- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF
- 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. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT I-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SGINAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET ND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ASPHALT
- LOCATION: TAX MAP #35, GRID IT
 - ZONING: POR (PLANNED OFFICE RESEARCH) ELECTION DISTRICT: 5TH SEE SITE ANALYSIS BELOW FOR SITE AREA
- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY
- PROPOSED USE: HOUSING COMMISSION HOUSING DEVELOPMENT-MULTI FAMILY
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB, AND FACE OF BUILDING, UNLESS OTHERWISE NOTED. DIMENSIONS ARE MEASURED PERPENDICULAR OR RADIALLY BETWEEN ITEMS UNLESS
- EXISTING TOPOGRAPHY IS PER FIELD RUN SURVEY INFORMATION BY GUTSCHICK, LITTLE \$ WEBER, P.A., FROM VOGEL ENGINEERING, AND FROM GIS TOPOGRAPHY. AND IS 2- FOOT
- COORDINATES AND BEARINGS ARE BASED UPON THE '83 MD STATE COORDINATE SYSTEM (NAD '83) AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 35I \$ 35II
- SITE IS BEING DEVELOPED UNDER POR REGULATIONS, AND SUPPLEMENTAL REGULATIONS SECTION 128.O.J. PER HOWARD COUNTY ZONING AND ORDINANCES
- THE PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS ECP-22-040, MP-22-088, CONT., DPM CONT 24-5212-D, F-23-044.
- ALTERNATIVE COMPLIANCE SUBMITTED WITH THE ECP, UNDER MP-22-088
- THE ALTERNATIVE COMPLIANCE INCLUDES THE FOLLOWING: I. REMOVAL OF SPECIMEN TREES (Sec 16.1205(a)(3)) AND PROVIDE MINIMUM OF 75% FOREST CONSERVATION OBLIGATION ON SITE.
- DBH ARE PLANTED AS REPLACEMENT TREES AND ALL OTHER TREE CONSERVATION MEASURES ARE COMPLIED WITH. 2. GRADING OF STEEP SLOPES (SEC 16.11(b)(1))

APPROVED FEBRUARY 2, 2023. WITH A CONDITION THAT I2 NATIVE TREES OF 3"

- APPROVED ON FEBRUARY 2, 2023. WITH A CONDITION THAT ALL REMAINING SLOPES ARE REVEGETATED AND STABILIZED 3. IMPACT OF NON-TIDAL WETLANDS (SEC 16.116(a)(1))
- DEFERRED ON FEBRUARY 2 2023 APPROVED ON AUGUST 3 2023 ** SEE FULL CONDITIONS OF WP-22-088 THIS SHEET
- WATER AND SEWER SERVICE IS PUBLIC PER CONTRACT NO. 24-5212-D.
- THE MDE PERMIT TRACKING NUMBER IS 22-NT-3282/202261946. APPROVED ON JUNE 30
- 15. ALL ON-SITE STORM DRAIN SYSTEMS ARE PRIVATE.
- STORMWATER MANAGEMENT, SATISFYING ENVIRONMENTAL SITE DESIGN (ESD) CRITERIA, PROPOSED BY THESE PLANS INCLUDES 2 MICRO BIO-RETENTION (M-6) FACILITIES. AND PERVIOUS PAVING, THESE STORMMATER MANAGEMENT PRACTICES WILL BE PRIVATELY OWNED 2. GROSS AREA OF PARCEL DEED REFERENCE AND OWNER: AND MAINTAINED. THERE IS ALSO 100-YEAR ATTENUATION WITH A STORMTECH SC140 POLYPROPYLENE CHAMBER SYSTEM ENVELOPED WITH STONE UNDER THE OUTDOOR PARKING
- EXISTING UTILITIES ARE BASED ON DESIGN PLANS AND UTILITY COMPANY RECORDS. THERE ARE NO KNOWN CEMETERIES, GRAVE SITES OR HISTORIC STRUCTURES LOCATED ON
- 19. THERE ARE NO SCENIC ROADS WITHIN OR ADJACENT TO THE SUBJECT PROPERTY
- 20. THERE ARE NO FLOODPLAINS WITHIN THE SUBJECT PROPERTY. THE WETLANDS STUDY WAS PREPARED BY WETLANDS STUDIES AND SOLUTIONS, DATED
- 22. A NOISE STUDY WAS COMPLETED FOR THIS PROJECT, DATED MARCH 23, 2023 BY MILLER
- BEAM & PAGANELLI, INC., AND APPROVED ON JUNE 15, 2023, WITH THIS SDP
- 23. THE STUDY CONCLUDES THAT NOISE ATTENUATION IN THE FORM OF UPGRADED WINDOW MATERIAL WILL BE REQUIRED ALONG THE FACADE THAT FACES CEDAR LANE AND FREETOWN
- 4. THE TRAFFIC STUDY (APFO) WAS PREPARED BY THE TRAFFIC GROUP, INC. DATED 12/20/2022 THE COUNTS WERE DONE ON MAY 3, 20
- 3. SCHOOLS WERE IN SESSION ON THAT DAY THE REPORT WAS SUBMITTED AS PART OF SDP-23-026
- HE INTERSECTIONS STUDIED WERE: ERFETOWN ROAD AND CEDAR LANE, HARRIET TUBMAN LANE AND FREETOWN ROAD, WINDSOR DRIVE AND SENECA DRIVE, MARTIN ROAD AND OWEN BROWN ROAD, AND CEDAR LANE AND OWEN BROWN ROAD.
- . ALL STUDIED INTERSECTIONS ARE UNDER COUNTY JURISDICTION. EVEL OF SERVICE FOR ALL INTERSECTIONS FOR THE HORIZON YEAR 2025 IS 'A'.
- 25. THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM W/ AN INSIDE METER.
- 24. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS AWAY FROM ALL ADJOINING RESIDENTIAL USE AREAS AND PUBLIC ROADS IN ACCORDANCE WITH SECTION 134.0 OF THE HOWARD COUNTY ZONING REGULATIONS.
- 5. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENTS AS NOTED ON SHEET 15. THE LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL
- . SETBACK REQUIREMENTS DO NOT APPLY TO WALLS AND FENCES WHICH SERVE AS ENTRANCE FEATURES FOR A SUBDIVISION OR DEVELOPMENT IN ALL ZONING DISTRICTS PROVIDED THE ENTRANCE FEATURE DOES NOT EXCEED 8 FEET IN HEIGHT AND DOES NOT INTERFERE WITH GHT DISTANCE ALONG PUBLIC ROADS IN ACCORDANCE WITH SECTION 128.0 OF THE ZONING
- . THERE IS NO LOWER LEVEL BASEMENT SPACE IN THE BUILDING.
- 28. APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP-23-026) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN.
- 29. IN ACCORDANCE WITH SECTION 128.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS. PORCHES, OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD
- 30. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, (UNLESS SPECIFICALLY PERMITTED FOR THIS PROJECT), FLOODPLAIN, FOREST CONSERVATION EASEMENT AREAS, AND STEEP SLOPES.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE

APPROVED: HOWARD COUNTY DEPA		IING & ZONING
Jessica Bellalı L	n behalf of ynda D.	6/6/2024
Direction Docusigned by:	isenberg, AICP	Date
M-		6/6/2024
Chief, Division Doctor	nt	Date
CHAD Edmondson		6/6/2024
Chief, Developrom 神區中國ineering Div	vision	Date

REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. 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.

- 32. AS CALCULATED IN THE FOREST CONSERVATAION WORKSHEET ON SHEET IT OF THIS PLAN SET, THE FOREST CONSERVATION PLANTING OBLIGATION FOR THIS PROJECT (SDP-23-026) IS 1.8 ACRES, OF WHICH 1.2 AC. IS PROVIDED ON-SITE & OFF-SITE (on the adj. HOA Open Space Lot-13 within the same watershed). THE BALANCE OF THE PLANTING OBLIGATION (w/ a multiplier factor) IS PROVIDED AT AN OFF-SITE FOREST CONSERVATION BANK (FCB). THE FOREST CONSERVATION SURETY OF \$25,844,00 FOR THE ON-SITE & OFF-SITE PLANTING (that's within the same watershed) SHALL BE POSTED WITH THE DEVELOPER AGREEMENT. FOR THE BREAK DOWN OF THE FC-SURETY, SEE SHEET #17.
- 33. THE FCB ESTABLISHED UNDER SDP-05-132 WILL PROVIDE THE FOREST CONSERVATION CREDIT NEEDED BY THIS PROJECT (SDP-23-026). THE SDP-05-132 "TREE BANK BALANCE SHEET" SHALL BE AMENDED (by redline revision process) TO ACCOUNT FOR THE CREDIT PURCHASED OF BY THIS PROJECT (SDP-23-026). SEE SHEET-IT FOR HOW THE CREDIT AMOUNT IS CALCULATED (accounting for the fact that the SDP-05-132 forest conservation bank is a "forest retention" type bank and it's not wthin the same watershed as SDP-23-026).
- 34. UNLESS OTHERWISE APPROVED BY THE AHJ, THE FOLLOWING PROVISIONS SHALL APPLY TO A FIRE DEPARTMENT CONNECTION FOR FIRE PROTECTION SYSTEMS: (I) A FIRE DEPARTMENT CONNECTION FOR FIRE PROTECTION SYSTEMS SHALL BE LOCATED: (A.) ON THE SIDE OF THE STRUCTURE DISPLAYING THE ADDRESS CLEARLY VISIBLE TO THE RESPONDING UNITS (UNLESS AN ALTERNATE LOCATION IS APPROVED BY THE OFFICE OF THE FIRE MARSHAL); (B.) WITHIN 100 FT. OF A FIRE HYDRANT (II) THE APPROPRIATE SIGN SHALL BE MOUNTED ON THE BUILDING'S WALL BETWEEN 8 AND 12 FEET ABOVE THE FIRE DEPARTMENT CONNECTION; (III) A FREE-STANDING FIRE DEPARTMENT CONNECTION SHALL HAVE THE SIGN MOUNTED ON A POLE DIRECTLY BEHIND THE CONNECTION APPROXIMATELY 6 FEET HIGH; (IV) SIGNS IDENTIFYING THE LOCATION 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 I" STROKE. THE ARROW SHALL HAVE A STROKE NOTE LESS THAN 2". THE OVERALL SIGN MEASUREMENTS SHALL BE 12" BY 18"; (V) 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
- 35. KNOX BOXES SHALL BE LOCATED WITHIN 6' TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4-5' IN HEIGHT. THE CONTRACTOR SHOULD CONTACT THE OFFICE OF THE FIRE MARSHAL PRIOR TO PURCHASING AND INSTALLING KNOX BOXES TO DETERMINE IF ADDITIONAL KNOX BOXES WILL BE REQUIRED AS WELL AS TO VERIFY THE LOCATION(S)
- 36. A UNIFORM NUMERIC SYSTEM SHALL BE UTILIZED TO IDENTIFY ALL DWELLING UNITS WITH A NUMBER THAT IS UNIQUE TO ONLY ONE UNIT. ALL UNITS IN A VERTICAL STACK OR COLUMN SHALL BE UNIFORMLY NUMBERED SUCH THAT THEY ALL SHARE A NUMERIC REFERENCE TO EACH OTHER IN THAT STACK OR COLUMN, AS APPROVED BY THE AHJ. FOR EXAMPLE, UNIT 301 SHALL BE DIRECTLY OVER UNIT 201, MHICH IS DIRECTLY OVER UNIT 101. IN THE EVENT AN OPEN OR AMENITY SPACE ON ANY FLOOR PREVENTS THIS UNIFORMITY, THE CORRESPONDING JNIT NUMBER SHALL BE OMITTED RATHER THAN MOVED OUTSIDE OF THE NUMERICALLY UNIFORM COLUMN OR STACK.
- 37. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY 'GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE."
- 38. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" x 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" x 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) xxx± LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- 39. CONTACT HOWARD COUNTY TRAFFIC (410-313-5752) PRIOR TO REMOVING AND INSTALLING ANY PAVEMENT MARKINGS. 40. ANY EXISTING PRIVATE WELL AND SEPTIC FACILITIES FOUND FROM PREVIOUS HOUSES ARE TO
- BE ABANDONED PER HEALTH DEPT REQUIREMENTS AND UNDER HEALTH DEPARTMENT INSPECTION AND CERTIFICATION.

SITE ANALYSIS DATA . ZONING: POR (PLANNED OFFICE RESEARCH)

- PARCEL 108 = 21,446 50, FT. DEED REFERENCE L: 21699 F:485 OWNER: PATUXENT OWNER, LP PARCEL 109 = 130,798 50, FT. DEED REFERENCE L: 21699 F:479 OWNER: PATUXENT OWNER, LP PARCEL 137 = 33,440 50, FT. DEED REFERENCE L: 21699 F:479 OWNER: PATUXENT OWNER, LP PARCEL 137 = 13,440 50, FT. DEED REFERENCE L: 21699 F:479 OWNER: PATUXENT OWNER, LP
 - PATUXENT OWNER I P C/O MISSION FIRST 330 NEW HAMPSHIRE AVE. NW,
 - MASHINGTON D.C. 20036 ATTN: ELIZABETH EVERHART TEL. (202) 223 -3405
- 4. LIMIT OF DISTURBED AREA = 4.2 AC.
- 5. PROPOSED USE: HOUSING COMMISSION HOUSING DEVELOPMENT PROJECT. 76 UNIT MULTI-FAMILY UNITS
- 6. BUILDING COVERAGE (% OF GROSS SITE AREA): BUILDING = 30,000 S.F. or 0.69 AC. = 15.6%
- 7. FLOOR AREA RATIO (F.A.R.) CALCULATIONS 118,795 SQ. FT./4.4 ACRES = 0.62
- PARKING GARAGE (51 SPACES
- PARKING SURFACE (72 SPACES) (INCLUDING 4 VAN SPACES PARKING REQ'D I SP/PER 25 UNITS
- * PARKING IS BEING PROVIDED BASED ON A PARKING STUDY BY THE TRAFFIC GROUP DATED
- 9. ZONING STANDARDS: POR ZONE ALLOWED/REQD PROVIDED/PROPOSED I. MAXIMUM HEIGHT: 50 FT.
- (MEASURED FROM AVERAGE GRADE AT BLDG TO MIDPOINT OF GABLE ROOF)
- A .*FROM OPEN SPACE: B. FROM RESIDENTIAL DISTRICT: 75 FT
- C. FROM PUBLIC STREET R/W: ** 3. MINIMUM PASSIVE RECREATIONA
- AND/OR AMENITY OPEN SPACE 25% (I.I ACRES)
 SEE EXHIBIT ON SHEET 16.
- 38% (1.7 ACRES) * SECTION 128.0.J.I.c(3). SECTION 128.0.J.I.q

300 FT.

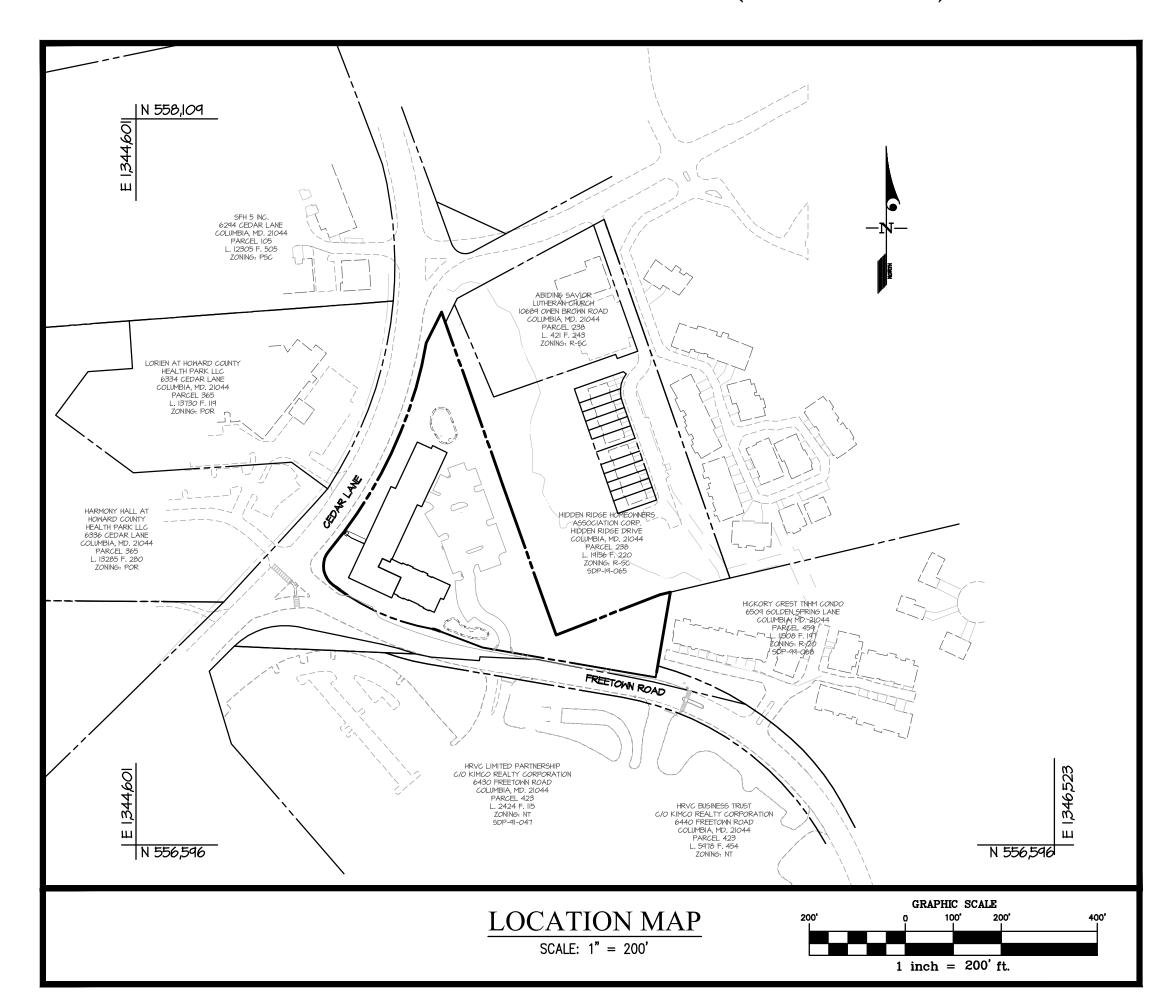
ENLARGED NORTH ELEVATION

ENLARGED SOUTH ELEVATION

SCALE: NOT TO SCALE

SITE DEVELOPMENT PLAN PATUXENT COMMONS

Proposed Lot 1 6441 Freetown Road (76 Units)

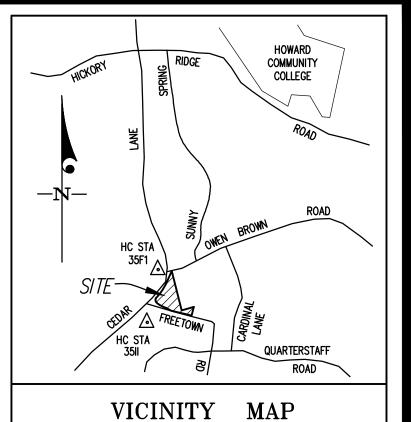


UNIVERSAL DESIGN REQUIREMENTS I. FOR MULTI-FAMILY APARTMENT DEVELOPMENTS, AN ACCESSIBLE PATH BETWEEN PARKING, DWELLING UNIT AND COMMON AREAS THAT MEET ADA STANDARDS. 2. A 'NO-STEP' ACCESS IS PROVIDED AT THE FRONT DOOR ENTRANCE, REAR BUILDING ENTRANCE, AND A NTRANCE DOOR FROM GARAGE, TO ALL COMMON AREAS AND DWELLING UNITS. (A NO-STEP ENTRANCE DESIRABLE, BUT NOT REQUIRED TO OTHER ENTRANCES). 3 36" WIDE FRONT DOOR WITH EXTERIOR LIGHTING OF ENTRANCE (EXTERIOR DOORS SHALL BE PROVIDE MITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE EXTERIOR DOOR; THE ILLUMINATION OF THE EXTERIOR LIGHT SHALL BE CONTROLLED FROM INSIDE THE DWELLING UNIT. EXCEPTION: LIGHTS THAT ARE CONTINUOUSLY ILLUMINATED OR AUTOMATICALLY CONTROLLED. 4. ALL INTERIOR DOORWAYS AT LEAST 32" CLEAR WIDTH IN THE OPEN POSITION (2/IO DOORS ARE OR A 36 HALLWAYS AT LEAST 36" WIDE (40-42" IS PREFERABLE). THE MAXIMUM VERTICAL FLOOR LEVEL CHANGI 5. COMPLETE LIVING AREA INCLUDING PRIMARY BEDROOM AND BATH ON FIRST FLOOR (OR ELEVATOR ACCESS IF MULTI-STORY RENTAL APARTMENTS)

7. LEVER HANDLES ON INTERIOR AND EXTERIOR DOORS. δ . REINFORCED WALLS TO ALLOW FOR THE LATER INSTALLATION OF GRAB BARS AROUND THE TOILET, TUB CLEAR FLOOR SPACE OF 30"X48" CENTERED ON THE APPLIANCE OR FIXTURE SHALL BE PROVIDED AT EACH FIXTURE IN THE KITCHEN. FLOOR SPACES CAN OVERLAP (FAIR HOUSING ACT). MANFLIVERING SPACE WITHIN THE BATHROOM TO PERMIT A PERSON USING A MOBILITY AID TO ENTER 1 ROOM, CLOSE AND REOPEN THE DOOR, WITH A CLEAR FLOOR SPACE OF 30"X48" OUTSIDE OF THE DOOR SWING. IN ADDITION, A CLEAR FLOOR SPACE OF 30"X48" SHOULD BE PROVIDED AT EACH FIXTURE AND CENTERED ON EACH FIXTURE. THE 30"X48" FLOOR SPACES CAN OVERLAP EACH OTHER (FAIR HOUSING).

. WALL MOUNTED LIGHT SMITCHES, ELECTRICAL OUTLETS, OR ENVIRONMENTAL CONTROLS SHALL BE MOUNTED FOR A REACH RANGE OF MINIMUM 15" OFF THE FLOOR AND MAXIMUM 48" ABOVE THE FLOOR.

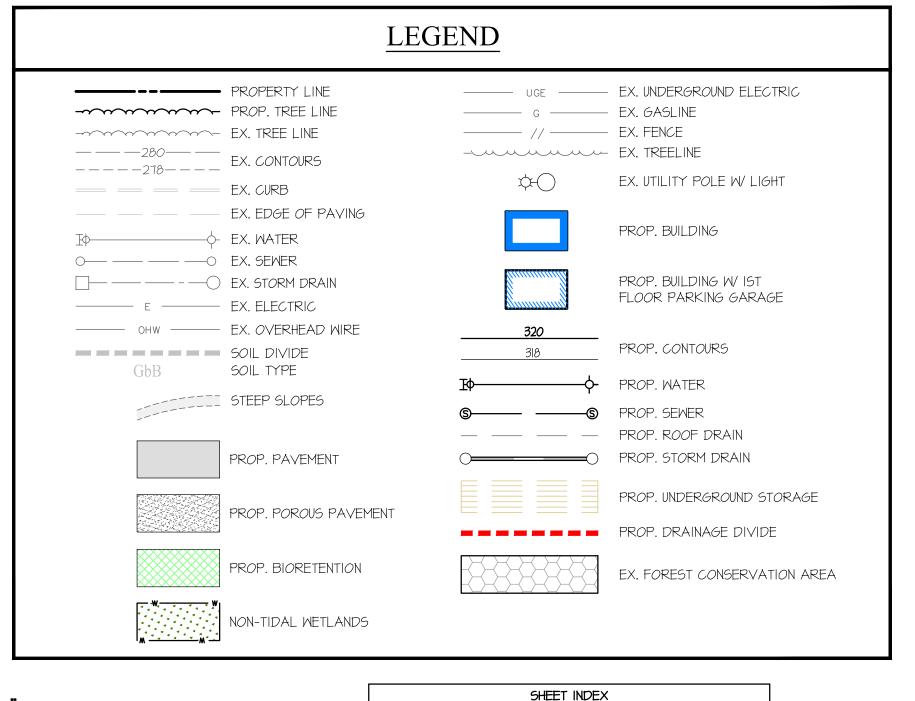
STORMWATER MANAGMENT PRACTICES **UNDERGROUND** POROUS BIORENTION FILTERRA STORMWATER **ADDRESS** PAVEMENT (F-6) (F-I) Managemen[.] (A-2) SYSTEM I 6441 FREETOWN RD.



SCALE: 1"=2000' **BENCHMARKS**

35F1 ELEV. 400.452 N = 557,787.369 E = 1,345,217.326 35I1 ELEV. = 400.048 N = 557,110.385 E = 1,344,843.672

ADC MAP 32 GRID E-3



FULL CONDITIONS OF WP-22-088 FROM GENERAL NOTE 12

50' MAX BUILDING HEIGHT

SECTION OF STREET SHOPES SHALL BE LIMITED TO THE GRADING SHOWN ON 5DP-23-026, ANY NATURAL VEGETATION DISTURBED DURING GRADING FOR SWM FACILITY MUST BE RESTORED TO NATURAL CONDITION TO THE GREATEST EXTENT POSSIBLE INCLUDING STABILIZATION AND RE-VEGETATION OF REMAINING SLOPES ONCE CONSTRUCTION IS COMPLETE

SEC 16.1205(a)(3) and 16.1209(b)(2). SPECIMEN TREES

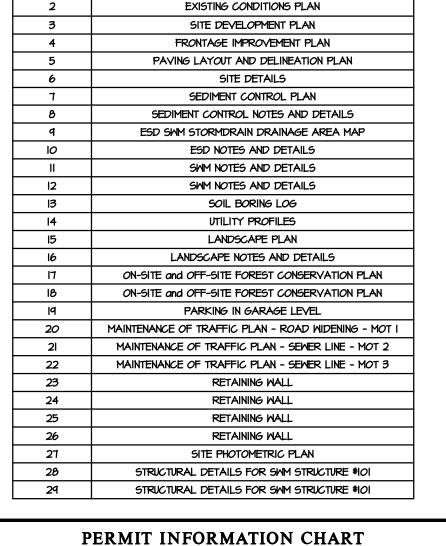
1. GRANTS APPROVAL TO REMOVE 6 SPECIMEN TREES AS SHOWN ON THE AC EXHIBIT (ST#2, 3, 5, 6, 7, 420). THE REMOVAL OF ANY OTHER TREES ON THE SUBJECT PROPERTY IS NOT PERMITTED UNDER THIS APPROVAL.

2. THE REMOVAL OF 6 SPECIMENT TREES IS PERMITTED AND REQUIRES THE PLANTING OF 12 NATIVE SHADE TREES ON SITE PER SEC 16.1216 (d) OF FOR REGULATIONS. TREES SHALL BE A MIN OF 3" DBH AND SHALL BE SHOWN ON THE SDP LANDSCAPE AND FOR PLA SHEETS. THE TREES MUST BE BONDED ALONG WITH THE DEVELOPER'S REQUIRED LANDSCAPING OR FOREST CONSERVATION.
THE APPLICANT MUST SATISFY THE REMAINING FC/REFORESTATION

AND/OR FULFILLING THE OBLIGATION BY PLANTING OR RETAINING EXISTING FOREST AT A SUITABLE OFF SITE LOCATION PREFERABLY WITHIN A HIGH PRIORITY LOCATION TO BE APPROVED BY THE COUNTY DURING SDP

SEC 16-116(a)(1) WETLANDS THE PERMANENT IMPACT TO THE WETLANDS AND THE 25-FT BUFFER SHAL

BE LIMITED TO THE GRADING REQUIRED TO CONSTRUCT THE ACCESS DRIVEWAY, PARKING LOT, RESIDENTIAL BUILDING AND SWM OUTFALL AS SHOWN ON THE SDP-23-026.
THE AREA OF THE WETLAND AND THE 25-FT WETLAND BUFFER OUTSIDE HE LOD MUST BE PLANTED AND/OR MAINTAINED MITHIN A FOREST ONSERVATION EASEMENT AS SHOWN ON THE SDP-23-026. DISTURBANCE MUST BE RETURNED TO THEIR NATURAL CONDITIONS AND RE-VEGETATED AFTER THE PROPOSED IMPROVEMENTS. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MDE PERMIT APPROVAL (PERMIT 22-NT-3282/202261946)

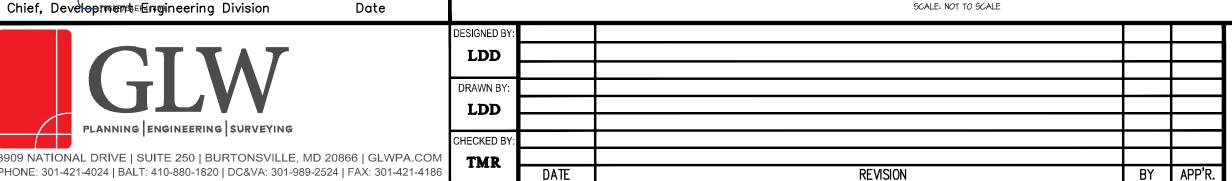


DESCRIPTION

COVER SHEET

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING					
Jessica Bellalı	On behalf of Lynda D.	6/6/2024			
Direction Docusigned by:	Eisenberg, AICP	Date			
1		6/6/2024			
Chief, Division Douglasing Developn	nent	Date			
(HD) Edmondson		6/6/2024			
Chief, Developmen地E回頭ineering	Division	Date			



PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405

O' MAX BUILDING HEIGHT ALLOWED

TOP OF GABLE

TOP OF GABLE

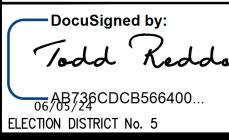
ROOF BEARING

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE PLANS 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. <u>17285</u> EXPIRATION DATE: MARCH 17, 202



PARTIAL EAST ELEVATION I

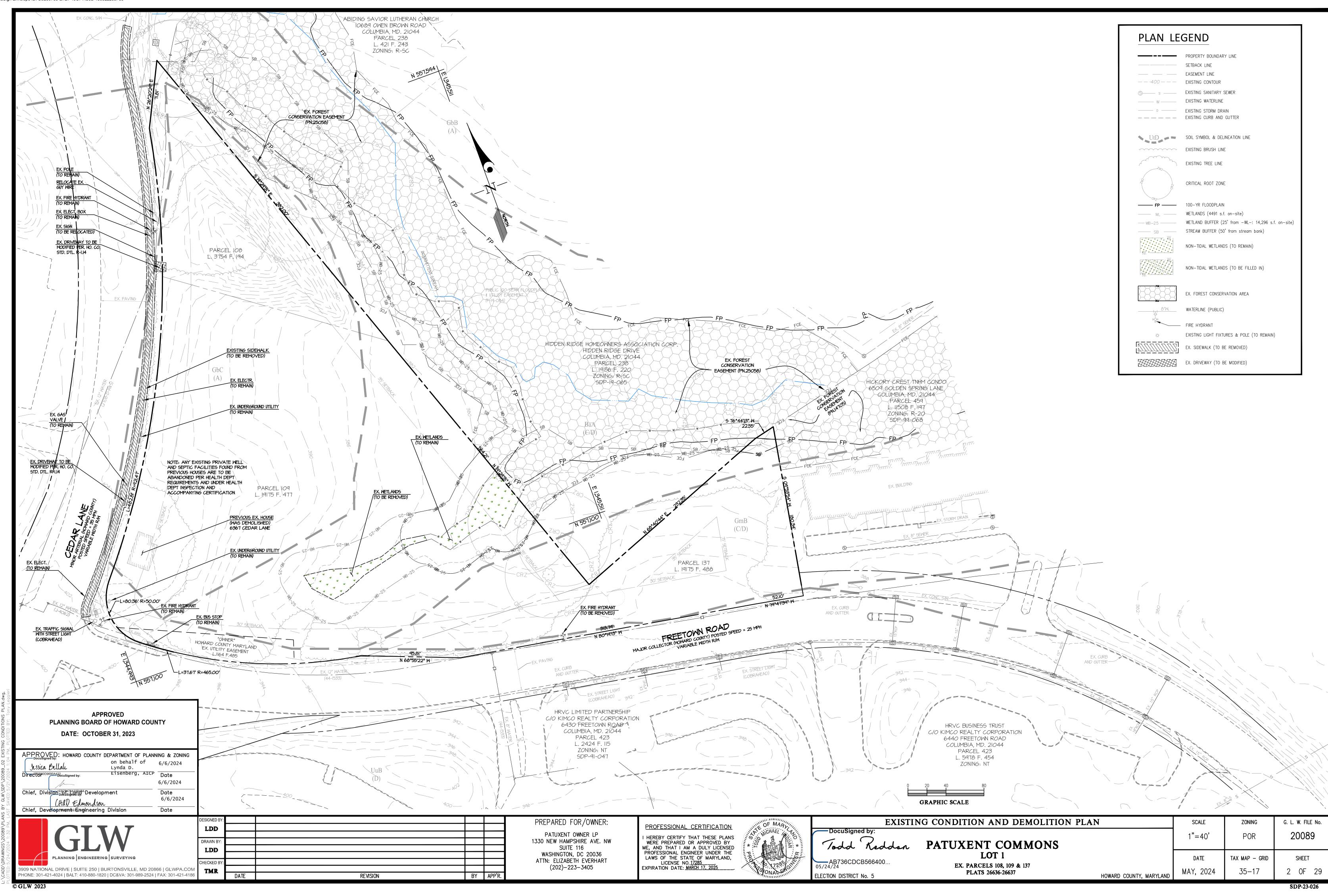
PARTIAL EAST ELEVATION 2

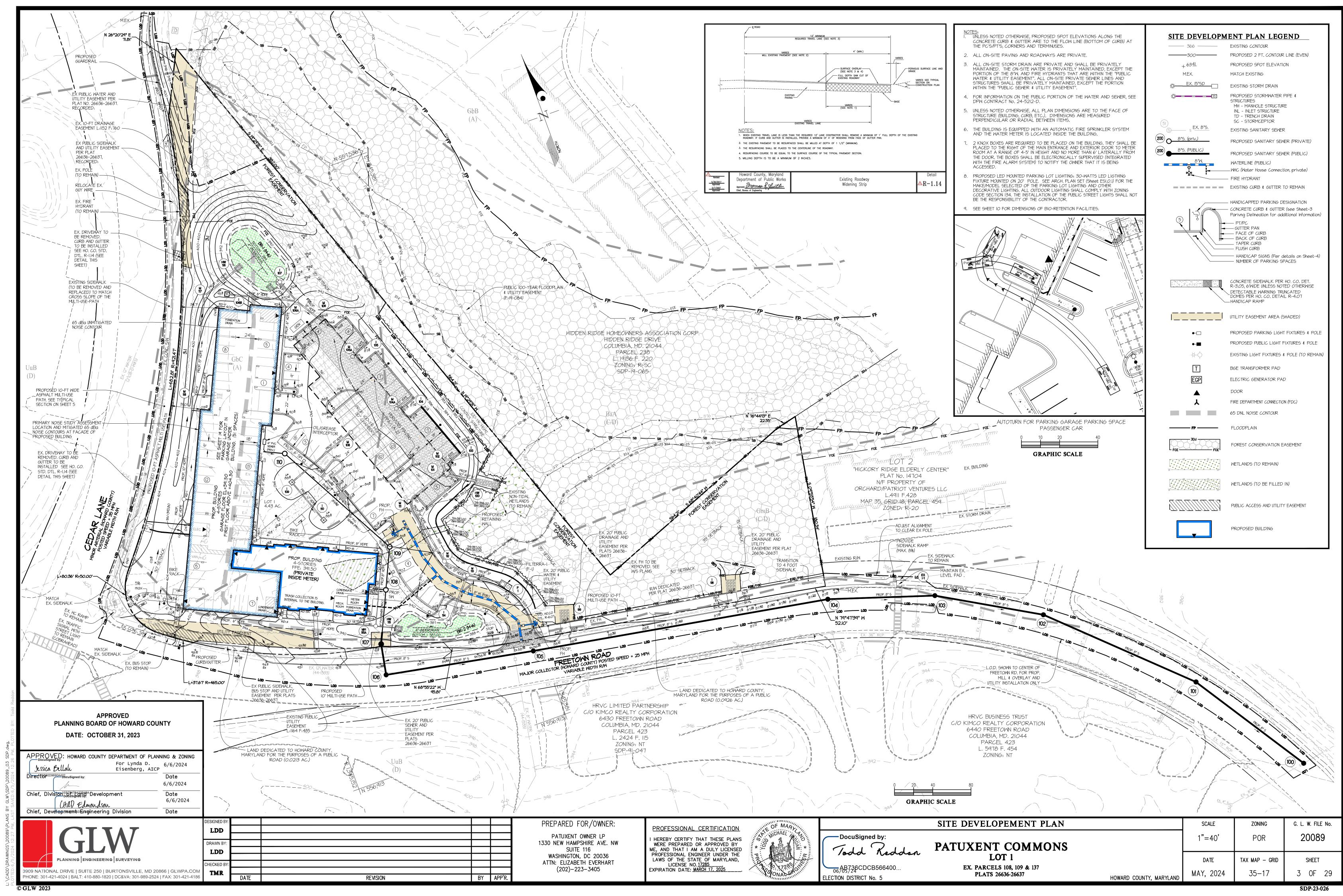


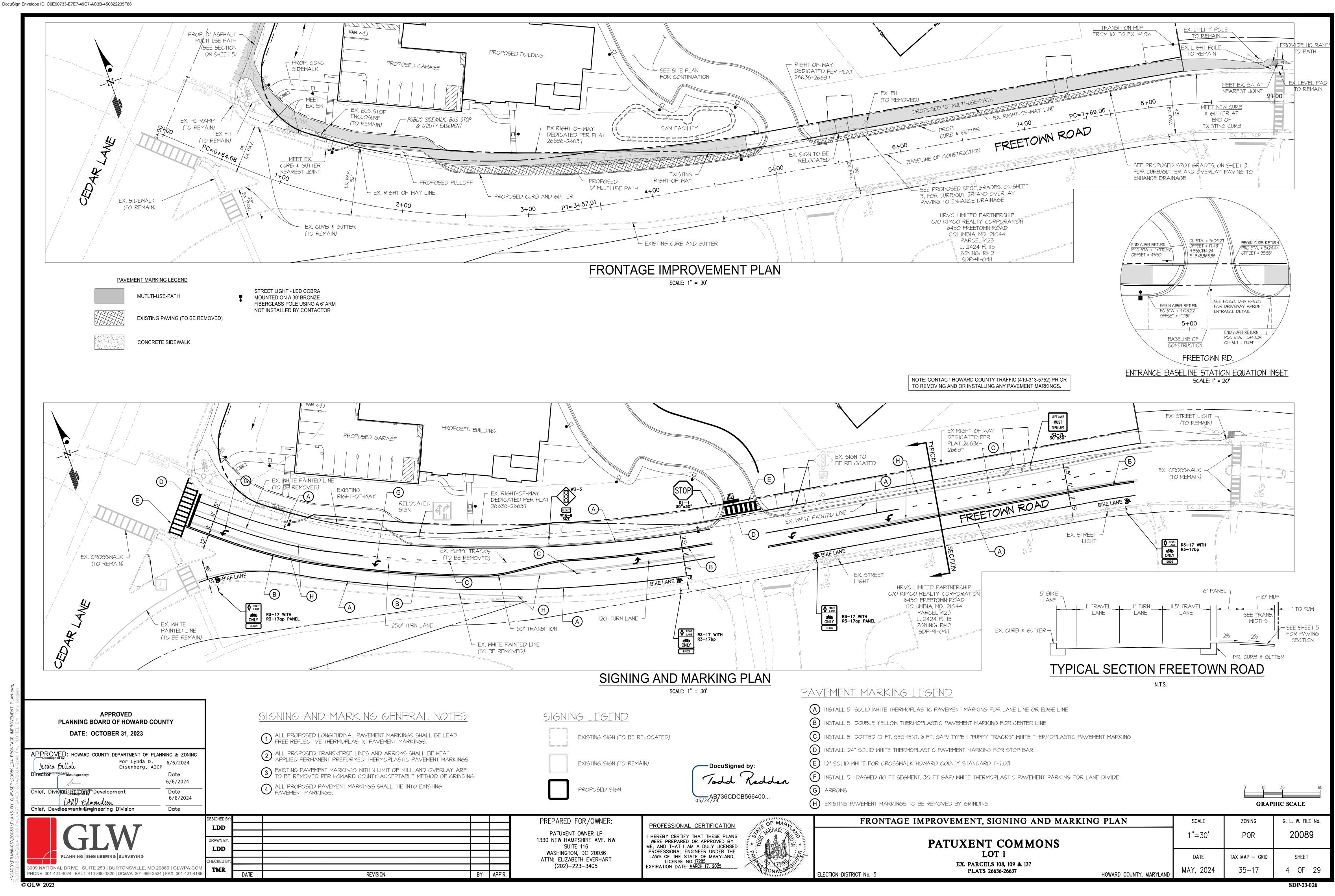
SECTION/AREA: N/A SUBDIVISION NAME: PATUXENT COMMONS PARCEL: 108, 109 \$ 13 ZONE TAX MAP ELEC. DIST. CENSUS TRACT POR 26636-26637 (F-23-044) 6056.02 WATER CODE: SEWER CODE: **COVER SHEET** G. L. W. FILE No AS SHOWN **PATUXENT COMMONS** LOT 1 SHEET EX. PARCELS 108, 109 & 137 OF 29 PLATS 26636-26637

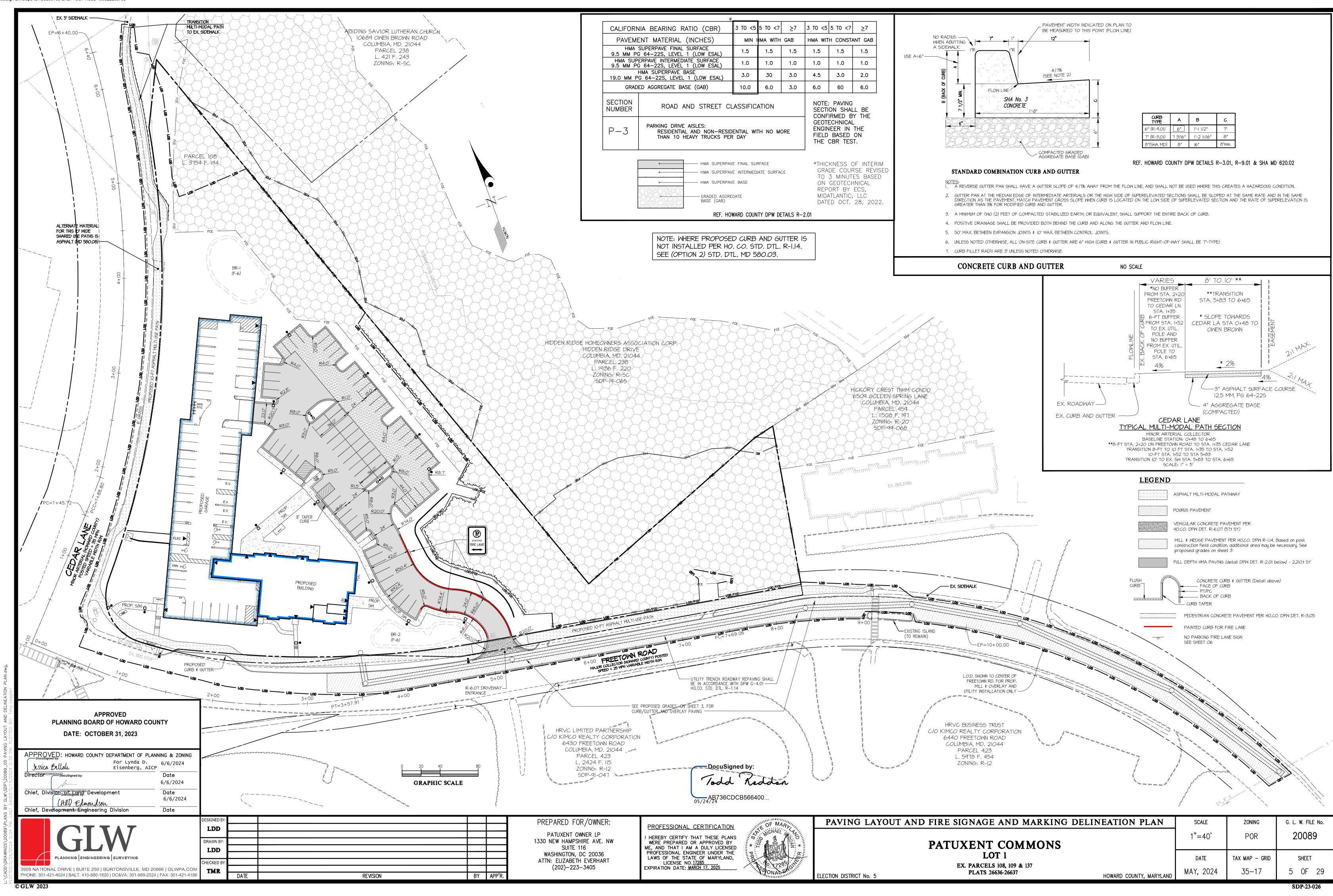
HOWARD COUNTY, MARYLAND

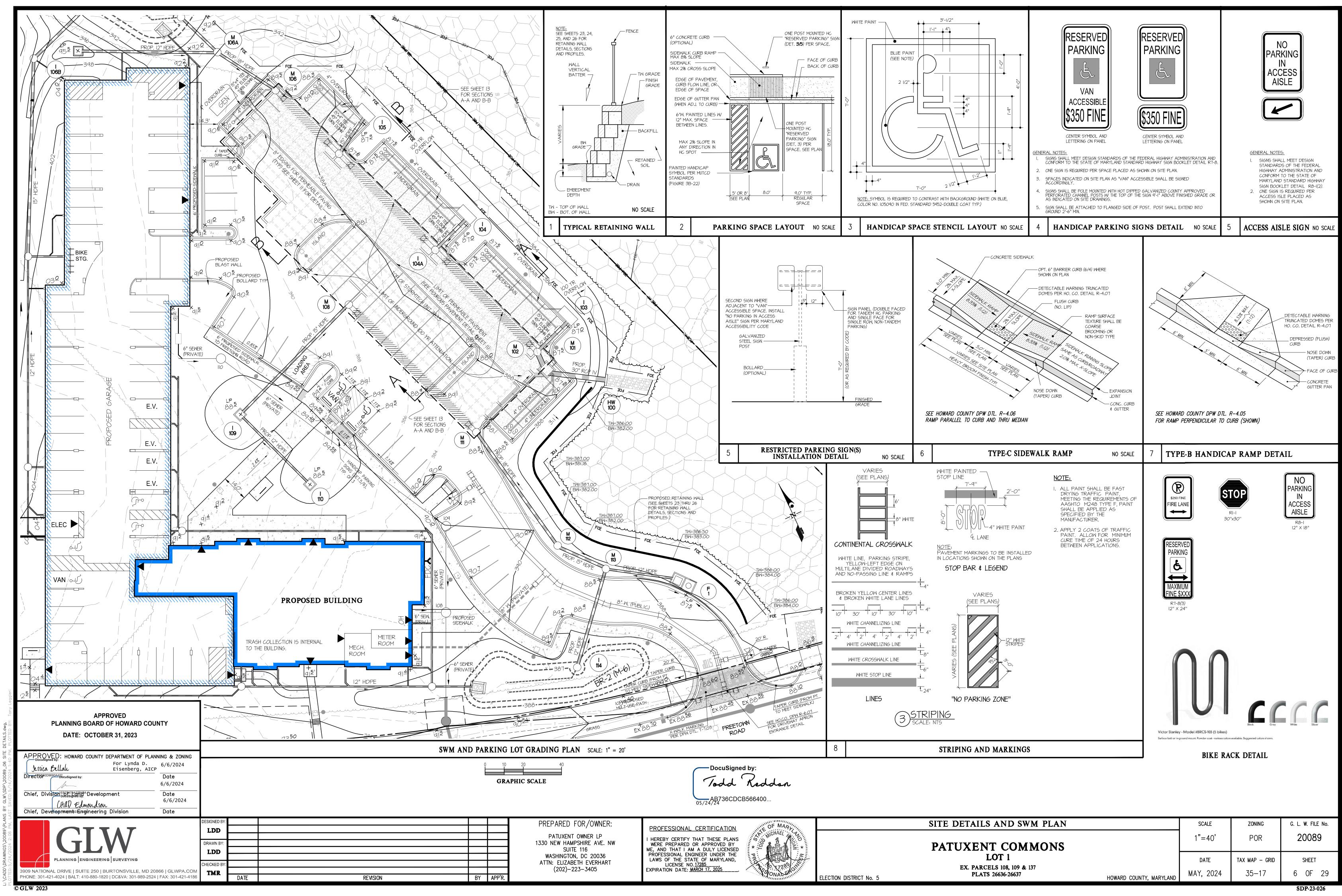
BUILDING ADDRESS: 6441 FREETOWN ROAD

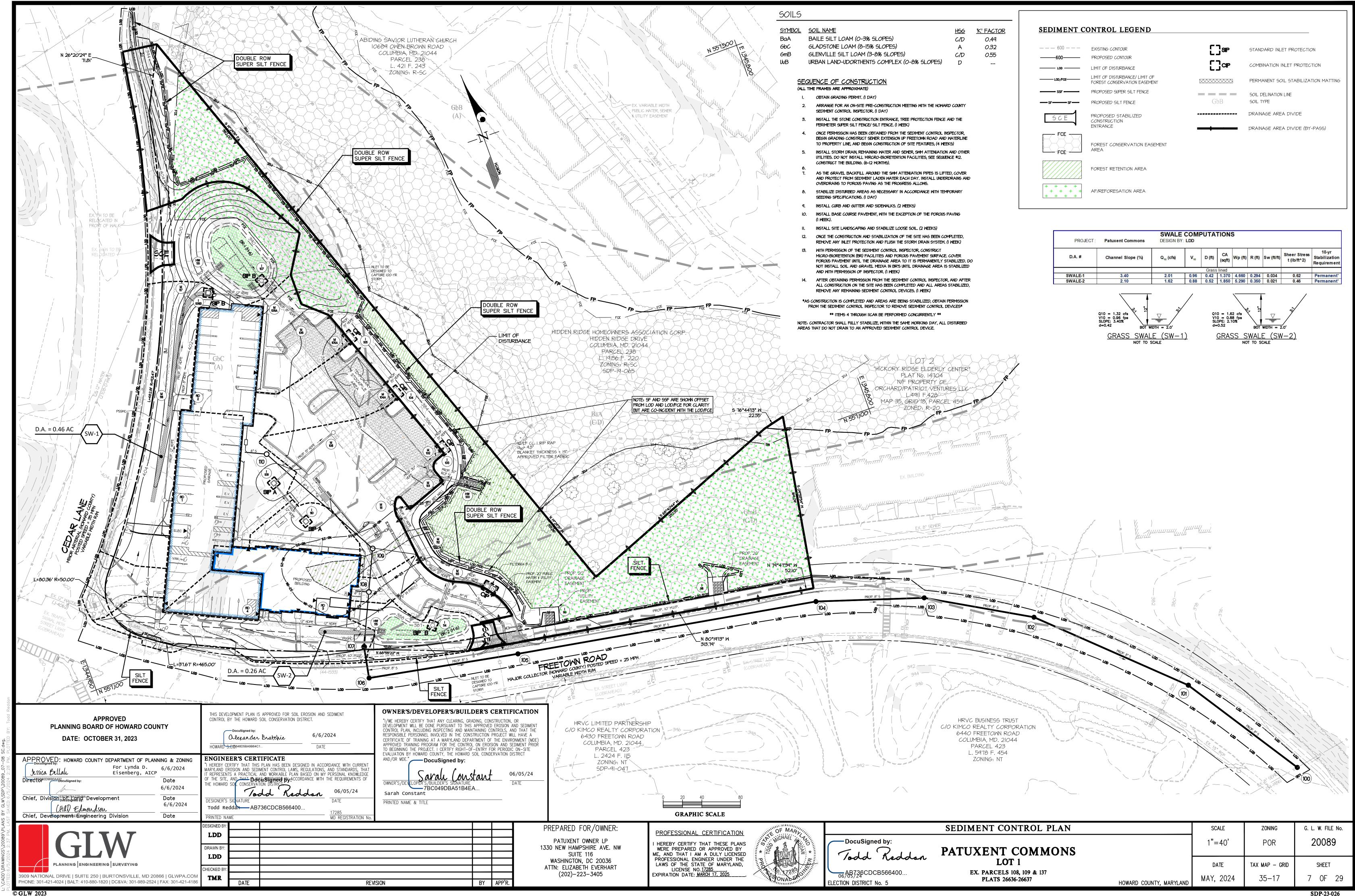












DRAWN E

LDD

HECKED

TMR

DATE

REVISION

PLANNING ENGINEERING SURVEYING

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3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM

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DocuSign Envelope ID: C6E90733-E7E7-49C7-AC3B-450822235F88 **B-4-4 STANDARDS AND SPECIFICATIONS B-4-2 STANDARD AND SPECIFICATIONS FOR SOIL B-4-3 STANDARDS AND SPECIFICATIONS FOR** SCE DETAIL E- 9-1 STANDARD INLET PROTECTION DETAIL E- 9-1 STANDARD INLET PROTECTION ENTRANCE FOR TEMPORARY STABILIZATION **B-4-5 STANDARDS AND SPECIFICATIONS** SEDIMENT CONTROL NOTES PREPARATION, TOPSOILING, AND SOIL AMENDMENTS SEEDING and MULCHING FOR PERMANENT STABILIZATION MOUNTABLE BERM (6 IN MIN.) <u>DEFINITION</u> DEFINITION A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY CONSTRUCTION SPECIFICATIONS <u>DEFINITION</u> DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKE EXISTING GROUND — USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION NONWOVEN GEOTEXTILE PIPE (SEE NOTE 6) AT THE FOLLOWING STAGES: a. PRIOR TO THE START OF EARTH DISTURBANCE, INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS ADION, STRETCH & INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY, FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST. DESCRIPTION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING PROFILE TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONSTRUCTION. TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED CONDITIONS WHERE PRACTICE APPLIES ON DISTURBED SOILS. 16 IN MIN. NOTCH ELEVATION FOR TYPE B, USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE HES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE WITH FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. CONDITIONS WHERE PRACTICE APPLIES FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED. STABILIZATION PRACTICES ARE REQUIRED. CONDITIONS WHERE PRACTICE APPLIES d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA —NAILING STRIP NOT UNDER ACTIVE GRADING EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES. UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR <u>CRITERIA</u> A. SOIL PREPARATION THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN PLAN VIEW -WOVEN SLIT FILM GEOTEXTILE . TEMPORARY STABILIZATION THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING . SEEDING 18 IN INTO GROUND -ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE TYPE A TYPE B SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES SPECIFICATIONS COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE CONSTRUCTION SPECIFICATIONS BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS ISOMETRIC VIEW HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS. SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATI THE SOIL IS LOOSENED IT MILST NOT BE ROLLED OR DRAGGED SMOOTH BILL LEFT IN THI CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S). APPLICATION EDGE OF ROADWAY OR TOP OF EARTH DIKE ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES BY THE TESTING AGENCY SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING. LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SÚMMARY IS TO . PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT. RUNNING PARALLEL TO THE CONTOUR OF THE SLOP WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON. APPLY SEED AND IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES. MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC MAINTAIN UNTIL THE NEXT SEEDING SEASON. SEED AND SEEDING RATE. TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 -FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS CRITICAL AREA PLANTING. TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMÉTER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 . PERMANENT STABILIZATION DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. TEMPORARY SEEDING SUMMAR' RECOMMENDED BY THE SOIL TESTING AGENCY. a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAK OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED HARDINESS ZONE: 6b FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: ERTILIZER LIME 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING SEED MIXTURE: SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN I. SOIL PH BETWEEN 6.0 AND 7.0. RATE IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY. RATF HE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS A SEEDING SECTION FOR TYPE A AND B DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIES II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM). HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL A III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (Se MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND 40 lb/ac 436 lb./ac. 0.5 INCHES CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTI (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, 8–4–2), PERMANENT SEEDING (Sec.B–4–5), TEMPORARY SEEDING (SEC. B $\dot{-}$ 4–4) Ryegrass Aug. 1 to Oct. MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (10 lb./ (90 lb./ SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH AND MULCHING (SEC. B—4—3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE 2011 SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE 1.000 sf) | 1.000 st STANDARD SYMBOL SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE PERMANENT SOL May 16 to July 31 0.5 INCHES 20 lb/ac TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC Pearl Millet GROUND IS FROZEN INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATION TABILIZATION MATTING CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DETAIL E-9-6 COMBINATION INLET SHALL BE ENFORCED IN AREAS WITH >15'OF CUT AND/OR FILL. STOCKPILES (SEC. DETAIL E-9-6 COMBINATION INLET CHANNEL APPLICATION (* INCLUDE SHEAR STRESS) DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. A CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL **PROTECTION** IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. . APPLICATION V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6). MAXIMUM DRAINAGE AREA = 1/4 ACRE KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE CONSTRUCTION SPECIFICATIONS DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND USE NOMINAL 2 INCH x 4 INCH LUMBE ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET 2 FT MIN. LENGTH— OF 2 IN x 4 IN AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. **B-4-8 STANDARDS AND SPECIFICATIONS** INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE ABOVE CONDITIONS. SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF BEEN OBTAINED FROM THE CID. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE. 3/4 TO 11/2 IN—_____ 2 IN × 4 IN—___ STONE WEIR TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR FOR STOCKPILE AREA THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 . GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE SITE-SPECIFIC SEEDING SUMMARIES. ___6 IN___ APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY PERCENT OF THE TOTAL MIXTURE BY WEIGHT. SITE ANALYSIS ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LEIGH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE. HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA TOTAL AREA OF SITE (LOT 18) : 4.43± AC. WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUI PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR. . APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY AREA DISTURBED : 4.20 AC. AREAS WHERE RAPID ÉSTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE NONWOVEN GEOTEXTILE -A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART). DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS AREA TO BE ROOFED OR PAVED : 1.54 AC. SEDIMENT CONTROL MEASURES. ISOMETRIC VIEW 14 IN HARDWARE CLOTH-COVER SEED WITH SOIL. CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER CONSTRUCTION SPECIFICATIONS: 6 IN OVERLAP . PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2X4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD. AREA TO BE VEGETATIVELY STABILIZED : 2.66 AC. . CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A 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. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. WIRE TIES-FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT * FOR ESTIMATIN TOTAL CUT : 8,738 CY* NONWOVEN GEOTEXTIL STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN . USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN, IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2×2 INCHES AND SUFFICIENTLY BONDED OR SEWIN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL. CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE MUST BE FIRM AFTER PLANTING. SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN 8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING. : 5,108 CY* TOTAL FILL ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY PATTERNS. CONTRACTOR T iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT HE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION 9. FORM THE 1/2, INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 3/ TO 11/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE. : SITE WITH AN ACTIVE | VERIFY ACTUAL CONDITIONS WHERE PRACTICE APPLIES HALF THE SEEDING RATE IN EACH DIRECTION. OFF-SITE WASTE/BORROW RACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SECTION STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR 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. SUN TO MEDIUM SHADE AREA LOCATION | VALUES. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "I" SHAPED STEEL WER HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ NOCHES MODE AND BE A MINIMUM OF 6 INCHES LONG. "I" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAMIN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1X3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES 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 10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS SEED AND FERTILIZER). NY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING. THE FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF 6 FT MAX. SPACING OF 2 IN x 4 IN SPACERS . STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. CLEARLY INDICATED ON THE <u>TOPSOILING</u> POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY FROSION AND SEDIMENT CONTROL PLAN 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE. IV KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANEN UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY. INTENSIVELY MANAGED VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW ANTICIPATED VOLUME OF MATERIAL ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: EVERY INSPECTION AND SHOULD INCLUDE: • INSPECTION DATE OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT. PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. PROVIDED IN ACCORDANCE BURNT OR HYDRATED LIME WHEN HYDROSEEDING 1/2 TO 3 POUNDS PER 1000 SQUARE FEET. WITH SECTION B-3 LAND GRADING KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY. ii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) NAME AND TITLE OF INSPECTOR L2 IN x 4 IN WEIR RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS T 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 STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL. • WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE. ISOMETRIC VIEW PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS. SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF LAST RECORDED PRECIPITATION) CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR DIVERSION DEVICE SUCH AS . MULCHING TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE RECOMMENDATIONS FOR MARYLAND" AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE 0. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. MADE FOR DISCHARGING IDENTIFICATION OF PLAN DEFICIENCIES IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE MULCH MATERIALS (IN ORDER OF PREFERENCE) THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO CONCENTRATED FLOW IN A NON-EROSIVE MANNER. CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER 2011 MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE APPROPRIATE EROSION/SEDIMENT AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. PROTECTION AND ASSURES A PURE GENETIC LINE STABILIZATION REQUIREMENTS SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION HE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. CAKED. DECAYED. OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW DETAIL E-3 SUPER SILT FENCE IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. REQUIREMENT AS WELL AS MONITORING/SAMPLING MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED. WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE). CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 61 SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP STOCKPILES CONTAINING APPROPRIATE COLOR TO FACILITATE TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH THE END OF EACH WORKDAY, WHICHEVER IS SHORTER. GROUND SURFACE— TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 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 OF SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION, MINOR REVISIONS MAY ALLOWED BY THE CID STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.). FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS PER THE LIST OF HSCD-APPROVED FIELD CHANGES. REA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE URRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 k. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5 INCHES IN DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING. GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ARF FIRMÎ Y FSTABI ISHFD. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME. CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES. WOVEN SLIT FILM GEOTEXTILE-GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO—TOXIC. FLOW ___ PERMANENT SEEDING SUMMARY . TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. HARDINESS ZONE: 6b USED IN LIEU OF NATURAL TOPSOIL. APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, STANDARDS AND SPECIFICATIONS SEED MIXTURE: #9 (Tall Fescue/ Kentucky Bluegrass) PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM. **FERTILIZEF** FOR DUST CONTROL CONSTRUCTION SPECIFICATIONS TOPSOIL APPLICATION INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROLIND DEPTHS | (10-20-20) | RATE TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE. SPECIES DATES EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A *Certified Tall Fescue blend 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'IN ELEVATION. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDIN MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER 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 . FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THI UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND. (95% by weight): Falcon /\ THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES. Mar. 1 to May 15, | 1/4 - | 1.0 lb/ 1000 90 lb Penn 1901 & Rebel Exeda PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE 'Aug. 15 to Oct. 15 | 1/2 IN. 1000 s.f. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, Certified Kentucky Bluegrass (45 lb/acre) TIME PERIODS (INCLUSIVE): • USE I AND IP MARCH 1 - JUNE 15 NCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE. TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES TO REDUCE ON 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 lend (5% by weight): WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY AND OFF-SITE DAMAGE INCLUDING HEALTH AND TRAFFIC HAZARDS. Courtyard, Raven & Yankee • USE III AND IIIP OCTOBER 1 - APRIL 30 WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION $H\!-\!1$ MATERIALS. OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CONDITIONS WHERE PRACTICE APPLIES AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE. CELLULOSE FIBER PER 100 GALLONS OF WATER. * Other cultivars listed as "proven" in the most current UMD TT—77 may also be used A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) WITHOUT TREATMENT. . SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER). 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL <u>SPECIFICATIONS</u> a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE U.S. DEPARTMENT OF AGRICULTURE URAL RESOURCES CONSERVATION SERVICE URAL RESOURCES CONSERVATION SERVICE WARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE O COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO MULCHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE SED FOR CHEMICAL ANALYSES SECTION B-4-3 SEEDING AND MULCHING, AND SECTION B-4-4 TEMPORARY STABILIZATION. STANDARD SYMBO THE AREA AND EROSION HAZARD: ZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. MULCH MUST BE ANCHORED TO PREVENT BLOWING. DETAIL E-1 SILT FENCE DETAIL E-1 SILT FENCE -----SF-------⊢----SF-----A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED CCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND MARBANTY OF THE PROPRIET OF THE PROPR TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON CENTER TO CENTER 36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ONSTRUCTION SPECIFICATIONS SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY USE WOOD POSTS 1% X 1% ± % inch (Minimum) square cut of sound quality hardwood. As an alternative to wooden post use standard "t" or "u" section steel posts weighing not less than 1 pound per linear foot. SLOPING LAND. THIS PRACTICE SHOULD FOLLOW THE CONTOUR WARRANTY OF THE PRODUCER STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN PRODUCE THE DESIRED EFFECT. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. 16 IN MIN. HEIGHT OF WOVEN SLIT FILM GEOTEXTILE USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART IE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT GRASP ON THE UPPER 10 PERCENT OF THE SECTION. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS. THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION. TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNÉSIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. i. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA MANUFACTURER. APPLICATION OF LIQUID BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL E AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE 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. SOD MUST BÉ HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SO AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE OT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. WHERE THE SUBSOIL EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE A BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND APPROPRIATE PLAN REVIEW AUTHORITY. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC. SCIENTIST PRIOR TO ITS INSTALLATION. CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE THE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. OF ASPHALT BINDERS IS STRICTLY PROHIBITED. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. . SOD INSTALLATION FENCE POST 18 IN MIN. ABOVE GROUND LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH WOVEN SLIT FILM—— GEOTEXTILE ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE. UNDISTURBED GROUND a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG. LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOI - STATE OF THE PARTY OF THE PAR . REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED FENCE POST DRIVEN A MIN. OF 16 IN INTO THE GROUND PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OWNER'S/DEVELOPER'S/BUILDER'S CERTIFICATION THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS APPROVED CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. "I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR WHICH WOULD CAUSE AIR DRYING OF THE ROOTS. DÉVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT PLANNING BOARD OF HOWARD COUNTY WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND CROSS SECTION CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD T 6/6/2024 RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND Olexander Bratchie **DATE: OCTOBER 31, 2023** CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) E UNDERLYING SOIL SURFACE APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROISION AND SEDIMENT PRIOR WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE EVALUATION BY HOWARD COUNTY. THE HOWARD SOIL CONDERVATION DISTRICT AND OR MDE DOCUSIGNED by: THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING ENGINEER'S CERTIFICATE I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURREN For Lynda D. 6/6/2024 SOD MAINTENANCE MARYLAND EROSION AND SEDIMENT CONTROL LAWS. REGULATIONS. AND STANDARDS. TH 1 day or Jessica Bellali Eisenberg, AICP 05/24/24 A PRACTICA AND WORKARIE BLAN BASED ON MY PERSONAL KNOWLEDG ND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS Director DocuSigned by: Date 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. WIER'S/DEVELOPER'S/BUILDER'S SIGNATURI THE HOWARD S 6/6/2024 7BC049DBA51B4EA... STAPLElodd Kedden 05/24/24 b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN FENCE SECTIONS (TOP MEW) Chief, Division Declaration Development Date DESIGNER'S PRINTED NAME & TITLE DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF 6/6/2024 MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS Todd Reddan AB736CDCB566400... Hall Edmondson 2011 MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION NATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMINISTRATION HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED. Date Chief, Developmenselengineering Division MD REGISTRATION N PRINTED NAM SEDIMENT CONTROL NOTES AND DETAILS PREPARED FOR/OWNER: OF MARL PROFESSIONAL CERTIFICATION

PATUXENT OWNER LP

SUITE 116

WASHINGTON, DC 20036

ATTN: ELIZABETH EVERHART

(202)-223-3405

BY APP'R

1330 NEW HAMPSHIRE AVE. NW

ELECTION DISTRICT No. 5

HEREBY CERTIFY THAT THESE PLANS

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. 17285 EXPIRATION DATE: MARCH 17, 2025

DocuSigned by: lodd Reddon __AB736CDCB566400.. $05/24/\overline{24}$

PATUXENT COMMONS LOT 1 EX. PARCELS 108, 109 & 137

PLATS 26636-26637

G. L. W. FILE No. 20089 SHEET TAX MAP - GRID OF 29 MAY, 2024 35–17 HOWARD COUNTY, MARYLAND

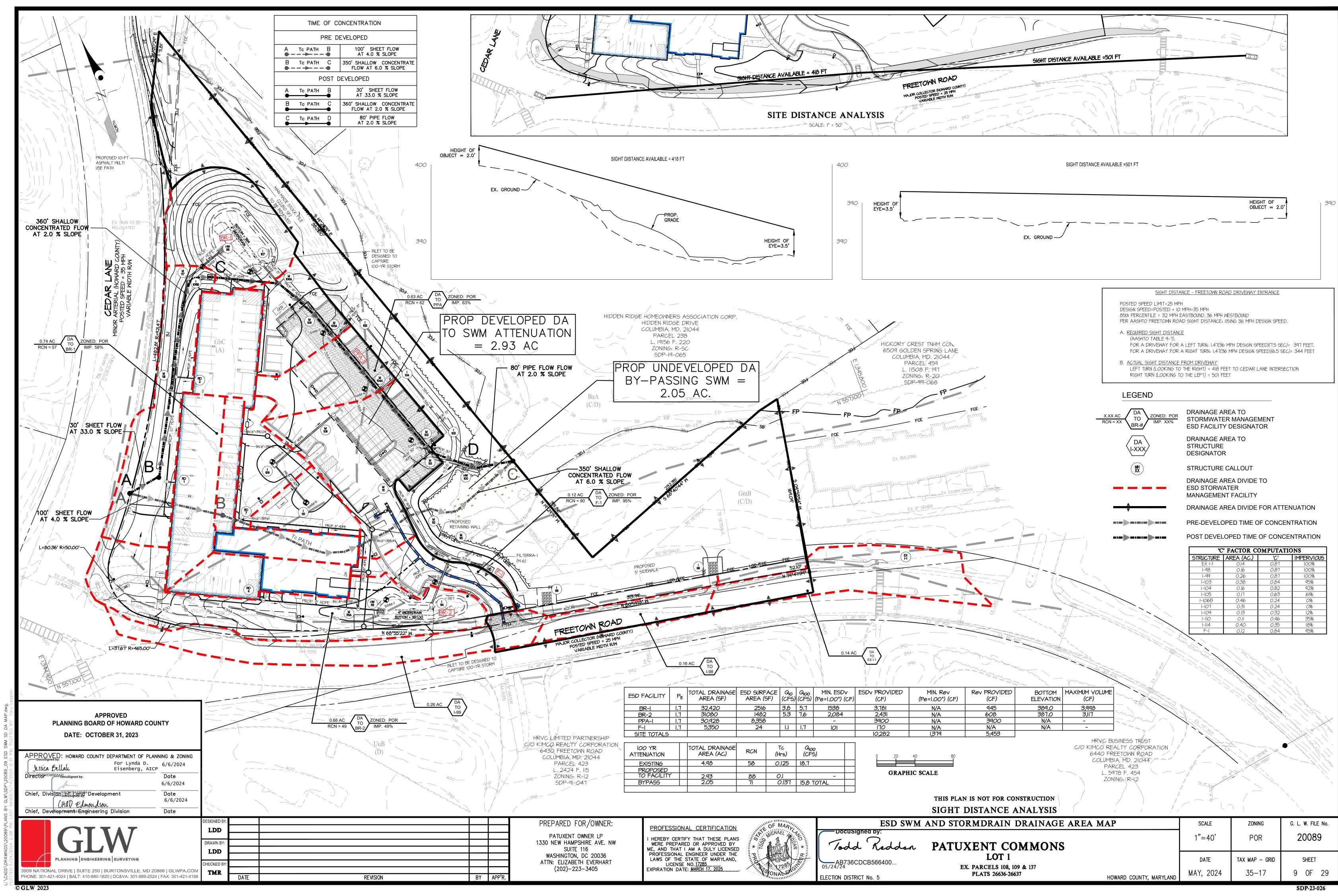
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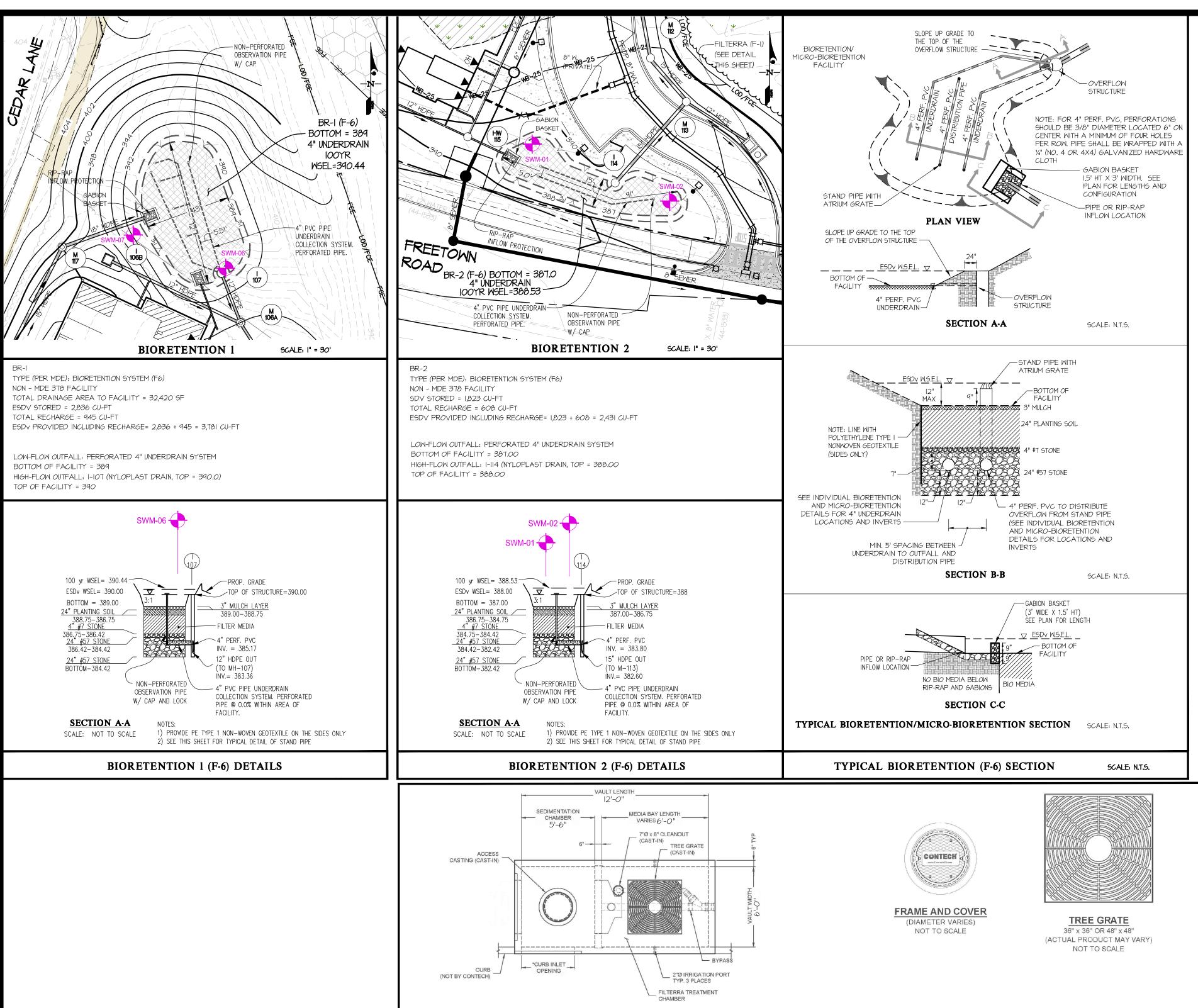
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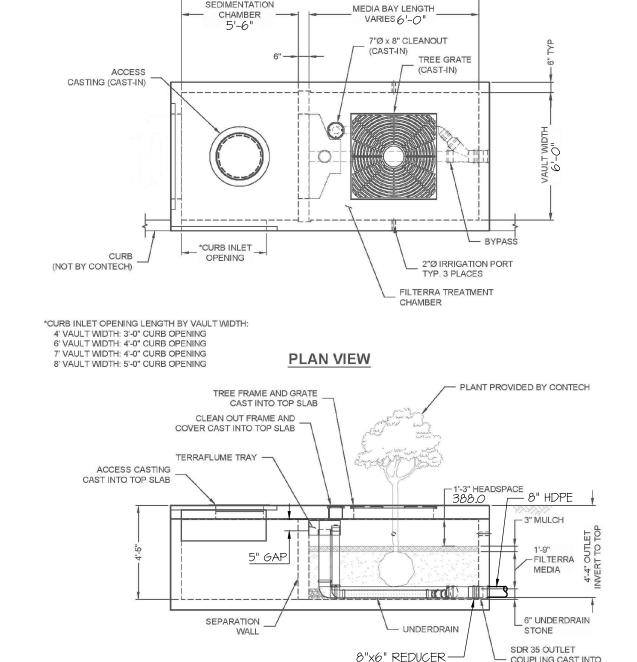
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTRO

2011

PROTECTION

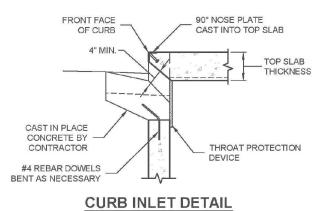






ELEVATION VIEW

REVISION



NOT TO SCALE

REQUIRED MINIMUM FILTERRA TREATMENT SURFACE AREA IS 91 SF/20,000 SF OF THE TOTAL DRAINAGE AREA PER MDE. STORAGE CAPACITY ASSUMES NO STORAGE IN MULCH, MEDIA AND STONE.

ADA COMPLIANT FULL GRATE COVERS WITH SHADE TOLERANT PLANT SPECIES AVAILABLE UPON REQUEST. ALL INFORMATION IS BASED ON STANDARD 4.33' RIM TO OUTLET INVERT DEPTH. ACCEPTABLE DEPTH IS 4.42' MIN. TO 5.00

MAXIMUM BYPASS FLOW FOR 4', 6', AND 7' WIDE UNITS IS 2.37 CFS. MAXIMUM BYPASS FLOW FOR 8' WIDE UNITS IS 4.74 CFS. . PRE-TREATMENT VOLUME OF 25 %, IOI CU FT. IS PROVIDED, PRIOR TO FILTRATION IN THE FIRST CHAMBER

ALL VEGETATION PROVIDED BY CONTECH.

TYPICAL FILTERRA SECTION DETAIL (F-1) SCALE: N.T.S.

(202)-223-3405

PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART

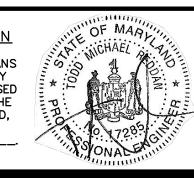
COUPLING CAST INTO

PRECAST VAULT WALL

INV.= 383.67

BY APP'R

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE PLANS 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. 17285 _____, EXPIRATION DATE: MARCH 17, 202





MATERIAL SPECIFICATIONS THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

DRAINAGE SYSTEM ON SITE, THE EXISTING MUNICIPAL INFRASTRUCTURE. AND/OR THE EXISTING SOIL AND GEOGRAPHY OF THE THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER RECEIVING WATERSHED. UNLESS SITE INCLUDES CERTAIN UNIQUE AND RARE FEATURES. THE OPERATION OF THE UNDERGROUND MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT SWM SYSTEM WILL BE DRIVEN BY NATURALLY OCCURRING SYSTEMS AND WILL FUNCTION AUTONOMOUSLY. HOWEVER UPHOLDING GROWTH. OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

A PROPER SCHEDULE OF INSPECTION AND MAINTENANCE IS CRITICAL TO ENSURE CONTINUED FUNCTIONALITY AND OPTIMUM

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA: SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)ORGANIC MATTER 1.5 - 4% (BY WEIGHT)

ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%). ESTABLISHED FOR EACH INDIVIDUAL LOCATION BASED UPON SITE SPECIFIC VARIABLES. THE TYPE OF LAND USE (I.E. INDUSTRIAL CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.

PH RANGE -SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH. YEAR OF OPERATION. FOR SUBSEQUENT YEARS, THE INSPECTION SHOULD BE ADJUSTED BASED UPON PREVIOUS OBSERVATION

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

T IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN

POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL, IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

> GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

JNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE- SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).
- PERFORATIONS IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH
- THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT
- PORT AND MONITOR PERFORMANCE OF THE FILTER. A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED

APPENDIX B.1.1. - SUPPLEMENTAL POND SPECIFICATIONS (NON-378)

SUPPLEMENTAL STORMWATER PONDS AND WETLAND SPECIFICATIONS (NON-378)

THESE NOTES AND SPECIFICATIONS ARE IN ADDITION TO THE MD-378 SPECIFICATIONS. IF THERE IS ANY QUESTIONS AS TO THE APPLICABILITY, THE MD-378 SPECIFICATIONS SUPERCEDE.

IT IS PREFERRED TO USE THE SAME MATERIAL IN THE EMBANKMENT AS IS BEING INSTALLED FOR THE CORE TRENCH. IF THIS IS NOT POSSIBLE BECAUSE THE APPROPRIATE MATERIAL IS NOT AVAILABLE, A DAM CORE WITH A SHELL MAY BE USED. THE CROSS-SECTION OF THE STORMWATER FACILITY SHOULD SHOW THE LIMITS OF THE DAM CORE (UP TO 10-YEAR WATER SURFACE ELEVATION) AS WELL AS THE ACCEPTABLE MATERIALS FOR THE SHELL. THE SHAPE OF THE DAM CORE AND THE MATERIAL TO BE USED IN THE SHELL SHOULD BE PROVIDED BY THE GEOTECHNICAL ENGINEER.

IF THE COMPACTION TESTS FOR THE SITE IMPROVEMENTS IS USING MODIFIED PROCTOR (AASHTO T-180), THEN TO MAINTAIN ON-SITE CONSISTENCY, THE MODIFIED PROCTOR MAY BE USED IN LIEU OF A STANDARD PROCTOR (AASHTO T-99). THE MINIMUM DENSITY USING THE MODIFIED PROCTOR TEST METHOD SHALL BE AT LEAST 92% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF ±2% OF THE OPTIMUM. THE MINIMUM REQUIRED DENSITY USING THE STANDARD PROCTOR TEST METHOD SHALL BE AT LEAST 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF $\pm 2\%$ OF THE OPTIMUM.

FOR ALL STORMWATER MANAGEMENT FACILITIES, A GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE MUST BE PRESENT TO VERIFY COMPACTION IN ACCORDANCE WITH THE SELECTED TEST METHOD. THIS INFORMATION NEEDS TO BE PROVIDED IN A REPORT TO THE DESIGN ENGINEER, SO THAT CERTIFICATION OF THE CONSTRUCTION OF THE FACILITY, IN ACCORDANCE WITH MD-378 SPECIFICATIONS, CAN BE MADE.

A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS OF THE DAM EMBANKMENT. SEEDING, LIMING, FERTILIZING, MULCHING, ETC. SHALL BE IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SERVICE MD-342 OR THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL PERMANENT SEEDING, SECTION IN CHAPTER 20. THE PURPOSE OF THE TOPSOIL IS TO ESTABLISH A GOOD GROWTH OF GRASS, WHICH IS NOT ALWAYS POSSIBLE WITH SOME OF

THE MATERIALS THAT MAY BE PLACED FOR THE EMBANKMENT FILL. GEOTEXTILE PLACED BENEATH RIP-RAP SHALL BE CLASS "C" GEOTEXTILE OR BETTER (SEE SECTION 24.0, MATERIAL SPECIFICATIONS,

1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (MDE, 1994). SOME ACCEPTABLE GEOTEXTILES THAT MEET THE CLASS "C" CRITERIA INCLUDE.

AMOCO 4552 CARTHAGE FX-70S GEOLON N70 MIRAFI 180-N

THIS IS ONLY A PARTIAL LISTING OF AVAILABLE GEOTEXTILES BASED ON INFORMATION PROVIDED BY THE MANUFACTURES OF THE 1997 SPECIFIER'S GUIDE DATED DECEMBER 1996. IT IS THE RESPONSIBILITY OF THE ENGINEER TO VERIFY THE ADEQUACY OF THE MATERIAL, AS THERE ARE CHANGES IN THE MANUFACTURING PROCESS AND THE TYPE OF FABRIC USED, WHICH MAY AFFECT THE CONTINUED ACCEPTANCE.

A RULE OF THUMB TO DETERMINE WHEN AN EXCAVATED POND MAY NEED TO BE CONSIDERED AN EMBANKMENT POND IS AS PROVIDE CALCULATION OF 10H + 20 FEET = L, WHERE H HEIGHT FROM POND BOTTOM TO TOP OF DAM. IF THE PROJECTION OF L DOWNSTREAM IS A HORIZONTAL LINE FROM THE UPSTREAM TOE OF SLOPE IS BELOW EXISTING GROUND, THE POND CAN BE

THE DESIGN ENGINEER AND GEOTECHINCAL ENGINEER SHOULD MAKE THE DETERMINATION THAT THE SETTLEMENT OF THE POND WILL

CONSIDERED AN EXCAVATED POND. IN ADDITION, THE EXISTING GROUND SLOPE, DOWNSTREAM OF THE TOE, MUST BE LESS THAN

NOT CAUSE EXCESSIVE JOINT EXTENSION. FOR FURTHER INFORMATION ON JOINT ANALYSIS, SEE NRCE PUBLICATION TR-18. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8-INCH. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE

THE EMBANKMENT FILL SHALL NOT BE PLACED HIGHER THAN THE CENTERLINE OF THE PRINCIPAL SPILLWAY UNTIL AFTER THE PRINCIPAL SPILLWAY HAS BEEN INSTALLED. IF THE EMBANKMENT NEEDS TO BE EXCAVATED TO INSTALL THE PRINCIPAL SPILLWAY, THE SIDE SLOPE SHALL BE NO LESS THAN 2:1

. THE SIDE SLOPES OF A CUT TO REPAIR A DAM, INSTALL A PRINCIPAL SPILLWAY FOR AN EXCAVATED POND, OR OTHER REPAIR WORK, SHALL BE NO LESS THAN 2:1.

DocuSigned by:

Neddan

_AB736CDCB566400.

ELECTION DISTRICT No. 5

PATUXENT COMMONS LOT 1 EX. PARCELS 108, 109 & 137

G. L. W. FILE No. 20089 AS SHOWN SHEET TAX MAP - GRID 10 OF 29 MAY, 2024 35–17

Jessica Bellali

Direction DocuSigned by:

Chief, Division Document

Hdl) Edmondson

PLANNING ENGINEERING SURVEYING

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM

HONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

Chief, Development Engineering Division

APPROVED

PLANNING BOARD OF HOWARD COUNTY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

For Lynda D.

Eisenberg, AICP

6/6/2024

Date

Date

6/6/2024

6/6/2024

DRAWN E

LDD

HECKED

TMR

DATE

DATE: OCTOBER 31, 2023

INSPECTION IT IS FOUND THAT SEDIMENT HAS ACCUMULATED. A STADIA ROD SHOULD BE INSERTED TO DETERMINE THE DEPTH OF SEDIMENT. WHEN THE AVERAGE DEPTH OF SEDIMENT EXCEEDS 3 INCHES THROUGHOUT THE LENGTH OF THE ISOLATOR ROW, CLEAN-OUT SHOULD BE PERFORMED.

PERFORMANCE OF THE SYSTEM.

MAINTENANCE: THE ISOLATOR ROW WAS DESIGNED TO REDUCE THE COST OF PERIODIC MAINTENANCE. BY "ISOLATING" SEDIMENTS TO JUST ONE ROW, COSTS ARE DRAMATICALLY REDUCED BY ELIMINATING THE NEED TO CLEAN OUT EACH ROW OF THE ENTIRE STORAGE BED. IF INSPECTION INDICATES THE POTENTIAL NEED FOR MAINTENANCE, ACCESS IS PROVIDED VIA A MANHOLE(S) LOCATED ON THE END(S) OF THE ROW FOR CLEANOUT. IF ENTRY INTO THE MANHOLE IS REQUIRED, PLEASE FOLLOW LOCAL AND OSHA RULES FOR A CONFINED SPACE ENTRIES. MAINTENANCE IS ACCOMPLISHED WITH THE JETVAC PROCESS. THE JETVAC PROCESS UTILIZES A HIGH PRESSURE WATER NOZZLE TO PROPEL ITSELF DOWN THE ISOLATOR ROW WHILE SCOURING AND SUSPENDING SEDIMENTS. AS THE NOZZLE IS RETRIEVED, THE CAPTURED POLLUTANTS ARE FLUSHED BACK INTO THE MANHOLE FOR VACUUMING, MOST SEWER AND PIPE MAINTENANCE COMPANIES HAVE VACUUM/JETVAC COMBINATION VEHICLES. SELECTION OF AN APPROPRIATE JETVAC NOZZLE WILL IMPROVE MAINTENANCE EFFICIENCY. FIXED NOZZLES DESIGNED FOR CULVERTS OR LARGE DIAMETER PIPE CLEANING ARE PREFERABLE, REAR FACING JETS WITH AN EFFECTIVE SPREAD OF AT LEAST 45" ARE BEST. MOST JETVAC REELS HAVE 400 FEET OF HOSE ALLOWING MAINTENANCE OF AN ISOLATOR ROW UP TO 50 CHAMBERS LONG. THE JETVAC PROCESS SHALL ONLY BE PERFORMED ON STORMTECH ISOLATOR ROWS THAT HAVE AASHTO CLASS 1 WOVEN GEOTEXTILE (AS SPECIFIED BY STORMTECH) OVER THEIR ANGULAR BASE STONE.

THE STORMTECH UNDERGROUND SWM SYSTEM HAS BEEN DESIGNED TO FUNCTION IN CONJUNCTION WITH THE ENGINEERED

THE FREQUENCY OF INSPECTION AND MAINTENANCE VARIES BY LOCATION. A ROUTINE INSPECTION SCHEDULE NEEDS TO BE

COMMERCIAL, RESIDENTIAL), ANTICIPATED POLLUTANT LOAD, PERCENT IMPERVIOUSNESS, CLIMATE, ETC. ALL PLAY A CRITICAL

ROLE IN DETERMINING THE ACTUAL FREQUENCY OF INSPECTION AND MAINTENANCE PRACTICES. AT A MINIMUM, STORMTECH

RECOMMENDS ANNUAL INSPECTIONS. INITIALLY, THE ISOLATOR ROW SHOULD BE INSPECTED EVERY 6 MONTHS FOR THE FIRST

OF SEDIMENT DEPOSITION. THE ISOLATOR ROW INCORPORATES A COMBINATION OF STANDARD MANHOLE(S) AND STRATEGICALLY

LOCATED INSPECTION PORTS (AS NEEDED). THE INSPECTION PORTS ALLOW FOR EASY ACCESS TO THE SYSTEM FROM THE

SURFACE, ELIMINATING THE NEED TO PERFORM A CONFINED SPACE ENTRY FOR INSPECTION PURPOSES. IF UPON VISUAL

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION (F-6)

- A. THE HOA SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II. TABLE A.4.1 AND 2.
- B. THE HOA SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- . THE HOA SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- D. THE HOA SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.
- E. THE HOA SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE UNDERDRAINS WITHIN THE MICRO-BIORETENTION LAYERS. F. THE HOA SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STORM DRAIN PIPES AND STRUCTURES WITHIN PUBLIC

<u>OPERATION AND MAINTENANCE SCHEDULE FOR</u> PRIVATELY OWNED AND MAINTAINED FILTERRA DEVICES

EASEMENTS.

A. ACTIVATION OF THE FILTERRA™ UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA™ INLET PROTECTION AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED), NEGATING THE CHANCE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA™ SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES. B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.

A. EACH CORRECTLY INSTALLED FILTERRATM UNIT IS TO BE MAINTAINED BY THE SUPPLIER, OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA™ UNIT. EXTENDED MAINTENANCE CONTRACTS ARE AVAILABLE AT EXTRA COST UPON REQUEST.

B. ANNUAL MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS ARE SCHEDULED SEASONALLY: THE AN UP AFIER WINTER LOADS INCLUDING SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM B REMOVING EXCESSIVE LEAFLITTER.

EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS. FILTERRA™ UNIT INSPECTION

FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY

PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY REPLACEMENT OF MULCH

DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST)

THE BEGINNING AND ENDING DATE OF SUPPLIER'S OBLIGATION TO MAINTAIN THE INSTALLED SYSTEM SHALL BE DETERMINED

BY THE SUPPLIER AT THE TIME THE SYSTEM IS ACTIVATED. OWNERS MUST PROMPTLY NOTIFY THE SUPPLIER OF ANY DAMAGE TO THE PLANT(S), WHICH CONSTITUTE(S) AN INTEGRAL PART OF THE BIORETENTION TECHNOLOGY.

<u>OPERATION AND MAINTENANCE SCHEDULE FOR</u> PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

- A. THE OWNER SHALL PERIODICALLY SWEEP THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
- B. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
- C. THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
- D. THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

SPECIFICATION FOR A-2 PERMEABLE PAVEMENT

IHESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING DETAILED SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC

1. <u>PERVIOUS CONCRETE SPECIFICATIONS</u>

A. DESIGN THICKNESS-PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 325.9R, ACI 330R) OR USING STRUCTURAL VALUES DERIVED FROM FLEXIBLE PAVEMENT DESIGN PROCEDURES.

3. MIX AND INSTALLATION—TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADMIXTURES MAY ALSO BE USED. MATERIALS SHOULD BE TESTED (E.G., TRIAL BATCHING) PRIOR TO CONSTRUCTION SO THAT THE CRITICAL PROPERTIES (E.G., SETTLING TIME, RATE OF STRENGTH DEVELOPMENT, POROSITY, PERMEABILITY) CAN BE DETERMINED.

AGGREGATE-PERVIOUS CONCRETE CONTAINS A LIMITED FINE AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (\(\frac{3}{4}\) IN. TO NO. 4), NO. 8 (\(\frac{3}{8}\) IN. TO NO. 16) AND NO. 89 (\(\frac{3}{8}\) IN. TO NO. 50) SIEVES. SINGLE-SIZED AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED.

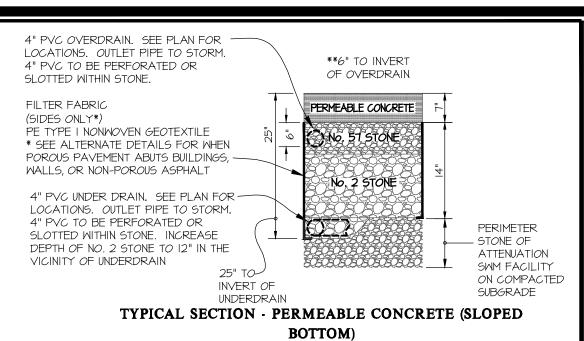
WATER CONTENT-WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUALITY SHOULD MEET ACI 30A. AS A GENERAL RULE, POTABLE WATER SHOULD BE USED ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR AASHTO M 157 MAY ALSO BE USED.

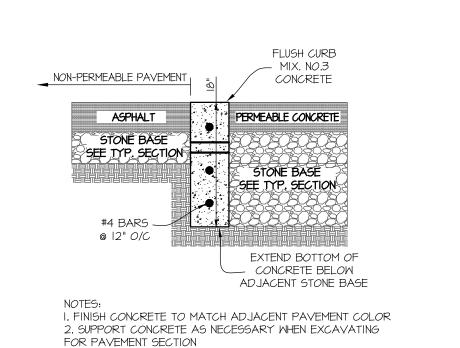
ADMIXTURES-CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.

. BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (N=0.30).

ESD NOTES AND DETAILS

PLATS 26636-26637 HOWARD COUNTY, MARYLAND



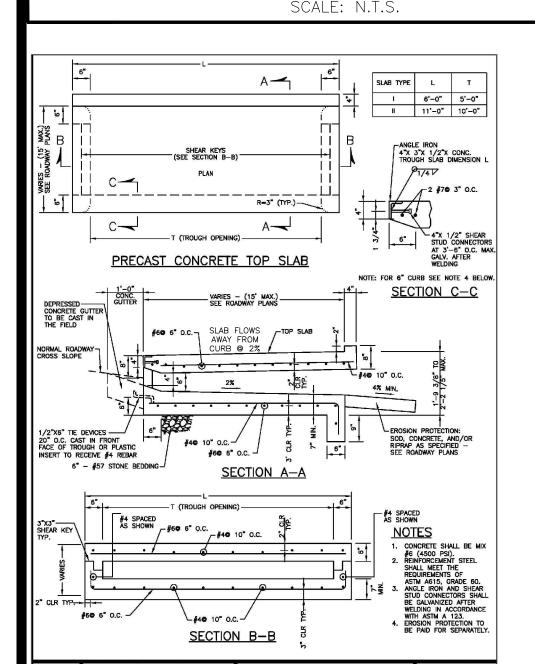


POUROUS PAVEMENT DETAIL

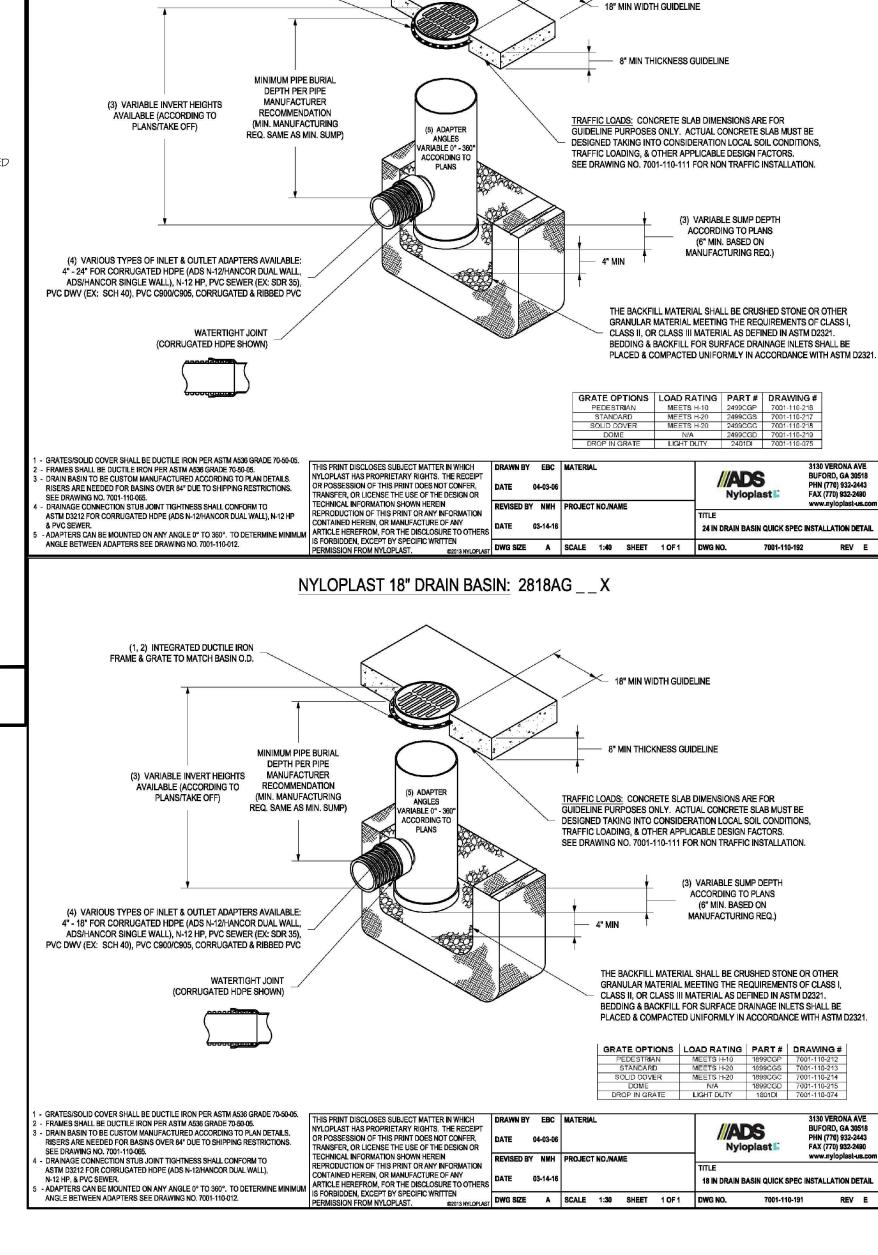
SEE SHEET IO FOR PERVIOUS PAVEMENT SPECIFICATIONS

CONCRETE EDGE FOR PERMEABLE PAVEMENT ABUTTING ASPHALT

SCALE: NTS

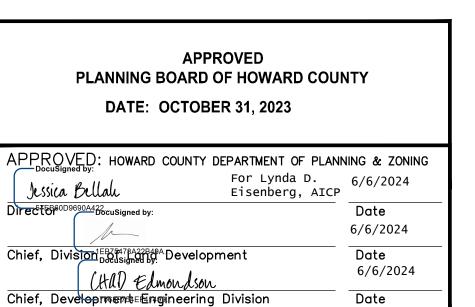


partment of Public Works



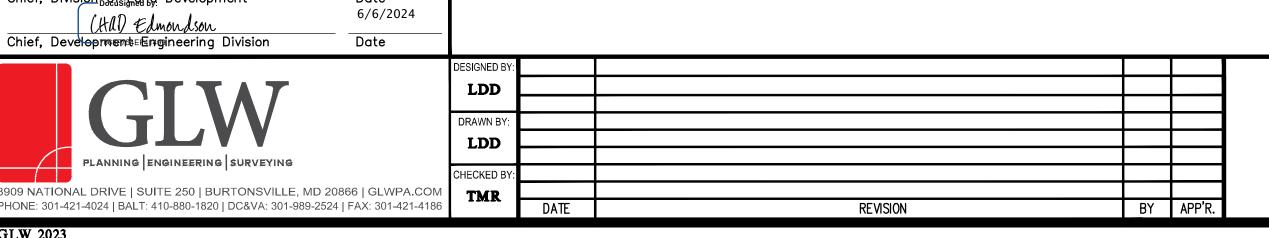
NYLOPLAST 24" DRAIN BASIN: 2824AG _ _X

(1, 2) INTEGRATED DUCTILE IRON FRAME & GRATE TO MATCH BASIN O.D.



PLANNING ENGINEERING SURVEYING

D-4.35



PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405

(SEE ADS MANUFACTURES

(SEE SHEET 12)

RECOMMENDED SPECIFICATIONS)

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE PLANS 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. 17285 EXPIRATION DATE: MARCH 17, 2025

PIPE (EL=379.17)

DETAIL D-4-1-A ROCK OUTLET PROTECTION

--- A

EMBED GEOTEXTILE LINING A MIN. OF 4 IN

ROP1

├--| d/2 |--

SECTION A-A

CHANNEL CROSS SECTION WILL TRANSITION FROM A-A TO B-B

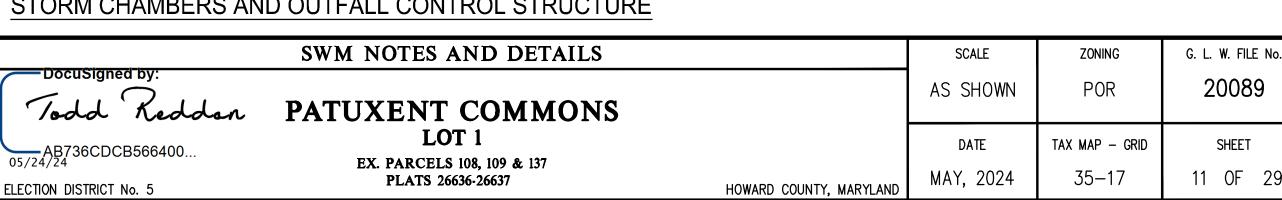


SCALE: 1"=3'

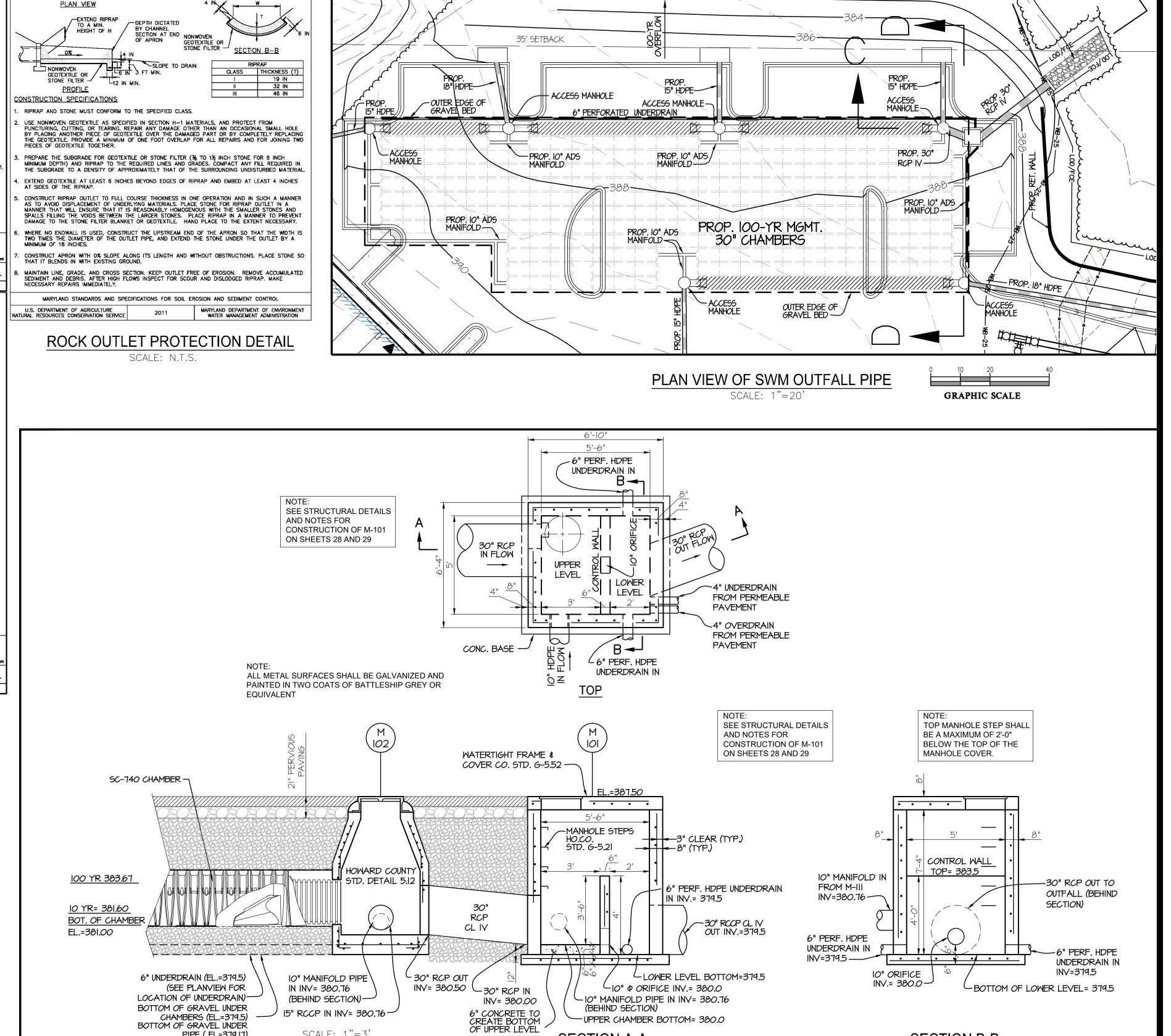
C-361, RUBBER GASKET PIPE).

PROVIDE WATERTIGHT JOINTS AT ALL CONCRETE PIPE

CONNECTIONS (FOR REINFORCED CONCRETE PIPE, ASTM



 $\frac{100}{100} \frac{100}{100} \frac{10$



STORM CHAMBERS AND OUTFALL CONTROL STRUCTURE

SECTION A-A

FRONT VIEW

SCALE: 1"=3'

SECTION B-B

SIDE VIEW

20 LF CL. I RIP RAP

 $D_{50} = 9.5$ "
BLANKET THICKNESS = 19"

APPROVED FILTER FABRIC

NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE

SC-740 STORMTECH CHAMBER SPECIFICATIONS

CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE

3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED

CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD

THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1)

THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE

LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION

CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787,

"STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"

TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING

• TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS

GREATER THAN OR EQUAL TO 550 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE

TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE

8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN

• THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.

BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.

4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.

5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.

STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:

WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.

BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.

7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A

ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE

THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN

• THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR

DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO

2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN

9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN

ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE.

WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.

CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

WALL STORMWATER COLLECTION CHAMBERS'

IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.

FOR IMPACT AND MULTIPLE VEHICLE PRESENCES

7 REQUIREMENTS FOR HANDLING AND INSTALLATION:

PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.

EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.

DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:

PRE-CONSTRUCTION MEETING WITH THE INSTALLERS

STORMTECH RECOMMENDS 3 BACKFILL METHODS: STONESHOOTER LOCATED OFF THE CHAMBER BED.

NOTES FOR CONSTRUCTION EQUIPMENT

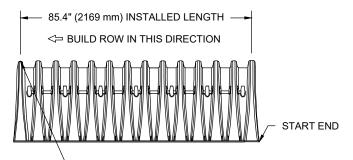
NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.

STACKING LUGS

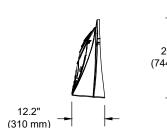
1. CHAMBERS SHALL BE STORMTECH SC-740.

SC-740 TECHNICAL SPECIFICATION

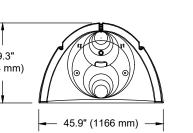
90.7" (2304 mm) ACTUAL LENGTH ------

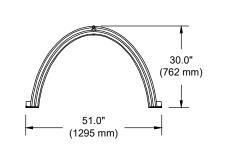


- OVERLAP NEXT CHAMBER HERE (OVER SMALL CORRUGATION)



\\\rangle

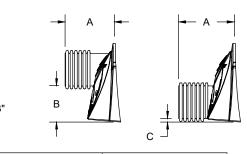




NOMINAL CHAMBER SPECIFICATIONS SIZE (W X H X INSTALLED LENGTH CHAMBER STORAGE MINIMUM INSTALLED STORAGE*

51.0" X 30.0" X 85.4" (1295 mm X 762 mm X 2169 mm) 45.9 CUBIC FEET (1.30 m³) 74.9 CUBIC FEET 75.0 lbs.

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" PRE-CORED END CAPS END WITH "PC"

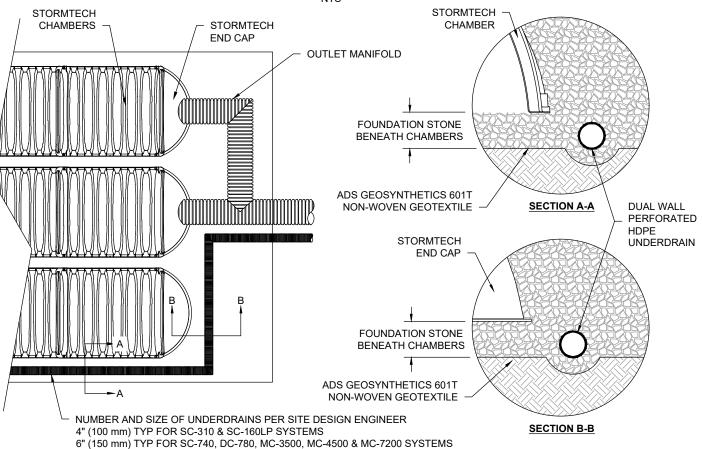
PART#	STUB	Α	В	С
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	
SC740EPE06B / SC740EPE06BPC	0 (130 11111)	10.9 (217 11111)		0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	
SC740EPE08B / SC740EPE08BPC	8 (200 111111)	12.2 (31011111)		0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	
SC740EPE10B / SC740EPE10BPC	10 (230 11111)	13.4 (340 11111)		0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	
SC740EPE12B / SC740EPE12BPC	12 (300 11111)	14.7 (3/3/11111)		1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	
SC740EPE15B / SC740EPE15BPC	13 (3/3/11111)	10.4 (407 11111)		1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	
SC740EPE18B / SC740EPE18BPC	10 (430111111)	19.7 (300 11111)		1.6" (41 mm)
SC740ECEZ*	24" (600 mm)	18.5" (470 mm)		0.1" (3 mm)

STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT * FOR THE SC740ECEZ THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm).

ALL STUBS, EXCEPT FOR THE SC740ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE

BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL. NOTE: ALL DIMENSIONS ARE NOMINAL

UNDERDRAIN DETAIL



ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

		MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
	D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
N R	С	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
	В	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
	A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO 18" BELOW (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE: THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE"

- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 18" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGNS, CONTACT STORMTECH FOR
- 4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

SUBGRADE SOILS

(SEE NOTE 3)

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS - PAVEMENT LAYER (DESIGNED TOP OF RIGID PAVEMENT BY SITE DESIGN ENGINEER) 385.0 (BASE FLEXIBLE PAVEMENT) *TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED STALLATIONS WHERE RUTTING FROM VEHICLES MAY OCI INCREASE COVER TO 24" (600 mm). PERIMETER STONE (SEE NOTE 4) (450 mm) MIN* 6" (150 mm) MIN L.=383.50 v EXCAVATION WALL (CAN BE SLOPED OR VERTICAL **THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS. DEPTH OF STONE TO BE DETERMINED

(150 mm) MIN

- 1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

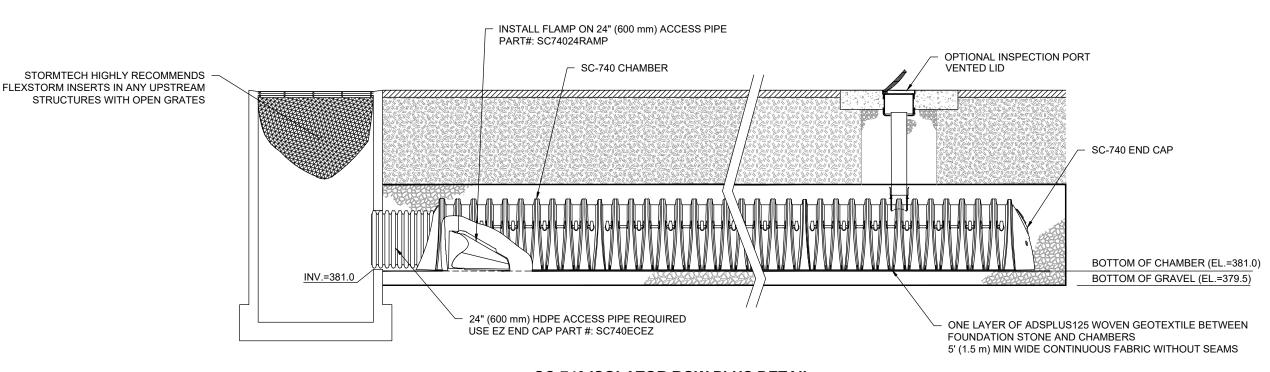
12" (300 mm) MIN

- 5. REQUIREMENTS FOR HANDLING AND INSTALLATION: TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
- TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".

THE GEO-TECHNICAL ENGINEER IS TO VERIFY THAT BEARING

CAPACITY OF THE SOIL IS A MINIMUM 2000 PSF UNDER THE STORM

- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550
- LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW



SC-740 ISOLATOR ROW PLUS DETAIL

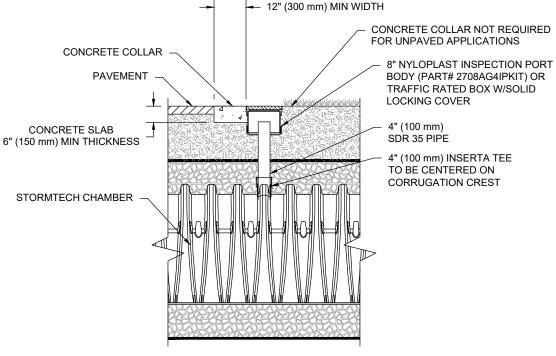
INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
 - A. INSPECTION PORTS (IF PRESENT) A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3. B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

- 1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- 2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY



ELECTION DISTRICT No. 5



BY SITE DESIGN ENGINEER 18" MIN

INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST

4" PVC INSPECTION PORT DETAIL

PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023** For Lynda D. 6/6/2024 Eisenberg, AICP

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING Jessica Bellali Director DocuSigned by: Date 6/6/2024 Chief, Division Douglain Chief, Division Development Date 6/6/2024 (HdD Edmondson Chief, Development Engineering Division Date

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM

PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

APPROVED

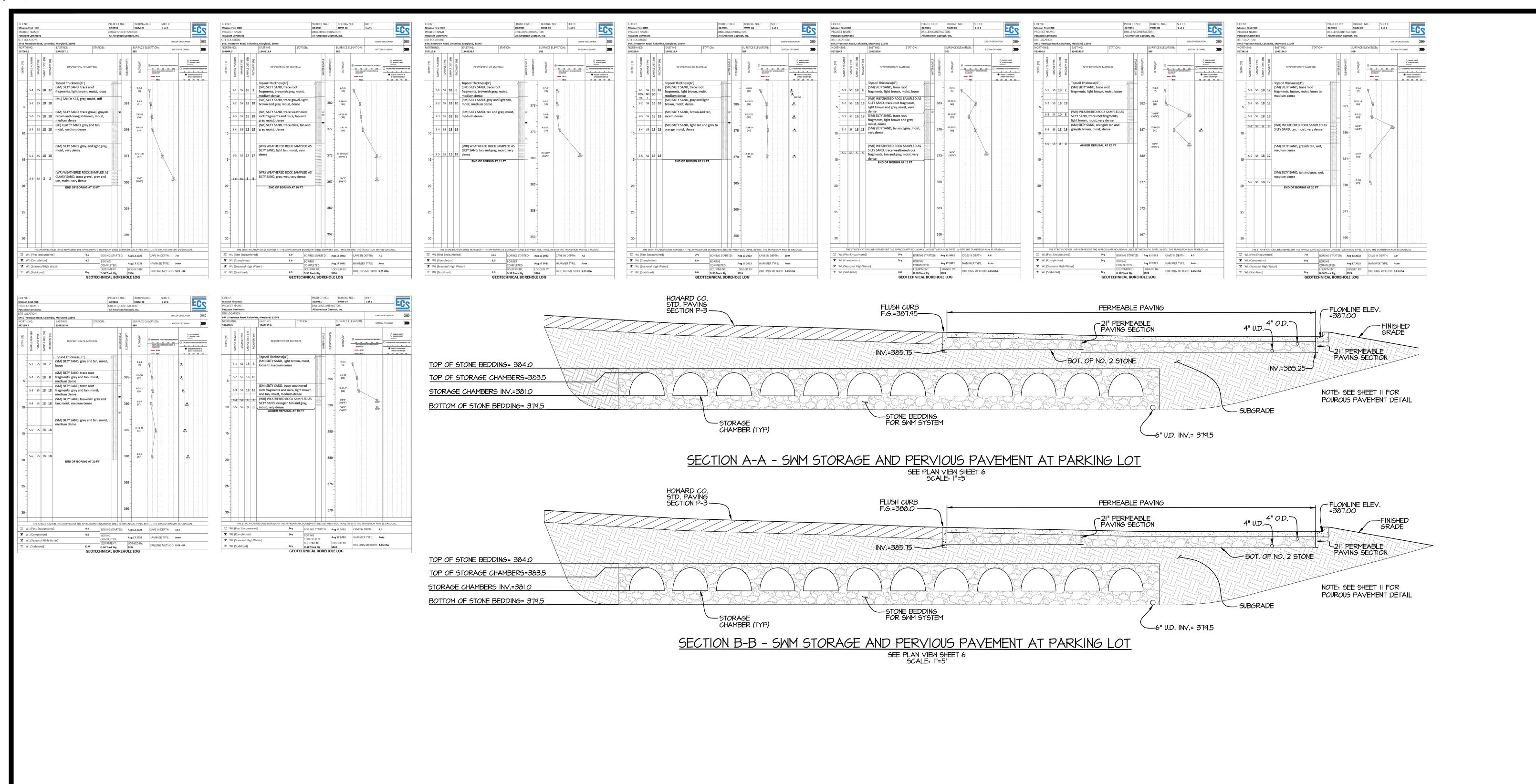


LDD DRAWN B LDD HECKED **TMR** DATE REVISION

PREPARED FOR/OWNER: PROFESSIONAL CERTIFICATION PATUXENT OWNER LP HEREBY CERTIFY THAT THESE PLANS 1330 NEW HAMPSHIRE AVE. NW WERE PREPARED OR APPROVED BY SUITE 116 ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE WASHINGTON, DC 20036 LAWS OF THE STATE OF MARYLAND, ATTN: ELIZABETH EVERHART LICENSE NO. 17285 _____, EXPIRATION DATE: MARCH 17, 202 (202)-223-3405

SWM NOTES AND DETAILS
PATUXENT COMMONS
LOT 1
EX. PARCELS 108, 109 & 137
PLATS 26636-26637

	SCALE	ZONING	G. L. W. FILE No		
	AS SHOWN	POR	20089		
	DATE	TAX MAP - GRID	SHEET		
ARD COUNTY, MARYLAND	MAY, 2024	35–17	12 OF 29		
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APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING For Lynda D. 6/6/2024 Jessica Bellah Eisenberg, AICP Director Discussioned by: Date 6/6/2024 Date Chief, Division Douglasment Development 6/6/2024 (HD) Edmondson

Date

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ELECTION DISTRICT No. 5



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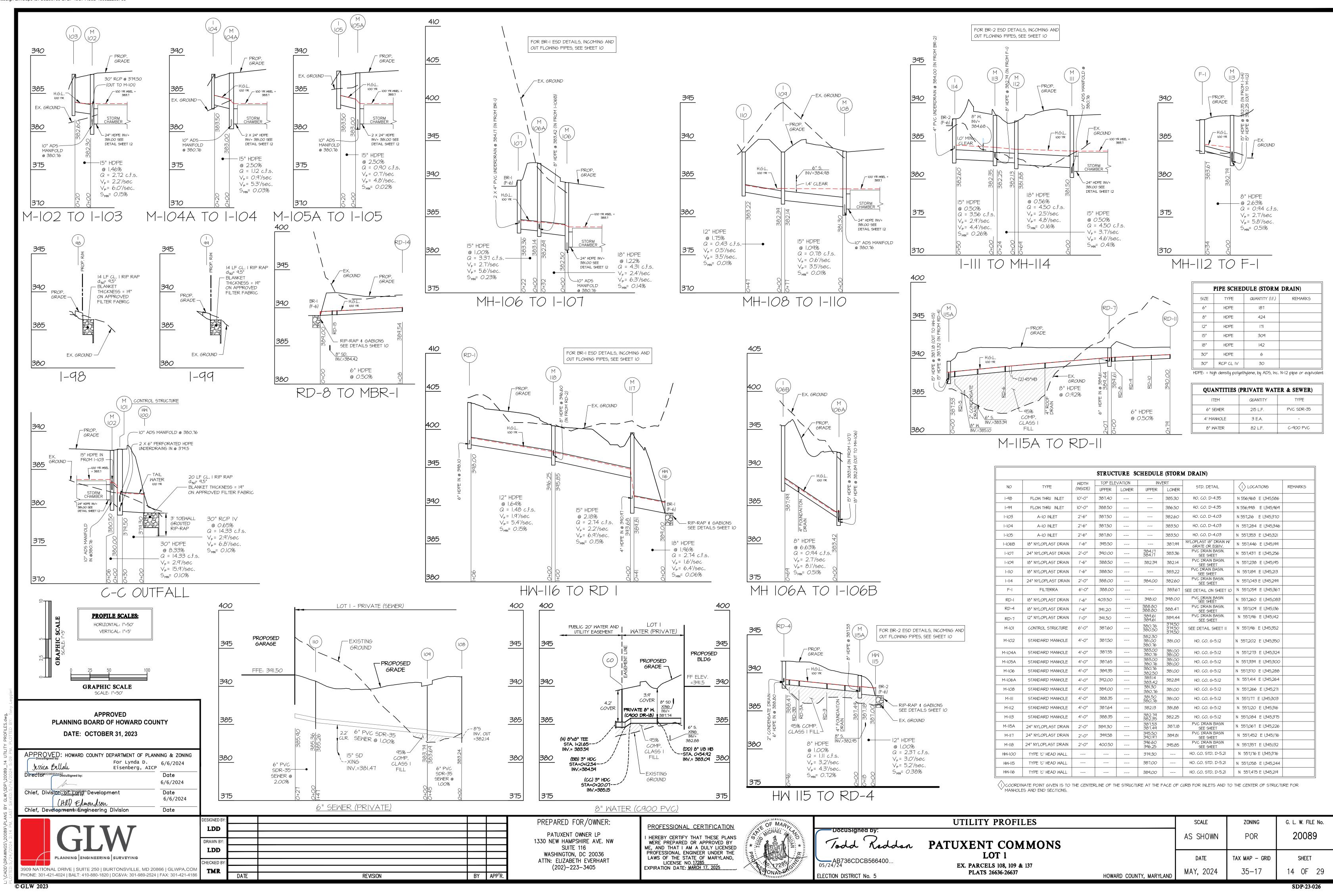
	DESIGNED BY:					l
	LDD					l
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TI.VV	DRAWN BY:					l
	LDD					l
PLANNING ENGINEERING SURVEYING						l
	CHECKED BY:					l
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE, MD 20866 GLWPA.CC						l
PHONE: 301-421-4024 BALT: 410-880-1820 DC&VA: 301-989-2524 FAX: 301-421-41	36	DATE	REVISION	BY	APP'R.	1

PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS 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. 17285_____,
EXPIRATION DATE: MARCH 17, 2025____.

	OF MARITY
•	CHAE!
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D	OF MARIANICHAEL STATE
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	WIIIIIII

SOIL BORING LOG		SCALE	ZONING	G. L. W. FILE
PATUXENT COMMONS		AS SHOWN	POR	20089
LOT 1		DATE	TAX MAP — GRID	SHEET
EX. PARCELS 108, 109 & 137 PLATS 26636-26637	HOWARD COUNTY, MARYLAND	MAY, 2024	35–17	13 OF



LANDSCAPE NOTES

- I. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE & THE HOWARD COUNTY LANDSCAPE MANUAL.
- . CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST (5) FIVE DAYS BEFORE STARTING WORK. ALL GENERAL NOTES, ESPECIALLY THOSE REGARDING UTILITIES, ON SHEET NO.1 SHALL APPLY.
- 3. FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK. CONTACT CONSTRUCTION MANAGER OR OWNER IF ANY RELOCATIONS ARE REQUIRED.
- 4. PLANT QUANTITIES SHOWN ON THE PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
- 5. ALL PLANT MATERIAL SHALL BE FULL, HEAVY, WELL FORMED, SYMMETRICAL, AND CONFORM TO THE A.A.N. SPECIFICATIONS. IN ADDITION, ALL REQUIRED PLANTING FOR THE LANDSCAPE ISLANDS IN THE PARKING LOT SHALL CONFORM TO THE HOWARD COUNTY LANDSCAPE MANUAL. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THIS PLAN. SEE SHEET 16 FOR PLANTING DETAILS.
- 6. NO SUBSTITUTION SHALL BE MADE WITHOUT PRIOR APPROVAL FROM HOWARD COUNTY DPZ AND THE OWNER OR HIS REPRESENTATIVE.
- 7. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED, OR MULCHED SHALL BE SODDED OR SEEDED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATION. A MINIMUM OF 4" OF TOPSOIL SHALL BE PROVIDED TO ALL PLANTING AREAS.
- 8. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF HE/SHE ENCOUNTERS SOIL DRAINAGE CONDITIONS THAT MAY BE DETRIMENTAL TO THE
- ALL EXPOSED EARTH WITHIN THE LIMITS OF PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER THE PLANTING DETAILS.
- IO. DO NOT PLANT WITHIN THE PUBLIC WATER, SEWER AND UTILITY EASEMENT.
- II. VERIFY THE LOCATION AND DEPTH OF THE COMMUNICATION LINE(S) WITHIN THE AT&T R/W PRIOR TO ANY PLANTING WITHIN THIS R/W. THE CONTRACTOR SHALL CONTACT GLW FOR ANY NECESSARY RELOCATION OF PLANT MATERIALS.
- 12. THE SCHEDULES A, B & C AND MITIGATION TREES SHOWN ON THIS SHEET ARE PROVIDED FOR LANDSCAPE SURETY CALCULATION PURPOSES. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$37,500.00 FOR THE FOLLOWING PLANT QUANTITIES:

89 SHADE TREES at \$300/TREE = \$**26,700.00**

72 EVERGREEN TREES AT \$150/TREE = \$10,800.00

TO REQUEST A LANDSCAPE INSPECTION TO OBTAIN THE RELEASE OF THE POSTED LANDSCAPE SURETY, SUBMIT A WRITTEN REQUEST OF LANDSCAPE INSPECTION, ALONG WITH A COPY OF THE ONE YEAR LANDSCAPE PLANT WARRANTY, TO THE DIVISION OF LAND DEVELOPMENT, HO. CO. DEPT. OF PLANNING AND ZONING.

13. FOR THE REQUIRED **31** PUBLIC STREET TREES A TOTAL OF \$**4,300.00** SHALL BE INCLUDED IN THE ENGINEERING COST ESTIMATE AND BE POSTED SEPARATELY WITH THE DEVELOPER'S AGREEMENT.

TABULATION OF LANDSCAPING FOR SCHEDULE A, B &C and THE MITIGATION TREES FOR REQUIRED LANDSCAPE SURETY					
	SCHDA	SCHDB	SCHDC	*MITIGATION TREES	TOTAL
TOTAL SHADE TREES REQUIRED	45	7	25	12	89
TOTAL EVGRN. TREES REQUIRED	72	0	0	0	72

* MITIGATION TREES PER SECTION 16.1216(D) NOTE: FOR PUBLIC STREET REQUIREMENTS SEE CHART THIS SHEET.

PLANTING LEGEND

EXISTING TREELINE



PROPOSED ORNAMENTAL TREES

EXISTING SHADE TREE (24")

05/24/24

klp

TMR

DATE

DATE

PROPOSED PUBLIC STREET TREES

DEVELOPER'S/OWNER'S CERTIFICATE

I/ME 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/ME FURTHER CERTIFY THAT UPON

COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN

EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE

DEPARTM DOCH SIGNAR DAY: ZONING.

Out of the same of

7BC049DBA51B4EA...

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: OCTOBER 31, 2023

APPROVED: HOWARD	COUNTY DEPARTMENT OF PLANNING & ZONING
Jessica Bellah	For Lynda D. 6/6/2024 Eisenberg, AICP

Director ODG	Date
M	6/6/2024
Chief, Division Development	Date
CHAD Edmondson	6/6/2024
Chief, Development Engineering Division	Date

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	GLW

PLANNING | ENGINEERING | SURVEYING

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SYMBO	OL.	aty.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS
HADE TREES	<u> </u>	l			
	AF	II	ACER RUBRUM 'FRANKSRED'/ RED SUNSET RED MAPLE	2 1/2" cal. min.	B\$B, 6' min. branching height
-45-00 PA	PA	19	PLATANUS X ACERIFOLIA 'BLOODGOOD'/ BLOODGOOD LONDON PLANETREE	2 1/2" cal. min.	B&B
ممسهم	QP	7	QUERCUS PALUSTRIS/ PIN OAK	2 1/2" cal. min.	B∉B
	QW	19	QUERCUS PHELLOS/ WILLOW OAK	2 1/2" Cal. min.	B≰B
	*)	12	QUERCUS RUBRA/ NORTHERN RED OAK	3" DBH	B&B, *Mitigation Tree, per SEC.16.1216(D)
TREET ($\overline{\mathbf{\cdot}}$	28	ACER RUBRUM 'ARMSTRONG'/ ARMSTORNG RED MAPLE	2 1/2" cal. min.	B&B, 6' min. branching height
REES (3	CRATAEGUS CRUSGALLI 'INERMIS'/ THORNLESS COCKSPUR HAWTHORN		
/ERGREEN	TREES				
And the second		36	ILEX OPACA/ AMERICAN HOLLY	5-6' HT.	B&B, INTACT LEADER
Z# Z		36	JUNIPEROUS VIRGINIANA / EASTERN RED CEDAR	6-8' HT.	B&B, INTACT LEADER
		15	ILEX 'NELLIE R. STEVENS'/ NELLIE STEVENS HOLLY	5-6' HT.	B&B, INTACT LEADER
ORNAMENT	AL TRE	<u>E5</u>			
0		6	LAGERSTROEMIA INDICA 'NATCHEZ'/ CRAPE MYRTLE 'NATCHEZ' or LAGERSTROEMIA INDICA 'TUSCARORA' / TUSCARORA CRAPE MYRTLE	6-8' HT.	ALL B&B AND TREEFORM
E	\Diamond	13	CERCIS CANADENSIS / EASTERN REDBUD	1.5" -2" CAL MIN.	
SHRUBS (C	H005E 1	FROM THE	: FOLLOWING)		
C)	28	CHOOSE FROM THE FOLLOWING: THUJA PLICATA 'CAN CAN' / THUJA CAN CAN BUXUS MICROPHYLA 'WINTER GEM' / WINTER GEM BOXWOOD PRUNUS LAUROCERASUS 'OTTO LUTYKEN'/ OTTO CHERRY LAUREL	2.0'-2.5' HT.	
	3	12	CHOOSE FROM THE FOLLOWING: MAHONIA AGUIFOLIUM / OREGON GRAPE HOLLY ILEX CRENATA 'HELLEI' / DWARF JAPANESE HOLLY	2.5'-3' HT.	ALL CONTAINERIZED.

SCHEDULE - A: PERIMETER LANDSCAPE EDGE							
PERIMETER No.	1	2	3				
USE SITUATION	FRONT ADJ. TO ROADWAYS	ADJ. TO CONDOS	ADJ. TO CONDOS				
	В	C	С				
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1,316' (1341' - 25'entrance)	173'	599' (968' - 369')				
CREDIT FOR EXISTING VEGETATION	NO	NO	YES, 369 L.F.				
CREDIT FOR WALL, FENCE OR BERM	NO	NO	NO	TOTAL			
NUMBER OF PLANTS REQUIRED: SHADE TREES EVERGREEN TREES ORNAMENTAL TREES SHRUBS	26 33 N/A N/A	4 9 N/A N/A	15 30 N/A N/A	45 72 N/A N/A			
NUMBER OF PLANTS PROVIDED: SHADE TREES EVERGREEN TREES ORNAMENTAL TREES SHRUBS	17 33 N/A N/A	4 9 N/A N/A	15 30 N/A N/A	36 72 N/A N/A			
SUBSTITUTIONS MADE	IO ornamentals for 5 shade trees \$ 40 shrubs for 4 shade trees	0	0	IO ornamentals for 5 shade 40 shrubs for 4 shade trees			

ILEX GLABRA 'COMPACTA' / DWARF INKBERRY
DEUTZIA GRACILIS/ SLENDER DEUTIZIA
TAXUS MEDIA 'DESIFORMIS' / DENSIFORMIS YEW

SCHEDULE-B: PARKING LOT INTERNAL LANDSCAPING					
NUMBER OF PARKING SPACES	72 COMMON SURFACE SPACES				
NUMBER OF SHADE TREES REQUIRED (I PER IO RES. SPACES, I per 20 commercial spaces I)	7				
NUMBER OF TREES PROVIDED					
SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	7				

SCHEDULE-C: RESIDENTIA	L INTERNAL LANDSCAPING
NUMBER OF DWELLING UNITS	76 APARTMENT UNITS

NUMBER OF DWELLING UNITS	76 APARTMENT UNITS
NUMBER OF TREES REQUIRED (1:3 DU APTS)	25 SHADE TREES
NUMBER OF TREES PROVIDED SHADE TREES	13 SHADE TREES
OTHER TREES (2:1 substitutions with ornamental or evergreen trees)	9 ORNAMENTAL TREES & 15 EVERGREENS (for 12 shade trees)
NOTE	

IOTE:

EVERGREEN OR ORNAMENTAL TREES MAY BE SUBSTITUTED AT 2:1 RATIO FOR UP TO 50% OF THE REQUIRED SHADE TREES. SUCH SUBSTITUTIONS WOULD NOT CHANGE THE TOTAL SURETY REQUIRED (I.E., \$300.00 = 1 SHADE TREE = 2 ORNAMENTAL OR 2 EVERGREEN = 10 SHRUBS)

PUBLIC STREET TREE REQUIREMENTS				
LOCATION	LENGTH OF CURB (L.F.)	CALCULATED NUMBER of TREES REQUIRED	NUMBER of TREES PROVIDED	
CEDAR LA.	568	14 (approximately one tree per 40 lf.)	14	
FREETOWN RD.	693	17 (approximately one tree per 40 lf.)	17	
TOTAL NUMBER	OF PUBLIC STREE	TREES REQUIRED FOR BONDING	31	

OTES:
SUBSTITUTION FOR DIFFERENT TYPE OF PLANT
MATERIALS ARE AS FOLLOWS:
2 ORNAMENTALS or 2 EVERGREENS FOR I
SHADE TREE
or IO SHRUBS FOR I SHADE TREE OR

2. THE FOLLOWING STANDARDS SHALL GOVERN THE PLACEMENT OF PUBLIC STREET TREES:

SHALL BE PLACED A MINIMUM OF 30' FROM ALL SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN THE SIDEWALK AND CURB, AND BE LOCATED WITH CONSIDERATION TO UNDERGROUND UTILITIES AND STRUCTURES.
 STREET TREES MAY NOT BE PLANTED WITHIN 5' OF A DRAIN INLET STRUCTURE, WITHIN 5' OF AN OPEN SPACE ACCESS STRIP, AND WITHIN IO' OF A DRIVEWAY.
 A 20' MINIMUM DISTANCE SHALL BE MAINTAINED BETWEEN ANY TREES LOCATED

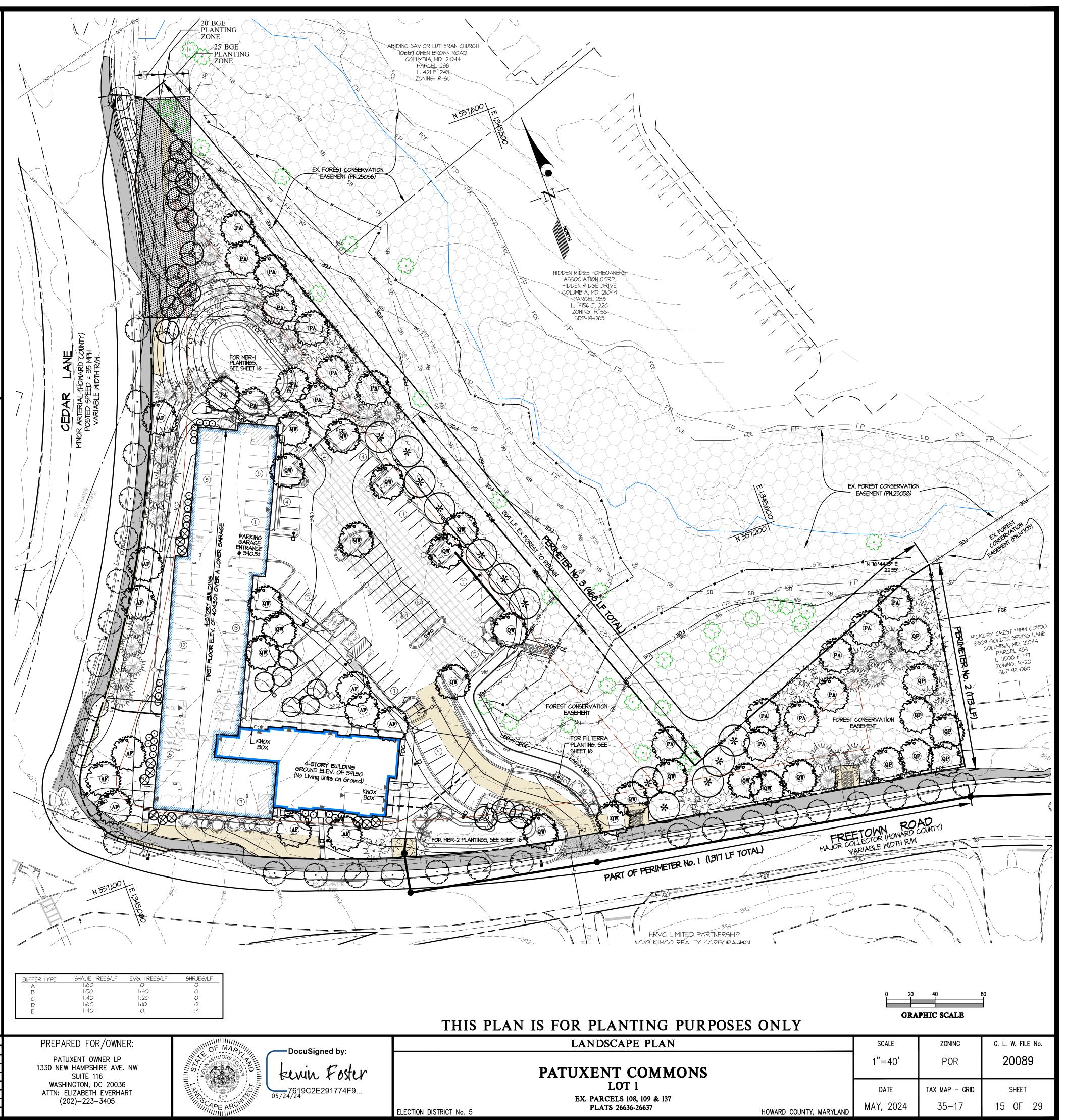
FEET, AND WHERE TREES ARE PLANTED CLOSER THAN 3 FEET TO THE SIDEWALK, A BIOLOGICAL ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE REQUIRED.

• FINAL PLACEMENT OF THE STREET TREES WILL BE DETERMINED IN THE FIELD BY THE DEPARTMENT OF PUBLIC WORKS TO BEST ACCOMMODATE THESE SETBACKS WHILE PROVIDING THE MAXIMUM NUMBER OF STREET

TREES REQUIRED.

REVISION

ALONG THE CURB LINE AND ANY STREET LIGHT. WHEN THE DISTANCE BETWEEN THE CURB AND THE SIDEWALK IS LESS THAN 6



A. PLANT MATERIALS

THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP AND TRANSPLANT ALL OF THE PLANT MATERIALS CALLED FOR ON DRAWINGS AND/OR LISTED IN THE PLANT SCHEDULE.

I. PLANT NAMES

PLANT NAMES USED IN THE PLANT SCHEDULE SHALL CONFORM WITH "STANDARDIZED PLANT NAMES," LATEST EDITION.

2. PLANT STANDARDS

ALL PLANT MATERIAL 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 (HERE- AFTER REFERRED TO AS AAN STANDARDS). ALL PLANTS SHALL E TYPICAL OF THEIR SPECIES AND VARIETY, SHALL HAVE A NORMAL HABIT OF GROWTH AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL-BRANCHED AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL

ALL PLANTS SHALL BE NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATE CONDITIONS AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING NEITHER HEELED-IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

3. PLANT MEASUREMENTS

ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE AS APPROVED BY THE DESIGN REVIEW COMMITTEE (DRC)

CALIPER MEASUREMENTS SHALL BE TAKEN SIX INCHES (6") ABOVE GRADE FOR TREES UNDER FOUR-INCH (4") CALIPER AND TWELVE (12") ABOVE GRADE FOR TREES FOUR INCHES (4") IN CALIPER AND OVER.

B. MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX FEET (6'), MAXIMUM EIGHT FEET (8').

. CALIPER, HEIGHT, SPREAD AND SIZE OF BALL SHALL BE GENERALLY AS FOLLOWS:

CALIPER HEIGHT SPREAD SIZE OF BALL

3" - 3.5"	14'-16'	6'-8'	32" DIAMETER
3.5"- 4"	14'-16'	8'-10'	36" DIAMETER
4" - 4.5"	16'-18'	8'-10'	40" DIAMETER
4.5"- 5"	16'-17'	10'-12'	44" DIAMETER
5" - 5.5"	16'-20'	10'-12'	48" DIAMETER
5.5"- 6"	18'-20'	12'-14'	52" DIAMETER

ALL PLANT MATERIAL SHALL GENERALLY AVERAGE THE MEDIAN FOR THE SIZE RANGES INDICATED ABOVE AS INDICATED IN THE "AAN STANDARDS".

4. PLANT IDENTIFICATION

LEGIBLE LABELS SHALL BE ATTACHED TO ALL SHADE TREES, MINOR TREES, SPECIMEN SHRUBS AND BUNDLES OR BOXES OF OTHER PLANT MATERIAL GIVING THE BOTANICAL AND COMMON NAMES, SIZE AND QUANTITY OF EACH, EACH SHIPMENT OF PLANTS SHALL BEAR CERTIFICATES OF INSPECTION AS REQUIRED BY FEDERAL, STATE AND COUNTY AUTHORITIES

5. PLANT INSPECTION

THE DESIGN REVIEW COMMITTEE MAY UPON REQUEST BY THE BUILDER OR DEVELOPER, AT LEAST TEN (IO) DAYS PRIOR TO THE INSTALLATION OF ANY PROPOSED PLANT MATERIAL, INSPECT ALL PROPOSED PLANT MATERIAL AT THE SOURCE OF ORIGIN.

THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE

CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER

AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED IND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE

BURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED

AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

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, WILL BE SUBMITTED TO THE

DEVELOPER'S/OWNER'S CERTIFICATE

DEPARTMENT OF PLANNING AND ZONING. DocuSigned by:

--- 7BC049DBA51B4EA

REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

B. PLANTING METHODS

ROPOSED PLANT MATERIALS THAT MEET PECIFICATIONS IN SECTION A ARE TO BE PLANTED IN CCORDANCE WITH THE FOLLOWING METHODS DURING THE PROPER PLANTING SEASONS AS DESCRIBED IN THE FOLLOWING:

I. PLANTING SEASONS

THE PLANTING OF DECIDUOUS TREES, SHRUBS AND VINES SHALL BE FROM MARCH IST TO JUNE 15TH AND FROM SEPTEMBER 15TH DECEMBER 15TH. PLANTING OF DECIDUOUS MATERIAL MAY E CONTINUED DURING THE WINTER MONTHS PROVIDING THERE S NO FROST IN THE GROUND AND FROST-FREE TOPSOIL

SPECIFICATIONS: PLANT MATERIALS AND PLANTING METHODS

THE PLANTING OF EVERGREEN MATERIAL SHALL BE FROM MARCH 15TH TO JUNE 15TH AND FROM AUGUST 15TH TO DECEMBER IST. NO PLANTING SHALL BE DONE WHEN THE GROUND IS FROZEN OR EXCESSIVELY MOIST. NO FROZEN OR WET TOPSOIL SHALL BE USED AT ANY TIME.

2. DIGGING

ALL PLANT MATERIAL SHALL BE DUG, BALLED AND BURLAPPED (B&B) IN ACCORDANCE WITH THE "AAN STANDARDS".

3. EXCAVATION OF PLANT PITS

PLANTING MIXTURES ARE USED.

PITS, VINE PITS, HEDGE TRENCHES AND SHRUB BEDS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: A. LOCATIONS OF ALL PROPOSED PLANT MATERIAL SHALL BE STAKED AND APPROVED IN THE FIELD BY THE

LANDSCAPE ARCHITECT BEFORE ANY OF THE PROPOSED

PLANT MATERIAL IS INSTALLED BY THE LANDSCAPE

BET FORTH IN THE FOLLOWING SCHEDULE.

THE LANDSCAPING CONTRACTOR SHALL EXCAVATE ALL PLANT

ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, VERTICAL SIDES; DEPTH SHALL NOT BE LESS THAN 6"
DEEPER THAN THE ROOT BALL, DIAMETER SHALL NOT BE
LESS THAN TWO TIMES THE DIAMETER OF THE ROOT BALL AS

IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE EXCAVATED TO AT LEAST 18" DEPTH MINIMUM. AREAS DESIGNATED FOR GROUND OVERS AND VINES SHALL BE EXCAVATED TO AT LEAST 12"

D. DIAMETER AND DEPTH OF TREE PITS SHALL

F	LANT SIZE	ROOT BALL	PIT DIA.	PIT DEPTH
5	3" - 3.5"CAL.	32"	64"	28"
ξ	3.5"- 4" CAL.	36"	72"	32"
4	4" - 4.5"CAL.	40"	80"	36"
4	4.5"- 5" CAL.	44"	88"	40"
5	5" - 5.5"CAL.	48"	96"	44"
Ę	5.5"- 6" CAL.	52"	104"	48"

A 20 % COMPACTION FIGURE OF THE SOIL TO BE REMOVED IS ASSUMED AND WILL BE ALLOWED IN CALCULATION OF EXTRA TOPSOIL. THE TABULATED PIT SIZES ARE FOR PURPOSES OF UNIFORM CALCULATION AND SHALL NOT OVERRIDE THE SPECIFIED DEPTHS BELOW THE BOTTOMS OF THE ROOT BALLS.

4. STAKING, GUYING AND WRAPPING

GENERALLY BE AS FOLLOWS:

ALL PLANT MATERIAL SHALL BE STAKED OR GUYED, AND WRAPPED IN ACCORDANCE WITH THE FOLLOWING

A. STAKES: SHALL BE SOUND WOOD 2" X 2" ROUGH SAWN OAK OR SIMILAR DURABLE WOODS, OR LENGTHS, MINIMUM 7'-O" FOR MAJOR TREES AND 5'-O" MINIMUM FOR MINOR TREES.

B. WIRE AND CABLE: WIRE SHALL BE #10 GA. GALVANIZED OR BETHANIZED ANNEALED STEEL WIRE. FOR TREES OVER 3" CALIPER, PROVIDE 5/16" TURN BUCKLES, EYE AND EYE WITH 4" TAKE-UP. FOR TREES OVER 5" CALIPER, PROVIDE 3/16", 7 STRAND CABLE CADMIUM PLATED STEEL, WITH GALVANIZED "EYE" THIMBLES OF WIRE AND HOSE ON TREES UP TO 3" IN

HOSE: SHALL BE NEW, 2 PLY REINFORGED RUBBER HOSE, MINIMUM 1/2" I.D. "PLASTIC LOCK TIES" OR "PAUL'S TREES BRACES" MAY BE USED IN PLACE OF WIRE AND HOSE ON TREES

ALL TREES UNDER 3" IN CALIPER ARE TO BE PLANTED AND STAKED IN ACCORDANCE WITH THE ATTACHED PLANTING

5. PLANT PRUNING, EDGING AND MULCHING

A. EACH TREE, SHRUB OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER TO ITS PARTICULAR REQUIREMENTS. IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE. BROKEN OR BRUISED BRANCHES SHALL BE REMOVED WITH CLEAN CUTS FLUSH WITH THE ADJACENT TRUNK OR BRANCHES. ALL CUTS OVER I" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED ANTISEPTIC TREE WOUND DRESSING.

ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND CULTIVATED TO THE LINES SHOWN ON THE DRAWING. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND CULTIVATED TO THE FULL DIAMETER OF THE PIT. SOD WHICH HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES C ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGES OF SHRUB AREAS, HEDGE TRENCHES AND

AFTER CULTIVATION, ALL PLANT MATERIALS SHALL BE MULCHED WITH A 3" LAYER OF FINE, SHREDDED PINE BARK, PEAT MOSS, OR ANOTHER APPROVED MATERIAL OVER THE

6. PLANT INSPECTION AND ACCEPTANCE

ENTIRE AREA OF THE BED OR SAUCER.

THE DESIGN REVIEW COMMITTEE SHALL BE RESPONSIBLE FOR INSPECTING ALL PLANTING PROJECTS ON A PERIODIC BASIS TO ASSURE THAT ALL WORK IS PROCEEDING IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

7. PLANT GUARANTEE

ALL PLANT MATERIAL SHALL BE GUARANTEED FOR THE DURATION OF ONE FULL GROWING SEASON, AFTER FINAL INSPECTION AND ACCEPTANCE OF THE WORK IN THE PLANTING PROJECT. PLANTS SHALL BE ALIVE AND IN SATISFACTORY

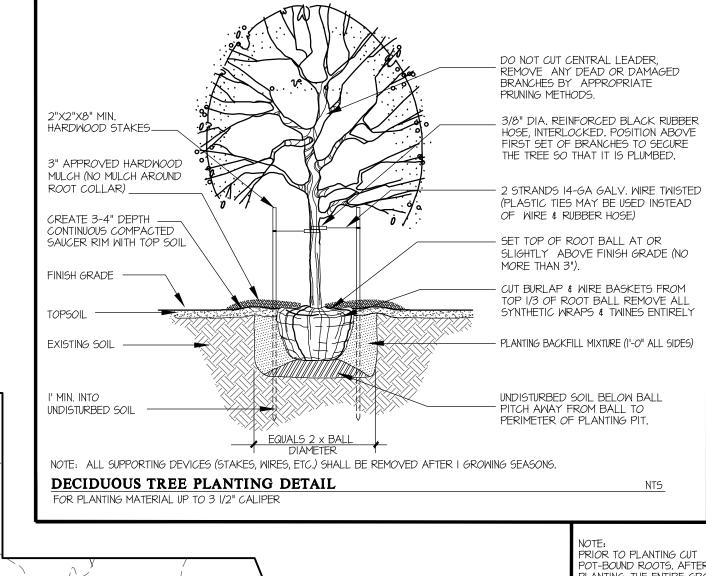
GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD.

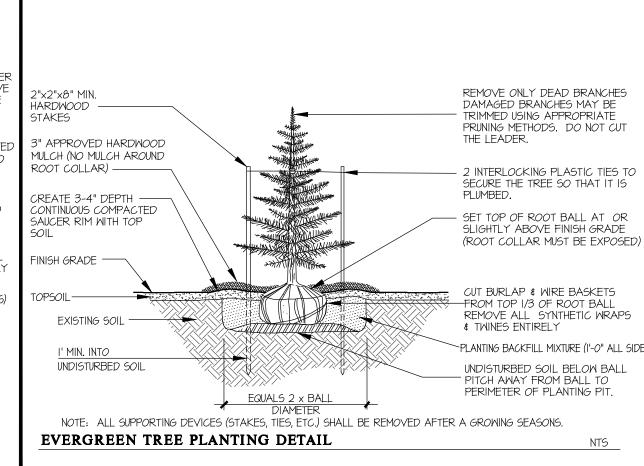
A. FOR THIS PURPOSE, THE "GROWING SEASON" SHALL BE THAT PERIOD BETWEEN THE END OF THE "SPRING" PLANTING SEASON, AND THE COMMENCEMENT OF THE "FALL" PLANTING

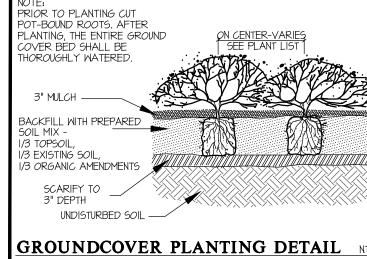
B. GUARANTEE FOR PLANTING PERFORMED AFTER THE SPECIFIED END OF THE "SPRING" PLANTING SEASON, SHALL BE EXTENDED THROUGH THE END OF THE NEXT FOLLOWING SPRING" PLANTING SEASON.

ALL SODDING SHALL BE IN ACCORDANCE TO THE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" LATEST EDITION, APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE AMERICAN SOCIETY OF LANDSCAPE

ALL SOD SHALL BE STRONGLY ROOTED SOD, NOT LESS THAN TWO YEARS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE ONLY SOD CAPABLE OF GROWTH DEVELOPMENT WHEN PLANTED AND IN STRIPS NOT MORE THAN 18 WIDE X 4" LONG. PROVIDE SOD COMPOSED PRINCIPALLY OF IMPROVED STRAIN KENTUCKY BLUEGRASS, SUCH AS, COLUMBIA, VICTA, OR ESCORT.

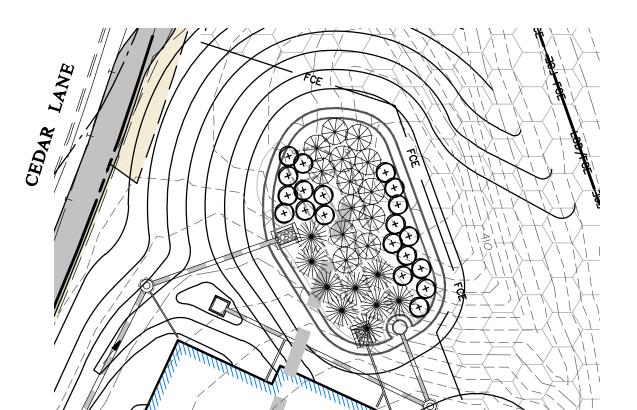






SET ROOT BALL AT OR SLIGHTLY ABOVE FINISH GRADE. CONTAINERS TO BE REMOVED PRIOR TO PLANTING. SCARIFY ROOT EDGES TO STIMULATE GROWTH. MOUNDED FARTH SAUCER (FOR-ISOLATED PLANTING SITUATION) PLANTING BACKE MIXTURE SCARIFY SOIL BELOW ROOTBALL EXISTING SOIL-

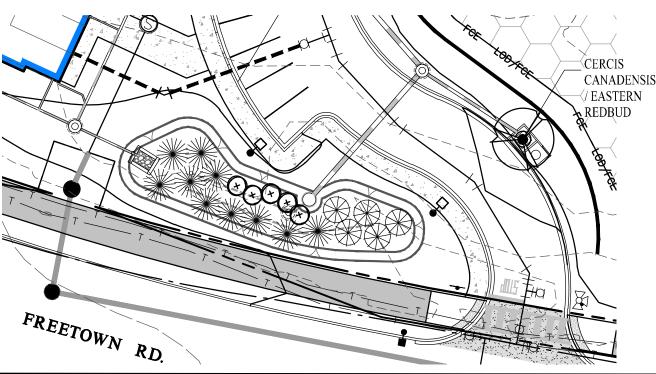
SHRUB PLANTING DETAIL



MICRO-BIORETENTION #1 PLANTING PLAN

SCALE: I" = 30'

SCALE: I" = 30'



MICRO-BIORETENTION #2 and FILTERRA PLANTING PLAN

PLANT LIST FOR MICRO-BIORETENTION					
SYMB0L	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS	
<u>SHRUBS</u>					
4	25	CEPHALANTHUS OCCIDENTALIS/ BUTTONBUSH	18"-24"SPR.	CONTAINER	
*	18	ITEA VIRGINICA/ VIRGINIA SWEETSPIRE	18"-24"SPR.	CONTAINER	
*	19	CORNUS SERICEA / RED OSIER DOGWOOD	18"-24"SPR.	CONTAINER	
	•		•		

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

05/24/24

DATE

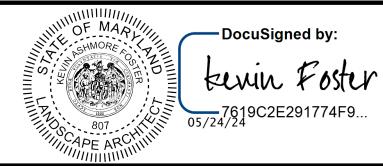
APPROVED: HOWARD COUNTY	DEPARTMENT OF PLANN	IING & ZONING
Jessica Bellalı	For Lynda D. Eisenberg, AICP	6/6/2024
Director Docusigned by:		Date
,		a a

6/6/2024 Chief, Division Doubling Of Page 19 Development 6/6/2024 (HD) Edmondson Date Chief, Development Engineering Division

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

klp DRAWN BY **TMR** DATE BY APP'R REVISION

PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405



OPEN SPACE EXHIBIT

SCALE: I" = 60'

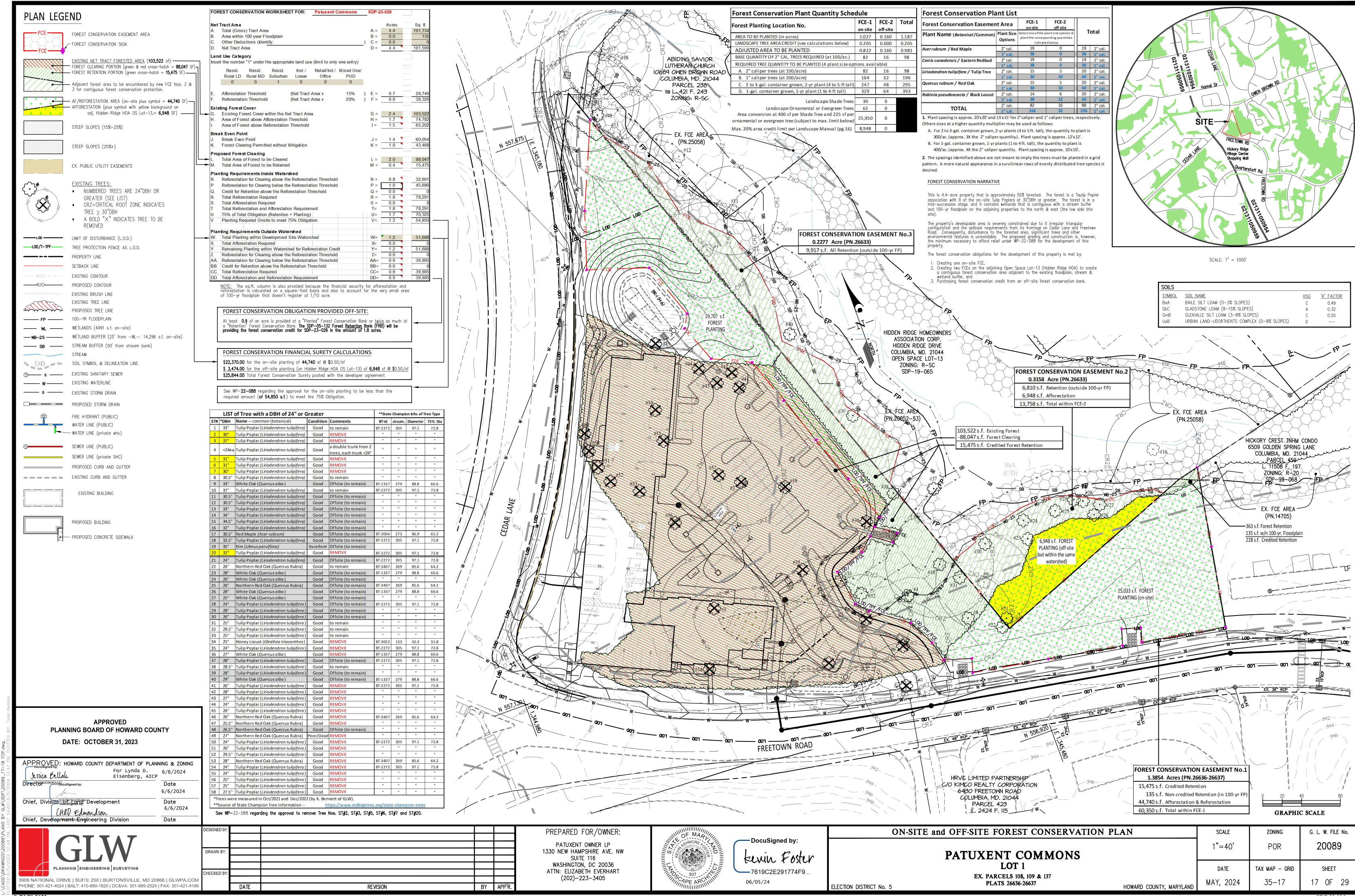
AREA OF OPEN SPACE 1.70 AC.

PATUXENT COMMONS LOT 1 EX. PARCELS 108, 109 & 137 PLATS 26636-26637 ELECTION DISTRICT No. 5

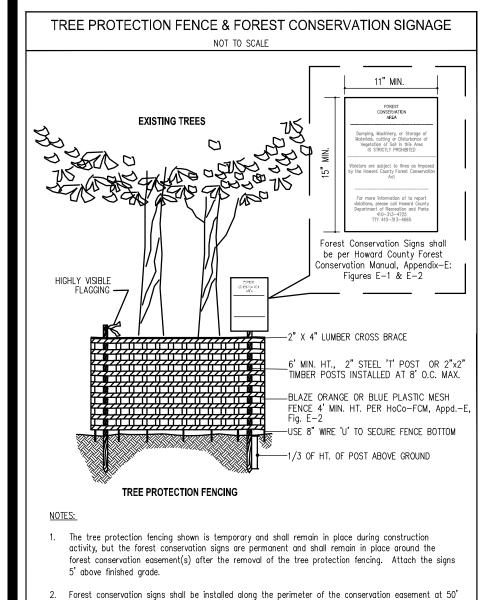
LANDSCAPE NOTES and DETAILS

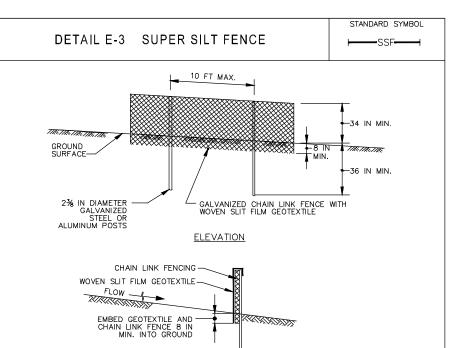
GRAPHIC SCALE

G. L. W. FILE No. 20089 AS SHOWN TAX MAP - GRID SHEET MAY, 2024 16 OF 29 35–17 HOWARD COUNTY, MARYLAND



26





to 100' apart and at change of direction around the perimeter of the forest conservation easement.

Attachment of signs to trees is prohibited. DO NOT ATTACH SIGNS TO TREES!!

INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOO ENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES

CROSS SECTION

CONSTRUCTION SPECIFICATIONS

on the FCP with the "-LOD/T-TFP-" line type.

- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND. . WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- 5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPEC	CIFICATIONS FOR SOIL ER	ROSION AND SEDIMENT CONTROL	
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONM WATER MANAGEMENT ADMINISTRATION	

<u>OTE:</u> As shown on **Sheet—5 (Sediment Control Plan)** of this SDP set, Super Silt Fence nust also be installed where the LOD is along the forest retention area which is depicted

GENERAL NOTES

- 1. THESE PLANS ARE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF SUBTITLE 12 "FOREST CONSERVATION" OF THE HOWARD COUNTY CODE. ALSO SEE SHEET No.1 OF THE PLAN SET FOR APPLICABLE GENERAL NOTES FOR THE PROJECT
- THE OWNER IS RESPONSIBLE FOR A 3-YEAR (MINIMUM) POST-CONSTRUCTION MAINTENANCE PERIOD WHICH INVOLVES ACTIVITIES NECESSARY TO ENSURE SURVIVAL & GROWTH OF THE FOREST
- AT THE END OF THE POST—CONSTRUCTION MANAGEMENT AND PROTECTION PERIOD, THE DEPARTMENT OF PLANNING AND ZONING OR ITS DESIGNEE WILL CONDUCT A FINAL INSPECTION FOR RELEASE OF FOREST CONSERVATION OBLIGATION IN ACCORDANCE WITH HOWARD COUNTY FOREST CONSERVATION
- MANUAL (FCM) SEC.4.5.5. THE FOREST CONSERVATION EASEMENT, FOREST CONSERVATION AGREEMENT AND A DEED OF FORES CONSERVATION EASEMENT SHALL BE RECORDED TO FULFILL THE REQUIREMENTS OF SECTION 16.120 OF THE HOWARD COUNTY CODE AND THE FCM (SEC.5.11). 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. THIS PROPERTY IS IN THE PATUXENT RIVER WATERSHED. THE DNR 12-DIGIT WATERSHED IS 021311050954 (See the Vicinity Map on Sheet-17 delineation).
- 6. WP-22-088 WAS APPROVED ON 2/02/2023. SEE GENERAL NOTE #12 ON SHEET-1 FOR FOR ADDITIONAL DETAILS.

OVERALL FOREST CONSERVATION PROGRAM SEQUENCE

- 1. OBTAIN ALL NECESSARY PLAN PERMITS.
- 2. STAKE THE LIMIT OF DISTURBANCE.
- FIELD MEETING TO REVIEW AND VERIFY LIMIT OF DISTURBANCE FOR ANY NECESSARY ADJUSTMENTS FOR CR PRIOR TO SITE GRADING AND CONSTRUCTION.
- 4. INSTALL FOREST PROTECTION DEVICES (SIGNS, TREE PROTECTION FENCES AND SUPER SILT FENCE).
- COMMENCE SITE CONSTRUCTION.
- 6. MAINTENANCE OF THE FOREST RETENTION AREA IN ACCORDANCE WITH THE DEED OF EASEMENT, THE FOREST CONSERVATION MANUAL AND THESE PLANS.
- 7. INSPECTION (BY DPZ OR ITS DESIGNEE) FOR THE RELEASE OF THE CONSTRUCTION PERIOD OBLIGATIONS; START OF POST-CONSTRUCTION MANAGEMENT PERIOD.
- 8. POST-CONSTRUCTION MANAGEMENT FOR A PERIOD OF 3 GROWING SEASONS (MIN.).
- 9. FINAL INSPECTION FOR THE RELEASE OF THE OWNER'S FOREST CONSERVATION OBLIGATION.
- 10. LONG TERM PROTECTION OF THE FOREST CONSERVATION EASEMENT AREA IN ACCORDANCE with the deed o forest conservation agreement and FCM Sec.4.6

CONSTRUCTION-PERIOD FOREST PROTECTION PROGRAM

- FOREST PROTECTION DEVICES AND SIGNS SHALL BE INSTALLED PRIOR TO START OF SITE CONSTRUCTION. THE PROTECTION DEVICES AND SIGNS SHALL BE MAINTAINED DURING THE ENTIRE CONSTRUCTION PERIOD. ALL TRASH AND DEBRIS SHALL BE REMOVED FROM THE FCE. THE TRASH/DEBRI REMONAL OPERATION SHANOT DAMAGE ANY TREES WITHIN THE FCE.
- 2. ADJOINING PROPERTY OWNERS MUST BE NOTIFIED ABOUT PROTECTION OF THE FOREST CONSERVATION EASEMENT AREA ON THIS PROPERTY.
- EQUIPMENT, VEHICLES, BUILDING MATERIALS OR ANY OTHER CONSTRUCTION ACTIVITIES SHALL NOT BE WITHIN THE PROTECTED FCE AREA. FOREST MAINTENANCE ACTIVITIES INCLUDES I.E. WATERING, FERTILIZING, PRUNING, PLANTING OF SUPPLEMENTAL NATIVE PLANT MATERIAL, REMOVAL OF DEAD AND DISEASED TREES THAT MAY POSE A THREAT TO NEARBY STRUCTURES IF THEY FALL OUTSIDE THE FCE AND CONTROL OF INVASIVE PLANTS) MAY BE PERMITTED WITHIN THE FCE. CLEARING FOR THE PURPOSE OF SODDING OR PLANTING GRASS IS NOT PERMITTED WITHIN THE FOREST CONSERVATION AREA.
- 4. ONE YEAR AFTER THE FOREST CONSERVATION AGREEMENT HAS BEEN SINGED, DPZ OR ITS DESIGNEE WILL CONDUCT AND INSPECTION TO CONFIRM THAT ALL FOREST RETENTION AREAS WITHIN THE FCE HAVE BEEN PRESERVED. WRITTEN APPROVAL OF THE INSPECTION INITIATES THE START OF THE POST—CONSTRUCTION PROTECTION PERIOD FOR A MINIMUM OF 3 YEARS. NON-COMPLIANCE WOULD REQUIRE A RE-INSPECTION

MINIMUM 3 GROWING SEASON POST-CONSTRUCTION MANAGEMENT PROGRAM

A POST-CONSTRUCTION MANAGEMENT PROGRAM MUST BE APPROVED AS PART OF THE ORIGINAL FOREST CONSERVATION PLAN AND REMAIN IN EFFECT FOR A MINIMUM OF 3 GROWING SEASONS. A LONGER PERIOD MAY BE REQUIRED FOR SPECIFIC STRATEGIES.

IMPLEMENTATION OF THE POST-CONSTRUCTION MANAGEMENT PROGRAM MUST BE SUPERVISED BY A QUALIFIED PROFESSIONAL WHO SHOULD INSPECT THE STATUS OF ALL FOREST RETENTION, REFORESTATION AND AFFORESTATION AREAS (IF APPLICABLE) AT SPECIFIED TIMES DURING THE LIFE OF THE POST CONSTRUCTION AGREEMENT AND IMPLEMENT APPROPRIATE ACTION TO ENSURE FOREST CONSERVATION AREA IS NOT DEGRADED THERE ARE FIVE PRIMARY COMPONENTS OF THE POST-CONSTRUCTION PROGRAM: INSPECTION, MANAGEMENT OF RETAINED OR NEW PLANTINGS, REPLACEMENT OF DEAD OR DAMAGED MATERIAL WHEN NECESSARY, EDUCATION CONCENSIONAL OF NEW OCCUPANTS OR NEIGHBORS AND FINAL INSPECTION AND RELEASE OF DEVELOPER FROM ADDITIONAL

ROUTINE MONITORING OF THE FOREST RETENTION AND PLANTED AREAS (WHERE APPLICABLE) SHOULD OCCUR AT LEAST 3 TIMES THROUGHOUT THE YEAR TO PINPOINT ANY PROBLEMS AND IMPLEMENT REMEDIAL ACTIONS NEEDED TO CORRECT EXISTING PROBLEMS.

MANAGEMENT OF FOREST CONSERVATION AREAS

POST-CONSTRUCTION MANAGEMENT INCLUDES: MAINTENANCE OF ALL FENCES, SIGNS OR OTHER DEVICES DELINEATING FOREST CONSERVATION AREAS; NEEDED WATERING; REMOVAL OF DEAD OR DAMAGED MATERIAL (WHEN NECESSARY AND IF APPROVED BY THE DEPT. OF RECREATION & PARKS); CONTROL OF UNDESIRABLE COMPETING INVASIVE SPECIES OR NOXIOUS WEEDS; FERTILIZING (IF NECESSARY); AND CONTROL OF PESTS.
SPECIFIC PRACTICES WILL DEPEND ON THE WEATHER PREVAILING DURING THE POST CONSTRUCTION PERIOD. IT IS
THE RESPONSIBILITY OF THE POST—CONSTRUCTION PLAN SUPERVISOR TO TAKE APPROPRIATE ACTIONS AS
NEEDED. THE FCM, THEREFORE, DOES NOT CITE REQUIRED MEASURES. SURVIVAL SUCCESS, NOT FULFILLMENT OF A
GIVEN SERIES OF TASKS, WILL BE THE MEASURE OF CONFORMANCE TO THE NEEDS OF THE POST—CONSTRUCTION
PROCRAM

REPLACEMENT OF PLANT MATERIAL (WHERE APPLICABLE)
AN INSPECTION SHALL TAKE PLACE AT THE END OF YEAR ONE OR BEFORE THE SECOND GROWING SEASON TO EVALUATE SURVIVAL RATES WITH REFERENCE TO THE SURVIVAL REQUIRED AT THE END OF THE TWO YEAR PERIOD. THIS IS AN OPPORTUNITY TO AVOID THE PENALTY FOR VIOLATING SURVIVAL RATE STANDARDS. THIS INSPECTION SHOULD ESTIMATE SURVIVAL POTENTIAL BASED ON THE FOLLOWING:

·VIGOR AND THREAT OF COMPETING VEGETATION (I.E. IF SEEDLINGS ARE FREE TO GROW) •STRUCTURE •GROWTH RATE

IF, AFTER ONE YEAR, THE POSSIBILITY EXISTS THAT THE ORIGINAL PLANTING WILL NOT MEET SURVIVAL STANDARDS, THE APPLICANT MAY CHOOSE TO ESTABLISH REINFORCEMENT PLANTINGS. IF PLANT MORTALITY OF REFORESTATION OR AFFORESTATION EXCEEDS 10% OF PLANTED MATERIAL AT THE END OF THE FIRST GROWING SEASON, SUCH MATERIAL SHOULD BE REPLACED TO BRING THE TOTAL NUMBER OF TREES TO 90% OF THE ORIGINAL TOTAL. SUCH MATERIAL SHALL BE INSTALLED BY THE BEGINNING OF THE SECOND GROWING SEASON. IF AT THE END OF THE SECOND GROWING SEASON, SURVIVAL RATE DROPS BELOW 75%, SUCH MATERIAL AS NEEDE TO GUARANTEE AN 75% SURVIVAL RATE BY THE END OF THE THIRD GROWING SEASON SHALL BE INSTALLED.

EDUCATION OF NEW OCCUPANTS

THE OCCUPANTS OR NEIGHBORS MUST AVOID ACTIVITIES THAT DESTROY OR DEGRADE PROTECTED FOREST RESOURCES. THE POST—CONSTRUCTION MANAGEMENT PROGRAM MUST THEREFORE INCLUDE STEPS TO EDUCATE THE NEW OCCUPANTS OR NEIGHBORS ABOUT THE PROPER USE OF FOREST CONSERVATION AREAS, ABOUT THE NEED FOR THE DEVELOPER TO CARRY OUT THE POST—CONSTRUCTION MANAGEMENT PROGRAM, THE TYPE AND DURATION OF THE POST—CONSTRUCTION PROTECTION PROGRAM, AND THE EVENTUAL TRANSFER OF LONG—TERM RESPONSIBILITIES TO THE PROPERTY OWNERS. SUCH EDUCATIONAL MATERIAL SHOULD INCLUDE A PLAN LOCATING ALL PROTECTED AREAS ON THE SITE AND A DESCRIPTION OF PERMITTED AND PROHIBITED ACTIVITIES WITHIN OR AFFECTING SUCH AREAS. THE FORMAT AND METHOD OF CONVEYING SUCH INFORMATION IS LEFT TO THE DISCRETION OF THE DEVELOPER DISCRETION OF THE DEVELOPER.

FINAL INSPECTION AND RELEASE OF OBLIGATIONS

AT THE END OF THE POST-CONSTRUCTION MANAGEMENT AND PROTECTION PERIOD, THE DEPARTMENT OF PLANNING AND ZONING OR ITS DESIGNEE WILL CONDUCT A FINAL INSPECTION IN ACCORDANCE WITH FCM SEC. 4.5.5 FOR THE RELEASE FOREST CONSERVATION OBLIGATIONS.



White Oak * Area measured to the nearest 1/10 acre ** Source: Howard County Soil Survey. USDA

Project Name: Patuxent Commons

and Approx. %)

anut Hickory:

lulti-florā Rose Spicebush:

Mock stramberry:

Japanese Honeysuckle

'irginia Creeper:

ulip Poplar

<u> Understory:</u>

<u>ferbaceous:</u> liscanthus

Stickywilly Ribwórt Álantain:

Canopy:

% Cover DBH Successional Stand

Larry Hogan, Governor Boyd Rutherford, Lt. Governor Jeannie Haddaway-Riccio, Secretary Allan Fisher, Deputy Secretary

Submission No.

Community Area (Ac.)

Sensetivé Environment

0.43 acres of FI is

environments (stream

wetland buffers).

within sensitive

December 8, 2021

Gutschick, Little & Weber, P.A. 3909 National Drive

Suite 250 Burtonsville, Maryland 20866

RE: Environmental Review for 6441 Freetown Road, Columbia, Tax Map 35-18, Howard County, Maryland

DEPARTMENT OF

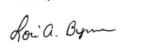
NATURAL RESOURCES

Dear Mr. Bennett:

The Wildlife and Heritage Service has determined that there are no official State or Federal records for listed plant or animal species within the delineated area shown on the map provided. As a result, we have no specific concerns regarding potential impacts or recommendations for protection measures at this time. Please let us know however if the limits of proposed disturbance or overall site boundaries change and we will provide you with an updated evaluation.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at lori.byme@maryland.gov or (410) 260-8573.

Lori A. Byrne,



Environmental Review Coordinator Wildlife and Heritage Service MD Dept. of Natural Resources

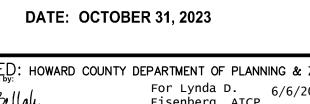
ER# 2021.1605.ho

HOWARD COUNTY, MARYLAND

Tawes State Office Building – 580 Taylor Avenue – Annapolis, Maryland 21401 410-260-8DNR or toll free in Maryland 877-620-8DNR – dnr.maryland.gov – TTY Users Call via the Maryland Relay

APPROVED PLANNING BOARD OF HOWARD COUNTY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLA For Lynda D. Jussica Bullalu Eisenberg, AIC	6/6/2024
Directon DocuSigned by:	Date 6/6/2024
Chief, Division Doubling Development	Date
(HD) Edmondson Chief, Developmente Engineering Division	6/6/2024 — Date



Joshan	Down Ersenberg, A	10.
recttor ^{60D96}	G90A422 DocuSigned by:	Date
	h-	6/6/2024
nief, Divi	sion Douglained by Development	Date
	(HD) Edmondson	6/6/2024

PLANNING ENGINEERING SURVEYING 3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20866 | GLWPA.COM

PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

DRAWN BY DATE BY APP'R REVISION

PREPARED FOR/OWNER:

PATUXENT OWNER LP

1330 NEW HAMPSHIRE AVE. NW

SUITE 116

WASHINGTON, DC 20036

ATTN: ELIZABETH EVERHART

(202)-223-3405

DocuSigned by: kevin Foster 7619C2E291774F9..

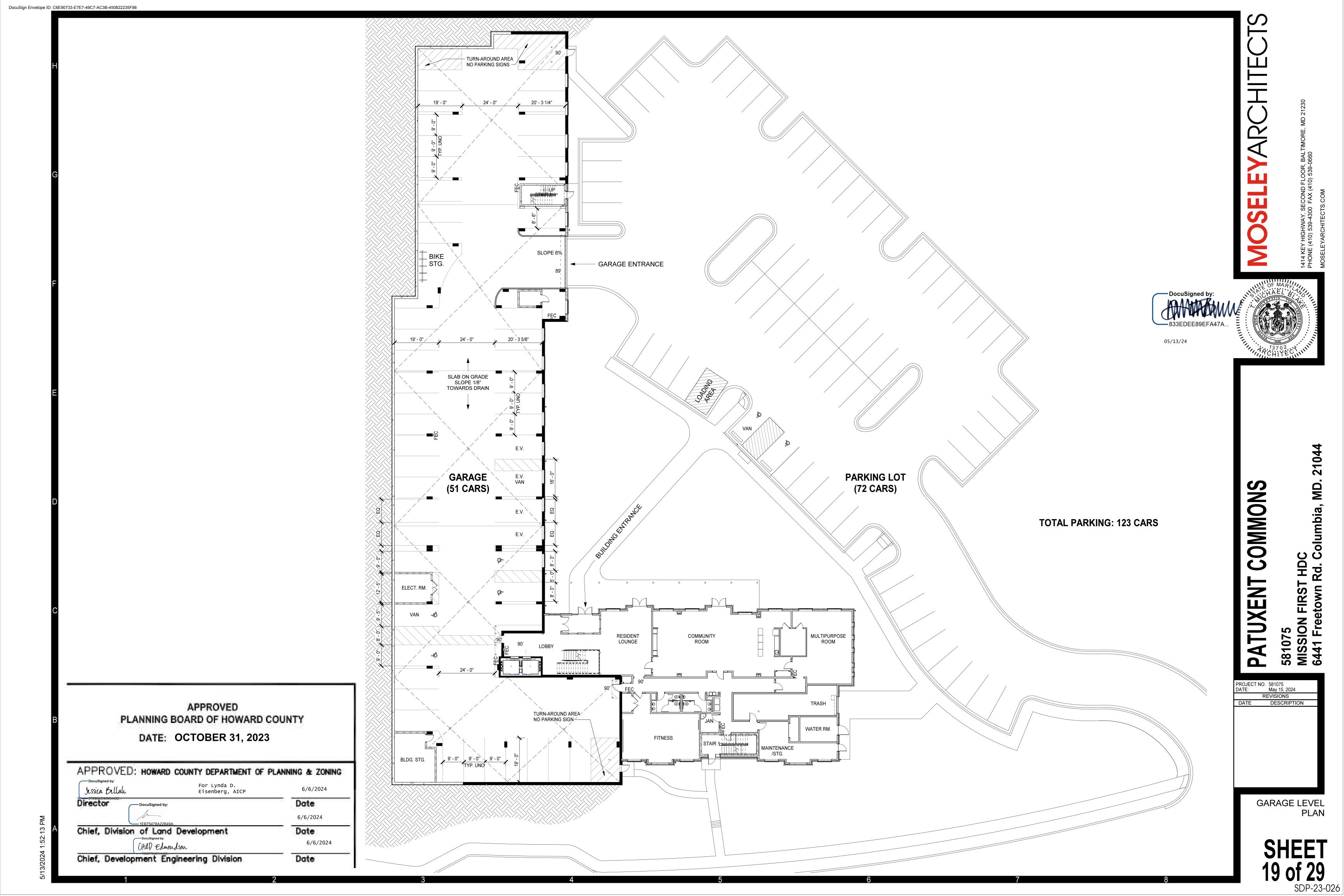
ELECTION DISTRICT No. 5

PATUXENT COMMONS LOT 1 EX. PARCELS 108, 109 & 137

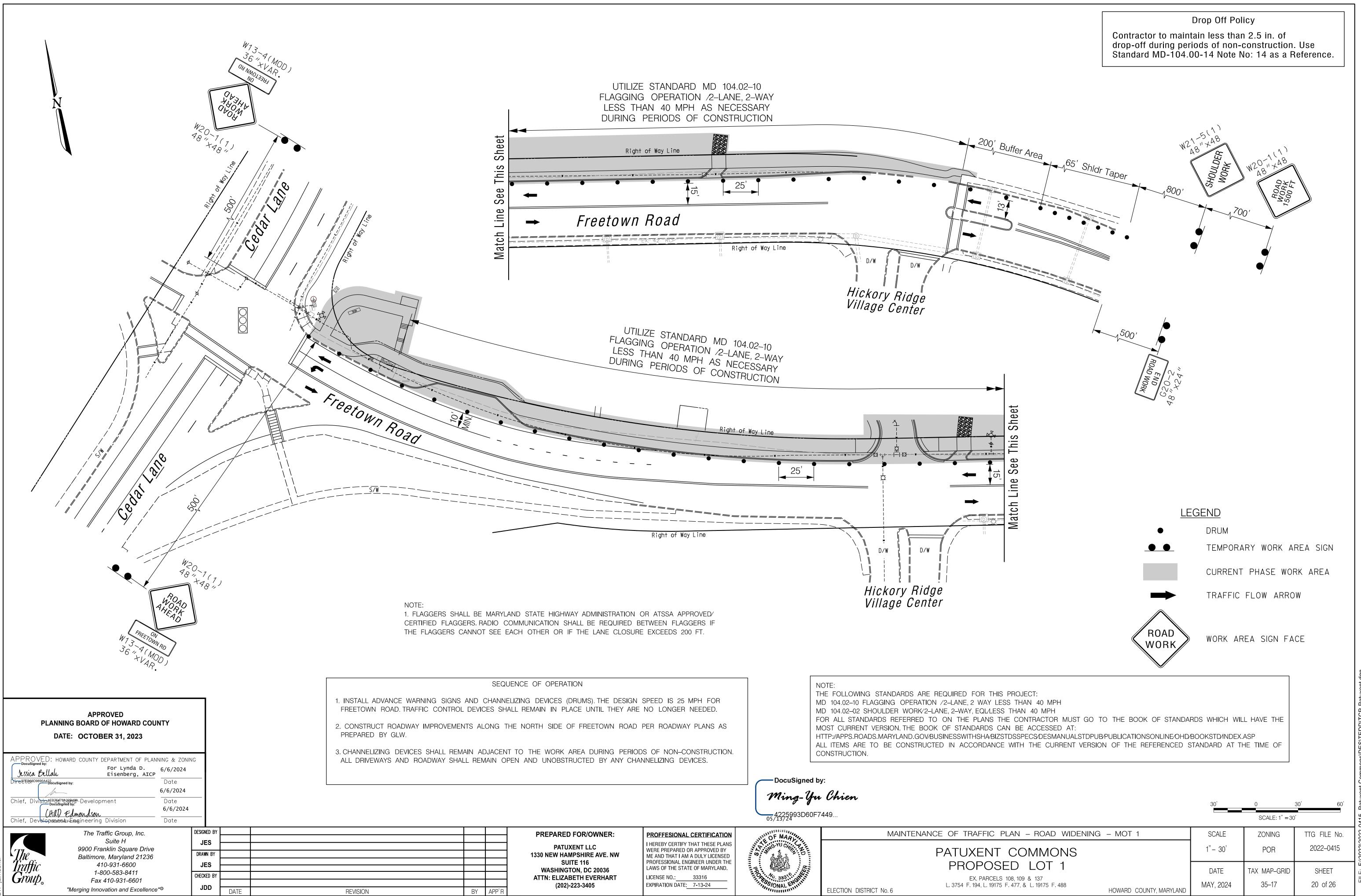
ON-SITE and OFF-SITE FOREST CONSERVATION PLAN

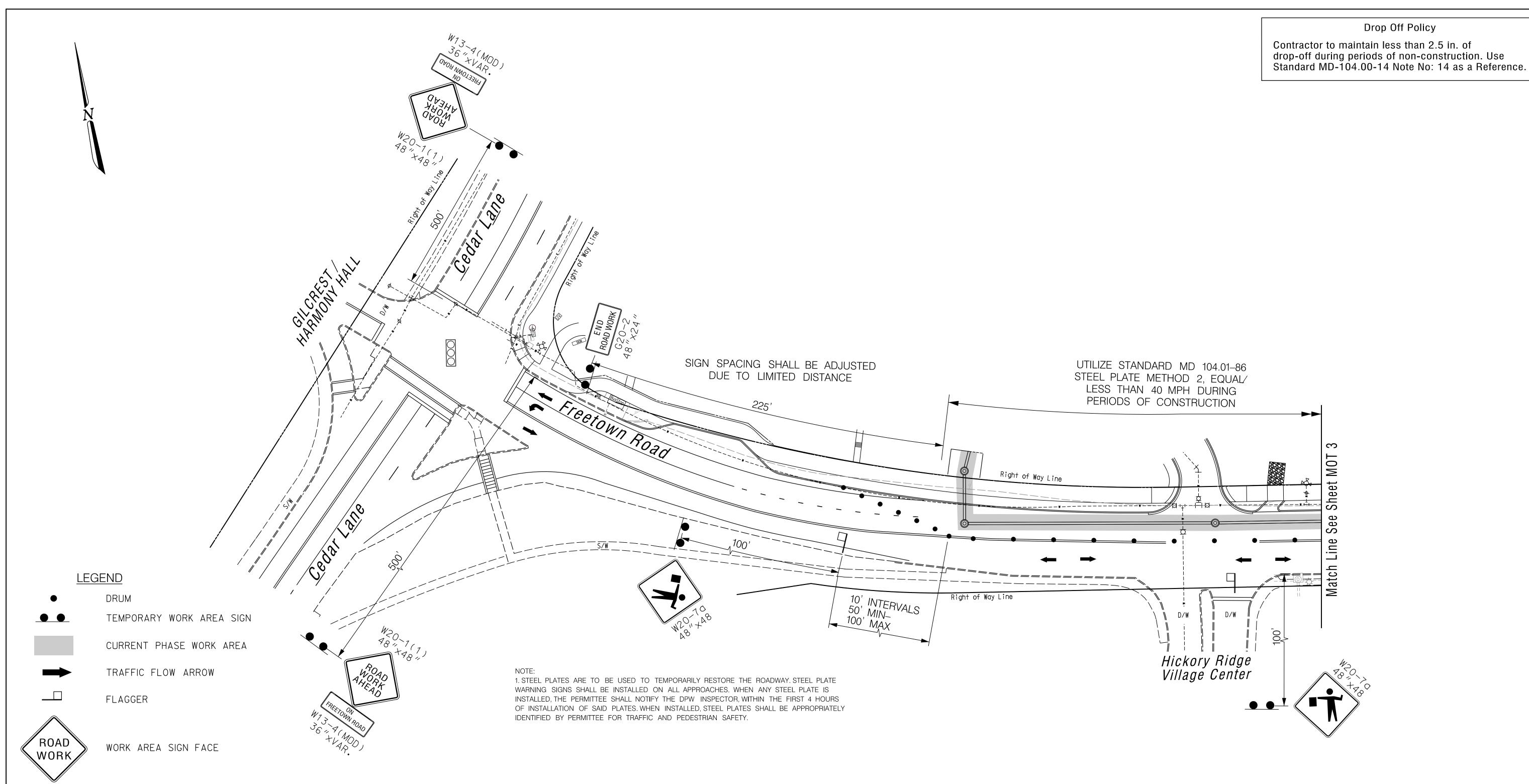
PLATS 26636-26637

GRAPHIC SCALE G. L. W. FILE No. 20089 1"=50' TAX MAP - GRID SHEET 18 OF 29 35–17



PLOTTED: May, 2024





APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

JUSSICA DULLIU ETSENBERG, AICP	INING & ZONING 6/6/2024
Director DöcuSigned by:	Date 6/6/2024
Chief, Division Chief Division Chief Division Chief Division Chief Division Chief Development	Date 6/6/2024

Chief, Develophaneering Division

SEQUENCE OF OPERATION

- 1. INSTALL ADVANCE WARNING SIGNS AND CHANNELIZING DEVICES (DRUMS). THE DESIGN SPEED IS 25 MPH FOR FREETOWN ROAD. TRAFFIC CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THEY ARE NO LONGER NEEDED.
- 2. CONSTRUCT PROPOSED SEWER LINE ALONG FREETOWN ROAD PER ROADWAY PLANS PREPARED BY GLW.
- 3. CONTRACTOR TO INSTALL AND SECURE STEEL PLATES AT THE END OF THE WORK DAY. CONTRACTOR'S PROPOSED METHOD OF ANCHORING SHALL BE APPROVED BY THE ENGINEER.
- 4. CHANNELIZING DEVICES SHALL REMAIN ADJACENT TO THE WORK AREA DURING PERIODS OF NON-CONSTRUCTION. ALL DRIVEWAYS AND ROADWAY SHALL REMAIN OPEN AND UNOBSTRUCTED BY ANY CHANNELIZING DEVICES EXCEPT WHERE NOTED.

LICENSE NO.:

EXPIRATION DATE: 7-13-24

- THE FOLLOWING STANDARDS ARE REQUIRED FOR THIS PROJECT: MD 104.01-86 STEEL PLATE METHOD 2, EQUAL TO OR LESS THAN 40 MPH
- MD 104.02-10 FLAGGING OPERATION /2-LANE. 2 WAY LESS THAN 40 MPH
- FOR ALL STANDARDS REFERRED TO ON THE PLANS THE CONTRACTOR MUST GO TO THE BOOK OF STANDARDS WHICH WILL HAVE THE MOST CURRENT VERSION. THE BOOK OF STANDARDS CAN BE ACCESSED AT: HTTP://APPS.ROADS.MARYLAND.GOV/BUSINESSWITHSHA/BIZSTDSSPECS/DESMANUALSTDPUB/PUBLICATIONSONLINE/OHD/BOOKSTD/INDEX.ASP
- ALL ITEMS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VERSION OF THE REFERENCED STANDARD AT THE TIME OF CONSTRUCTION.

— DocuSigned by:

4225993D60F7449...

PROFFESIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

	MAINTENANCE OF TRAFFIC PLAN - S
	PATUXENT COMM PROPOSED LO
	THOI OSED EO
ON DICTRICT No. (EX. PARCELS 108, 109 & 137 L. 3754 F. 194, L. 19175 F. 477, & L. 1917

PLAN – SEWER LINE –	MOT 2	SCALE	ZONING	TTG FILE No.
COMMONS		1" – 30'	POR	2022–0415
D LOT 1		DATE	TAX MAP-GRID	SHEET
08, 109 & 137 477, & L. 19175 F. 488	HOWARD COUNTY, MARYLAND	MAY, 2024	35–17	21 of 26
	•			

PLOTTED: May, 2024

The Traffic Group, Inc. 9900 Franklin Square Drive Baltimore, Maryland 21236 410-931-6600 1-800-583-8411 Fax 410-931-6601

"Merging Innovation and Excellence"®

DRAWN BY **JES** CHECKED BY DATE

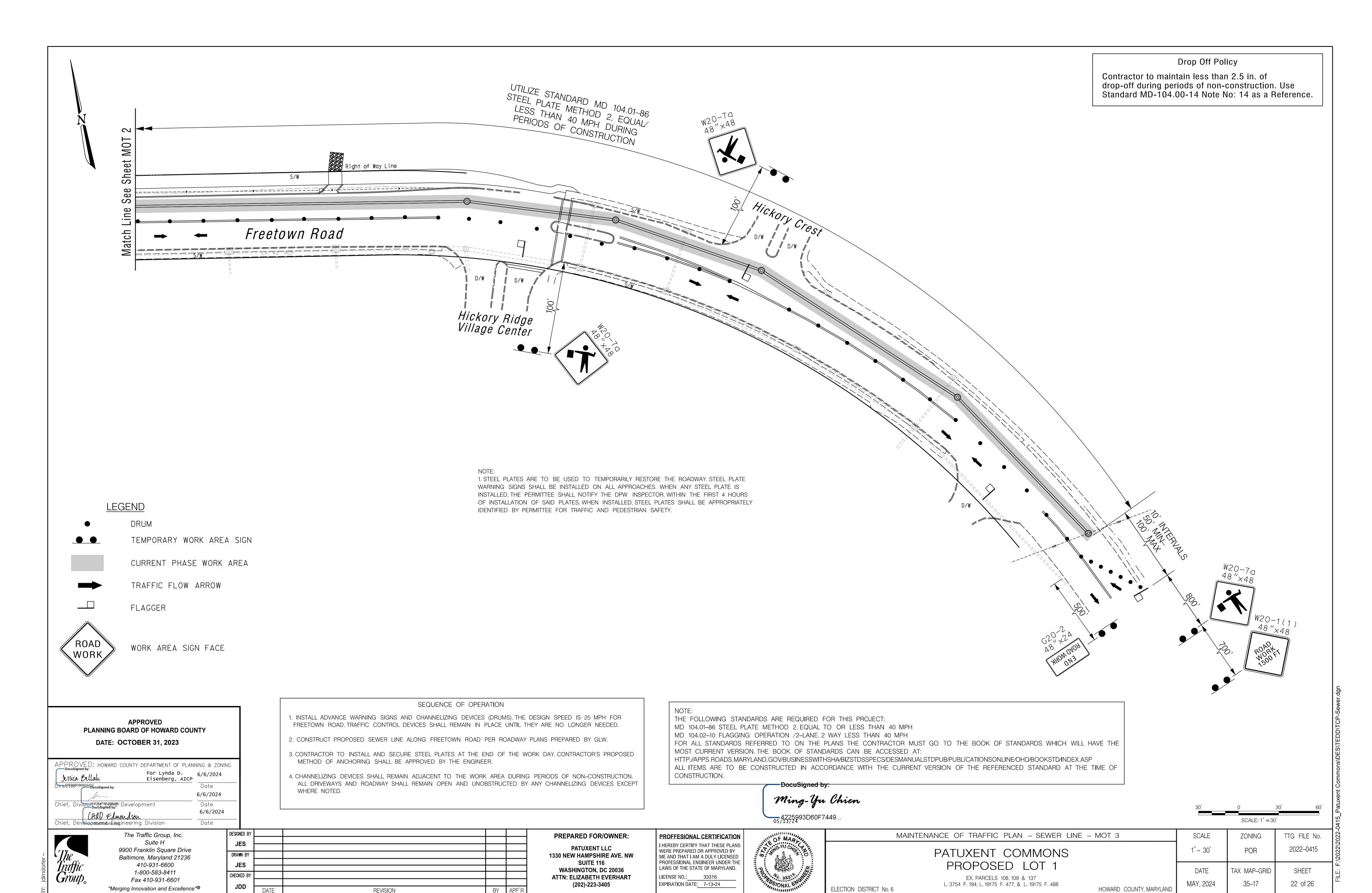
REVISION

PATUXENT LLC 1330 NEW HAMPSHIRE AVE. NW **SUITE 116** WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405

PREPARED FOR/OWNER:

ELECTION DISTRICT No. 6

PLOTTED: May, 2024



SDP-23-026

SEGMENTAL RETAINING WALL SPECIFICATIONS

PART 1 - GENERAL

1.1 WORK INCLUDES

FURNISHING AND INSTALLING SEGMENTAL RETAINING WALL UNITS, GEOGRID REINFORCEMENT, WALL FILL, AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS AND AS SPECIFIED HEREIN. THE CONTRACT ALSO INCLUDES FURNISHING AND INSTALLING ALL APPURTENANT MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR CONSTRUCTION OF THE GEOGRID REINFORCED SEGMENTAL RETAINING WALL. ALL EXISTING AND PROPOSED CONSTRUCTION AND SITE GRADING INFORMATION WAS REFERENCED FROM THE PATUXENT COMMONS, LOT 1, SITE DETAILS AND SWM PLAN, DATED APRIL OF 2023, PREPARED BY GUTSCHICK, LITTLE & WEBER, P.A. (GLW). SOIL DESIGN PARAMETERS ARE BASED ON LIMITED SUBSURFACE DATA PRESENTED IN PATUXENT COMMONS, GEOTECHNICAL ENGINEERING REPORT, DATED OCTOBER 28, 2022, PREPARED BY ECS MID-ATLANTIC, LLC AND FROM LIMITED SUBSURFACE DATA COLLECTED FROM HAND-AUGER BORINGS, PERFORMED BY GEO-TECHNOLOGY ASSOCIATES, INC. (GTA), PRESENTED ON SHEET RW-3. SOIL DESIGN PARAMETERS SHOULD BE VERIFIED DURING CONSTRUCTION.

1.2 REFERENCE STANDARDS

- A. ASTM C90 STANDARD SPECIFICATION FOR LOADBEARING CONCRETE MASONRY UNITS B. ASTM C1262 - STANDARD TEST METHOD FOR EVALUATING THE FREEZE-THAW DURABILITY OF DRY-CAST SEGMENTAL RETAINING WALL UNITS AND RELATED CONCRETE UNITS
- ASTM C1372 STANDARD SPECIFICATION FOR DRY-CASE SEGMENTAL RETAINING WALL UNITS ASTM D698 — STANDARD TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT ASTM D2487 - STANDARD PRACTICE FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION
- ASTM D3034 STANDARD SPECIFICATION FOR TYPE PSM POLY(VINYL CHLORIDE) (PVC) SEWER PIPE AND FITTINGS
- G. ASTM STP399 VANE SHEAR AND CONE PENETRATION RESISTANCE TESTING OF IN-SITU SOILS
- H. 2018 INTERNATIONAL BUILDING CODE (IBC)
- NATIONAL CONCRETE MASONRY ASSOCIATION DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, 3RD EDITION MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA) — STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS, JULY 2018
- 1.3 DELIVERY, STORAGE AND HANDLING
- CONTRACTOR SHALL CHECK THE MATERIALS UPON DELIVERY TO ENSURE THAT PROPER MATERIAL HAS BEEN RECEIVED CONTRACTOR SHALL PREVENT EXCESSIVE MUD, WET CEMENT, EPOXY, AND LIKE MATERIALS WHICH MAY AFFIX THEMSELVES, FROM
- GEOGRIDS SHALL BE STORED ABOVE -20° F D. CONTRACTOR SHALL PROTECT THE MATERIALS FROM DAMAGE. DAMAGED MATERIAL SHALL NOT BE INCORPORATED INTO THE REINFORCED RETAINING WALL.
- 1.4 SUBMITTALS/CERTIFICATION
- A. IF REQUESTED BY GTA OR THE OWNER, CONTRACTOR SHALL SUBMIT QUALIFICATIONS AND DOCUMENTATION OF PRIOR EXPERIENCE TO SHOW THE NECESSARY SKILL AND EXPERIENCE. PRIOR EXPERIENCE SHALL INCLUDE RETAINING WALL
- B. CONTRACTOR SHALL SUBMIT MANUFACTURER'S CATALOG FOR THE PROPOSED MATERIALS TO GTA FOR APPROVAL A MINIMUM OF SEVEN DAYS BEFORE START OF CONSTRUCTION. IF REQUESTED BY GTA OR THE OWNER, CONTRACTOR SHALL SUBMIT SAMPLES OF PROPOSED MATERIALS TO GTA A MINIMUM OF

CONSTRUCTION OF SIMILAR SIZE/TYPE TO THOSE SHOWN ON THIS PLAN (MINIMUM THREE PROJECTS IN THE LAST FIVE YEARS).

SEVEN DAYS BEFORE START OF CONSTRUCTION. D. MATERIALS SHALL BE TRANSPORTED TO THE SITE ONLY AFTER APPROVAL OF THE PROPOSED MATERIAL BY GTA.

PART 2 - PRODUCTS

2.1 DEFINITIONS

- A. CONCRETE UNITS ARE DRY-STACKED, CONCRETE MASONRY UNITS THAT FORM THE FACE OF THE RETAINING WALL.
- B. CAP UNITS ARE CONCRETE MASONRY UNITS PLACED ON THE TOP COURSE OF THE CONCRETE UNITS. LEVELING PAD IS A COMPACTED, AGGREGATE LAYER SUPPORTING THE BOTTOM CONCRETE UNITS.
- FIBERGLASS CONNECTION PINS ARE PLACED BETWEEN SUCCESSIVE CONCRETE UNIT COURSES TO CONNECT CONCRETE UNITS AND SECURE GEOGRID TO THE CONCRETE UNITS. GEOGRID IS A HIGH-DENSITY POLYETHYLENE, POLYESTER, OR POLYPROPYLENE GRID, SPECIFICALLY FABRICATED FOR USE AS A
- SOIL REINFORCEMENT. GRAVEL FILL IS DRAINAGE AGGREGATE THAT IS PLACED WITHIN AND IMMEDIATELY BEHIND THE CONCRETE UNITS.
- G. REINFORCED BACKFILL IS COMPACTED, STRUCTURAL FILL PLACED BEHIND THE CONCRETE UNITS, EXTENDING THE FULL LENGTH
- OF THE GEOGRID ZONE. H. CONTROLLED FILL IS COMPACTED, STRUCTURAL FILL PLACED BEHIND THE REINFORCED BACKFILL AND/OR SUPPORTING THE
- LEVELING PAD AND REINFORCED BACKFILL.
- I. LOW-PERMEABILITY SOIL IS A LAYER OF COMPACTED, LOW-PERMEABILITY SOIL FILL PLANNED AT THE GROUND SURFACE, EXTENDING FROM JUST BEHIND THE CAP UNIT TO THE BACK OF THE REINFORCED BACKFILL ZONE.
- J. DRAINAGE PIPE IS PVC OR HDPE PIPING PLACED BEHIND AND/OR THROUGH THE CONCRETE UNITS TO FACILITATE DRAINAGE OF WATER FROM BEHIND THE RETAINING WALL.
- K. FILTER FABRIC IS A NON-WOVEN, POLYPROPYLENE GEOTEXTILE USED TO PROVIDE SEPARATION BETWEEN GRAVEL FILL AND REINFORCED BACKFILL.

2.2 MATERIALS

A. CONCRETE UNITS

- 1. CONCRETE UNITS SHALL BE KEYSTONE COMPAC III RETAINING WALL UNITS, SUBSTITUTION OF OTHER CONCRETE UNITS OF SIMILAR SIZE AND WEIGHT MAY BE ALLOWED WITH THE PRIOR APPROVAL OF GTA AND THE OWNER.
- 2. CONCRETE WALL UNITS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI, IN ACCORDANCE WITH ASTM C90. THE CONCRETE SHALL HAVE ADEQUATE FREEZE/THAW PROTECTION, WITH A MAXIMUM MOISTURE ABSORPTION OF 8
- 3. CONCRETE UNIT MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372. 4. CONCRETE UNITS SHALL PASS 100 FREEZE/THAW CYCLES IN WATER WITH LESS THAN 1% WEIGHT LOSS IN ACCORDANCE WITH
- 5. CONCRETE UNITS SHALL HAVE ANGLED SIDES AND BE CAPABLE OF ATTAINING THE REQUIRED CONCAVE AND CONVEX
- ALIGNMENT CURVES. 6. EXTERIOR CONCRETE UNIT DIMENSIONS MAY VARY. CONCRETE UNITS SHALL HAVE A MINIMUM OF ONE SQUARE FOOT OF FACE
- AREA EACH. 7. CONCRETE UNITS SHALL BE INTERLOCKED WITH NON-CORROSIVE REINFORCED FIBERGLASS PINS.
- 8. CONCRETE UNITS SHALL BE INTERLOCKED AS TO PROVIDE A NOMINAL 1-1/8-INCH OF SETBACK PER COURSE.
- 1. CAP UNITS SHALL BE KEYSTONE CAP UNITS. SUBSTITUTION OF OTHER CAP UNITS OF SIMILAR SIZE AND WEIGHT MAY BE
- ALLOWED WITH THE PRIOR APPROVAL OF GTA. 2. CAP UNITS SHALL CONFORM TO THE REQUIREMENTS STATED IN NOTES 2.2.A.2 AND 2.2.A.5.

C. LEVELING PAD

B. CAP UNITS

- 1. LEVELING PAD MATERIALS SHALL CONSIST OF COMPACTED, FREE-DRAINING, COARSE AGGREGATES MEETING THE REQUIREMENTS OF MARYLAND SHA NO. 57 STONE
- 2. LEVELING PAD SHALL BE A MINIMUM OF 6 INCHES DEEP AND 24 INCHES WIDE.

D. FIBERGLASS CONNECTION PINS

- 1. FIBERGLASS CONNECTING PINS SHALL BE THERMOSET, ISOPTHALIC, POLYESTER RESIN PULTRUDED, REINFORCEMENT RODS, 1/2 INCH IN DIAMETER.
- PINS SHOULD HAVE A MINIMUM FLEXURAL STRENGTH OF 128,000 PSI AND SHORT BEAM SHEAR OF 6,400 PSI. 3. FOR SUBSTITUTE CONCRETE UNITS, USE OF OTHER COMPATIBLE CONNECTOR SYSTEMS MAY BE ALLOWED WITH THE PRIOR
- APPROVAL OF GTA.
- E. GEOGRID
- 1. GEOGRID SHALL BE MIRAGRID 3XT MANUFACTURED BY TENCATE GEOSYNTHETICS AMERICAS. EQUIVALENT MATERIALS MAY BE SUBSTITUTED WITH PRIOR APPROVAL OF GTA.
- 2. THE GEOGRID SHALL HAVE A MINIMUM LONG TERM DESIGN STRENGTH (LTDS) OF 1,999 POUNDS PER FOOT. LTDS IS DEFINED AS THE ULTIMATE STRENGTH DIVIDED BY REDUCTION FACTORS FOR CREEP, DURABILITY, AND INSTALLATION DAMAGE.
- F. GRAVEL FILL
- 1. GRAVEL FILL SHALL CONSIST OF CLEAN, 1 INCH MINUS CRUSHED STONE OR CRUSHED GRAVEL WITH 100 PERCENT PASSING THE 1-INCH SIEVE, 75 TO 100 PERCENT PASSING THE 3/4-INCH SIEVE, 0 TO 10 PERCENT PASSING THE NO. 4 SIEVE, AND 0 TO 5 PERCENT PASSING THE NO. 50 SIEVE.
- G. REINFORCED BACKFILL
- 1. REINFORCED BACKFILL SOILS SHALL BE NON-PLASTIC SOIL MEETING THE REQUIREMENTS OF AASHTO A-2-4 OR MORE GRANULAR. IF ADEQUATE QUANTITIES ARE NOT AVAILABLE ON-SITE, MATERIALS MEETING THESE REQUIREMENTS WILL NEED TO
- 2. REINFORCED BACKFILL SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698.

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING For Lynda D. Jessica Bellali Eisenberg, AICP Dir e CE 60 D9690A422 Docusigned by: 6/6/2024 Chief, Division Profit Development Date 6/6/2024 (HdD Edmondson Date Chief, Development-4Engineering Division

H. CONTROLLED FILL

- 1. CONTROLLED FILLS TO BE PLACED OUTSIDE OF THE REINFORCED BACKFILL ZONE SHALL CONSIST OF ON-SITE OR BORROW
- SOILS MEETING THE REQUIREMENT OF AASHTO A-4 OR MORE GRANULAR. 2. CONTROLLED FILLS SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698, OR HIGHER IF REQUIRED BY THE GEOTECHNICAL REPORT.
- I. LOW-PERMEABILITY SOIL
- 1. LOW-PERMEABILITY SOILS TO BE PLACED AT THE TOP OF THE WALL, WHERE SPECIFIED, SHALL CONSIST OF SANDY, SILTY OR CLAYEY SOILS MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM CRITERIA FOR ML, CL, SM, OR SC, WITH A MINIMUM OF 25% PASSING THE #200 SIEVE.
- J. DRAINAGE PIPE
- 1. THE DRAINAGE PIPES SHALL BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D3034.
- K. FILTER FABRIC
- 1. FILTER FABRIC SHALL BE NON-WOVEN, POLYPROPYLENE GEOTEXTILE MIRAFI 140N MANUFACTURED BY TENCATE GEOSYNTHETICS AMERICAS OR TERRATEX NO4.5 MANUFACTURED BY HANES GEO COMPONENTS. EQUIVALENT MATERIALS MAY BE SUBSTITUTED

PART 3 - EXECUTION

3.1 EXCAVATION

- A. THE CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. UNDER NO CIRCUMSTANCES SHALL THE EXCAVATION LINES AND GRADES BE EXCEEDED, EXCEPT WITH OWNER'S APPROVAL. THE CONTRACTOR SHALL PROTECT THE EXCAVATION FROM SLOUGHING BY PLACING A MEMBRANE OVER THE FACE OF THE
- B. PRIOR TO RETAINING WALL CONSTRUCTION AND THE PLACEMENT OF FILL, ALL TOPSOIL SHALL BE STRIPPED AND REMOVED FROM THE SITE
- C. EXCAVATIONS SHALL BE SLOPED OR OTHERWISE SUPPORTED IN ACCORDANCE WITH OCCUPATION SAFETY AND HEALTH ADMINISTRATION (OSHA) AND OTHER STATE AND LOCAL REGULATIONS.
- 3.2 FOUNDATION SUBGRADE PREPARATION
- A. FOUNDATION SOIL SHALL BE EXCAVATED AS REQUIRED FOR INSTALLATION OF THE LEVELING PAD, GEOGRID, AND OTHER ELEMENTS AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- B. FOUNDATION SOIL SHALL BE EXAMINED BY THE TESTING AGENCY TO ENSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS ASSUMED DESIGN STRENGTH. SOILS NOT MEETING REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH CONTROLLED FILL, MEETING THE MATERIAL AND COMPACTION REQUIREMENTS STATED IN NOTE 2.2H.
- C. THE ALLOWABLE BEARING PRESSURE FOR NATURAL AND CONTROLLED FILL SOILS SHALL BE AS SPECIFIED IN PART 5 THE EXPOSED FOUNDATION SUBGRADE SHALL BE PROOFROLLED WITH A LOADED DUMP TRUCK. ANY SOFT OR UNSTABLE AREAS IDENTIFIED DURING THIS EVALUATION SHALL BE OVEREXCAVATED AND BACKFILLED WITH CONTROLLED FILL.
- E. ANY FILLS REQUIRED TO ESTABLISH SLOPING SURFACES IN FRONT OF THE WALLS SHALL CONSIST OF CONTROLLED FILL MEETING THE REQUIREMENTS STATED IN NOTE 2.2H AND SHALL BE TESTED BY THE TESTING AGENCY.

3.3 LEVELING PAD

- A. THE LEVELING PAD SHALL BE PLACED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITH A MINIMUM THICKNESS OF 6 INCHES. B. LEVELING PAD MATERIALS SHALL BE PLACED ON A SUBGRADE PREPARED AS DESCRIBED IN SECTION 3.2 AND APPROVED BY
- THE TESTING AGENCY C. LEVELING PAD SHALL BE PREPARED TO ENSURE COMPLETE CONTACT OF RETAINING WALL UNIT WITH BASE, GAPS SHALL NOT BE ALLOWED.

3.4 UNIT INSTALLATION

- A. FIRST COURSE OF CONCRETE UNITS SHALL BE PLACED ON THE LEVELING PAD. THE CONCRETE UNITS SHALL BE CHECKED FOR
- LEVEL AND ALIGNMENT. THE FIRST COURSE IS THE MOST IMPORTANT TO PROVIDE ACCURATE AND ACCEPTABLE RESULTS. B. ENSURE THAT CONCRETE UNITS ARE IN FULL CONTACT WITH THE LEVELING PAD.
- C. CONCRETE UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL ALIGNMENT. ALIGNMENT MAY BE DONE BY MEANS OF A STRING LINE OR OFFSET FROM BASE LINE.
- INSTALL FIBERGLASS CONNECTING PINS AT THE END OF EACH COURSE WHERE THE WALL CHANGES ELEVATION, UNITS SHALL BE TURNED INTO THE BACKFILL. UNITS SHOULD BE LAID AS TO CREATE THE MINIMUM RADIUS POSSIBLE. CONCRETE UNITS SHALL BE EMBEDDED BELOW FINAL
- BOTTOM-OF-WALL GRADES TO THE MINIMUM EMBEDMENT DEPTHS SHOWN ON THE WALL PROFILES. ONLY THE FRONT FACE OF THE UNITS SHOULD BE VISIBLE FROM THE SIDE OF THE WALL.
- F. LAY UP EACH COURSE OF CONCRETE UNITS. INSERT FIBERGLASS CONNECTING PIN INTO THE REAR SLOT OF THE LOWER CONCRETE UNIT AND INTO THE RECEIVING HOLE OF THE UPPER CONCRETE UNIT. REPEAT PROCEDURE TO THE EXTENT OF WALL
- H. CAP UNITS SHALL BE INSTALLED AND BONDED WITH CONSTRUCTION ADHESIVE OR EPOXY CEMENT AS REQUIRED BY
- I. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE FOR THE BACK OF THE RETAINING WALL DURING CONSTRUCTION.
- 3.5 GEOGRID INSTALLATION

G. FILL CONCRETE UNIT VOIDS WITH GRAVEL FILL.

- A. ALL UTILITIES IN THE VICINITY OF ANY RETAINING WALL OR GEOGRID SHALL BE INSTALLED AND PROPERLY BACKFILLED PRIOR TO PLACING THE GEOGRID OR CONSTRUCTING THE WALL
- B. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED REINFORCED BACKFILL, CONNECTED TO THE CONCRETE UNITS. K GEOGRID OVER THE FIBERGLASS CONNECTING PIN, PULL TAUT, AND ANCHOR BEFORE REINFORCED BACKFILL IS PLAUED
- C. SLACK IN THE GEOGRID AT THE WALL UNIT CONNECTIONS SHALL BE REMOVED IN A MANNER, AND TO SUCH A DEGREE, AS APPROVED BY THE TESTING AGENCY D. GEOGRID SHALL BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS
- DIRECTED BY THE TESTING AGENCY. ADDITIONAL GEOGRID IS REQUIRED IN WALL CURVES OR BENDS AS SHOWN ON THE TYPICAL DETAILS. CORRECT ORIENTATION (ROLL DIRECTION) OF THE GEOGRID SHALL BE VERIFIED BY THE CONTRACTOR.
- G. GEOGRID SHALL BE SECURED IN PLACE WITH STAPLES, PINS, SAND BAGS, OR BACKFILL AS REQUIRED BY FILL PROPERTIES, FILL PLACEMENT PROCEDURES, OR WEATHER CONDITIONS, OR AS DIRECTED BY THE TESTING AGENCY.
- 1. UNIAXIAL GEOGRID DOES NOT NEED TO BE OVERLAPPED IN THE ACROSS THE ROLL DIRECTION, EXCEPT TO CONTAIN THE FILL AT THE SLOPE FACE WHEN WRAP-AROUND FACING IS USED. UNIAXIAL GRID SHOULD BE OVERLAPPED 48" IN THE ROLLED
- 2. LAYER OF SOIL A MINIMUM OF 4 INCHES IN THICKNESS SHOULD BE SPREAD BETWEEN UNIAXIAL GEOGRID LAYERS IN THE AREA TO BE OVERLAPPED, OR AS DIRECTED.

3.6 FILL PLACEMENT

- A. REINFORCED BACKFILL AND CONTROLLED FILL SHALL BE PLACED AND COMPACTED AS DESCRIBED IN SECTION 2.2 AND IN ACCORDANCE WITH APPLICABLE COUNTY REQUIREMENTS.
- B. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF WRINKLES IN AND/OR MOVEMENT OF THE GEOGRID. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 4 FEET OF THE WALL FACE.
- REINFORCED BACKFILL SHALL BE PLACED FROM THE WALL OUTWARD TO ENSURE THAT THE GEOGRID REMAINS TAUT. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED BEHIND OR ABOVE THE WALL.
- RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
- G. PLACE FILTER FABRIC BETWEEN THE GRAVEL FILL AND THE REINFORCED BACKFILL AS SHOWN ON PLANS. THE FILTER FABRIC SHALL BE EMBEDDED A MINIMUM OF TWO FEET INTO THE REINFORCED FILL.

3.7 DRAINAGE

- A. GRAVEL FILL SHALL BE PLACED BEHIND THE CONCRETE UNITS TO THE LIMITS SHOWN. THE GRAVEL FILL SHALL EXTEND MINIMUM 12 INCHES BEHIND THE BACK OF THE CONCRETE UNITS. INCREASED GRAVEL FILL THICKNESS IS REQUIRED IN CURVES AND CORNERS AS SHOWN ON THE TYPICAL DETAILS. B. PLACE FILTER FABRIC BEHIND THE GRAVEL FILL AS DESCRIBED IN SECTION 3.6.
- C. POSITIVE DRAINAGE SHALL BE MAINTAINED DURING AND AFTER CONSTRUCTION. REINFORCED BACKFILL THAT BECOME WET DURING
- CONSTRUCTION SHALL BE DRIED AND RECOMPACTED, OR REMOVED AND REPLACED WITH NEW REINFORCED BACKFILL. D. INSTALL THE PERFORATED DRAINAGE PIPES AND LATERAL DRAINAGE PIPES INCREMENTALLY ALONG WITH THE INSTALLATION OF CONCRETE UNITS AND PLACEMENT OF REINFORCED BACKFILL.

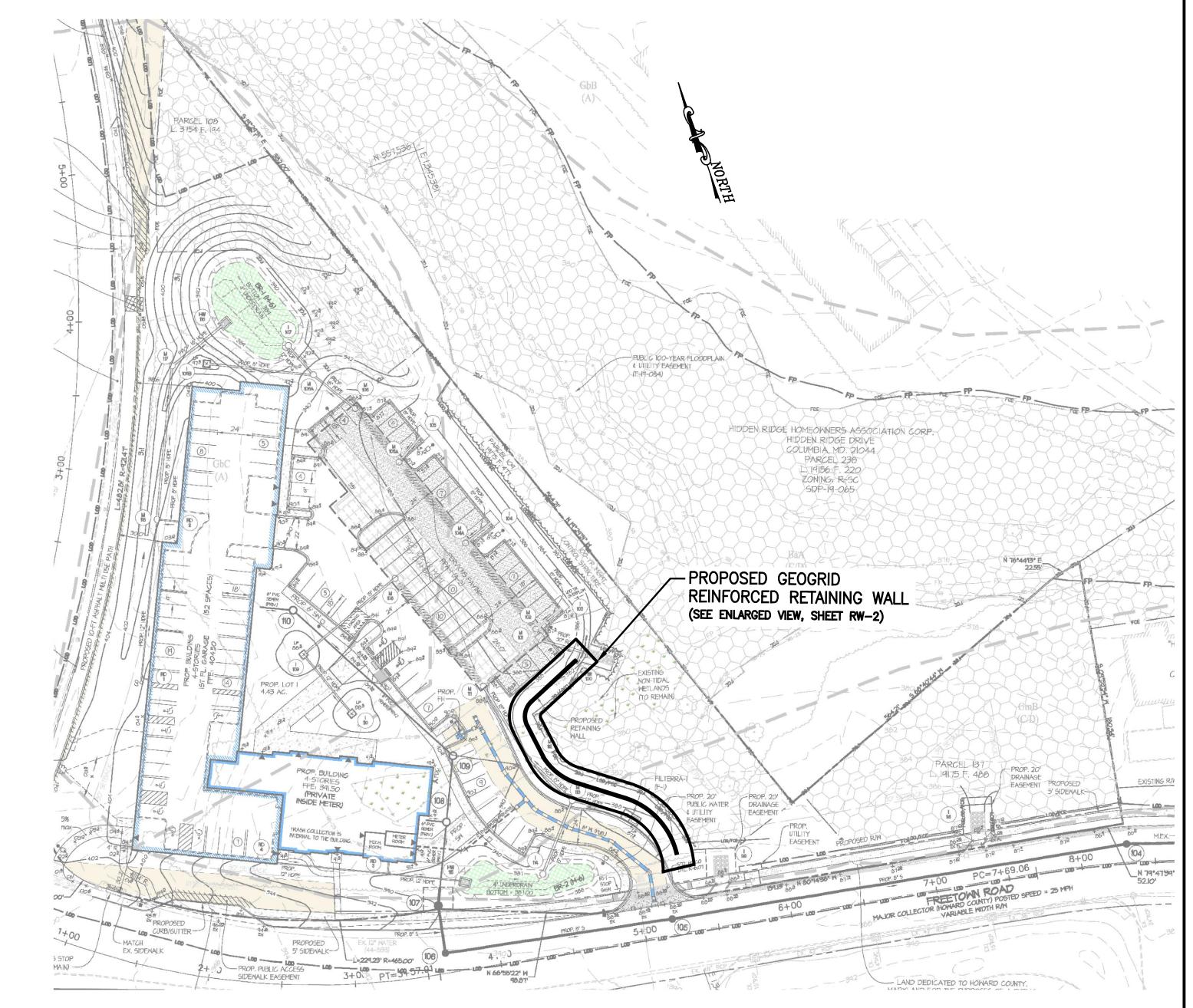
PART 4 - CONSTRUCTION OBSERVATION AND TESTING

RESPONSIBILITY FOR THE PERFORMANCE OF THE WALLS.

- A. THE RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF GTA TO CONFIRM THAT THE SOILS AND MATERIALS USED DURING CONSTRUCTION MEET THE REQUIREMENTS SPECIFIED HEREIN. IF GTA IS NOT CONTRACTED TO PROVIDE CONSTRUCTION OBSERVATION AND TESTING SERVICES DURING WALL CONSTRUCTION, GTA IS RELIEVED OF ALL
- B. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO GTA PRIOR TO THE START OF WALL CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER (DCP) TEST ASTM STP399. C. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE TESTING AGENCY REPRESENTATIVE.

PART 5 - DESIGN CRITERIA

- A. REQUIRED MINIMUM ALLOWABLE FOUNDATION BEARING PRESSURE IS 2,500 PSF. B. REINFORCED SOIL INTERNAL FRICTION ANGLE = 28 DEGREES AND COHESION = 0 PSF.
- REINFORCED SOIL MOIST UNIT WEIGHT = 120 PCF. FOUNDATION AND RETAINED SOIL INTERNAL FRICTION ANGLE = 28 DEGREES AND COHESION = 0 PSF.
- FOUNDATION AND RETAINED SOIL MOIST UNIT WEIGHT = 120 PCF. F. RETAINING WALLS ARE NOT DESIGNED TO RESIST HYDROSTATIC PRESSURE.



RETAINING WALL LOCATION PLAN

BASE IMAGE WAS ADAPTED FROM THE PATUXENT COMMONS, PROPOSED LOT 1, SITE DEVELOPMENT PLAN, DATED FEBRUARY OF 2023, PREPARED BY GLW (ORIGINAL SCALE: 1"=20').

SCALE 1" = 50'



RW-1 GEO-TECHNOLOGY ASSOCIATES. INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 14280 PARK CENTER DRIVE, SUITE: A LAUREL, MARYLAND 20707 (410) 792-9446 or (301) 470-4470 WWW.GTAENG.COM

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PATUXENT COMMONS

RETAINING WALL



LOCATION PLAN AND GENERAL NOTES

HOWARD COUNTY, MARYLAND

MD PROFESSIONAL CERTIFICATION:	DATE	REVISIONS
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. 29184,		
EXPIRATION DATE: 06/16/2025.		

SCALE: AS SHOWN DATE: 04/15/2024 DRAWN BY: CAAF DESIGN BY: CAAF REVIEW BY: BTD SHEET: 23 OF 29

PREPARED FOR/OWNER: SCALE ZONING G. L. W. FILE No. 20089 PATUXENT OWNER LP 1"=50' 1330 NEW HAMPSHIRE AVE. NW PATUXENT COMMONS SUITE 116 WASHINGTON, DC 20036 PROPOSED LOT 1 SHEET TAX MAP — GRID ATTN: ELIZABETH EVERHART EX. PARCELS 108, 109 & 137 (202)-223-3405APRIL 2024 23 OF 29 HOWARD COUNTY, MARYLAN ELECTION DISTRICT No. 5

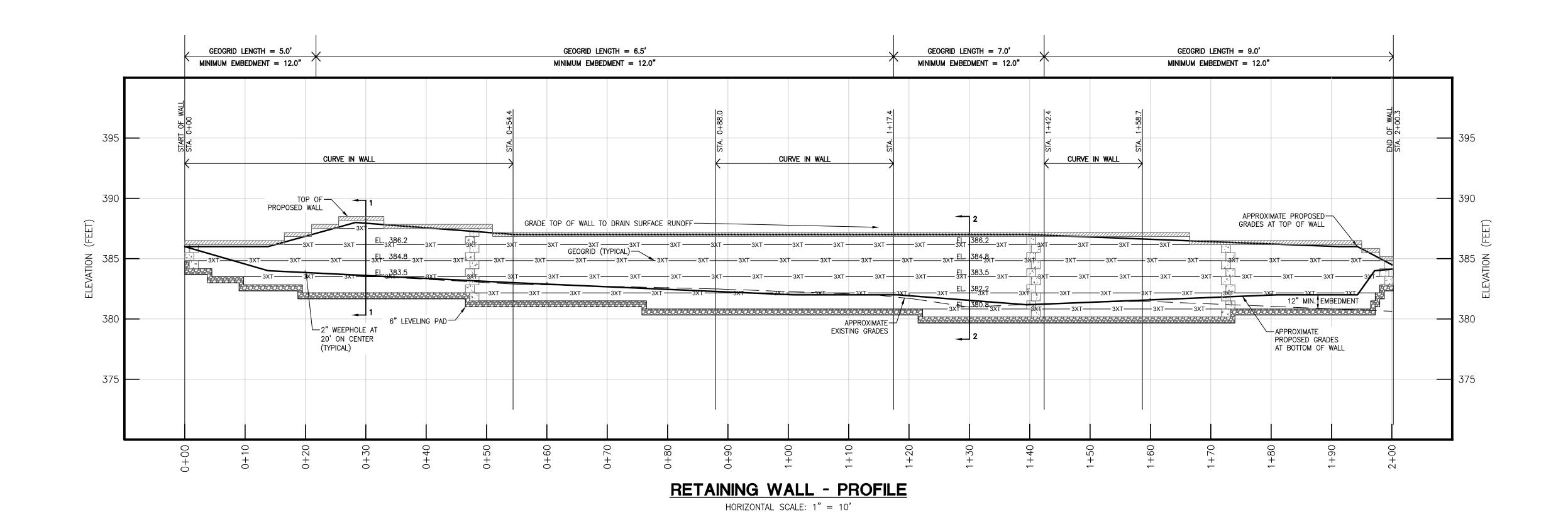
DocuSigned by:

DUNAMIN

05/24/24

SDP-23-026

GTA JOB NO.: 31230531



VERTICAL SCALE: 1" = 5'

SWM-02 /—APPROXIMATE GEOGRID ZONE SEE NOTE 2 BELOW-SWM-03 TW: 387.0/ BW: 381.2 STA. 1+50 PROPOSED: RETAINING WALL TW: 386.0 BW: 382.0 START OF WALL STA. 0+00 STA. 2+00 TW: 386.0 BW: 384.0

RETAINING WALL PLAN VIEW

BASE IMAGE WAS ADAPTED FROM THE <u>PATUXENT COMMONS, LOT 1, SITE DETAILS AND SWM PLAN</u>, DATED APRIL OF 2023, PREPARED BY GLW (ORIGINAL SCALE: 1"=20'). SCALE 1" = 20"

IDENTIFICATION AND APPROXIMATE LOCATION OF HAND AUGER PERFORMED BY GTA IN MARCH OF 2023.

identification and approximate location of standard penetration test (SPT) boring performed by esc mid-atlantic, llc (esc) in august of 2022.

1. THE HAND AUGER LOCATIONS WERE SELECTED AND STAKED IN THE FIELD BY GTA USING A GLOBAL POSITIONING SYSTEM (GPS UNIT). THE SPT BORING LOCATIONS WERE REFERENCED FROM THE <u>PATUXENT COMMONS</u>, <u>GEOTECHNICAL ENGINEERING REPORT</u>, DATED OCTOBER 28, 2022, PERPARED BY ECS. EXPLORATION LOCATIONS SHOULD ONLY BE CONSIDERED ACCURATE TO THE DEGREE IMPLIED BY THE METHAL TISE.

2. INSTALLATION OF STORM DRAIN TO BE COORDINATED WITH THE WALL CONSTRUCTION. INSTALLATION SHOULD BE PERFORMED AS TO NOT COMPROMISE OR UNDERMINE THE GEOGRIDS.

RW-2 GEO-TECHNOLOGY ASSOCIATES, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

14280 PARK CENTER DRIVE, SUITE: A LAUREL, MARYLAND 20707 (410) 792-9446 or (301) 470-4470 WWW.GTAENG.COM

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PATUXENT COMMONS **RETAINING WALL**

PLAN VIEW AND PROFILE

HOWARD COUNTY, MARYLAND

DATE REVISIONS JOB NO.: 31230531 MD PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR SCALE: AS SHOWN APPROVED BY ME, AND THAT I DATE: 04/15/2024 AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER
THE LAWS OF THE STATE OF DRAWN BY: CAAF DESIGN BY: CAAF MARYLAND, LICENSE NO. 29184, EXPIRATION DATE: 06/16/2025. REVIEW BY: BTD

SHEET: 24 OF 29 PREPARED FOR/OWNER: SCALE ZONING G. L. W. FILE No. 20089 PATUXENT OWNER LP AS SHOWN 1330 NEW HAMPSHIRE AVE. NW PATUXENT COMMONS SUITE 116 PROPOSED LOT 1 WASHINGTON, DC 20036 SHEET TAX MAP - GRID ATTN: ELIZABETH EVERHART EX. PARCELS 108, 109 & 137 (202)-223-3405

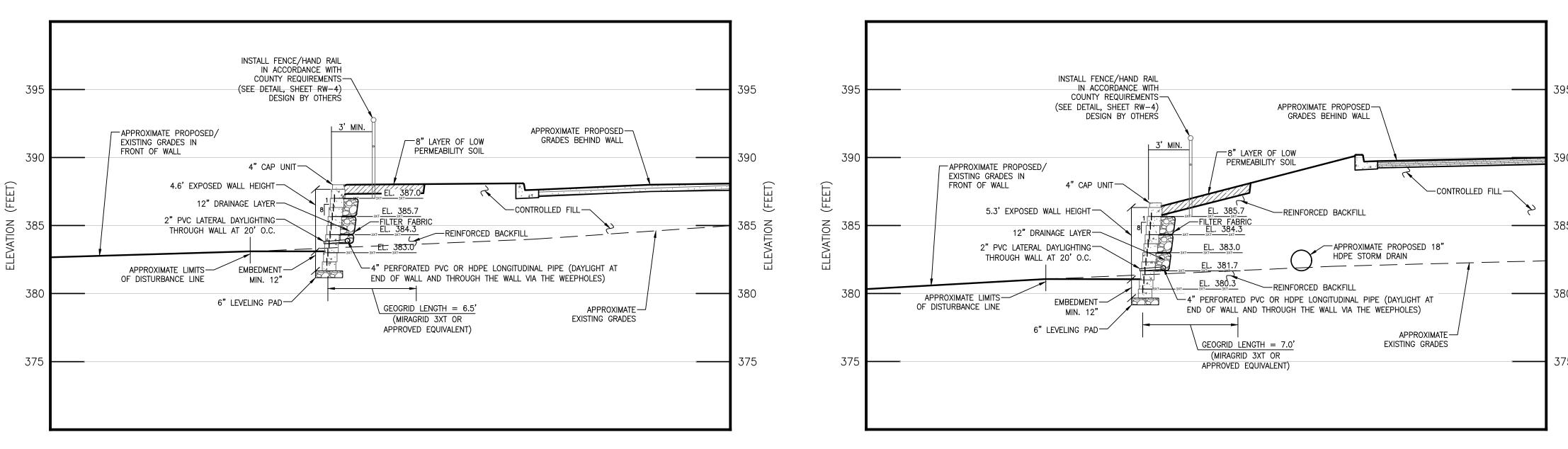
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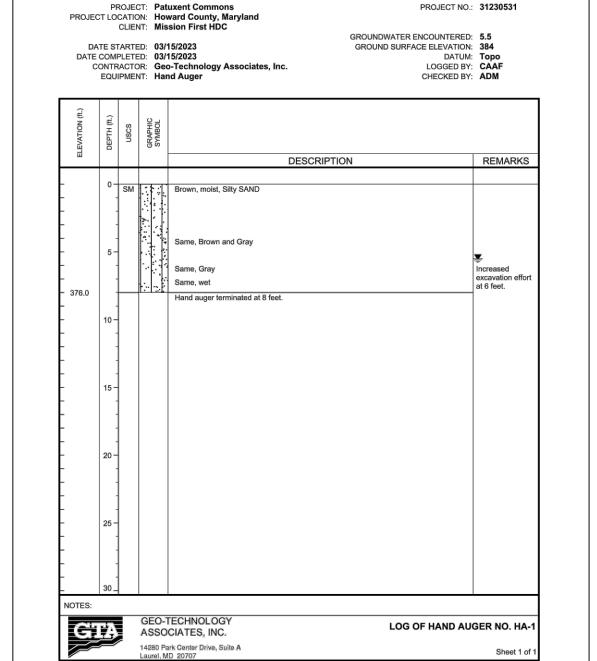
05/24/24

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING For Lynda D. 6/6/2024 Eisenberg, AICP Jessica Bellalı 6/6/2024 Chief, Division 540 2186 Ad Development 6/6/2024 Chief, Development Langineering Division Date







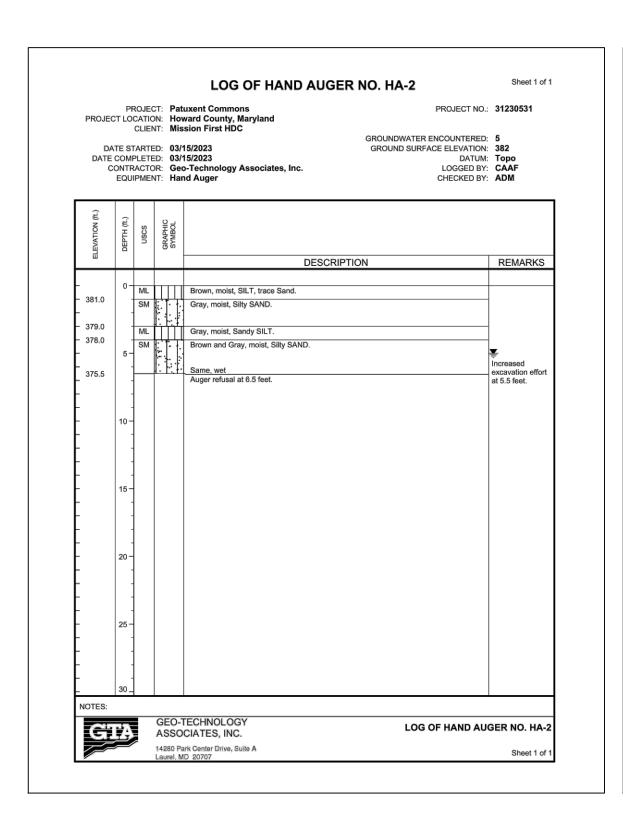
LOG OF HAND AUGER NO. HA-1

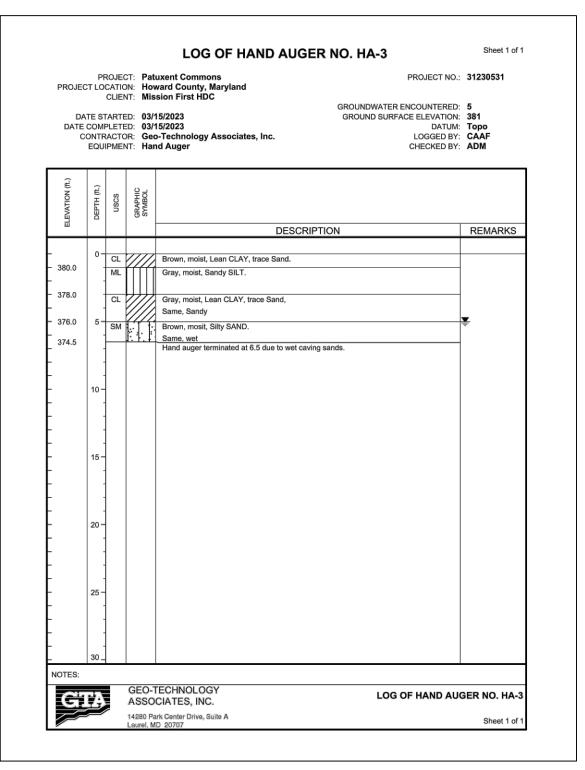
Sheet 1 of 1

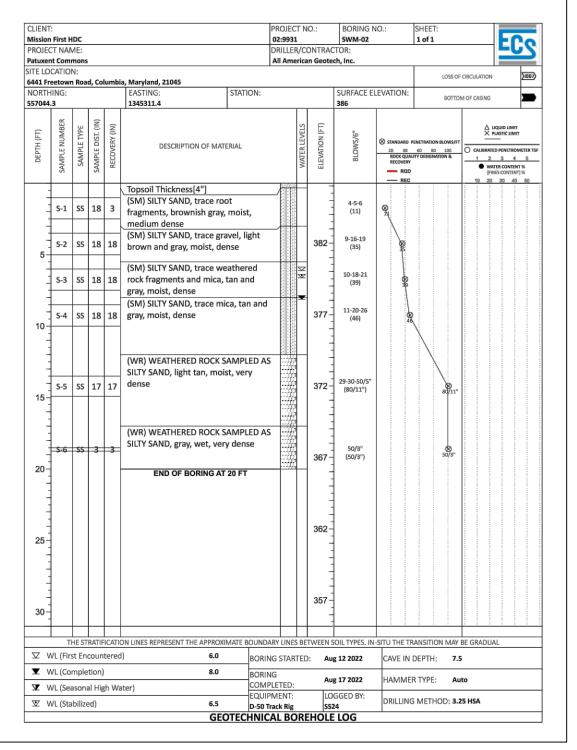
RETAINING WALL - SECTION 1 (APPROXIMATE STATION 0+30)

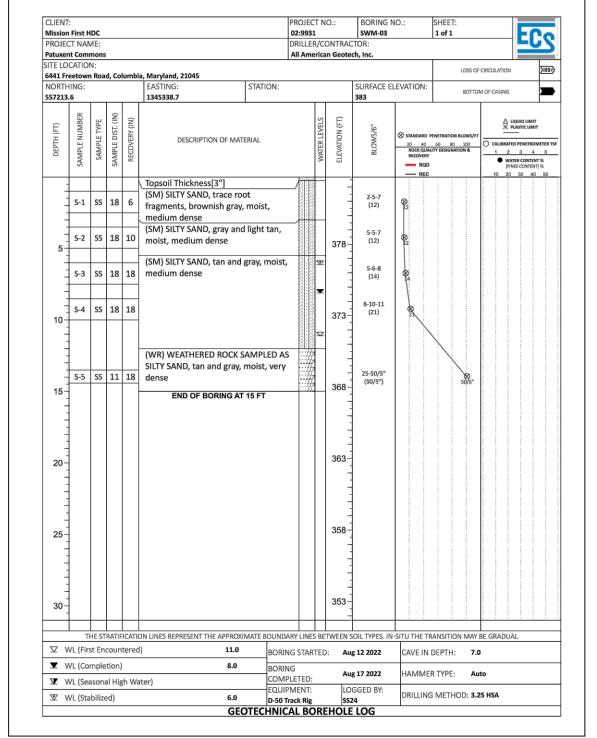
SCALE: 1" = 5'

RETAINING WALL - SECTION 2 (APPROXIMATE STATION 1+30) SCALE: 1" = 5"











GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 14280 PARK CENTER DRIVE, SUITE: A LAUREL, MARYLAND 20707 (410) 792-9446 or (301) 470-4470 WWW GTAENG COM

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PATUXENT COMMONS RETAINING WALL

SECTIONS AND EXPLORATION LOGS

HOWARD COUNTY, MARYLAND MD PROFESSIONAL CERTIFICATION: DATE REVISIONS

MD PROFESSIONAL CERTIFICATION:	DATE	REVISIONS	JOB NO.: 31230531
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. 29184, EXPIRATION DATE: 06/16/2025.			SCALE: AS SHOWN
			DATE: 04/15/2024
			DRAWN BY: CAAF
			DESIGN BY: CAAF
			REVIEW BY: BTD
			SHEET: 25 OF 29

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023** APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING For Lynda D. 6/6/2024 For Lynda D.
Eisenberg, AICP

Date Jussica Bullale
Director 690A4 Book 1820 Signed by: 6/6/2024 Chief, Division of a bear Development 6/6/2024 Chief, Development, Engineering Division

Date

PREPARED FOR/OWNER: PATUXENT OWNER LP 1330 NEW HAMPSHIRE AVE. NW SUITE 116 WASHINGTON, DC 20036 ATTN: ELIZABETH EVERHART (202)-223-3405

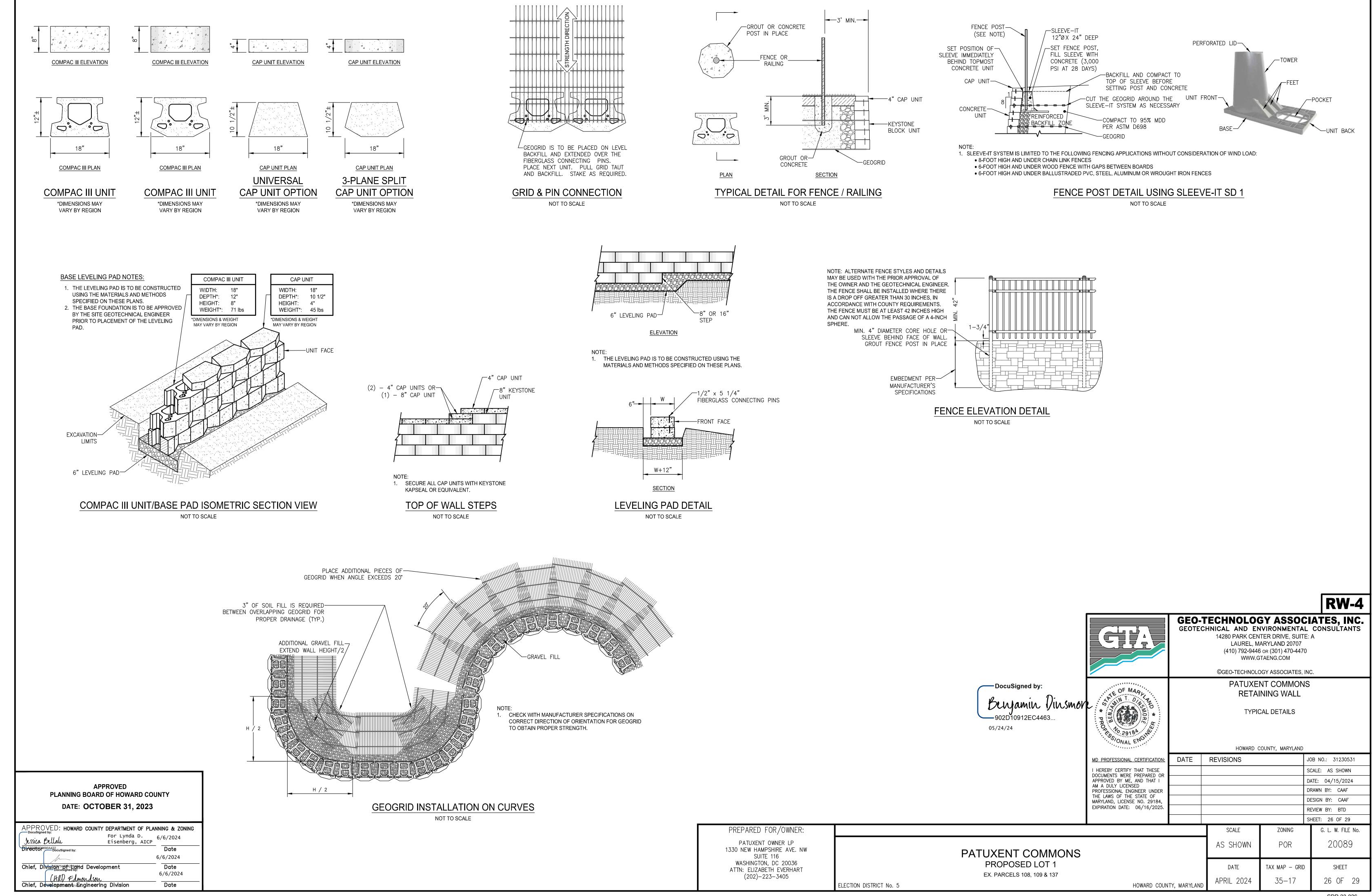
ELECTION DISTRICT No. 5

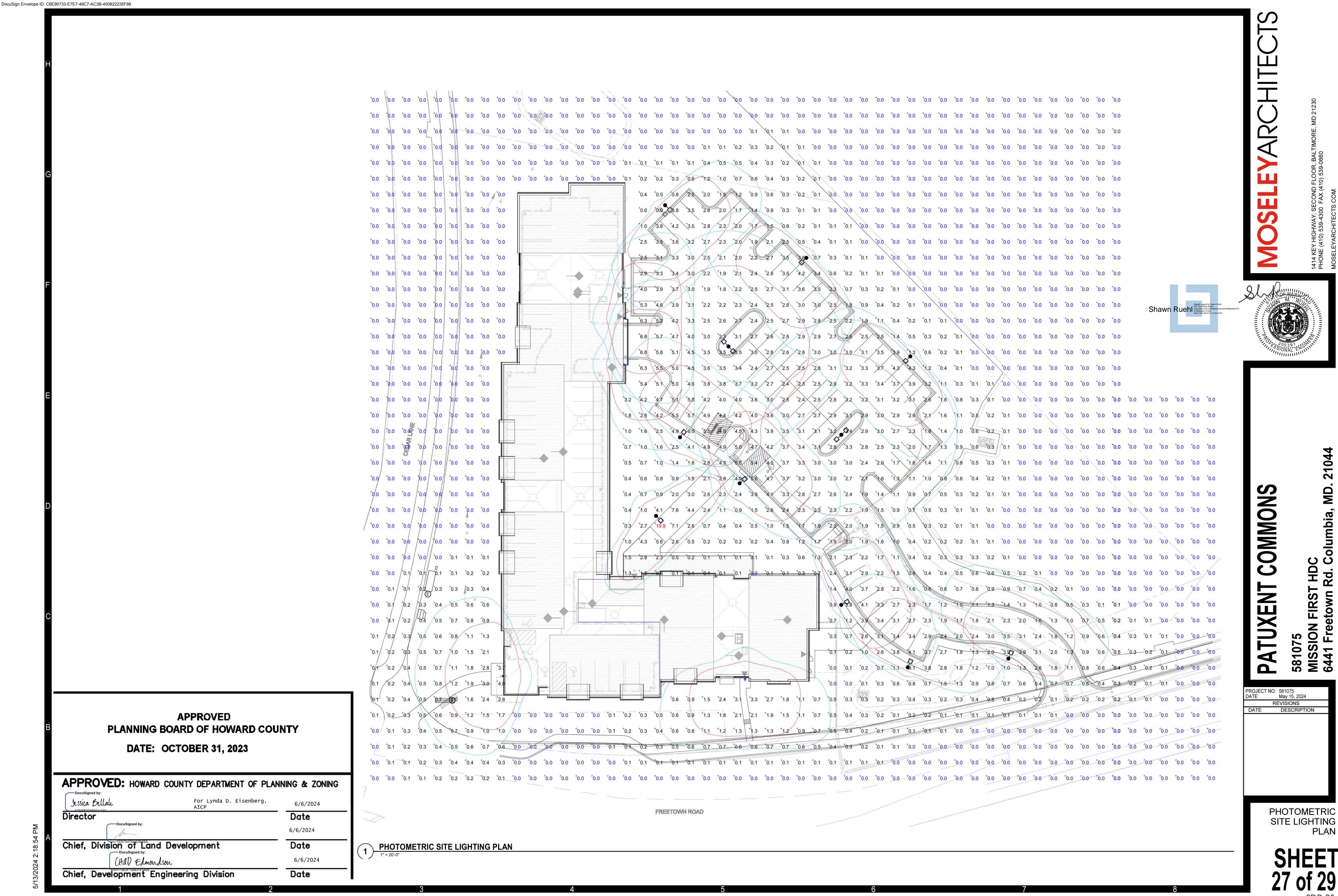
PATUXENT COMMONS PROPOSED LOT 1 EX. PARCELS 108, 109 & 137

DocuSigned by:

05/24/24

	SCALE	SCALE ZONING	
	1"=5'	POR	20089
	DATE	TAX MAP — GRID	SHEET
HOWARD COUNTY, MARYLAND	APRIL 2024	35–17	25 OF 29





M M 64

Typical Structural Notes

Section 3 - Concrete:

Section 1 – General Notes:

1.01) Design Code - IBC 2021

1.02) Live Loads: 1.03) Loads greater than the design live loads shall not be placed on the structure. A concrete structure may not support its design live load for 28 days. Contractor shall support adjacent structures, utilities and excavations. Contractor shall have all temporary formwork,

sheeting, shoring, underpinning, etc. certified by a qualified engineer as a part of the contractor's work. 1.4) Contractor shall conform with the provisions of the local Building Code and any other Local, State or Federal Regulations.

1.5) The general contractor shall review all shop drawings before submission to the engineer and make all corrections as he deems necessary and shall certify on each drawing as follows:

> "I certify that the contract document requirements have been met and all dimensions, conditions and quantities are verified as shown and/or as corrected on this drawing.

1.6) The contractor shall support adjacent structures, utilities, and excavations. The contractor shall submit shop drawings and design calculations certified by a registered professional engineer for all temporary formwork, sheeting, shoring, and underpinning as a part of the contractor's work. Contractor shall verify the location of all existing site conditions, structures and utilities prior to commencing work and

1.7) The General Contract shall verify floor slab depressions, duct and pipe openings and offsets with the architectural and mechanical

1.8) Inspection - The Owner is responsible to hire a qualified inspection agency to perform any or all the services specified herein. The Contractor shall afford full cooperation to laboratory personnel and shall provide adequate notice before beginning operations requiring laboratory services. The Testing Laboratory shall make immediate report of all tests and observations and distribute copies as follows:

Owner, Architect, Engineer, and Contractor. (one copy each). The Owner may hire the structural engineer as the inspection agency. 1.9) "Typical Details" shown on the drawings apply to all conditions of the project similar to those shown in the details regardless of whether or not they are specifically referenced on the plans. Plans, sections, and details are not to be scaled for determination of quantities,

1.10) Shop drawings for all structural items must be submitted by the General Contractor. If a Contractor or Owner fails to submit the shop drawings, the firm Meyer Consulting Engineers will not be responsible for the structural certification and/or the design of the project.

2.01) Footings are designed for an assumed bearing capacity of 4,000. PSF. Footings shall bear on natural undisturbed soil, 1'-0" below

Section 2 - Soils:

original grade and bottom of exterior footing shall be 2'-6" below finished grade. Contractor shall verify soil pressure in the field. If found to be less than 4,000 PSF, the footings will have to be redesigned. The Contractor shall obtain the Soils Report from the Owner. 2.02) All fill under slabs shall be coarse granular material compacted to 95% of maximum density at optimum water content. All slabs on ground shall have panels poured per ACI-302.1R (latest local approved edition), Section 6.4.1 or all slabs on ground may be poured

continuously be using a pre-molded keyed metal joint to form areas not exceeding 650 square feet. 2.03) Do not backfill against walls until supporting slabs are in place and have attained required strength or if shored with shoring designed and certified by a shoring contractor. The shoring contract shall submit shoring shopping drawings and shoring calculation signed and sealed by a P.E. licensed in the State of the project. Where backfill is required on both sides of walls, backfill both sides simultaneously. Unless the wall is designed as a cantilever retaining wall, contract the engineer to determine if concrete walls shown can be backfilled against before the

2.04) All fill and backfill material, all footing bearing, excavations, and compaction control shall be inspected and approved in writing by a Qualified Engineer.

3.01) General contractor shall submit a formwork plan and design calculations certified by a registered professional engineer showing framing sizes, and strengths of formwork, materials, specifications, sequence of construction, and detailed plans of formwork removal and

3.02) All formwork shall be in accordance with the American Concrete Institute's "Formwork of Concrete", special publication No. 4 and

ACI's "Standard Recommended Practice of Concrete Formwork" (ACI-347-latest edition). 3.03) Except as noted, all reinforcing shall be high strength new billet steel conforming to ASTM designation A615 (Fy = 60,000 psi). All stirrups and ties shall be new intermediate grade steel conforming to ASTM designation A615 (Fy = 60,000 psi). All reinforcing shall be

detailed, fabricated, and placed in accordance with the ACI's "Manual of Standard Practice for Detailing Concrete Structures" (ACI 315). 3.04) Reinforcing steel shall be place in accordance with the "CRSI Manual of Standard Practice for Reinforced Concrete Construction." 3.05) Lap all splices 36 bar diameters (2'-0" min.) except as noted on plans. Bend outside face wall horizontal reinforcing 1'-0" around all

corners or provide 4'-0" long corner bars to match horizontal reinforcing. Splicing of #6 or larger bars shall not be permitted unless otherwise noted or authorized by the Engineer. Lapped splices of #14 or #18 bars shall not be permitted. 3.06) Dowels from footings, supporting beams, walls and columns shall be provided for reinforcing bars in adjoining walls, columns, etc.,

even if not specifically shown on the details. Dowels shall be of the same size and quantity as in the supporting element and shall be embedded a minimum of 30 bar diameters unless otherwise noted.

3.07) All reinforcing bars not otherwise detailed or noted on the drawings shall be continuous with splices as noted herein.

3.08) Design mixes shall be provided by the concrete producer in accordance with the General Notes and shall be approved prior to

3.09) All splices in reinforcing shall be Class "C" splices in accordance with ACI 318 (latest local approved edition) except as noted in the

3.10) Bend horizontal wall reinforcing 1'-0" minimum around all corners or provide 4'-0" long corner bars to match horizontal reinforcing.

3.11) All concrete work shall be in accordance with the requirements of the American Concrete Institute Code (ACI 318 - latest edition).

3.12) All concrete work shall conform to the latest approved (by local government) editions of the following ACI and ASTM documents:

specifications ACI - 214 ACI - 306 cold weather ACI - 315 detailing ACI - 347 formwork ACI - 605 hot weather ACI - 613 proportions of concrete placing concrete ACI - ASCE Committee 423 unbonded tendons ASTM- C94 ready-mix concrete 3.13) Provide concrete protection for reinforcing in accordance with ACI and as follows unless noted on the drawings:

Walls ---- outside face -- 1 1/2" inside face ---1"

See mechanical and architectural drawings for holes and openings in slabs not shown.

3.15) All concrete, except as noted elsewhere, shall be (f'c = 5,000 psi) normal weight concrete. All exterior concrete shall be air-entrained

3.16) Admixtures other than those listed (for set retardation, acceleration or workability) shall be submitted for approval with the mix designs. Concrete shall be transit-mixed in accordance with ASTM C24.

3.17) No calcium chloride shall be added to the concrete without written approval by the Engineer.

3.18) The addition of water to concrete at the plant or in the field greater than 1% more than the specified water content is strictly prohibited

3.19) Unless noted otherwise, concrete slab surfaces shall receive a smooth, trowelled finish. Surface tolerance shall be 1/4 inch in 10 feet unless otherwise noted. Ramps shall receive a medium broom finish.

3.20) The General Contractor shall submit plans showing all penetrations through the framed slabs. The openings shall be accurately located, sized and dimensioned.

3.21) All field and lab testing of concrete shall conform to the latest approved (by local government) editions of ASTM:

ASTM-C-431 Field cylinder specimens ASTM-C-143 Slump test ASTM-C-173 or C-231 Air content (when required) ASTM-C-39 Lab testing cylinders ASTM-C-172 Sampling fresh concrete ASTM-C-42 Hardened cores (when required)

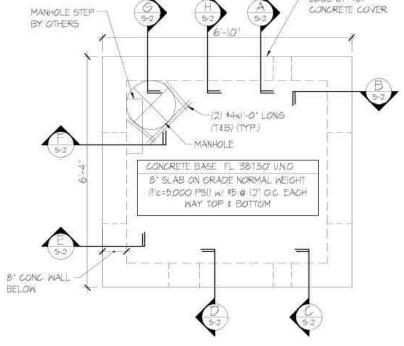
Upon completion of concrete testing, the agency shall certify their results as follows:

"I certify that the field and lab testing conforms to the ASTM documents and good practice."

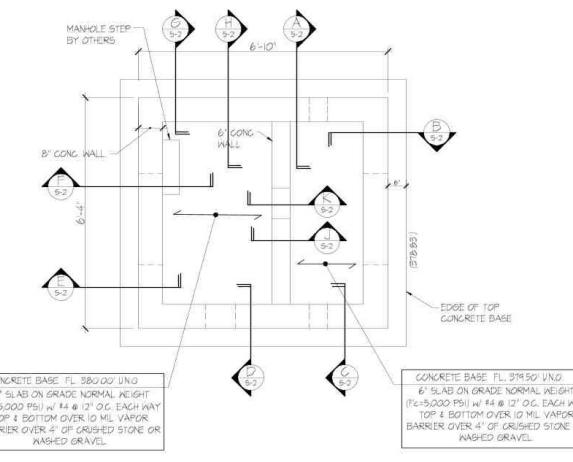
3.22) Concrete test cylinders shall be made in accordance with ACI 318. Mold and cure samples in accordance with ASTM C31. Test cylinders in accordance with ASTM C39; 1 at 7 days age, and 2 at 28 days. Determine slump in accordance with ASTM C143. Determine air content of concrete for each strength test in accordance with ASTM C231

3.23) Certify delivery tickets and control addition of water at the site.

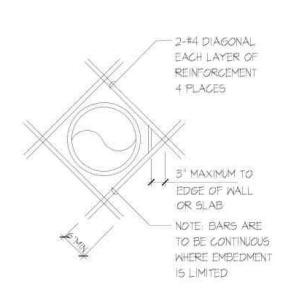
3.24) Inspection of all placed concrete and reinforcement is required. Engineer shall approve inspector. Inspection Agency shall certify formwork, concrete and reinforcement under an engineer's seal. Submit daily reports to Owner, Contractor, Architect, Building Department,



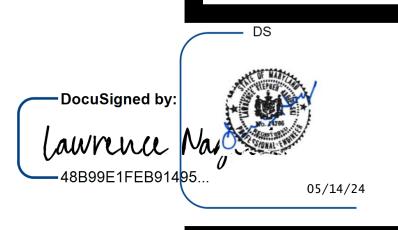
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STORM CHAMBERS BOTOM PLAN



CIRCULAR OPENING 1'-4" AND LARGER



COMMONS

Rd.

PROJECT NO: 581075 May 15, 2024 REVISIONS DESCRIPTION

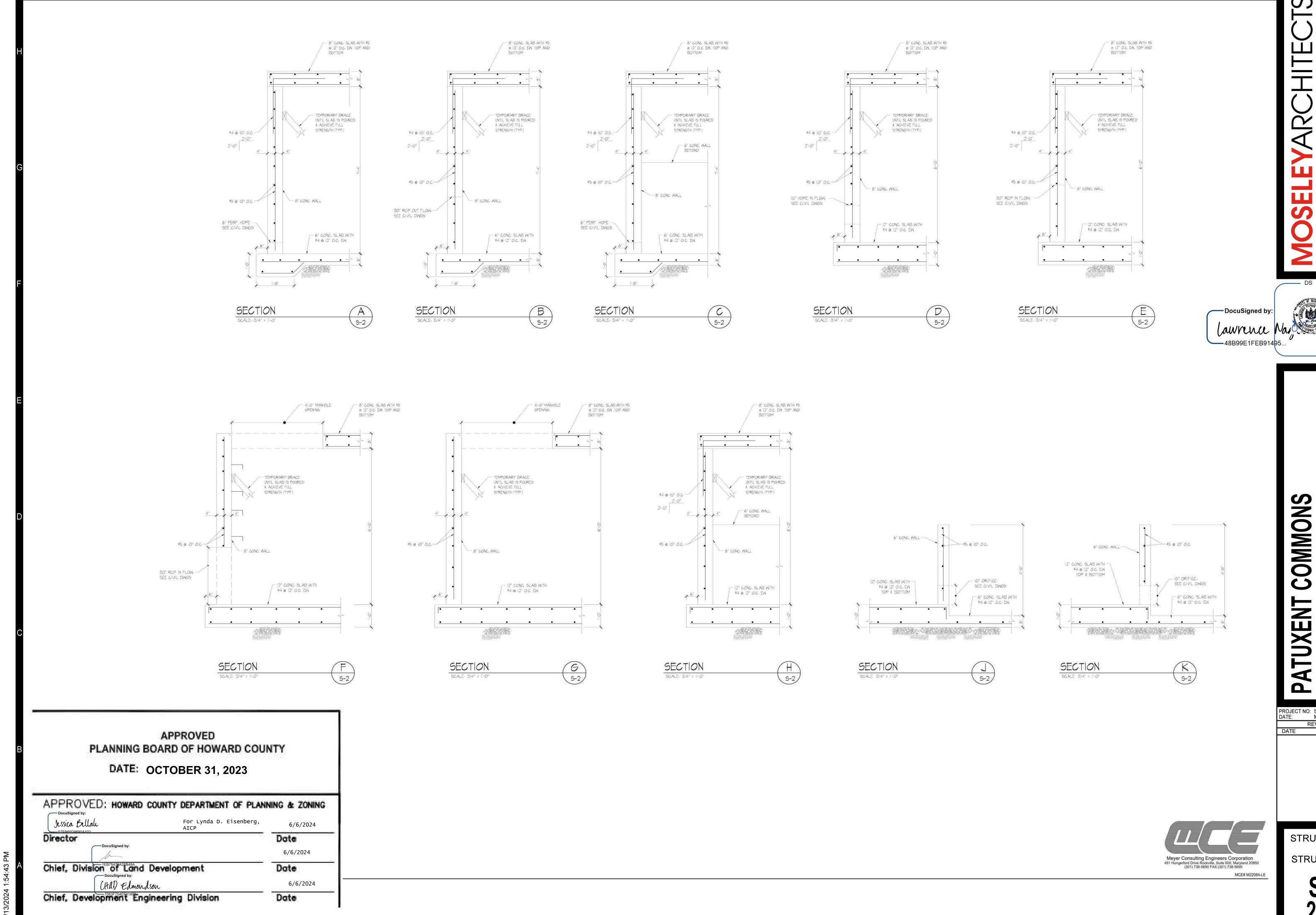
Meyer Consulting Engineers Corporation 451 Hungerford Drive Rockville, Suite 600, Maryland 20850 (301) 738-5690 FAX:(301) 738-5695

STRUCT. DETAILS FOR SWM STRUCTURE #101

APPROVED PLANNING BOARD OF HOWARD COUNTY **DATE: OCTOBER 31, 2023**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING Jessica Bellalı For Lynda D. Eisenberg, 6/6/2024 Director Date 6/6/2024 Chief, Division of Land Development Date CHAD Edmondson 6/6/2024 Chief, Development Engineering Division Date

6" SLAB ON GRADE NORMAL WEIGHT 12' SLAB ON GRADE NORMAL WEIGHT 2=5,000 P51 W #4 @ 12" O.C. EACH WAY C=5,000 PSI) W #4 & 12" O.C. EACH WAY TOP & BOTTOM OVER 10 MIL VAPOR TOP & BOTTOM OVER IO MIL VAPOR BARRIER OVER 4" OF CRUSHED STONE OR WASHED GRAVEL RRIER OVER 4" OF CRUSHED STONE OR



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DS DS 05/14/24

581075 MISSION FIRST HDC 6441 Freetown Rd. Co

PROJECT NO: 581075
DATE: May 15, 2024
REVISIONS
DATE DESCRIPTION

STRUCT. DETAILS FOR SWM STRUCTURE #101

SHEET 29 of 29

SDP-23-026