

# Construction Plans

## For

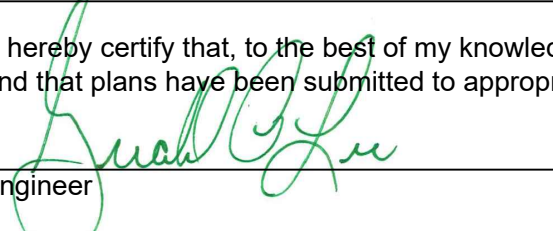
# Francis Marion University

## Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B

## State Project No: H18-9584-MJ-B1

**ZONING CERTIFICATION**

"I hereby certify that, to the best of my knowledge, these plans comply with all applicable zoning ordinances, and that plans have been submitted to appropriate authority for their review and/or approval."

Engineer:  Date: 03-28-23

**TABLE 1 FLOOD HAZARD INFORMATION & FLOOD LOADS**

**FLOOD HAZARD AREA**

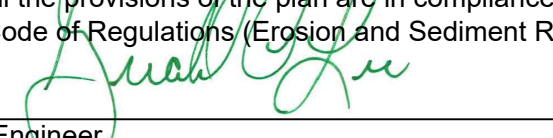
Flood Map Information: Flood Zone: X  
Community Number: 450076 Panel Number: 45041C0167E

Is the Project Site in a 100-Year Floodplain? Yes  No

Base Flood Elevation (NGVD or FIRM) N/A  
Design Flood Elevation (IBC 1612.3 and ASCE 24) N/A

**EROSION AND SEDIMENT REDUCTION/STORMWATER MANAGEMENT**

Designer's Certification:  
"I hereby certify that the measures in this plan are designed to control erosion, retain sediment on the site, and manage stormwater in a manner that neither any on-site nor off-site damage or problem is caused or increased, that all structural measures are designed to the minimum standards for health and safety, and that all the provisions of the plan are in compliance with the Regulations contained in Chapter 72, Article 2, SC Code of Regulations (Erosion and Sediment Reduction and Stormwater Management Regulations)"

Engineer:  Date: 03-28-23

**Contact: Taylor Hucks**  
**Tel: (843) 661-1488**  
**Email: Taylor.hucks@fmarion.edu**

**Prepared by:**  
**Chao & Associates, Inc.**  
**Consulting Engineers**

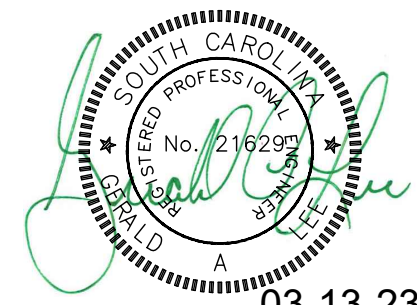
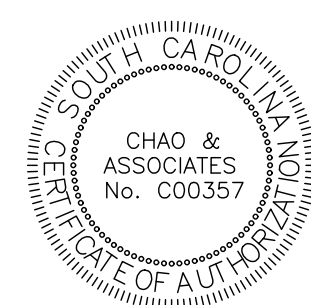
**C & A #: 392912-22**



**FOR REVIEW ONLY**



**Chao & Associates, Inc.**  
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7 Clusters Court  
Columbia, SC 29210  
Voice: (803) 772-8420  
Fax: (803) 772-9120  
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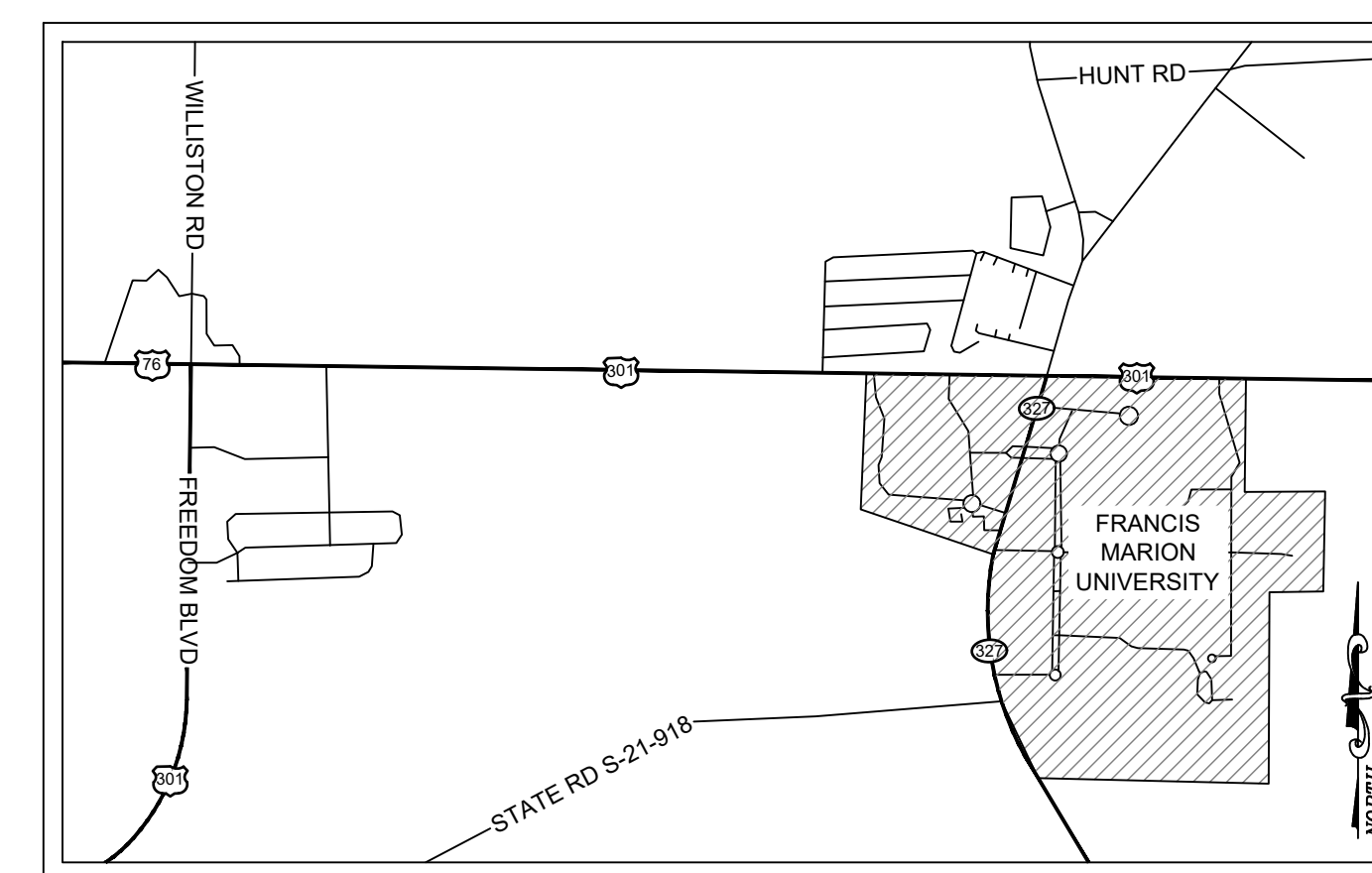
03-13-23

**DRAWING INDEX**

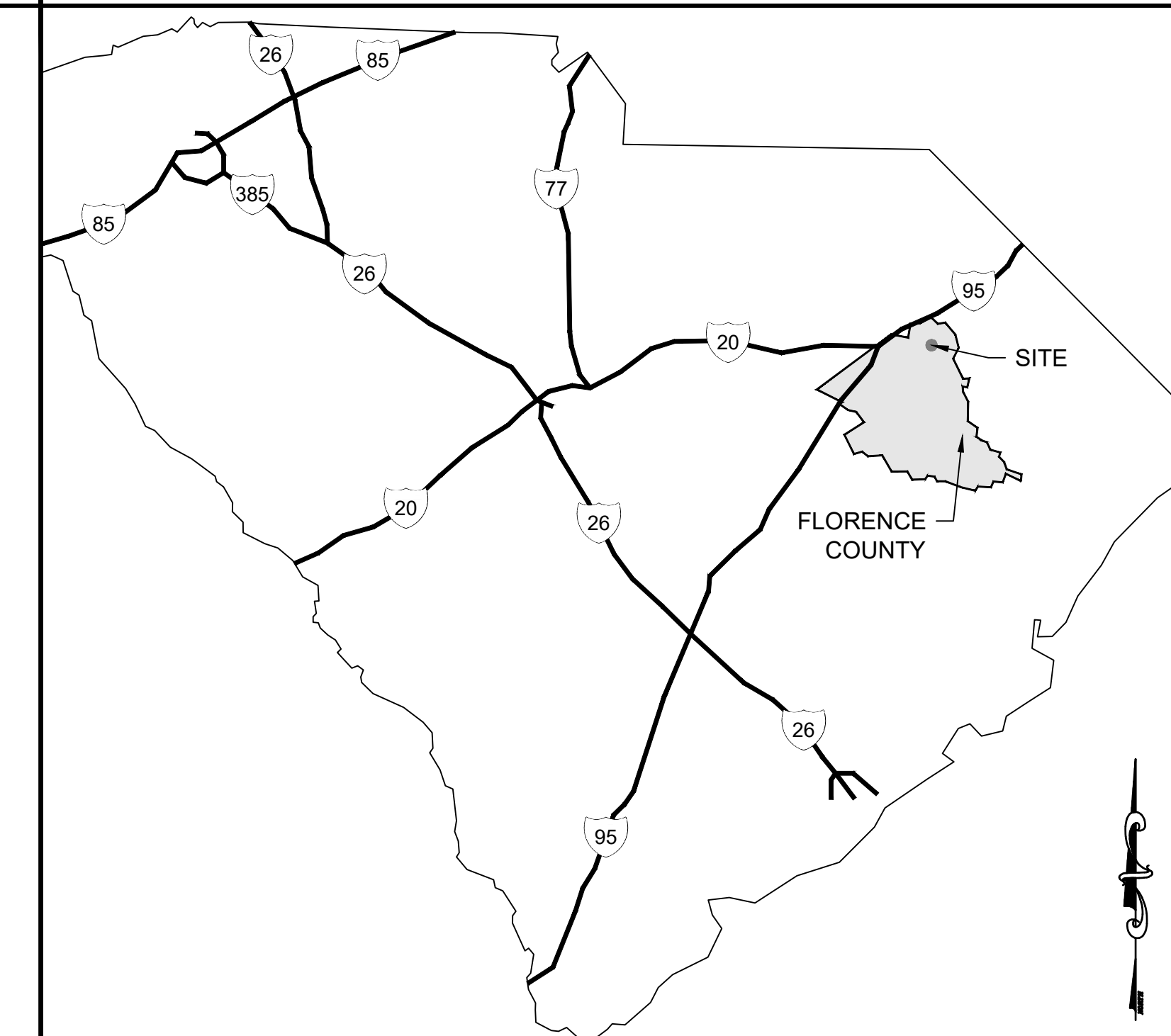
- C1.0 - Key Map
- C2.0 - Existing Conditions & Repair Plan for Lot B
- C2.1 - Pavement Striping Plan for Lot B
- C3.0 - Sidewalk & Ramp Condition Plan for Area A
- C3.1 - Sidewalk & Ramp Condition Plan for Area B
- C3.2 - Sidewalk & Ramp Condition Plan for Area C
- C3.3 - Sidewalk & Ramp Condition Plan for Area D
- C3.4 - Sidewalk & Ramp Condition Plan for Area E
- C4.0 - Construction Details

**Location Map**

County of Florence  
Scale: Not to Scale



State of South Carolina  
Scale: 1" = 30 Miles

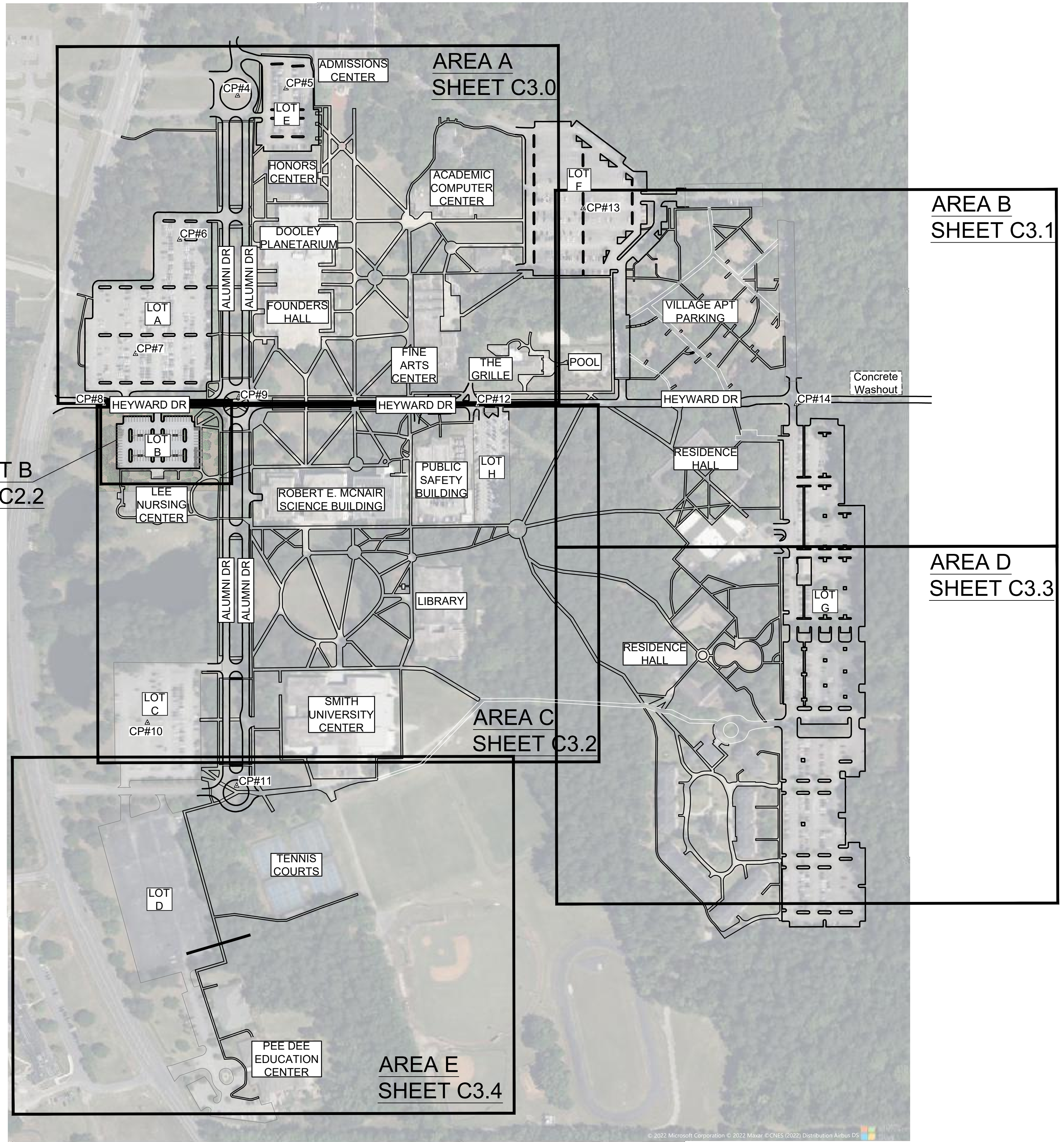


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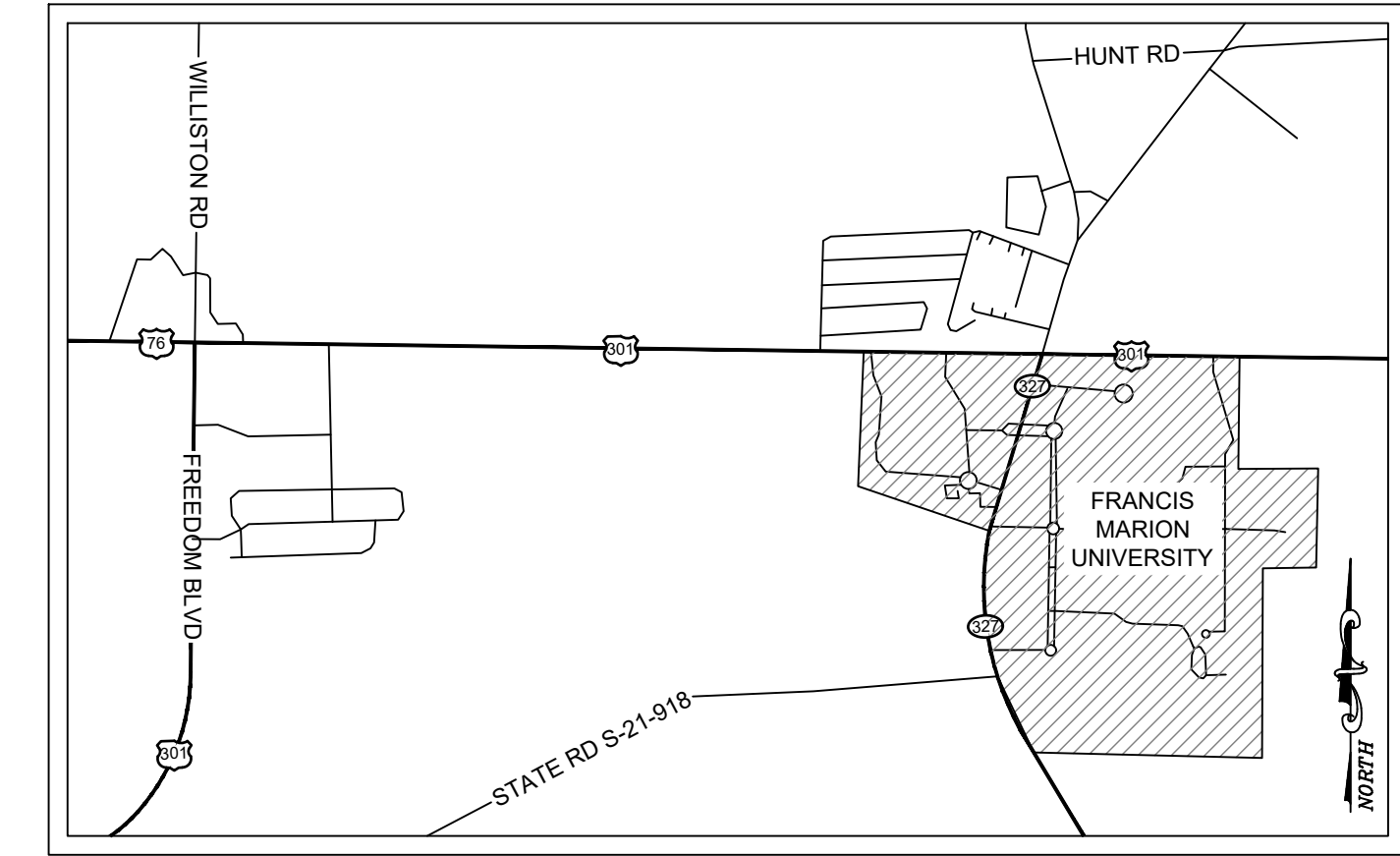
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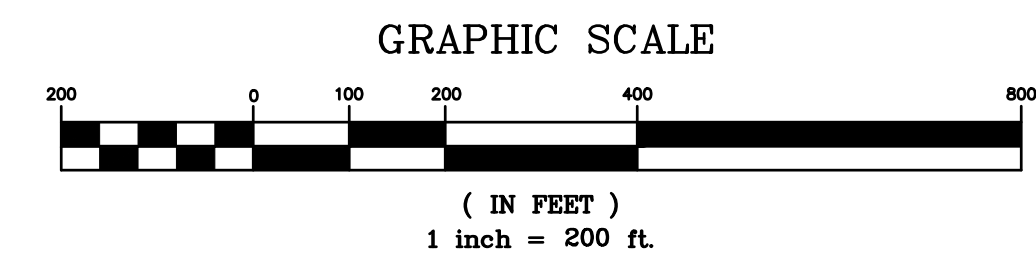
▲ MONUMENT SHOT



PARKING LOT B  
SHEET C2.0-C2.2



Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1	MONUMENT SHOT	95.00	862236.76	2406619.86
9	CP#9	93.82	860641.49	2406677.09
4	CP#4	94.91	861607.11	2406675.00
5	CP#5	92.90	861629.74	2406830.06
6	CP#6	92.37	861146.18	2406488.47
7	CP#7	93.40	860780.00	2406346.50
8	CP#8	92.26	860619.20	2406245.52
10	CP#10	91.97	859598.88	2406382.06
11	CP#11	92.93	859396.61	2406667.86
12	CP#12	92.49	860614.77	2407440.56
13	CP#13	91.82	861243.95	2407780.91
14	CP#14	84.36	860615.93	2408463.05



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
STATE PROJECT NO.: H18-9584-MJ-B1

**FOR REVIEW ONLY**

Drawn: TJD Checked: GAL

Revised:

File: 392912C\_R2.dwg Project No.: 392912-22

**Key Plan**

Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-

Ramps, Sidewalks & Lot B

Prepared for: Francis Marion University

Florence County, South Carolina

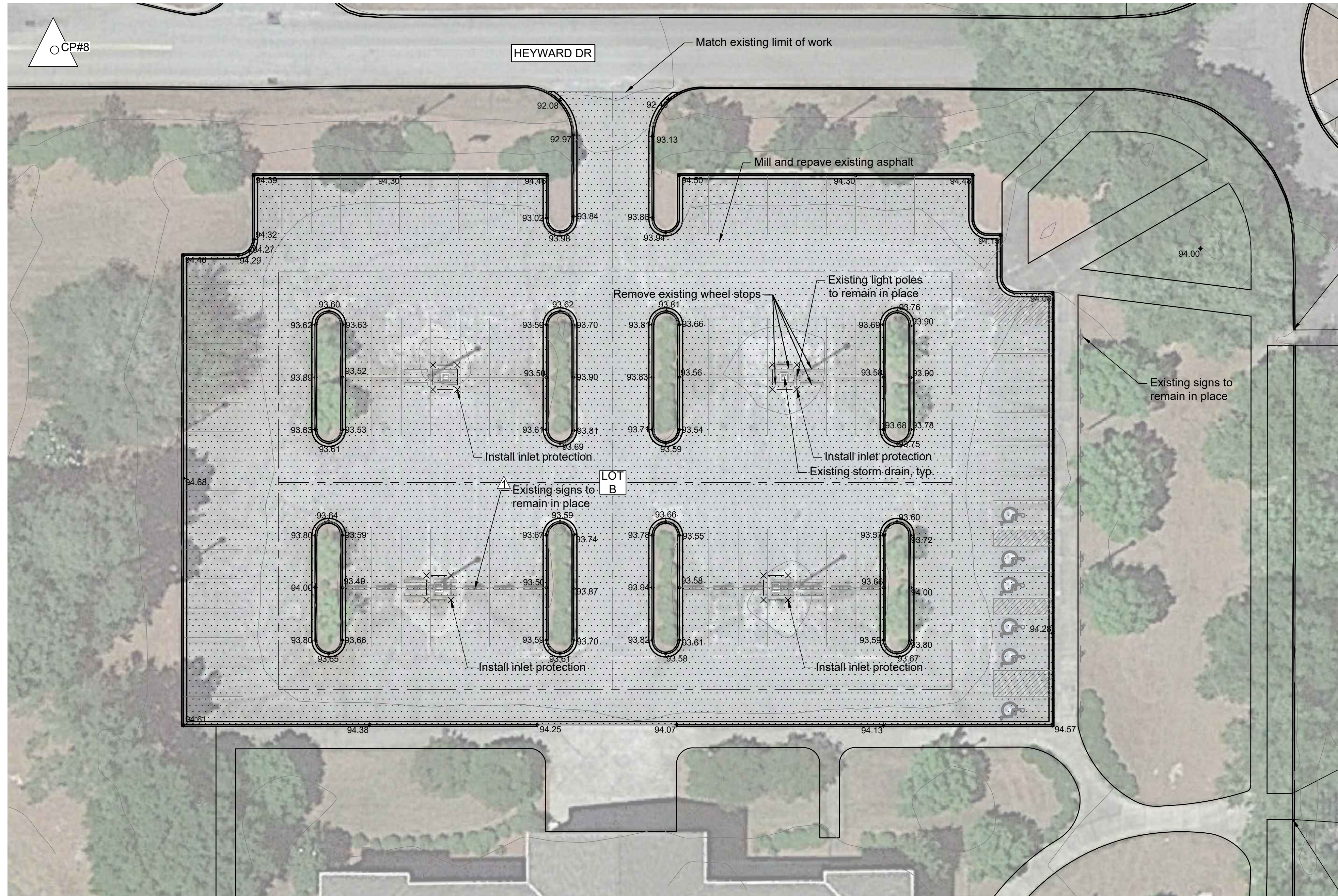


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Email: [consult@chaoinc.com](mailto:consult@chaoinc.com)



**C1.0**  
Sheet Number  
03-01-2023  
Date



**Mill and Re-Pave Procedure:**

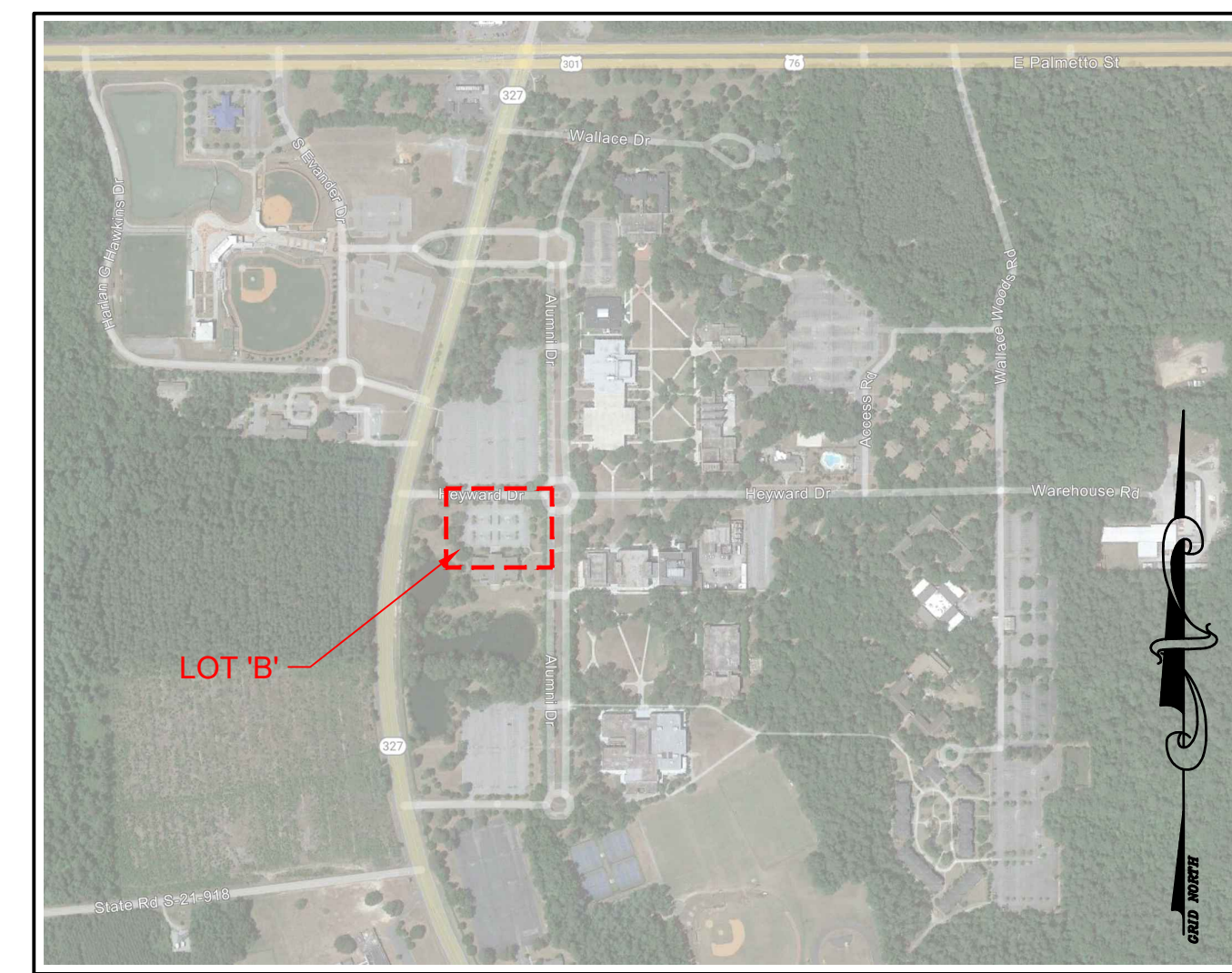
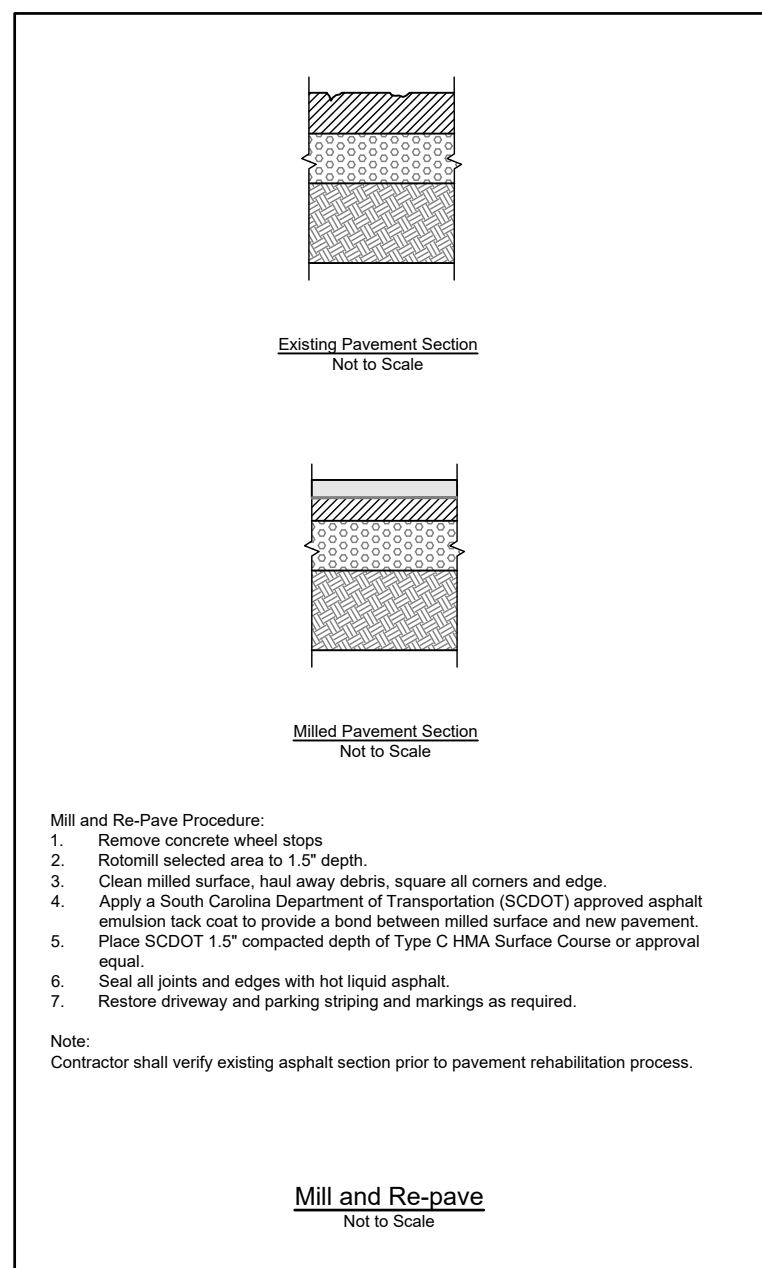
1. Remove concrete wheel stops
2. Rotomill selected area to 1.5" depth
3. Clean milled surface, haul away debris, square all corners and edge
4. Apply a South Carolina Department of Transportation (SCDOT) approved asphalt emulsion tack coat to provide a bond between milled surface and new pavement
5. Place SCDOT 1.5" compacted depth of Type C HMA Surface Course or approved equal
6. Seal all joints and edges with hot liquid asphalt
7. Restore driveway and parking striping and markings as required

**Note:**

Contractor shall verify existing asphalt section to pavement rehabilitation process.

**Reference:**

See Appendix A of Project Manual for geotechnical report



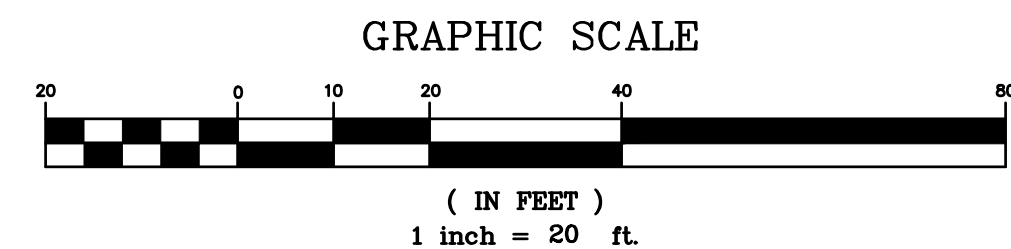
LEGEND	
	Fire hydrant
	Water valve
	Water meter
	Gas valve
	Sanitary sewer manhole
	Cleanout (CO)
	Natural gas line
	Sanitary sewer line
	Water line
	Fenceline
	Overhead electric
	Underground telephone
	Underground fiber optic
	Underground cable TV
	Telephone pedestal
	Curb & gutter
	Junction box (JB)
	Drop inlet (DI)
	Hood & grate inlet (H&G)
	Yard inlet (YI)
	Storm drain pipe
	Concrete sidewalk
	Power pole & guy
	Light pole
	Electrical box
	Sign
	Limits of disturbance
	Asphalt milling

**Construction Notes:**

1. All elevations are referenced to mean sea level (MSL) datum.
2. All pavement dimensions are referenced to the face of curb where applicable.
3. Contractor is cautioned that the location and/or elevation of existing utilities shown herein are based on records provided by the utility company and information obtained from the field. Contractor shall verify all existing field conditions and utilities prior to beginning work and notify the engineer if any differing site conditions are noted.
4. Contractor is required to contact Utility Protection Service (811) three days prior to any digging or commencing construction.
5. Provide silt fence and other erosion control devices, as may be required, to control soil erosion during construction. All disturbed areas shall be cleaned, graded and stabilized with grassing immediately after completion of construction in the area.
6. Contractor shall take necessary action to minimize the tracking of mud onto the paved roadway from construction areas. Contractor to daily remove mud/soil from pavement as required.
7. All construction staking shall be provided at the contractor's expense.
8. Contractor to clear existing culverts/pipes, catch basins and ditches along frontage and downstream as necessary to achieve positive drainage.
9. Contractor to saw cut existing asphalt for smooth joint not aligned with wheel path.
10. Existing light poles and signages will remain in place. Contractor is to mill and repave around existing light poles and signages.

**Reference:**

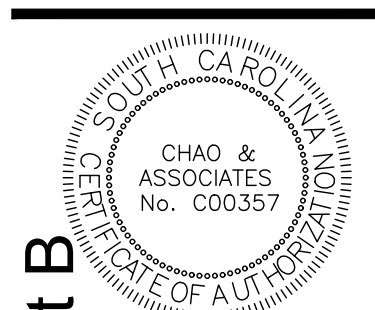
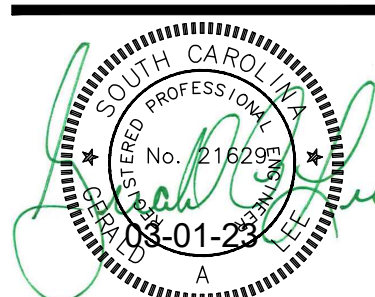
1. Boundary and topographic information (1-foot contour) were surveyed using LIDAR by Back Forty Aerial Solutions dated December 28, 2022.



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
STATE PROJECT NO.: H18-9584-MJ-B1



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**Existing Conditions & Repair Plan for Lot B**  
Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B  
Prepared for: Francis Marion University  
Florence County, South Carolina

Drawn: TJD Checked: GAL  
Revised: 03/28/2022 Revised per OSE's comments  
File: 392912C\_R2.dwg Project No.: 392912-22

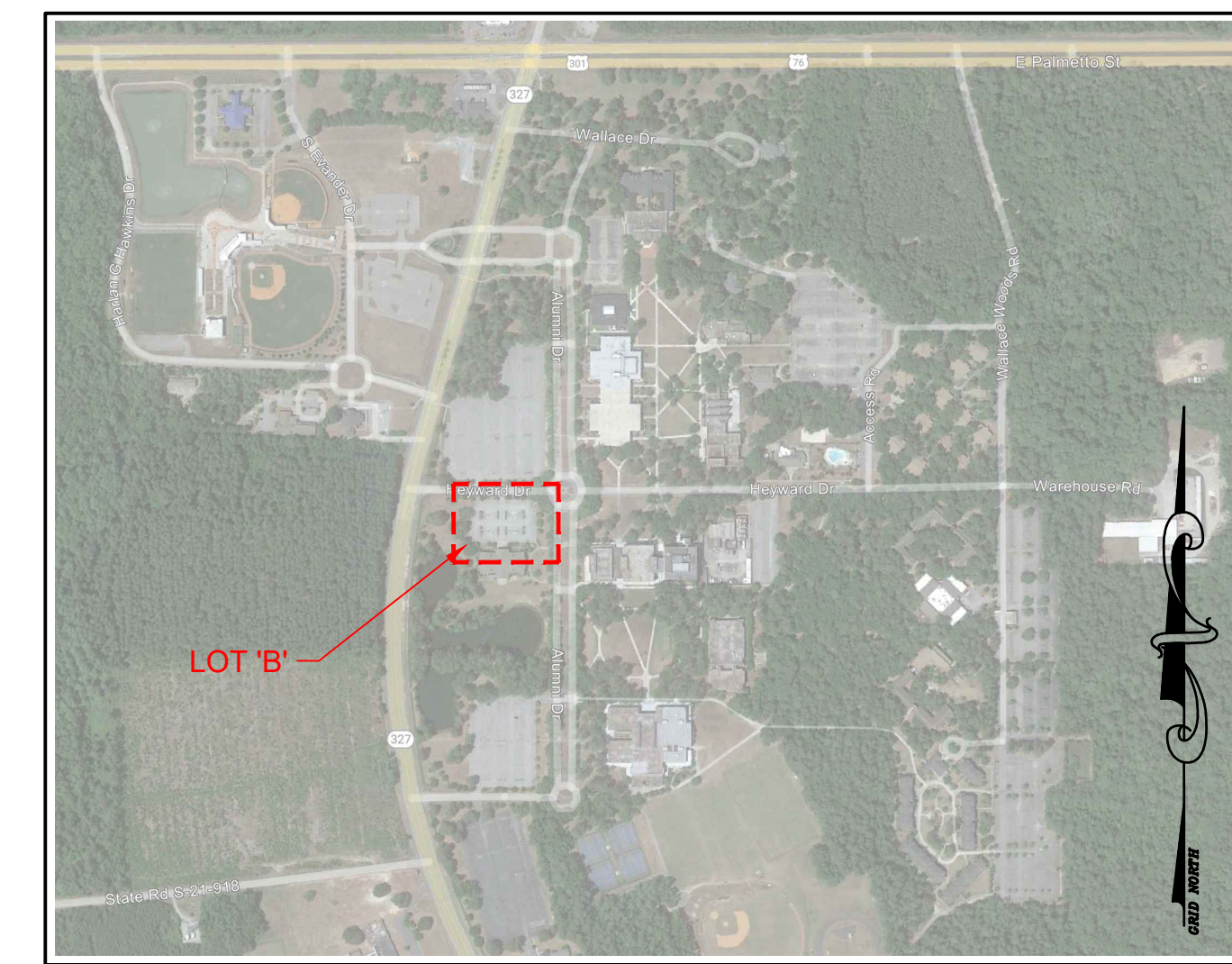
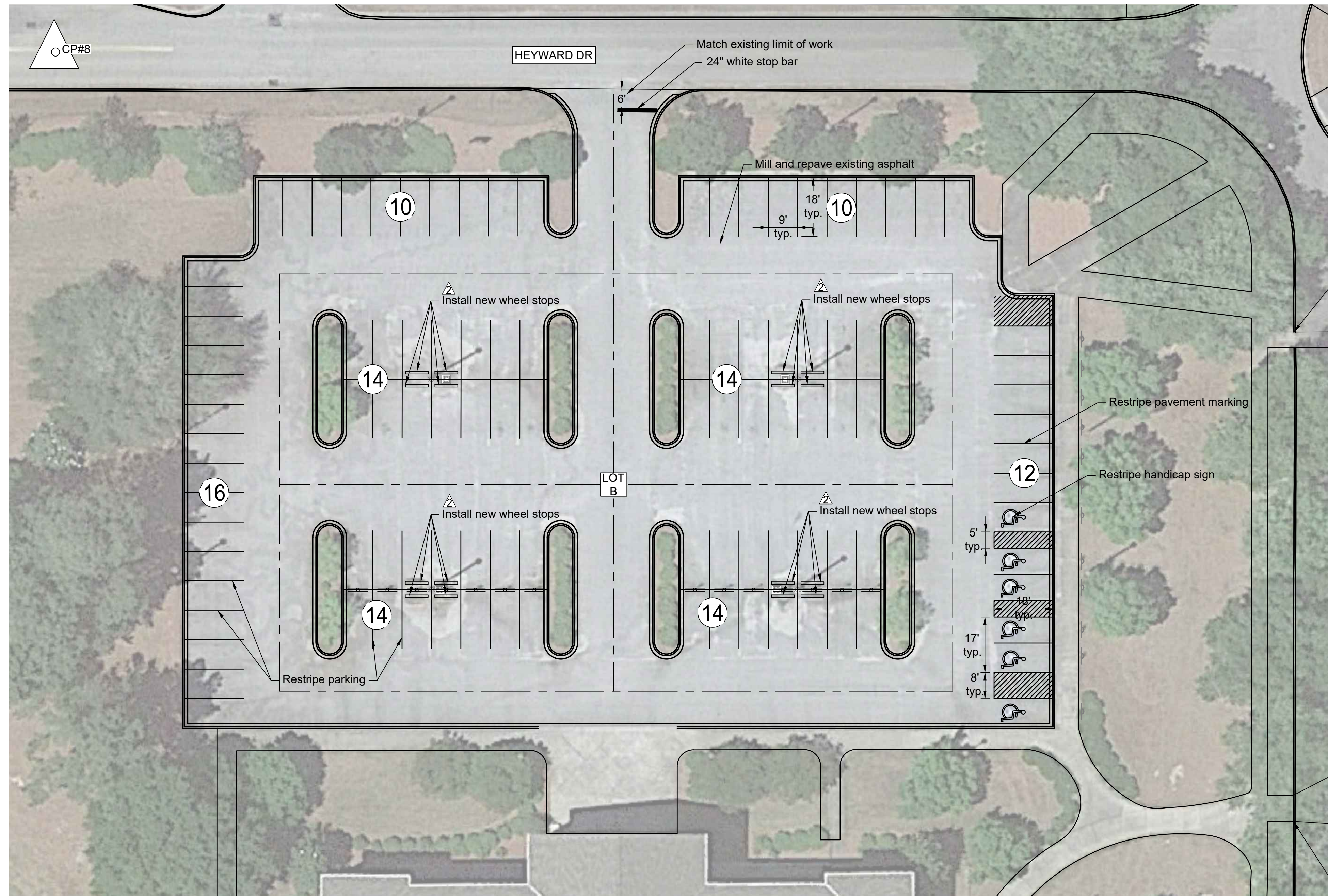
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**C2.0**  
Sheet Number  
03-01-2023  
Date

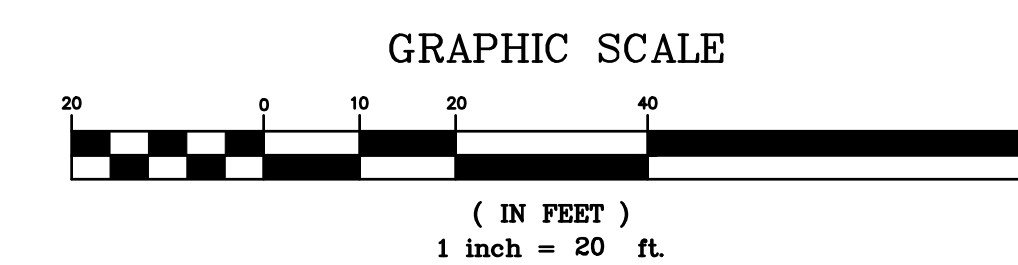
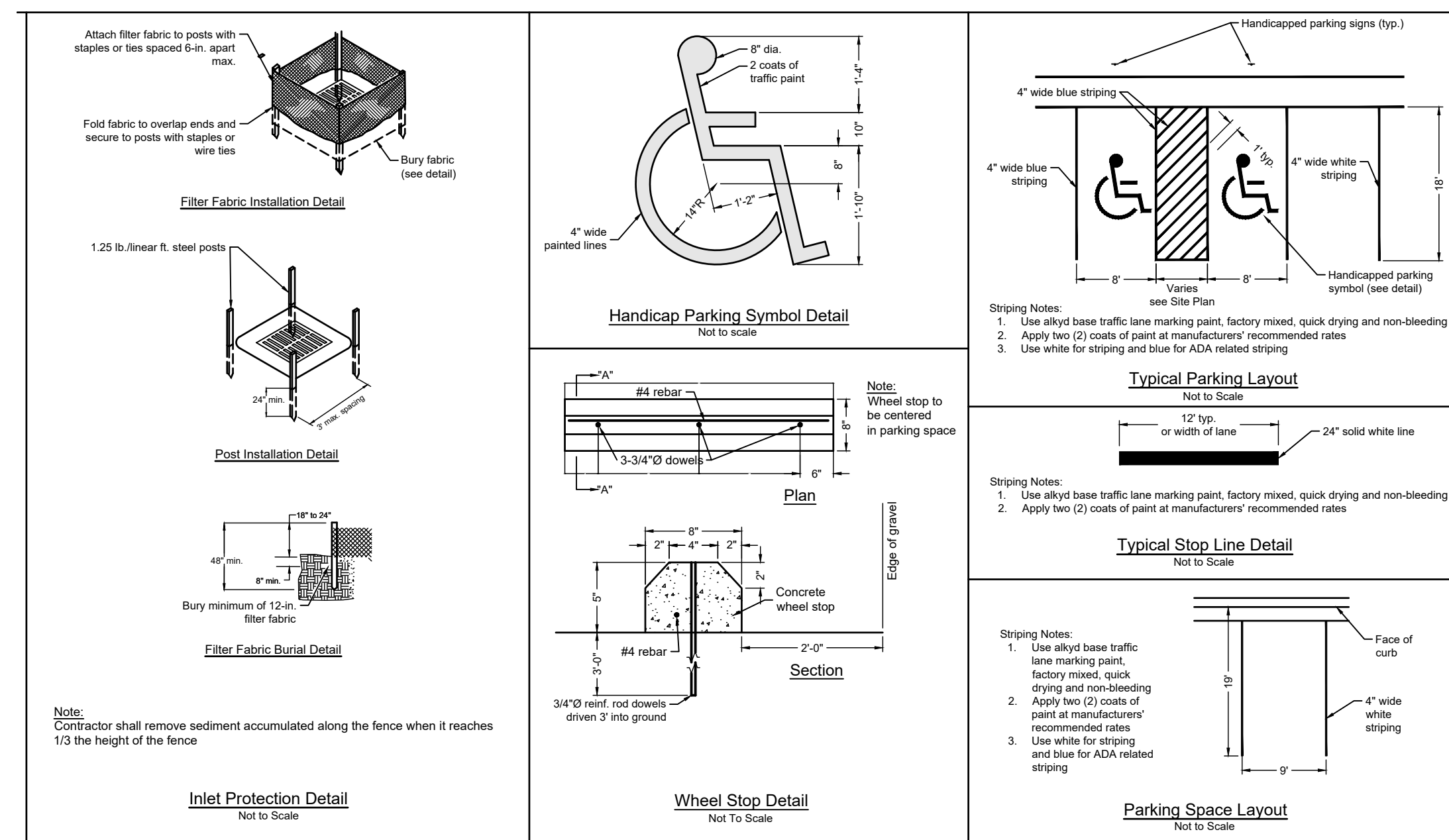


The utilities are shown for the contractor's convenience only. There may be other utilities not shown on these Plans. The Engineer assumes no responsibility to verify the locations shown and it shall be the contractor's responsibility to verify the locations of all utilities within the limits of the work. All damage made to existing utilities by the contractor shall be the sole responsibility of the contractor.

Drawing File: 392912C\_R2.dwg Plotted: Apr 03, 2023 10:20:00am



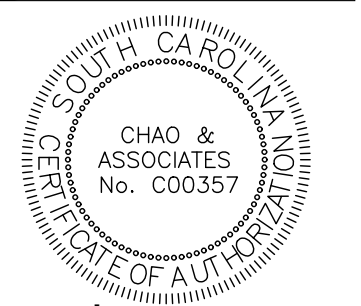
LEGEND	
	Fire hydrant
	Water valve
	Water meter
	Gas valve
	Sanitary sewer manhole
	Cleanout (CO)
	Natural gas line
	Sanitary sewer line
	Water line
	Fenceline
	Overhead electric
	Underground telephone
	Underground fiber optic
	Underground cable TV
	Telephone pedestal
	Curb & gutter
	Junction box (JB)
	Drop inlet (DI)
	Hood & grate inlet (H&G)
	Yard inlet (YI)
	Storm drain pipe
	Concrete sidewalk
	Power pole & guy
	Light pole
	Electrical box
	Sign
	Limits of disturbance
	Asphalt milling



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
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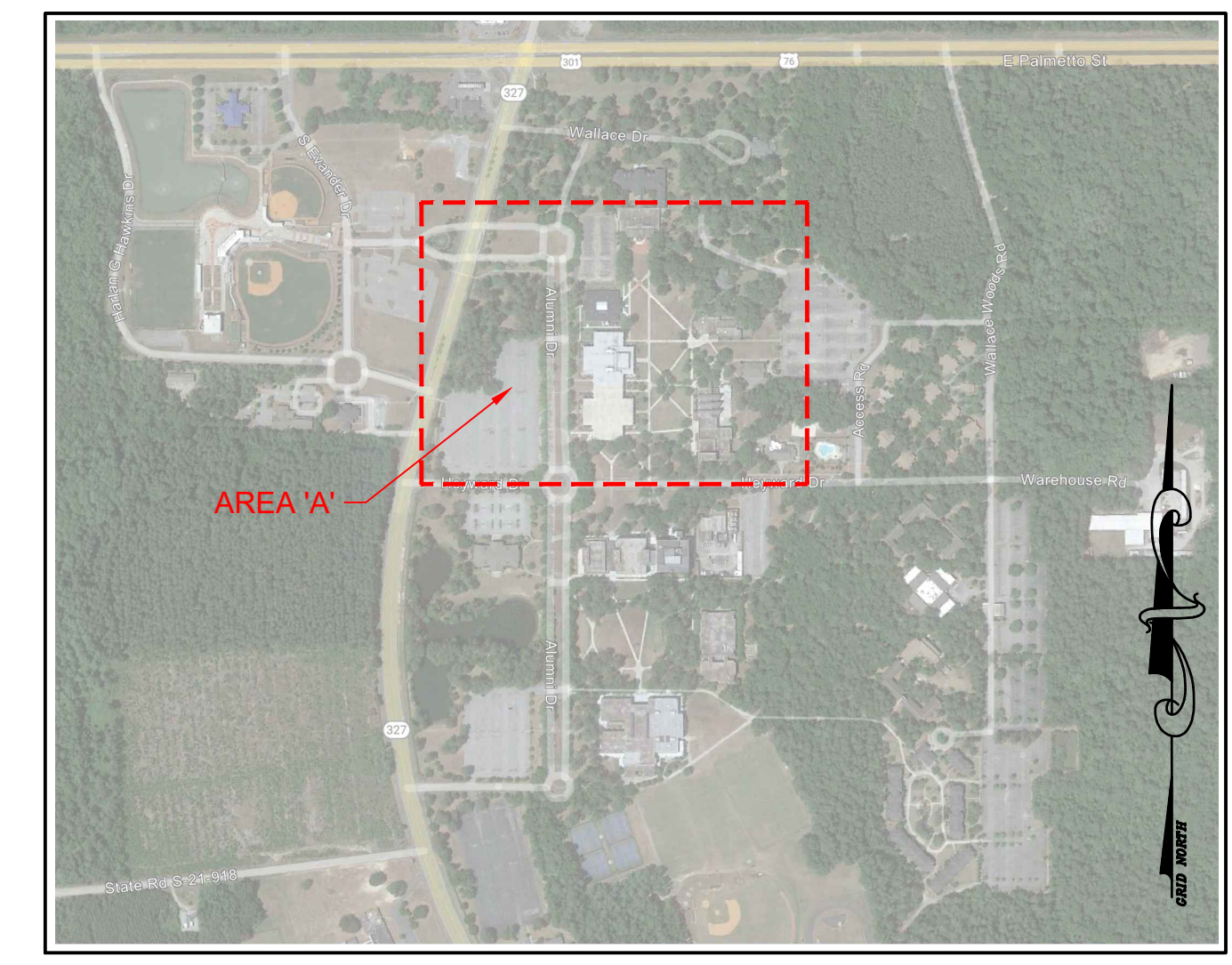
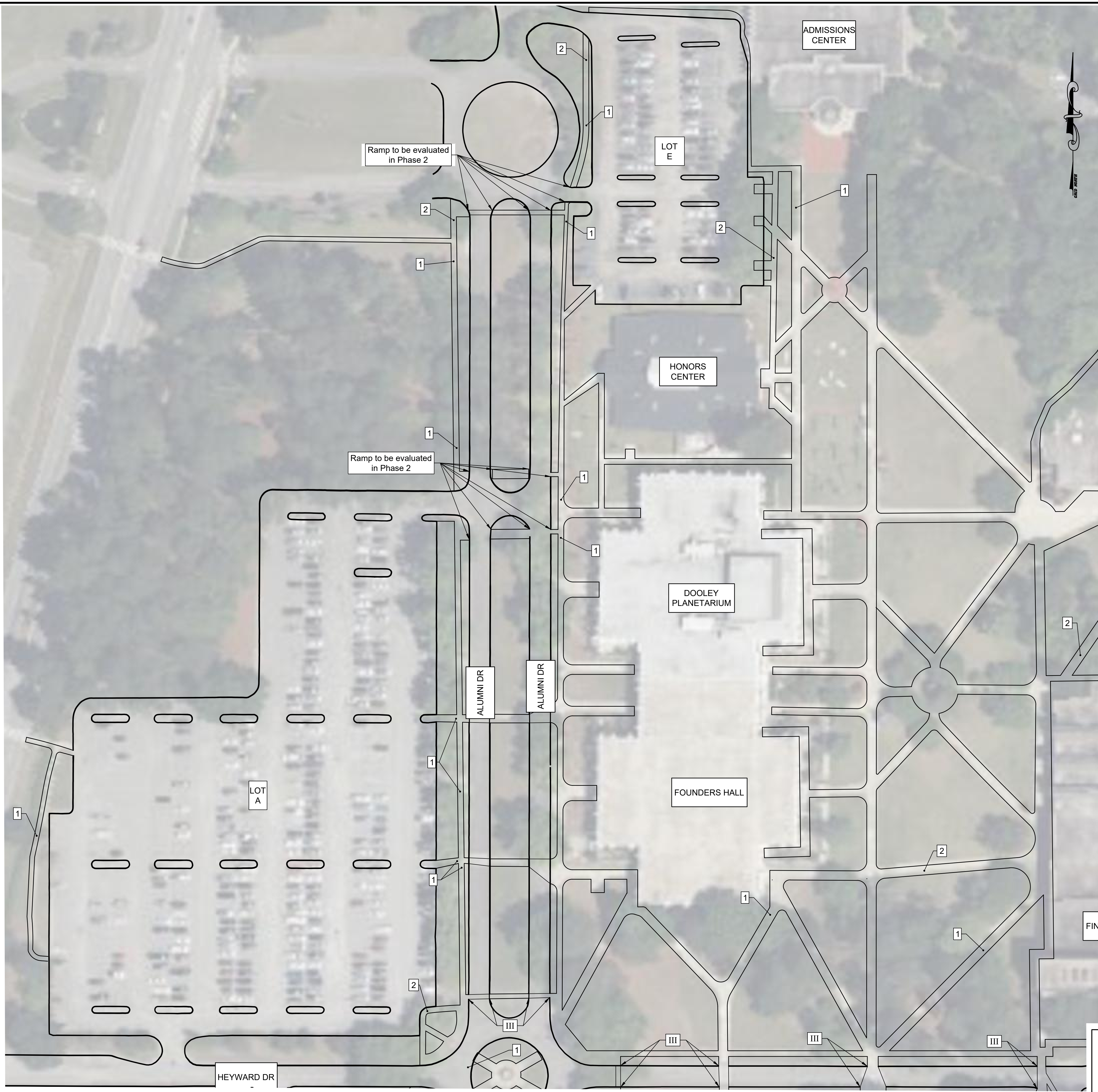
**Pavement Striping Plan for Lot B**  
Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B  
Prepared for: Francis Marion University  
Florence County, South Carolina

Drawn: TJD Checked: GAL  
Revised: 03/30/2022 Revised per OSE's comments  
Project No.: #392912-22  
File: 392912C\_R2.dwg

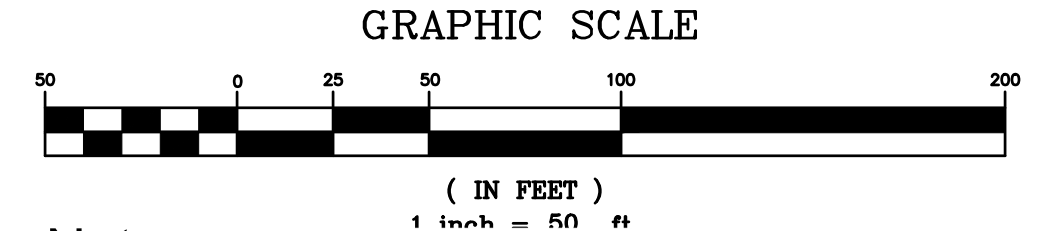
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**C2.1**  
Sheet Number  
03-01-2023  
Date

Drawing file: 392912C\_R2.dwg Plotted: Apr 03, 2023 10:20am



Sidewalk Repair Legend:		Total Estimated Concrete Repair Quantities	
1	Grinding	Grinding:	450 Linear Feet
2	Repour	Repouring:	3,000 Square Feet
III	Modification of Existing Sidewalk to become Handicap Accessible Ramps		
III	Modification of Existing Sidewalk to have Sidewalk Ramps		
III	Existing Sidewalk Ramps to install Detectable Warning Surface		



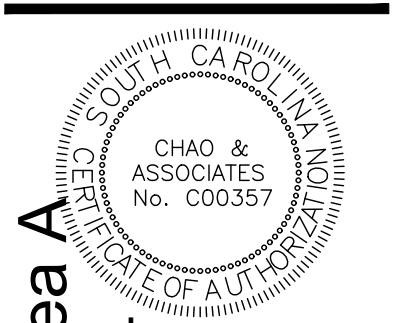
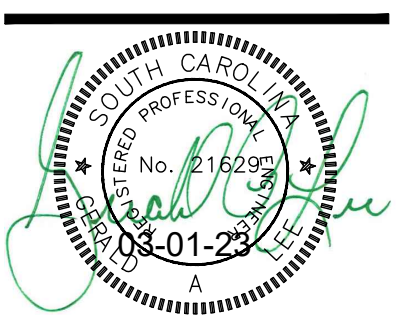
Notes:  
 1. Contractor to see Appendix A of project manual for detail of each deficiency

PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
 STATE PROJECT NO.: H18-9584-MJ-B1

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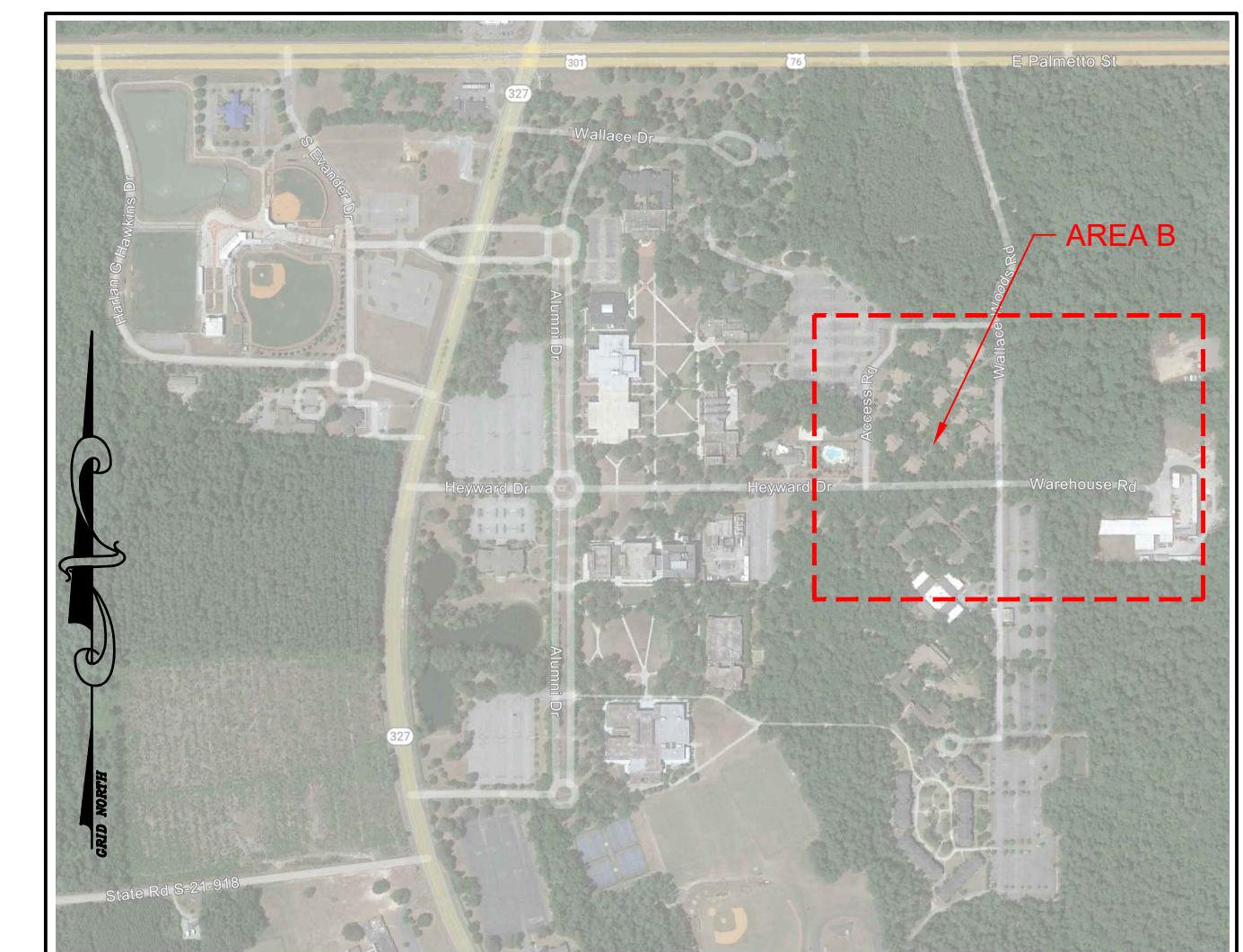


**Sidewalk & Ramp Condition Plan for Area A**  
 Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B  
 Prepared for: Francis Marion University  
 Florence County, South Carolina

Drawn: TJD	Checked: GAL
Revised: 03/28/2022	Revised per OSE's comments
File: 392912C_R2.dwg	Project No.: #392912-22

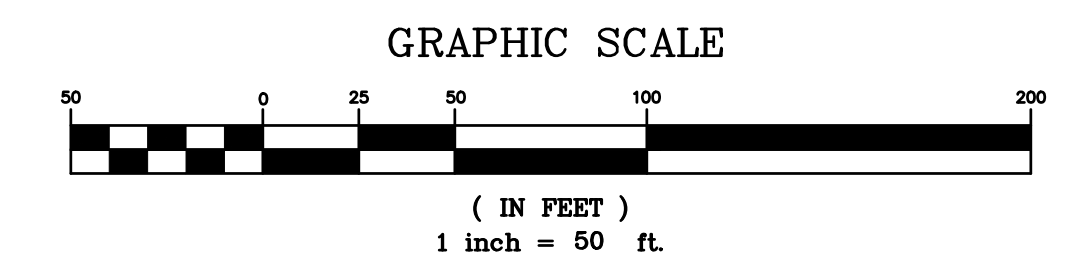
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 Sheet Number  
 03-01-2023  
 Date

Drawing file: 392912C\_R2.dwg Plotted: Apr 03, 2023 10:20am



Sidewalk Repair Legend:		Total Estimated Concrete Repair Quantities	
①	Grinding	Grinding:	450 Linear Feet
②	Repour	Repouring:	3,000 Square Feet
I	Modification of Existing Sidewalk to become Handicap Accessible Ramps		
II	Modification of Existing Sidewalk to have Sidewalk Ramps		
III	Existing Sidewalk Ramps to install Detectable Warning Surface		

- Notes:**
- Contractor to see Appendix A of project manual for detail of each deficiency



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
 STATE PROJECT NO.: H18-9584-MJ-B1

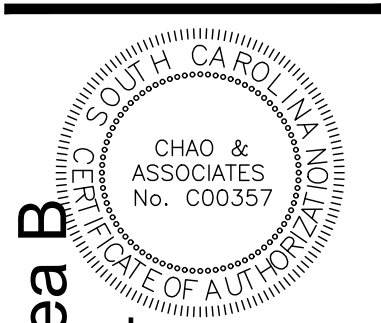
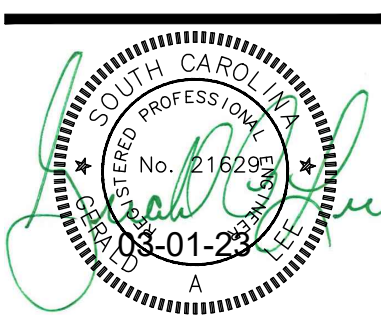
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Drawn: TJD Checked: GAL  
 Revised: 03/28/2022 Revised per OSE's comments  
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**C3.1**  
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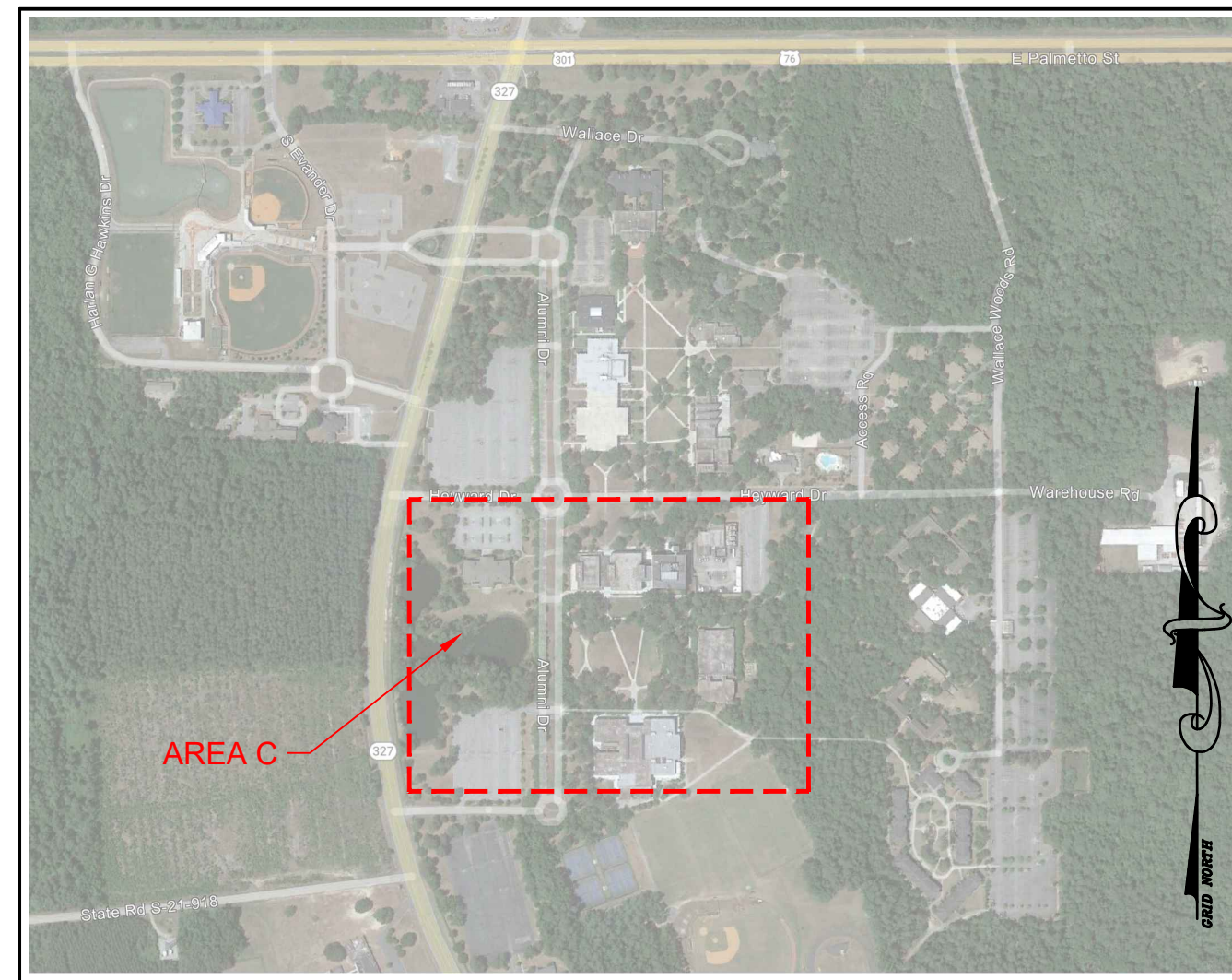
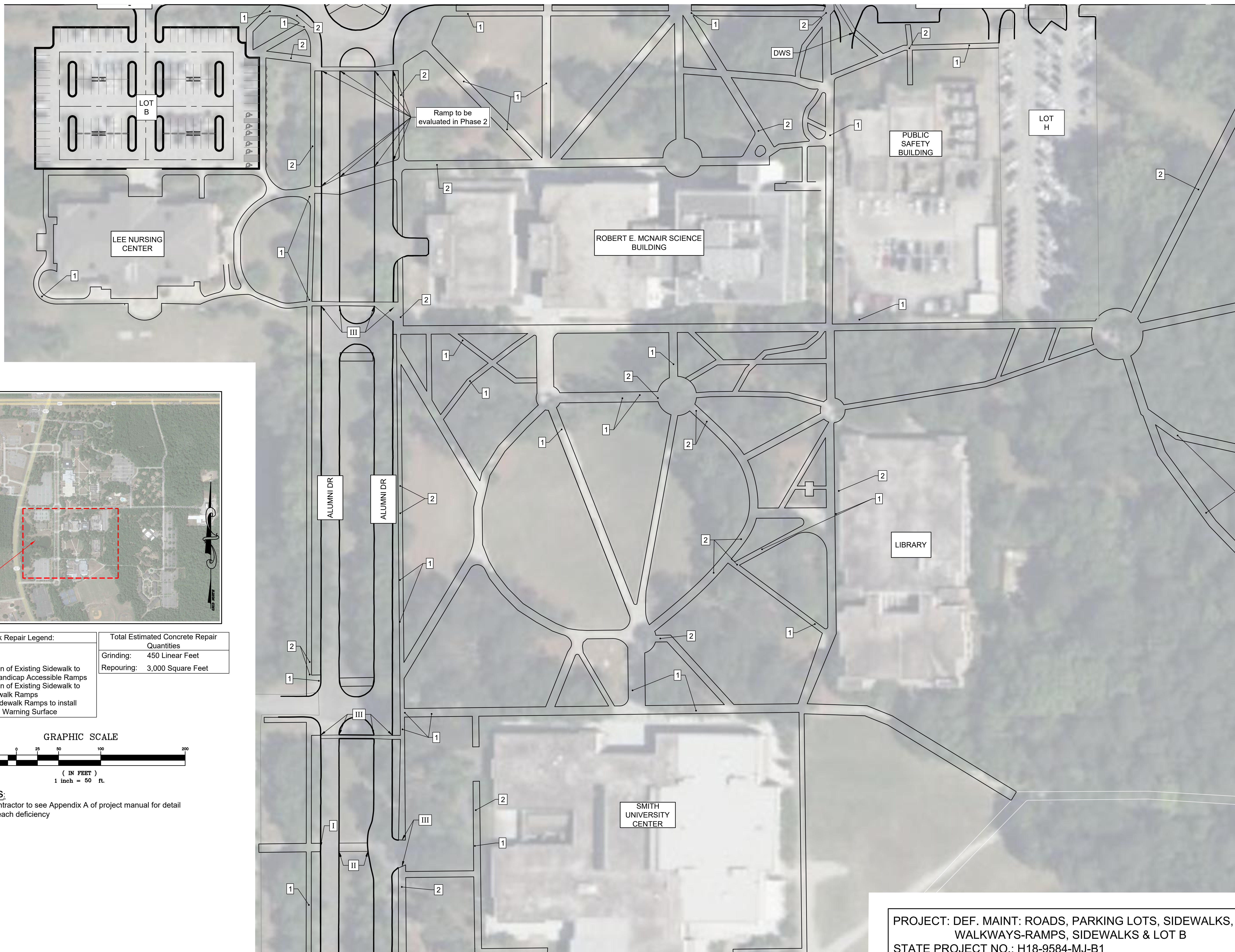


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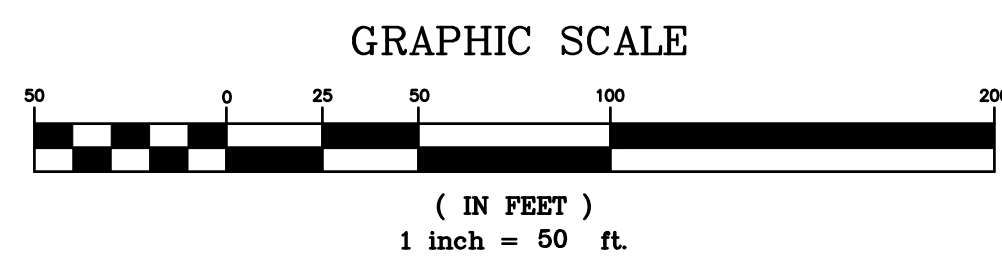
**Sidewalk & Ramp Condition Plan for Area B**  
 Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B  
 Prepared by: Francis Marion University  
 Florence County, South Carolina

Drawing File: 392912C\_R2.dwg Plotted: Apr 03, 2023 10:20am



Sidewalk Repair Legend:	
1	Grinding
2	Repour
III	Modification of Existing Sidewalk to become Handicap Accessible Ramps
II	Modification of Existing Sidewalk to have Sidewalk Ramps
IV	Existing Sidewalk Ramps to install Detectable Warning Surface

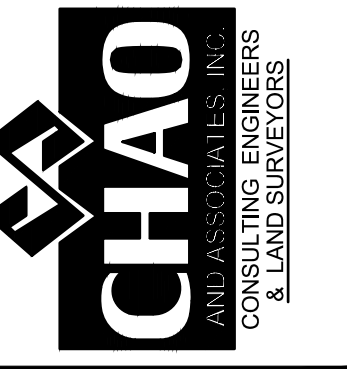
Total Estimated Concrete Repair Quantities	
Grinding:	450 Linear Feet
Repouring:	3,000 Square Feet



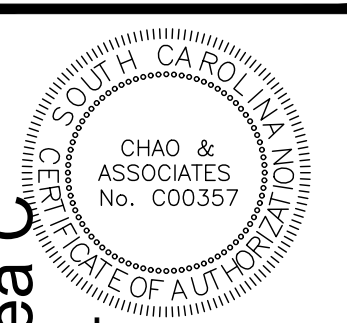
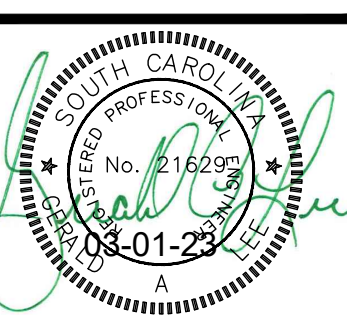
- Notes:**
- Contractor to see Appendix A of project manual for detail of each deficiency

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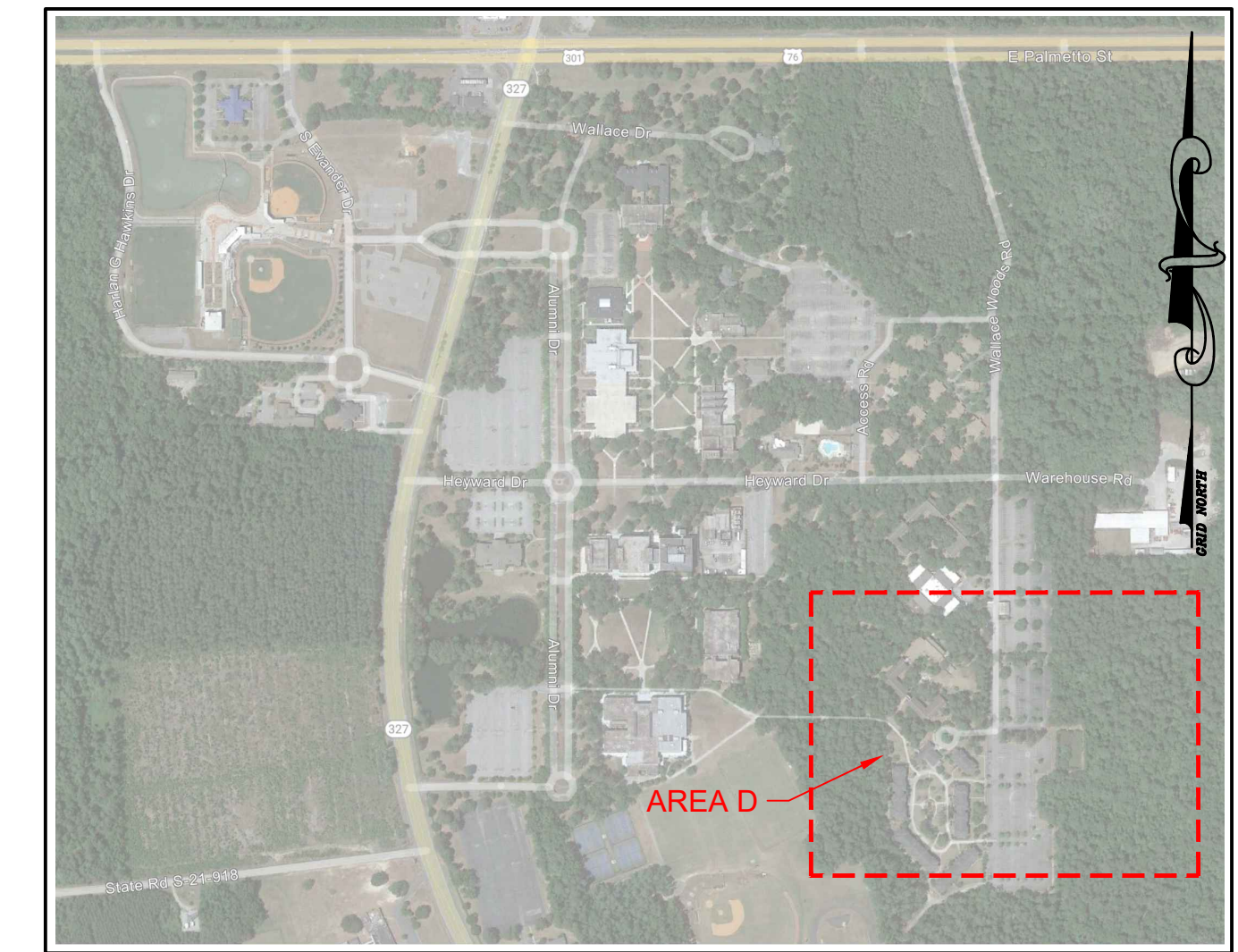
**Sidewalk & Ramp Condition Plan for Area C**  
 Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-  
 Ramps, Sidewalks & Lot B

Prepared by: Francis Marion University  
 Florence County, South Carolina

Drawn: TJD Checked: GAL  
 Revised: 03/28/2022 Revised per OSE's comments  
 File: 392912C\_R2.dwg Project No.: #392912-22

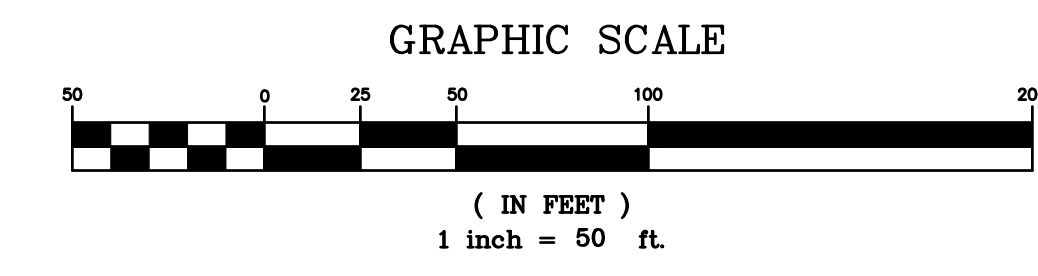
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 Sheet Number  
 03-01-2023  
 Date

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Sidewalk Repair Legend:		Total Estimated Concrete Repair Quantities	
①	Grinding	Grinding:	450 Linear Feet
②	Repour	Repouring:	3,000 Square Feet
Ⓜ	Modification of Existing Sidewalk to become Handicap Accessible Ramps		
Ⓜ	Modification of Existing Sidewalk to have Sidewalk Ramps		
Ⓜ	Existing Sidewalk Ramps to install Detectable Warning Surface		

- Notes:**
- Contractor to see Appendix A of project manual for detail of each deficiency



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
 STATE PROJECT NO.: H18-9584-MJ-B1

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Drawn: TJD Checked: GAL  
 Revised: 03/28/2022 Revised per OSE's comments  
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**C3.3**  
 Sheet Number  
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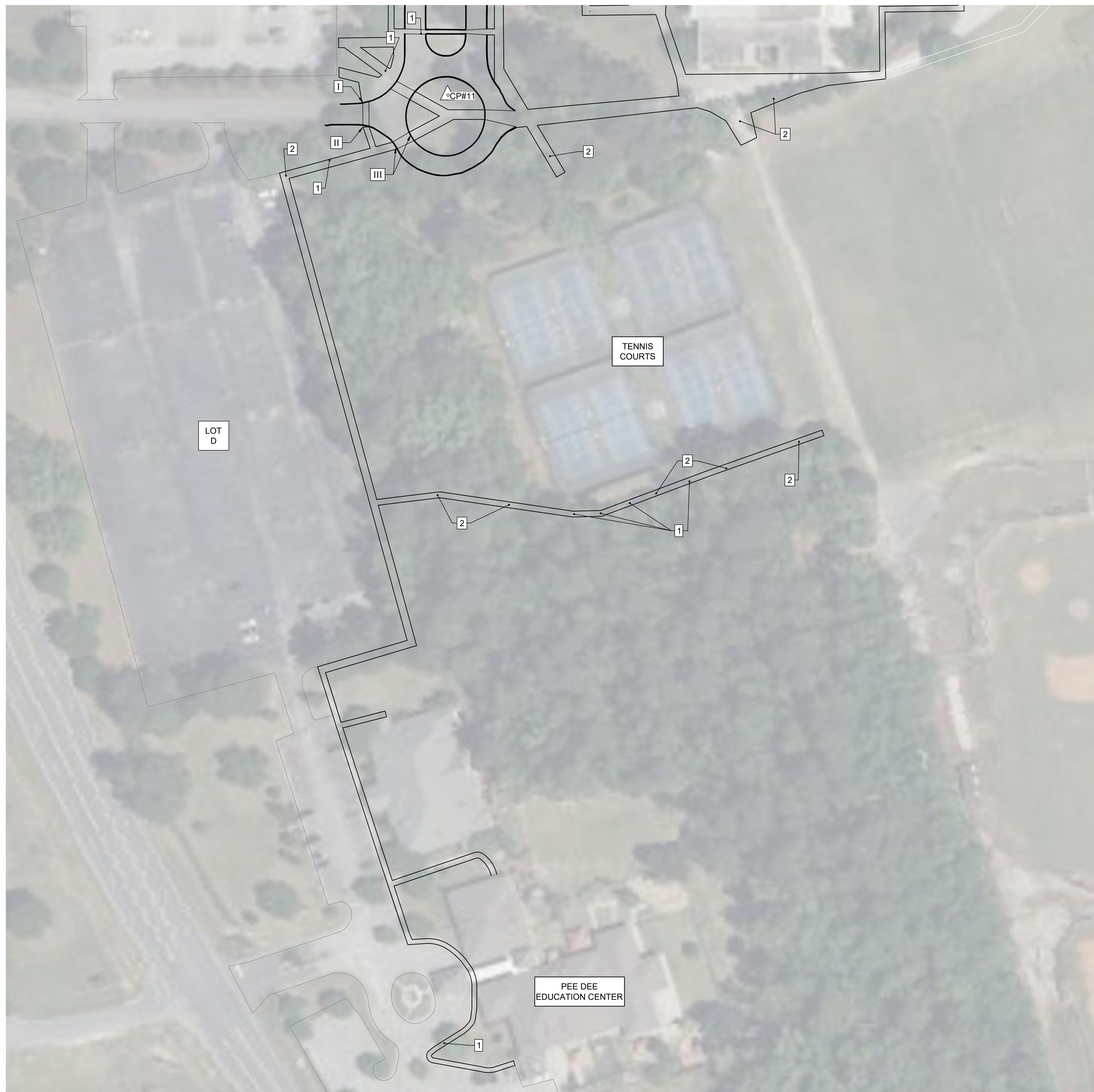
Sidewalk & Ramp Condition Plan for Area D  
 Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-  
 Ramps, Sidewalks & Lot B  
 Prepared by: Francis Marion University  
 Florence County, South Carolina



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Drawing file: 392912C\_R2.dwg Plotted: Apr 03, 2023 10:20am

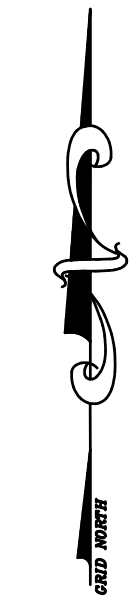
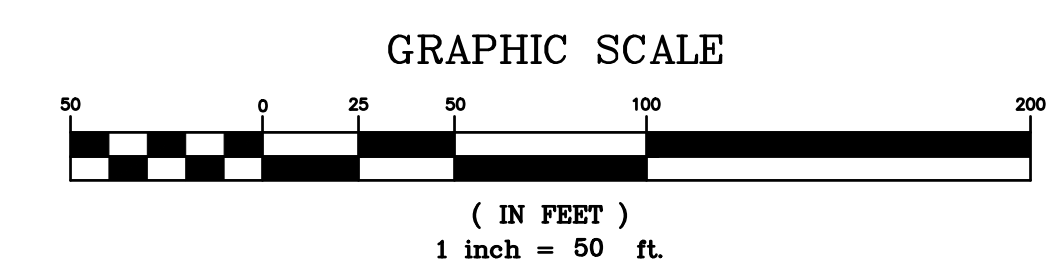


Sidewalk Repair Legend:	
①	Grinding
②	Repour
III	Modification of Existing Sidewalk to become Handicap Accessible Ramps
III	Modification of Existing Sidewalk to have Sidewalk Ramps
III	Existing Sidewalk Ramps to install Detectable Warning Surface

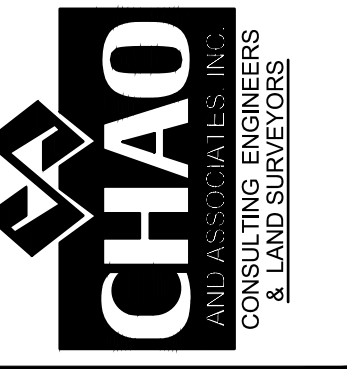
Total Estimated Concrete Repair Quantities	
Grinding:	450 Linear Feet
Repouring:	3,000 Square Feet

**Notes:**

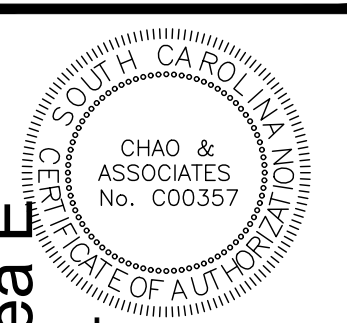
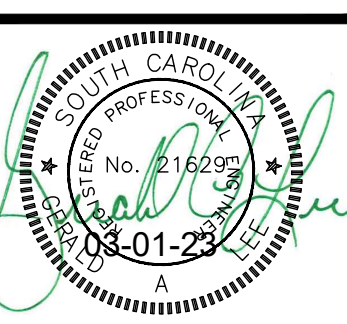
- Contractor to see Appendix A of project manual for detail of each deficiency



PROJECT: DEF. MAINT: ROADS, PARKING LOTS, SIDEWALKS, WALKWAYS-RAMPS, SIDEWALKS & LOT B  
 STATE PROJECT NO.: H18-9584-MJ-B1



**Chao & Associates, Inc.**  
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**Sidewalk & Ramp Condition Plan for Area E**

Def. Maint: Roads, Parking Lots, Sidewalks, Walkways-Ramps, Sidewalks & Lot B  
 Prepared by: Francis Marion University  
 Florence County, South Carolina

Drawn: TJD	Checked: GAL
Revised: 03/28/2022	Revised per OSE's comments
File: 392912C_R2.dwg	Project No.: #392912-22

**FOR REVIEW ONLY**

**C3.4**  
 Sheet Number  
 03-01-2023  
 Date

