SITE DEVELOPMENT PLAN SDP-20-42 AKEVIEW RETAIL

HOWARD COUNTY, MARYLAND

-Fire Department Connection

OWNER/DEVELOPER

AGS Borrower Lakeview, LLC

7127 Ambassador Road, Suite 100

Baltimore, MD 21244

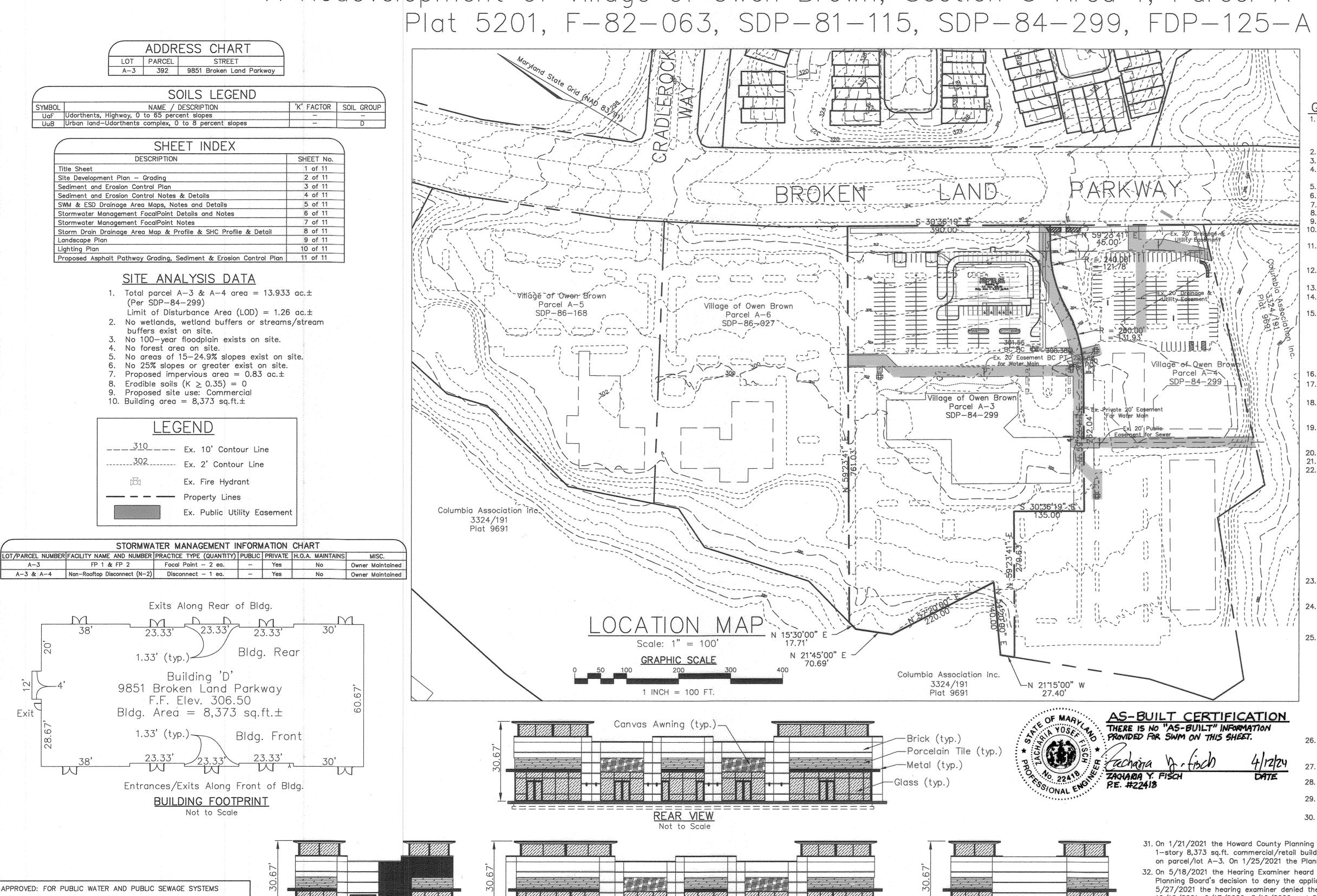
Attention: Alan C. Grabush, Principal

(443)725 - 9000

RIGHT VIEW

Not to Scale

A Redevelopment of Village of Owen Brown, Section 3 Area 1, Parcel A-3 & A-4,



FRONT VIEW

Not to Scale

JULY 7, 2022

PPROVED: PLANNING BOARD OF HOWARD COUNTY

10/4/22

DATE DATE

10/12/2

Not to Scale

Lakeview Retail

5201

Plat # Deed Ref. Grid

. 17713

PERMIT INFORMATION CHART

Tax Map No.

Lot/Parcel No.

6067.01

Elect. District | Census Tract

A-3 & A-4 / 392

DATE /

HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATI

CHIEF, DIVISION OF LAND DEVELOPMENT

Denotes County Benchmark (Stamped disc set on top of a 3' deep column of concrete) 36HA 1354381.451 E 555116.606 (NAD 83/91) Elev. 292.22 (NGVD 88)

36HB 1354677.983 E 552978.353 (NAD 83/91) Elev. 313.43 (NGVD 88)

GENERAL NOTES

· Site Data: Property Address: 9841 (Parcel A-4) and 9851/9861 (Parcel A-3) Broken Land Parkway, Columbia, Maryland 21045.

Tax Map 42; Grid 3; Parcel 392; Lot A-3; 6th Election District Plat 5201; F-82-063; FDP-125-A; SDP-81-115; SDP-84-299; Liber 17713 Folio 102; Parcels A-3 & A-4 Area = 13.933 ac.± (Per SDP-84-299); Project Area (LOD Area) = 1.26 ac.± 2. The subject property is zoned NT per the 10/6/13 Comprehensive Zoning Plan.

3. Public water and sewer will be used within this site, contract no. 24-0988-D, water code E13 and sewer code 5330000. 4. There are no floodplains, wetlands, streams, wetland/stream buffers, historic structures or cemeteries on-site, per the environmental report/wetland investigation conducted on January 24, 2019 by Exploration Research, Inc. 5. This property is subject to the Amended 5th edition of the Howard County Subdivision and Land Development Regulations.

6. Field run topographic survey prepared by FSH Associates in March, 2018. 7. Per FEMA (FIRM Map) 24027C0165D no FEMA delineated floodplain exists within the project area.

8. Boundary based on plat #5201. 9. The Environmental Concept Plan, ECP-19-038, was approved on 6/11/19.

O. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards

11. 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 and the contractor shall notify "Miss Utility" at -800-257-777 at least 48 hours prior to any excavation work being done.

12. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt. 13. All plan dimensions are to the face of curb unless otherwise noted.

14. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based on the Maryland State Plane Coordinate System. Howard County Monument Nos. 36HA and 36HB were used for this project

15. This project qualifies as redevelopment therefore stormwater management is provided per Section 5.5.2.1.c. of the MD SWM Manual by providing environmental site design (ESD) water quality (WQ) treatment for 50% of the existing impervious area and 100% of the proposed increase in impervious area. The overall impervious area within the project area (LOD) requiring treatment = 15,942 sq.ft. (50% of the existing impervious area) + 4,430 sq.ft. (proposed increase in impervious area from proposed pathway) = 20,372 sq.ft. WQ treatment is provided using SWM ESD practices to the maximum extent practicable through two (2) FocalPoint High Performance Modular Biofiltration Systems, an MDE approved ESD practice, and the Disconnection of Non-Rooftop Runoff credit (N-2).

16. All outdoor lighting complies with Section 134.0 of the Zoning Regulations, see lighting plan sheet 10.

17. Financial surety for the required landscaping will be posted as part of the Developer's Agreement in the amount of \$3,150 (5 shade trees @ \$300.00 each and 11 evergreens @ \$150.00 each).

18. This SDP is exempt from the requirements of Section 16.1202(b)(1)(ii) of the Howard County Code for Forest Conservation because the subject property is zoned New Town and is part of a planned unit development which has preliminary development plan approval and 50% or more of the land is recorded and substantially developed before December 31, 1992 19. A traffic study, performed by Traffic Concepts, Inc, in January 2020 was approved by Howard County, DED, on June 30, 2020. As concluded and stated within the approved report "The Intersection Capacity Analysis has shown that the key intersections will continue to operate at satisfactory "D" or better levels of service under the total 2023 future build out conditions."

20. Inside metering is proposed. 21. The proposed building will have an automatic fire protection sprinkler system.

Per SDP-84-299, number of parking spaces required: 436 spaces (Parcels A-3 & A-4)

Per ALTA survey dated April 6, 2017, parking spaces provided: 764 spaces (Ex. Spaces Parcels A-3 & A-4) Number of Parking spaces required for Lakeview Retail:

8,373 s.f. @ 14 spaces pr 1000 s.f. for restaurant use = 118 spaces (Parcel A-3) Outdoor Seating Area 500 sq.ft. @ 3 spaces / 1,000 sq.ft. = 2 spaces.

Total number of parking spaces required: 436+120 = 556 spaces (Parcels A-3 & A-4)

Number of existing spaces lost due to proposed project = 111 spaces (Parcel A-3)

Number of proposed spaces to be added to project, in front of proposed building = 13 spaces (Parcel A-3) Total number of parking spaces provided = 764 (Ex. Spaces) -111 + 13 = 666 spaces > 554 spaces (Parcels A-3 & A-4) HANDICAP SPACE TABULATIONS:

Total Number of Handicap Spaces Required for Lakeview Retail (based on 118 total parking spaces) = 5 H.C. spaces

Total Handicap Spaces Provided = 5 H.C. spaces 23. 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 gauge) inserted into a 2-1/2 galvanized steel, perforated, square tube sleeve (12 gauge) 3'long. A galvanized steel pole cap shall be mounted on top of each post.

24. Health Department approval of this Site Development Plan does not ensure approval of building permit applications associated with this plan. Plans for certain facilities to be constructed within the limits described by this plan will require review and approval by the Health Department. Such facilities may include, but are not limited to, those which have swimming pools, or that sell prepared or packaged foods, or that may have equipment that emits radiation. 25. A.) A fire department connection for fire protection systems shall be located:

1.) on the side of the structure displaying the address clearly visible to the responding units. 2.) within 100 ft. of a fire hydrant.

B.) The appropriate sign shall be mounted on the building's wall between 8 and 12 feet above the fire department

C.) A free-standing Fire Department Connection shall have the sign mounted on a pole directly behind the connection

approximately 6 feet high. D.) Signs shall have a white reflective background with a red reflective border, red reflective letters and a red reflective arrow. The border shall have a 3/8" stroke. The letters shall be 6" high with a 1" stroke. The arrow shall have a

stroke note less than 2". The overall sign measurements shall be 12" by 18". E.) Any obstruction or condition that deters or hinders access to a FDC is prohibited. A minimum clear space of 15 feet (7.5 feet on all sides) shall be maintained.

26. This project was presented before the Design Advisory Panel (DAP) on July 25, 2018 for site design and architectural comments. The DAP by a vote of 4-0 issued five design/architectural recommendations. All five recommendations were endorsed by the Director of DPZ.

27. An underground utility marking survey was performed by SoftDig and located by Howard County Bureau of Utilities and FSH

on May 7, 2020. 28. An Advance Deposit Order (ADO), Contract 24-0988-D, SDP-20-042 was approved by Howard County Bureau of Utilities

on August 31, 2020 for the proposed water house connection and fire hydrant. 29. A Design Manual Waiver from Design Manual Vol III, Apprendix G to reduce the minimum width of a one way drive lane in a

parking lot from 16' to 12', was approved on July 2, 2020.

30. A Design Manual Waiver from Design Manual Vol IV, standard detail R-1.06 to reduce the required 10-foot distance between the face of curb to the edge of sidewalk or asphalt pathway to 2.5 feet and to reduce the width of the pathway to 4.5

31. On 1/21/2021 the Howard County Planning Board considered this SDP for a 1-story 8,373 sq.ft. commercial/retail building and related site improvements on parcel/lot A-3. On 1/25/2021 the Planning Board denied the plan.

32. On 5/18/2021 the Hearing Examiner heard BA Case 781-D to appeal the Planning Board's decision to deny the application for the SDP approval. On 5/27/2021 the hearing examiner denied the appeal. On 10/14/2021, 12/16/2021, 2/17/2022, 3/10/2022 and 5/12/2022 the Board of Appeals heard the appeal to the Planning Boards denial of the SDP and on 5/26/2022 that petition of appeal under BA Case 781-D be granted and the Planning Boards denial of the SDP be reversed and the SDP be remanded to the Planning Board with the specific instruction that the Planning Board approve SDP-20-042.

33. Pursuant to the instruction of the Board of Appeals, BA Case 781-D, who reversed the Planning Board denial of the SDP on 1/21/2021, the Howard County Planning Board at its regularly scheduled meeting held on 7/7/2022reconsidered this SDP for construction of a 1-story 8,378 sq.ft. commercial/retail building on parcel/lot A-3 and approved the SDP on 7/12/2022.

State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

PROFESSIONAL CERTIFICATION 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



A Redevelopment of Village of Owen Brown, Parcel A-3 & A-4, Plat 5201 F-82-063, SDP-81-115, SDP-84-299, FDP-125-A

TAX MAP 42 GRID 3 **6TH ELECTION DISTRICT**

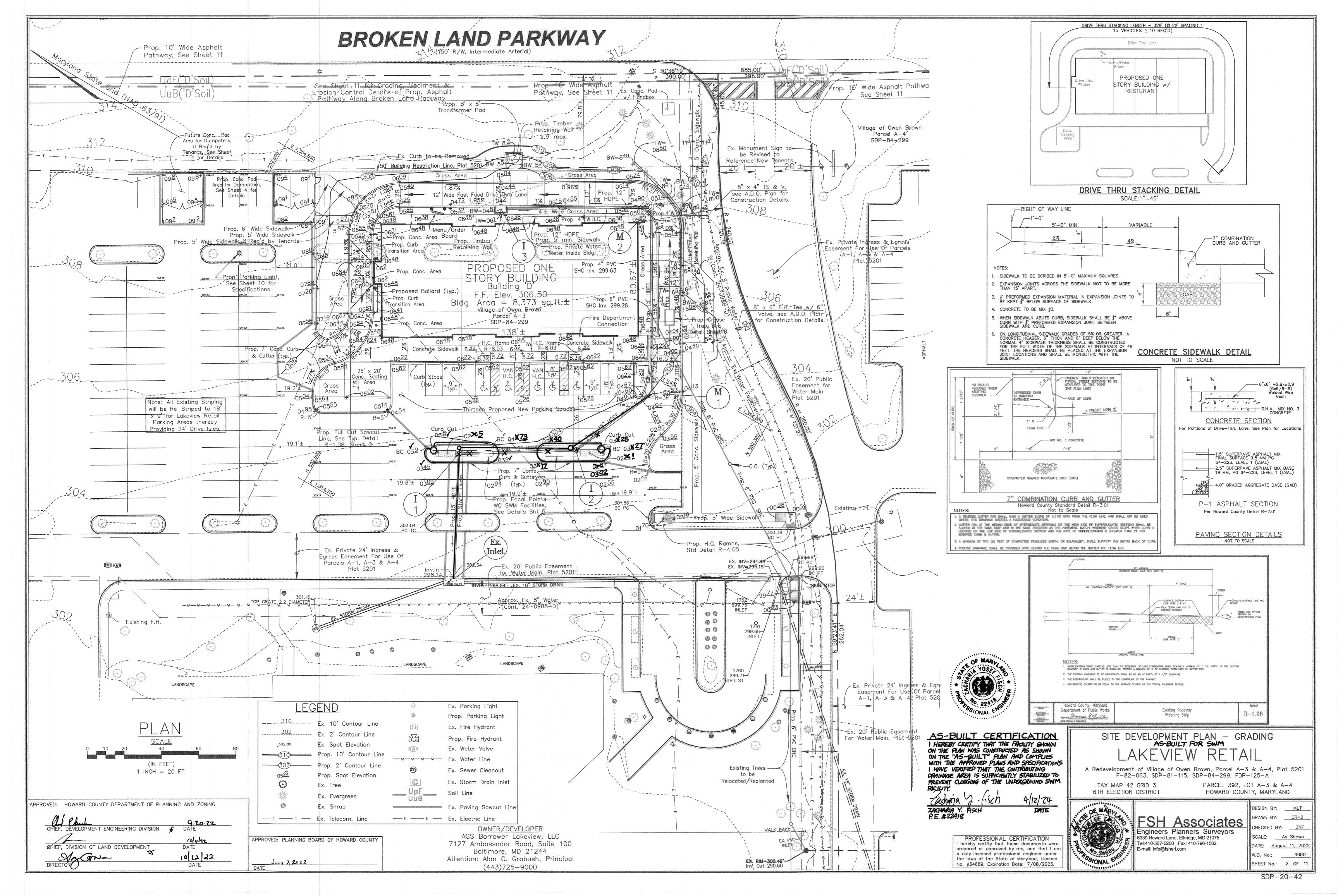
PARCEL 392, LOT A-3 & A-4 HOWARD COUNTY, MARYLAND

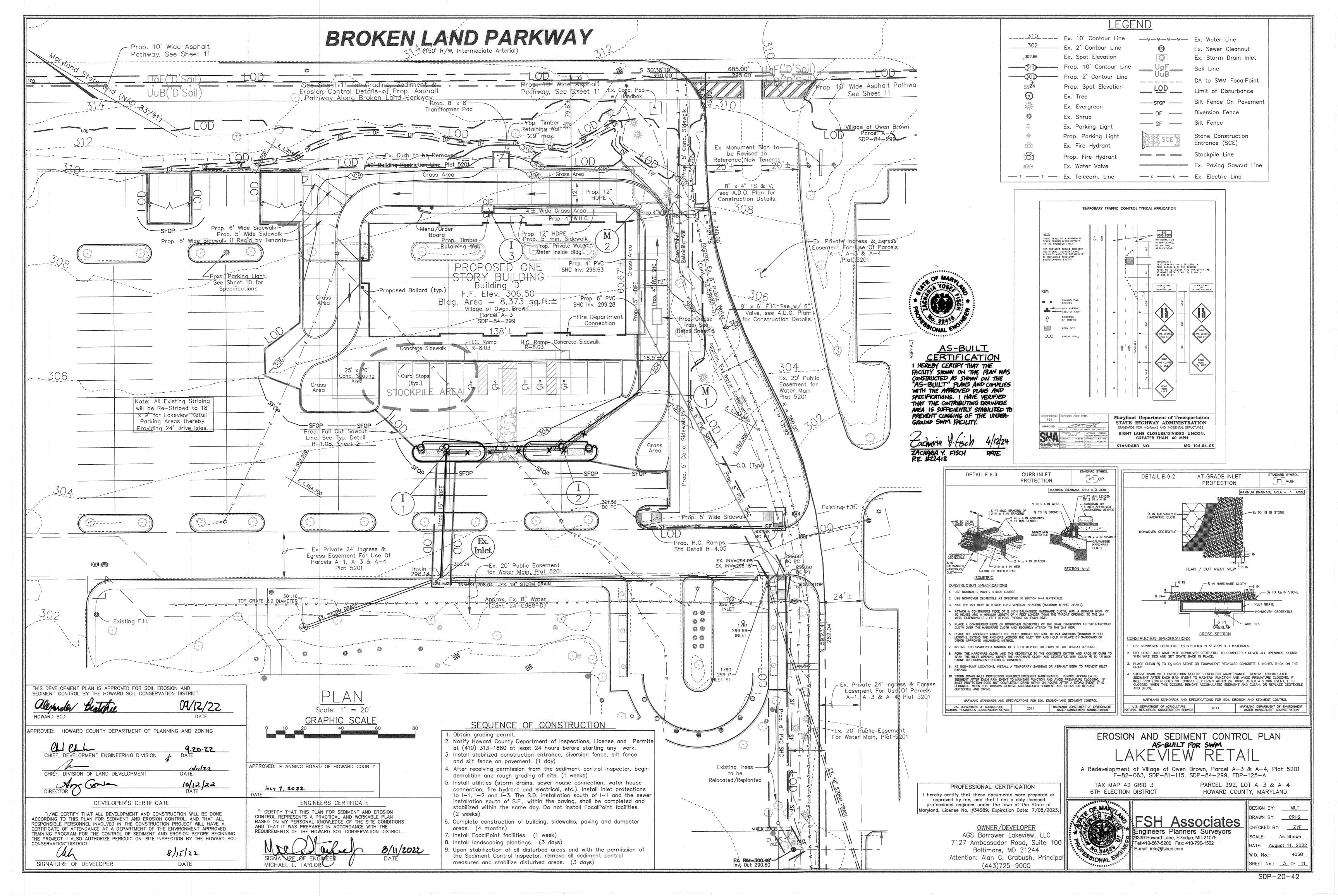


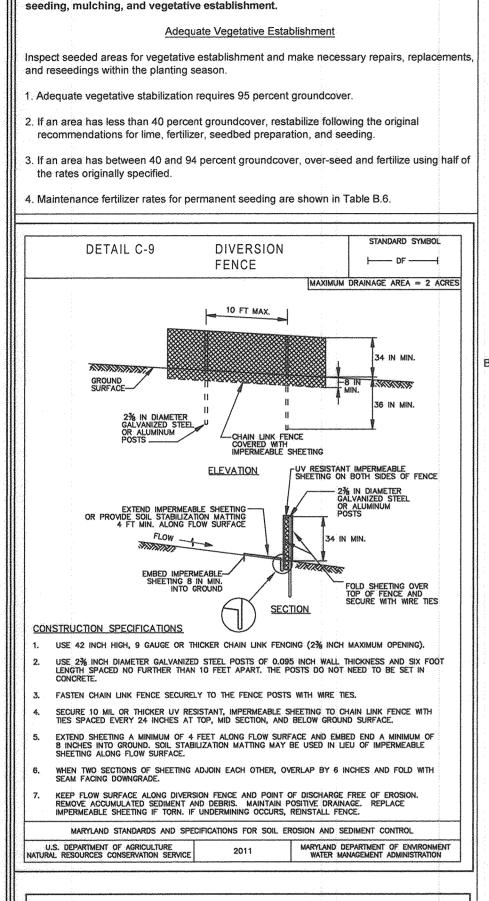
FSH Associates Engineers Planners Surveyors 6339 Howard Lane, Elkridge, MD 21075 Tel:410-567-5200 Fax: 410-796-1562 E-mail: info@fsheri.com

DRAWN BY: CRH2 CHECKED BY: ZYF SCALE: As Shown DATE: <u>August 11, 2022</u> W.O. No.: SHEET No.: 1 OF 1

DESIGN BY: MLT







B-4 STANDARDS AND SPECIFICATIONS

VEGETATIVE STABILIZATION

Purpose

Conditions Where Practice Applies

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed

soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to

allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on

groundwater recharge. Over time, vegetation will increase organic matter content and improve

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals

Sediment control practices must remain in place during grading, seedbed preparation

carried by runoff to receiving waters. Plants will also help protect groundwater

volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and

the water holding capacity of the soil and subsequent plant growth.

supplies by assimilating those substances present within the root zone.

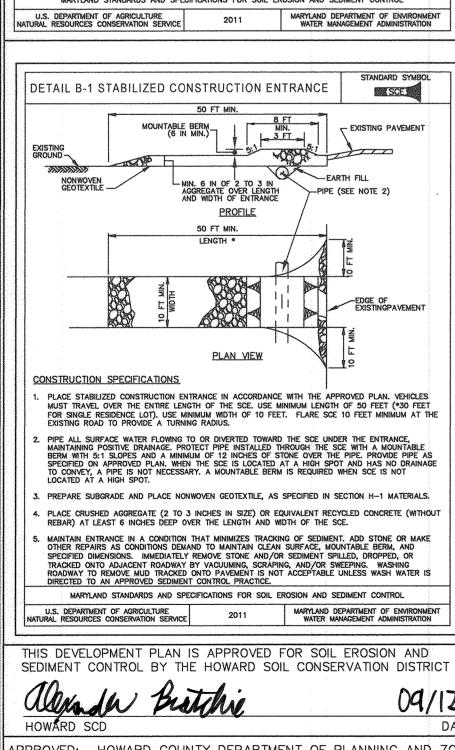
On all disturbed areas not stabilized by other methods. This specification is divided into

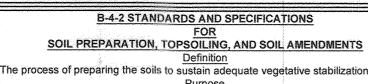
seeding and mulching; temporary stabilization; and permanent stabilization.

sections on incremental stabilization; soil preparation, soil amendments and topsoiling;

Using vegetation as cover to protect exposed soil from erosion.

To promote the establishment of vegetation on exposed soil.





To provide a suitable soil medium for vegetative growth. Conditions Where Practice Applies Where vegetative stabilization is to be established

Soil Preparation 1. Temporary Stabilization

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. Afte the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges

running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans. c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or

. Permanent Stabilization a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:

ii. Soluble salts less than 500 parts per million (ppm)

i. Soil pH between 6.0 and 7.0.

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.

iv. Soil contains 1.5 percent minimum organic matter by weight.

v. Soil contains sufficient pore space to permit adequate root penetration b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.

c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to e salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.

Topsoiling is limited to areas having 2:1 or flatter slopes where a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

 c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible

4. Areas having slopes steeper than 2:1 require special consideration and

5. Topsoil Specifications: Soil to be used as topsoil must meet the following

a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2 inches in diameter.

b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.

c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil

Topsoil Application a. Erosion and sediment control practices must be maintained when applying

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets

c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for ertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the 3. Lime materials must be ground limestone (hydrated or burnt lime may be

substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.

MICHAEL I TAYLOR

5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

SEEDING AND MULCHING The application of seed and mulch to establish vegetative cover

To protect disturbed soils from erosion during and at the end of construction. Conditions Where Practice Applies To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

1. Specifications a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate

b. Mulch alone may be applied between the fall and spring seeding dates

only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws. c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding

Note: It is very important to keep inoculant as cool as possible until used

Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria

and make the inoculant less effective. d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

> i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. i. Cultipacking seeders are required to bury the seed in such a

fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.

ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

iii. Mix seed and fertilizer on site and seed immediately and without interruption.

When hydroseeding do not incorporate seed into the soi

1. Mulch Materials (in order of preference)

a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.

b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state. i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

ii. WCFM, including dye, must contain no germination or growth inhibiting factors

iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.

v. WCFM must conform to the following physical requirements fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent

a. Apply mulch to all seeded areas immediately after seeding.

 When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.

c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.

ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS

PERMANENT STABILIZATION

o stabilize disturbed soils with permanent vegetation To use long-lived perennial grasses and legumes to establish permanent ground cover or

disturbed soils. Conditions Where Practice Applies Exposed soils where ground cover is needed for 6 months or more. Criteria A. Seed Mixtures

1. General Use a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and

seeding dates in the Permanent Seeding Summary. The Summary is to be placed

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

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

d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

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

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive

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

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

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

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 11/2 to 3 pounds per 1000 square feet.

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

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

c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 11/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter). General Specifications

a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspecto

b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable c. Standard size sections of sod must be strong enough to support their own weight

upper 10 percent of the section d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival

and retain their size and shape when suspended vertically with a firm grasp on the

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod. b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it

and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying c. Wherever possible, lay sod with the long edges parallel to the contour and with

staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the

operations of laying, tamping and irrigating for any piece of sod within eight hours. 3 Sod Maintenance a. In the absence of adequate rainfall, water daily during the first week or as often

and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting. b. After the first week, sod watering is required as necessary to maintain adequate

at least 3 inches unless otherwise specified.

c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf mus be removed by the initial cutting or subsequent cuttings. Maintain a grass height of

All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto (see Standard Sediment Control Note #2)

STANDARD SEDIMENT CONTROL NOTES

A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after

b. Upon completion of the installation of perimeter erosion and

Other building or grading inspection approvals may not be authorized until

this initial approval by the inspection agency is made. Other related state

and federal permits shall be referenced, to ensure coordination and to avoid

All vegetative and structural practices are to be installed according to the

Following initial soil disturbance or re-disturbance, permanent or temporary

stabilization is required within three (3) calendar days as to the surface of

slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar

days as to all other disturbed areas on the project site except for those

all perimeter controls, dikes, swales, ditches, perimeter slopes, and all

All disturbed areas must be stabilized within the time period specified

SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil

(Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with

(Sec.B-4-8) in excess of 20 ft, must be benched with stable outlet. All

concentrated flow, steep slope, and highly erodible areas shall receive soil

All sediment control structures are to remain in place, and are to be

Any sediment control practice which is disturbed by grading activity for

placement of utilities must be repaired on the same day of disturbance

Additional sediment control must be provided, if deemed necessary by the

and the next day after each rain event. A written report by the contractor,

made available upon request, is part of every inspection and should include:

· Inspection type (routine, pre-storm event, during rain event)

· Weather information (current conditions as well as time and

· Brief description of project's status (e.g., percent complete)

Identification of sediment controls that require maintenance

Compliance status regarding the sequence of construction and

· Other inspection items as required by the General Permit for

Stormwater Associated with Construction Activities (NPDES,

· Identification of missing or improperly installed sediment

Maintenance and/or corrective action performed

Trenches for the construction of utilities is limited to three pipe lengths

Any major changes or revisions to the plan or sequence of construction

must be reviewed and approved by the HSCD prior to proceeding with

construction. Minor revisions may allowed by the CID per the list of

grading unit when at least 50 percent of the disturbed area in the

or that which can and shall be back-filled and stabilized by the end of each

Disturbance shall not occur outside the L.O.D. A project is to be sequenced

so that grading activities begin on one grading unit (maximum acreage of

preceding grading unit has been stabilized and approved by the CID. Unless

20 ac. per grading unit) at a time. Work may proceed to a subsequent

otherwise specified and approved by the HSCD, no more than 30 acres

2. Wash water from any equipment, vehicles, wheels, pavement, and other

sources must be treated in a sediment basin or other approved washout

Topsoil shall be stockpiled and preserved on-site for redistribution onto

4. All Silt Fence and Super Silt Fence shall be placed on—the—contour, and

be imbricated at 25 minimum intervals, with lower ends curled uphill by 2

associated permits shall be on-site and available when the site is active.

* Earthwork quantities are solely for the purpose of calculating fees. Contractor to

** To be determined by contractor, with pre-approval of the Sediment Control

15. Stream channels must not be disturbed during the following restricted

· Use I and IP March 1 - June 15

verify all quantities prior to the start of construction

Inspector with an approved and active grading permit.

A copy of this plan, the 2011 MARYLAND STANDARDS AND

SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and

CID. The site and all controls shall be inspected by the contractor weekly;

maintained in operative condition until permission for their removal has been

1.26 (LOD) Acres±

1.26 (LOD) Acres±

0.83 Acres±
0.43 Acres±

1,300* Cu.Yds.± 1,300* Cu.Yds.±

___ Acres±

mulch alone can only be applied between the fall and spring seeding dates

if the ground is frozen, incremental stabilization (Sec. B-4-1) specifications

(Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding

above in accordance with the 2011 MARYLAND STANDARDS AND

shall be enforced in areas with >15' of cut and/or fill. Stockpiles

provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND

sediment controls, but before proceeding with any other earth

c. Prior to the start of another phase of construction or opening of

d. Prior to the removal or modification of sediment control practices

the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages

a. Prior to the start of earth disturbance,

disturbance or grading,

SEDIMENT CONTROL, and revisions thereto.

another grading unit,

conflicts with this plan.

areas under active grading.

stabilization matting (Sec. B-4-6).

Total Area of Site:

Inspection date

Area to be roofed or paved:

Area to Vegetively Stabilized:

Offsite waste/borrow area location:

Name and title of inspector

Evidence of sediment discharges

· Identification of plan deficiencie

and/or current activities

stabilization requirements

Photographs

workday, whichever is shorter.

HSCD-approved field changes.

time periods (inclusive):

8-4-4 STANDARDS AND SPECIFICATION

TEMPORARY STABILIZATION

Conditions Where Practice Applies

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section

Temporary Seeding Summary

Monitoring/sampling

cumulatively may be disturbed at a given time.

amount of last recorded precipitation

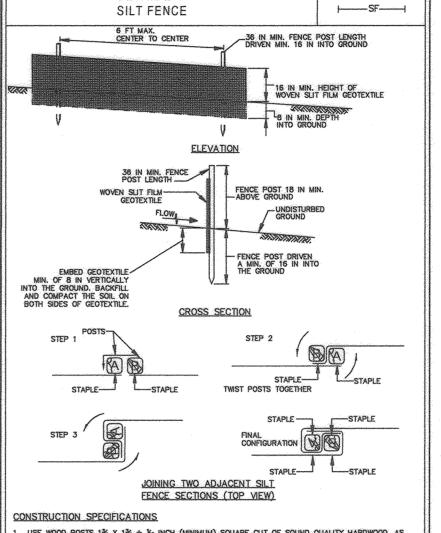
Area Disturbed:

Total Cut:

Total Fill:

obtained from the CID.

-1/2" PREFORMED EXPANSION , GRASS detectable Warning ---Surface Truncated Done's as applicable A RAMP PERPENDICULAR TO CURB MORNAL CURB HEIGHT -LANDING AREA boss Table -1/2" PREFORMED EXPANSION JOINT COMBINATION CURB AND GUTTER (DEPRESSED WITH NO LP) ∧ SECTION A-A ARRIVER STORY AND ARRIVER STO STANDARD SYMBOL



DETAIL E-

USE WOOD POSTS 1% X 1% ± % INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "I" OR "U" SECTION STEEL POSTS WEIGHING NOT USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H $^-1$ MATERIALS.

EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.

WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL 2011

AS-BUILT CERTIFICATION THERE IS NO "AS-BUILT" INFORMATION provided for SWM on THIS SHEET SE MAA Y. FISCH.

MARYLAND DEPARTMENT OF ENVIRONME
WATER MANAGEMENT ADMINISTRATION XIXIXIX Permanent Seeding Summary

DETAIL STANDARD MARYLAND HANDI RESERVED PARKING SIGN STANDARD DETAIL R7-8(3) (MIN INSIDE ENCLOSURE WIDTH) 3' CUEARANCE STANDARD CUMPSTER SIZE STANDARD DUMPSTER (INCLUDING SLEEVE'S) (INCLUDING SLEEVES) ---- U-CHANNE SLOPE CONCRETE
AWAY FROM POST FINISHED GRAD 10000000 SERVICE PAD (SEE OETAIL R-8.03) 6" COMPACTED SUBSOIL HANDICAP PARKING SIGN NOT TO SCALE 2. IF ENCLOSURE GATES ARE INSTALLED. MINIMAIN OPENIN OF 21'-6" MUST BE PROVIDED WHEN GATES ARE OPENED. ONLY 2 GATE SYSTEMS WITH NO CENTER POST ARE ALLOWED.

DETAIL E-2

JOINING ADJACENT SECTIONS

CONSTRUCTION SPECIFICATIONS

USE NOMINAL 2 INCH X 4 INCH LUMBER.

SILT FENCE ON

PAVEMENT

USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE

INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION $H\!-\!1$ MATERIALS.

PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.

KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.

PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

Taper Curb 5'-0" Taper Curb

WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.

SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.

Concrete Ramp

-6X6/6-6 Welded Wire Mesh

No. 6 Rebar

3. A MINIMUM OF 15' CLEAR SPACE SHALL BE PROVIDED FROM SOLID WASTE DOUBLE CONTAINER ENCLOSURE Not to Scale PROFESSIONAL CERTIFICATION 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. #34689, Expiration Date: 7/08/2023.

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

A Redevelopment of Village of Owen Brown, Parcel A-3 & A-4, Plat 5201 F-82-063, SDP-81-115, SDP-84-299, FDP-125-A TAX MAP 42 GRID 3 PARCEL 392, LOT A-3 & A-4



6TH ELECTION DISTRICT

Engineers Planners Surveyors 6339 Howard Lane, Elkridge, MD 21075 Tel:410-567-5200 Fax: 410-796-1562 E-mail: info@fsheri.com

DRAWN BY: CRH2 CHECKED BY: ZYF SCALE: As Shown DATE: <u>August 11, 2022</u> 4060 W.O. No.: SHEET No.: 4 OF 11

DESIGN BY: MLT

HOWARD COUNTY, MARYLAND

STANDARD SYMBOL

----SF0P------

GEOTEXTILE

-MASTIC SEAL

(Typical)

ectable Warning Surfac

No Lip @ Flow Line

Note: 2% Max. Rollove

SECTION A-A

AGS Borrower Lakeview, LLC 7127 Ambassador Road, Suite 100 Baltimore, MD 21244 Attention: Alan C. Grabush, Principal (443)725 - 9000

Hardiness Zone (From Figure B.3) Fertilizer Rat Lime Rate Seed Mixture(From Table B.3) 3 & 8 (10-20-20)Application | Seeding Dates * P205 Rate (lb/ac) Depths 5/1-5/31 2/15-4/30 ♦♦ Sheep 20 Fescue 5/1-5/31 2/15-4/30 ♦♦ $\frac{1}{4} - \frac{1}{2}$ in. (1.0 lb/) (2 lb/) (2 lb/ Redtop 5/1-5/31 1000sf) 1000sf) 1000sf) 2/15-4/30 ♦♦ Korean 10 Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices 5/1-5/31 Lespedezal 100 Fescue For mix no. 3: For the period 6/1 to 8/14 add either 2.5 lbs/ac. Foxtail Millet or 2.5 Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3)

and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this | Ibs./ac. Pearl Millet and for the period 8/15 thru 11/30 add 24 lbs./ac. Oats to the For mix no. 8: For the period 5/1 to 8/14 add either 5.0 lbs/ac. Foxtail Millet or 5.0 lbs./ac. Pearl Millet and for the period 10/16 thru 11/30 add 24 lbs./ac. Oats to the permanent seed

> ♦♦ Warm-season grasses need a soil temperature of at least 50 degrees F in order to germinate. If soil temperatures are colder than 50 degrees, or moisture is not adequate, the seeds will remain dormant until conditions are favorable. In general, planting during the latter portion of this period allows more time for weed emergence and weed control prior to planting. When selecting a planting date, consider the need for weed control vs. the likelihood of having sufficient moisture for later plantings, especially on droughty sites.

> > OWNER/DEVELOPER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 1.20.22 EVELOPMENT ENGINEERING DIVISION 10/11/22 Y GOV 16/12/22 APPROVED: PLANNING BOARD OF HOWARD COUNTY JULY 7, 2022

ENGINEERS CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON SQIL CONSERVATION DISTRICT.

THE HOWARD SOIL CONSERVATION DISTRICT. 8/15/22 SIGNATURE OF DEVELOPER

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALI MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD 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 INSPECTION BY

Seeding Dates Seeding Fertilizer Rate Rate (lb/ac (10-20-20)Rate Annual Ryegrass 40 2/15-4/30 436 lb/ac Lolium perenne 2 tons/ac 8/15-11/30 [10.0 lb/1000sf) | (90 lb/1000sf Foxtail Millet 5/1-8/14 Setaria italica

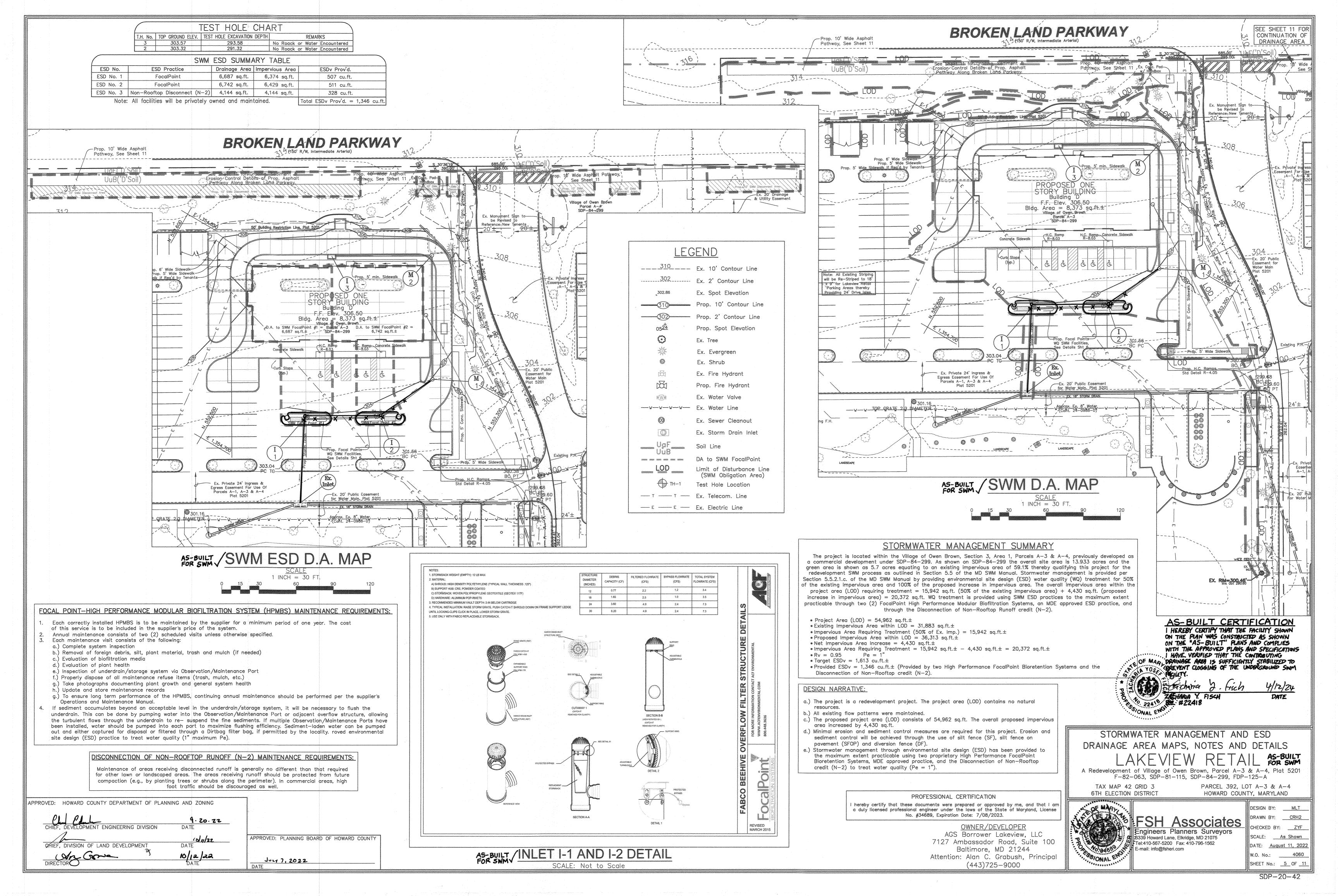
Hardiness Zone (From Figure B.3) _______7A

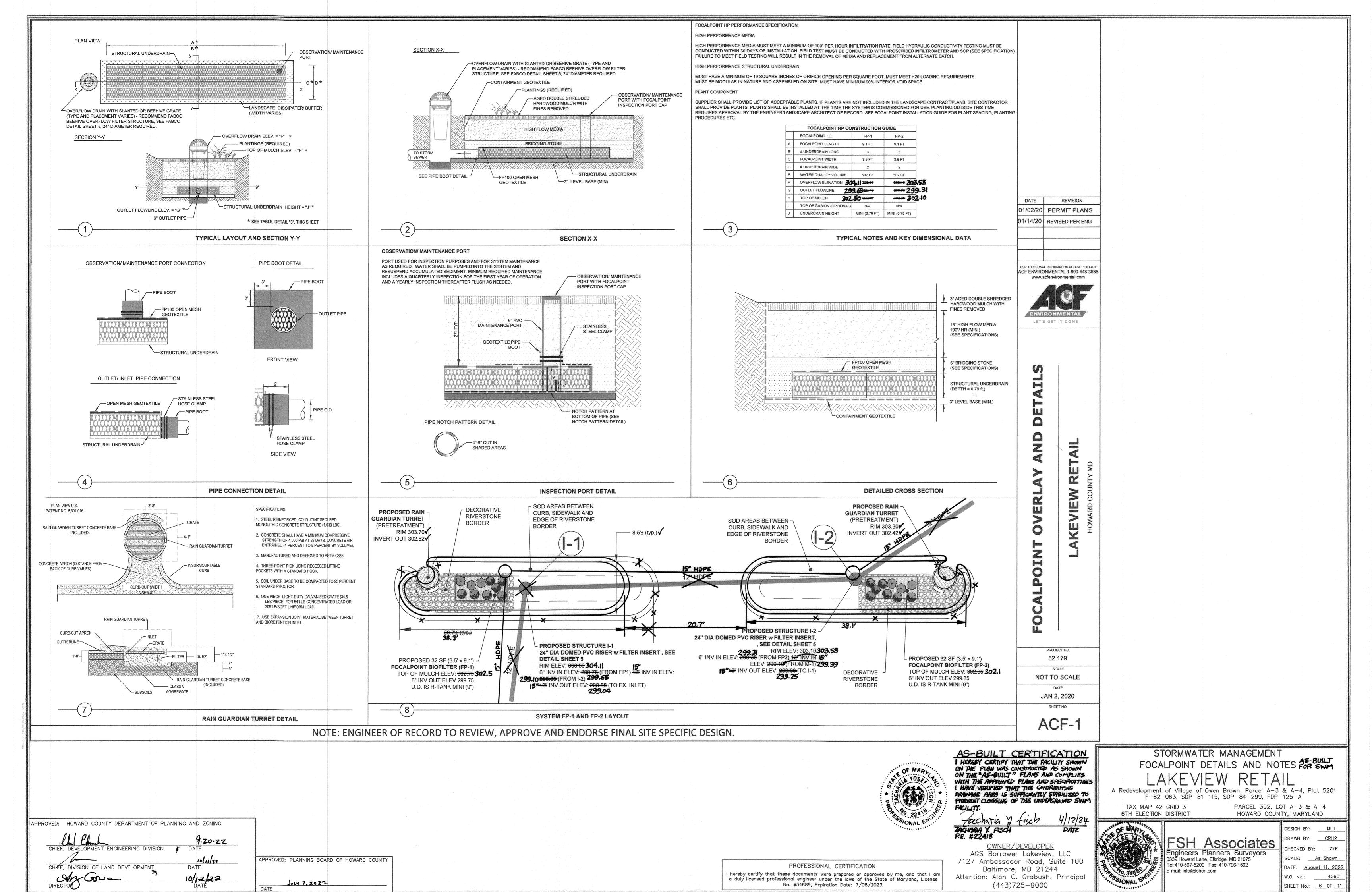
o stabilize disturbed soils with vegetation for up to 6 months

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

B-4-3.A.1.b and maintain until the next seeding seaso

SDP-20-42





SDP-20-42

THE FOLLOWING GENERAL SPECIFICATIONS DESCRIBE THE COMPONENTS AND INSTALLATION REQUIREMENTS FOR A VOLUME BASED HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS) THAT UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF A SOIL, PLANT AND MICROBE COMPLEX TO REMOVE POLLUTANTS TYPICALLY FOUND IN URBAN STORM WATER RUNDFF. THE MODULAR TREATMENT SYSTEM IN WHICH THE BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA IS USED SHALL BE A COMPLETE, INTEGRATED SYSTEM DESIGNED TO BE PLACED IN SQUARE FOOT OR LINEAR FOOT INCREMENTS PER THE APPROVED DRAWINGS TO TREAT CONTAMINATED RUNDER FROM IMPERVIOUS SURFACES. THE HIGH PERFORMANCE MODULAR BIDFILTRATION SYSTEM (HPMBS) IS COMPRISED OF THE FOLLOWING COMPONENTS:

A. PLANT COMPONENT

1. MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS. 2.PLANTS, AS SPECIFIED IN THE APPROVED DRAWINGS/MANUFACTURER'S PLANT LIST, SHALL BE INSTALLED AT THE TIME THE HPMBS IS COMMISSIONED FOR USE.

3.PLANTS AND PLANTING ARE TYPICALLY INCLUDED IN LANDSCAPE CONTRACT.

1. THIS COMPONENT EMPLOYS A HIGH PERFORMANCE CROSS-SECTION IN WHICH EACH ELEMENT IS HIGHLY DEPENDENT ON THE OTHERS TO MEET THE PERFORMANCE SPECIFICATION FOR THE COMPLETE SYSTEM. IT IS IMPORTANT THAT THIS ENTIRE CROSS-SECTION BE PROVIDED AS

2.AS INDICATED IN THE APPROVED DRAWINGS, THE ELEMENTS OF THE BIOFILTER INCLUDE:

- A. A MULCH PROTECTIVE LAYER (IF SPECIFIED).
- B. AN ADVANCED HIGH INFILTRATION RATE BIOFILTRATION PLANTING MEDIA BED WHICH UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF THE SOIL, PLANT, AND MICROBE COMPLEX, TO REMOVE POLLUTANTS FOUND IN STORM WATER RUNOFF.
- C. A SEPARATION LAYER WHICH UTILIZES THE CONCEPT OF 'BRIDGING' TO SEPARATE THE BIOFILTRATION MEDIA FROM THE UNDERDRAIN WITHOUT THE USE OF GEOTEXTILE FABRICS.
- D. A WIDE APERTURE MESH LAYER UTILIZED TO PREVENT BRIDGING STONE FROM ENTERING THE UNDERDRAIN/STORAGE ELEMENT
- E. A MIDULAR, HIGH INFILTRATION RATE 'FLAT PIPE' STYLE UNDERDRAIN/STORAGE SYSTEM WHICH IS DESIGNED TO DIRECTLY INFILTRATE OR EXFILTRATE WATER THROUGH ITS SURFACE. THE MODULAR UNDERDRAIN MUST PROVIDE A MINIMUM OF 95% VOID SPACE.

1. AN ENERGY DISSIPATION COMPONENT IS TYPICALLY SPECIFIED TO SLOW AND SPREAD OUT WATER AS IT ENTERS THE SYSTEM. THIS COMPONENT IS DEPENDENT UPON THE DESIGN IN THE APPROVED DRAWINGS, BUT TYPICALLY CONSISTS OF A ROCK GABION, ROCK FILTER DAM OR DENSE VEGETATION ELEMENT, SUCH AS NATIVE GRASSES, EITHER SURROUNDING THE BIOFILTRATION COMPONENT OR LOCATED IMMEDIATELY

PRETREATMENT COMPONEN

1. PRETREATMENT, WHEN SPECIFIED, IS TYPICALLY ACCOMPLISHED BY LOCATING THE BIOFILTRATION COMPONENT WITHIN A TRADITIONAL VEGETATED BMP SUCH AS A VEGETATED SWALE, VEGETATED DEPRESSION, TRADITIONAL BIORETENTION SYSTEM, VEGETATED FILTER STRIP SEDIMENT FOREBAY, ETC. THESE BMPS PROVIDE PRIMARY TSS REMOVAL WHEN DESIRABLE.

1. AN OBSERVATION AND MAINTENANCE PORT SHALL BE INSTALLED PER THE APPROVED DRAWINGS TO PROVIDE FOR EASY INSPECTION OF THE UNDERDRAIN/STORAGE ELEMENT, AND CLEANOUT ACCESS IF NEEDED. EXTREME EVENT OVERFLOW (BY OTHERS)

1. AN EXTREME EVENT OVERFLOW SHOULD BE LOCATED EXTERNAL TO, BUT NEAR THE BIOFILTRATION ELEMENT TO PROVIDE BYPASS WHEN NEEDED. THIS MAY BE AN OVERLAND FLOW BYPASS STRUCTURE, BEEHIVE OVERFLOW GRATE STRUCTURE, OR EQUIVALENT THAT SERVES THE PURPOSE. IF BEEHIVE OVERFLOW STRUCTURES IS UTILIZED IT SHOULD INCLUDE A REMOVABLE FILTER INSERT TO PROVIDE A MINIMUM OF 50% TSS REMOVAL AND CONTROL OF GROSS POLLUTANTS, TRASH AND FLOATABLES.

THE QUALITY AND COMPOSITION OF ALL SYSTEM COMPONENTS AND ALL OTHER APPURTENANCES AND THEIR ASSEMBLY PROCESS SHALL BE SUBJECT TO INSPECTION UPON DELIVERY OF THE SYSTEM TO THE WORK SITE. INSTALLATION IS TO BE PERFORMED ONLY BY SKILLED WORK PEOPLE WITH SATISFACTORY RECORD OF PERFORMANCE ON EARTHWORKS, PIPE,

CHAMBER, DR POND/LANDFILL CONSTRUCTION PROJECTS OF COMPARABLE SIZE AND QUALITY.

1, PLANTS MUST BE COMPATIBLE WITH THE HPMBS MEDIA AND THE ASSOCIATED HIGHLY VARIABLE HYDROLOGIC REGIME. PLANTS ARE TYPICALLY FACULTATIVE WITH FIBROUS ROOTS SYSTEMS SUCH A NATIVE GRASSES AND SHRUBS. 2.MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS.

3.ALL PLANT MATERIAL SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS AND SHALL BE ALIVE AND FREE OF OBVIOUS SIGNS OF DISEASE. B. MULCH

1. MULCH, TYPICALLY DOUBLE SHREDDED HARDWOOD (NON-FLOATABLE), SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS, AND SHALL BE SCREENED TO MINIMIZE FINES.

1. BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA SHALL BE VISUALLY INSPECTED TO ENSURE APPROPRIATE VOLUME, TEXTURE AND CONSISTENCY WITH THE APPROVED DRAWINGS, AND MUST BEAR A BATCH NUMBER MARKING FROM THE MANUFACTURER WHICH CERTIFIES PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION RATE (100 IN/HR). A THIRD PARTY LABORATORY TEST MUST BE PROVIDED TO CERTIFY THE 100 IN/HR RATE.

2. WITHIN 90 DAYS AFTER PROJECT COMPLETION, THE INFILTRATION RATE SHALL BE CONFIRMED AT THE MANUFACTURER'S EXPENSE, BY WETTED CONDITION HYDRAULIC CONDUCTIVITY TEST. O.FAILURE TO PASS THIS TEST WILL RESULT IN REMOVAL AND REPLACEMENT OF ALL MEDIA IN THE SYSTEM AT NO COST TO THE PROJECT OWNER/OPERATOR.

6, TEST MUST UTILIZE THE EQUIPMENT AND FOLLOW THE STANDARD OPERATING PROCEDURES FOUND IN THE HARRIS COUNTY TEXAS MANUAL ENTITLED, LOW IMPACT DEVELOPMENT & GREEN INFRASTRUCTURE DESIGN CRITERIA FOR STORM WATER MANAGEMENT (2011). C.REPLACEMENT MEDIA, IF REQUIRED, MUST BE TAKEN FROM A DIFFERENT BATCH THAN THE DRIGINAL,

3.MANUFACTURER SHALL PROVIDE, AT NO ADDITIONAL COST TO THE PROJECT OWNER/OPERATOR, MAINTENANCE OF THE BIOFILTRATION SYSTEM FOR A PERIOD OF ONE YEAR. 4.POLLUTANT REMOVAL PERFORMANCE, COMPOSITION AND CHARACTERISTICS OF THE BIOFILTRATION MEDIA MUST MEET OR EXCEED THE FOLLOWING MINIMUM STANDARDS AS DEMONSTRATED BY TESTING ACCEPTABLE TO THE PROJECT ENGINEER:

Pollutant	Removal Efficiency				
TSS	91%				
Phosphorus	66%				
Nitrogen	48%				
Composition a	nd Characteristics				
Sand - Fine	<5%				
Sand – Medium	10% - 15%				
Sand – Coarse	15% - 25%				
Sand – Very Coarse	40% - 45% 10% - 20%				
Gravel					
Infiltration Rate	>100 inches per hour				
Peat Moss*	5% - 15%				
* Peat Moss	Specification				
Listed by Organic Ma	terials Review Institute				
100% natural peat (no composted, sluc	ige, yard or leaf waste) Total Carbon >85%				
Carbon to Nitrogen Ratio 15:1 t	to 23:1 Lignin Content 49% to 52%				
Humic	Acid >18%				
pH 6.	0 to 7.0				
Moisture Con	tent 30% to 50%				
95% to 100% pa	ssing 2.0mm sieve				

>80% passing 1.0mm sieve

UNDERDRAIN/STORAGE SYSTEM

1. UNDERDRAIN/STORAGE COMPONENTS SHALL BE MANUFACTURED IN AN ISO CERTIFIED FACILITY AND BE MANUFACTURED FROM AT LEAST 90% POST CONSUMER RECYCLED MATERIALS. 2.UNDERDRAIN/STORAGE COMPONENTS SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:

	a a series de la companya de la comp
Property	Value
Surface Void Area	≥85%
Unit Weight	3.25 lbs/cf
Service Temperature	-14° to 167°
Unconfined Crush Strength	32,48 psi
180 Day Creep Test	
Load Applied – Initial and Sustained	11.16 psi
* Creep Sustained – After 180 Days	0.20 inches
* Creep Sustained – After 180 Days	1.13%
* Projected Creep – 40 years	1.72%

1. SEPARATION MESH SHALL BE COMPOSED OF HIGH-TENACITY MONOFILAMENT POLYPROPYLENE YARNS THAT ARE WOVEN TOGETHER TO PRODUCE AN OPEN MESH GEOTEXTILE WHICH SHALL BE INERT TO BIOLOGICAL DEGRADATION AND RESISTANT TO NATURALLY ENCOUNTERED CHEMICALS, ALKALIS AND ACIDS. THE MESH SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:

Properties	Test Method	Unit	Min Avg Roll Value		
			MD	CD	
Tensile Strength	ASTM D4595	kN/m (lbs/ft)	21 (1440)	25.3 (1733)	
Creep Reduced Strength	ASTM D5262	kN/m (lbs/ft)	6.9 (471)	8.3 (566)	
Long Term Allowable Design Load	GRI GG-4	kN/m (lbs/ft)	5.9 (407)	7.2 (490)	
UV Resistance (at 500 hours)	-	% strength retained	90		
Aperture Size (machine direction)		mm (in)	2 (0.08)		
Aperture Size (cross machine direction)	-	mm (in)	2 (0.08)		
Mass/Unit Area	ASTM D5261	g/m2 (oz/vd2)	197 (5.8)		

BRIDGING STONE SHALL BE 3/8 PEA GRAVEL, OR OTHER DIAMETER SIZED TO PREVENT MIGRATION OF FILTER MEDIA, AS SPECIFIED BY A. PERFORM CLEANING DURING THE INSTALLATION AND UPON COMPLETION OF THE WORK.

2.STONE MUST BE WASHED AND FREE FROM SEDIMENT, SOIL AND CONTAMINANTS.

A. PROTECT ALL MATERIALS FROM DAMAGE DURING DELIVERY AND STORE UV SENSITIVE MATERIALS UNDER TARP TO PROTECT FROM SUNLIGHT INCLUDING ALL PLASTICS, WHEN TIME FROM DELIVERY TO INSTALLATION EXCEEDS ONE WEEK. STORAGE SHOULD OCCUR ON SMOOTH SURFACES, FREE FROM DIRT, MUD AND DEBRIS. B. BIOFILTRATION MEDIA SHALL BE SEGREGATED FROM ANY OTHER AGGREGATE MATERIALS AND SHALL BE PROTECTED AGAINST CONTAMINATION, INCLUDING CONTAMINATION FROM ANY STORMWATER RUNDFF FROM AREAS OF THE SITE WHICH ARE NOT STABILIZED.

PRODUCT DATA

1. SUBMIT MANUFACTURER'S PRODUCT DATA AND APPROVED INSTALLATION MANUAL AS WELL AS MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL FOR THE SYSTEM. IT WILL BE THE RESPONSIBILITY OF THE SYSTEM OWNER/OPERATOR OR THEIR CONTRACTOR TO ENSURE THE SYSTEM IS OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL.

1. MANUFACTURER SHALL SUBMIT A LETTER OF CERTIFICATION THAT THE COMPLETE SYSTEM MEETS OR EXCEEDS ALL TECHNICAL AND PACKAGING REQUIREMENTS. BIOFILTRATION MEDIA PACKAGING MUST BEAR A BATCH NUMBER MARKING FROM THE MANUFACTURER WHICH MATCHES A LETTER FROM THE MANUFACTURER CERTIFYING PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION

1. MANUFACTURER SHALL PROVIDE DIMENSIONAL DRAWINGS INCLUDING DETAILS FOR CONSTRUCTION, MATERIALS, SPECIFICATIONS AND PIPE CONNECTIONS. MANUFACTURER'S WARRANT

1. MANUFACTURER SHALL PROVIDE A WARRANTY FOR ALL COMPONENTS OF THE HPMBS FOR A PERIOD OF ONE YEAR PROVIDED THE UNIT IS INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL IMPROPER OPERATION, MAINTENANCE OR ACCIDENTAL OR ILLEGAL ACTIVITIES (I.E. DUMPING OF POLLUTANTS, VANDALISM, ETC.) WILL VOID THE WARRANTY. BIOFILTRATION MEDIA SHALL BE WARRANTED TO PASS THE POST-INSTALLATION INFILTRATION TEST DESCRIBED IN THIS DOCUMENT.

1. THE HPMBS MUST BE SIZED USING THE MDE SIZING CRITERIA AND DEMONSTRATE THAT DEPENDING ON WHETHER NEW DEVELOPMENT, REDEVELOPMENT OR RETROFIT THAT ALL APPLICABLE WATER QUALITY (VQ), CHANNEL PROTECTION (CPV) AND RECHARGE (REV) REQUIREMENTS HAVE BEEN MET. IF LOCAL REGULATIONS HAVE THE SYSTEM APPROVED BASED ON AN ALTERNATIVE SIZING CRITERIA THE LARGER OF THE TWO COMPUTED SIZES WILL GOVERN.

1. ANY PROPOSED EQUAL ALTERNATIVE PRODUCT SUBSTITUTION TO THIS SPECIFICATION MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING. REVIEW PACKAGE SHOULD INCLUDE THIRD PARTY REVIEWED PERFORMANCE DATA FOR BOTH FLOW RATE AND POLLUTANT REMOVAL OF BIOFILTRATION MEDIA. POLLUTANT REMOVAL DATA MUST FOLLOW SPECIFIED PROTOCOLS. ALL COMPONENTS MUST POLLUTANT REMOVAL OF BIOFILTRATION MEDIA, PULLUIANI REPOVAL DESCRIPTION MEET OR EXCEED QUALITY ASSURANCE AND PERFORMANCE CRITERIA INDICATED HEREIN.

SUBSTITUTIONS

REVIEW MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND COORDINATE INSTALLATION WITH OTHER WORK AFFECTED, SUCH AS GRADING, EXCAVATION, UTILITIES, CONSTRUCTION ACCESS AND EROSION CONTROL TO PREVENT ALL NON- INSTALLATION RELATED CONSTRUCTION TRAFFIC OVER THE COMPLETED HPMBS.

B. COLD WEATHER

1. DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST.

2.DO NOT BUILD ON FROZEN GROUND OR WET, SATURATED OR MUDDY SUBGRADE.

3.CARE MUST BE TAKEN WHEN HANDLING PLASTICS WHEN AIR TEMPERATURE IS AT 40 DEGREES OR BELOW AS PLASTIC BECOMES BRITTLE. C. PROTECT PARTIALLY COMPLETED INSTALLATION AGAINST DAMAGE FROM OTHER CONSTRUCTION TRAFFIC WHEN WORK IS IN PROGRESS AND FOLLOWING COMPLETION OF BACKFILL BY ESTABLISHING A PERIMETER WITH HIGHLY VISIBLE CONSTRUCTION TAPE, FENCING, OR OTHER MEANS UNTIL

D. SOIL STABILIZATION OF THE SURROUNDING SITE MUST BE COMPLETE BEFORE THE BIOFILTRATION SYSTEM CAN BE BROUGHT ONLINE. SOIL STABILIZATION OCCURS WHEN 90% OF THE SITE HAS BEEN PAVED OR VEGETATED, TEMPORARY EROSION CONTROL AND/OR SEDIMENTATION PREVENTION MEASURES SHALL BE IMPLEMENTED TO REDUCE THE POSSIBILITY OF SEDIMENTS BEING TRANSPORTED INTO THE BIOFILTRATION SYSTEM PRIOR TO FULL STABILIZATION OF THE SITE, SIGNIFICANT SEDIMENT LOADS CAN DAMAGE THE HPBMS AND LEAD TO FAILURE IF NOT PREVENTED OR REMEDIATED

VI. PRODUCTS

A. ACCEPTABLE HPBMS

FOCALPOINT HIGH PERFORMANCE BIOFILTRATION SYSTEM . ACCEPTABLE BEEHIVE OVERFLOW GRATE STRUCTURE (OPTIONAL)

BEEHIVE OVERFLOW GRATE STRUCTURE WITH REMOVABLE STORMSACK

ACCEPTABLE MANUFACTURER

MANUFACTURER

WWW.CONVERGENTWATER.COM

AUTHORIZED VALUE ADDED RESELLER

ACF ENVIRONMENTAL (800) 448 3636 WWW.ACFENVIRONMENTAL.COM

VII. PACKAGING

HPMBS IS ASSEMBLED ON SITE. MODULAR UNDERDRAIN/STORAGE UNIT IS SHIPPED FLAT AND MODULES ARE ASSEMBLED PRIOR TO INSTALLATION.

C. BIOFILTRATION MEDIA IS DELIVERED IN ONE TON SUPER SACKS EACH LABELED WITH MANUFACTURER'S BATCH NUMBER AND/OR IN BULK WITH ACCOMPANYING MANUFACTURER'S CERTIFICATION. D. OTHER COMPONENTS ARE DELIVERED IN BULK OR SUPER SACKS

A. EXCAVATION AND BACKFILL

1. BASE OF EXCAVATION SHALL BE SMOOTH, LEVEL AND FREE OF LUMPS OR DEBRIS, AND COMPACTED UNLESS INFILTRATION OF STORM WATER INTO SUBGRADE IS DESIRED. A THIN LAYER (3°) OF COMPACTED BASE MATERIAL IS RECOMMENDED TO ESTABLISH A LEVEL WORKING PLATFORM (MAY NOT BE NEEDED IN SANDY SOILS). IF THE BASE OF THE EXCAVATION IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE. IN MANY CASES, A STABILIZATION GEOTEXTILE AND 6° OF COMPACTABLE MATERIAL THAT DRAINS WELL WILL BE SUFFICIENT TO AMEND THE BEARING CAPACITY OF THE SOIL.

2.MOST APPLICATIONS REQUIRE 8 0Z NON-WOVEN GEOTEXTILE OR EQUIVALENT NONVOVEN GEOTEXTILE WITH A NOMINAL WEIGHT OF 8 0Z PER SQUARE YARD TO LINE THE EXCAVATION TO SEPARATE IN SITU SOILS AND THE HPMBS. (APPLICATIONS REQUIRING WATER TO INFILTRATE THE IN SITU SUB-SOILS SHOULD USE A BRIDGING STONE RATHER THAN GEOTEXTILE TO PROVIDE A SEPARATION LAYER BETWEEN THE HPMBS AND THE IN SITU SOILS). GEOTEXTILE, WHEN UTILIZED, SHOULD BE PLACED ON THE BOTTOM AND UP THE SIDES OF THE EXCAVATION. ABSOLUTELY NO GEOTEXTILES SHOULD BE USED IN THE WATER COLUMN. IF AN IMPERMEABLE LINER IS SPECIFIED, IT SHALL BE

3.SPECIFIED BACKFILL MATERIAL MUST BE FREE FROM LUMPS, DEBRIS AND ANY SHARP DBJECTS THAT COULD PENETRATE THE GEDTEXTILE. MATERIAL IS USED FOR BACKFILL ALONG THE SIDES OF THE SYSTEM AS INDICATED IN ENGINEERING DETAIL DRAWINGS.

1. EXAMINE PREPARED EXCAVATION FOR SMOOTHNESS, COMPACTION AND LEVEL. CHECK FOR PRESENCE OF HIGH WATER TABLE, WHICH MUST BE KEPT AT LEVELS BELOW THE BOTTOM OF THE UNDER DRAIN STRUCTURE AT ALL TIMES. IF THE BASE IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE.

2.INSTALLATION COMMENCEMENT CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS AND RESPONSIBILITY FOR SATISFACTORY PERFORMANCE IF EXISTING CONDITIONS ARE FOUND TO BE UNSATISFACTORY, CONTACT PROJECT MANAGER OR ENGINEER FOR RESOLUTION PRIOR TO

IX. CLEANUP AND PROTECTION DURING ONGOING CONSTRUCTION ACTIVITY

REMOVE FROM SITE ALL EXCESS MATERIALS, DEBRIS, AND EQUIPMENT, REPAIR ANY DAMAGE TO ADJACENT MATERIALS AND SURFACES RESULTING IF SURROUNDING DRAINAGE AREA IS NOT FULLY STABILIZED, A PROTECTIVE COVERING OF GEOTEXTILE FABRIC SHOULD BE SECURELY PLACED TO D. CONSTRUCTION PHASE EROSION AND SEDIMENTATION CONTROLS SHALL BE PLACED TO PROTECT THE INLET(S) TO THE BIOFILTRATION SYSTEM. EXCESSIVE SEDIMENTATION, PARTICULARLY PRIOR TO ESTABLISHMENT OF PLANTS MAY DAMAGE THE HPMBS. STRICTLY FOLLOW MANUFACTURER'S GUIDELINES WITH RESPECT TO PROTECTION OF THE HPMBS BETWEEN INSTALLATION AND COMMISSIONING

A. COMMISSIONING SHOULD ONLY BE CARRIED OUT DICE THE CONTRIBUTING DRAINAGE AREA IS FULLY STABILIZED. IF COMMISSIONING MUST BE CARRIED OUT SOONER, IT IS IMPERATIVE THAT APPROPRIATE EROSION AND SEDIMENT CONTROLS BE PLACED TO PREVENT THE ENTRY OF EXCESSIVE SEDIMENT/POLLUTANT LOADS INTO THE SYSTEM. B. COMMISSIONING ENTAILS REMOVING THE PROTECTIVE COVERING FROM THE BIOFILTRATION MEDIA, PLANTING THE PLANT MATERIAL IN ACCORDANCE WITH THE APPROVED DRAWINGS, AND PLACING MULCH IF SPECIFIED. 1. DIG PLANTING HOLES THE DEPTH OF THE ROOT BALL AND TWO TO THREE TIMES AS WIDE AS THE ROOT BALL. WIDE HOLES ENCOURAGE HORIZONTAL ROOT GROWTH THAT PLANTS NATURALLY PRODUCE.

2. WITH TREES, YOU MUST ENSURE YOU ARE NOT PLANTING TOO DEEP, DON'T DIG HOLES DEEPER THAN ROOT BALLS. THE MEDIA SHOULD BE PLACED AT THE ROOT COLLAR, NOT ABOVE THE ROOT COLLAR, OTHERWISE THE STEM WILL BE VULNERABLE TO DISEASE. 3.STRICTLY FOLLOW MANUFACTURER'S PLANTING GUIDANCE.

C. COVER THE EXPOSED ROOT BALL TOP WITH MULCH. MULCH SHOULD NOT TOUCH THE PLANT BASE BECAUSE IT CAN HOLD TOO MUCH MOISTURE ANI INVITE DISEASE AND INSECTS. EVENLY PLACE 3 INCHES OF DOUBLE-SHREDDED HARDWOOD MULCH (IF SPECIFIED) ON THE SURFACE OF THE MEDIA.

D. PLANTINGS SHALL BE WATERED-IN AT INSTALLATION AND TEMPORARY IRRIGATIONS SHALL BE PROVIDED, IF SPECIFIED.

MAINTENANCE REQUIREMENTS

EACH CORRECTLY INSTALLED HPMBS IS TO BE MAINTAINED BY THE MANUFACTURER FOR A MINIMUM PERIOD OF ONE YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE MANUFACTURER'S PRICE OF THE SYSTEM.

2.ANNUAL MAINTENANCE CONSISTS OF TWO (2) SCHEDULED VISITS UNLESS OTHERWISE SPECIFIED

3.EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING

1. COMPLETE SYSTEM INSPECTION

2.REMOVAL OF FOREIGN DEBRIS, SILT, PLANT MATERIAL, TRASH AND MULCH (IF NEEDED)

3.EVALUATION OF BIOFILTRATION MEDIA

4.EVALUATION OF PLANT HEALTH

5.INSPECTION OF UNDERDRAIN/STORAGE SYSTEM VIA OBSERVATION/MAINTENANCE PORT

6.PROPERLY DISPOSE OF ALL MAINTENANCE REFUSE ITEMS (TRASH, MULCH, ETC.)

7. TAKE PHOTOGRAPHS DOCUMENTING PLANT GROWTH AND GENERAL SYSTEM HEALTH

8.UPDATE AND STORE MAINTENANCE RECORDS

9.TO ENSURE LONG TERM PERFORMANCE OF THE HPMBS, CONTINUING ANNUAL MAINTENANCE SHOULD BE PERFORMED PER THE MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL 4.IF SEDIMENT ACCUMULATES BEYOND AN ACCEPTABLE LEVEL IN THE UNDERDRAIN/STORAGE SYSTEM, IT WILL BE NECESSARY TO FLUSH THE UNDERDRAIN. THIS CAN BE DONE BY PUMPING WATER INTO THE OBSERVATION/MAINTENANCE PORT OR ADJACENT OVERFLOW STRUCTURE, ALLOWING THE TURBULENT FLOWS THROUGH THE UNDERDRAIN TO RE- SUSPEND THE FINE SEDIMENTS. IF MULTIPLE OBSERVATION/MAINTENANCE PORTS HAVE BEEN INSTALLED, WATER SHOULD BE PUMPED INTO EACH PORT TO MAXIMIZE FLUSHING EFFICIENCY.

SEDIMENT-LADEN WATER CAN BE PUMPED OUT AND EITHER CAPTURED FOR DISPOSAL OR FILTERED THROUGH A DIRTBAG FILTER BAG, IF PERMITTED BY THE LOCALITY.

II. MEASUREMENT AND PAYMENT

GIVEN THE INTEGRATED NATURE OF THE HPMBS, MEASUREMENT AND PAYMENT WILL BE BASED NOT ON THE INDIVIDUAL COMPONENT PRICES, BUT ON THE SIZE OF THE BIOFILTRATION MEDIA BED. THE EXTERNAL DIMENSION AS INDICATED IN THE APPROVED PLANS AND EXECUTED IN THE INSTALLATION VILL BE MEASURED IN SQUARE FEET AND PAYMENT WILL BE MADE PER HPMBS SYSTEM. MEASUREMENT AND PAYMENT OF BEEHIVE OVERFLOW GRATE STRUCTURE WITH REMOVABLE FILTER INSERT WILL BE BASED ON PER UNIT PRICE.

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REVISION

01/02/20 | PERMIT PLANS

ACF ENVIRONMENTAL 1-800-448-3636

www.acfenvironmental.com

LET'S GET IT DONE

DATE

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PROJECT NO. 52.179

JAN 2, 2020 SHEET NO.



AS-BUILT CERTIFICATION THERE IS NO "AS-BUILT" INFORMATION PROVIDED FOR SWM ON THIS SHEET.

tachatha ZACHARIA Y. FISCH

DATE

A Redevelopment of Village of Owen Brown, Parcel A-3 & A-4, Plat 5201 F-82-063, SDP-81-115, SDP-84-299, FDP-125-A TAX MAP 42 GRID 3 6TH ELECTION DISTRICT

E-mail: info@fsheri.com SS/ONAL

HOWARD COUNTY, MARYLAND 6339 Howard Lane, Elkridge, MD 21075 Tel:410-567-5200 Fax: 410-796-1562

DESIGN BY: MLT DRAWN BY: CRH2 CHECKED BY: ZYF Engineers Planners Surveyors SCALE: As Shown || DATE: August 11, 2022 W.O. No.:

STORMWATER MANAGEMENT

FOCALPOINT NOTES

4060 SHEET No.: _ 7_ OF _ 11 SDP-20-42

PARCEL 392, LOT A-3 & A-4

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE APPROVED: PLANNING BOARD OF HOWARD COUNTY July 7, 2022

PROFESSIONAL CERTIFICATION

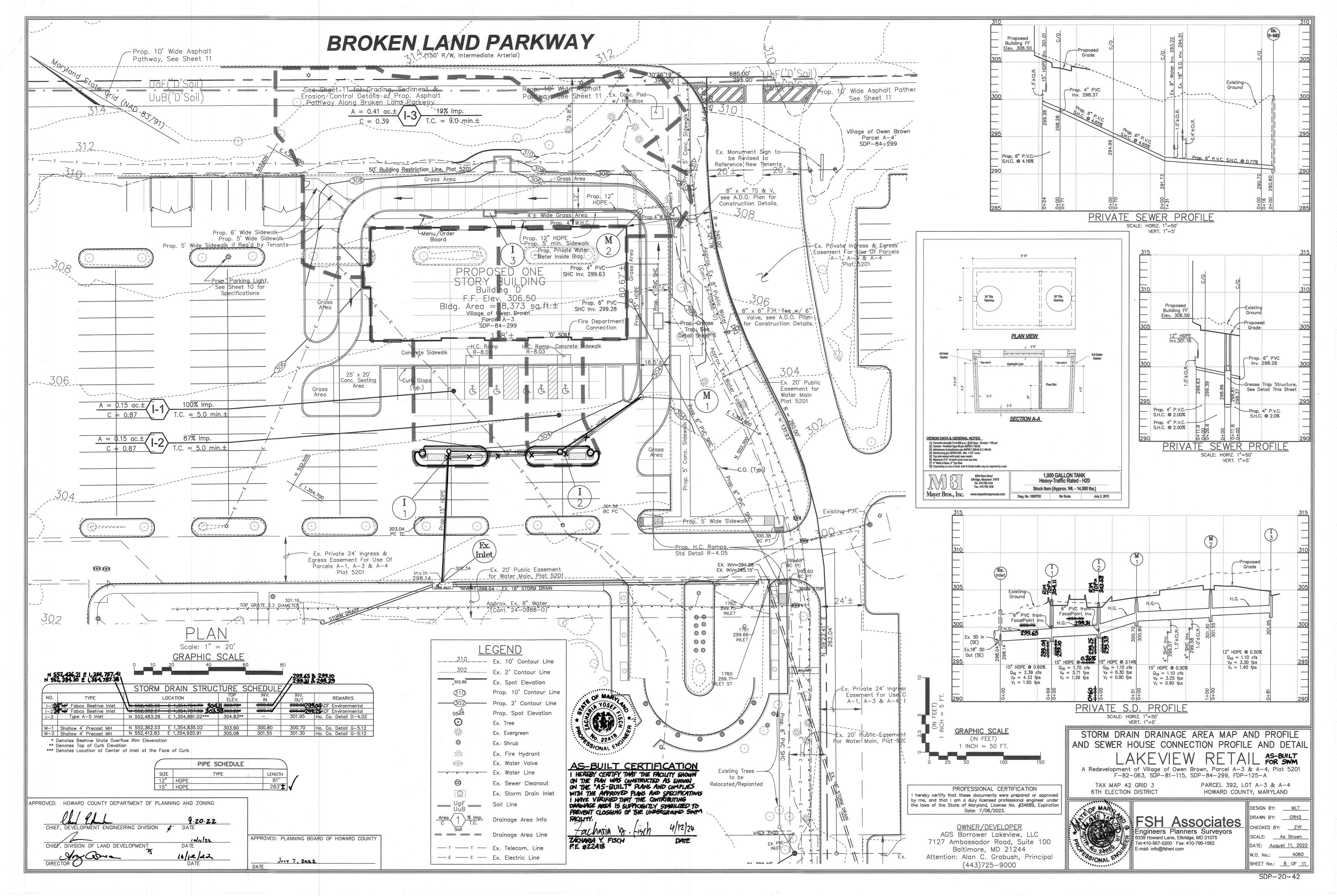
hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #34689, Expiration Date: 7/08/2023.

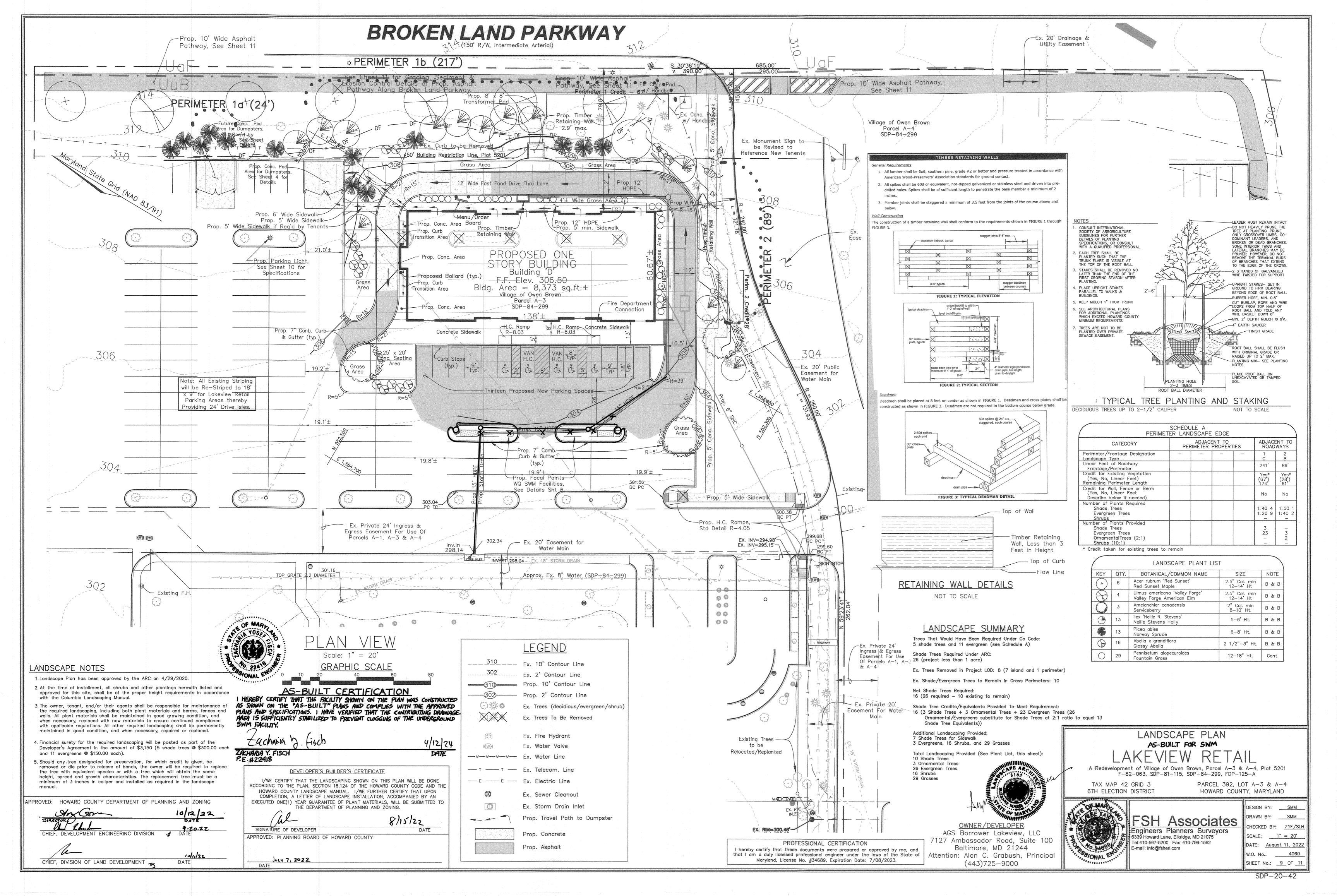
Baltimore, MD 21244 Attention: Alan C. Grabush, Principal (443)725 - 9000

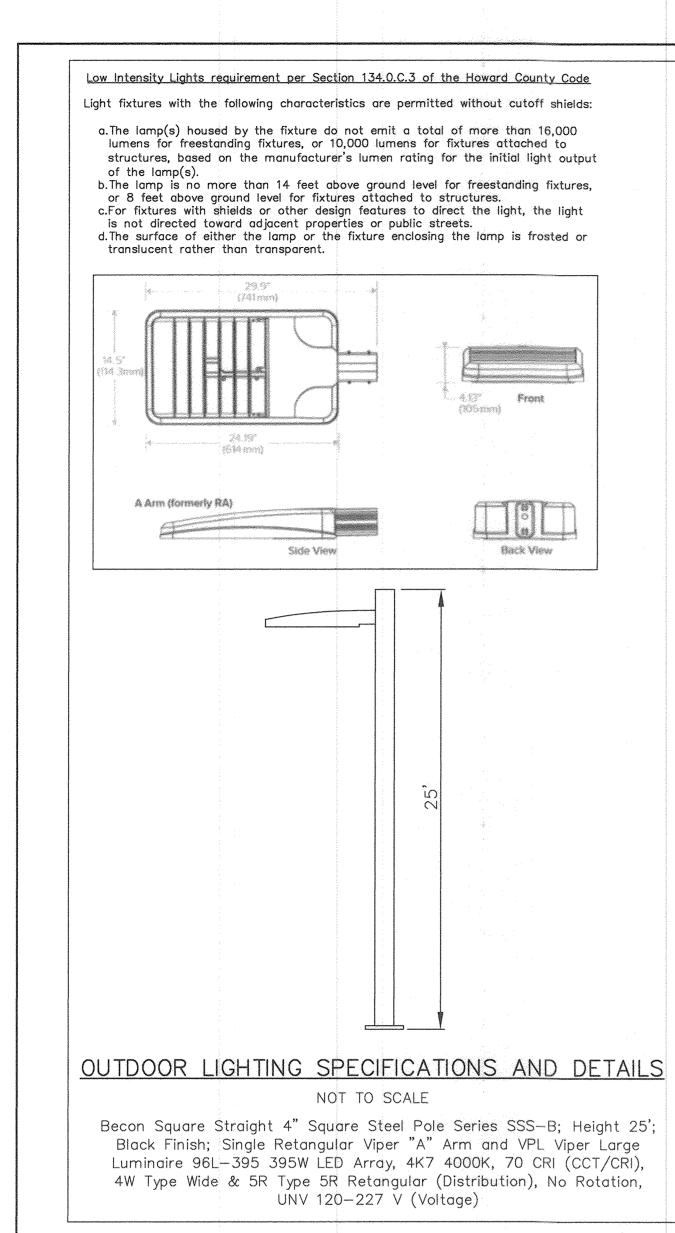
OWNER/DEVELOPER

AGS Borrower Lakeview, LLC

7127 Ambassador Road, Suite 100







BROKEN LAND PARKWAY

0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.3 0.5 0.9 1.7 2.9 2.5 3.4 4.4 4.4 4.6 4.4 3.7 2.7 2.2 2.3 1.5 7.4

> WM (TYP.) MH: 6.5

1.4 1.4 1.3 1.3 1.4 1.4 1.4 1.3 1.3 1.3 1.3 1.2 2.9 7.7 6.8 5.2 ANTER 1.9 1.7 5.1 0.9 5.9 1.0 3.4 ANTER 5.8 5.3 7.8 0.8 0.5 0.5 0.5 0.4 0.3 0.2 0.1 0.1 0.1 0.0 0.0 0.0

(TYP.)

2.7 0.4 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0

6.5

4.8 0.3 0.2 0.2 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.0 0.0 0.0

GRASS

4.8 0.3 0.1 0.1 0.1 0.1 0.1 0.1 0.0 **0.0** 0.0

Luminaire Schedule

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Sym	bol	Label	Qty	Arrangement	Description	Lum. Lumens	LLF	Lum. Watts	Arr. Watts	Total Watts
		DL	12	SINGLE	LTR-6RD-H-SL15L-DM1_LTR-6RD-T-SL40K8WDS (35K Source File)	1586	0.864	18.7	18.7	224.4
		WM	21	SINGLE	LTC-6RW-W-20L35K8WW-X-S-BL	2211	0.850	22.817	22.817	479.157
		T4W	2	SINGLE	VP-L-96L-395-4K7-4W	35759	0.850	401.8	401.8	803.6
		T5R	1	SINGLE	VP-L-96L-395-4K7-5R	41205	0.850	392.44	392.44	392.44

 $0.0 \quad 0.0 \quad 0.0$

Calculation Summary

All CalcPts Extending Out To Zero Foot-Candles
StatArea - Parking

JULY 7, 2022

 CalcType
 Units
 Avg
 Max
 Min
 Avg/Min
 Max/Min
 PtSpcLr
 PtSpcTt

 Illuminance
 Fc
 0.80
 36.2
 0.0
 N.A.
 N.A.
 10
 10

 Illuminance
 Fc
 1.76
 4.6
 0.5
 3.52
 9.20

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 - FT.

LIGHTING PLAN

A Redevelopment of Village of Owen Brown, Parcel A-3 & A-4, Plat 5201 F-82-063, SDP-81-115, SDP-84-299, FDP-125-A

6339 Howard Lane, Elkridge, MD 21075 Tel:410-567-5200 Fax: 410-796-1562

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of

.......Maryland, License No. #34689, Expiration Date: 7/08/2023.

E-mail: info@fsheri.com

PARCEL 392, LOT A-3 & A-4

HOWARD COUNTY, MARYLAND

AS-BUILT CERTIFICATION

THERE IS NO "AS BUILT" INFORMATION

PROVIDED FOR SWM ON THIS SHEET.

Tacharia y . (464

ZACHARIA Y. FISCH

P.E. #22418

DESIGN BY: SMM
DRAWN BY: SMM

CHECKED BY: ZYF/SLHSCALE: 1" = 20'

DATE: <u>August 11, 2022</u>

W.O. No.: 4060 SHEET No.: 10 OF 11

4/12/24

DATE

TAX MAP 42 GRID 3

6TH ELECTION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

LO 12 2 2

DATE

Q-20.22

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: PLANNING BOARD OF HOWARD COUNTY

OWNER/DEVELOPER

AGS Borrower Lakeview, LLC

7127 Ambassador Road, Suite 100

Baltimore, MD 21244

Attention: Alan C. Grabush, Principal

(443)725-9000

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

REVISED FROM DRAWING NUMBER(S):

CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJEC

THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION,

PHOTOMETRIC PLAN
Lakeview

REVISED FROM DR	AWING NUMBER(S):		DN BY:	DATE:	CHK BY:
-25435	19-25435-R4	() () () () () () () () () ()	Kalyan	12-12-2019	
-25435-R1	19-25435-R5	HUBBELL	REV. BY:	DATE: 2-19-20	SCALE: AS NOTED
-25435-R2		Hubbell Lighting, Inc. 701 MILLENNIUM BLVD.	QUOTE:	DRAWING / DESIGN NO) <u>.</u> :
-25435-R3		GREENVILLE, SC 29607	N/A	19-2543	35-R6
					00 00 1

SDP-20-42

