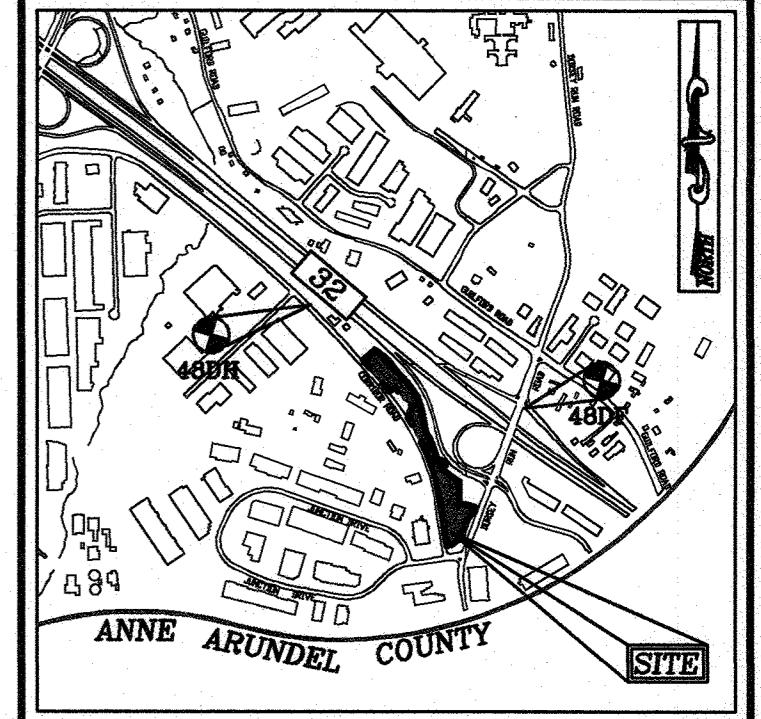


# ENVIRONMENTAL CONCEPT PLAN CORRIDOR ROAD APARTMENTS CORRIDOR ROAD JESSUP, MARYLAND 21029

**BENCHMARKS**  
 HOWARD COUNTY BENCHMARK 48DH  
 N 533,615.373 E 1,368,378.454 ELEV.: 220.082'  
 HOWARD COUNTY MONUMENT  
 HOWARD COUNTY BENCHMARK 48DF  
 N 532,537.544 E 1,370,606.737 ELEV.: 229.422'  
 HOWARD COUNTY MONUMENT



**VICINITY MAP**  
 SCALE: 1"=2000'  
 ADC MAP: 5052 PAGE: 41 GRID: B6

**LEGENDS:**  
 - - - - - PARCEL BOUNDARY  
 - - - - - ADJACENT BOUNDARY  
 - - - - - RIGHT-OF-WAY  
 - - - - - STRUCTURE AND USES (EXCEPT SURFACE PARKING) SETBACK  
 - - - - - SURFACE PARKING SETBACK

SHEET INDEX	
DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 6
ESDV CONCEPT PLAN	2-4 OF 6
STORMWATER MANAGEMENT DRAINAGE AREA MAP, NOTES & DETAILS	5 OF 6
STORMWATER MANAGEMENT NOTES & DETAILS	6 OF 6

**GENERAL NOTES**

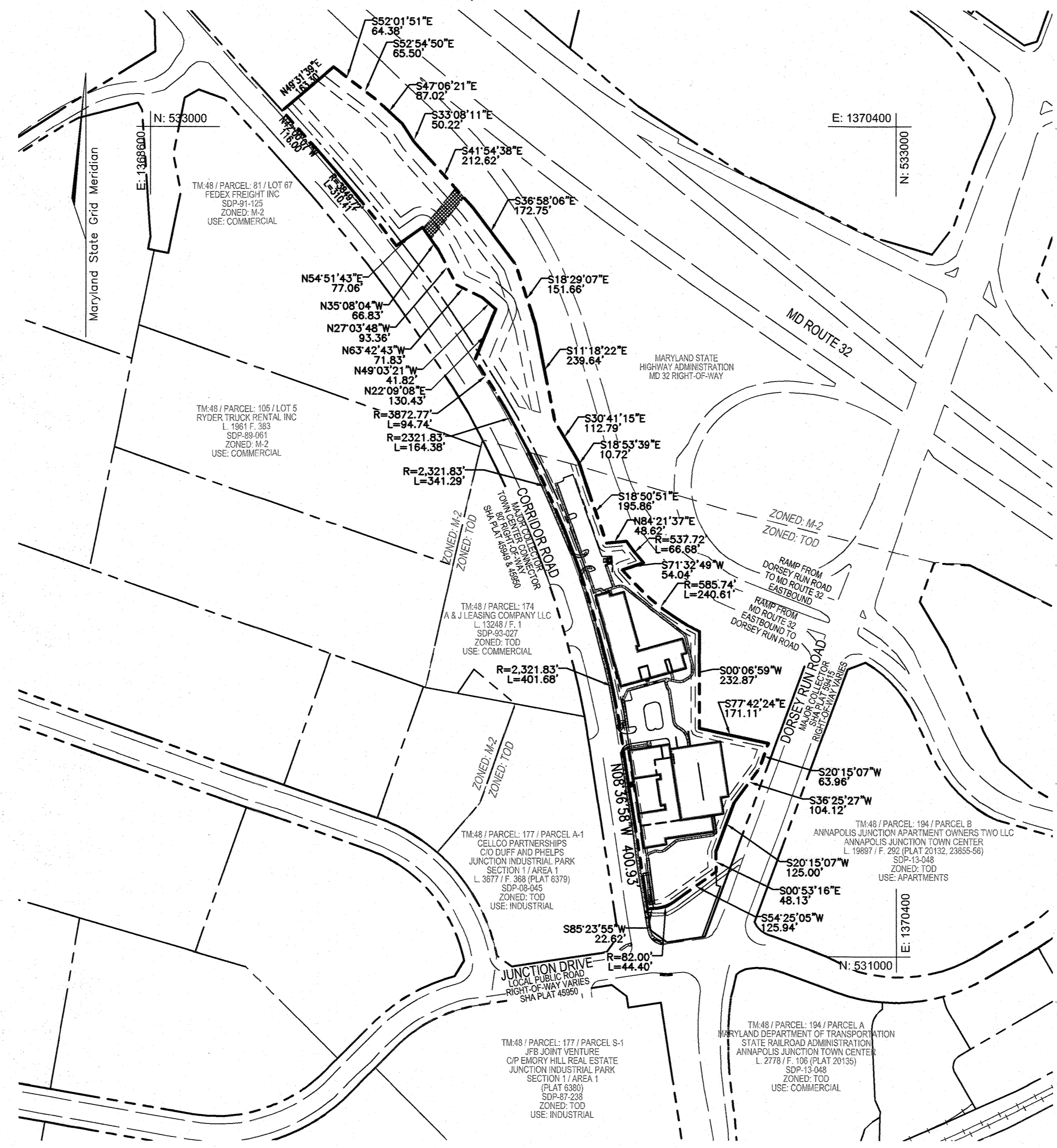
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON SURVEY CONDUCTED BY VOGEL ENGINEERING + TIMMONS GROUP, INC. DATED JANUARY 14, 2022 AND HOWARD COUNTY GIS.
- BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON A SHA PLAT.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 48DH AND 48DF WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED "TOD" & "M-2" IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAMS, WETLAND BUFFERS, STREAM BUFFERS OR STEEP SLOPES BESIDES THOSE APPROVED AS ALTERNATIVE COMPLIANCE.
- THERE IS AN INTERMITTENT STREAM ON-SITE.
- THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON-SITE.
- STEEP SLOPES (>25%) OVER 20,000 SF CONTIGUOUS ARE NOT LOCATED ON-SITE.
- FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE ADDRESSED BY A FOREST CONSERVATION PLAN SUBMITTED WITH THE FUTURE SITE DEVELOPMENT PLAN.
- THE FORESTS, WETLANDS, WETLAND BUFFER AND STREAM BUFFER SHOWN ON-SITE ARE BASED ON ENVIRONMENTAL REPORT BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, DATED MARCH 9, 2023.
- GEOTECHNICAL INVESTIGATIONS SHALL BE COMPLETED AND SUBMITTED WITH THE SITE DEVELOPMENT PLANS.
- A NOISE STUDY WILL BE COMPLETED AND SUBMITTED WITH THE SITE DEVELOPMENT PLANS.
- GULFORD ROAD IS CLASSIFIED AS A MAJOR COLLECTOR. DORSEY RUN ROAD IS CLASSIFIED AS A MAJOR COLLECTOR. CORRIDOR ROAD IS CLASSIFIED AS MAJOR COLLECTOR.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF MICRO-SCALE AND STRUCTURAL PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. THESE PRACTICES INCLUDE TWO (2) MICRO-BIORETENTION FACILITIES (M-6), ONE (1) FILTERRA FACILITY, AND THREE (3) BIORETENTION FACILITIES (F-6). THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE SITE DEVELOPMENT PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
- ANTICIPATED ALTERNATIVE COMPLIANCE REQUESTS: DISTURBANCE TO THE WETLANDS, WETLAND BUFFER, STREAM AND STREAM BUFFER, SPECIMEN TREES (4).

**ENVIRONMENTAL SITE DESIGN NARRATIVE:**

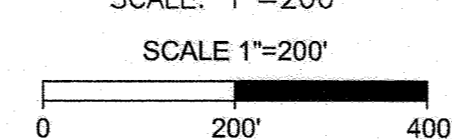
- THERE ARE ENVIRONMENTAL FEATURES LOCATED THROUGHOUT THE SITE. THERE ARE THREE FOREST STANDS ON-SITE AND A WETLAND TO THE EAST OF THE STREAM THAT RUNS THROUGH THE CENTER OF THE SITE FROM NORTH TO SOUTH. THE STREAM DISCHARGES TO AN EXISTING INLET. EIGHT (8) SPECIMEN TREES WERE LOCATED ON-SITE. THERE IS PROPOSED DISTURBANCE TO FOUR (4) FOREST SPECIMEN TREES, WETLAND AND WETLAND BUFFER AS WELL AS THE STREAM BUFFER.
- THE SITE NATURALLY SLOPES BOTH TO THE WEST AND EAST FROM A CENTRAL RIDGE THAT RUNS ALONG THE PROPERTY. A DEGRADED STREAM FLOWS FROM THE CORRIDOR ROAD DISCHARGE EAST THROUGH THE SITE TO A SHA STORM DRAIN SYSTEM. THIS STREAM RECEIVES THE DISCHARGE FROM THE INDUSTRIAL USES LOCATED ON THE WEST SIDE OF CORRIDOR ROAD. THE SITE HAS BEEN DESIGNED TO MAINTAIN THE NATURAL DRAINAGE PATTERNS, WITH NO CHANGES TO THE NATURAL DRAINAGE PATTERN.
- THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT TO THE MAXIMUM EXTENT PRACTICABLE (MEP). THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN FOR THIS PROJECT WILL REFLECT "WOODS IN GOOD CONDITION". THE ESD CONCEPT INCLUDES THE USE OF TWO (2) MICRO-BIORETENTION FACILITIES (M-6), ONE (1) FILTERRA FACILITY AND THREE (3) BIORETENTION FACILITY (F-6).
- SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF PROPOSED SUPER SILT FENCE, SILT FENCE PERIMETER CONTROLS. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT DURING THE FUTURE SITE DEVELOPMENT PLAN PHASE OF THE PROJECT.
- STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF TWO (2) MICRO-BIORETENTION FACILITIES (M-6), ONE (1) FILTERRA FACILITY AND THREE (3) BIORETENTION FACILITIES (F-6). PROPOSED PRACTICES HAVE BEEN MAXIMIZED TO THE EXTENT PRACTICAL. THE CALCULATED RAINFALL TARGET (PE) FOR THIS PROJECT IS 1.8", AND THE TOTAL RUNOFF VOLUME (ESDv) REQUIRED IS 15,471 CF. THE CALCULATED RAINFALL PROVIDED (PE) FOR THIS PROJECT IS 2.00", AND THE TOTAL RUNOFF VOLUME (ESDv) PROVIDED IS 15,812 CF.
- AT THIS CONCEPT STAGE OF DEVELOPMENT, ANTICIPATED ALTERNATIVE COMPLIANCE REQUESTS: DISTURBANCE TO THE WETLANDS, WETLAND BUFFER, STREAM AND STREAM BUFFER, SPECIMEN TREES (4).

**SITE ANALYSIS DATA CHART**

A. TOTAL SITE AREA:	8.32 AC.
B. TOD ZONE AREA:	4.63 AC.
C. M-2 ZONE AREA:	3.69 AC.
D. AREA OF PLAN SUBMISSION:	4.90 AC. (CONSTRUCTION LOD)
E. AREA OF WETLANDS AND BUFFERS:	6,246 SF OR 0.143 AC.
F. AREA OF FLOODPLAIN:	0.00 SF OR 0.00 AC.
G. AREA OF 50' STREAM BUFFER:	37,083 SF OR 0.85 AC.
H. AREA OF FOREST:	7.3 AC.
I. AREA OF MODERATE SLOPES (15%-24.99%):	0.00 SF OR 0.00 AC.±
J. AREA OF STEEP SLOPES (25% & GREATER):	0.00 SF OR 0.00 AC.±
K. ERODIBLE SOILS:	362,275 SF OR 8.32 AC.±
L. LIMIT OF DISTURBED AREA:	5.10 AC.± (CONSTRUCTION LOD)
M. STORMWATER MANAGEMENT LOD:	4.21 AC.± (SWM LOD)
N. PROPOSED USES FOR SITE AND STRUCTURES:	RESIDENTIAL APARTMENT COMPLEX
O. GREEN OPEN AREA:	5.92 AC.± (WITHIN PROPERTY)
P. PROPOSED IMPERVIOUS AREA:	2.40 AC.± (WITHIN PROPERTY)
Q. PRESENT ZONING DESIGNATION:	TOD & M-2
R. AMENITY/OPEN SPACE REQUIRED:	0.463 AC. (10% OF 4.63 AC.)
S. DPZ FILE REFERENCES:	N/A



**ESDV CONCEPT PLAN**  
 SCALE: 1"=200'



**Specimen Tree Chart**

Key (DB)	Species	Size (in DBH)	CRZ 1:1.5 (ft radius)	State Champion (DBH)	Good (unless otherwise noted)
1	Southern Red Oak	30	45.0	84.08	Poor, trunk rot, crown dieback
2	Southern Red Oak	31	46.5	84.08	
3	Southern Red Oak	36	52.5	84.08	
4	Red Maple	30	45.0	86.94	Fair, broken side stem
5	Red Maple	32	48.0	86.94	
6	Tulip Poplar	36	54.0	101.27	
7	Willow Oak	33	49.5	87.9	
8	Southern Red Oak	36	54.0	84.08	

**24"-30" Tree Chart**

Key (DB)	Species	Size (in DBH)	CRZ 1:1.5 (ft radius)	State Champion (DBH)	Good (unless otherwise noted)
1	Tulip Poplar	24.0	36.0	101.27	
2	Slippery Elm	25	37.5	60.51	
3	Tulip Poplar	29.0	43.5	101.27	Fair, uncommon at base
4	Tulip Poplar	26	39.0	101.27	
5	Tulip Poplar	28	42.0	101.27	
6	Tulip Poplar	24	36.0	101.27	
7	Tulip Poplar	29.0	43.5	101.27	
8	Tulip Poplar	30	45.0	101.27	
9	Red Maple	23.5	35.25	86.94	Good/Fair, grapevine pressure
10	Tulip Poplar	26	39.0	101.27	
11	Red Maple	26	39.0	86.94	
12	Southern Red Oak	27	40.5	84.08	Fair, larger deadwood
13	Willow	23.5	35.25	78.03	
14	Southern Red Oak	24	36.0	84.08	
15	Pin Oak	27.5	41.25	63.36	Fair, cavity at the base, codominant at 12'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9/26/23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9/18/23  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**DEVELOPER**  
 KIRBY DEVELOPMENT, LLC  
 5670B FURNACE AVENUE  
 ELKRDGE, MD 20175  
 PHONE: 410-788-0027

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
 COVER SHEET

**CORRIDOR ROAD APARTMENTS**  
 CORRIDOR ROAD, JESSUP, MD 20701

TAX MAP 48 BLOCK 19 3RD ELECTION DISTRICT      ZONE: TOD & M-2 HOWARD COUNTY, MARYLAND

**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

**PROFESSIONAL CERTIFICATE**

DESIGN BY: RHW/DZE  
 DRAWN BY: IMH  
 CHECKED BY: RHW  
 DATE: JULY 2023  
 SCALE: AS SHOWN  
 W.O. NO.: 48948

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2024

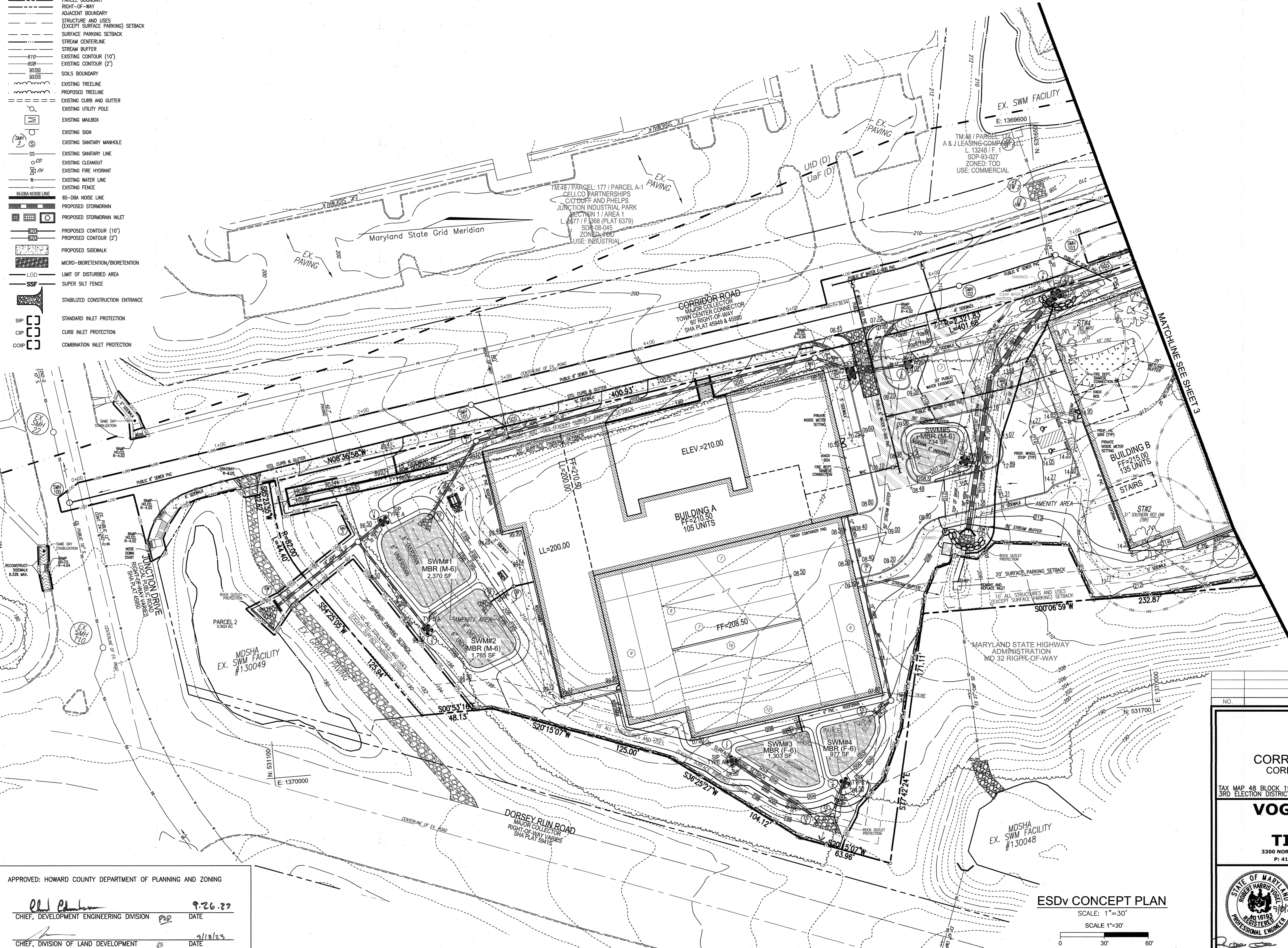
1 SHEET OF 6

ROBERT H. VOGEL, PE No.16193



**LEGENDS:**

- PARCEL BOUNDARY
- RIGHT-OF-WAY
- ADJACENT BOUNDARY
- STRUCTURE AND USES (EXCEPT SURFACE PARKING) SETBACK
- SURFACE PARKING SETBACK
- SURFACE CENTERLINE
- STREAM BUFFER
- 610 EXISTING CONTOUR (10')
- 608 EXISTING CONTOUR (2')
- M1B2 SOILS BOUNDARY
- M1D9 EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- SS EXISTING SANITARY LINE
- CD EXISTING CLEANOUT
- FH EXISTING FIRE HYDRANT
- W EXISTING WATER LINE
- EXISTING FENCE
- 85-DBA NOISE LINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED CONTOUR (10')
- PROPOSED CONTOUR (2')
- PROPOSED SIDEWALK
- MICRO-BIORETENTION/BIORETENTION
- LOD LIMIT OF DISTURBED AREA
- SSF SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- SIP STANDARD INLET PROTECTION
- CIP CURB INLET PROTECTION
- COIP COMBINATION INLET PROTECTION



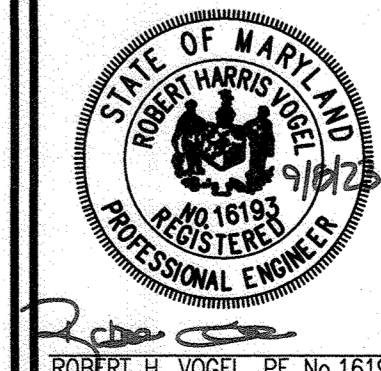
**DEVELOPER**  
 KIRBY DEVELOPMENT, LLC  
 55708 FURNACE AVENUE  
 ELK RIDGE, MD 20175  
 PHONE: 410-788-0027

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
 ESDv CONCEPT PLAN  
**CORRIDOR ROAD APARTMENTS**  
 CORRIDOR ROAD, JESSUP, MD 20701  
 TAX MAP 48 BLOCK 19 ZONE: TOD & M-2  
 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**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

PROFESSIONAL CERTIFICATE  
 DESIGN BY: RHW/DZE  
 DRAWN BY: IMH  
 CHECKED BY: RHW  
 DATE: JULY 2023  
 SCALE: AS SHOWN  
 W.O. NO.: 48948  
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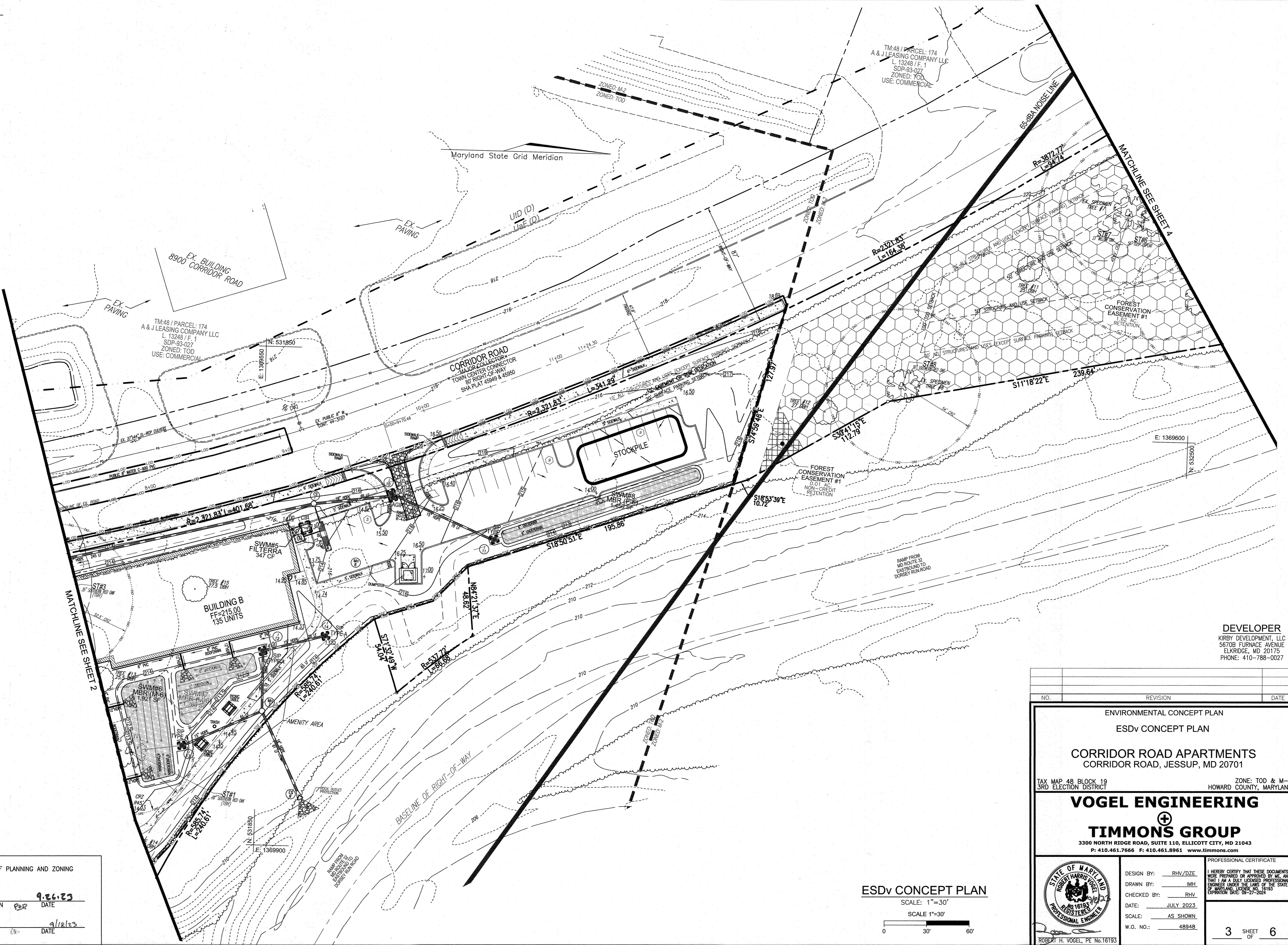
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 [Signature] 9/26/23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 9/18/23  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**ESDv CONCEPT PLAN**  
 SCALE: 1"=30'  
 SCALE 1"=30'  
 0 30' 60'



**LEGENDS:**

- PARCEL BOUNDARY
- RIGHT-OF-WAY
- ADJACENT BOUNDARY
- STRUCTURE AND USES (EXCEPT SURFACE PARKING) SETBACK
- SURFACE PARKING SETBACK
- STREAM CENTERLINE
- STREAM BUFFER
- 10' EXISTING CONTOUR (10')
- 2' EXISTING CONTOUR (2')
- MIB2 SOILS BOUNDARY
- MIB3
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- SS EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- 65-DBA NOISE LINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED CONTOUR (10')
- PROPOSED CONTOUR (2')
- PROPOSED SIDEWALK
- MICRO-BIORETENTION/BIORETENTION
- LOD LIMIT OF DISTURBED AREA
- SSF SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- SIP STANDARD INLET PROTECTION
- CIP CURB INLET PROTECTION
- COIP COMBINATION INLET PROTECTION
- FOREST CONSERVATION AREA



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9.26.23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9/26/23  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**ESDv CONCEPT PLAN**  
 SCALE: 1"=30'  
 SCALE 1"=30'

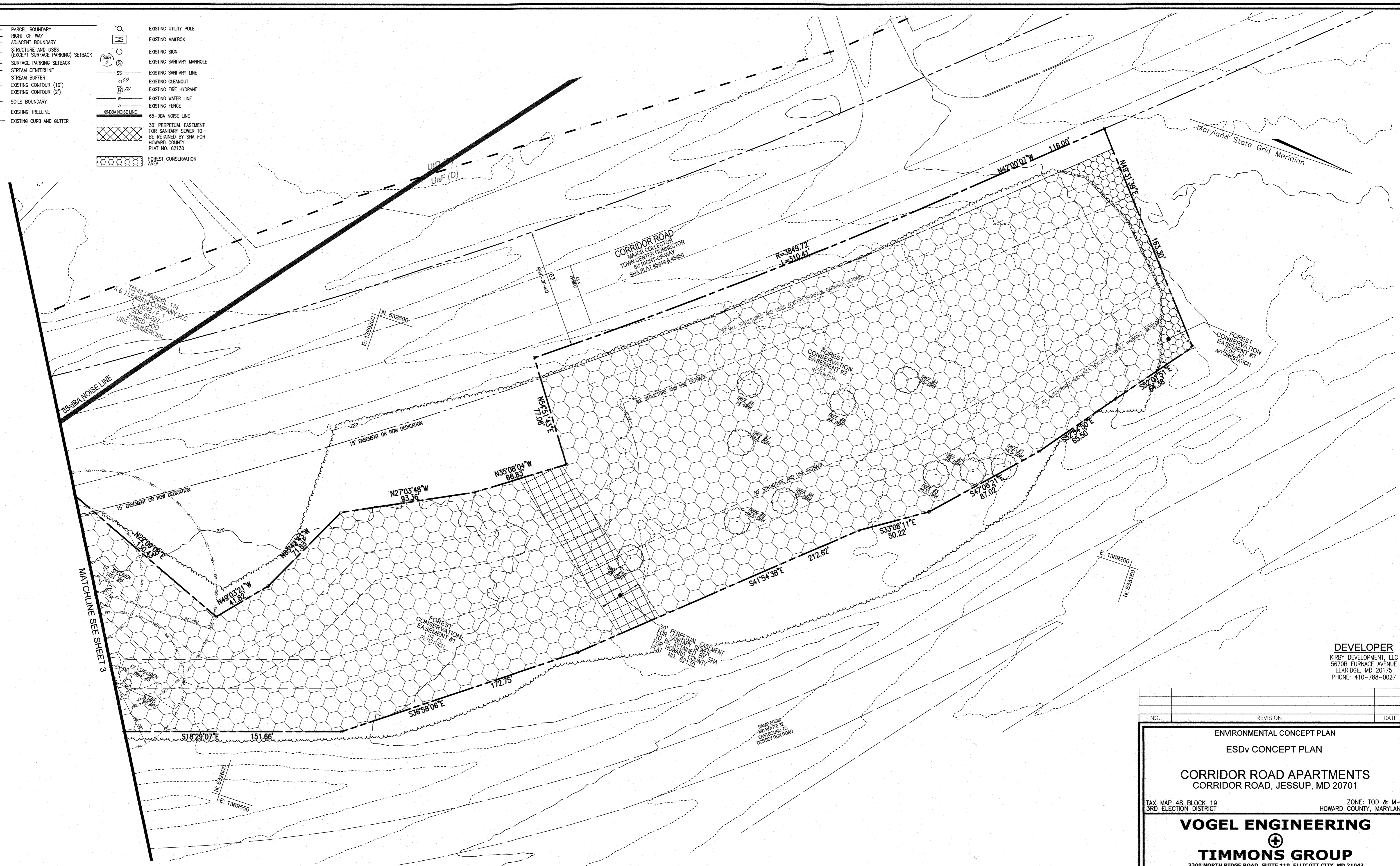
**DEVELOPER**  
 KIRBY DEVELOPMENT, LLC  
 5670B FURNACE AVENUE  
 ELK RIDGE, MD 20175  
 PHONE: 410-788-0027

NO.	REVISION	DATE
ENVIRONMENTAL CONCEPT PLAN ESDv CONCEPT PLAN <b>CORRIDOR ROAD APARTMENTS</b> CORRIDOR ROAD, JESSUP, MD 20701 TAX MAP 48 BLOCK 19 3RD ELECTION DISTRICT      ZONE: TOD & M-2 HOWARD COUNTY, MARYLAND		
<b>VOGEL ENGINEERING</b> + <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com		
	PROFESSIONAL CERTIFICATE I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2024.	
DESIGN BY: RHW/DZE DRAWN BY: IMH CHECKED BY: RHW DATE: JULY 2023 SCALE: AS SHOWN W.O. NO.: 48948	<b>3</b> SHEET OF <b>6</b>	



**LEGENDS:**

- PARCEL BOUNDARY
- RIGHT-OF-WAY
- ADJACENT BOUNDARY
- STRUCTURE AND USES (EXCEPT SURFACE PARKING) SETBACK
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- STREAM BUFFER
- 610 EXISTING CONTOUR (10')
- 608 EXISTING CONTOUR (2')
- M1B2 SOILS BOUNDARY
- M1B3 SOILS BOUNDARY
- EXISTING TREELINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- SS EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- W EXISTING WATER LINE
- EXISTING FENCE
- 65-DBA NOISE LINE
- 65-DBA NOISE LINE
- 30' PERPETUAL EASEMENT FOR SANITARY SEWER TO BE RETAINED BY SHA FOR HOWARD COUNTY PLAT NO. 62130
- ▨ FOREST CONSERVATION AREA



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9/26/23  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9/18/23  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**ESDv CONCEPT PLAN**  
 SCALE: 1"=30'  
 0 30' 60'

**DEVELOPER**  
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<b>VOGEL ENGINEERING</b> + <b>TIMMONS GROUP</b> 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com		
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**APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS**

**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 HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 16.08.01.05. THE PLANTING 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%-40%) OR SANDY LOAM (50%), COARSE SAND (40%), 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 LOADERS. THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES, AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REMOVE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN USE THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

**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 4". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE 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 MOST 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 BALLS. GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLOTS 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, DRENTERS, OR AT A MINIMUM, IMPROVES THIS GOAL. ONLY 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 BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 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 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.  
• A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES 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.

**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6), AND BIORETENTION (F-8)**

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

Corridor Road Apartments- ECP - ESDV COMPUTATIONS														
DRAINAGE #	% IMPERV	Rv	DA	DA	1.0'	Target 1.8'	MAXIMUM	VOLUME	Rev	IMPERV	IMPERV	GREEN	REMARKS	
													CF	SF
A	66.25	0.6463	40476	0.93	2180	3924	5668	5513	948	26816	0.62	0.31	SWM#1 - MICRO-BIORETENTION (M-6) 3,300 2370 Surface Area of M-6 @ 1.0' ponding (75% above) 948 2370 Stone Below MIB (includes Rev)	
								3160						
								2353						
								2,353 1765 Surface Area of M-6 @ 1.0' ponding (75% above) 706 1765 Stone Below MIB (includes Rev)						
B	81.73	0.7856	26516	0.61	1736	3124	4513	3040	521	21671	0.50	0.11	SWM#2 - MICRO-BIORETENTION (M-6) 3,737 1303 Surface Area of M-6 @ 1.0' ponding (75% above) 521 1303 Stone Below MIB (includes Rev)	
								1737						
								12426						
								2,353 1765 Surface Area of M-6 @ 1.0' ponding (75% above) 391 977 Stone Below MIB (includes Rev)						
C	71.06	0.6895	11391	0.26	655	1378	1702	1303	391	8094	0.19	0.08	SWM#3 - MICRO-BIORETENTION (M-6) 1,303 977 Surface Area of M-6 @ 1.0' ponding (75% above) 294 734 Stone Below MIB (includes Rev)	
								294						
								10124						
								979 734 Surface Area of M-6 @ 1.0' ponding (75% above) 294 734 Stone Below MIB (includes Rev)						
D	73.34	0.7101	30746	0.71	1819	3275	4730	4271	768	22550	0.52	0.19	SWM#4 - MICRO-BIORETENTION (M-6) 2,353 1921 Surface Area of M-6 @ 1.0' ponding (75% above) 768 1921 Stone Below MIB (includes Rev)	
								2557						
								12168						
								1,715 1286 Surface Area of M-6 @ 1.0' ponding (75% above) 514 1286 Stone Below MIB (includes Rev)						
E	90.41	0.8637	4787	0.11	345	620	896	345	260	4328	0.10	0.01	SWM#5 - FILTERRA 6x10 447 CF PIPE STORAGE 260 CF	
								260						
								21						
F	72.21	0.6999	12525	0.29	730	1315	1899	1899	580	9044	0.21	0.08	SWM#6 - MICRO-BIORETENTION (M-6) 1,933 1450 Surface Area of M-6 @ 1.0' ponding (75% above) 580 1450 Stone Below MIB (includes Rev)	
								1,933						
								1899						
TOTAL	79.41	0.7107	187441	4.30	11101	28863	16047	5566	137602	3.16	1.14			



**PLAN VIEW**  
SCALE: 1"=50'  
0 50' 100'

**LEGENDS:**

- PARCEL BOUNDARY
- RIGHT-OF-WAY
- ADJACENT BOUNDARY
- STRUCTURE AND USES
- EXCEPT SURFACE PARKING) SETBACK
- SURFACE PARKING SETBACK
- STREAM CENTERLINE
- STREAM BUFFER
- EXISTING CONTOUR (10')
- EXISTING CONTOUR (2')
- SOILS BOUNDARY
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED CONTOUR (10')
- PROPOSED CONTOUR (2')
- PROPOSED SIDEWALK
- MICRO-BIORETENTION/BIORETENTION
- DRAINAGE DIVIDE
- FOREST CONSERVATION AREA

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE	HYDRIC
U <sub>6</sub>	UDORTHENTS, HIGHWAY, 0 TO 65 PERCENT SLOPES	D	-	YES	NO
UD	URBAN LAND-UDORTHENTS COMPLEX, 0 TO 15 PERCENT SLOPES	D	-	NO	NO
F <sub>6a</sub>	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	C/D	0.24	NO	YES

**SOILS NOTE:**  
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**DEVELOPER**  
KIRBY DEVELOPMENT, LLC  
5670B FURNACE AVENUE  
ELK RIDGE, MD 20175  
PHONE: 410-788-0027

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
STORMWATER MANAGEMENT  
DRAINAGE AREA MAP, NOTES & DETAILS  
**CORRIDOR ROAD APARTMENTS**  
CORRIDOR ROAD, JESSUP, MD 20701

TAX MAP 48 BLOCK 19  
3RD ELECTION DISTRICT

ZONE: TOD & M-2  
HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**  
+  
**TIMMONS GROUP**  
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21143  
P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/DZE  
DRAWN BY: MMH  
CHECKED BY: RHV  
DATE: JULY 2023  
SCALE: AS SHOWN  
W.O. NO.: 48948

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 08-27-2024

ROBERT H. VOGEL, PE No.16193

5 SHEET OF 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

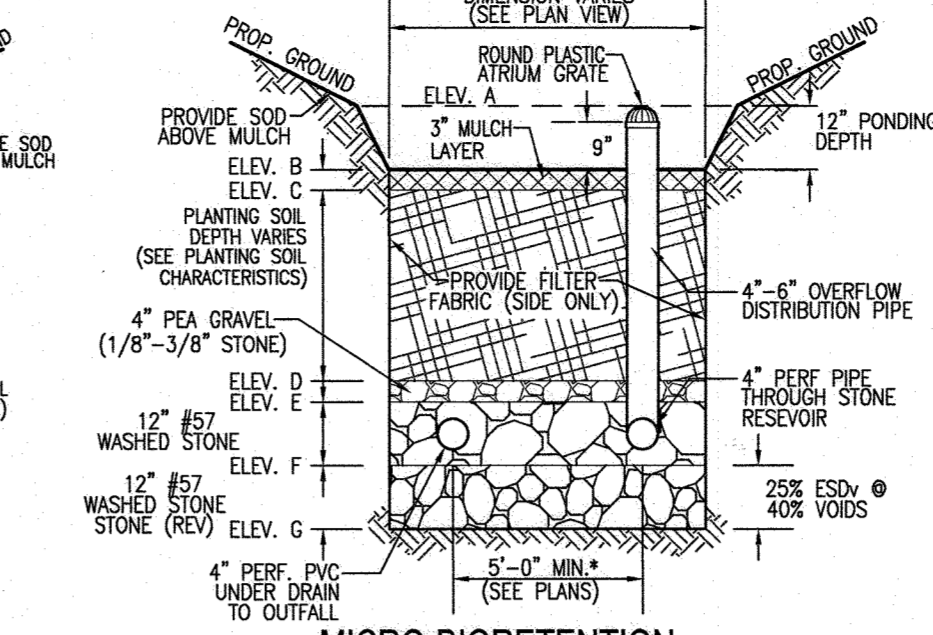
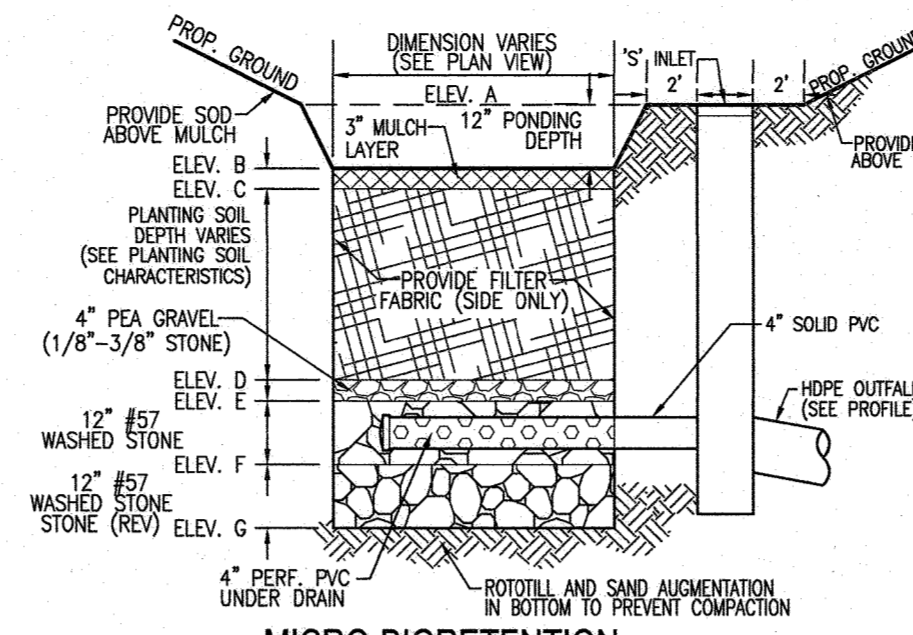
*Paul Edlund* 9/26/23  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Paul Edlund* 9/18/23  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE



Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specifications	Notes
Planting soil	see Appendix A, Table A.4 loamy sand (60-40%) & compost (5-40%) or sandy loam (50%), coarse sand (10%) & compost (40%)	plantings are site-specific USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	
Mulch	shredded hardwood No. 8 OR NO. 9 (1/8" to 3/8")	aged 6 months, minimum, no pine or wood chips
Curtain drain	ceramic stone, washed cobble	2" to 5"
Gravel (underdrains and infiltration basins)	AASHTO M-43 NO. 57 OR NO. 6 AGGREGATE (0.075 to 3.00")	FS Type I non-venom
Underdrain piping	7/8" Type F9-28 or AASHTO M-275 4" or 6" rigid schedule 40 PVC or HDPE	Slotted or perforated pipe 3/8" slot @ 6" on center, 4 holes per row, minimum of 3' of gravel over pipe; see necessary underdrain notes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Formed in place concrete (if required)	MSHA Mix No. 3; F <sub>c</sub> = 3000 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	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 308.9R9; vertical loading 18.10 or 15.00; allowable horizontal loading based on soil strength and analysis of potential cracking
Sand	AASHTO M-6 or ASTM C-33 0.075 to 0.04"	Sand substitutions such as Diatomite and Onyria (AASHTO #10) are not acceptable. No calcium carbonate or dolomite sand substitutions are acceptable. No "rock dust" can be used for sand.



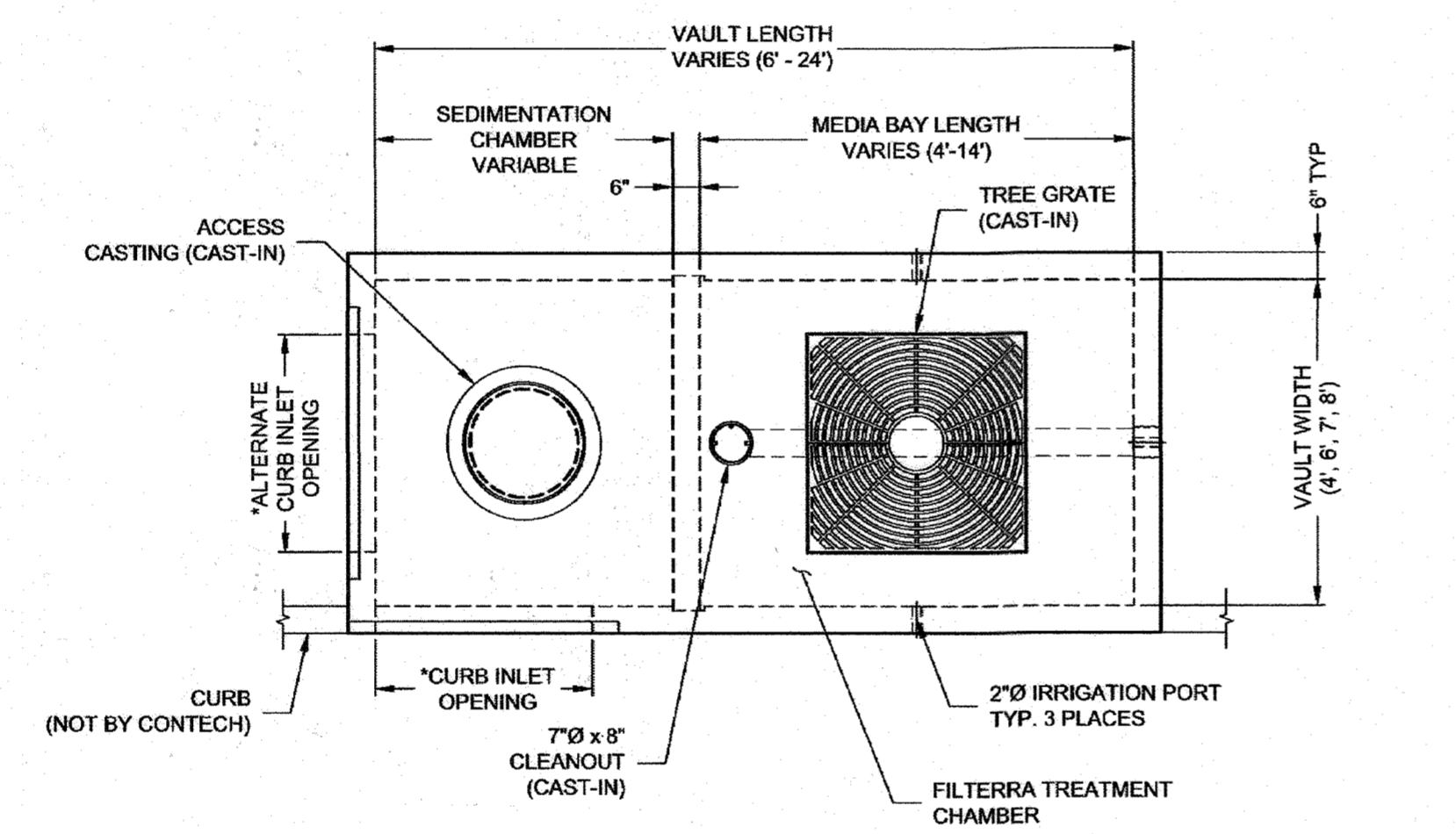
MICRO-BIORETENTMENT (UNDERDRAIN) NOT TO SCALE

MICRO-BIORETENTMENT (OVERFLOW) NOT TO SCALE

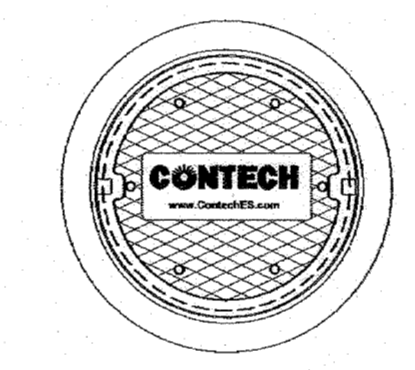
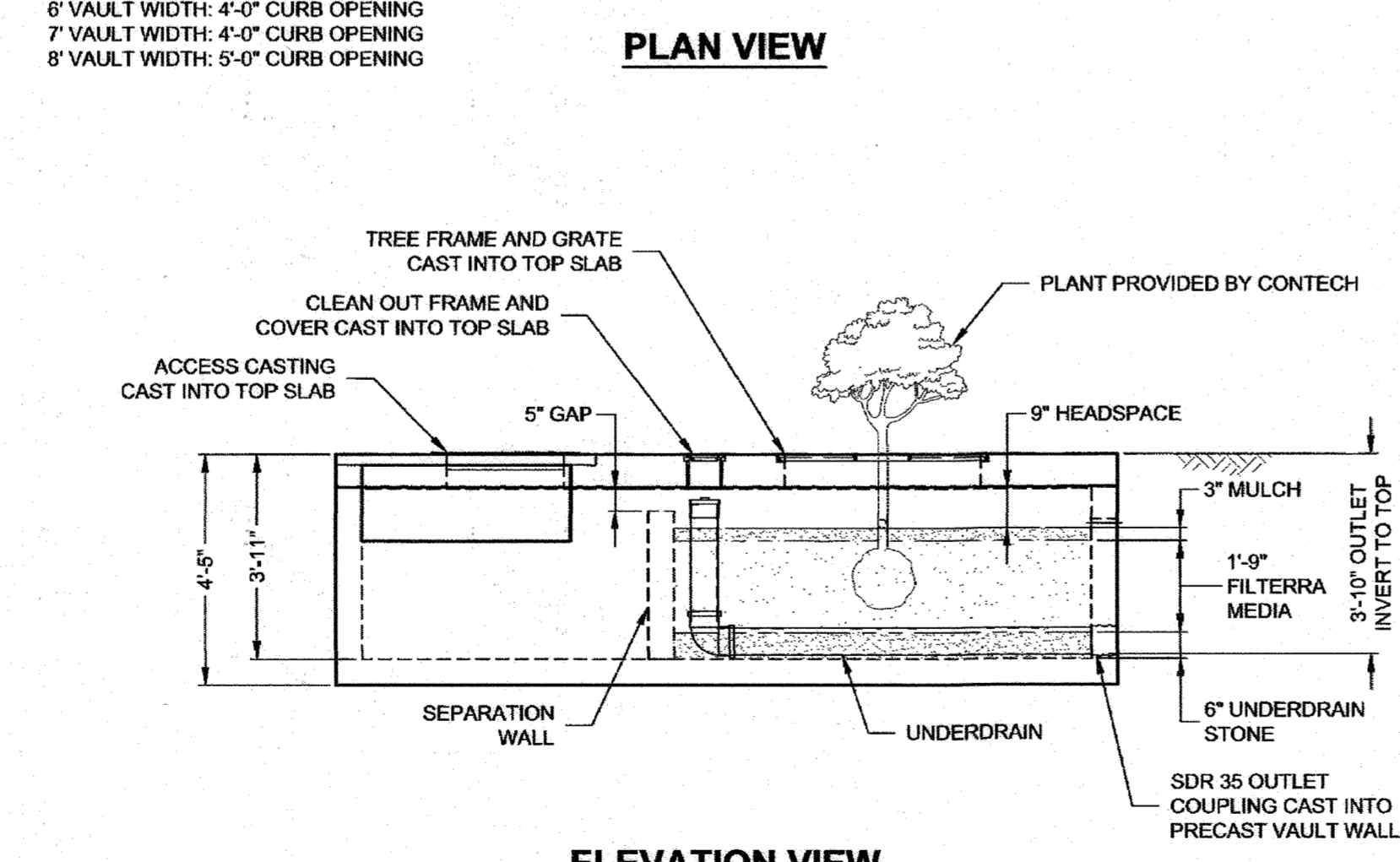
- MICROBIORETENTION NOTES:**
- ONLY THE SIDES OF MICRO-BIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICRO-BIORETENTION WILL CAUSE THE MBR TO FAIL, AND THEREFORE SHALL NOT BE INSTALLED.
  - WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4X4) OR SMALLER GALVANIZED HARDWARE CLOTH. SEE APPENDIX B.4.C.
  - PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED FILTERRA DEVICES

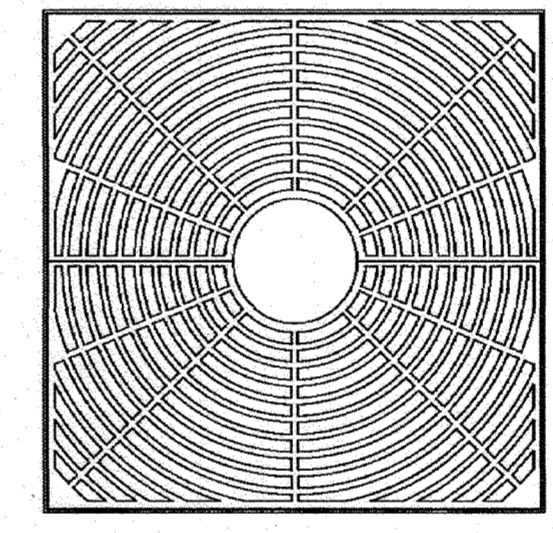
- ACTIVATION**
- A. ACTIVATION OF THE FILTERRA UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA INLET PROTECTION AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED), NEGATING THE CHANCE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES.
- B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.
- MAINTENANCE**
- A. EACH CORRECTLY INSTALLED FILTERRA UNIT IS TO BE MAINTAINED BY THE SUPPLIER, OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA UNIT. EXTENDED MAINTENANCE CONTRACTS ARE AVAILABLE AT EXTRA COST UPON REQUEST.
- B. ANNUAL MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS ARE SCHEDULED SEASONALLY; THE SPRING VISIT AIMS TO CLEAN UP AFTER WINTER LOADS INCLUDING SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM BY REMOVING EXCESSIVE LEAF LITTER.
- C. EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS.
- FILTERRA UNIT INSPECTION.
  - FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL.
  - FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY.
  - PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY.
  - REPLACEMENT OF MULCH.
  - DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS.
  - MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST).
  - DEWATERING THE SEDIMENT CHAMBER WITH ALL INSPECTIONS, TRASH/ DEBRIS REMOVAL WITHIN THE CHAMBER.
- D. THE BEGINNING AND ENDING DATE OF THE SUPPLIER'S OBLIGATION TO MAINTAIN THE INSTALLED SYSTEM SHALL BE DETERMINED BY THE SUPPLIER AT THE TIME THE SYSTEM IS ACTIVATED. OWNERS MUST PROMPTLY NOTIFY THE SUPPLIER OF ANY DAMAGE TO THE PLANT(S), WHICH CONSTITUTE(S) AND INTEGRAL PART OF THE BIORETENTION TECHNOLOGY.
- NOTES:**
- CONTRACTOR SHALL ENSURE THAT THE S.W.M. FACILITY IS WATERTIGHT TO ENSURE WATERTIGHT CONNECTION.
  - ALL ALLOP PIPE JOINTS SHALL USE 12" WIDE HUGGER BAND WITH "O" RING GASKETS.
  - TEES AND ELBOWS TO BE FACTORY FABRICATED WELDS, ONE PIECE.
  - TRENCH BEDDING TO BE IN ACCORDANCE WITH RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER IN THE FIELD.
  - PROVIDE WATERTIGHT JOINTS AT ALL PIPE CONNECTIONS. (FOR REINFORCED CONCRETE PIPE, ASTM C-361, RUBBER GASKET PIPE).



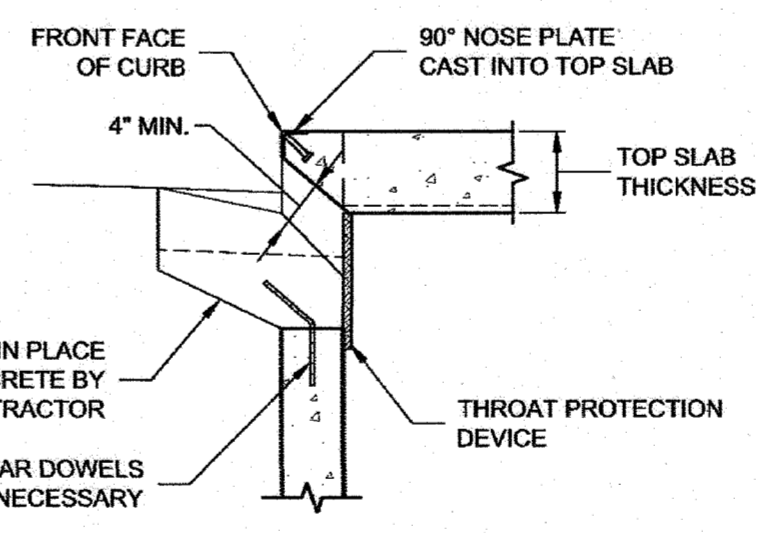
- \*CURB INLET OPENING LENGTH BY VAULT WIDTH:
- 4' VAULT WIDTH: 3'-0" CURB OPENING
  - 6' VAULT WIDTH: 4'-0" CURB OPENING
  - 7' VAULT WIDTH: 4'-0" CURB OPENING
  - 8' VAULT WIDTH: 5'-0" CURB OPENING



FRAME AND COVER (DIAMETER VARIES) NOT TO SCALE



TREE GRATE 36" x 36" OR 48" x 48" (ACTUAL PRODUCT MAY VARY) NOT TO SCALE



CURB INLET DETAIL NOT TO SCALE

- NOTES:**
- REQUIRED MINIMUM FILTERRA TREATMENT SURFACE AREA IS 91 SF/20,000 SF OF THE TOTAL DRAINAGE AREA PER MDE. STORAGE CAPACITY ASSUMES NO STORAGE IN MULCH, MEDIA AND STONE.
  - ALL VEGETATION PROVIDED BY CONTECH.
  - ADA COMPLIANT FULL GRATE COVERS WITH SHADE TOLERANT PLANT SPECIES AVAILABLE UPON REQUEST.
  - ALL INFORMATION IS BASED ON STANDARD 3.83 RIM TO OUTLET INVERT DEPTH. CONTACT CONTECH FOR CUSTOM SIZING IF DEPTH IS NOT 3.83'. ACCEPTABLE DEPTH IS 3.33' MIN. TO 5.00' MAX. RIM TO INVERT OUT.
  - PLEASE CONTACT YOUR CONTECH REPRESENTATIVE FOR SIZING RECOMMENDATIONS. [www.conteches.com](http://www.conteches.com).

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chief, Development Engineering Division* 9/26/23  
DATE

*Chief, Division of Land Development* 9/18/23  
DATE



FILTERRA SEDIMENTATION CHAMBER (FTSC) CONFIGURATION DETAIL MARYLAND

DEVELOPER  
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PHONE: 410-788-0027

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN  
STORMWATER MANAGEMENT  
NOTES & DETAILS  
CORRIDOR ROAD APARTMENTS  
CORRIDOR ROAD, JESSUP, MD 20701

TAX MAP 48 BLOCK 19 3RD ELECTION DISTRICT ZONE: TOD & M-2 HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**  
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PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2024

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6 SHEET OF 6