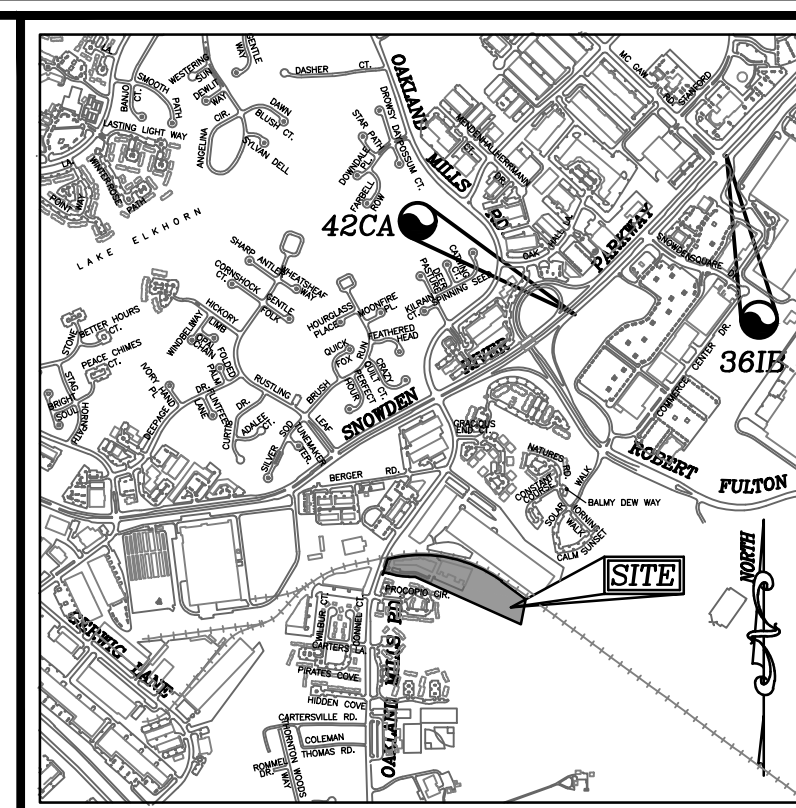
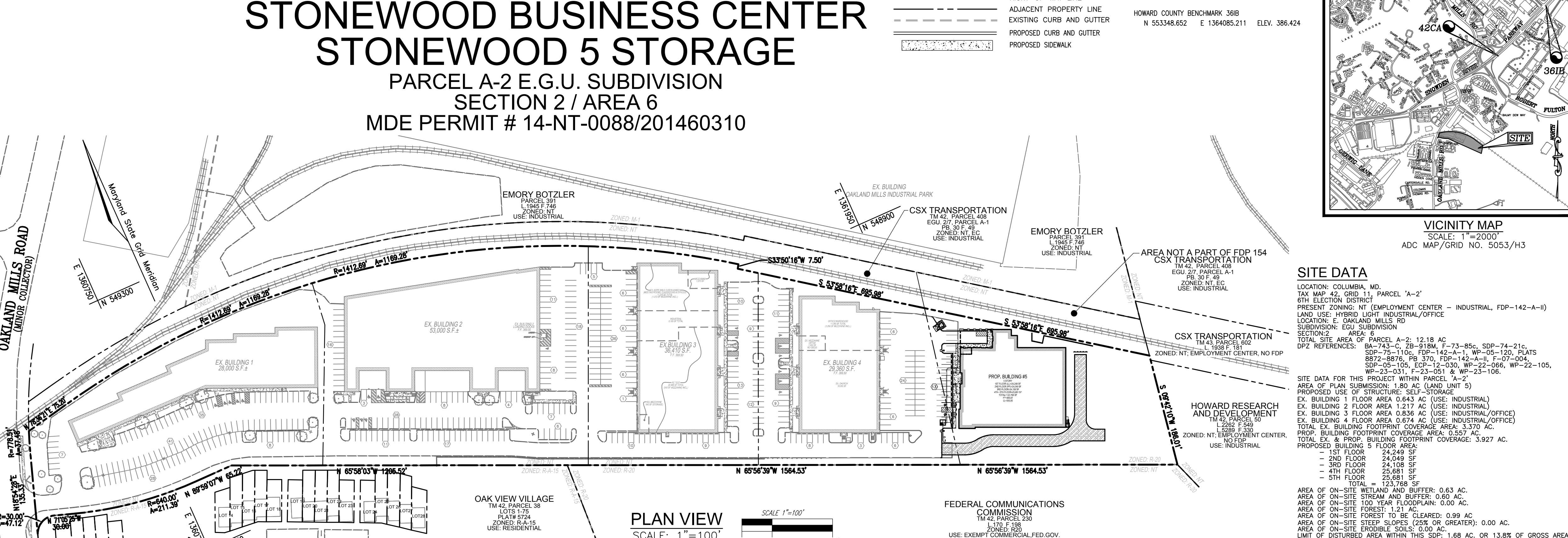


SITE DEVELOPMENT PLAN STONEWOOD BUSINESS CENTER STONEWOOD 5 STORAGE PARCEL A-2 E.G.U. SUBDIVISION SECTION 2 / AREA 6 MDE PERMIT # 14-NT-0088/201460310

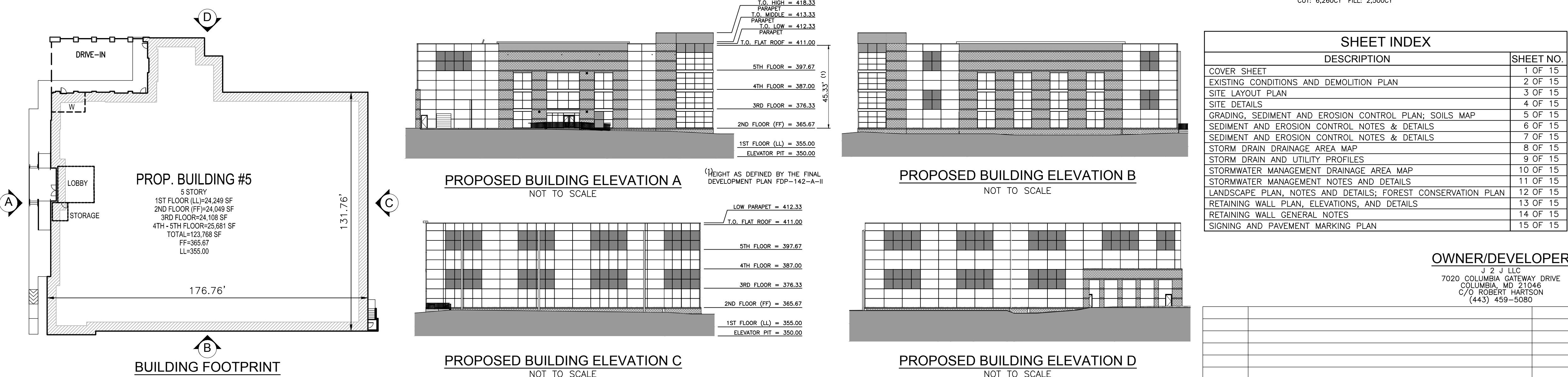
- GENERAL NOTES 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARDS AND SPECIFICATIONS... 2. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS...



BENCHMARKS table with columns: BENCHMARK NAME, EASTING, NORTHING, ELEVATION. Includes Howard County Benchmark 42CA and 361B.

LEGEND table with symbols for Property Line, Right-of-Way Line, Adjacent Property Line, Existing Curb and Gutter, Proposed Curb and Gutter, Proposed Sidewalk.

PLAN VIEW SCALE: 1"=100'



PROPOSED BUILDING ELEVATION A, B, C, D. NOT TO SCALE.

OWNER/DEVELOPER information table with fields for name, address, phone, and title. Includes contact for Robert H. Vogel, PE.

SHEET INDEX table with columns: SHEET NO., DESCRIPTION, SHEET NO. Lists various sheets from COVER SHEET to SIGNING AND PAVEMENT MARKING PLAN.

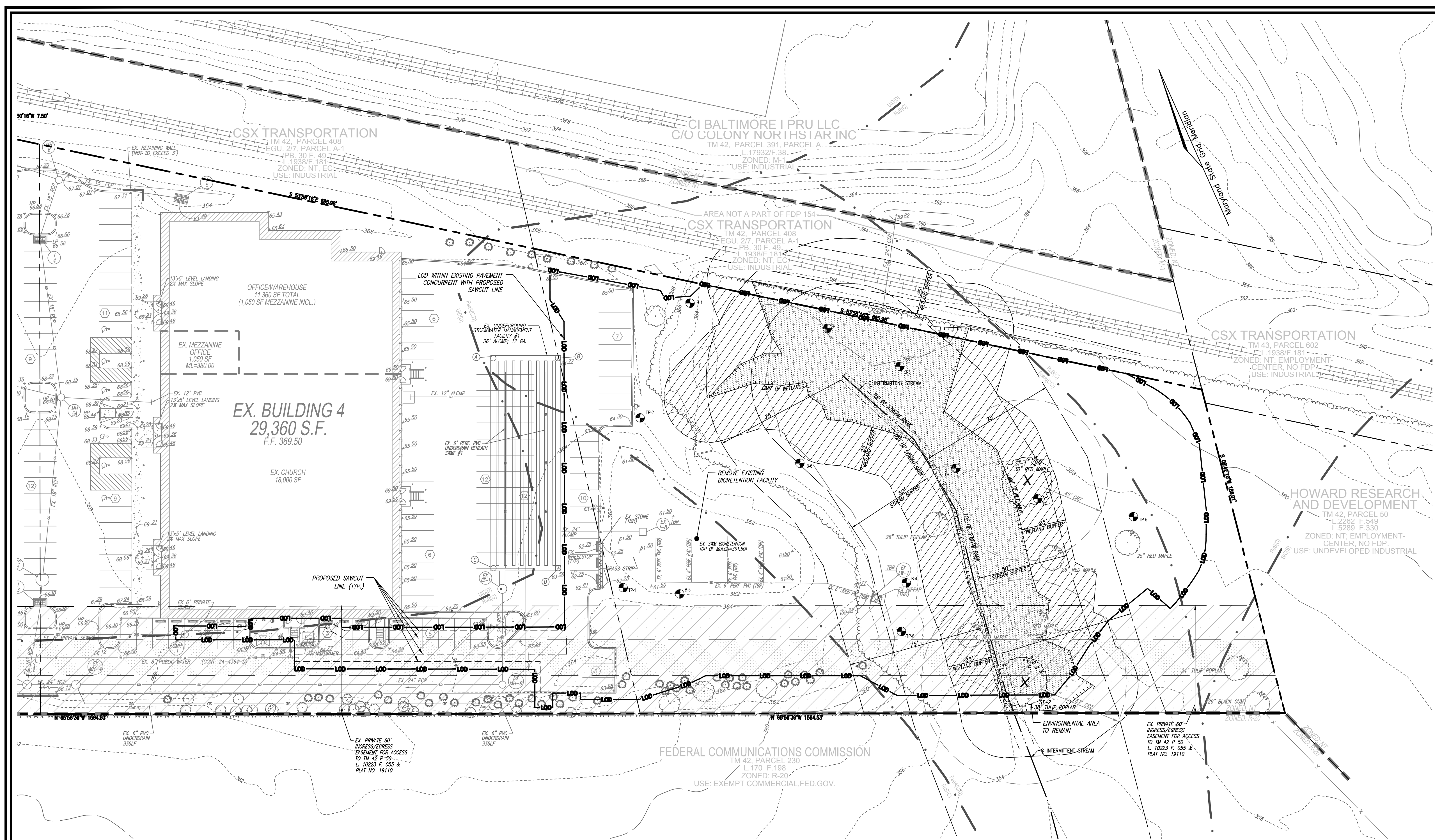
GENERAL NOTES (CONTINUED...) and PARKING TABULATION (BUILDING 5). Includes notes on signage, setbacks, and detailed parking space calculations for various building types.

GENERAL NOTES (CONTINUED...) and PARKING TABULATION (BUILDING 5). Continuation of parking and site notes for Building 5.

GENERAL NOTES (CONTINUED...) and PARKING TABULATION (BUILDING 5). Continuation of parking and site notes for Building 5.

GENERAL NOTES (CONTINUED...) and PARKING TABULATION (BUILDING 5). Continuation of parking and site notes for Building 5.

GENERAL NOTES (CONTINUED...) and PARKING TABULATION (BUILDING 5). Continuation of parking and site notes for Building 5.



OWNER/DEVELOPER
 J 2 J LLC
 7020 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

EXISTING UTILITIES NOTE:
 EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM EXISTING SITE DEVELOPMENT PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION ONLY.

CONTRACTOR SHALL TEST PIT TO VERIFY EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES. TO MAINTAIN UNINTERRUPTED SERVICE AND TO PROVIDE REQUIRED CLEARANCES FOR ALL PROPOSED UTILITIES. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

PLAN VIEW
 SCALE: 1"=30'

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	PERM. PARALAND	Kw	<1% SLOPE W/ EROSION POTENTIAL
FoaA	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	C/D	YES	YES	NO	—	NO
RUB	RUSSETT AND BELLSVILLE SOILS, 2 TO 5 PERCENT SLOPE	C	NO	NO	NO	.28	NO
S/C	SASSAPARA AND CROOM SOILS, 5 TO 10 PERCENT SLOPE	B	NO	NO	NO	.32	NO
LUD	URBAN LAND-UDORHENTS COMPLEX, 0 TO 15 PERCENT SLOPE	D	NO	NO	NO	—	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

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

SPECIMEN TREES

ID#	SPECIES	SCIENTIFIC NAME	DBH (INCHES)	HEIGHT (FEET)	CROWN (FEET)	OBSERVATIONS	TO BE REMOVED
1	RED MAPLE	ACER RUBRUM	30	65	40	GOOD - TWO LEADERS FUSED ABOVE DBH.	TO BE REMOVED
2	TULIP POPLAR	LIRIODENDRON TULIPIFERA	38	70	45	GOOD - TWO LEADERS FUSED ABOVE DBH. PART OF TRIPLE TRUNK.	TO BE REMOVED

LEGEND:

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	CENTERLINE OF EXISTING STREAM
	EXISTING STREAM BUFFER
	EXISTING CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING TREELINE
	EXISTING SPECIMEN TREE
	EXISTING SPECIMEN TREE CRITICAL ROOT ZONE
	EXISTING 20' WATER AND UTILITY EASEMENT (PLAT 19110)
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	SOILS BOUNDARY
	SOIL BORING
	WETLAND IMPACT
	25' WETLAND BUFFER IMPACT
	PROPOSED LIMIT OF DISTURBANCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

	10/12/2023
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	10/12/2023
CHIEF, DIVISION OF PLANNING & DEVELOPMENT	DATE
DIRECTOR	DATE

NO. _____ REVISION _____ DATE _____

SITE DEVELOPMENT PLAN
EXISTING CONDITIONS AND DEMOLITION PLAN
STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

TAX MAP 42 BLOCK 11
 6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5
 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

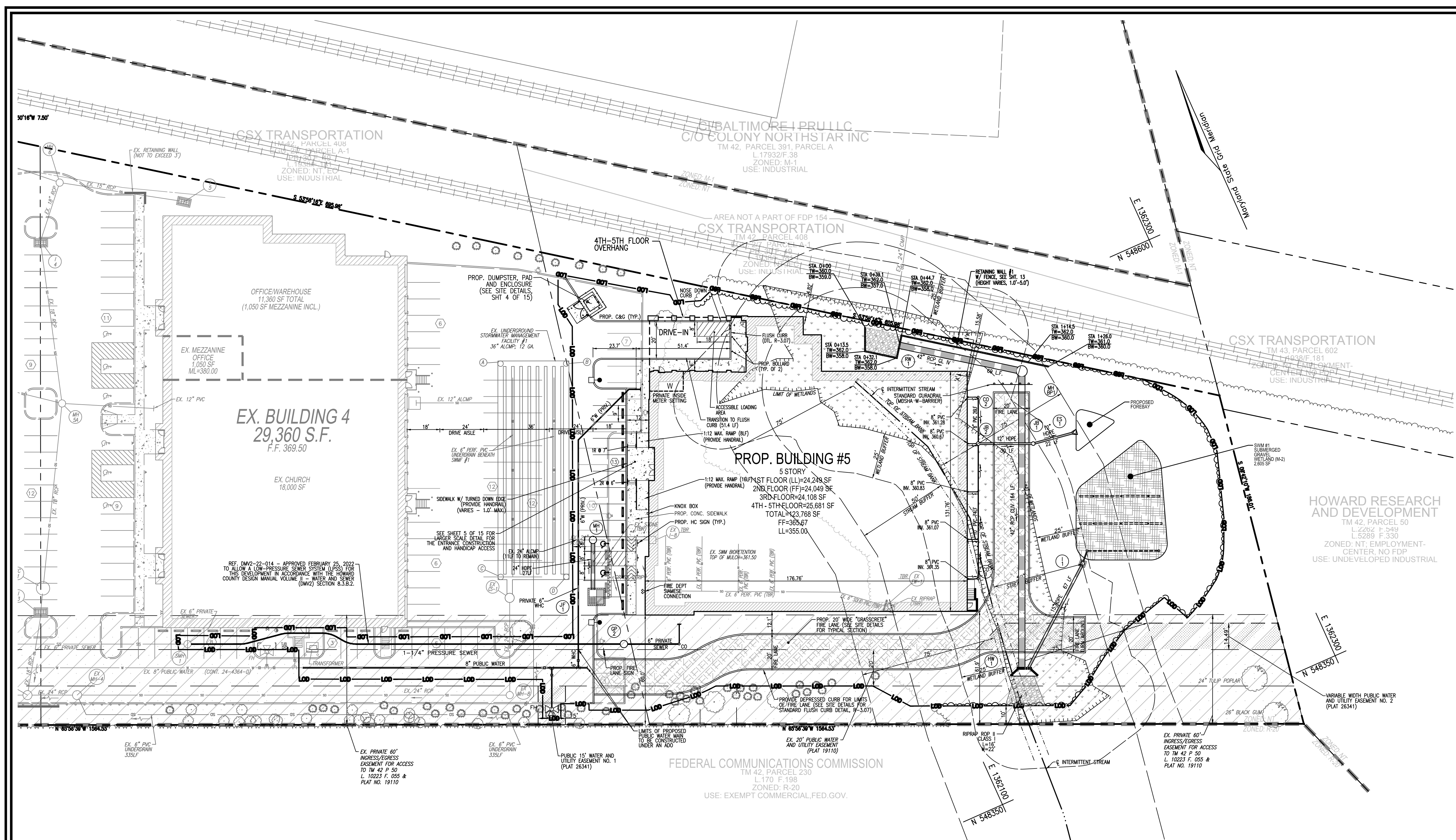
PROFESSIONAL CERTIFICATE

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: DZE/RHV/ACS
 DRAWN BY: JH/DZE/ACS
 CHECKED BY: RHV
 DATE: JULY 2023
 SCALE: AS SHOWN
 W.O. NO.: 02-79

2 SHEET OF 15

Rob Vogel
 REGISTERED PROFESSIONAL ENGINEER
 LICENSE # 16193, P.E. NO. 16193



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- CENTERLINE OF EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- PROPOSED GUARDRAIL
- EXISTING TREELINE
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED SIDEWALK
- EXISTING 20' WATER AND UTILITY EASEMENT (PLAT 19110)
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- STRUCTURAL RETAINING WALL
- PROPOSED PUBLIC WATER & UTILITY EASEMENT
- SUBMERGED GRAVEL WETLAND SURFACE LAYER
- 20' WIDE FIRE LANE GRASSCRETE
- SOILS BOUNDARY
- SOIL BORING

PLAN VIEW
SCALE: 1"=30'

EXISTING UTILITIES NOTE:
EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM EXISTING SITE DEVELOPMENT PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION ONLY.

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Philip M. Thompson	10/12/2023
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	10/12/2023
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Lynnda Eschenberg	10/12/2023
DIRECTOR	DATE

OWNER/DEVELOPER
J 2 J LLC
7020 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046
C/O ROBERT HARTSON
(443) 459-5080

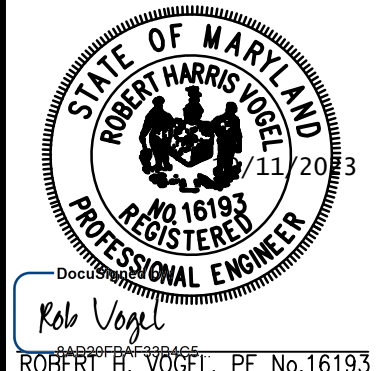
NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
SITE LAYOUT PLAN**

STONEWOOD 5 STORAGE
PARCEL A-2 (E.G.U. SUBDIVISION)
SECTION 2 / AREA 6

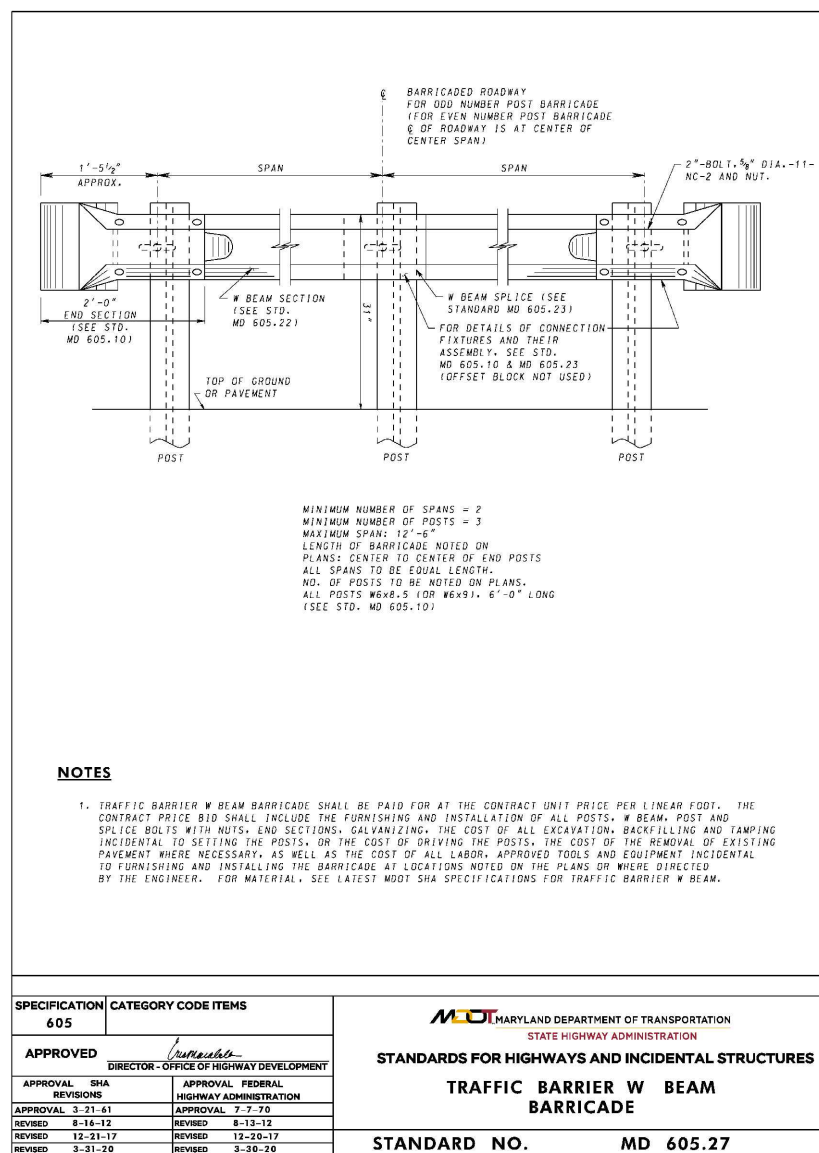
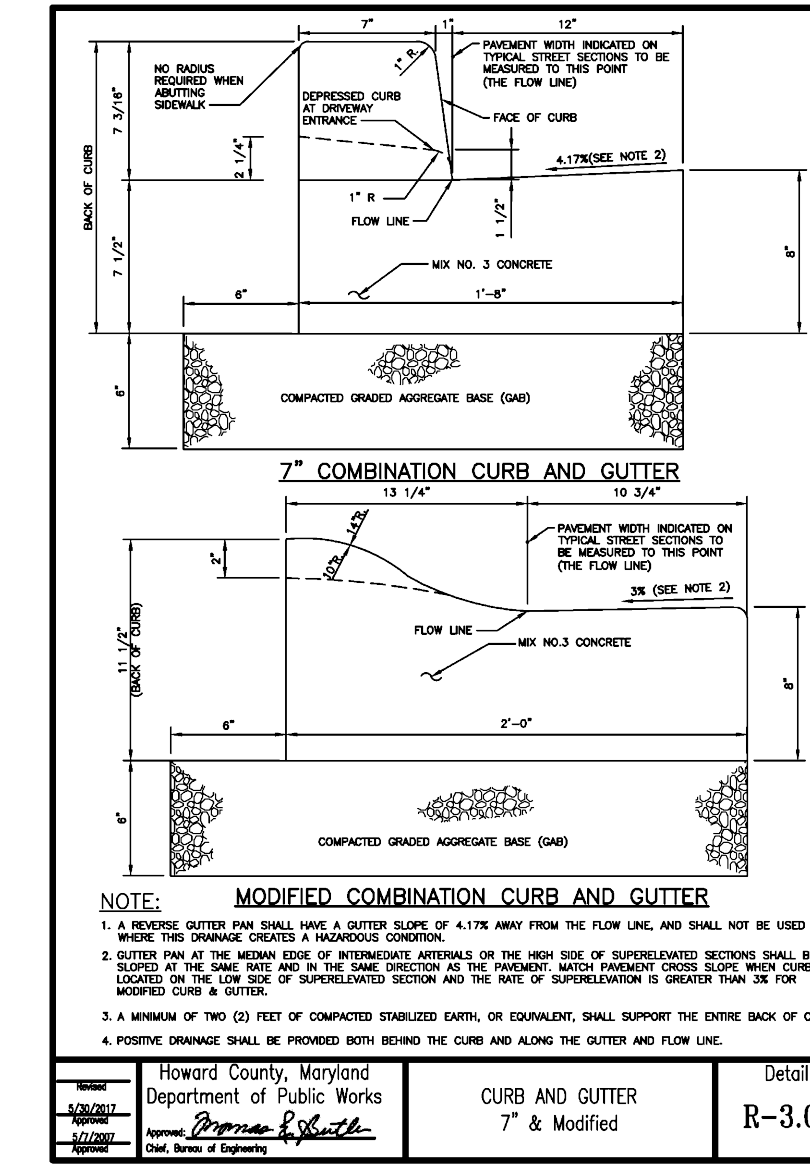
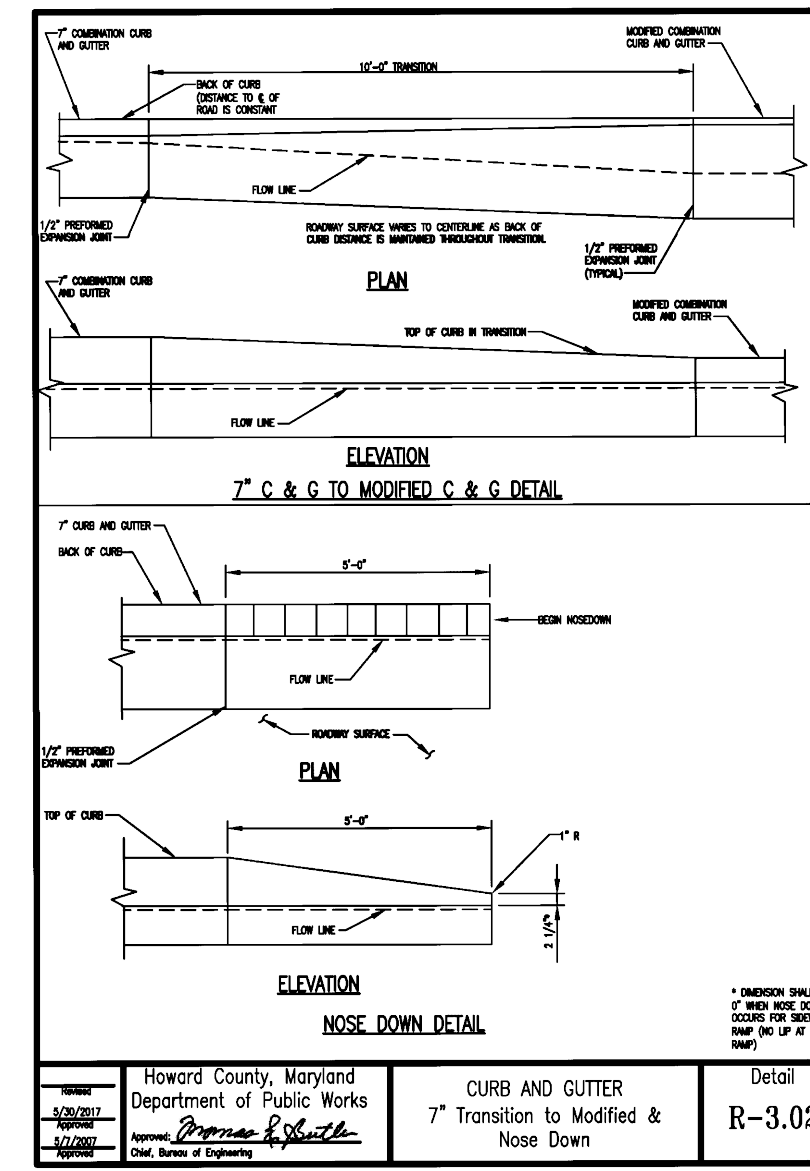
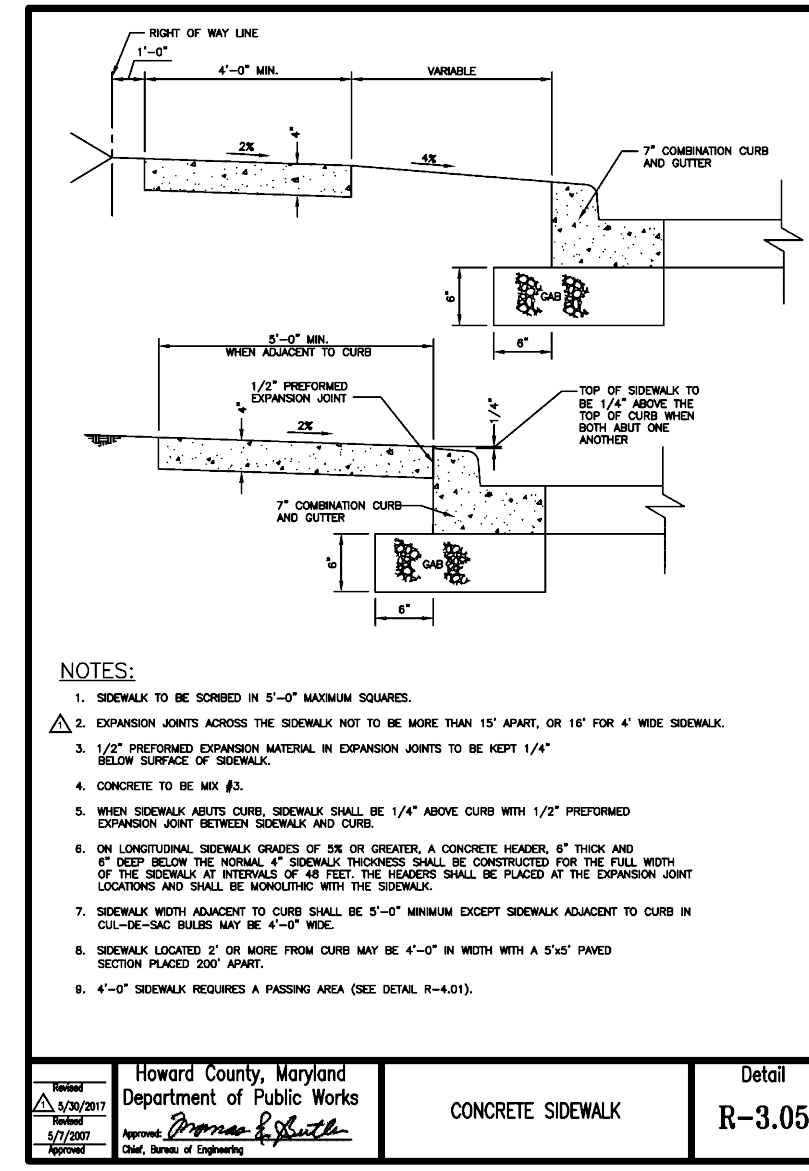
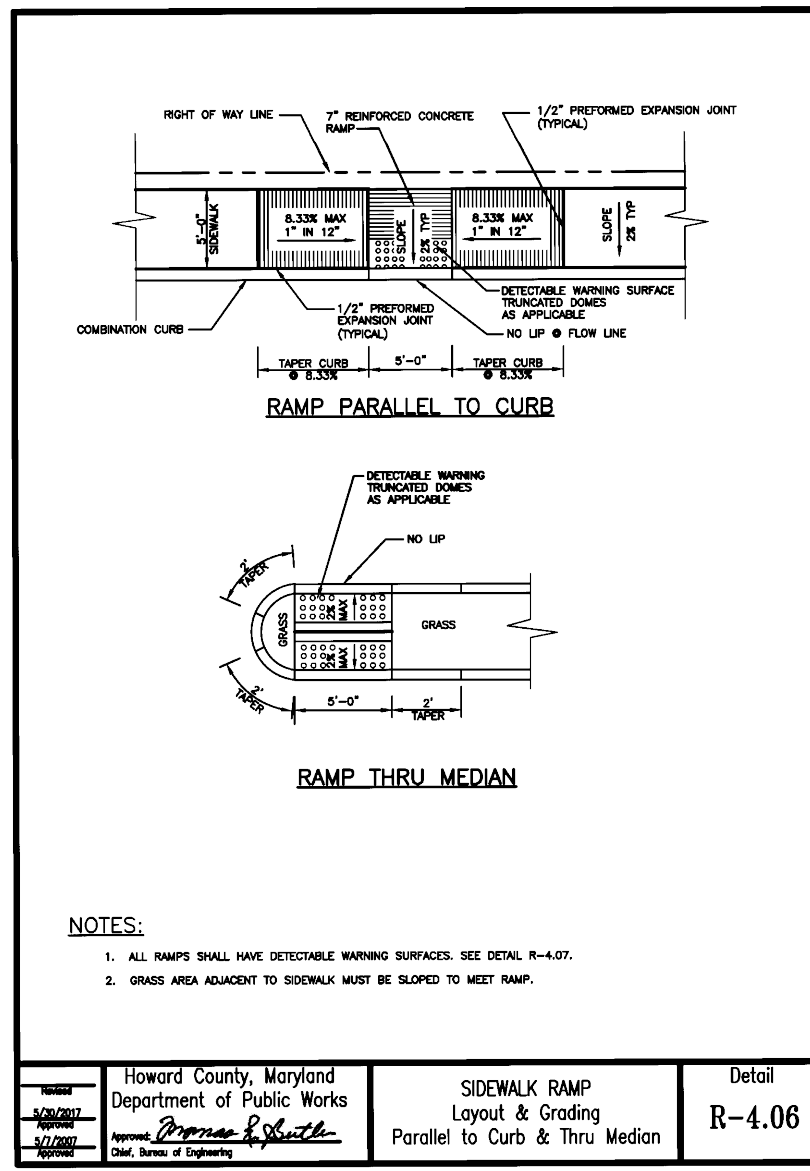
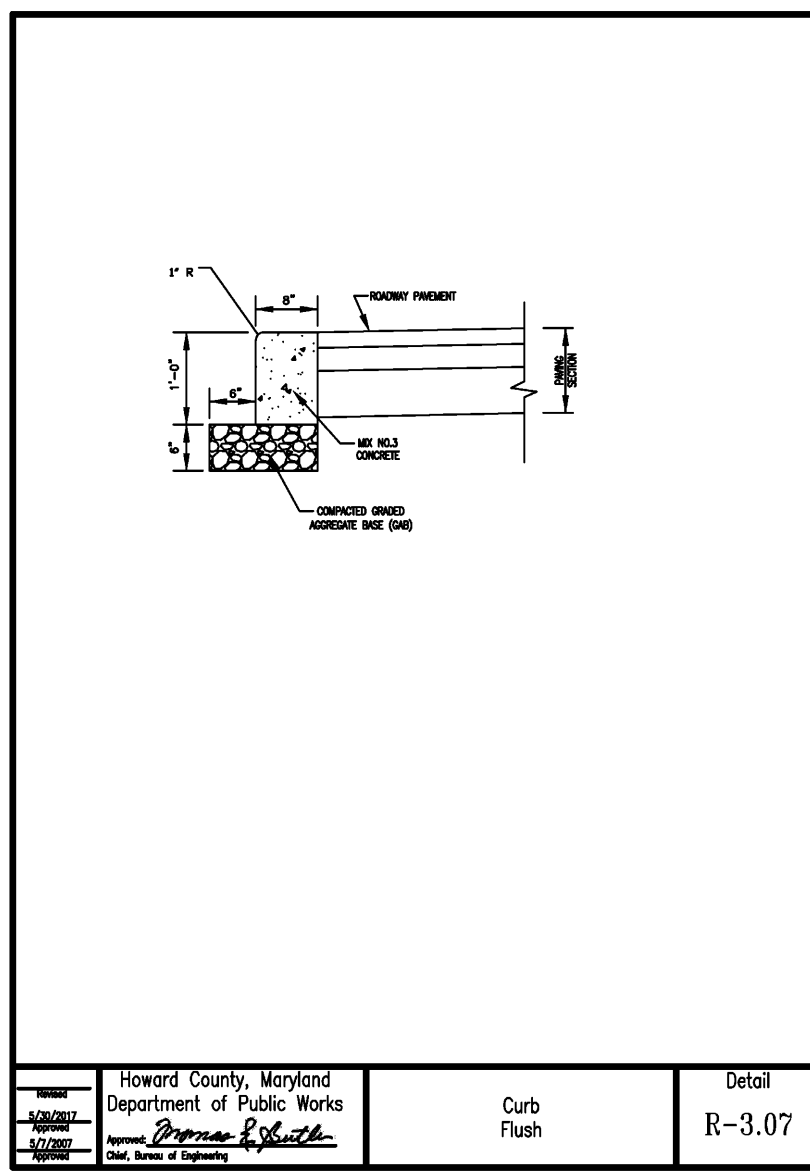
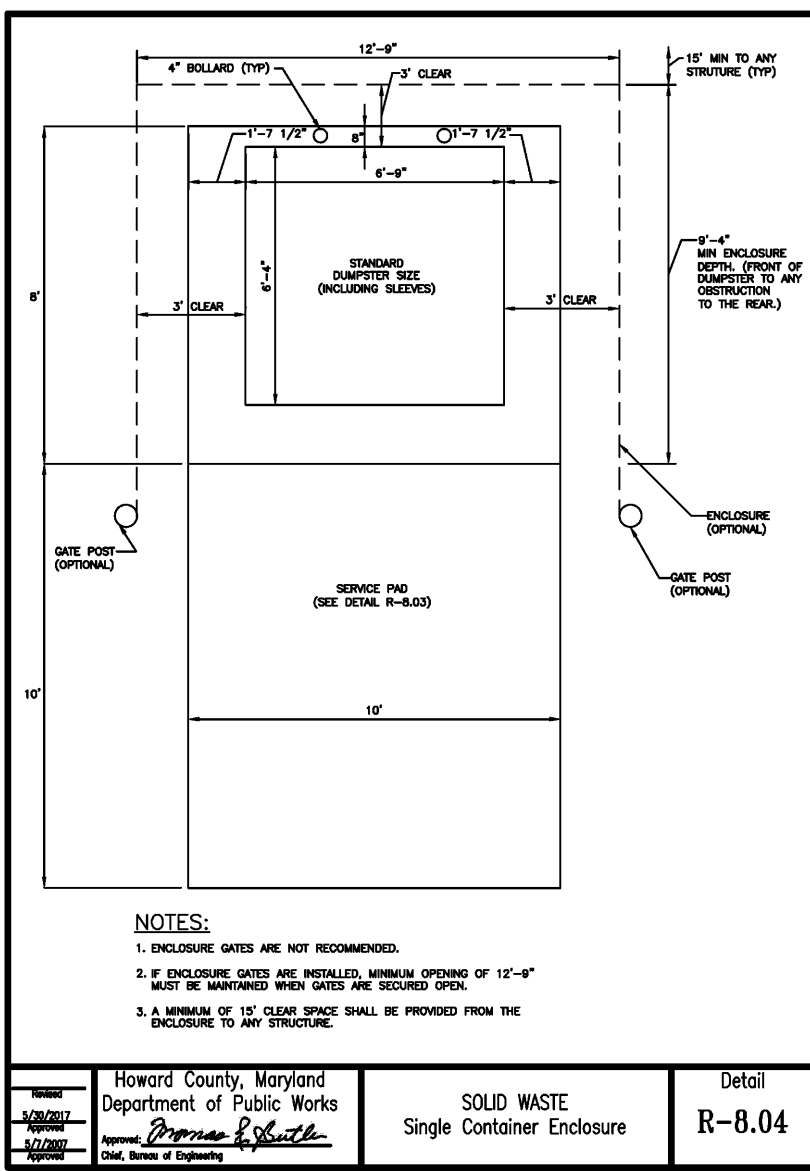
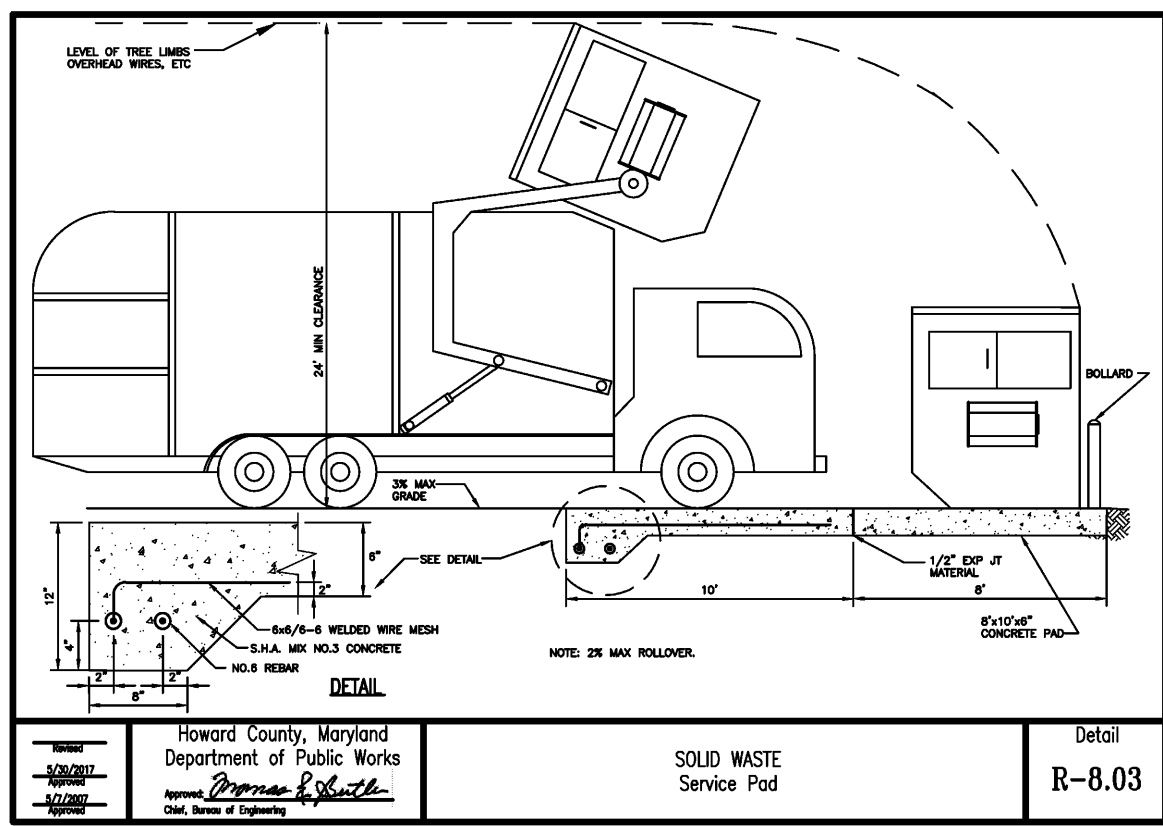
TAX MAP 42 BLOCK 11 6TH ELECTION DISTRICT PARCEL 'A-2' / LAND UNIT 5 HOWARD COUNTY, MARYLAND

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



DESIGN BY: DZE/RHV/ACS
DRAWN BY: JH/DZE/ACS
CHECKED BY: RHV
DATE: JULY 2023
SCALE: AS SHOWN
W.O. NO.: 02-79

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



DH152/DR152

General Features

The model DH152 or DR152 grinder pump station is a complete unit that includes two grinder pumps, check valve, polyethylene tank, controls, and alarm panel. A single DH152 or DR152 is used for up to four, average single-family homes and can also be used for up to 12 average single-family homes where codes allow and with consent of the authority.

- Rated for flows of 1000 gpd (11.38 lpd)
- 150 gallons (568 liters) of capacity
- Standard outdoor height ranges from 93 inches to 160 inches

The DH152 is the "backbone" or "wired" model where a cable connects the motor controls to the level controls through underground penetrations. The DR152 is the "radio frequency identification" (RFID) or "wireless" model that uses wireless technology to communicate between the level controls and the motor controls.

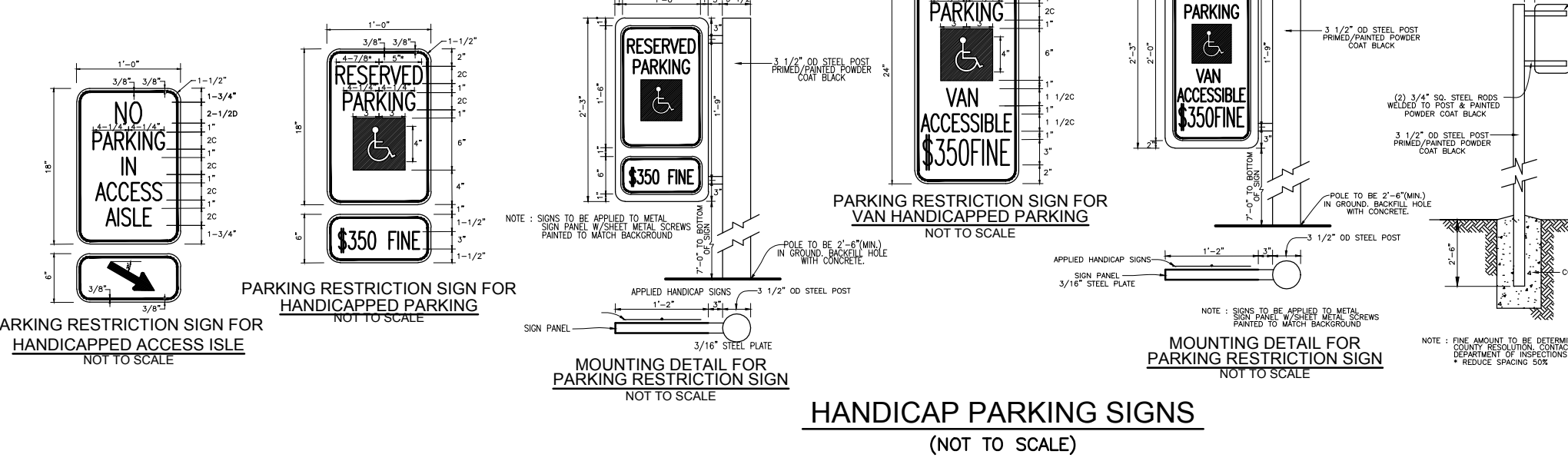
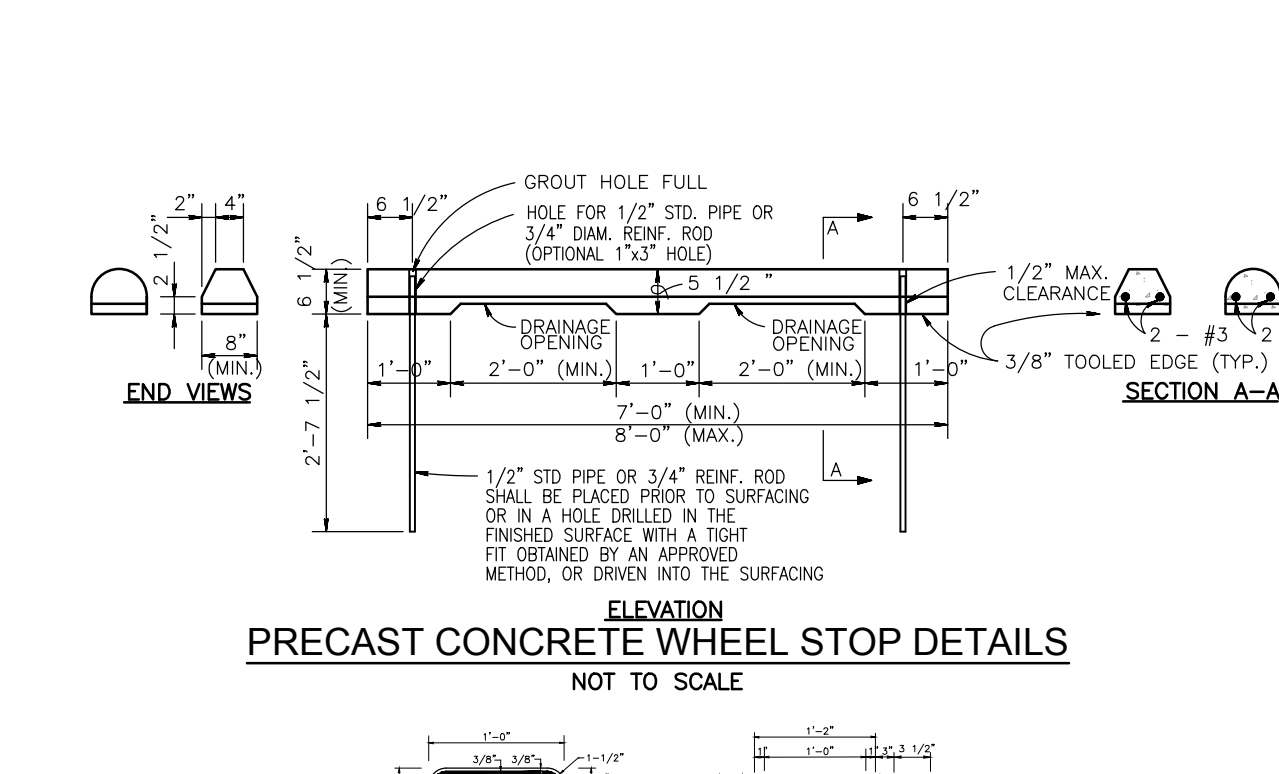
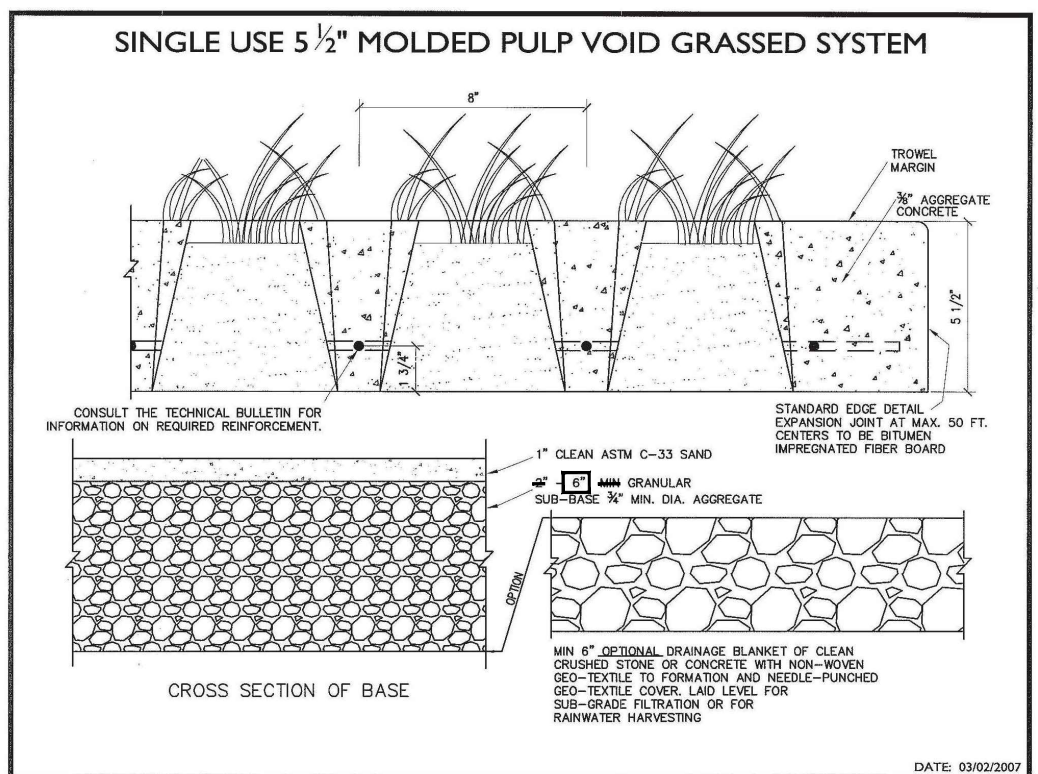
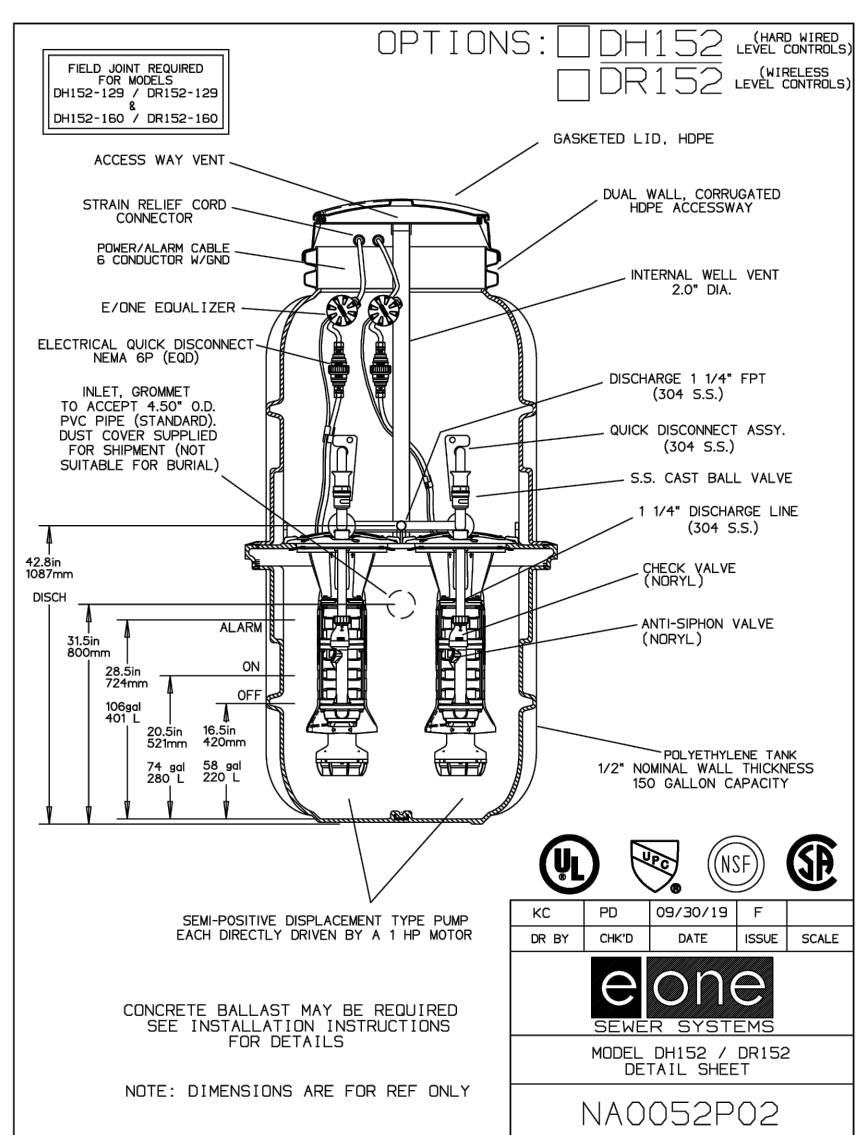
Motor
 1hp, 1.25 hp, high torque, capacitor start, thermally protected, 1500/40V, 60 Hz, 3 phase

Inlet Connections
 4-inch inlet ground standard for DWV pipe. Other inlet configurations available from the factory.

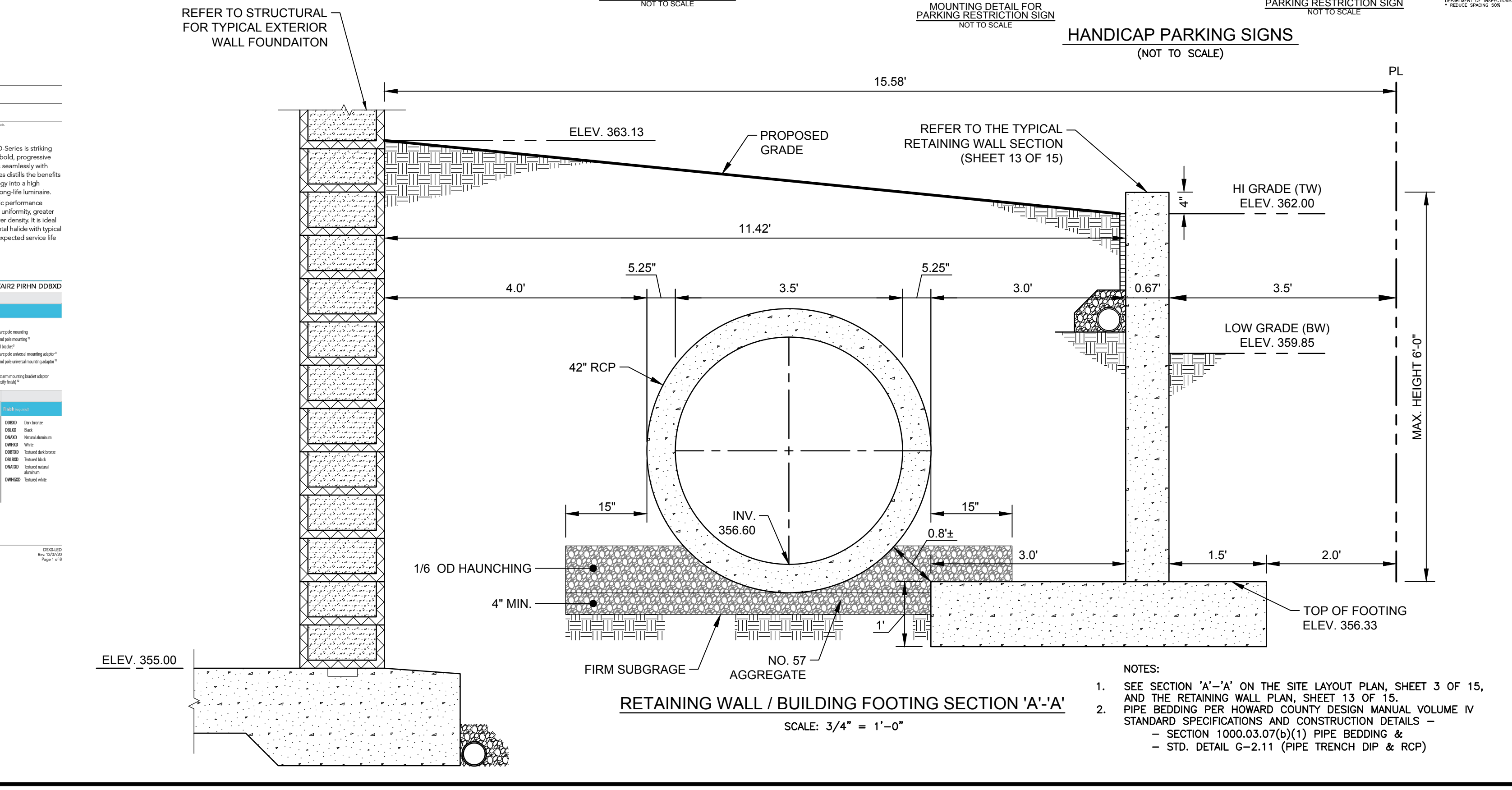
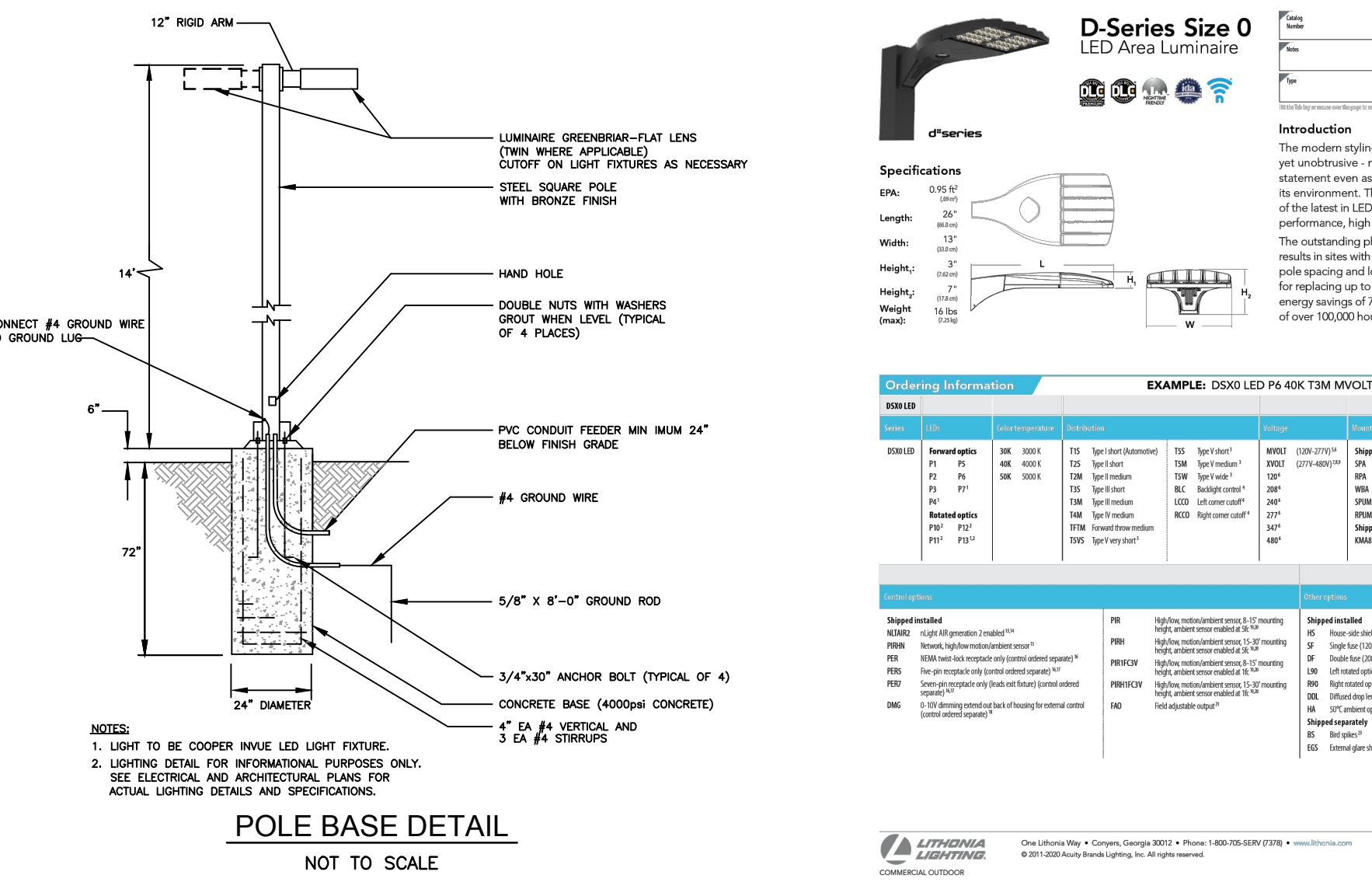
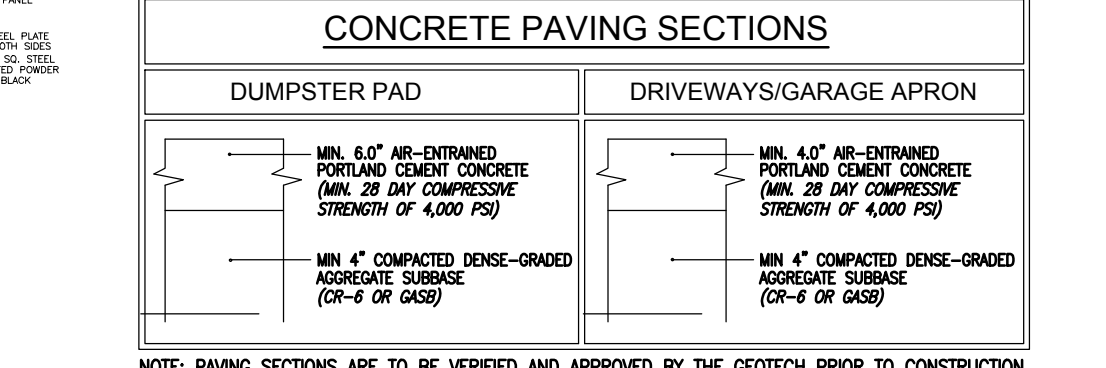
Discharge Connections
 Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

Accessories
 Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

The remote battery is ideal for installations where the alarm panel may be hidden from view.



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA MOBILE HOME (CMH)	3 TO 45 FT TO 4 FT	3 TO 7 FT TO 5 FT	3 TO 7 FT TO 7 FT	3 TO 7 FT TO 7 FT	3 TO 7 FT TO 7 FT
P-1	PARKING SIGN WITH ACCESSIBLE VAN SYMBOL	MIN. 6" 40-ENTRANCED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI)	1.5	3.0	4.0	4.0	4.0
		MIN. 4" COMPACTED DENSE-GRADED AGGREGATE SURFACE (CR-6 OR G-6)	2.0	3.0	3.0	3.0	3.0
P-2	PARKING SIGN WITH ACCESSIBLE VAN SYMBOL	MIN. 6" 40-ENTRANCED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI)	1.5	3.0	4.0	4.0	4.0
		MIN. 4" COMPACTED DENSE-GRADED AGGREGATE SURFACE (CR-6 OR G-6)	2.0	3.0	3.0	3.0	3.0
P-3	PARKING SIGN WITH ACCESSIBLE VAN SYMBOL	MIN. 6" 40-ENTRANCED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI)	1.5	3.0	4.0	4.0	4.0
		MIN. 4" COMPACTED DENSE-GRADED AGGREGATE SURFACE (CR-6 OR G-6)	2.0	3.0	3.0	3.0	3.0
P-4	PARKING SIGN WITH ACCESSIBLE VAN SYMBOL	MIN. 6" 40-ENTRANCED PORTLAND CEMENT CONCRETE (MIN. 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI)	1.5	3.0	4.0	4.0	4.0
		MIN. 4" COMPACTED DENSE-GRADED AGGREGATE SURFACE (CR-6 OR G-6)	2.0	3.0	3.0	3.0	3.0



OWNER/DEVELOPER
 C/O J LLC
 7020 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
SITE DETAILS
STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

TAX MAP 42, BLOCK 11
 6TH ELECTION DISTRICT

PARCEL 'A-2' / LAND UNIT 5
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
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PROFESSIONAL CERTIFICATE
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DESIGN BY: DZE/RHV/ACS
 DRAWN BY: HH/DZE/ACS
 CHECKED BY: RHV
 DATE: JULY 2023
 SCALE: AS SHOWN
 W.O. NO.: 02-79

4 SHEET OF 15

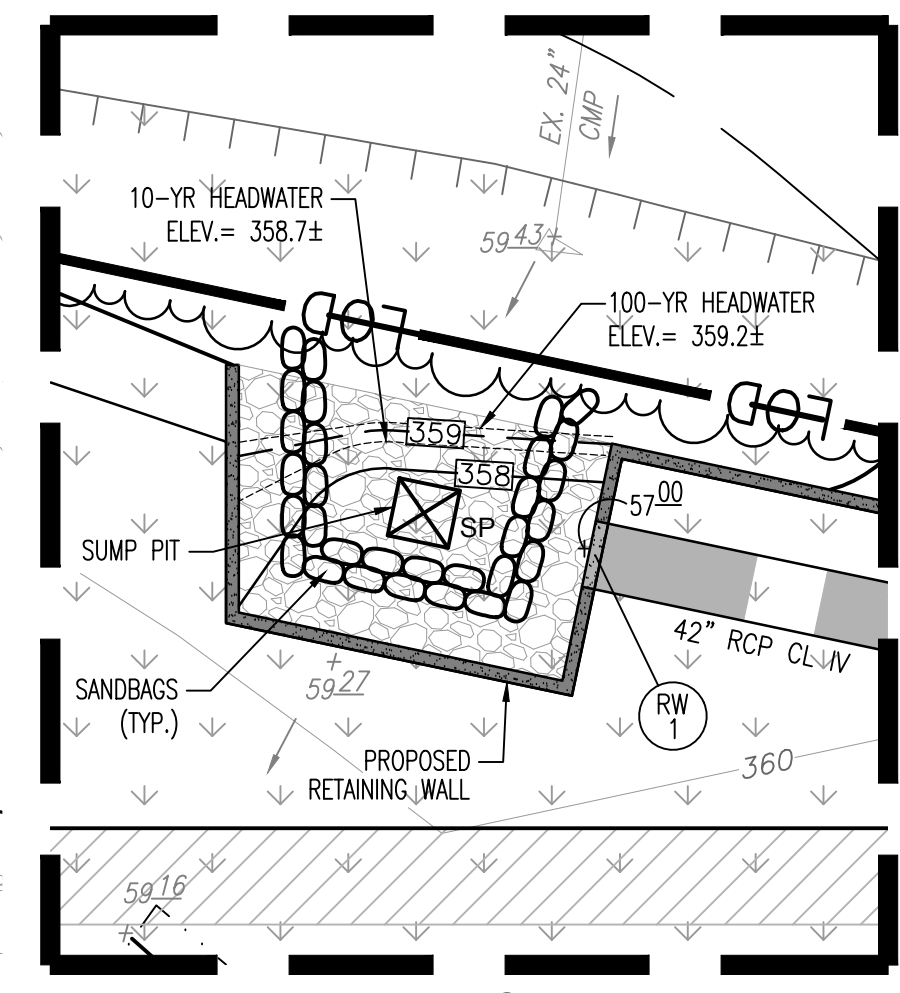
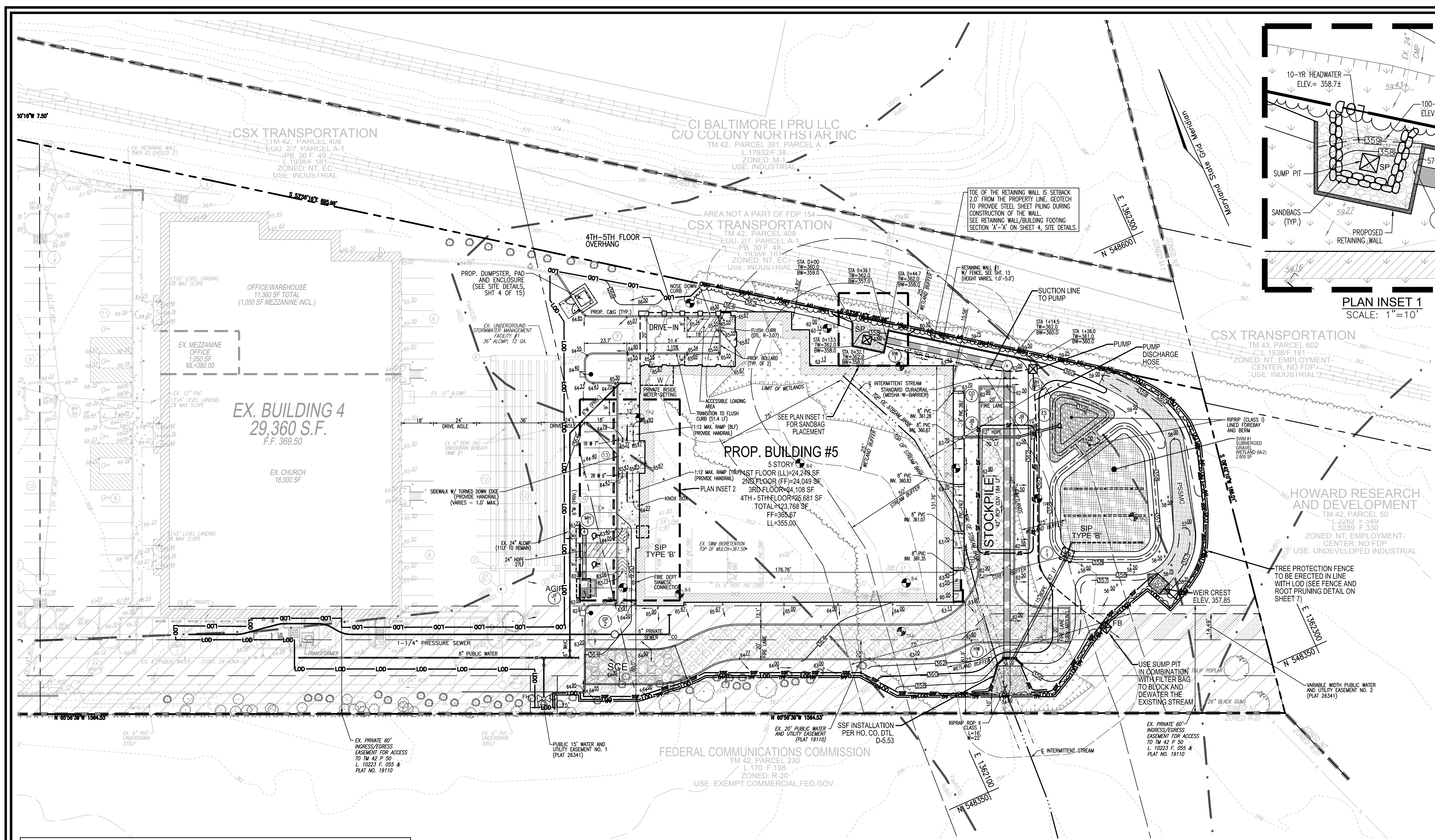
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Designed by: Philip M. Thompson 10/12/2023

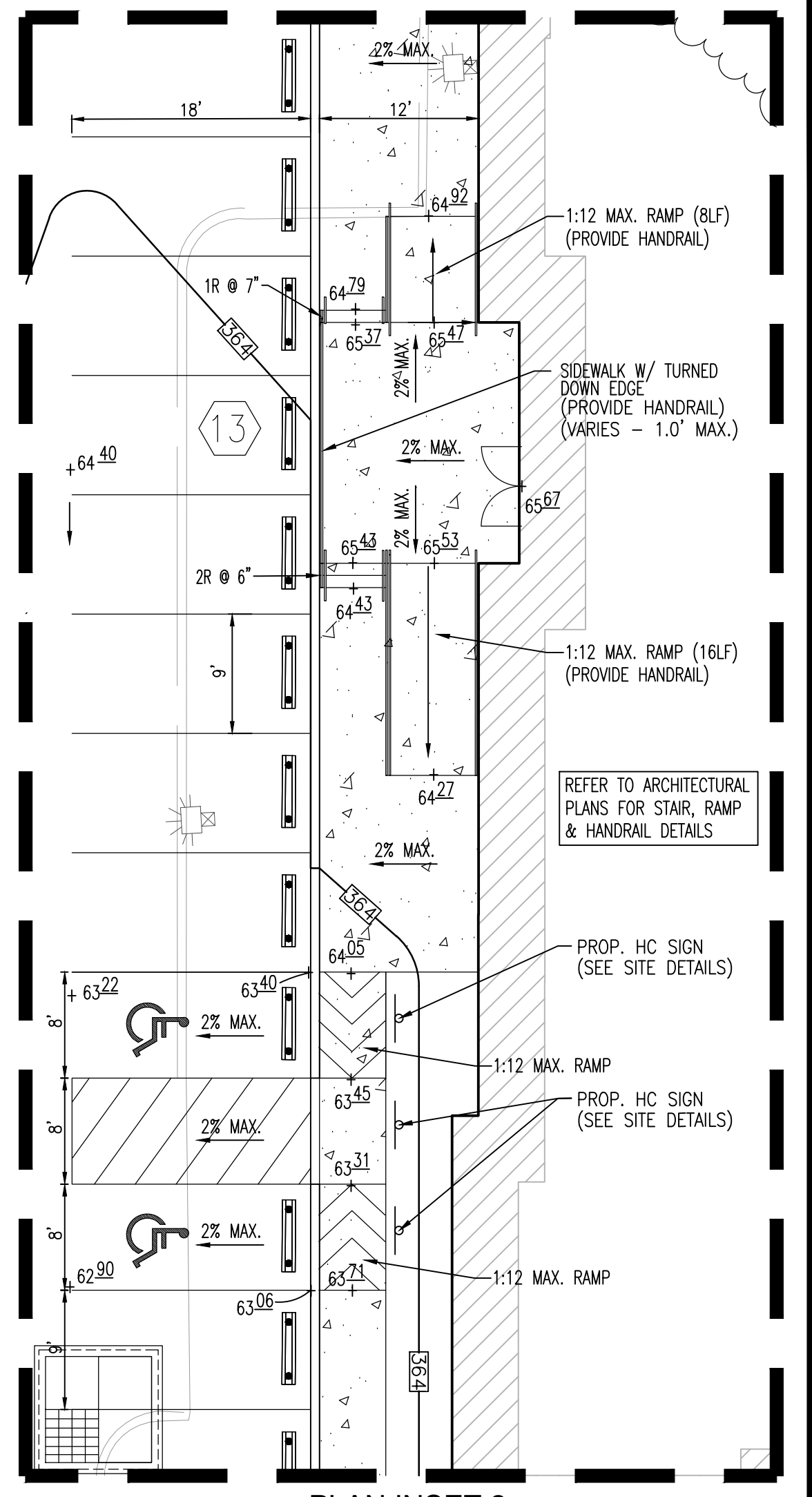
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/12/2023

CHIEF, DIVISION OF PLANNING DEVELOPMENT DATE 10/12/2023

DIRECTOR DATE



PLAN INSET 1
SCALE: 1"=10'



PLAN INSET 2
SCALE: 1"=10'

SOILS LEGEND							
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT SAND	PERCENT SILT	PERCENT CLAY	ERODIBILITY
FoaA	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	C/D	YES	YES	NO	NO	NO
RuB	RUSSETT AND BELTSVILLE SOILS, 2 TO 5 PERCENT SLOPE	C	NO	NO	NO	.28	NO
S4C	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPE	B	NO	NO	NO	.32	NO
U1D	URBAN LAND-INDUSTRIALS COMPLEX, 0 TO 15 PERCENT SLOPE	D	NO	NO	NO	NO	NO

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

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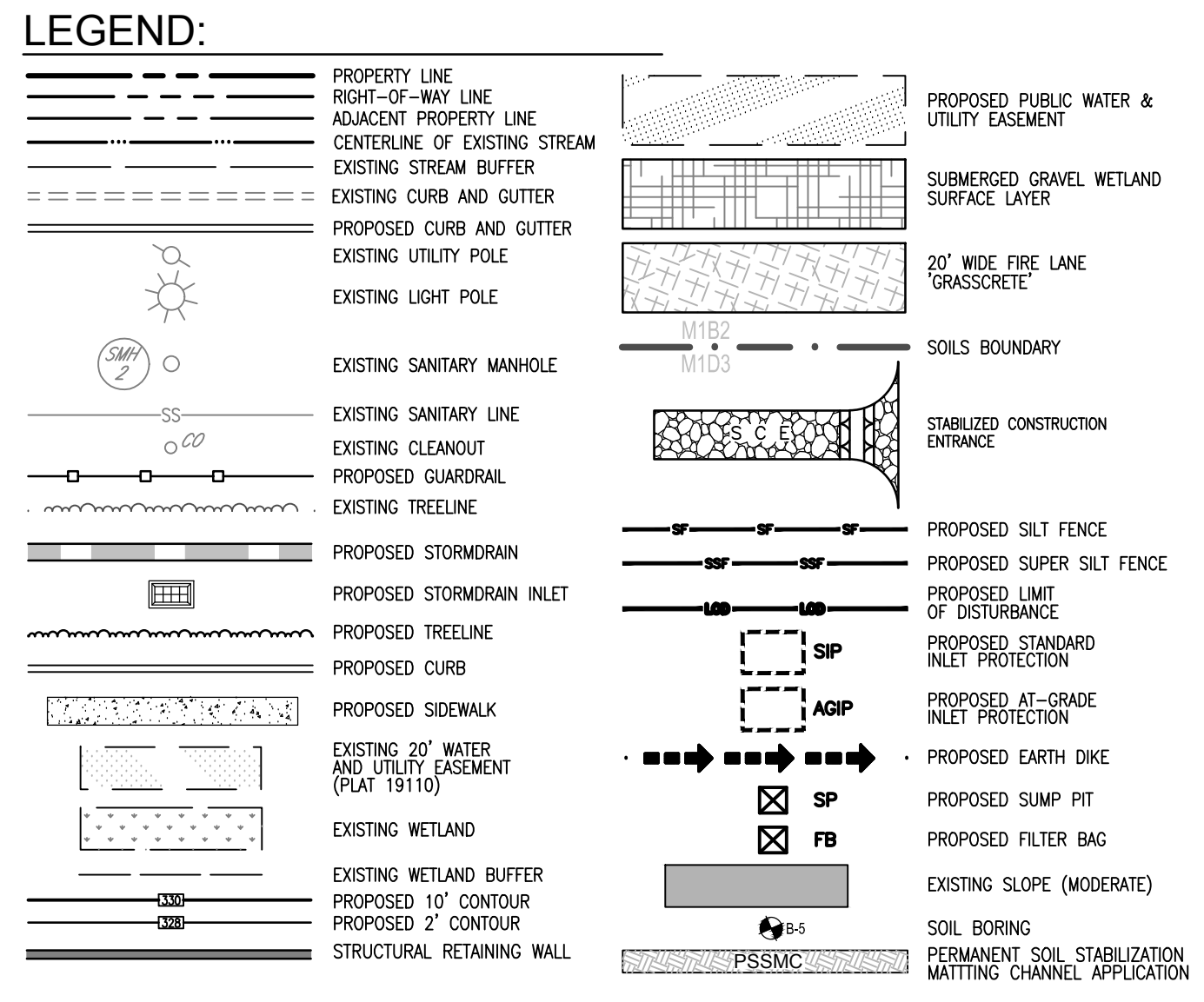
WETLAND/STREAM BUFFER DISTURBANCE:
 1. DISTURBANCES TO THE WETLANDS/STREAM BUFFER MUST BE CONDUCTED IN ACCORDANCE WITH ANY PERMITTING APPROVAL REQUIREMENTS FROM MDE AND ALTERNATIVE COMPLIANCE, WP-22-105.

SEDIMENT CONTROL NOTES:
 1. SEDIMENT CONTROLS INTERRUPTED BY THE INSTALLATION OF STORM DRAINS ARE TO BE REPAIRED IMMEDIATELY.
 2. A DOUBLE ROW OF "SUPER" SILT FENCE IS TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 3. STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.
 4. SILT FENCE SHALL BE CURLED UPHILL WHEREVER IT RUNS DOWNHILL.
 5. EITHER TEMPORARY OR PERMANENT SEEDING AND STABILIZATION IS TO BE PERFORMED AT THE INTERVALS PROVIDED IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT.

DEWATERING NOTES:
 1. GROUNDWATER MAY BE ENCOUNTERED BY UTILITY AND STORMWATER EXCAVATIONS. IT IS ANTICIPATED THAT REMOVAL OF WATER COULD BE ACCOMPLISHED BY PUMPING FROM SUMPS WHICH ARE BACKFILLED WITH DOT SIZE NO. 57 STONE OR OPEN GRADED BEDDING MATERIAL. SHOULD WATER CONDITIONS BEYOND THE CAPABILITY OF SUMP PUMPING BE ENCOUNTERED, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE APPROVING AUTHORITY.
 2. IF DEWATERING IS NEEDED FOR THE STREAM, CONTRACTOR TO UTILIZE A PORTABLE SEDIMENT TANK AND SANDBAG DIKE AT THE END OF THE STREAM (NEAR HW-1), OR THE MARYLAND GUIDELINES FOR WATERWAY CONSTRUCTION DETAIL 1.2: PUMP-AROUND PRACTICE, TO KEEP IT FREE OF WATER AS IT IS FILLED (SEE DETAILS ON SHEET 7).

TEMPORARY STONE OUTLET STRUCTURE (TSOS)
 DRAINAGE AREA TO TSOS (DA) 0.25 ACRES
 STORAGE VOLUME REQUIRED * 450 CF
 STORAGE VOLUME PROVIDED 450 CF
 * (PROVIDE 1,800 CF OF STORAGE VOLUME PER ACRE OF DA)

STAGE STORAGE (TSOS)			
	ELEVATION FT.	AREA S.F.	VOLUME C.F.
BOTTOM	356.75	0	---
	357.00	233	29
	357.25	382	77
	357.50	534	115
	357.75	705	155
WEIR CREST	357.85	782	224



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Philip M. Thompson 10/12/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 10/12/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT
 10/12/2023
 DIRECTOR

OWNER/DEVELOPER CERTIFICATION:
 I HEREBY 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 OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERMITS AND SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.
 10/11/2023
 OWNER/DEVELOPER SIGNATURE
 Robert Hartson
 PRINTED NAME & TITLE

DESIGN CERTIFICATION:
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT 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.
 10/11/2023
 DESIGNER'S SIGNATURE
 Robert H. Vogel
 M.D. REGISTRATION NO. 16193
 (P.S. P.L.S. OR P.L.A. (circle one))

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 10/12/2023
 HOWARD S.C.D.

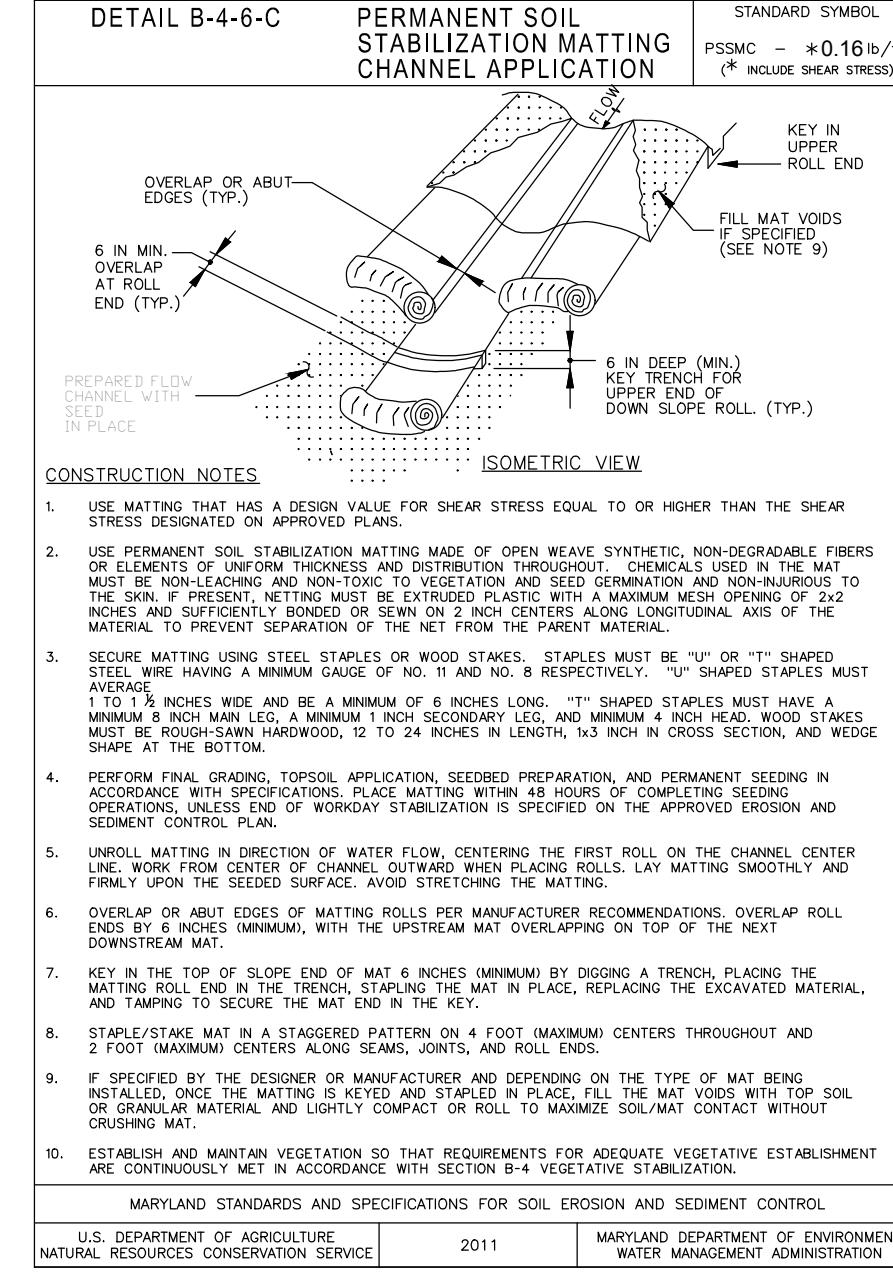
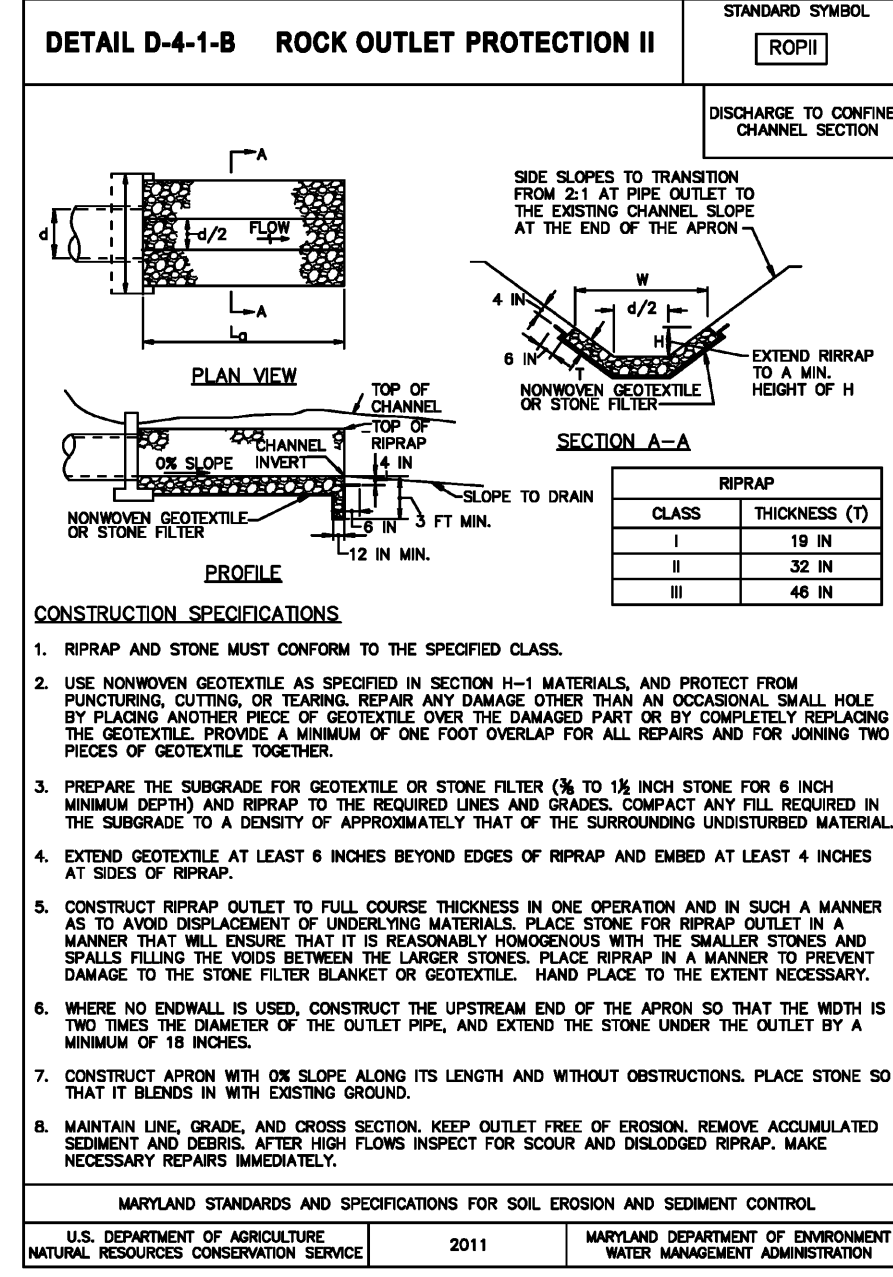
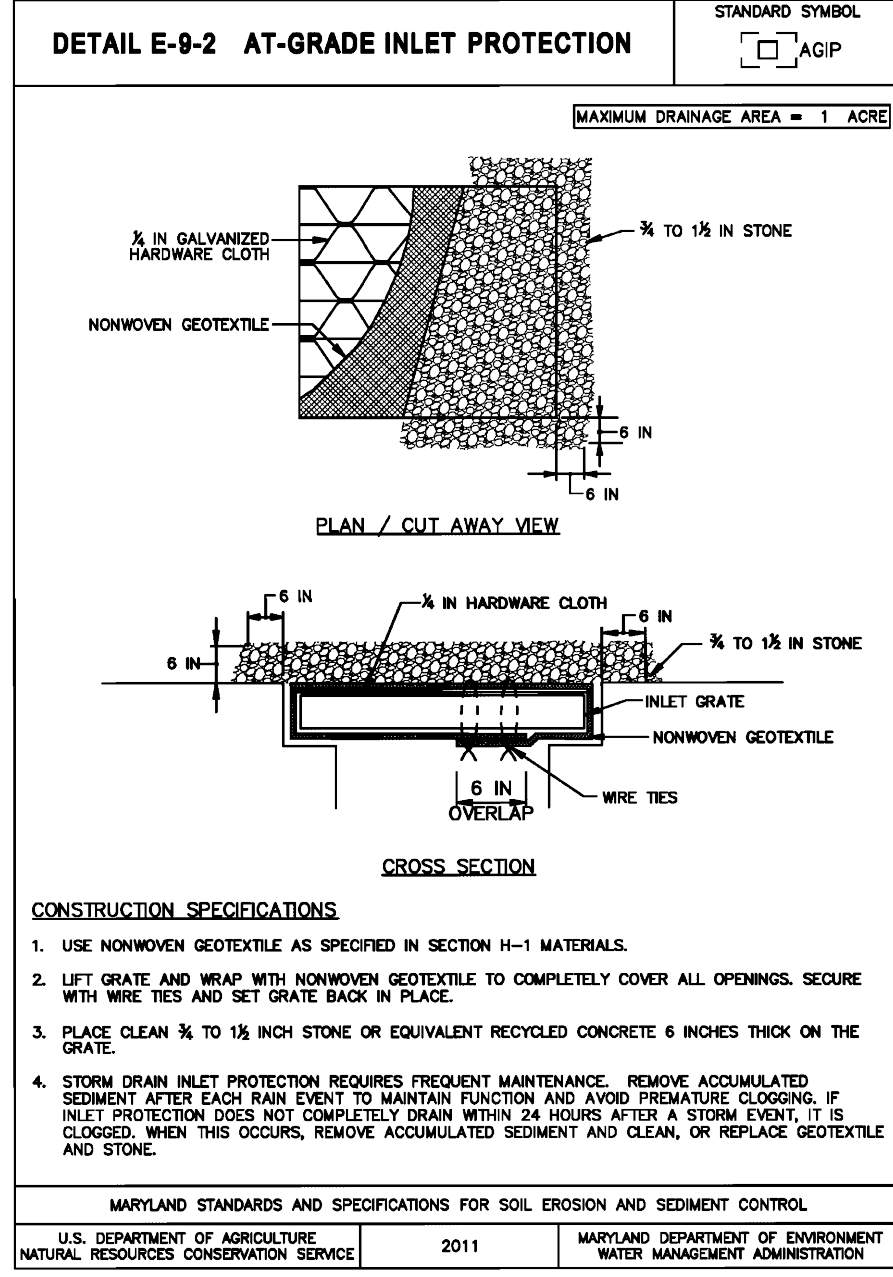
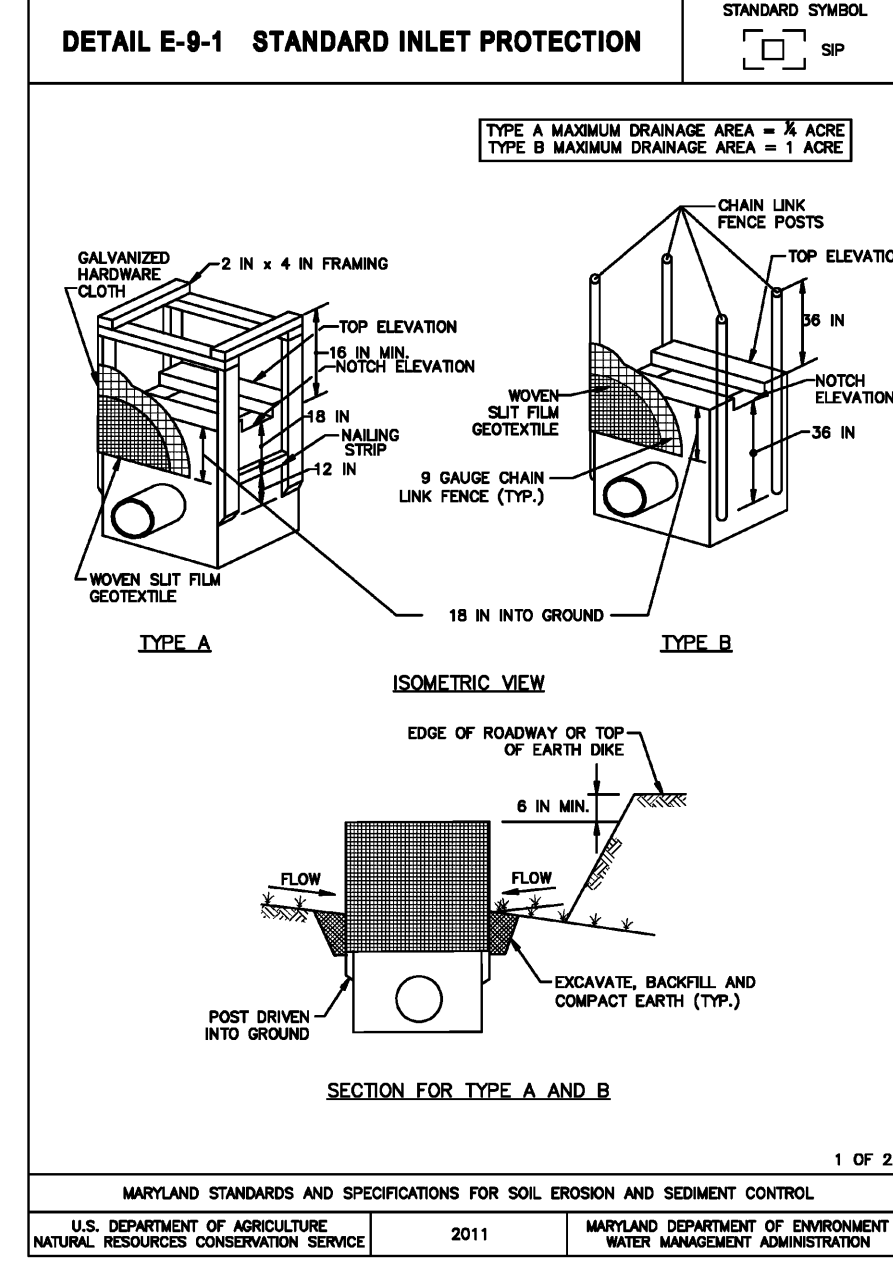
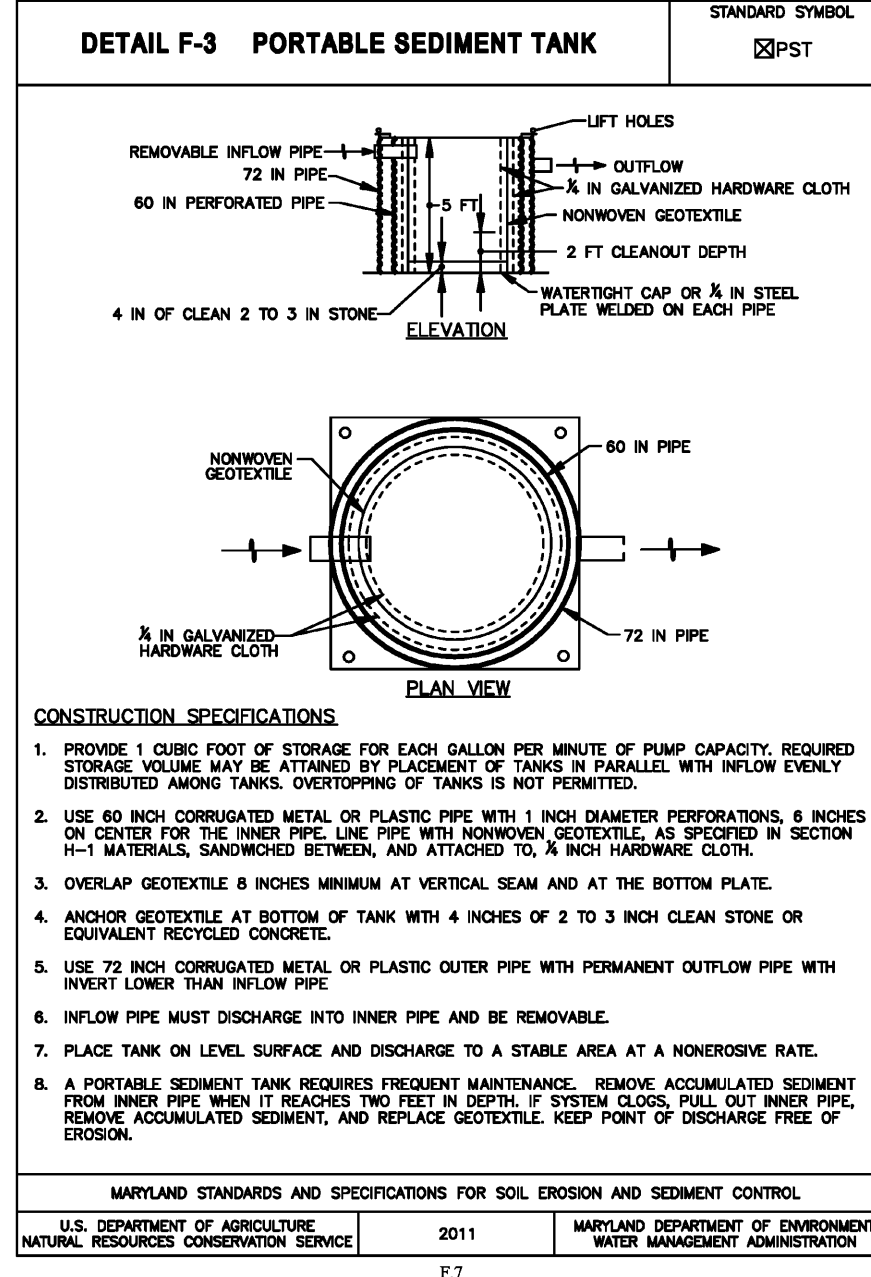
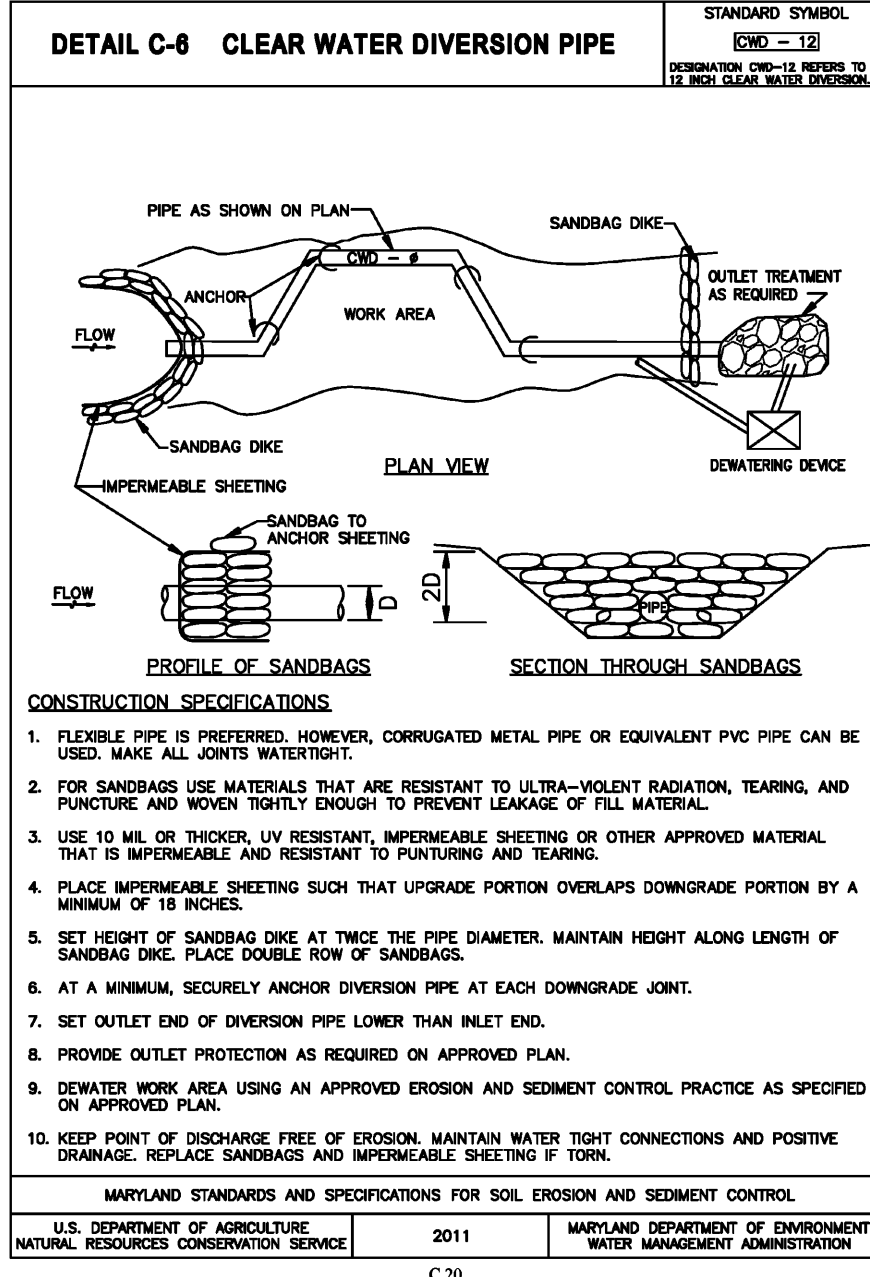
SITE DEVELOPMENT PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN; SOILS MAP
STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6
 TAX MAP 42 BLOCK 11
 6TH ELECTION DISTRICT
 PARCEL "A-2" / LAND UNIT 5
 HOWARD COUNTY, MARYLAND

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

DESIGN BY: DZE/RHV/ACS
 DRAWN BY: JH/DZE/ACS
 CHECKED BY: RHV
 DATE: JULY 2023
 SCALE: AS SHOWN
 W.O. NO.: 02-79

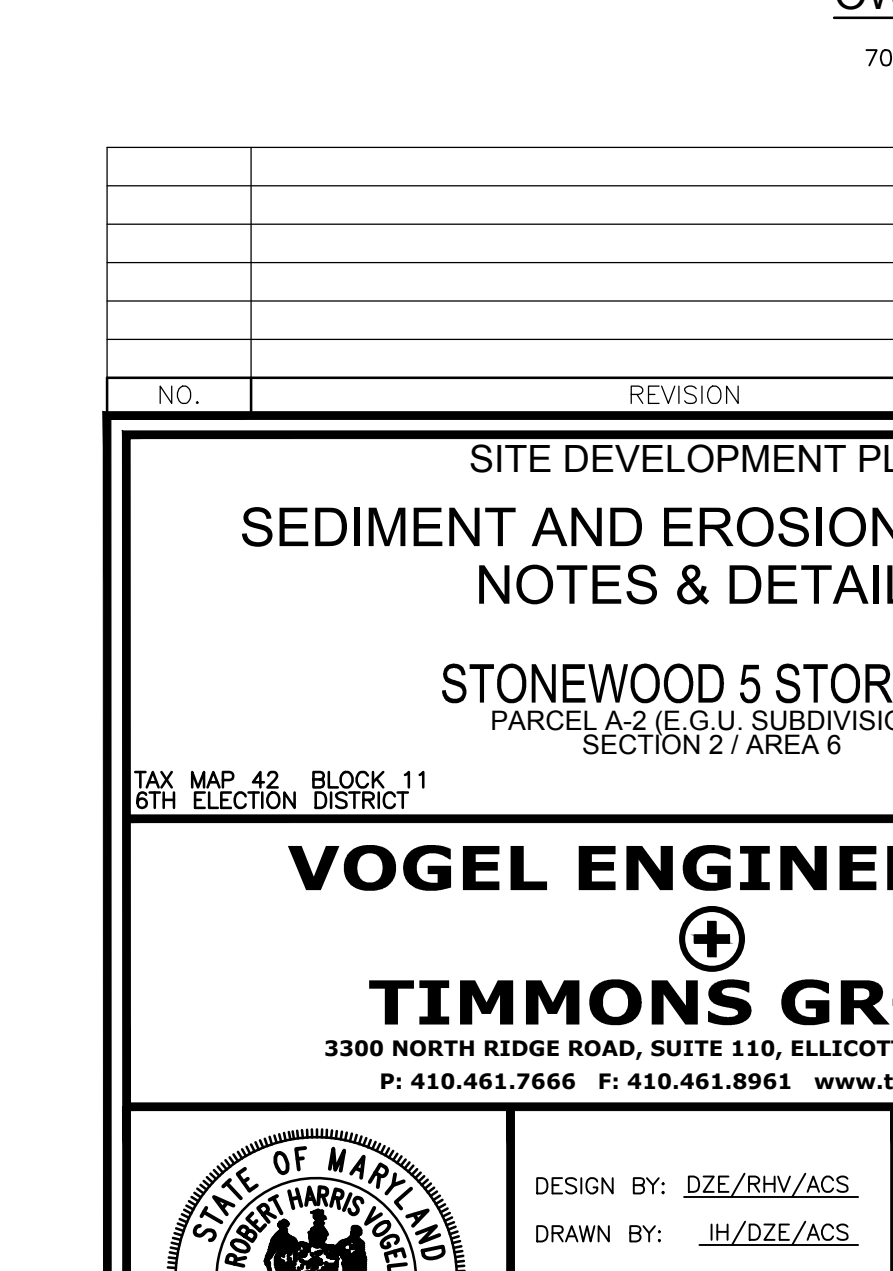
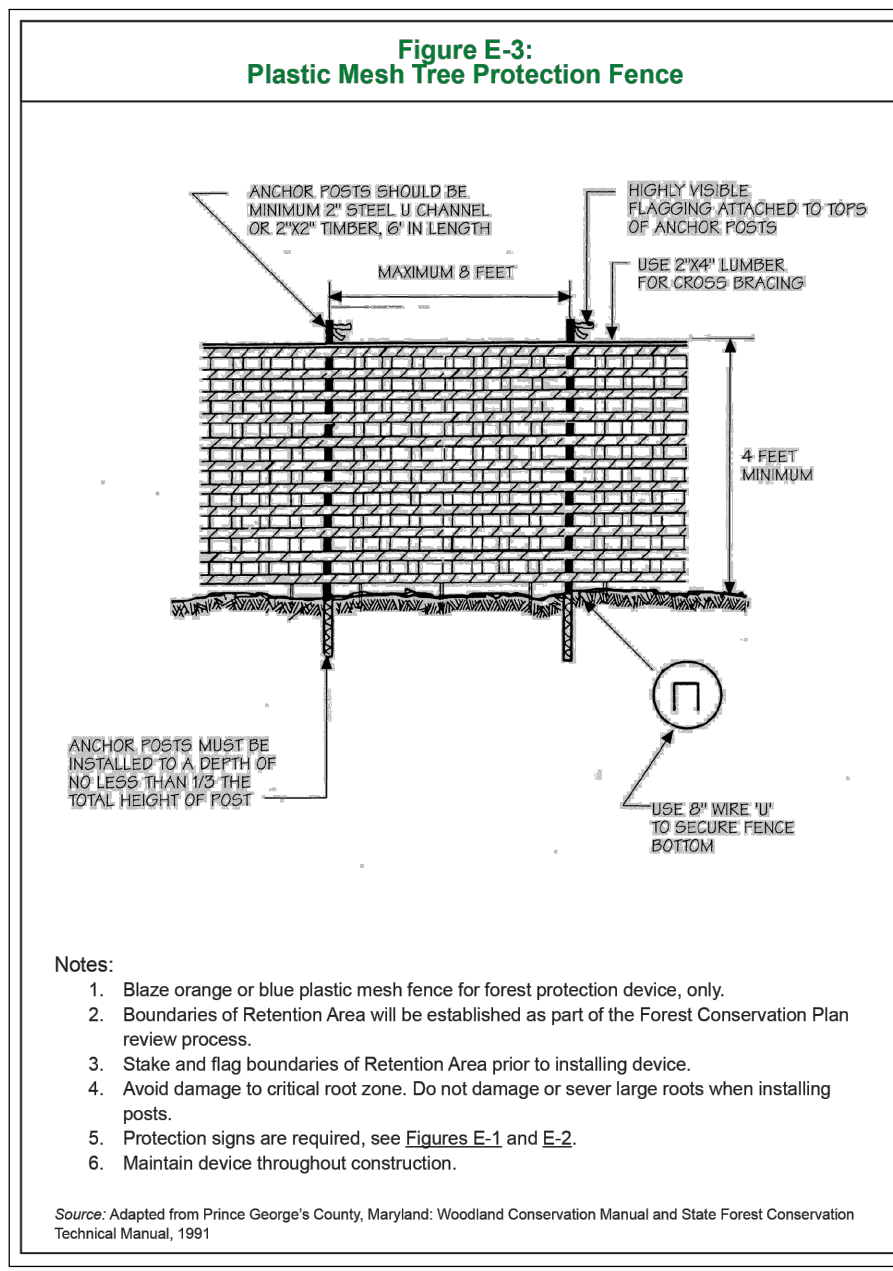
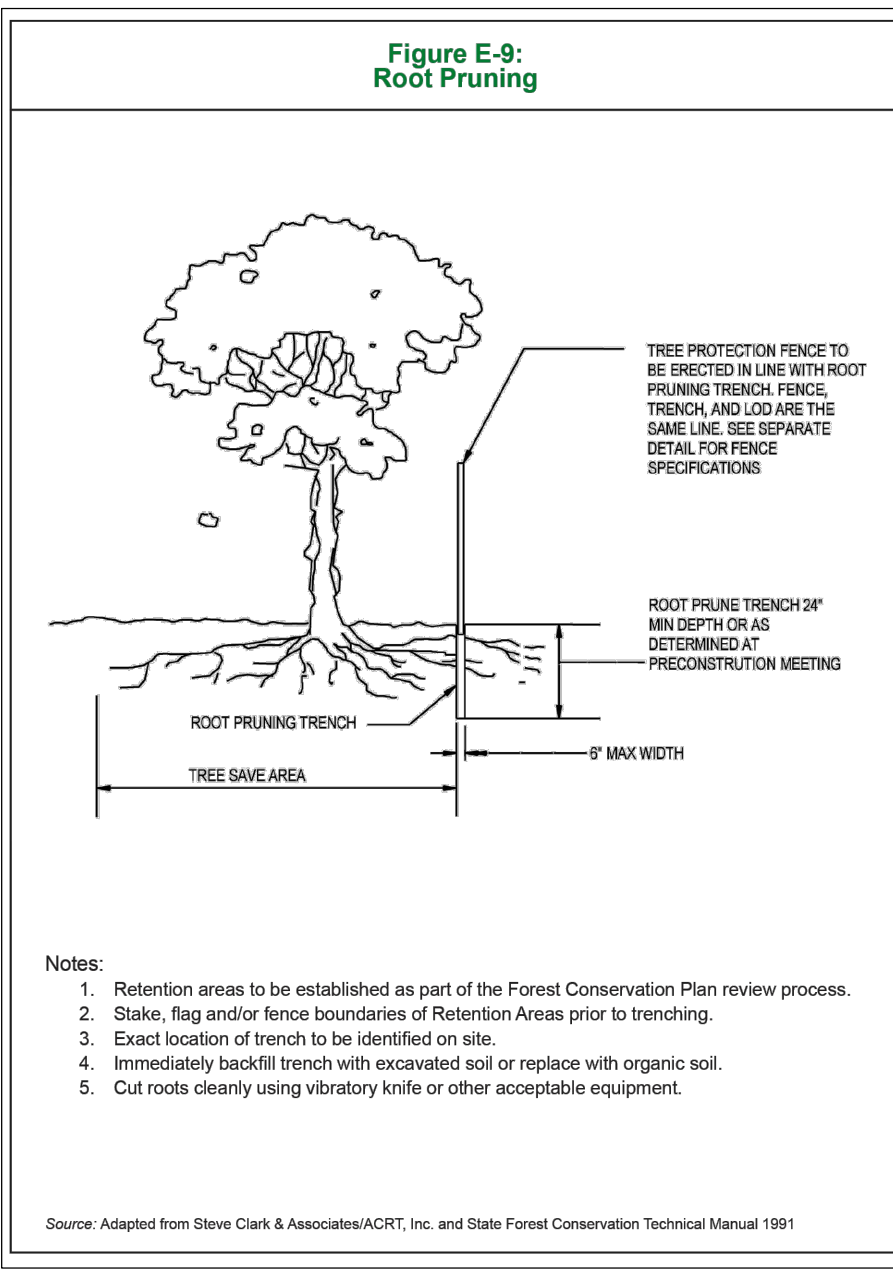
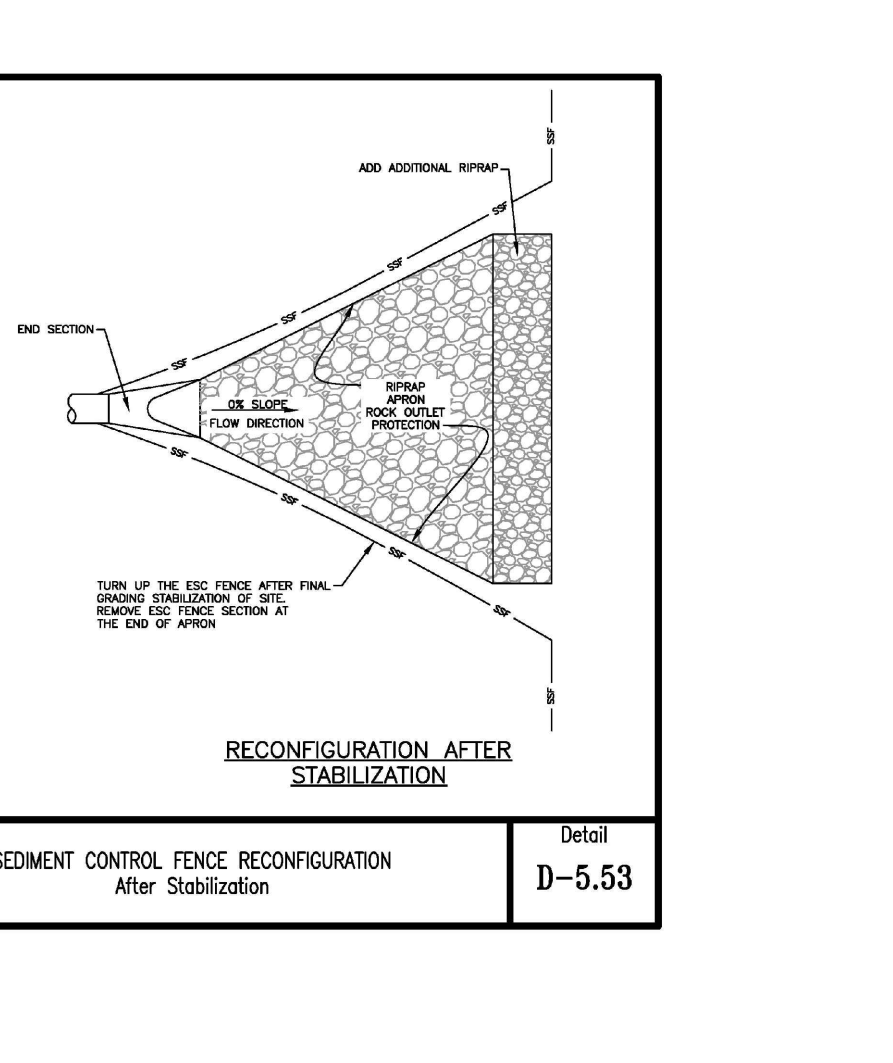
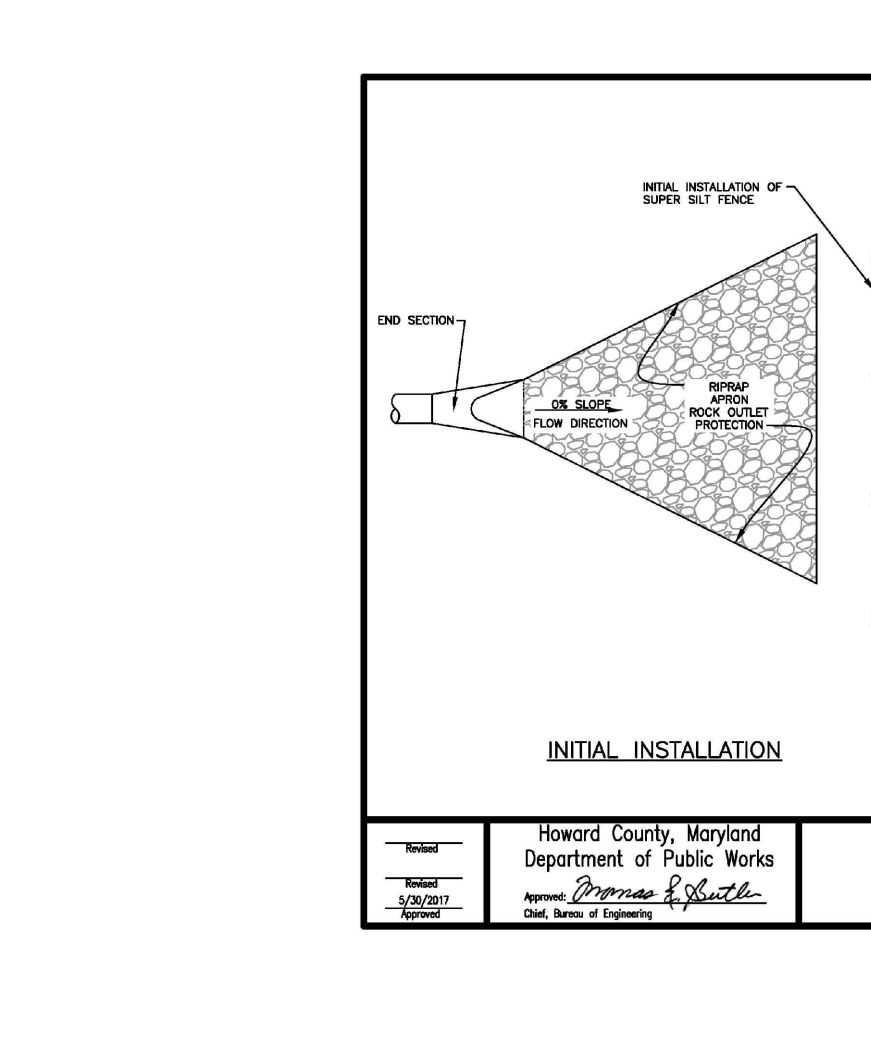
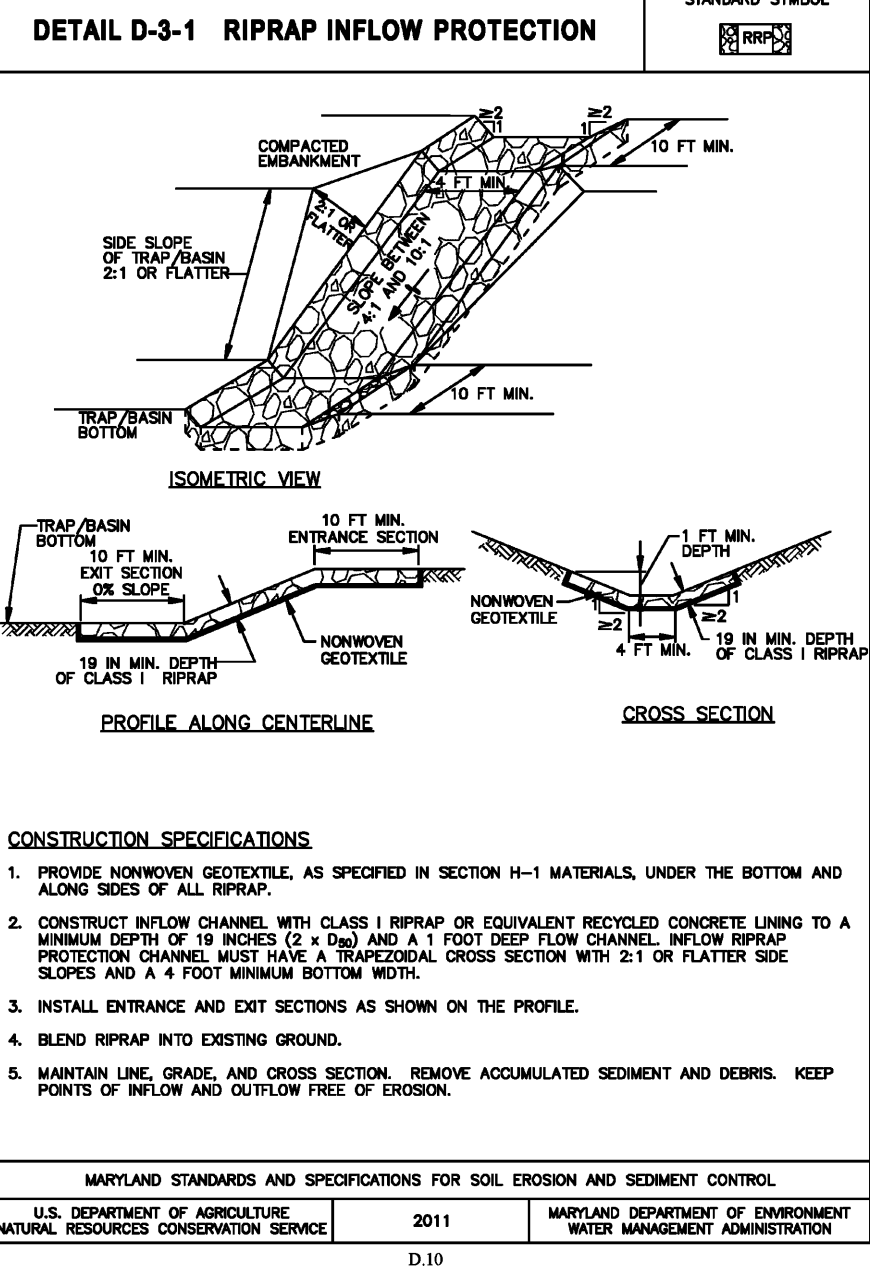
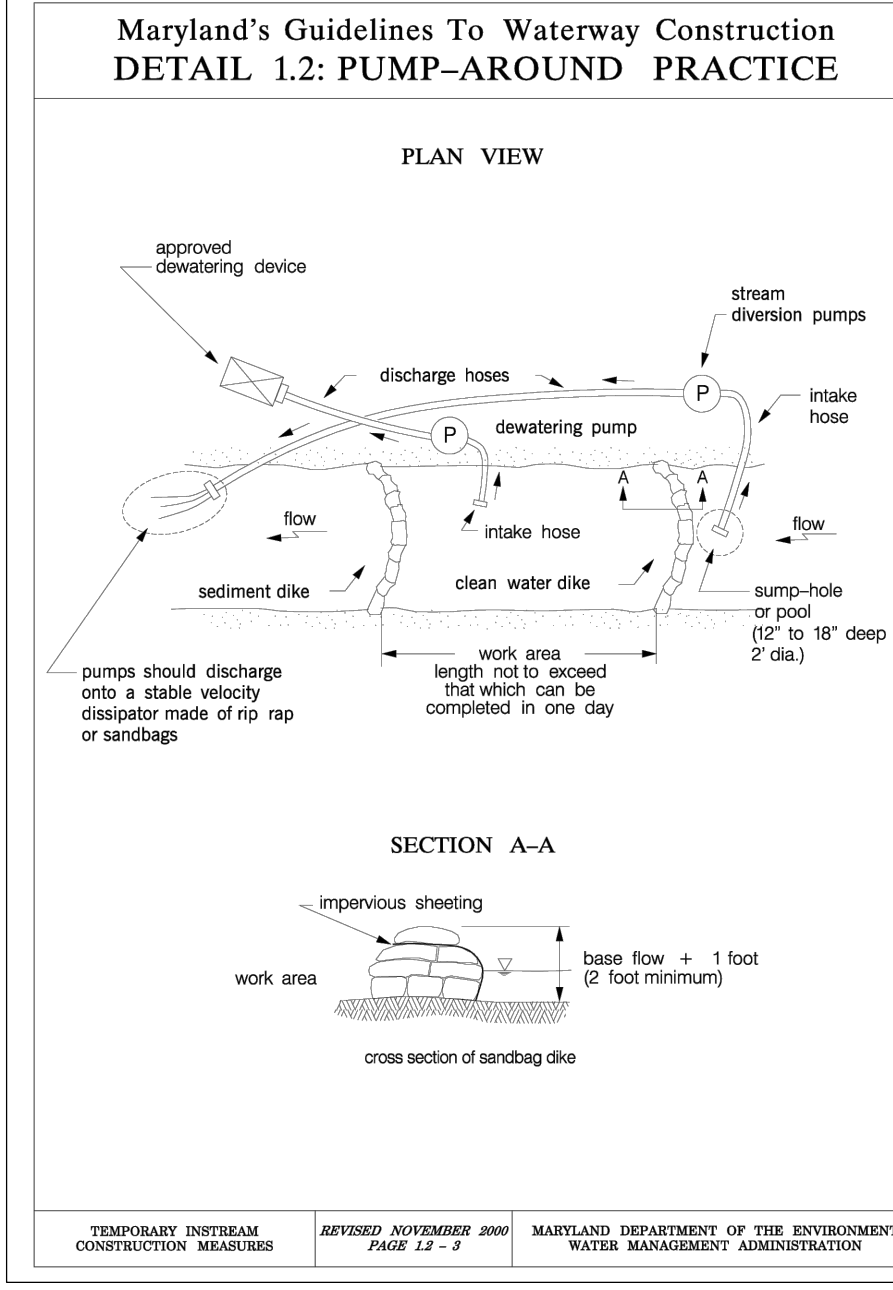
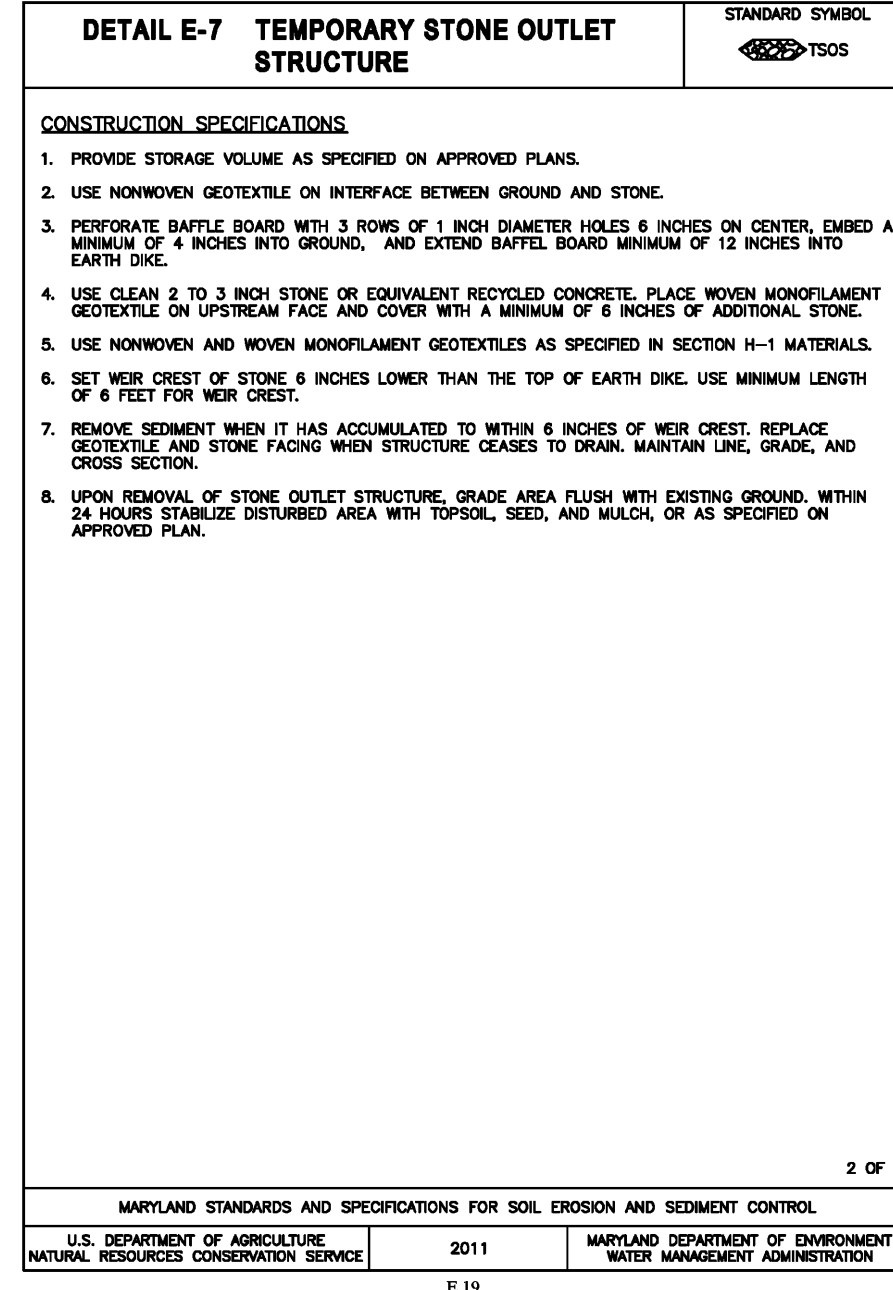
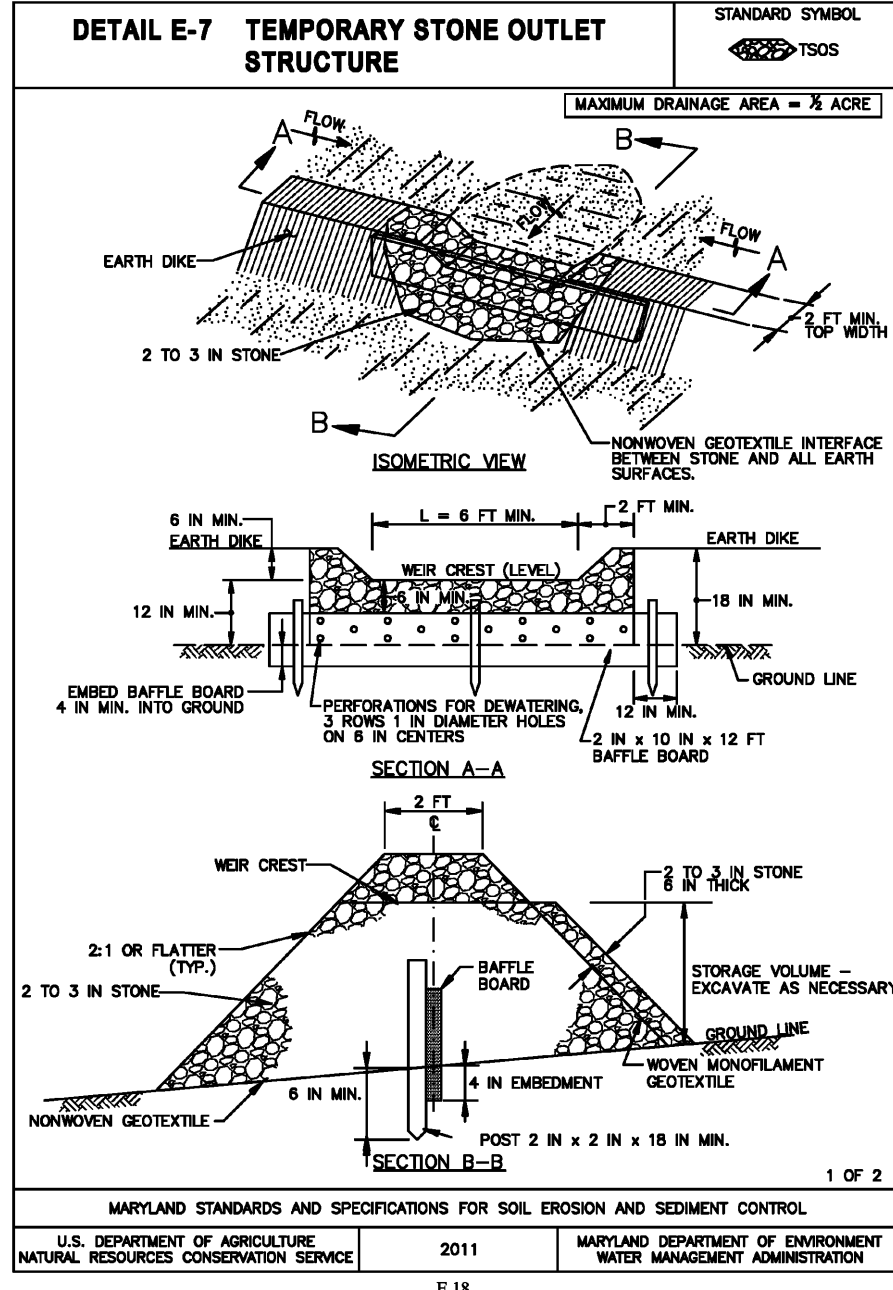
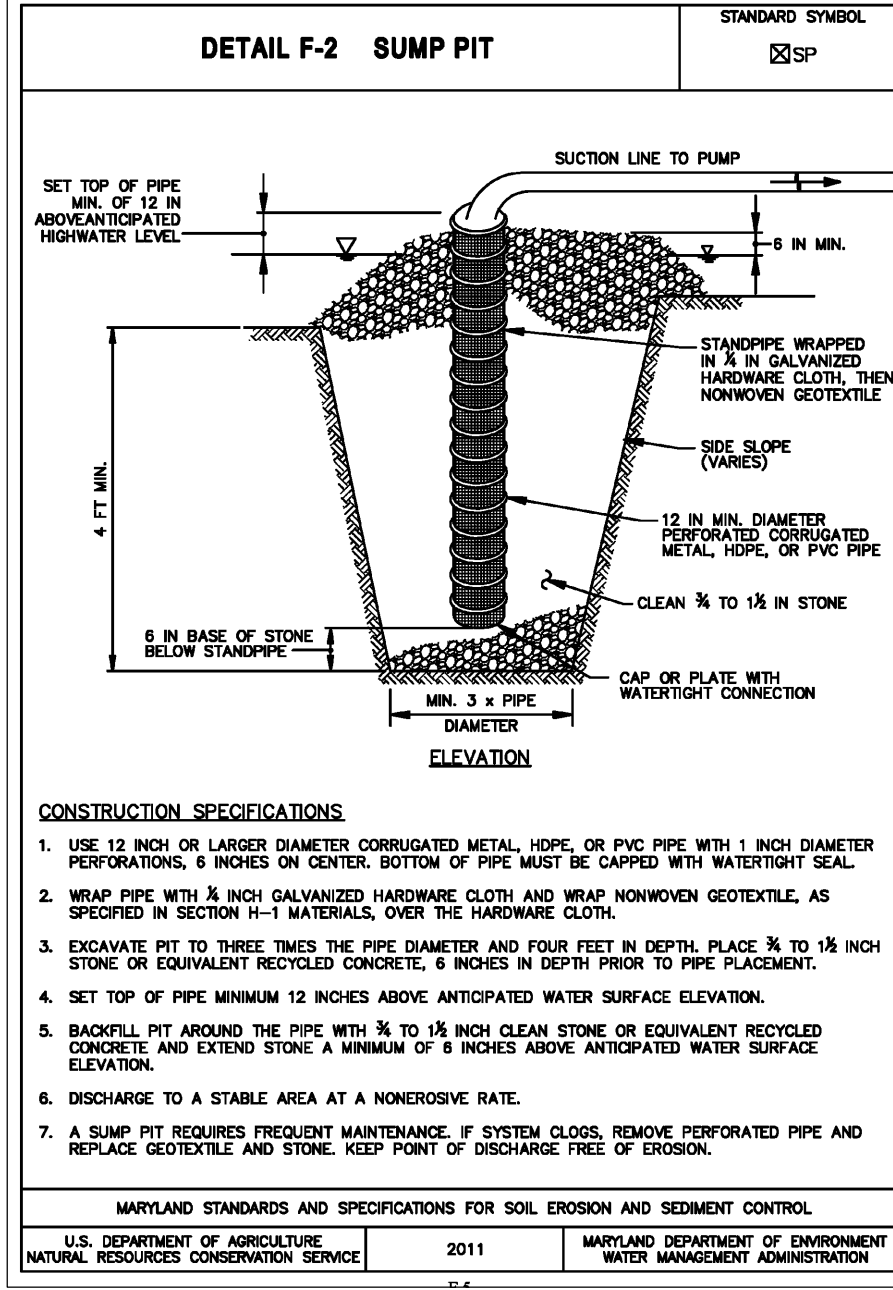
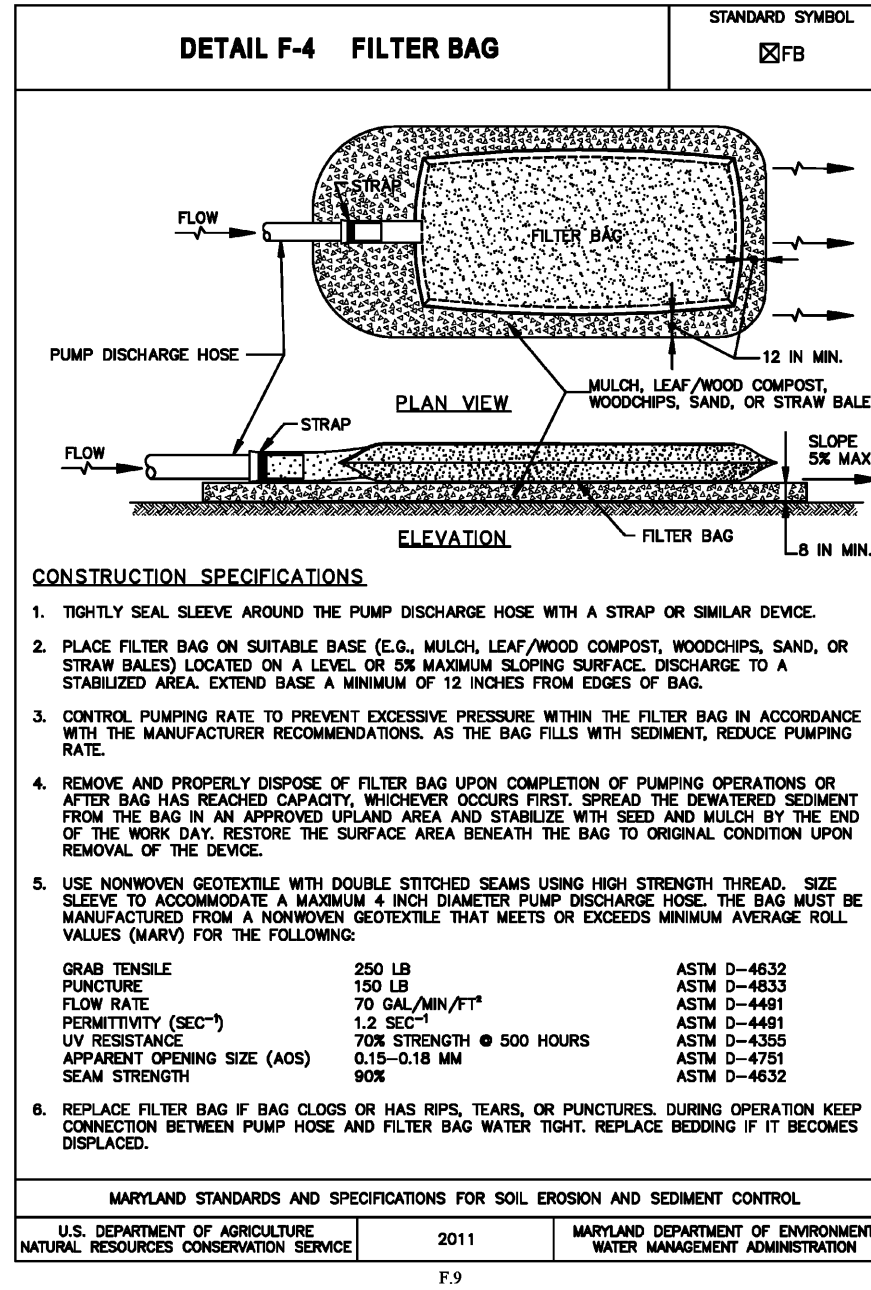
PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2024
 10/11/2023
 ROBERT H. VOGEL, P.E. NO. 16193

5 SHEET OF 15
 PLOT-21-052



BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Do not use the excavated material as backfill if it contains waste metal products, unightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unightly debris, toxic material, or any other deleterious substance.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill if there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that under the originally authorized structure or fill.
- Reclaim any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Pigeonwing (*Ludwigia malincolana*), Miller (*Sagittaria latifolia*), Darley (floodplain sp.), Chen (*Clethra sp.*) and/or Fox (*Sagittaria sp.*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other nonperennial vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division, Kentucky 31 fence shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, instream work is prohibited as determined by the classification of the stream:
 - Use 1/2 meters. In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Use 1/2 meters. In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.
 - Use 1/4 meters. In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Designed by: Philip M. Thompson, 10/12/2023

CHIEF, DEVELOPMENT ENGINEERING DIVISION

10/12/2023

CHIEF, DIVISION OF PLANNING AND DEVELOPMENT

10/12/2023

DIRECTOR

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.

Robert Hartson, 10/11/2023

DESIGN CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT 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.

Designed by: Rob Vogel, 10/11/2023

ROBERT H. VOGEL

MD REGISTRATION NO. 16193

REGISTERED PROFESSIONAL ENGINEER

HOWARD S.C.D.

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

Designed by: Alexander Bratovic, 10/12/2023

ALEXANDER BRATOVIC

HOWARD S.C.D.

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. MY LICENSE NO. IS 16193 AND MY EXPIRATION DATE IS 09-27-2024.

DESIGN BY: DZE/RHV/ACS

DRAWN BY: HH/DZE/ACS

CHECKED BY: RHV

DATE: JULY 2023

SCALE: AS SHOWN

W.O. NO.: 02-79

7 SHEET OF 15

OWNER/DEVELOPER

2 J LLC

7020 COLUMBIA GATEWAY DRIVE

COLUMBIA, MD 21046

C/O ROBERT HARTSON

(443) 459-5080

TAX MAP 42, BLOCK 11

6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5

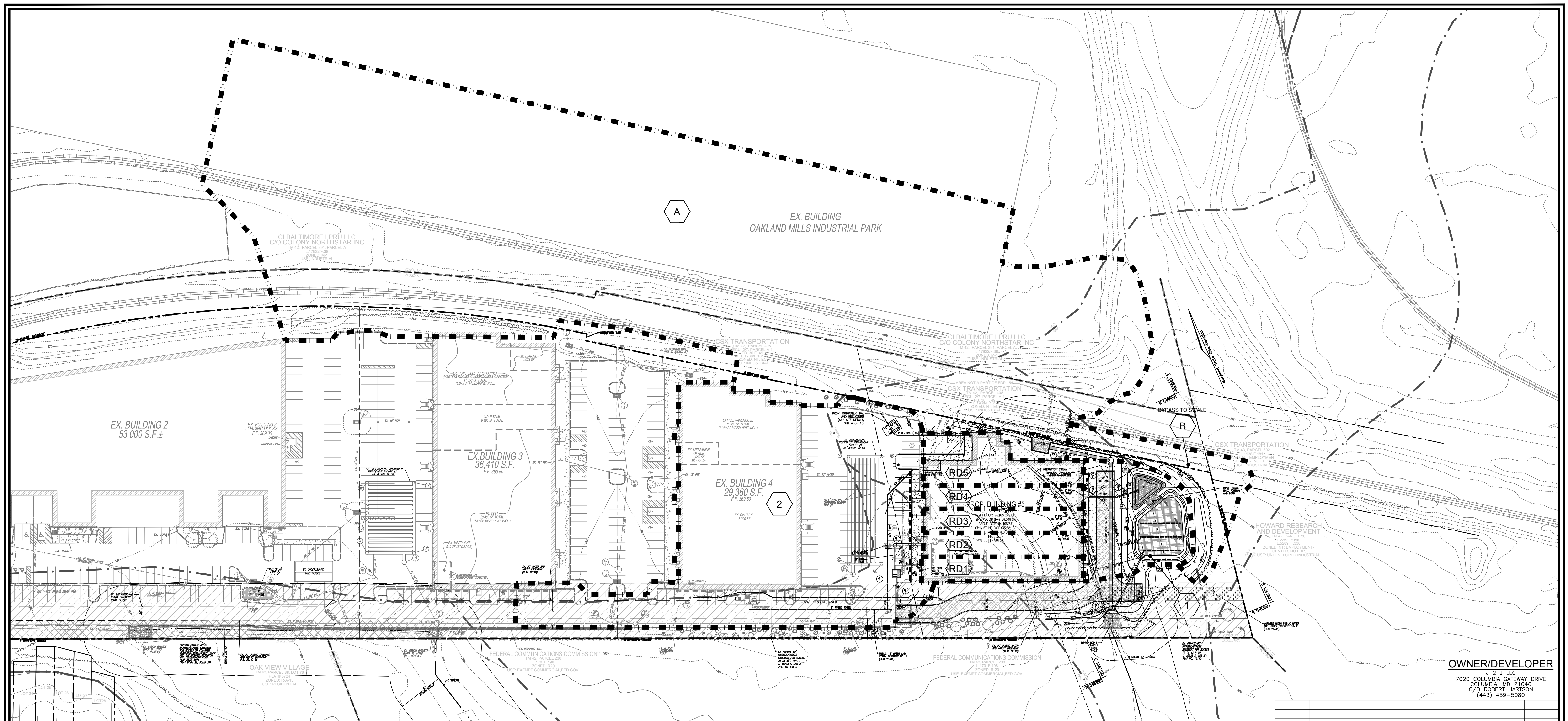
HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

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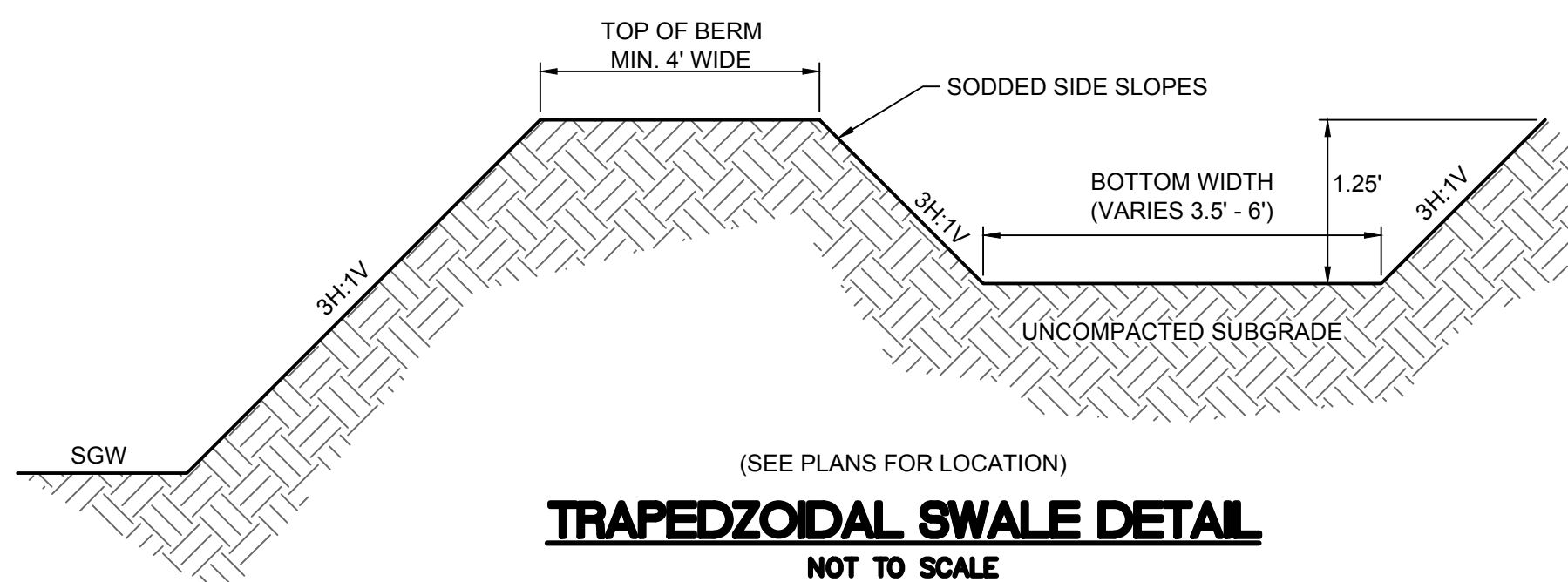
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STORM DRAIN DRAINAGE AREA MAP
SCALE: 1"=50'

SD Drainage Area Chart

DRAINAGE AREA	AREA AC	C	IMP %
DA-1	0.30	0.22	0.6%
DA-2	1.68	0.83	94.8%
RD-1	0.11	0.86	100%
RD-2	0.10	0.86	100%
RD-3	0.11	0.86	100%
RD-4	0.10	0.86	100%
RD-5	0.17	0.86	100%
OFFSITE			
'A'	5.67	0.57	54%
'B'	0.25	0.18	0%



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- CENTERLINE OF EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- PROPOSED GUARDRAIL
- EXISTING TREELINE
- EXISTING 20' WATER AND UTILITY EASEMENT (PLAT 19110)
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING SLOPE (MODERATE)
- SOILS BOUNDARY
- DRAINAGE DIVIDE
- DRAINAGE AREA LABEL

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
STORM DRAIN DRAINAGE AREA MAP

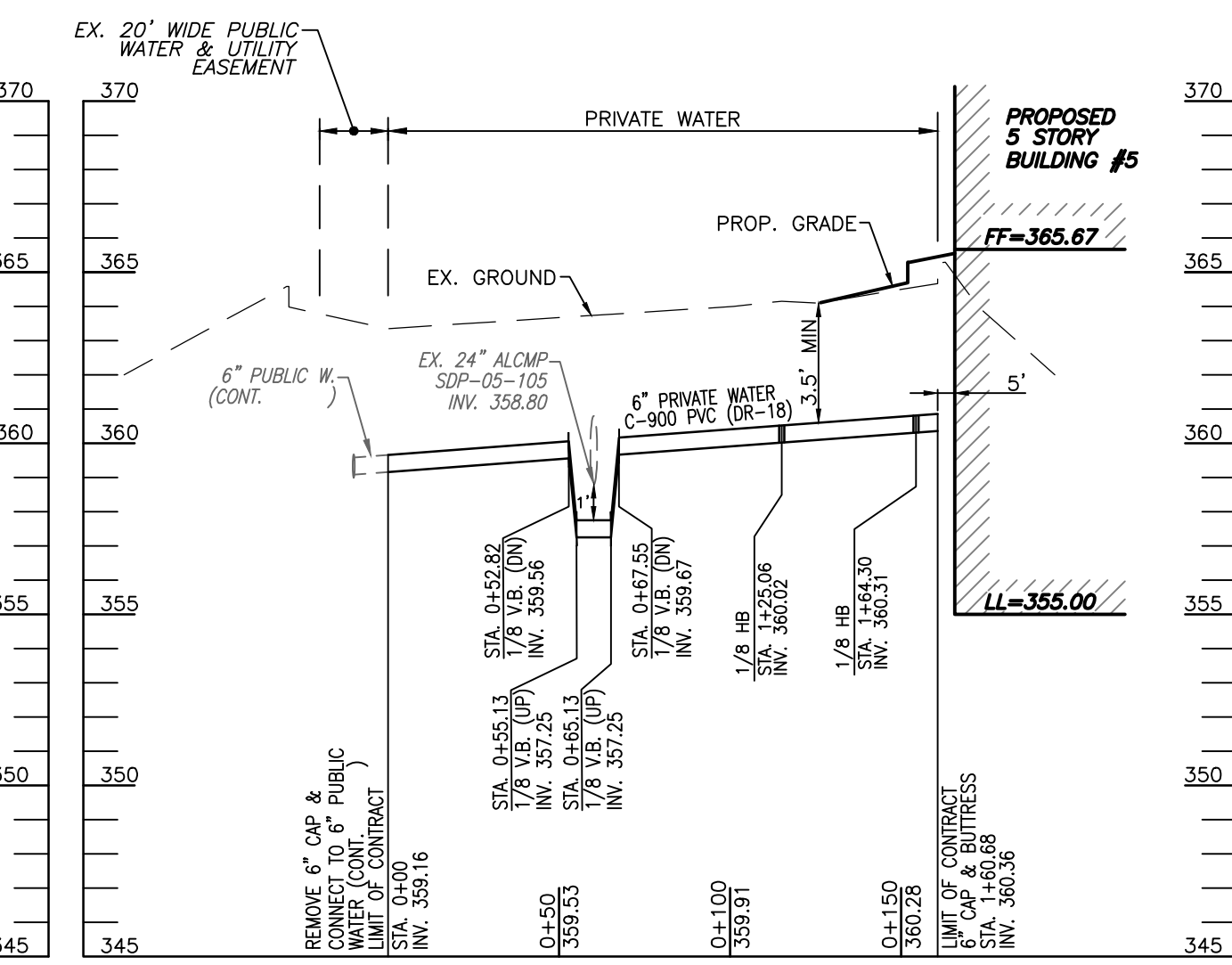
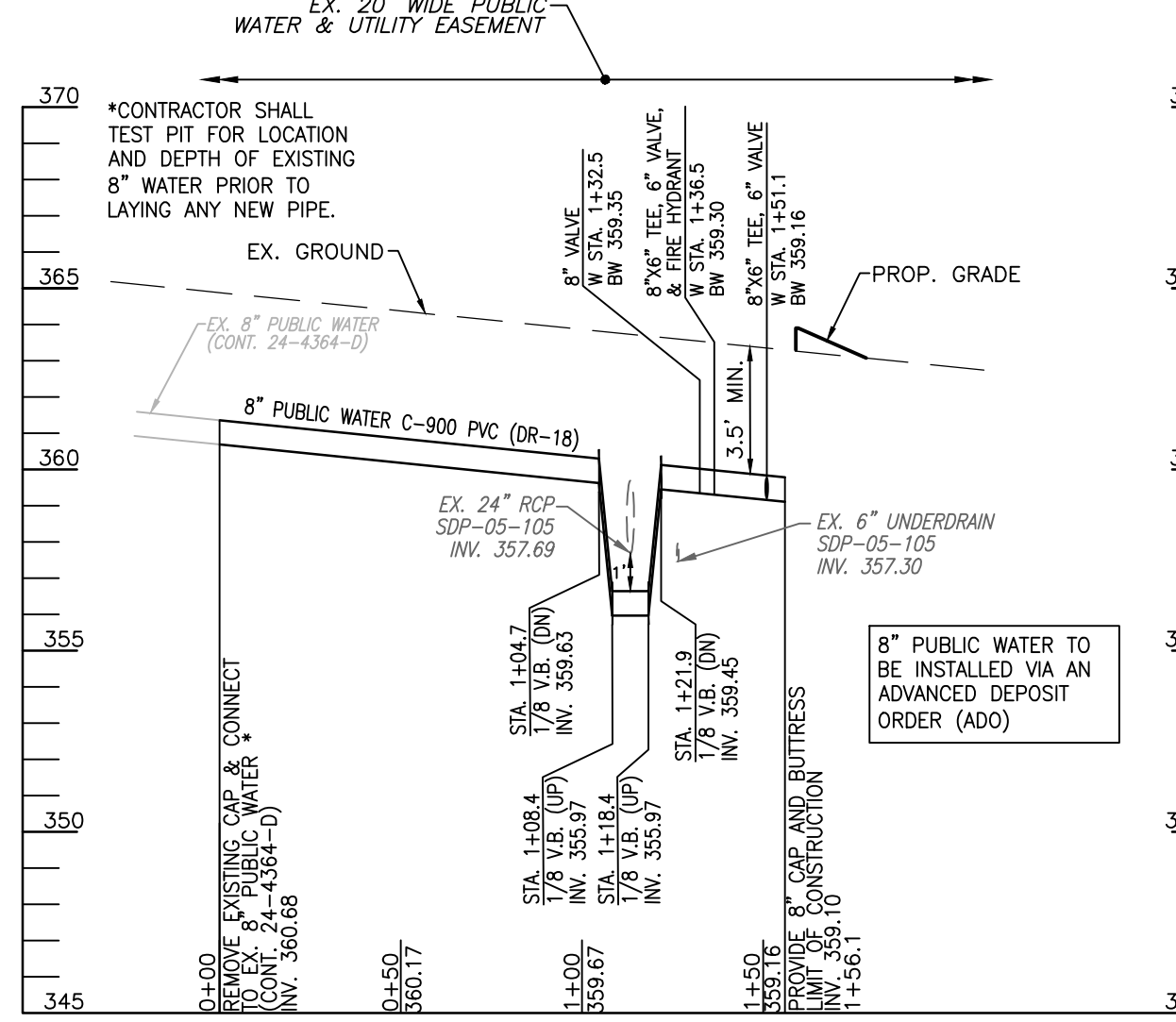
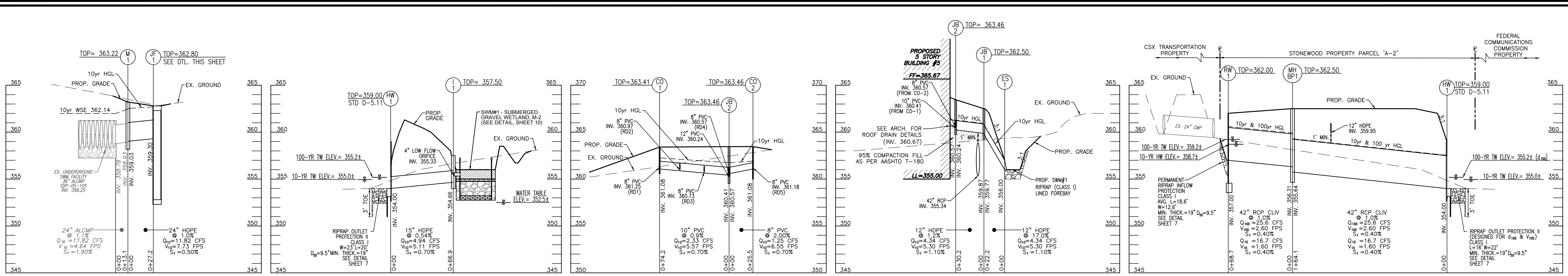
STONEWOOD 5 STORAGE
PARCEL A-2 (E.G.U. SUBDIVISION)
SECTION 2 / AREA 6

TAX MAP 42, BLOCK 11, 6TH ELECTION DISTRICT PARCEL 'A-2' / LAND UNIT 5, 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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING Designated by: <u>Philip M. Thompson</u> 10/12/2023 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE CHIEF, DIVISION OF PLANNING AND DEVELOPMENT DATE 10/12/2023 DIRECTOR DATE	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. DESIGNER: <u>Robert H. Vogel</u> DATE: 10/11/2023 SCALE: AS SHOWN W.O. NO.: 02-79 8 SHEET OF 15 ROBERT H. VOGEL, PE No. 16193
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SCALE 1"=50'
25' 0' 50'

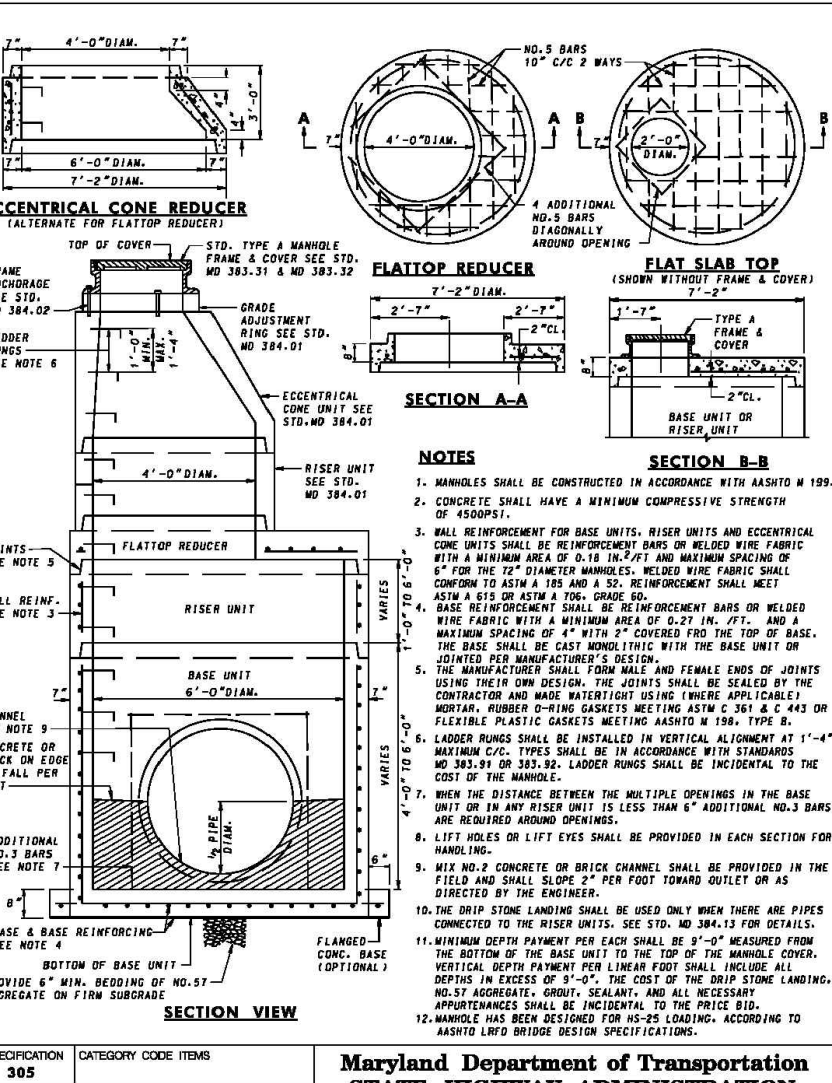


PUBLIC WATER MAIN LOCATION CHART

WL STA	APPURTENANCE	NORTHING	EASTING
0+00	BEGIN 8" WATER	548,575.29	1,361,780.29
1+32.53	8" VALVE	548,521.16	1,361,901.27
1+36.53	8" VALVE F.H.T. & VALVE	548,519.52	1,361,904.92
1+51.05	8" TEE & VALVE	548,513.59	1,361,918.17
1+56.05	8" CAP & BUTTRESS	548,511.55	1,361,922.73

PUBLIC WATER PIPE SCHEDULE

SIZE	TYPE	MATERIAL	LENGTH (LF)
8"	PUBLIC WATER	C-900	156
6"	PUBLIC WATER	C-900	10
6"	PUBLIC WATER	DIP (FH)	23

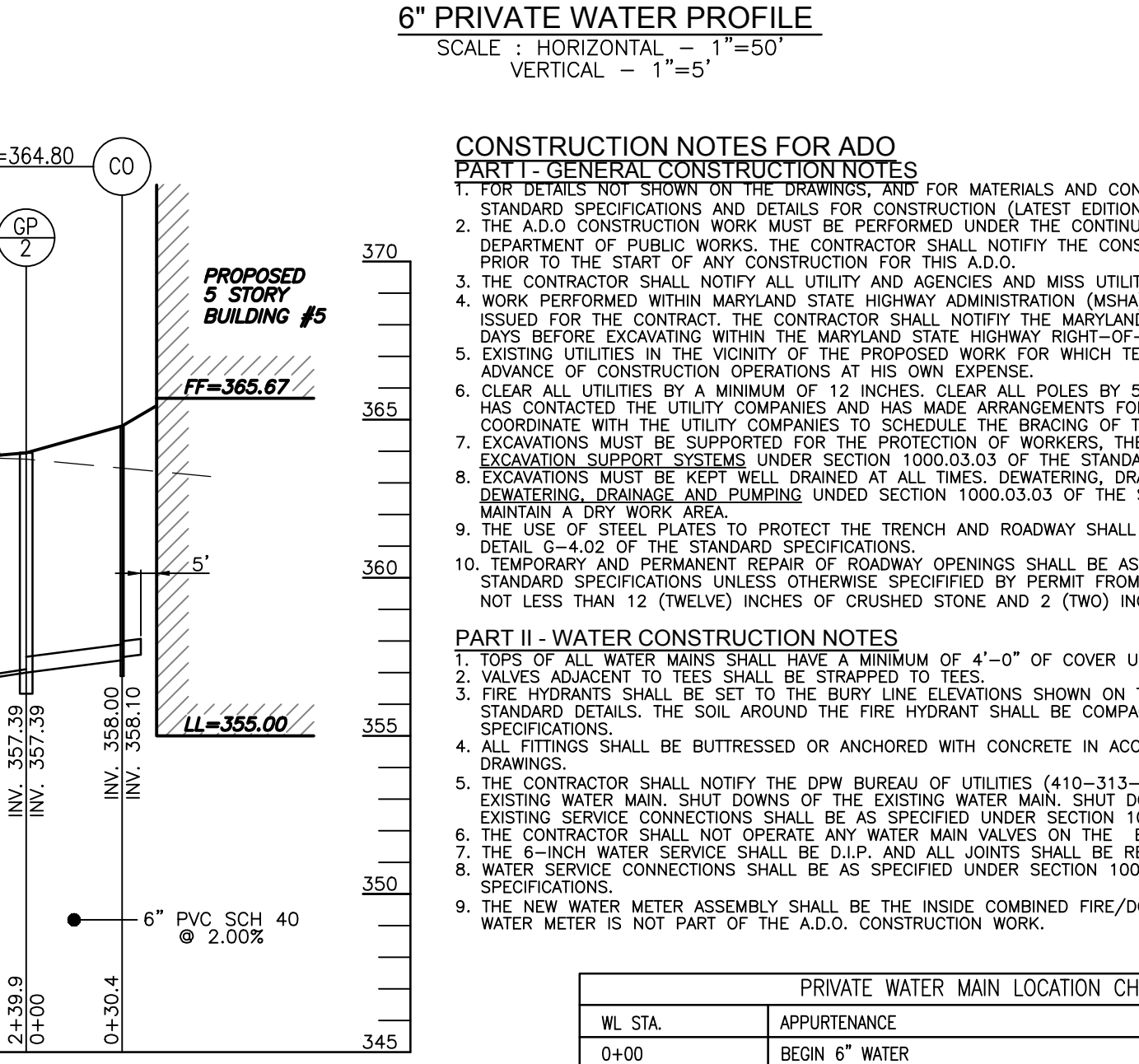
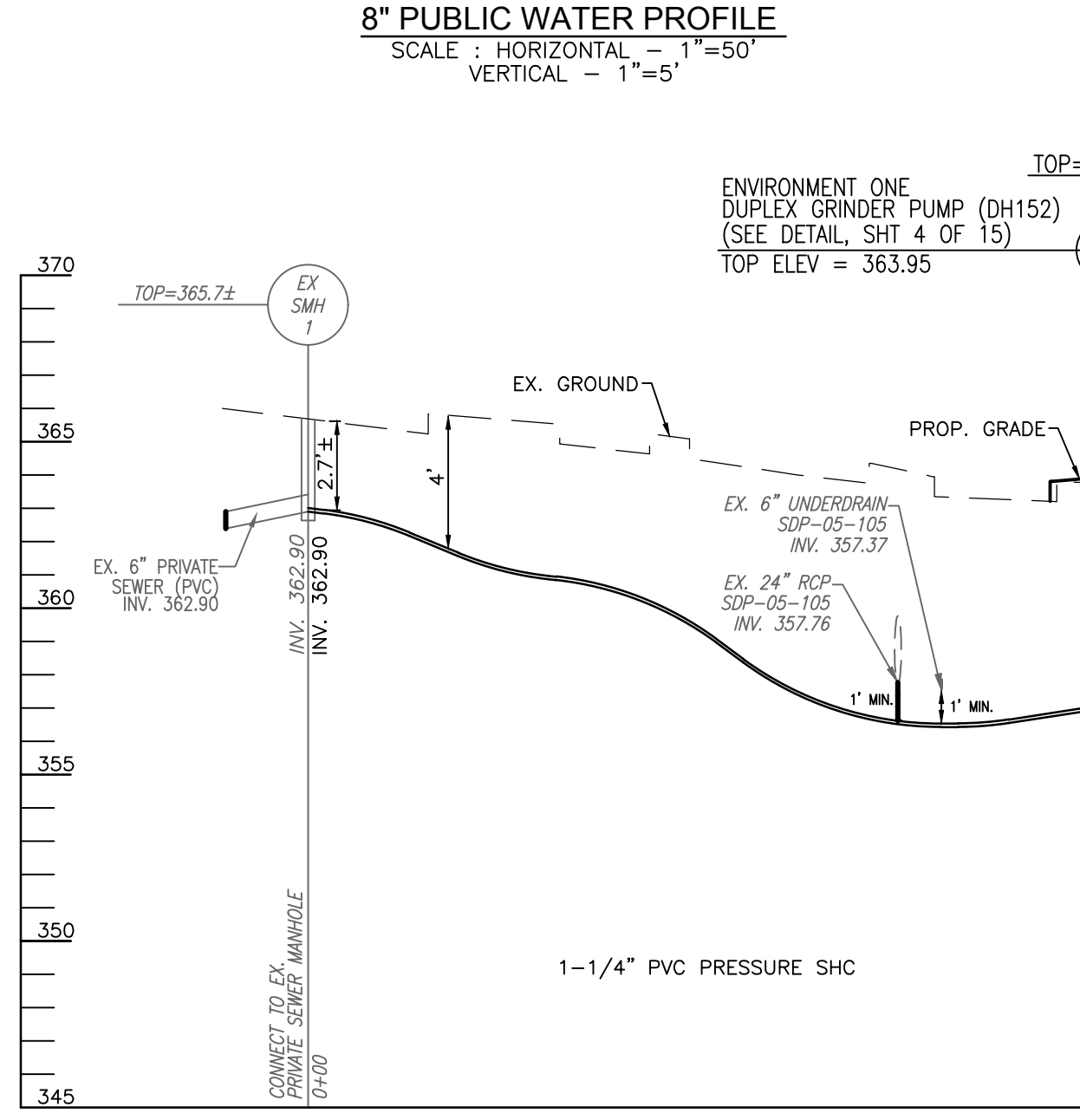
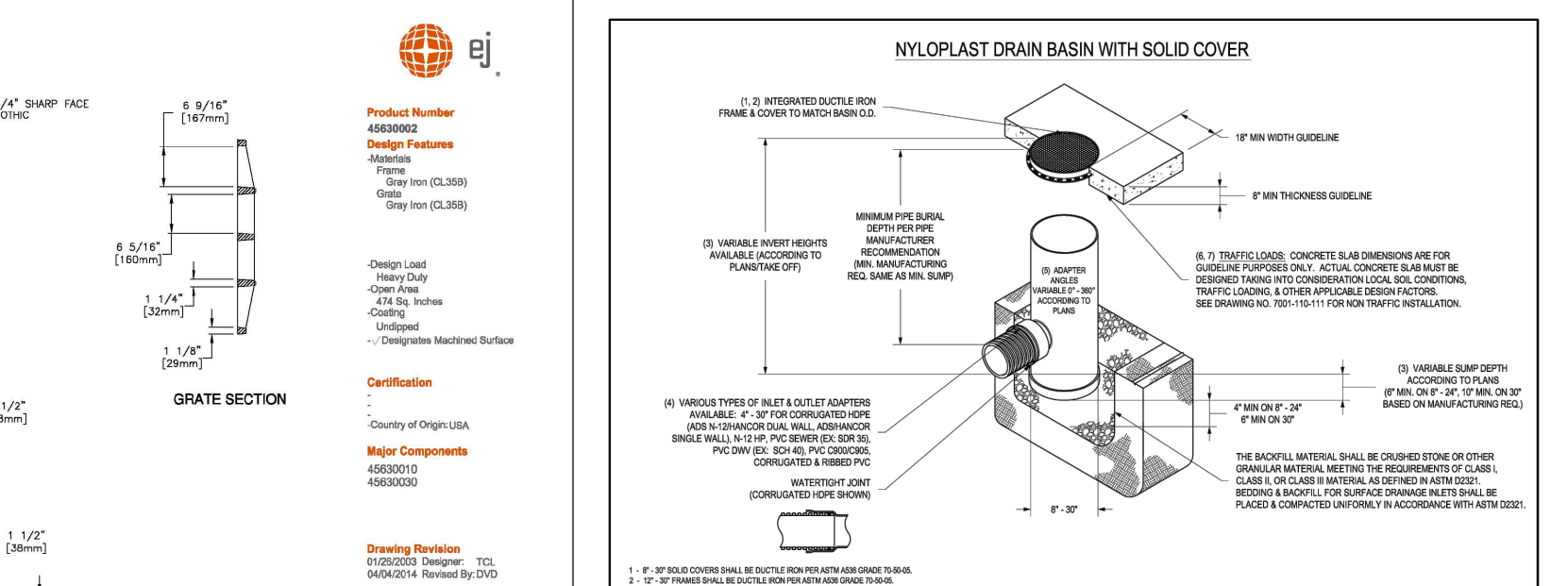
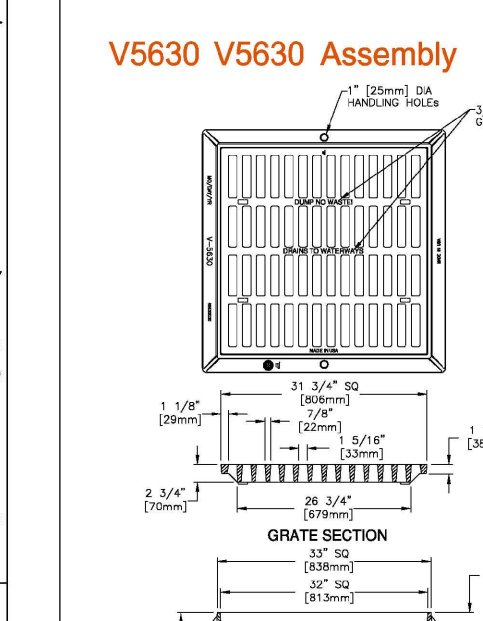


PRIVATE SD PIPE SCHEDULE

SIZE	CLASS	TOTAL LENGTH
4"	SOLID PVC (SWM)	6
6"	SOLID PVC (SWM)	18
6"	PERF PVC (SWM)	69
10"	PERF PVC (SWM)	69
8"	SOLID PVC	51
10"	SOLID PVC	74
12"	HDPE	52
12"	HDPE	19
24"	HDPE	27
42"	RCP CLV	223

STORM DRAIN STRUCTURE SCHEDULE

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV	DETAIL	LOCATION	REMARKS
MH-BP1	72" DIAMETER PRECAST MANHOLE TYPE 'X' HEADWALL	359.89	355.75	362.50	MDSHA 361.05	E+ 1362207.32	N+ 548555.08
ES-1	12" HDPE END SECTION	---	359.00	357.00	---	E+ 1362184.15	N+ 548524.33
JP-1	12" NYLOPLAST DRAIN BASIN W/ SOLID COVER	359.30	360.00	---	---	E+ 1361943.23	N+ 548544.99
CO-2	12" NYLOPLAST DRAIN BASIN W/ SOLID COVER	361.25 (8')	361.58 (10')	363.41	---	E+ 1362138.47	N+ 548468.44
CO-1	12" NYLOPLAST DRAIN BASIN W/ SOLID COVER	361.18 (8')	361.08 (8')	363.46	---	E+ 1362179.20	N+ 548503.47
JB-1	12" NYLOPLAST DRAIN BASIN W/ SOLID COVER	359.97 (12')	360.97 (12')	362.50	---	E+ 1362196.32	N+ 548523.92
JB-2	18" NYLOPLAST DRAIN BASIN W/ SOLID COVER	360.41 (10')	360.57 (10')	363.46	---	E+ 1362168.78	N+ 548536.18

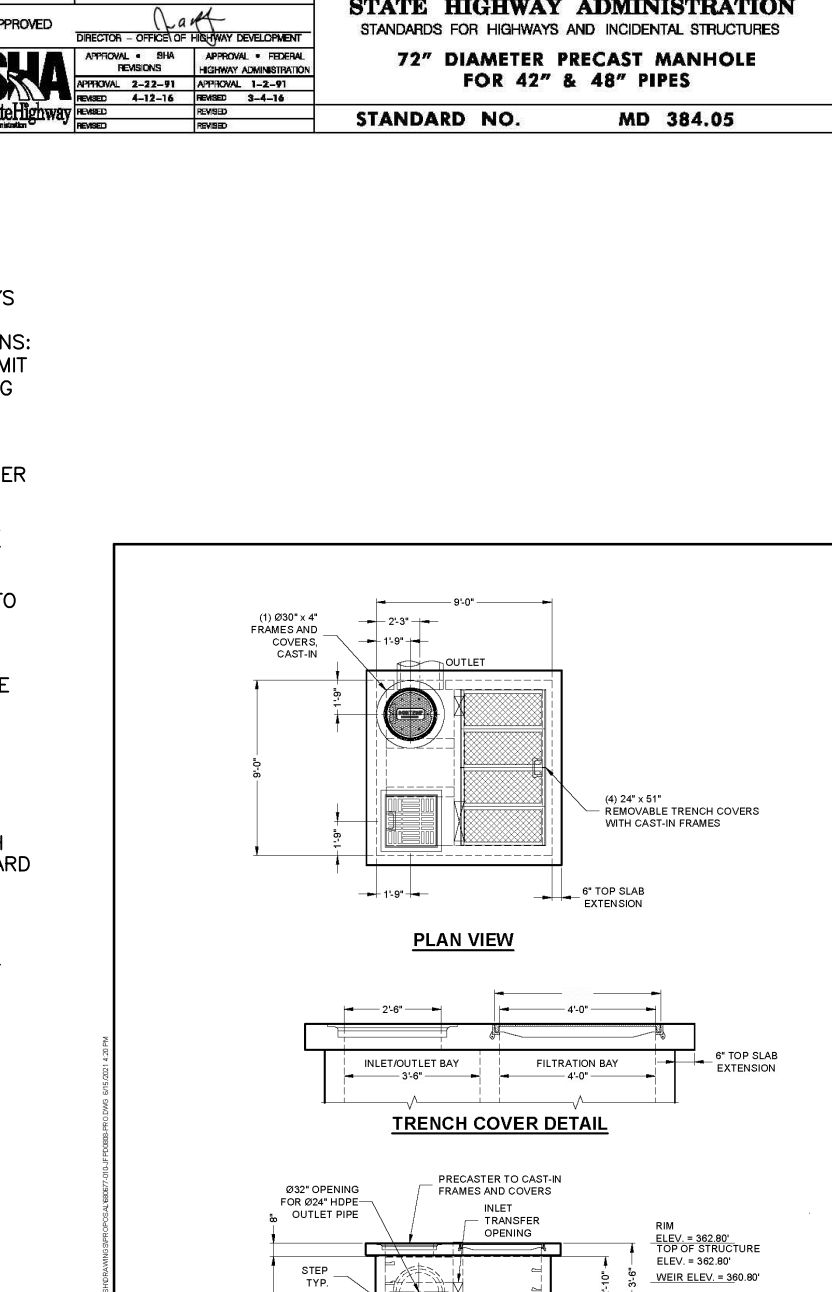


PRIVATE WATER MAIN LOCATION CHART

WL STA	APPURTENANCE	NORTHING	EASTING
0+00	BEGIN 6" WATER	548,575.29	1,361,780.29
1+15.05	8" - 1/8 HORIZONTAL BEND	548,521.16	1,361,901.27
1+54.30	8" - 1/8 HORIZONTAL BEND	548,519.52	1,361,904.92
1+60.67	6" CAP & BUTTRESS	548,513.59	1,361,918.17

PRIVATE WATER AND SEWER PIPE SCHEDULE

SIZE	TYPE	MATERIAL	LENGTH (LF)
6"	PRIVATE WATER	C-900	161
4"	PRIVATE SEWER	PVC (PRESSURE)	240
6"	PRIVATE SEWER	PVC	35



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Philip M. Thompson 10/12/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Lynda Eschler 10/12/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT

10/12/2023
 DIRECTOR

PRIVATE SEWER - STRUCTURE LOCATION CHART

MH NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
SCO-1	STD. SHC CLEANOUT (S-2.22)	N 548502.83 E 1361974.04	364.80	358.10	358.00	
GP-2	E/ONE DUPLEX GRINDER PUMP (DH152)	N 548515.22 E 1361946.34	363.95	357.39	357.39	

OWNER/DEVELOPER

J 2 J LLC
 7020 COLUMBIA GATEWAY DRIVE
 LUMBERIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

CONTECH

STONEMOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

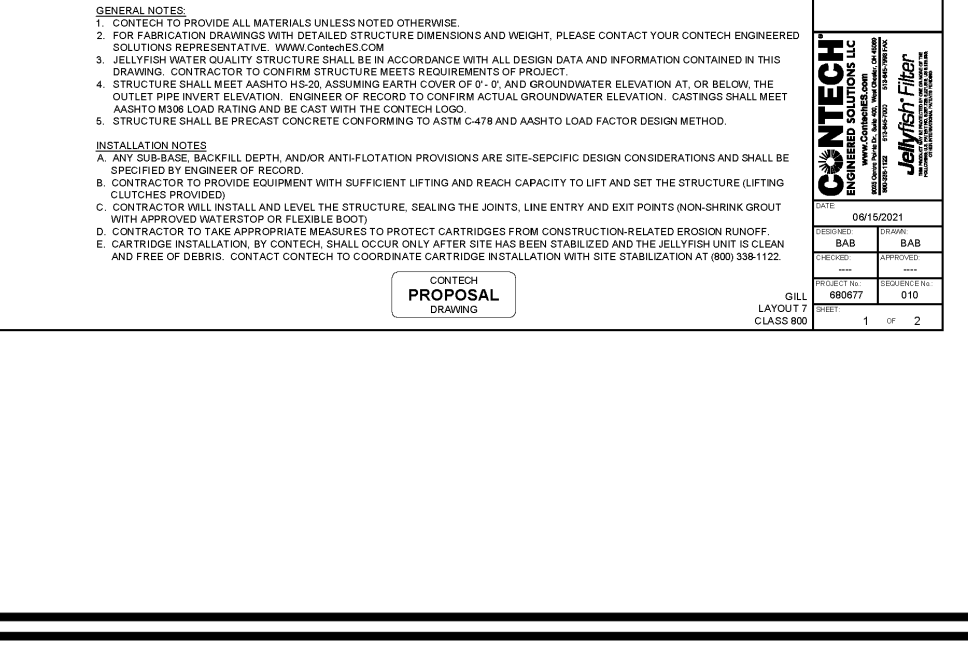
TAX MAP 42 BLOCK 11
 6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

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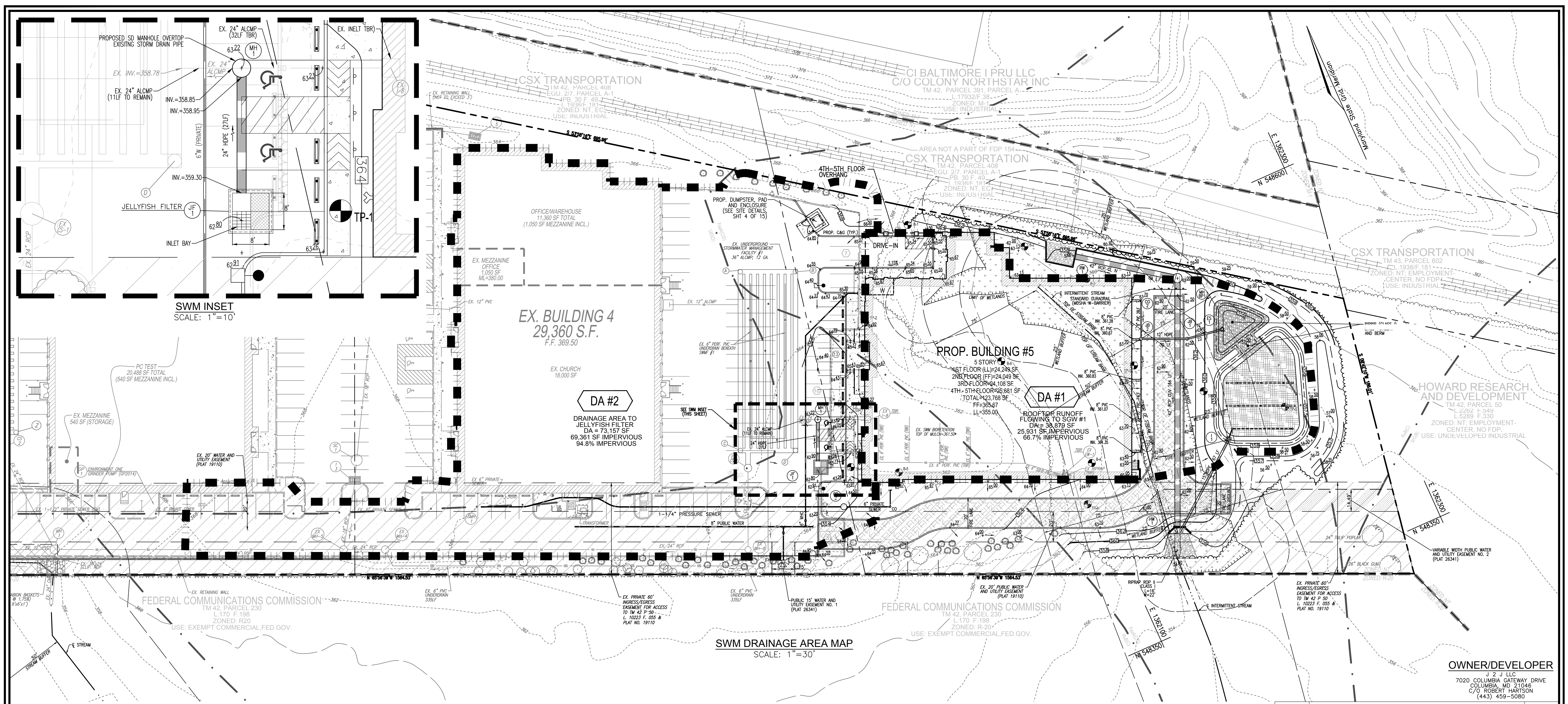
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PROFESSIONAL CERTIFICATE

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STATE OF MARYLAND
 ROBERT HARRIS
 PROFESSIONAL ENGINEER

9 SHEET OF 15



SWM DRAINAGE AREA MAP
SCALE: 1"=30'

LEGEND:

	PROPERTY LINE		PROPOSED STORMDRAIN
	RIGHT-OF-WAY LINE		PROPOSED STORMDRAIN INLET
	ADJACENT PROPERTY LINE		PROPOSED TRELINE
	CENTERLINE OF EXISTING STREAM		PROPOSED CURB
	EXISTING STREAM BUFFER		PROPOSED SIDEWALK
	EXISTING CURB AND GUTTER		PROPOSED 10' CONTOUR
	PROPOSED CURB AND GUTTER		PROPOSED 2' CONTOUR
	EXISTING UTILITY POLE		EXISTING SLOPE (MODERATE)
	EXISTING LIGHT POLE		M1B2
	EXISTING SANITARY MANHOLE		M1D3
	EXISTING SANITARY LINE		SOILS BOUNDARY
	EXISTING CLEANOUT		DRAINAGE DIVIDE
	PROPOSED GUARDRAIL		DRAINAGE AREA LABEL
	EXISTING TRELINE		
	EXISTING 20' WATER AND UTILITY EASEMENT (PLAT 19110)		
	EXISTING WETLAND		
	EXISTING WETLAND BUFFER		

Stonewood V - ESDv Summary

50% of Existing Impervious:	4,744 s.f.	0.11 AC.
100% of Proposed Impervious:	26,945 s.f.	0.62 AC.
Impervious (Ex. & Prop.):	31,689 s.f.	0.73 AC.
Target P _i :	2.08 in	
Total ESDv Required (Ex. + New):	4,770 c.f.	

PRACTICE	DA #1	PRACTICE DA (SF)	PRACTICE DA (AC)	IMPERV (SF)	IMPERV (AC)	PERV (SF)	PERV AREA	PRACTICE % IMPERV	PRACTICE Rv	MIN PRACTICE VOLUME (L ³)	TARGET P _i VOLUME (2.08")	MAX PRACTICE VOLUME (2.67")	TOTAL ESDv VOLUME PROVIDED (CF)	ADDITIONAL VOLUME PROVIDED FOR Q10	REMARKS	depth	porosity
SWM#1		38,879	0.89	25,931	0.60	12,948	0.297	66.7	0.65	2,107	4,340	5,478	5,290		SUBMERGED GRAVEL WETLAND (M-2)		
WETLAND, SGW-1 (M-2)													2,511		Surface Area of SGW @ 1.5' ponding (75% above) - See Stage / Storage		
															Surface Area of Forebay @ 1.5' ponding depth - See Stage / Storage		
TOTALS		38,879	0.89	25,931	0.60	12,948	0.30						5,290				

Note: Each individual practice ESDv provided must be between the minimum of 1" rainfall and up to the maximum of 2.6" rainfall (1-year rainfall)

Total ESDv Required: 4,770
Total ESDv Provided: 5,290

Stonewood V - Structural WQv Summary to Replace Ex. Bioretention approved under SDP-05-105

WQv Required Per Previously SDP-05-105 (Ex. Bioretention):	5,828 c.f.	<< See Calculations from SDP-05-105 (following page)
WQv Provided Per Previously SDP-05-105 (Ex. Bioretention):	6,009 c.f.	<< See Calculations from SDP-05-105 (following page)

PRACTICE	DA #1	PRACTICE DA (SF)	PRACTICE DA (AC)	IMPERV (SF)	IMPERV (AC)	PERV (SF)	PERV AREA	PRACTICE % IMPERV	PRACTICE Rv	MIN PRACTICE VOLUME (L ³)	TARGET P _i VOLUME (1")	MAX PRACTICE VOLUME (2.67")	TOTAL WQv VOLUME PROVIDED	ADDITIONAL VOLUME PROVIDED FOR Q10	REMARKS	depth	porosity
SWM#2		73,157	1.68	69,361	1.59	3,796	0.087	94.8	0.90	5,507	5,507	14,318	5,507		JELLYFISH FILTER (CHAPTER 3 DEVICE)		
CONTECH JELLYFISH PEAK DIVERSION FILTER													1,000		5,507 Design Water Quality Volume for P=1.0"		
TOTALS		73,157	1.68	69,361	1.59	3,796	0.09						5,507				

Total Structural WQv Required: 6,009
Total Structural WQv Provided: 5,507

*It is acknowledged that the proposed Jellyfish filter provides 502 cubic feet less WQv (6,009 c.f. - 5,507 c.f.). Documentation from the State is only available for Jellyfish for 1" WQv under Chapter 3. Due to site constraints, this is the maximum WQv that can be achieved for its contributing drainage area. The deficit in WQv is being provided in the proposed submerged gravel wetlands.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Developed by: *Philip M. Thompson* 10/12/2023

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/12/2023

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10/12/2023

DIRECTOR DATE

OWNER/DEVELOPER
J 2 J LLC
7020 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046
C/O ROBERT HARTSON
(443) 459-5080

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT DRAINAGE AREA MAP

STONEWOOD 5 STORAGE
PARCEL A-2 (E.G.U. SUBDIVISION)
SECTION 2 / AREA 6

TAX MAP 42 BLOCK 11
6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5
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

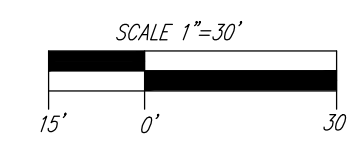
PROFESSIONAL CERTIFICATE

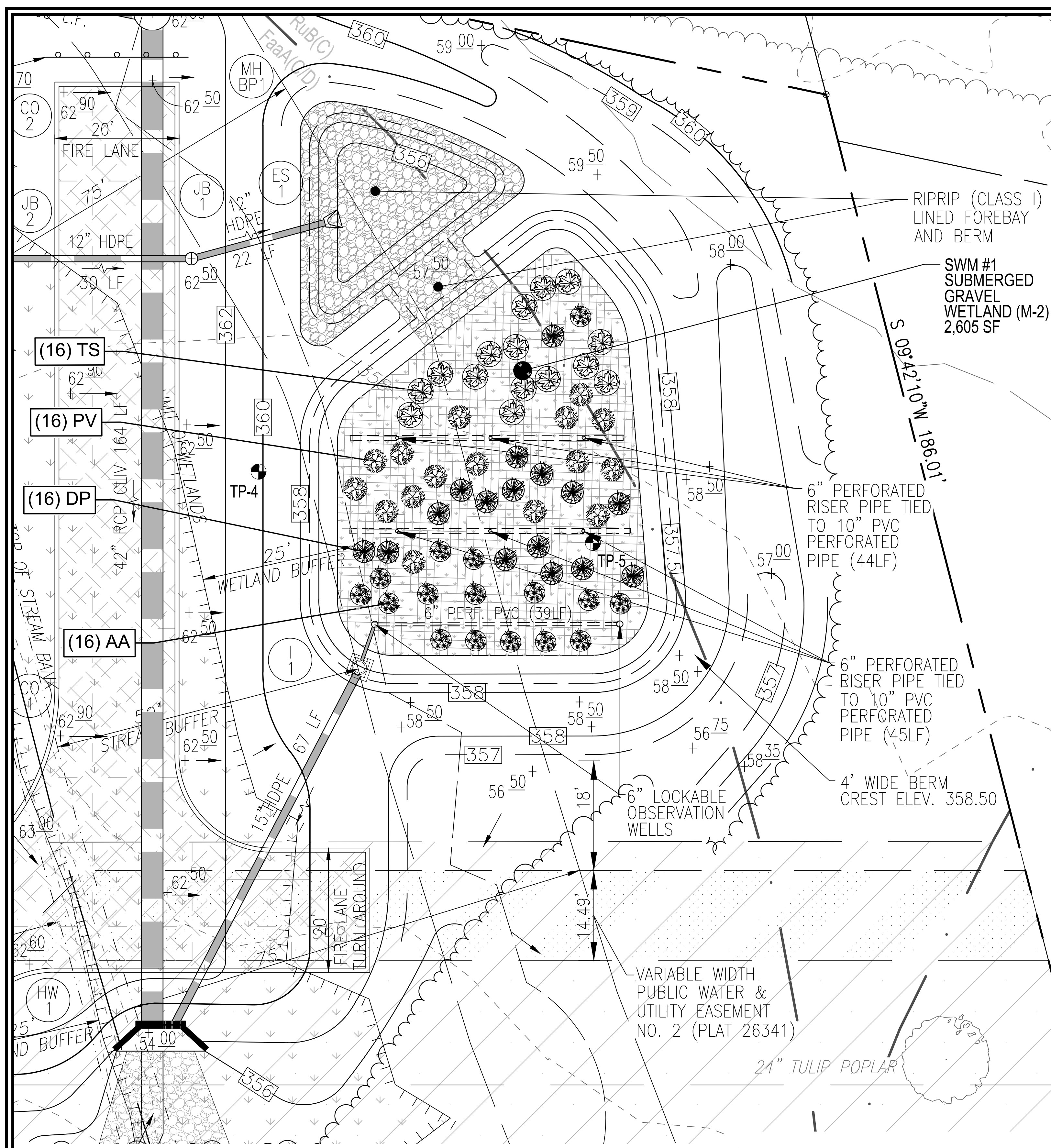
DESIGN BY: DZE/RHV/ACS
DRAWN BY: JH/DZE/ACS
CHECKED BY: RHV
DATE: JULY 2023
SCALE: AS SHOWN
W.O. NO.: 02-79

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

10 SHEET OF 15

ROBERT H. VOGEL, P.E. NO. 16193





**STORMWATER MANAGEMENT FACILITY #1
SUBMERGED GRAVEL WETLAND (M-2)**
SCALE: 1"=20'

SYMB./KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
TS	16	SCIRPUS PUNGENS COMMON THREE-SQUARE	PLANT STOCK	CONT
DP	16	SAGITTARIA LATIFOLIA ARROWHEAD/DUCK POTATO	PLANT STOCK	9-12" SPACE
AA	16	PELIZANDIA VIRGINICA ARROW ARUM	PLANT STOCK	9-12" SPACE
PV	16	PANICUM VIRGATUM SWITCHGRASS	1 GAL.	-

LEGEND	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
[Symbol]	96	BAPTISIA AUSTRALIS FALSE INDIGO	4" POT	12"-15" O.C. FOR SIDES AND BOTTOM OF SWM MIX ALL VARIETIES IN A NATURALIZED RANDOM PATTERN THROUGHOUT. PLANT IN GROUPS OF NO LESS THAN 9 PLANTS PER CLUMP
[Symbol]	96	ACORUS GRAMINEUS 'OGON' GOLDEN VARIEGATED SWEET FLAG	1 QT.	

MBR #	AREA	STEMS REQUIRED (0.0227)	STEMS PROVIDED	TS	DP	AA	PV	BA	AG	TOTAL
2788	63	64	16	16	16	16	16	96	96	192
TOTALS	2788	63	64	16	16	16	16	96	96	192

AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 3000 STEMS PER PLANTED ACRE (0.0227 STEMS PER SQUARE FOOT).

- NO TREES SHALL BE PLANTED WITHIN A GRAVEL WETLAND. USE ONLY SHRUB OR HERBACEOUS SPECIES.
- LANDSCAPE CONTRACTOR SHALL INSTALL PLANTINGS SPECIFIED OR USE APPROVED EQUAL WHICH ARE TOLERANT TO FLUCTUATING WATER LEVELS.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THIS FINAL PLAN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Philip M. Thompson 10/12/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE 10/12/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT
 Lynda Eschberg 10/12/2023
 DIRECTOR DATE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SUBMERGED GRAVEL WETLANDS (M-2):

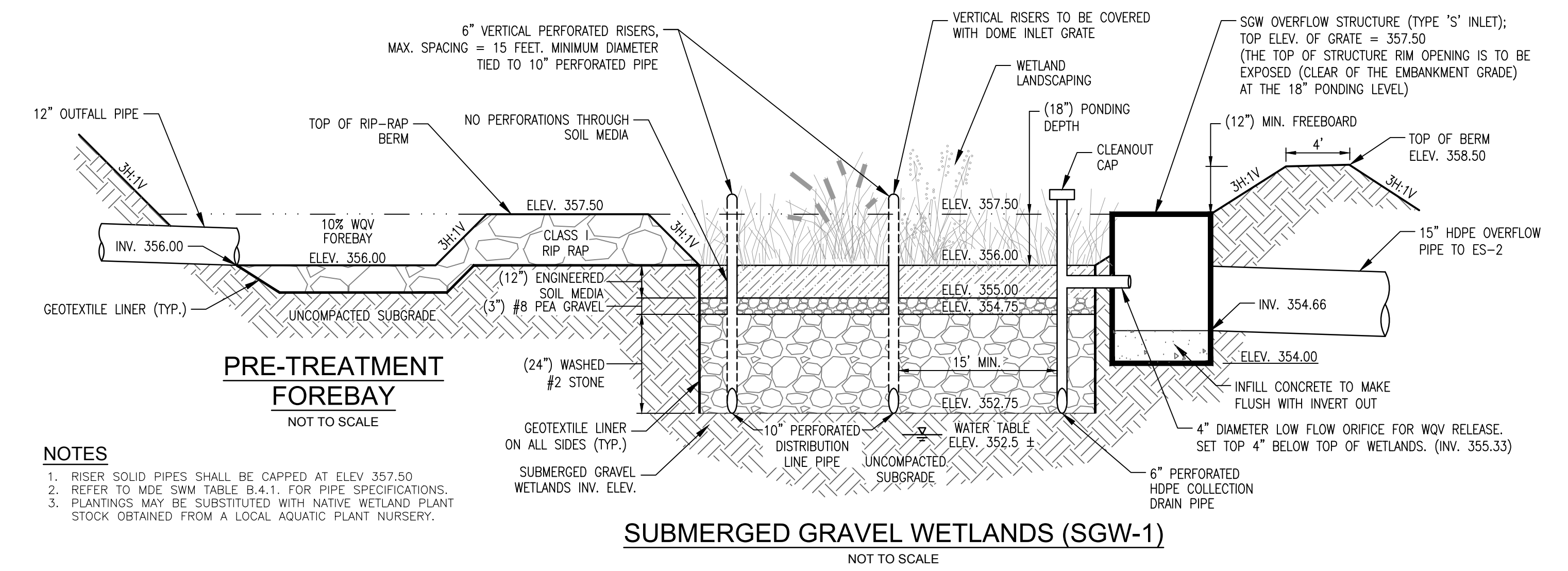
- During the first year of operation, the Owner shall inspect the facility after every heavy storm and replace vegetation as needed.
- The Owner shall remove sediment accumulated in the pretreatment areas as necessary.
- Signs of uneven flow within the wetland may mean that the gravel or underdrain is clogged. The gravel or underdrain shall be removed, cleaned, and replaced, as needed.
- The Owner shall ensure a dense stand of wetland vegetation is maintained through the life of the facility and replace vegetation as needed.
- The Owner shall ensure the inlets and outlets to each gravel wetland cell are free from debris.
- The Owner shall repair erosion at inflow points and ensure flow splitters are functional to prevent storm water from bypassing the facility.

NOTES

- GRAVEL WETLANDS: ENGINEERED SOIL MEDIA
 - Composition: The soil composition shall be made up of 35 - 50% sand; 30 - 55% silt; 0 - 12% clay. 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 gravel wetland area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.
 - Soil Testing: The planting soil for the gravel wetland shall be tested prior to installation for pH, organic matter and other chemical constituents. The soil should meet the following criteria (Landscape Contractors Association, 4th edition, 1993):
 - pH Range: 5.2 to 7.0
 - Organic Matter: 1.5% - 4% (BY WEIGHT)
 - Magnesium (Mg): 35 LBS / AC
 - Phosphorous (P2 O5): 75 LBS / AC
 - Potassium (K2 O): 85 LB / AC
 - Soluble Salts: Not to exceed 500 ppm

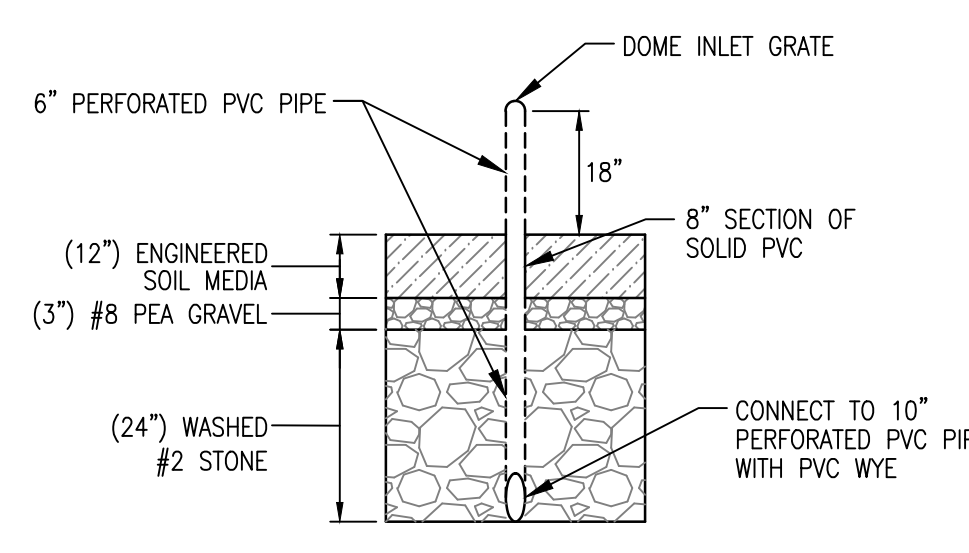
WETLAND SOIL SPECIFICATIONS

THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1-0.01 FT/DAY = 3.5 X 10⁻⁵ CM/SEC TO 3.5 X 10⁻⁶ CM/SEC). THIS SOIL CAN BE MANUFACTURED USING COMPOST, SAND, AND SOME FINE SOILS TO BLEND TO A HIGH % ORGANIC MATTER CONTENT SOIL (>15% ORGANIC MATTER).
 AVOID USING CLAY CONTENTS IN EXCESS OF 15% BECAUSE OF POTENTIAL MIGRATION OF FINES INTO SUBSURFACE GRAVEL LAYER. DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.

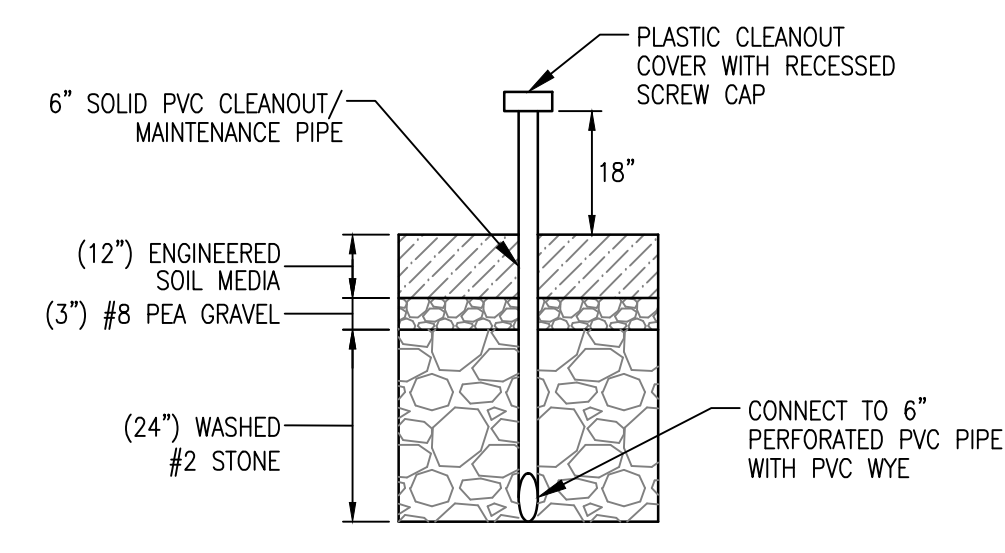


NOTES

- RISER SOLID PIPES SHALL BE CAPPED AT ELEV. 357.50
- REFER TO MDE SWM TABLE B.4.1, FOR PIPE SPECIFICATIONS.
- PLANTINGS MAY BE SUBSTITUTED WITH NATIVE WETLAND PLANT STOCK OBTAINED FROM A LOCAL AQUATIC PLANT NURSERY.



**PERFORATED RISER
DETAIL
NOT TO SCALE**



**CLEANOUT/MAINTENANCE
PIPE DETAIL
NOT TO SCALE**

DATE	PROJECT	NO.	DESCRIPTION	BY	REVISION
10/12/2023	STORMWATER MANAGEMENT FACILITY #1	1	INSTALL PERFORATED RISERS AND CLEANOUT PIPES	PHILIP M. THOMPSON	

DATE	PROJECT	NO.	DESCRIPTION	BY	REVISION
10/12/2023	STORMWATER MANAGEMENT FACILITY #1	2	INSTALL PERFORATED RISERS AND CLEANOUT PIPES	PHILIP M. THOMPSON	

OWNER/DEVELOPER
 J 2 J LLC
 7020 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

NO. _____ REVISION _____ DATE _____

**SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT NOTES
AND DETAILS**

STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

TAX MAP 42 BLOCK 11
 6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

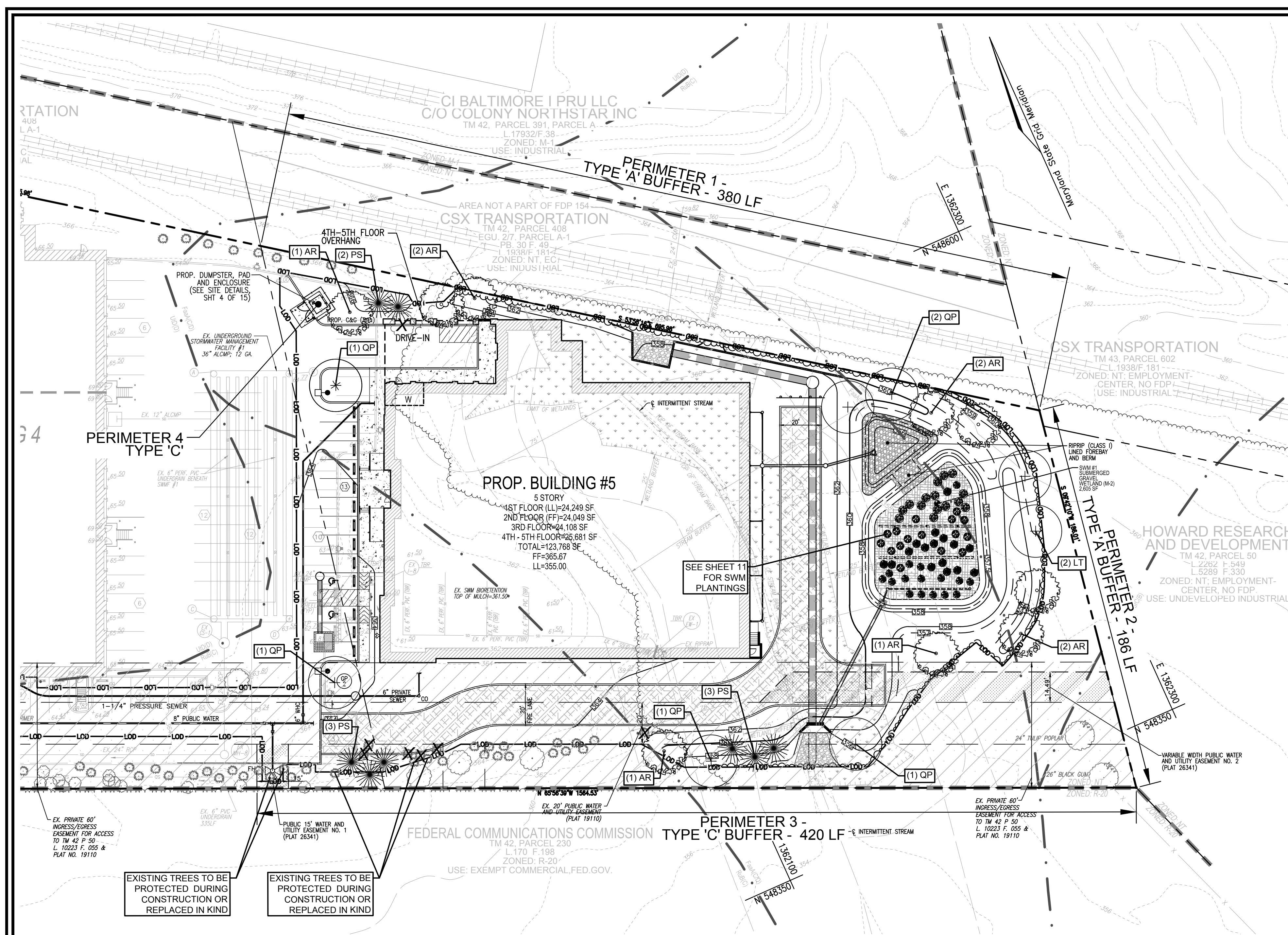
TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: DZE/RHV/ACS
 DRAWN BY: JH/DZE/ACS
 CHECKED BY: RHV
 DATE: JULY 2023
 SCALE: AS SHOWN
 W.O. NO.: 02-79

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

Robert H. Vogel, P.E. No. 16193

11 SHEET OF 15



SCHEDULE A PERIMETER LANDSCAPE EDGE table with columns for Category, Adjacent to Perimeter and Roadway, Dumpsters, and Total. Rows include Perimeter/Frontage Designation, Linear Feet of Roadway, Credit for Existing Vegetation, etc.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING table with columns for Number of Trees Required (1:20) and Number of Trees Provided. Rows include Shade Trees and Other Trees (2:1 Substitution).

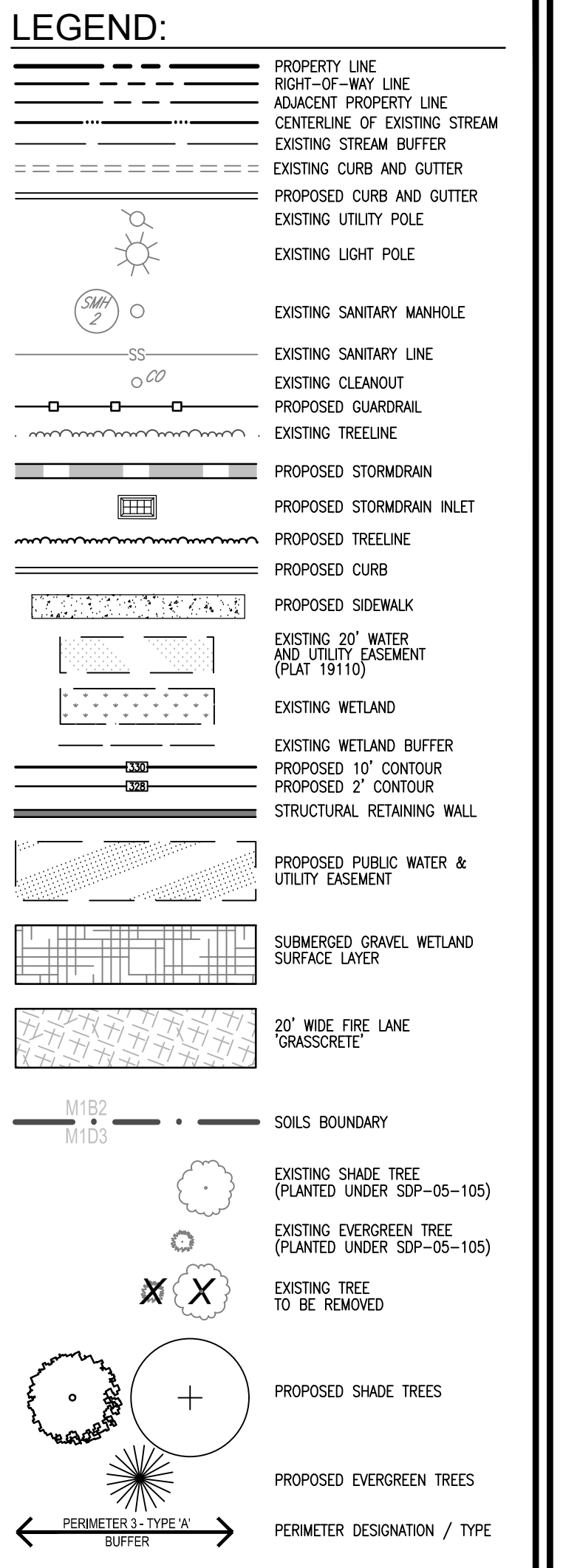
PLANT LIST - SCHEDULE B (PARKING LOT) table with columns for Key, Quan, Botanical Name, Size, and Cat. Lists Quercus phellos and Willow Oak.

PLANT LIST - SCHEDULE A (PERIMETER) table with columns for Key, Quan, Botanical Name, Size, and Cat. Lists Acer rubrum, Quercus phellos, and Pinus strobus.

SPECIMEN TREE REPLACEMENT REQUIREMENT table with columns for Description and Total Quantity. Lists existing trees to be removed and replacement trees provided.

PLANT LIST - (REPLACEMENT TREE MITIGATION - PERIMETER 3) table with columns for Key, Quan, Botanical Name, Size, and Cat. Lists Pinus strobus.

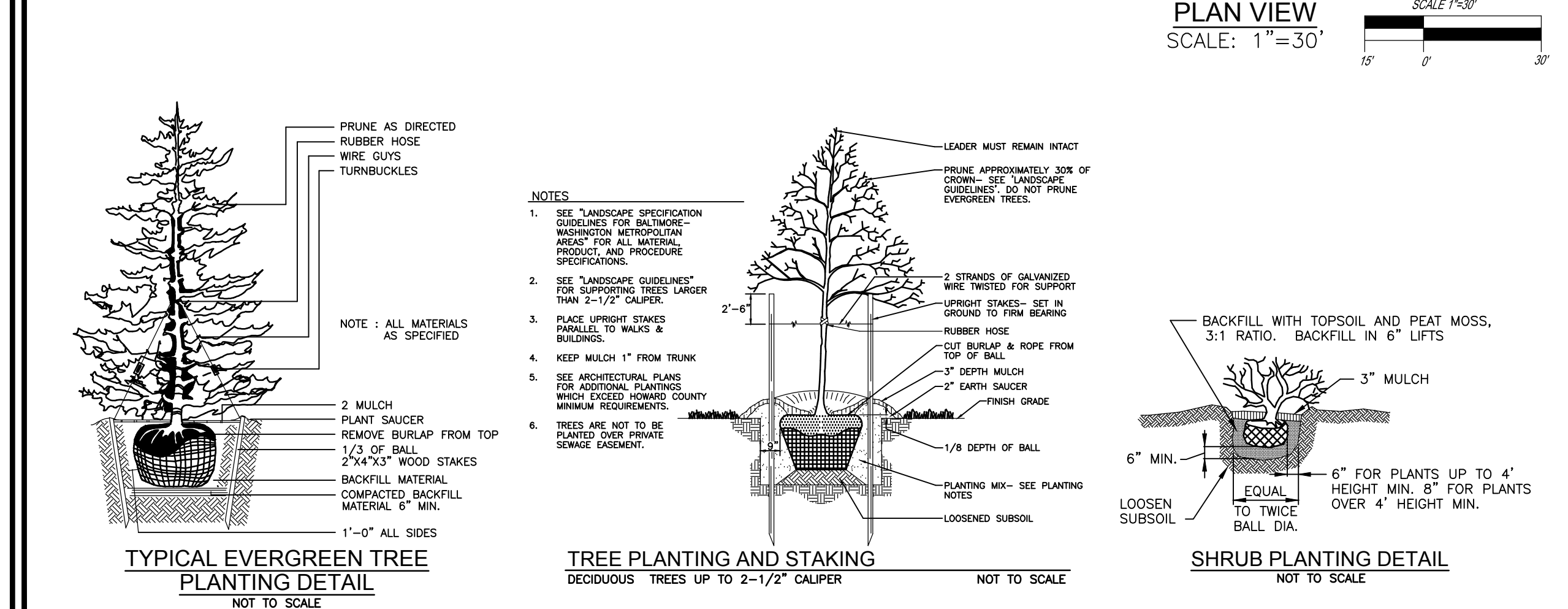
PLANT LIST - SPECIMEN TREE REPLACEMENT table with columns for Key, Quan, Botanical Name, Size, and Cat. Lists Tulip Poplar and Acer rubrum.



- 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... 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...

- FOREST CONSERVATION NOTE: 1. THE NRI/FSD SURVEY DOCUMENTED A SINGLE FOREST STAND ON THE 1.80-ACRE PROPERTY ALONG WITH WETLANDS, WATERS, AND TWO (2) SPECIMEN TREES... 2. IN ACCORDANCE WITH SECTION 16.1200 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND CS-85-2021 THAT WENT INTO EFFECT ON JAN. 3, 2022...

- 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... 2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN...



FOREST STAND DESCRIPTION table with columns for Stand A (1.21 acres onsite) and various metrics: Number of plots, Priority for Retention and Protection, Dominant species (Red Maple), Co-dominant and Associate Species (Blackgum, Tulip poplar), Forest Association, Successional stage, Mean size class, Percent canopy coverage, etc.

FOREST CONSERVATION WORKSHEET FOR STONEWOOD 5 STORAGE (LAND UNIT 5) table with columns for Net Tract Area, Land Use Category, Existing Forest Cover, Break Even Point, Proposed Forest Clearing, Planting Requirements Inside Watershed, and Planting Requirements Outside Watershed.

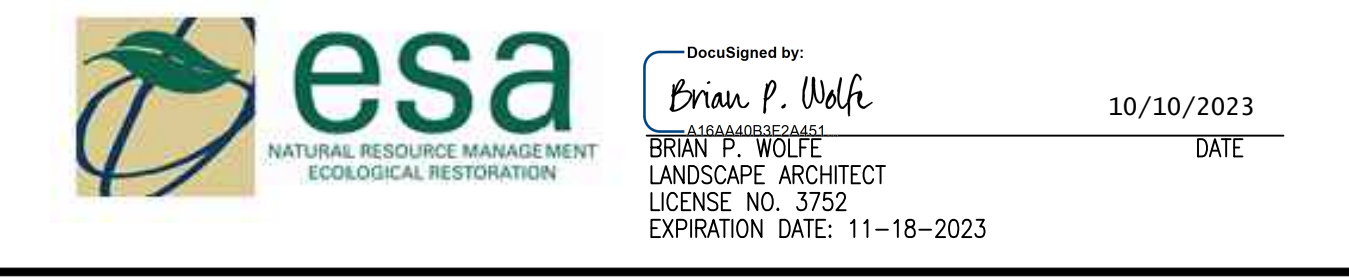
OWNER/DEVELOPER: J 2 J LLC, 7020 COLUMBIA GATEWAY DRIVE, COLUMBIA, MD 21046, C/O ROBERT HARTSON, (443) 459-5080

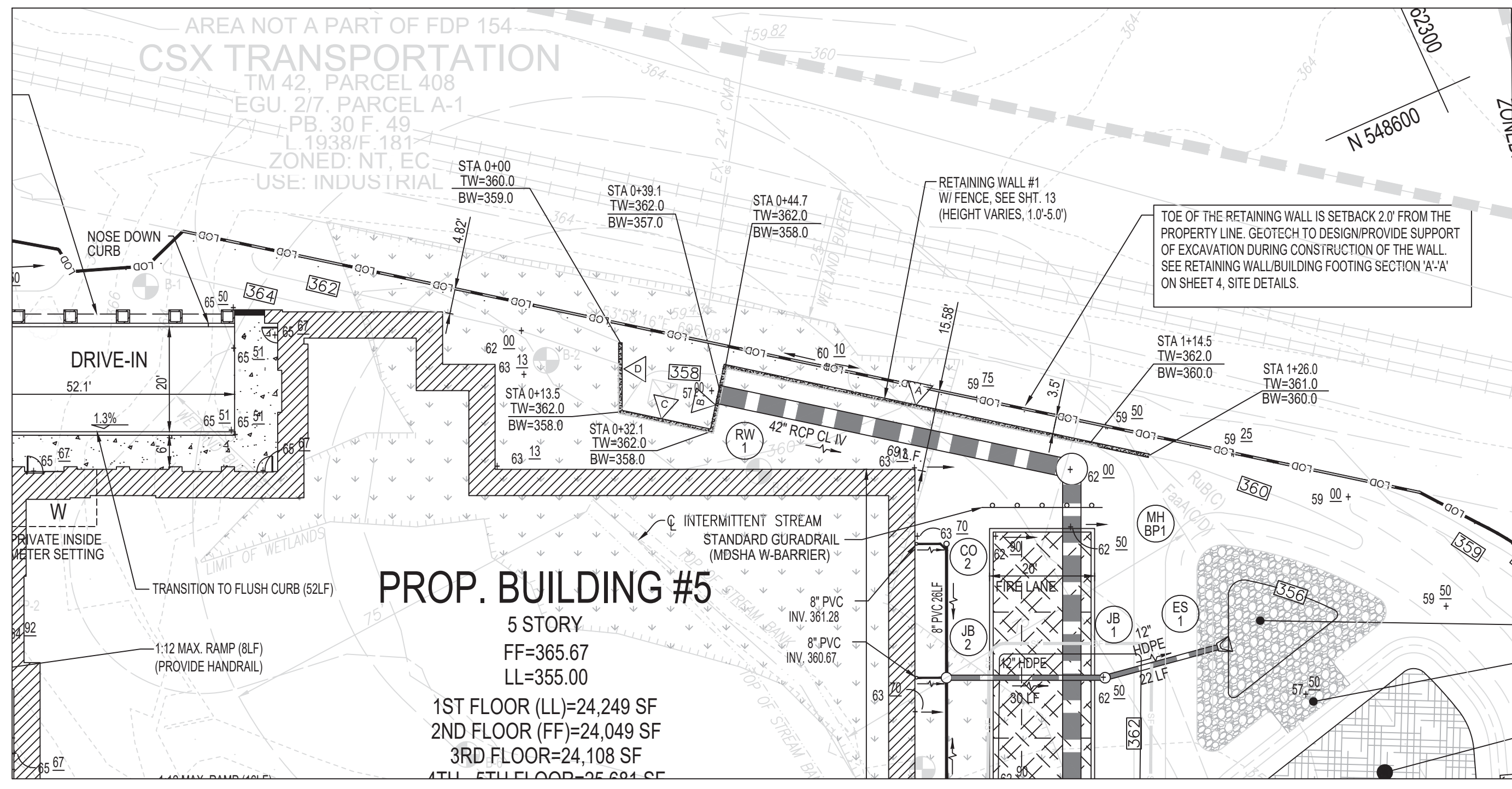
REVISION table with columns for NO., REVISION, and DATE.

SITE DEVELOPMENT PLAN, LANDSCAPE PLAN, NOTES AND DETAILS; FOREST CONSERVATION PLAN. STONEWOOD 5 STORAGE (PARCEL A-2 (E.G.U. SUBDIVISION) SECTION 2 / AREA 6). VOGEL ENGINEERING and TIMMONS GROUP logo and contact information. Includes a professional seal for Robert H. Vogel, P.E.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Chief, Development-Engineering Division: Philip M. Thompson, 10/12/2023. Chief, Division of Land Development: Lynda Ewaning, 10/12/2023. Director: [Signature], [Date].

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... [Signature: Brian P. Wolfe], 10/10/2023.





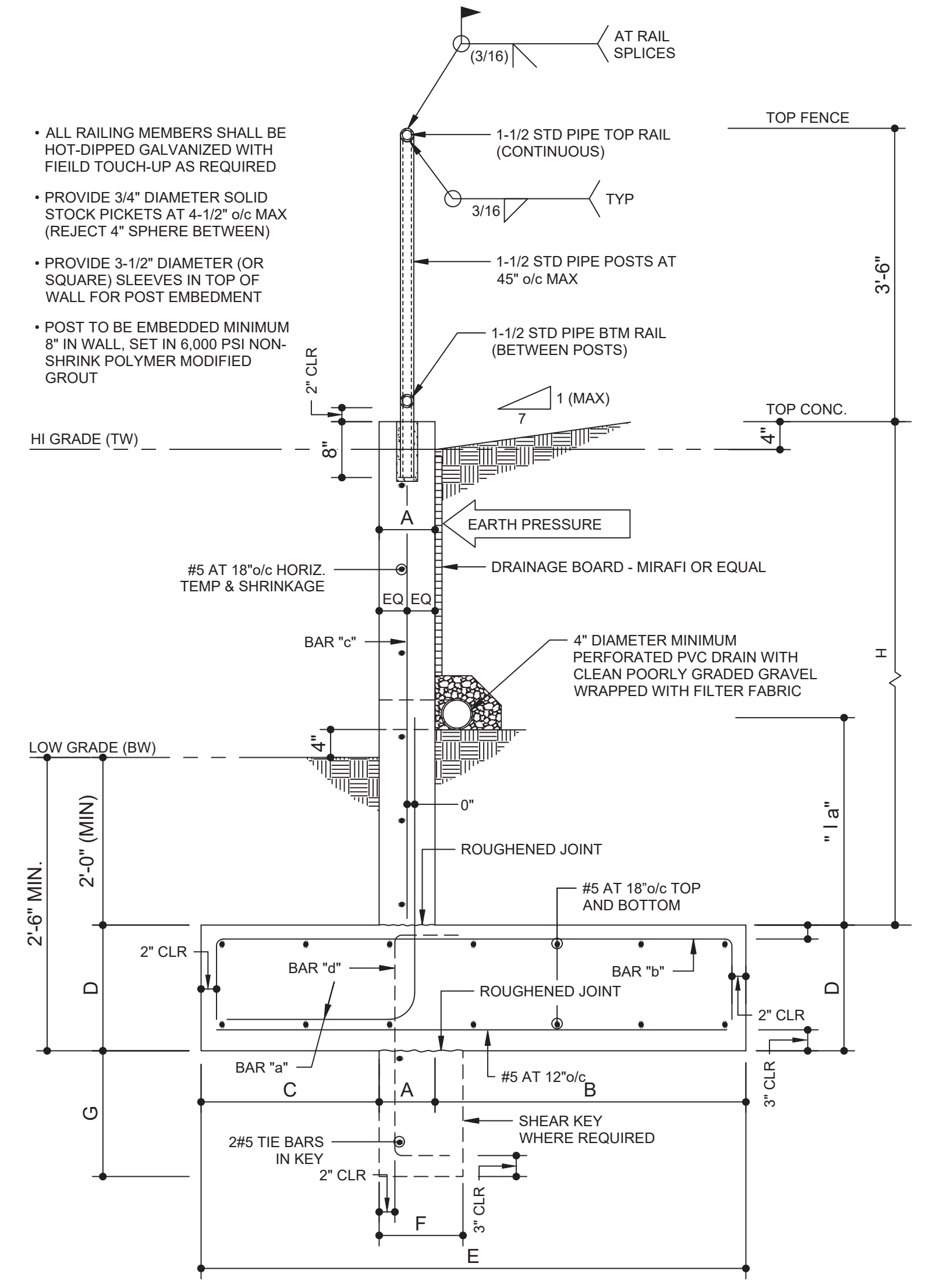
PROP. BUILDING #5
 5 STORY
 FF=365.67
 LL=355.00
 1ST FLOOR (LL)=24,249 SF
 2ND FLOOR (FF)=24,049 SF
 3RD FLOOR=24,108 SF
 4TH FLOOR=25,884 SF

REINFORCED CONCRETE RETAINING WALL SCHEDULE												
MARK	MAX HEIGHT	WALL	FOOTING			KEY	REINFORCING				REMARKS	
			H	A	E x D		B	C	F x G	BAR "a"		I _a
△△△	6'-0"	8"	5'-8" x 12"	3'-0"	1'-6"	1'-0" x 1'-4"	#5 AT 12"o/c	48"	#5 AT 12"o/c	#5 AT 12"o/c	#5 AT 12"o/c	

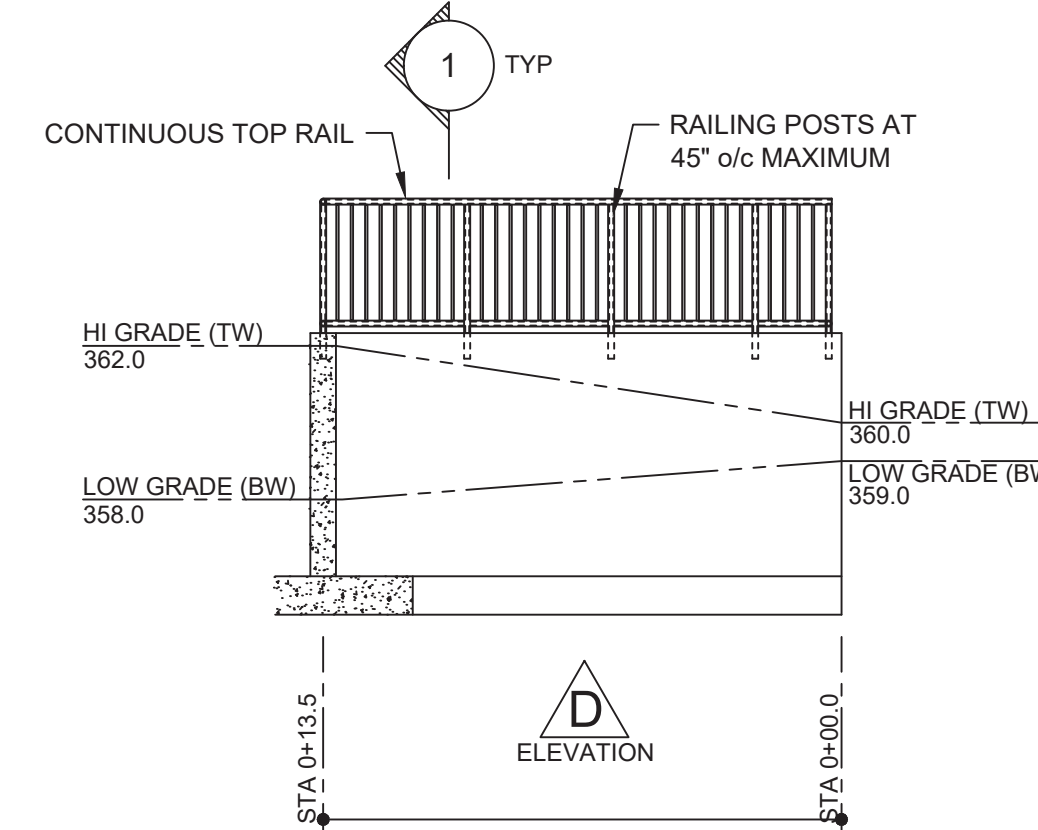
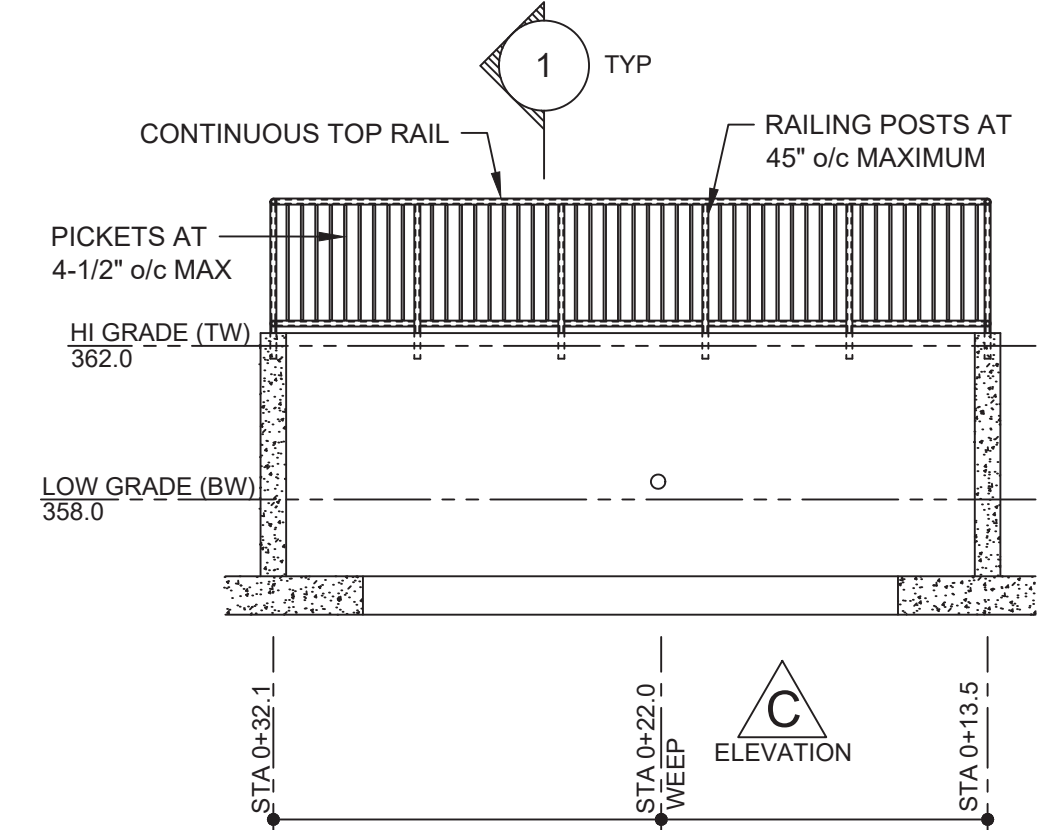
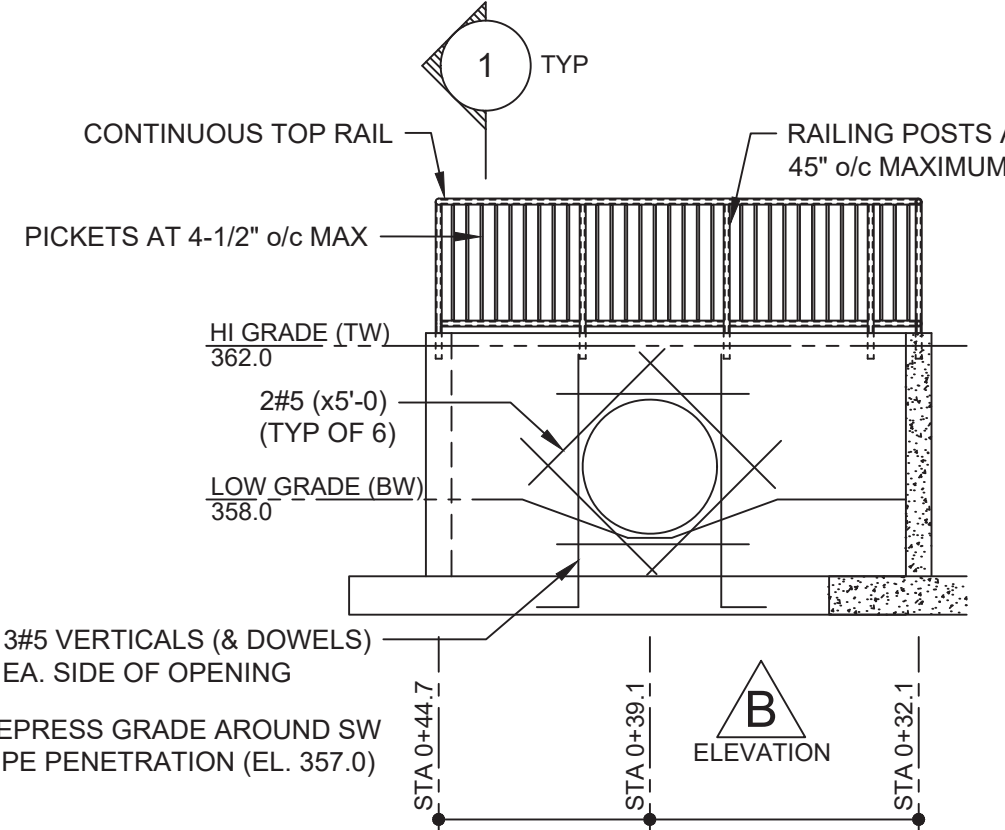
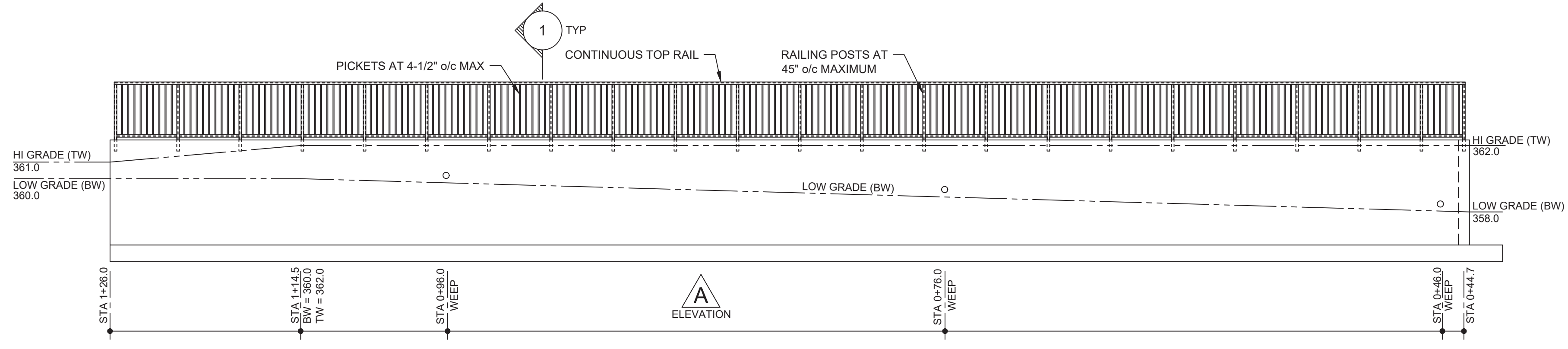
- RETAINING WALL NOTES:**
- VERTICAL WALL REINFORCEMENT SHALL BE CENTERED ON WALL THICKNESS (UNO).
 - ALL CONCRETE FOR RETAINING WALLS AND RETAINING WALL FOOTINGS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI
 - DO NOT BACKFILL WALLS UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH AND SLAB ON GRADE HAS BEEN POURED AND CURED FOR AT LEAST 7 DAYS.
 - I_a IS REQUIRED LAP SPLICE OF "c" AND "a" BARS.

RETAINING WALL PLAN NOTES SCALE: 1" = 20'-0"

- NEW RETAINING WALL SHALL BE CONSTRUCTED OF REINFORCED CONCRETE WITH 28-DAY STRENGTH OF 4,000 PSI. ALL REINFORCEMENT SHALL BE GRADE 60. CONTRACTOR SHALL SUBMIT ALL MATERIALS AND REINFORCING SHOP DRAWINGS PRIOR TO CONSTRUCTION.
- DUE TO THE CRITICAL NATURE OF RETAINING WALLS, THE CONTRACTOR SHALL PAY CAREFUL ATTENTION TO THE REQUIREMENTS OF SOIL PROPERTIES, TESTING, AND INSPECTION. ALTHOUGH THE GEOTECHNICAL SUBSURFACE EXPLORATION BY ECS MID-ATLANTIC IS INTENDED TO REPRESENT A GOOD ESTIMATE OF IN-SITU SOIL CONDITIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ACTUAL CONDITIONS FOUND IN THE FIELD PROVIDE EQUAL OR BETTER PERFORMANCE AS SPECIFIED HEREIN.
- ALLOWABLE SOIL BEARING PRESSURE = 3,000 PSF. THIS VALUE AND ALL SOIL FILL AND COMPACTION SHALL BE FIELD-INSPECTED BY A REGISTERED GEOTECHNICAL ENGINEER.
- RETAINING WALL HAS BEEN DESIGNED FOR A MINIMUM FACTOR OF SAFETY OF 2.0 FOR SLIDING, OVERTURNING, AND BEARING FAILURE.
- WALL ELEVATION SEGMENTS ARE NOTED AS THUS: **A**
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN
- THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SPOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ONSITE SOILS TECHNICIAN. EACH EIGHT (8) INCH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTER DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- THIS RETAINING WALL IS NOT A "CRITICAL" WALL AS DEFINED BY HOWARD COUNTY.
- THIS RETAINING WALL HAS BEEN DESIGNED FOR A LIVE LOAD SURCHARGE OF 100 PSF. THIS SURCHARGE SHALL NOT BE EXCEEDED DURING OR AFTER CONSTRUCTION.
- A CONTINUOUS GALVANIZED PIPE RAILING (ASTM A53, F_y = 35 KSI) SHALL BE PROVIDED ALONG THE RETAINING WALL. SEE WALL SECTION AND ELEVATIONS FOR ADDITIONAL INFORMATION.
- REFER TO CIVIL PLANS BY VOGEL ENGINEERING FOR ALL OTHER SITE ELEMENTS.



1 TYPICAL RETAINING WALL SECTION
 SCALE: 3/4" = 1'-0"



2 RETAINING WALL ELEVATIONS

VERTICAL SCALE: 1" = 5'-0"
 HORIZONTAL SCALE: 1" = 5'-0"

OWNER/DEVELOPER
 J 2 J LLC
 7020 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
RETAINING WALL
PLAN, ELEVATIONS, AND DETAILS
STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

TAX MAP 42, BLOCK 11, 6TH ELECTION DISTRICT
 PARCEL "A-2" / LAND UNIT 5, HOWARD COUNTY, MARYLAND

morabito consultants
 Structural Engineers | Parking Consultants
 952 Ridgebrook Road, Suite 1700
 Sparks, MD 21152-9472
 410-467-2377 | www.morabitoconsultants.com
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 MC#20411

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Designed by: **Philip M. Thompson** 10/12/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE 10/12/2023
 CHIEF, DIVISION OF PLANNING AND DEVELOPMENT
 DATE 10/12/2023
 DIRECTOR DATE

PROFESSIONAL CERTIFICATE

DESIGN BY: RJM
 DRAWN BY: RJM
 CHECKED BY: TM
 DATE: MAY 2022
 SCALE: AS SHOWN
 W.O. NO.: 02-79

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. 52184, EXPIRATION DATE: 01-16-2024

13 SHEET **15**
 OF

GENERAL NOTES

CONTRACTORS RESPONSIBILITIES:

- 1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE, AND TO ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTING. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY CUES, BRACING OR TIEDOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT AND SHALL REMAIN THE CONTRACTOR'S PROPERTY.
2. CONTRACTOR SHALL VERIFY CONDITION IN THE FIELD AND IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY CONDITIONS NOT AS ASSUMED; HE SHALL TAKE FIELD MEASUREMENTS AS REQUIRED AND BE RESPONSIBLE FOR THE SAME.
3. CONTRACTOR SHALL COORDINATE WITH ALL RELATED TRADES FOR DETAILING, FABRICATION AND ERECTION PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL.
4. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ETC. REQUIREMENTS. DISCREPANCIES AND/OR INTERFERENCES SHALL BE REPORTED TO THE ARCHITECT/ENGINEER IMMEDIATELY.
5. THE ENGINEER HAS NO EXPERTISE IN, AND TAKES NO RESPONSIBILITY FOR, CONSTRUCTION MEANS AND METHODS OR JOBSITE SAFETY DURING CONSTRUCTION.
6. PROCESSING AND/OR APPROVED SUBMITTALS MADE BY THE CONTRACTOR WHICH MAY CONTAIN INFORMATION RELATED TO CONSTRUCTION METHODS OF SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, SHALL NOT BE CONSTRUED AS VOLUNTARY ASSUMPTION BY THE ENGINEER OF ANY RESPONSIBILITY OF EACH CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
7. THE ENGINEER IS NOT ENGAGED IN AND DOES NOT SUPERVISE CONSTRUCTION.

CONTROLLED FILL AND BACKFILL:

- 1. SAMPLES OF ALL MATERIALS THAT THE CONTRACTOR PROPOSES TO USE FOR COMPACTED FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
2. COMPACTED FILL SHALL CONSIST OF LOCAL MATERIAL FREE OF DELETERIOUS MATTER AND CLASSIFIED SP, SW, SM, SC, GP, GW, GM, OR GC PER ASTM D 2487.
3. THE CONTROL OF THE MOISTURE FOR PLACING THE FILL WILL BE BASED ON THE RESULTS OF COMPACTION TESTS PER ASTM D 1557.
4. ALL COMPACTED FILL SHALL HAVE A DENSITY OF AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557.
5. PRIOR TO PLACEMENT OF ANY FILLS, THE SITE SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, ROCKS, AND ORGANIC MATERIALS AND THE EXPOSED SUBGRADE SHALL BE COMPACTED IN PLACE TO A CONFIRMED DENSITY OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY.
6. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8" IN THICKNESS AND SHALL BE MIXED, SPREAD AND PLACED IN SUCH A WAY AS TO PRODUCE A UNIFORM THICKNESS OF MATERIAL AFTER PLACING.
7. EACH LAYER OF FILL SHALL BE COMPACTED WITH A MINIMUM OF 6 COMPLETE PASSES ON ALL PORTIONS OF THE SURFACE OF EACH LIFT OF FILL BY RUBBER Tired ROLLERS, SHEEP'S FOOT ROLLERS OR OTHER MECHANICAL EQUIPMENT APPROVED BY THE GEOTECHNICAL ENGINEER.
8. COMPACTED LIFT PLACED WITHIN 4 FEET OF STRUCTURES AND PIPES SHOULD BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 4 INCHES THICKNESS AND COMPACTED WITH HAND TAMPERS OR LIGHT COMPACTION EQUIPMENT TO THE SAME STANDARD.
9. HEAVY COMPACTION EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 4 FEET OF STRUCTURES UNLESS A MINIMUM 2 FEET DEPTH OF FILL COVERS THE STRUCTURES.
10. WHENEVER IN PLACE DENSITIES ARE FOUND BELOW ACCEPTABLE LIMITS, ADDITIONAL ROLLING TO PRODUCE THE SPECIFIED DENSITIES SHALL BE REQUIRED.
11. THE CONTRACTOR SHALL TAKE ALL MEASURES REQUIRED TO PROVIDE FOR FREE DRAINAGE OF THE SITE AND TO PREVENT PONDING OF WATER. SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.
12. PLACING OF FILL CONTAINING ORGANIC MATTER: PLACING OF FILL WITH MOISTURE CONTENT TOO HIGH OR TOO LOW FOR PROPER COMPACTION; PLACING OF FILL WHEN FREE WATER IS STANDING ON THE EXISTING FILL SURFACE; PLACING OF FILL IN A FROZEN CONDITION OR ON TOP OF FROZEN MATTER WILL NOT BE PERMITTED.
13. THE SOILS ENGINEER SHALL SUPERVISE THE PLACING OF THE COMPACTED FILL AND ALL THE MATERIAL AND EQUIPMENT USED FOR THIS PURPOSE AND SHALL MAKE SUCH SOILS TESTS AS MAY BE REQUIRED FOR THE COMPLETION OF THE WORK PERFORMING AT LEAST 6 IN PLACE DENSITY TESTS DURING EACH EIGHT HOUR SHIFT.

DESIGN DATA:

BUILDING CODE: THE INTERNATIONAL BUILDING CODE - IBC 2018 WITH HOWARD COUNTY AMENDMENTS

CONCRETE: NORMAL WEIGHT CONCRETE HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH (fc) AS FOLLOWS: ALL CONCRETE, UNO 4,000 PSI

REINFORCING STEEL: Fy = 60,000 PSI (REBAR)

STRUCTURAL STEEL: STEEL PIPE ASTM A-53 GR. B Fy = 35,000 PSI, UNO

LIVE LOADS: RETAINING WALL SURCHARGE = 100 PSF

LATERAL EARTH PRESSURES ON SOIL-RETAINING WALLS:

- 1. EQUIVALENT ACTIVE FLUID PRESSURE (CANTILEVER): 40H
2. EQUIVALENT PASSIVE FLUID PRESSURE: 330H
3. COEFFICIENT OF FRICTION: 0.30
4. BASE COHESION: VARIES / 100 PSF MAX

CONCRETE:

- 1. ALL CONCRETE WORK SHALL CONFORM TO ALL THE PROVISIONS OF THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).
2. CONCRETE PROPERTIES FOR EACH STRUCTURAL ELEMENT IS DEFINED IN THE DESIGN DATA SECTION ON THIS SHEET.
3. CONCRETE SHALL CONFORM TO ALL THE PROVISIONS OF "RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING" (ACI 305) AND "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING" (ACI 306).
4. ALL FORMWORK SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "FORMWORK FOR CONCRETE" SPECIAL PUBLICATION NO. 4 AND ACI'S "STANDARD RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" (ACI 347).
5. CONCRETE MIX DESIGN SHALL BE BASED ON LABORATORY TRIAL BATCH METHOD DESCRIBED IN ACI-318. CONCRETE SHALL ALSO CONFORM TO THE FOLLOWING REQUIREMENTS.
6. ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 6% +/- 1%.
7. THE MAXIMUM WATER CEMENT RATIO W/C SHALL NOT EXCEED 0.56 FOR ALL CONCRETE EXCEPT CONCRETE EXPOSED TO WEATHER WHICH SHALL NOT EXCEED 0.45.
8. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED.
9. THE MAXIMUM SLUMP OF ALL CONCRETE SHALL BE 4".
10. ALL CONCRETE SHALL BE CURED WITH LIQUID SEALING COMPOUND CONFORMING TO ASTM C-309, TYPE I AND FEDERAL SPECIFICATION TT-C-00800 OR OTHER APPROVED METHOD WHICH IS COMPATIBLE WITH FLOORING ADHESIVES AND OTHER SURFACE TREATMENTS.
11. ALL CONCRETE LEFT EXPOSED AT THE COMPLETION OF THE PROJECT SHALL BE TREATED WITH A CLEAR, PENETRATING ACRYLIC BASE POLYMER CAPABLE OF PREVENTING INFILTRATION OF WATER BORNE CHLORIDES SUCH AS "US CURE & SEAL" BY US CONCRETE PRODUCTS OR APPROVED EQUAL.
12. CONTRACTOR SHALL SUPPORT ADJACENT STRUCTURES, UTILITIES, AND EXCAVATIONS AS REQUIRED FOR COMPLETION OF WORK.
13. ONE SET OF COMPRESSIVE TEST CYLINDERS FOR EACH 100 CUBIC YARDS POURED, BUT NOT LESS THAN ONE SET FOR EACH DAY'S POUR AND EACH CLASS OF CONCRETE, ALONG WITH SLUMP TESTS SHALL BE PERFORMED BY A TESTING LABORATORY APPROVED BY THE STRUCTURAL ENGINEER.
14. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE AND HAVE BEEN APPROVED BY THE ENGINEER.

REINFORCING STEEL:

- 1. REINFORCING STEEL SHALL BE DEFORMED BARS IN ACCORDANCE WITH ASTM A 615, GRADE 60.
2. BENDS AND HOOKS ARE TO BE FABRICATED IN ACCORDANCE WITH ACI SP-66 ACI DETAILING MANUAL AND AS PER DETAILS.
3. PLACE MAIN REINFORCING STEEL SO AS TO PROVIDE 3" MINIMUM COVER FOR FOUNDATIONS POURED ON EARTH, 2" MINIMUM COVER FOR BEAMS AND COLUMNS, 3/4" MINIMUM COVER FOR SLABS AND 1 1/2" FOR ALL REBAR IN EXPOSED CONCRETE (EXCEPT AS OTHERWISE IN DETAILS).
4. LAP DEFORMED BARS IN ACCORDANCE WITH LAP SPLICE SCHEDULE ON THESE DRAWINGS, UNO.
5. HOOKS SHALL BE STANDARD HOOKS, UNO.
6. PROVIDE ACCESSORIES AND BAR SUPPORTS IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315).

SUBMITTALS:

- 1. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER.
2. ALL SHOP DRAWINGS USED FOR WORK SHALL BEAR THE STAMP OF THE ARCHITECT/ENGINEER AND SHALL BE MARKED "APPROVED" OR "APPROVED AS NOTED".
3. CONTRACTOR SHALL CHECK SHOP DRAWINGS THOROUGHLY BEFORE SUBMITTING. VERIFY DIMENSIONS REQUIRING FIELD VERIFICATION BEFORE SUBMITTING AND MARK AS HAVING BEEN VERIFIED.
4. SUBMIT CONCRETE MIX DESIGNS FOR EACH CLASS OR USE.
5. SUBMIT CONCRETE REINFORCING STEEL SHOP DRAWINGS.
6. ALL CONTRACTOR MODIFICATIONS (INCLUDING PRODUCTS SUBMISSION) MUST BE IDENTIFIED IN WRITING AS A PROPOSED "AS EQUAL" CHANGES AT TIME OF SUBMISSION.
7. IF A CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS OR FAILS TO FOLLOW THE ABOVE "AS EQUAL" PROCEDURE, THE FIRM MORABITO CONSULTANTS, INC. WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT.
8. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AS A CONVENIENCE TO THE CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.

INSPECTION:

- 1. ALL WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND ALL LOCAL ORDINANCES.
2. THE OWNER SHALL HIRE AN EXPERIENCED QUALIFIED INSPECTOR TO PERFORM ALL REQUIRED INSPECTION WORK.
3. INSPECTION SHALL CONSIST OF VISUAL OBSERVATIONS OF MATERIALS, EQUIPMENT OR CONSTRUCTION WORK FOR THE PURPOSE OF ASCERTAINING THAT THE WORK IS IN SUBSTANTIAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND WITH THE DESIGN INTENT.
4. PERFORM VISUAL INSPECTION OF WELDS IN ACCORDANCE WITH AWS D1.1
a. VERIFY QUALIFICATIONS OF WELDERS
b. VERIFY WELDING PROCEDURE QUALIFICATION AND EQUIPMENT.
c. VERIFY WELD MATERIALS AND STORAGE FACILITIES.
d. INSPECT JOINT FIT-UP PRIOR TO WELDING.
e. MEASURE 25 PERCENT OF FILLET WELDS
5. MAKE, CURE AND TEST CONCRETE TEST SPECIMENS IN ACCORDANCE WITH ASTM C31, FROM CONCRETE SAMPLED AT POINT OF DISCHARGE FOR COMPRESSIVE STRENGTH.
6. THE ENGINEER WILL NOT PERFORM THE REQUIRED INSPECTION AS PART OF THIS PRESENT CONTRACT WITH THE ARCHITECT/OWNER, HOWEVER, IF DESIRED, MORABITO CONSULTANTS, INC. MAY BE HIRED UNDER A SEPARATE CONTRACT TO PERFORM THIS INSPECTION WORK.
7. UNDER THIS PRESENT CONTRACT, THE ENGINEER MAY PERFORM CONSTRUCTION ADMINISTRATION SERVICES OR VISIT THE SITE TO ASCERTAIN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS. HOWEVER, SUCH SERVICES OR SITE VISITS SHALL NOT BE RELIED UPON BY OTHERS AS INSPECTION OR ACCEPTANCE OF THE WORK, NOR SHOULD IT BE CONSTRUED TO RELIEVE THE CONTRACTOR IN ANY WAY FROM HIS OBLIGATIONS AND RESPONSIBILITIES UNDER THE CONSTRUCTION CONTRACT.
8. IT IS AGREED THAT IF THE OWNER DOES NOT ENGAGE MORABITO CONSULTANTS OR AN INDEPENDENT THIRD PARTY INSPECTION AGENCY, THEN THE OWNER WILL DEFEND, INDEMNIFY AND HOLD HARMLESS MORABITO CONSULTANTS, INC., FROM ANY CLAIM OR SUIT WHATSOEVER, INCLUDING BUT NOT LIMITED TO ALL PAYMENTS, EXPENSES OR COSTS INVOLVED, ARISING FROM OR ALLEGED TO HAVE ARISEN FROM THE CONTRACTOR'S PERFORMANCE OR THE FAILURE OF THE CONTRACTOR'S WORK TO CONFORM TO THE DESIGN INTENT AND THE CONTRACT DOCUMENTS.
9. MORABITO CONSULTANTS, INC. AGREES TO BE RESPONSIBLE FOR ITS OWN OR ITS EMPLOYEES' NEGLIGENT ACTS, ERRORS OR OMISSIONS.

OWNERSHIP OF DOCUMENTS:

- 1. THE CONTRACTOR ACKNOWLEDGES THESE PLANS AND SPECIFICATIONS PREPARED BY MORABITO CONSULTANTS, INC., AS INSTRUMENTS OF PROFESSIONAL SERVICE.
2. NEVERTHELESS, THE PLANS AND SPECIFICATIONS PREPARED UNDER THIS AGREEMENT SHALL REMAIN THE PROPERTY OF MORABITO CONSULTANTS, INC. UPON COMPLETION OF THE WORK.
3. THE CONTRACTOR AGREES TO HOLD HARMLESS AND INDEMNIFY MORABITO CONSULTANTS, INC., AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT THE WRITTEN AUTHORIZATION OF MORABITO CONSULTANTS, INC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Philip M. Thompson 10/12/2023
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/12/2023
CHIEF, DIVISION OF PLANNING AND DEVELOPMENT DATE 10/12/2023
DIRECTOR DATE

OWNER/DEVELOPER

J 2 J LLC
7020 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046
C/O ROBERT HARTSON
(443) 459-5080

Table with 3 columns: NO., REVISION, DATE

SITE DEVELOPMENT PLAN
RETAINING WALL
GENERAL NOTES

STONEWOOD 5 STORAGE
PARCEL A-2 (E.G.U. SUBDIVISION)
SECTION 2 / AREA 6

TAX MAP 42, BLOCK 11
6TH ELECTION DISTRICT

PARCEL "A-2" / LAND UNIT 5
HOWARD COUNTY, MARYLAND

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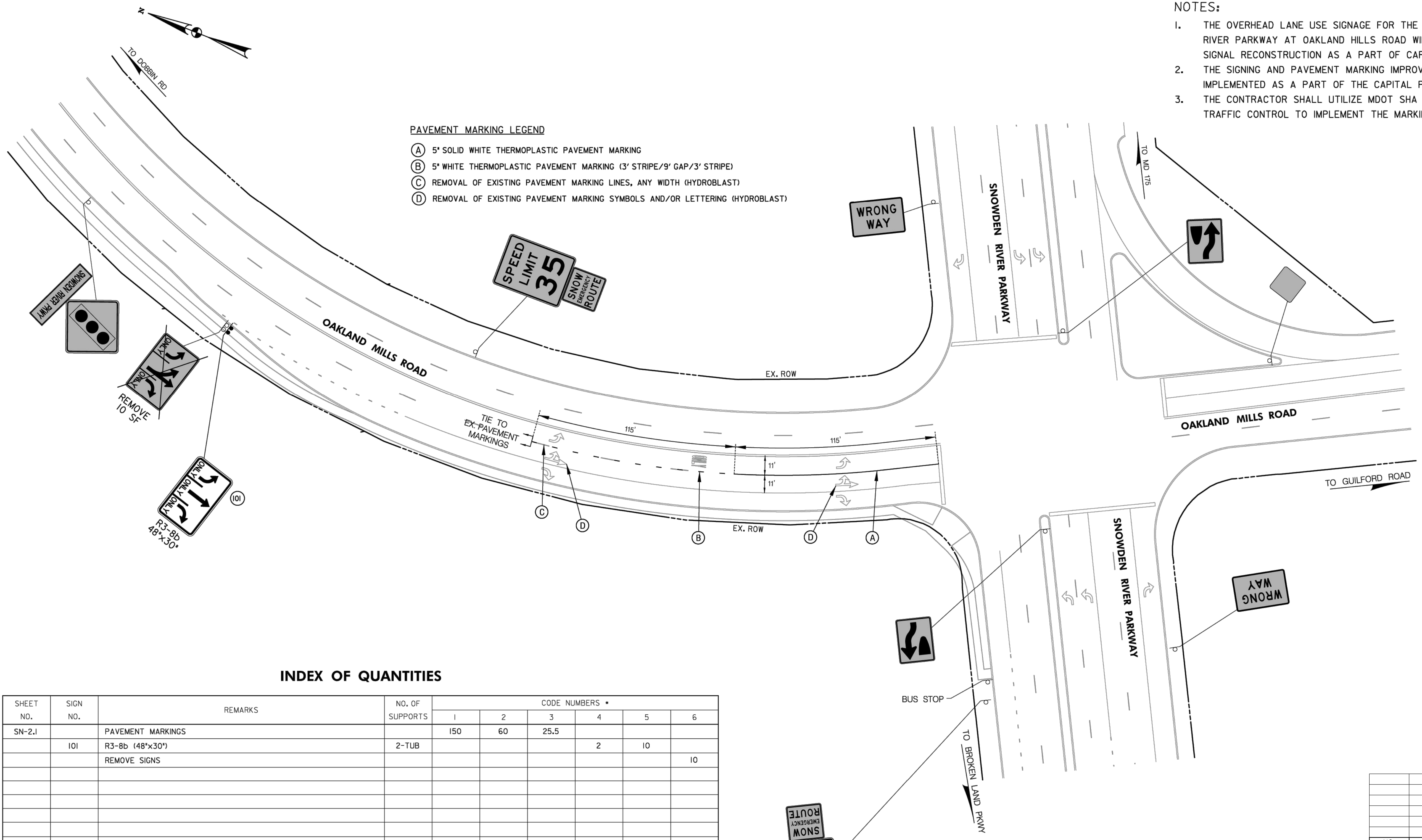
DESIGN BY: RJM
DRAWN BY: RJM
CHECKED BY: TM
DATE: MAY 2022
SCALE: AS SHOWN
W.O. NO.: 02-79

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. 52184, EXPIRATION DATE: 01-16-2024.
14 SHEET OF 15

NOTES:

1. THE OVERHEAD LANE USE SIGNAGE FOR THE SOUTHBOUND APPROACH OF THE SNOWDEN RIVER PARKWAY AT OAKLAND HILLS ROAD WILL BE ADJUSTED UNDER THE SCHEDULED SIGNAL RECONSTRUCTION AS A PART OF CAPITAL PROJECT T7105.
2. THE SIGNING AND PAVEMENT MARKING IMPROVEMENTS SHOWN ON THIS SHEET WILL BE IMPLEMENTED AS A PART OF THE CAPITAL PROJECT T7105.
3. THE CONTRACTOR SHALL UTILIZE MDOT SHA STANDARD 104.03-18 FOR THE REQUIRED TRAFFIC CONTROL TO IMPLEMENT THE MARKING CHANGES.

- PAVEMENT MARKING LEGEND**
- (A) 5" SOLID WHITE THERMOPLASTIC PAVEMENT MARKING
 - (B) 5" WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE/9' GAP/3' STRIPE)
 - (C) REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH (HYDROBLAST)
 - (D) REMOVAL OF EXISTING PAVEMENT MARKING SYMBOLS AND/OR LETTERING (HYDROBLAST)



INDEX OF QUANTITIES

SHEET NO.	SIGN NO.	REMARKS	NO. OF SUPPORTS	CODE NUMBERS *					
				1	2	3	4	5	6
SN-2.1		PAVEMENT MARKINGS	150	60	25.5				
	101	R3-8b (48"x30')	2-TUB				2	10	
		REMOVE SIGNS							10
SHEET SUBTOTAL			150	60	25.5	2	10	10	
SHEET ROUNDED SUBTOTAL			200	100	30	2	10	10	

* CODE NUMBER, DESCRIPTION AND UNIT

CODE NUMBERS	DESCRIPTION	UNIT
1	5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS	LF
2	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH (HYDROBLAST)	LF
3	REMOVAL OF EXISTING PAVEMENT MARKING SYMBOLS AND/OR LETTERING (HYDROBLAST)	SF
4	GALVANIZED SQUARE TUBULAR STEEL SIGN SUPPORT	LF
5	SHEET ALUMINUM SIGNS	SF
6	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORT(S)	SF

SIGNING LEGEND

SYMBOL	DESCRIPTION
	EXISTING GROUND MOUNTED SIGN AND SUPPORT(S)
	PROPOSED GROUND MOUNTED SIGN AND SUPPORT(S)
	EXISTING SIGN TO REMAIN
	EXISTING SIGN TO BE REMOVED
	PROPOSED SIGN TO BE INSTALLED
	EXISTING GUARD RAIL
	SIGN NUMBER

OWNER/DEVELOPER
 J 2 J LLC
 7020 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 C/O ROBERT HARTSON
 (443) 459-5080

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN
 SIGNING AND PAVEMENT MARKING PLAN**

STONEWOOD 5 STORAGE
 PARCEL A-2 (E.G.U. SUBDIVISION)
 SECTION 2 / AREA 6

TAX MAP 42, BLOCK 11, 6TH ELECTION DISTRICT PARCEL "A-2" / LAND UNIT 5, HOWARD COUNTY, MARYLAND

LENHART TRAFFIC CONSULTING, INC.
 645 BALTIMORE ANNAPOLIS BOULEVARD, SUITE 214
 SEVERNA PARK, MD 21146
 TEL: (410) 216-3333
 FAX: (443) 782-2288
 www.lenharttraffic.com



DESIGN BY: LTC/AGK
 DRAWN BY: LTC/AGK
 CHECKED BY: LTC/BCS
 DATE: DECEMBER 2021
 SCALE: 1"=30'
 W.O. NO.: 02-79

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. 00757, EXPIRATION DATE: 06-06-2023

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Philip M. Thompson 10/12/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE
 10/12/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE
 10/12/2023
 LYNDA EISENBERG
 DIRECTOR DATE