

1. WORK PERFORMED SHALL COMPLY WITH THE FOLLOWING:

- A. THE VIRGINIA STATEWIDE BUILDING CODE (VSBC); 2018 EDITION
- B. THE INTERNATIONAL RESIDENTIAL CODE (IRC); 2018 EDITION AS AMENDED BY THE VSBC.
- C. ALL APPLICABLE STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.

2. DESIGN LOADS:

- A. BUILDING CLASSIFICATION CATEGORY _____ 1
- B. GROUND SNOW Pg _____ 15 PSF
- C. ULTIMATE WIND SPEED _____ 105 MPH
- D. EXPOSURE _____ B
- E. SOIL UNIT WEIGHT _____ 120 PCF
- F. LIVE LOADS: _____
- G. LANDSCAPE & MAINTENANCE _____ UNIFORM
- H. VEHICLE SURCHARGE _____ 50 PSF
- I. SEISMIC DESIGN: _____ 250PSF

SEISMIC IMPORTANCE FACTOR I 1.0

MAPPED SPECTRAL RESPONSE ACCELERATION Sa 0.11

MAPPED SPECTRAL RESPONSE ACCELERATION Sd 0.043

SITE SOIL CLASS D

SPECTRAL COEFFICIENT, Sds 0.1

SPECTRAL COEFFICIENT, Sdi 0.068

SEISMIC DESIGN CATEGORY B

BASIC STRUCTURAL SYSTEM SEGMENTAL BLOCK RETAINING WALL

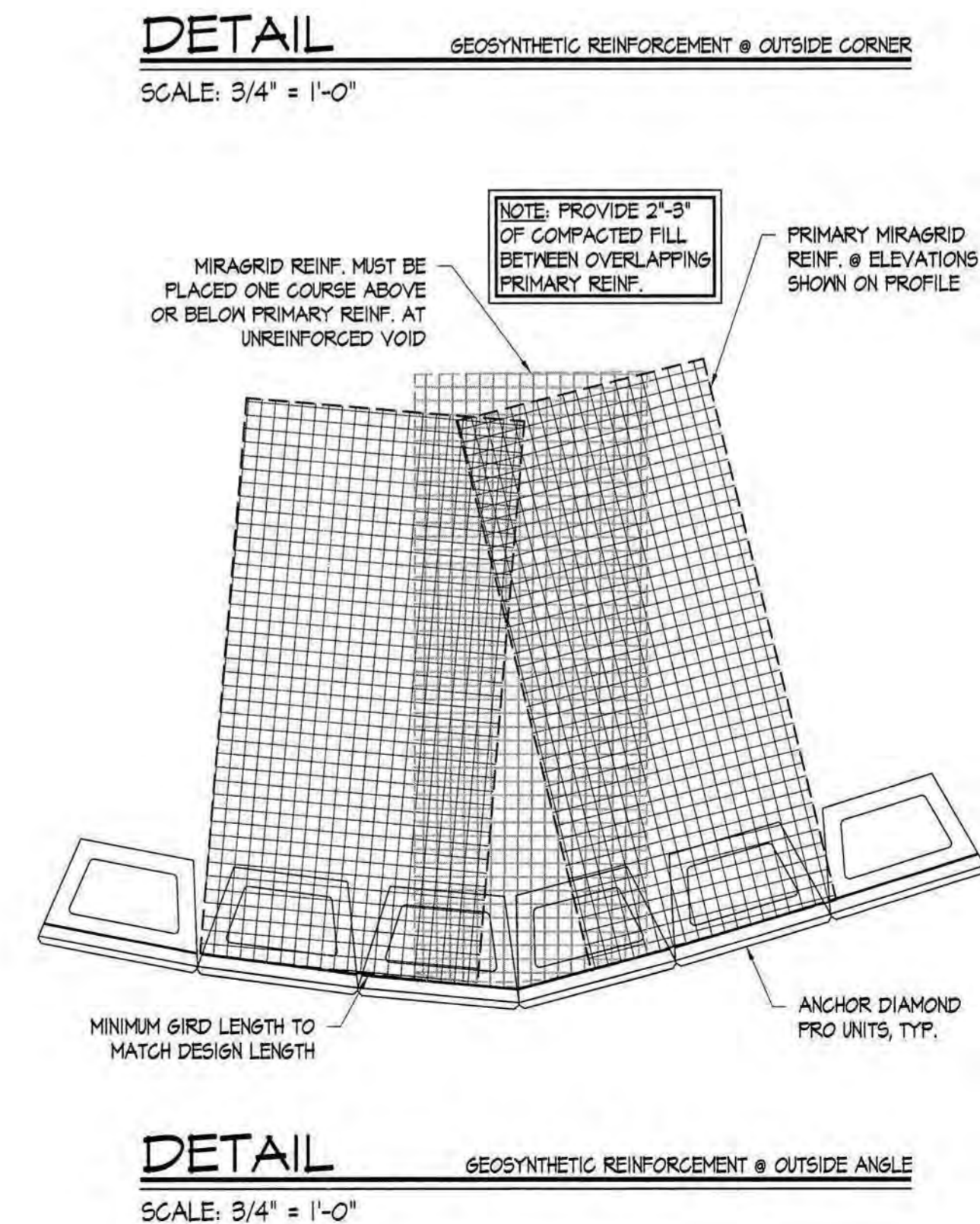
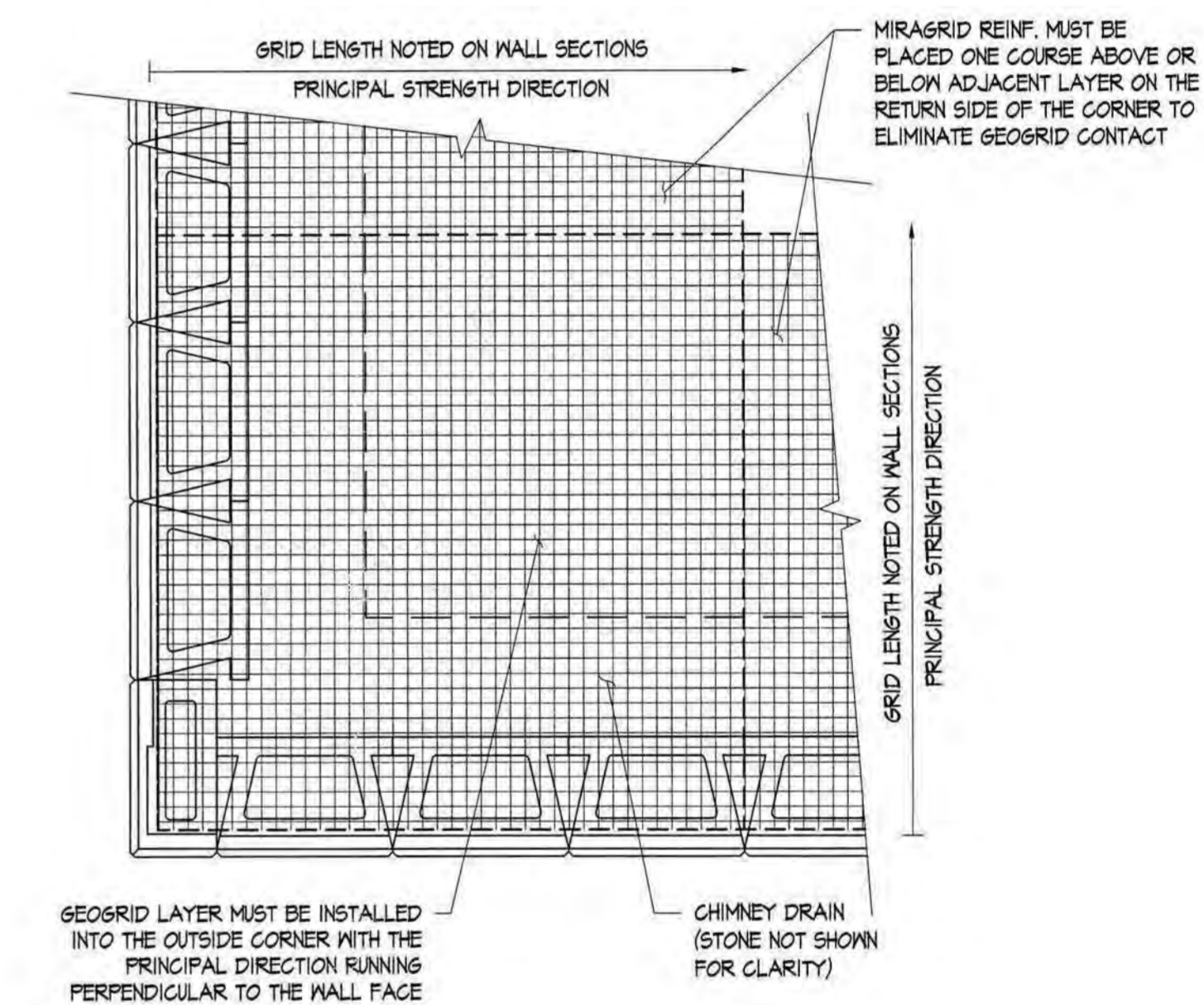
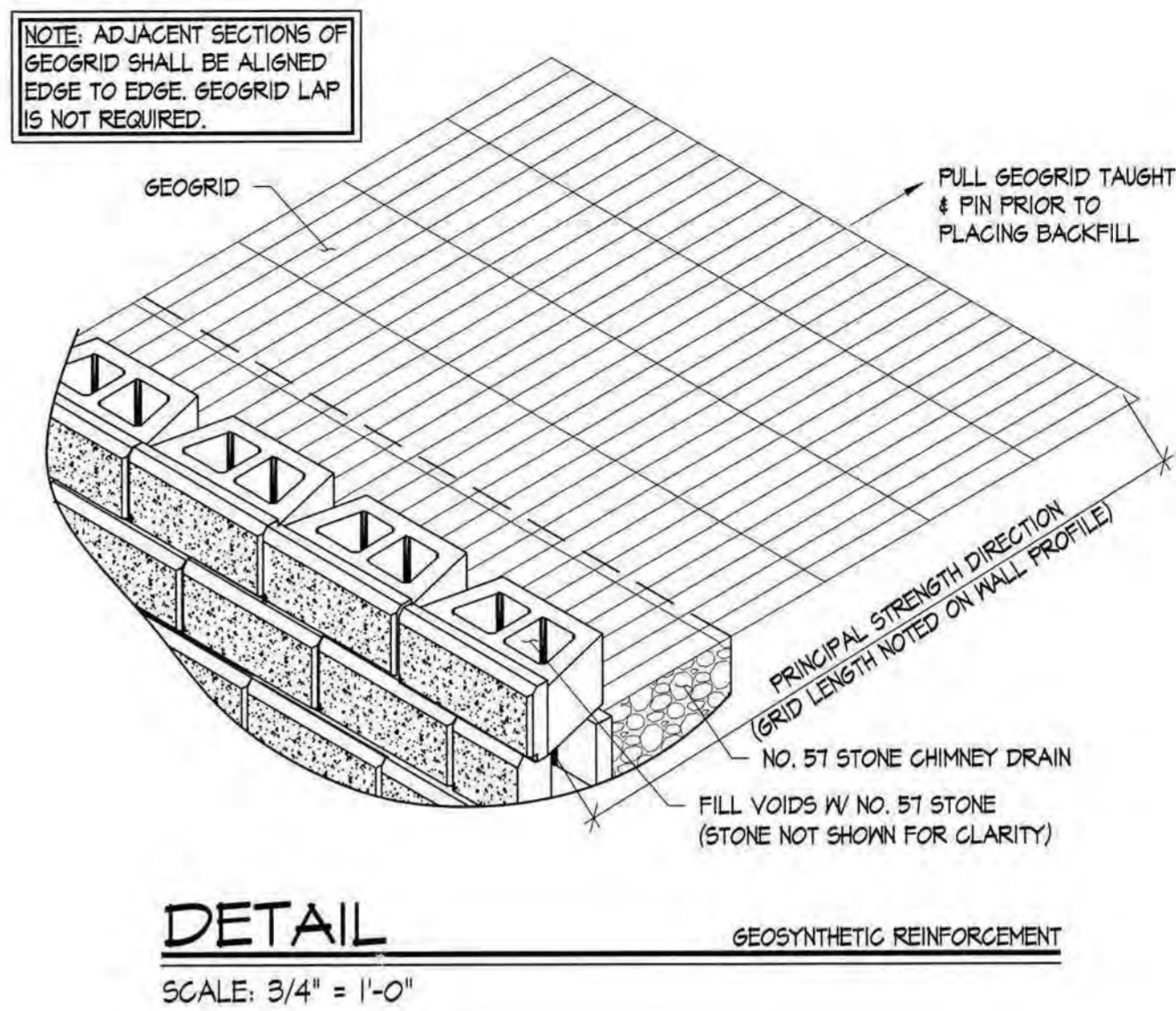
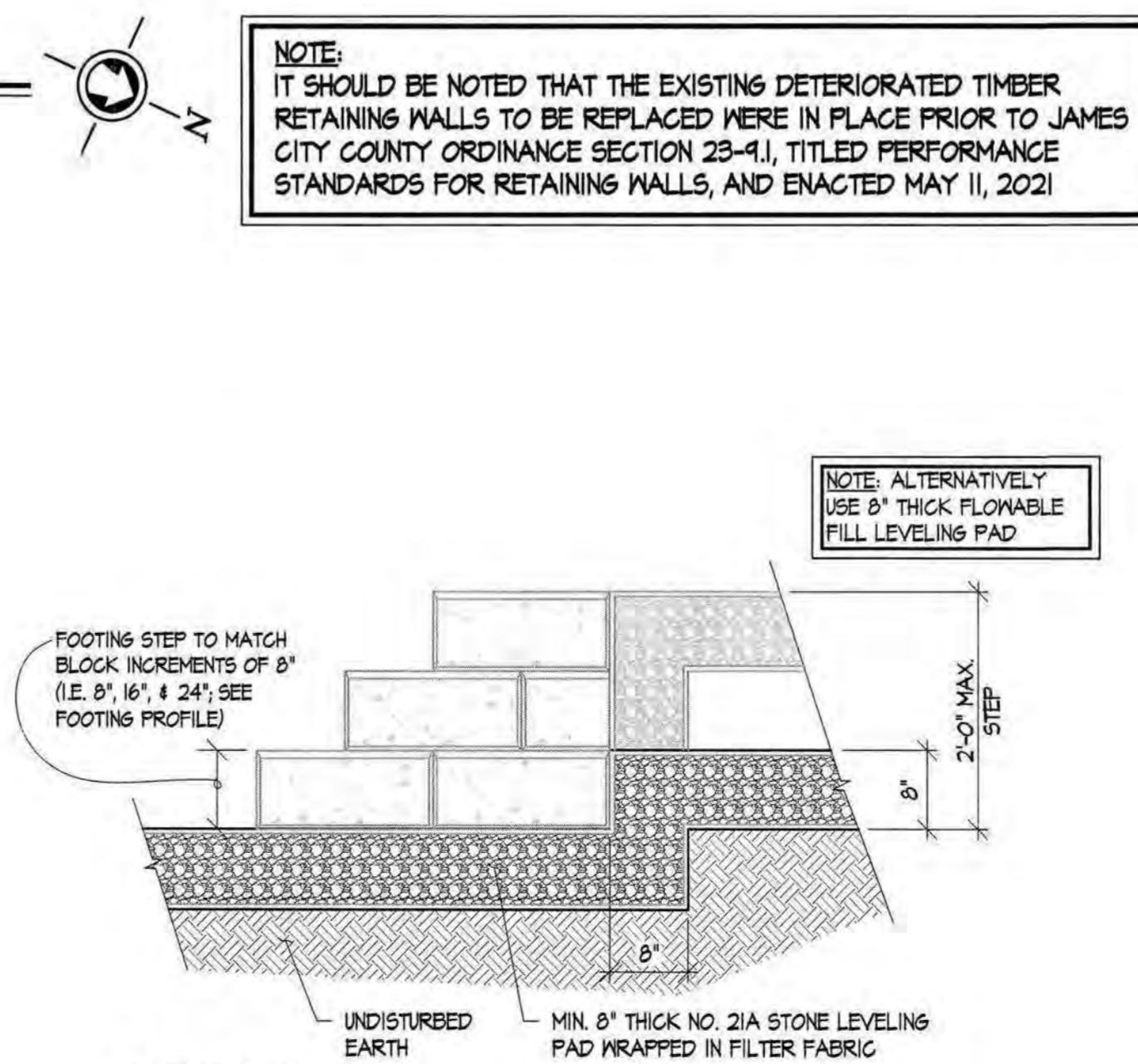
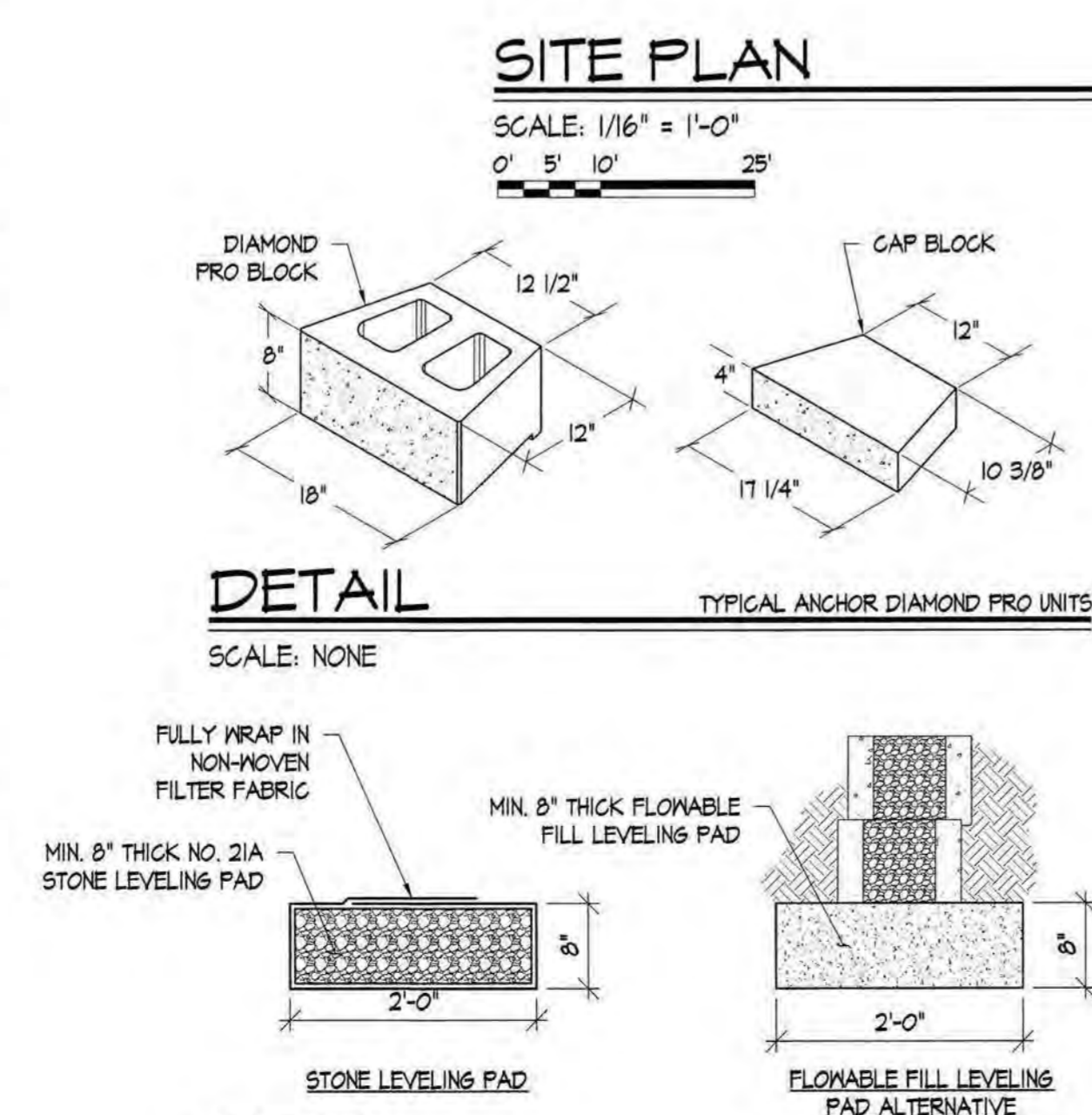
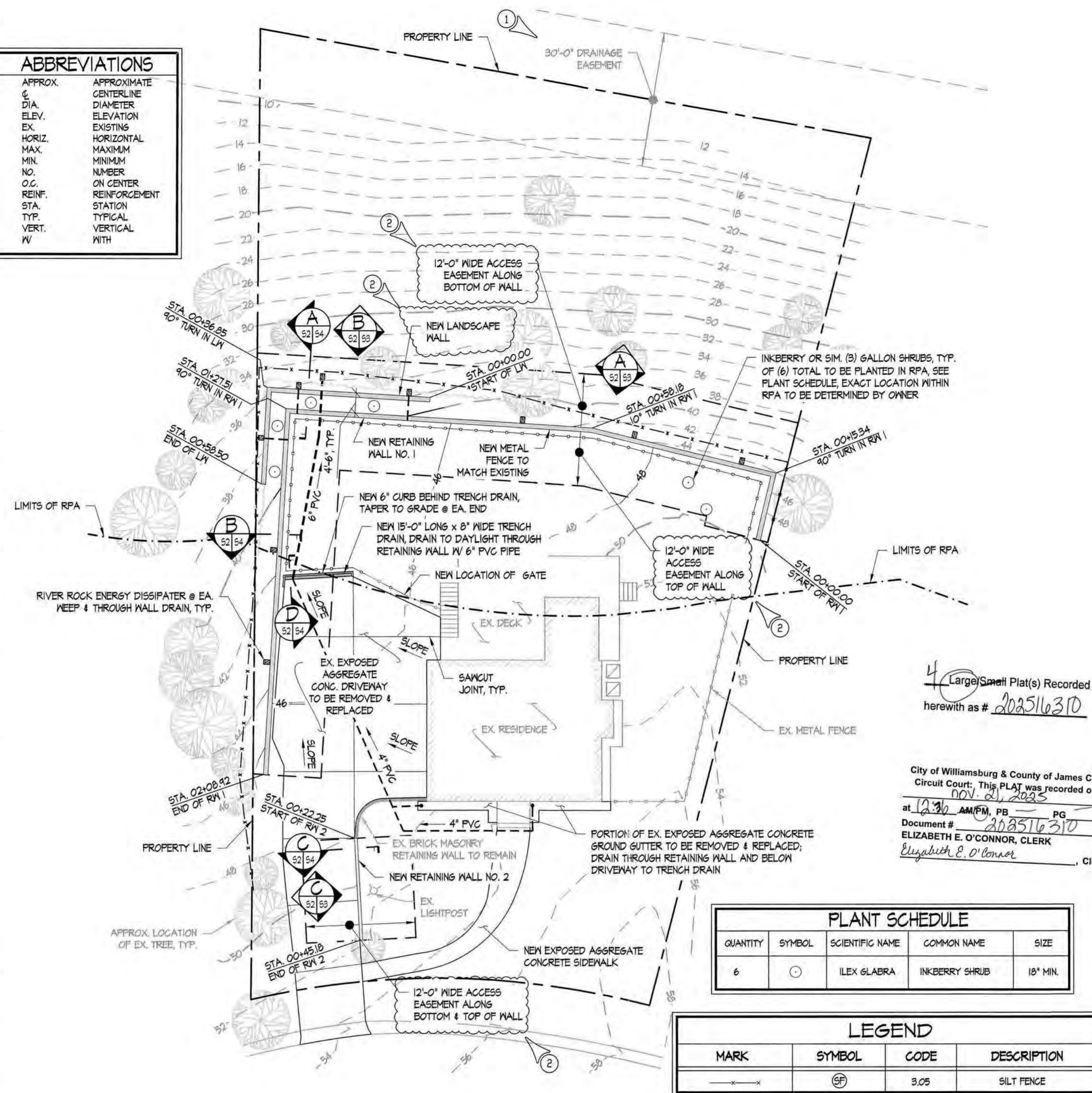
3. THE CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD PRIOR TO FABRICATION OF MEMBERS AND COMMENCING WORK.
4. CONTRACTOR SHALL NOTIFY "MISS UTILITY OF VIRGINIA" PRIOR TO BEGINNING EXCAVATION FOR LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR COSTS ASSOCIATED WITH DAMAGE AND REPAIR OF ANY LINES MARKED BY MISS UTILITY OF VIRGINIA.
5. PROVIDE TEMPORARY BRACINGS AS REQUIRED TO RESIST SOIL PRESSURE AND OTHER LOADS DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES, EQUIPMENT, ADJACENT GROUNDS, SPRINKLERS, TREES AND PLANTS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE, AT NO ADDITIONAL COSTS TO THE OWNER, ANY ITEMS DAMAGED DURING THE CONSTRUCTION.
7. UNLESS NOTED OTHERWISE, ALL UTILITIES WHICH CROSS FOOTINGS MUST PASS ABOVE FOOTINGS THROUGH THE RETAINING WALL. STEP FOOTINGS WERE REQUIRED.

8. LEVELING PAD FOR SEGMENTAL BLOCK RETAINING WALLS SHALL BE A MINIMUM OF 8" THICK COMPACTED NO. 21A CRUSHED STONE WRAPPED IN FILTER CLOTH. ALTERNATELY, 8" THICK 350 PSI FLOWABLE FILL MAY BE UTILIZED FOR THE LEVELING PAD.
9. ALL FLOWABLE FILL SHALL BE MIXED, PLACED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318.
10. ALL FLOWABLE FILL SHALL HAVE A SLUMP OF $7" \pm 1"$ UNLESS NOTED OTHERWISE.
11. ALL FLOWABLE FILL TO BE POURED IN COLD WEATHER, AS DEFINED IN SECTION 11 OF ACI 306R, COLD WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 306R, STANDARD SPECIFICATIONS FOR COLD WEATHER CONCRETING, AND 306R.
12. ALL FLOWABLE FILL TO BE POURED IN HOT WEATHER, AS DEFINED IN SECTION 12 OF ACI 305R, HOT WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 305R, STANDARD SPECIFICATIONS FOR HOT WEATHER CONCRETING, AND ACI 305R.

13. CONCRETE FOR MASONRY RETAINING WALL FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS AND A MAXIMUM WATER/CEMENT RATIO OF 0.55.
14. ALL CONCRETE SHALL BE MIXED, PLACED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318.
15. ALL CONCRETE SHALL HAVE A SLUMP OF 4" ± 1" UNLESS NOTED OTHERWISE.
16. ALL CONCRETE TO BE POURED IN COLD WEATHER, AS DEFINED IN SECTION 1.1 OF ACI 306R, COLD WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 306.1, STANDARD SPECIFICATIONS FOR COLD WEATHER CONCRETING, AND 306R.
17. ALL CONCRETE TO BE POURED IN HOT WEATHER, AS DEFINED IN SECTION 1.2 OF ACI 305R, HOT WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 305.1, STANDARD SPECIFICATIONS FOR HOT WEATHER CONCRETING, AND ACI 305R.
18. REINFORCING BARS SHALL BE ASTM A-615, GRADE 60.
19. ALL CONCRETE REINFORCING SHALL BE DETAILED AND CONSTRUCTED PER ACI 318.

20. ELEVATIONS SHOWN ARE BASED ON TOPOGRAPHIC SURVEY PROVIDED BY LAND TECH RESOURCES, INC. REVISED JUNE 24, 2022.
21. EXISTING SITE SOILS ARE EMPORIA COMPLEX AND CRAVEN/CHEE COMPLEX WITH MODERATE SHRINK-SWELL POTENTIAL BASED ON THE USDA SOIL SURVEY.
22. FOOTINGS FOR RETAINING WALLS ARE DESIGNED TO BEAR ON UNDISTURBED SOIL BELOW THE FROST LINE AND A MINIMUM OF 2'-2" BELOW THE EXISTING GRADE WITH A MINIMUM SOIL BEARING PRESSURE OF 2,000 PSF UNLESS NOTED OTHERWISE.
23. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN MAXIMUM 8" LIFTS USING A VIBRATORY PLATE COMPACTOR. ALL BACKFILL SHALL BE FREE-DRAINING, NON-FROST SUSCEPTIBLE GRANULAR MATERIAL .5M OR BETTER, UNLESS NOTED TO BE 5% RETAINED MATERIAL. MATERIAL SHALL HAVE A MINIMUM FRICTION ANGLE OF 25 DEGREES, EXCEPT IN THE REINFORCED ZONE. BACKFILL MATERIAL TO BE USED IN THE REINFORCED ZONE SHALL BE .5M OR BETTER WITH MINIMUM FRICTION ANGLE OF 30 DEGREES.
24. CHIMNEY DRAIN ADJACENT TO RETAINING WALLS AND MATERIAL USED TO FILL MODULAR WALL UNITS SHALL BE VIBRATORY PLATE COMPACTED NO. 51 STONE, OR A WELL GRADED COMPACTABLE NO. 21A STONE, 1/4" TO 1 1/2" DIAMETER WITH NO MORE THAN 10% PASSING THE #200 SIEVE.
25. PLACE A 4" DIAMETER PERFORATED PVC DRAIN PIPE WRAPPED IN FILTER CLOTH ADJACENT TO INSIDE FACE OF THE MODULAR CONCRETE UNIT AND MASONRY RETAINING WALLS. PROVIDE DRAINAGE TO DAYLIGHT.
26. ANY VARIATION IN LOCATION OR ELEVATION OF RETAINING WALLS, ELEVATION IN THE GRADE EITHER ABOVE OR BELOW THE WALLS, OR THE RECOMMENDED INSTALLATION DETAILS, REQUIRE REVIEW BY THE ENGINEER OF RECORD.
27. ALL GEOSGRID REINFORCEMENT TO BE MIRASGID EXT SERIES MANUFACTURED BY TENCATE GEOSYNTHETICS. LENGTH OF GEOSGRID SHOWN ON DRAWINGS IS TAKEN FROM OUTSIDE FACE OF RETAINING WALL. GEOSGRID SHALL BE PULLED TAUGHT PRIOR TO INFILLING BACKFILL.
28. SEGMENTAL RETAINING WALL UNITS SHALL BE DIAMOND PRO MANUFACTURED BY ANCHOR WALL SYSTEMS, LLC.
29. CONTRACTOR SHALL FOLLOW INSTRUCTIONS PROVIDED BY BLOCK MANUFACTURER REGARDING THE CONSTRUCTION OF THE MODULAR CONCRETE UNIT WALLS. ANY INSTRUCTIONS THAT DIFFER FROM THOSE INDICATED ON THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
30. CONCRETE MASONRY UNITS SHALL BE IN ACCORDANCE WITH ASTM C-90. MORTAR TO CONFORM TO ASTM C-270, TYPE "S" BELM GRADE AND TYPE "N" ABOVE GRADE. MASONRY GROUT TO CONFORM TO ASTM C476.
31. ALL CMU REINFORCING SHALL BE DETAILED AND CONSTRUCTED PER ACI 550.
32. ALL CONCRETE MASONRY CONSTRUCTION SHALL BE CONSTRUCTED TO HAVE A MINIMUM DESIGN COMPRESSIVE STRENGTH (F'm) OF 1500 PSI. ALL MASONRY GROUT SHALL HAVE A MINIMUM TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
33. HORIZONTAL REINFORCING FOR SINGLE RYTHE AND MULTI-RYTHE COMPOSITE MASONRY WALLS SHALL BE DUK-O-MAL TRUSS TYPE WALL REINFORCING WITH #1 DEFORMED STEEL BARS AND #4 CROSS-BARS. MINIMUM VERTICAL SPACING 16" O.C. ABOVE GRADE AND 8" O.C. BELOW GRADE. BRICK VENEER WALLS TO HAVE NON-CORROSIVE METAL TIES AT 16" O.C. VERTICALLY AND HORIZONTALLY.
34. BRICK MASONRY UNITS SHALL BE IN ACCORDANCE WITH ASTM C-216. COLOR AND BRICK TYPE SHALL BE SELECTED BY THE OWNER FROM CONTRACTOR SUPPLIED SAMPLES.
35. PEDESTRIAN PROTECTION IS REQUIRED WHEN WALL HEIGHT EXCEEDS 30" ABOVE FINISH GRADE. GUARD RAILING, FENCING, AND/OR LANDSCAPE SHROBBERY SHALL BE PROVIDED WHERE WALL HEIGHT EXCEEDS 30" ABOVE FINISH GRADE.
36. RETAINING WALL MINIMUM DESIGN SAFETY FACTORS:
 - A. OVERTURNING - 2.0
 - B. SLIDING - 1.5
 - C. GLOBAL STABILITY - 1.3

ABBREVIATIONS	
APPROX.	APPROXIMATE
¢	CENTERLINE
DIA.	DIAMETER
ELEV.	ELEVATION
EX.	EXISTING
HORIZ.	HORIZONTAL
MAX.	MAXIMUM
MIN.	MINIMUM
NO.	NUMBER
O.C.	ON CENTER
REINF.	REINFORCEMENT
STA.	STATION
TYP.	TYPICAL
VERT.	VERTICAL
W/	WITH



Sheet				Date:	Project #:	Drawn by:	Reviewed by:
GENERAL NOTES RETAINING WALL PLAN, & DETAILS				10/14/22	VA2115DES	JMK	MAM

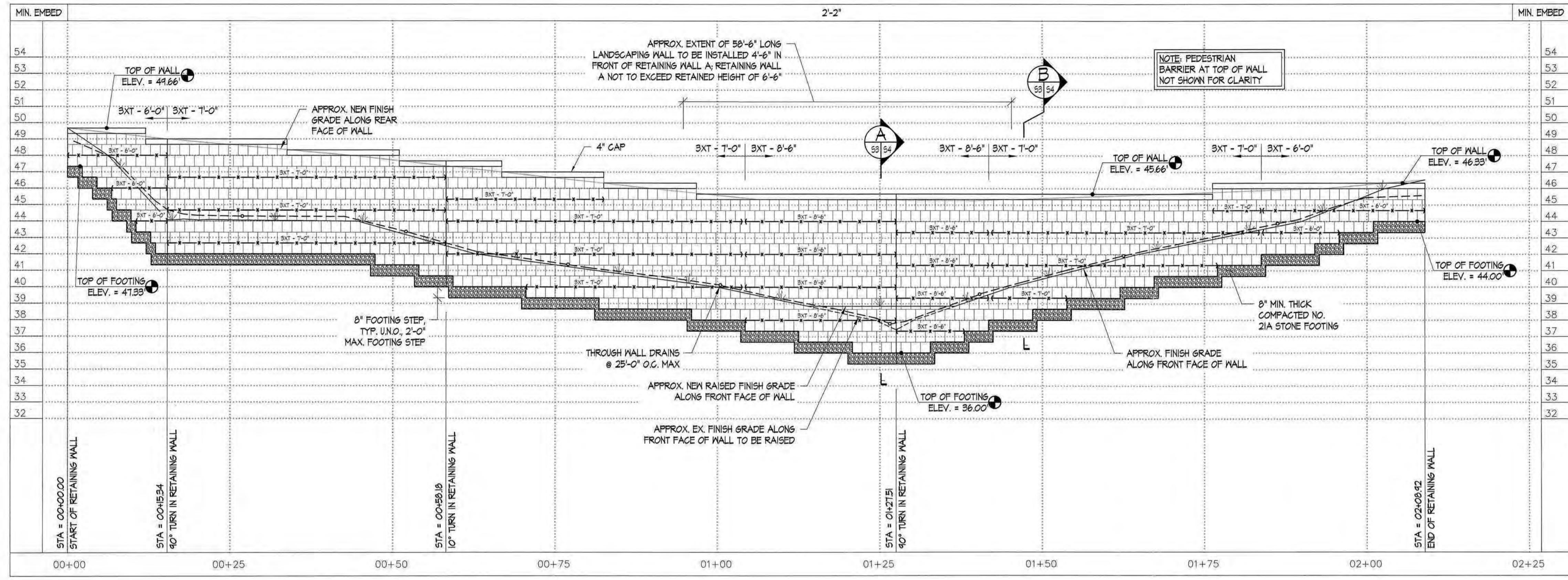
RETAINING WALL
TRAINUM RESIDENCE
105 AMBROSE HILL
Y COUNTY



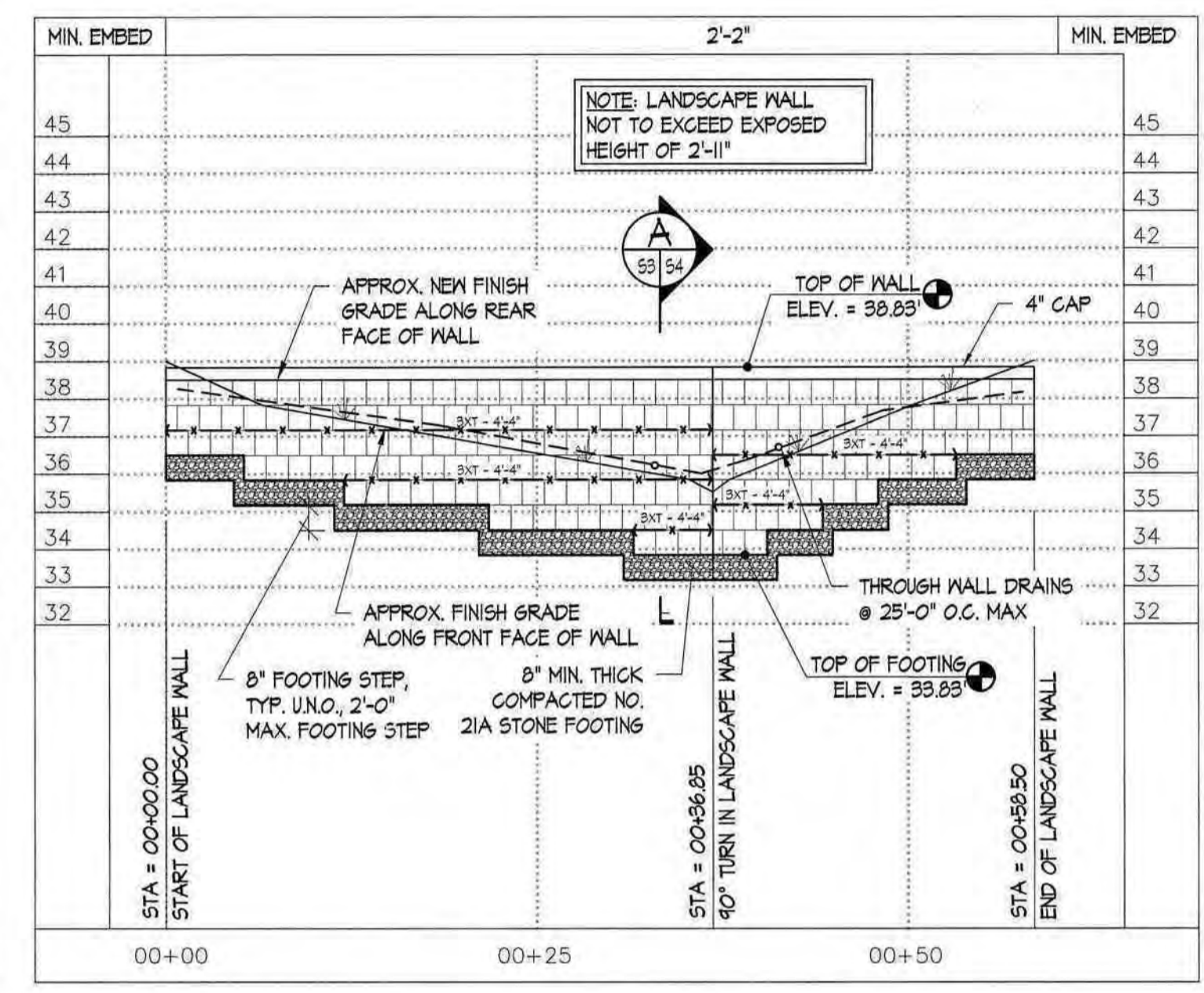
2 of 4

The Structures Group, Inc.
1200 Old Colony Lane • Williamsburg, VA 23185
(757)220-0465 • Fax (757)220-1546
www.thestructuresgroup.com

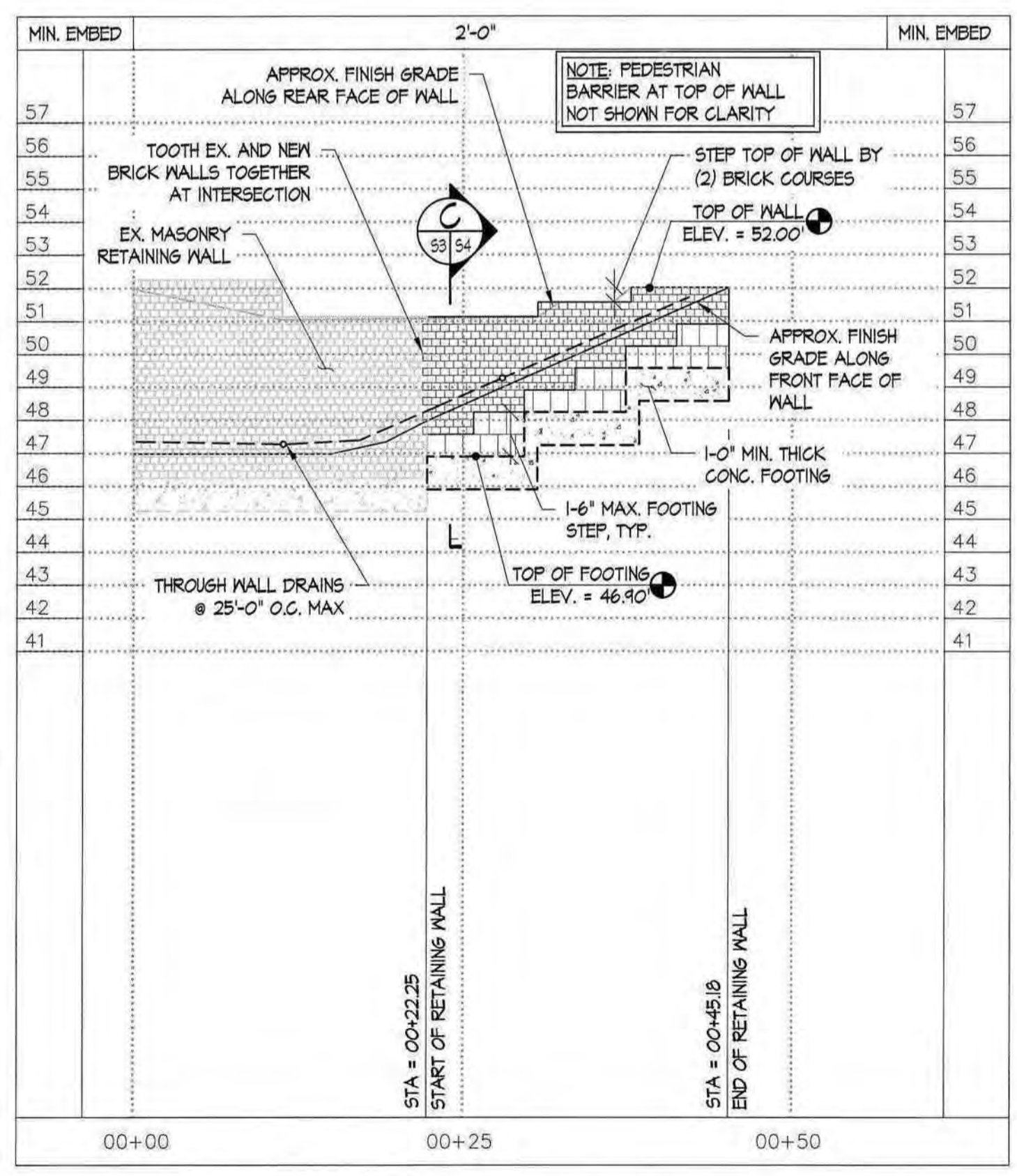
2025116310



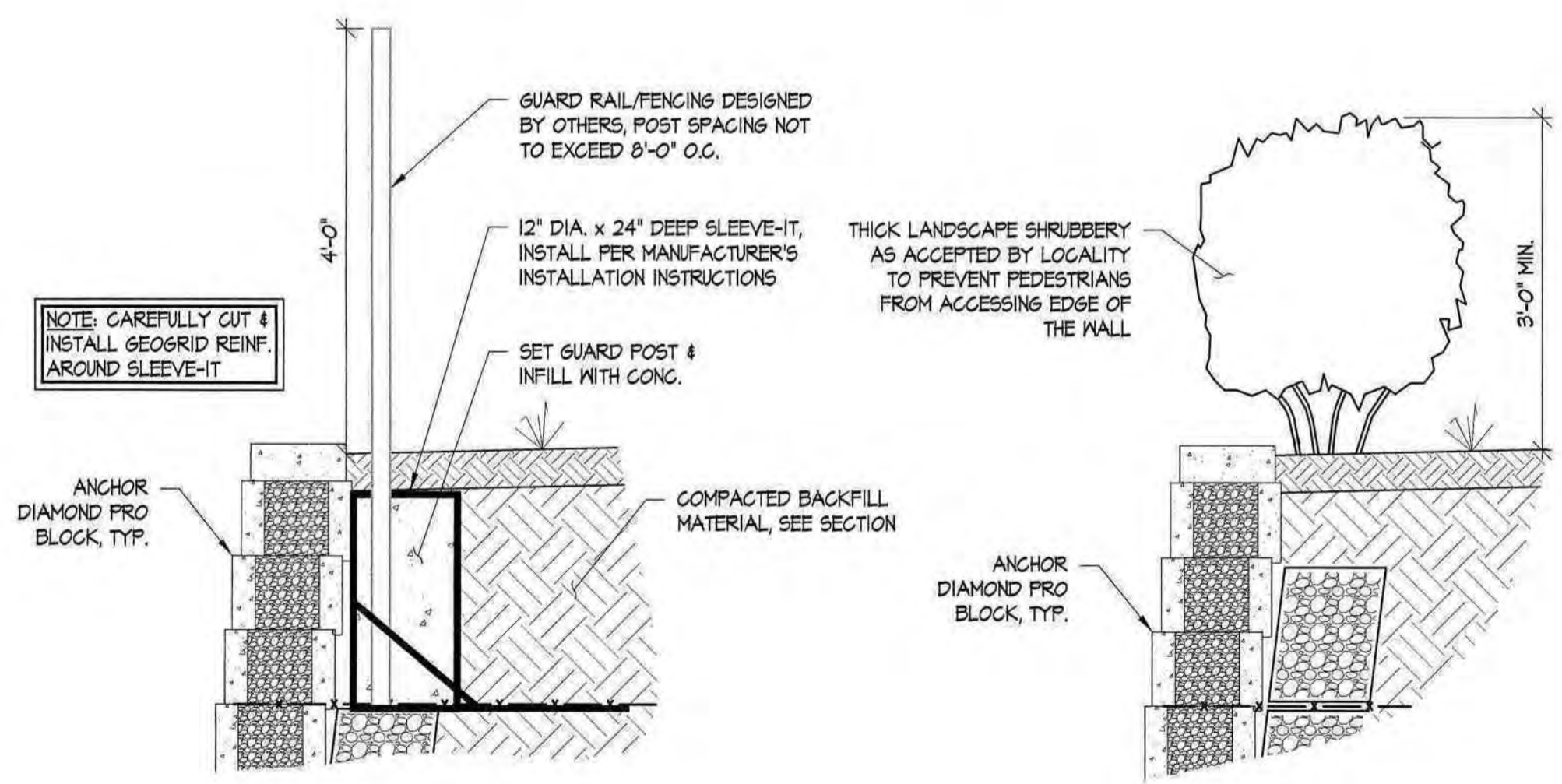
WALL PROFILE
HORIZ. SCALE: 1"=10'-0", VERT. SCALE: 1"=4'-0"
RETAINING WALL NO. 1



WALL PROFILE
HORIZ. SCALE: 1"=10'-0", VERT. SCALE: 1"=4'-0"
LANDSCAPE WALL



WALL PROFILE
HORIZ. SCALE: 1"=10'-0", VERT. SCALE: 1"=4'-0"
RETAINING WALL NO. 2



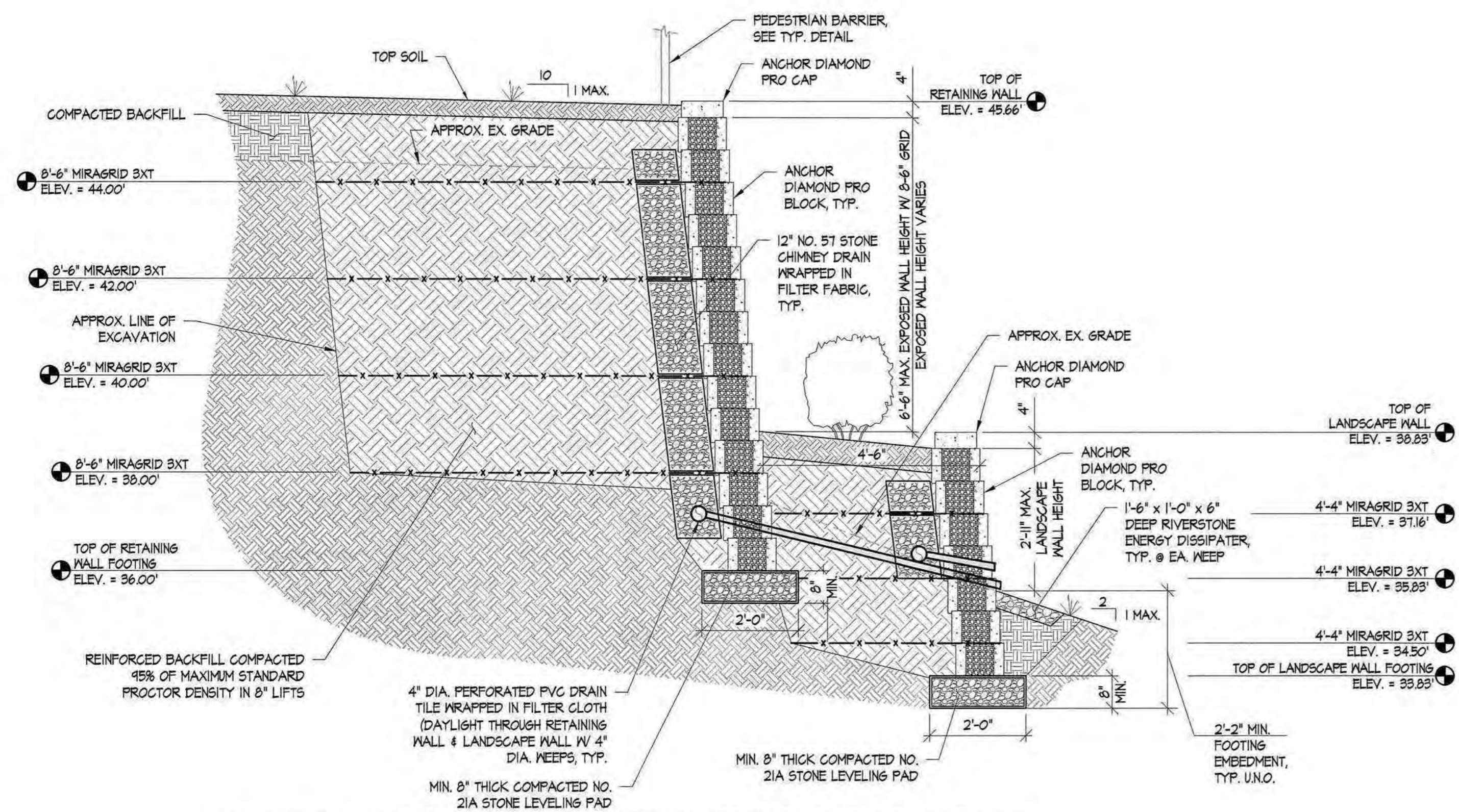
DETAIL
SCALE: 3/4" = 1'-0"
ALTERNATE NO. 1
ALTERNATE NO. 2
PEDESTRIAN BARRIER

4 Large/Small Plat(s) Recorded
herewith as # 2025116310

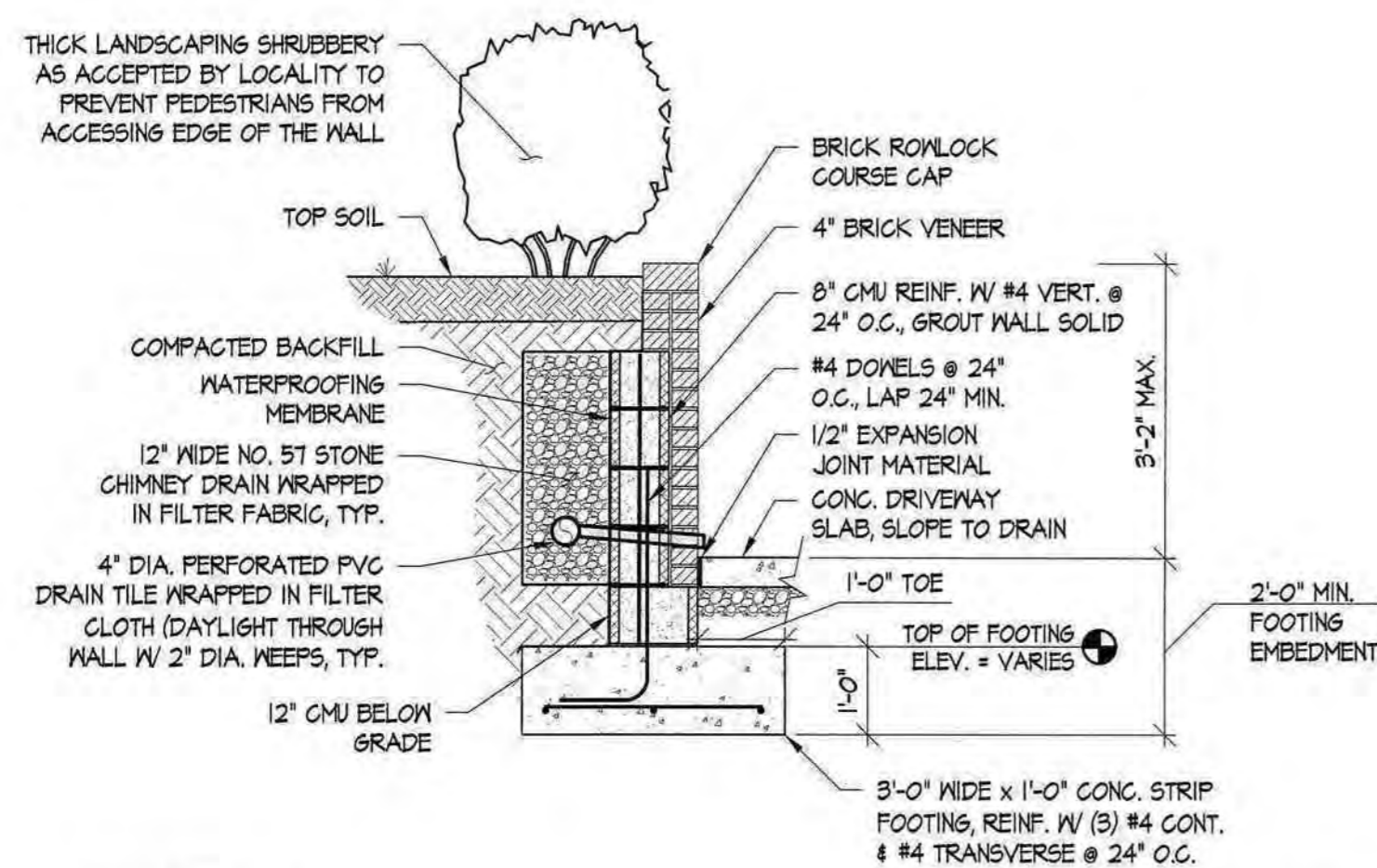
City of Williamsburg & County of James City
Circuit Court: This PLAT was recorded on
at 12:36 AM (P) PG
Document # 2025116310
ELIZABETH E. O'CONNOR, CLERK
Elizabeth E. O'Connor, Clerk

Sheet	RETAINING WALL PROFILES & DETAILS	Date: 10/14/22	Project #: VA2115DES	Drawn by: JMK	Reviewed by: MAM
	RETAINING WALL TRAINUM RESIDENCE 105 AMBROSE HILL JAMES CITY COUNTY	Professional Seal of Michael A. Matthews, Inc. (Professional Engineer, License No. 07863, State of Virginia)			
		JCC Building Safety & Permits Review Comments			
		Revisions			
3 of 4	VA	No.	6/29/23	Date	

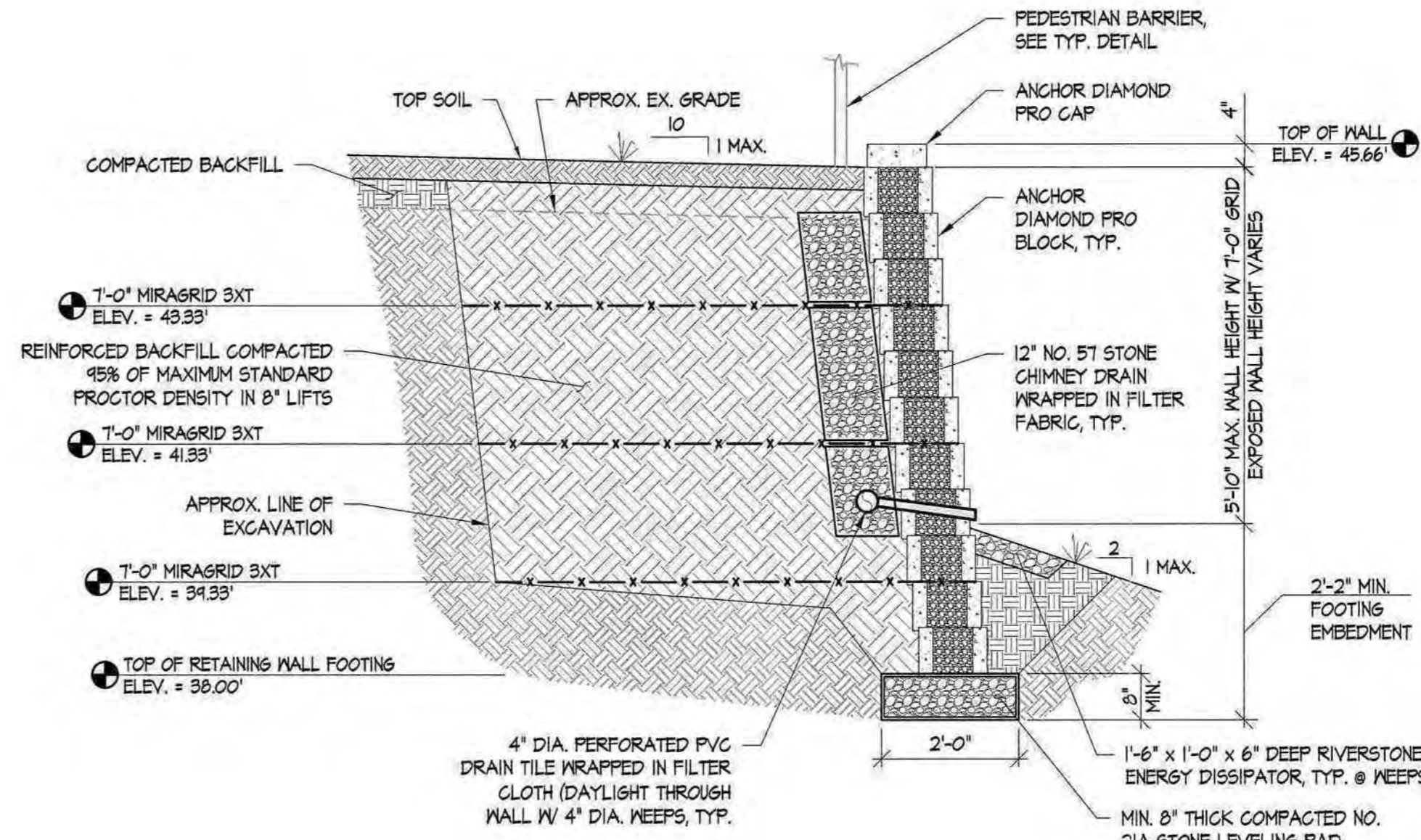
202516310



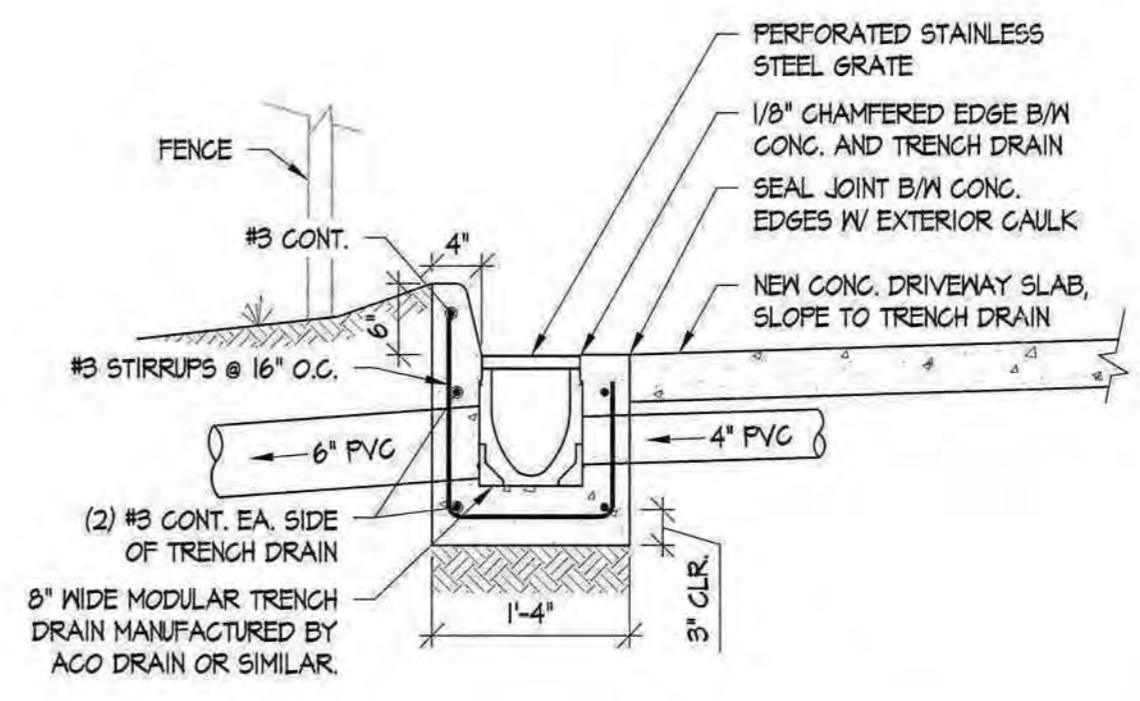
SECTION A
SCALE: 1/2"=1'-0"
RETAINING WALL NO. 1 & LANDSCAPE WALL
52, 53



SECTION C
SCALE: 1/2"=1'-0"
RETAINING WALL NO. 2
52, 53



SECTION B
SCALE: 1/2"=1'-0"
RETAINING WALL NO. 1
52, 53



SECTION D
SCALE: 1/2"=1'-0"
TRENCH DRAIN
52, 53

Large/Small Plat(s) Recorded
herewith as # 202516310

City of Williamsburg & County of James City
Circuit Court: This PLAT was recorded on
November 04, 2025
at 12:36 AM PM, PB
Document # 202516310
ELIZABETH E. O'CONNOR, CLERK
Elizabeth E. O'Connor, Clerk

Sheet	54	4 of 4
RETAINING WALL & DRAINAGE SECTIONS	RETAINING WALL TRAINUM RESIDENCE 105 AMBROSE HILL JAMES CITY COUNTY VA	Project #: VA2115DES Date: 10/14/22 JCC Building Safety & Permits Review Comments Revisions No.
Drawn by: JMK	Reviewed by: MAM	The Structures Group, Inc. 1200 Old Colony Lane • Williamsburg, VA 23185 (757) 220-0465 • Fax (757) 220-1546 www.thestructuresgroup.com