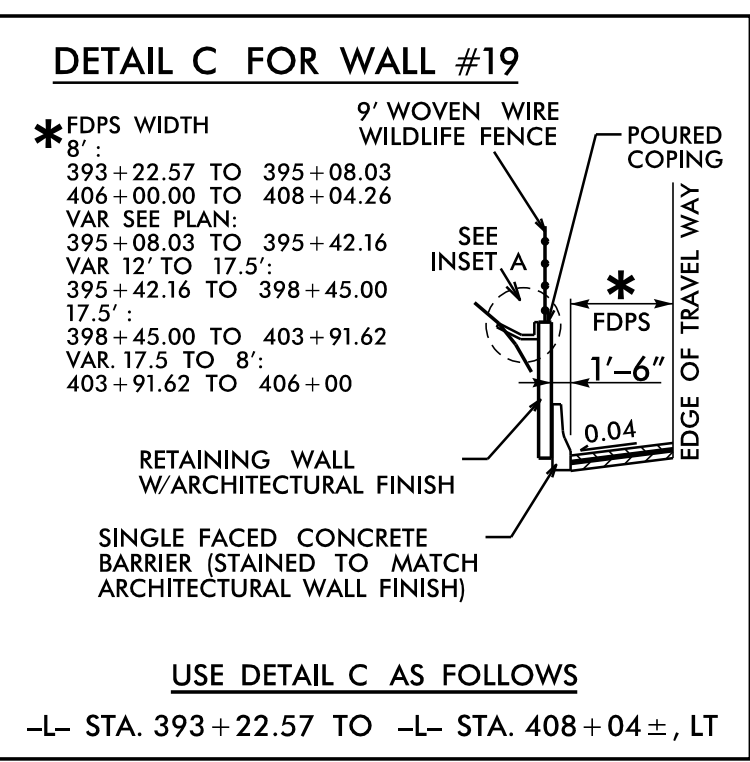
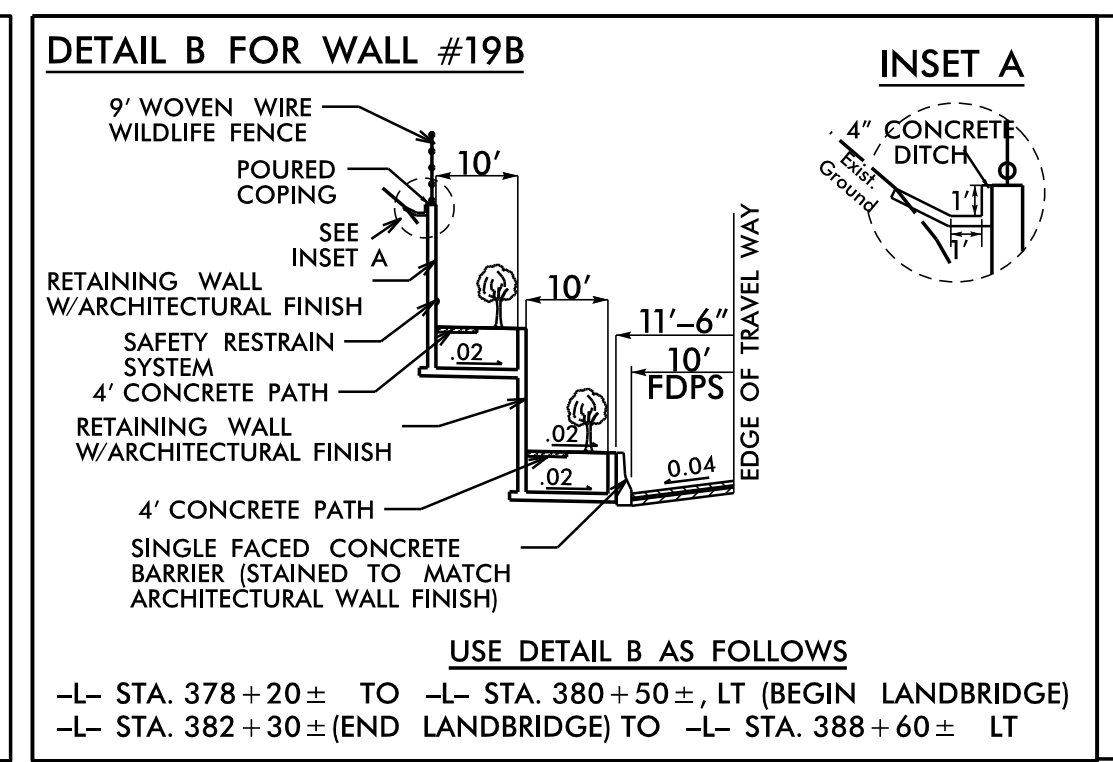
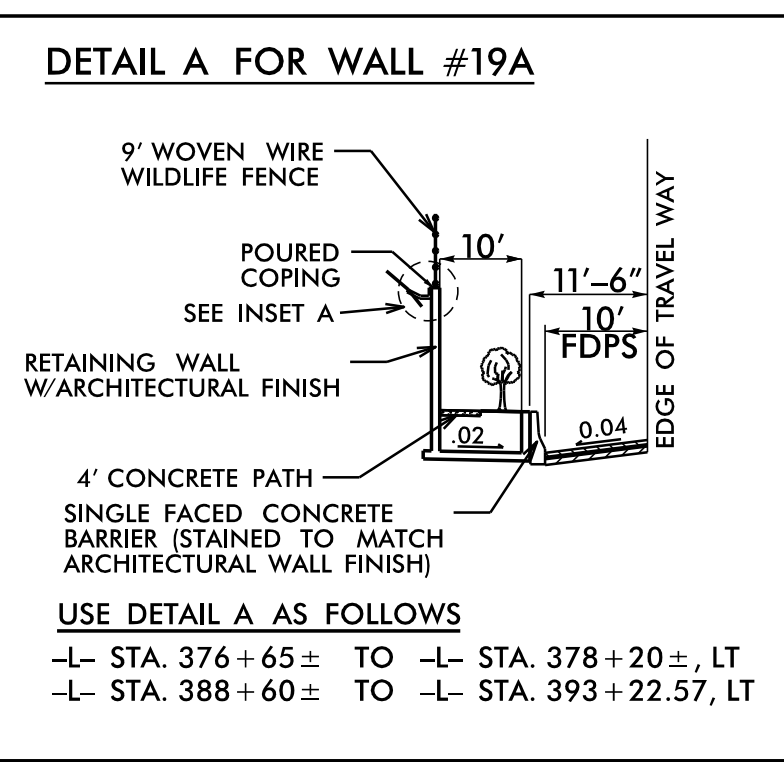
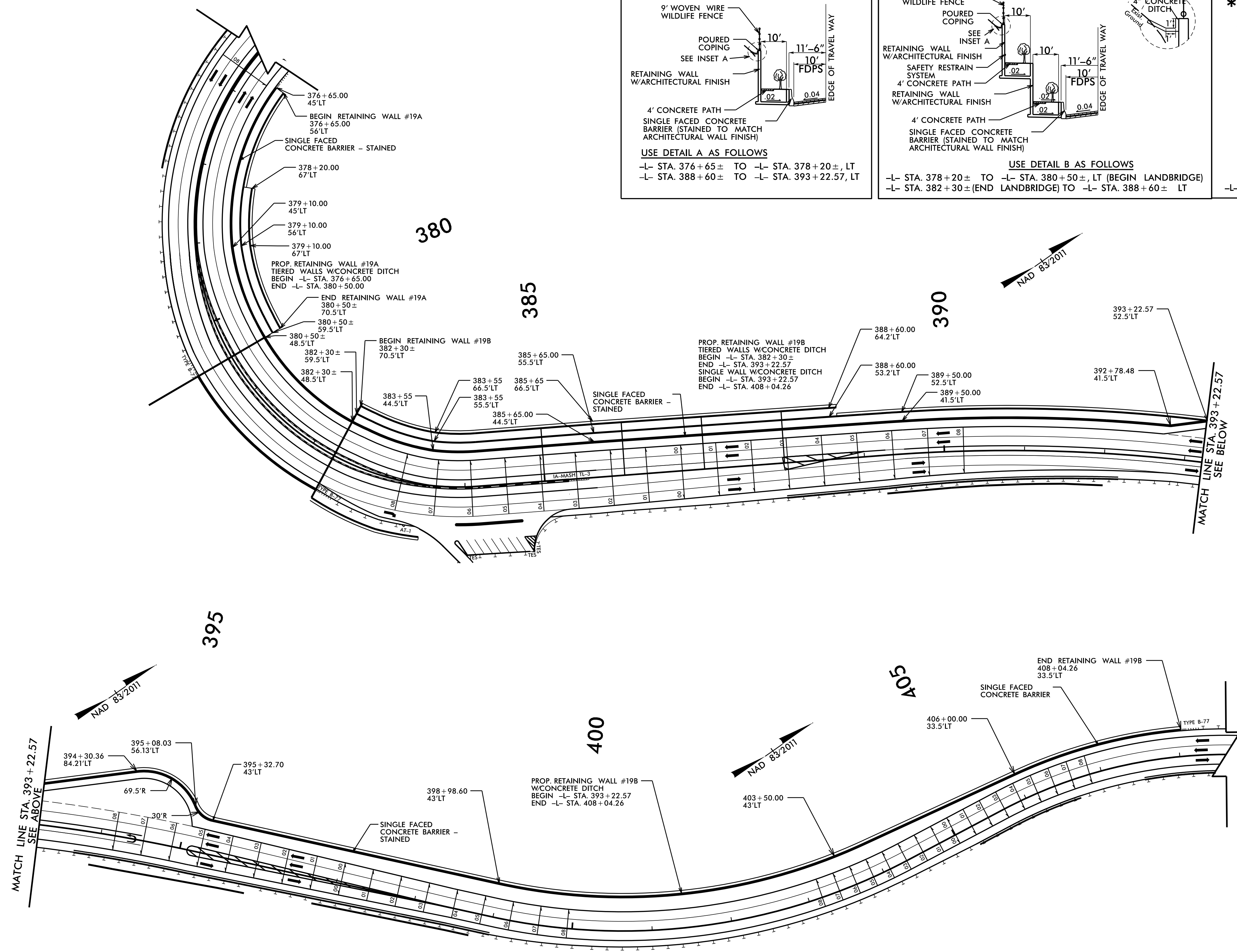


# RETAINING WALL #19A & #19B:



GEOTECHNICAL ENGINEER

ENGINEER

Seal: NORTH CAROLINA PROFESSIONAL ENGINEERS SEAL 042642 ROBERT E. KRAL

DocuSigned by: [Signature] DATE: 7/14/2022

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

### ESTIMATED SOIL NAIL WALL QUANTITIES

RETAINING WALL NO.	TIERED SOIL NAIL RETAINING WALLS (SQUARE FEET)	SOIL NAIL VERIFICATION TESTS	SOIL NAIL PROOF TESTS
19A	14,840*	5	50
19B	74,180*	25	235
LAND BRIDGE PERMANENT SHORING**	10,340*	1	25
SIMULATED STONE FORM LINER SYSTEM AND SURFACE FINISH**			89,020* SF
HORIZONTAL DRAINS (CONTINGENCY)			900 LF
CLASS VI SELECT MATERIAL**			800 TON
SEPARATION GEOTEXTILE**			7,100 SY

\* INCLUDES RETAINING WALL EMBEDMENT  
\*\* INCIDENTAL PAY ITEMS!

### ESTIMATED PLANTER BOX QUANTITIES

ITEM	LOCATION	LOCATION
SIMULATED STONE FORM LINER SYSTEM AND SURFACE FINISH**	TIER 1 FACE	10,330 SF
SIMULATED STONE FORM LINER SYSTEM AND SURFACE FINISH**	TIER 2 FACE	6,250 SF
CLASS A CONCRETE (PLANTER BOX)	TIER 1 & TIER 2	1,610 CY
REINFORCING STEEL (PLANTER BOX)	TIER 1 & TIER 2	318,700* LB
CLASS VI SELECT MATERIAL**	TIER 1 & TIER 2	750 TON
SUBSURFACE DRAIN**	TIER 1 & TIER 2	10,250 LF
SEPARATION GEOTEXTILE**	TIER 1 & TIER 2	6,000 SY
4" SLOPE PROTECTION	TIER 1 & TIER 2	50 SY

\* ASSUMES STEEL IS 1.5% THE VOLUME OF CONCRETE.  
\*\* INCIDENTAL PAY ITEMS!

### ESTIMATED ADDITIONAL QUANTITIES

SAFETY RESTRAINT SYSTEM	1 LS
PLANTER BOX BACKFILL, SEE LANDSCAPING PROVISIONS *	4,300 CY

\* INCIDENTAL PAY ITEMS!

RETAINING WALL #19A & 19B - PLAN  
NOT TO SCALE

PROJECT NO.: A-0009CB  
GRAHAM COUNTY  
RETAINING WALL #19A: -L- 376+65, 45'-56' LT TO 380+50, 48.5'-70.5' LT  
RETAINING WALL #19B: -L- 382+30, 48.5'-70.5' LT TO 408+04, 33.5' LT  
SHEET 1 OF 11

PREPARED BY: R. KRAL DATE: 7/13/2022  
REVIEWED BY: M. BREWER DATE: 7/13/2022

Prepared in the Office of:

**CGE CAROLINAS GEOTECHNICAL GROUP**  
2400 CROWNPOINT EXECUTIVE DRIVE  
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CHARLOTTE, NC 28227  
(980) 339-8684

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

**GEOTECHNICAL ENGINEERING UNIT**

### RETAINING WALL #19A & #19B TIERED SOIL NAIL RETAINING WALL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			W19-1
2			4			