B.G.&E. (CONSTRUCTION SERVICES)
B.G.&E. (EMERGENCY):
STATE HIGHWAY ADMINISTRATION:
COLONIAL PIPELINE CO.:
4. SITE ANALYSIS (LOTS 7 & 8):
PRESENT ZONING: NT (NEW TOWN)

EXISTING USE: RESIDENTIAL (TOWNHOUSE APARTMENTS) NUMBER OF EXISTING DWELLING UNITS: 58 TOWNHOUSE APTS

PARCEL AREA (DEVELOPABLE AREA): 152,932 SF (3.5108 AC.) USE OF STRUCTURES:

AREA OF WETLANDS ON SITE: 0.00 AC.
AREA OF WETLAND BUFFERS ON SITE: 0.00 AC.
AREA OF STREAMS AND THEIR BUFFERS ON SITE: 0.00 AC.
AREA OF ON-SITE 100 YEAR FLOODPLAIN: 0.00 AC.
AREA OF EXISTING FOREST ON SITE: 0.00 AC.
AREA OF EXISTING FOREST MADERIALS: 1.60 AC. (48.187)

BUILDING 1: APARTMENTS (59 UNITS)
BUILDING 2: APARTMENTS (94 UNITS)
BUILDING COVERAGE: 45,206 SF (1.038 AC. OR 29.74% OF GROSS AREA)
BUILDING 1 FOOTPRINT: 20,576 SF (0.4724 AC.)
BUILDING 2 FOOTPRINT: 24,630 SF (0.5654 AC.)

PAVED DRIVEWAYS/PARKING LOT: 49,044 SF (1.13 AC. OR 32.1% OF GROSS AREA)
GREEN AREA: 50,455 SF (1.16 AC. OR 33.0% OF GROSS AREA)
AREA MANAGED BY ESDV (*THIS PLAN): 1.65 AC.
*IMPERVIOUS AREA: 1.28 AC.
*CREEN AREA: 0.37 AC.

AREA OF EXISTING SITE IMPERVIOUS: 1.69 AC. (48.1%)
LIMIT OF DISTURBED AREA: 182,163 SF / 4.18 AC.
CUT: 11,000 CY FILL: 0 CY
PROJECT BACKGROUND: LOCATION:
LOCATION: TWIN RIVERS ROAD, COLUMBIA, MD
TAX MAP 30, GRID 19, PARCEL 272, LOTS 7 AND 8 & TAX MAP 36, GRID 1, PARCEL 81, LOT 5
5TH ELECTION DISTRICT
DESCENT ZONING: NT

51H ELECTION DISTRICT
PRESENT ZONING: NT
SUBDIVISION: VILLAGE OF WILDE LAKE
SECTION/AREA: 10/4
ALLOCATION PHASE: N/A
DPZ REFERENCES: L.17980/F.426, PB.15/31, PB.15/F.87, PB.16/F.78–81, FDP-41-A, SDP-91-011, ECP-20-049, ZB-1120M, FDP-41-A-1 (PLAT NO. 25827),
L.20949/F.223, L.20949/F.235, L.20949/F.256, L.20949/F.264, F-21-064 (PLAT NO. 26043), F-22-007 (PLAT NO. 29531), F-22-029 (PLAT. NO. 25972) &
F-22-058 (PLAT NO. 26088)

F-22-058 (PLAT NO. 26088)

6. IN ACCORDANCE WITH SECTION 16.121(A)(4) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THERE IS NO OVERALL OPEN SPACE REQUIREMENT FOR THIS NT APARTMENT PROJECT. 7,377 SF OF AMENITY AREA IS PROVIDED, CONSISTING OF AN ACTIVITY AREA (2,340 SF), A PATIO (2,729 SF) AND LAWN AREA (2,308 SF).

7. 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.

8. THE CONTRACTOR AND DEVELOPER OR A REPRESENTATIVE SHALL HAVE, ON THE JOB SITE, THE LATEST EDITION OF ALL APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDING BUT NOT LIMITED TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, S.H.A. SPECIFICATION BOOK, AND LATEST MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL.

9. ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

10. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WILL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR'S EXPENSE.

TRAFFIC CONTROL DEVICES:

A. THE R1-1 SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.

B. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.

C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC DEVICES (MAINITED).

LOT (5)
PRESENT ZONING: NT (NEW TOWN)

AREA OF WETLANDS ON SITE: 0.00 AC,
AREA OF WETLAND BUFFERS ON SITE: 0.00 AC,
AREA OF STREAMS AND THEIR BUFFERS ON SITE: 0.00 AC,
AREA OF ON-SITE 100 YEAR FLOODPLAIN: 0.00 AC,
AREA OF EXISTING FOREST ON SITE: 0.00 AC,
AREA OF MDE STEEP SLOPES (25% OR GREATER): 0.00 AC,
AREA OF ERODIBLE SOILS: 0.00 AC,
AREA OF EXISTING SITE IMPERVIOUS: 0.7 AC, (18.3%)
PAVED PATIO, RETAINING WALLS & PATHWAYS: 0.12 AC, (29.4%)
GREEN AREA: 0.28 AC, (70.6%)

SITE DEVELOPMENT PLAN ROSYLN RISE

VILLAGE OF WILDE LAKE SECTION 10, AREA 4

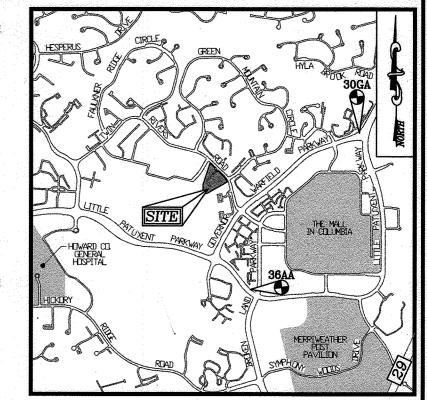
LOT 5 (PARCEL 81)

BENCHMARKS

HOWARD COUNTY BENCHMARK - 30GA (CONC. MONUMENT) N 566,053.579 E 1,352,177.604 ELEV. 339.894 HOWARD COUNTY BENCHMARK - 36AA (CONC. MONUMENT) N 562,804.842 E 1,349,906.240 ELEV. 359.163

LOCATION: COR. LITTLE PATUXENT PKWY & BROKEN LAND PKWY

PROPERTY LINE



VICINITY MAP

ADC MAP 4935 - GRIDS A5 & A6

SHEET INDEX		
DESCRIPTION	SHEET	NUMBER
COVER SHEET	1	OF 27
EXISTING CONDITIONS & DEMOLITION PLAN	2	OF 27
SITE LAYOUT PLAN .	3	OF 27
SITEUTILITY PLAN	4	OF 27
SITE DETAILS	5-6	OF 27
BUILDING 1 FOOTPRINTS AND ELEVATIONS; GARAGE PARKING PLAN	7	OF 27
BUILDING 2 FOOTPRINTS AND ELEVATIONS; GARAGE PARKING PLAN	8	OF 27
DETAILED GRADING PLAN .	9	OF 27
DETAILED GRADING (PATIO AREA) & WALL LOCATION PLAN	10	OF 27
SEDIMENT & EROSION CONTROL PLAN	11	OF 27
SEDIMENT & EROSION CONTROL NOTES AND DETAILS	12-13	OF 27
STORM DRAIN DRAINAGE AREA MAP	14	OF 27
STORM DRAIN PROFILES	15-17	OF 27
UTILITY PROFILES	18-19	OF 27
STORMWATER MANAGEMENT DRAINAGE AREA MAP	20	OF 27
STORMWATER MANAGEMENT NOTES AND DETAILS (MICRO-BIORETENTION)	21	OF 27
STORMWATER MANAGEMENT NOTES AND DETAILS (PERMEABLE PAVEMENT)	22	OF 27
LANDSCAPE PLAN	23	OF 27
LANDSCAPE PLAN NOTES & DETAILS	24	OF 27
SITE LIGHTING PLAN	25	OF 27
RETAINING WALL CONSTRUCTION DETAILS	26	OF 27
MSE RETAINING WALL #1 ELEVATION	27	OF 27

The state of the s		
PARKING REQUIRED: BUILDING 1: (59 APARTMENTS) 59 APARTMENTS @ 1.5 SPACES/APARTMENT	89	SPACES REQUIRE
BUILDING 2: (94 APARTMENTS) 94 APARTMENTS @ 1.5 SPACES/APARTMENT	141	SPACES REQUIRE
TOTAL PARKING REQUIRED:	230	PARKING SPACES
PARKING PROVIDED: BUILDING 1: GARAGE LEVEL PARKING	47	PARKING SPACES
BUILDING 2: GARAGE LEVEL PARKING	61	PARKING SPACES
SURFACE PARKING	125	PARKING SPACES

TOTAL PARKING PROVIDED:

1. PARKING PROVIDED IS IN ACCORDANCE WITH FINAL DEVELOPMENT PLAN CRITERIA — PHASE 41-A, 9. PARKING REQUIREMENTS — SECTION 17.031 E: A. APARTMENT LAND USES AREAS - NO LESS THAN 1-1/2 OFF-STREET PARKING SPACES FOR EACH DWELLING UNIT SHALL BE PROVIDED WITHIN LOT 2 DEVOTED TO APARTMENT USES.

(410) 381-3551

OWNER/DEVELOPER COLUMBIA ASSOCIATION INC. 94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LL C/O ALBERT F. EDWARDS 59 UNIT BUILDING 1 (9%): ROSLYN RISE NINE, LLC 10221 WINCOPIN CIRCLE C/O MACKENZIE KIESEL COLUMBIA, MD 21044

875 HOLLINS STREET, SUITE 202 BALTIMORE, MD 21201 (410) 230-2117

233 PARKING SPACES (INCL. 12 HC. SPACES)

SITE DEVELOPMENT PLANS

COVER SHEET

ROSLYN RISE VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8

COLUMBIA, MD 21044

TIMMONS GROUP

P: 410.461.7666 F: 410.461.8961 www.timmons.com

VOGEL ENGINEERING

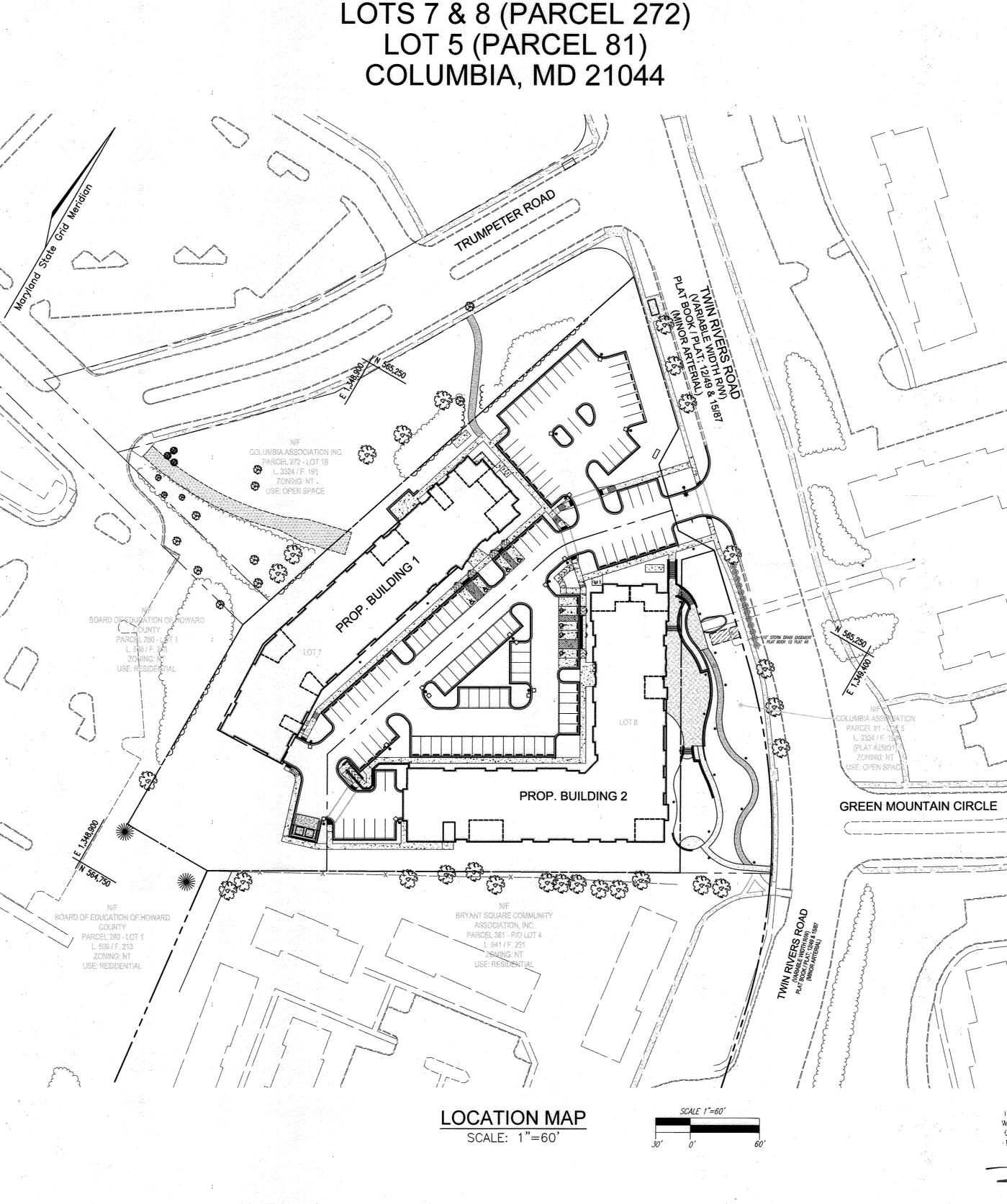


CHECKED BY: .W.O. NO.:

OCTOBER 2021 SHEET 27

HOWARD COUNTY, MARYLAN

AS-BUILT APRIL 2024



		The state of the s				
	STORMV	VATER MANAGEMENT INFOR	MATION			
LOT/PARCEL#	FACILITY NAME & NUMBER	PRACTICE TYPE (QUALITY)	PUBLIC	PRIVATE	MAINTENANCE BY	NOTE
Lot 7 / Parcel 272	SVMF#1	M-6 Micro-Bioretention		Х	Owner (Lots 7 & 8)	
Lot 7 / Parcel 273	SWMF#3	M-6 Micro-Bioretention		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 274	SVMF#4	Stormfilter		Х	Owner (Lots 7 & 8)	
Lot 7 / Parcel 272	SWMF#5	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 272	SVMF#6	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 272	SVMF#7	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 272	SVMF#8	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 272	SWMF#9	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 8 / Parcel 272	. SWMF#10	A-2 Permeable Pavement		Х	Owner (Lots 7 & 8)	
Lot 1B / Parcel 272	GRASSCRETE	A-2 Permeable Pavement	Х		Owner (Lots 7 & 8)	

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	l			

HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY. NO ASBULT INFORMATION ON THIS SHEET

BUILDING NO. BUILDING 1

BUILDING 2

PLAT # OR L/F

	ADDRESS	CHART				JULIE OF MA
Τ	STREET ADDRESS					TO REPORT OF THE PROPERTY OF T
	10401 TWIN RIVERS ROAD					1 S (100)
	10351 TWIN RIVERS ROAD					
PE	RMIT INFORM	ATION C	CHA	RT		78 P. 10 1619
	ISION NAME OF WILDE LAKE	SECTION/A	NEA	LOTS 7	/PARCEL # 8/PARCEL 272	Docusion ONAL EX
•	BLOCK NO. ZONE	TAX MAP	ELE	CT. DIST.	CENSUS TR.	Pala Vaas
3	10 1 15	7.0			6054.02	Now vorge

AS-BUILT CERTIFICATION FOR PSWM

(110-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.

C. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MAUNTED) STORES (MAUNTE 33. THIS SUBDIVISION IS DEXEMT FROM THE REQUIREMENTS OF SUBTILE 12.—FOREST CONSERVATION OF THE HOWARD COUNTY CODE, PER SECTION 16.1202(b)(1)(i) — A PLANNED UNIT DEVELOPED HER PREVAIL HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50 PERCENT OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECOMBER 31, 1992.

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

35. ANY EXISTING STREET IRRES DAWAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.

36. LANDSCAPING NOT PERMITTED WITHIN 7-172 OF CARA 1500 OF THE RETE DEPARTMENT CONNECTION. REPLANS 13.4500 OF THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE CURBS SHOULD BE PARTMENT CONNECTION. REPLANS 13.4500 IN THE SITE OF THE PROVISION SO THE SITE OF THE STRUCTURE DESTROYED TO IDENTIFY THE ROAD AS A PIECE PROTECTION SHALL BE LOCATED. (A) ON THE SIDE OF THE STRUCTURE DESTROYED SHOULD BE INSTALLED, OR THE CURBS SHOULD BE PARTMENT CONNECTION FOR THE REPORT VISIBLE TO THE RESPONDING HIST (B). WITHIN 100 FEET OF A PIRE HOWARD (III) THE APPROPRIATE SION SHALL BE ROAD AS A PIECE DEPARTMENT CONNECTION FOR THE REPORT WITH SHALL AND AND BE CLEARLY VISIBLE TO THE RESPONDING HIST. (B). WITHIN 100 FEET OF A PIRE HOWARD (III) THE APPROPRIATE SION SHALL BUT BE BUILDING'S WALL BETWEEN BY AND 12 FEET ABOVE THE FIRE DEPARTMENT CONNECTION. (III) A PRECE-STANDING FIRE DEPARTMENT CONNECTION SHALL HAVE THE SION MUNITED ON THE BUILDING'S WALL BETWEEN BY AND 12 FEET ABOVE THE FIRE DEPARTMENT CONNECTION. (III) A PRECE-STANDING FIRE DEPARTMENT CONNECTION SHALL HAVE THE SION MUNITED ON THE BUILDING SHALL BE AVER THE PREFERENCE BORKER, FOR BUILDING SHALL BE THE PROPERTY OF THE STRUCTURE BORKER, FOR DEPARCH OF THE PROPERTY OF THE FIRE DEPARTMENT CONNECTION. (IV) AT DESTROYED BORKER BORKER FOR BUILDING SHALL BE PROPERTY.

40. A KNOW BOX IS REQUIRED TO BE PROVIDED WITHIN 100 OF EACH FIRE THE HIGH, (IV) SIGNS SHALL BE A WHITE REFERENCE BORKEROUND WITH A PER \$32,790.00 FOR THE REQUIRED 61 SHADE TREES, 51 EVERGREEN AND FLOWERING TREES, AND 228 SHRUBS.

55. BUILDINGS ARE TO HAVE FIRE SPRINKLER SYSTEMS THAT FULLY COMPLY WITH NFPA 13. THE GARAGES ARE REQUIRED TO HAVE FIRE SPRINKLER SYSTEMS.

56. WAIVER DMV2-21-011 NOTES:

(1) REF. DMV2-21-011 - WAIVER REQUEST NO. 1, TO WAIVE SECTION 3.3.B.2.b.1 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME II - WATER AND SEWER (DMV2), TO ALLOW A NON-LOOPED 8-INCH WATER MAIN TO SERVE THE SUBJECT-REFERENCED PROPERTY. THE REQUEST TO WAIVE THE LOOPING REQUIREMENT IS DENIED. IN LIEU OF PROVIDING THE WATER MAIN LOOP, A PUBLIC WATER AND UTILITY EASEMENT WITH 8" WATER MAIN SHALL BE EXTENDED TO THE BOUNDARY OF THE PROPERTY (WILDE LAKE HIGH SCHOOL) WITH THE REMAINING WATER MAIN LOOP TO BE CONSTRUCTED BY OTHERS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (Hal) Edmondson CHIEF, DEVELORMENT DIVISION 5/31/2022 CHIEF, DIVISION OF A PLANT DEVELOPMENT 6/1/2022

HIGH SCHOOL), WITH THE REMAINING WATER MAIN LOOP TO BE CONSTRUCTED BY OTHERS.

SIGNATURE APPROVAL OF PUBLIC WATER AND SEWER CONTRACT 24-5171-D,

COMPLETION OF DEVELOPER AGREEMENT, AND SIGNATURE APPROVAL OF SITE DEVELOPMENT PLAN, SDP-21-030.

APPROVED BY PLANNING BOARD OF HOWARD COUNTY

PB Approved Sept. 23, 2021

59. THE FOLLOWING IS THE PROJECT DEVELOPMENT PHASING:

(2) REF. DMY2-21-011 - WAYER REQUEST NO. 2, APPROVED MAY 13, 2021 TO WAIVE SECTION 5.4.B.2 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME II - WATER AND SEWER (DMY2), ALLOWING APPROXIMATELY 90 FEET OF THE PUBLIC SEWER AND UTILITY EASEMENT BETWEEN PROPOSED MANHOLES MH-103 AND MH-103 TO HAVE THE REQUIRED 10-FOOT SETBACK REDUCED TO BETWEEN 3.6' AND 6.6'.

REQUIRED TO—FOOT SETBACK REDUCED TO BETWEEN 3.6 AND 6.6.

57. THE PURPOSE OF THE FDP—41—A—1 AMENDMENT IS TO:

(1) MAP CHANGE: REVISE THE BOUNDARY LINE BETWEEN LOT 2 AND LOT 3 WITH NO CHANGE IN AREA,

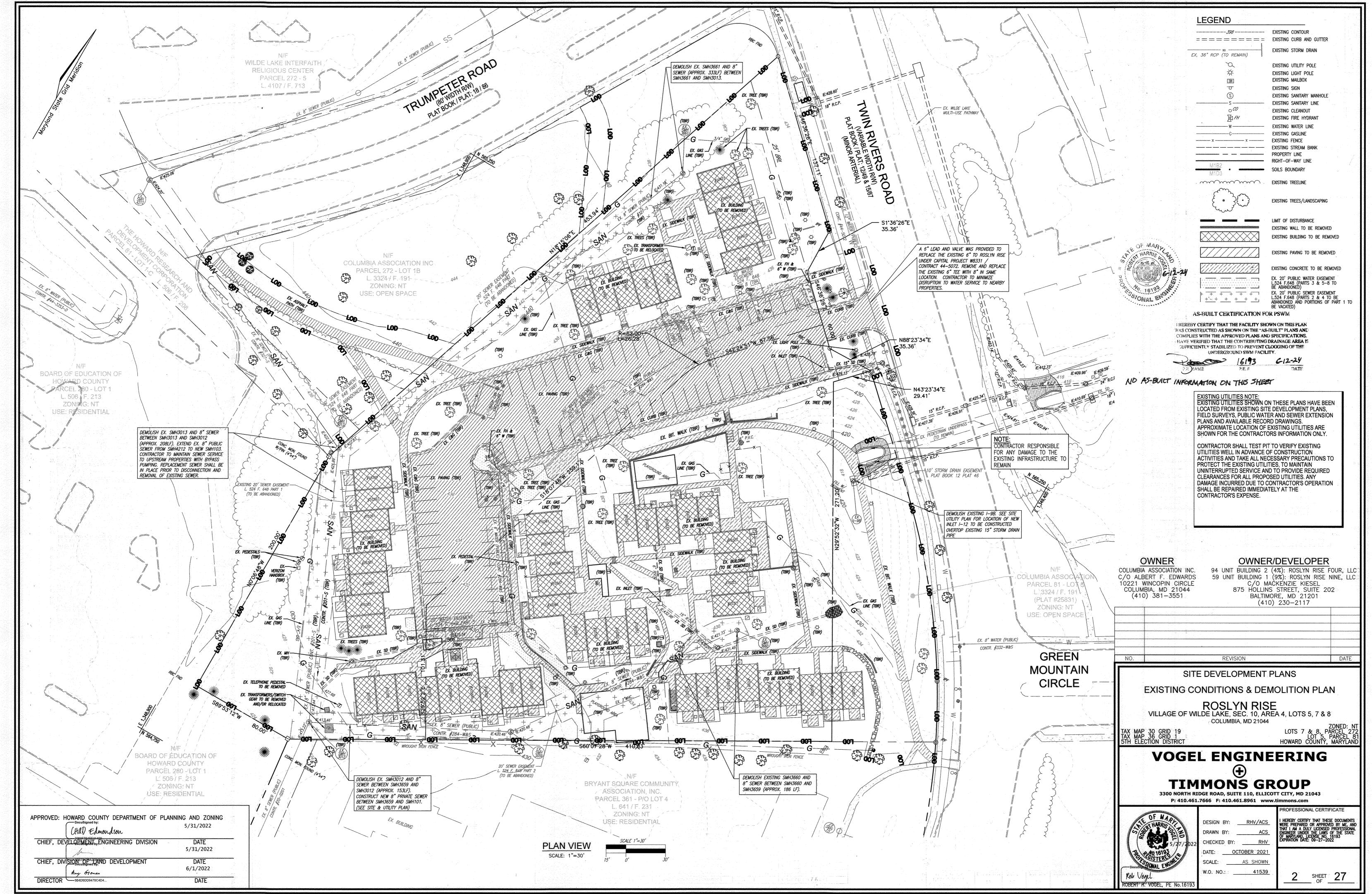
(2) CRITERIA CHANGE: 7A. CHANGE THE NUMBER OF ALLOWED UNITS TO 153 (REF. ZB—1120M), AND 8A. CHANGE ALLOWED BUILDING HEIGHT TO 47 FEET.

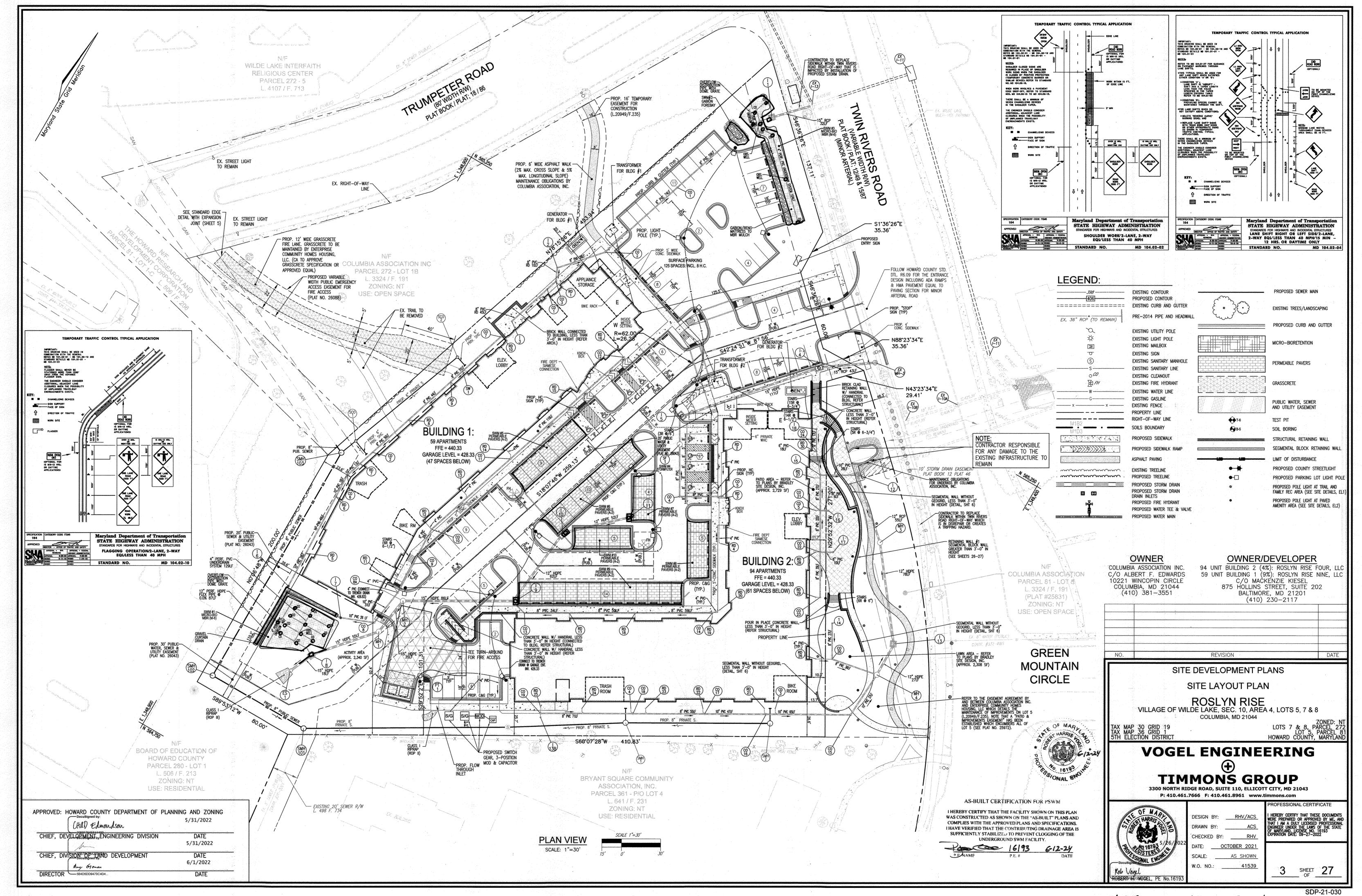
58. REFERENCE RIGHT—OF—WAY AGREEMENT DATED APRIL 13, 2021 BETWEEN ENTERPRISE COMMUNITY DEVELOPMENT, INC. ("ENTERPRISE") AND COLUMBIA ASSOCIATION INC. ("CA") WHEREAS, CA IS WILLING TO GRANT ENTERPRISE PERMISSION TO ENTER CERTAIN PORTIONS OF THE CA PROPERTY WITHIN THE LIMITS OF DISTURBANCE ("LOD") FOR THE PURPOSES OF GRADING AND CONSTRUCTING PATHWAYS, ACCESS FOR EMERGENCY VEHICLES, STORMWATER FACILITIES, AND ANCILLARY AMENITIES AS SHOWN ON THESE SITE DEVELOPMENT DIAMS.

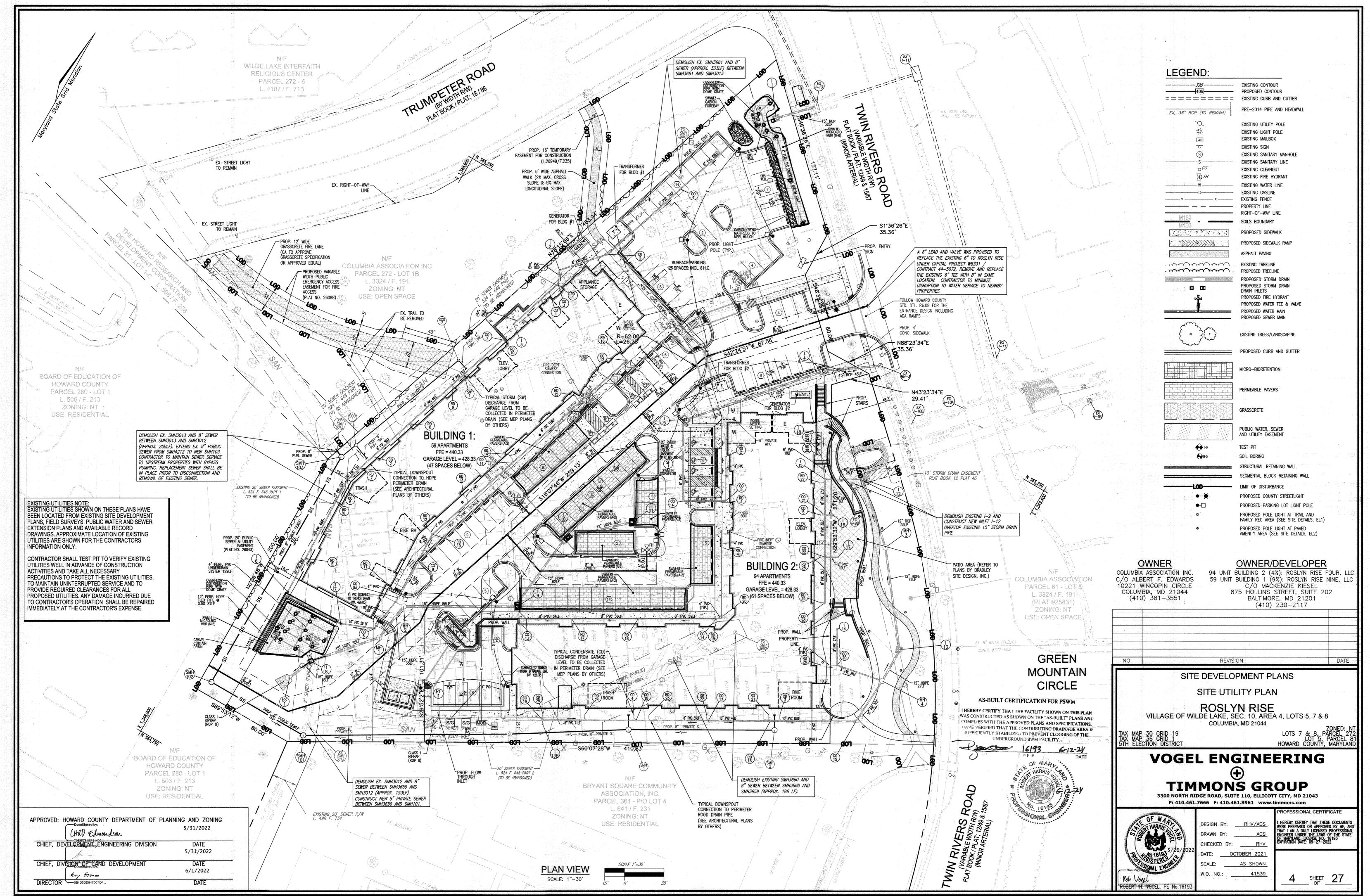
1) RECORDATION OF VILLAGE OF WILDE LAKE SECTION 10, AREA 4, LOTS 5 AND 6 (RESUBDIVISION OF LOTS 2 & 3) PRIOR TO DEMOLITION OF VACANT BUILDINGS,
2) RECORDATION OF VILLAGE OF WILDE LAKE SECTION 10, AREA 4, LOTS 7 AND 8 (RESUBDIVISION OF LOT 6),
3) DEMOLITION OF BUILDINGS,

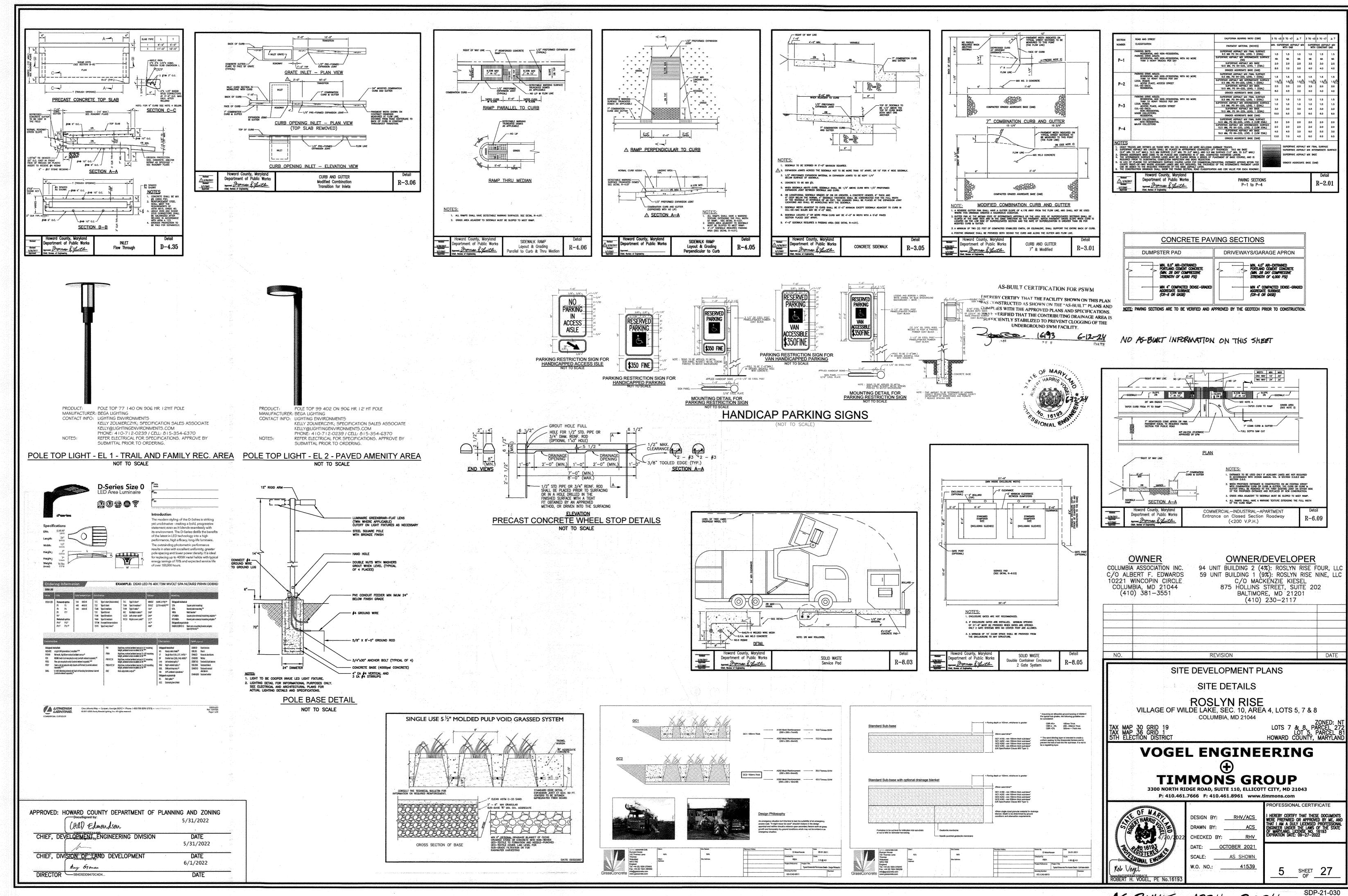
(1) SIGNATURE AFFRONAL OF SHE DEVELOPMENT FLAT, SUP-21-030.

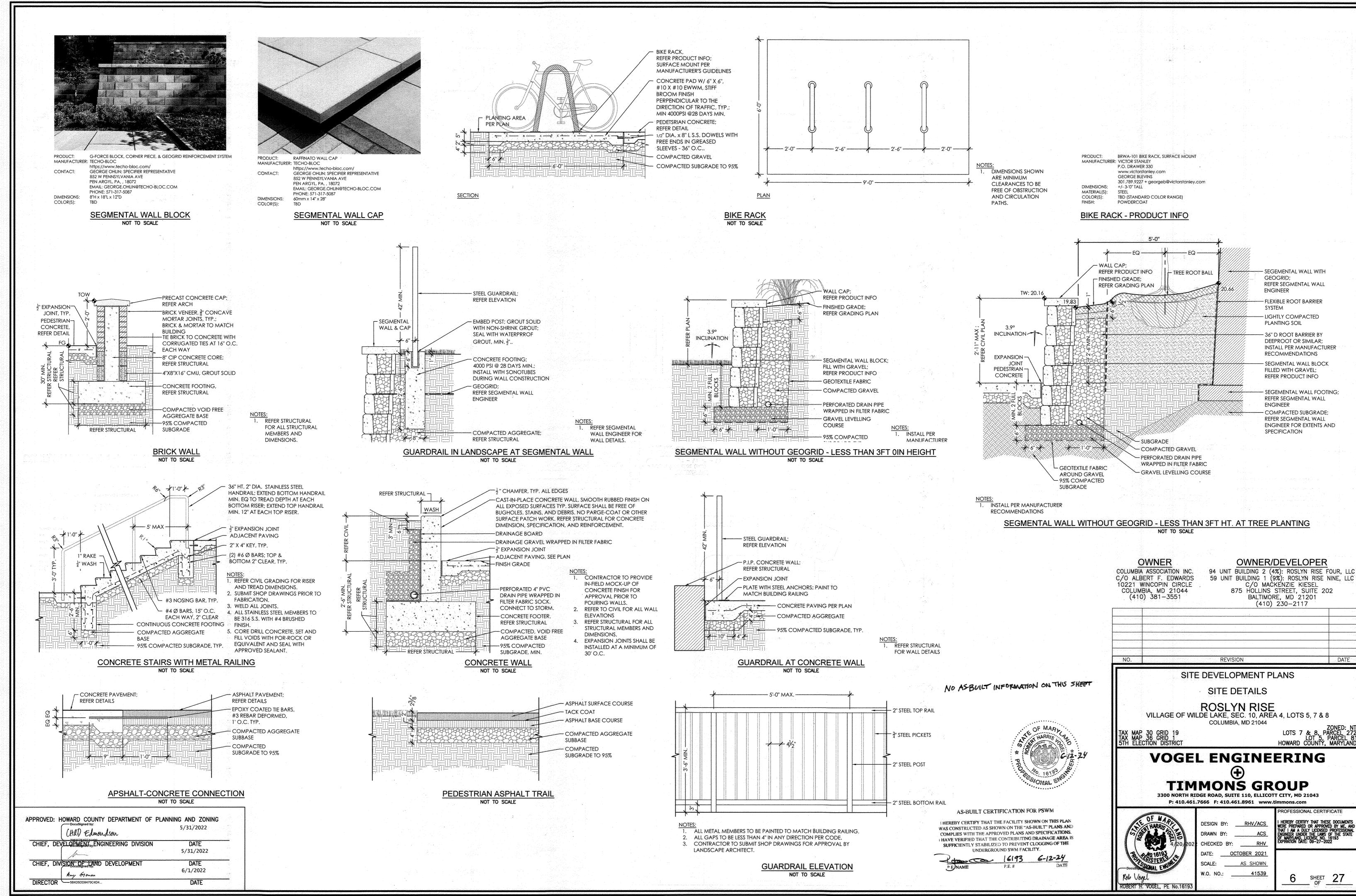
REFERENCE EASEMENT AGREEMENT DATED SEPTEMBER 9, 2021 BETWEEN COLUMBIA ASSOCIATION INC. ("GRANTOR") AND ENTERPRISE COMMUNITY HOMES HOUSING, LLC ("GRANTEE") WHEREAS, GRANTEE WILL PERFORM MAINTENANCE, REPAIR AND REPLACEMENT OF THE IMPROVEMENTS SHOWN ON THE SITE PLAN, SHEET 3 OF 27, TO INCLUDE RETAINING WALLS, CONCRETE SIDEWALKS AND WALKING PATHS, ASPHALT WALKING PATHS, AND A STRUCTURAL PATIO AND FAMILY RECREATION AREA AS SHOWN ON LOT 5 TOGETHER WITH THE FIRE LANE SHOWN ON LOT 1B. THE GRANTOR WILL HAVE THE SOLE MAINTENANCE OBLIGATIONS FOR THE ASPHALT PATHWAY BETWEEN THE SUBJECT PROPERTY AND TRUMPETER ROAD. THE EASEMENT AGREEMENT WAS RECORDED IN THE HOWARD COUNTY LAND RECORDS AS LIBER 20949 FOLIO 235 ON SEPTEMBER 24, 2021.

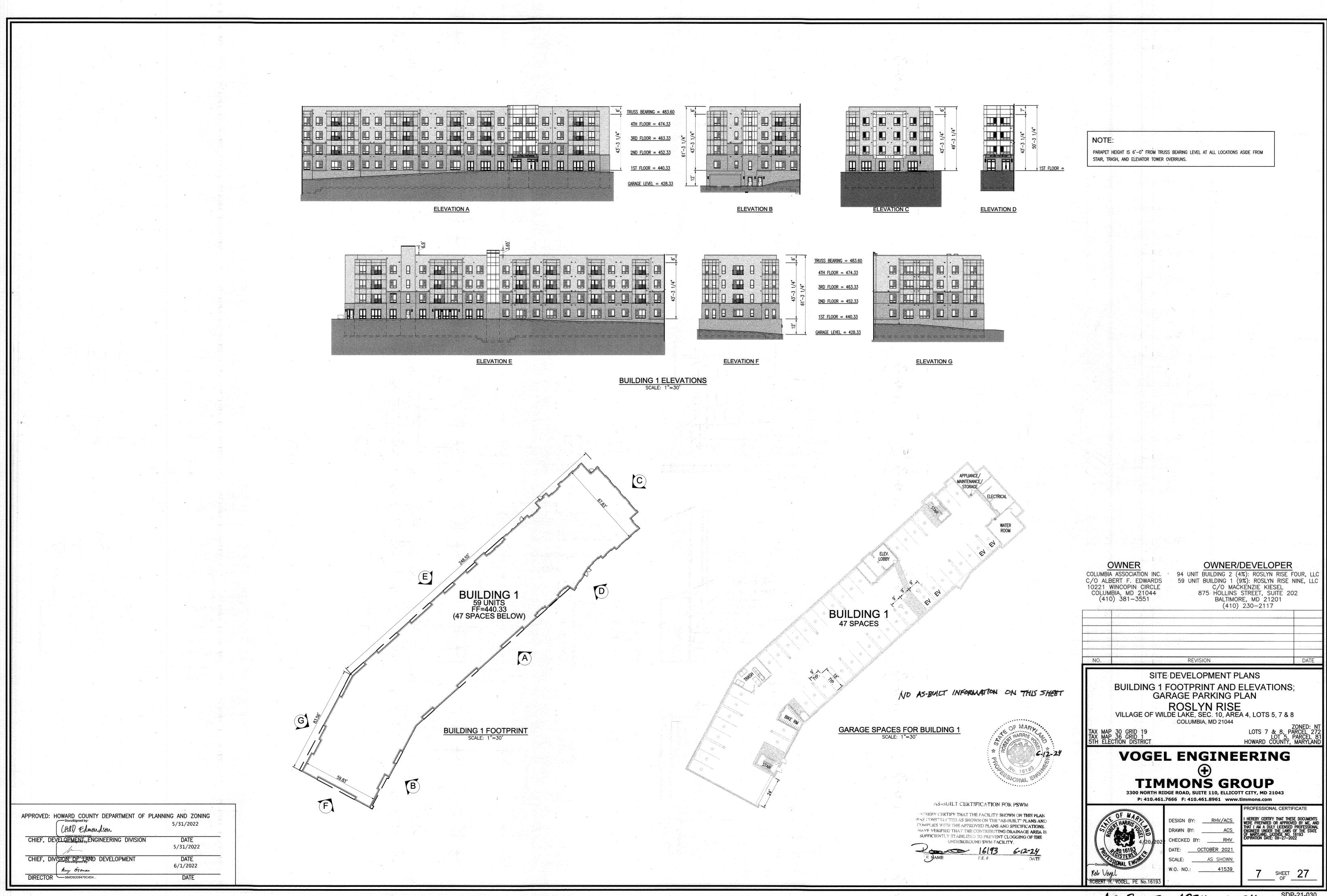












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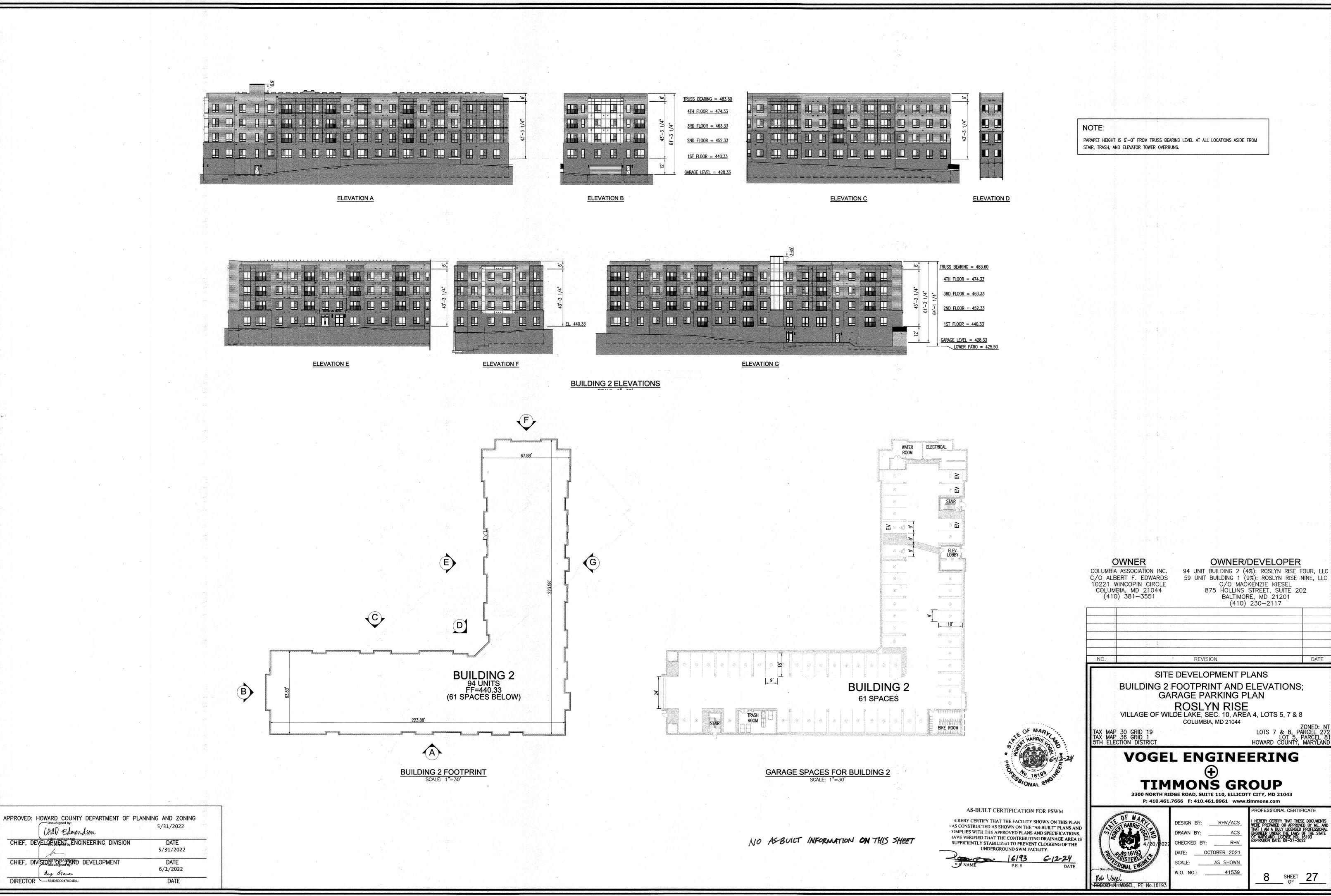
AS-BUILT APRIL 2024

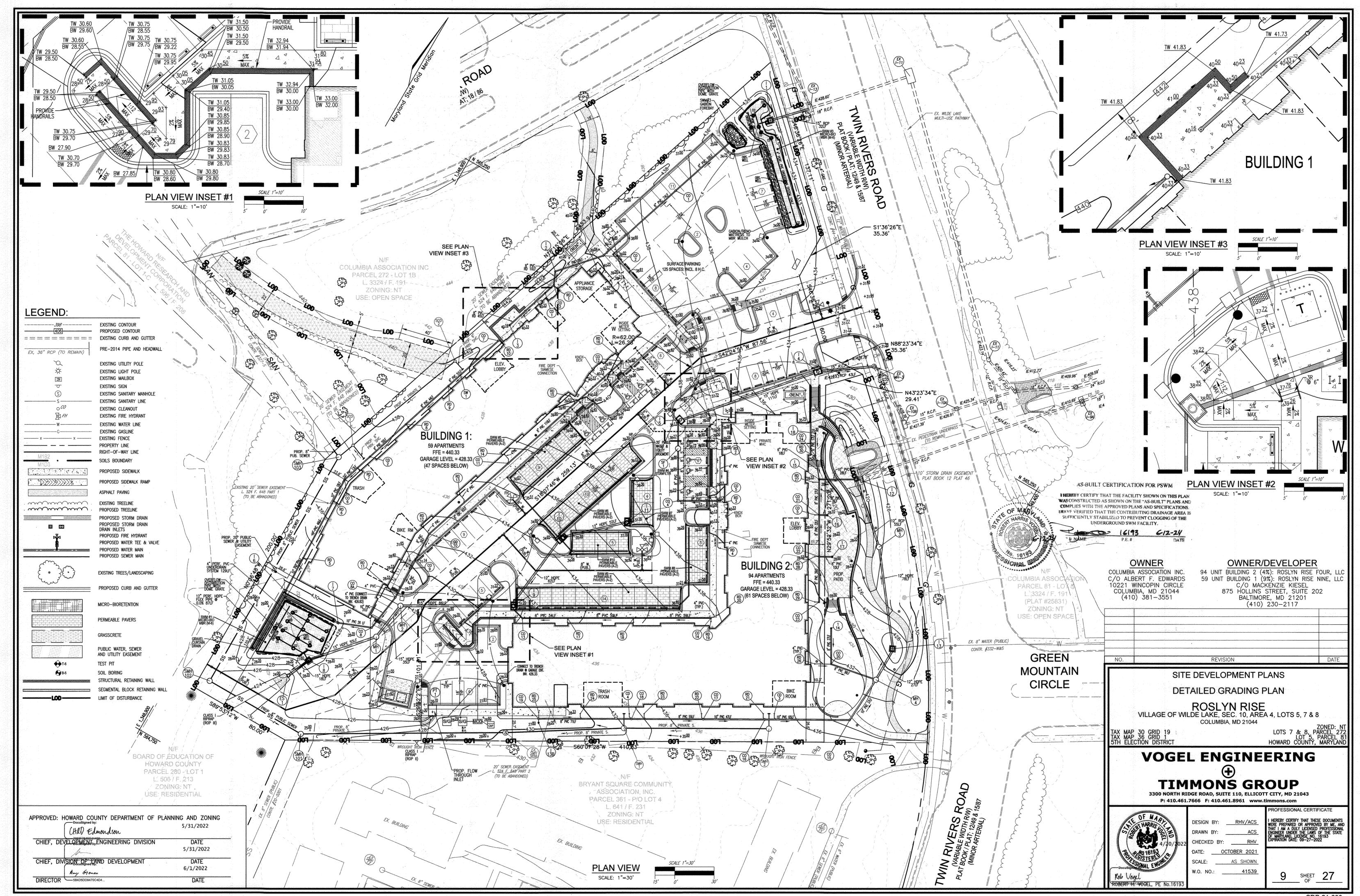
SDP-21-030

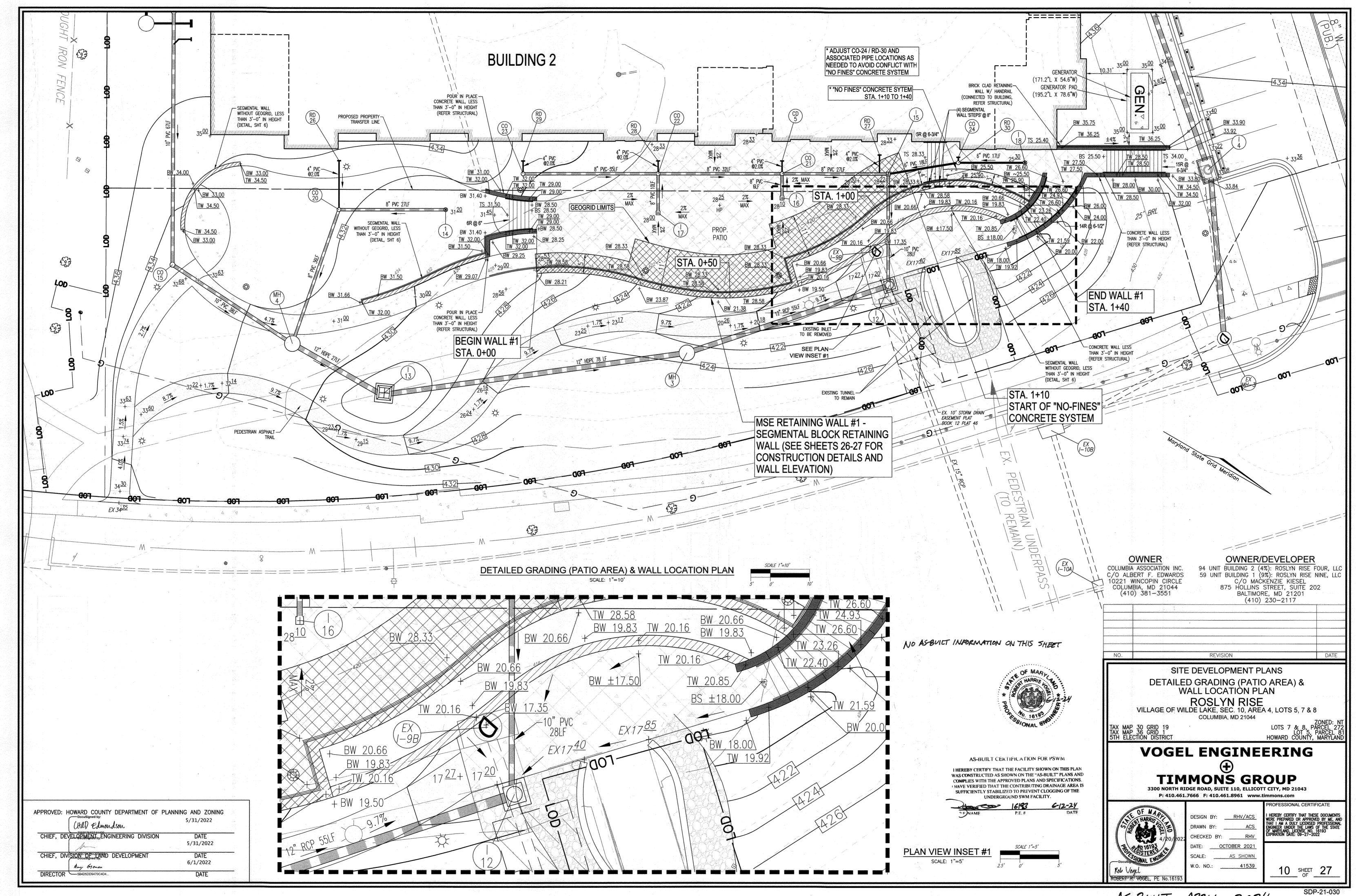
CHAD Edmondson

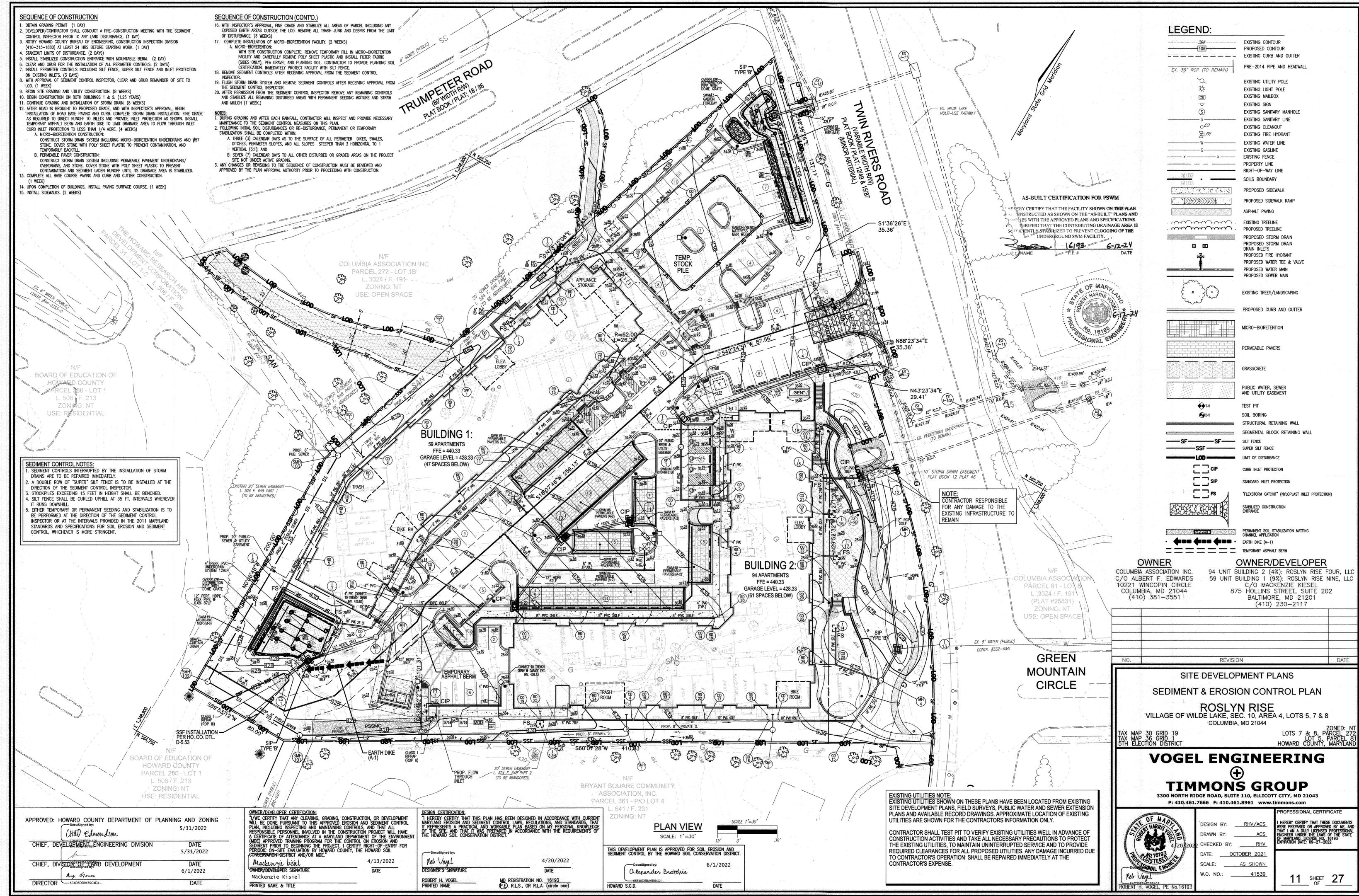
CHIEF, DEVELORMENT BY ENGINEERING DIVISION

CHIEF, DIVISION OF ATTAIND DEVELOPMENT









B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISCHARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

MEANS.
PERMANENT STABILIZATION

A A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

1. SOIL PH BETWEEN 6.0 AND 7.0.

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOILUBE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST. TEST.

MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA—NRCS. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES SITEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

A TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROPAIL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE

PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE), LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A

#100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A

#20 MESH SIEVE. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MFANS. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF

STANDARD SEDIMENT CONTROL NOTES

A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: STAGES:

A. PRIOR TO THE START OF EARTH DISTURBANCE,
B. UPON COMPLETION 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 OF OPENING OF ANOTHER GRADING UNIT,
C. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
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.
BUTCHING INITIAL SOIL DISTURBANCE OR RE—DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING. TIVE GRADING. L DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL

STABILIZATION MATTING (SEC. B—4—6). ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID. AVALYSIS: TOTAL AREA OF SITE: AREA DISTURBED: AREA TO BE ROOFED OR PAVED: AREA TO BE VEGETATIVELY STABILIZED: TOTAL CLIEF

OFFSITE WASTE/BORROW AREA LOCATION:

TO BE DETERMINED **
SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE
NEED ON THE SAME DAY OF DISTURBANCE.
TIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL
IROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A
TEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND

• INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
• NAME AND TITLE OF INSPECTOR • WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)

BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES

EMBENCE OF SEDIMENT DISCHARGES

IDENTIFICATION OF PLAN DEFICIENCIES

IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE

IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS

COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS

PHOTOGRAPHS

MONITORING CAMERINA

 MONITORING/SAMPLIN • MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED • OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH

CONSTRUCTION ACTIVITIES (NPDES, MOE).

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID
PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LO.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES

BEEN AND ADDRESSED OF THE WARM HER ACCIDENT. 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LO.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM 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 THE CID. NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAYEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON—SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. 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.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

• USE I AND IP MARCH 1 — JUNE 15

• USE II AND IIP OCTOBER 1 — APRIL 30

• USE IV MARCH 1 — MAY 31

16. 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.

* ESTIMATE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES TO HIS OWN SATISFACTION.
** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, WITH AN APPROVED AND ACTIVE GRADING PERMIT.

TEEP SLOPE DISTURBANCE NOTE: NHANCED MANAGEMENT SUCH AS ACCELERATED STABILIZATION AND REDUNDENT EROSION AND SEDIMENT CONTROLS ARE REQUIRED FOR STEEP B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING DEFINITION THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

A ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED, SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

B. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES, INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER, AND FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING, NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1,
PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN
EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL
CONTACT.

B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING, SEEDBED MUST BE FIRM AFTER PLANTING.

I. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION. (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.

II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, QAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY.

NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWIN INHBITING FACTORS.

III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HONGENCOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHBITING THE GROWTH OF THE GRASS SEEDLINGS.

V. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6

PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

3. ANCHORING
A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND O

A PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

1. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

11. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY. WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

111. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL. MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

17. M. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.
CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE FRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION
OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED. 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

		ZONE (FROM FIGURE B.3): ZONE 6b URE (FROM TABLE B.1): FELIZER RATE								
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	(10-20-20)	LIME RATE				
1	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO	0.5 IN.	436 LB/AC	2 TONS/AC				
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	OCT 15 MAY 16 TO JUL 31	0.5 IN.	(10 LB PER 1000 SF)	(90 LB PEF 1000 SF)				

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION DEFINITION TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEED MIXTURES

1. GENERAL USE

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE
PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE
FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE
PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS,
OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHERIC TREATMENT MAY BE FOUND
IN USDA—NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 — CRITICAL AREA PLANTING.
C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY
THE SOIL TESTING AGENCY.
D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46—0—0) AT 3—1/2
POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION
TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
2. TURFGRASS MIXTURES

TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUM MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT

WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET. NOTES:

MARYLAND*.

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTEM MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 58, 6A)

CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

SOUTHERN MD. EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B) ZONES: 7A, 7B)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1% INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

HARDINESS ZONE (FROM FIGURE B.3): ZONE 6b FELIZER RATE SEED MIXTURE (FROM TABLE B.3): 9 (10-20-20)								
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P2 05	K ₂ 0	LIME RATE
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN.	(1 LB PER	(2 LB PER		2 TONS/AC (90 LB PER 1000 SF)

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. AVAILABLE TO THE JUB FUNEMAN AND INSPECTOR.

B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS X INCH, AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

PERCENT OF THE SECTION.

D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION.

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

B. LAY THE FIRST ROW OF SOO IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AR DRYING OF THE ROOTS.

C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SUPPAGE ON SLOPES. ENSURE SOLLD CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

5. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE

C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

Table B.1: Temporary Seeding for Site Stabilization

man c	Seedi	ng Rate 1/	Seeding	Recommended Seedin	g Dates by Plant Hardin	ess Zone ^{3/}		
Plant Species	1 1 1		Depth ^{2/} (inches)	5b and 6a	6b 7a and 7b			
Cool-Season Grasses		1						
Annual Ryegrass (Lolium perenne ssp. multiflorum)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	FERTILIZER	
Barley (Hordeum vulgare)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	RATE (10-20-20)	LIME RATE
Oats (Avena sativa)	72	1.7	1,0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	436 LB/AC	2 TONS/AC
Wheat (Triticum aestivum)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30	(10 LB PER 1000 SF)	(90 LB PER 1000 SF)
Cereal Rye (Secale cereale)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15		
Warm-Scason Crasses								
Foxtail Millet (Setaria italica)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14		
Pearl Millet (Pennisetum glaucum)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14		

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zon

OWNER/DEVELOPER CERTIFICATION: OWNER/DEVELOPER CERTIFICATION:

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL

CONSERVATION: DISTRICT AND/OR MDE."

5/27/2022 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 5/31/2022 (Hal) Edmondson CHIEF, DEVELOPMENT BY ENGINEERING DIVISION 5/31/2022 5/27/2022 Mackensic kisiel CHIEF, DIVISION OF A PAND DEVELOPMENT OWNER DEVELOPER SIGNATURE 6/1/2022 Mackenzie Kisiel DATE PRINTED NAME & TITLE

DESIGN CERTIFICATION: THEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURREN MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT." Rob Vogel 5/27/2022 DESIGNER'S SIGNATURE MD REGISTRATION NO. 16193
(P.E., R.L.S., OR R.L.A. (circle one)

DETAIL B-1 STABILIZED CONSTRUCTION EX SCF **ENTRANCE PROFILE** 50 FT MIN. LENGTH PLAN VIEW CONSTRUCTION SPECIFICATIONS 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. 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. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS I. 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. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

DETAIL E-3 SUPER SILT FENCE I---SSF---I KIIKIKI IKI - GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE **ELEVATION** WOVEN SLIT FILM GEOTEXTILE-CROSS SECTION

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

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,

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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA A MOUND OR PILE OF SOIL PROTECTION BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES. <u>PURPOSE</u>
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

<u>onditions where practice applies</u> Tockpile areas are utililized when it is necessary to salvage and store soil for later use. <u>CRITERIA</u> 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.

5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSM 6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE

MUST BE USED TO INTERCEPT THE DISCHARGE.

7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAININATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING. MAINTENANCE
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH
SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA
MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1
SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

STANDARDS AND SPECIFICATIONS FOR DUST CONTROL DEFINITION CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES.

PURPOSE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES TO REDUCE ON AND OFF-SITE DAMAGE INCLUDING HEALTH AND TRAFFIC HAZARDS.

CONDITIONS WHERE PRACTICE APPLIES
SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

1. MUICHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, SECTION B-4-3 SEEDING AND MUICHING, AND SECTION B-4-4 TEMPORARY STABILIZATION. MUICH MUST BE ANCHORED TO PREVENT BLOWING.

2. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION. MUICH MUST BE ANCHORED TO PREVENT BLOWING.

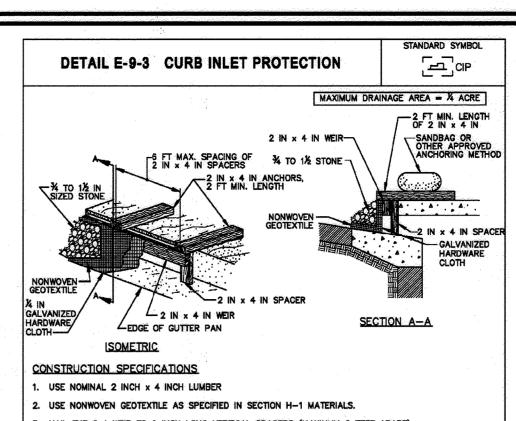
3. TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APPART, SPRING—TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFECT.

4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.

5. BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW AUTHORITY.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. 6/1/2022 Olexander Bratchie



NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART). ATTACH A CONTINUOUS PIECE OF % INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2×4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.

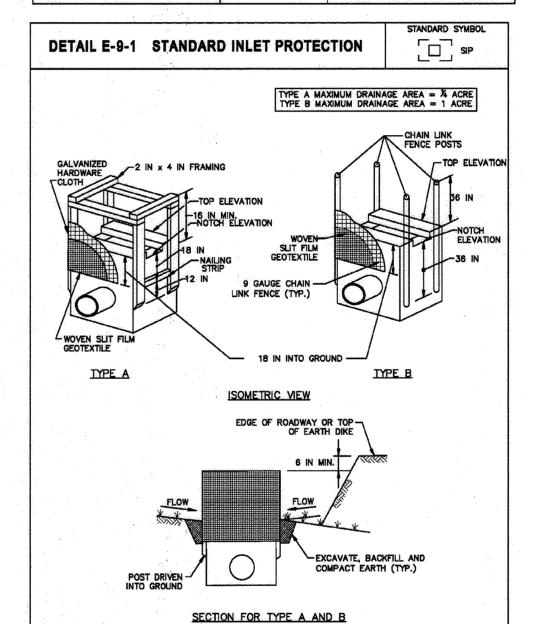
. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.

PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2×4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.

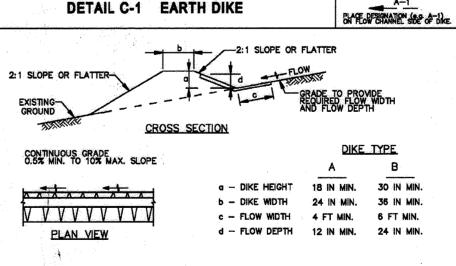
FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN % TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.

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 STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STANDARD SYMBOL
A-1
PLACE DESIGNATION (60 A-1)
PLACE OF CHANNEL SIDE OF DIKE.



FLOW CHANNEL STABILIZATION

SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.) SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD. 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.

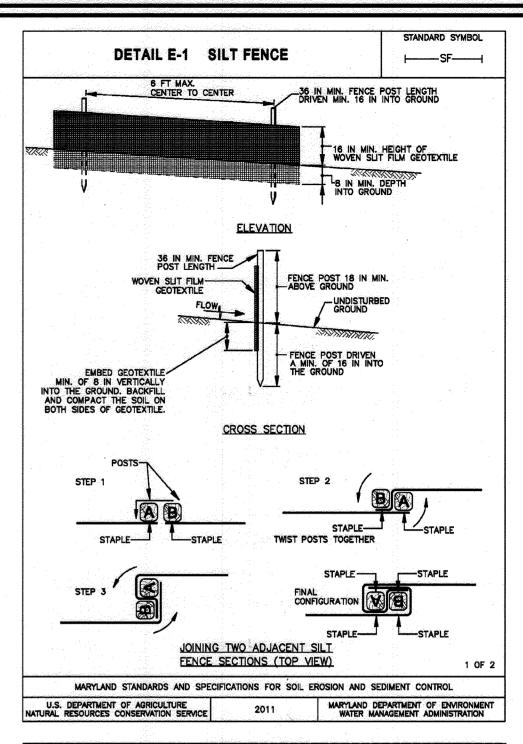
3. COMPACT FILL. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.

. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN

STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE, KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION





I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY. Jan 16193 6-12-24

NO AS-BUILT INFORMATION ON THIS SHEET

OWNER COLUMBIA ASSOCIATION INC. C/O ALBERT F. EDWARDS 10221 WINCOPIN CIRCLE COLUMBIA, MD 21044

NO.

OWNER/DEVELOPER 94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LLC 59 UNIT BUILDING 1 (9%): ROSLYN RISE NINE, LLC C/O MACKENZIE KIESEL 875 HOLLINS STREET, SUITE 202 BALTIMORE, MD 21201

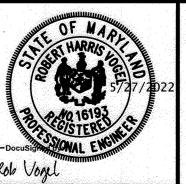
(410) 381-3551(410) 230-2117

SITE DEVELOPMENT PLANS SEDIMENT & EROSION CONTROL **NOTES AND DETAILS ROSLYN RISE** VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8

COLUMBIA, MD 21044 ZONED: NT LOTS 7 & 8, PARCEL 272 LOT 5, PARCEL 8 HOWARD COUNTY, MARYLAND FAX MAP 30 GRID 19 FAX MAP 36 GRID 1 5TH ELECTION DISTRICT

VOGEL ENGINEERING

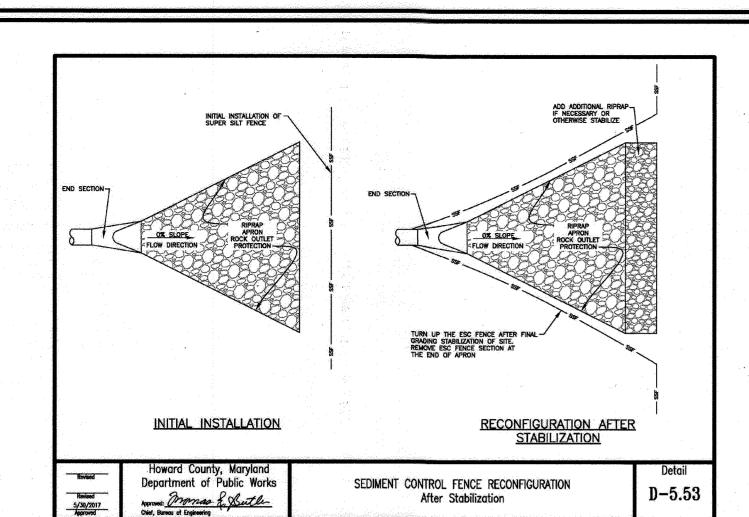
TIMMONS GROUP P: 410.461.7666 F: 410.461.8961 www.timmons.com



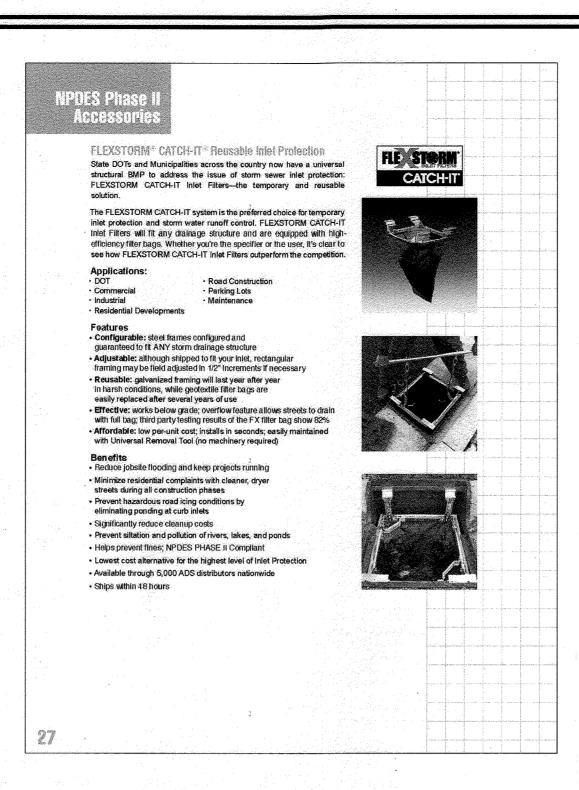
RHV/ACS ACS RHV CHECKED BY: OCTOBER 2021 SCALE: 41539

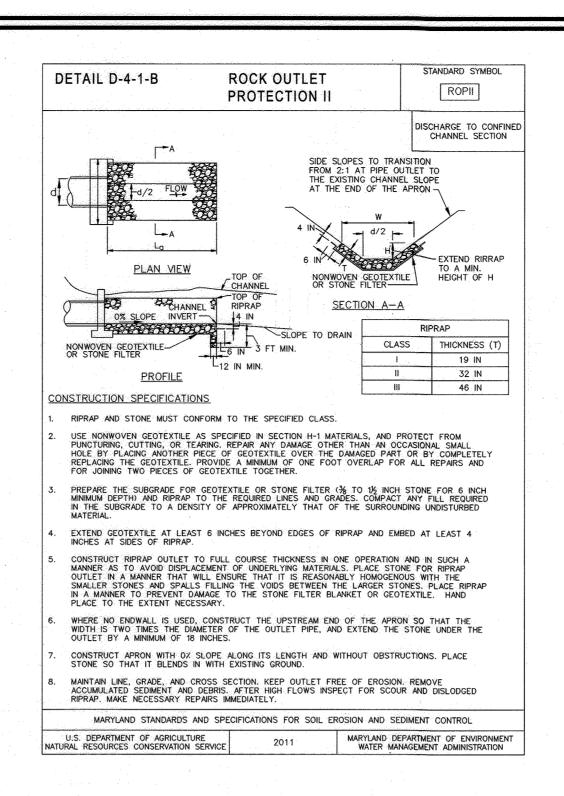
HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2022

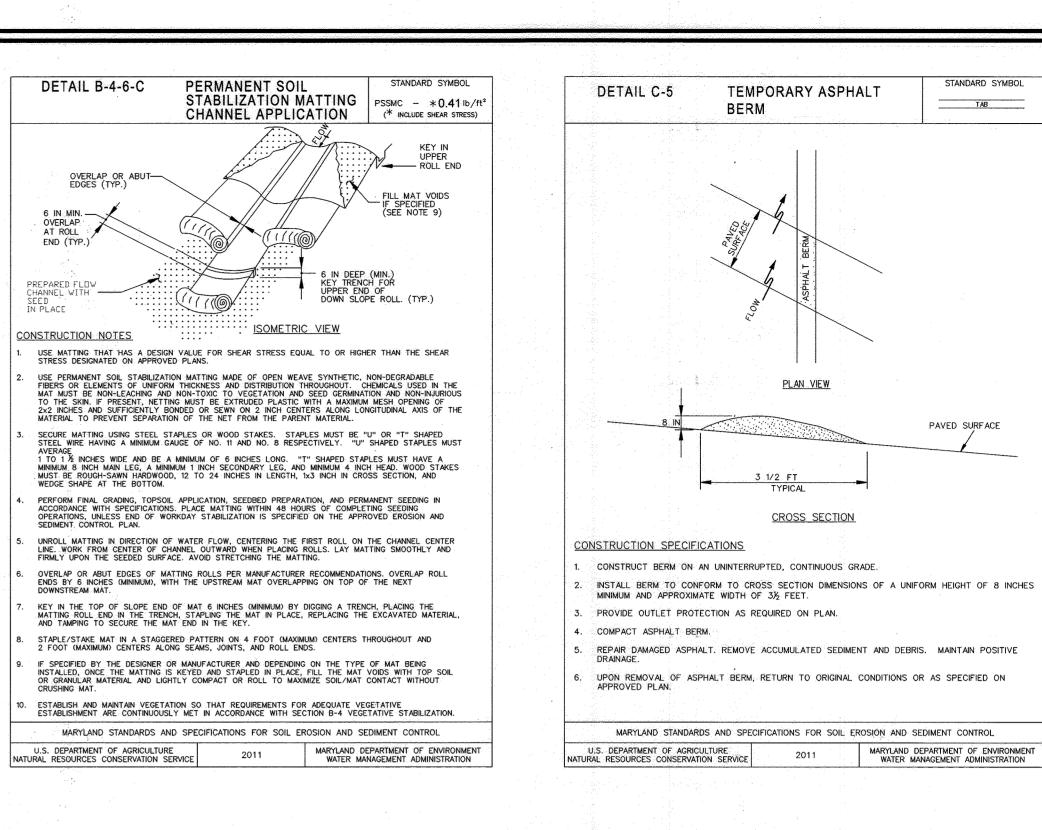
SHEET 27

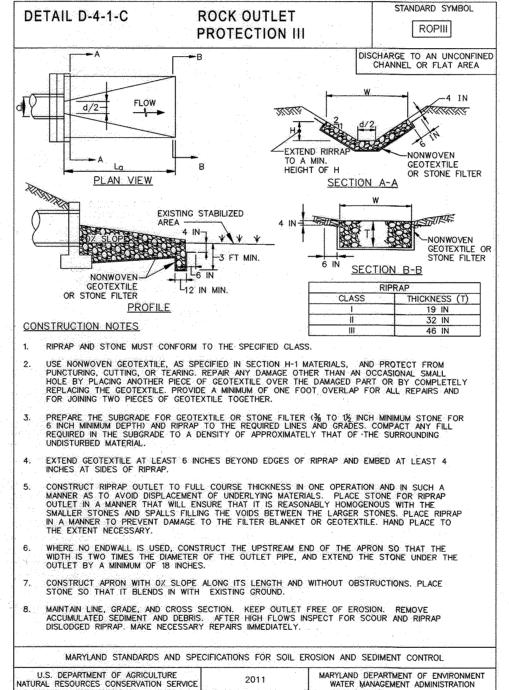


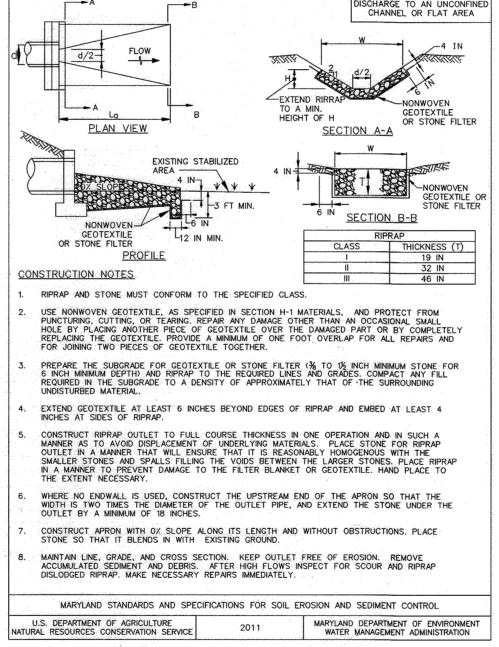
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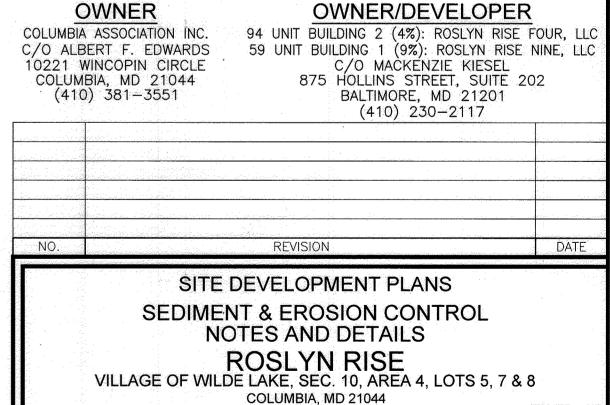












MAP 30 GRID 19 MAP 36 GRID 1 ELECTION DISTRICT

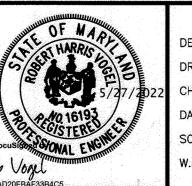
LOTS 7 & 8, PARCEL 27. LOT 5, PARCEL 8 HOWARD COUNTY, MARYLAND

13 SHEET 27

SDP-21-030

VOGEL ENGINEERING

TIMMONS GROUP



ACS CHECKED BY: SCALE: W.O. NO.:

AS-BUILT CERTIFICATION FOR PSWM HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN AS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND)MPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. AVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

NO ASBULT INFORMATION ON THIS SHEET

OWNER/DEVELOPER CERTIFICATION:

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY FOR PERIODIC ON TIME TO BEGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY FOR PERIODIC ON TIME TO BEGINNING THE PROJECT. I CERTIFY RIGHT—OF—ENTRY FOR PERIODIC ON TIME TO BE VALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE." APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 5/31/2022 (HD) Edmondson CHIEF, DEVELOPMENT DEVELOPMENT DIVISION 5/31/2022 Mackenzie kisiel CHIEF, DIVISION OF ALEMAND DEVELOPMENT OWNER/DEVELOPER SIGNATURE 6/1/2022 Mackenzie Kisiel

DATE

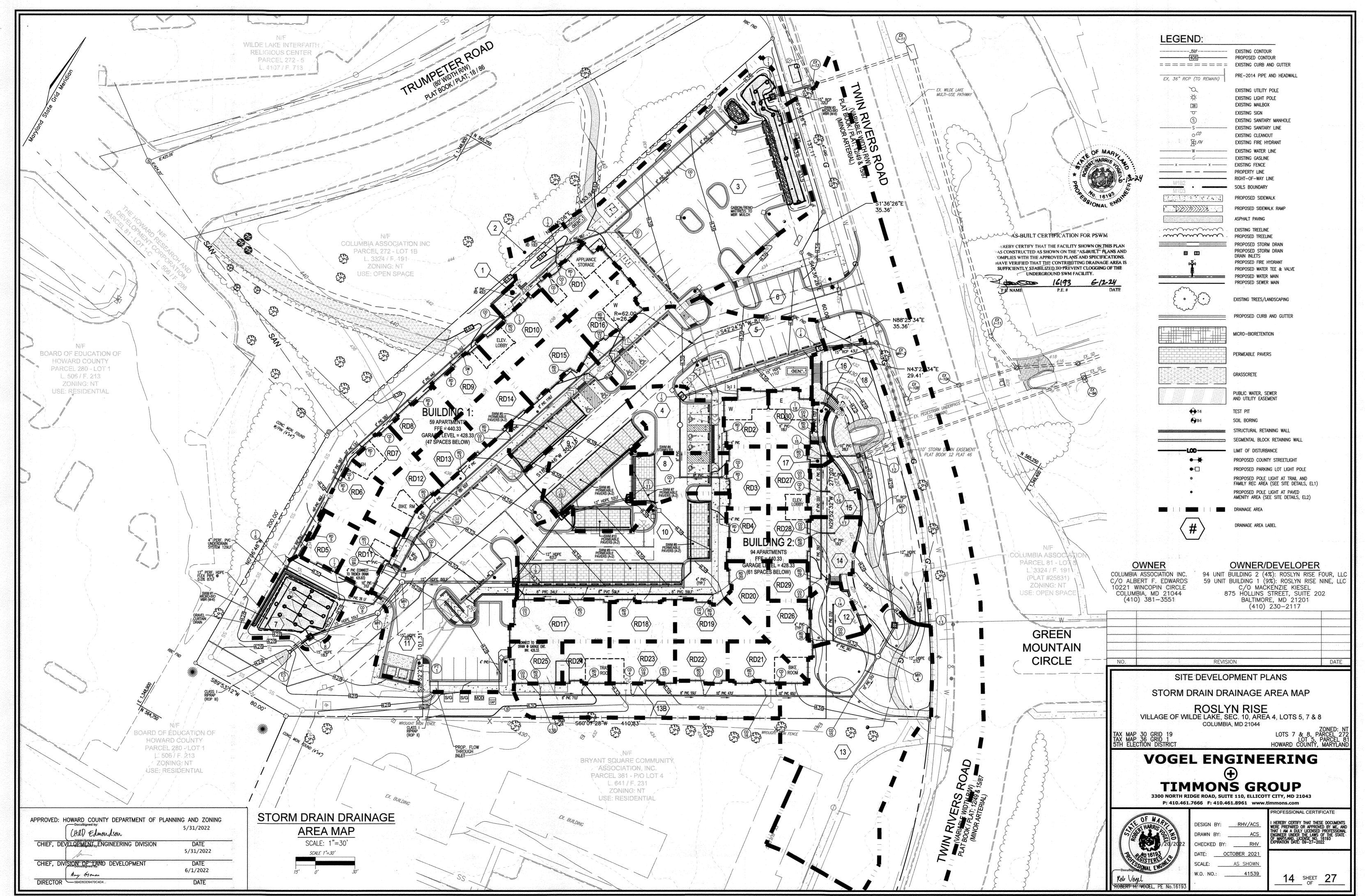
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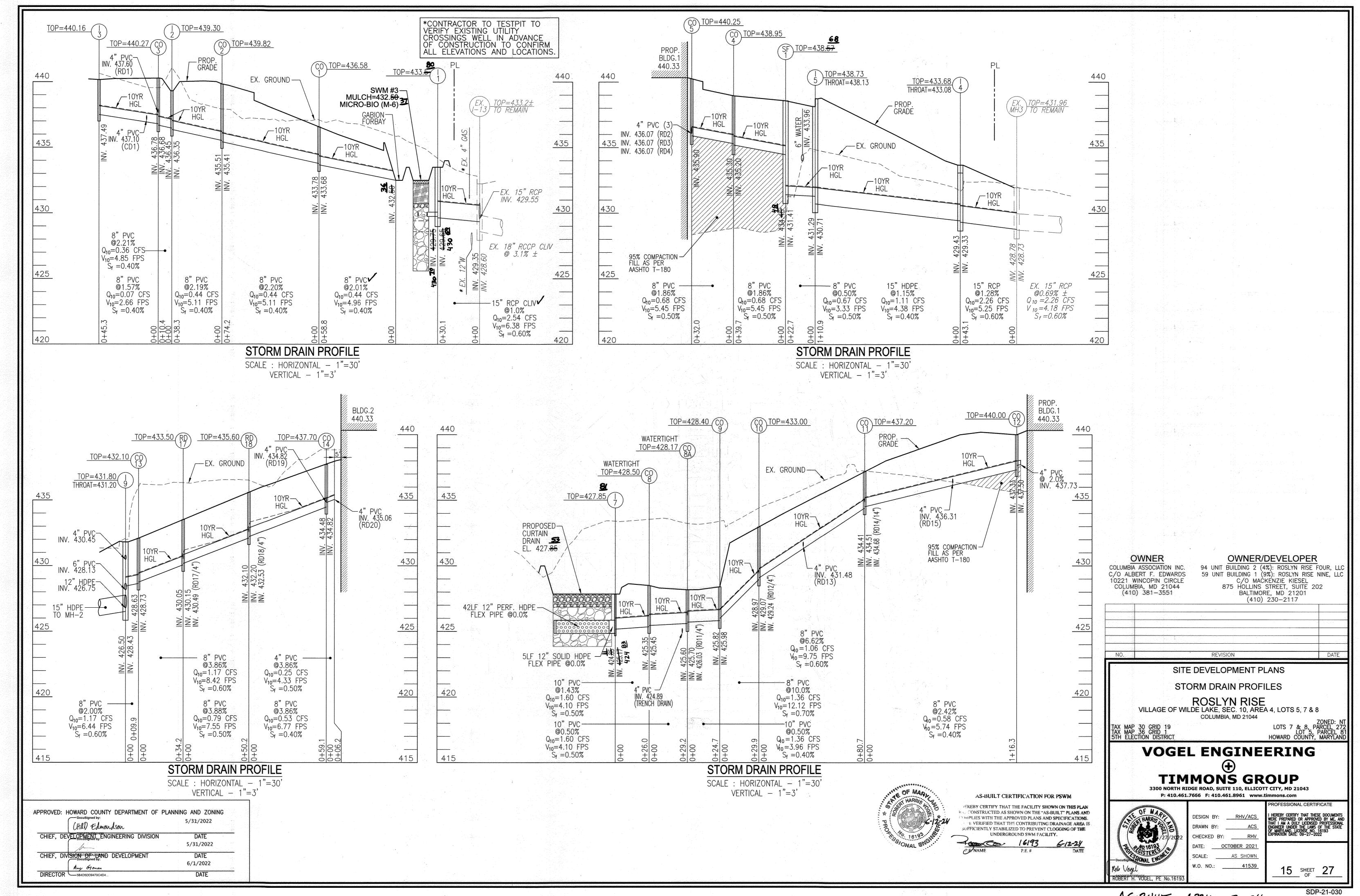
DIRECTOR ____5B4D5DD9470C4D4..

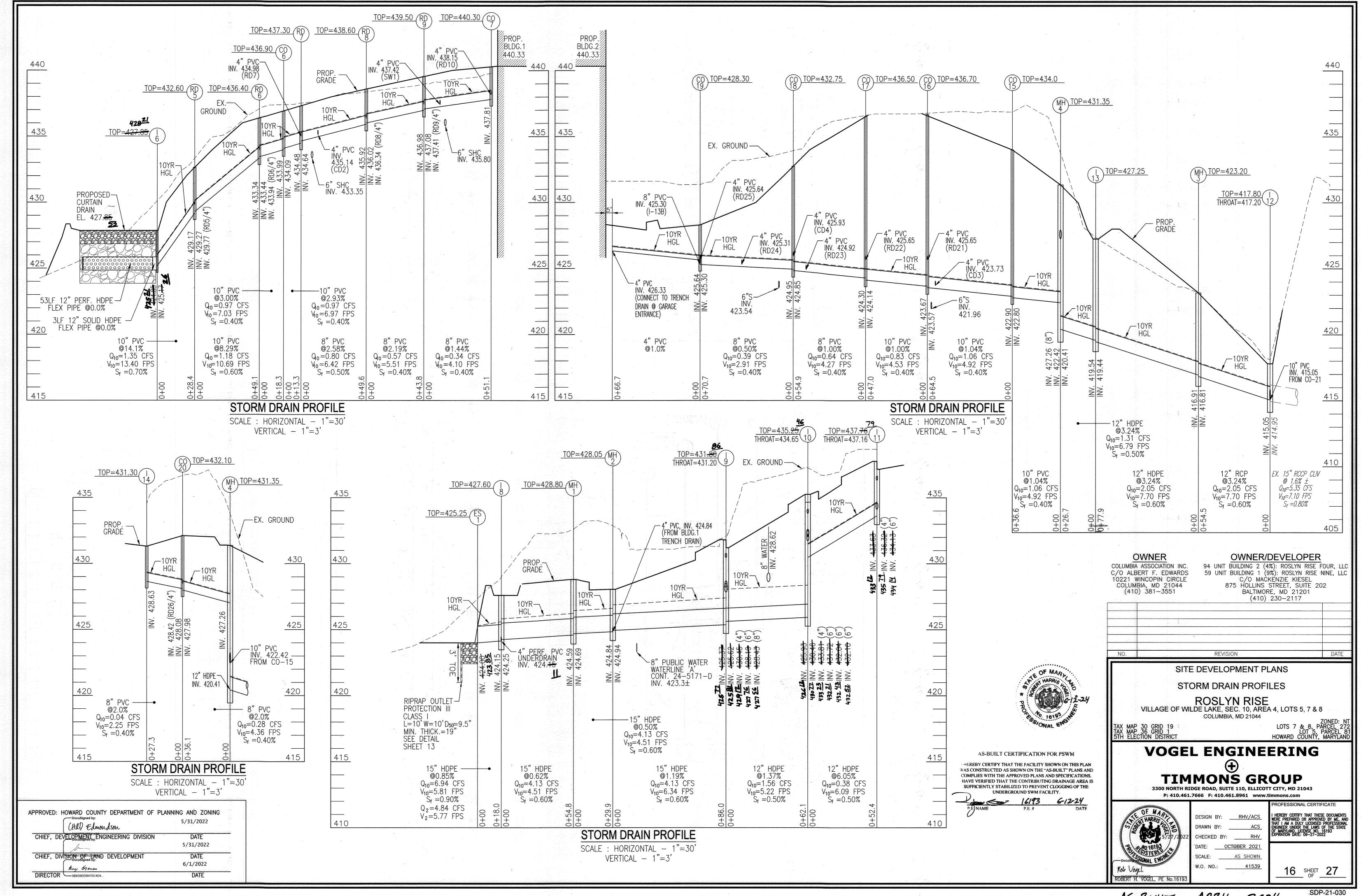
Rob Vogel 5/27/2022 DESIGNER'S SIGNATURE MD REGISTRATION NO. 16193
P.E, R.L.S., OR R.L.A. (circle one)

5/27/2022

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







AS-BUILT APRIL 2024

- (Ø4'-10" [Ø1473 mm]) O.D.

- HDPE OUTLET RISER

PLAN VIEW

FLOWKIT: 40A

SECTION A-A

The Stormwater Management StormFilter*

5/31/2022

DATE

5/31/2022

6/1/2022

DATE

STORMFILTER

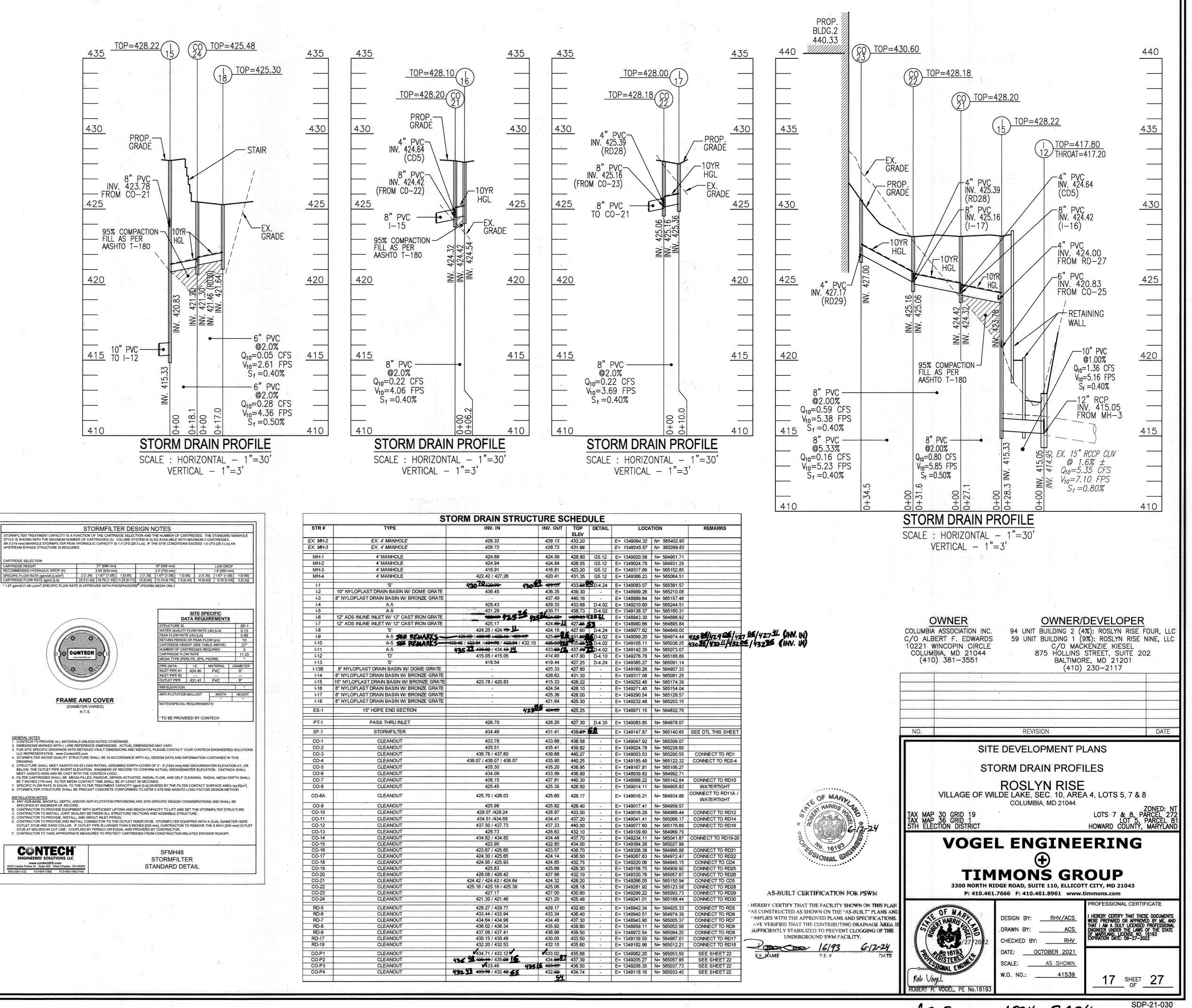
CONTRACTOR TO GROUT TO

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

(Hd) Edmondson

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISIONET OF A PAND DEVELOPMENT



AS-BUILT APRIL 2024

CHAD Edmondson

CHIEF, DEVELOPMENT BY GINEERING DIVISION

CHIEF, DIVISION OF 154 PAND DEVELOPMENT

PRIVATE PROPOSED PUBLIC WATER, SEWER & UTILITY EASEMENT MAIN LINE ÇLEANOUT LAMPHOLE (S-3.21)STD. PRECAST MANHOLE
HO.CO. G-5.12
W/ TYPE 'B' DROP
HO.CO. S-1.32
WATERTIGHT FRAME
HO.CO. G-5.52 PROPOSED BUILDING#1 PROPOSED BUILDING#1 TOP=437.40/SCO MAIN LINE CLEANOUT LAMPHOLE (S-3.21) /FF=440.33 FF=440.33/ TOP=427.00/SMH SMH TOP=424.85 TOP=437.40 (SCO) 440 STD. PRECAST MANHOLE 102 HO.CO. G-5.12 WATERTIGHT FRAME HO.CO. G-5.52 HO.CO. G-5.14
WATERTIGHT FRAME
HO.CO. G-5.52 PROP. GRADE-EX. GROUND-BUILD OVER AND CONNECT TO EX. SEWER EX. GROUND <u>435</u> - 8"RD INV. 433.35 6" PRIVATE -SEWER INV. 435.43 6" PVC S.-FROM SCO-2 INV. 429.37 - 6" PRIVATE SEWER INV. 432.00 430 -PROP. GRADE 6" PVC S.-TO SMH103 425 425 425 EXTEND EX. 8" PUBLIC S.— (CONT. #327—S) TO MH103 8" PUBLIC WATER-WATERLINE 'A' CONT. 24-5171-D INV. 422.02 6"PVC — SEWER INV. 422.02 @ 5.0% 420 420 - 8"S INV. 413.11 SEWER MAIN PROFILE (PRIVATE) 6"PVC SCALE: 1"=30 HORIZ. 1"=3' VERT. SEWER © 5.0% SEWER @ 5.0% -EX. 8" PUBLIC S. CONT. #20-0201 8"PVC PUBLIC SEWER @ 2.39% PUBLIC SEWER @ 5.0% PUBLIC OWNER OWNER/DEVELOPER COLUMBIA ASSOCIATION INC. 94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LLC C/O ALBERT F. EDWARDS C/O MACKENZIE KIESEL

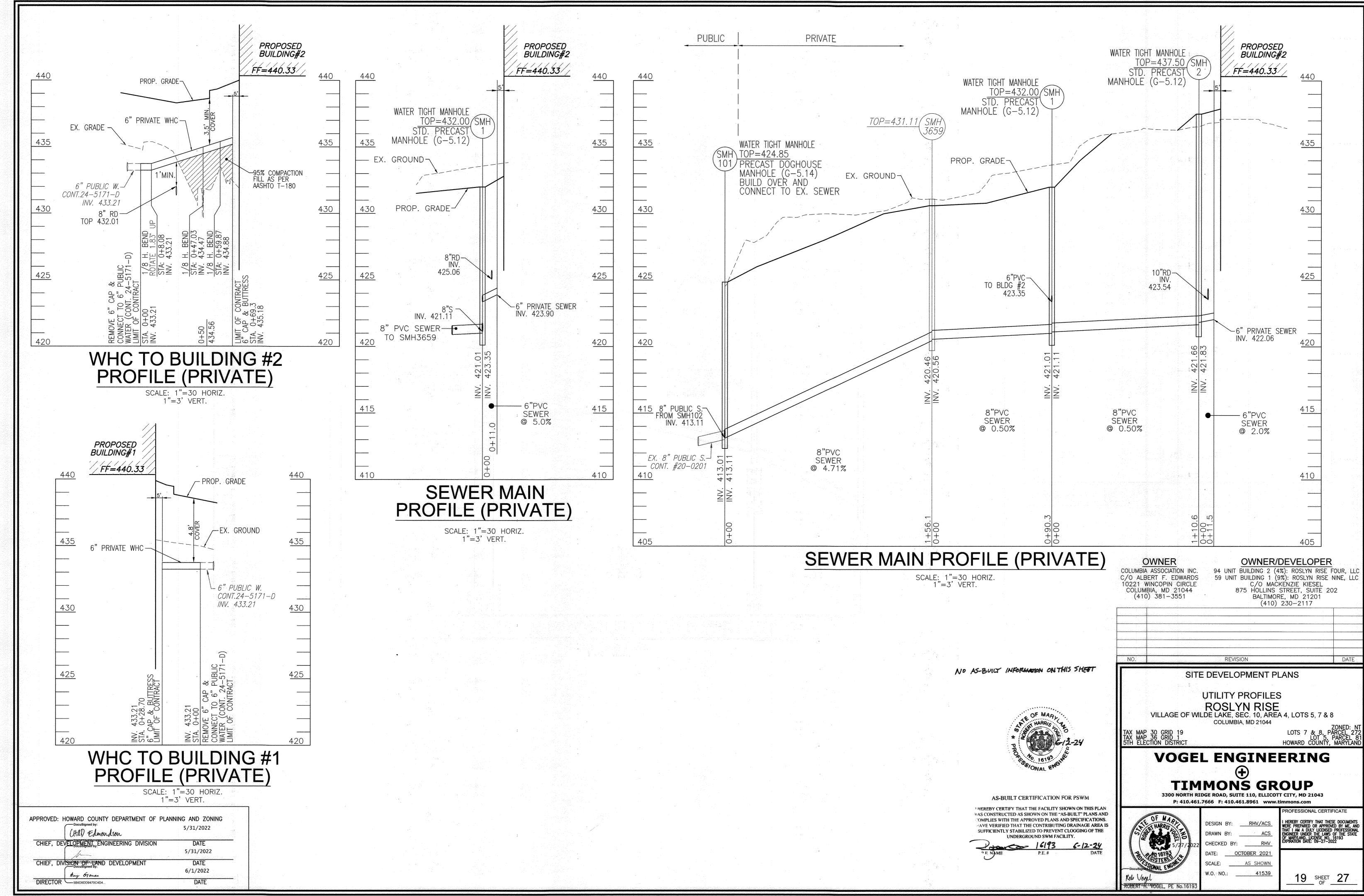
875 HOLLINS STREET, SUITE 202

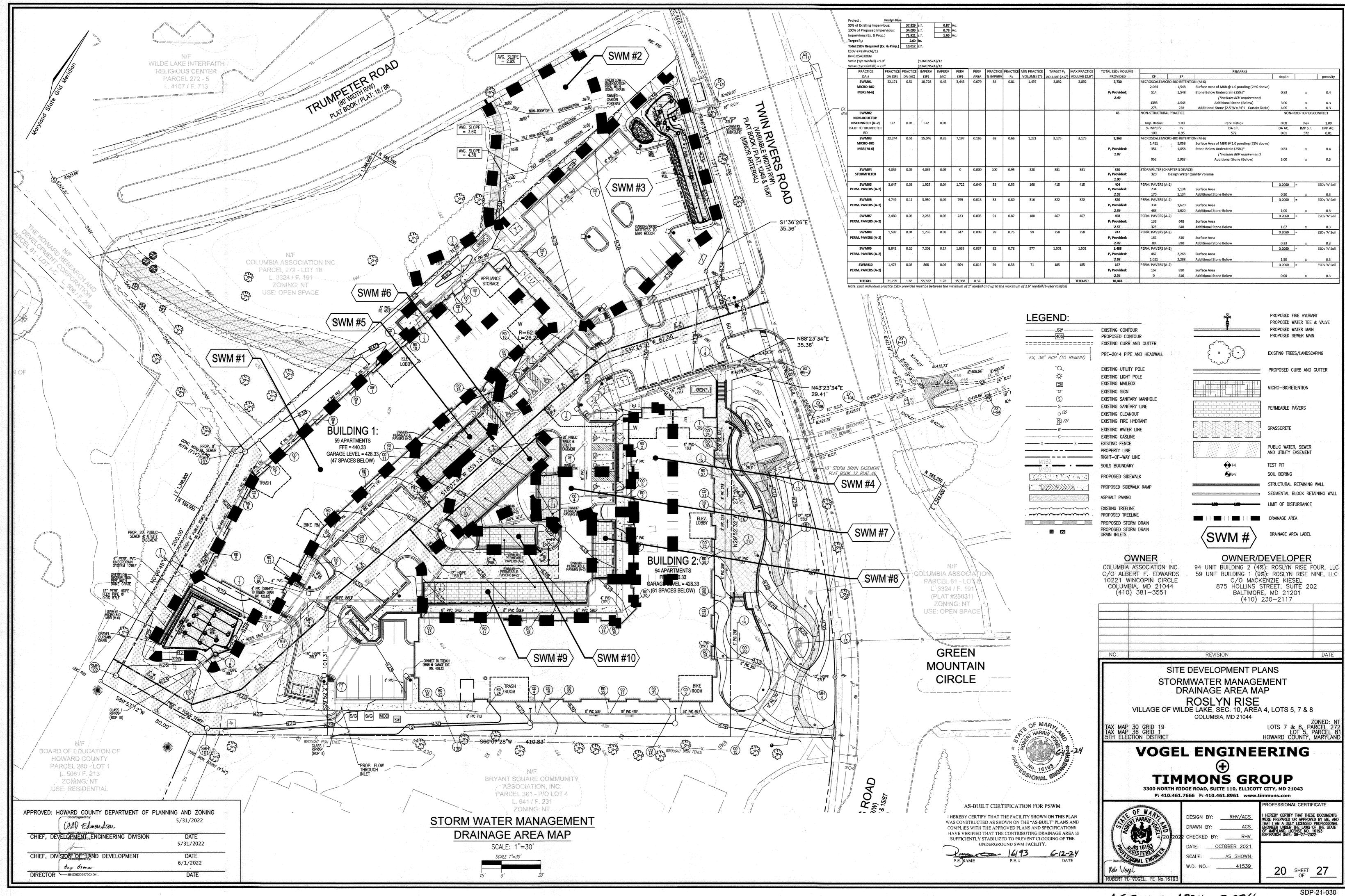
BALTIMORE, MD 21201

(410) 230-2117 10221 WINCOPIN CIRCLE COLUMBIA, MD 21044 (410) 381-3551 SEWER MAIN PROFILE (PUBLIC/PRIVATE) SCALE: 1"=30 HORIZ. 1"=3' VERT. REVISION NO AS-BUILT INFORMATION ON THIS SHEET SITE DEVELOPMENT PLANS **UTILITY PROFILES** ROSLYN RISE VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8 TAX MAP 30 GRID 19 TAX MAP 36 GRID 1 5TH ELECTION DISTRICT **VOGEL ENGINEERING TIMMONS GROUP** AS-BUILT CERTIFICATION FOR PSWM OMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING AVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS 5/31/2022 SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE DRAWN BY: UNDERGROUND SWM FACILITY. DATE CHECKED BY: 5/31/2022 OCTOBER 2021 DATE SCALE: 6/1/2022

W.O. NO.:

18 SHEET 27





APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION. RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION

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

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

**SCHOOL OF THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

* SOIL COMPONENT — LOAMY SAND OR SANDY LOAM (USDA SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

* SOIL COMPONENT — LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).

* 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%).

* 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 IN TO THE SOIL TO INCREASE OR DECREASE PH.

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.

3. COMPACTION

IT 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 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.

CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE 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 BIORETENION 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

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

5. PLANT INSTALLATION
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 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.

6. UNDERDRAINS UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- * PIPE SHOULD MEET THE FULLOWING 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 OF 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.

 * GRAVEL 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 CRAVEL (1/8" TO 3/9" STONE) SHALL BE LOCATED BETWEEN THE FILTER WERE AND INDEPENDENT TO PROVIDE A CURRY WRONG TO 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
IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS 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).

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

	MICRO-BIORETENTION DATA CHART											: .			
MBR Facility Number	Ponding Depth (ft)	Ponding Elevation ELEV. A			Depth of Plant Mix	Plant Mix	Bottom of Pea Gravel ELEV. E	Depth of Stone (ft.)	Invert of Underdrain	Bottom of Stone ELEV. F	Depth of REV Stone (ft.)	Bottom of REV Stone ELEV. G	1	Bottom of Addt'l Stone ELEV. H	Invert of Outfall Pipe
SWM#1 (M-6)	0.75	427.60	426. 85	58 _{426.60}	1.50	425.10	424.77	1.00	424.15	423.77	0.83	422.94	3.00	419.94	I-8 / 424.15
SWM#3 (M-6)	1.00	433.50	432. 50	4 32.25	1.50	430. 75	430.42	1.00	429.75	429.42	0.83	428.59	3.00	425.59	I-1/ 429.65

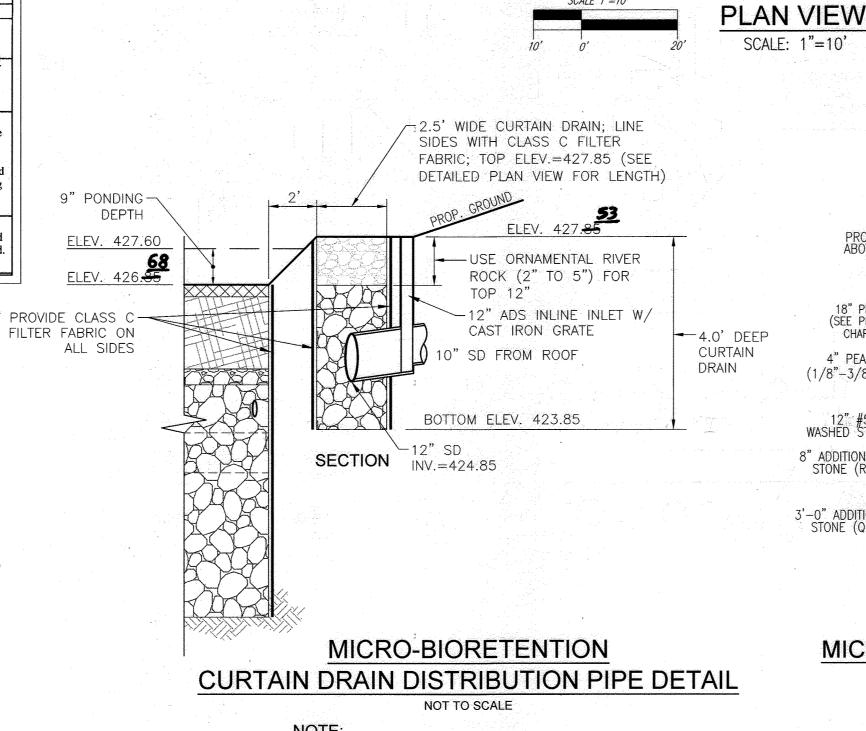
Table B.4.1 Materials S	pecifications for Micro-Bioret	ention, Rain Gardens &	Landscape Infiltration-
Vaterial	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f' _c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand

OPERATION AND MAINTENANCE SCHEDULE FOR LANSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

	The state of the s
APPROVED: HOWARD COUNTY DEPARTMENT OF F	PLANNING AND ZONING 5/31/2022
CHIEF, DEVELOPMENT BY ENGINEERING DIVISION	DATE 5/31/2022
CHIEF, DIVISION OF AZEMAND DEVELOPMENT Any Gronan	DATE 6/1/2022

DIRECTOR ___5B4D5DD9470C4D4.



1. THIS DETAIL IS FOR THE CURTAIN DRAINS WITHIN MICRO-BIORETENTION AREA SWM#1 ONLY

INEET W/ 12"
CAST IRON GRATE

CURTAIN

46LF 12" PERF.-HDPE FLEX PIPE @ 0.0%

MICRO-BIO

MBR (M-6)

TOP=427.85

CO 4" PVC>

8 INV. 424 10

CO 9" PVC 12

L15" HDPE 18LF

DIN. 424 19

INV.42424

0000 4" PVC

CO 4" PVC 1NV. 424 18

INV.42417

/ HDPE SOLID PIPE

4" PERF. PVC UNDERDRAIN SYSTEM 129LF 28.50

INV. 42412

PLAN VIEW SCALE: 1"=10' COLUMBIA ASSOCIATION INC. C/O ALBERT F. EDWARDS 10221 WINCOPIN CIRCLE COLUMBIA, MD 21044 ROUND PLASTIC-ATRIUM GRATE 3" MULCH-LAYER ELEV. B-ELEV. B ELEV. C-ELEV. 18" PLANTING SOIL (SEE PLANTING SOIL 18" PLANTING SOIL (SEE PLANTING SOIL CHARACTERISTICS) PROVIDE FILTER
FABRIC (SIDE ONLY) CHARACTERISTICS) -PROVIDE FILTER — 4"-6" OVERFLOW DISTRIBUTION PIP -4" SOLID PVC 4" PEA GRAVEL-4" PEA GRAVEL-(1/8"-3/8" STONE)(1/8"-3/8" STONE)- HDPE OUTFALL - PERF PIPE THROUGH STONE 12" #57 WASHED STONE RESEVOIR 8" ADDITIONAL STONE (REV) 8" ADDITIONAL STONE (REV) 25% ESDv @ 40% VOIDS 3'-0" ADDITIONAL STONE (Q10) 3'-0" ADDITIONAL STONE (Q10) ELEV. H TO OUTFALL MICRO-BIORETENTION (OVERFLOW) NOT TO SCALE

OVERFLOW — DISTRIBUTION

SWM#2 — GABION FOREBAY

PE WITH DOME

MICRO-BIO

MBR (M-6)

AS-BUILT CERTIFICATION FOR PSWM

EREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN AS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND

MPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. AVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

SCALE 1"=10'

12" ADS INLINE | 7

TOP=427.85

CAST IRON GRATE

MICRO-BIORETENTION (UNDERDRAIN)

MICRO-BIORETENTION NOTES:

- ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC.
 FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETATION
 WILL CAUSE THE MBR TO FAIL, AND THERFORE SHALL NOT BE INSTALLED.

 2. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.

 3. PROVINCE F. HARDWARE CLOTH.

 4. PROVINCE F. MICROBIOLOGY.

 4. PROVINCE F. MICROBIOLOGY.

 4. PROVINCE F. MICROBIOLOGY.

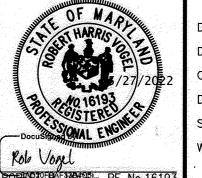
 4. PROVINCE F. MICROBIOLOGY.

 5. PROVINCE F. MICROBIOR.

 5. PROVINCE F. MICROBIOR.

 6. PROVINCE F. MICROBIOR.

 7. PR
- MINIMUM SPACING BETWEEN UNDERDRAIN AND PERFORATED PIPE THROUGH STONE RESIVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)



OWNER

(410) 381-3551

TAX MAP 30 GRID 19 TAX MAP 36 GRID 1 5TH ELECTION DISTRICT

OCTOBER 2021 41539 W.O. NO.: 21 SHEET 27

SITE DEVELOPMENT PLANS

STORMWATER MANAGEMENT NOTES AND DETAILS

MICRO-BIORETENTION

ROSLYN RISE VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8

COLUMBIA, MD 21044

VOGEL ENGINEERING

TIMMONS GROUP

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com

OWNER/DEVELOPER

C/O MACKÉNZIE KIESEL 875 HOLLINS STREET, SUITE 202 BALTIMORE, MD 21201

(410) 230-2117

ZONED: N LOTS 7 & 8, PARCEL 272 LOT 5, PARCEL 8 HOWARD COUNTY, MARYLANI

SDP-21-030

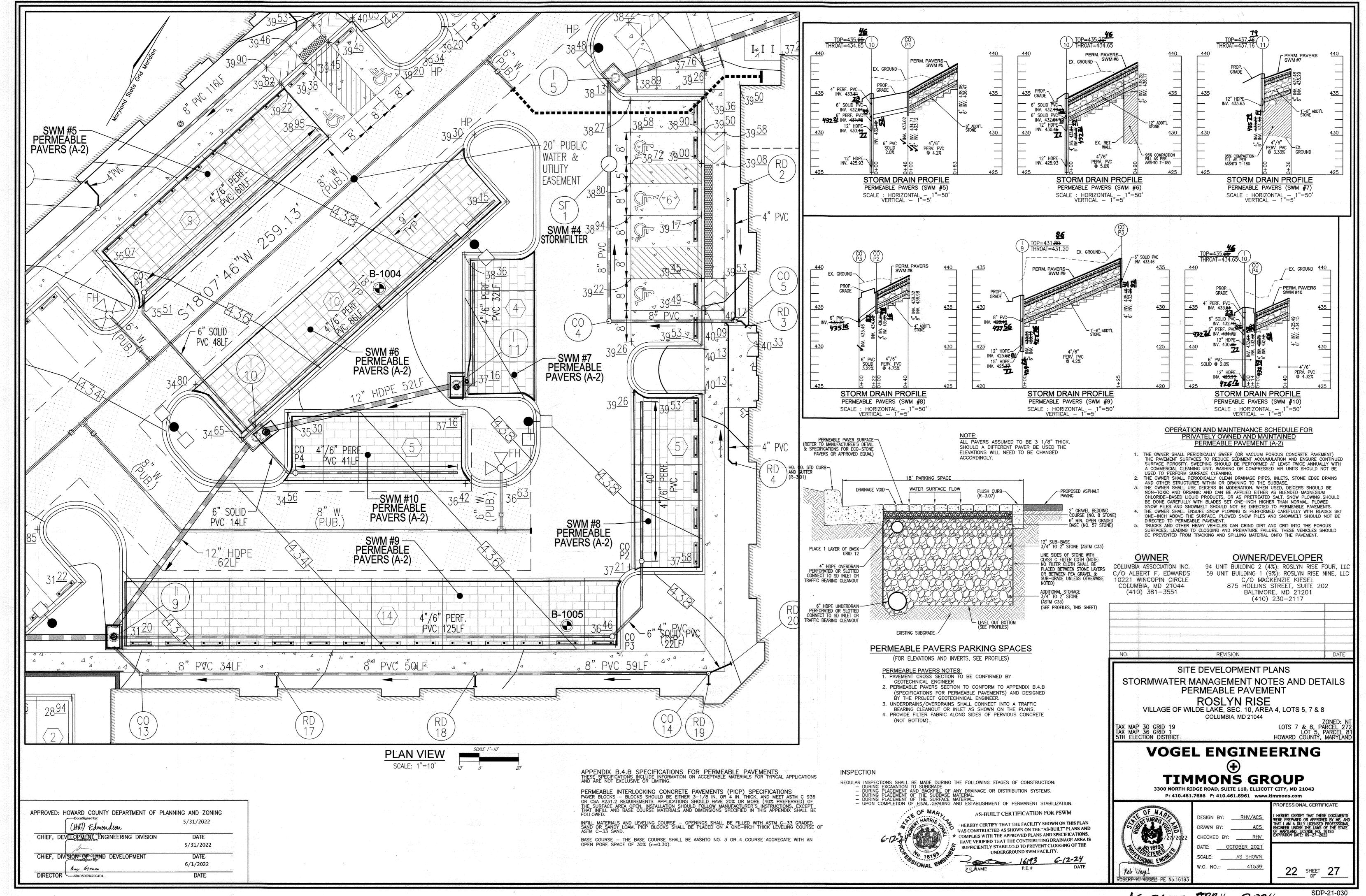
94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LL 59 UNIT BUILDING 1 (9%): ROSLYN RISE NINE, LLC

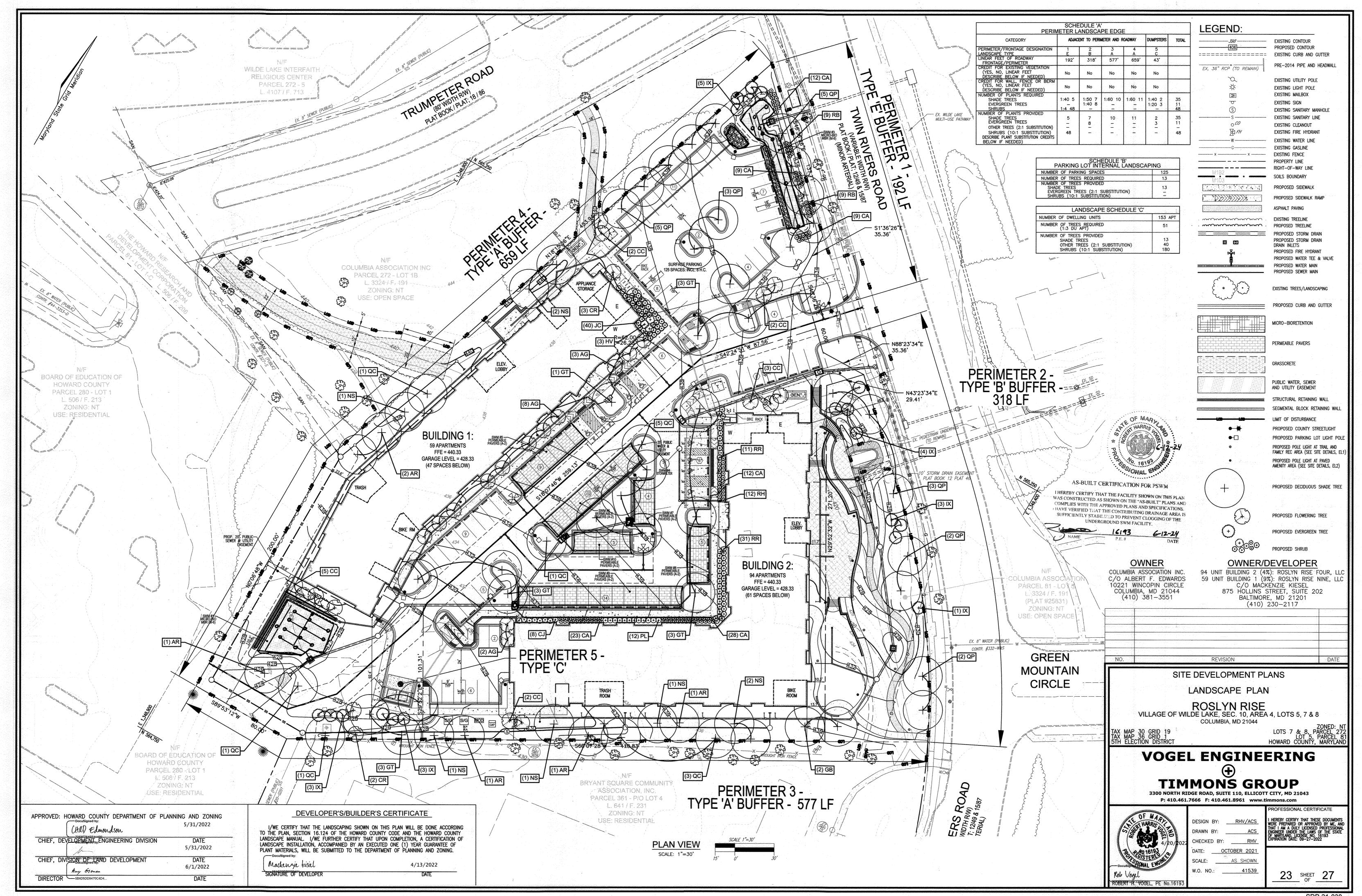
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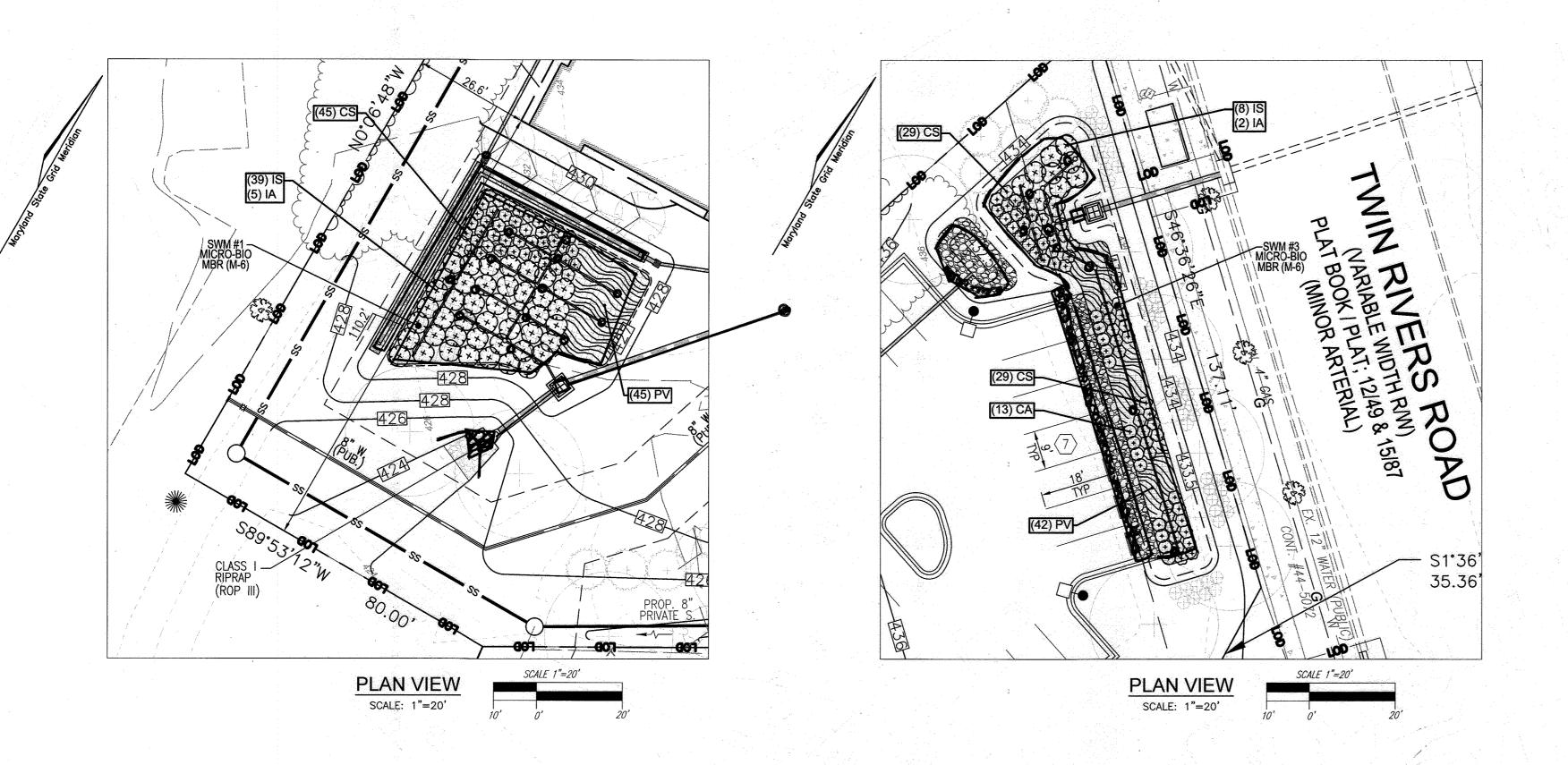
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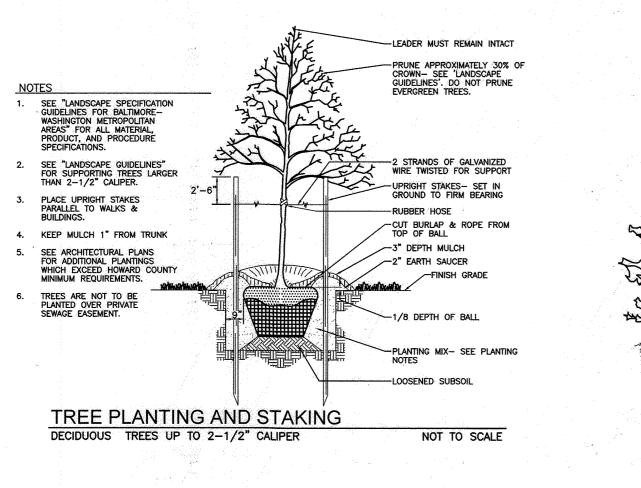


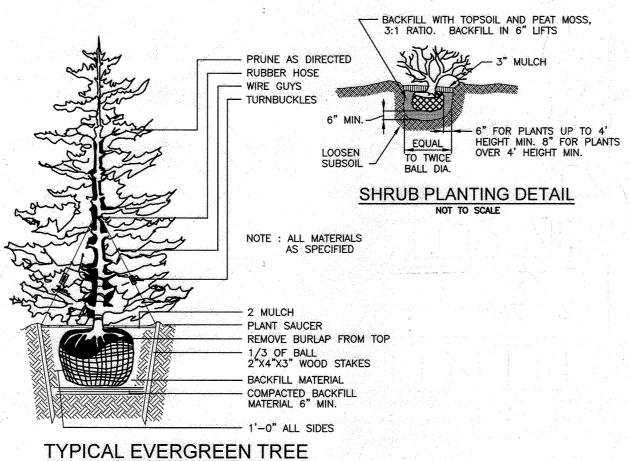




DECIDUOUS TREES	KEY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
6	AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.		STRONG SINGLE LEADER/SPECIMEN
2	GB	GINKGO BILOBA `AUTUMN GOLD` TM	AUTUMN GOLD MAIDENHAIR TREE	2.5" CAL.		
13	GT	GLEDITSIA TRIACANTHOS INERMIS "SHADEMASTER"	SHADEMASTER LOCUST	3" CAL.		STRONG SINGLE LEADER/SPECIMEN
8	NS	NYSSA SYLVATICA	SOUR GUM	3" CAL.		STRONG SINGLE LEADER/SPECIMEN
12	QC	QUERCUS COCCINEA	SCARLET OAK	3" CAL.		STRONG SINGLE LEADER/SPECIMEN
20	QP	QUERCUS PHELLOS	WILLOW OAK	3" CAL.		STRONG SINGLE LEADER/SPECIMEN
EVERGREEN TREES	KEY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
19	IX	ILEX X 'NELLIE R, STEVENS'	NELLIE R. STEVENS HOLLY	12` HT.		SINGLE STRONG LEADER/SPECIMEN
and the state of t						
ORNAMENTAL TREES	KEY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
13	AG	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`	AUTUMN BRILLIANCE SERVICEBERRY	14` HT		MULISTEMMED SPECIMEN
14	СС	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	10` HT.		SPECIMEN
5	CR	CORNUS X RUTGERSENSIS `RUTGAN` TM	STELLAR PINK DOGWOOD	1.75" CAL.		SINGLE STRONG LEADER/SPECIMEN
					A Charles and A Charles	
SHRUBS	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
93	CA	CLETHRA ALNIFOLIA `HUMMINGBIRD`	SUMMERSWEET	2` HT.	36" o.c.	MIN. 4 CANES
12	PL	PRUNUS LAUROCERASUS "OTTO LUYKEN"	OTTO LUYKEN LAUREL	3` HT.	48" o.c.	MIN. 5 CANES
18	RB	RHODODENDRON X `BLAAUW`S PINK`	BLAAUW`S PINK AZALEA	2` HT.	36" o.c.	MIN. 4 CANES
42	RR	ROSA 'RADRAZZ' KNOCK OUT	SHRUB ROSE	2` HT.	30" o.c.	MIN. 5 CANES
8	CJ	CAMELLIA JAPONICA `APRIL REMEMBERED` TM	APRIL REMEMBERED ICE ANGELS CAMELLIA	3` HT.	48" o.c.	MIN. 5 CANES
12	RH	RHODODENDRON X 'HINO-CRIMSON'	HINO-CRIMSON KURUME AZALEA	1.5` HT.	36" o.c.	MIN. 4 CANES
3	ΗV	HAMAMELIS VERNALIS `SANDRA`	SANDRA OZARK WITCHHAZEL	4° HT.	72" o.c.	MIN. 5 CANES
40	JC	JUNIPERUS CHINENSIS 'SARGENTII'	SARGENT JUNIPER	2` HT.	48" o.c.	MIN. 4 CANES

SHRUBS	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
103	CS	CORNUS SERICEA `ARCTIC FIRE`	ARCTIC FIRE DOGWOOD	3` HT.	36" o.c.	MIN. 5 CANES
47	IS	ILEX VERTICILLATA `SPARKLEBERRY`	WINTERBERRY	3° HT.	60" o.c.	MIN. 5 CANES
7 .	IA	ILEX VERTICILLATA `APOLLO`	APOLLO HOLLY	3` HT.	60" o.c.	MIN. 5 CANES
13	CA	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SUMMERSWEET	2° HT.	36" o.c.	MIN. 4 CANES
	· · · · · · · · · · · · · · · · · · ·	aragan ngangangan mang ng ngapang tinti patat ini ana anta ini mag manana matika matiki atau ministraka.				Supergravity and the second se
PERENNIALS	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
87	PV	PANICUM VIRGATUM 'PRAIRE FIRE'	RED SWITCH GRASS	#1	36" o.c.	





PLANTING DETAIL NOT TO SCALE

LANDSCAPE SCHEDULE NOTES:

- 1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS, BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, 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 SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

 2. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

 3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.

 4. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.

 5. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.

 6. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

GENERAL NOTES:

- 1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.

 2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN IN THE AMOUNT OF \$73,700.00 FOR THE REQUIRED 61. SHAPE TREES. 51. DV/CROPLED & FLOWERING.
- OF \$32,790.00 FOR THE REQUIRED 61 SHADE TREES, 51 EVERGREEN & FLOWERING TREES, AND 228 SHRUBS. THE DEVELOPER IS THE RESPONSIBLE PARTY FOR THE LANDSCAPING ON BOTH LOTS.

 3. THE WILDE LAKE RESIDENT ARCHITECTURAL COMMITTEE RECOMMENDED THAT THE APPLICATION TO REDEVELOP ROSLYN RISE BE APPROVED AS SUBMITTED ON APRIL 20, 2021.

OWNER COLUMBIA ASSOCIATION INC. C/O ALBERT F. EDWARDS 10221 WINCOPIN CIRCLE

COLUMBIA, MD 21044 (410) 381-3551

OWNER/DEVELOPER 94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LLC 59 UNIT BUILDING 1 (9%): ROSLYN RISE NINE, LLC

C/O MACKENZIE KIESEL 875 HOLLINS STREET, SUITE 202 BALTIMORE, MD 21201 (410) 230-2117

REVISION SITE DEVELOPMENT PLANS

LANDSCAPE PLAN NOTES & DETAILS

ROSLYN RISE
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8 COLUMBIA, MD 21044

LOTS 7 & 8, PARCEL 27 LOT 5, PARCEL 8 HOWARD COUNTY, MARYLAN **VOGEL ENGINEERING**

TIMMONS GROUP 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: DRAWN BY: CHECKED BY: DATE: OCTOBER 2021 SCALE: AS SHOWN W.O. NO.:

24 SHEET 27

AS-BUILT CERTIFICATION FOR PSWM

CHEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PL	ANNING AND ZONING 5/31/2022
CHIEF, DEVELORMENT BY ENGINEERING DIVISION	DATE 5 (21 (2022)
	5/31/2022

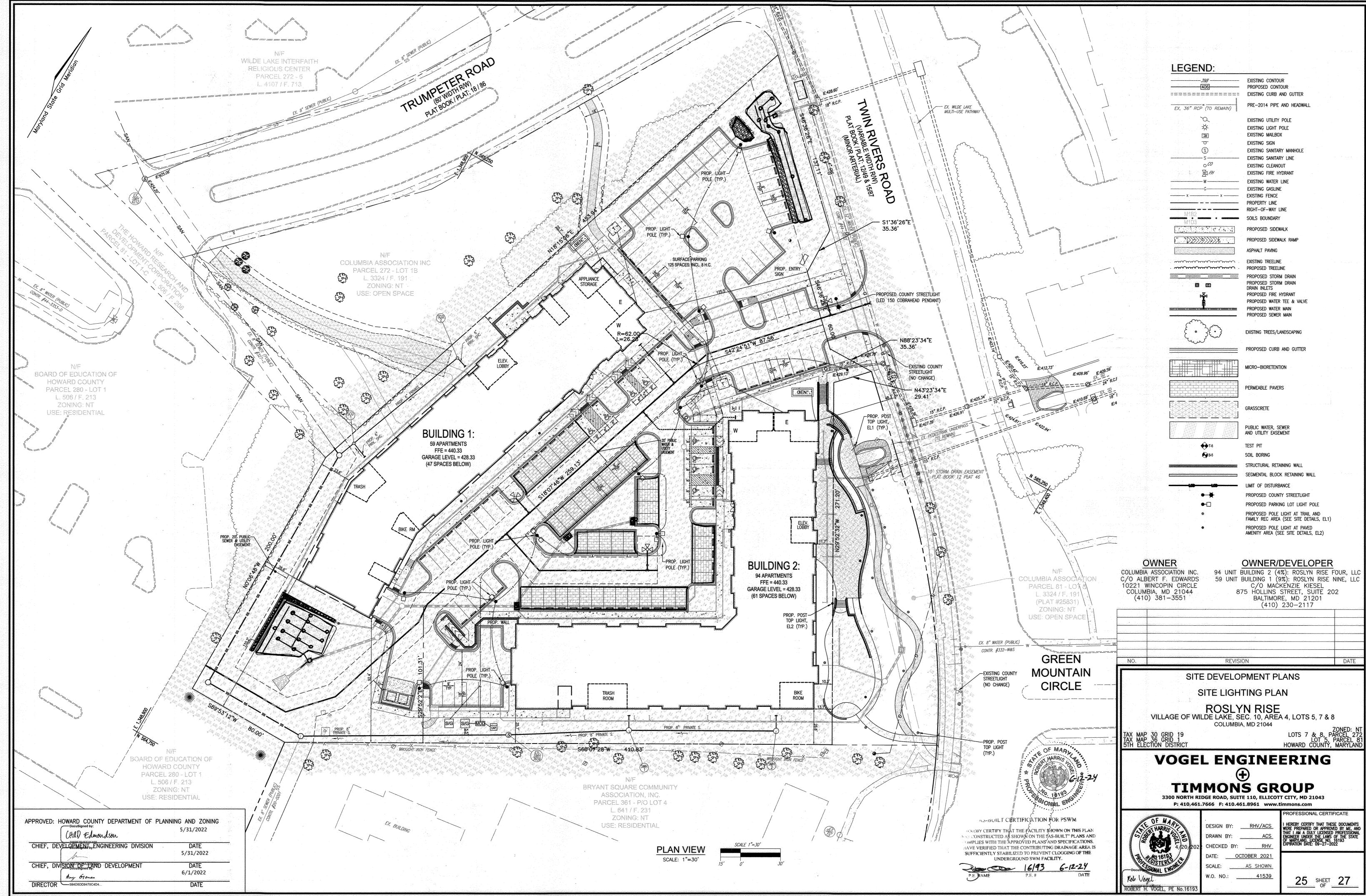
CHIEF, DIVISIONET DEVELOPMENT DATE 6/1/2022

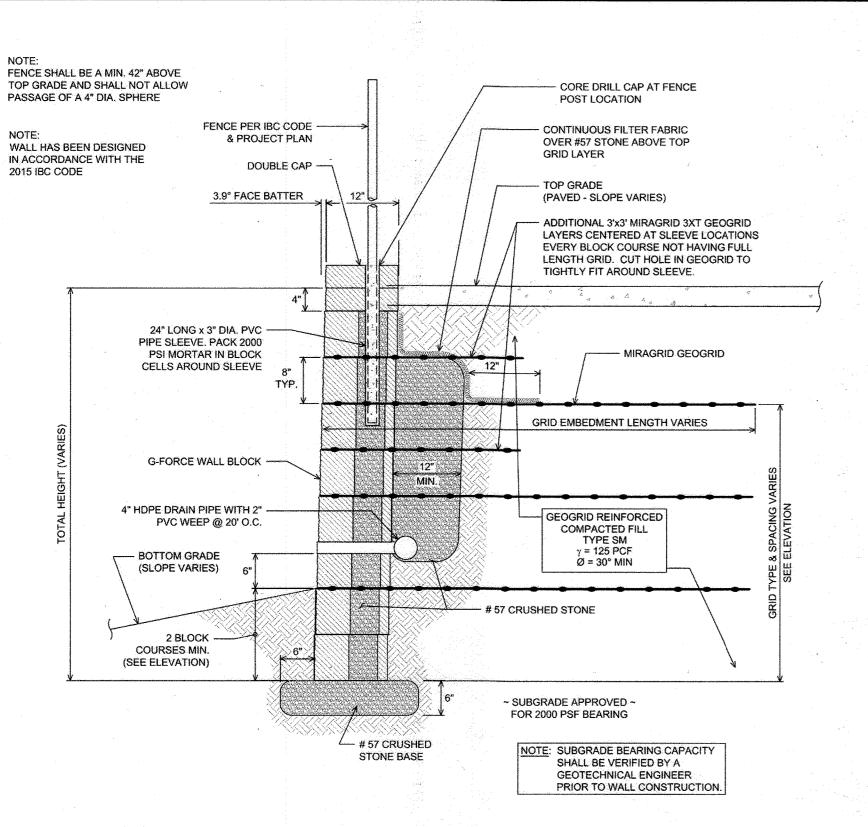
DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

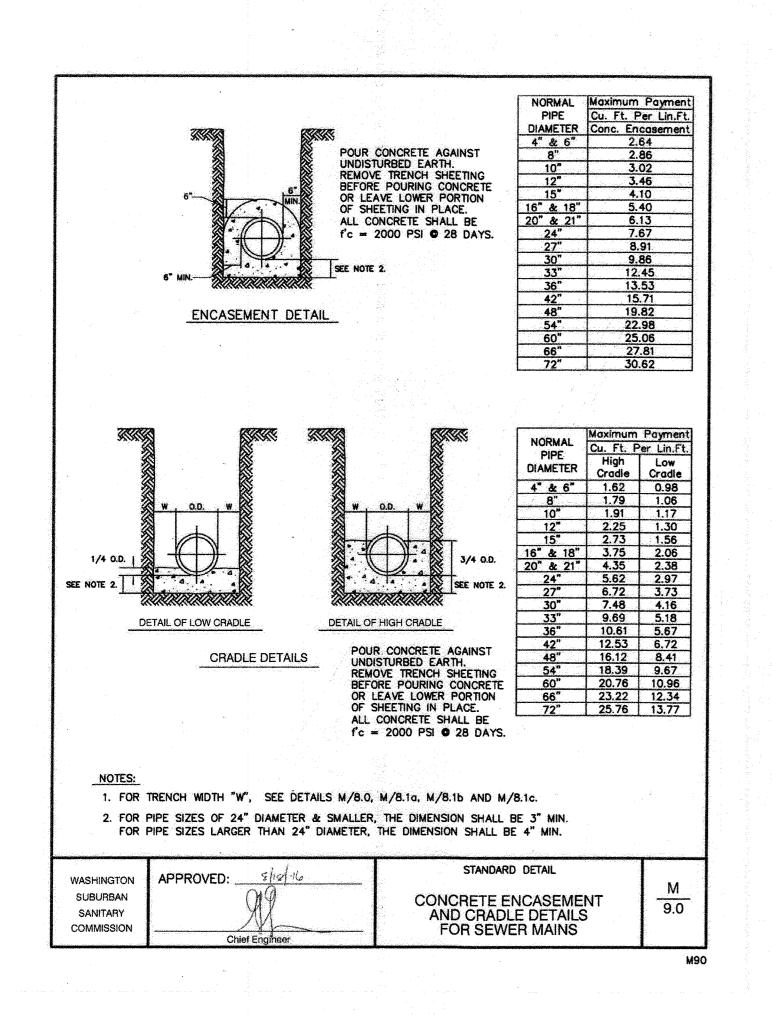
Mackenzie kisiel SIGNATURE OF DEVELOPER

4/13/2022





TYPICAL WALL SECTION



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 5/31/2022 (HD) Edmondson CHIEF, DEVELOPMENT, ENGINEERING DIVISION 5/31/2022 CHIEF, DIVISION OF ATTAIND DEVELOPMENT 6/1/2022 DIRECTOR —584D5DD9470C4D4

- NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIV.) CERTIFIED SOILS TECHNICIAN.
- ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL. COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
- THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
- WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD CO. RIGHT-OF-WAY OR EASEMENT.

SPECIFICATIONS

SEGMENTAL CONCRETE BLOCK RETAINING WALL

1.01 DESCRIPTION

- A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A SEGMENTAL RETAINING WAL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES. GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE
- B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT FACING SYSTEM, UNIT DRAINAGE FILL AND REINFORCED BACKFILL TO THE LINES AND GRADES SHOWN ON THE
- C. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND ENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.

1.02 DELIVERY, STORAGE AND HANDLING

CONSTRUCTION DRAWINGS

- A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
- B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE

PART 2: PRODUCTS 2.01 SEGMENTAL CONCRETE RETAINING WALL UNITS

A. SEGMENTAL CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS: FACE COLOR - COLOR MAY BE SPECIFIED BY THE OWNER. FACE FINISH - COLOR MAY BE SPECIFIED BY THE OWNER. BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT IN VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED

EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 20 FEET UNDER DIFFUSED LIGHTING

- B SEGMENTAL CONCRETE UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
- C. SEGMENTAL CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING & TESTING CONCRETE MASONRY UNITS.

COMPRESSIVE STRENGTH = 3000 PSI MINIMUM; ABSORPTION = 8% MAXIMUM (6% MAXIMUM IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES: DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL LINIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE ± 1/6" FROM NOMINAL UNIT HEIGHT, UNIT SIZE - 8" (H) X 18" (W) X 11 7/16" (D) MINIMUM FOR G-FORCE UNITS; 8" (H) X 18" (W) X 2" (D) MINIMUM FOR COMPAC III UNITS; JUNIT SIZE - 8" (H) X 18" (W) X 18" (D) MINIMUM FOR STANDARD UNITS.]

INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE. [GEOGRID/UNIT PEAK CONNECTION STRENGTH - 1000 PLF

D. SEGMENTAL CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS:

VERTICAL SETBACK = 1/8"± PER COURSE (NEAR VERTICAL) OR [3.9° FACE BATTER] PER TYPICAL WALL SECTION; ALIGNMENT AND GRID ATTACHING MECHANISM -BERGLASS PINS, TWO PER UNIT MINIMUM; MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2

2.02 SHEAR AND REINFORCEMENT PIN CONNECTORS

- SHEAR AND REINFORCEMENT PIN CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN PULTRUDED FIBERGLASS REINFORCEMENT RODS OR FOLIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS AND GEOSYNTHETIC REINFORCEMENT WITH THE FOLLOWING REQUIREMENTS: FLEXURAL STRENGTH IN ACCORDANC WITH ASTM D4476: 128 000 PSI MINIMUM: SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475: 6,400 PSI
 - B. SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE

SEOGRID IN THE PROPER DESIGN POSITION DURING GRID

2.03 BASE LEVELING PAD MATERIAL

PRE-TENSIONING AND BACKFILLING.

A. MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED STONE BASE OR CONCRETE AS SHOWN ON THE

2.04 UNIT DRAINAGE FILL A. UNIT DRAINAGE FILL SHALL CONSIST OF #57 CRUSHED

2.05 REINFORCED BACKFILL A. REINFORCED BACKFILL SHALL BE TYPE SM, FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D422 AND MEET OTHER

OPERTIES SHOWN ON	THE PLAN:		
SIEVE SIZE	PERCENT PASSING		
1 1/2 INCH	100		
3/4 INCH	100-75		
NO. 40	0-60		

PLASTICITY INDEX (PI) <15 AND LIQUID LIMIT <40, PER ASTM

- . MATERIAL CAN BE SITE EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGHLY PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE REINFORCED SOIL
- C. CONTRACTOR SHALL SUBMIT REINFORCED FILL SAMPLE AND LABORATORY TEST RESULTS FOR APPROVAL PRIOR TO THE USE OF ANY REINFORCED BACKFILL MATERIAL.

2.06 GEOGRID SOIL REINFORCEMENT

A GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER (PET)

2.07 DRAINAGE PIPE

A. THE DRAINAGE PIPE SHALL BE PERFORATED CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM

2.08 GEOTEXTILE FILTER FABRIC A. WHEN REQUIRED, FILTER FABRIC SHALL BE A NEEDLE-PUNCHED NONWOVEN FABRIC MEETING

REQUIREMENTS OF AASHTO M288. PART 3 EXECUTION

3.01 EXCAVATION

A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTING AND APPROVING THE SUBGRADE PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.

- A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE
- B. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE
- C. COMPACT TO MINIMUM 95% OF STANDARD PROCTOR

DENSITY PER ASTM D698. 3.03 SEGMENTAL UNIT INSTALLATION

- A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL CONTACT WITH THE BASE AND PROPERLY SEATED.
- B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH
- MANUFACTURER'S RECOMMENDATIONS. C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
- D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. NOT LESS THAN 1.3 CU. FT. OF DRAINAGE FILL SHALL BE USED FOR EACH SQ. FT. OF WALL FACE, UNLESS NOTED OTHERWISE
- E. PLACE AND COMPACT REINFORCED BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH BACKFILL.
- MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT

AND COMPACTION, SHALL NOT EXCEED TWO COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL

B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE

TO BACKFILL PLACEMENT ON THE GEOGRID.

C. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE SEGMENTAL WALL UNIT PINS AND WITHIN 1 INCH OF THE FACE OF THE UNITS. PLACE THE NEXT COURSE OF SEGMENTAL CONCRETE UNITS OVER THE GEOGRID. THE GFOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR

D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH

LEVEL SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS GREATER THAN 2 INCHES BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT

3.05 REINFORCED BACKFILL PLACEMENT

- A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE EVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE TO GEOGRID.
- B. REINFORCED BACKEILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- C. REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF HE MAXIMUM DENSITY AS DETERMINED BY ASTM D698. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE + 0% TO - 3% OF OPTIMUM.
- D. ONLY LIGHTWEIGHT HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE
- BACK OF THE SEGMENTAL CONCRETE UNIT E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TRACKS FROM DISPLACING THE FILL AND DAMAGING OR DISPLACING THE SEGMENTAL CONCRETE UNITS OR
- F. RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH.
- SUDDEN BRAKING AND TURNING SHALL BE AVOIDED. G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM

ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION

3.06 CAP INSTALLATION

- A. PRIOR TO PLACEMENT OF CAP UNITS, THE UPPER SURFACE OF THE TOP COURSE WALL UNITS SHALL BE CLEANED OF SOIL AND ANY OTHER MATERIAL.
- B. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER EXTERIOR CONSTRUCTION ADHESIVE RECOMMENDED BY THE MANUFACTURER.

3.07 FIELD QUALITY CONTROL

- A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.
- B. AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, RETAINED SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND

TYPICAL CONCRETE GRAVITY WALL NOTES

"NO-FINES" CONCRETE SPECIFICATION

"NO-FINES" CONCRETE IS A PERMEABLE CONCRETE MASS THAT IS MADE BY ELIMINATING THE FINE AGGREGATE COMPONENT IN CONCRETE WHICH CREATES A SIGNIFICANT VOID STRUCTURE WITHIN THE CONCRETE. THE MATERIAL IS PLACED IN A SEMI-LIQUID STATE AND ALLOWED TO HARDEN IN PLACE WITH MINIMAL COMPACTION AND PLACEMENT WORK AS REQUIRED TO LEVEL MATERIAL AND FILL ALL

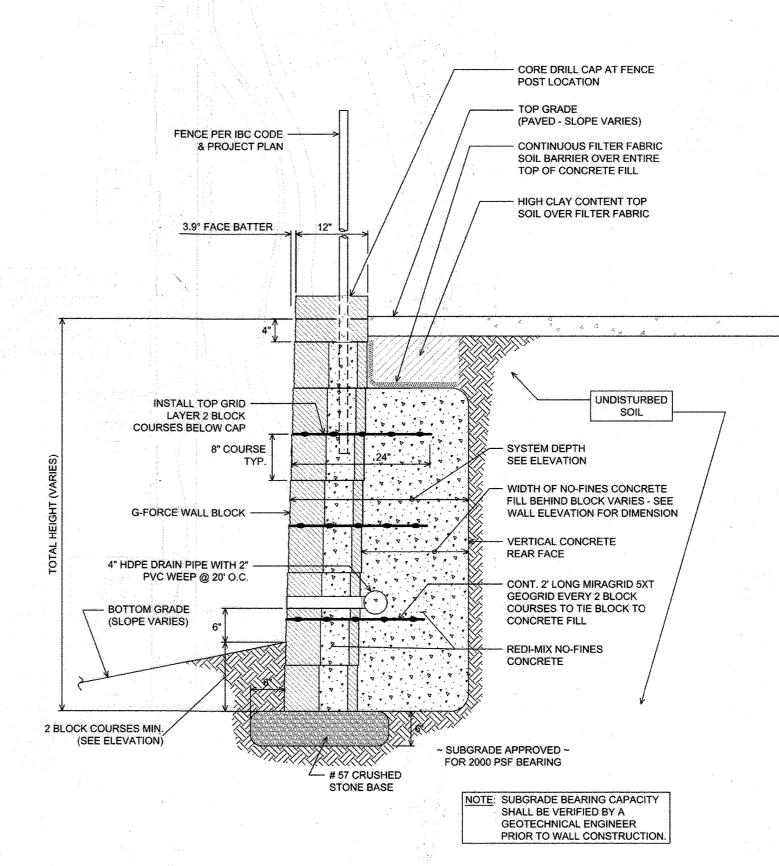
"NO-FINES" CONCRETE SHALL CONSIST OF PORTLAND CEMENT, WATER AND 1/2" - 3/4" COARSE AGGREGATE, FLY ASH MAY ALSO BE USED AS PART OF THE MIX DESIGN AS REQUIRED. THE CONCRETE SHALL BE MIXED BY MACHINE AND THE QUANTITY OF WATER USED SHALL NOT EXCEED THAT REQUIRED TO COMPLETELY COAT ALL THE AGGREGATE PARTICLE WITHOUT FORMING EXCESSIVE GROUT.

"NO-FINES" CONCRETE INSTALLATION STEPS

- SUBGRADE SHALL BE CLEAN AND FIRM BEFORE PLACING CONCRETE.
- PLACE CONCRETE IN 16" (2 BLOCK COURSE) LIFTS, FILLING ALL VOIDS IN BLOCK - ROD CONCRETE AS NEEDED TO CONSOLIDATE.
- 3. PLACE GEOGRID TIES EVERY 2 BLOCK COURSES IN-BETWEEN CONCRETE LIFTS.
- 4. WAIT SEVERAL HOURS BETWEEN CONCRETE LIFTS TO ALLOW CONCRETE TO SUFFICIENTLY HARDEN.

TYPICAL MIX DESIGN

- CEMENT PORTLAND CEMENT, TYPE 1 OR II, ASTM C150
- AGGREGATE NO. 57 OR NO. 6 STONE OR **EQUIVALENT, ASTM C33**
- AGGREGATE/CEMENT RATIO APPROX 6:1 BY WEIGHT
- WATER/CEMENT RATIO 0.35 TO 0.45 BY WEIGHT
- IN-PLACE VOID RATIO 20% 30%
- IN-PLACE UNIT WEIGHT = 110 TO 130 LBS/CF
- COMPRESSIVE STRENGTH 2,000 PSI NOMINALLY @ 28 DAYS

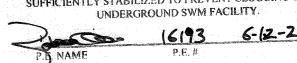


TYPICAL "NO-FINES" WALL SECTION STA. 1+10 TO 1+40 N.T.S.



AS-BUILT CERTIFICATION FOR PSWM

HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE



NO AS-BUILT INFORMATION ON THIS SHEET

COLUMBIA, MD 21044

(410) 381-3551

OWNER OWNER/DEVELOPER COLUMBIA ASSOCIATION INC. 94 UNIT BUILDING 2 (4%): ROSLYN RISE FOUR, LL C/O ALBERT F. EDWARDS 59 UNIT BUILDING 1 (9%): ROSLYN RISE NINE, LLC 10221 WINCOPIN CIRCLE

C/O MACKENZIE KIESEL 875 HOLLINS STREET, SUITE 202 BALTIMORE, MD 21201 (410) 230-2117

REVISION SITE DEVELOPMENT PLANS

RETAINING WALL CONSTRUCTION DETAILS **ROSLYN RISE**

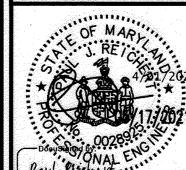
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8 COLUMBIA, MD 21044

TAX MAP 30 GRID 19 TAX MAP 36 GRID 1 5TH ELECTION DISTRICT

HILLIS-CARNES ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, Maryland

(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098



PAUL REICHERT, PE No.002892

DATE: <u>SEPTEMBER 2021</u> AS SHOWN SCALE:

W.O. NO.:

REREDI CERTIFY THAT THESE DOCUMENTS
REE PREPARED OR APPROVED BY ME, AN
IAT I AM A DULY LICENSED PROFESSIONA
IGINEER UNDER THE LAWS OF THE STATE
MARYLAND, LICENSE NO. 0028925
PIRATION DATE: 01-15-2022

26 SHEET 27

SDP-21-030

HOWARD COUNTY, MARYLA

DocuSign Envelope ID: FDEEE9E4-DADA-44C3-AA0E-521D23D4F2DA