# SERENITY SUBDIVISION - PHASE 8 & 9

RETAINING WALLS

ROLLINS ROAD HARNETT COUNTY, NC

### **GEOTECHNICAL GENERAL NOTE:**

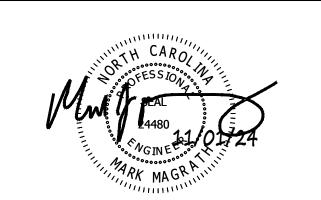
- I. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

DATE

### GENERAL DESIGN NOTE:

- . WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.

REVISIONS





RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION

ROLLINS ROAD

COVER SHEET SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

This drawing and/or the design shown are the
property of Venture Engineering, P.A. The reproduction
alteration, copying or other use of this drawing
without their written consent is prohibited and any
infringement will be subject to legal action.
Venture Engineering, P.A.

HORIZONTAL

VERTICAL:

DATE: October 29, 2024

CHECKED: KLY

APPROVED: MJM

\_\_\_C-2B

\_\_\_C-2C

\_\_\_C-2D

\_\_\_C-3

\_\_\_C-6

\_\_\_C-12

\_\_\_C-13

\_\_\_C-14

\_\_\_C-16

\_\_\_C-17

\_\_\_C-18

\_\_\_C-20

\_\_\_C-21

\_\_\_C-22 \_\_\_C-23

\_\_\_C-24

\_\_C-25



HARNETT COUNTY, NC

SHEET INDEX

**COVER SHEET** 

SPECIFICATIONS...

RETAINING WALL SITE PLAN - SHEET 1 OF 5

RETAINING WALL SITE PLAN - SHEET 2 OF 5

RETAINING WALL SITE PLAN - SHEET 3 OF 5

RETAINING WALL SITE PLAN - SHEET 4 OF 5

RETAINING WALL SITE PLAN - SHEET 5 OF 5

RETAINING WALL PROFILE #14 (Continued)\_

RETAINING WALL PROFILE #15 (Continued)

RETAINING WALL PROFILE #17 (Continued)\_

RETAINING WALL PROFILE #19 (Continued)\_

RETAINING WALL PROFILE #18 & #19\_\_\_

RETAINING WALL PROFILE #20 & #21\_

RETAINING WALL PROFILE #25 & #26\_

RETAINING WALL PROFILE #28\_

DETAIL SHEET - SHEET 1 OF 2\_

DETAIL SHEET - SHEET 2 OF 2\_

RETAINING WALL PROFILE #15 (Continued) & #16\_

RETAINING WALL PROFILE #21 (Continued) & #22\_

RETAINING WALL PROFILE #26 (Continued) & #27\_

RETAINING WALL PROFILE #22 (Continued), #23 & #24\_\_\_

RETAINING WALL PROFILE #9 (Continued) & #10\_

RETAINING WALL PROFILE #10 (Continued) & #11...

RETAINING WALL PROFILE #12 (Continued), #13 & #14

RETAINING WALL #19 Thru #21) \_

(RETAINING WALL #24 & #25) ...

(RETAINING WALL #26 Thru #28)

RETAINING WALL PROFILE #12.

RETAINING WALL PROFILE #15\_

RETAINING WALL PROFILE #17\_\_\_

RETAINING WALL PROFILE #8 & #9\_

(RETAINING WALL #12 Thru #16 & #19(Continued))

(RETAINING WALL #8, #11, #15 (Continued), #16 (Continued), #17,

(RETAINING WALL #9 & #10, #17 (Continued), #18, #22 & #23)

### 1.1 GENERAL

SRW RETAINING WALL SYSTEMS ARE DESIGNED AS A GRAVITY RETAINING WALL UTILIZING A HIGH DENSITY POLYESTER GEOGRID TO REINFORCE THE SOIL ZONE BEHIND THE WALL. THE GEOGRID IS POSITIVELY CONNECTED TO THE MODULAR CONCRETE BLOCK CREATING A REINFORCED SOIL MASS CAPABLE OF RESISTING LATERAL EARTH PRESSURES AND SURCHARGED LOADS. ALL REFERENCES TO THE ENGINEER REFER TO VENTURE ENGINEERING, P.A.

### 1.2 QUALITY ASSURANCE

CONTRACTOR SHALL BE QUALIFIED TO BUILD RETAINING WALL AND SHALL SUBMIT CERTIFICATION, PRIOR TO START OF WORK THAT THEY HAVE SUCCESSFULLY INSTALLED ON A MINIMUM OF 5 SIMILAR PROJECTS, I.E., HEIGHT, SOIL FILL TYPES, ERECTION TOLERANCES, ETC.

### 1.3 BACK FILL MATERIALS

THE SOIL MATERIAL ASSOCIATED WITH THE RETAINING WALL IN THE REINFORCED ZONE, THE RETAINED ZONE, OR THE FOUNDATION BEDDING SHALL HAVE THE FOLLOWING PROPERTIES

A.) FOUNDATION SOILS  $\emptyset = 28$  DEGREES, COHESION = 0 PSF, UNIT WEIGHT = 120 LBS/CU.F.T.

B.) RETAINED SOILS  $\emptyset = 28$  DEGREES, COHESION = 0 PSF, UNIT WEIGHT = 120 LBS/CU.F.T.

C.) REINFORCED SOILS  $\emptyset = 28$  DEGREES, COHESION = 0 PSF, UNIT WEIGHT = 120 LBS/CU.F.T.

D.) UNIT FILL SHALL CONSIST OF CLEAN 1" MINUS CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING:

THE SOILS CHARACTERISTICS ABOVE WERE ASSUMED BASED ON SOILS CONDITIONS ON SIMILAR PROJECTS IN THAT AREA. IF THIS INFORMATION DOES NOT REPRESENT THE ACTUAL SOIL TO BE USED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND THE WALL SHALL BE REDESIGNED.

> SIEVE SIZE % PASSING 100 75-100 0-60

E.) REINFORCED BACKFILL SOILS SHALL BE FREE OF DEBRIS OR ORGANIC MATERIAL MEETING THE FOLLOWING GRADATION:

% PASSING 100 75-100 < 25-30

### 1.4 FOUNDATION LOADS

RETAINING WALL UNDER 20 FEET IN HEIGHT SHALL HAVE A MINIMUM BEARING OF 3,000 PSF. RETAINING WALL OVER 20 FEET IN HEIGHT SHALL HAVE A MINIMUM BEARING OF 5,000 PSF.

### 1.5 CONCRETE MASONRY WALL UNITS

CONCRETE WALL UNITS SHALL BE SRW UNITS MANUFACTURED IN ACCORDANCE WITH ASTM-C1372 AND ASTM C140 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.

### 1.6 GEOGRID REINFORCEMENT

THE GEOGRID REINFORCING MATERIAL SHALL BE HIGH TENACITY POLYESTER MANUFACTURED BY SYNTEEN AND SHALL MEET THE SPECIFICATION REQUIREMENTS PUBLISHED BY STRATAGRID FOR:

**GRIDLOCK 370 GRIDLOCK 540** 

### 1.7 WALL BATTER

BATTER FOR THE ENTIRE WALL SHALL BE MAINTAINED AT A 4.4° SETBACK.

### 2.0 FOUNDATION REQUIREMENTS

THE FOUNDATION BEARING CAPACITY THAT WAS ASSUMED FOR DESIGN SHALL BE VERIFIED IN THE FIELD, AND COPIES OF THE TEST DATA FILED WITH THE ENGINEER. THE FOOTING SHALL BE CLEARED OF LOOSE SOIL. A MINIMUM OF 12" OF WASHED STONE SHALL BE PLACED AT THE BACK OF EACH BLOCK AS INDICATED ON THE DETAILS.

### 2.1 LEVELING PAD

MATERIAL SHALL CONSIST OF COMPACTED SAND, GRAVEL, CRUSHED ROCK, OR UNREINFORCED CONCRETE. THE PAD SHALL BE 4"- 6" THICK. SAND OR GRAVEL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR. AGGREGATE MATERIAL SHALL RECEIVE A MINIMUM OF ONE PASS OF THE COMPACTION EQUIPMENT.

### 2.2 UNIT FILL

THE VOID WITHIN EACH UNIT SHALL BE FILLED WITH A WASHED STONE HAVING 100% OF THE AGGREGATE PASSING THE 2" SIEVE. A MINIMUM OF 3/8" WASHED STONE SIZE IS REQUIRED (NO MORE THAN 5% PASSING THE #200 SIEVE.) PLACE THIS MATERIAL BEHIND THE BLOCK AS WELL. ALL EXCESS MATERIAL SHALL BE SWEPT CLEAN FROM THE TOP OF THE BLOCK PRIOR TO INSTALLING THE NEXT COURSE. EACH COURSE OF BLOCK SHALL BE COMPLETELY FILLED BEFORE PROCEEDING TO THE NEXT COURSE.

### 2.3 FIRST BLOCK COURSE

THE FIRST COURSE OF BLOCK SHALL BE PLACED ON TOP OF AND IN FULL CONTACT WITH THE LEVELING PAD. THE UNITS SHALL MAINTAIN A DISTANCE OF MINIMUM 6" FROM THE FRONT AND BACK OF THE LEVELING PAD. PROPER ALIGNMENT MAY BE ACHIEVED WITH THE AID OF A STRING LINE.

### **2.4 CAPS**

APPLY A CONSTRUCTION ADHESIVE TO THE UNITS TO PREVENT THEIR REMOVAL.

#### 3.0 GEOGRID INSTALLATION

THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED BACK FILL AND CONNECTED TO THE CONCRETE WALL UNITS(SRW UNITS SHALL BE USED FOR THIS PROJECT). GEOGRID SHALL BE PULLED TAUT REMOVING ALL SLACK FROM THE MATERIAL AND ANCHORED BEFORE ADDING FILL. GEOGRID SHALL BE INSTALLED AT THE ELEVATIONS AND LENGTHS REQUIRED AS SHOWN ON THE PLANS. (REFER TO DETAILS FOR THE APPROPRIATE ORIENTATION) SOIL SURFACE SHALL BE SMOOTH AND LEVEL AND HAVE COMPACTED TO 95% STANDARD PROCTOR BEFORE INSTALLING THE GRID.

### 3.1 FILL PLACEMENT

BACK FILL MATERIAL SHALL BE AND COMPACTED 95% STANDARD PROCTOR ON EVERY GEOGRID LIFT LAYER INTERVAL. ONLY HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE SRW UNITS. BACK FILL SHALL BE PLACED FROM THE WALL REARWARD TO INSURE TAUTNESS OF THE GEOGRID. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID.

### 3.2 UNSUITABLE MATERIAL

SOILS CONTAINING ROOTS, BRUSH, SOD, OR THE OTHER ORGANIC MATERIAL SHALL NOT BE ALLOWED. FROZEN SOILS, SNOW, ICE, HEAVY CLAYS, OR WET SOILS SHALL NOT BE ALLOWED. MATERIAL PASSING THE #40 SIEVE SHALL HAVE A LIQUID LIMIT OF LESS THAN 30 AND A PLASTIC LIMIT OF LESS THAN 15, UNLESS WRITTEN CONSENT IS OBTAINED FROM THE ENGINEER PRIOR TO PLACEMENT.

### 3.3 SOIL PROPERTIES

MINIMUM INTERNAL ANGLE OF FRICTION SHALL EQUAL OR BE GREATER THAN REFERENCE IN SECTION 1.3 VERIFICATION SHALL BE FILED WITH THE ENGINEER THAT THE SOIL WILL MEET THIS CRITERIA.

### 4.0 SOIL TESTING

COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LIFT ELEVATION REQUIRING GEOGRID OR EVERY 3RD LIFT AS A MINIMUM TEST SHALL BE FILED WITH THE ENGINEER'S OFFICE.

### 5.0 HYDROSTATIC PRESSURE POTENTIAL

THE ENGINEER SHALL BE NOTIFIED IF ANY OF THE FOLLOWING SHOULD BECOME EVIDENT:

- WATER OR WETNESS FROM OR IN A CUT BANK.
- LOCAL SPRINGS, LOCAL STORM DRAINS, SEWER, WATER LINES UNDER OR BEHIND THE WALL

### 6.0 ACCEPTABLE BLOCK

SRW UNITS SHALL BE USED & KEPT FREE OF DEFECTS THAT WOULD INTERFERE WITH THE PLACING OR POSITIONING OF THE UNIT OR IMPAIR ITS STRENGTH. MINOR CRACKS INCIDENTAL TO THEIR USUAL METHOD OF MANUFACTURING OR MINOR CHIPPING RESULTING FROM SHIPMENT & DELIVERY ARE NOT GROUNDS FOR REJECTION.

### 7.0 ACCEPTABLE GEOGRID

GEOGRID SHALL BE REJECTED IF 20% OR MORE OF A STRUCTURAL RIB HAS BEEN CUT OR RIPPED THE CONTRACTOR SHALL INSPECT ALL GEOGRID DELIVERED TO THE SITE AND REJECT MATERIALS THAT MEET THIS CRITERIA. IF THE GEOGRID IS DAMAGED ON THE CONSTRUCTION SITE, IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

### 8.0 DRAINAGE COMPOSITE

(APPLIES TO CUT WALL APPLICATIONS ONLY), WHERE SITE CONDITIONS WARRANT, DRAINAGE COMPOSITE SHALL BE INSTALLED TO COVER 30% OF THE CUT BEHIND THE GEOGRID LAYERS. GRIDLOCK (4 FT. WIDE SECTIONS) PROVIDE 30% COVERAGE WHEN INSTALLED ON 15 FT. CENTERS AND 2/3 THE WALL HEIGHT.

### 9.0 SPECIAL PROVISIONS

- A. GENERAL CONTRACTOR SHALL COORDINATE UPPER GEOGRID LAYERS INSTALLATION WITH PAVING INSTALLATION.
- B. MAINTAIN THE DIRECTION OF DRAINAGE AWAY FROM THE WALL FACE AT TIMES DURING CONSTRUCTION OF THE WALL AND FINISH GRADING AS SHOWN ON PLANS.
- C. PLACEMENT OF GEOGRID SHALL BE AS PER PLANS REFERENCE TO LENGTH AND ELEVATIONS.
- D. THE ENGINEER SHALL BE NOTIFIED BY THE INSTALLING CONTRACTOR SHOULD THE EMBEDMENT DEPTH OF THE BLOCK BE LESS THAN 8" FOR WALLS UNDER OR EQUAL TO 7 FT., 12" FOR WALLS GREATER THAN 7 FT. AND 2'-0" FOR WALLS GREATER THAN OR EQUAL TO 14 FT.
- E. THE REINFORCED SOIL IS ASSUMED TO BE SANDY TYPE MATERIAL.

### 10.0 QUALIFICATION OF DESIGN

- A. STABILITY OF ANY TEMPORARY SLOPES REQUIRED BY THE INSTALLATION OF A SEGMENTAL RETAINING WALL SHALL BE ADDRESSED BY A QUALIFIED GEOTECHNICAL ENGINEER. RESPONSIBILITY OF THESE TEMPORARY SLOPES RESTS WITH THE OWNER AND/OR ARCHITECT OF THIS PROJECT AND THE SLOPES SHALL MEET ALL OSHA STANDARDS. SLOPES STEEPNESS = 1.5H:1V.
- B. HANDRAIL/GUARDRAIL REQUIREMENTS SHALL BE DETERMINED BY THE CIVIL SITE ENGINEER OF RECORD, NOT VENTURE ENGINEERING, P.A.
- C. NOTIFY VENTURE ENGINEERING, P.A. PRIOR TO MODIFYING IF EXISTING SITE TOPOGRAPHY DOES NOT MATCH CONDITIONS OUTLINED ON RETAINING WALL PROFILE.

This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.

### **GENERAL DESIGN NOTE:**

**GEOTECHNICAL GENERAL NOTE:** 

. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.

IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.

I. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1).

2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR

2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.

RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

DATE DESCRIPTIONS **REVISIONS** 



Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** HARNETT COUNTY, NC

**SPECIFICATIONS** SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

October 29, 2024	SCALE
TLH	
ED: KLY	HORIZONTAL:
/ED: MJM	N/A
	VERTICAL:
	N/A
	, , , , , , , , , , , , , , , , , , , ,

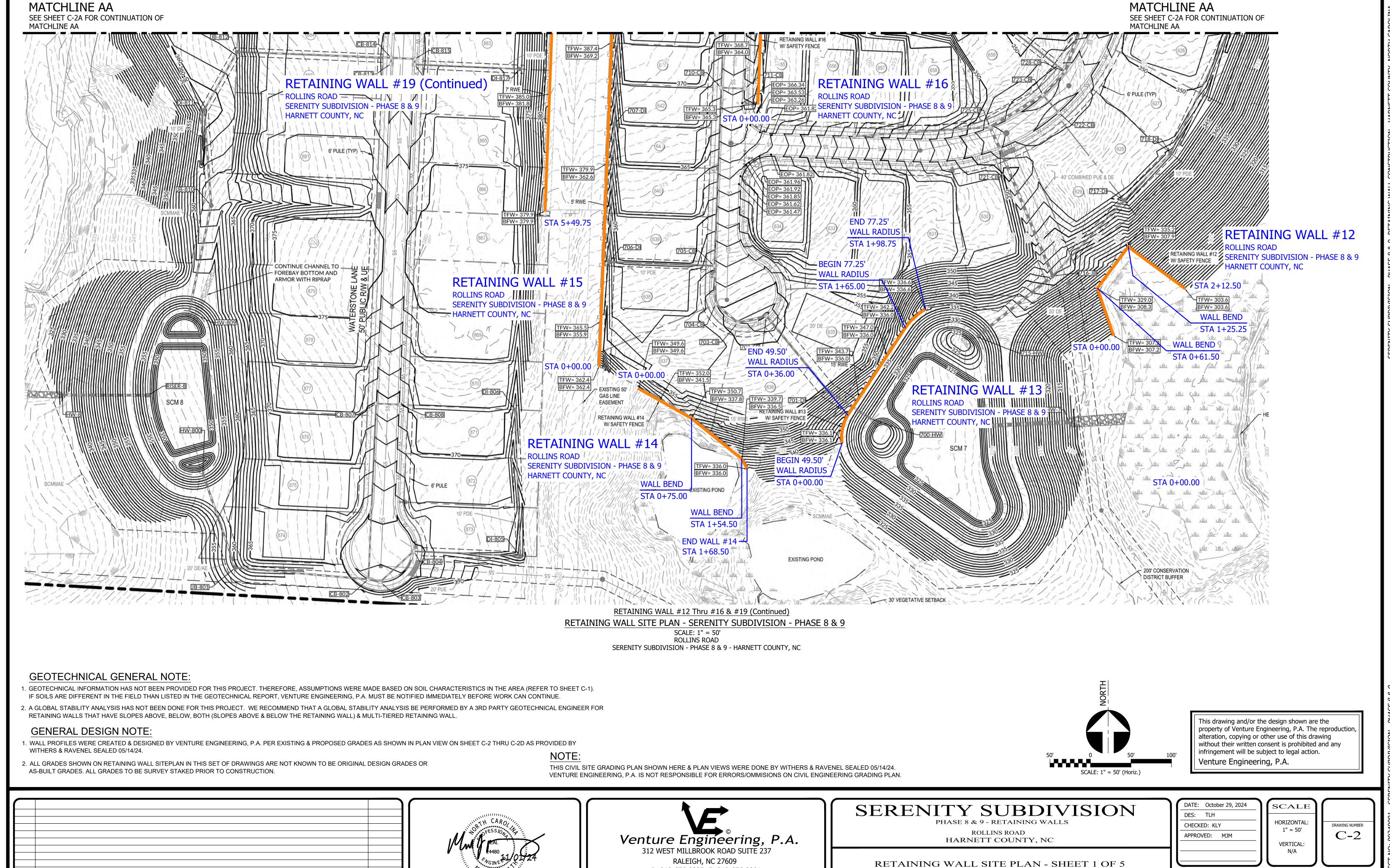
DATE:

DES:

CHECKE

APPRO\

DRAWING NUMBER



P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

DATE

DESCRIPTIONS

**REVISIONS** 

SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

RETAINING WALL #12 Thru #16 & #19 (Continued)

E PROJECT NO: 00240001 SERENITY SUBDIVI

Venture Engineering, P.A.

312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

DESCRIPTIONS

REVISIONS

DATE

ROLLINS ROAD

HARNETT COUNTY, NC

RETAINING WALL SITE PLAN - SHEET 2 OF 5

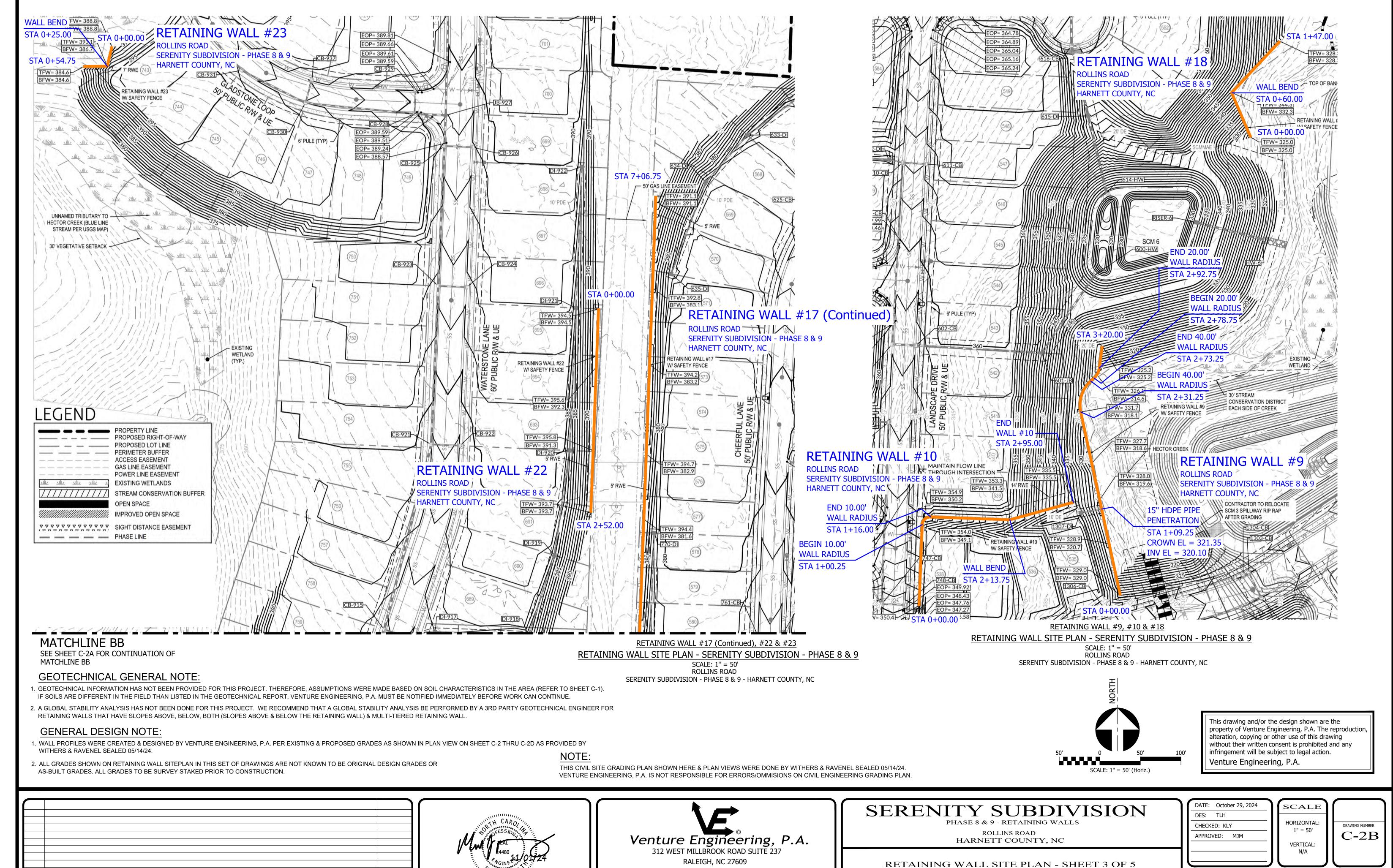
SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

RETAINING WALL #8, #11, #15 (Continued), #16 (Continued), #17, #19 Thru #21

C-2A

VERTICAL:

APPROVED: MJM



P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

DATE

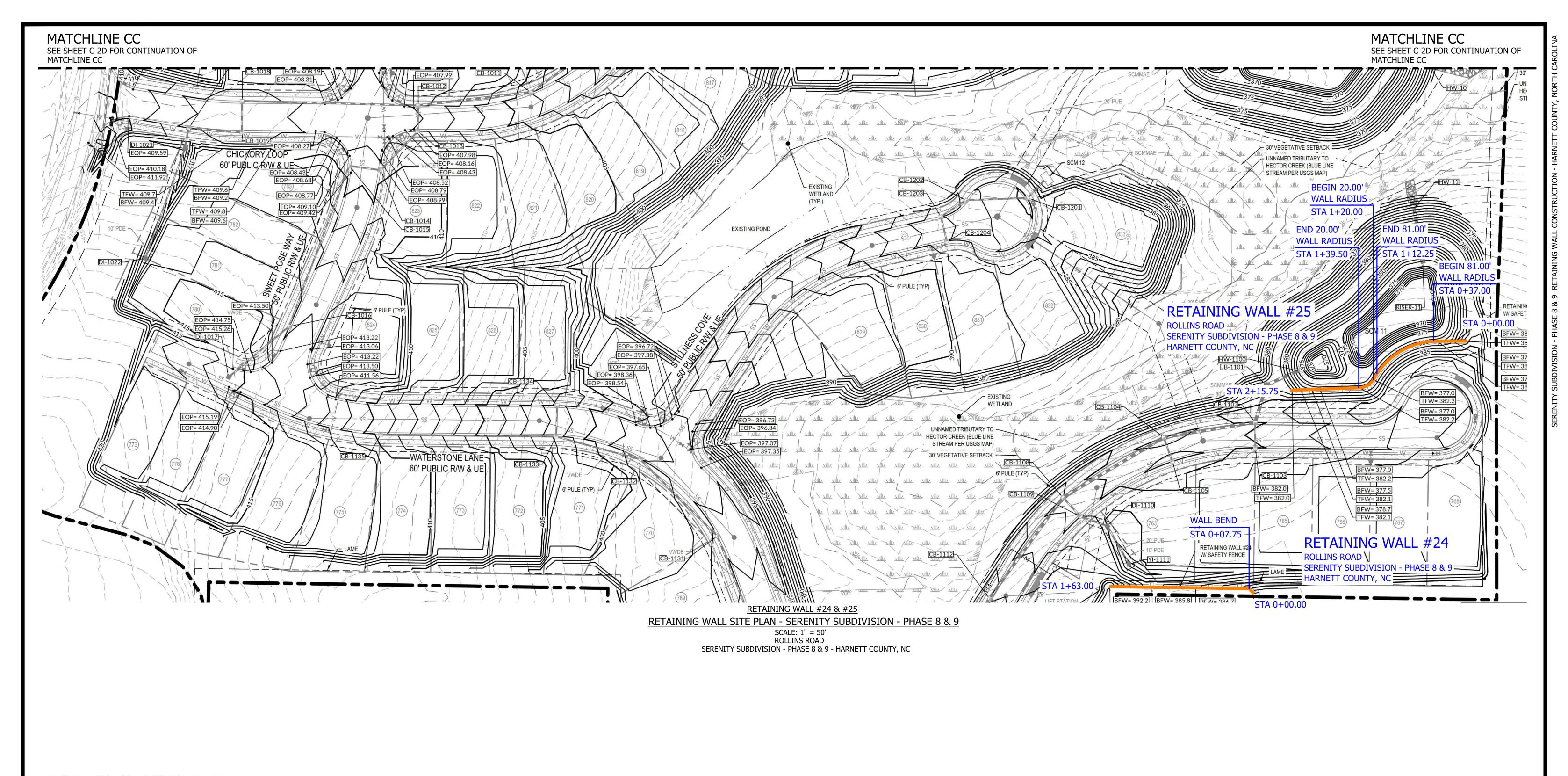
DESCRIPTIONS

REVISIONS

SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

RETAINING WALL #9, #10, #17 (Continued), #18, #22 & #23

VE PROJECT NO: 00240001 SERENITY SUBDIVISION - PHASE 8 &

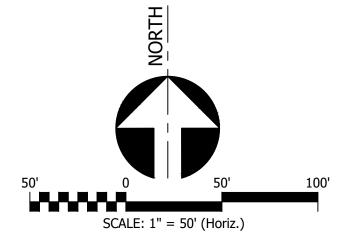


- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### GENERAL DESIGN NOTE:

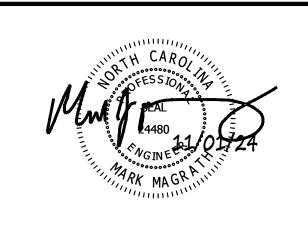
- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24. NOTE:
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.

THIS CIVIL SITE GRADING PLAN SHOWN HERE & PLAN VIEWS WERE DONE BY WITHERS & RAVENEL SEALED 05/14/24. VENTURE ENGINEERING, P.A. IS NOT RESPONSIBLE FOR ERRORS/OMMISIONS ON CIVIL ENGINEERING GRADING PLAN.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.

DESCRIPTIONS	DATE
REVISIONS	



Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

RETAINING WALL SITE PLAN - SHEET 4 OF 5 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

SERENITY SUBDIVISION

PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD

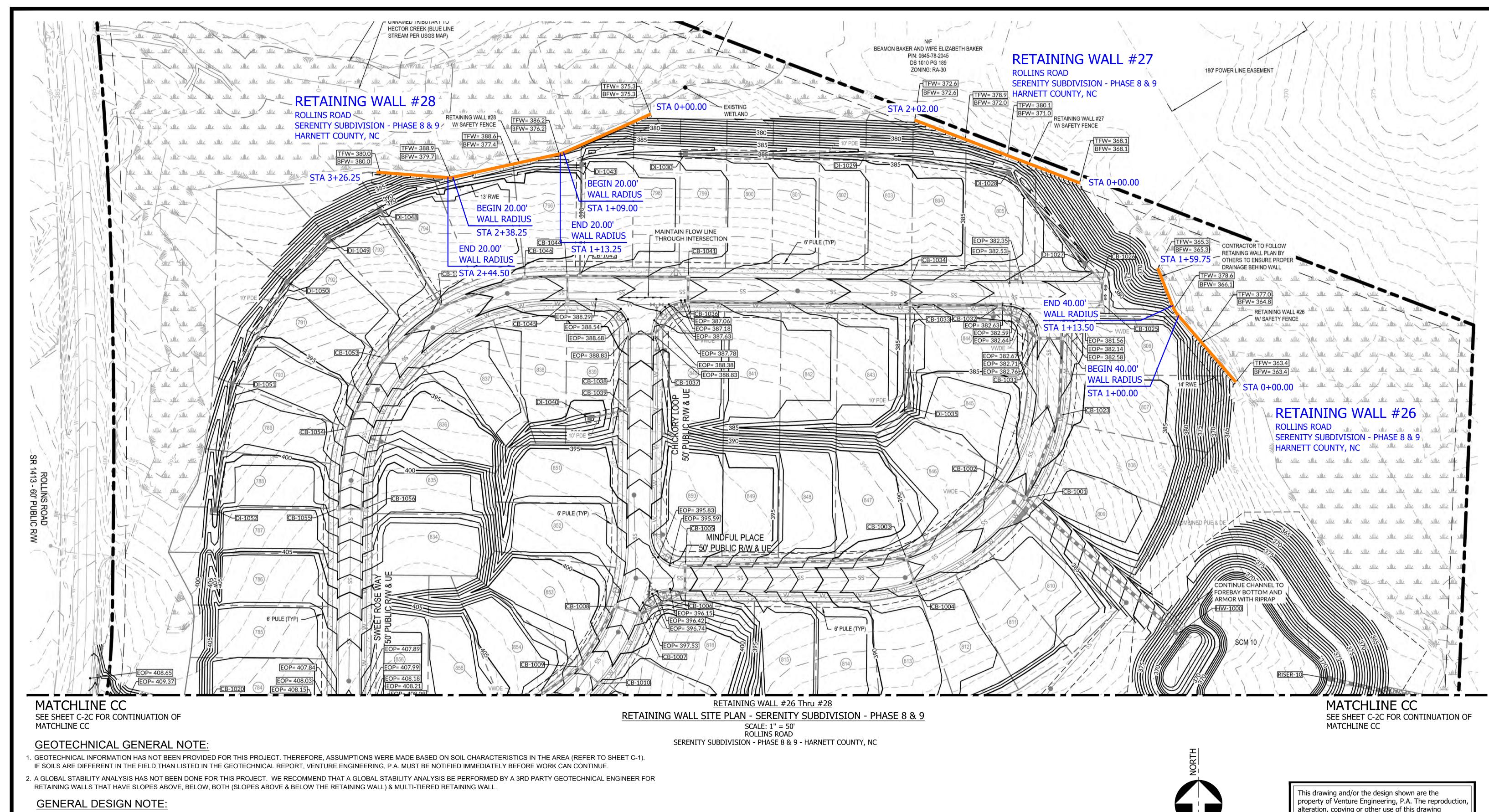
HARNETT COUNTY, NC

RETAINING WALL #24 & #25

ATE:	October 29, 2024	1	
ES:	TLH		_
HECKE	D: KLY		
PPRO\	/ED: MJM		

SCALE HORIZONTAL: 1" = 50' VERTICAL:

C-2C



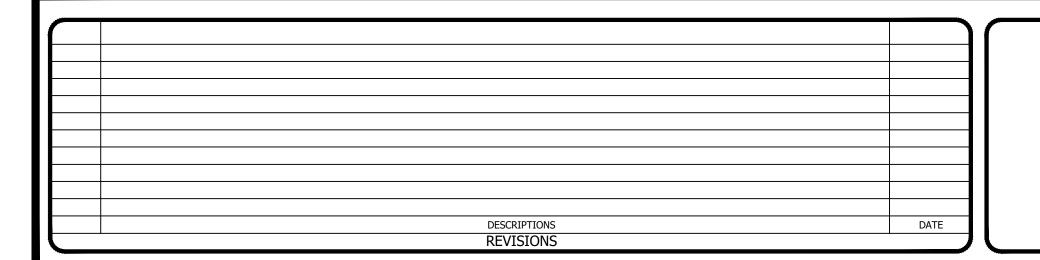
1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.

2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.

NOTE:

THIS CIVIL SITE GRADING PLAN SHOWN HERE & PLAN VIEWS WERE DONE BY WITHERS & RAVENEL SEALED 05/14/24. VENTURE ENGINEERING, P.A. IS NOT RESPONSIBLE FOR ERRORS/OMMISIONS ON CIVIL ENGINEERING GRADING PLAN.

this drawing hibited and any







RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD HARNETT COUNTY, NC

RETAINING WALL SITE PLAN - SHEET 5 OF 5 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC RETAINING WALL #26 Thru #28

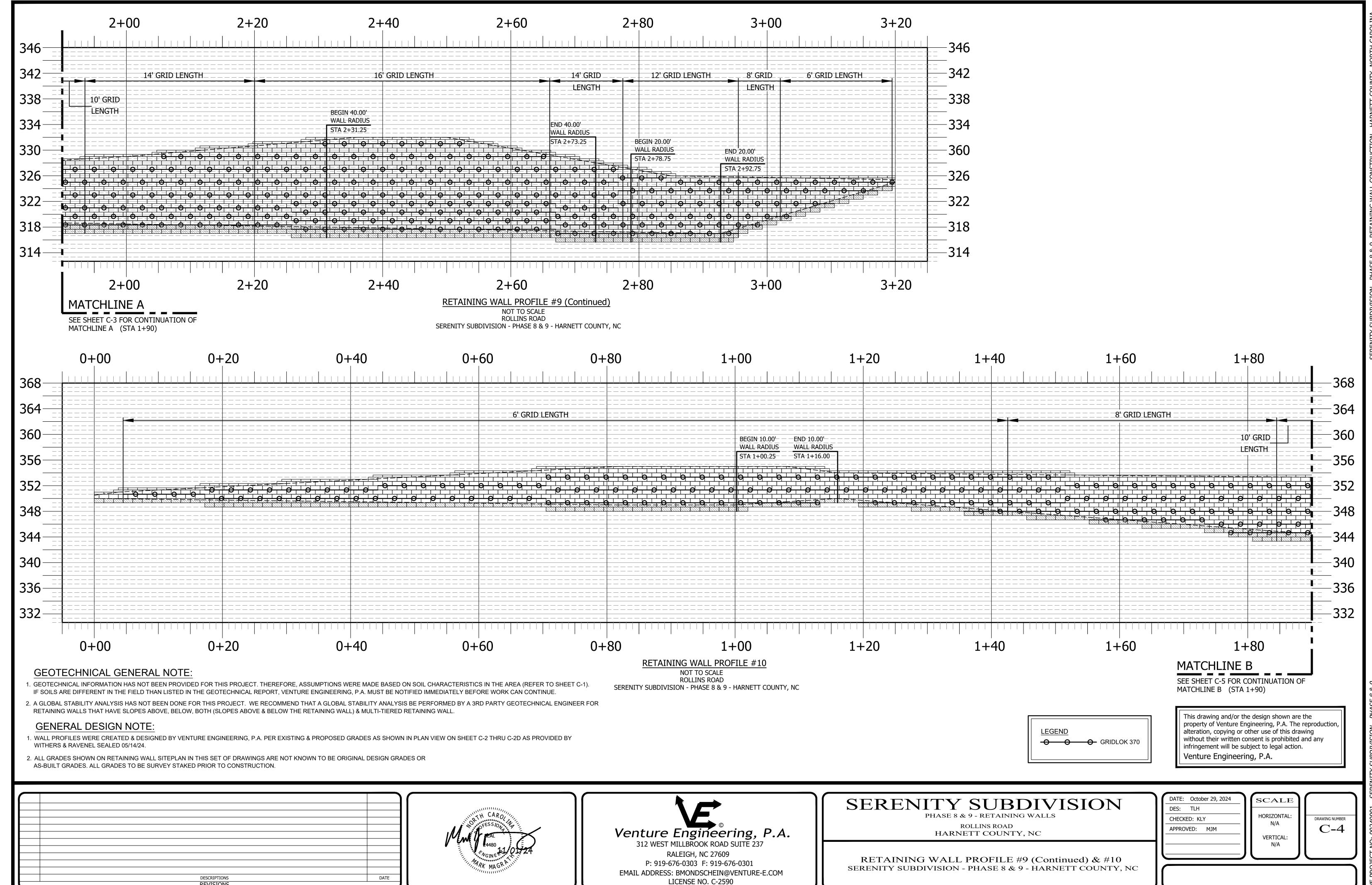
100'	This drawing and/or the design show property of Venture Engineering, P.A alteration, copying or other use of the without their written consent is prohinfringement will be subject to legal Venture Engineering, P.A.
•	
DA	TE: October 29, 2024

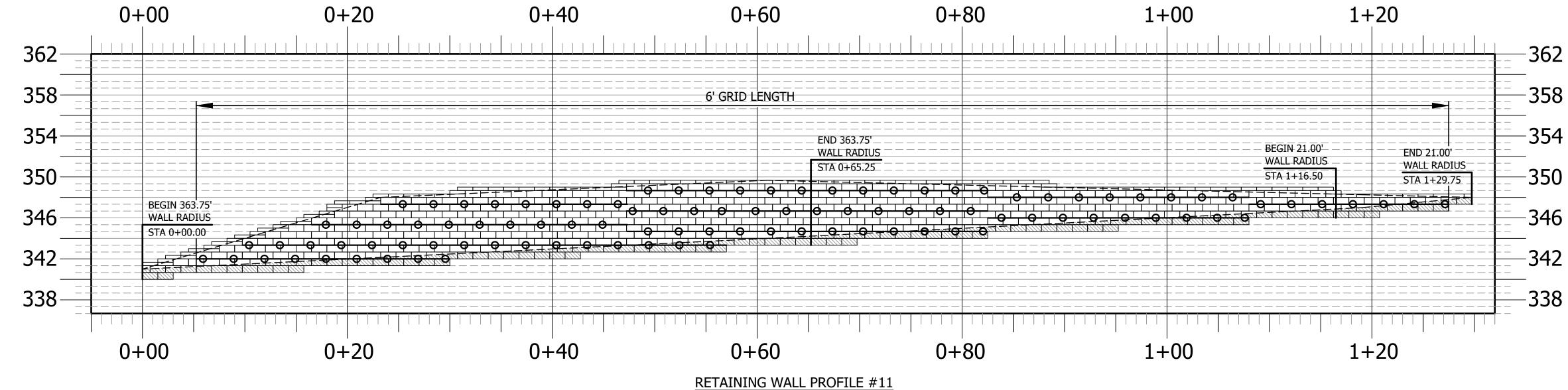
DES: TLH

CHECKED: KLY

APPROVED: MJM

HORIZONTAL: 1" = 50' C-2D VERTICAL:





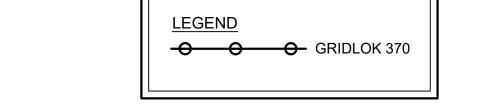
NOT TO SCALE **ROLLINS ROAD** SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

### **GEOTECHNICAL GENERAL NOTE:**

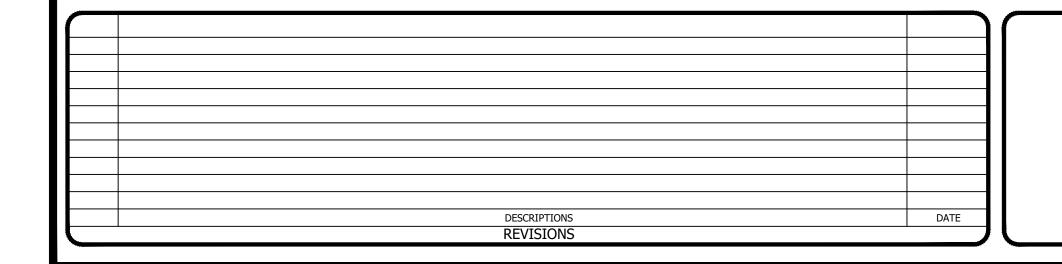
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237

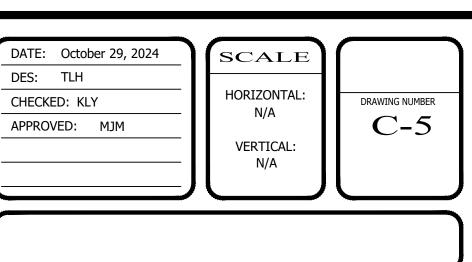
RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** 

HARNETT COUNTY, NC

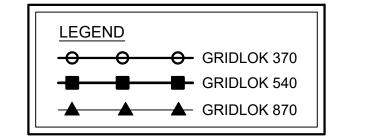
RETAINING WALL PROFILE #10 (Continued) & #11 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC



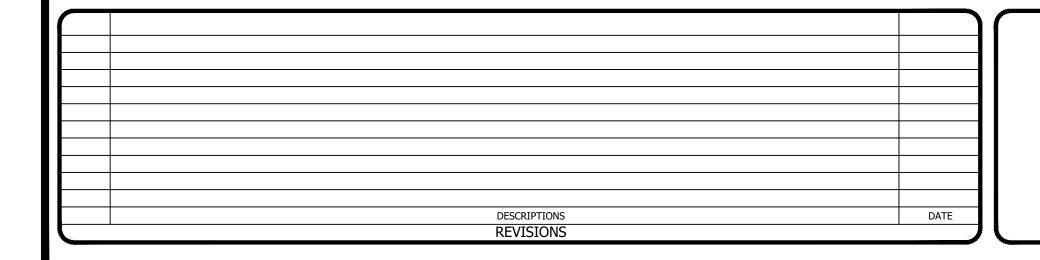
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

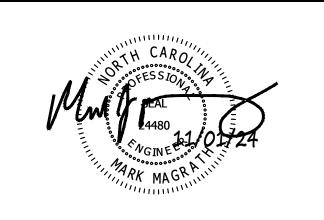
### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

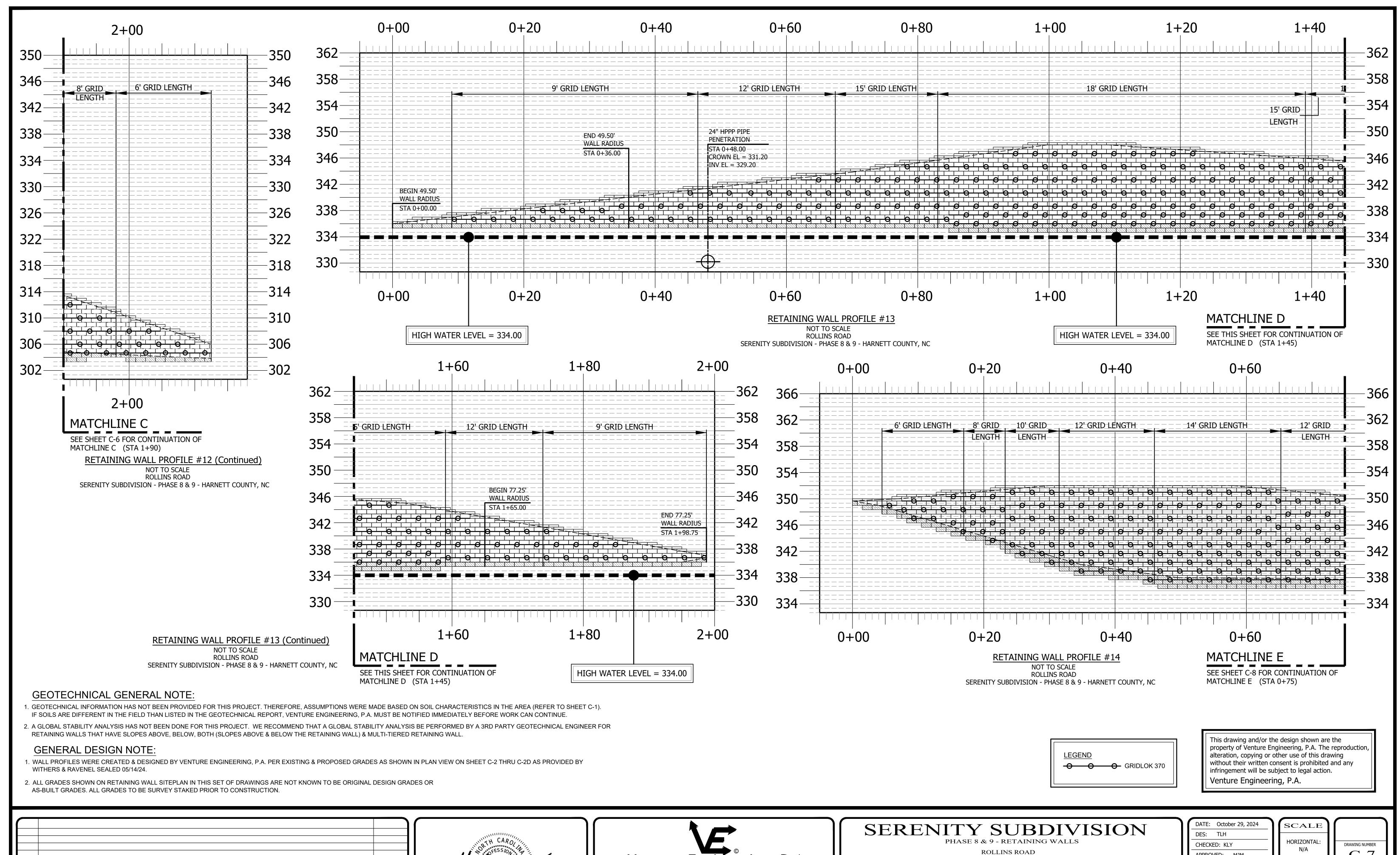
### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** 

HARNETT COUNTY, NC

RETAINING WALL PROFILE #12 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

ATE: October 29, 2024 ES: TLH HECKED: KLY PPROVED: MJM	SCALE  HORIZONTAL: N/A  VERTICAL: N/A	DRAWING NUMBER



Venture Engineering, P.A.

312 WEST MILLBROOK ROAD SUITE 237

RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301

DATE

DESCRIPTIONS

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

APPROVED: MJM

VERTICAL:

N/A

HARNETT COUNTY, NC

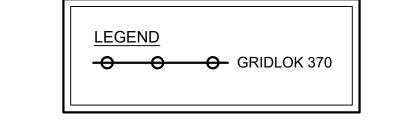
RETAINING WALL PROFILE #12 (Continued), #13 & #14

SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

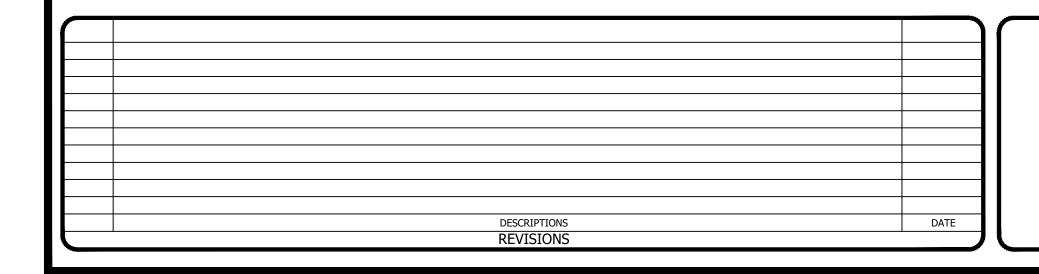
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

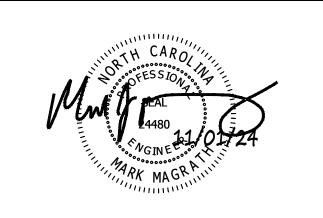
### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION

PHASE 8 & 9 - RETAINING WALLS **ROLLINS ROAD** 

HARNETT COUNTY, NC

RETAINING WALL PROFILE #14 (Continued) SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

DATE: October 29, 2024	SCALE	
DES: TLH		
CHECKED: KLY	HORIZONTAL:	DRAWING NUMBER
APPROVED: MJM	N/A	C-8
	VERTICAL: N/A	
	N/A	

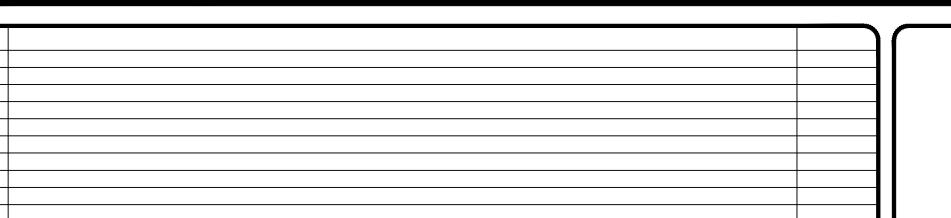
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR

DATE

RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

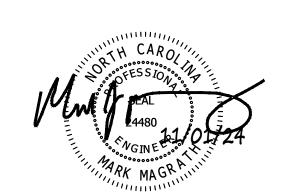
### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



DESCRIPTIONS

REVISIONS





RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION

PHASE 8 & 9 - RETAINING WALLS **ROLLINS ROAD** 

**LEGEND** 

HARNETT COUNTY, NC

RETAINING WALL PROFILE #15 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

infringement will be subject to legal action. Venture Engineering, P.A. DATE: October 29, 2024 SCALE DES: TLH HORIZONTAL: CHECKED: KLY DRAWING NUMBER C-9 APPROVED: MJM VERTICAL:

This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing

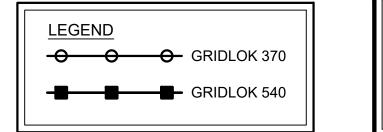
without their written consent is prohibited and any

N/A

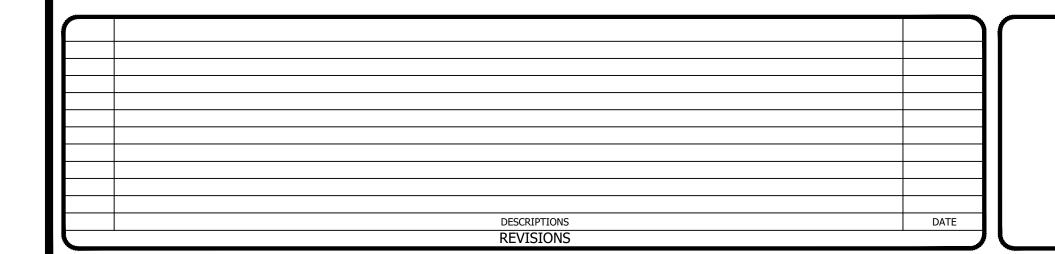
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301

LICENSE NO. C-2590

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** HARNETT COUNTY, NC

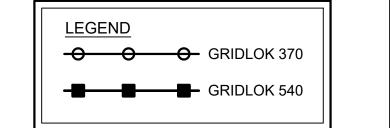
RETAINING WALL PROFILE #15 (Continued) SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

ATE: October 29, 2024 ES: TLH HECKED: KLY PPROVED: MJM	SCALE  HORIZONTAL: N/A  VERTICAL: N/A	DRAWING NUMBER  C-10

- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

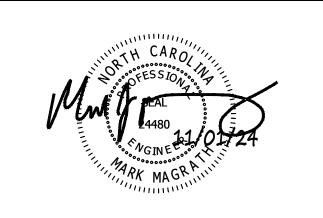
### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.

DATE REVISIONS



Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** 

HARNETT COUNTY, NC

RETAINING WALL PROFILE #15 (Continued) SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

ATE: October 29, 2024 ES: TLH HECKED: KLY PPROVED: MJM	HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER  C-11

- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

# SERENITY SUBDIVISION

PHASE 8 & 9 - RETAINING WALLS **ROLLINS ROAD** HARNETT COUNTY, NC

O O GRIDLOK 370

GRIDLOK 540

RETAINING WALL PROFILE #15 (Continued) SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.

SCALE HORIZONTAL: DRAWING NUMBER C-12VERTICAL:

DATE REVISIONS

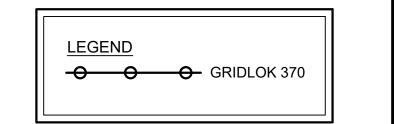


DATE: October 29, 2024 DES: TLH CHECKED: KLY APPROVED: MJM

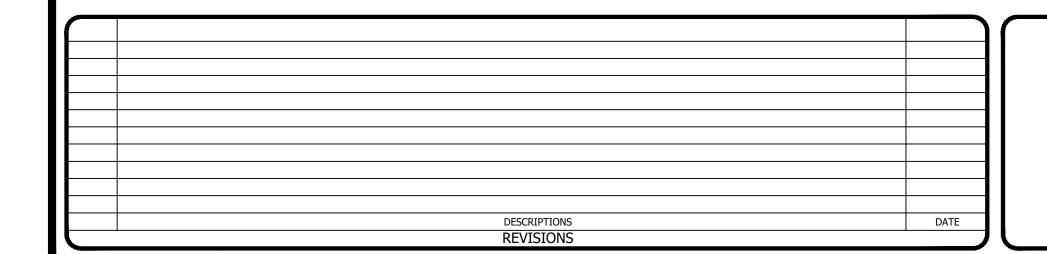
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### GENERAL DESIGN NOTE:

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

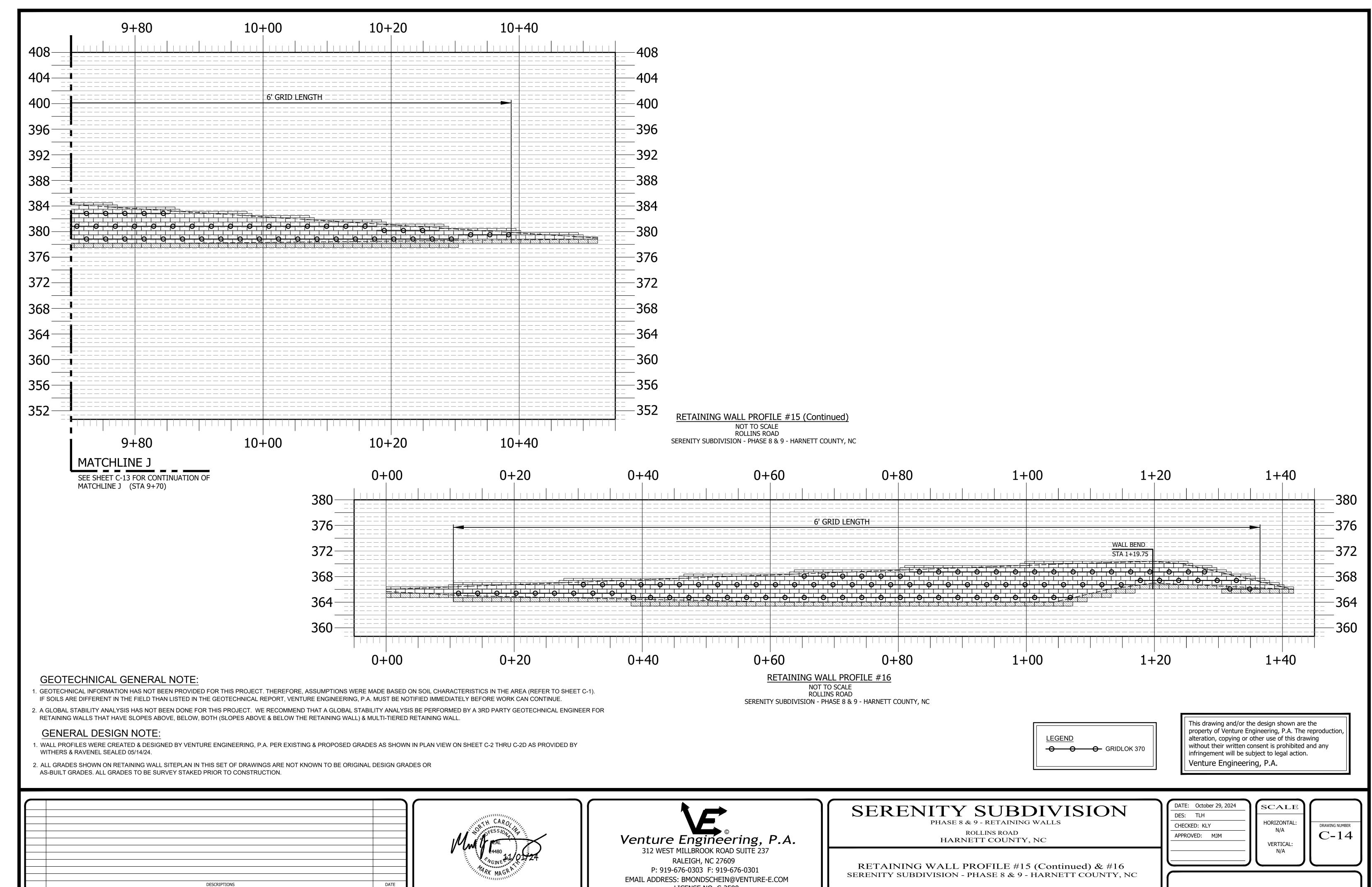
### SERENITY SUBDIVISION

PHASE 8 & 9 - RETAINING WALLS **ROLLINS ROAD** 

HARNETT COUNTY, NC

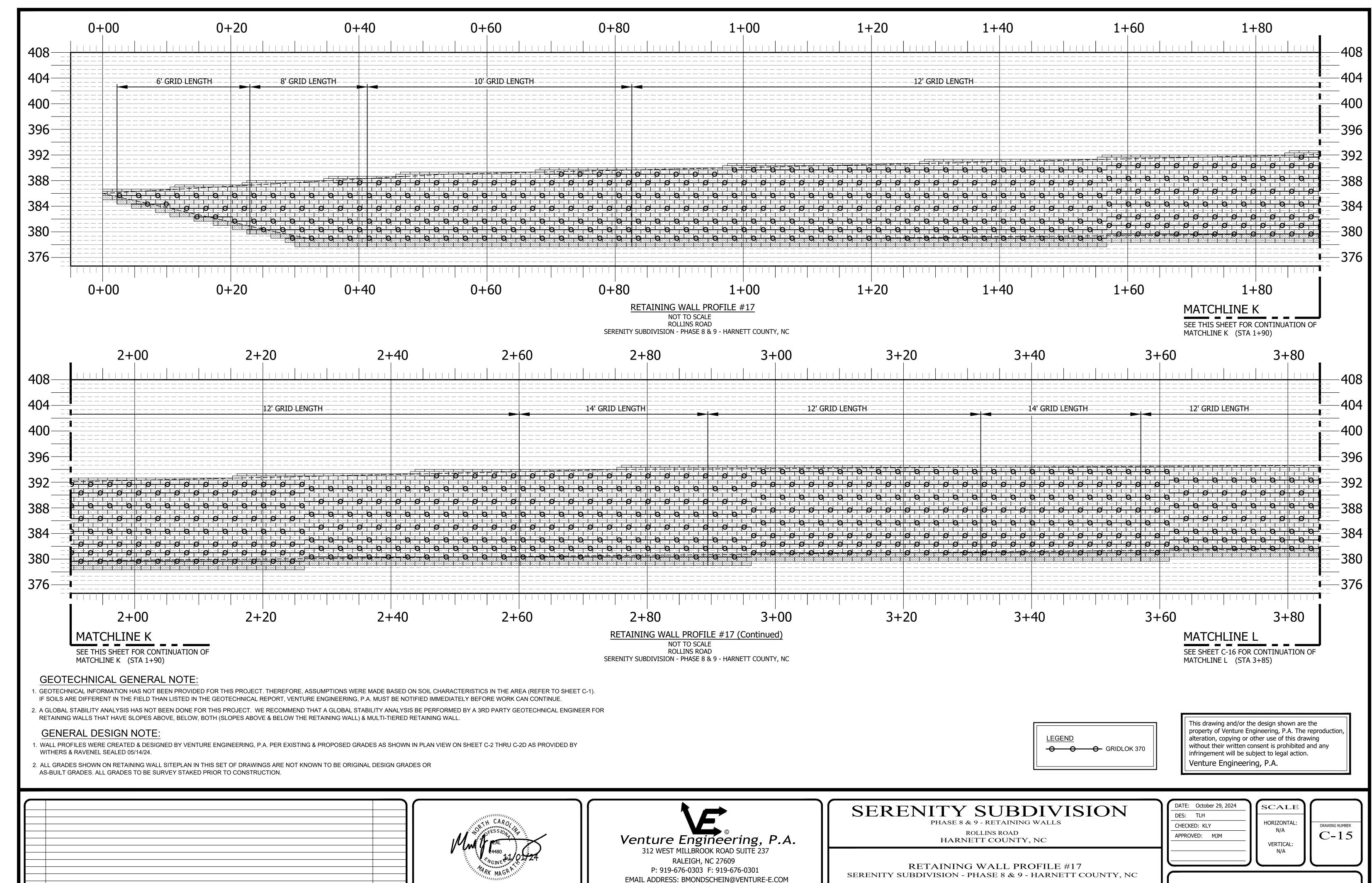
RETAINING WALL PROFILE #15 (Continued) SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

DATE: October 29, 2024 DES: TLH CHECKED: KLY DPROVED: MJM	HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-13



LICENSE NO. C-2590

VE PROJECT NO: 00240001 SERENITY SUBDIVI

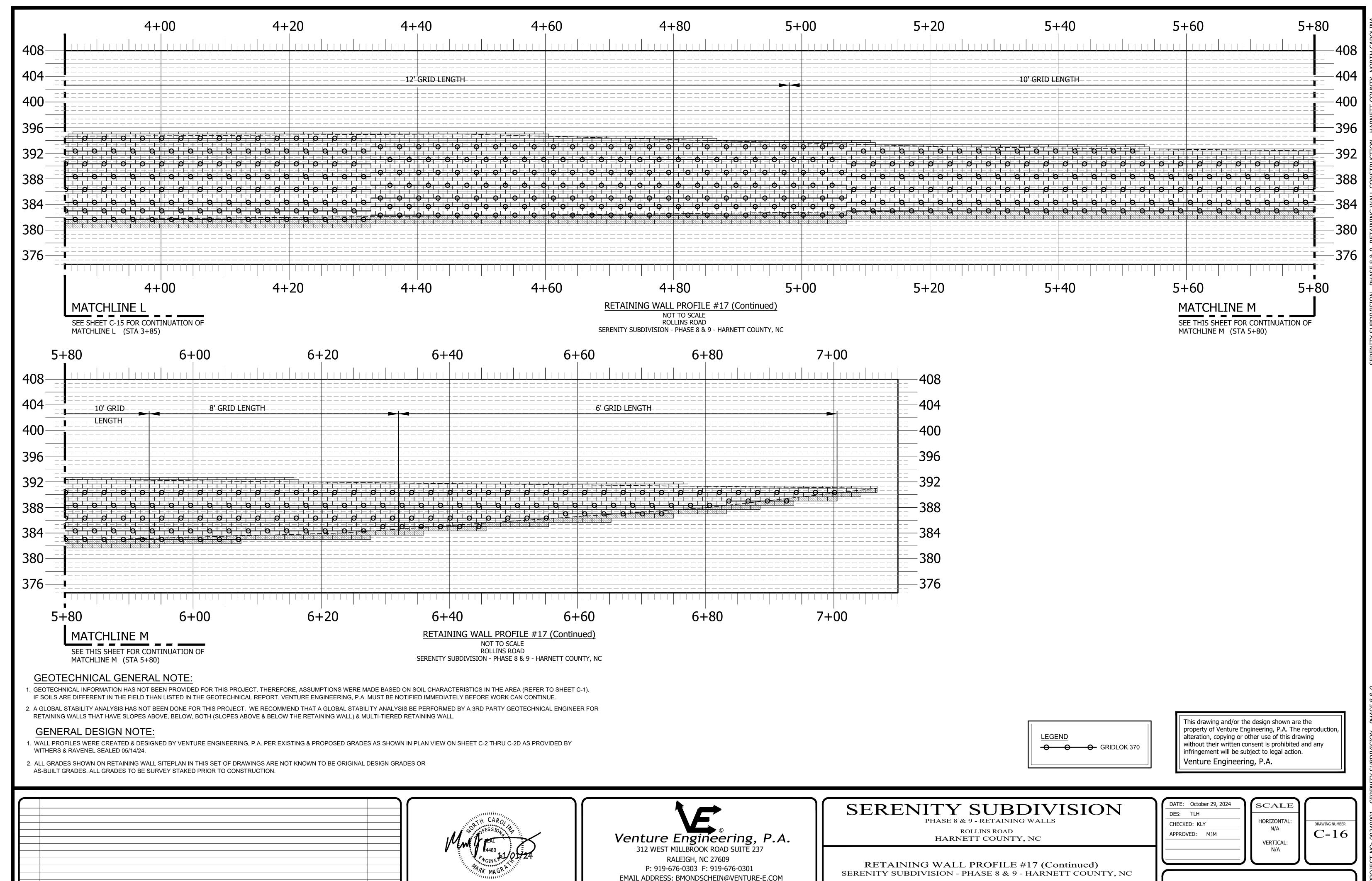


LICENSE NO. C-2590

DESCRIPTIONS

DATE

VE PROJECT NO: 00240001 SERENITY SUBDI



LICENSE NO. C-2590

DESCRIPTIONS

DATE

VE PROJECT NO: 00240001 SERENITY SUBDIV

RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301

DESCRIPTIONS

DATE

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

RETAINING WALL PROFILE #18 & #19

SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

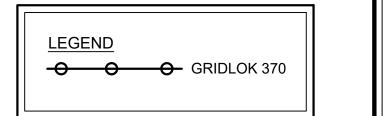
VE PROJECT NO: 00240001 SERENITY SUBDIVISION - PHA

- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1).

  IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

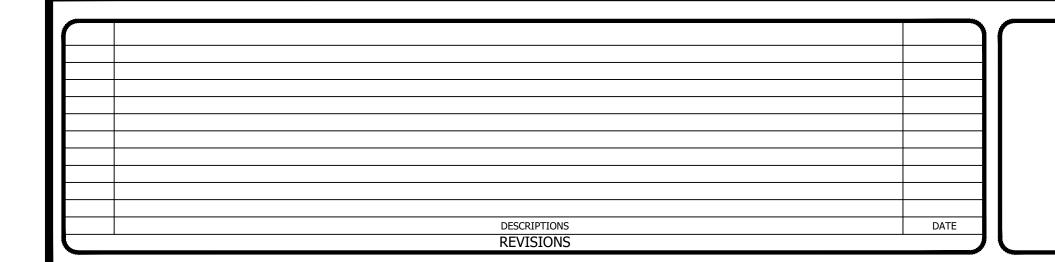
### GENERAL DESIGN NOTE:

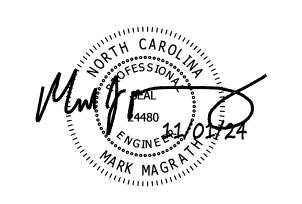
- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.

Venture Engineering, P.A.







RALEIGH, NC 27609
P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM
LICENSE NO. C-2590

# SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

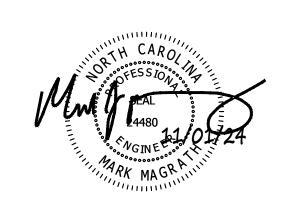
ROLLINS ROAD
HARNETT COUNTY, NC

RETAINING WALL PROFILE #19 (Continued)
SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

DATE: October 29, 2024 DES: TLH CHECKED: KLY DES: MJM	HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-18

VE PROJECT NO: 00240001 SERENITY SUBDIVISION - PHA

DESCRIPTIONS DATE
REVISIONS



# Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237

RALEIGH, NC 27609
P: 919-676-0303 F: 919-676-0301
EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM
LICENSE NO. C-2590

# SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD HARNETT COUNTY, NC

RETAINING WALL PROFILE #21 (Continued) & #22 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

DATE: October 29, 2024

DES: TLH

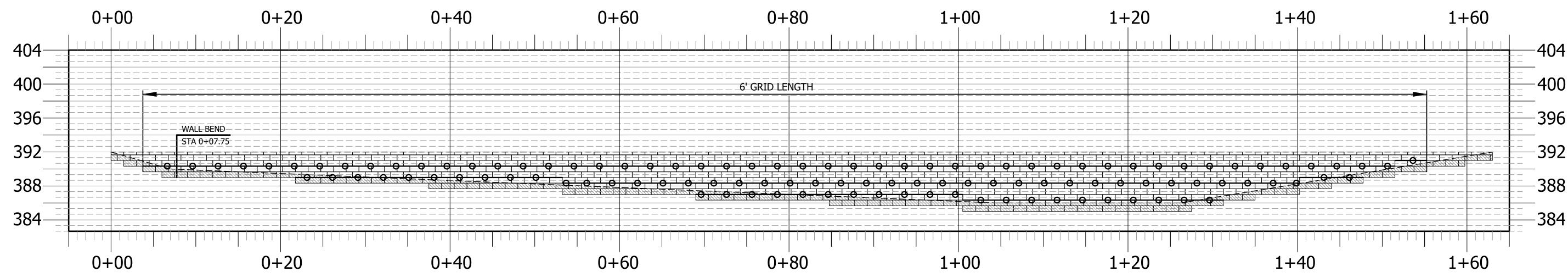
CHECKED: KLY

APPROVED: MJM

VERTICAL:
N/A

VERTICAL:
N/A

: PROJECT NO: 00240001 SERENITY SUBDIVISION - PHASE



RETAINING WALL PROFILE #24

NOT TO SCALE
ROLLINS ROAD

SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

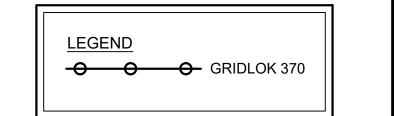
### GEOTECHNICAL GENERAL NOTE:

- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1).

  IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

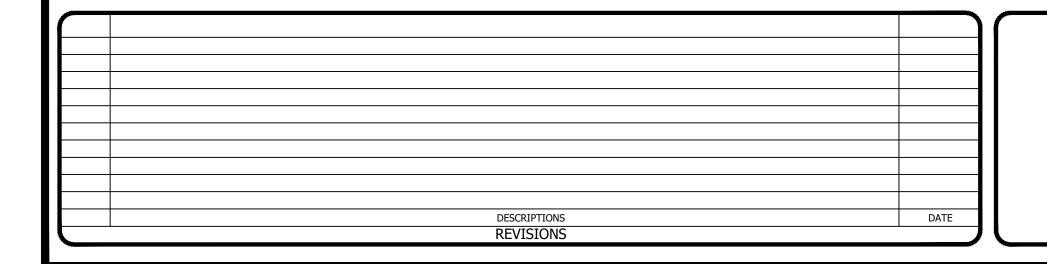
### GENERAL DESIGN NOTE:

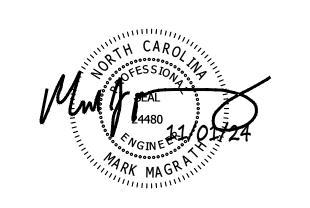
- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.

Venture Engineering, P.A.







RALEIGH, NC 27609
P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM
LICENSE NO. C-2590

# SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD HARNETT COUNTY, NC

RETAINING WALL PROFILE #22 (Continued), #23 & #24 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

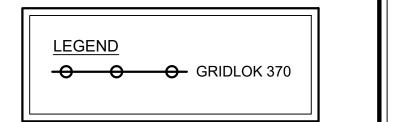
DATE: October 29, 2024  DES: TLH  CHECKED: KLY  APPROVED: MJM	HORIZONTAL: N/A  VERTICAL: N/A	DRAWING NUMBER C-21
		$\equiv$

VE PROJECT NO: 00240001 SERENITY SUBDIVISION - PH.

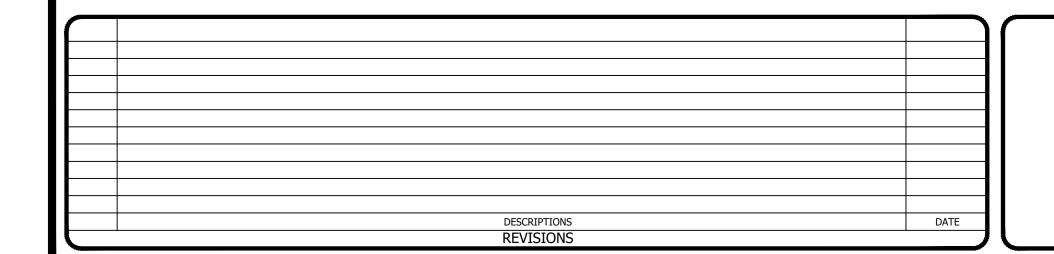
- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### **GENERAL DESIGN NOTE:**

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

**ROLLINS ROAD** HARNETT COUNTY, NC

RETAINING WALL PROFILE #25 & #26 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

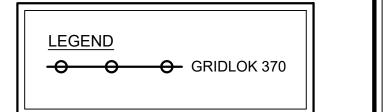
IORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-22
	N/A VERTICAL:

/E PROJECT NO: 00240001 SERENITY SUBDIVISION - PHASE 8 & 9

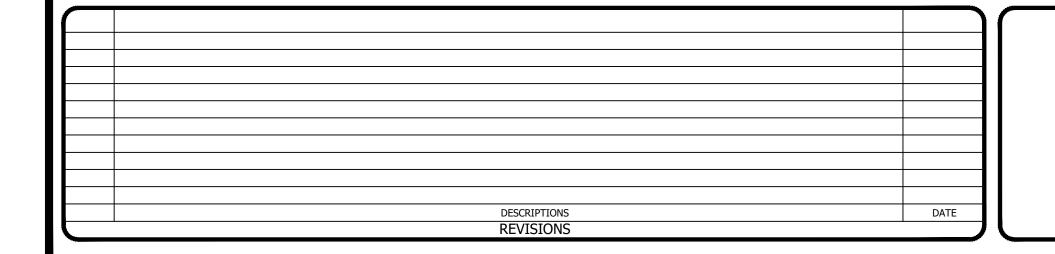
2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

### **GENERAL DESIGN NOTE:**

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action. Venture Engineering, P.A.





Venture Engineering, P.A. 312 WEST MILLBROOK ROAD SUITE 237 RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

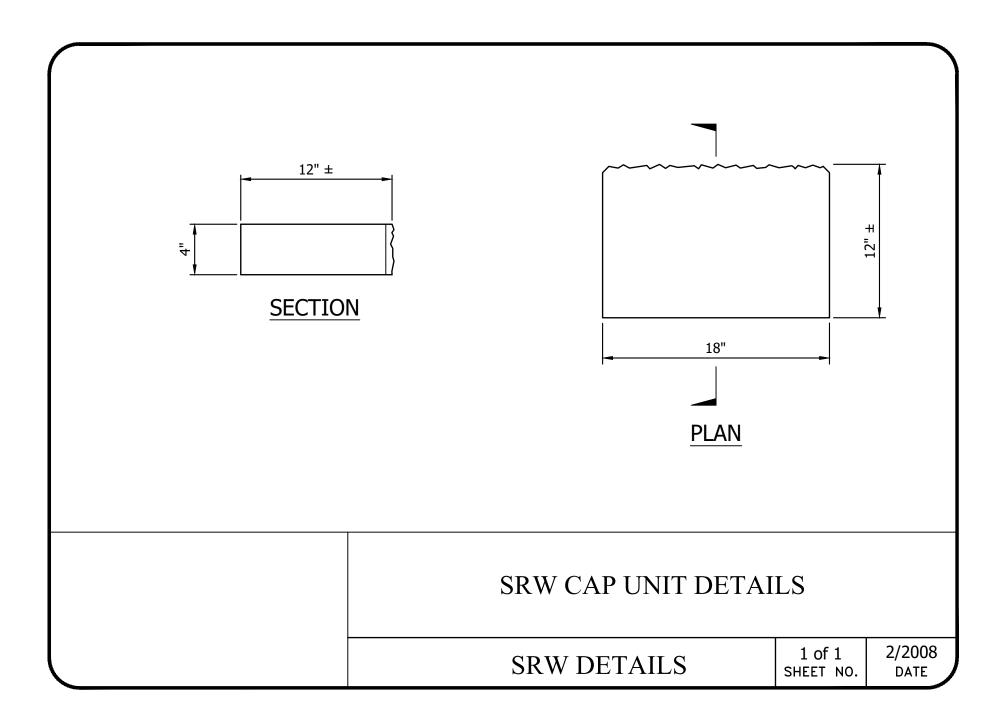
### SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

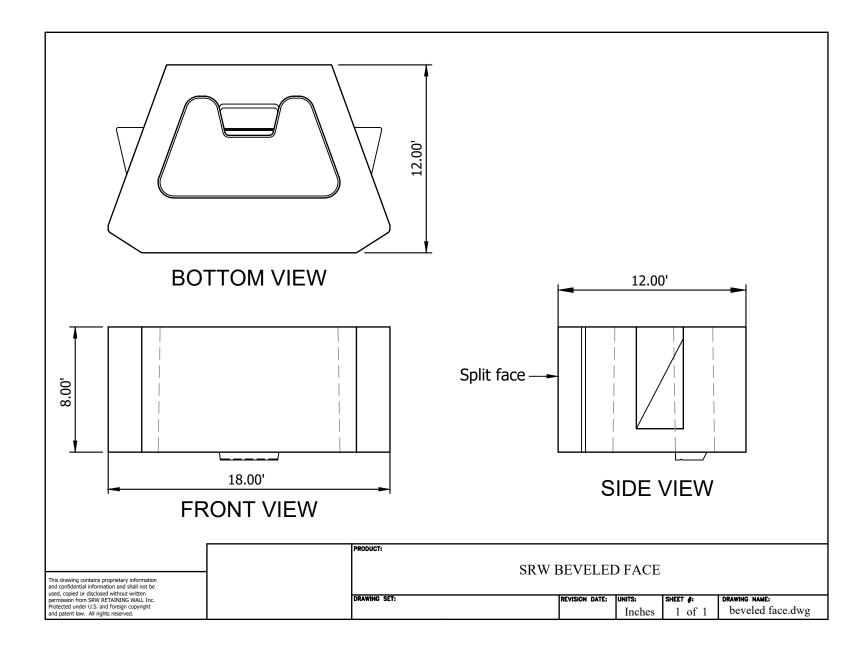
**ROLLINS ROAD** 

HARNETT COUNTY, NC

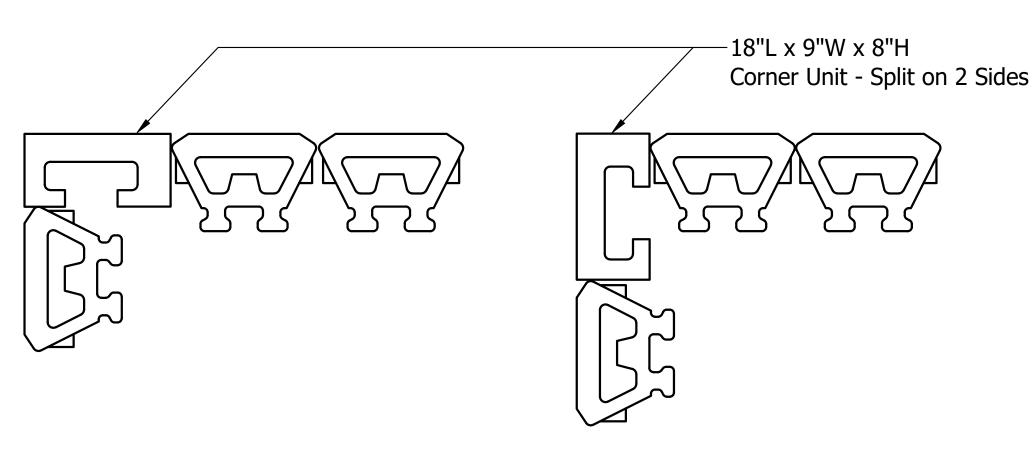
RETAINING WALL PROFILE #28 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

ATE: October 29, 2024 ES: TLH HECKED: KLY PPROVED: MJM	HORIZONTAL: N/A  VERTICAL: N/A	DRAWING NUMBER  C-24





Note:
Trim Face block to fit to accomodate setback.



Typical Outside Corner Formation Detail

Design By Others

### GEOTECHNICAL GENERAL NOTE:

- 1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1).

  IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL STABILITY ANALYSIS BE PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & BELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALL.

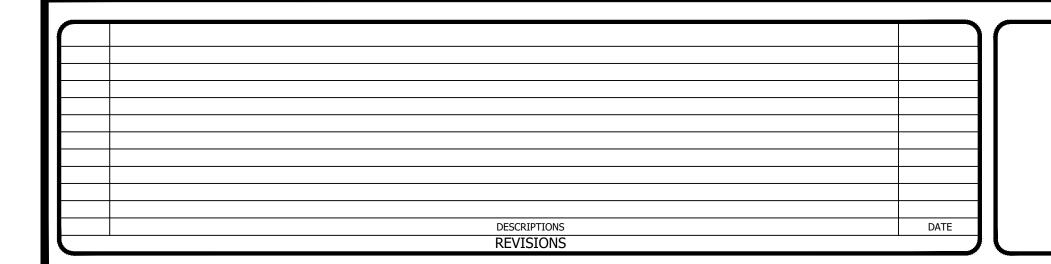
### GENERAL DESIGN NOTE:

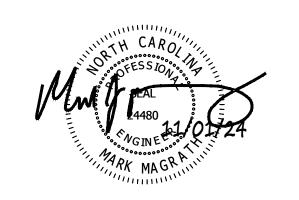
- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.

property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.

Venture Engineering, P.A.

Venture Engineering, P.A.





Venture Engineering, P.A.

312 WEST MILLBROOK ROAD SUITE 237

RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301

EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM

LICENSE NO. C-2590

# SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD
HARNETT COUNTY, NC

DETAIL SHEET - SHEET 1 OF 2 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC DATE: October 29, 2024

DES: TLH

CHECKED: KLY

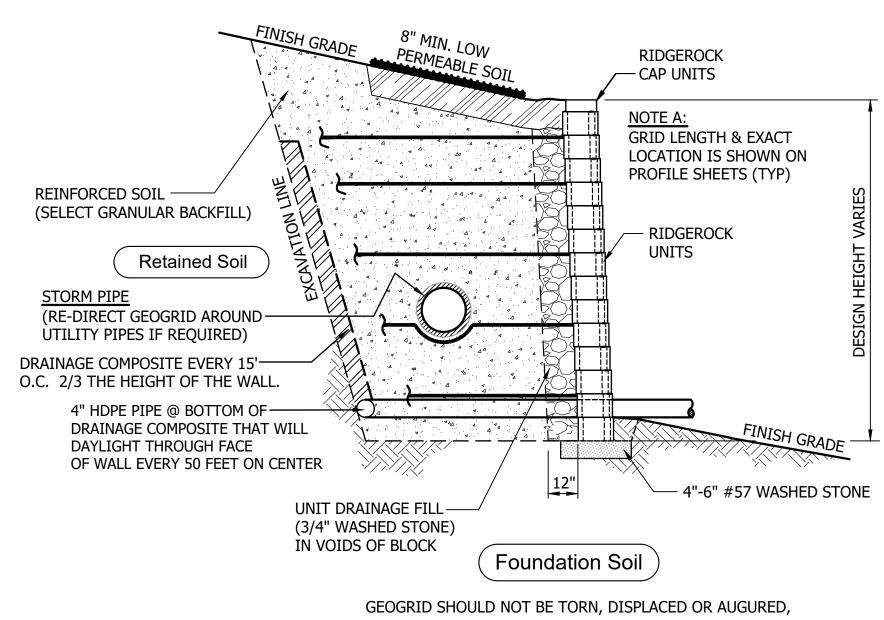
APPROVED: MJM

VERTICAL:
N/A

VERTICAL:
N/A

This drawing and/or the design shown are the

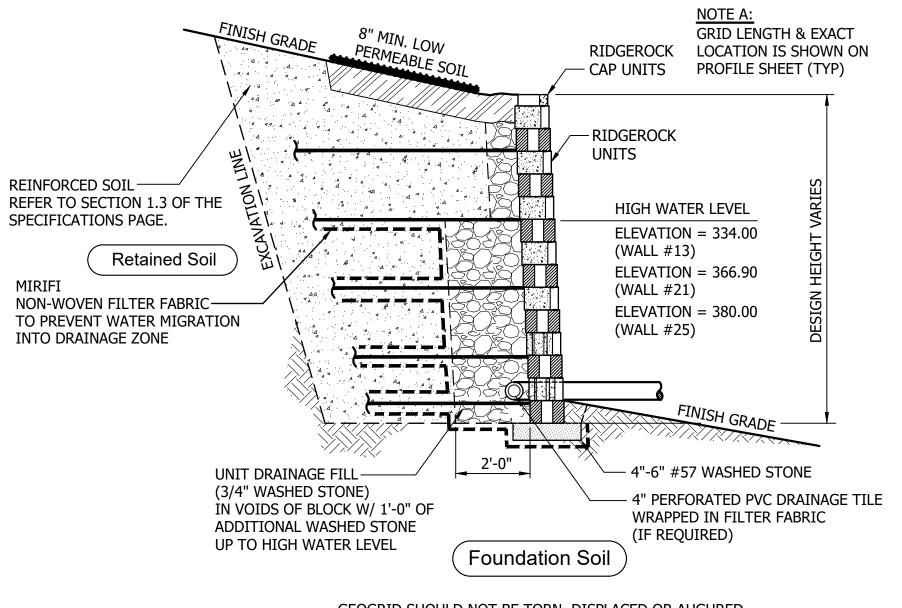
VE PROJECT NO: 00240001 SERENITY SUBDIV



WHEN FENCE POSTS OR GUARD RAIL POSTS ARE INSTALLED.

TYPICAL DRAINAGE COMPOSITE DETAIL (For Cut Walls Only)

NOT TO SCALE



GEOGRID SHOULD NOT BE TORN, DISPLACED OR AUGURED,
WHEN FENCE POSTS OR GUARD RAIL POSTS ARE INSTALLED.

RIDGEROCK UNITS

TYPICAL REINFORCED WATER APPLICATION DE

TYPICAL REINFORCED WATER APPLICATION DETAIL

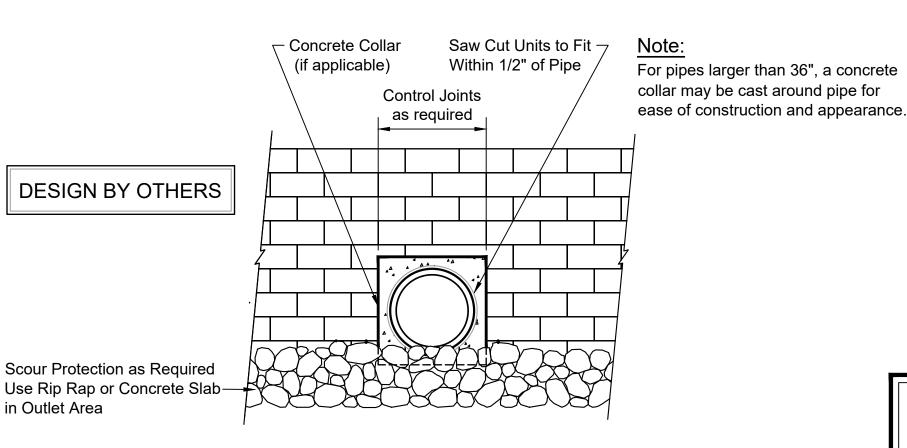
NOT TO SCALE

#### GEOTECHNICAL GENERAL NOTE:

- GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1).
   IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
- 2. A GLOBAL STABILITY ANALYSIS HAS NOT BEEN DONE FOR THIS PROJECT. WE RECOMMEND THAT A GLOBAL S STABILITY ANALYSIS PERFORMED BY A 3RD PARTY GEOTECHNICAL ENGINEER FOR RETAINING WALLS THAT HAVE SLOPES ABOVE, BELOW, BOTH (SLOPES ABOVE & DELOW THE RETAINING WALL) & MULTI-TIERED RETAINING WALLS.

#### **GENERAL DESIGN NOTE:**

- 1. WALL PROFILES WERE CREATED & DESIGNED BY VENTURE ENGINEERING, P.A. PER EXISTING & PROPOSED GRADES AS SHOWN IN PLAN VIEW ON SHEET C-2 THRU C-2D AS PROVIDED BY WITHERS & RAVENEL SEALED 05/14/24.
- 2. ALL GRADES SHOWN ON RETAINING WALL SITEPLAN IN THIS SET OF DRAWINGS ARE NOT KNOWN TO BE ORIGINAL DESIGN GRADES OR AS-BUILT GRADES. ALL GRADES TO BE SURVEY STAKED PRIOR TO CONSTRUCTION.



Typical Pipe Outlet Detail

Design By Others

This drawing and/or the design shown are the property of Venture Engineering, P.A. The reproduction, alteration, copying or other use of this drawing without their written consent is prohibited and any infringement will be subject to legal action.

Venture Engineering, P.A.

DESCRIPTIONS DATE

REVISIONS



Venture Engineering, P.A.

312 WEST MILLBROOK ROAD SUITE 237

RALEIGH, NC 27609

P: 919-676-0303 F: 919-676-0301

RALEIGH, NC 27609 P: 919-676-0303 F: 919-676-0301 EMAIL ADDRESS: BMONDSCHEIN@VENTURE-E.COM LICENSE NO. C-2590

# SERENITY SUBDIVISION PHASE 8 & 9 - RETAINING WALLS

ROLLINS ROAD
HARNETT COUNTY, NC

DETAIL SHEET - SHEET 2 OF 2 SERENITY SUBDIVISION - PHASE 8 & 9 - HARNETT COUNTY, NC

DATE: October 29, 2024	SC.
DES: TLH	
CHECKED: KLY	HORI
APPROVED: MJM	

HORIZONTAL:
N/A

VERTICAL:
N/A

DRAWING NUMBER

C-26

UMBER
26

VE PROJECT NO: 00240001 SERENITY SUBDIV

