

**LEGEND**

- EXISTING CONTOUR
- EXISTING CURB AND GUTTER
- EXISTING STORM DRAIN
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING GASLINE
- EXISTING FENCE
- EXISTING STREAM BANK
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- EXISTING TREELINE
- EXISTING TREES/LANDSCAPING
- LIMIT OF DISTURBANCE
- EXISTING WALL TO BE REMOVED
- EXISTING BUILDING TO BE REMOVED
- EXISTING PAVING TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED
- EX. 20" PUBLIC WATER EASEMENT
- EX. 20" PUBLIC SEWER EASEMENT

**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.

**NOTE:**  
 CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING INFRASTRUCTURE TO REMAIN.

**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.**

**OWNER**  
 COLUMBIA ASSOCIATION INC.  
 C/O ALBERT F. EDWARDS  
 10221 WINCOPIN CIRCLE  
 COLUMBIA, MD 21044  
 (410) 381-3551

**OWNER/DEVELOPER**  
 94 UNIT BUILDING 2 (4%); ROSLYN RISE FOUR, LLC  
 59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
 C/O MACKENZIE KIESEL  
 875 HOLLIS STREET, SUITE 202  
 BALTIMORE, MD 21201  
 (410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**EXISTING CONDITIONS & DEMOLITION PLAN**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

ZONED: NT  
 LOTS 7 & 8, PARCEL 272  
 TAX MAP 30 GRID 19  
 TAX MAP 36 GRID 1  
 5TH 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  
 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. 18193, EXPIRATION DATE: 09-27-2022

DESIGN BY: RHW/ACS.  
 DRAWN BY: ACS.  
 CHECKED BY: RHW.  
 DATE: OCTOBER 2021  
 SCALE: AS SHOWN.  
 W.O. NO.: 41539.

2 SHEET OF 27

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 5/31/2022

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 6/1/2022

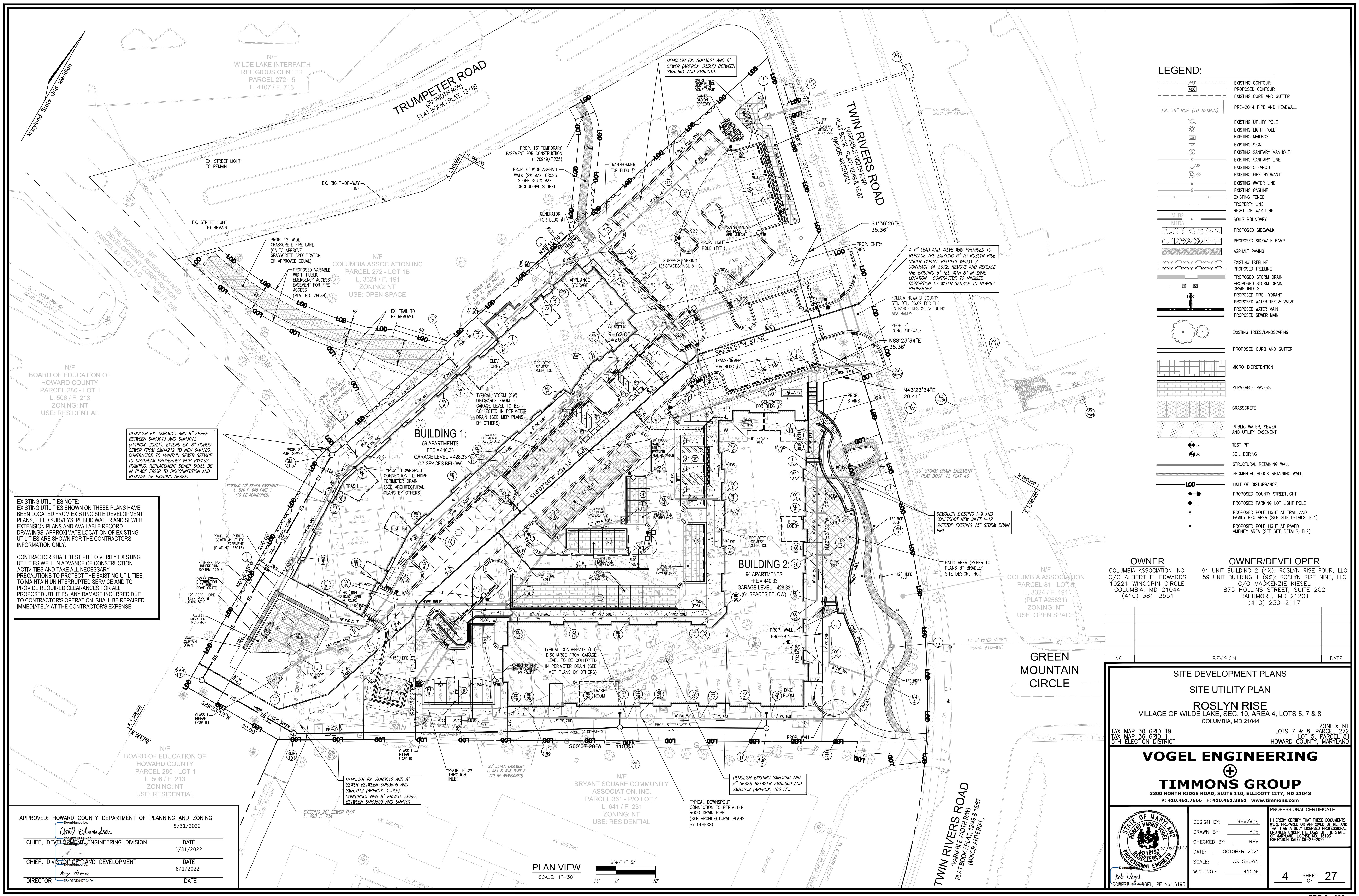
DIRECTOR  
 DATE

**PLAN VIEW**  
 SCALE: 1"=30'









- LEGEND:**
- EXISTING CONTOUR
  - PROPOSED CONTOUR
  - EXISTING CURB AND GUTTER
  - PRE-2014 PIPE AND HEADWALL
  - EXISTING UTILITY POLE
  - EXISTING LIGHT POLE
  - EXISTING MAILBOX
  - EXISTING SIGN
  - EXISTING SANITARY LINE
  - EXISTING CLEANOUT
  - EXISTING FIRE HYDRANT
  - EXISTING WATER LINE
  - EXISTING GASLINE
  - EXISTING FENCE
  - PROPERTY LINE
  - RIGHT-OF-WAY LINE
  - SOILS BOUNDARY
  - PROPOSED SIDEWALK
  - PROPOSED SIDEWALK RAMP
  - ASPHALT PAVING
  - EXISTING TREE LINE
  - PROPOSED TREE LINE
  - PROPOSED STORM DRAIN
  - PROPOSED STORM DRAIN INLET
  - PROPOSED FIRE HYDRANT
  - PROPOSED WATER TEE & VALVE
  - PROPOSED WATER MAIN
  - PROPOSED SEWER MAIN
  - EXISTING TREES/LANDSCAPING
  - PROPOSED CURB AND GUTTER
  - MICRO-BIORETENTION
  - PERMEABLE PAVERS
  - GRASSCRETE
  - PUBLIC WATER, SEWER AND UTILITY EASEMENT
  - TEST PIT
  - SOIL BORING
  - STRUCTURAL RETAINING WALL
  - SEGMENTAL BLOCK RETAINING WALL
  - LIMIT OF DISTURBANCE
  - PROPOSED COUNTY STREETLIGHT
  - PROPOSED PARKING LOT LIGHT POLE
  - PROPOSED POLE LIGHT AT TRAIL AND FAMILY REC AREA (SEE SITE DETAILS, E1)
  - PROPOSED POLE LIGHT AT PAVED AMENITY AREA (SEE SITE DETAILS, E2)

DEMOLISH EX. SMH3013 AND 8" SEWER BETWEEN SMH3013 AND SMH3012 (APPROX. 208LF). EXTEND EX. 8" PUBLIC SEWER FROM SMH312 TO NEW SMH103. CONTRACTOR TO MAINTAIN SEWER SERVICE TO UPSTREAM PROPERTIES WITH BYPASS PUMPING. REPLACEMENT SEWER SHALL BE IN PLACE PRIOR TO DISCONNECTION AND REMOVAL OF EXISTING SEWER.

**EXISTING UTILITIES NOTE:**  
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A 6" LEAD AND VALVE WAS PROVIDED TO REPLACE THE EXISTING 6" TO ROSLYN RISE UNDER CAPITAL PROJECT W8331 / CONTRACT 44-5072. REMOVE AND REPLACE THE EXISTING 6" TEE WITH 8" IN SAME LOCATION. CONTRACTOR TO MINIMIZE DISRUPTION TO WATER SERVICE TO NEARBY PROPERTIES.

FOLLOW HOWARD COUNTY STD. DET. R5.09 FOR THE ENTRANCE DESIGN INCLUDING ADA RAMPS

PROP. 4' CONC. SIDEWALK

N88°23'34"E 35.36'

N43°23'34"E 29.41'

EX-109

10" STORM DRAIN EASEMENT PLAT BOOK 12 PLAT 46

EX. PEDESTRIAN UNDERPASS (TO REMAIN)

EX. 8" WATER (PUBLIC) CONTR. #332-883

DEMOLISH EXISTING 1-9 AND CONSTRUCT NEW INLET 1-12 OVERTOP EXISTING 15" STORM DRAIN PIPE

PATIO AREA (REFER TO PLANS BY BRADLEY SITE DESIGN, INC.)

12" HOPE 78LF

12" HOPE 27LF

EX. 8" WATER (PUBLIC) CONTR. #332-883

12" HOPE 27LF

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

TAX MAP 30 GRID 19 LOTS 7 & 8, PARCEL 272  
TAX MAP 36 GRID 1 LOT 5, PARCEL 81  
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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4 SHEET OF 27

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

Chief, Development Engineering Division  
DATE: 5/31/2022

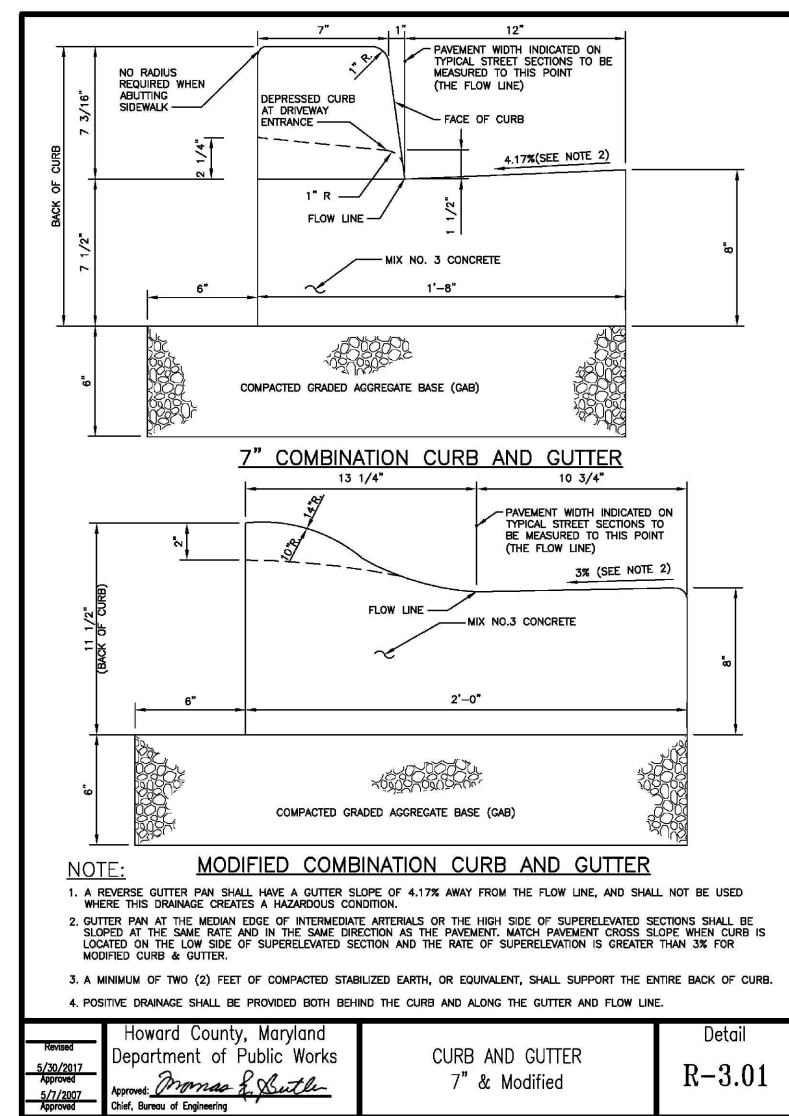
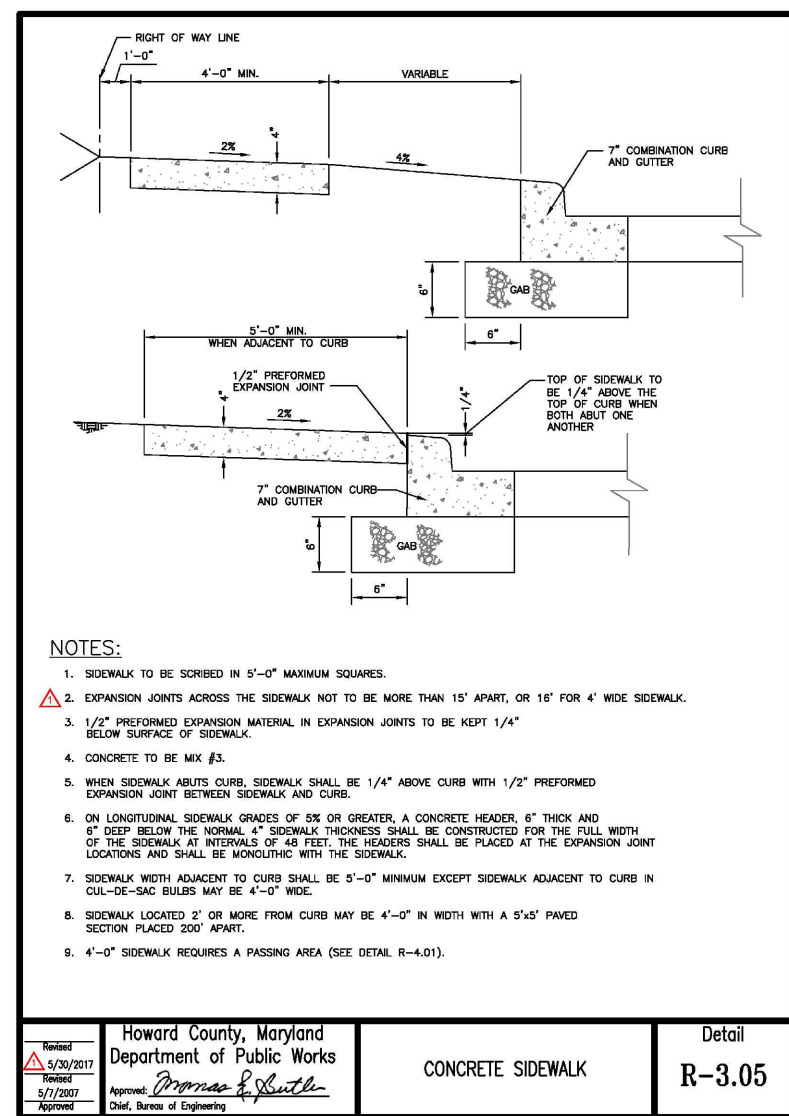
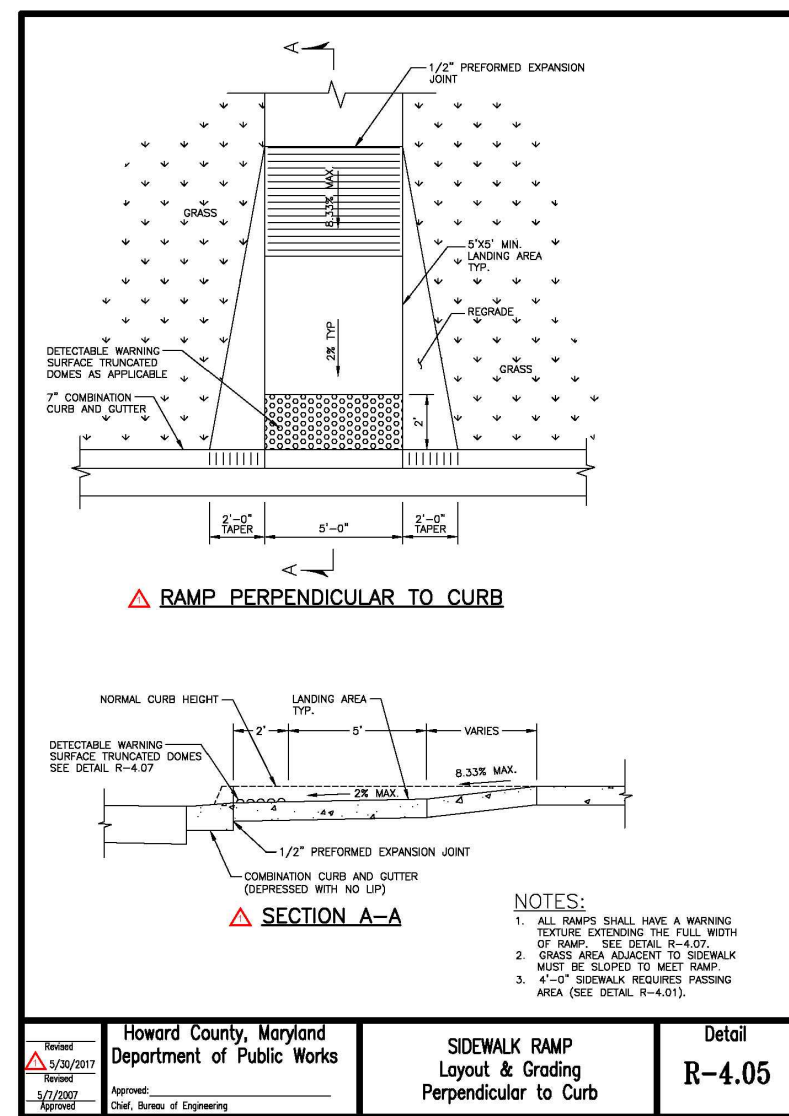
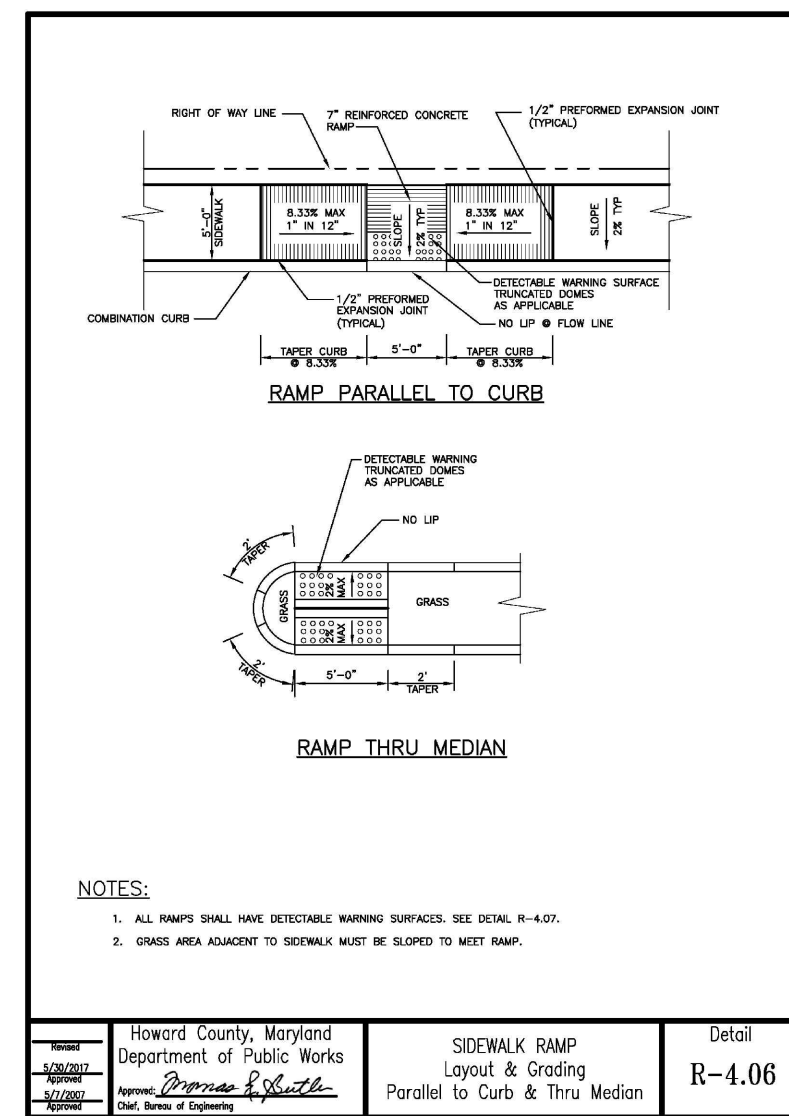
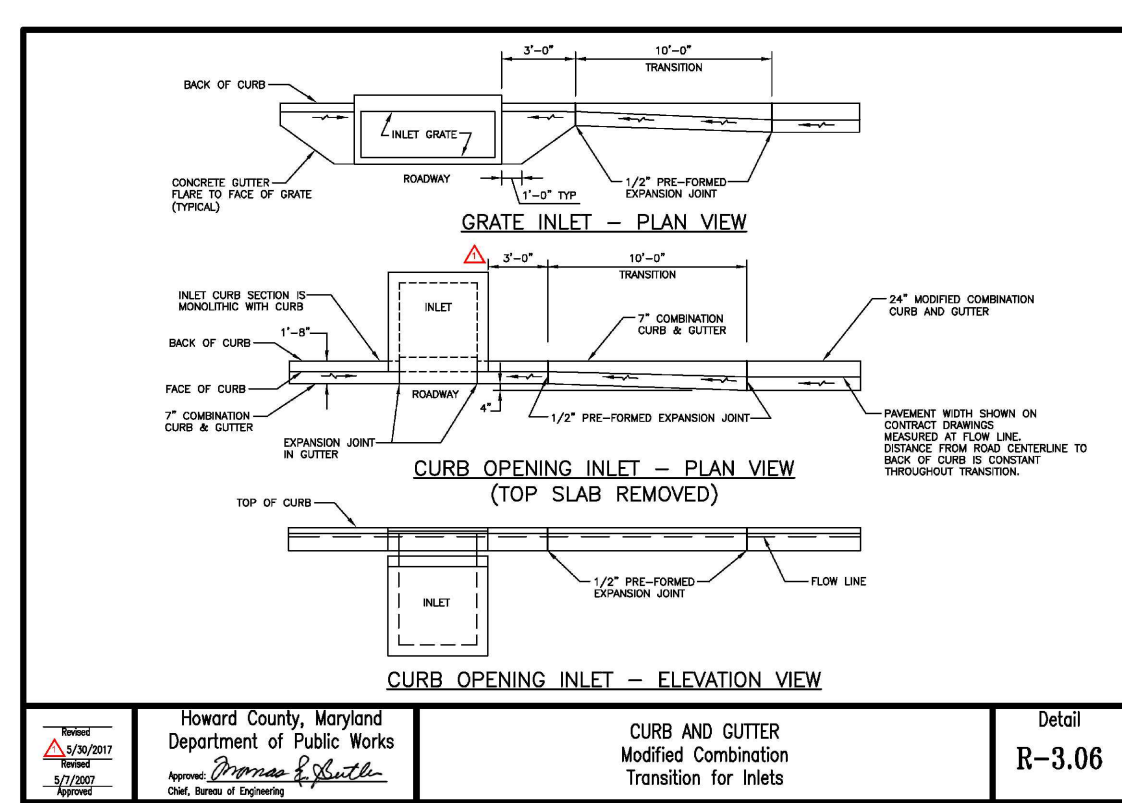
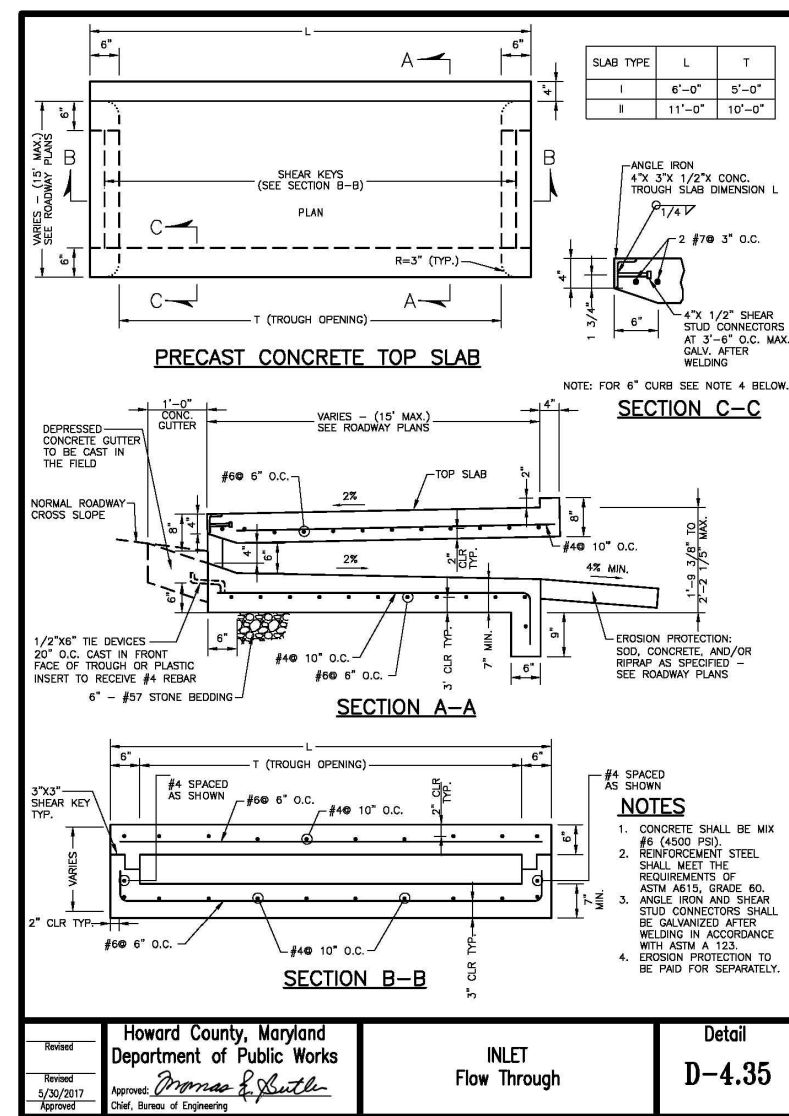
Chief, Division of Land Development  
DATE: 6/1/2022

Director  
DATE: \_\_\_\_\_

**PLAN VIEW**  
SCALE: 1"=30'

15' 0' 30'

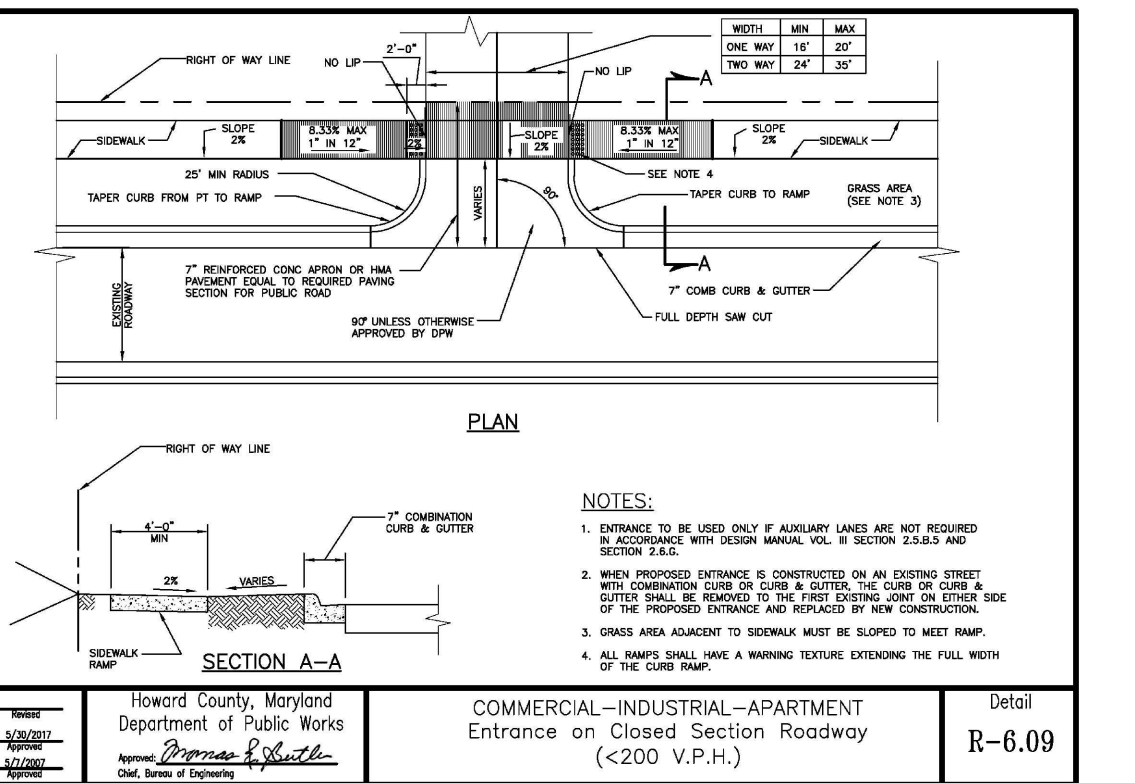
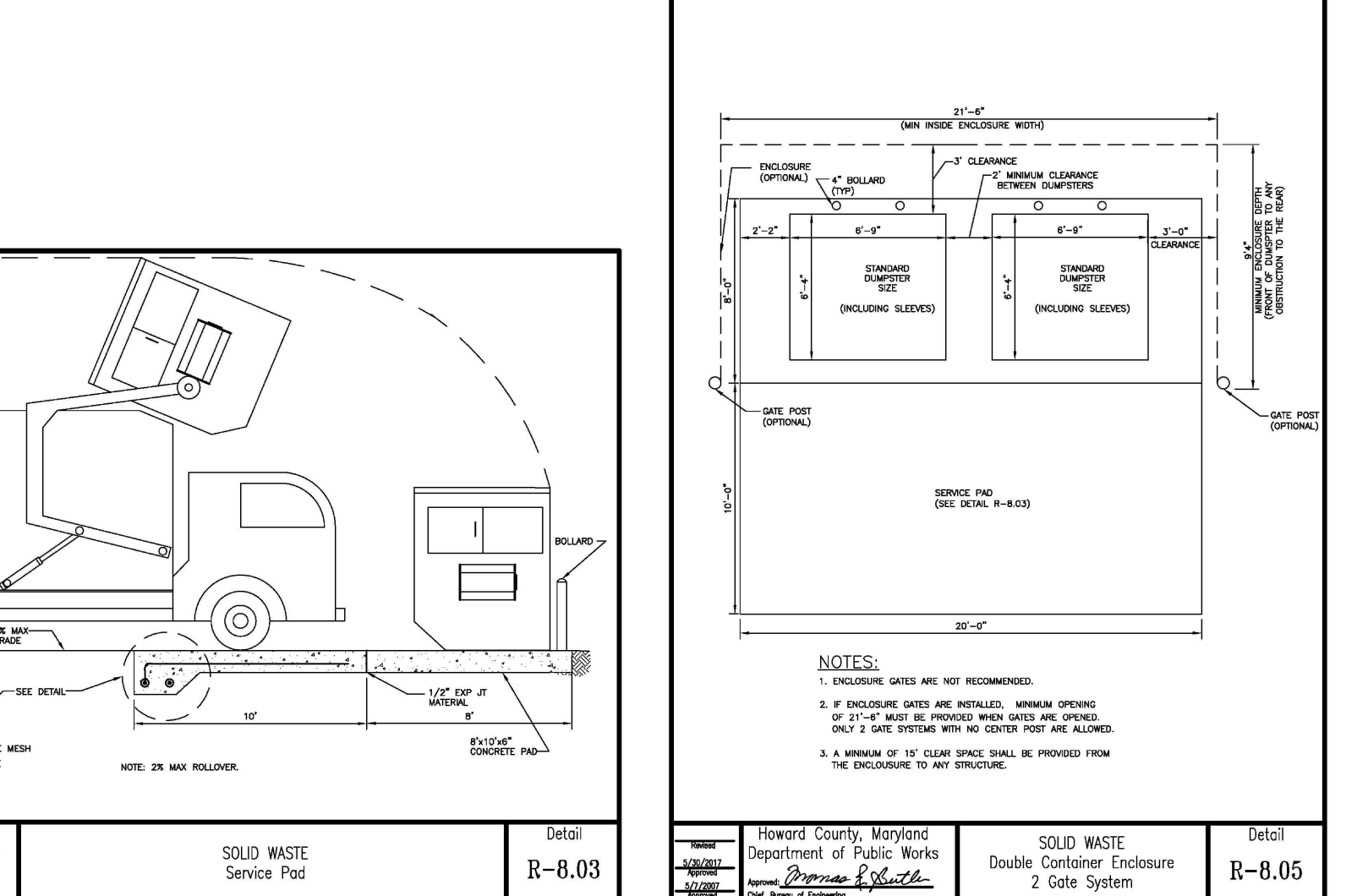
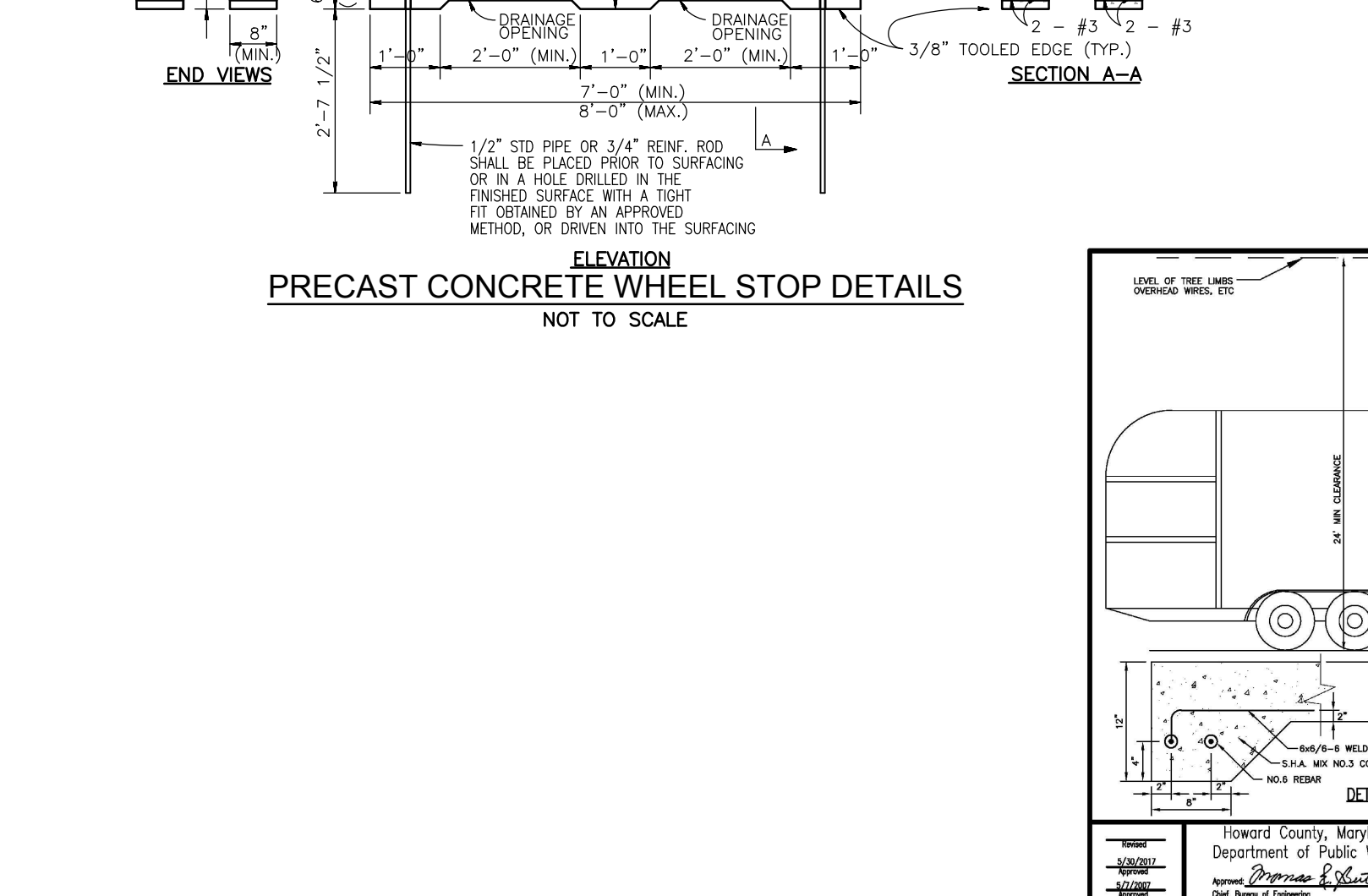
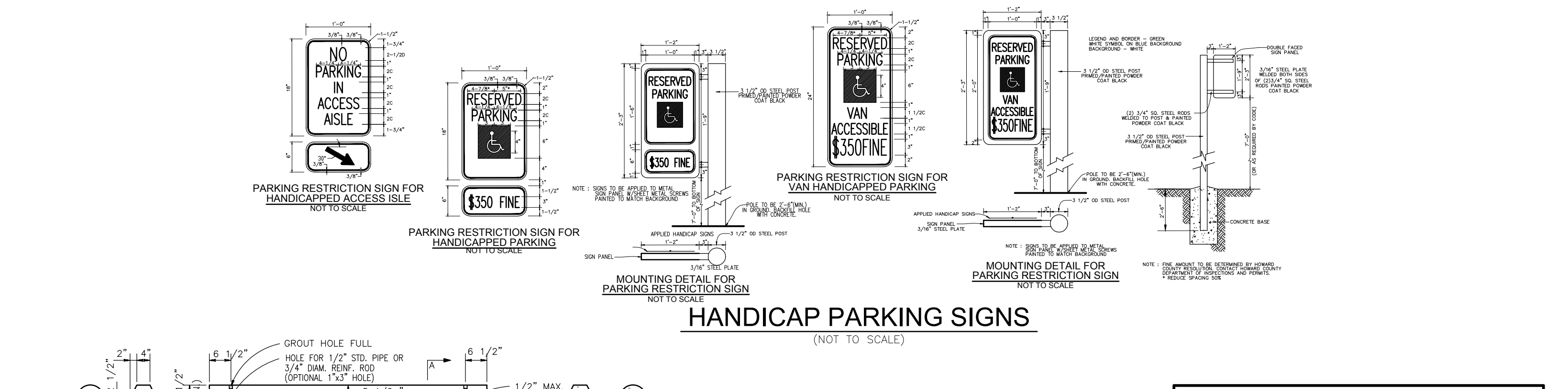




ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO 4.5	4.5 TO 7	7 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50
P-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P-2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
P-3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
P-4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

CONCRETE PAVING SECTIONS  
DUMPSTER PAD  
DRIVEWAYS/GARAGE APRON

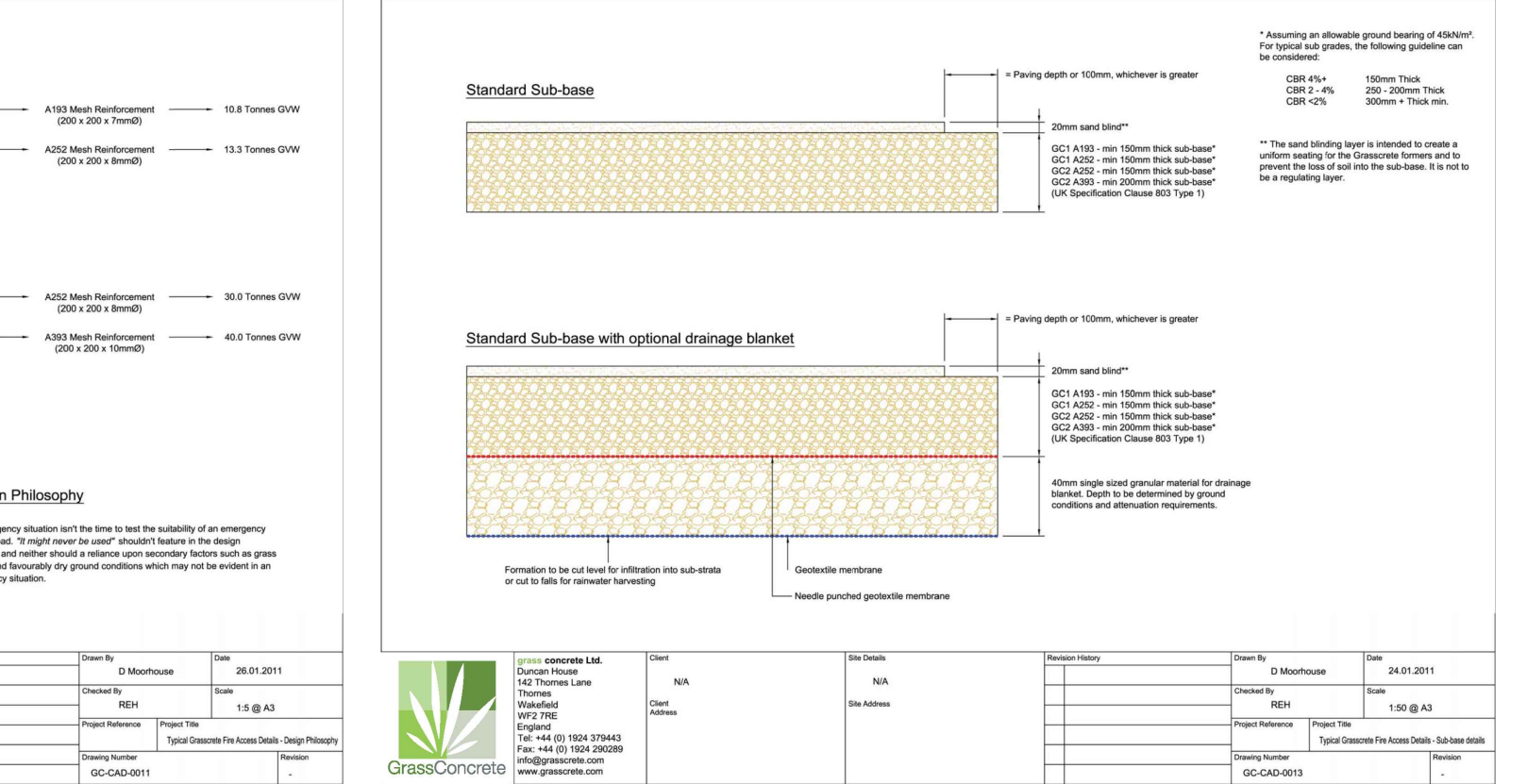
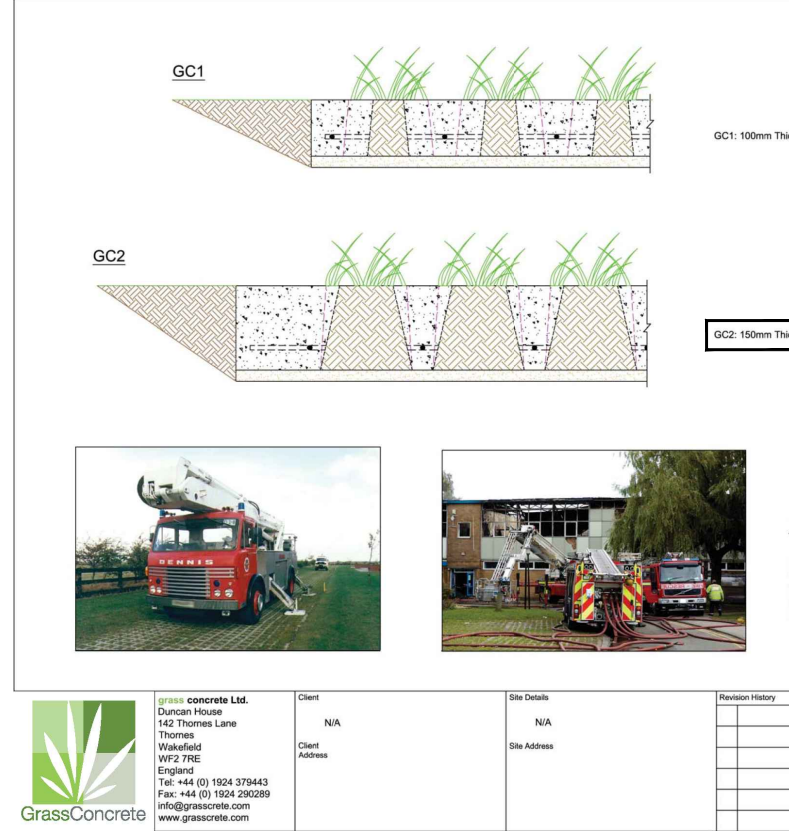
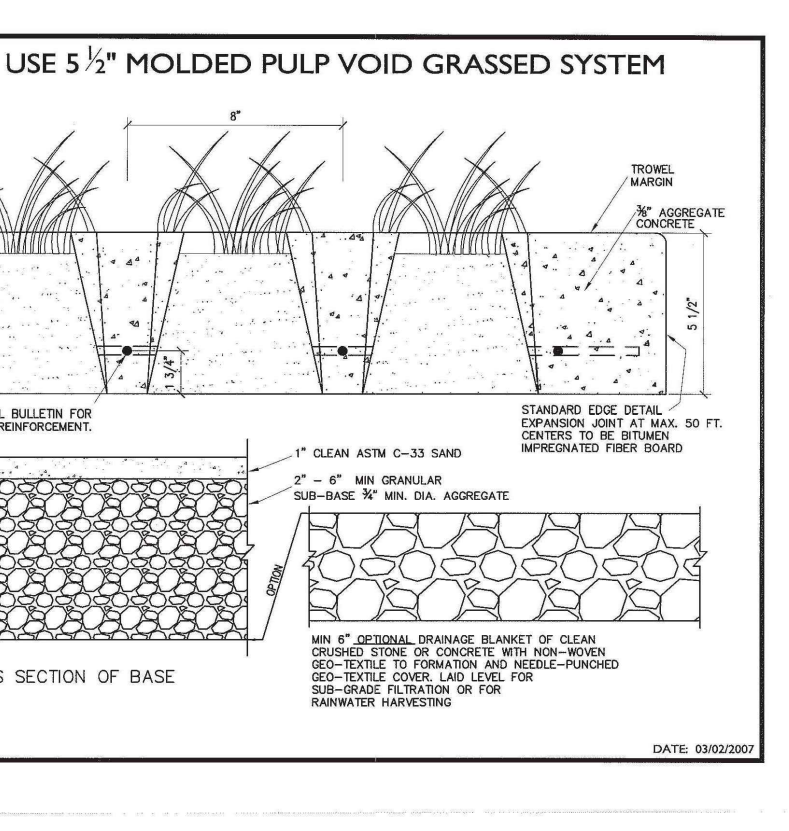
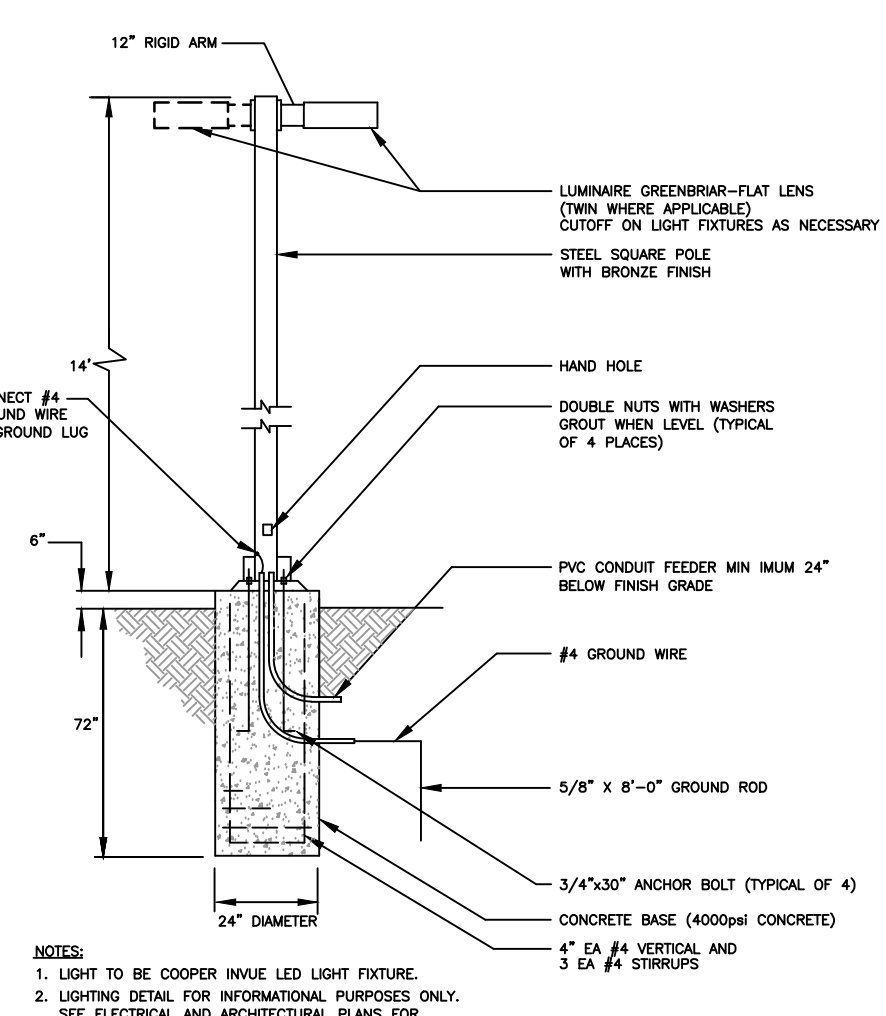
CONCRETE PAVING SECTIONS  
P-1 to P-4  
Detail  
R-2.01



**D-Series Size 0 LED Area Luminaire**

Introduction  
The modern styling of the D-Series is striking yet understated - making a bold, progressive statement even as it blends unobtrusively with its environment. The D-Series offers the benefits of the latest LED technology in a high performance, high efficiency, long life luminaire. The outstanding photometric performance results in other world excellent uniformity, greater pole spacing and excellent power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information	EXAMPLE: D5X0 LED P6 40K T3M MVOLT SPA NLTAR2 PIRN1 D0X0
Model	D5X0
Power	40W
Height	5'0"
Width	12"
Depth	12"
Weight	15.0 lbs
Finish	White



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE 5/31/2022

CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 6/1/2022

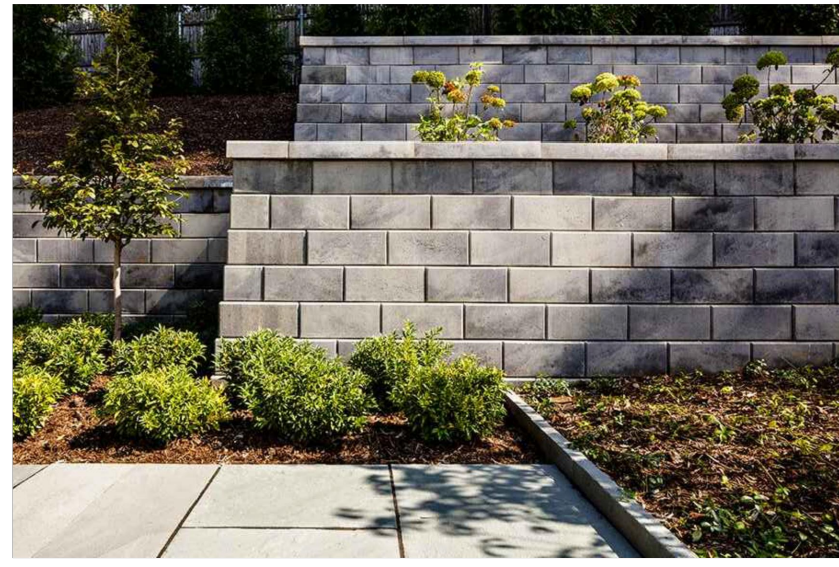
DIRECTOR  
DATE

DESIGN BY: RHW/ACS.  
DRAWN BY: ACS.  
DATE: OCTOBER 2021  
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5 SHEET OF 27





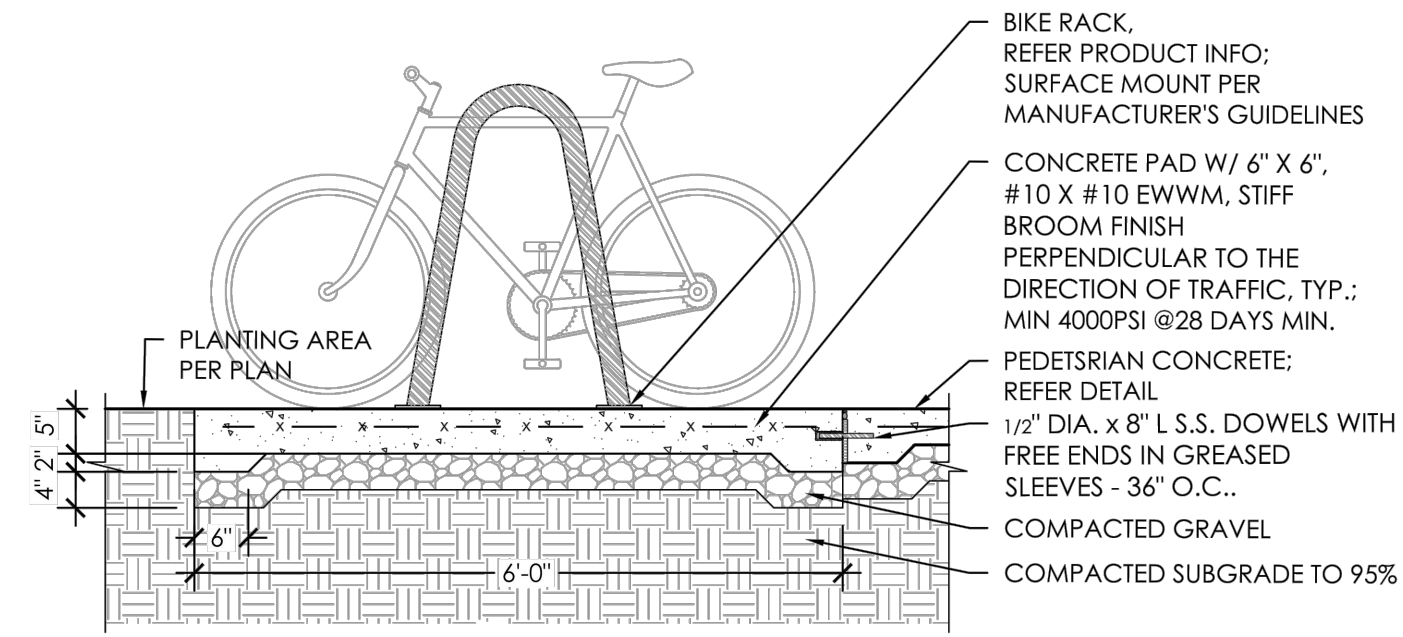
PRODUCT: G-FORCE BLOCK, CORNER PIECE, & GEOGRID REINFORCEMENT SYSTEM  
 MANUFACTURER: TECHO-BLOC  
 CONTACT: <https://www.techo-bloc.com/>  
 GEORGE OHLIN, SPECIFIER REPRESENTATIVE  
 852 W PENNSYLVANIA AVE  
 PEN ARCYL, PA., 18022  
 EMAIL: GEORGE.OHLIN@TECHO-BLOC.COM  
 PHONE: 571-317-5087  
 DIMENSIONS: 6" H x 18" L x 12" D  
 COLOR(S): TBD

**SEGMENTAL WALL BLOCK**  
 NOT TO SCALE

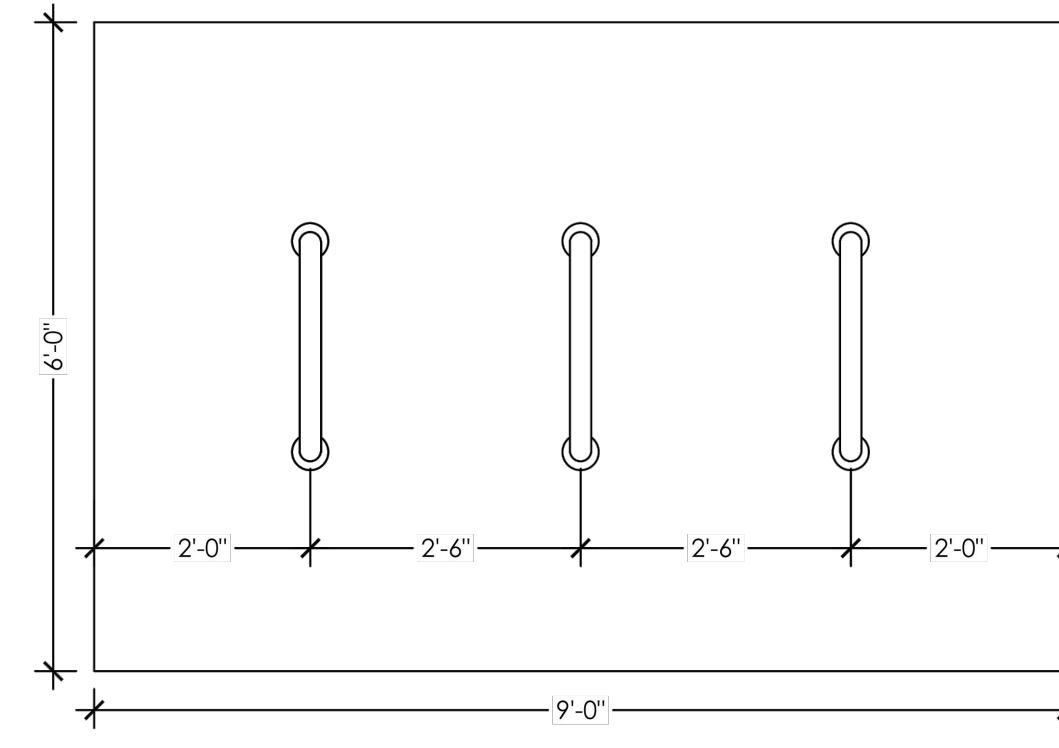


PRODUCT: RAFFINATO WALL CAP  
 MANUFACTURER: TECHO-BLOC  
 CONTACT: <https://www.techo-bloc.com/>  
 GEORGE OHLIN, SPECIFIER REPRESENTATIVE  
 852 W PENNSYLVANIA AVE  
 PEN ARCYL, PA., 18022  
 EMAIL: GEORGE.OHLIN@TECHO-BLOC.COM  
 PHONE: 571-317-5087  
 DIMENSIONS: 60mm x 14" x 28"  
 COLOR(S): TBD

**SEGMENTAL WALL CAP**  
 NOT TO SCALE



**SECTION**



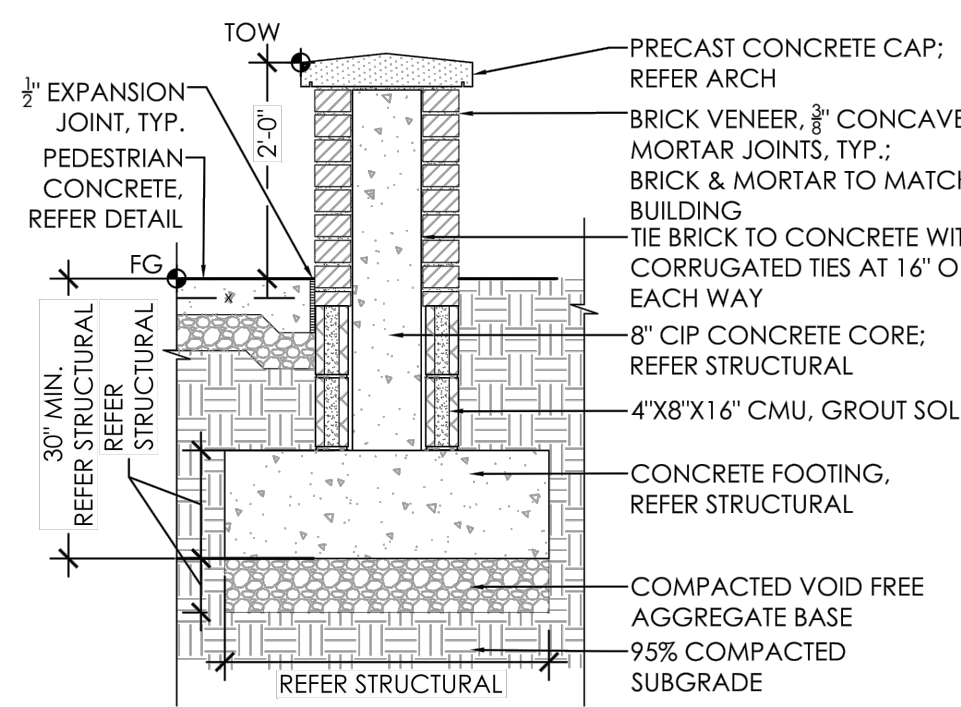
**PLAN**

**BIKE RACK**  
 NOT TO SCALE

NOTES:  
 1. DIMENSIONS SHOWN ARE MINIMUM CLEARANCES TO BE FREE OF OBSTRUCTION AND CIRCULATION PATHS.

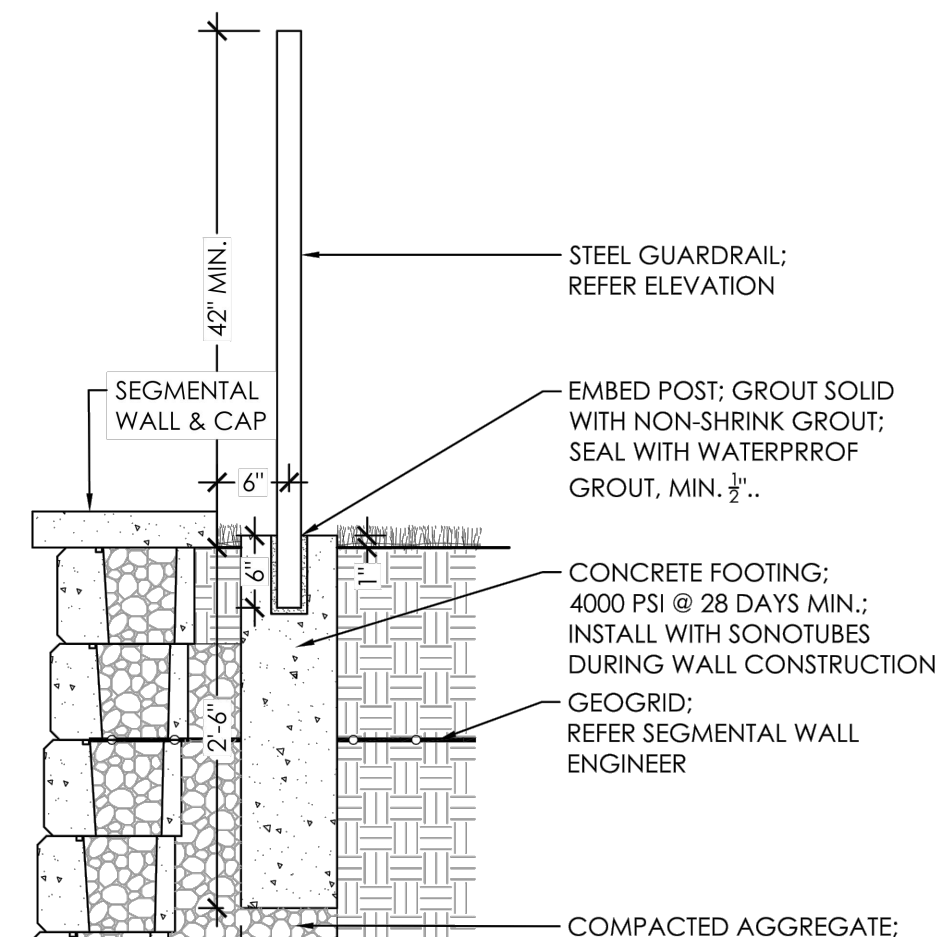
PRODUCT: BRWA-101 BIKE RACK, SURFACE MOUNT  
 MANUFACTURER: VICTOR STANLEY  
 P.O. DRAWER 530  
 www.victorstanley.com  
 GEORGE BLEVINS  
 301.789.9227 • georgeb@victorstanley.com  
 DIMENSIONS: +/- 3'-0" TALL  
 MATERIAL(S): STEEL  
 COLOR(S): TBD (STANDARD COLOR RANGE)  
 FINISH: POWDERCOAT

**BIKE RACK - PRODUCT INFO**



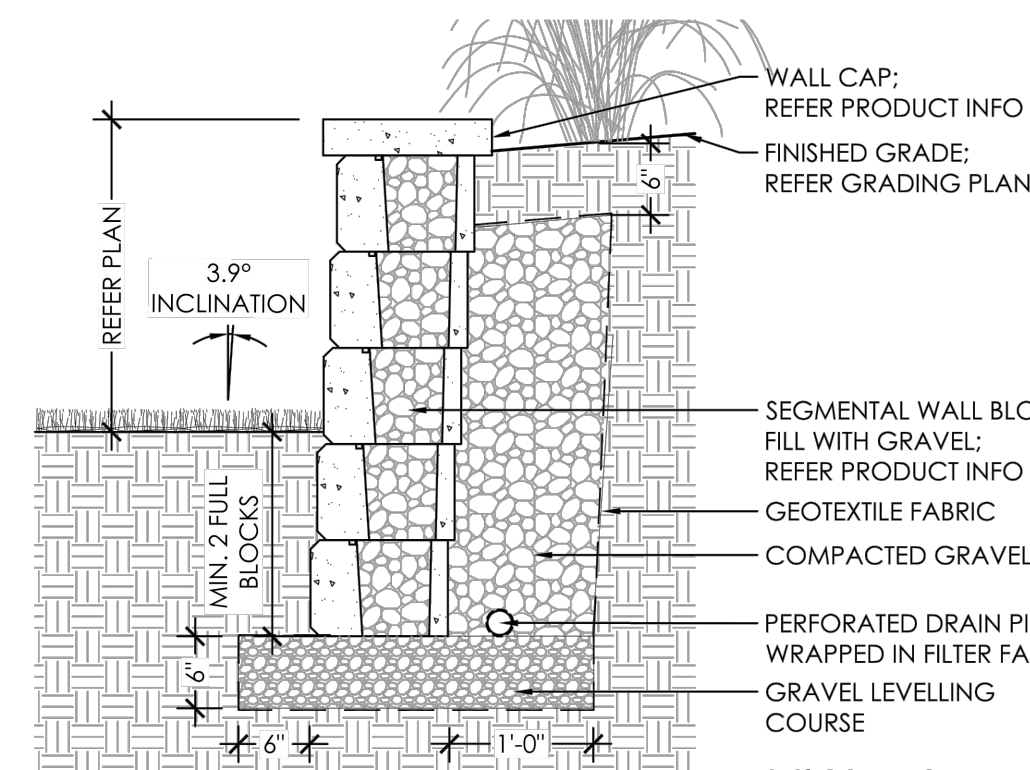
**BRICK WALL**  
 NOT TO SCALE

NOTES:  
 1. REFER STRUCTURAL FOR ALL STRUCTURAL MEMBERS AND DIMENSIONS.



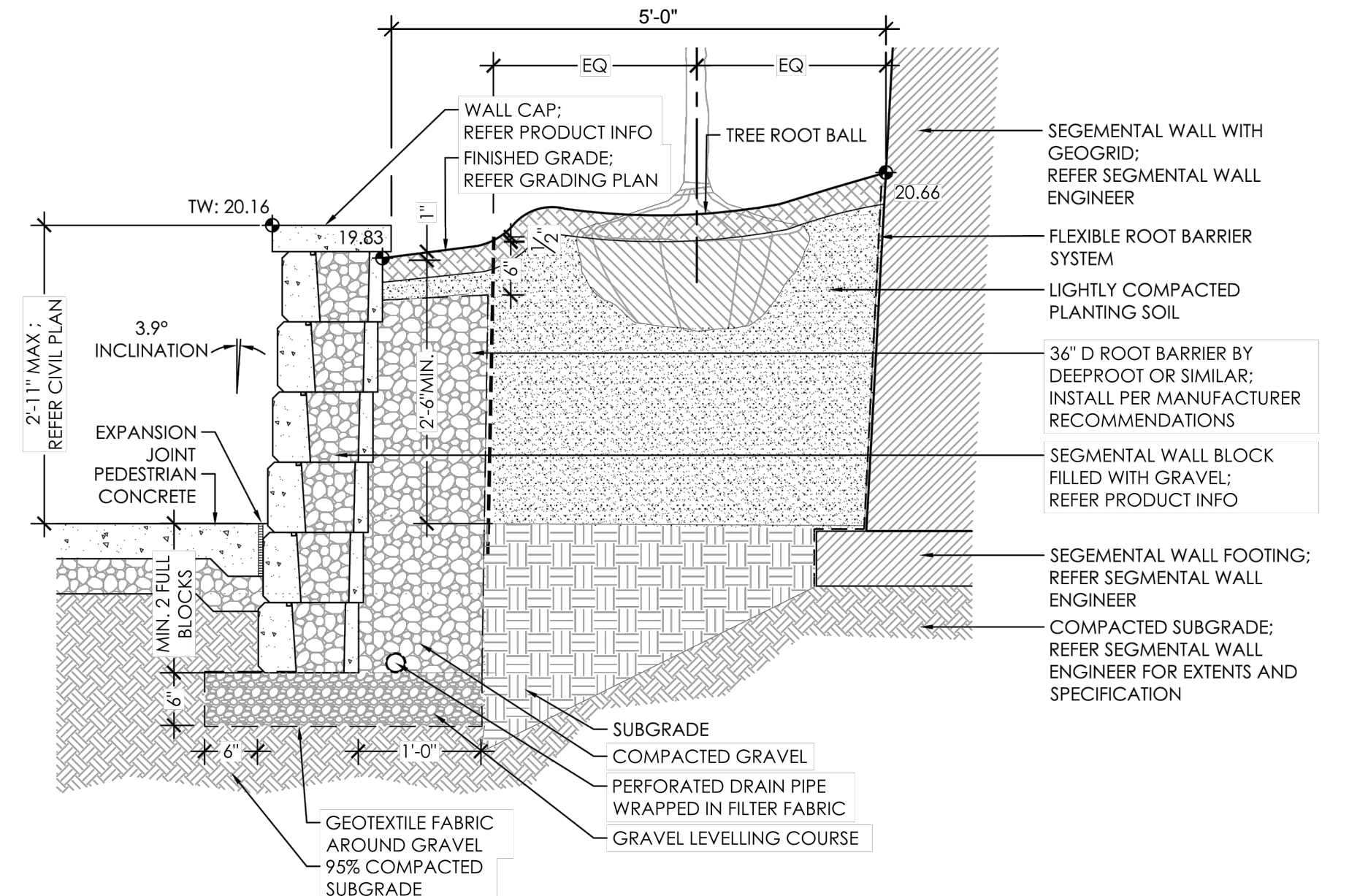
**GUARDRAIL IN LANDSCAPE AT SEGMENTAL WALL**  
 NOT TO SCALE

NOTES:  
 1. REFER SEGMENTAL WALL ENGINEER FOR WALL DETAILS.



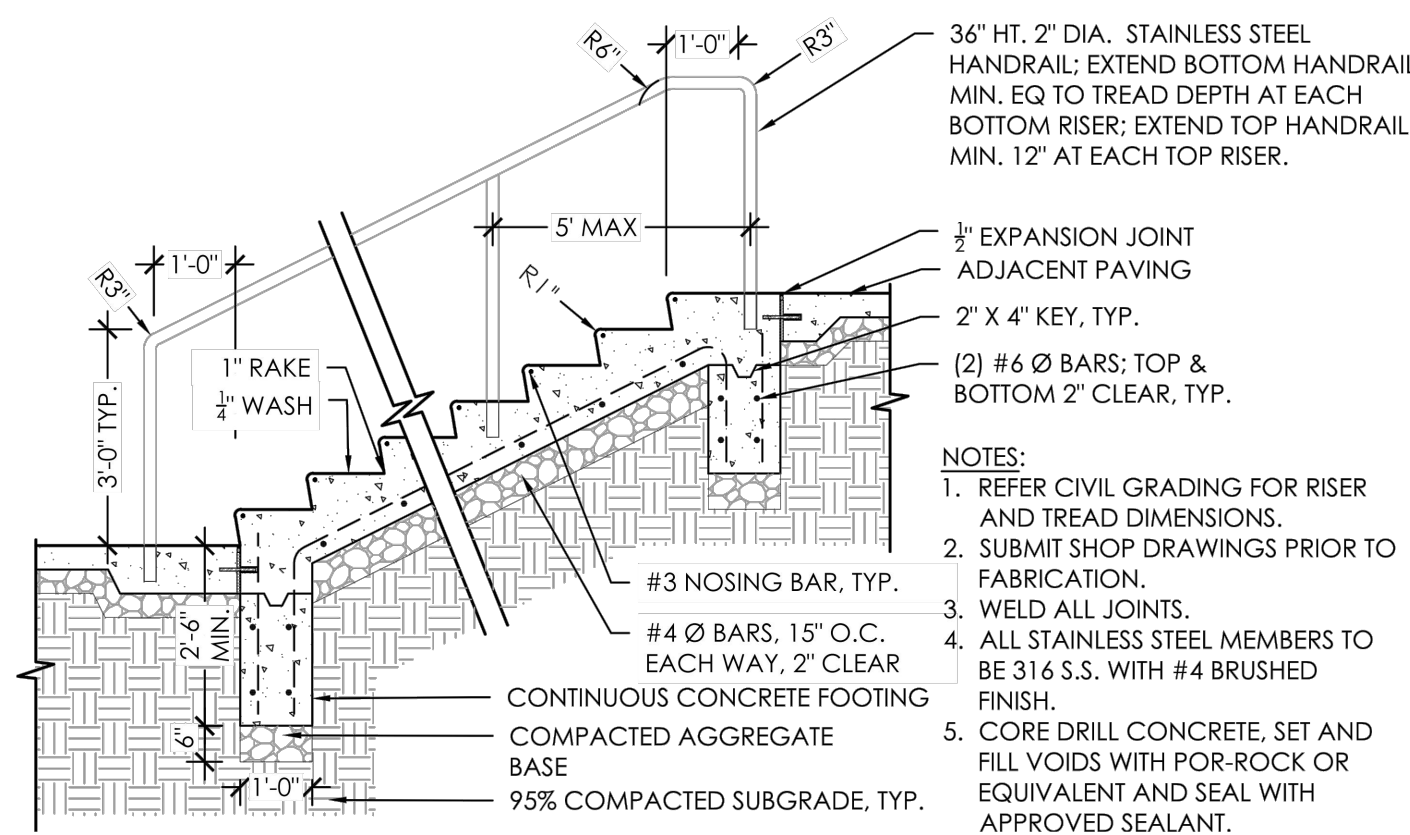
**SEGMENTAL WALL WITHOUT GEOGRID - LESS THAN 3FT 0IN HEIGHT**  
 NOT TO SCALE

NOTES:  
 1. INSTALL PER MANUFACTURER



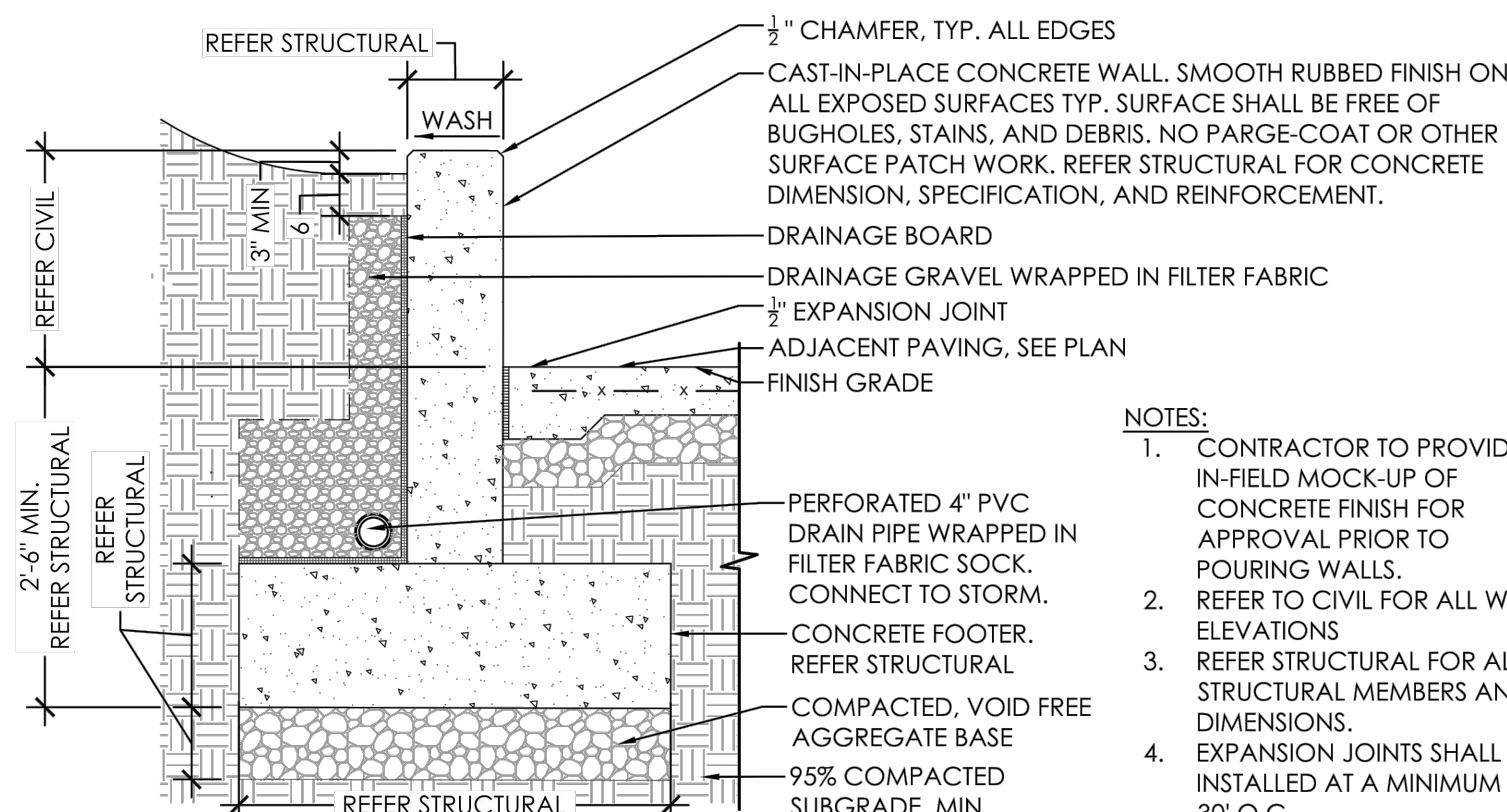
NOTES:  
 1. INSTALL PER MANUFACTURER RECOMMENDATIONS

**SEGMENTAL WALL WITHOUT GEOGRID - LESS THAN 3FT HT. AT TREE PLANTING**  
 NOT TO SCALE



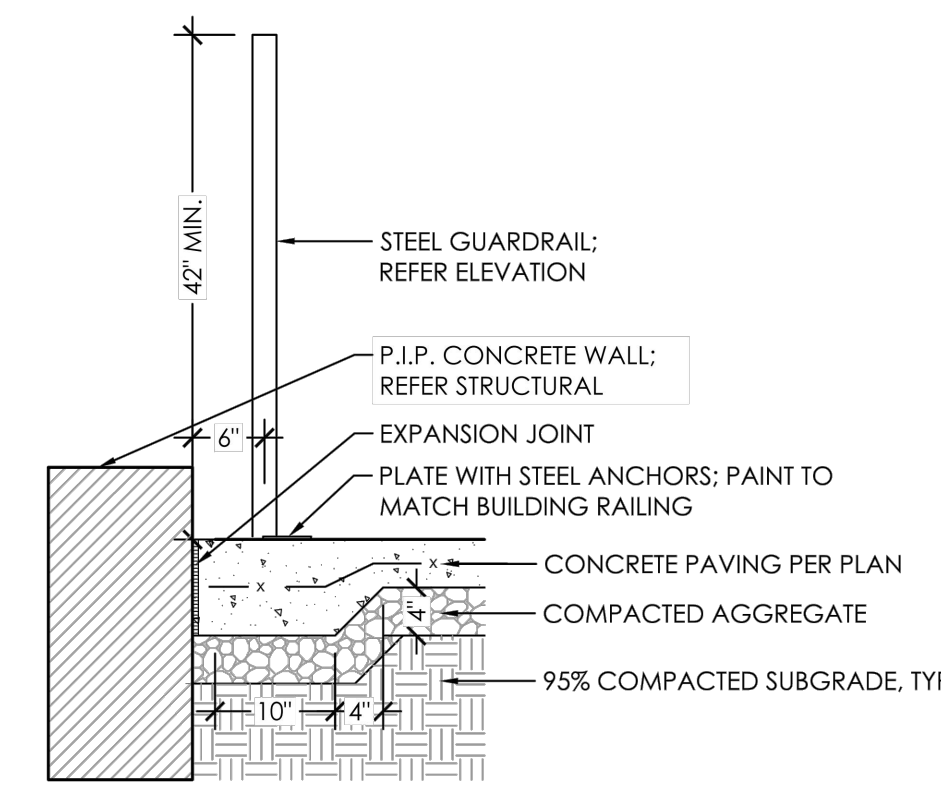
**CONCRETE STAIRS WITH METAL RAILING**  
 NOT TO SCALE

NOTES:  
 1. REFER CIVIL GRADING FOR RISER AND TREAD DIMENSIONS.  
 2. SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION.  
 3. WELD ALL JOINTS.  
 4. ALL STAINLESS STEEL MEMBERS TO BE 316 S.S. WITH #4 BRUSHED FINISH.  
 5. CORE DRILL CONCRETE, SET AND FILL VOIDS WITH POR-ROCK OR EQUIVALENT AND SEAL WITH APPROVED SEALANT.



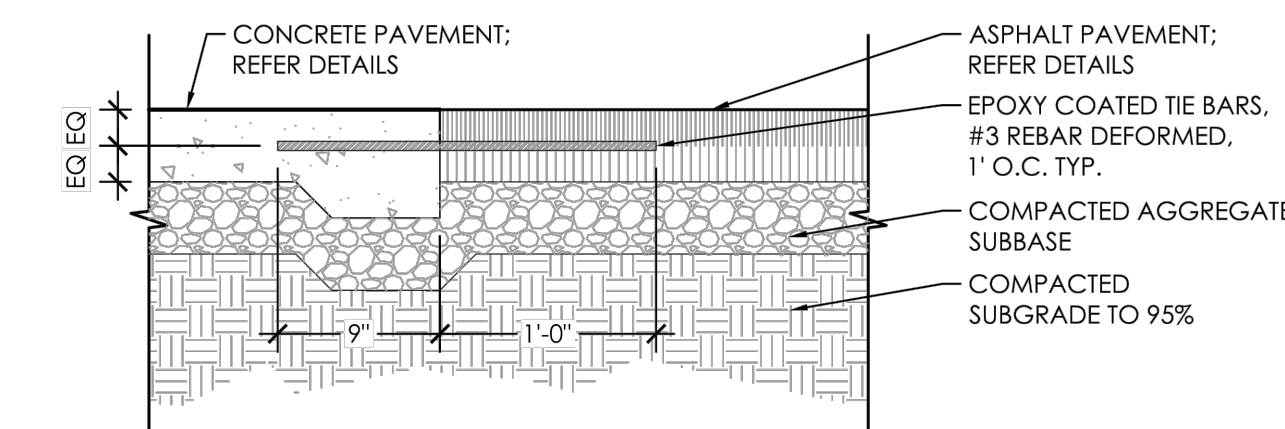
**CONCRETE WALL**  
 NOT TO SCALE

NOTES:  
 1. CONTRACTOR TO PROVIDE IN-FIELD MOCK-UP OF CONCRETE FINISH FOR APPROVAL PRIOR TO POURING WALLS.  
 2. REFER TO CIVIL FOR ALL WALL ELEVATIONS  
 3. REFER STRUCTURAL FOR ALL STRUCTURAL MEMBERS AND DIMENSIONS.  
 4. EXPANSION JOINTS SHALL BE INSTALLED AT A MINIMUM OF 30' O.C.

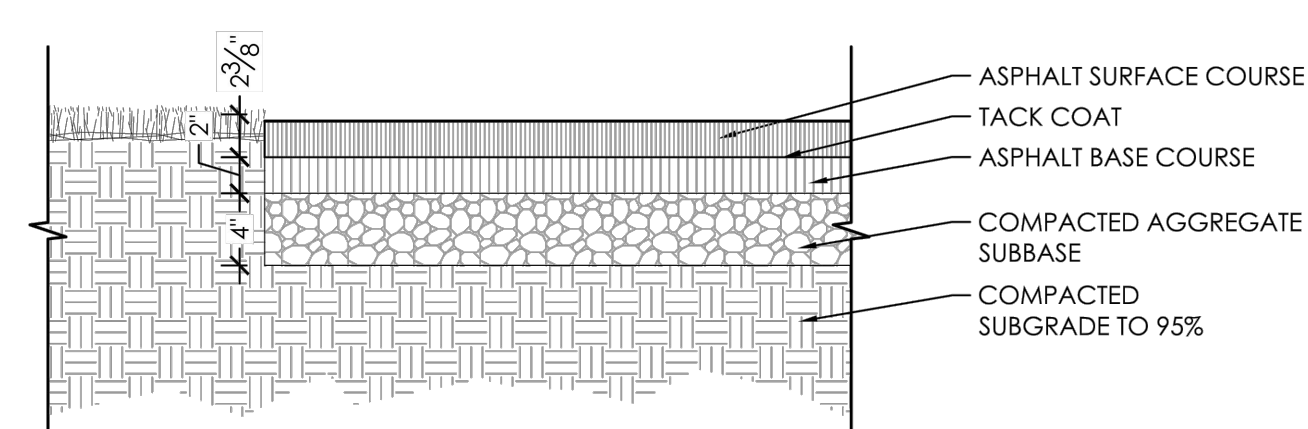


**GUARDRAIL AT CONCRETE WALL**  
 NOT TO SCALE

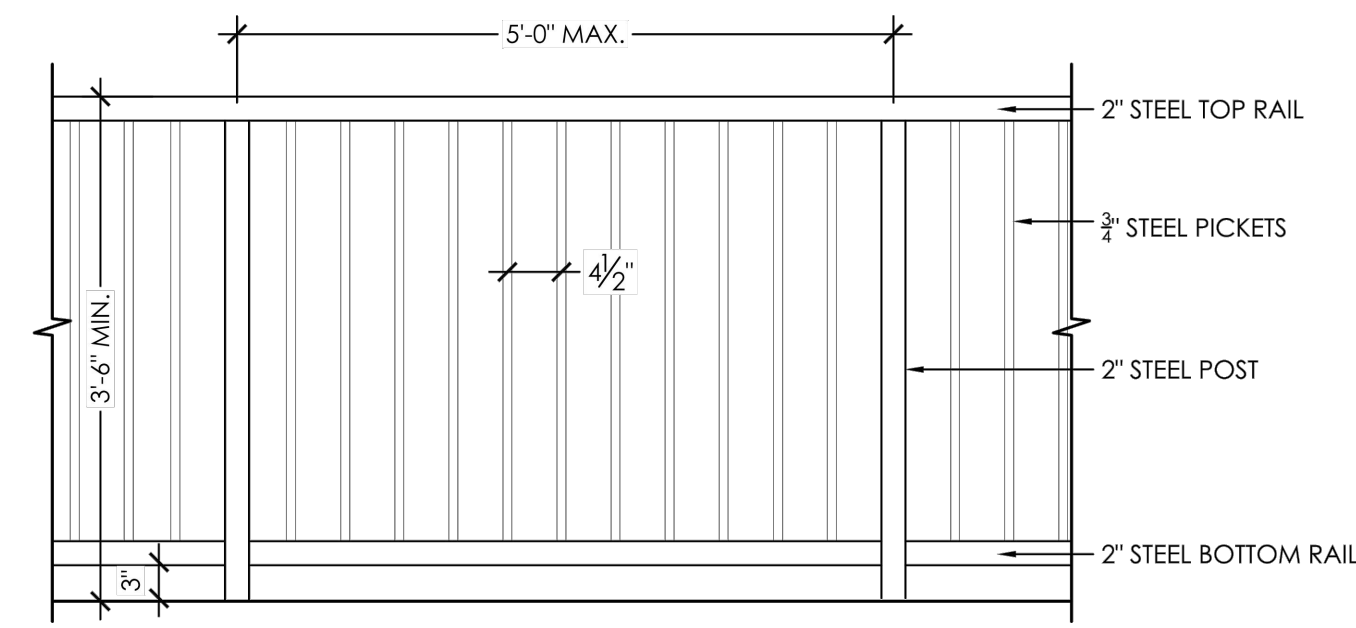
NOTES:  
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**APSHALT-CONCRETE CONNECTION**  
 NOT TO SCALE



**PEDESTRIAN ASPHALT TRAIL**  
 NOT TO SCALE



**GUARDRAIL ELEVATION**  
 NOT TO SCALE

NOTES:  
 1. ALL METAL MEMBERS TO BE PAINTED TO MATCH BUILDING RAILING.  
 2. ALL GAPS TO BE LESS THAN 4" IN ANY DIRECTION PER CODE.  
 3. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
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 CHIEF, DIVISION OF PLANNING AND DEVELOPMENT  
 DIRECTOR

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**SITE DETAILS**  
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 TAX MAP 36 GRID 1  
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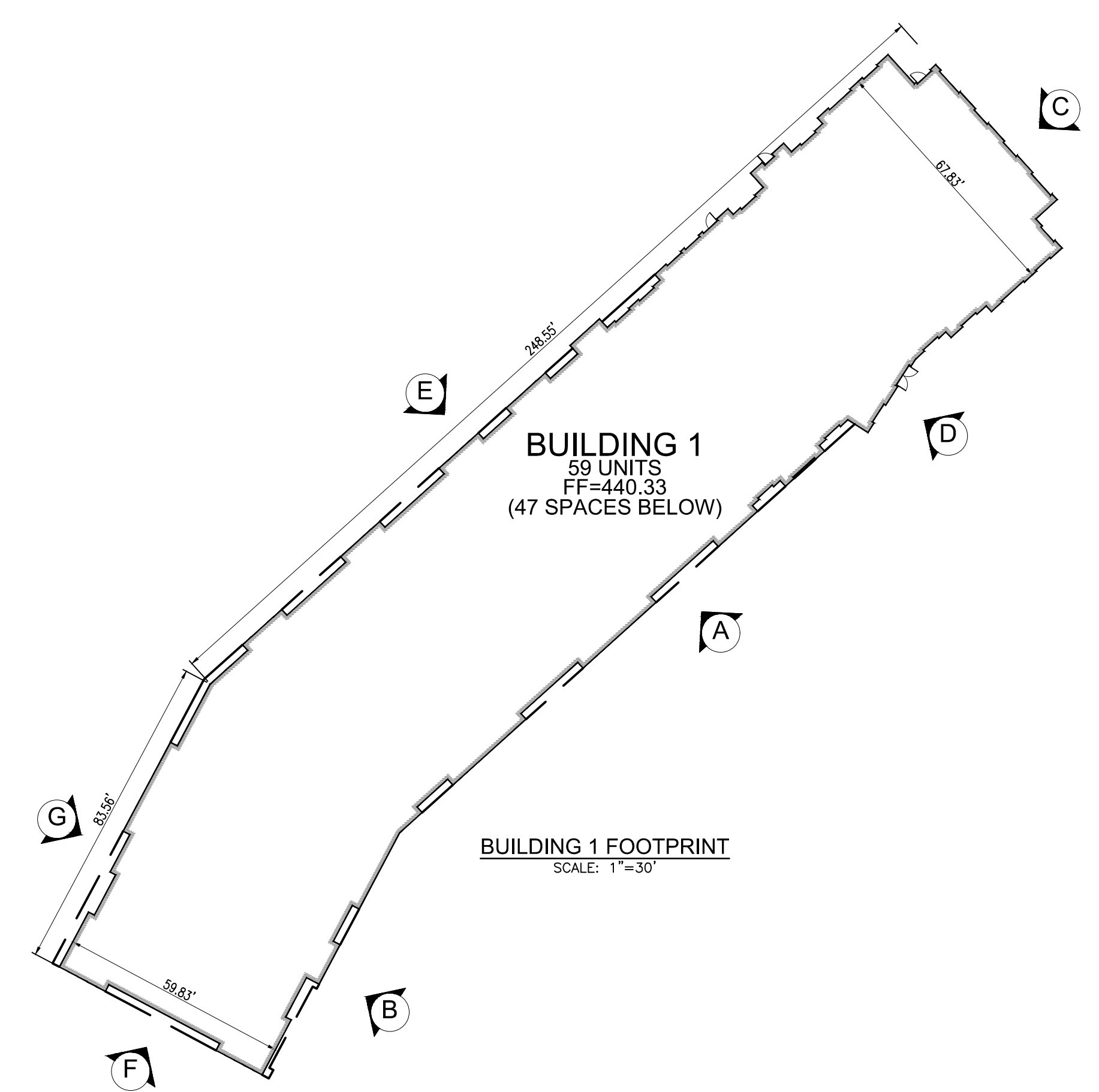
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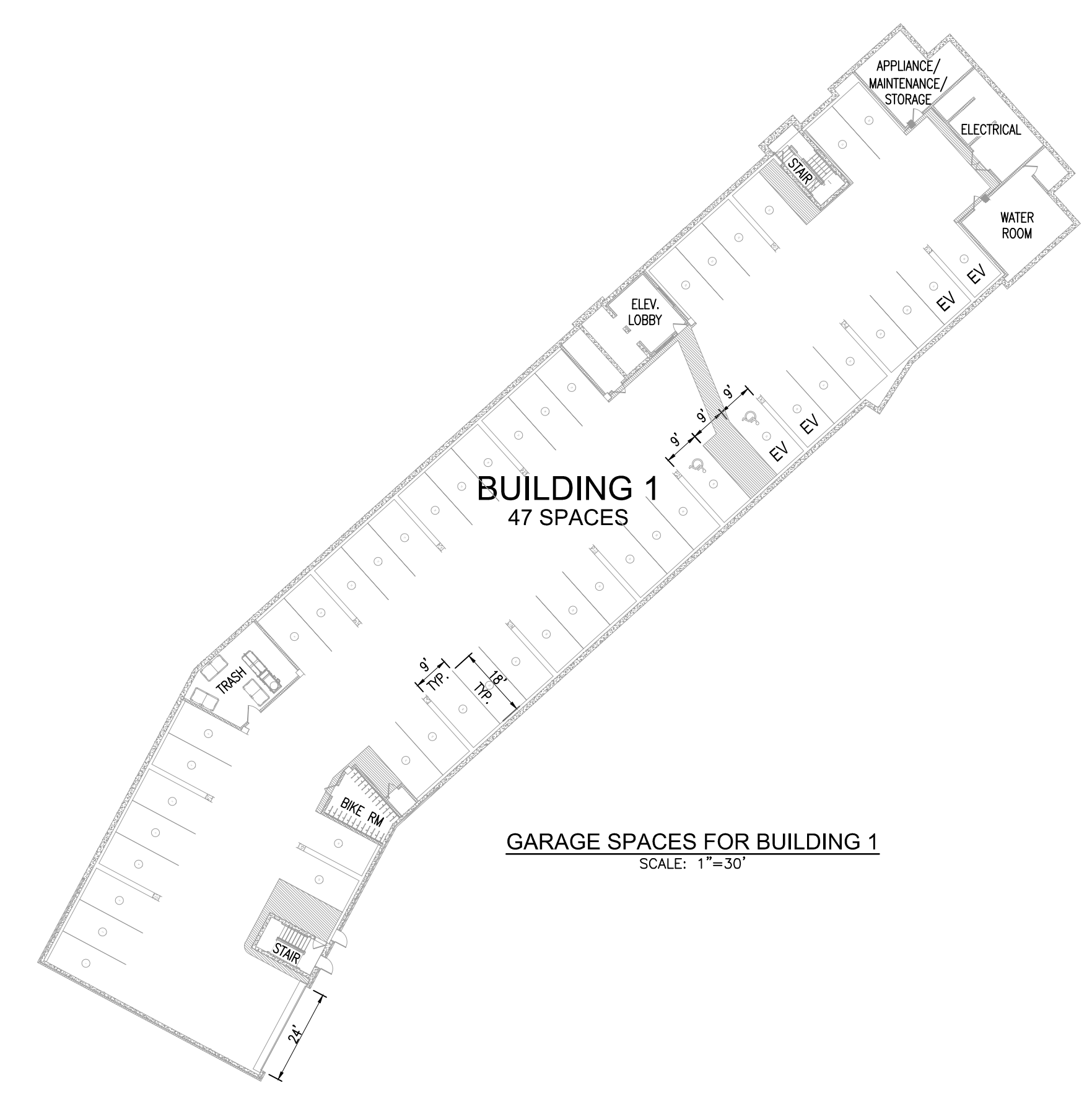


**NOTE:**  
PARAPET HEIGHT IS 6\"-0\" FROM TRUSS BEARING LEVEL AT ALL LOCATIONS ASIDE FROM STAIR, TRASH, AND ELEVATOR TOWER OVERRUNS.

**BUILDING 1 ELEVATIONS**  
SCALE: 1\"=30'



**BUILDING 1 FOOTPRINT**  
SCALE: 1\"=30'



**GARAGE SPACES FOR BUILDING 1**  
SCALE: 1\"=30'

**OWNER**  
COLUMBIA ASSOCIATION INC.  
C/O ALBERT F. EDWARDS  
10221 WINCOPIN CIRCLE  
COLUMBIA, MD 21044  
(410) 381-3551

**OWNER/DEVELOPER**  
94 UNIT BUILDING 2 (4%); ROSLYN RISE FOUR, LLC  
59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
C/O MACKENZIE KIESEL  
875 HOLLINS STREET, SUITE 202  
BALTIMORE, MD 21201  
(410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**BUILDING 1 FOOTPRINT AND ELEVATIONS;**  
**GARAGE PARKING PLAN**  
**ROSLYN RISE**  
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
COLUMBIA, MD 21044

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

ZONED: NT  
LOTS 7 & 8, PARCEL 272  
LOT 5, PARCEL 81  
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 DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193, EXPIRATION DATE: 09-27-2022

DESIGN BY: RHV/ACS  
DRAWN BY: ACS  
CHECKED BY: RHV  
DATE: OCTOBER 2021  
SCALE: AS SHOWN  
W.O. NO.: 41539

4/20/2022

STATE OF MARYLAND  
ROBERT H. VOGEL  
REGISTERED PROFESSIONAL ENGINEER  
No. 18193

7 SHEET OF 27

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Developed by: *CHAD Edmondson* 5/31/2022  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Approved by: *Amy Gowan* 6/1/2022  
CHIEF, DIVISION OF LAND DEVELOPMENT

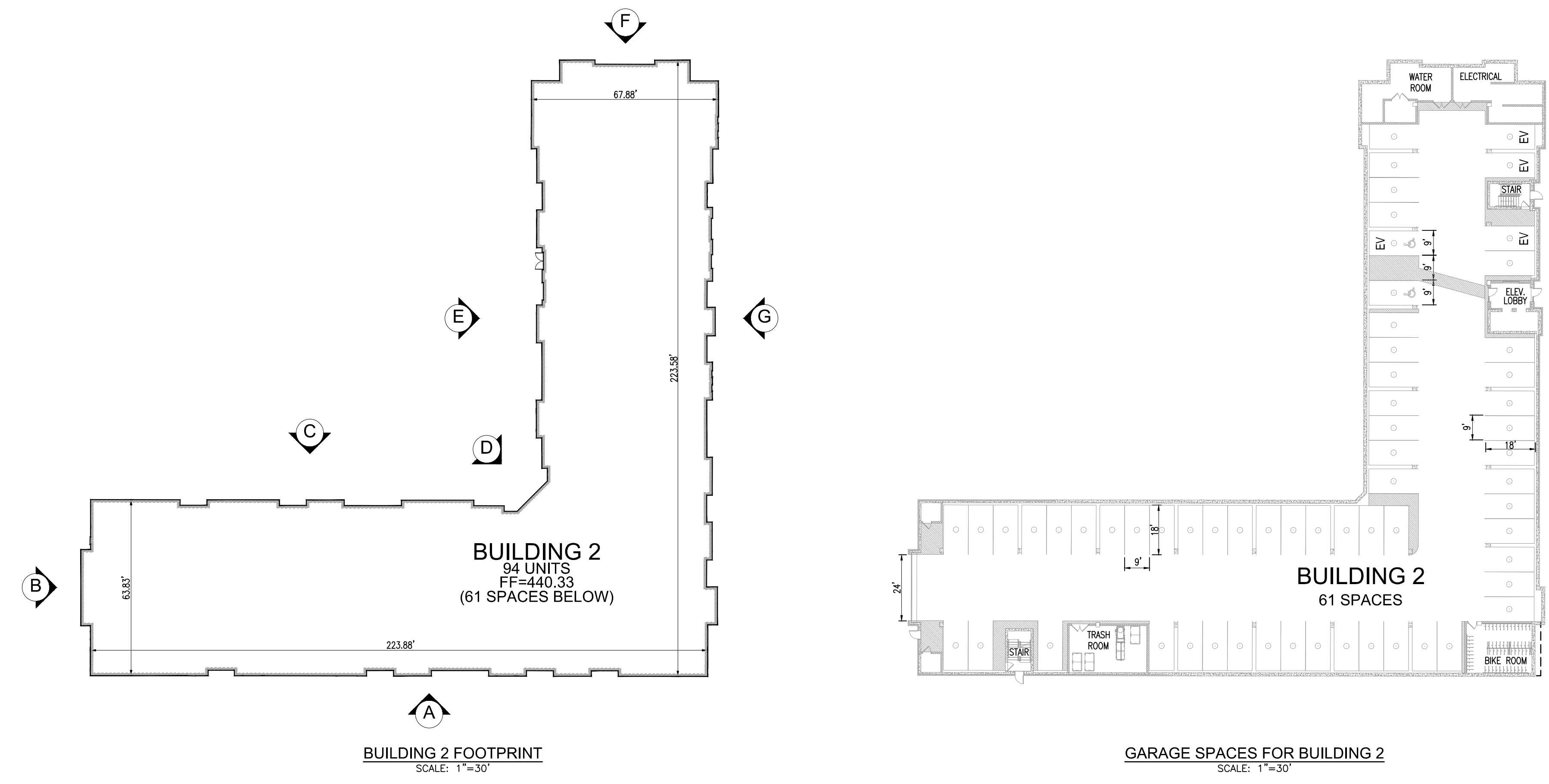
Director: *Amy Gowan* 6/1/2022  
DIRECTOR





**NOTE:**  
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**BUILDING 2 ELEVATIONS**



**OWNER**  
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 BALTIMORE, MD 21201  
 (410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**BUILDING 2 FOOTPRINT AND ELEVATIONS;**  
**GARAGE PARKING PLAN**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

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

ZONED: NT  
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8 SHEET OF 27

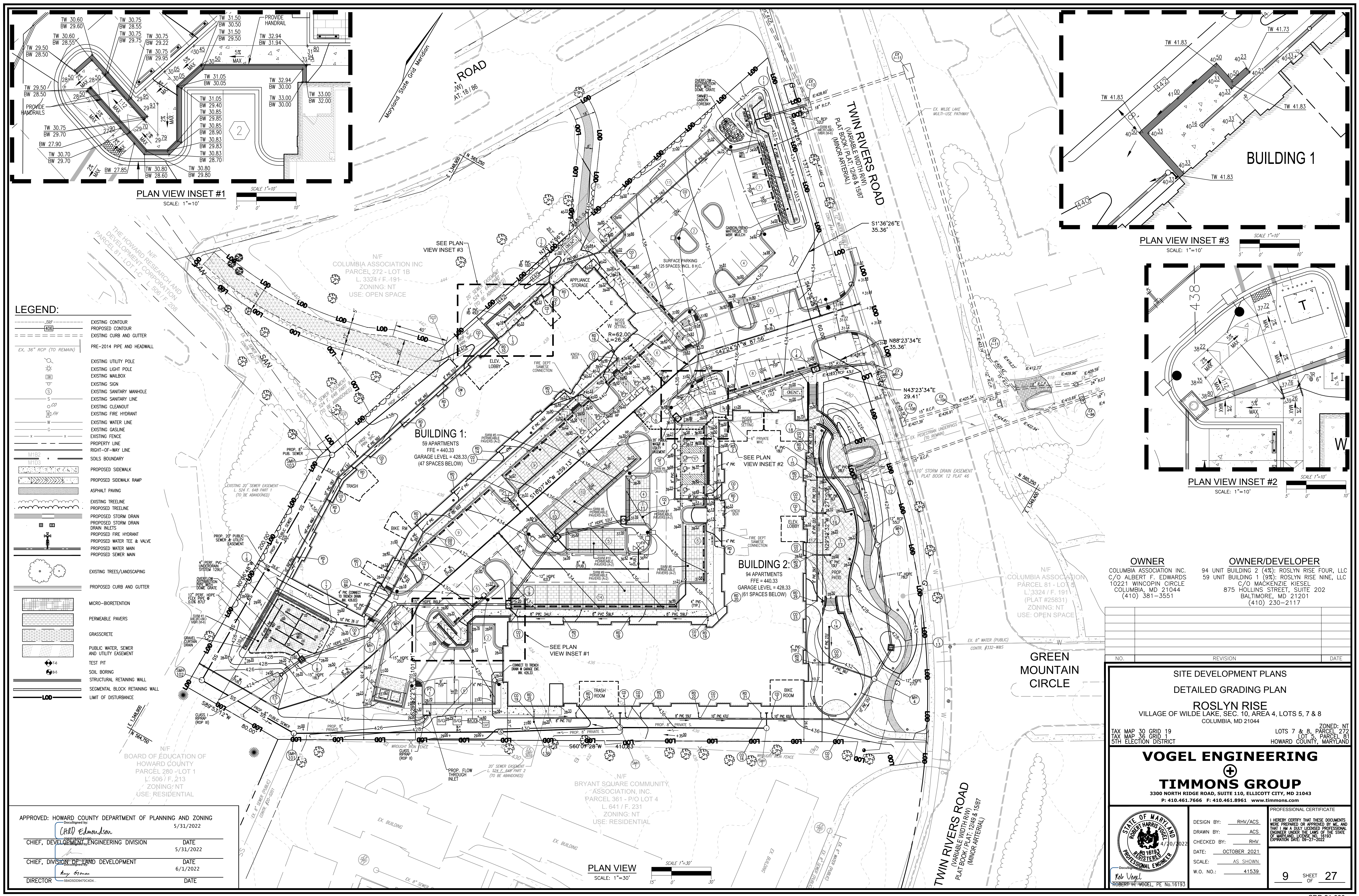
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Developed by: *CHAD Edmondson* 5/31/2022  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Approved by: *Amy Gowan* 6/1/2022  
 CHIEF, DIVISION OF PLANNING AND DEVELOPMENT

Director: *Rob Vogel* 6/1/2022  
 DIRECTOR





- LEGEND:**
- EXISTING CONTOUR
  - PROPOSED CONTOUR
  - EXISTING CURB AND GUTTER
  - PRE-2014 PIPE AND HEADWALL
  - EXISTING UTILITY POLE
  - EXISTING LIGHT POLE
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  - TEST PIT
  - SOIL BORING
  - STRUCTURAL RETAINING WALL
  - SEGMENTAL BLOCK RETAINING WALL
  - LIMIT OF DISTURBANCE

PLAN VIEW INSET #1  
SCALE: 1"=10'

PLAN VIEW INSET #3  
SCALE: 1"=10'

PLAN VIEW INSET #2  
SCALE: 1"=10'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 5/31/2022  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 5/31/2022  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 6/1/2022  
 DIRECTOR  
 DATE

PLAN VIEW  
SCALE: 1"=30'

**OWNER**  
 COLUMBIA ASSOCIATION INC.  
 C/O ALBERT F. EDWARDS  
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 COLUMBIA, MD 21044  
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NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**DETAILED GRADING PLAN**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

TAX MAP 30 GRID 19  
 TAX MAP 36 GRID 1  
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ZONED: NT  
 LOTS 7 & 8, PARCEL 272  
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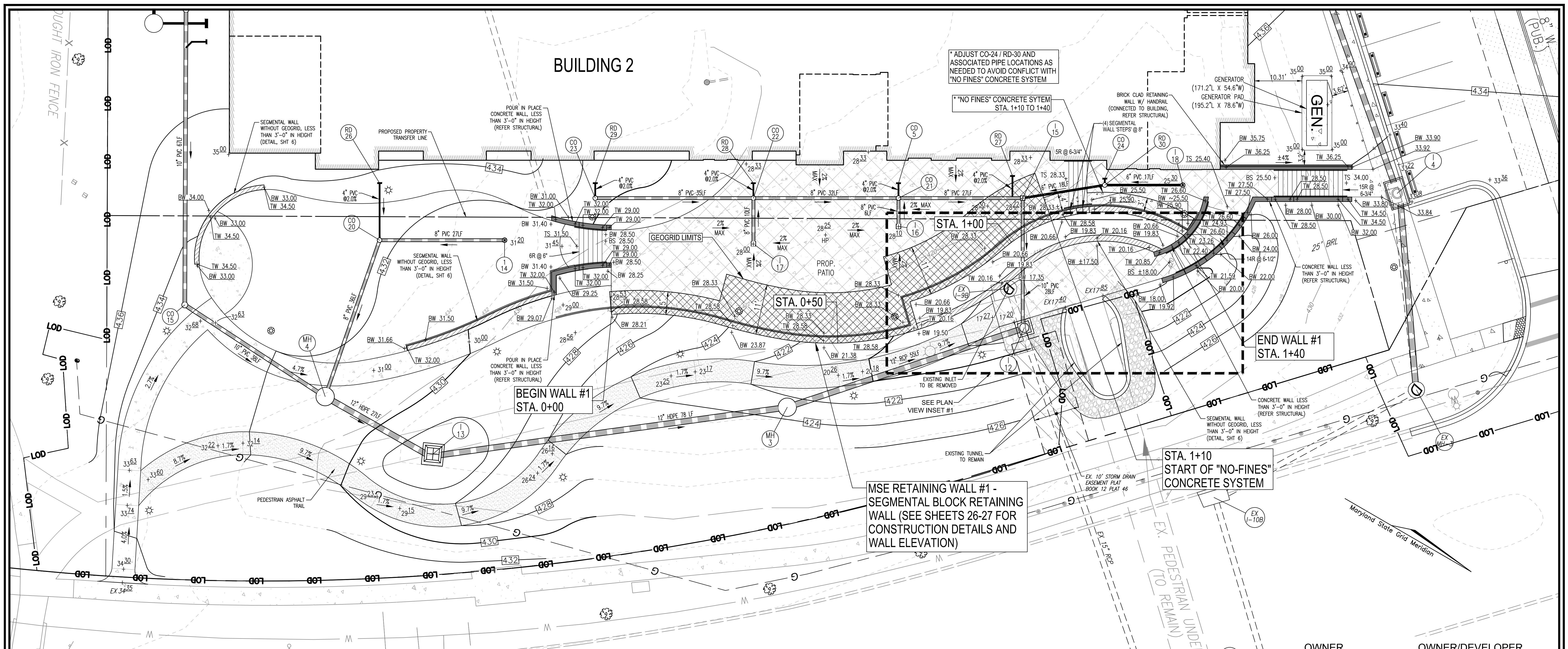
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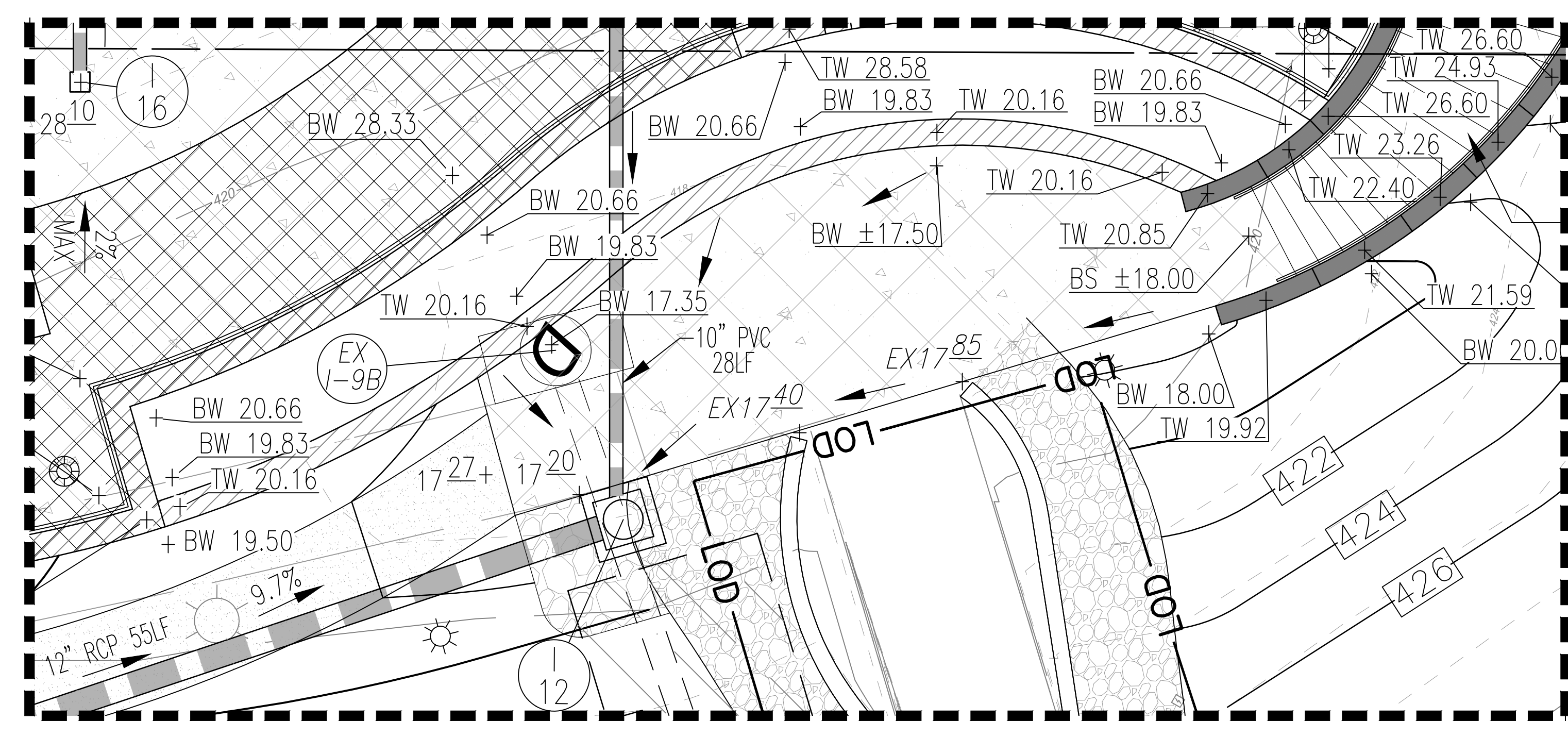
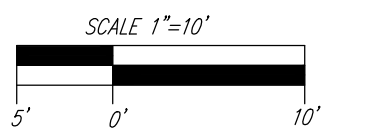
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9 SHEET OF 27





**DETAILED GRADING (PATIO AREA) & WALL LOCATION PLAN**  
SCALE: 1"=10'



**PLAN VIEW INSET #1**  
SCALE: 1"=5'

**STA. 1+10  
START OF "NO-FINES"  
CONCRETE SYSTEM**

**MSE RETAINING WALL #1 -  
SEGMENTAL BLOCK RETAINING  
WALL (SEE SHEETS 26-27 FOR  
CONSTRUCTION DETAILS AND  
WALL ELEVATION)**

**BEGIN WALL #1  
STA. 0+00**

**END WALL #1  
STA. 1+40**

\*ADJUST CO-24 / RD-30 AND  
ASSOCIATED PIPE LOCATIONS AS  
NEEDED TO AVOID CONFLICT WITH  
"NO FINES" CONCRETE SYSTEM

\*"NO FINES" CONCRETE SYSTEM  
STA. 1+10 TO 1+40

**OWNER**  
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NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS  
DETAILED GRADING (PATIO AREA) &  
WALL LOCATION PLAN  
ROSLYN RISE  
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
COLUMBIA, MD 21044**

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

LOTS 7 & 8, PARCEL 272  
LOT 5, PARCEL 81  
HOWARD COUNTY, MARYLAND

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**10 SHEET OF 27**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE 5/31/2022

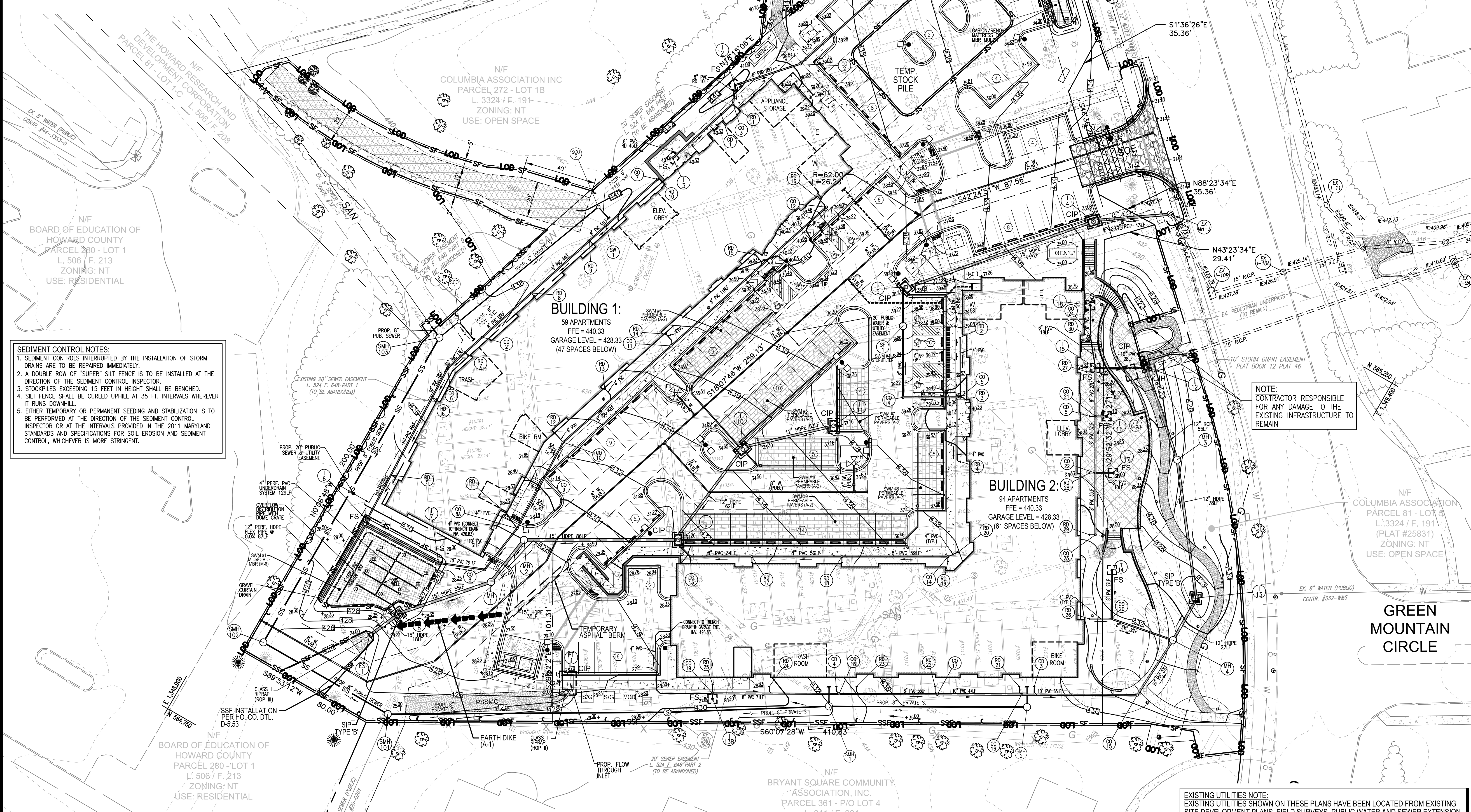
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 6/1/2022

DIRECTOR  
DATE



- SEQUENCE OF CONSTRUCTION**
1. OBTAIN GRADING PERMIT (1 DAY)
  2. DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 DAY)
  3. NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION (410-113-1800) AT LEAST 24 HRS BEFORE STARTING WORK. (1 DAY)
  4. STATEOUT LIMITS OF DISTURBANCE. (2 DAYS)
  5. INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (2 DAY)
  6. CLEAR AND GRUB FOR THE INSTALLATION OF ALL PERIMETER CONTROLS. (2 DAYS)
  7. INSTALL PERIMETER CONTROLS INCLUDING SILT FENCE, SUPER SILT FENCE AND SILET PROTECTION ON EXISTING INLETS. (3 DAYS)
  8. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE TO LOD. (1 WEEK)
  9. BEGIN SITE GRADING AND UTILITY CONSTRUCTION. (8 WEEKS)
  10. BEGIN CONSTRUCTION ON BOTH BUILDINGS 1 & 2. (1.25 YEARS)
  11. CONTINUE GRADING AND INSTALLATION OF STORM DRAIN. (8 WEEKS)
  12. AFTER ROAD IS BROUGHT TO PROPOSED GRADE, AND WITH INSPECTOR'S APPROVAL, BEGIN INSTALLATION OF ROAD BASE PAVING AND CURB. COMPLETE STORM DRAIN INSTALLATION, FINE GRADE AS REQUIRED TO DIRECT RUNOFF TO INLETS AND PROVIDE INLET PROTECTION AS SHOWN. INSTALL TEMPORARY ASPHALT BERM AND EARTH DIKE TO LIMIT DRAINAGE AREA TO FLOW THROUGH INLET CURB INLET PROTECTION TO LESS THAN 1/4 ACRE. (4 WEEKS)
  13. COMPLETE ALL BASE COURSE PAVING AND CURB AND GUTTER CONSTRUCTION. (1 WEEK)
  14. UPON COMPLETION OF BUILDINGS, INSTALL PAVING SURFACE COURSE. (1 WEEK)
  15. INSTALL SIDEWALKS. (2 WEEKS)

- SEQUENCE OF CONSTRUCTION (CONTD.)**
16. WITH INSPECTOR'S APPROVAL, FINE GRADE AND STABILIZE ALL AREAS OF PARCEL INCLUDING ANY EXPOSED EARTH AREAS OUTSIDE THE LOD. REMOVE ALL TRASH, JUNK AND DEBRIS FROM THE LIMIT OF DISTURBANCE. (3 WEEKS)
  17. COMPLETE INSTALLATION OF MICRO-BIORETENTION FACILITY. (2 WEEKS)
    - A. MICRO-BIORETENTION: WITH SITE CONSTRUCTION COMPLETE, REMOVE TEMPORARY FILL IN MICRO-BIORETENTION FACILITY AND CAREFULLY REMOVE POLY SHEET PLASTIC AND INSTALL FILTER FABRIC (SIDES ONLY). PEK GRAVEL AND PLANTING SOIL. CONTRACTOR TO PROVIDE PLANTING SOIL CERTIFICATION. IMMEDIATELY PROTECT FACILITY WITH SILT FENCE.
  18. REMOVE SEDIMENT CONTROLS AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.
  19. FLUSH STORM DRAIN SYSTEM AND REMOVE SEDIMENT CONTROLS AFTER RECEIVING APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.
  20. AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE ANY REMAINING CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW AND MULCH (1 WEEK).
- NOTES:**
1. DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
  2. FOLLOWING WITH SOIL DISTURBANCES OR RE-DISTURBANCES, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
    - A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SLOPES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
    - B. SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
  3. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.



- 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 AT 35 FT. INTERVALS 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.

**LEGEND:**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING CURB AND GUTTER
- PRE-2014 PIPE AND HEADWALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
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- PROPOSED STORM DRAIN DRAIN INLETS
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- GRASSCRETE
- PUBLIC WATER, SEWER AND UTILITY EASEMENT
- TEST PIT
- SOIL BORING
- STRUCTURAL RETAINING WALL
- SEGMENTAL BLOCK RETAINING WALL
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- CURB INLET PROTECTION
- STANDARD INLET PROTECTION
- "TELESTORM CATCH" (NYLOPLAST INLET PROTECTION)
- STABILIZED CONSTRUCTION ENTRANCE
- PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION
- EARTH DIKE (A-1)
- TEMPORARY ASPHALT BERM

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

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 PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Mackenzie Kisel  
 OWNER/DEVELOPER SIGNATURE  
 Mackenzie Kisel

4/13/2022  
 DATE

**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.

DocuSigned by:  
 Rob Vogel  
 DESIGNER'S SIGNATURE  
 ROBERT H. VOGEL

4/20/2022  
 DATE

**PLAN VIEW**

SCALE: 1"=30'

DocuSigned by:  
 Alexander Bratich  
 HOWARD S.C.D.

6/1/2022  
 DATE

**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.

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**

**SEDIMENT & EROSION CONTROL PLAN**

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

TAX MAP 30 GRID 19  
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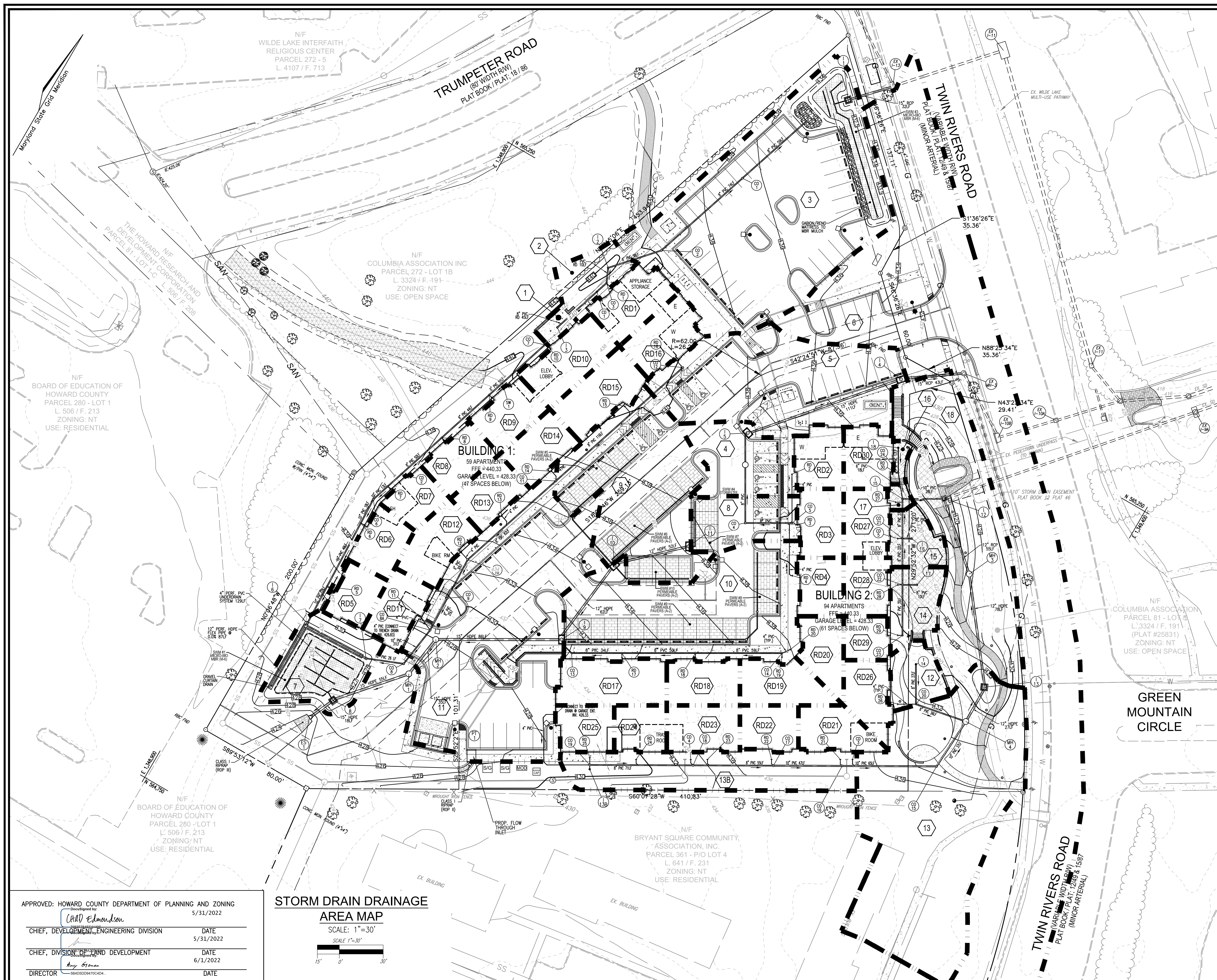












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  - SEGMENTAL BLOCK RETAINING WALL
  - LIMIT OF DISTURBANCE
  - PROPOSED COUNTY STREETLIGHT
  - PROPOSED PARKING LOT LIGHT POLE
  - PROPOSED POLE LIGHT AT TRAIL AND FAMILY REC AREA (SEE SITE DETAILS, E1)
  - PROPOSED POLE LIGHT AT PAVED AMENITY AREA (SEE SITE DETAILS, E2)
  - DRAINAGE AREA
  - DRAINAGE AREA LABEL

**OWNER**  
 COLUMBIA ASSOCIATION INC.  
 C/O ALBERT F. EDWARDS  
 10221 WINCOPIN CIRCLE  
 COLUMBIA, MD 21044  
 (410) 381-3551

**OWNER/DEVELOPER**  
 94 UNIT BUILDING 2 (4%); ROSLYN RISE FOUR, LLC  
 59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
 C/O MACKENZIE KIESEL  
 875 HOLLINS STREET, SUITE 202  
 BALTIMORE, MD 21201  
 (410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**STORM DRAIN DRAINAGE AREA MAP**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

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

LOTS 7 & 8, PARCEL 272  
 LOT 5, PARCEL 81  
 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 DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2022

DESIGN BY: RHW/ACS.  
 DRAWN BY: ACS.  
 CHECKED BY: RHW.  
 DATE: OCTOBER 2021  
 SCALE: AS SHOWN.  
 W.O. NO.: 41539.

14 SHEET OF 27

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 5/31/2022

Chief, Development Engineering Division  
 DATE 5/31/2022

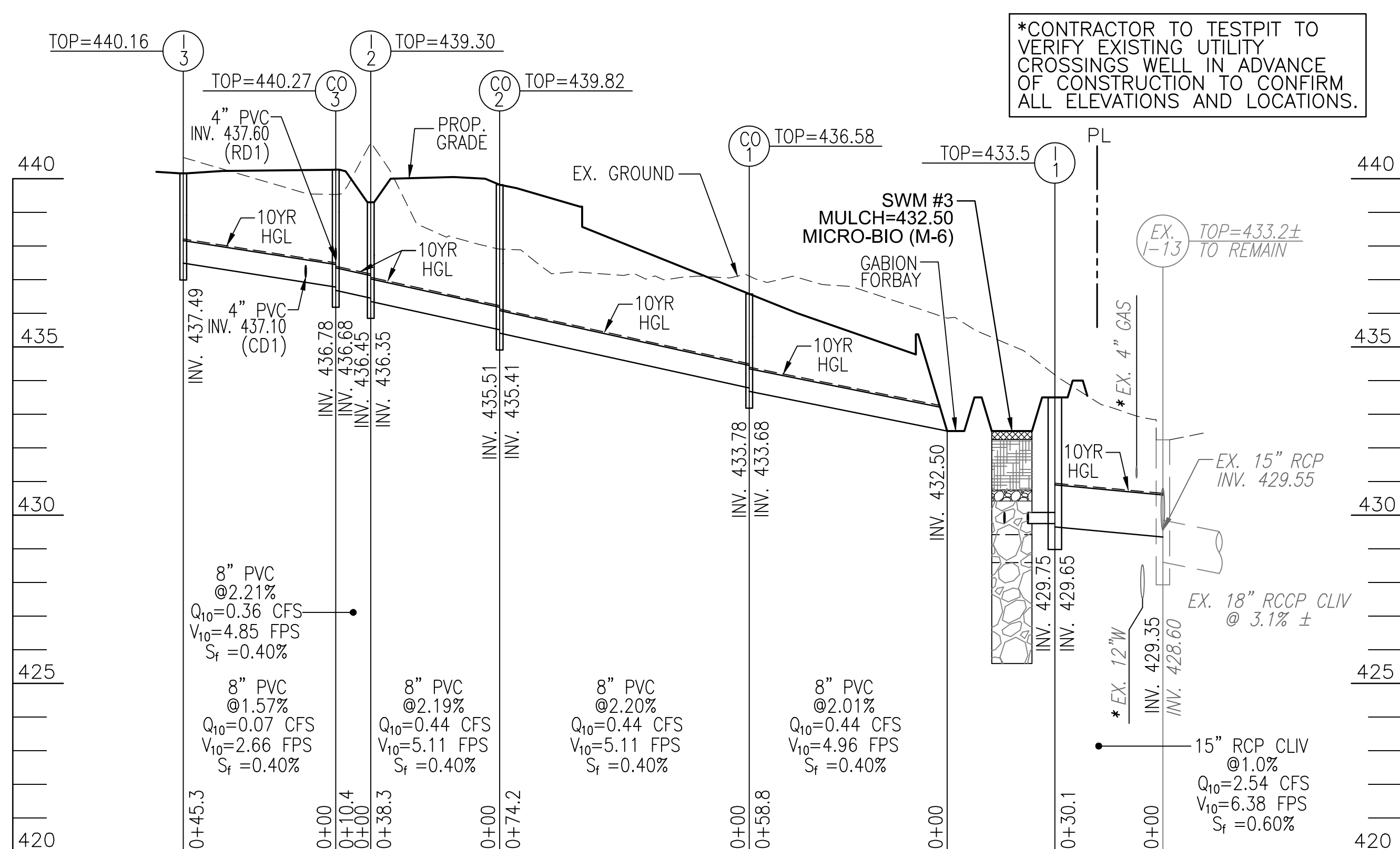
Chief, Division of Land Development  
 DATE 6/1/2022

DIRECTOR  
 DATE

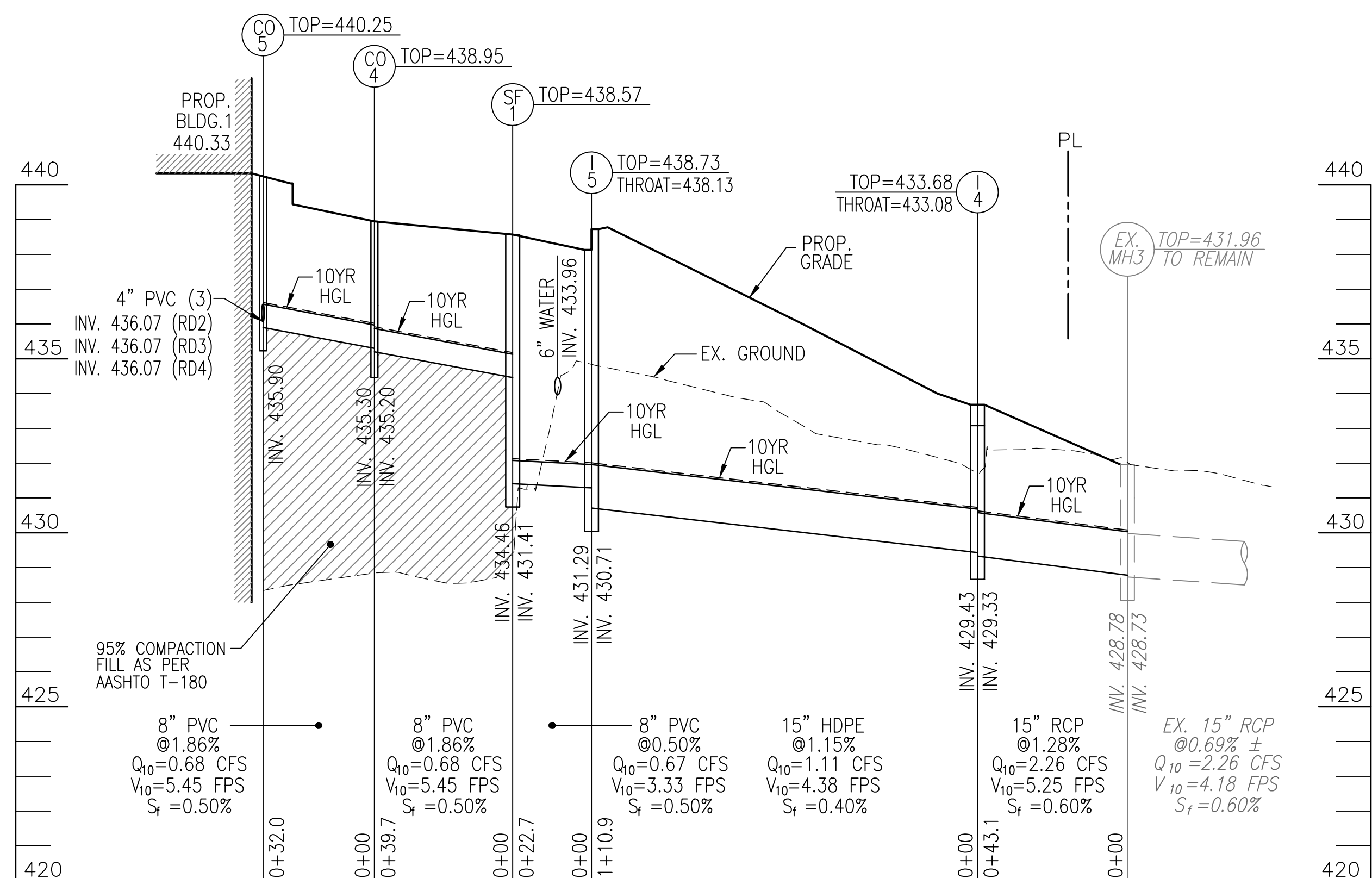
**STORM DRAIN DRAINAGE AREA MAP**  
 SCALE: 1"=30'



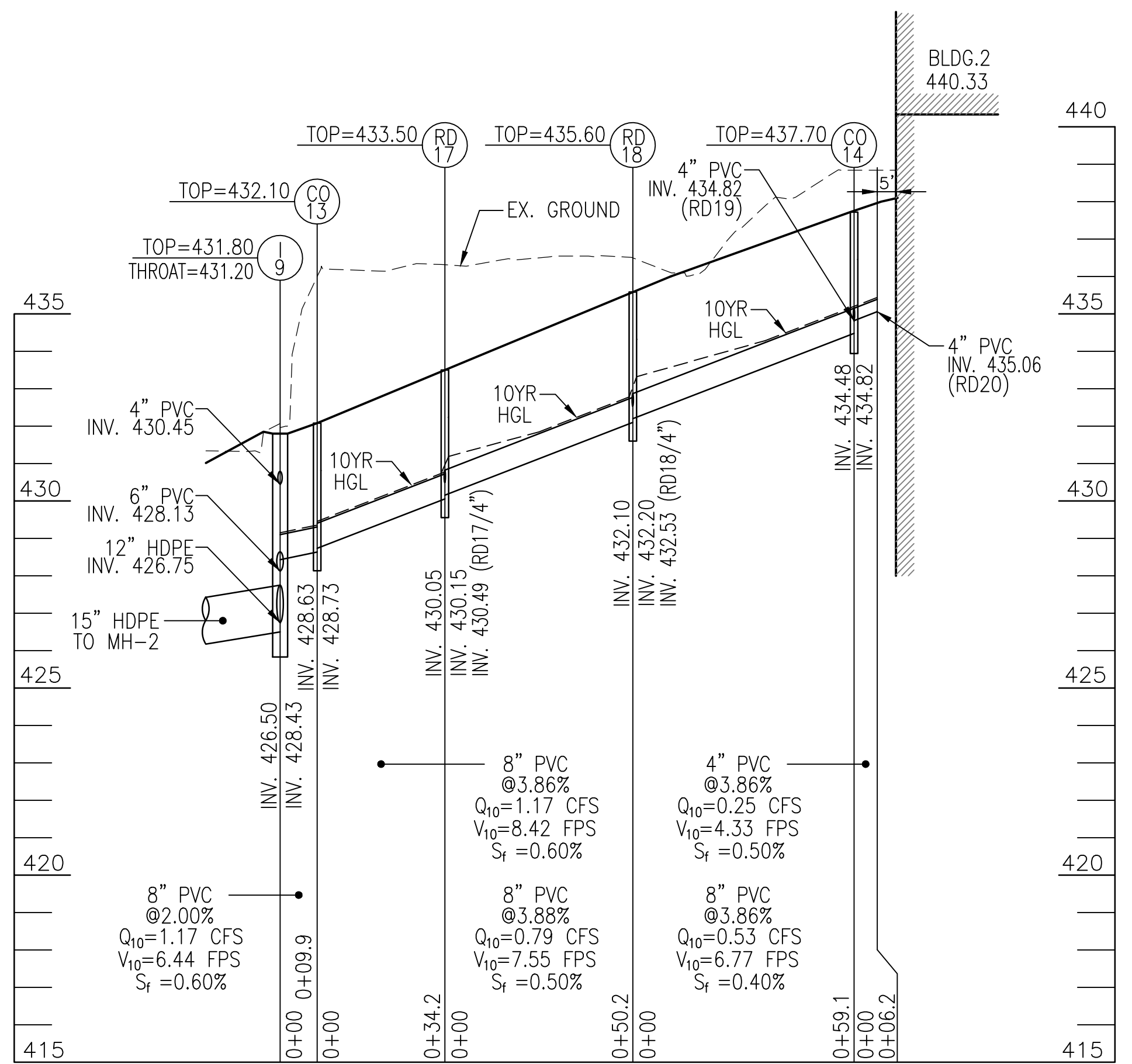
\*CONTRACTOR TO TESTPIT TO VERIFY EXISTING UTILITY CROSSINGS WELL IN ADVANCE OF CONSTRUCTION TO CONFIRM ALL ELEVATIONS AND LOCATIONS.



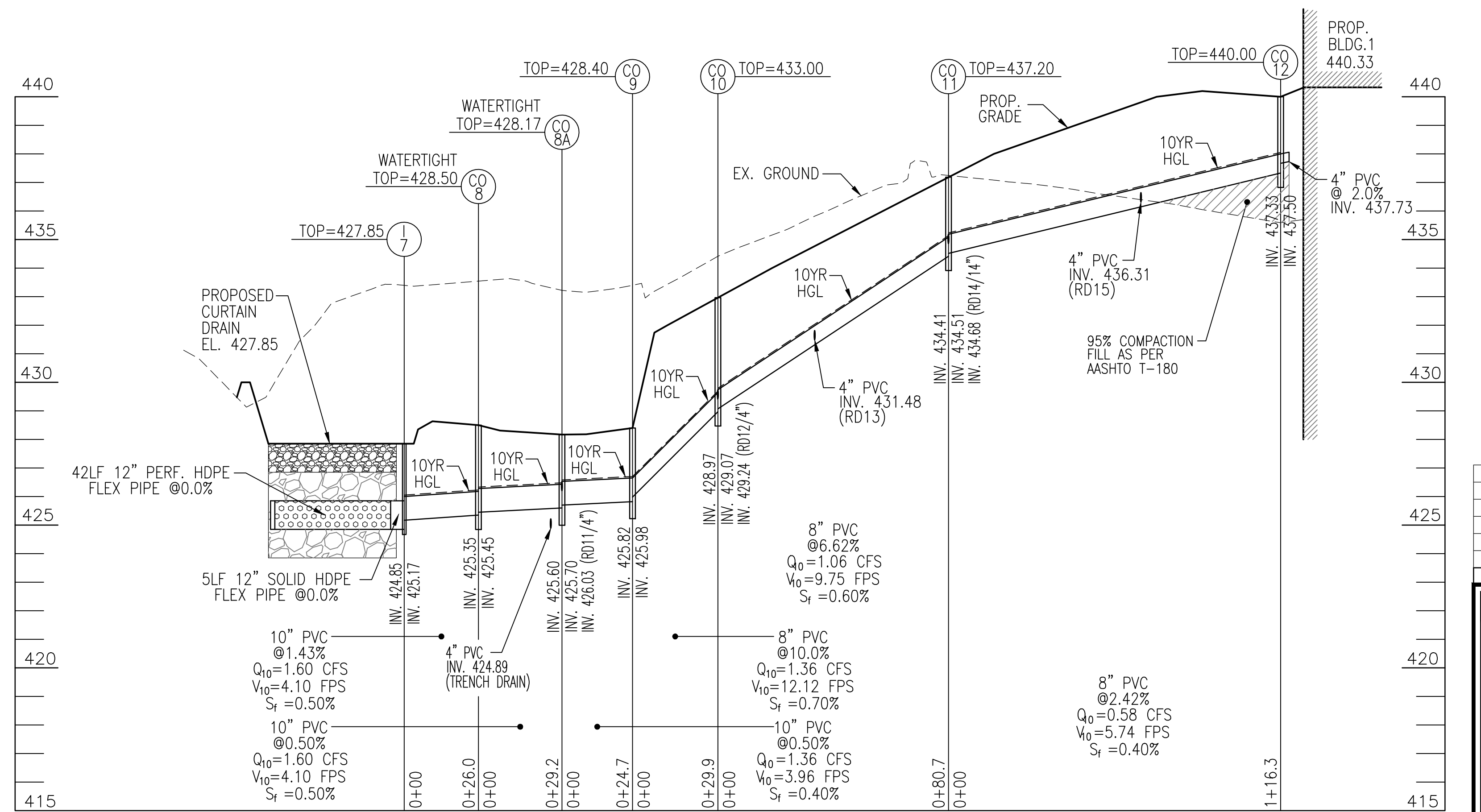
**STORM DRAIN PROFILE**  
SCALE : HORIZONTAL - 1"=30'  
VERTICAL - 1"=3'



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SCALE : HORIZONTAL - 1"=30'  
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ZONED: NT  
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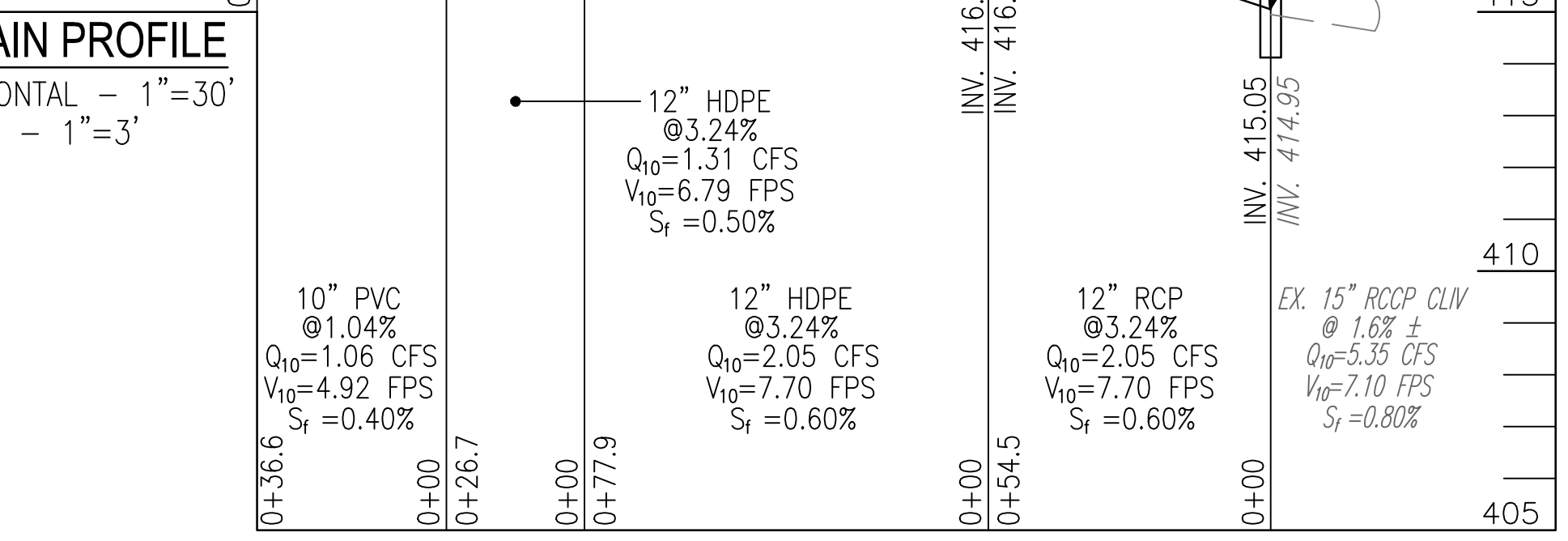
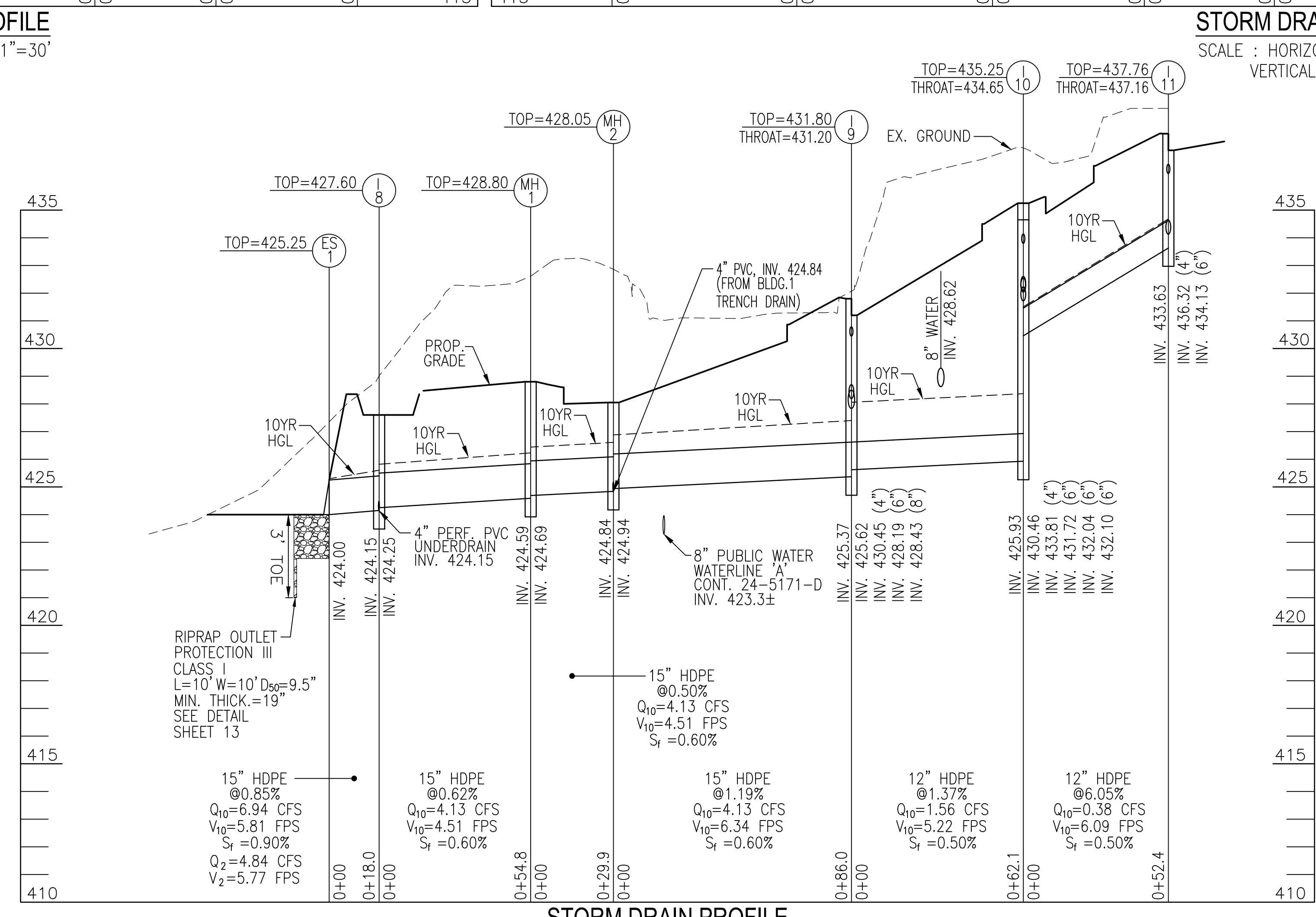
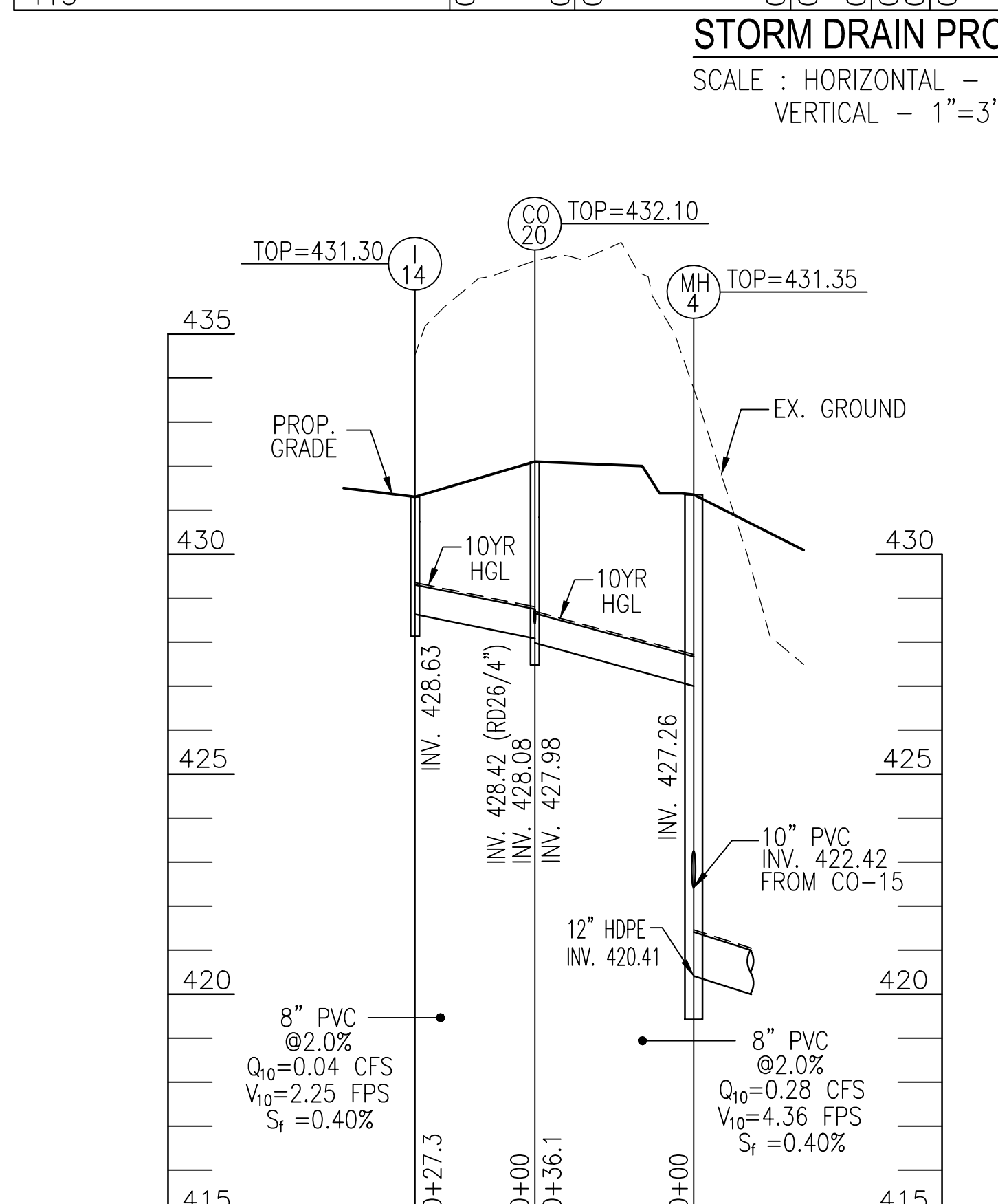
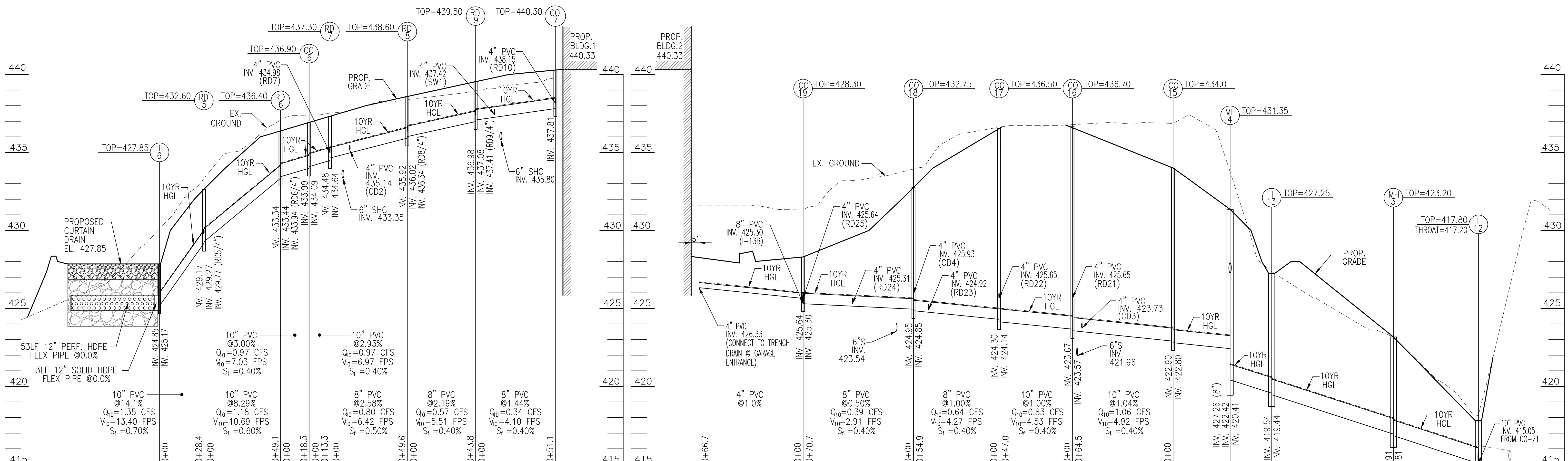
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

Developed by: *CHAD Edmondson*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/31/2022

Checked by: *Amy Stonan*  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/1/2022

DIRECTOR DATE





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 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/1/2022

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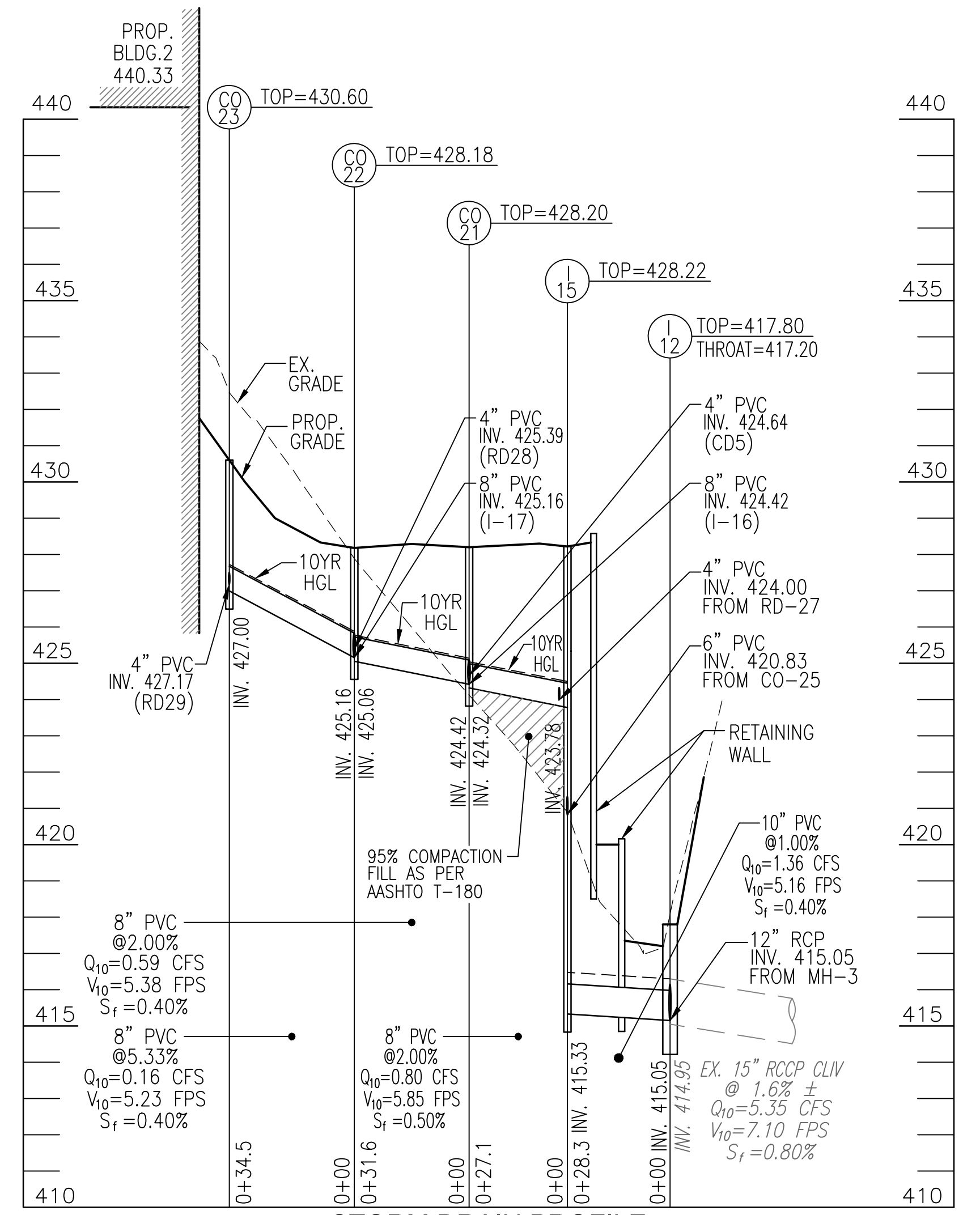
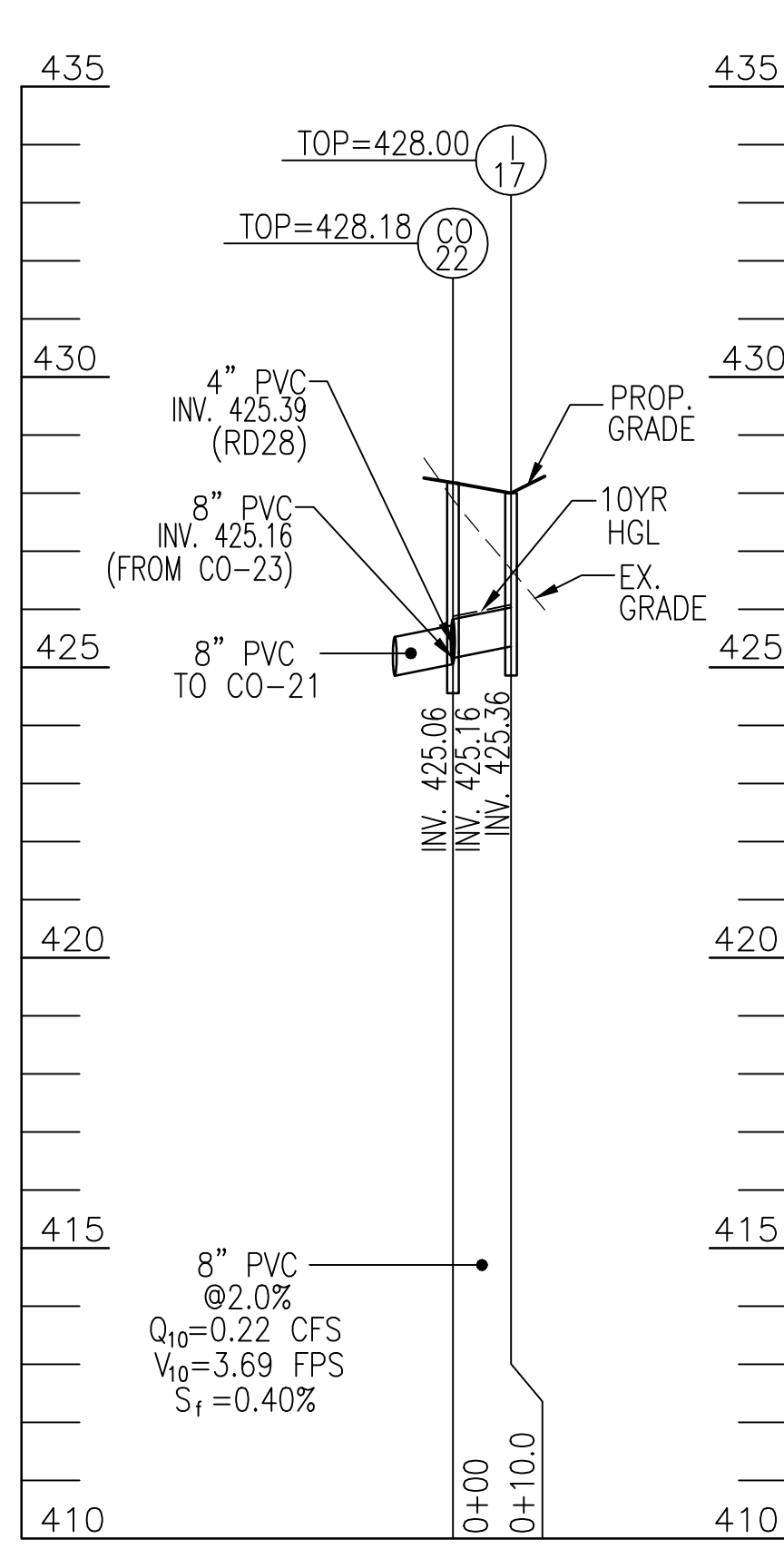
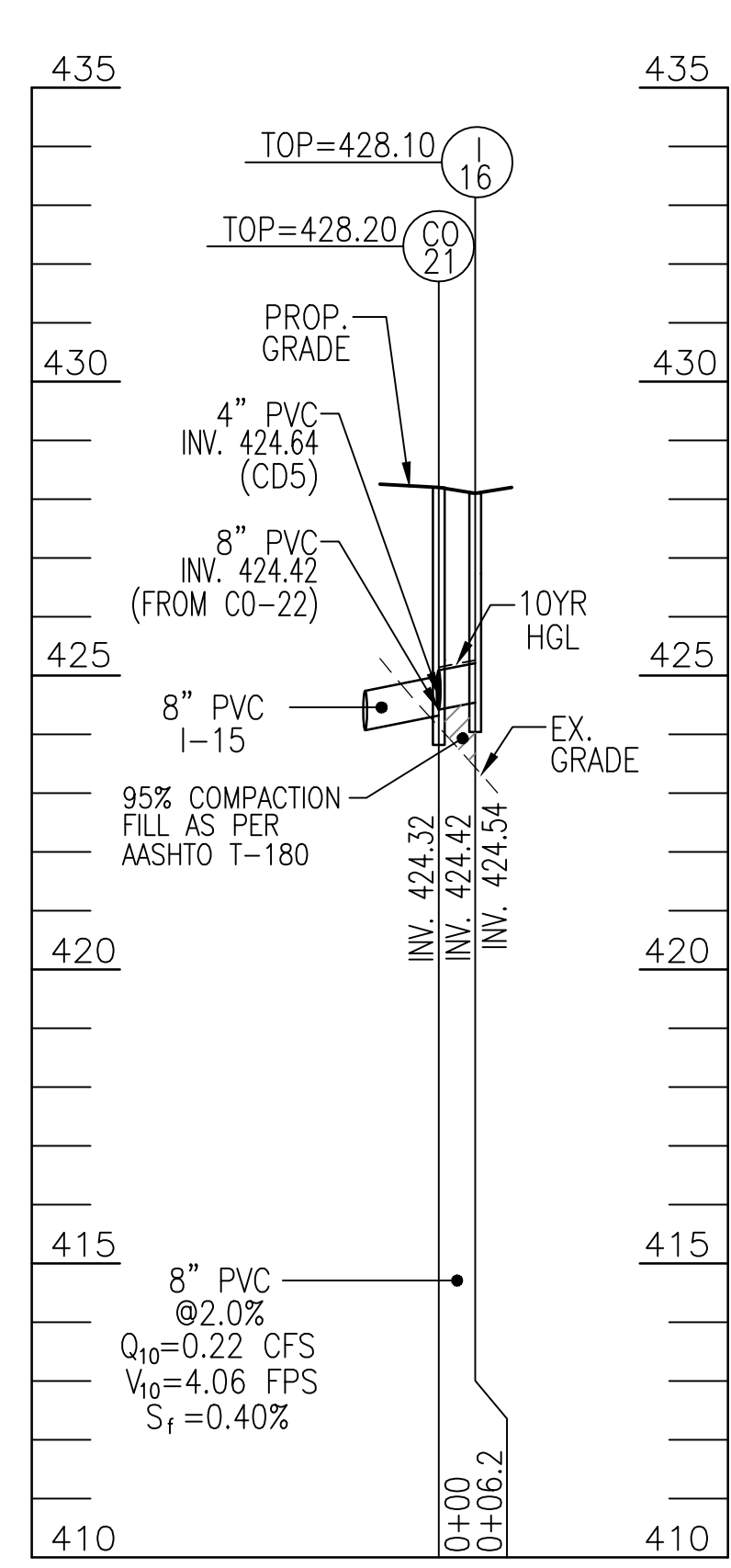
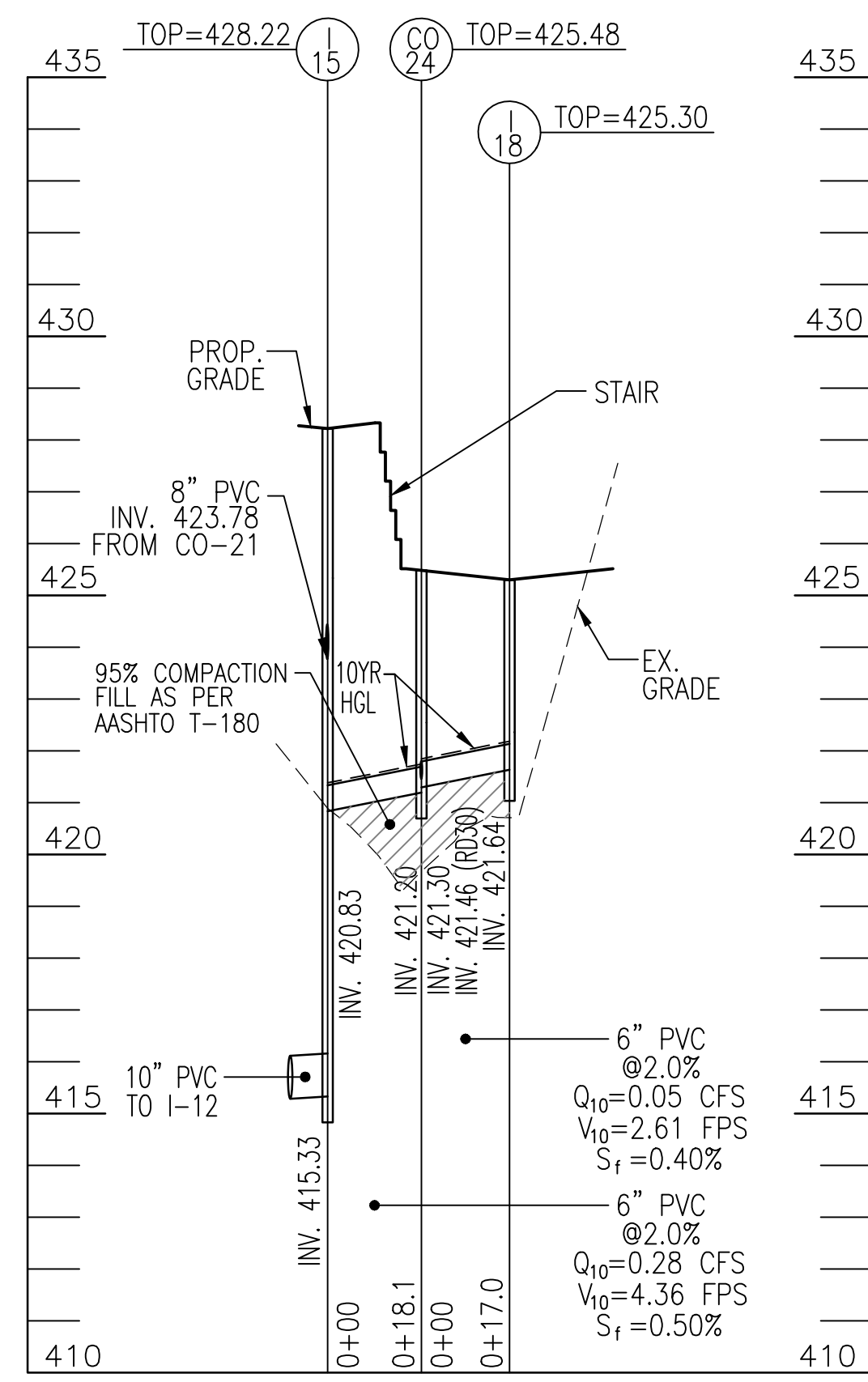
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**STORMFILTER DESIGN NOTES**

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARRYOVER SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (2). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 9 CARTRIDGES. IN (12) IN MANHOLE STORMFILTER PEAK HYDRAULIC CAPACITY IS 10 CFS (3.3 L/S). IF THE SITE CONDITIONS EXCEED 10 CFS (3.3 L/S) AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARRYOVER SELECTION	2" (50 mm)	1" (25 mm)	LOW DROP
CARRYOVER HEIGHT	2" (50 mm)	2" (50 mm)	1" (25 mm)
RECOMMENDED HYDRAULIC DROP (2)	2" (50 mm)	2" (50 mm)	1" (25 mm)
SPECIFIC FLOW RATE (gpm/ft²)	21.30	21.30	21.30
CARRYOVER FLOW RATE (gpm/ft²)	2.51	2.51	2.51

**SITE SPECIFIC DATA REQUIREMENTS**

STRUCTURE ID	TYPE	DIAMETER	DEPTH
PT-1	PASS THRU INLET	428.70	428.70
SF-1	STORMFILTER	434.46	438.57
CO-1	CLEANOUT	433.78	436.58
CO-2	CLEANOUT	435.51	439.82
CO-3	CLEANOUT	436.78	440.27
CO-4	CLEANOUT	436.07	436.07
CO-5	CLEANOUT	435.30	435.30
CO-6	CLEANOUT	434.09	433.99
CO-7	CLEANOUT	438.15	440.30
CO-8	CLEANOUT	425.45	428.50
CO-8A	CLEANOUT	425.70	428.03
CO-9	CLEANOUT	425.98	428.40
CO-10	CLEANOUT	429.07	429.24
CO-11	CLEANOUT	434.51	434.68
CO-12	CLEANOUT	437.50	437.73
CO-13	CLEANOUT	428.73	432.10
CO-14	CLEANOUT	434.82	434.82
CO-15	CLEANOUT	422.80	434.00
CO-16	CLEANOUT	423.67	425.05
CO-17	CLEANOUT	424.30	425.05
CO-18	CLEANOUT	424.95	425.93
CO-19	CLEANOUT	425.83	428.30
CO-20	CLEANOUT	428.08	428.42
CO-21	CLEANOUT	424.42	424.42
CO-22	CLEANOUT	425.18	425.18
CO-23	CLEANOUT	427.17	430.60
CO-24	CLEANOUT	421.30	421.46
RD-5	CLEANOUT	429.27	429.77
RD-6	CLEANOUT	433.44	433.94
RD-7	CLEANOUT	434.54	434.98
RD-8	CLEANOUT	436.02	436.60
RD-9	CLEANOUT	437.08	437.41
RD-17	CLEANOUT	430.15	430.49
RD-18	CLEANOUT	432.20	432.53
CO-P1	CLEANOUT	434.71	433.12
CO-P2	CLEANOUT	436.41	435.08
CO-P3	CLEANOUT	433.46	433.36
CO-P4	CLEANOUT	433.78	432.42

**CONTECH ENGINEERED SOLUTIONS LLC**  
SFMH48 STORMFILTER STANDARD DETAIL

**STORM DRAIN STRUCTURE SCHEDULE**

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV	DETAIL	LOCATION	REMARKS
EX MP-2	EX. 4" MANHOLE	429.33	429.13	433.20	E= 1349094.32	N= 565402.95	
EX MP-3	EX. 4" MANHOLE	428.73	428.73	431.96	E= 1349245.57	N= 565269.65	
MH-1	4" MANHOLE	424.69	424.59	428.80	G5.12	E= 1349202.58	N= 564901.71
MH-2	4" MANHOLE	424.84	424.84	428.05	G5.12	E= 1349204.78	N= 564912.29
MH-3	4" MANHOLE	416.81	423.20	G5.12	E= 1349317.69	N= 565152.85	
MH-4	4" MANHOLE	422.42	427.26	420.41	G5.12	E= 1349366.23	N= 565084.51
L-1	"S"	429.75	429.65	433.50	D-4.24	E= 1349083.57	N= 565391.57
L-2	10" NYLOPLAST DRAIN BASIN W/ DOME GRATE	436.45	436.35	439.30	-	E= 1348999.29	N= 565210.06
L-3	8" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	437.49	440.16	440.16	-	E= 1349099.64	N= 565157.48
L-4	"S"	429.43	433.68	D-4.02	E= 1349210.60	N= 565244.51	
L-5	"S"	431.29	430.71	438.73	D-4.02	E= 1349138.37	N= 565180.31
L-6	12" ADS INLINE INLET W/ 12" CAST IRON GRATE	425.17	424.85	427.85	-	E= 1348943.30	N= 564896.94
L-7	12" ADS INLINE INLET W/ 12" CAST IRON GRATE	425.17	424.85	427.85	-	E= 1349099.66	N= 564905.34
L-8	"S"	424.25	424.15	427.60	D-4.24	E= 1349077.62	N= 564949.00
L-9	"S"	425.27	430.45	428.19	D-4.02	E= 1349099.20	N= 564974.44
L-10	"S"	430.46	433.81	431.72	D-4.02	E= 1349105.11	N= 565036.25
L-11	"S"	436.32	434.13	433.63	D-4.02	E= 1349142.35	N= 565073.07
L-12	"S"	414.05	416.05	417.80	D-4.10	E= 1349276.78	N= 565188.69
L-13	"S"	419.54	419.44	427.25	D-4.24	E= 1349365.27	N= 565091.14
L13B	8" NYLOPLAST DRAIN BASIN W/ DOME GRATE	-	425.33	427.80	-	E= 1349160.26	N= 564907.33
L-14	8" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	-	428.63	431.30	-	E= 1349117.08	N= 565081.25
L-15	10" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	423.78	420.83	415.33	-	E= 1349252.46	N= 565174.39
L-16	8" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	-	424.54	428.10	-	E= 1349271.40	N= 565154.04
L-17	8" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	-	425.36	428.00	-	E= 1349250.54	N= 565128.57
L-18	8" NYLOPLAST DRAIN BASIN W/ BRONZE GRATE	-	421.64	425.30	-	E= 1349232.48	N= 565203.15
ES-1	15" HDPE END SECTION	-	424.00	425.25	-	E= 1348971.15	N= 564832.76
PT-1	PASS THRU INLET	428.70	428.20	427.30	D-4.35	E= 1349083.85	N= 564878.07
SF-1	STORMFILTER	434.46	431.41	438.57	-	E= 1349147.87	N= 565140.65
CO-1	CLEANOUT	433.78	433.88	436.58	-	E= 1349047.92	N= 565309.07
CO-2	CLEANOUT	435.51	435.41	439.82	-	E= 1349024.78	N= 565236.60
CO-3	CLEANOUT	436.78	437.80	440.27	-	E= 1349003.53	N= 565200.55
CO-4	CLEANOUT	436.07	436.07	436.07	-	E= 1349195.48	N= 565122.32
CO-5	CLEANOUT	435.30	435.30	435.30	-	E= 1349161.81	N= 565108.27
CO-6	CLEANOUT	434.09	433.99	436.90	-	E= 1349393.82	N= 564992.71
CO-7	CLEANOUT	438.15	437.81	440.30	-	E= 1349886.22	N= 565142.84
CO-8	CLEANOUT	425.45	425.35	428.50	-	E= 1349014.11	N= 564905.93
CO-8A	CLEANOUT	425.70	426.03	425.60	-	E= 1349018.21	N= 564934.86
CO-9	CLEANOUT	425.98	428.40	428.40	-	E= 1349017.41	N= 564959.57
CO-10	CLEANOUT	429.07	429.24	428.97	-	E= 1349016.29	N= 564989.44
CO-11	CLEANOUT	434.51	434.68	437.20	-	E= 1349041.41	N= 565005.37
CO-12	CLEANOUT	437.50	437.73	440.00	-	E= 1349077.60	N= 565176.69
CO-13	CLEANOUT	428.73	428.63	432.10	-	E= 1349109.80	N= 564969.79
CO-14	CLEANOUT	434.82	434.82	434.48	-	E= 1349234.11	N= 565041.87
CO-15	CLEANOUT	422.80	434.00	434.00	-	E= 1349394.28	N= 565027.89
CO-16	CLEANOUT	423.67	425.05	423.57	-	E= 1349308.38	N= 564995.88
CO-17	CLEANOUT	424.30	425.05	424.14	-	E= 1349267.63	N= 564972.47
CO-18	CLEANOUT	424.95	425.93	424.85	-	E= 1349220.06	N= 564945.15
CO-19	CLEANOUT	425.83	428.30	428.30	-	E= 1349164.75	N= 564909.82
CO-20	CLEANOUT	428.08	428.42	427.98	-	E= 1349330.76	N= 565057.67
CO-21	CLEANOUT	424.42	424.42	424.64	-	E= 1349296.05	N= 565150.94
CO-22	CLEANOUT	425.18	425.18	425.06	-	E= 1349261.92	N= 565123.58
CO-23	CLEANOUT	427.17	427.00	430.60	-	E= 1349299.22	N= 565093.73
CO-24	CLEANOUT	421.30	421.46	425.48	-	E= 1349241.01	N= 565188.44
RD-5	CLEANOUT	429.27	429.77	432.60	-	E= 1348942.34	N= 564925.33
RD-6	CLEANOUT	433.44	433.94	433.34	-	E= 1348940.51	N= 564974.39
RD-7	CLEANOUT	434.54	434.98	437.20	-	E= 1349043.90	N= 565005.37
RD-8	CLEANOUT	436.02	436.34	438.60	-	E= 1348956.11	N= 565052.56
RD-9	CLEANOUT	437.08	437.41	439.50	-	E= 1348972.54	N= 565094.20
RD-17	CLEANOUT	430.15	430.49	430.05	-	E= 1349126.50	N= 564987.01
RD-18	CLEANOUT	432.20	432.53	432.10	-	E= 1349162.96	N= 565012.21
CO-P1	CLEANOUT	434.71	433.12	433.02	-	E= 1349092.20	N= 565053.59
CO-P2	CLEANOUT	436.41	435.08	434.98	-	E= 1349205.27	N= 565057.95
CO-P3	CLEANOUT	433.46	433.36	436.50	-	E= 1349208.35	N= 565037.73
CO-P4	CLEANOUT	433.78	432.42	432.32	-	E= 1349118.16	N= 565033.40

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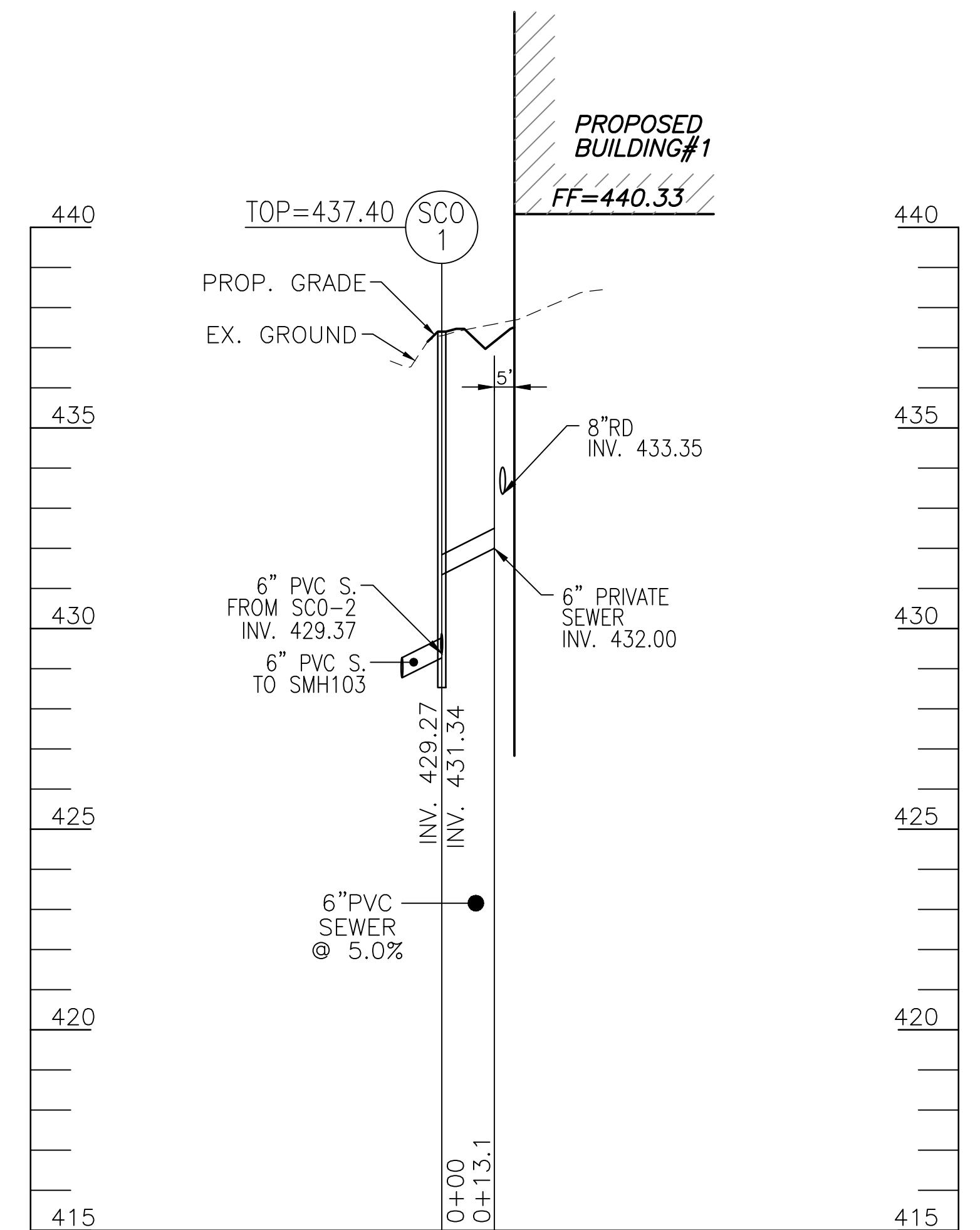
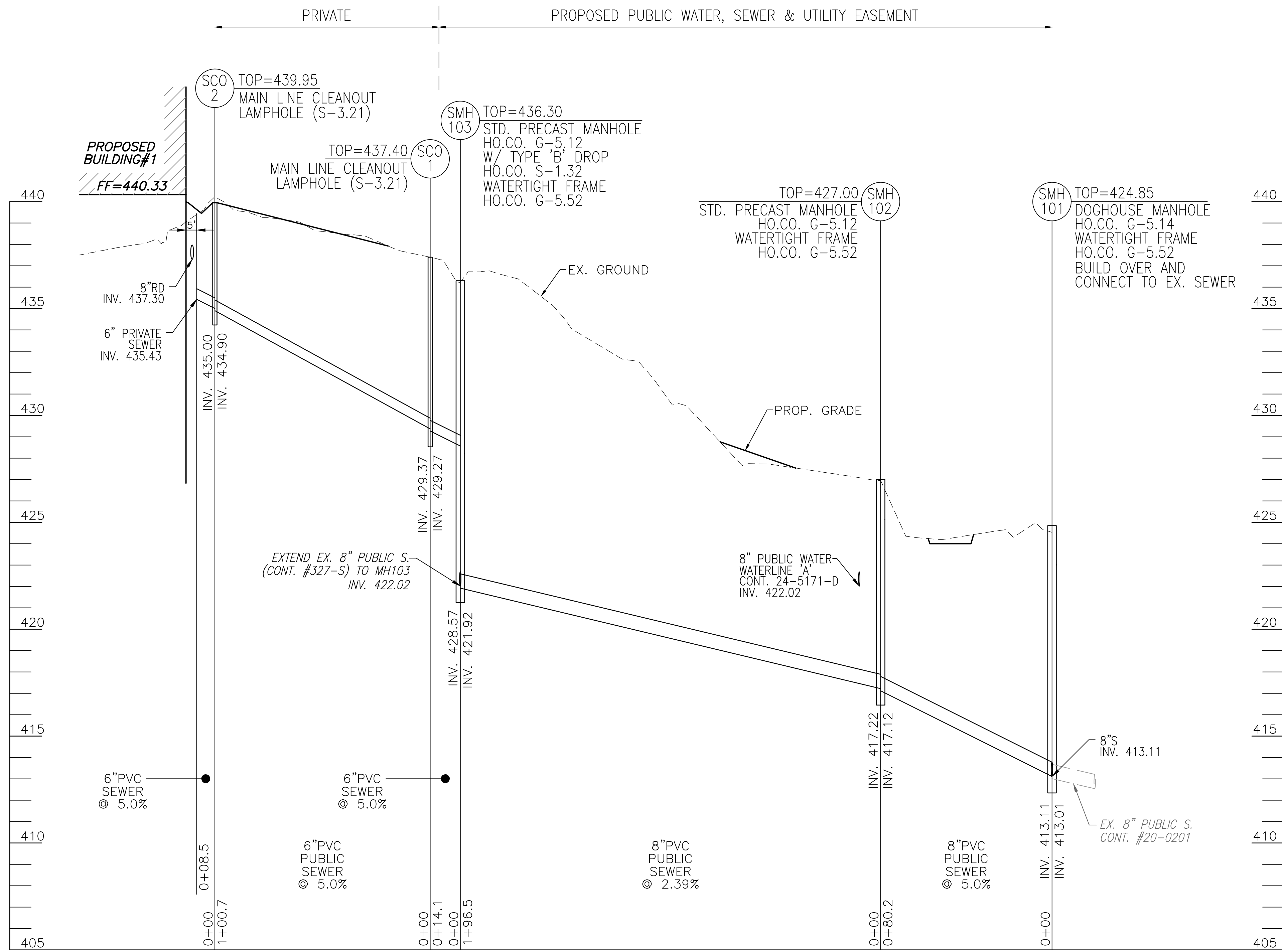
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5/31/2022

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DATE: 6/1/2022

Director  
DATE:





**SEWER MAIN PROFILE (PUBLIC/PRIVATE)**

**SEWER MAIN PROFILE (PRIVATE)**

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**UTILITY PROFILES**

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SCALE: AS SHOWN	PROFESSIONAL CERTIFICATE	
W.O. NO.: 41539	18 SHEET OF 27	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

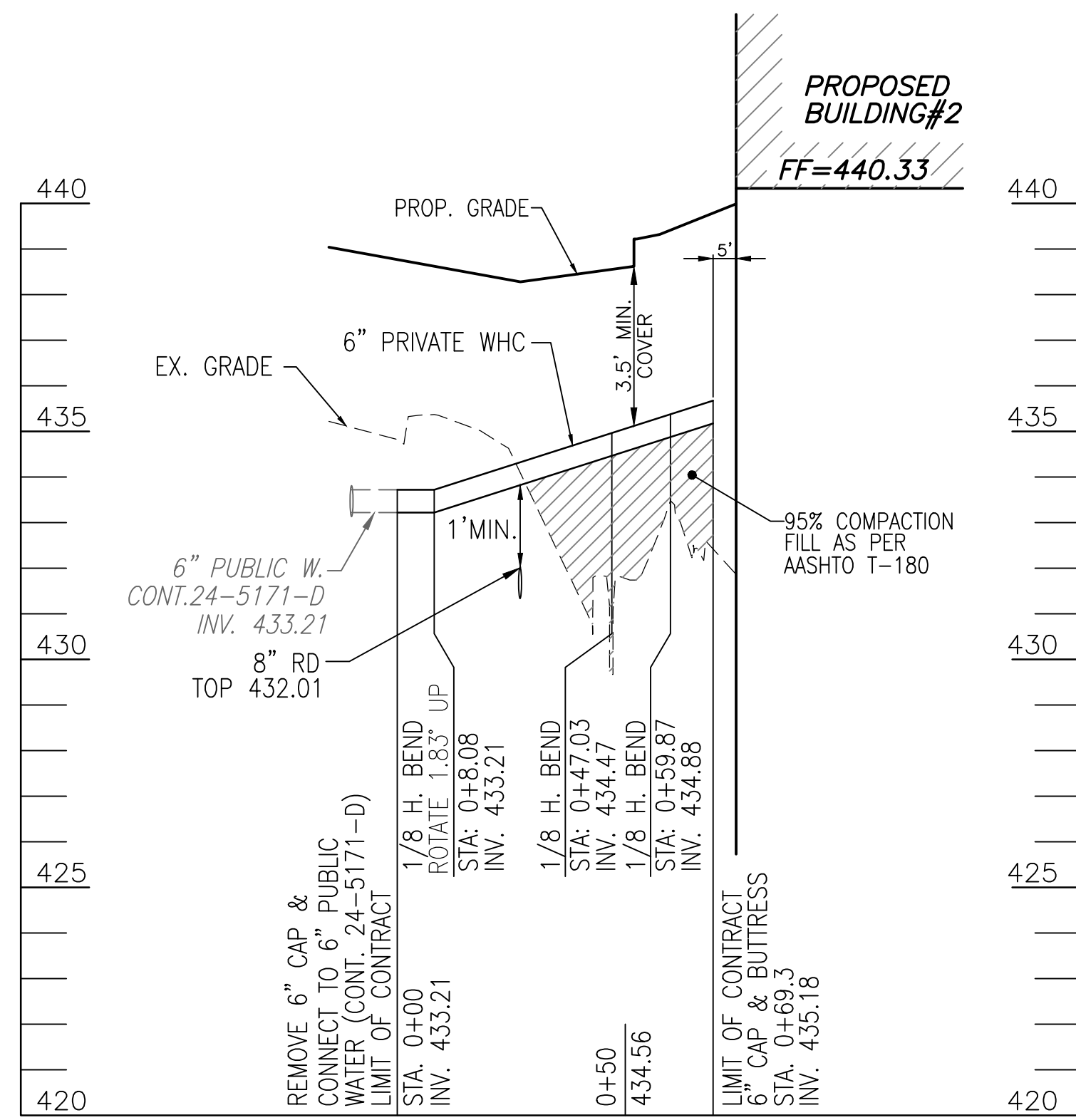
Developed by: *Chris Edmondson* 5/31/2022

Chief, Development Engineering Division DATE 5/31/2022

Chief, Division of Land Development DATE 6/1/2022

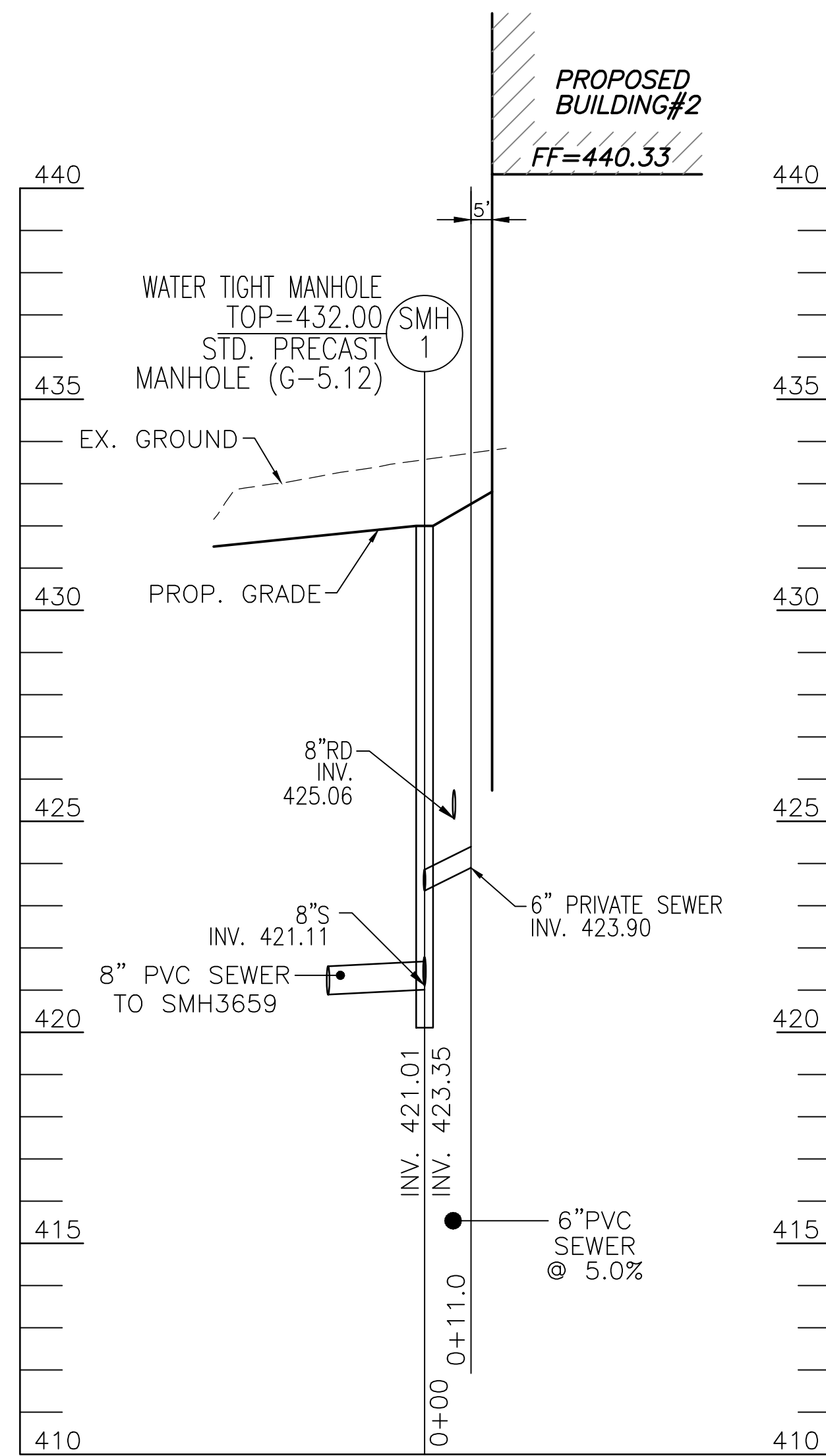
Director: *Amy Stonan* DATE





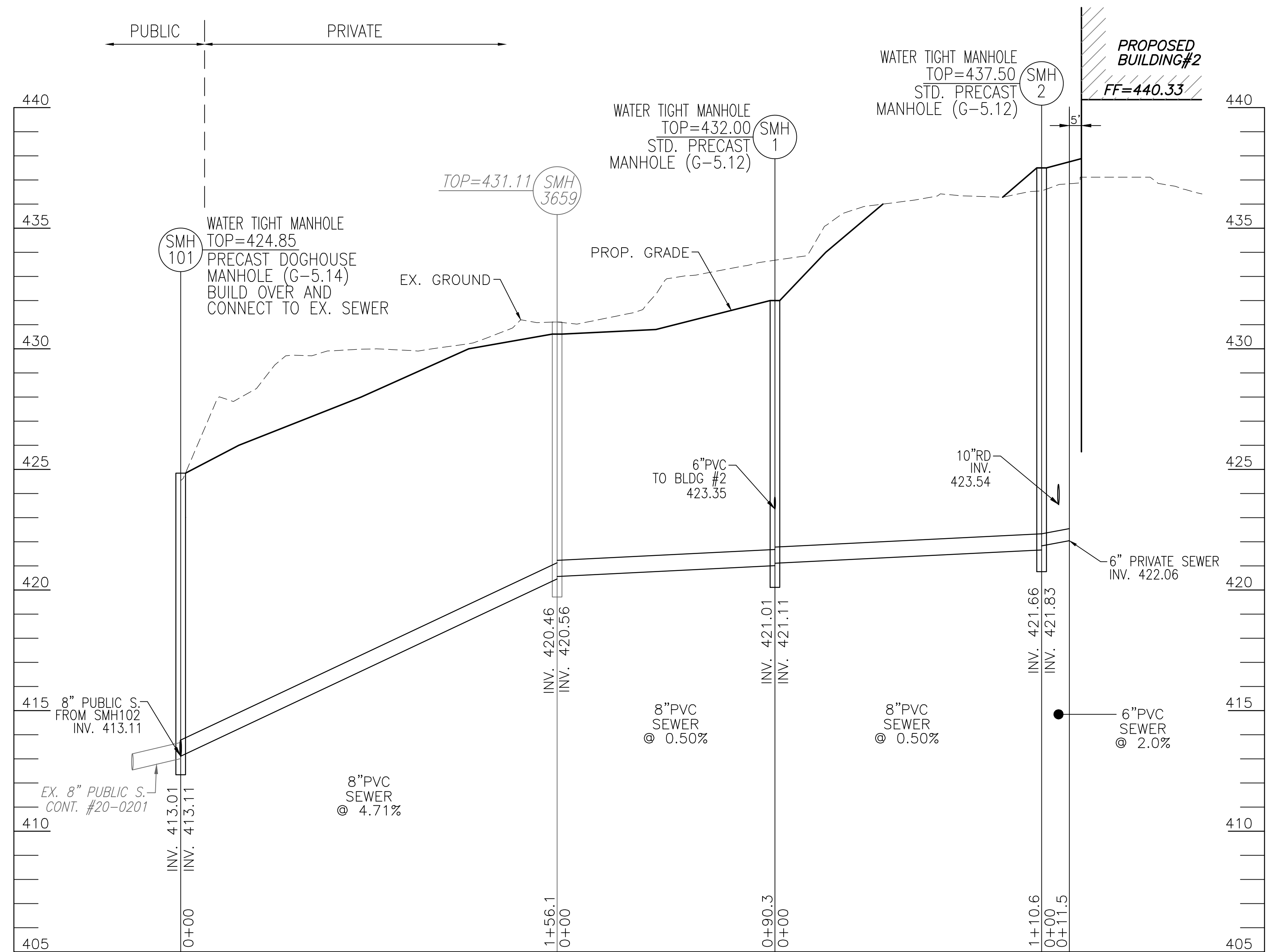
### WHC TO BUILDING #2 PROFILE (PRIVATE)

SCALE: 1"=30 HORIZ.  
1"=3' VERT.



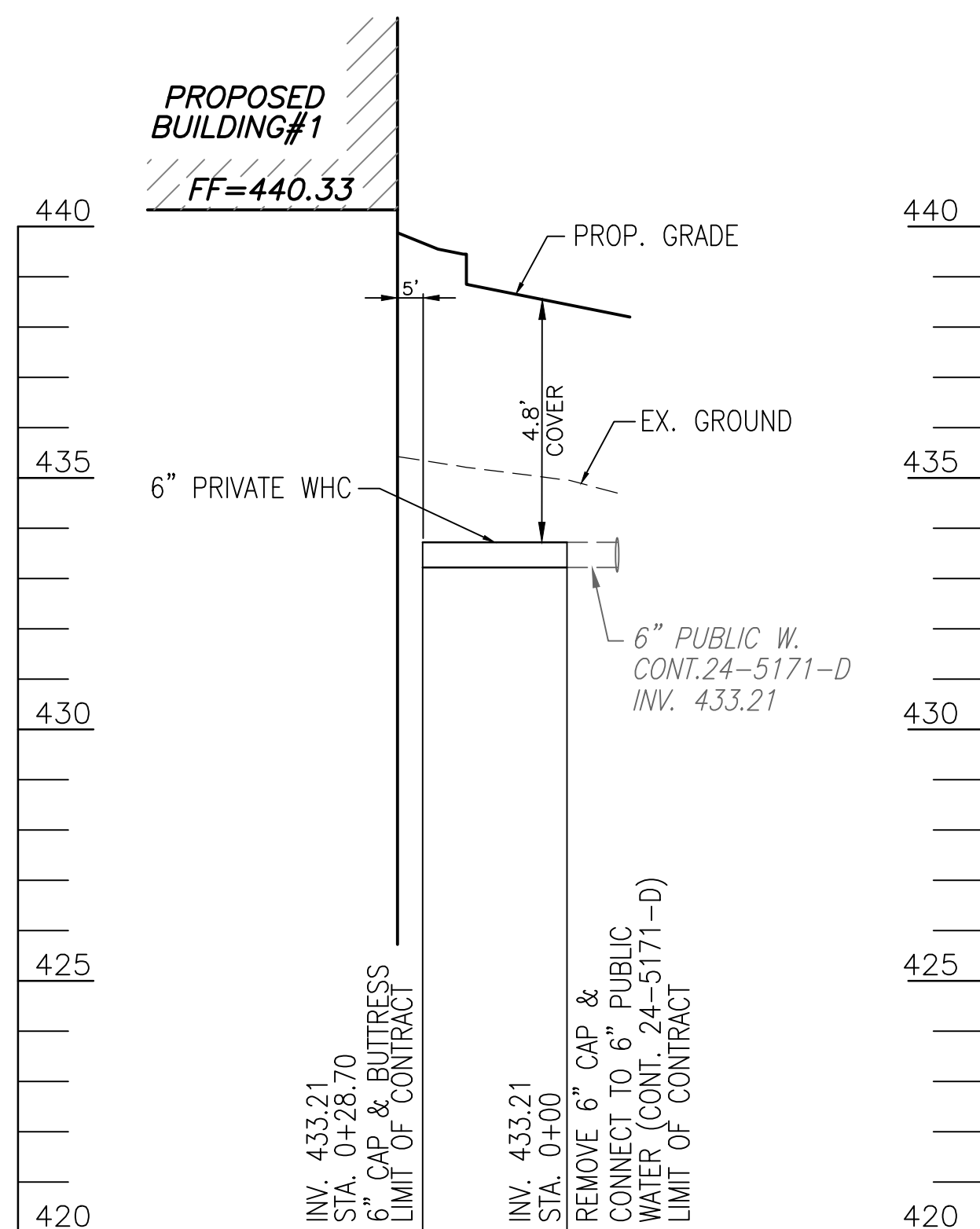
### SEWER MAIN PROFILE (PRIVATE)

SCALE: 1"=30 HORIZ.  
1"=3' VERT.



### SEWER MAIN PROFILE (PRIVATE)

SCALE: 1"=30 HORIZ.  
1"=3' VERT.



### WHC TO BUILDING #1 PROFILE (PRIVATE)

SCALE: 1"=30 HORIZ.  
1"=3' VERT.

**OWNER**  
COLUMBIA ASSOCIATION INC.  
C/O ALBERT F. EDWARDS  
10221 WINGOPIN CIRCLE  
COLUMBIA, MD 21044  
(410) 381-3551

**OWNER/DEVELOPER**  
94 UNIT BUILDING 2 (4%); ROSLYN RISE FOUR, LLC  
59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
C/O MACKENZIE KIESEL  
875 HOLLINS STREET, SUITE 202  
BALTIMORE, MD 21201  
(410) 230-2117

NO.	REVISION	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Developed by: *Chad Edmondson* 5/31/2022  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/31/2022

Checked by: *Amy Stanon* 6/1/2022  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/1/2022

DIRECTOR 58409009470C404 DATE

**SITE DEVELOPMENT PLANS**

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

TAX MAP 30 GRID 19 LOTS 7 & 8, PARCEL 272  
 TAX MAP 36 GRID 1 LOT 5, PARCEL 81  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**VOGEL ENGINEERING**  
 +  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
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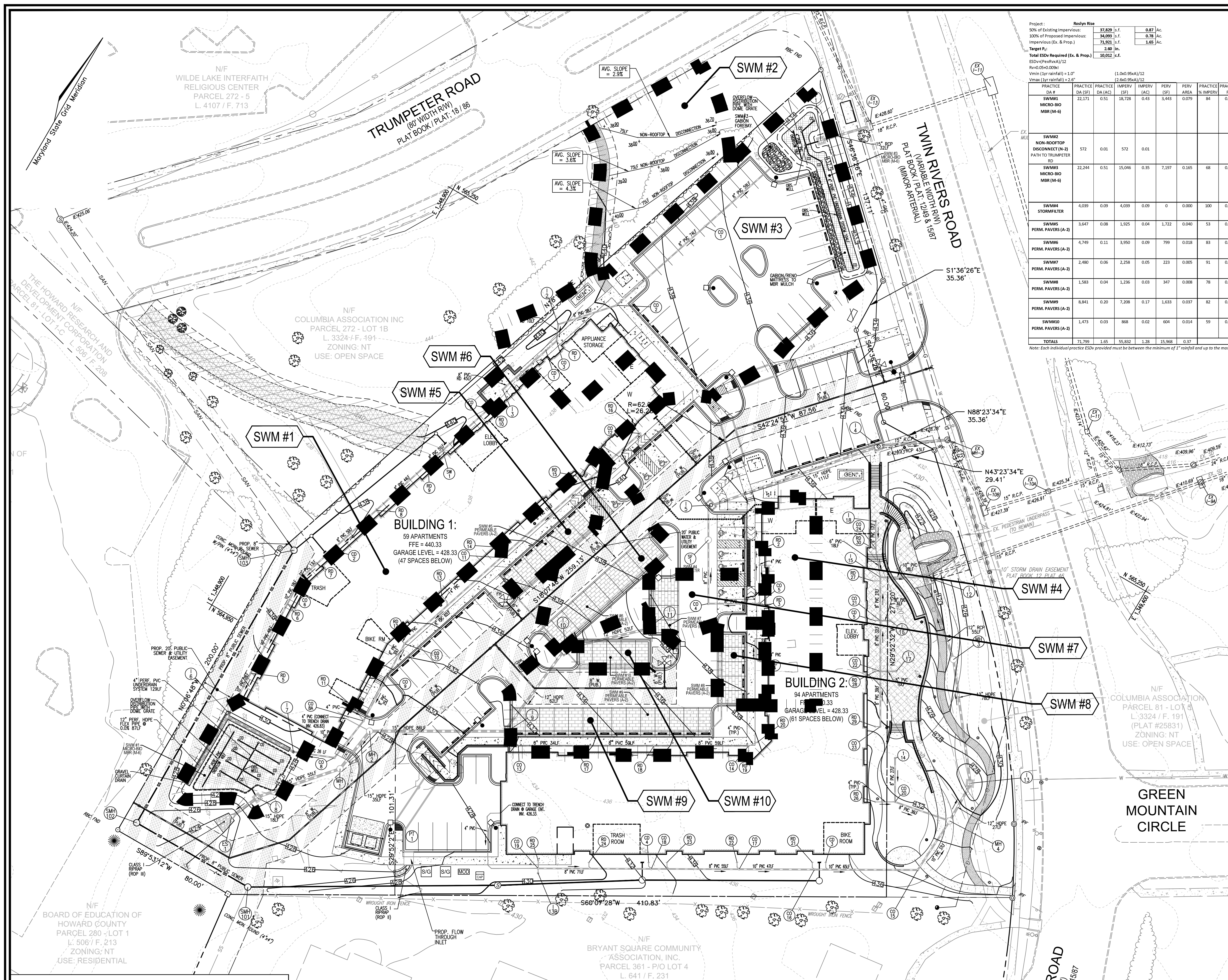
PROFESSIONAL CERTIFICATE

DESIGN BY: RHW/ACS  
 DRAWN BY: ACS  
 CHECKED BY: RHW  
 DATE: OCTOBER 2021  
 SCALE: AS SHOWN  
 W.O. NO.: 41539

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: 09-27-2022

**19** SHEET OF **27**





Category	Value	Unit
50% of Existing Impervious	37,829	S.F.
100% of Proposed Impervious	34,093	S.F.
Impervious (Ex. & Prop.)	71,922	S.F.
Target P <sub>2</sub>	2.90	In.
Total ESDV Required (Ex. & Prop.)	10,022	C.F.

SWM #	DA (SF)	DA (AC)	IMPV (SF)	IMPV (AC)	PERV (SF)	PERV (AC)	IMPV AREA (%)	PERV AREA (%)	MIN PRACTICE R <sub>v</sub>	TARGET P <sub>2</sub>	MAX PRACTICE VOLUME (2.0")	TOTAL ESDV VOLUME PROVIDED	CF	SF	REMARKS	depth	porosity	
SWM#1	22,171	0.51	18,728	0.43	3,443	0.079	84	0.81	1,497	3.892	3,892	3,790	2,064	1,548	MICROSCALE MICRO-BIO RETENTION (M-6) Surface Area of MBR @ 1.0 ponding (75% above) Stone Below Underdrain (25%)*	0.83	x	0.4
P <sub>2</sub> Provided:												2,49	1,993	1,548	Additional Stone (Below) (*Includes REV requirement)	3.00	x	0.3
SWM#2	572	0.01	572	0.01								45			NON-STRUCTURAL PRACTICE NON-ROOFTOP DISCONNECT			
SWM#3	22,244	0.51	15,046	0.35	7,197	0.165	68	0.66	1,221	3,175	3,175	2,363	1,411	1,058	MICROSCALE MICRO-BIO RETENTION (M-6) Surface Area of MBR @ 1.0 ponding (75% above) Stone Below Underdrain (25%)*	0.83	x	0.4
P <sub>2</sub> Provided:												2.93	952	1,058	Additional Stone (Below) (*Includes REV requirement)	3.00	x	0.3
SWM#4	4,039	0.09	4,039	0.09	0	0.000	100	0.95	320	831	831	320	320	0	STORMFILTER (CHAPTER 3 DEVICE) Design Water Quality Volume			
P <sub>2</sub> Provided:												2.00	404	0	PERMA PAVERS (A-2)	0.2000	-	ESOV 'A' Soil
SWM#5	3,647	0.08	1,925	0.04	1,722	0.040	53	0.53	160	415	415	233	170	1,134	PERMA PAVERS (A-2) Surface Area Additional Stone Below	0.50	x	0.3
P <sub>2</sub> Provided:												2.53	170	1,134	Additional Stone Below	0.2000	-	ESOV 'A' Soil
SWM#6	4,749	0.11	3,950	0.09	799	0.018	83	0.80	316	822	822	820	334	1,620	PERMA PAVERS (A-2) Surface Area Additional Stone Below	1.00	x	0.3
P <sub>2</sub> Provided:												2.59	488	1,620	Additional Stone Below	0.2000	-	ESOV 'A' Soil
SWM#7	2,480	0.06	2,258	0.05	223	0.005	91	0.87	180	467	467	458	133	648	PERMA PAVERS (A-2) Surface Area Additional Stone Below	1.67	x	0.3
P <sub>2</sub> Provided:												2.55	325	648	Additional Stone Below	0.2000	-	ESOV 'A' Soil
SWM#8	1,583	0.04	1,236	0.03	347	0.008	78	0.75	99	258	258	247	167	810	PERMA PAVERS (A-2) Surface Area Additional Stone Below	0.33	x	0.3
P <sub>2</sub> Provided:												2.49	80	810	Additional Stone Below	0.2000	-	ESOV 'A' Soil
SWM#9	8,841	0.20	7,208	0.17	1,633	0.037	82	0.78	577	1,501	1,501	1,488	467	2,268	PERMA PAVERS (A-2) Surface Area Additional Stone Below	1.50	x	0.3
P <sub>2</sub> Provided:												2.58	1,021	2,268	Additional Stone Below	0.2000	-	ESOV 'A' Soil
SWM#10	1,473	0.03	868	0.02	604	0.014	59	0.58	71	185	185	185	107	810	PERMA PAVERS (A-2) Surface Area Additional Stone Below	0.00	x	0.3
P <sub>2</sub> Provided:												2.34	0	810	Additional Stone Below	0.00	-	ESOV 'A' Soil
TOTALS	71,709	1.65	55,832	1.28	15,868	0.37						TOTALS:	10,041	0				

Note: Each individual practice ESDV provided must be between the minimum of 1" rainfall and up to the maximum of 2.6" rainfall (2-year rainfall)

**LEGEND:**

	EXISTING CONTOUR		PROPOSED CONTOUR		EXISTING CURB AND GUTTER		PRE-2014 PIPE AND HEADWALL		EXISTING UTILITY POLE		EXISTING LIGHT POLE		EXISTING MAILBOX		EXISTING SIGN		EXISTING SANITARY MANHOLE		EXISTING SANITARY LINE		EXISTING CLEANOUT		EXISTING FIRE HYDRANT		EXISTING WATER LINE		EXISTING GASLINE		EXISTING FENCE		PROPERTY LINE		RIGHT-OF-WAY LINE		SOILS BOUNDARY		PROPOSED SIDEWALK		PROPOSED SIDEWALK RAMP		ASPHALT PAVING		EXISTING TREELINE		PROPOSED TREELINE		PROPOSED STORM DRAIN		PROPOSED STORM DRAIN INLET		PROPOSED FIRE HYDRANT		PROPOSED WATER TEE & VALVE		PROPOSED WATER MAIN		PROPOSED SEWER MAN		EXISTING TREES/LANDSCAPING		PROPOSED CURB AND GUTTER		MICRO-BIORETENTION		PERMEABLE PAVERS		GRASSCRETE		PUBLIC WATER, SEWER AND UTILITY EASEMENT		TEST PIT		SOIL BORING		STRUCTURAL RETAINING WALL		SEGMENTAL BLOCK RETAINING WALL		LIMIT OF DISTURBANCE		DRAINAGE AREA		DRAINAGE AREA LABEL
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**SITE DEVELOPMENT PLANS**  
**STORMWATER MANAGEMENT**  
**DRAINAGE AREA MAP**  
**ROSLYN RISE**  
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
COLUMBIA, MD 21044

ZONED: NT  
TAX MAP 30 GRID 19  
TAX MAP 36 GRID 1  
5TH ELECTION DISTRICT

LOTS 7 & 8, PARCEL 272  
LOT 5, PARCEL 81  
HOWARD COUNTY, MARYLAND

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PROFESSIONAL CERTIFICATE

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20 SHEET OF 27

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE 5/31/2022

CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 6/1/2022

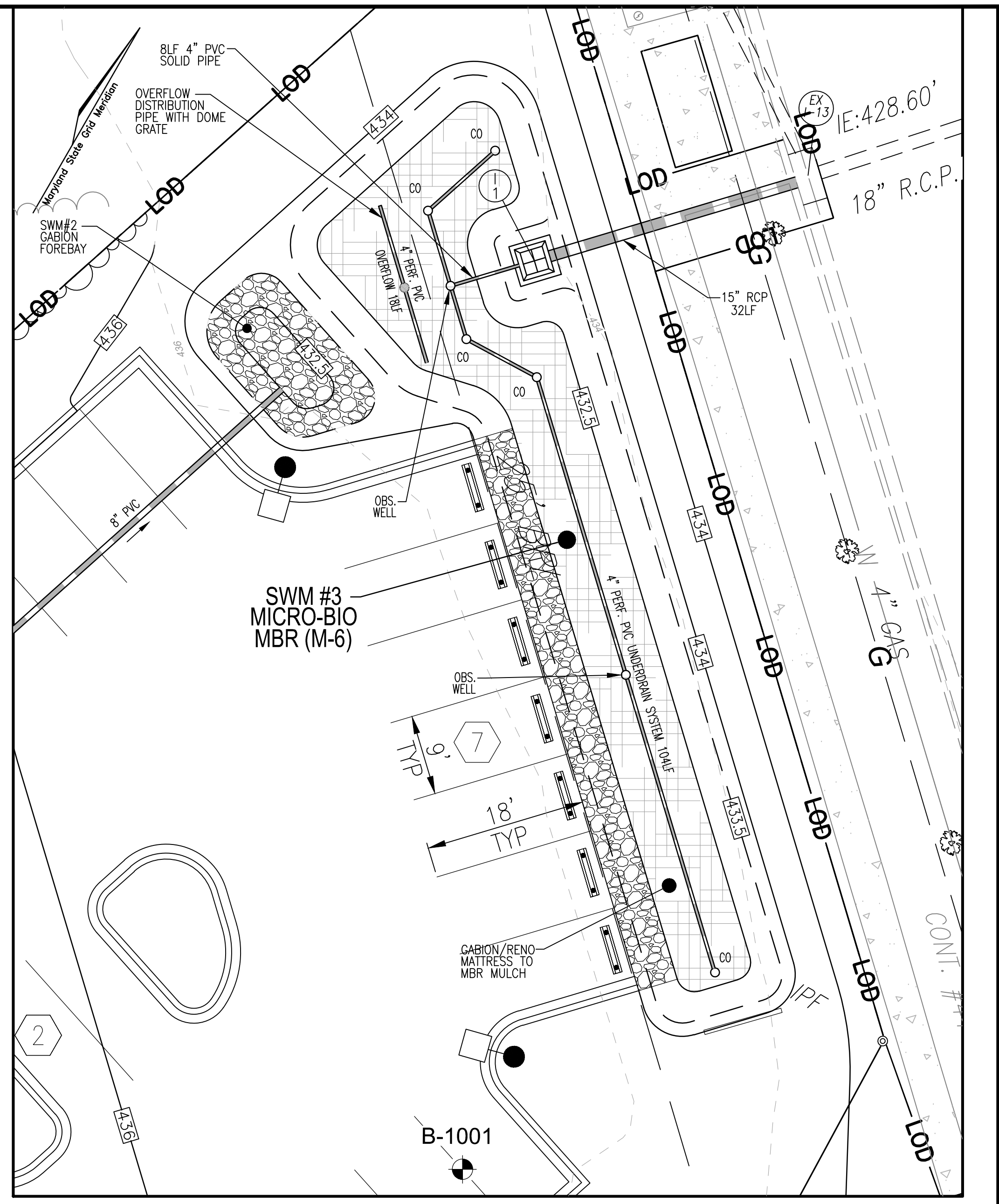
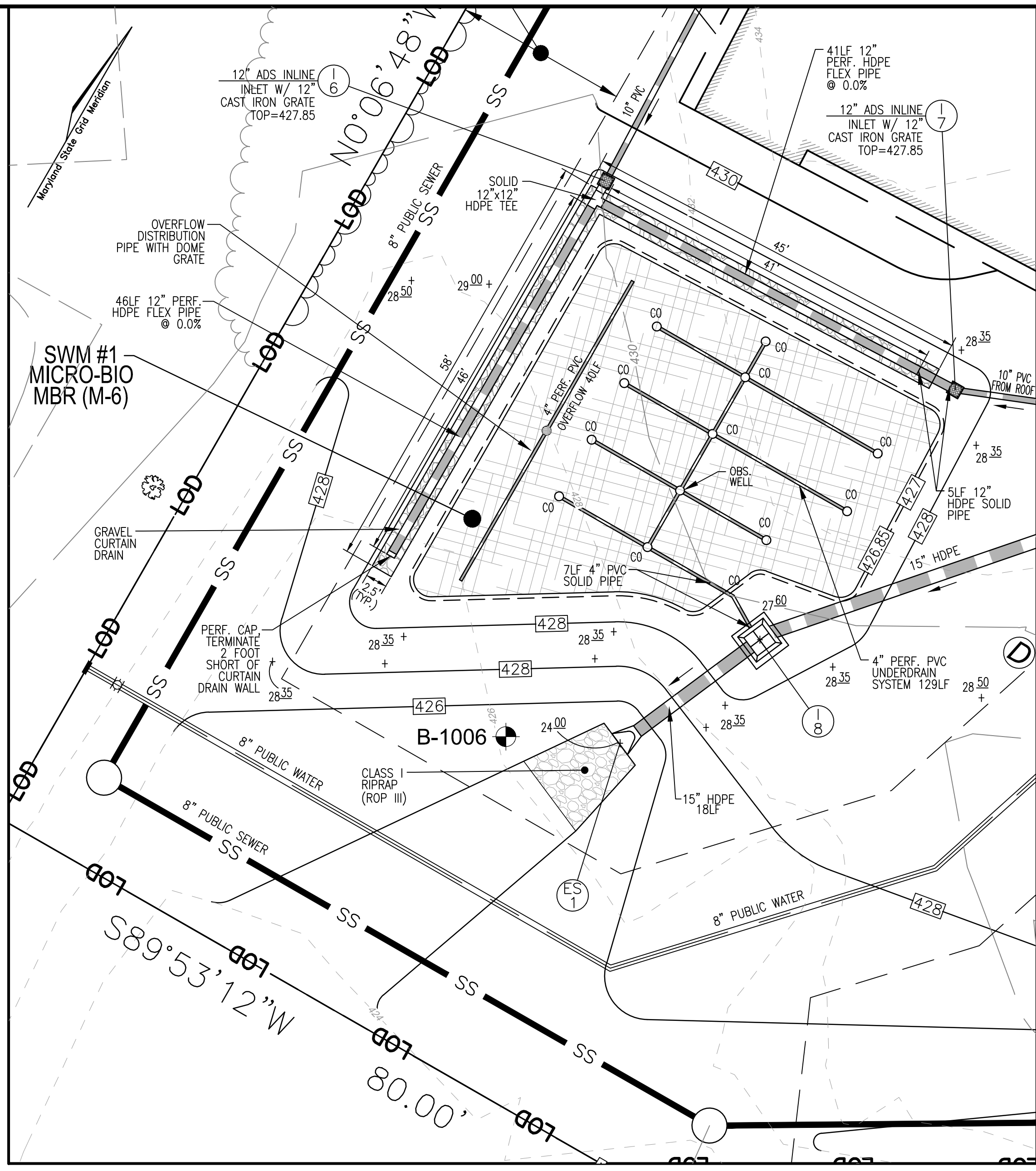
DIRECTOR  
DATE

**STORM WATER MANAGEMENT**  
**DRAINAGE AREA MAP**  
SCALE: 1"=30'  
SCALE: 1"=30'



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

- MATERIAL SPECIFICATIONS**  
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- 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 HINDERFUL TO PLANT GROWTH, OR PROVIDE 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 15.08.01.05. 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% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
  - CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 3%.
  - PH 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. TEXTURAL ANALYSIS FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
- 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 ALLEVATED 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 RESTRUCTURE 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 REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.  
ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12 TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT MATERIAL**  
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- PLANT INSTALLATION**  
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL CAUSE EXCESSIVE COMPACTION OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.  
THE ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.  
GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.  
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
- 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 HOPE).
  - 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 OF 4" DIA. AND SHALL BE 4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35.
  - 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 INTO 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).
- MISCELLANEOUS**  
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



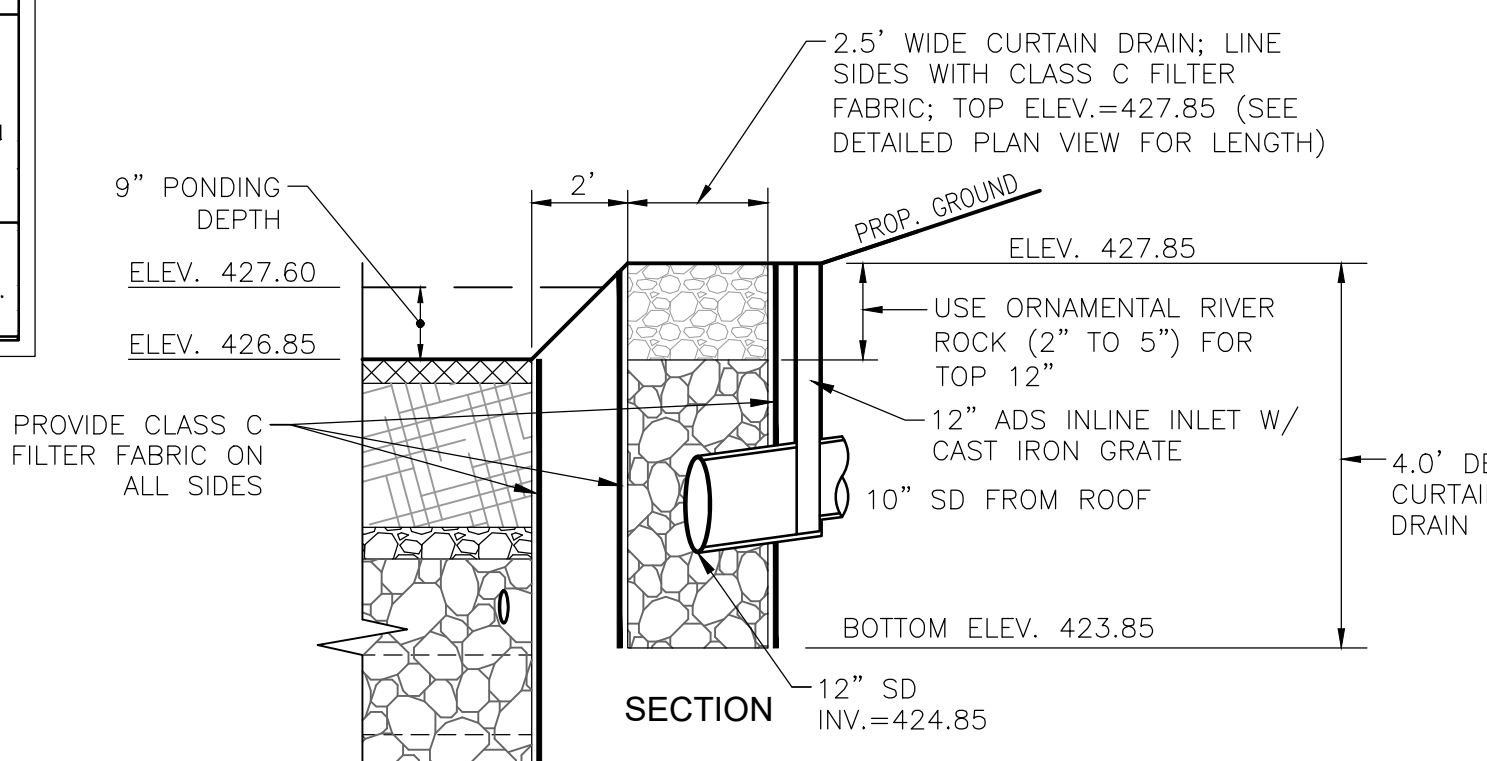
MBR Facility Number	Ponding Depth (ft)	Ponding Elevation ELEV. A	Top of Mulch ELEV. B	Bottom of Mulch ELEV. C	Depth of Plant Mix	Bottom of Plant Mix ELEV. D	Bottom of Pea Gravel ELEV. E	Depth of Stone	Invert of Underdrain	Bottom of Stone ELEV. F	Depth of REV Stone ELEV. G	Bottom of Additional Stone ELEV. H	Depth of Add'l Stone ELEV. I	Invert of Outfall Pipe
SWM#1 (M-6)	0.75	427.60	426.85	426.60	1.50	425.10	424.77	1.00	424.15	423.77	0.83	422.94	3.00	419.94
SWM#3 (M-6)	1.00	433.50	432.50	432.25	1.50	430.75	430.42	1.00	429.75	429.42	0.83	428.59	3.00	425.59

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

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

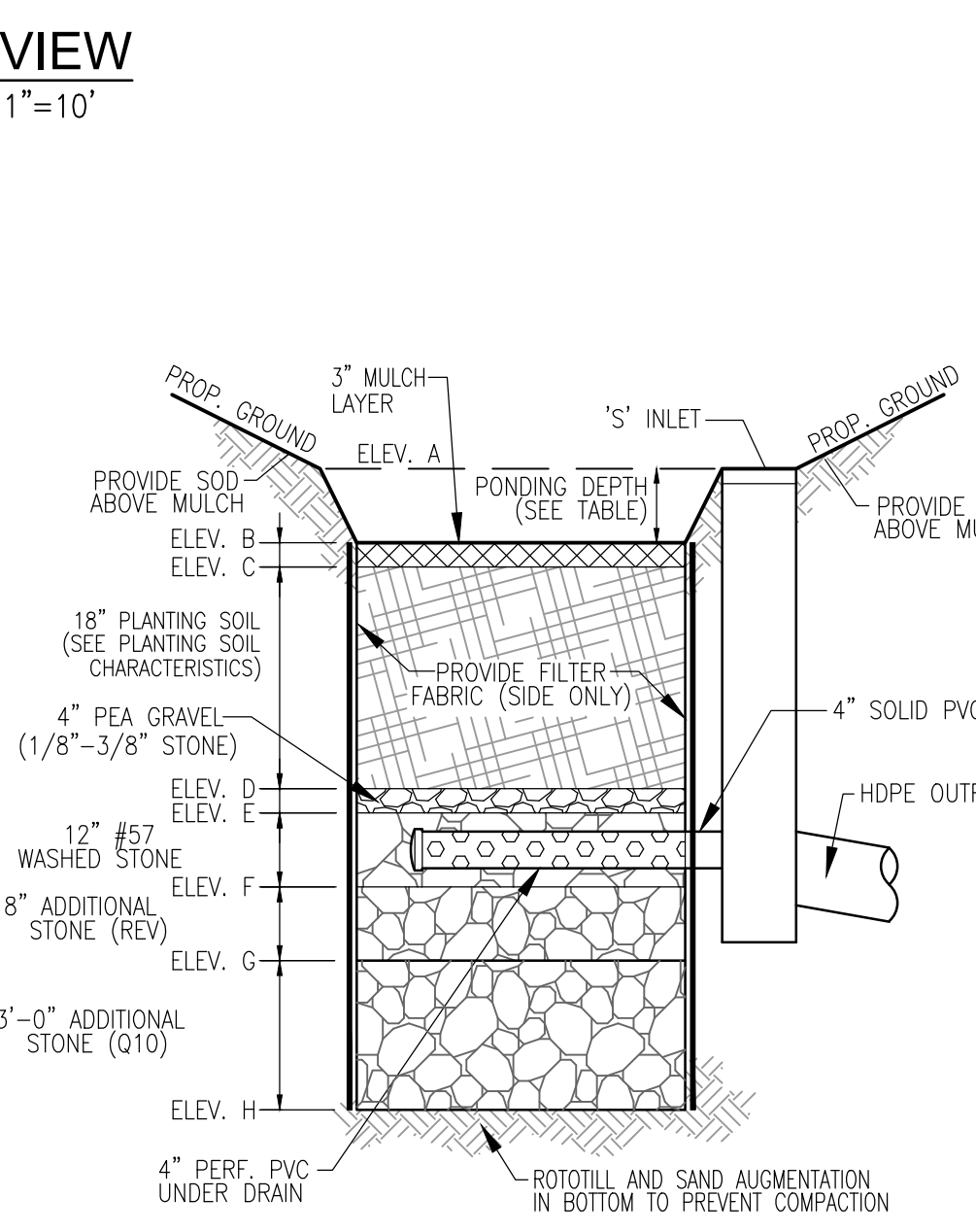
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL. PRUNING, ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WELLS.
- THE OWNER 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 5/31/2022  
 CHIEF, DEVELOPMENT, ENGINEERING DIVISION  
 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE  
 DIRECTOR  
 DATE



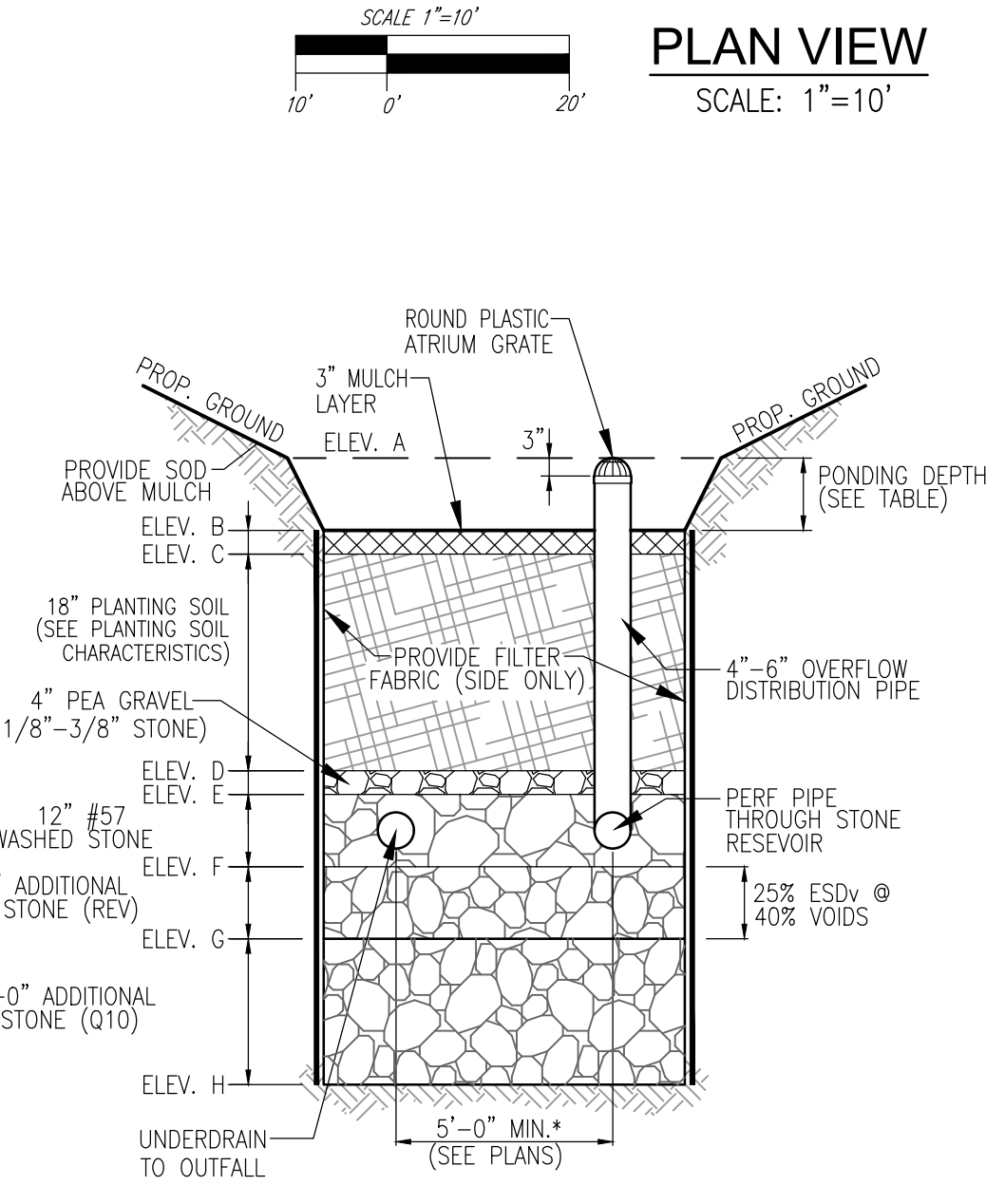
**MICRO-BIORETENTION CURTAIN DRAIN DISTRIBUTION PIPE DETAIL**  
NOT TO SCALE

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



**MICRO-BIORETENTION (UNDERDRAIN)**  
NOT TO SCALE

- MICRO-BIORETENTION NOTES:**
- ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION 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.
  - PROVIDE 5" MINIMUM SPACING BETWEEN UNDERDRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)



**MICRO-BIORETENTION (OVERFLOW)**  
NOT TO SCALE

**OWNER**  
COLUMBIA ASSOCIATION INC.  
C/O ALBERT F. EDWARDS  
10221 WINGOPIN CIRCLE  
COLUMBIA, MD 21044  
(410) 381-3551

**OWNER/DEVELOPER**  
94 UNIT BUILDING 2 (4%); ROSLYN RISE FIVE, LLC  
59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
C/O MACKENZIE KIESEL  
875 HOLLIS STREET, SUITE 202  
BALTIMORE, MD 21201  
(410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**STORMWATER MANAGEMENT NOTES AND DETAILS**  
**MICRO-BIORETENTION**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

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

ZONED: NT  
 LOTS 7 & 8, PARCEL 272  
 LOT 5, PARCEL 81  
 HOWARD COUNTY, MARYLAND

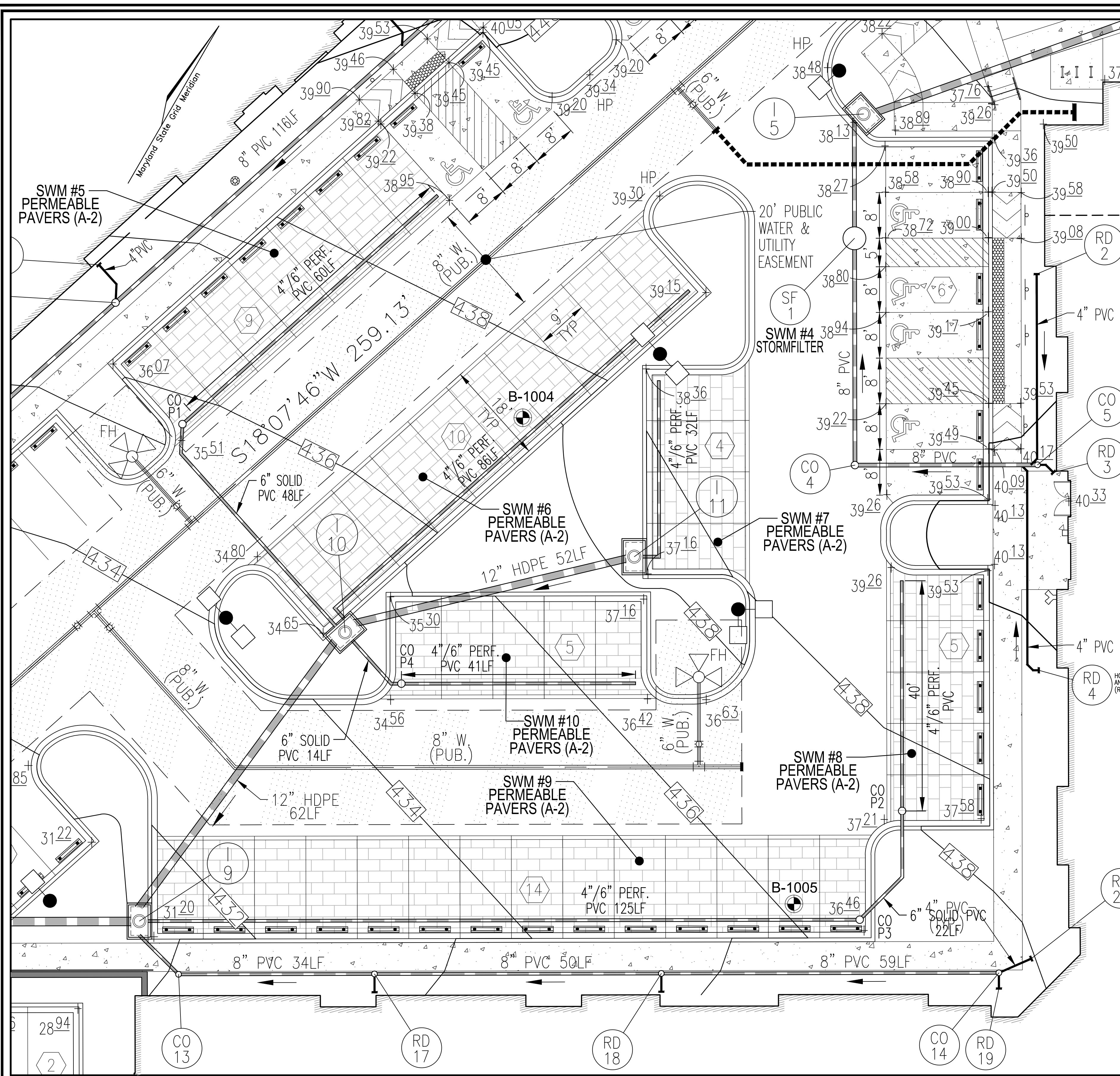
**VOGEL ENGINEERING**  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER AND MEMBER OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 08-27-2022

DESIGN BY: RHW/ACS  
 DRAWN BY: ACS  
 CHECKED BY: RHW  
 DATE: OCTOBER 2021  
 SCALE: AS SHOWN  
 W.O. NO.: 41539

21 SHEET OF 27





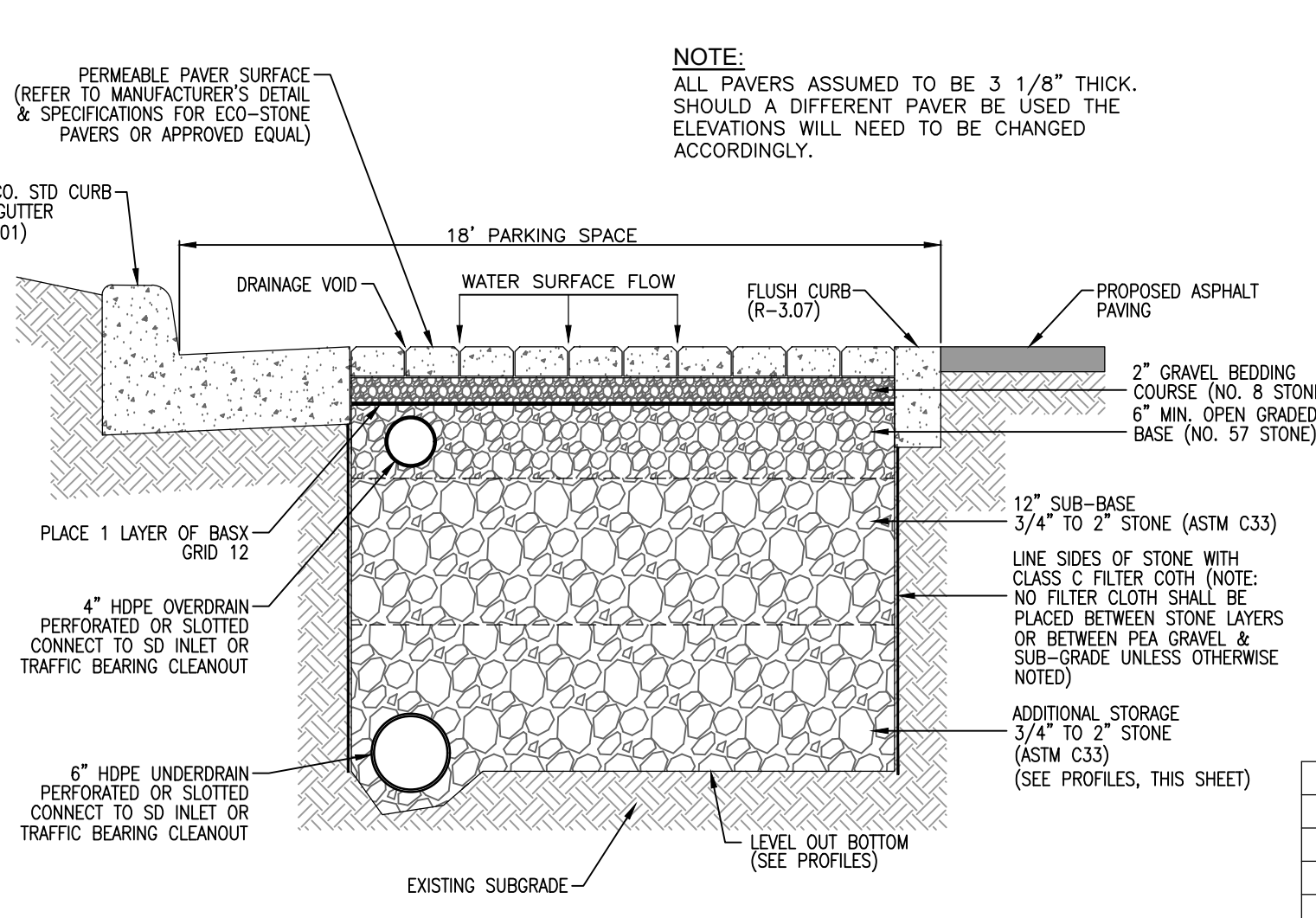
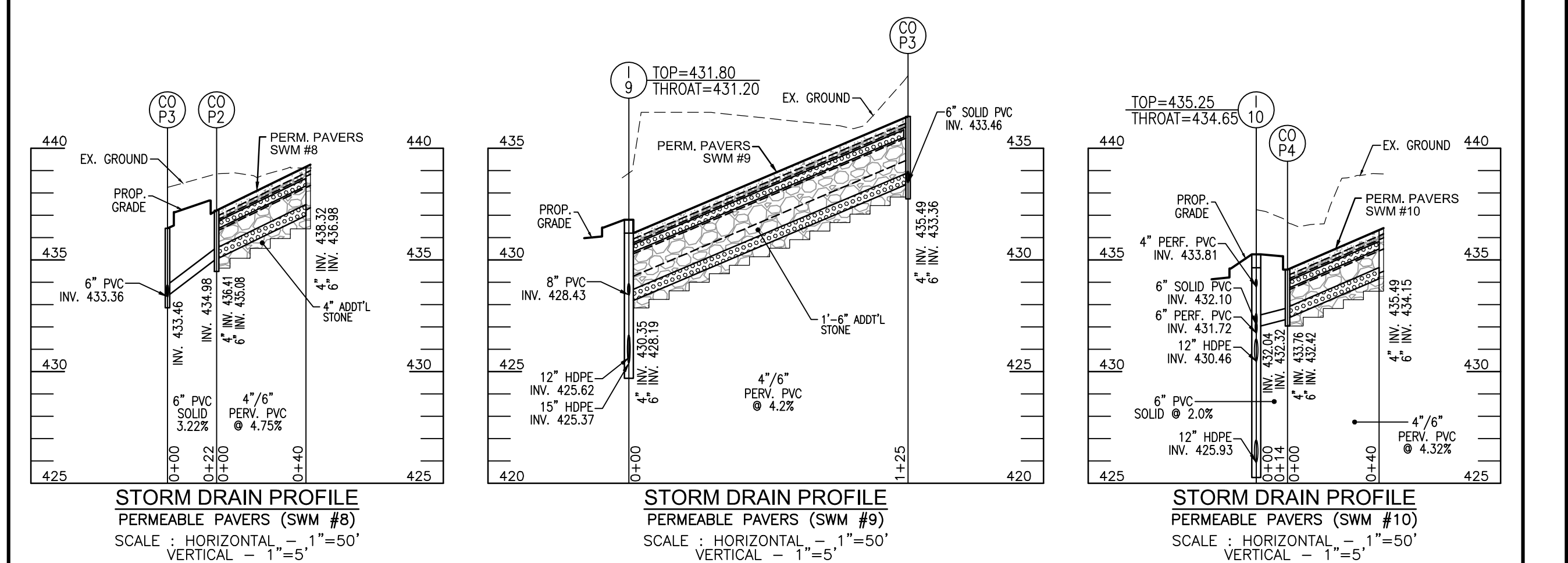
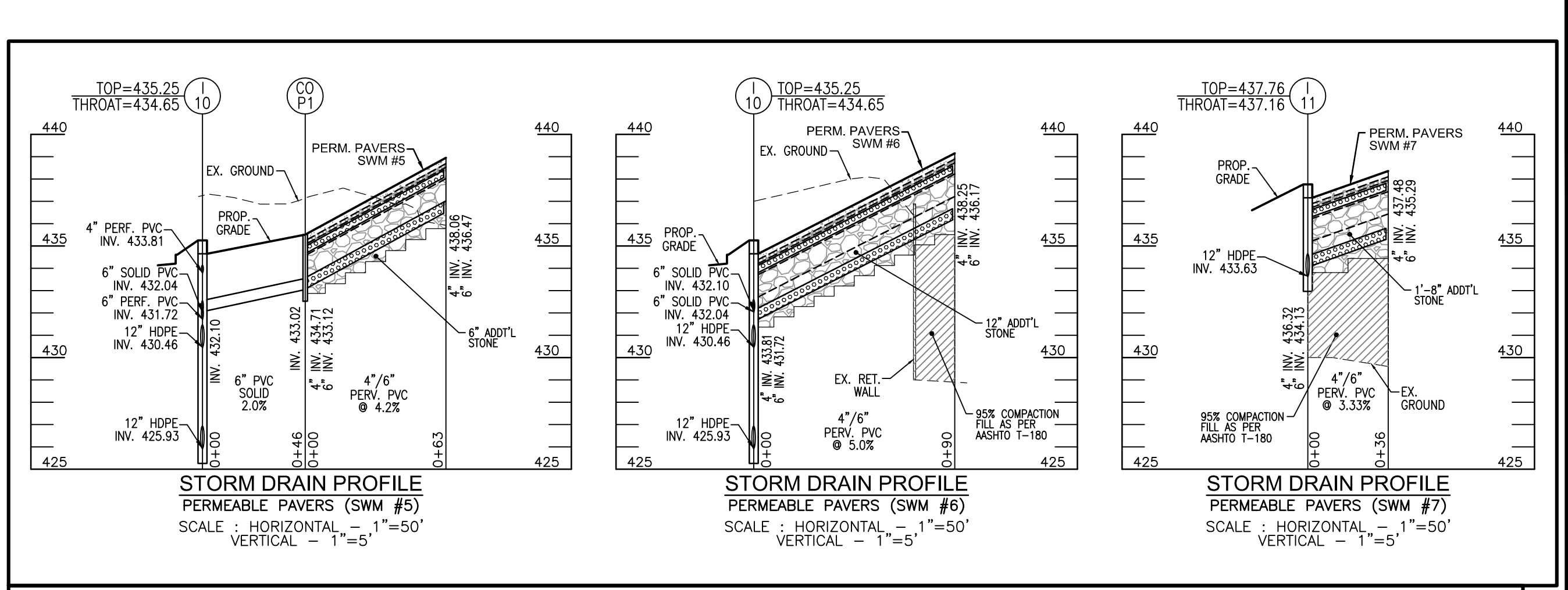
PLAN VIEW  
SCALE: 1"=10'

**APPENDIX B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS**  
 THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING.

**PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP) SPECIFICATIONS**  
 PAVEMENT BLOCKS - BLOCKS SHOULD BE EITHER 1-7/8 IN. OR 4 IN. THICK, AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% PREFERRED) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT INFILL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED.

INFILL MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRADED SAND OR SANDY LOAM. PICP BLOCKS SHALL BE PLACED ON A ONE-INCH THICK LEVELING COURSE OF ASTM C-33 SAND.

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



PERMEABLE PAVERS PARKING SPACES  
(FOR ELEVATIONS AND INVERTS, SEE PROFILES)

- PERMEABLE PAVERS NOTES:**
1. PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
  2. PERMEABLE PAVERS SECTION TO CONFORM TO APPENDIX B.4.B (SPECIFICATIONS FOR PERMEABLE PAVEMENTS) AND DESIGNED BY THE PROJECT GEOTECHNICAL ENGINEER.
  3. UNDERDRAINS/OVERDRAINS SHALL CONNECT INTO A TRAFFIC BEARING CLEANOUT OR INLET AS SHOWN ON THE PLANS.
  4. PROVIDE FILTER FABRIC ALONG SIDES OF PERVIOUS CONCRETE (NOT BOTTOM).

**INSPECTION**

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

- DURING EXCAVATION TO SUBGRADE
- DURING PLACEMENT AND BACKFILL OF ANY DRAINAGE OR DISTRIBUTION SYSTEMS.
- DURING PLACEMENT OF THE SUBBASE MATERIAL.
- DURING PLACEMENT OF THE SURFACE MATERIAL.
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

**NOTE:**  
 ALL PAVERS ASSUMED TO BE 3 1/8" THICK. SHOULD A DIFFERENT PAVER BE USED THE ELEVATIONS WILL NEED TO BE CHANGED ACCORDINGLY.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)**

1. THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
2. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
3. THE OWNER SHALL USE DICERS IN MODERATION. WHEN USED, DICERS SHOULD BE NON-TOXIC AND ORGANIC AND CAN BE APPLIED EITHER AS BLENDED MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS, OR AS PRETREATED SALT. SNOW PLOWING SHOULD BE DONE CAREFULLY WITH BLADES SET ONE-INCH HIGHER THAN NORMAL. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENTS.
4. THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.
5. TRUCKS AND OTHER HEAVY VEHICLES CAN GRIND DIRT AND GRIT INTO THE POROUS SURFACES, LEADING TO CLOGGING AND PREMATURE FAILURE. THESE VEHICLES SHOULD BE PREVENTED FROM TRACKING AND SPILLING MATERIAL ONTO THE PAVEMENT.

**OWNER**  
 COLUMBIA ASSOCIATION INC.  
 C/O ALBERT F. EDWARDS  
 10221 WINCOPIN CIRCLE  
 COLUMBIA, MD 21044  
 (410) 381-3551

**OWNER/DEVELOPER**  
 94 UNIT BUILDING 2 (4R); ROSLYN RISE FIVE, LLC  
 59 UNIT BUILDING 1 (9R); ROSLYN RISE FOUR, LLC  
 C/O MACKENZIE KIESEL  
 875 HOLLINS STREET, SUITE 202  
 BALTIMORE, MD 21201  
 (410) 230-2117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 5/31/2022

Chief, Development Engineering Division  
 Date: 5/31/2022

Chief, Division of Land Development  
 Date: 6/1/2022

Director  
 Date:

**SITE DEVELOPMENT PLANS**  
**STORMWATER MANAGEMENT NOTES AND DETAILS**  
**PERMEABLE PAVEMENT**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

TAX MAP 30 GRID 19  
 TAX MAP 36 GRID 10  
 5TH ELECTION DISTRICT

LOT 5, PARCEL 81  
 HOWARD COUNTY, MARYLAND

**ZONED: NT**  
 LOTS 7 & 8, PARCEL 272

**VOGEL ENGINEERING**  
 (Professional Seal)  
**TIMMONS GROUP**  
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043  
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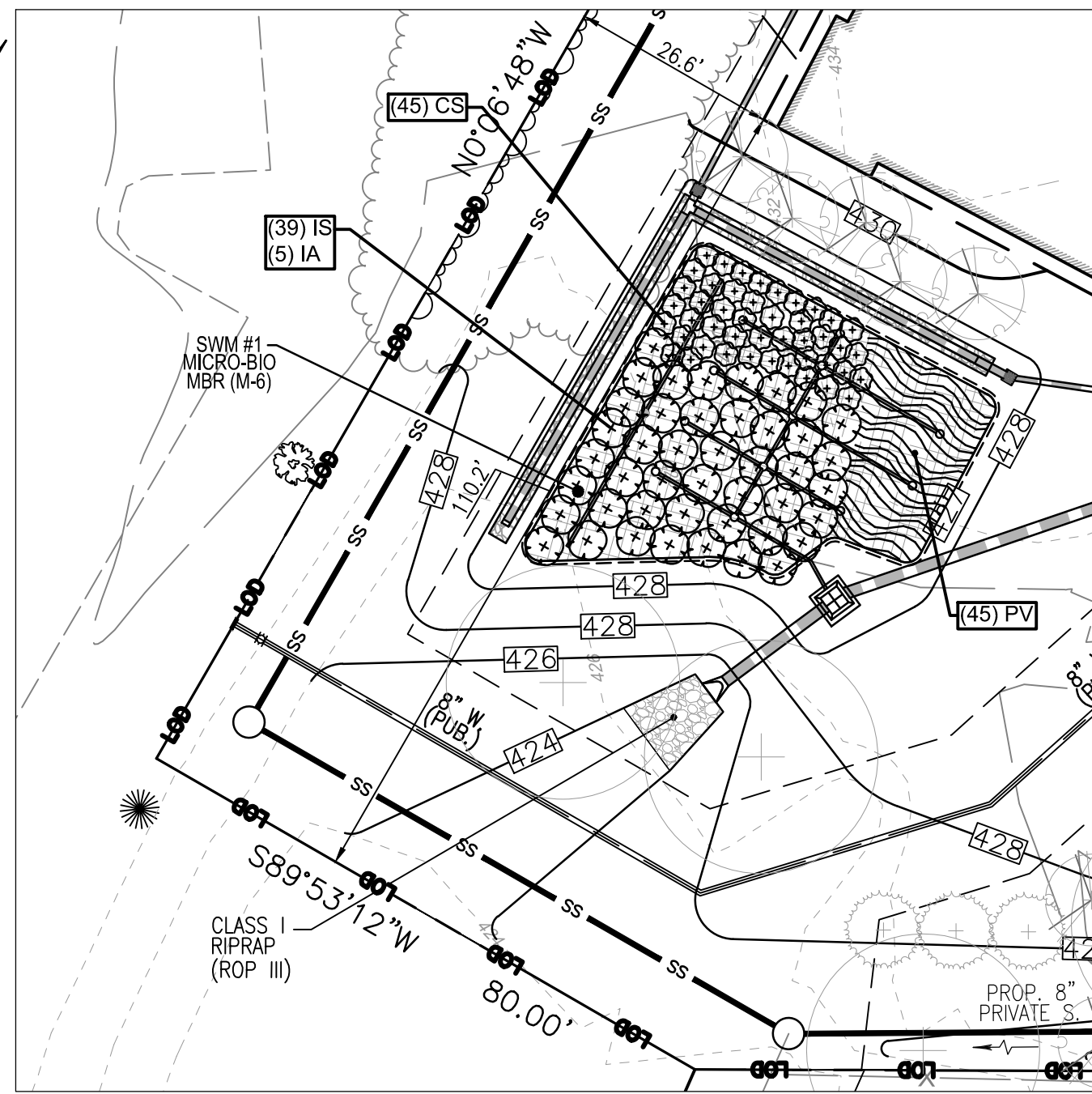
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22 SHEET OF 27

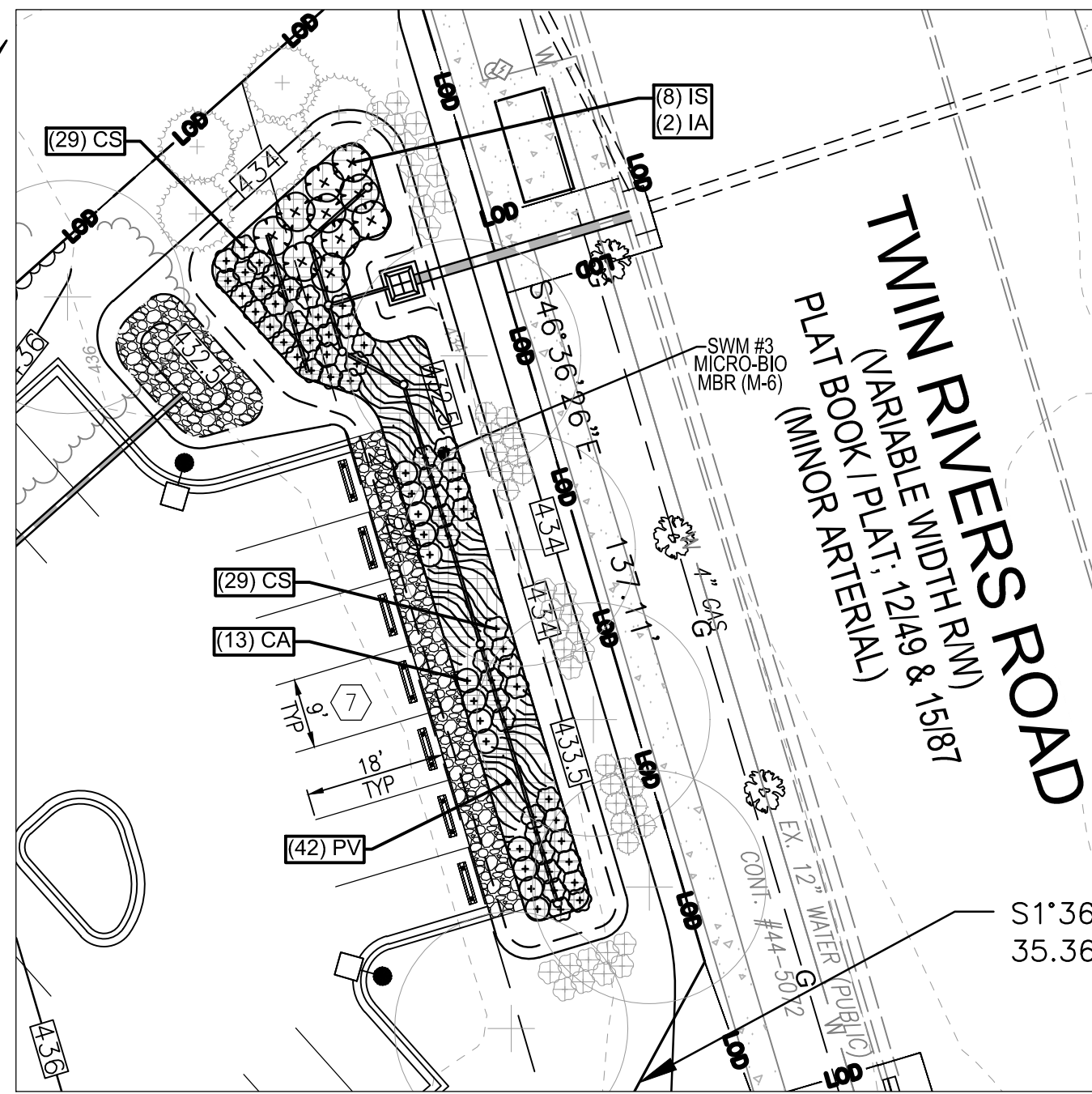








**PLAN VIEW**  
SCALE: 1"=20'



**PLAN VIEW**  
SCALE: 1"=20'

LANDSCAPE SCHEDULE - REQUIRED PLANTINGS					
DECIDUOUS TREES	KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
6	AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.	STRONG SINGLE LEADER/SPECIMEN
2	GB	GINKGO BILOBA 'AUTUMN GOLD' TM	AUTUMN GOLD MAIDENHAIR TREE	2.5" CAL.	
13	GT	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER'	SHADEMASTER LOCUST	3" CAL.	STRONG SINGLE LEADER/SPECIMEN
8	NS	NYSSA SYLVATICA	SOUR GUM	3" CAL.	STRONG SINGLE LEADER/SPECIMEN
12	QC	QUERCUS COCCINEA	SCARLET OAK	3" CAL.	STRONG SINGLE LEADER/SPECIMEN
20	QP	QUERCUS PHELLOS	WILLOW OAK	3" CAL.	STRONG SINGLE LEADER/SPECIMEN

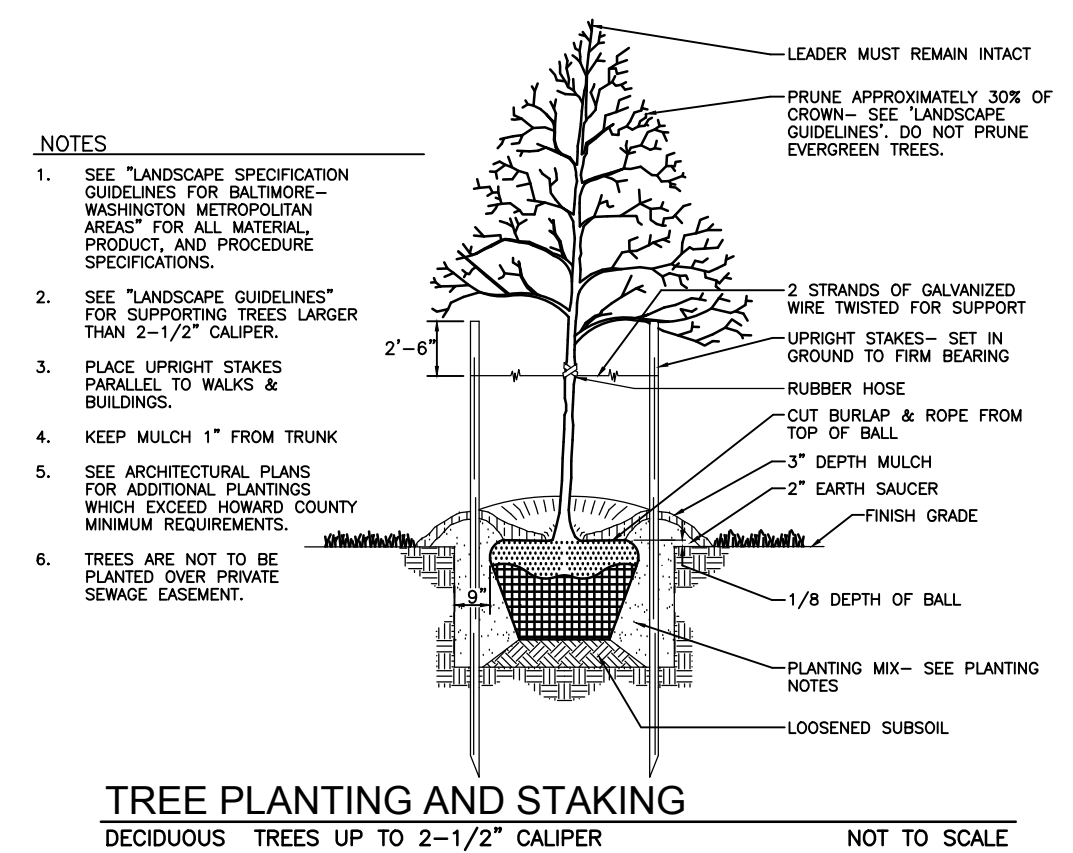
EVERGREEN TREES					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
19	IX	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	12' HT.	SINGLE STRONG LEADER/SPECIMEN

ORNAMENTAL TREES					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
13	AG	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	14' HT.	MULITEMMED SPECIMEN
14	CC	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	10' HT.	SPECIMEN
5	CR	CORNUS X RUTGERSSENSIS 'RUTGAN' TM	STELLAR PINK DOGWOOD	1.75" CAL.	SINGLE STRONG LEADER/SPECIMEN

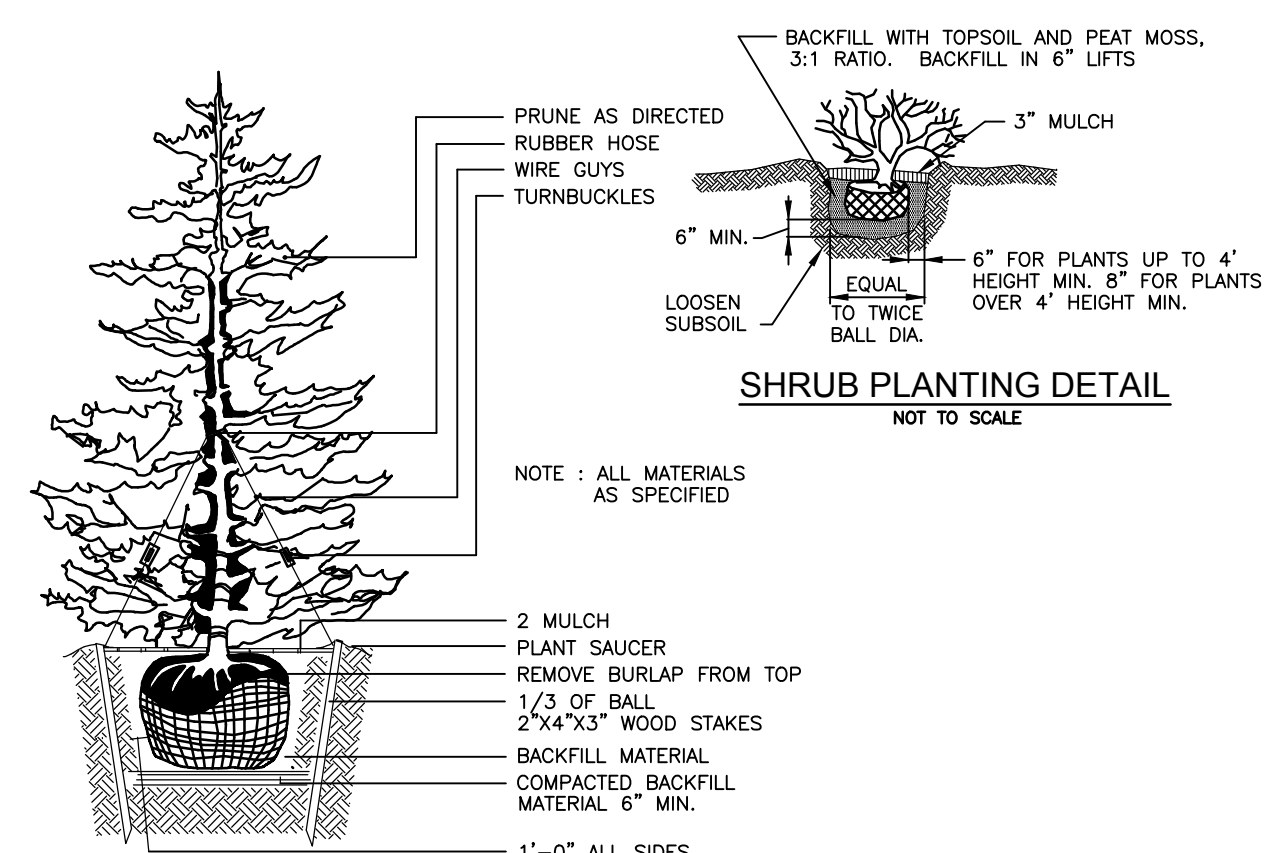
SHRUBS					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
93	CA	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SUMMERSWEET	2' HT.	36" o.c. MIN. 4 CANES
12	PL	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL	3' HT.	48" o.c. MIN. 5 CANES
18	RB	RHODODENDRON X 'BLAAUW'S PINK'	BLAAUW'S PINK AZALEA	2' HT.	36" o.c. MIN. 4 CANES
42	RR	ROSA 'RADRAZZ' KNOCK OUT	SHRUB ROSE	2' HT.	30" o.c. MIN. 5 CANES
8	CJ	CAMELLIA JAPONICA 'APRIL REMEMBERED' TM	APRIL REMEMBERED ICE ANGELS CAMELLIA	3' HT.	48" o.c. MIN. 5 CANES
12	RH	RHODODENDRON X 'HINO-CRIMSON'	HINO-CRIMSON KURUME AZALEA	1.5' HT.	36" o.c. MIN. 4 CANES
3	HV	HAMAMELIS VERNALIS 'SANDRA'	SANDRA OZARK WITCHHAZEL	4' HT.	72" o.c. MIN. 5 CANES
40	JC	JUNIPERUS CHINENSIS 'SARGENTII'	SARGENT JUNIPER	2' HT.	48" o.c. MIN. 4 CANES

LANDSCAPE SCHEDULE - MICRO-BIORETENTION PLANTINGS						
SHRUBS	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
103	CS	CORNUS SERICEA 'ARCTIC FIRE'	ARCTIC FIRE DOGWOOD	3' HT.	36" o.c.	MIN. 5 CANES
47	IS	ILEX VERTICILLATA 'SPARKLEBERRY'	WINTERBERRY	3' HT.	60" o.c.	MIN. 5 CANES
7	IA	ILEX VERTICILLATA 'APOLLO'	APOLLO HOLLY	3' HT.	60" o.c.	MIN. 5 CANES
13	CA	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SUMMERSWEET	2' HT.	36" o.c.	MIN. 4 CANES

PERENNIALS					
KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
87	PV	PANICUM VIRGATUM 'PRAIRE FIRE'	RED SWITCH GRASS	#1	36" o.c.



**TREE PLANTING AND STAKING**  
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE



**TYPICAL EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE

**LANDSCAPE SCHEDULE NOTES:**

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS, BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMES, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

**GENERAL NOTES:**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN IN THE AMOUNT OF \$32,790.00 FOR THE REQUIRED 61 SHADE TREES, 51 EVERGREEN & FLOWERING TREES, AND 228 SHRUBS. THE DEVELOPER IS THE RESPONSIBLE PARTY FOR THE LANDSCAPING ON BOTH LOTS.
- THE WILDE LAKE RESIDENT ARCHITECTURAL COMMITTEE RECOMMENDED THAT THE APPLICATION TO REDEVELOP ROSLYN RISE BE APPROVED AS SUBMITTED ON APRIL 20, 2021.

**OWNER**  
COLUMBIA ASSOCIATION INC.  
C/O ALBERT F. EDWARDS  
10221 WINCOPIN CIRCLE  
COLUMBIA, MD 21044  
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**OWNER/DEVELOPER**  
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C/O MACKENZIE KIESEL  
875 HOLLINS STREET, SUITE 202  
BALTIMORE, MD 21201  
(410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**LANDSCAPE PLAN NOTES & DETAILS**  
**ROSLYN RISE**  
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
COLUMBIA, MD 21044

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

LOTS 7 & 8, PARCEL 272  
LOT 5, PARCEL 81  
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/ACS  
DRAWN BY: ACS  
CHECKED BY: RHW  
DATE: OCTOBER 2021  
SCALE: AS SHOWN  
W.O. NO.: 41539

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: 09-27-2022

**24** SHEET OF **27**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by:  
**CHAD Edmondson**  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 5/31/2022

DocuSigned by:  
**Amy Gosan**  
CHIEF, DIVISION OF PLANNING AND DEVELOPMENT  
DATE: 6/1/2022

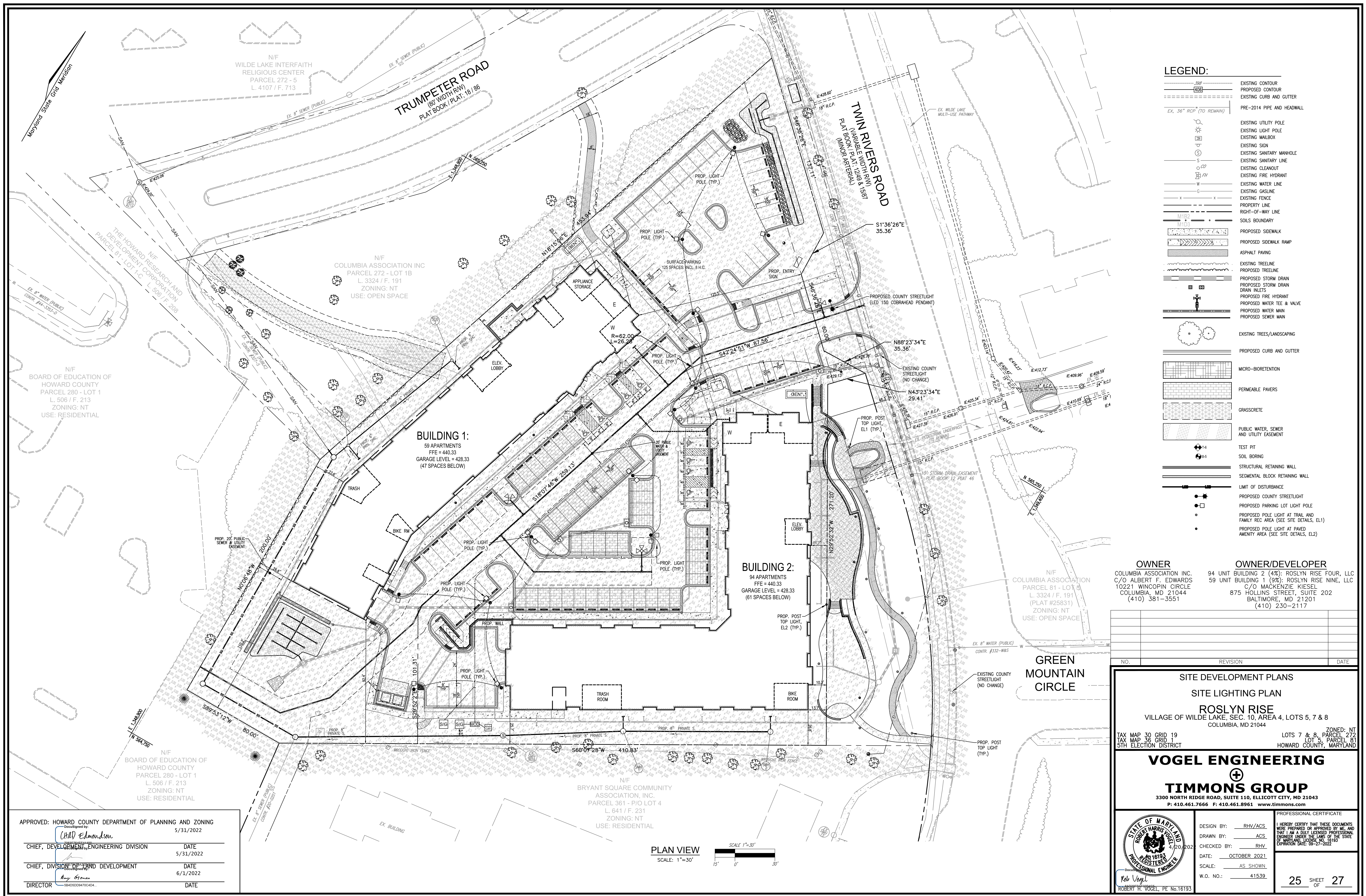
DocuSigned by:  
**Raymond Gosan**  
DIRECTOR  
DATE: 6/1/2022

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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

DocuSigned by:  
**Makenzie Kissel**  
SIGNATURE OF DEVELOPER  
DATE: 4/13/2022





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Developed by: *CHAD Edmondson* 5/31/2022  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 5/31/2022  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 6/1/2022  
 DIRECTOR: *Amy Gowan* 6/1/2022  
 DATE: \_\_\_\_\_

PLAN VIEW  
 SCALE: 1"=30'  
 15' 0' 30'

**OWNER**  
 COLUMBIA ASSOCIATION INC.  
 C/O ALBERT F. EDWARDS  
 10221 WINCOPIN CIRCLE  
 COLUMBIA, MD 21044  
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**OWNER/DEVELOPER**  
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 C/O MACKENZIE KIESEL  
 875 HOLLINS STREET, SUITE 202  
 BALTIMORE, MD 21201  
 (410) 230-2117

NO.	REVISION	DATE

**SITE DEVELOPMENT PLANS**  
**SITE LIGHTING PLAN**  
**ROSLYN RISE**  
 VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
 COLUMBIA, MD 21044

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

ZONED: NT  
 LOTS 7 & 8, PARCEL 272  
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**VOGEL ENGINEERING**  
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 CHECKED BY: RHV.  
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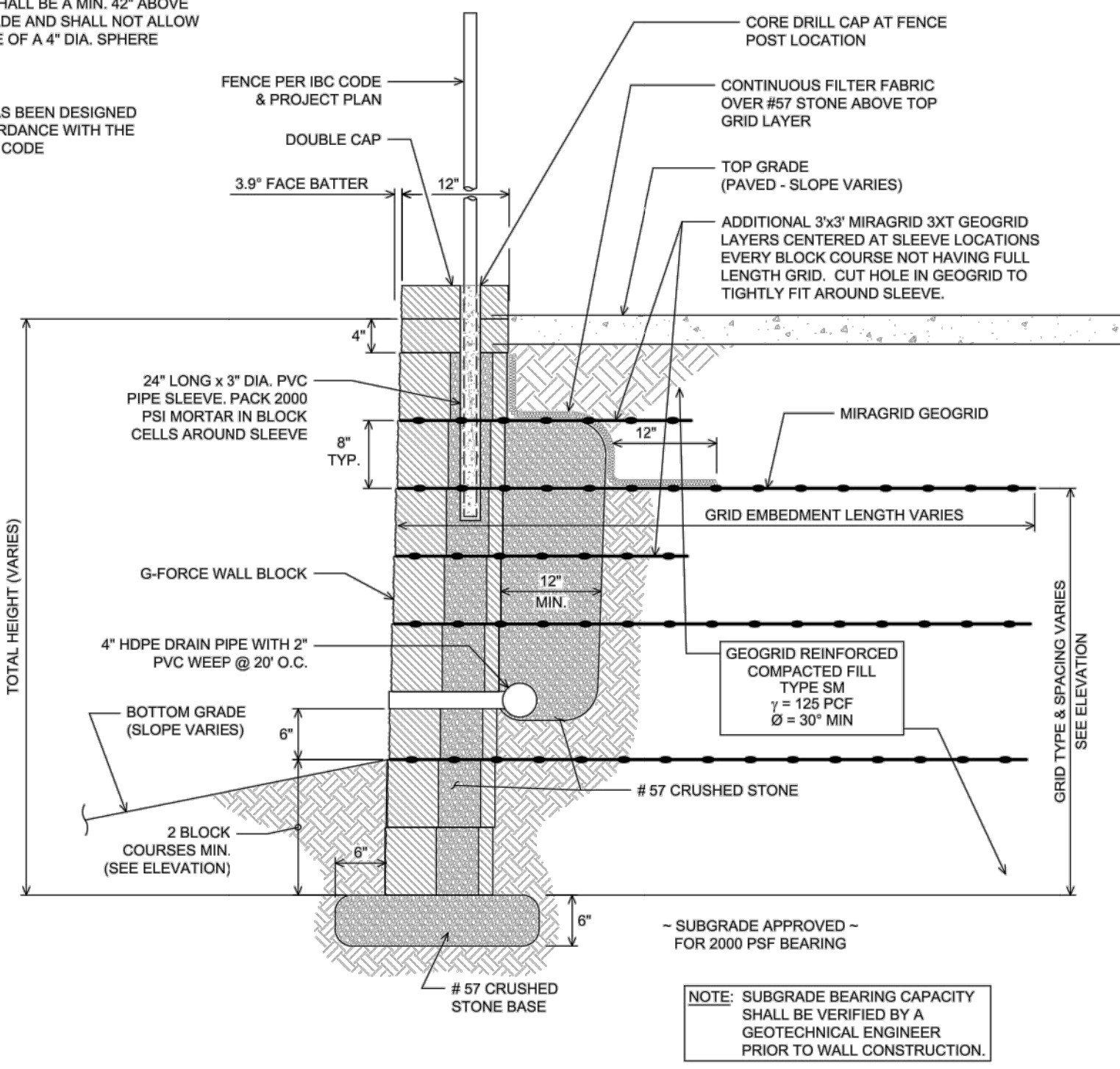
**25** SHEET OF **27**

ROBERT H. VOGEL, PE No. 16193



NOTE: FENCE SHALL BE A MIN. 42" ABOVE TOP GRADE AND SHALL NOT ALLOW PASSAGE OF A 4" DIA. SPHERE

NOTE: WALL HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2015 IBC CODE



TYPICAL WALL SECTION N.T.S.

SPECIFICATIONS SEGMENTAL CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL 1.01 DESCRIPTION 1. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A SEGMENTAL RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS.

2.08 GEOTEXTILE FILTER FABRIC 2.09 REINFORCED BACKFILL PLACEMENT 2.10 GEOTECHNICAL ENGINEER VERIFICATION

- NOTES: 1. NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL. 2. RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIV.) CERTIFIED SOILS TECHNICIAN.

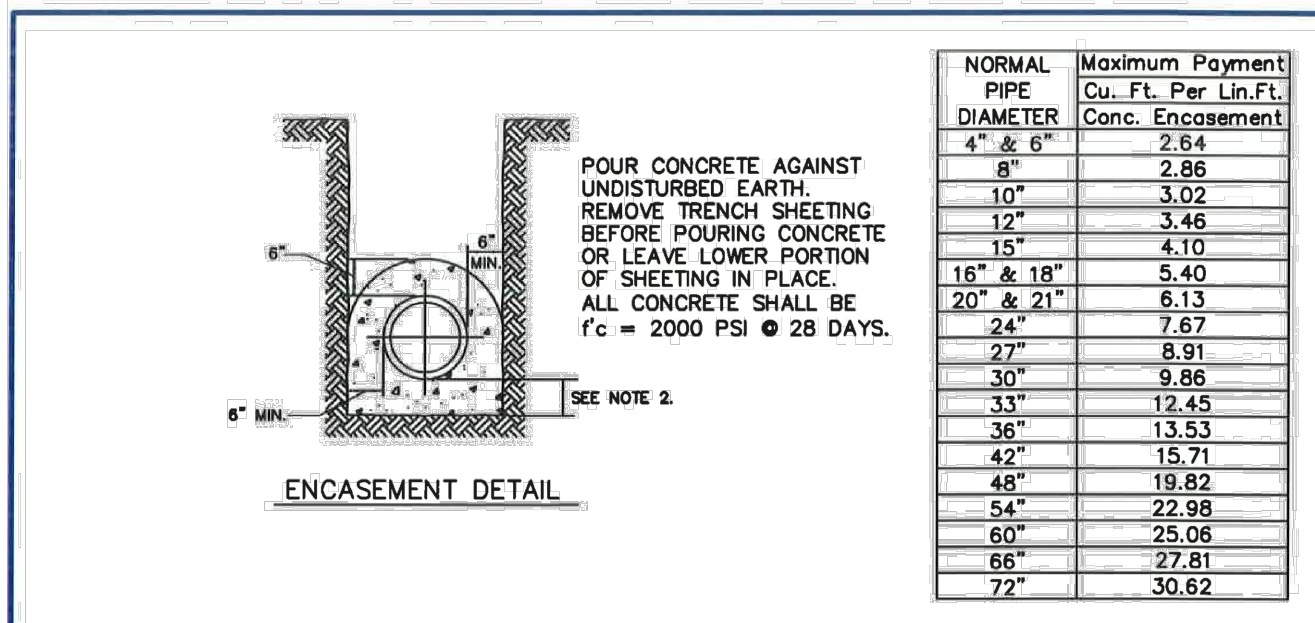


Table with columns: NORMAL PIPE DIAMETER, Maximum Payment Cu. Ft. Per Lin. Ft., Conc., Encasement. Rows include diameters from 4" to 72".

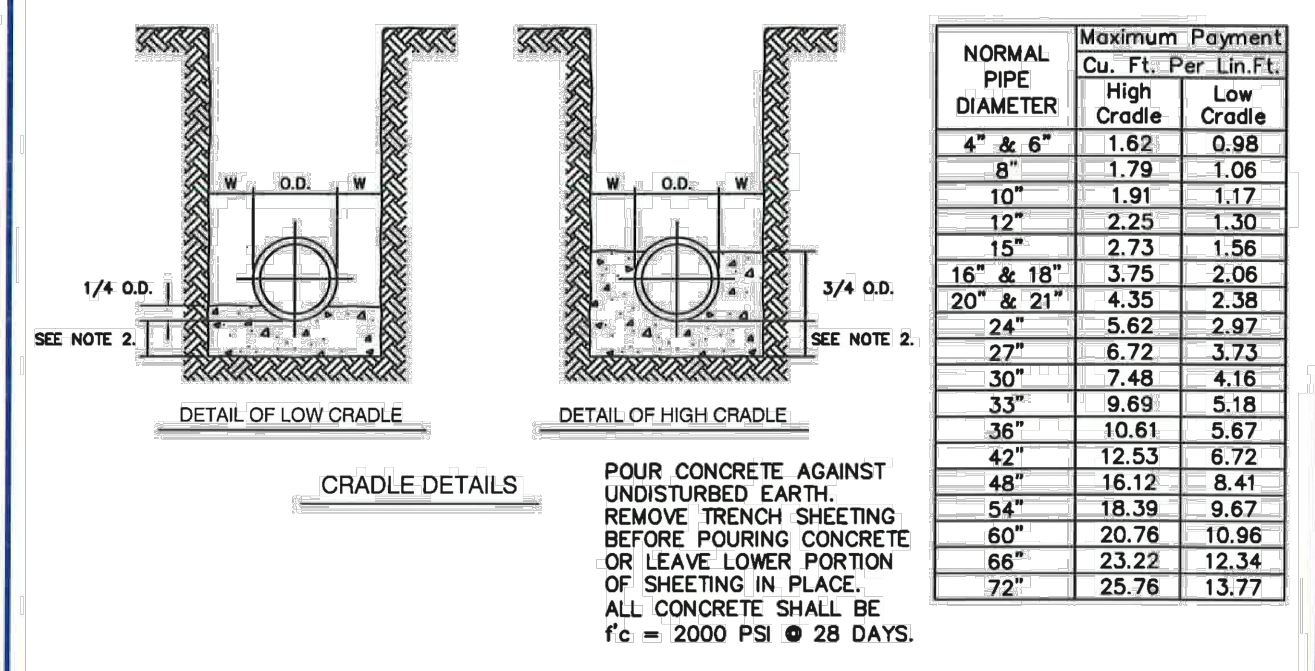


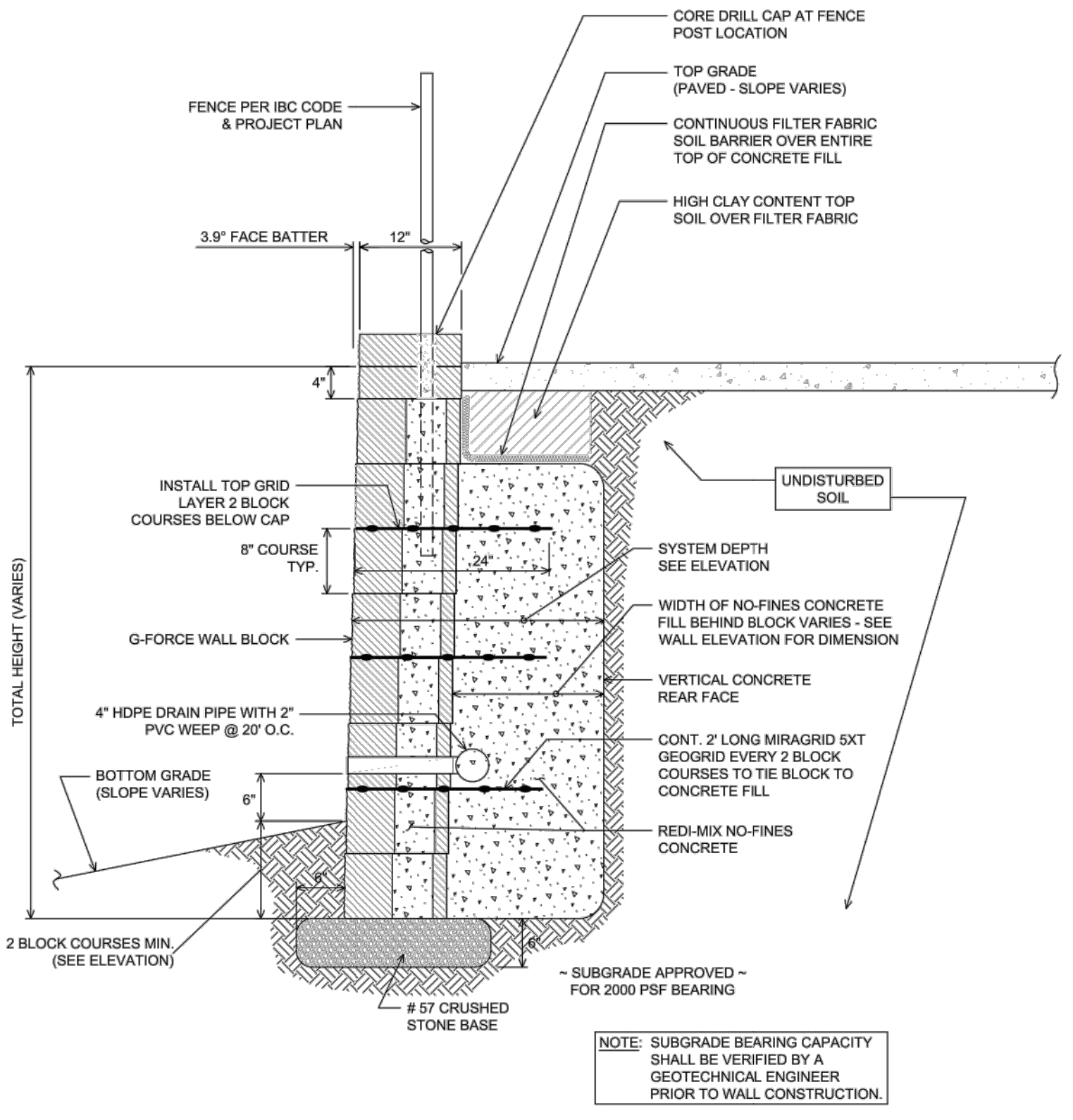
Table with columns: NORMAL PIPE DIAMETER, Maximum Payment Cu. Ft. Per Lin. Ft., High Cradle, Low Cradle. Rows include diameters from 4" to 72".

TYPICAL POURING CONCRETE GRAVITY WALL NOTES

"NO-FINES" CONCRETE SPECIFICATION "NO-FINES" CONCRETE IS A PERMEABLE CONCRETE MASS THAT IS MADE BY ELIMINATING THE FINE AGGREGATE COMPONENT IN CONCRETE WHICH CREATES A SIGNIFICANT VOID STRUCTURE WITHIN THE CONCRETE.

- "NO-FINES" CONCRETE INSTALLATION STEPS 1. SUBGRADE SHALL BE CLEAN AND FIRM BEFORE PLACING CONCRETE. 2. PLACE CONCRETE IN 16" (2 BLOCK COURSE) LIFTS, FILLING ALL VOIDS IN BLOCK - ROD CONCRETE AS NEEDED TO CONSOLIDATE.

- TYPICAL MIX DESIGN 1. CEMENT - PORTLAND CEMENT, TYPE 1 OR II, ASTM C150 2. AGGREGATE - NO. 57 OR NO. 6 STONE OR EQUIVALENT, ASTM C33



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

OWNER COLUMBIA ASSOCIATION INC. C/O ALBERT F. EDWARDS 10221 WINCOPIN CIRCLE COLUMBIA, MD 21044 (410) 381-3551

Table with columns: NO., REVISION, DATE. Multiple empty rows for revisions.

SITE DEVELOPMENT PLANS RETAINING WALL CONSTRUCTION DETAILS ROSLYN RISE VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8 COLUMBIA, MD 21044

HILLIS-CARNES ENGINEERING ASSOCIATES 10975 Guilford Road, Suite A Annapolis Junction, Maryland (410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

Professional Certificate section with fields for Design By, Drawn By, Checked By, Date, Scale, W.O. No., and a signature block for Paul Reichert, PE No. 0028925.

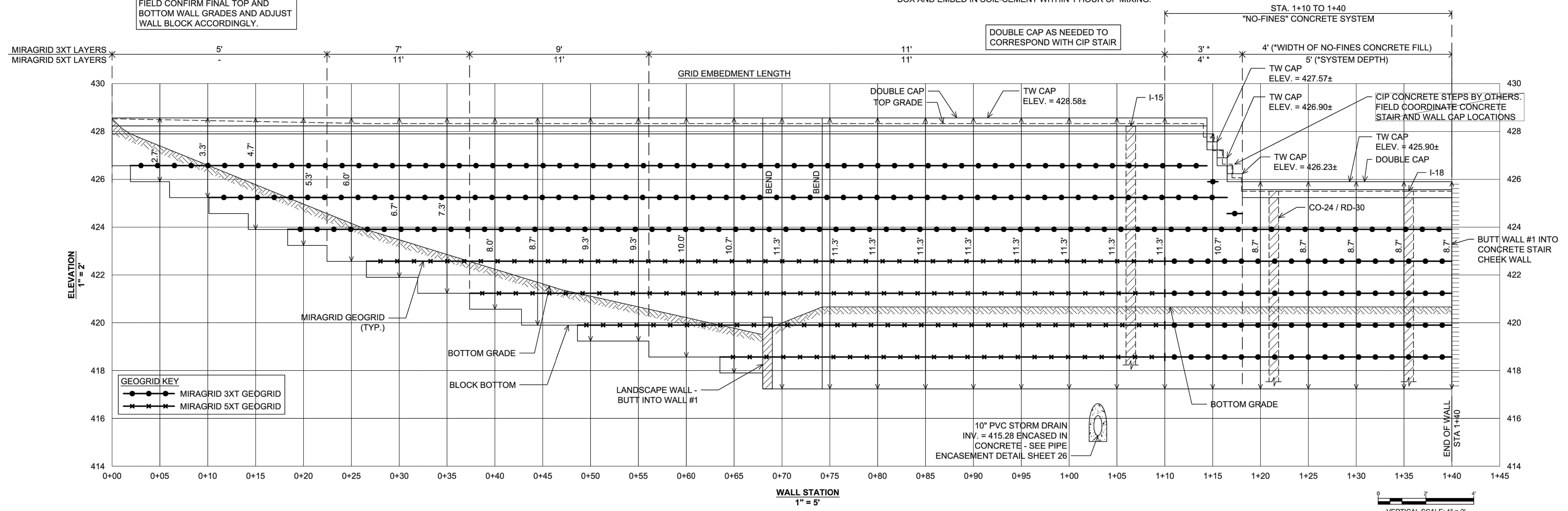
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 5/31/2022 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/31/2022 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/1/2022 DIRECTOR DATE



NOTE:  
FIELD CONFIRM FINAL TOP AND  
BOTTOM WALL GRADES AND ADJUST  
WALL BLOCK ACCORDINGLY.

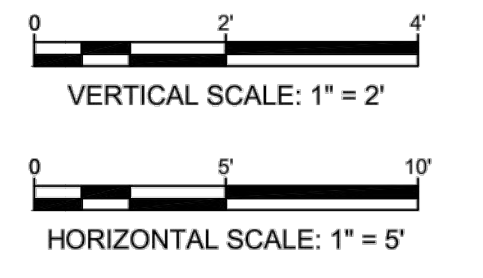
NOTE:  
INSTALL INLET STRUCTURE I-15 AND ASSOCIATED PIPE  
DURING WALL CONSTRUCTION. BACKFILL AROUND ENTIRE  
PERIMETER OF INLET BOX FOR FULL WALL HEIGHT WITH A 2  
FT. THICK WRAP OF COMPACTED SOIL-CEMENT CONSISTING  
OF A RATIO OF 180 LBS. (2 BAGS) PORTLAND CEMENT  
THOROUGHLY MIXED WITH 1 CU. YD. OF TYPE SM SOIL AT 3%  
OVER OPTIMUM MOISTURE. TRIM GEOGRIDS AT FACE OF INLET  
BOX AND EMBED IN SOIL-CEMENT WITHIN 1 HOUR OF MIXING.

NOTE:  
INSTALL CO-24 / RD-30 AND ASSOCIATED PIPE  
DURING WALL CONSTRUCTION. ADJUST STRUCTURE  
AND ASSOCIATED PIPE AS NEEDED TO AVOID  
CONFLICT WITH "NO-FINES" CONCRETE SYSTEM



GEOGRID KEY  
● ● ● ● ● MIRAGRID 3XT GEOGRID  
× × × × × MIRAGRID 5XT GEOGRID

WALL #1 ELEVATION  
1" = 5'



OWNER  
COLUMBIA ASSOCIATION INC.  
C/O ALBERT F. EDWARDS  
10221 WINCOPIN CIRCLE  
COLUMBIA, MD 21044  
(410) 381-3551

OWNER/DEVELOPER  
94 UNIT BUILDING 2 (4%); ROSLYN RISE FOUR, LLC  
59 UNIT BUILDING 1 (9%); ROSLYN RISE NINE, LLC  
C/O MACKENZIE KIESEL  
875 HOLLINS STREET, SUITE 202  
BALTIMORE, MD 21201  
(410) 230-2117

NO.	REVISION	DATE

SITE DEVELOPMENT PLANS  
MSE RETAINING WALL #1 ELEVATION  
ROSLYN RISE  
VILLAGE OF WILDE LAKE, SEC. 10, AREA 4, LOTS 5, 7 & 8  
COLUMBIA, MD 21044

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

LOTS 7 & 8, PARCEL 272  
LOT 5, PARCEL 81  
HOWARD COUNTY, MARYLAND

**HILLIS-CARNES**  
ENGINEERING ASSOCIATES  
10975 Guilford Road, Suite A Annapolis Junction, Maryland  
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
5/31/2022

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE 5/31/2022

CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE 6/1/2022

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. 0028925  
EXPIRATION DATE: 01-15-2022

DESIGN BY: AM/JE  
DRAWN BY: AM  
CHECKED BY: HM  
DATE: SEPTEMBER 2021  
SCALE: AS SHOWN  
W.O. NO.: 20632A

PAUL REICHERT, PE No.0028925

27 SHEET OF 27