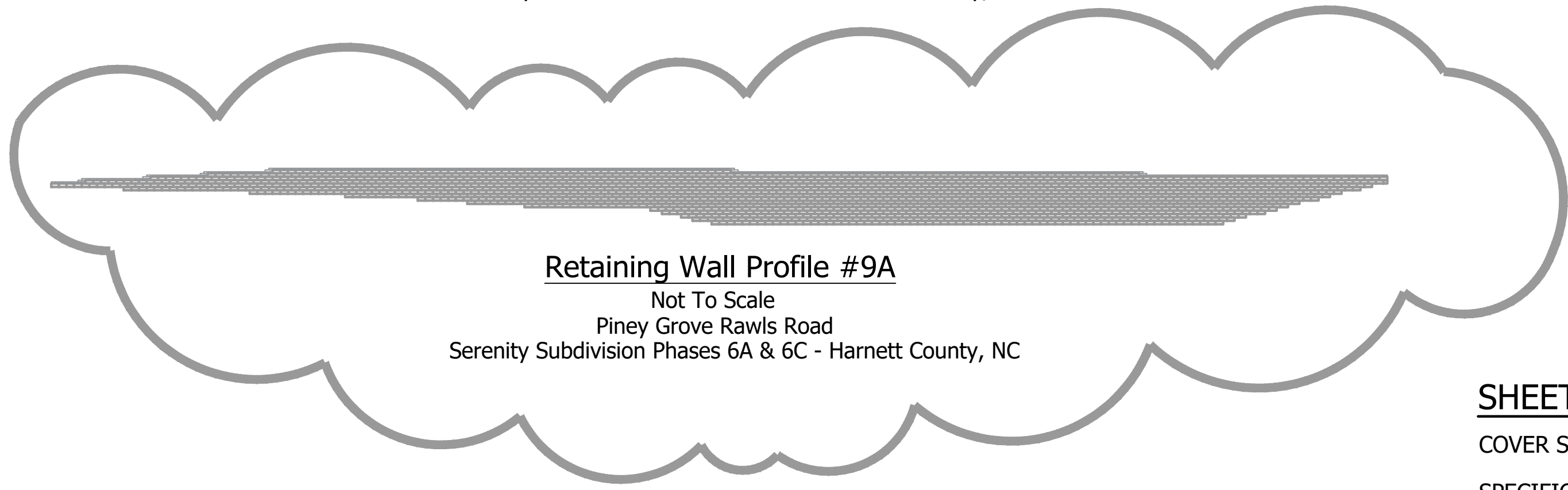
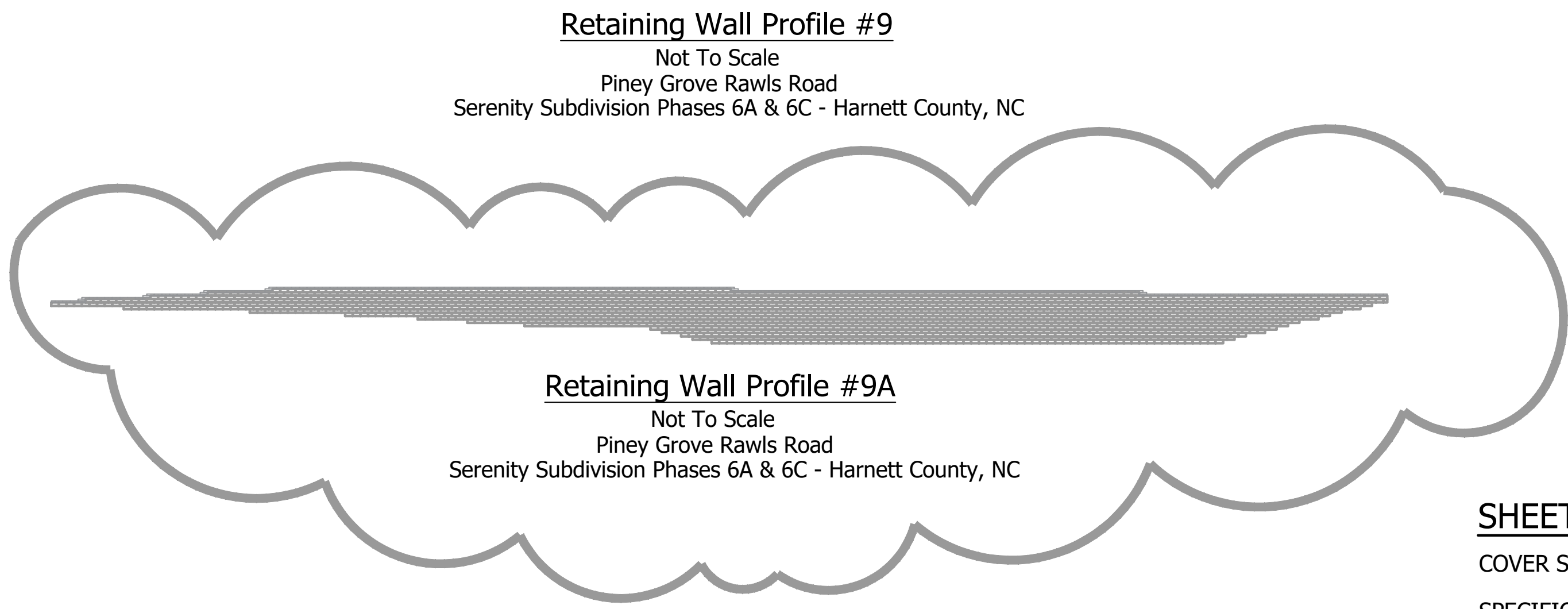
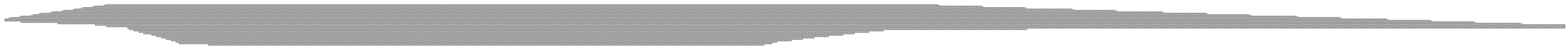
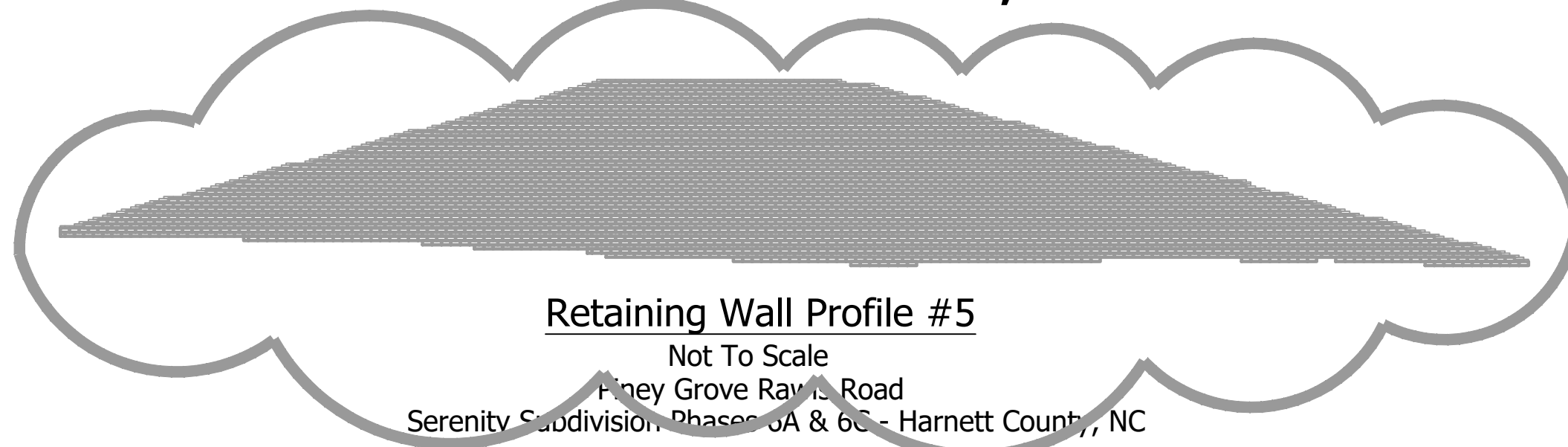


RETAINING WALL PLANS
FOR
SERENITY SUBDIVISION - PHASES 6A & 6C
RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC



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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 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 AS PROVIDED BY WITHERS & RAVENEL SEALED 01/24/24.
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.

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NO.	DESCRIPTIONS	DATE
2	REVISED PER SITE PLAN SEALED 1/24/24	01/31/24
1	REVISED TO ADD WALL NEW WALL #9A BEHIND LOTS #266 Thru #299	11/30/23
REVISIONS		



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LICENSE NO. C-2590

SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

COVER SHEET
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

DATE: JANUARY 31, 2024 DES: TLH CHECKED: KLY APPROVED: MJM	SCALE HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER G-1
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1.1 GENERAL

RIDGEROCK 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 $\phi = 28$ DEGREES, COHESION = 0 PSF, UNIT WEIGHT = 120 LBS/CU.F.T.

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

C.) REINFORCED SOILS $\phi = 28$ 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
2"	100
3/4"	75-100
No. #4	0-10
No. #50	0-5

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

SIEVE SIZE	% PASSING
2"	100
3/4"	100-75
No. #40	< 0-60
No. #200	< 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 4,000 PSF.

1.5 CONCRETE MASONRY WALL UNITS

CONCRETE WALL UNITS SHALL BE RIDGEROCK UNITS MANUFACTURED IN ACCORDANCE WITH ASTM-C1372 AND ASTM C140 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. UNITS SHALL BE INTERLOCKED WITH NON-CORROSIVE FIBERGLASS PINS.

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.

GEOTECHNICAL GENERAL NOTE:

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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 SWEEPED 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. AFTER PLACING PINS IN EACH OF THE APPROPRIATE HOLES PROCEED TO THE NEXT COURSE OF BLOCK. EACH UNIT SHALL CONTACT THE UNITS ON BOTH SIDES AS WELL AS ABOVE AND BELOW. SOME ADJUSTMENTS MAY BE REQUIRED FOR WALLS WITH CURVES AND A BATTER.

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(RIDGEROCK 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 KEYSTONE 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

TAN RIDGEROCK UNITS SHALL BE USED & KEPT FREE OF DEFECTS THAT WOULD INTERFERE WITH THW 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. STRATA-DRAIN (6 FT. WIDE SECTIONS) PROVIDE 30% COVERAGE WHEN INSTALLED ON 15 FT. CENTERS AND 2/3 THE WALL HEIGHT.

9.0 SPECIAL PROVISIONS

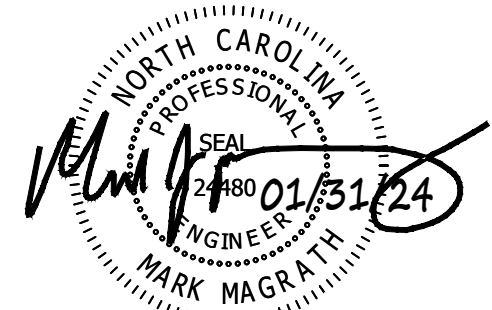
- GENERAL CONTRACTOR SHALL COORDINATE UPPER GEOGRID LAYERS INSTALLATION WITH PAVING INSTALLATION.
- MAINTAIN THE DIRECTION OF DRAINAGE AWAY FROM THE WALL FACE AT TIMES DURING CONSTRUCTION OF THE WALL AND FINISH GRADING AS SHOWN ON PLANS.
- PLACEMENT OF GEOGRID SHALL BE AS PER PLANS REFERENCE TO LENGTH AND ELEVATIONS.
- 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.
- THE REINFORCED SOIL IS ASSUMED TO BE SANDY TYPE MATERIAL.

10.0 QUALIFICATION OF DESIGN

- 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.
- HANDRAIL/GUARDRAIL REQUIREMENTS SHALL BE DETERMINED BY THE CIVIL SITE ENGINEER OF RECORD, NOT VENTURE ENGINEERING, P.A.
- NOTIFY VENTURE ENGINEERING, P.A. PRIOR TO MODIFYING IF EXISTING SITE TOPOGRAPHY DOES NOT MATCH CONDITIONS OUTLINED ON RETAINING WALL PROFILE.

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NO.	DESCRIPTIONS	DATE
2	REVISED PER SITE PLAN SEALED 1/24/24	01/31/24
1	REVISED TO ADD WALL NEW WALL #9A BEHIND LOTS #266 Thru #299	11/30/23
	DESCRIPTIONS	DATE
	REVISIONS	



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LICENSE NO. C-2590

SERENITY SUBDIVISION

PHASES 6A & 6C - RETAINING WALLS

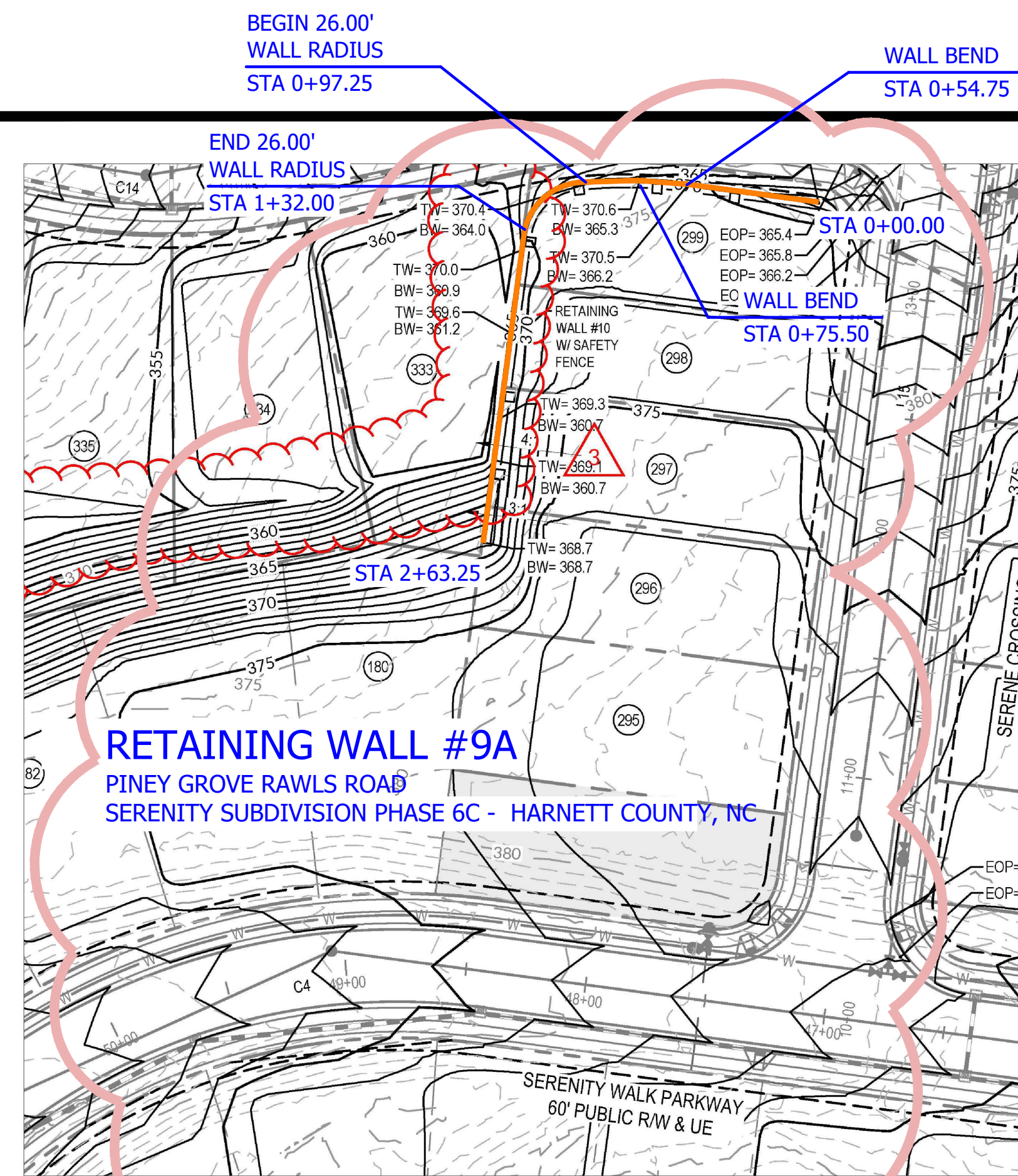
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

SPECIFICATIONS
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

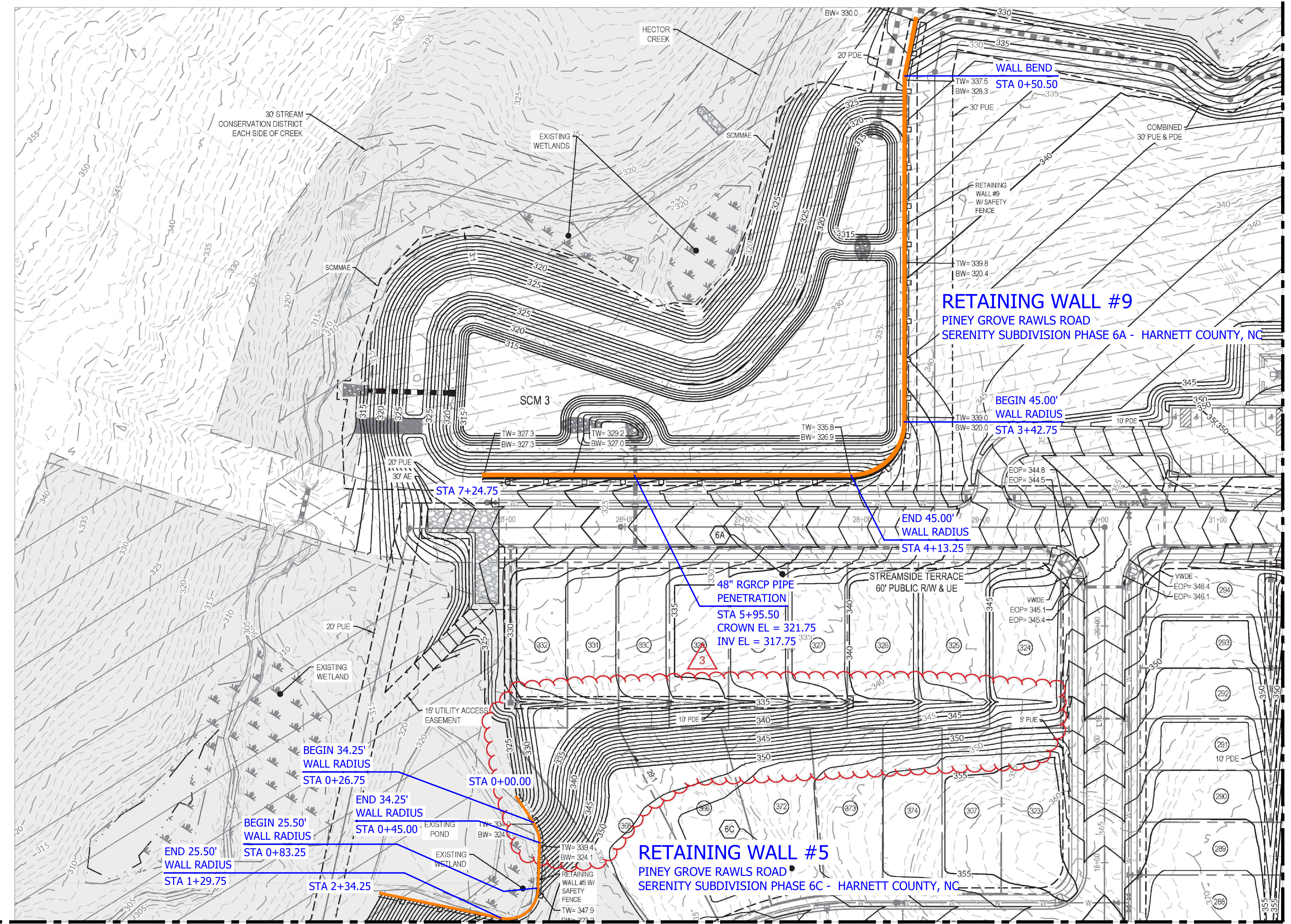
DATE: JANUARY 31, 2024
DES: TLH
CHECKED: KLY
APPROVED: MJM

SCALE
HORIZONTAL:
N/A
VERTICAL:
N/A

DRAWING NUMBER
C-1



RETAINING WALL #9A
 RETAINING WALL SITE PLAN - SERENITY SUBDIVISION
 SCALE: 1" = 50'
 PINEY GROVE RAWLS ROAD
 SERENITY SUBDIVISION PHASE 6A & 6C - HARNETT COUNTY, NC



RETAINING WALL #5 & #9
 RETAINING WALL SITE PLAN - SERENITY SUBDIVISION
 SCALE: 1" = 50'
 PINEY GROVE RAWLS ROAD
 SERENITY SUBDIVISION PHASE 6A & 6C - HARNETT COUNTY, NC

MATCHLINE BB
 SEE SITE PLAN (SEPERATE DESIGN/ 1D, 2C & 2E THRU 2G)
 FOR CONTINUATION OF MATCHLINE BB

MATCHLINE BB
 SEE SITE PLAN (SEPERATE DESIGN/ 1D, 2C & 2E THRU 2G)
 FOR CONTINUATION OF MATCHLINE BB

GEOTECHNICAL GENERAL NOTE:

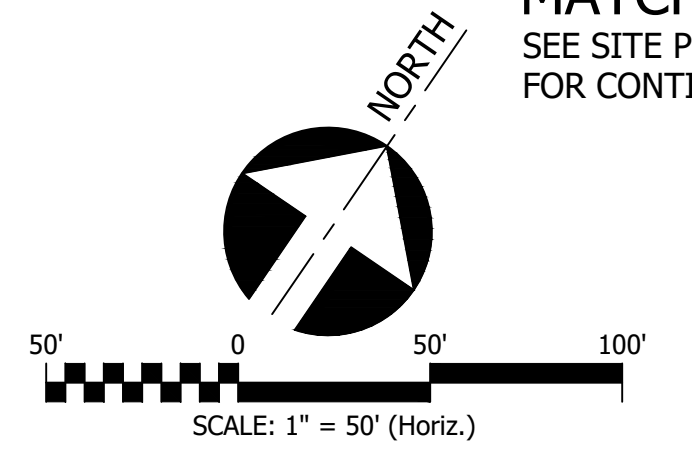
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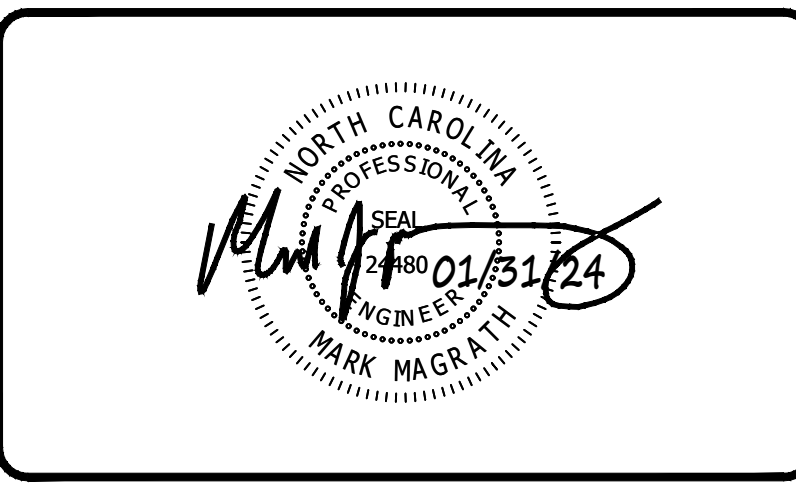
NOTE:

THIS CIVIL SITE GRADING PLAN SHOWN HERE & PLAN VIEWS WERE DONE BY WITHERS & RAVENEL SEALED 01/24/24. VENTURE ENGINEERING, P.A. IS NOT RESPONSIBLE FOR ERRORS/OMMISSIONS ON CIVIL ENGINEERING GRADING PLAN.



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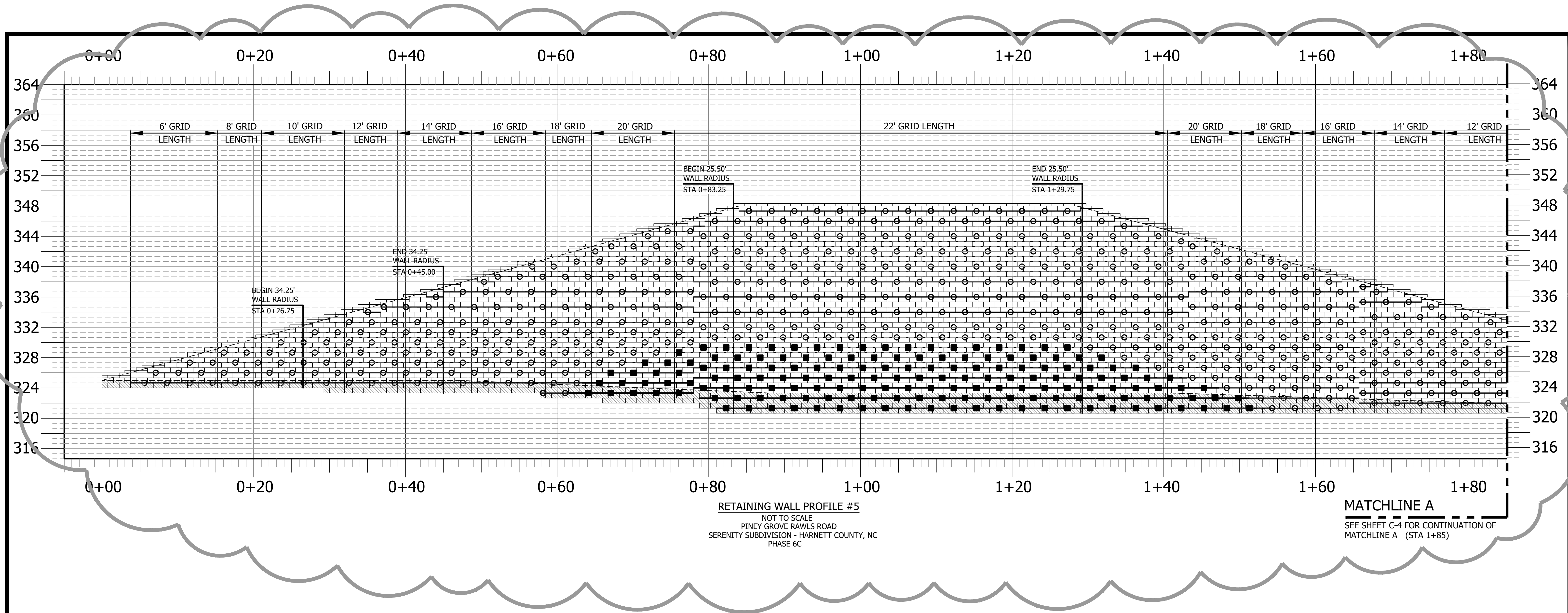
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 LICENSE NO. C-2590

SERENITY SUBDIVISION
 PHASES 6A & 6C - RETAINING WALLS
 PINEY GROVE RAWLS ROAD
 HARNETT COUNTY, NC

RETAINING WALL SITE PLAN
 SERENITY SUBDIVISION - HARNETT COUNTY, NC
 PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE HORIZONTAL: 1" = 50' VERTICAL: N/A	DRAWING NUMBER C-2
DES: TLH		
CHECKED: KLY APPROVED: MJM		

VE PROJECT NO: 00220001 - SERENITY SUBDIVISION - PHASES 6A & 6C



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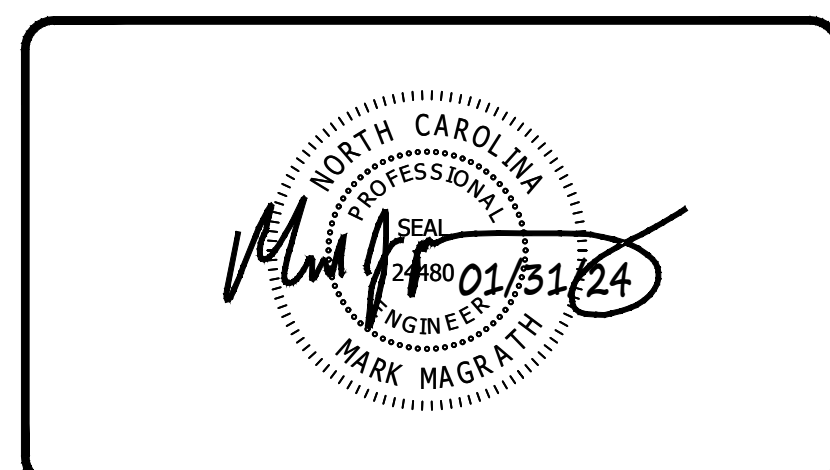
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LEGEND	
	GRIDLOK 370
	GRIDLOK 540

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REVISIONS		



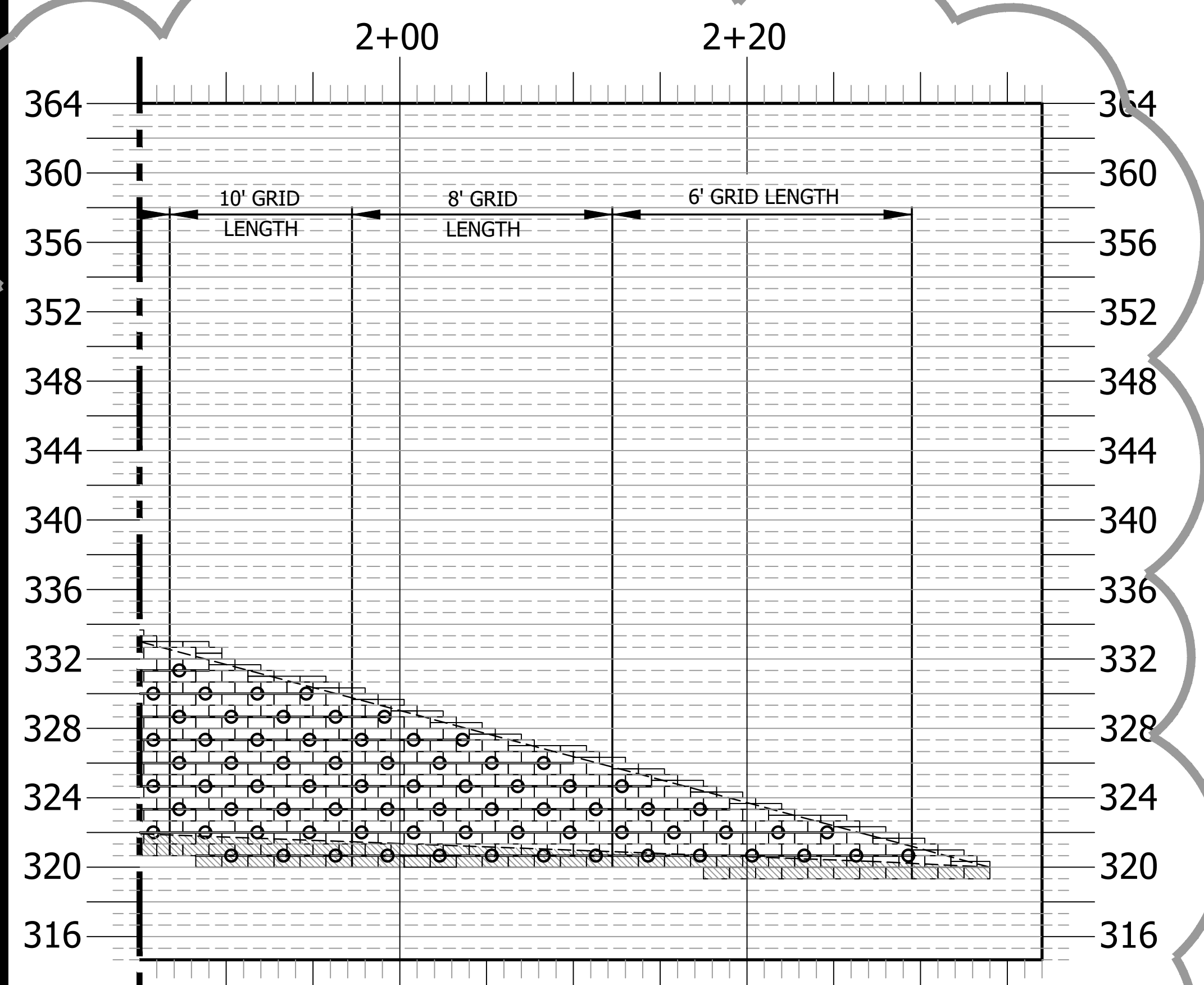
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SERENITY SUBDIVISION
 PHASES 6A & 6C - RETAINING WALLS
 PINEY GROVE RAWLS ROAD
 HARNETT COUNTY, NC

RETAINING WALL PROFILE #5
 SERENITY SUBDIVISION - HARNETT COUNTY, NC
 PHASES 6A & 6C

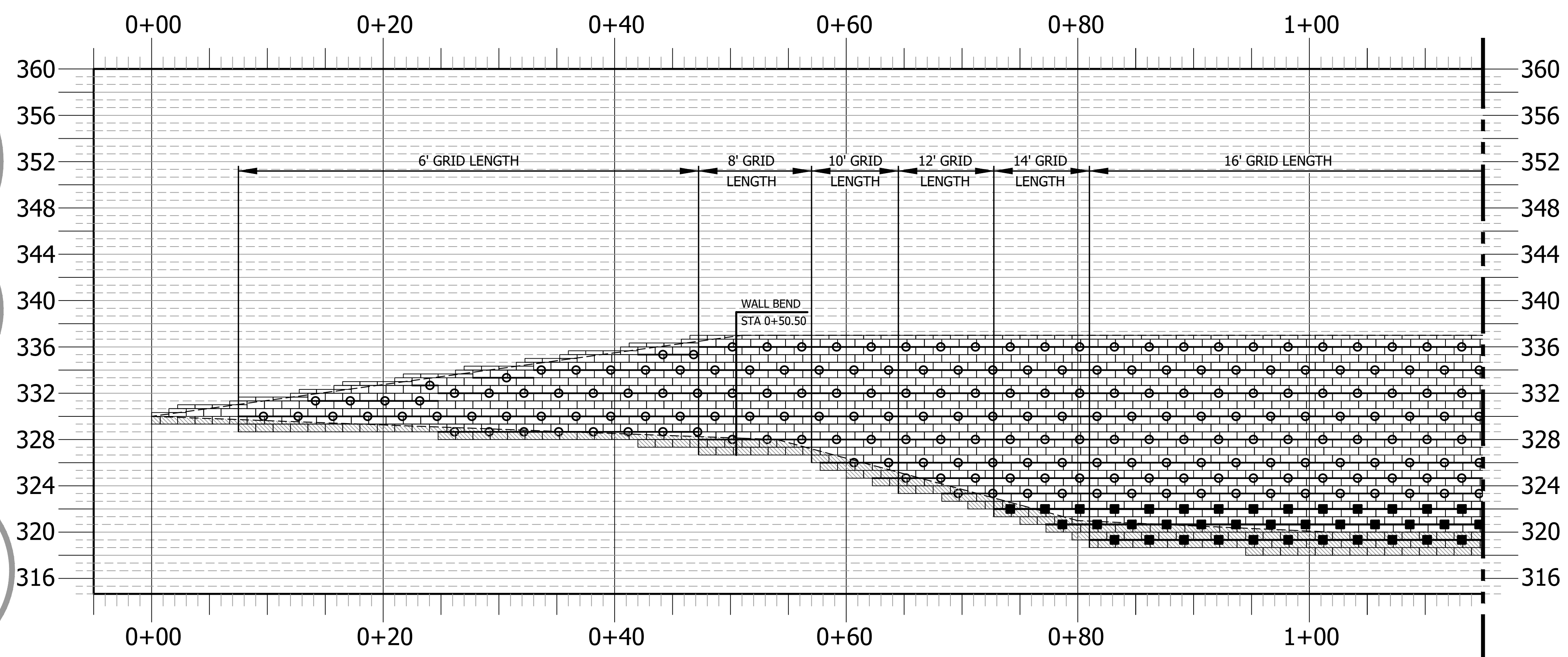
DATE: JANUARY 31, 2024	SCALE HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-3
DES: TLH		
CHECKED: KLY		
APPROVED: MJM		

SERENITY SUBDIVISION - PHASES 6A & 6C - RETAINING WALL CONSTRUCTION - HARNETT COUNTY, NORTH CAROLINA
 VE PROJECT NO: 00220001 - SERENITY SUBDIVISION - PHASES 6A & 6C



MATCHLINE A
SEE SHEET C-3 FOR CONTINUATION OF MATCHLINE A (STA 1+85)

RETAINING WALL PROFILE #5 (Continued)
NOT TO SCALE
PINEY GROVE RAWLS ROAD
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASE 6C



RETAINING WALL PROFILE #9
NOT TO SCALE
PINEY GROVE RAWLS ROAD
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASE 6C

MATCHLINE B
SEE SHEET C-4 FOR CONTINUATION OF MATCHLINE B (STA 1+15)

GEOTECHNICAL GENERAL NOTE:

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GENERAL DESIGN NOTE:

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LEGEND	
	GRIDLOK 370
	GRIDLOK 540

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NO.	DESCRIPTIONS	DATE
2	REVISED PER SITE PLAN SEALED 1/24/24	01/31/24
1	REVISED TO ADD WALL NEW WALL #9A BEHIND LOTS #266 Thru #299	11/30/23
REVISIONS		

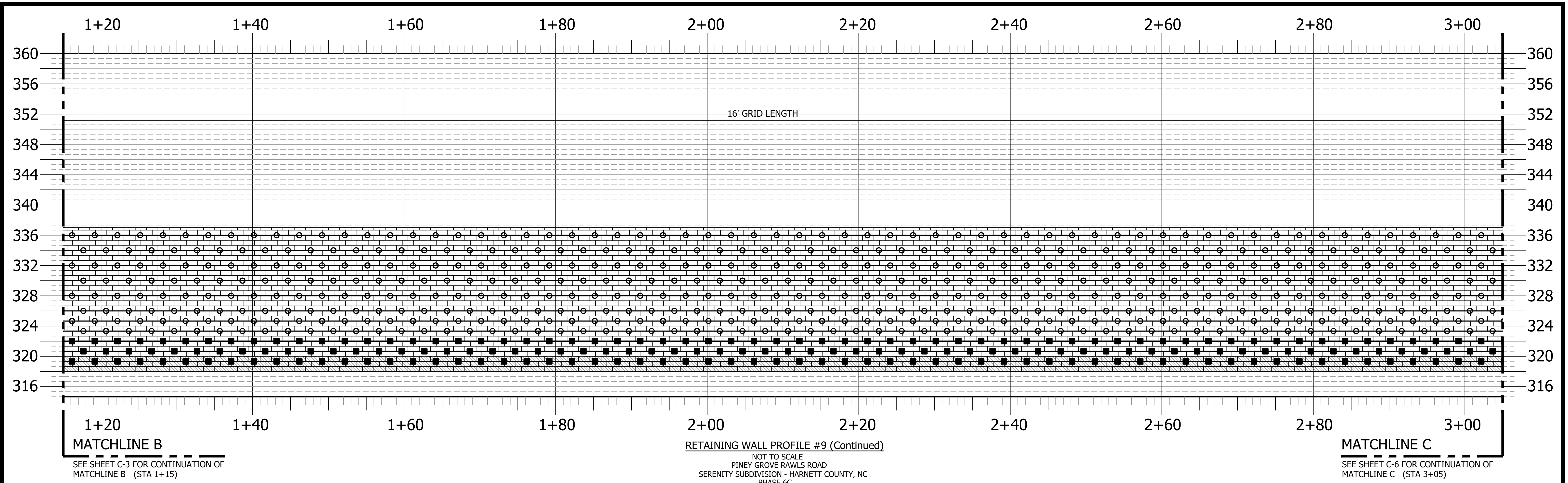


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SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

RETAINING WALL PROFILE #5 (Continued) & #9
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE	DRAWING NUMBER C-4	
DES: TLH			HORIZONTAL: N/A
CHECKED: KLY			VERTICAL: N/A
APPROVED: MJM			



GEOTECHNICAL GENERAL NOTE:

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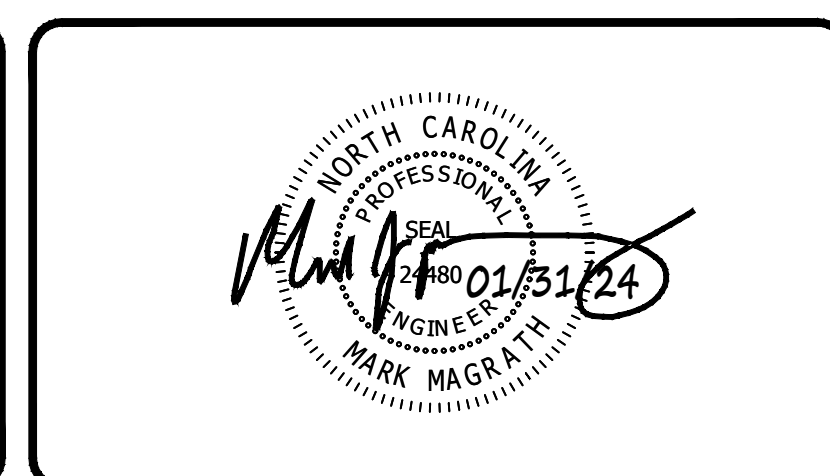
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LEGEND	
	GRIDLOK 370
	GRIDLOK 540

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1	REVISED TO ADD WALL NEW WALL #9A BEHIND LOTS #266 Thru #299	11/30/23
DESCRIPTIONS		DATE
REVISIONS		



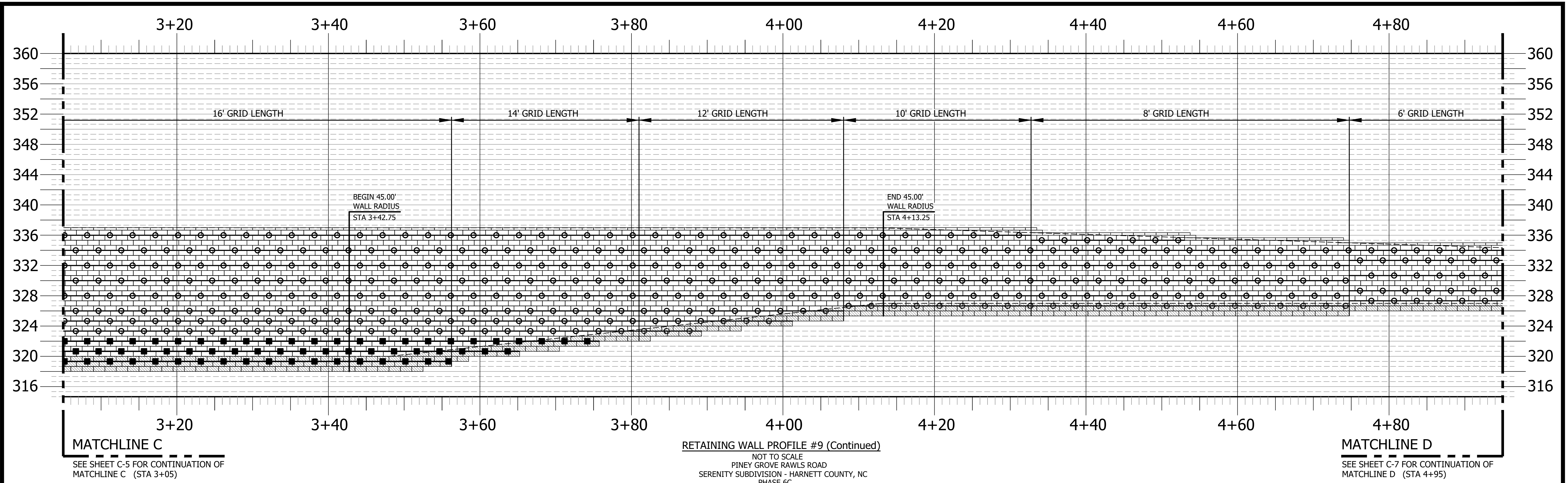
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SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

RETAINING WALL PROFILE #9 (Continued)
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-5
DES: TLH		
CHECKED: KLY		
APPROVED: MJM		

VE PROJECT NO: 00220001 SERENITY SUBDIVISION - PHASES 6A & 6C RETAINING WALL CONSTRUCTION - HARNETT COUNTY, NORTH CAROLINA



GEOTECHNICAL GENERAL NOTE:

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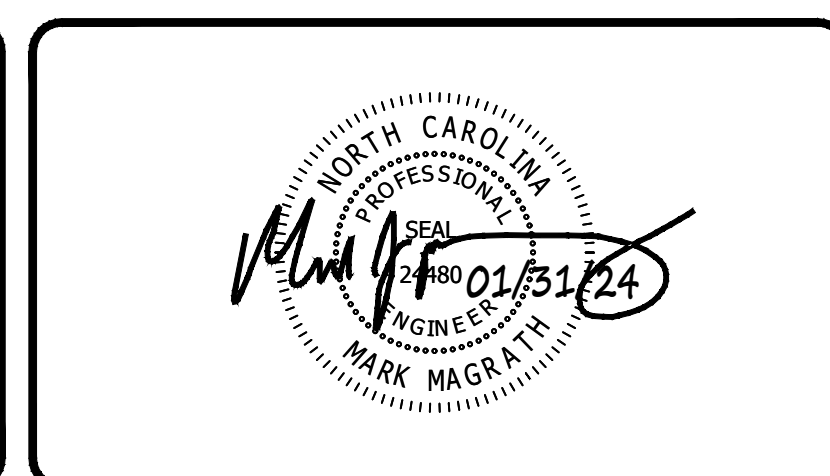
GENERAL DESIGN NOTE:

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LEGEND	
	GRIDLOK 370
	GRIDLOK 540

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DESCRIPTIONS		DATE
REVISIONS		



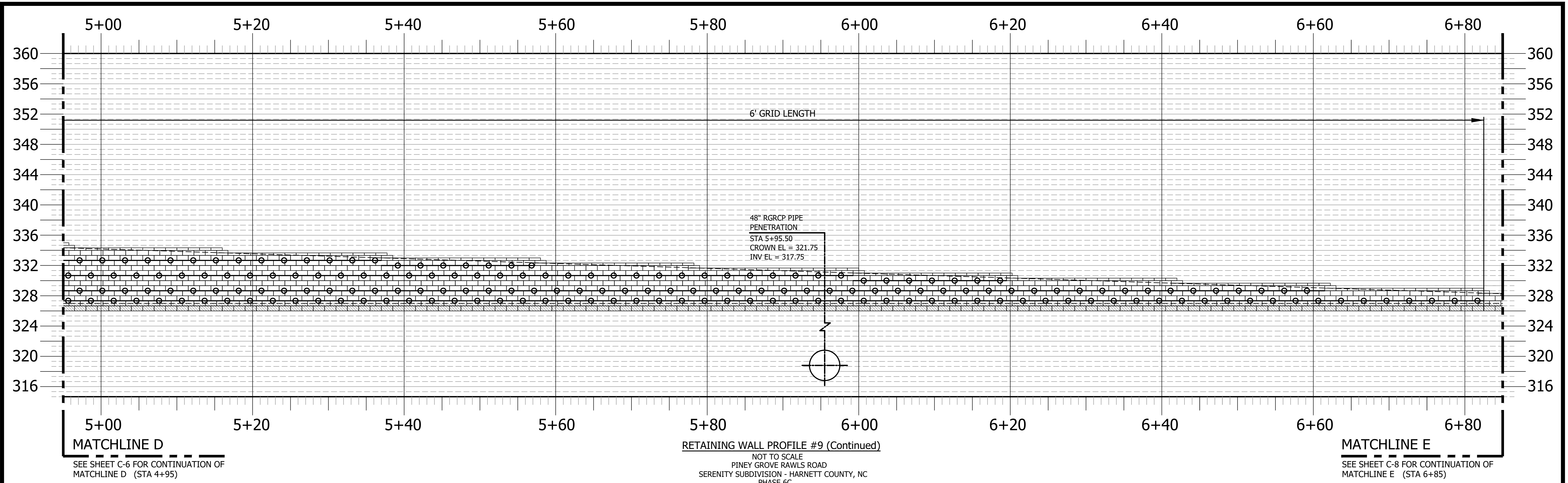
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SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

RETAINING WALL PROFILE #9 (Continued)
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE HORIZONTAL: N/A VERTICAL: N/A	DRAWING NUMBER C-6
DES: TLH		
CHECKED: KLY		
APPROVED: MJM		

VE PROJECT NO: 00220001 - SERENITY SUBDIVISION - PHASES 6A & 6C RETAINING WALL CONSTRUCTION - HARNETT COUNTY, NORTH CAROLINA

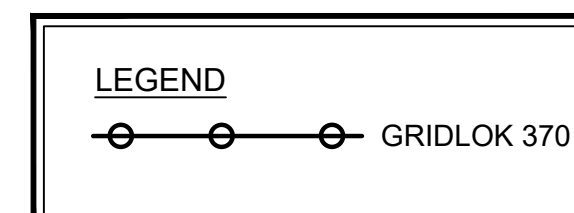


GEOTECHNICAL GENERAL NOTE:

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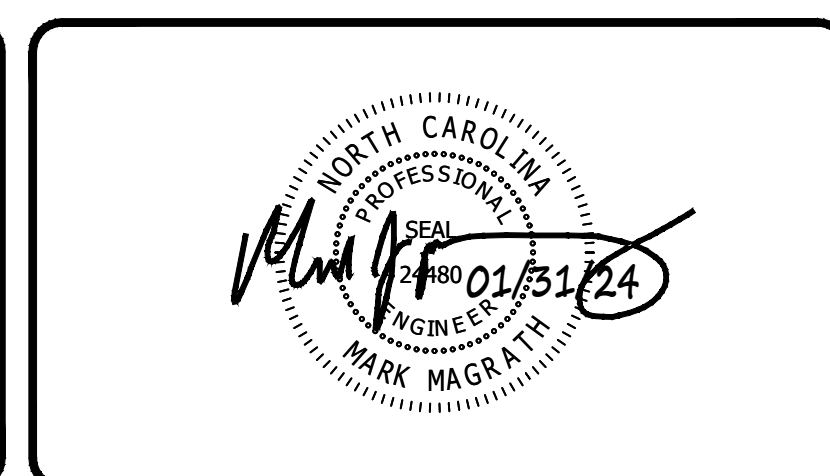
GENERAL DESIGN NOTE:

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DESCRIPTIONS		DATE
REVISIONS		



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SERENITY SUBDIVISION
 PHASES 6A & 6C - RETAINING WALLS
 PINEY GROVE RAWLS ROAD
 HARNETT COUNTY, NC

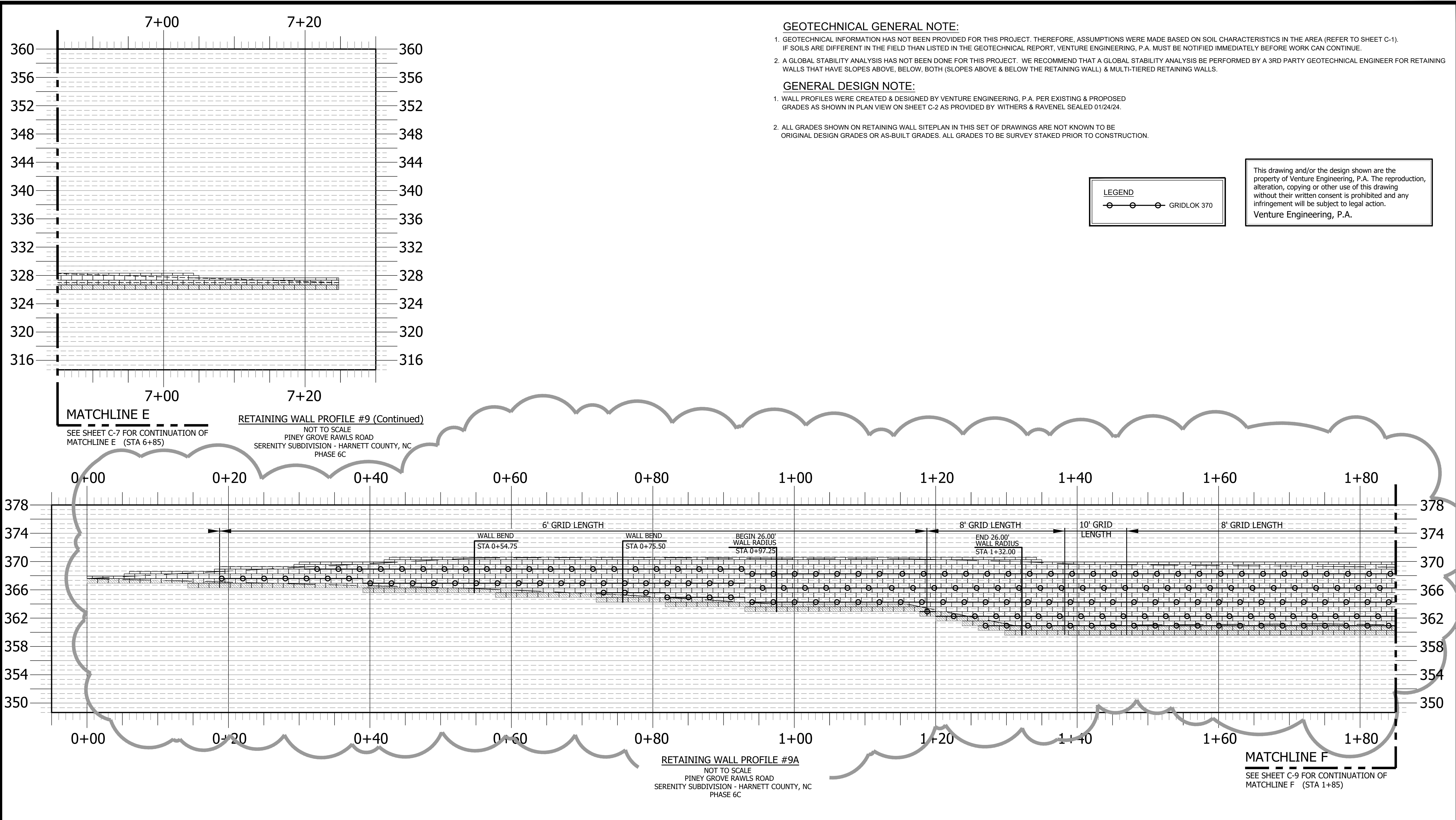
RETAINING WALL PROFILE #9 (Continued)
 SERENITY SUBDIVISION - HARNETT COUNTY, NC
 PHASES 6A & 6C

DATE: JANUARY 31, 2024
DES: TLH
CHECKED: KLY
APPROVED: MJM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

DRAWING NUMBER
C-7

VE PROJECT NO: 00220001 - SERENITY SUBDIVISION - PHASES 6A & 6C

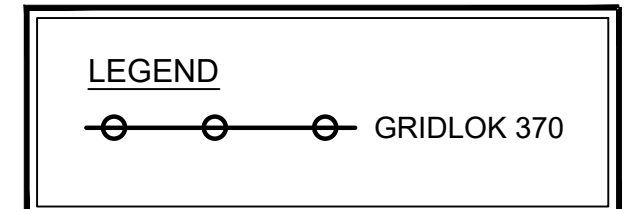


GEOTECHNICAL GENERAL NOTE:

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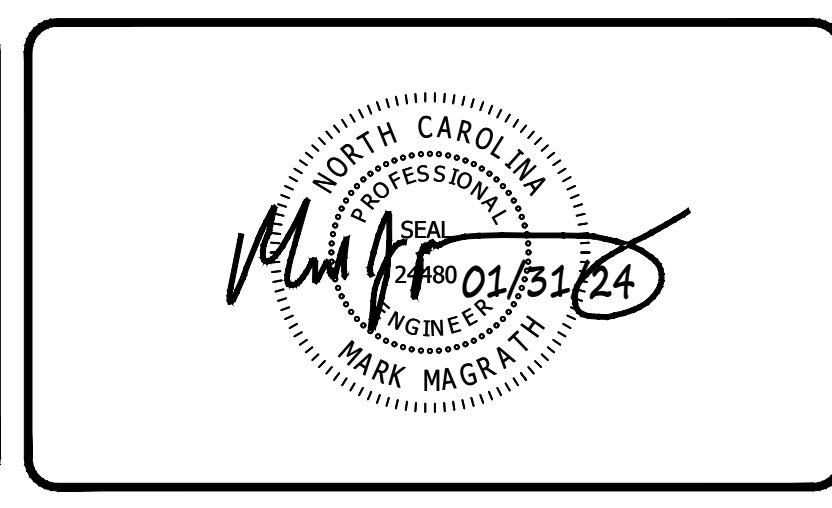
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DESCRIPTIONS		DATE
REVISIONS		



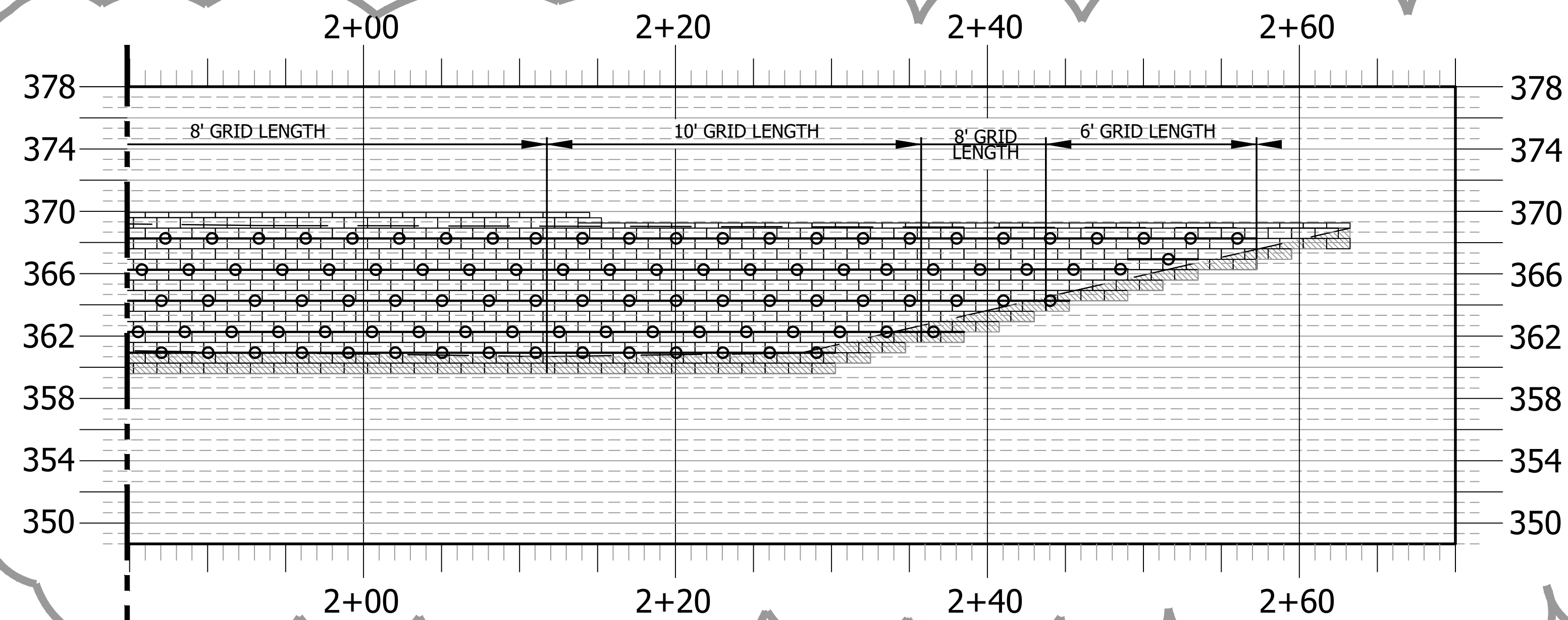
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SERENITY SUBDIVISION
 PHASES 6A & 6C - RETAINING WALLS
 PINEY GROVE RAWLS ROAD
 HARNETT COUNTY, NC

RETAINING WALL PROFILE #9 (Continued) & #9A
 SERENITY SUBDIVISION - HARNETT COUNTY, NC
 PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE	DRAWING NUMBER C-8
DES: TLH		
CHECKED: KLY	HORIZONTAL: N/A	
APPROVED: MJM	VERTICAL: N/A	

VE PROJECT NO: 00220001 - SERENITY SUBDIVISION - PHASES 6A & 6C



MATCHLINE F

SEE SHEET C-8 FOR CONTINUATION OF MATCHLINE F (STA 1+85)

RETAINING WALL PROFILE #9A (Continued)

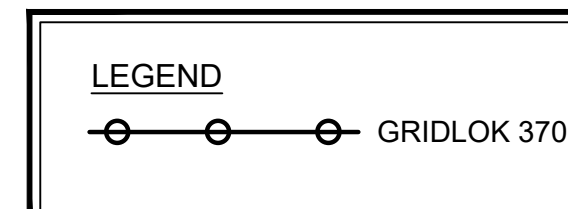
NOT TO SCALE
PINEY GROVE RAWLS ROAD
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASE 6C

GEOTECHNICAL GENERAL NOTE:

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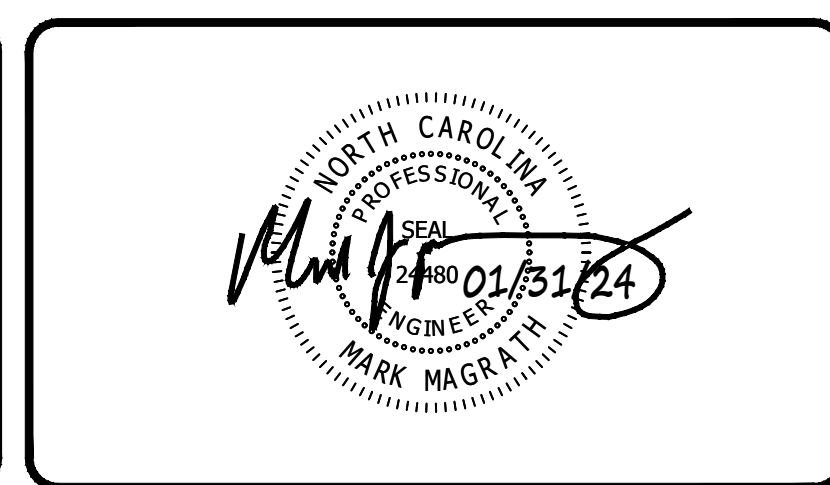
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NO.	DESCRIPTIONS REVISIONS	DATE
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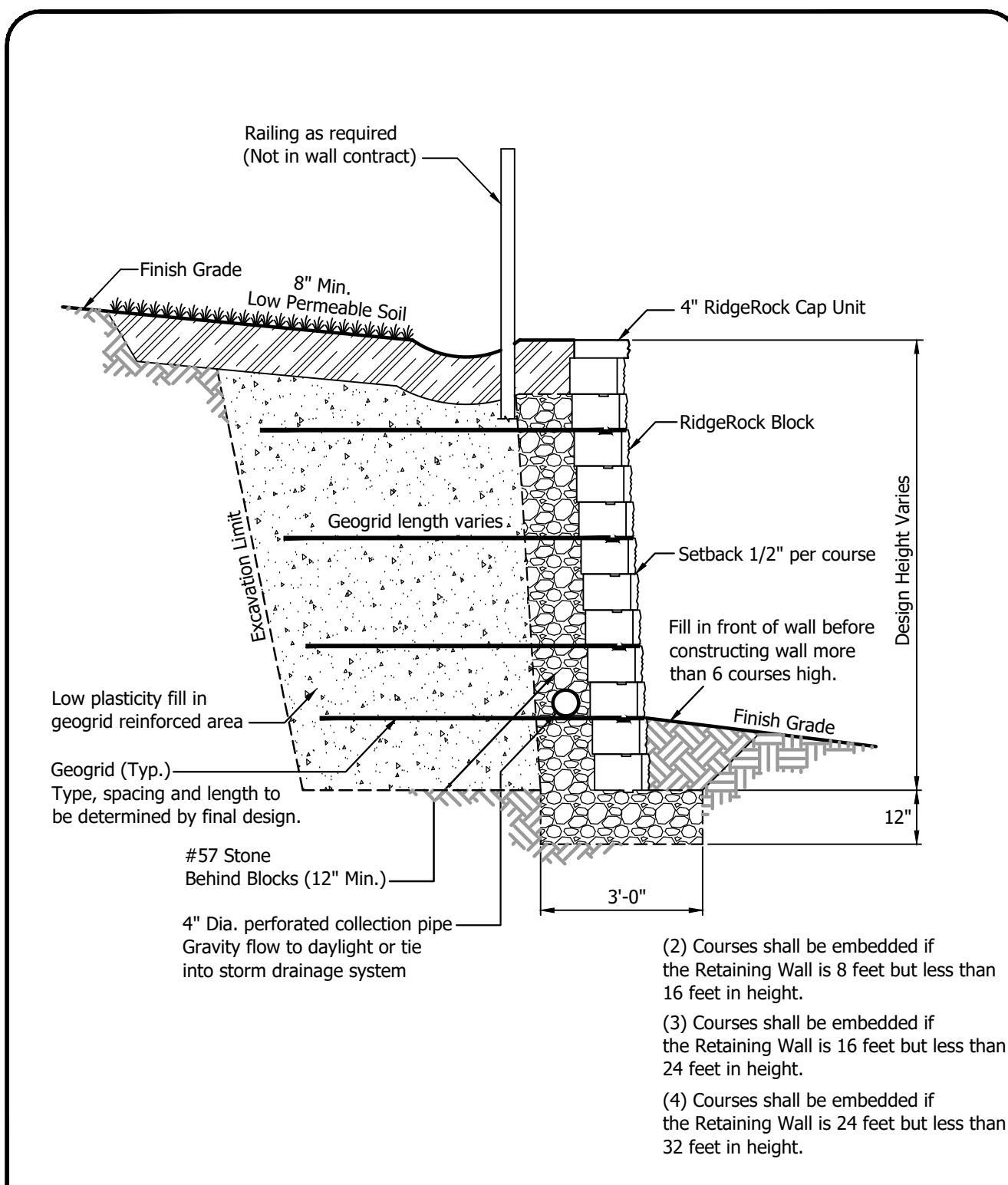
SERENITY SUBDIVISION
 PHASES 6A & 6C - RETAINING WALLS
 PINEY GROVE RAWLS ROAD
 HARNETT COUNTY, NC

RETAINING WALL PROFILE #9A (Continued)
 SERENITY SUBDIVISION - HARNETT COUNTY, NC
 PHASES 6A & 6C

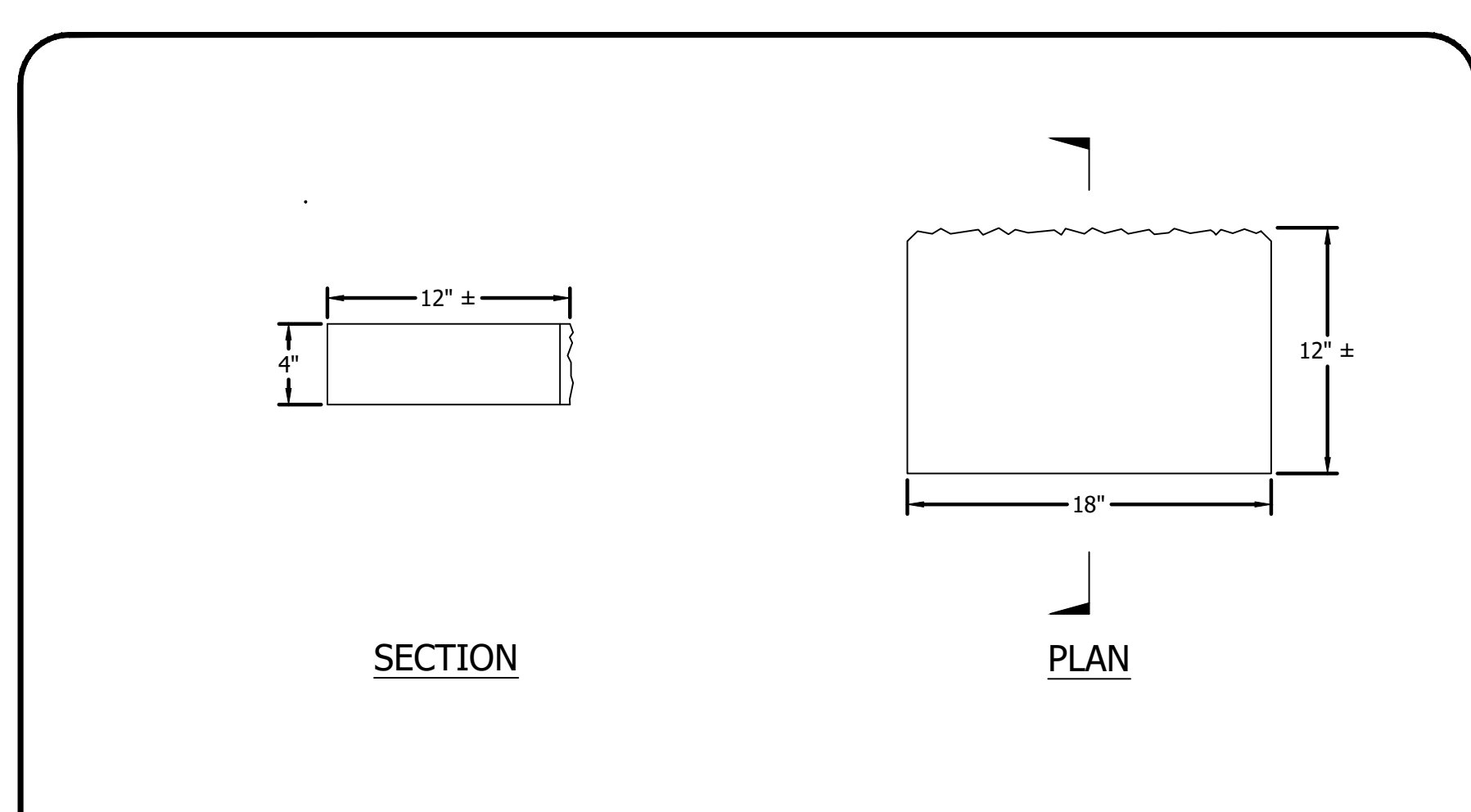
DATE: JANUARY 31, 2024
DES: TLH
CHECKED: KLY
APPROVED: MJM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

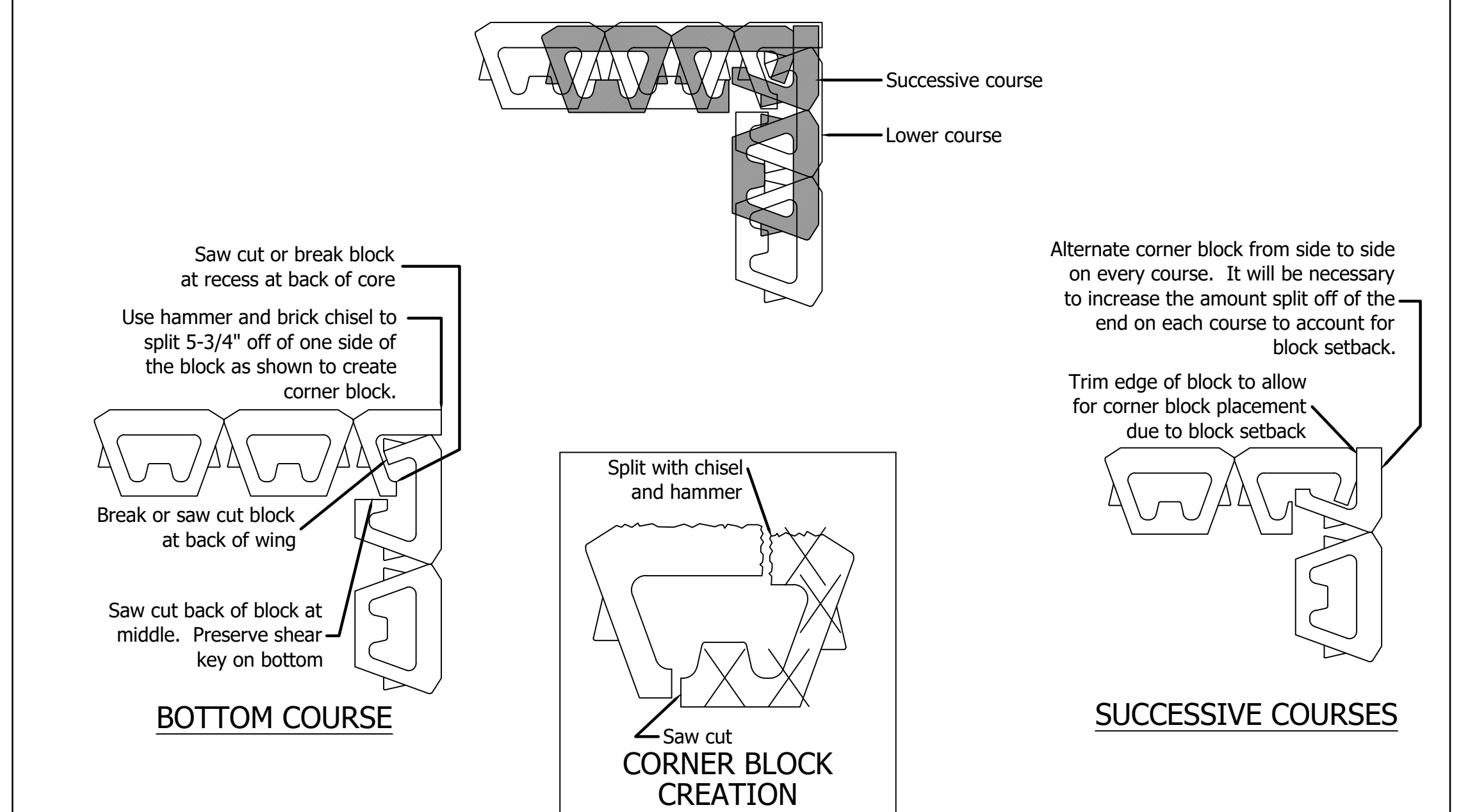
DRAWING NUMBER
C-9



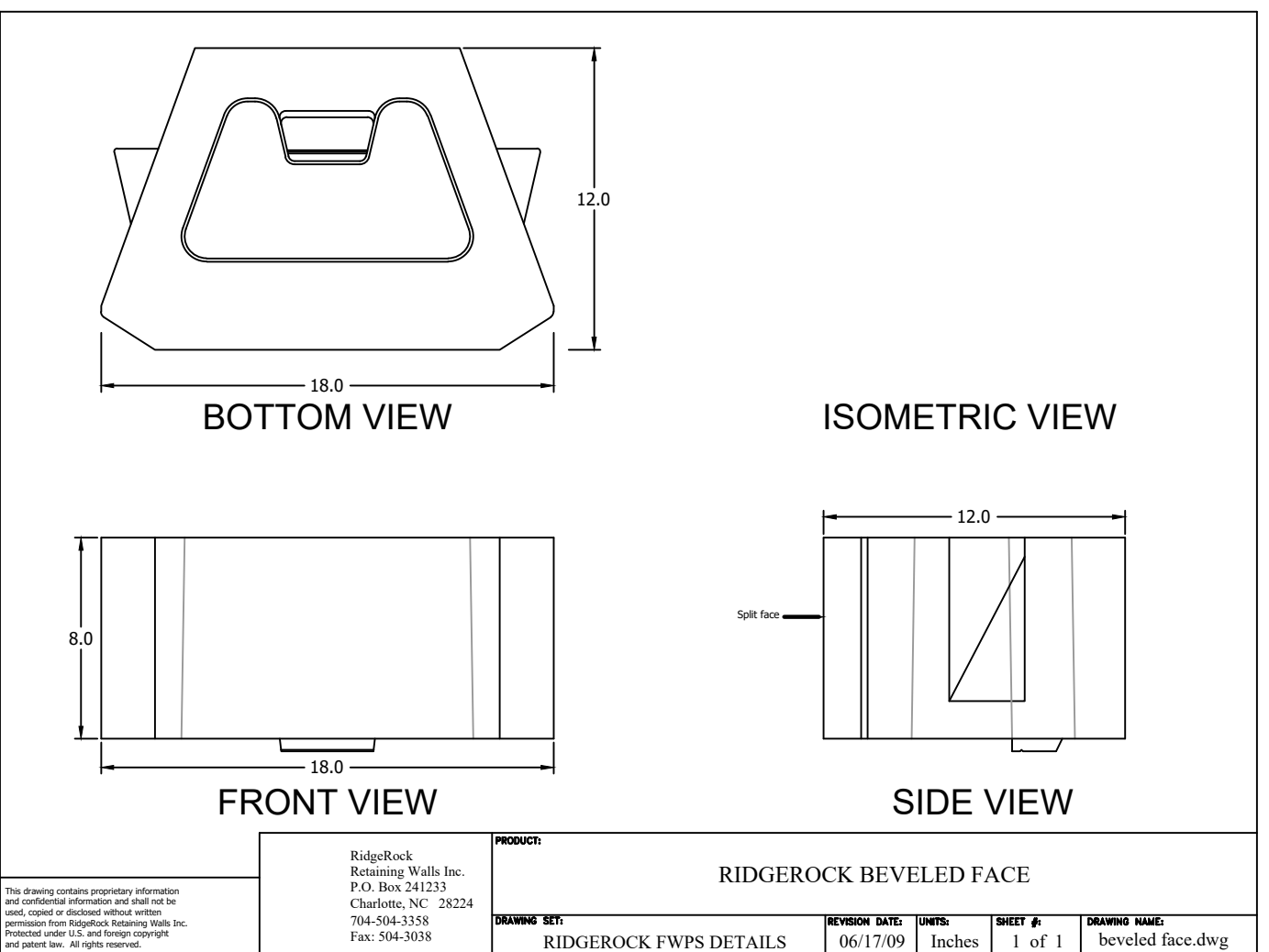
RidgeRock Retaining Walls Inc. P.O. Box 241233 Charlotte, NC 28224 704-504-3358 Fax: 504-3038	RIDGEROCK RETAINING WALL TYPICAL CROSS SECTION	1 of 1 SHEET NO.	1/15/07 DATE
RIDGEROCK DETAIL			



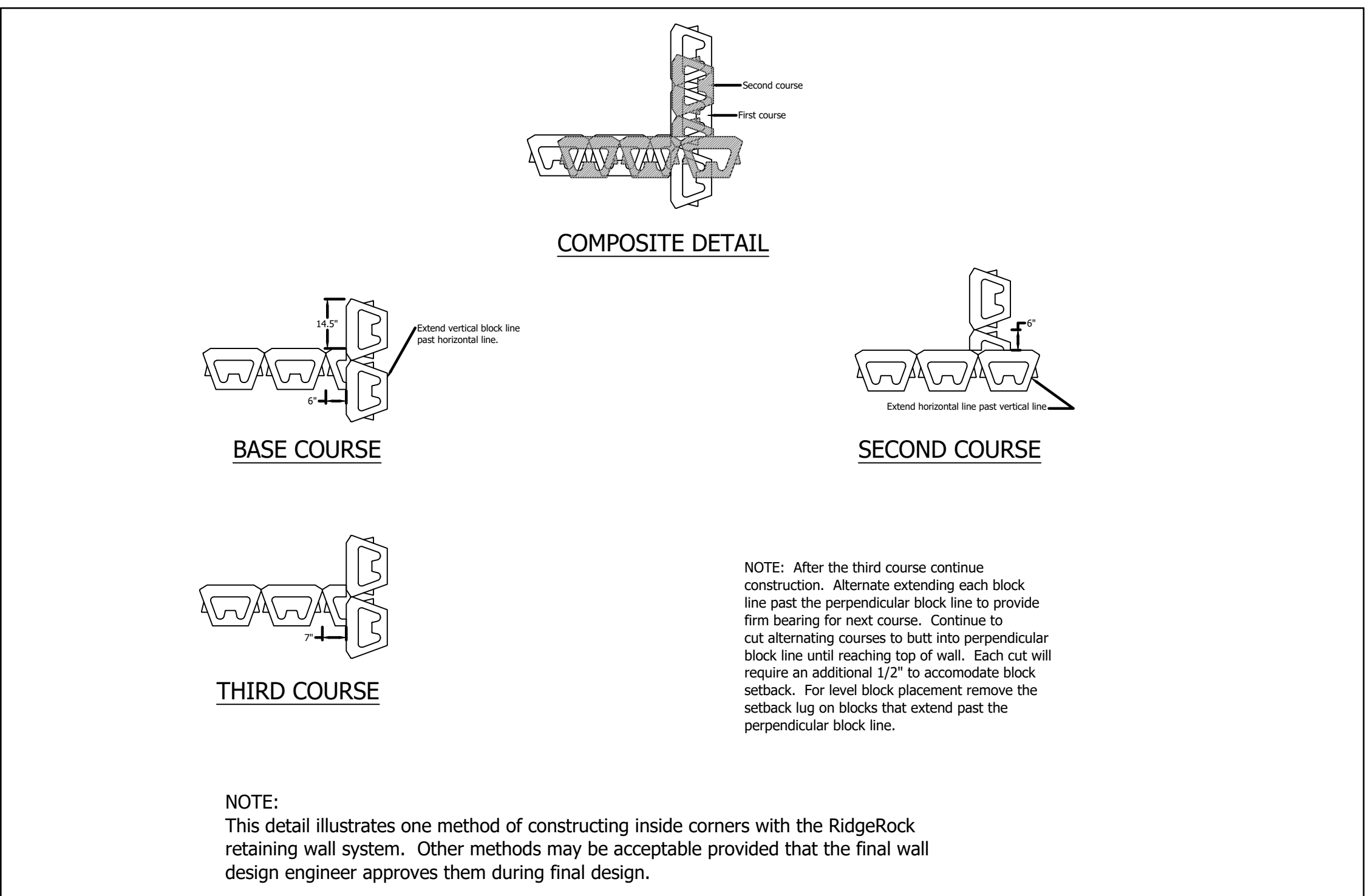
RidgeRock Retaining Walls Inc. P.O. Box 241233 Charlotte, NC 28224 704-504-3358 Fax: 504-3038	RIDGEROCK CAP UNIT DETAILS	1 of 1 SHEET NO.	2/2008 DATE
RIDGEROCK DETAILS			



NOTE: This detail illustrates one method of constructing outside corners with the RidgeRock retaining wall system. Other methods may be acceptable provided that the final wall design engineer approves them during final design.		OUTSIDE CORNER CONSTRUCTION	
RidgeRock Retaining Walls Inc. P.O. Box 241233 Charlotte, NC 28224 704-504-3358 Fax: 504-3038	DRAWING NAME:	DRAWING SET:	REVISION DATE: UNITS: SHEET #: DRAWING NAME:
	RIDGEROCK FWPS DETAILS	7/7/10 Feet	1 of 1 corner detail.dwg



RidgeRock Retaining Walls Inc. P.O. Box 241233 Charlotte, NC 28224 704-504-3358 Fax: 504-3038	RIDGEROCK BEVELED FACE	1 of 1 SHEET NO.	
RIDGEROCK FWPS DETAILS			



NOTE: This detail illustrates one method of constructing inside corners with the RidgeRock retaining wall system. Other methods may be acceptable provided that the final wall design engineer approves them during final design.		INSIDE CORNER CONSTRUCTION	
RidgeRock Retaining Walls Inc. P.O. Box 241233 Charlotte, NC 28224 704-504-3358 Fax: 504-3038	DRAWING NAME:	DRAWING SET:	REVISION DATE: UNITS: SHEET #: DRAWING NAME:
	RIDGEROCK FWPS DETAILS	4/3/14 Feet	1 of 1 corner detail.dwg

GEOTECHNICAL GENERAL NOTE:

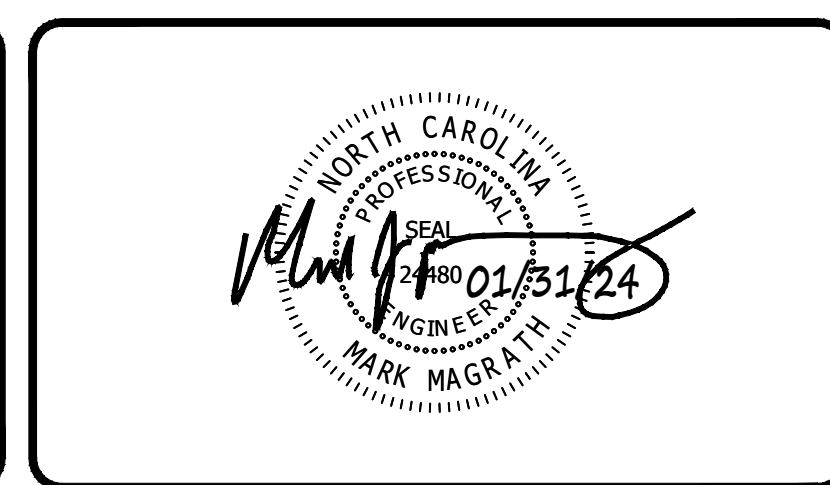
1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE WORK CAN CONTINUE.
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	DESCRIPTIONS	DATE
	REVISIONS	

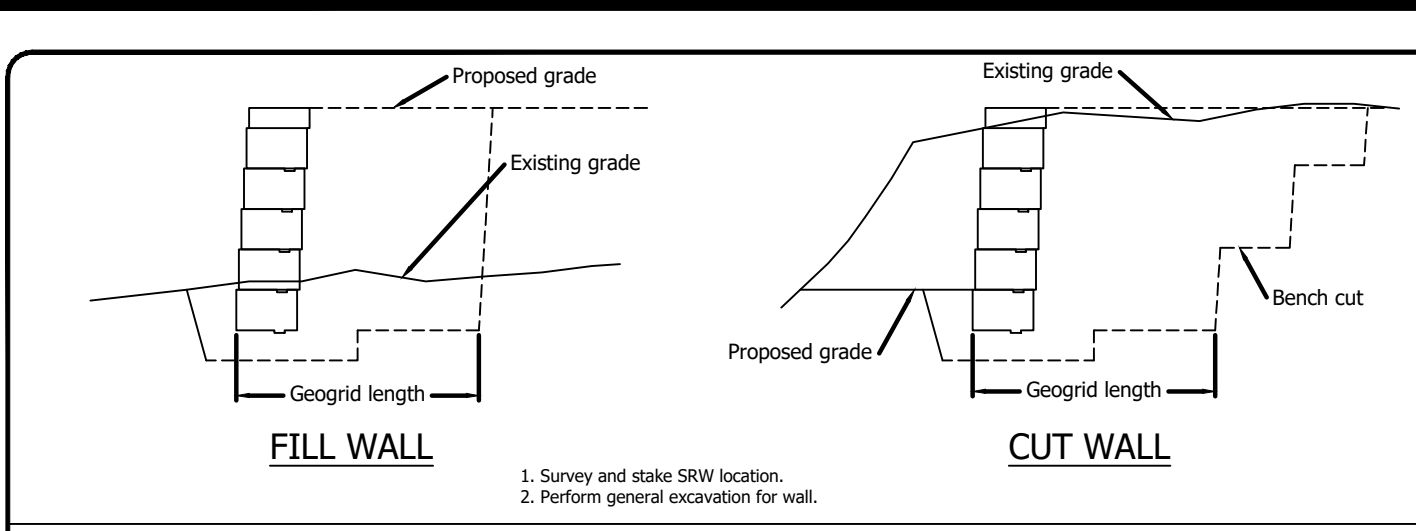


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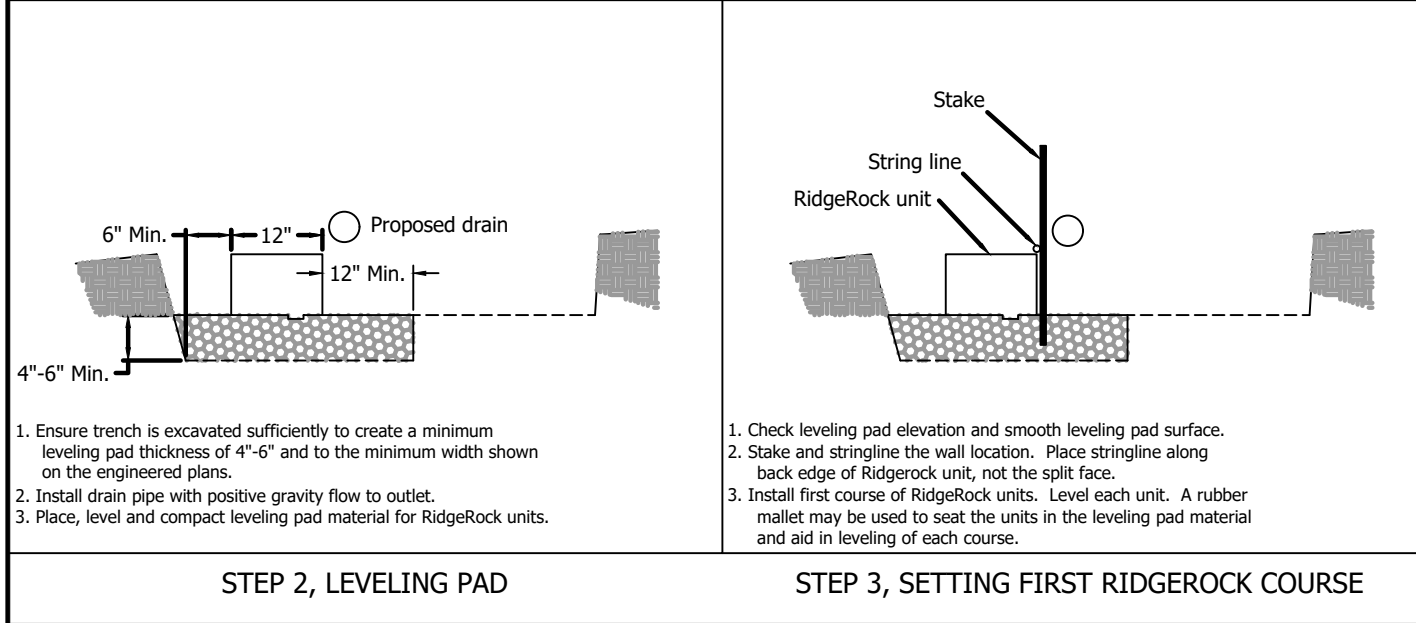
SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

DETAIL SHEET - SHEET 1 OF 2
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

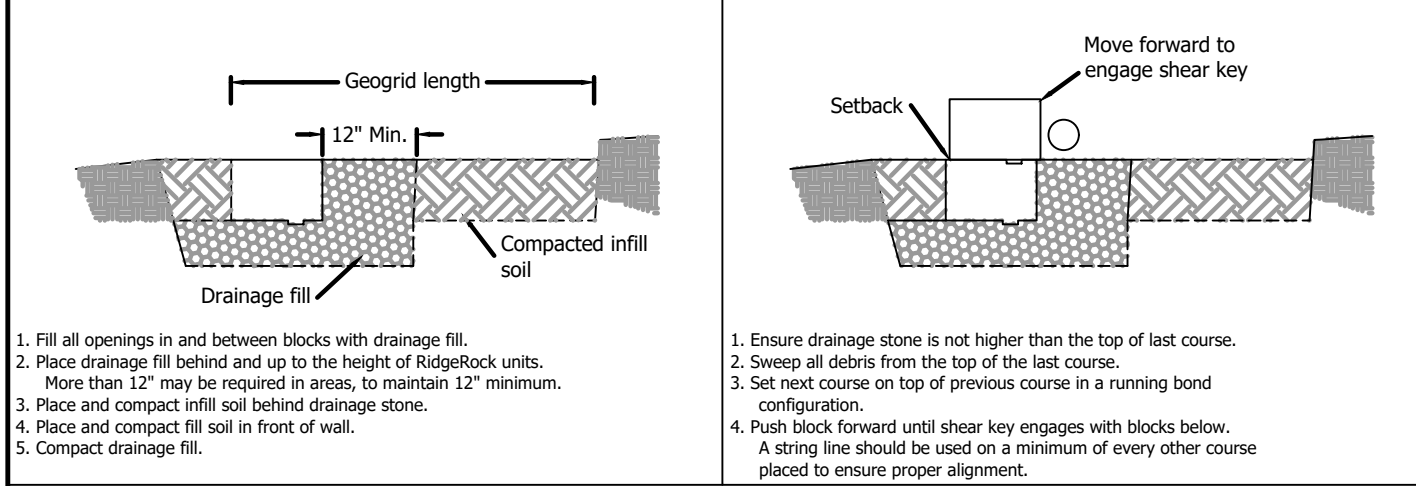
DATE: JANUARY 31, 2024	SCALE	DRAWING NUMBER
DES: TLH	HORIZONTAL: N/A	C-10
CHECKED: KLY	VERTICAL: N/A	
APPROVED: MJM		



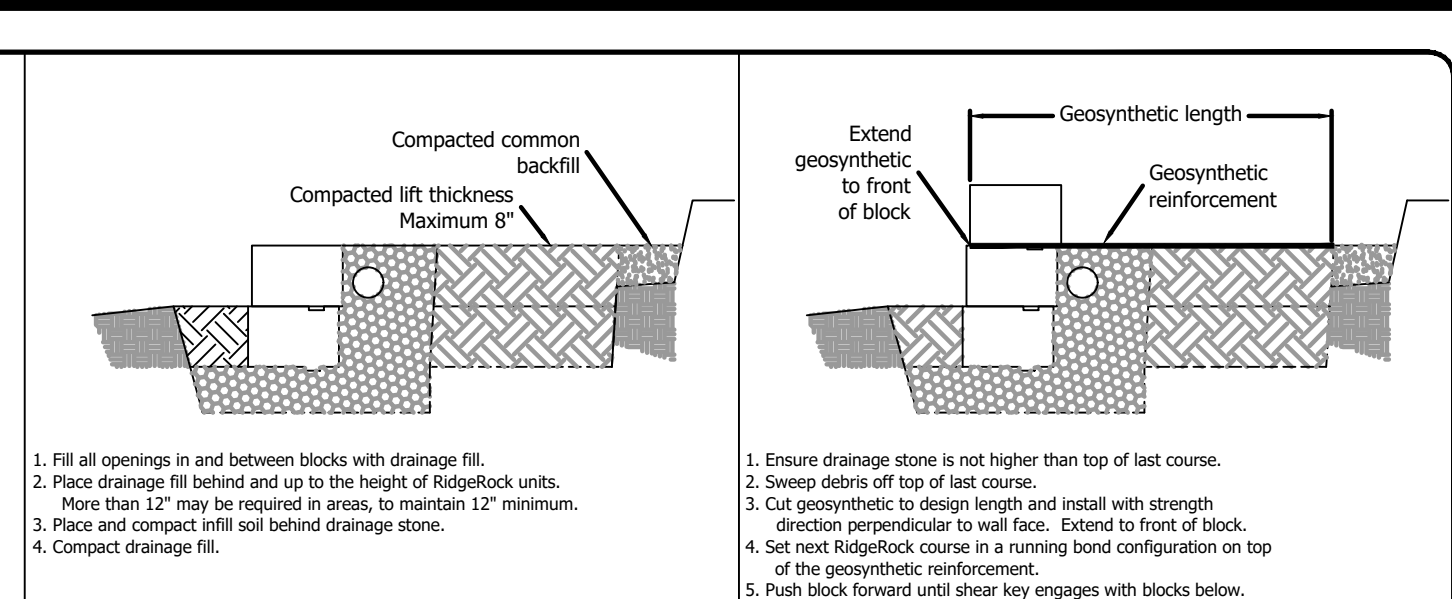
STEP 1, WALL LAYOUT AND GENERAL EXCAVATION



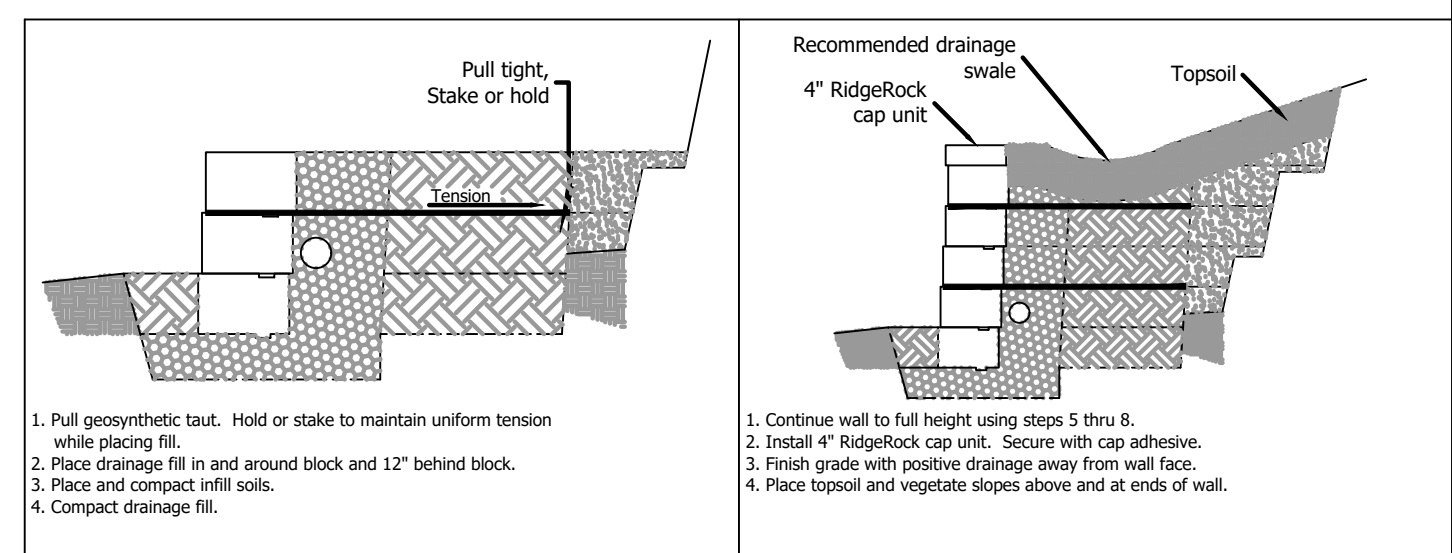
STEP 2, LEVELING PAD STEP 3, SETTING FIRST RIDGEROCK COURSE



STEP 4, BACKFILLING FIRST COURSE STEP 5, SETTING NEXT RIDGEROCK COURSES



STEP 6, FILL PLACEMENT ON NEXT COURSES STEP 7, PLACEMENT OF GEOSYNTHETIC



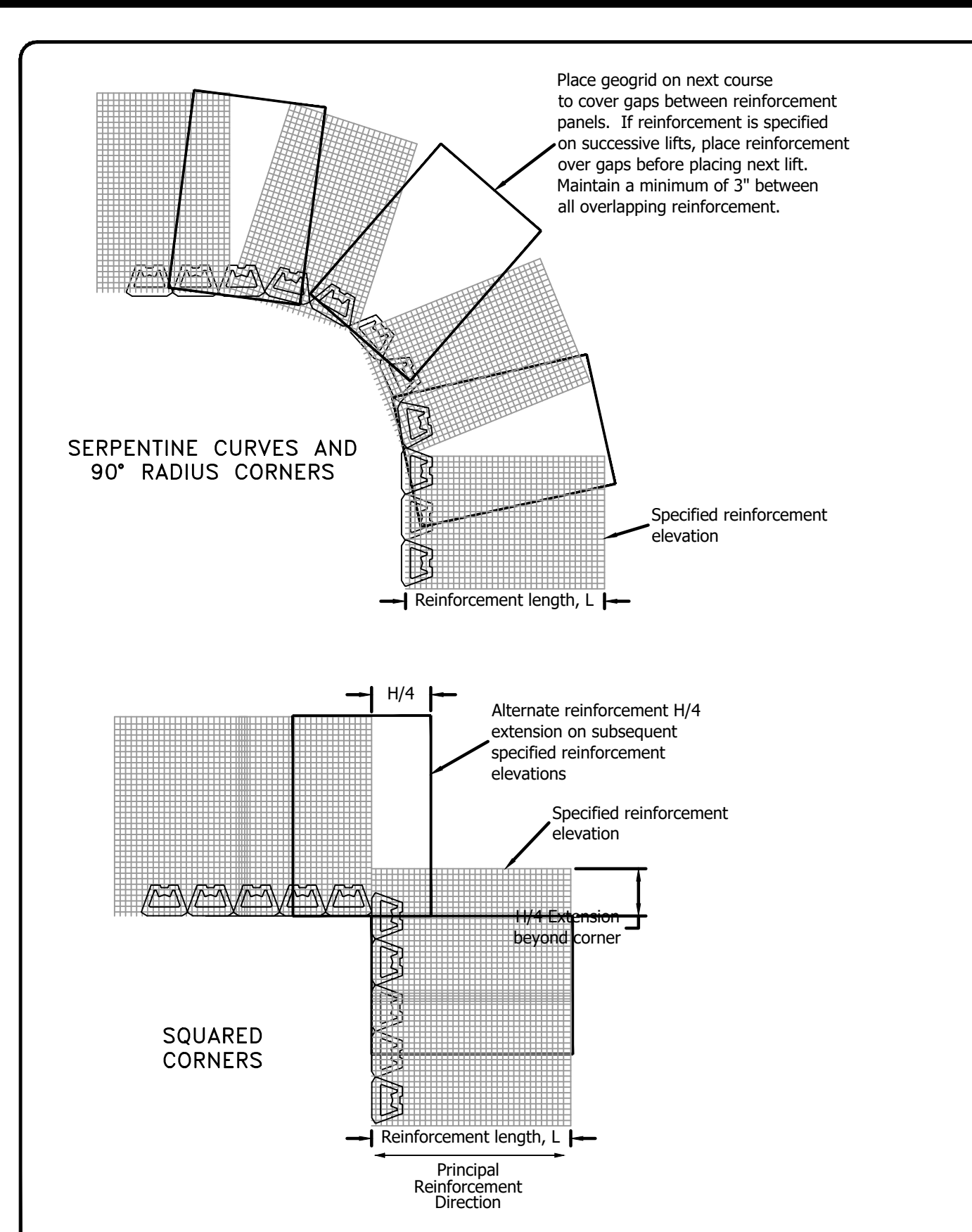
STEP 8, BACKFILLING OVER GEOSYNTHETIC STEP 9, COMPLETE THE WALL

**RIDGEROCK RETAINING WALL
INSTALLATION PROCEDURE**

RIDGEROCK DETAILS

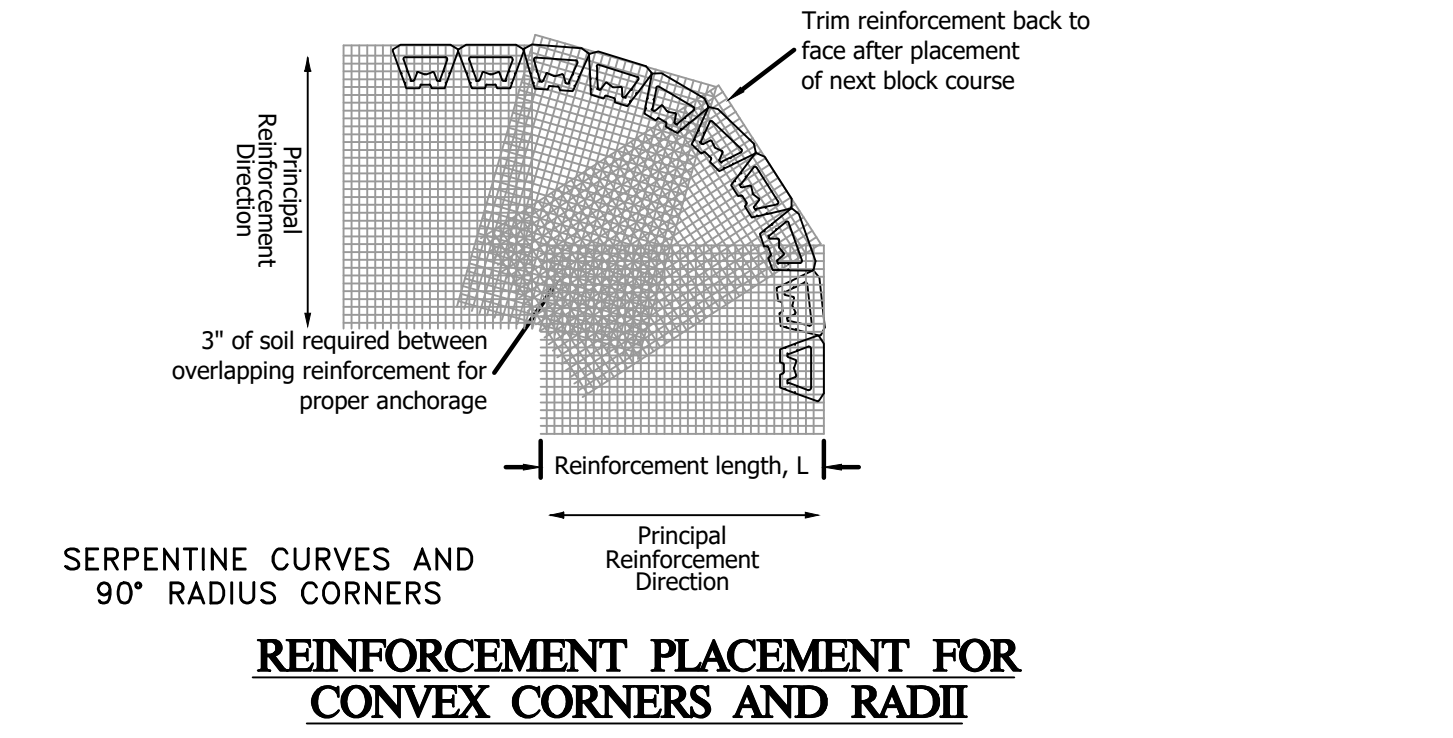
1 of 1 SHEET NO. 7/2001 DATE

RidgeRock Retaining Walls Inc.
P.O. Box 241233
Charlotte, NC 28224
704-504-3358
Fax: 504-3038



**REINFORCEMENT PLACEMENT FOR
CONCAVE CORNERS AND RADII**

**REINFORCEMENT PLACEMENT FOR
CONVEX CORNERS AND RADII**



**REINFORCEMENT PLACEMENT FOR
CONVEX CORNERS AND RADII**

**RIDGEROCK RETAINING WALL
GEGRID PLACEMENT ON CORNERS AND RADII**

RIDGEROCK DETAILS

1 of 1 SHEET NO. 12/2005 DATE

RidgeRock Retaining Walls Inc.
P.O. Box 241233
Charlotte, NC 28224
704-504-3358
Fax: 504-3038

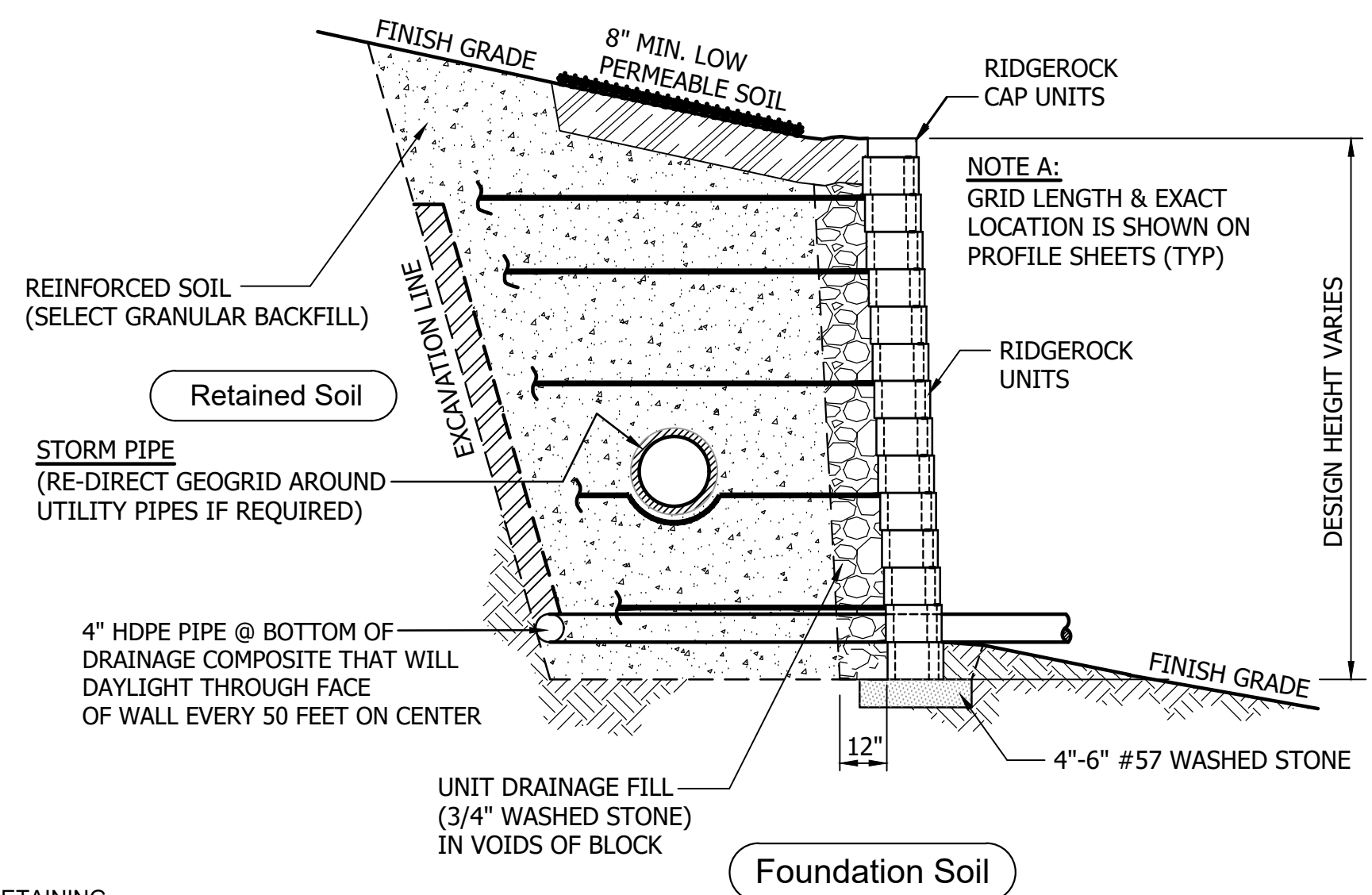
Information contained herewith is supplied for general use only. All walls should be designed by an engineer registered in the state of the project. Details provided in the first design should be used unless available. RidgeRock Retaining Walls Inc. assumes no liability for the accuracy or completeness of this information. Users should satisfy themselves through independent investigation that materials and designs can be used safely.

GEOTECHNICAL GENERAL NOTE:

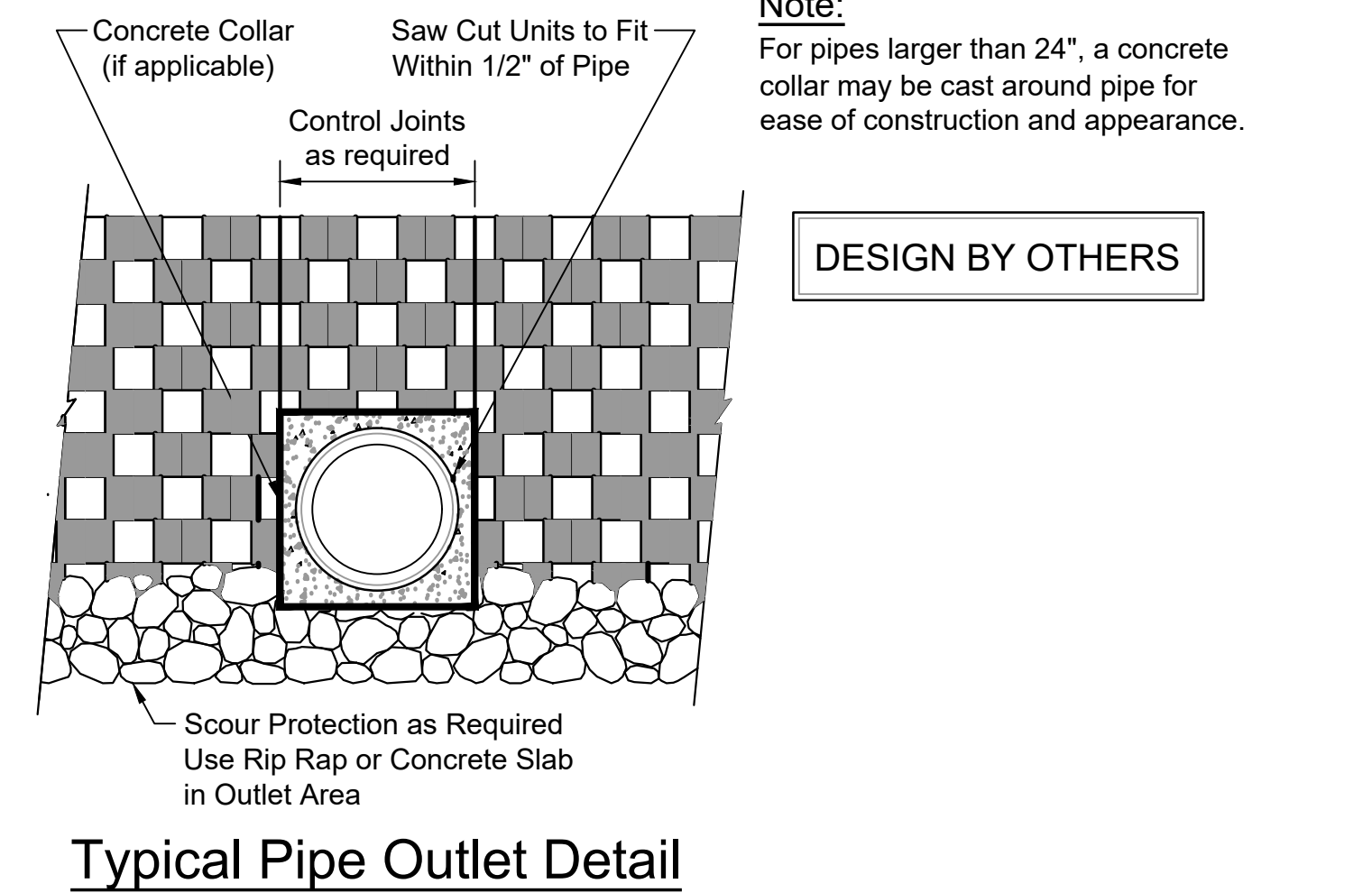
1. GEOTECHNICAL INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. THEREFORE, ASSUMPTIONS WERE MADE BASED ON SOIL CHARACTERISTICS IN THE AREA (REFER TO SHEET C-1). IF SOILS ARE DIFFERENT IN THE FIELD THAN LISTED IN THE GEOTECHNICAL REPORT, VENTURE ENGINEERING, P.A. MUST BE NOTIFIED IMMEDIATELY BEFORE 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 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 AS PROVIDED BY WITHERS & RAVENEL SEALED 01/24/24.
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 DRAINAGE COMPOSITE DETAIL (For Cut Walls Only)
NOT TO SCALE



Typical Pipe Outlet Detail

DESIGN BY OTHERS

Note:
For pipes larger than 24", a concrete collar may be cast around pipe for ease of construction and appearance.

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Venture Engineering, P.A.

NO.	DESCRIPTIONS	DATE
2	REVISED PER SITE PLAN SEALED 1/24/24	01/31/24
1	REVISED TO ADD WALL NEW WALL #9A BEHIND LOTS #266 Thru #299	11/30/23
	DESCRIPTIONS	DATE
	REVISIONS	

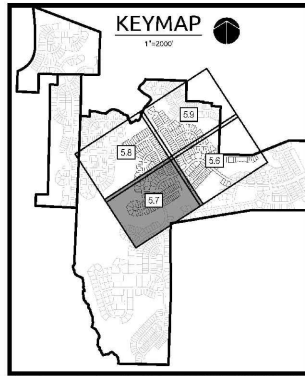


VE
Venture Engineering, P.A.
312 WEST MILLBROOK ROAD SUITE 237
RALEIGH, NC 27609
P: 919-676-0303 F: 919-676-0301
EMAIL ADDRESS: BMONDSCHIEIN@VENTURE-E.COM
LICENSE NO. C-2590

SERENITY SUBDIVISION
PHASES 6A & 6C - RETAINING WALLS
PINEY GROVE RAWLS ROAD
HARNETT COUNTY, NC

DETAIL SHEET - SHEET 2 OF 2
SERENITY SUBDIVISION - HARNETT COUNTY, NC
PHASES 6A & 6C

DATE: JANUARY 31, 2024	SCALE	DRAWING NUMBER C-11
DES: TLH		
CHECKED: KLY		
APPROVED: MJM		
	HORIZONTAL: N/A	
	VERTICAL: N/A	



LEGEND

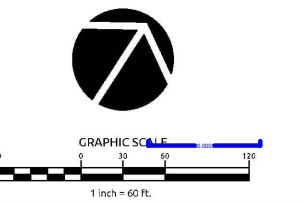
	PROPERTY LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED LOT LINE
	PERIMETER BUFFER
	ACCESS EASEMENT
	GAS LINE EASEMENT
	POWER LINE EASEMENT
	EXISTING WETLANDS
	STREAM CONSERVATION BUFFER
	OPEN SPACE
	IMPROVED OPEN SPACE
	PHASE 2D

UTILITY ABBREVIATION LEGEND

FHA	FIRE HYDRANT ASSEMBLY
SCA	SEWER ASSEMBLY
GV	GATE VALVE
ARV	AIR RELEASE VALVE
RED	REDUCER

EASEMENT ABBREVIATION LEGEND

DE	DRAINAGE EASEMENT (PUBLIC)
PDE	PRIVATE DRAINAGE EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PSE	PUBLIC SEWER EASEMENT
PWE	PUBLIC WATER EASEMENT
SCMAE	SCM MAINTENANCE AND ACCESS EASEMENT
SDTE	SOFT DISTANCE EASEMENT
VWDE	VARIABLE WIDTH DRAINAGE EASEMENT (PUBLIC)



WithersRavenel
 Engineers | Planners | Surveyors

SERENITY
 PHASES 1D, 1E, 2C, 2D, 2E, 2F,
 2G, 6A, 6B, 6C, 6D, 6E, 6F, &
 6G
 HARNETT COUNTY, NORTH CAROLINA

GRADING PLAN

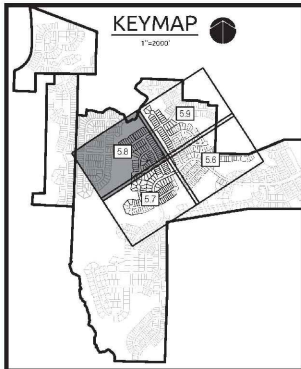
Job No. 02190647 Drawn By WR
 Date 03/01/24 Designer WR



Revisions

1	REVISED PER HRW REQUEST	10/17/22
2	REVISED PER DUKE EASEMENT	11/15/22
3	REVISED GA LOT GRADING	01/22/24

Sheet No.
C5.8



UTILITY ABBREVIATION LEGEND

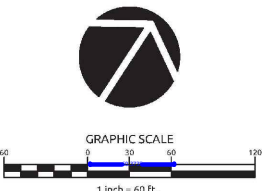
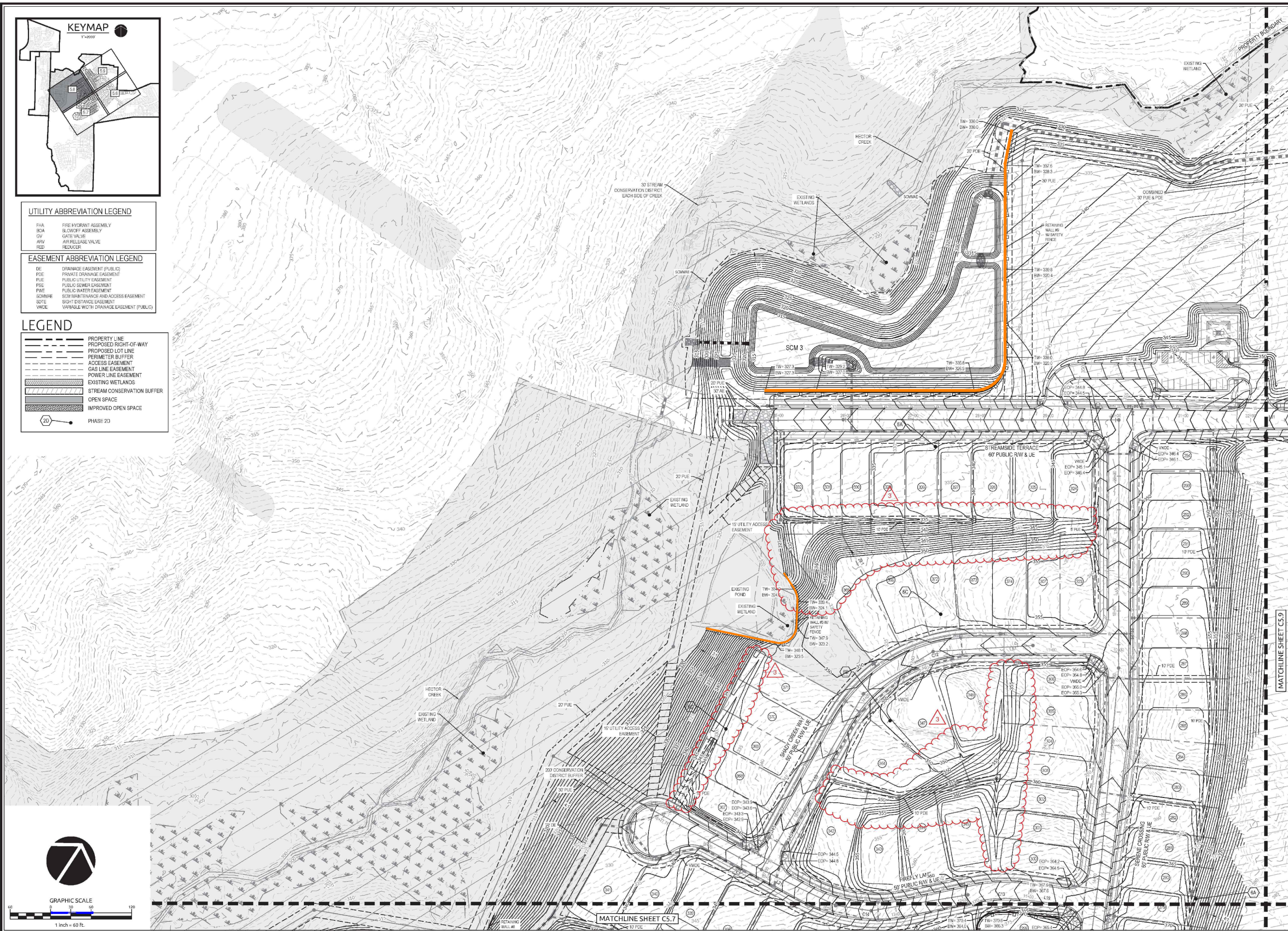
- FHA FIRE HYDRANT ASSEMBLY
- BCA BLOWOFF ASSEMBLY
- GV GATE VALVE
- AVV AIR RELEASE VALVE
- RED REDUCER

EASEMENT ABBREVIATION LEGEND

- DE DRAINAGE EASEMENT (PUBLIC)
- PDE PRIVATE DRAINAGE EASEMENT
- PUE PUBLIC UTILITY EASEMENT
- PSE PUBLIC SEWER EASEMENT
- PWE PUBLIC WATER EASEMENT
- SCMAFE SCM MAINTENANCE AND ACCESS EASEMENT
- SOTE SIGHT DISTANCE EASEMENT
- WVCE VARIABLE WIDTH DRAINAGE EASEMENT (PUBLIC)

LEGEND

- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- PERIMETER BUFFER
- ACCESS EASEMENT
- GAS LINE EASEMENT
- POWER LINE EASEMENT
- EXISTING WETLANDS
- STREAM CONSERVATION BUFFER
- OPEN SPACE
- IMPROVED OPEN SPACE
- PHASE 2D



MATCHLINE SHEET C5.7

MATCHLINE SHEET C5.9



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SERENITY PHASES 1D, 1E, 2C, 2D, 2E, 2F, 2G, 6A, 6B, 6C, 6D, 6E, 6F, & 6G
HARNETT COUNTY, NORTH CAROLINA

GRADING PLAN

Job No: 02190647 Drawn By: WR
Date: 03/01/21 Designer: WR



Revisions	Revised Per	Date
2	REVISED PER DUKE EASEMENT	11/15/22
3	REVISED AA LOT GRADING	01/22/24

Sheet No. C5.9