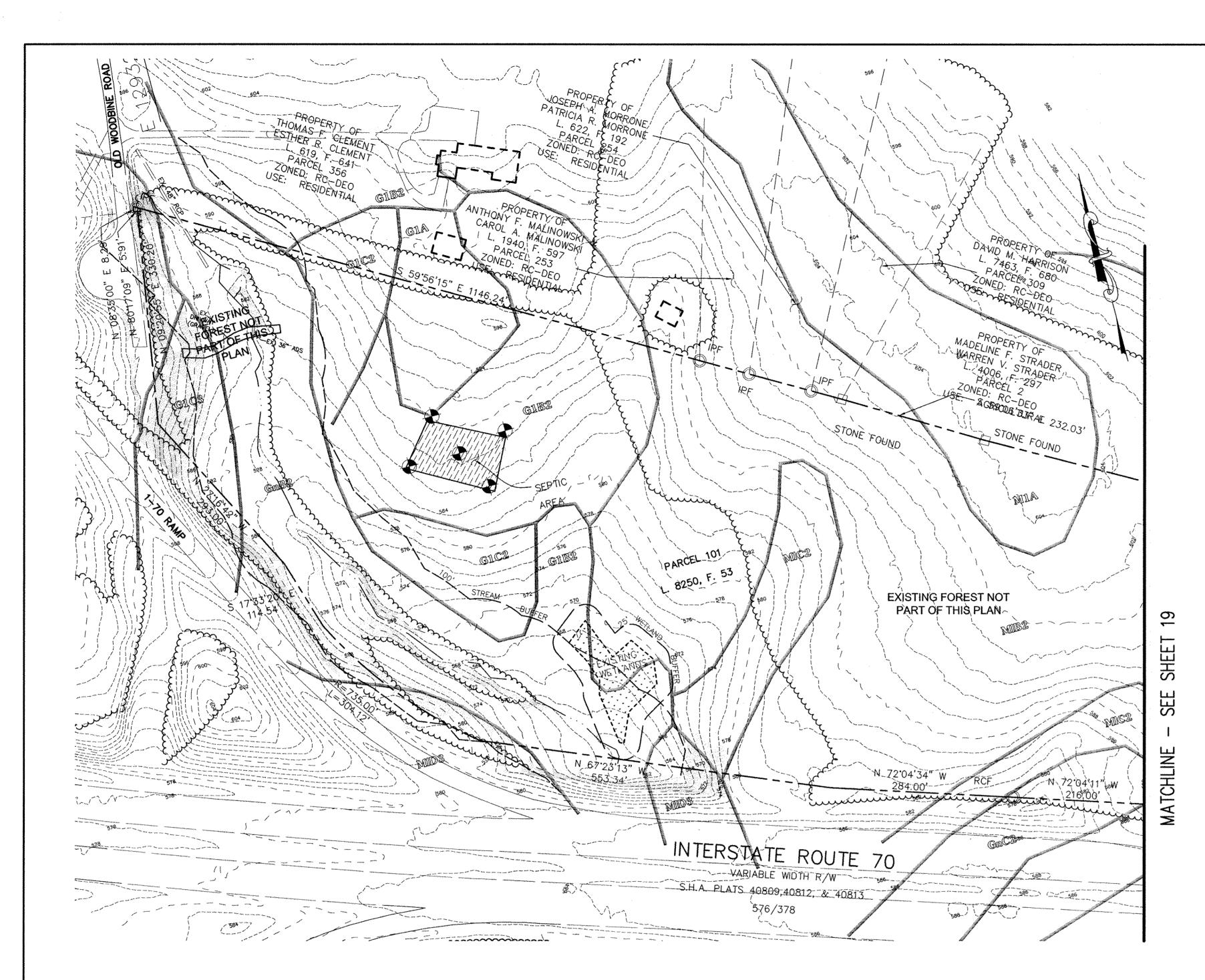
ORCHARD ESTATES

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SOIL BORING LOGS Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900 F 410.997.9282 CHECKED BY: DWC DESIGNED BY : NS DRAWN BY: EMR/JMK

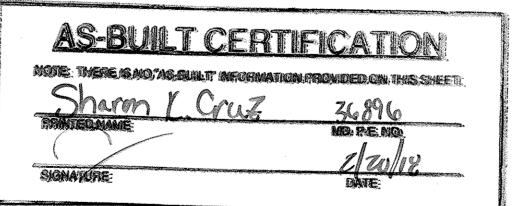
DOMENICK W. COLANGE #27200 DRAWING NO. 17 OF 21 F-07-005

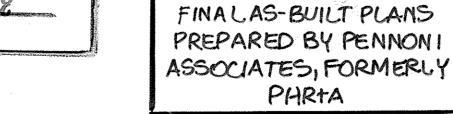
PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C903DET.DWG DATE: NOVEMBER 6, 2007

SCALE : AS SHOWN

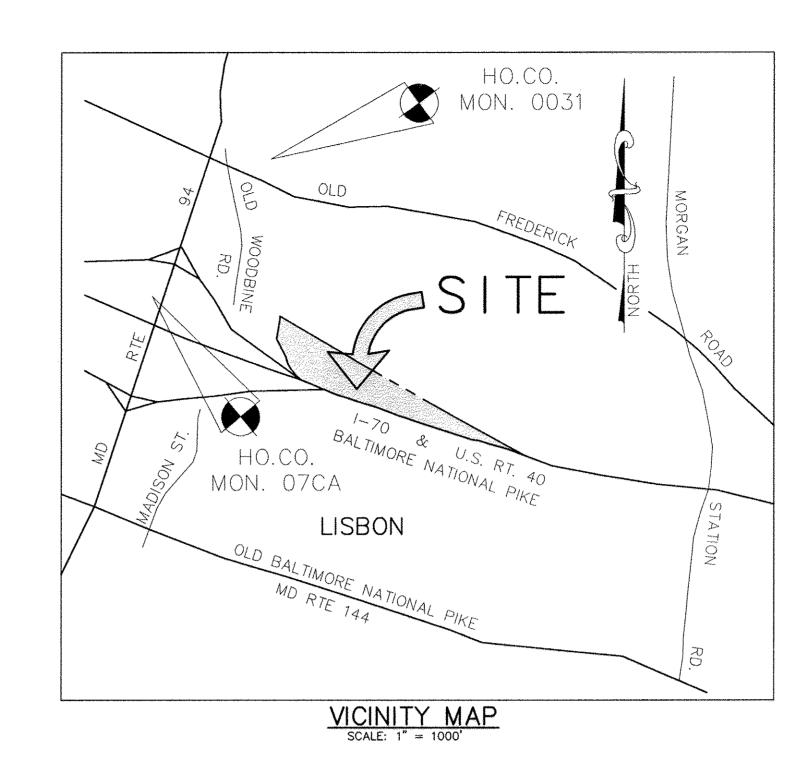


| PLANT COMMUNITY SUMMARY |           |           |                    |  |
|-------------------------|-----------|-----------|--------------------|--|
| SYMBOL                  | COMMUNITY | AREA      | RETENTION PRIORITY |  |
| F1                      | FOREST    | 0.24 Ac.± | HIGH               |  |
| F2                      | FOREST    | 1.1 Ac.±  | HIGH               |  |
| F3                      | FOREST    | 2.23 Ac.± | HIGH               |  |
| F4                      | FOREST    | 0.73 Ac.± | HIGH               |  |





AS-BUILT DATE OF SURVEY: (1.08.17



| EXISTING TREELINE                |                                         |
|----------------------------------|-----------------------------------------|
| PROPERTY LINE                    |                                         |
| EXISTING CONTOURS                | 480                                     |
| PROPOSED CONTOURS                | 480                                     |
| SOIL CLASSIFICATION AND BOUNDARY | CmB2                                    |
| EXISTING BUILDING                | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| SPECIMEN TREE                    | (3)                                     |
| STAND #                          | (F1)                                    |
| STAND DIVISION LINE              |                                         |
| SLOPES 15 - 25%                  |                                         |
| SLOPES >25%                      |                                         |

| MAP<br>SYMBOL | NAME                | STRUCTURAL LIMITATIONS DWELLINGS | EROSION<br>HAZARD | HYDRIC | SLOPE<br>(%) |
|---------------|---------------------|----------------------------------|-------------------|--------|--------------|
| GIA           | GLENELG LOAM        | SLIGHT                           | SLIGHT            | NO     | 0-3%         |
| GIB2          | GLENELG LOAM        | SLIGHT                           | MODERATE          | NO     | 3-8%         |
| GIC2          | GLENELG LOAM        | MODERATE                         | MODERATE          | NO     | 8-15%        |
| GIC3          | GLENELG LOAM        | MODERATE                         | SEVERE            | NO     | 8-15%        |
| GnA           | GLENVILLE SILT LOAM | MODERATE                         | SLIGHT            | NO*    | 0-3%         |
| GnB2          | GLENVILLE SILT LOAM | MODERATE                         | MODERATE          | NO*    | 3-8%         |
| GnC2          | GLENVILLE SILT LOAM | MODERATE                         | MODERATE          | NO     | 8-15%        |
| MIA           | MANOR LOAM          | SLIGHT                           | SLIGHT            | NO     | 0-3%         |
| MIB2          | MANOR LOAM          | SLIGHT                           | MODERATE          | NO     | 8-15%        |
| MIC2          | MANOR LOAM          | MODERATE                         | MODERATE          | NO     | 8-15%        |
| MIC3          | MANOR LOAM          | MODERATE                         | SEVERE            | NO     | 8-15%        |
| MID3          | MANOR LOAM          | MODERATE                         | SEVERE            | NO     | 15-25        |

\* SOIL MAY CONTAIN HYDRIC INCLUSIONS THIS INFORMATION TAKEN FROM THE HOWARD COUNTY SOIL SURVEY DATE JULY 1968. MAP 2

#### PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST STAND DELINEATION FOR APPROXIMATELY 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

| AREA CHART                   |       |  |  |  |
|------------------------------|-------|--|--|--|
| AREA                         | ACRES |  |  |  |
| TOTAL TRACT AREA             | 34.94 |  |  |  |
| EXISTING FOREST              | 24.23 |  |  |  |
| LAND WITHIN STREAM BUFFERS   | 5.53  |  |  |  |
| LAND WITHIN FLOODPLAIN       | 0     |  |  |  |
| FOREST WITHIN STREAM BUFFERS | 2.66  |  |  |  |
| FOREST WITHIN FLOODPLAIN     | 0     |  |  |  |
| ROAD DEDICATION              | 0     |  |  |  |

GENERAL NOTES:

I. THE SITE IS LOCATED ALONG THE NORTH SIDE OF ROUTE 70 IN WESTERN HOWARD COUNTY. THE SITE CONSISTS OF PARCEL 101 (TAX MAP 7) AND PARCEL 4 (TAX

2. TOPOGRAPHIC INFORMATION IS FROM HOWARD COUNTY GIS INFORMATION. BOUNDARY INFORMATION IS FROM A FIELD SURVEY PREPARED BY PATTON HARRIS RUST & ASSOCIATES.

3. THE SOILS ON SITE ARE DESCRIBED IN THE CHART ON THIS PLAN, AND ARE IN ACCORDANCE WITH THE SOIL SURVEY FOR HOWARD COUNTY, MARYLAND. STEEP SLOPES ARE PRESENT ON THE SITE AS SHOWN.

4. THE SITE IS ZONED RC-DEO (RURAL CONSERVATION WITH A DENSITY EXCHANGE OPTION OVERLAY).

5. THE SITE IS LOCATED IN THE PATUXENT WATERSHED, BRIGHTON DAM SUBWATERSHED (#2131108).

6. THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON SITE AS SHOWN. STREAMS AND WETLANDS ARE LOCATED ON SITE AS SHOWN.

7. THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS. 8. THERE ARE 4 SPECIMEN TREES (30"+) LOCATED ON SITE, AS SHOWN ON THE PLAN.

8. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER II, 2006 BY BILL BOND OF PARKTON WOODLAND SERVICES. SEE FOREST STAND DELINEATION REPORT FOR FIELD INVESTIGATION NARRATIVE.

10. NO CEMETERIES OR HISTORIC STRUCTURES ARE LOCATED ON-SITE. NO EXISTING STRUCTURES ARE PRESENT ON THE SITE.

12. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2 and GnA).

| AF | PRO                                                                                            | VEC | D : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.       |  |  |
|----|------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------|--|--|
| _  |                                                                                                | -   | Ilin Z. What 11-20-07 F, BUREAU OF HIGHWAYS AS DATE |  |  |
| AP | APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.                                    |     |                                                     |  |  |
|    | CHIEF, DIVISION OF LAND DATE DEVELOPMENT                                                       |     |                                                     |  |  |
|    | CHIEF, DEVELOPMENT NY ST DATE                                                                  |     |                                                     |  |  |
|    | ······                                                                                         |     |                                                     |  |  |
|    |                                                                                                |     |                                                     |  |  |
| DA | ATE                                                                                            | NO. | . REVISION                                          |  |  |
| O  | OWNER  CARLTON E HEYSER, JR  14526 NEW HAMPSHIRE AVENUE  SILVER SPRING, MD 20904  410-531-5539 |     |                                                     |  |  |
| DE | DEVELOPER RUPPERT PROPERTIES                                                                   |     | ER RUPPERT PROPERTIES_                              |  |  |

CLARKSVILLE, MARYLAND 21029 410-365-0414 AS-BUILT ORCHARD ESTATES **PROJECT** LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

OFFSITE FOREST STAND DELINEATION PLAN

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900

10.29.07

**F** 410.997.9282 CHECKED BY: PJS DESIGNED BY : NS DRAWN BY: ALC

PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C200FSD-0FFSITE.DWG DATE: NOVEMBER 6, 2007 SCALE: 1" = 100'

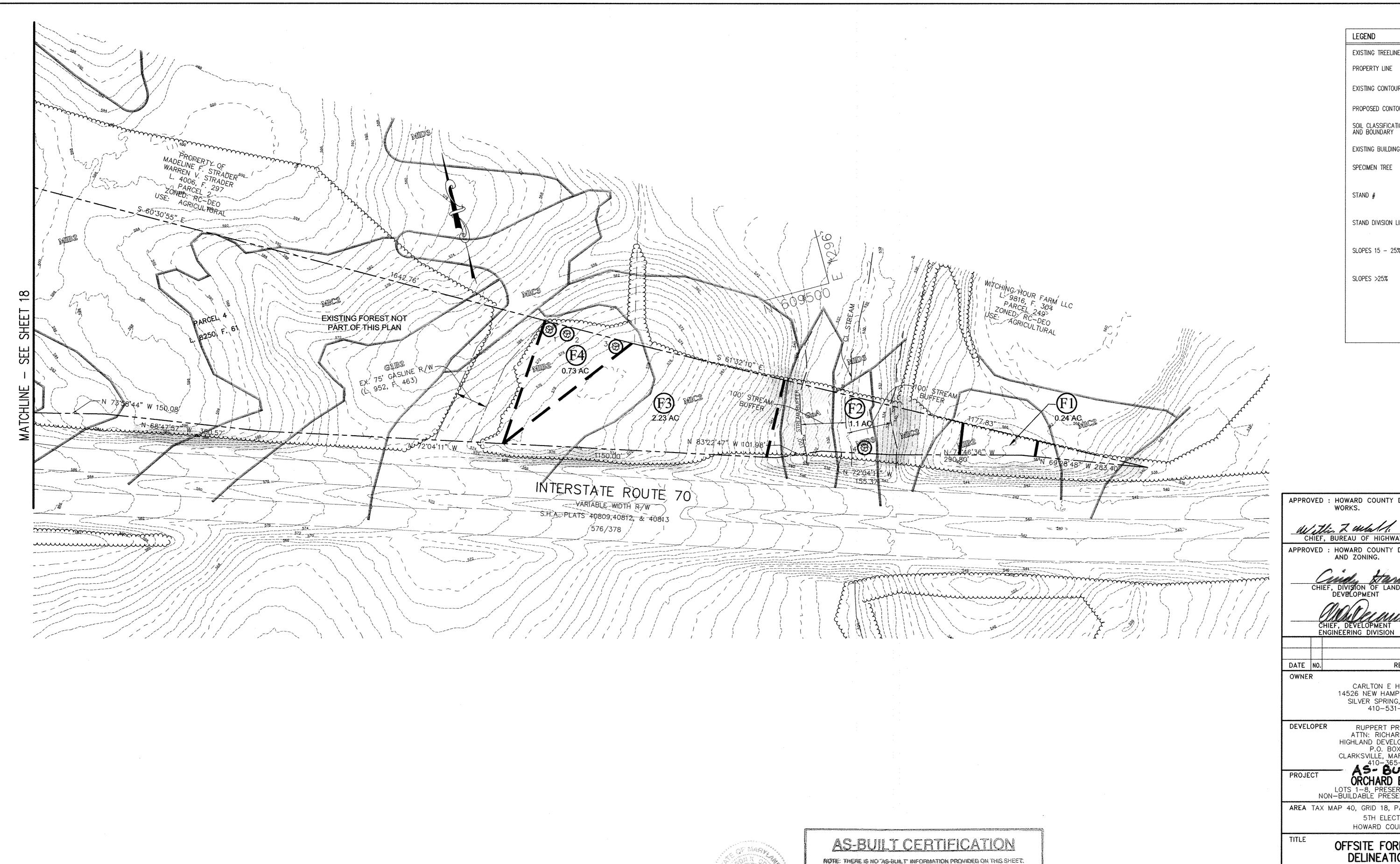
DRAWING NO. \_\_18\_OF \_\_21\_

F-07-005

SIZE KEY | SPECIES CONDITION SCARLET OAK (QUERCUS COCCINEA) 37" FAIR / GOOD 2 | SCARLET OAK (QUERCUS COCCINEA) FAIR / GOOD WHITE OAK (QUERCUS ALBA) GOOD RED MAPLE (ACER RUBRUM) FAIR

SPECIMEN TREE CHART

3068 9. THE SITE HAS A FOREST CONSERVATION THRESHOLD OF 25% AND AN AFFORESTATION THRESHOLD OF 20%. II. THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.



FINAL AS-BUILT PLANS
PREPARED BY PENNUN!
ASSOCIATES, FORMERLY PHRTA

36296 MD. P.E. NO.

AS-BUILT DATE OF SURVEY: 11.08.17

| APPROVED : HOWARD COUNTY                                                                     | DEPARTMENT OF PUBLIC                                    |  |  |  |  |  |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------|--|--|--|--|--|
| WORKS.                                                                                       | , , , , , , , , , , , , , , , , , , , ,                 |  |  |  |  |  |
| CHIEF, BUREAU OF HIGHY                                                                       | VAYS MS DATE                                            |  |  |  |  |  |
| APPROVED : HOWARD COUNTY AND ZONING.                                                         | DEPARTMENT OF PLANNING                                  |  |  |  |  |  |
| Card Ha                                                                                      | 11/2/03                                                 |  |  |  |  |  |
| CHIEF, DIVISION OF LAN                                                                       | ND BC DATE                                              |  |  |  |  |  |
| alio (Para                                                                                   |                                                         |  |  |  |  |  |
| CHIEF, DEVELOPMENT                                                                           | DATE                                                    |  |  |  |  |  |
| ENGINEERING DIVISION                                                                         |                                                         |  |  |  |  |  |
| DATE NO.                                                                                     | REVISION                                                |  |  |  |  |  |
| OWNER                                                                                        |                                                         |  |  |  |  |  |
| 14526 NEW HAN<br>SILVER SPRIN                                                                | HEYSER, JR<br>MPSHIRE AVENUE<br>IG, MD 20904<br>11—5539 |  |  |  |  |  |
| DEVELOPER RUPPERT F                                                                          | PROPERTIES                                              |  |  |  |  |  |
| HIGHLAND DEVE                                                                                | ARD DEMMITT<br>LOPMENT CORP.<br>DX 228                  |  |  |  |  |  |
|                                                                                              | ARYLAND 21029                                           |  |  |  |  |  |
|                                                                                              | ESTATES                                                 |  |  |  |  |  |
| LOTS 1-8, PRESI<br>NON-BUILDABLE PRES                                                        | ERVATION PARCEL A & SERVATION PARCELS B & C             |  |  |  |  |  |
|                                                                                              | PARCEL 178, ZONED RR-DEO CTION DISTRICT                 |  |  |  |  |  |
|                                                                                              | DUNTY, MARYLAND                                         |  |  |  |  |  |
| OFFSITE FO                                                                                   | OFFSITE FOREST STAND DELINEATION PLAN                   |  |  |  |  |  |
| Patton Harris Rust & Associates, pc<br>Engineers. Surveyors. Planners. Landscape Architects. |                                                         |  |  |  |  |  |
| 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900                                     |                                                         |  |  |  |  |  |
| 10.75.07                                                                                     | F 410.997.9282                                          |  |  |  |  |  |
| DATE                                                                                         | CHECKED BY: PJS  DESIGNED BY: NS                        |  |  |  |  |  |
| STREET OF MARIE                                                                              | DRAWN BY: ALC                                           |  |  |  |  |  |
| 3068                                                                                         | PROJECT NO: 13043/1-0/ENGR/PLAN                         |  |  |  |  |  |
| 3068 × \$3068                                                                                | DATE: NOVEMBER 6, 2007                                  |  |  |  |  |  |
| STOP LANDS OF LANDS OF REAL PROPERTY.                                                        | SCALE : 1" = 100'                                       |  |  |  |  |  |
| PETER J. STONE # 3068                                                                        | DRAWING NO. 19 OF 21                                    |  |  |  |  |  |
| F-07-005                                                                                     |                                                         |  |  |  |  |  |

PROPERTY LINE

EXISTING CONTOURS

PROPOSED CONTOURS SOIL CLASSIFICATION AND BOUNDARY

EXISTING BUILDING

SPECIMEN TREE

STAND #

STAND DIVISION LINE

SLOPES 15 - 25%

SLOPES >25%



#### PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST CONSERVATION EASEMENT FOR 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

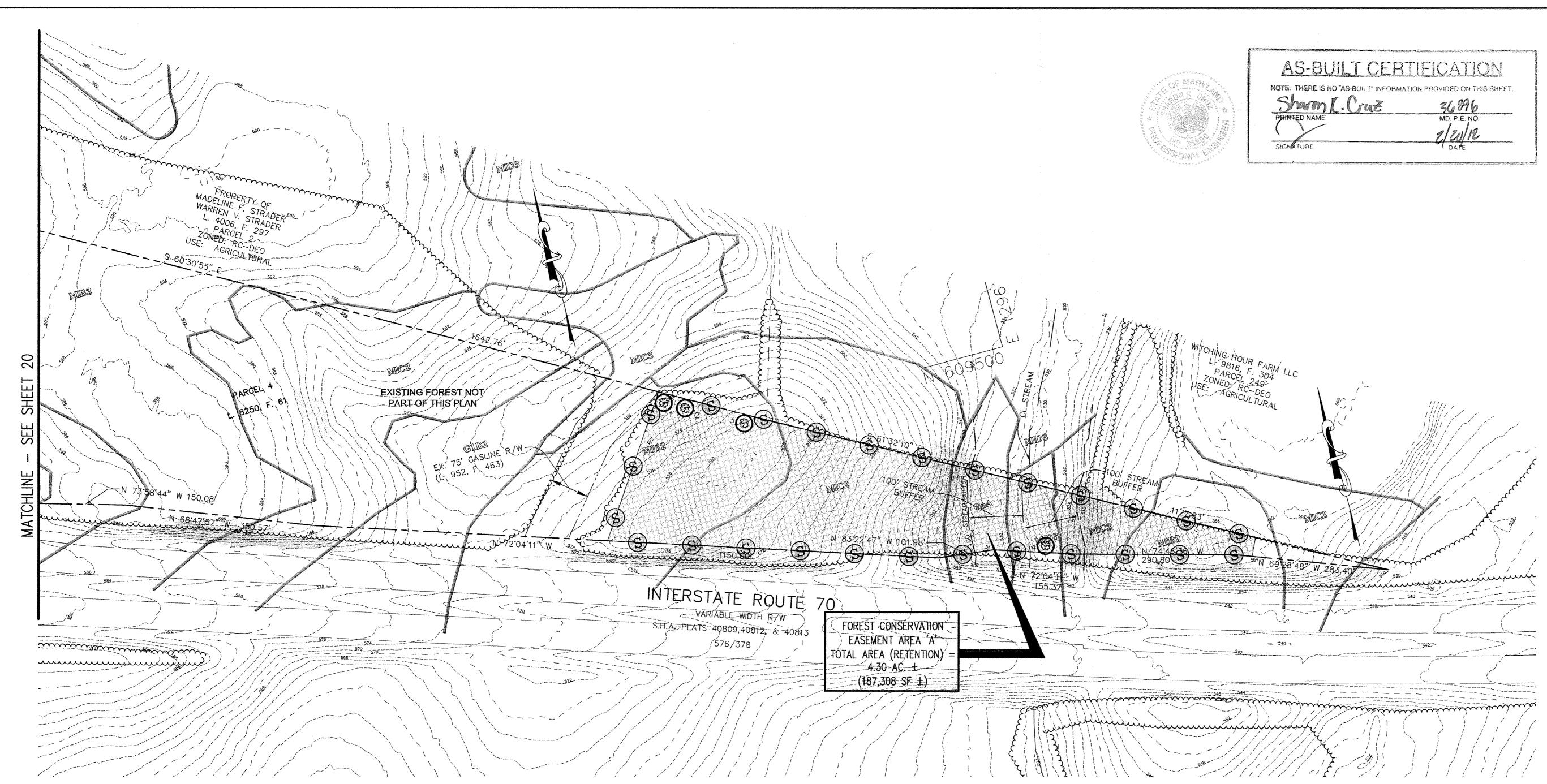
| LEGEND                                                           | , , , , , , , , , , , , , , , , , , , |
|------------------------------------------------------------------|---------------------------------------|
| EXISTING TREELINE                                                |                                       |
| PROPERTY LINE                                                    |                                       |
| EXISTING CONTOURS                                                | 478                                   |
| PROPOSED CONTOURS                                                | 478                                   |
| SOIL CLASSIFICATION AND BOUNDARY                                 | CmB2                                  |
| EXISTING BUILDING                                                |                                       |
| PROPOSED BUILDING                                                |                                       |
| LIMIT OF<br>DISTURBANCE LINE                                     |                                       |
| FOREST<br>CONSERVATION AREA                                      |                                       |
| FOREST<br>CONSERVATION SIGNAGE                                   | S                                     |
| TREE PROTECTION<br>DEVICE (BLAZE ORANGE<br>PLASTIC MESH FENCING) | — TPD —                               |
| SPECIMEN TREE                                                    |                                       |
| SLOPES 15 - 25%                                                  |                                       |
| SLOPES >25%                                                      |                                       |

|                                                                                                          | <i>*</i>             |                                          |
|----------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------|
|                                                                                                          |                      | DEVELOPER                                |
|                                                                                                          |                      | PROJECT                                  |
|                                                                                                          |                      | AREA TAX                                 |
| AS-BUILT CERTIFICATION OTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  Shaml. Ca2 36896 |                      | TITLE                                    |
| SIGNATURE DATE                                                                                           |                      | Pattor<br>Engineers                      |
|                                                                                                          |                      | 1 H                                      |
|                                                                                                          | FINAL AS-BUILT PLANS | J. J |

FINAL AS-BUILT PLANS
PREPARED BY PENNON!
ASSOCIATES, FORMERLY
PHR+A

AS-BUILT DATE OF SURVEY: 11,08.17

|             | APPROVED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : HOWARD COUN<br>WORKS.               | TY DEPARTMENT OF PUBLIC                                     |  |  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------|--|--|
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | à 2. Ashal.                           | 1 11-20-07                                                  |  |  |
|             | CHIEF,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BUREAU OF HIG                         | HWAYS MS DATE                                               |  |  |
|             | APPROVED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : HOWARD COUN<br>AND ZONING.          | TY DEPARTMENT OF PLANNING                                   |  |  |
|             | CHIE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | F, DIVISION OF L                      | 11/30/07   DATE                                             |  |  |
|             | CINE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | DEVELOPMENT                           | AND NO                                                      |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | IEF, DEVELOPMEN<br>GINEERING DIVISION |                                                             |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                             |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                             |  |  |
|             | DATE NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       | REVISION                                                    |  |  |
|             | OWNER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A . D. T.                             | E 1151/05B 10                                               |  |  |
|             | CARLTON E HEYSER, JR<br>14526 NEW HAMPSHIRE AVENUE<br>SILVER SPRING, MD 20904<br>410-531-5539                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                                             |  |  |
|             | DEVELOPER RUPPERT PROPERTIES  ATTN: RICHARD DEMMITT  HIGHLAND DEVELOPMENT CORP.  P.O. BOX 228  CLARKSVILLE, MARYLAND 21029  410-365-0414                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                                             |  |  |
|             | PROJECT ORCHARD ESTATES  LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                                                             |  |  |
|             | AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEC 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  TITLE  OFFSITE FINAL FOREST CONSERVATION PLAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                             |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                             |  |  |
|             | Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |                                                             |  |  |
|             | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | . 25.07                               | CHECKED BY: PJS                                             |  |  |
| 7           | . 1111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DATE                                  | DESIGNED BY : NS                                            |  |  |
|             | July E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | OF MARLANIA                           | DRAWN BY: ALC                                               |  |  |
|             | THE STATE OF THE S | OF MAR X                              | PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C200FCP-0FFSITE.DWG |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       | DATE: NOVEMBER 6, 2007                                      |  |  |
| 12 I7       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CO THINDSON WILLIAM                   | SCALE : 1" = 100'                                           |  |  |
| · · · · · · | PETER J.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | STONE # 3068                          | DRAWING NO. 20 OF 21                                        |  |  |
|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | F-07-00                               | 5                                                           |  |  |



#### FOREST CONSERVATION PROGRAM

I. OBJECTIVE:
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS IN AN OFFSITE FOREST CONSERVATION EASEMENT.

II. PRESERVATION: FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.

III. <u>GENERAL CONSTRUCTION NOTE:</u>
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.

IV. POST CONSTRUCTION MANAGEMENT PRACTICE; A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:

1-MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES

2-PREVENT UNWARRANTED INTRUSION AND DAMAGE.

3-CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER

4-ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

| SPECIMEN TREE CHART |                                |      |             |                  |
|---------------------|--------------------------------|------|-------------|------------------|
| KEY                 | SPECIES                        | SIZE | CONDITION   | REMAIN OR REMOVE |
| 1                   | SCARLET OAK (QUERCUS COCCINEA) | 37"  | FAIR / GOOD | REMAIN           |
| 2                   | SCARLET OAK (QUERCUS COCCINEA) | 33"  | FAIR / GOOD | REMAIN           |
| 3                   | WHITE OAK (QUERCUS ALBA)       | 35"  | GOOD        | REMAIN           |
| 4                   | RED MAPLE (ACER RUBRUM)        | 30"  | FAIR        | REMAIN           |

### **GENERAL NOTES:**

CONJUNCTION WITH THESE PLANS.

1. THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING HOWARD COUNTY GIS DATA. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.

2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.

3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE

4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.

5. THERE ARE NO EXISTING STRUCTURES ON THE SITE.

6. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2 AND GnA). 7. THE FSD, DATED DECEMBER 11, 2006, HAS BEEN PREPARED BY PARKTON WOODLAND SERVICES IN

8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.

9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.

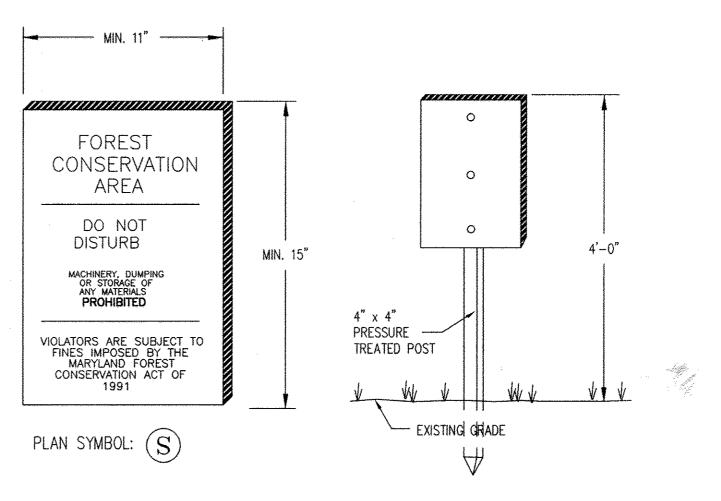
10. THE FOREST CONSERVATION EASEMENT SHOWN ON THIS PLAN IN THE AMOUNT OF A 4.3 ACRE (187,308 SF) RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) OF THE ORCHARD ESTATES (F-07-005) FOREST CONSERVATION REQUIREMENTS.

OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$37,461.60 (187,308 x \$0.20/SF) WILL BE

11. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

12. BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A "PLAT OF CONSOLIDATION AND PLAT OF PRESERVATION EASEMENT, DENSITY SENDING RUSSELL-HOLLAND PARCEL A"(F-07-130).

| FOREST CONSERVATION AREA | AREA (IN ACRES) |
|--------------------------|-----------------|
| Α                        | 4.3 AC ±        |
| TOTAL                    | 4.3 AC ±        |

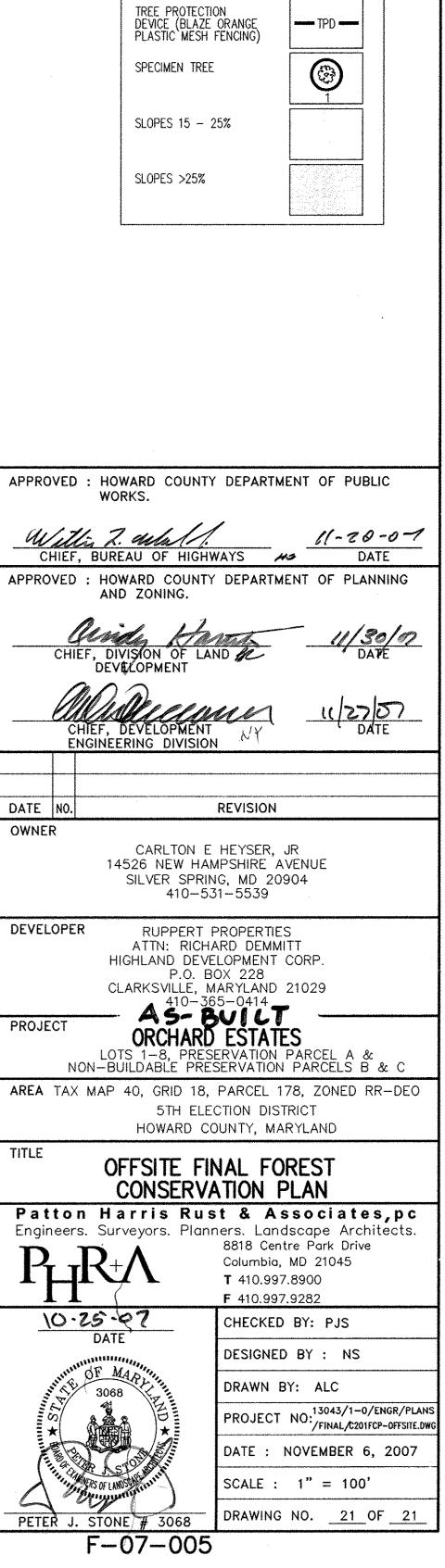


1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER. 2. SEE PLAN FOR SPACING.

> FOREST CONSERVATION SIGN DETAIL NOT TO SCALE

FINAL AS-BUILT PLANS PREPARED BY PENNON! ASSOCIATES, FORMERLY

AS-BUILT DATE OF SURVEY: 11.08.17



EXISTING TREELINE

PROPERTY LINE

**EXISTING CONTOURS** 

PROPOSED CONTOURS

SOIL CLASSIFICATION AND BOUNDARY

EXISTING BUILDING

PROPOSED BUILDING

LIMIT OF DISTURBANCE LINE

FOREST CONSERVATION AREA

FOREST CONSERVATION SIGNAGE