

Task 1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LOCATION: *ORANGE COUNTY*
SR 1750, N. ESTES DRIVE FROM
CASWELL ROAD TO LIBRARY DRIVE
TYPE OF WORK: *RRFB PEDESTRIAN CROSSING,*
PAVEMENT MARKING AND SIGNAGE,
CURB AND GUTTER , CURB RAMPS,
AND SIDEWALK

PLANS PREPARED BY:
TRANSPORTATION DESIGN GROUP

TOOLE
DESIGN

TODD EDWARDS, PEENGINEER OF RECORD
SAVANNAH LANGKAMP, PEPROJECT MANAGER

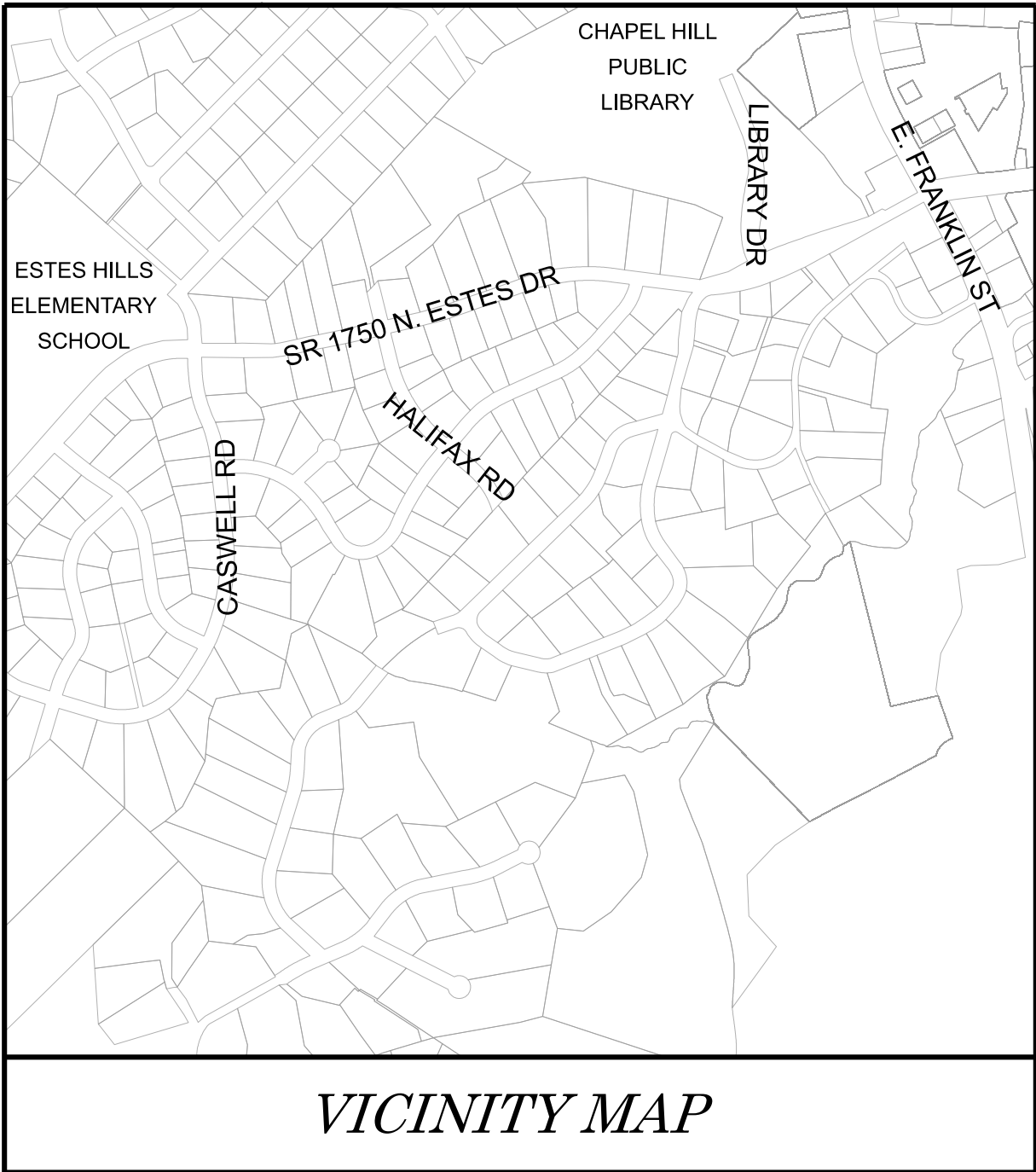
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" -
PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH N.C.,
DATED 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE
CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
846.01	CONCRETE CURB, GUTTER, AND CURB AND GUTTER
848.01	CONCRETE SIDEWALK
848.06	CURB RAMP - EXISTING CURB AND GUTTER
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNELS
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TRMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURE
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES = TYPE III
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.16	PAVEMENT MARKINGS - BICYCLE FACILITIES

PAVEMENT MARKING SCHEDULE

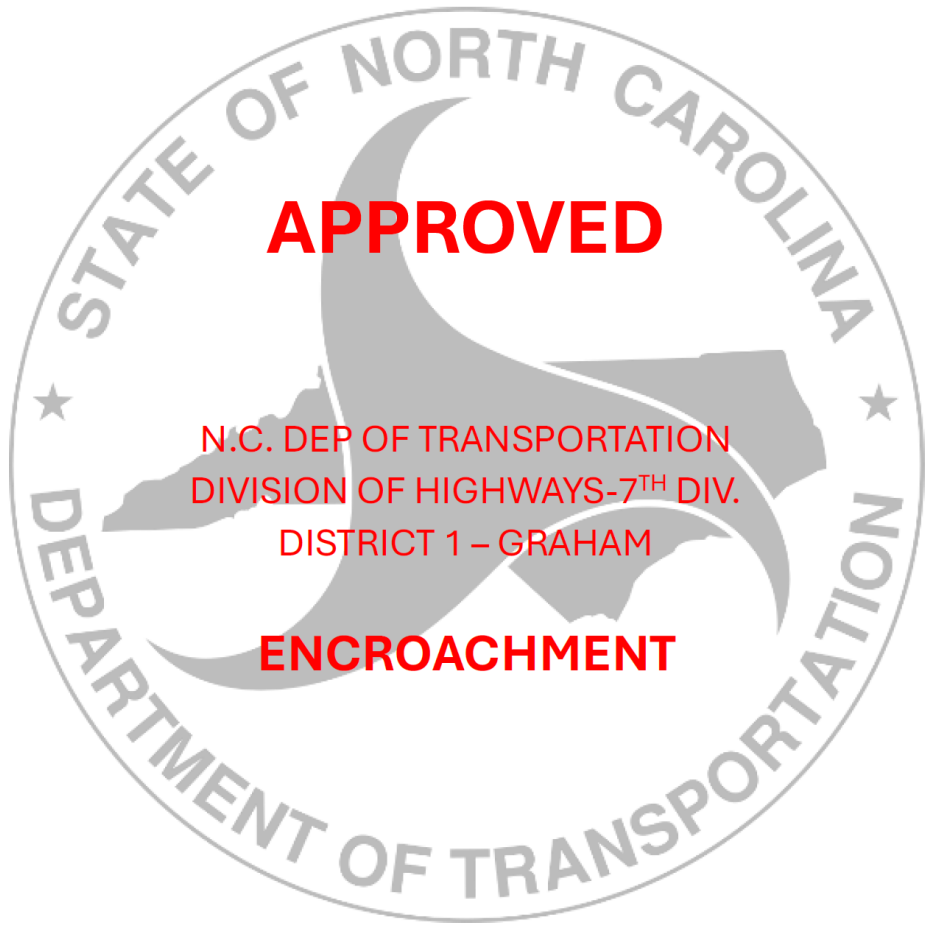
SYMBOL	DESCRIPTION
P62	WHITE CROSSWALK LINE (24", 90 MIL)
P102	12" YIELD LINE TRIANGLE (90 MIL)
P103	24" YIELD LINE TRIANGLE (90 MIL)
T62	WHITE CROSSWALK LINE (24", 90 MIL)



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
G01	COVER SHEET
G02	GENERAL NOTES
G03	SUMMARY OF QUANTITIES
PMP01 - PMP06	PAVEMENT MARKING & SIGNAGE PLAN
PMP07	NCDOT RRFB DETAIL
C01	ROADWAY PLAN
C02	ROADWAY DETAIL
TMP01A	TMP GENERAL NOTES
TMP01	TRAFFIC MAINTENANCE PLAN - PHASE 1
TMP02	TRAFFIC MAINTENANCE PLAN - PHASE 2



PAVEMENT MARKING GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER:

1.

INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
- | ROAD NAME | MARKING | MARKERS |
|-----------|---------------|---------|
| ALL ROADS | THERMOPLASTIC | NONE |
2.

TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES. CONTRACTOR SHALL FIELD VERIFY CURB-TO-CURB DIMENSIONS AT KEY INTERVALS TO ENSURE PROPOSED PAVEMENT MARKINGS ARE CENTERED WITHIN THE TRAVELWAY.
3.

GREEN PAINT, CURB RAMPS, QWICK KERB (OR APPROVED EQUAL) AND TUBULAR MARKERS ARE TO BE INSTALLED BY TOWN OF CHAPEL HILL'S CONTRACTOR.
4.

THE CONTRACTOR SHALL ERADICATE ALL EXISTING CONFLICTING PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK USING AN APPROVED, NON-DESTRUCTIVE METHOD SUCH THAT NO TRACE OF EXISTING MARKINGS REMAIN VISIBLE. THE CONTRACTOR SHALL NOT INSTALL NEW PAVEMENT MARKINGS WITHOUT FIRST ERADICATING EXISTING PAVEMENT MARKINGS, OR AS DIRECTED BY THE FIELD ENGINEER.
5.

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO PAVEMENT MARKING APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER.

SIGNING GENERAL NOTES

1.

THE TOWN OF CHAPEL HILL SHALL FURNISH AND INSTALL SIGNAGE UNLESS OTHERWISE NOTED ON PLANS.
2.

ALL EXISTING SIGNS SHALL BE FIELD LOCATED BY TOWN'S CONTRACTOR.
3.

IF REMOVAL OR RELOCATION OF SIGNS ON A PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE PROJECT MANAGER. THIS WORK WILL BE COMPLETED BY THE CONTRACTOR.
4.

EXISTING SIGNS SHOWN TO REMAIN IN PLACE UNLESS OTHERWISE NOTED ON THE PLANS.

GENERAL NOTES

1.

BASE MAPPING WAS ESTABLISHED UTILIZING ORTHO-RECTIFIED AERIAL IMAGERY OBTAINED FROM NC ONE MAP AND FIELD VERIFIED ON 08/25/2025.
2.

EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH NCDOT ON THE RESURFACING PROJECT. IN ADDITION, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND PROPOSED FEATURES TO THE ENGINEER.
3.

PLANS WERE DEVELOPED ASSUMING THAT THE N ESTES DR RESURFACING AND ROADWAY RESTRIPING WORK WOULD OCCUR FIRST AND THE HALIFAX CROSSWALK WOULD OCCUR AFTER. HOWEVER, THE TOWN OF CHAPEL HILL IS WORKING TO GET THE HALIFAX CROSSWALK INSTALLED BEFORE NCDOT STARTS THE RESURFACING PROJECT. IN THIS SCENARIO, THE HALIFAX CROSSWALK PAVEMENT WILL BE INSTALLED A TEMPORARY PAINT AS PART OF THIS PROJECT AND WILL BE REPLACED WITH THERMOPLASTIC AS PART OF THE RESURFACING PROJECT. THE GREEN CONFLICT MARKINGS, AND TUBULAR POSTS WILL BE INSTALLED BY THE TOWN OF CHAPEL HILL AFTER THE RESURFACING PROJECT IS COMPLETE. THE SIGNAGE IDENTIFIED TO BE INSTALLED / REMOVED / OR RELOCATED BY THE TOWN WILL OCCUR DURING THE RESURFACING PROJECT. EXCEPT FOR THE PROPOSED SIGNAGE RELATED TO THE HALIFAX CROSSWALK.
4.

WORK BY THE NCDOT RESURFACING CONTRACTOR AND THE TOWN'S HALIFAX MID-BLOCK CROSSWALK PROJECT IS NOT ANTICIPATED TO OCCUR CONCURRENTLY WITHIN THE ESTES DRIVE RIGHT OF WAY. IN THE EVENT OF SCHEDULE OVERLAP, THE TOWN ENGINEER SHALL COORDINATE WITH NCDOT AND THE PRIME CONTRACTOR PRIOR TO PERFORMING WORK WITHIN THE RESURFACING PROJECT LIMITS..
5.

NO UNDERGROUND UTILITY INFORMATION IS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONTACT NC 811 FOR UTILITY LOCATIONS, OBTAIN AVAILABLE RECORD INFORMATION, AND NOTIFY ALL UTILITY OWNERS, INCLUDING TIMOTHY JONES AT ENBRIDGE GAS (TIMOTHY.JONES@ENBRIDGE.COM), PRIOR TO COMMENCING CONSTRUCTION OF THE HALIFAX MID-BLOCK CROSSING.
6.

WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, SIZE, AND MATERIAL OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
7.

THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS, AND FEATURES ADJACENT TO THE LIMITS OF WORK. AS DIRECTED BY THE ENGINEER, AND AT THE CONTRACTOR'S OWN EXPENSE, THE CONTRACTOR SHALL REPAIR, REPLACE, OR OTHERWISE MAKE GOOD ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.
8.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY TRAFFIC CONTROL TO ENSURE TRAFFIC SAFETY DURING CONSTRUCTION ACTIVITIES. THEREFORE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS PRIOR TO STARTING ANY WORK IN THE RIGHT-OF-WAY. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) OR AS MODIFIED BY THE ENGINEER.
9.

ALL PAVEMENT MARKINGS AND SIGN SHALL MEET MUTCD STANDARD SPECIFICATIONS.

Update: NCDOT resurfacing project has been complete.
Contractor shall install green conflict markings and tubular posts.

APPROVED:

DATE:

SEAL

TOOLE
DESIGN

SUMMARY OF QUANTITIES

TOWN OF CHAPEL HILL

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QTY.	UNIT
1 2 3 4 5 6	TRANSPO INDUSTRIES MMA GREEN PAVEMENT MARKING (24", 90 MILS)		250	LF
	WHITE TUBULAR MARKERS		37	EA
	YELLOW TUBULAR MARKERS		2	EA
	TRAVERSABLE SURFACE		35	SF
	TEMPORARY RAMP		2	EA
	QWICK KERB (OR APPROVED EQUAL)		120	LF
DESC. NO.	SECT. NO.			
1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	10	TONS
1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	5	TONS
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	5	TONS
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	75	LF
2591000000-E	848	4" CONCRETE SIDEWALK	10	SY
2605000000-N	848	CONCRETE CURB RAMP	4	EA
4072000000-E	903	SUPPORTS, 3 LB STEEL U-CHANNEL	72	LF
4102000000-N	904	SIGN ERECTION, TYPE E	8	EA
4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	133.5	SF
4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	10	SF
4445000000-E	1145	BARRICADES (TYPE III)	8	LF
4455000000-N	1150	FLAGGER	2	DAY
4507000000-E	1170	WATER FILLED BARRIER	50	LF
4516000000-N	1180	SKINNY DRUM	60	EA
4891000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	160	LF
4835000000-E	1205	PAVEMENT MARKING LINES (24", 90 MILS)	130	LF
4845000000-E	1205	PAVEMENT MARKING SYMBOL (90 MILS)	12	EA

White tubular markers, Qwick Kerb, and RRFBs to be provided by the Town.
Contact Dale May:
dmay@chapelhillnc.gov
919-969-5096 to arrange pick up.

If Dale is unavailable, contact Kurt Stolka
(kstolka@chapelhillnc.gov, 919-969-4913

APPROVED:

DATE:

SEAL

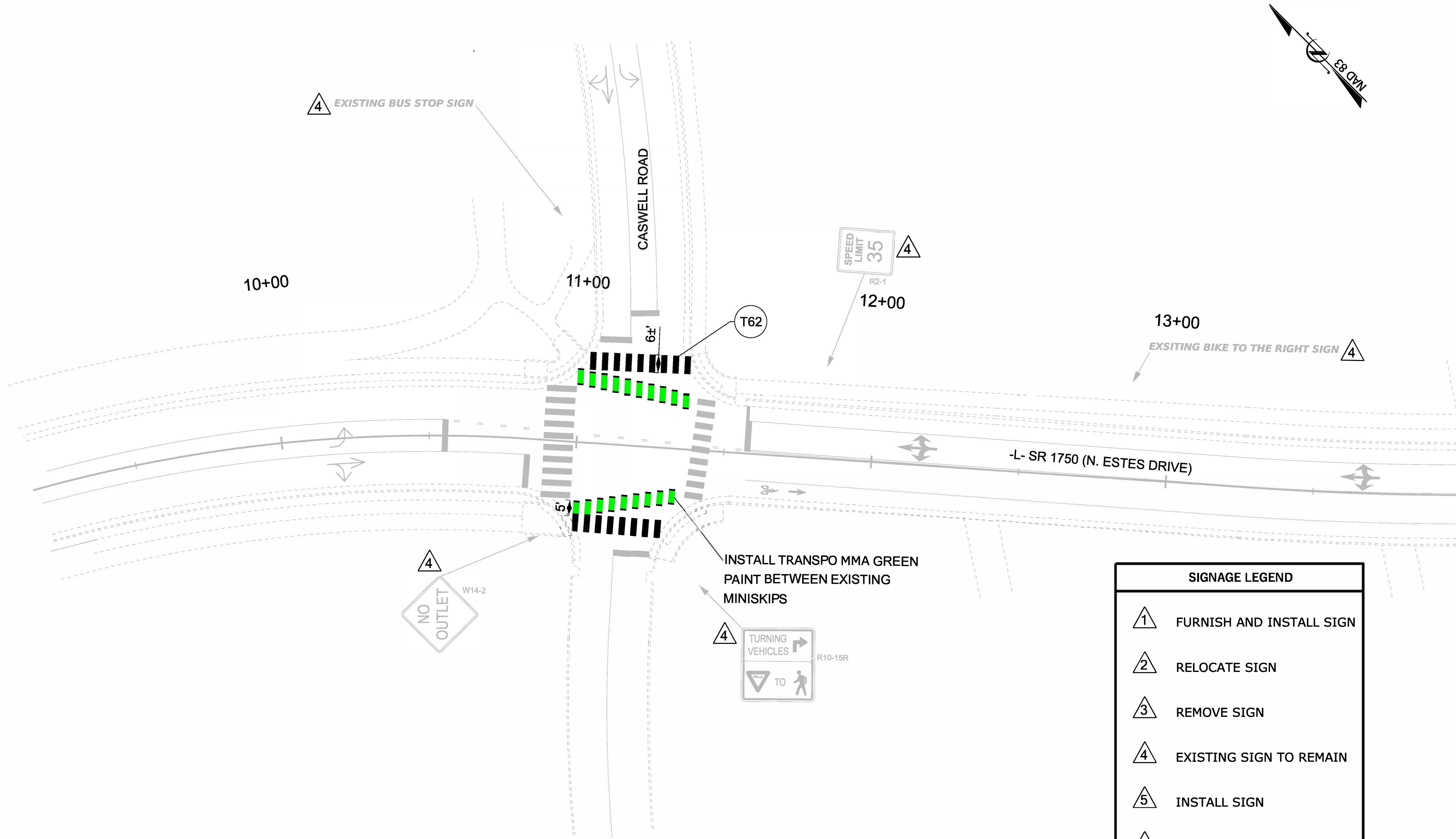
TOOLE
DESIGN

APPROVED:

DATE:

SEAL

TOOLE
DESIGN



GRAPHIC SCALE



SIGNAGE LEGEND

- 1 FURNISH AND INSTALL SIGN
- 2 RELOCATE SIGN
- 3 REMOVE SIGN
- 4 EXISTING SIGN TO REMAIN
- 5 INSTALL SIGN
- 6 INSTALL RELOCATED SIGN

NOTES:

- DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE. BASELINE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
- CONTACT NC ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- EXISTING SIDEWALK TO BE REMOVED FOR CONSTRUCTION OF CURB RAMPS SHOULD BE CUT AT EXISTING SIDEWALK JOINTS.
- REFER TO ROADWAY PLAN SHEETS FOR SIDEWALK AND CURB RAMP DETAILS.
- TOWN OF CHAPEL HILL TO PROVIDE RRFB SIGNAGE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING & SIGNAGE PLAN

MATCHLINE- L- STA. 14+00 +/-
SEE PMP 01

15+00

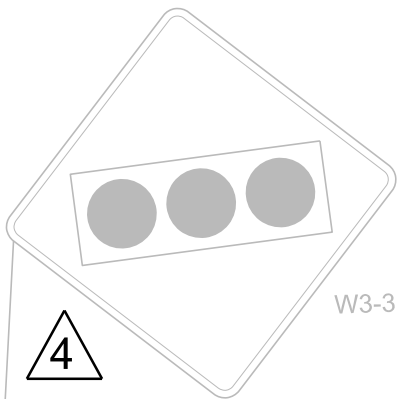
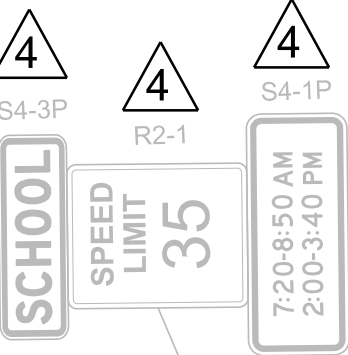
16+00

17+00

18+00

MATCHLINE- L- STA. 19+00 +/-
SEE PMP 03

-L- SR 1750 (N. ESTES DRIVE)



GRAPHIC SCALE



SIGNAGE LEGEND

- 1 FURNISH AND INSTALL SIGN
- 2 RELOCATE SIGN
- 3 REMOVE SIGN
- 4 EXISTING SIGN TO REMAIN
- 5 INSTALL SIGN
- 6 INSTALL RELOCATED SIGN

- NOTES:
- DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE. BASELINE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
 - CONTACT NC ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
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PAVEMENT MARKING & SIGNAGE PLAN

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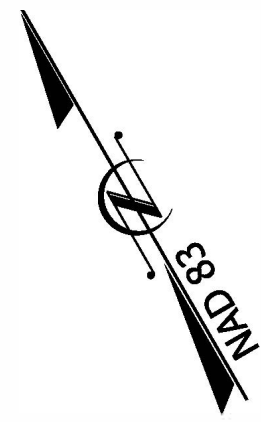
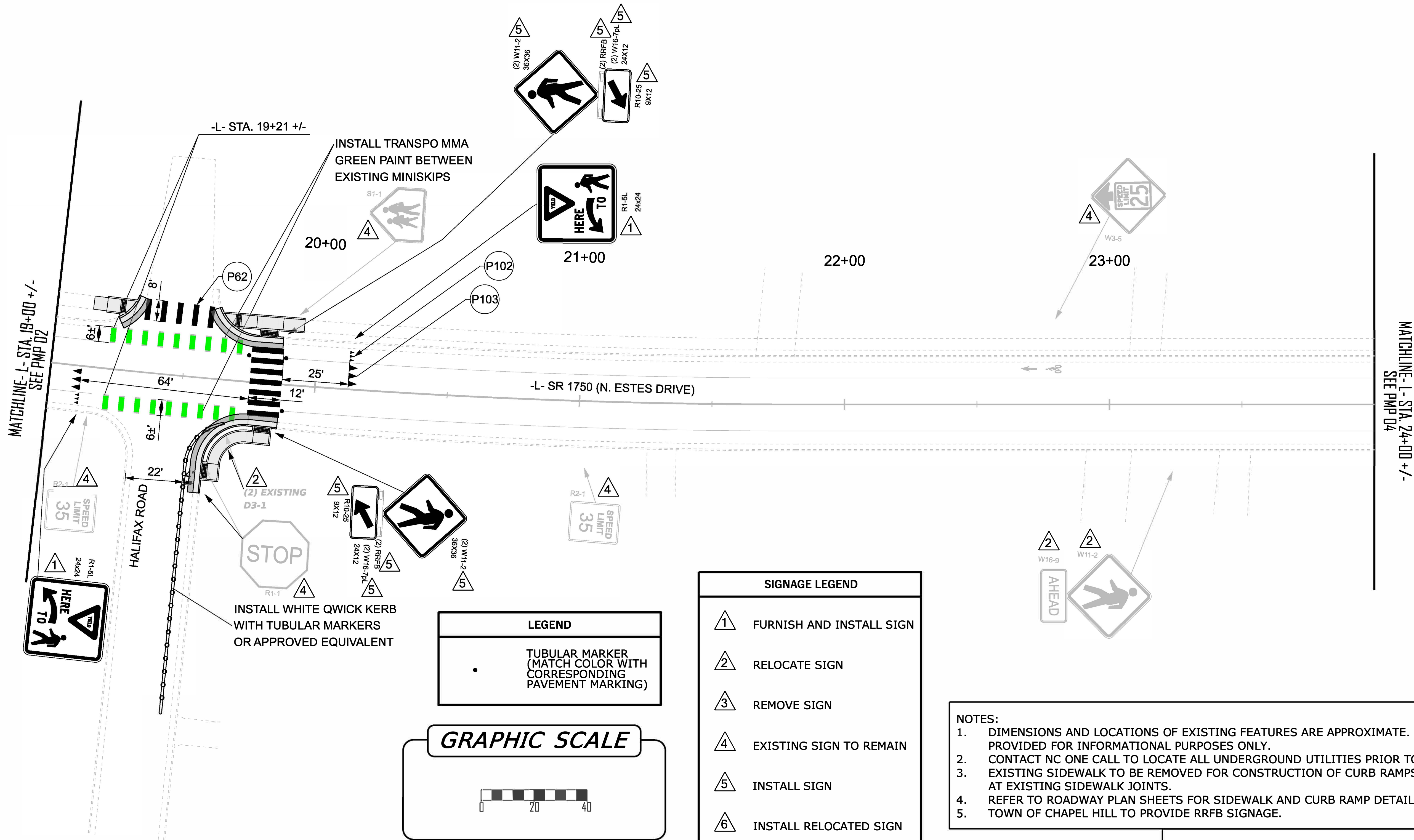
PMP 02

APPROVED:

DATE:

SEAL

TOOLE
DESIGN



03RAL00404.00

PMP 03

APPROVED:

DATE:

SEAL

TOOLE DESIGN

PAVEMENT MARKING & SIGNAGE PLAN

DOCUMENT NOT CONSIDERED FINAL
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APPROVED:

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TOOLE
DESIGN

MATCHLINE- L- STA. 24+00 +/-
SEE PMP 03

25+00

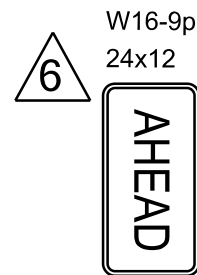
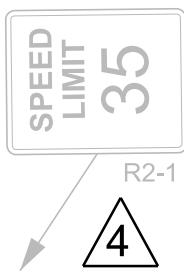
26+00

27+00

28+00

-L- SR 1750 (N. ESTES DRIVE)

MATCHLINE- L- STA. 29+00 +/-
SEE PMP 05



To be installed by Town

SIGNAGE LEGEND

- 1 FURNISH AND INSTALL SIGN
- 2 RELOCATE SIGN
- 3 REMOVE SIGN
- 4 EXISTING SIGN TO REMAIN
- 5 INSTALL SIGN
- 6 INSTALL RELOCATED SIGN

NOTES:

- DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE. BASELINE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
- CONTACT NC ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- EXISTING SIDEWALK TO BE REMOVED FOR CONSTRUCTION OF CURB RAMP SHOULD BE CUT AT EXISTING SIDEWALK JOINTS.
- REFER TO ROADWAY PLAN SHEETS FOR SIDEWALK AND CURB RAMP DETAILS.
- TOWN OF CHAPEL HILL TO PROVIDE RRFB SIGNAGE.

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PAVEMENT MARKING & SIGNAGE PLAN

GRAPHIC SCALE



APPROVED:

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TOOLE
DESIGN

MATCHLINE- L- STA. 29+00 +/-
SEE PMP 04

MATCHLINE- L- STA. 34+00 +/-
SEE PMP 06

30+00
INSTALL YELLOW TUBULAR MARKERS

31+00

INSTALL WHITE TUBULAR MARKERS

32+00

INSTALL WHITE TUBULAR MARKERS

33+00

-L- STA. 33+85 +/-

-L- STA. 33+33 +/-

-L- STA. 33+58 +/-

-L- STA. 30+57 +/-

INSTALL TRANSPO MMA
GREEN PAINT BETWEEN
EXISTING MINISKIPS

GRANVILLE ROAD

BURLAGE CIRCLE

T62

W1-8

EXISTING
WAYFINDING
SIGN

R1-1

STOP

EXISTING
NEIGHBORHOOD
WATCH SIGN

RRFB
(2) W11-2
(2) W16-7
R10-25

INSTALL WHITE TUBULAR MARKERS

R1-5R
HERE
TO

R3-17bP

ENDS

R3-17

BIKE LANE

RRFB
(2) W11-2
(2) W16-7
R10-25

INSTALL WHITE TUBULAR MARKERS

GRAPHIC SCALE



LEGEND

•

TUBULAR MARKER
(MATCH COLOR WITH
CORRESPONDING
PAVEMENT MARKING)

SIGNAGE LEGEND

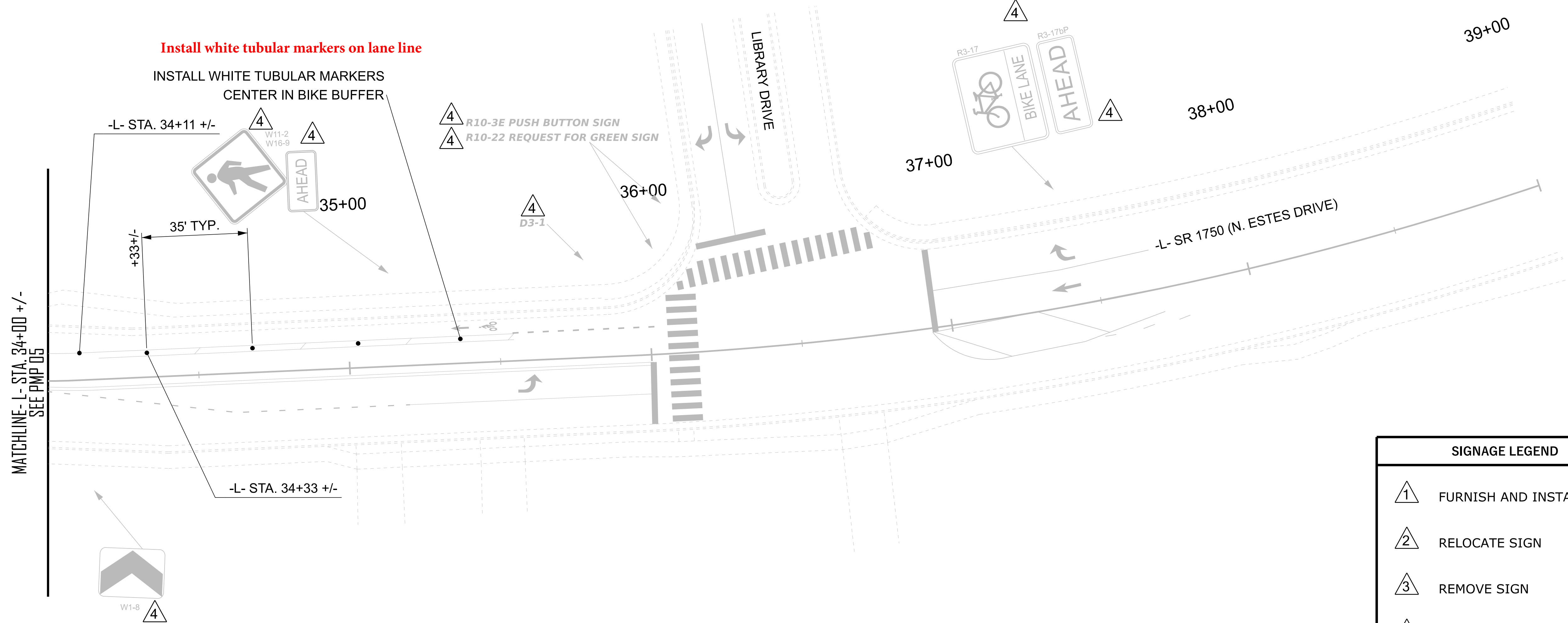
- 1 FURNISH AND INSTALL SIGN
- 2 RELOCATE SIGN
- 3 REMOVE SIGN
- 4 EXISTING SIGN TO REMAIN
- 5 INSTALL SIGN
- 6 INSTALL RELOCATED SIGN

NOTES:

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- EXISTING SIDEWALK TO BE REMOVED FOR CONSTRUCTION OF CURB RAMP SHOULD BE CUT AT EXISTING SIDEWALK JOINTS.
- REFER TO ROADWAY PLAN SHEETS FOR SIDEWALK AND CURB RAMP DETAILS.
- TOWN OF CHAPEL HILL TO PROVIDE RRFB SIGNAGE.

PAVEMENT MARKING & SIGNAGE PLAN

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Install white tubular markers on lane line

INSTALL WHITE TUBULAR MARKERS
CENTER IN BIKE BUFFER

-L- STA. 34+11 +/-

+33+/-

35' TYP.

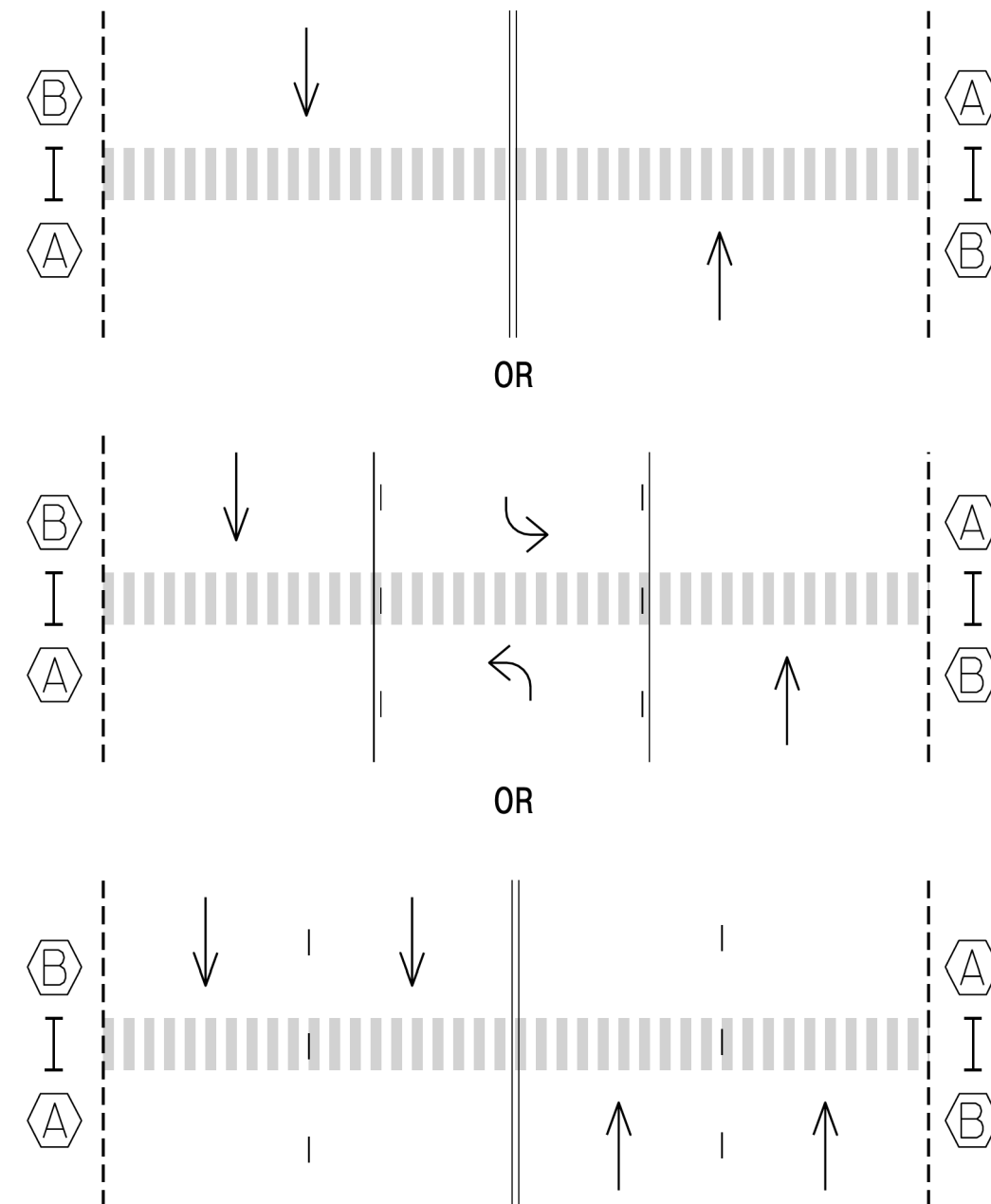
35+00

4

4

R10-3E PUSH BUTTON SIGN

R10-22 REQUEST FOR GREEN SIGN

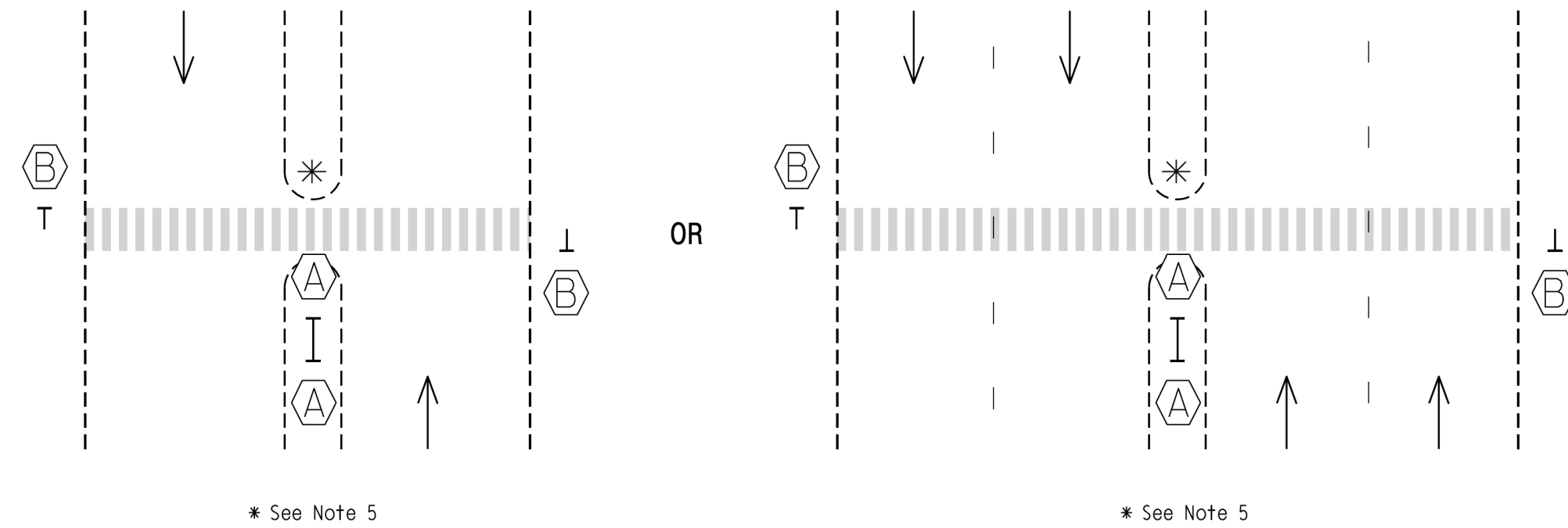


1. Design the RRFB in accordance with the 2023 MUTCD, 11th Edition, Chapter 7L: Rectangular Rapid-Flashing Beacons. The RRFB unit associated with a post-mounted sign and plaque should be located between the pedestrian crossing warning (W11-2) sign and the supplemental downward diagonal arrow plaque (W16-7p).
2. If needed, a supplemental RRFB with an "AHEAD" (W16-9P) or distance (W16-2P) plaque may be installed on the approach in advance of the crosswalk. The additional RRFB shall be a supplemental to and not a replacement for the RRFB at the actual crosswalk.
3. When practical, the RRFB and mounting post on the right side of the road shall be mounted on the approach side of the crosswalk closest to approaching traffic.
4. When practical, the RRFB and mounting post on the left side of the road may be mounted on the back of the post for the opposing approach.
5. A RRFB on the left side of the roadway or in the median may be individually mounted on the approach side of the crosswalk closest to approaching traffic, or, when practical, may be mounted back to back on the same post and mounted on either side of the crosswalk in the median.
6. Locate push button sign (R10-25) and push button to face crosswalk, even if it is mounted on the back side of the sign.
7. All RRFB units associated with a given crosswalk (including those with an advance crossing sign) shall, when actuated, simultaneously commence operation of their rapid-flashing indications and shall cease operation simultaneously.
8. For quantitative purposes, a single sided, post mounted RRFB is one assembly unit. A double sided RRFB mounted on the same post is counted as two (2) assemblies.
9. For additional information, see Version 24 of the Transportation Systems Management and Operations (TSMO) Unit Project Special Provisions (PSP).

When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence.

$$\text{Flash Time (sec.)} = 7 + D/3.5$$

- The RARF indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 50 milliseconds.
- The RARF indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 50 milliseconds.
- The RARF indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 50 milliseconds.
- The RARF indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 50 milliseconds.
- Both RARF indications shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 50 milliseconds.
- Both RARF indications shall be illuminated for approximately 50 milliseconds.
Both RARF indications shall be dark for approximately 250 milliseconds.



Prepared in the Offices of:



TSMD Unit

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL
026486
ROBERT J. ZIEMBA
EXPIRES 12/31/2014

Designed by:
Robert J. Ziemba

SIGNATURE

DATE 05/30/2014

DATE:

SEAL

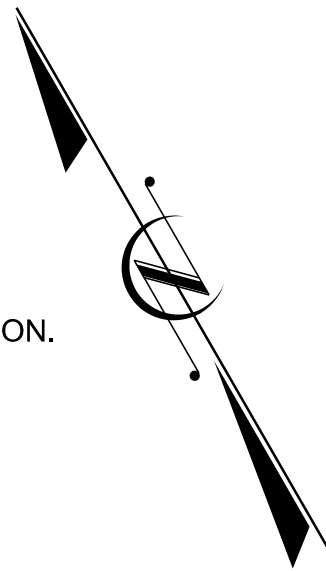
DESIGN TOOL

APPROVED:

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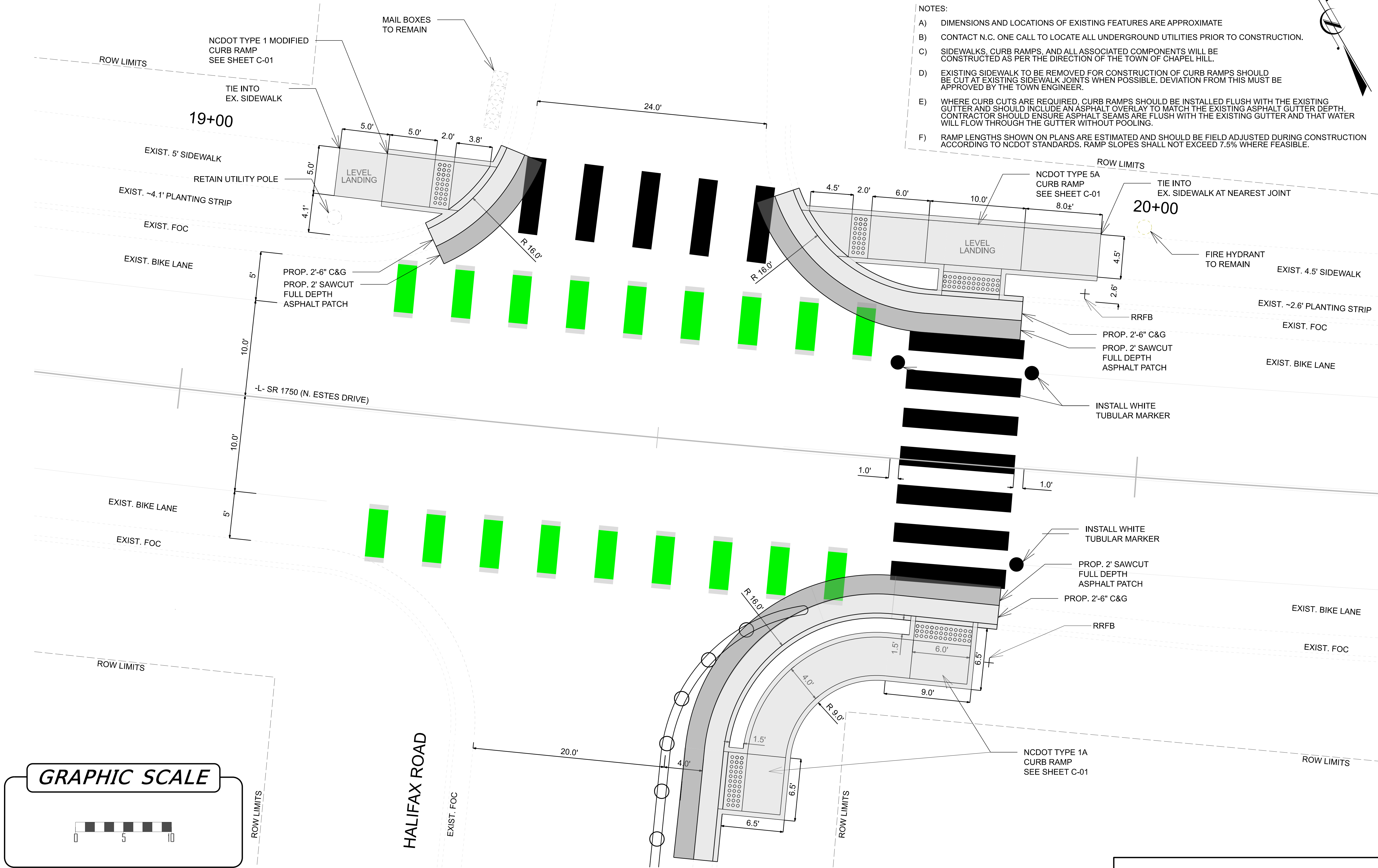
SEAL

TOOLE
DESIGN



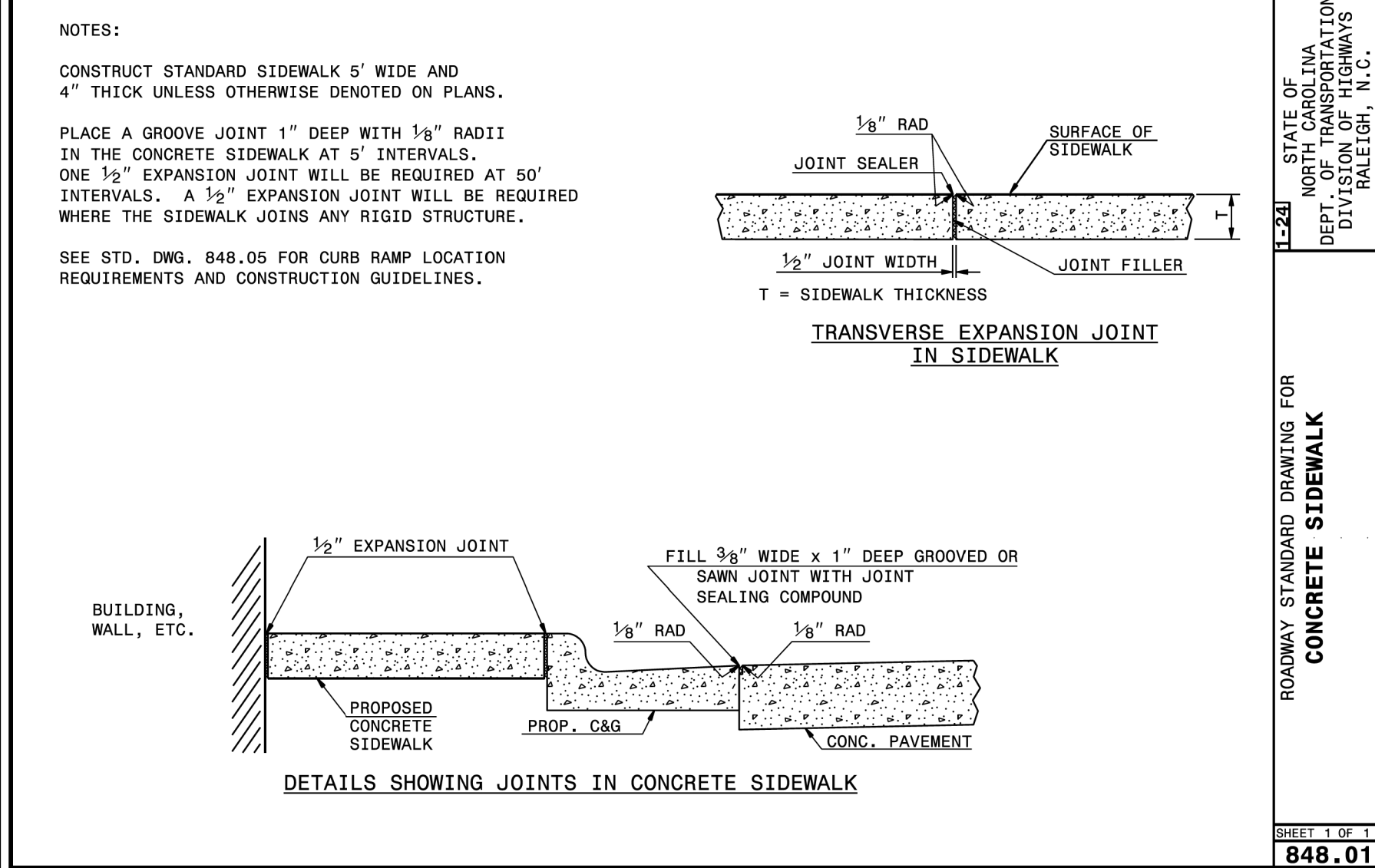
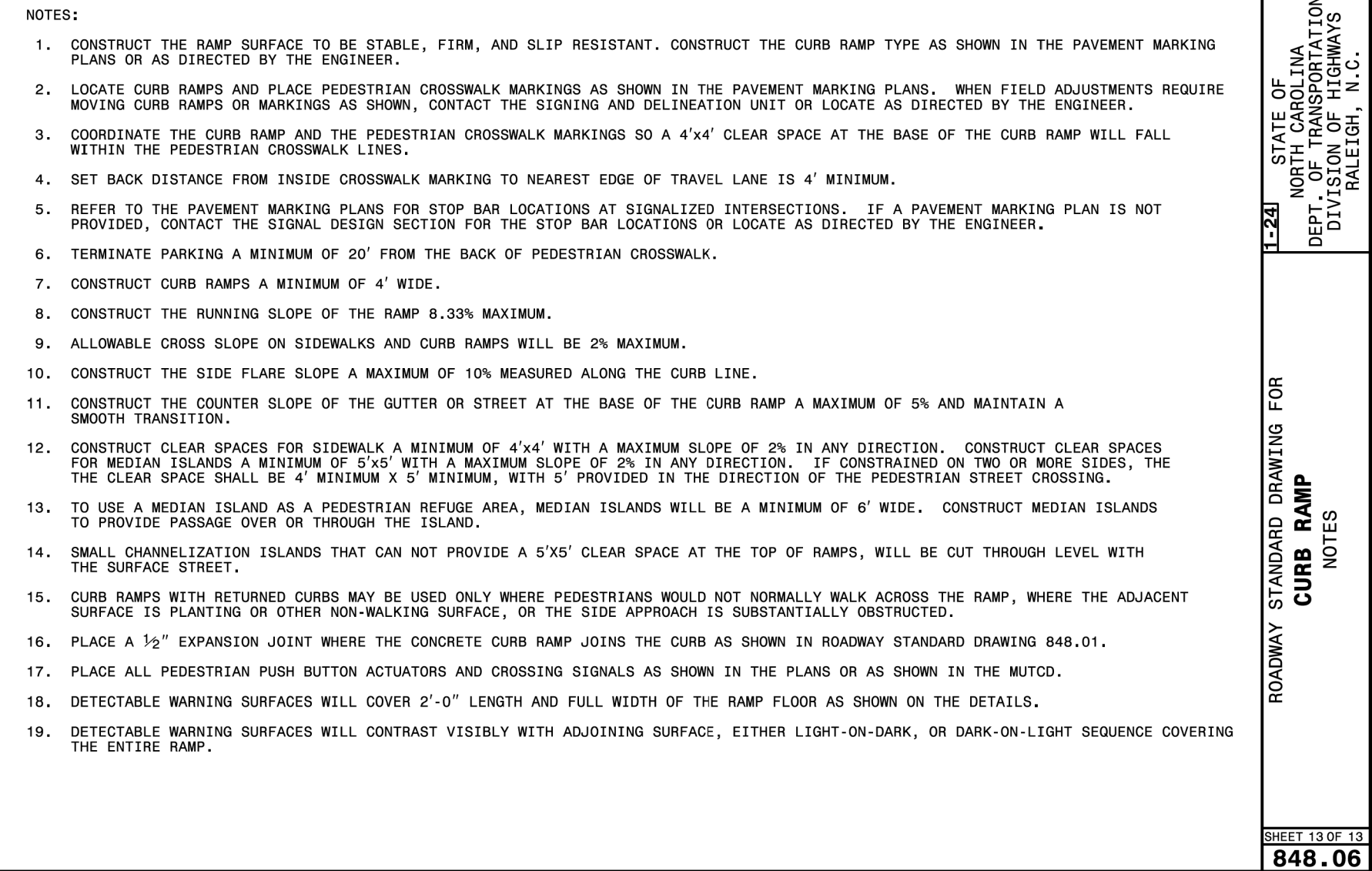
NOTES:

- A) DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE
- B) CONTACT N.C. ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- C) SIDEWALKS, CURB RAMP, AND ALL ASSOCIATED COMPONENTS WILL BE CONSTRUCTED AS PER THE DIRECTION OF THE TOWN OF CHAPEL HILL.
- D) EXISTING SIDEWALK TO BE REMOVED FOR CONSTRUCTION OF CURB RAMPS SHOULD BE CUT AT EXISTING SIDEWALK JOINTS WHEN POSSIBLE. DEVIATION FROM THIS MUST BE APPROVED BY THE TOWN ENGINEER.
- E) WHERE CURB CUTS ARE REQUIRED, CURB RAMPS SHOULD BE INSTALLED FLUSH WITH THE EXISTING GUTTER AND SHOULD INCLUDE AN ASPHALT OVERLAY TO MATCH THE EXISTING ASPHALT GUTTER DEPTH. CONTRACTOR SHOULD ENSURE ASPHALT SEAMS ARE FLUSH WITH THE EXISTING GUTTER AND THAT WATER WILL FLOW THROUGH THE GUTTER WITHOUT POOLING.
- F) RAMP LENGTHS SHOWN ON PLANS ARE ESTIMATED AND SHOULD BE FIELD ADJUSTED DURING CONSTRUCTION ACCORDING TO NCDOT STANDARDS. RAMP SLOPES SHALL NOT EXCEED 7.5% WHERE FEASIBLE.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROADWAY PLAN



SEAL

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) DO NOT CLOSE OR NARROW TRAVEL LANES ON N. ESTES DRIVE BETWEEN CASWELL ROAD AND LIBRARY DRIVE FROM 8:00 AM - 9:00 AM AND FROM 4:00 PM TO 7:00 PM MONDAY THROUGH FRIDAY. DO NOT CONDUCT LANE CLOSURES DURING UNC-CHAPEL HILL SPECIAL EVENTS, CHAPEL HILL-CARBORRO CITY SCHOOL OPERATING HOURS, HOLIDAYS, OR OTHER HIGH-TRAFFIC EVENTS AS DIRECTED BY THE TOWN.
- C) MAINTAIN ACCESS TO ALL SIDE STREETS, DRIVEWAYS, TRANSIT STOPS, PEDESTRIAN FACILITIES, AND EMERGENCY SERVICES AT ALL TIMES.
- D) REMOVE LANE CLOSURE DEVICES WHEN WORK IS NOT ACTIVELY IN PROGRESS OR WHEN THE LANE CLOSURE IS NO LONGER NEEDED.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 19 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- H) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON N. ESTES DRIVE.

TRAFFIC PATTERN ALTERATIONS

- I) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- J) INSTALL ADVANCE WORK ZONE WARNING SIGNS USING ROADWAY STANDARD DRAWING NO. 1101.01 SHEET 3 OF 3 WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

WATER FILLED TRAFFIC BARRIER

- L) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE TOWN UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS. TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

GENERAL NOTES

CHANNELIZING DEVICES

- M) THE TERM 'DRUMS' USED THROUGHOUT THESE TRANSPORTATION MANAGEMENT PLANS SHALL BE CONSIDERED TO INCLUDE STANDARD DRUMS, SKINNY DRUMS, OR TRAFFIC CONES WHEN APPROVED BY THE ENGINEER AND WHEN IN ACCORDANCE WITH THE MUTCD, NCDOT ROADWAY STANDARD DRAWINGS, AND THE CONTRACTORS' APPROVED TRAFFIC CONTROL PLAN.

- N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CANALIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

MISCELLANEOUS

- O) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- P) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.
- Q) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

PHASING NOTES

PHASE 1:

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS IN ACCORDANCE WITH RSD NO. 1101.01 SHEET 3 OF 3.

STEP 2: USING RSD NO. 1101.02 SHEET 1 OF 19 FOR FLAGGING OPERATIONS DURING TEMPORARY LANE CLOSURES, INSTALL CENTERLINE PAINT AND DRUMS TO CREATE A 5' LANE SHIFT NORTH OF THE EXISTING CENTERLINE WHILE MAINTAINING TWO 10' LANES ON ESTES DRIVE AND 2' SHY DISTANCE FROM CENTER OF DRUMS.

STEP 3: COMPLETE SAWCUT, CURB AND GUTTER, CURB RAMP, SIDEWALK, AND RRFB CONSTRUCTION ON THE SOUTHEAST CORNER OF ESTES AND HALIFAX. TIE SIDEWALK TO EXISTING DRIVEWAY (NOT SHOWN).

PHASE 2:

STEP 1: USING RSD NO. 1101.02 SHEET 1 OF 19 AND RSD NO. 1101.03 SHEET 8 OF 9 AS NEEDED. INSTALL DRUMS, AND WATER FILLED BARRIER TO CREATE A 5' LANE SHIFT NORTH OF THE EXISTING CENTERLINE WHILE MAINTAINING TWO 9' LANES ON ESTES DRIVE AND 2' SHY DISTANCE FROM CENTER OF DRUMS AND WATER FILLED BARRIER.

STEP 2: INSTALL TRAVERSABLE SURFACE, ADA COMPLIANT TEMPORARY RAMP, AND WATER FILLED BARRIER AS SHOWN ON TMP-02 TO CREATE PEDETRIAN DETOUR. PLACE TYPE III BARRICADES AS SHOWN AND OPEN DETOUR TO PEDESTRIANS.

STEP 3: COMPLETE SAWCUT, CURB AND GUTTER, CURB RAMP, SIDEWALK, AND RRFB CONSTRUCTION ON THE NORTH SIDE OF ESTES AT HALIFAX.

PHASE 3 (NOT SHOWN):

STEP 1: REMOVE PEDESTRIAN TYPE III BARRICADES, WATER FILLED BARRIER, AND TEMPORARY RAMPS. REMOVE TRAVERSABLE SURFACE AND RESTORE GRASS. REPLACE WATER FILLED BARRIER WITH DRUMS @ 10' O.C. OPEN CURB RAMPS TO PEDESTRIAN TRAFFIC.

STEP 2: USING RSD NO. 1101.02 SHEET 1 OF 19 AND RSD NO. 1101.03 SHEET 8 OF 9 AS NEEDED INSTALL CROSSWALK THERMOPLASTIC AND CENTERLINE THERMOPLASTIC IN ORIGINAL CONFIGURATION AND REMOVE ALL TRAFFIC CONTROL DEVICES.

STEP 3: REMOVE ADVANCE WARNING SIGNAGE.

LEGEND



DIRECTION OF TRAFFIC FLOW



DIRECTION OF PEDESTRIAN TRAFFIC FLOW



PROPOSED ASPHALT CONSTRUCTION



PROPOSED CONCRETE CONSTRUCTION



SKINNY DRUM



TYPE-III BARRICADE



WATER FILLED BARRIER



PORTABLE SIGN



TEMPORARY RAMP

Traffic control option is included; however, the traffic control plan will be up to the selected contractor to submit plans that comply with local requirements that may differ from these plans

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TRAFFIC MANAGEMENT PLAN
NOTES

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TMP

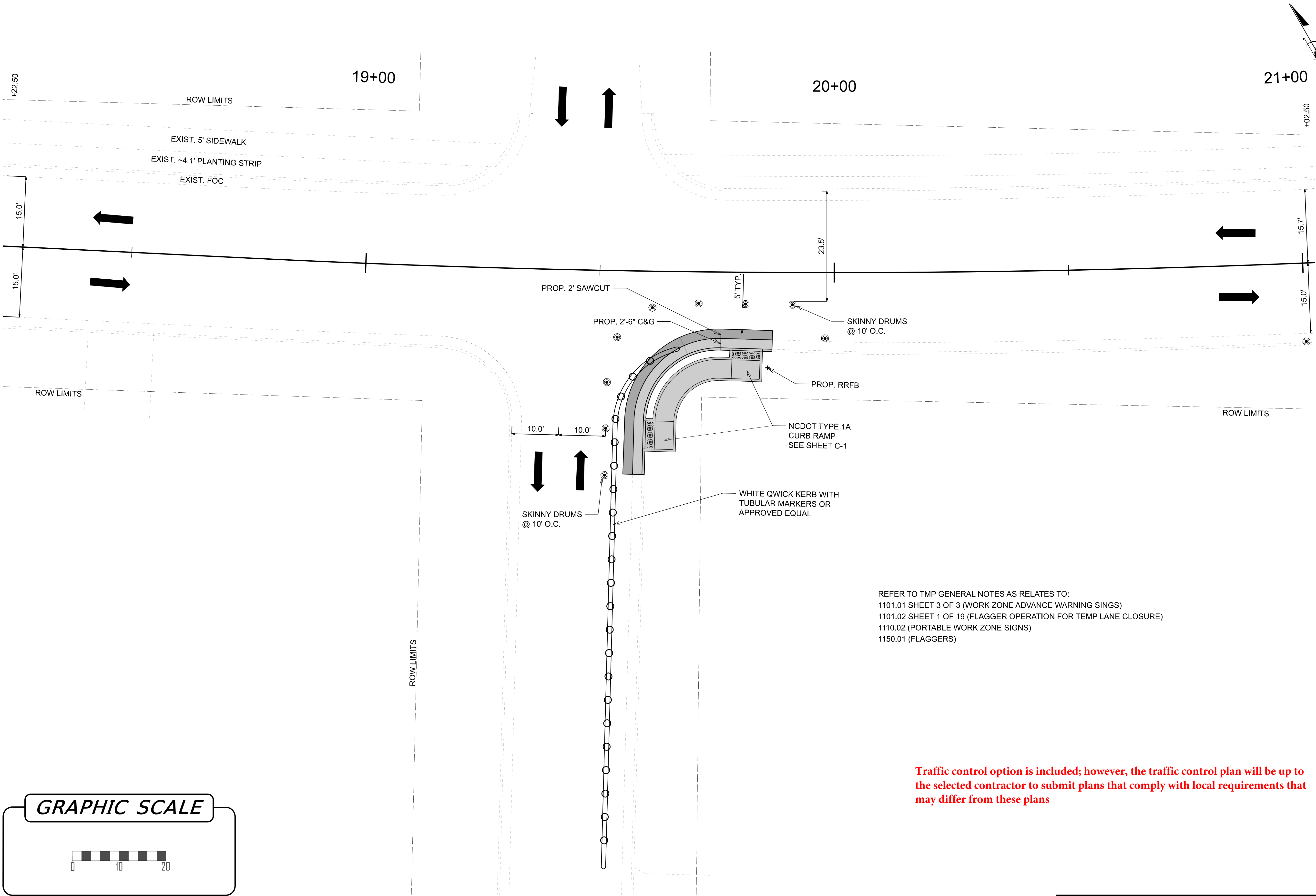
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DATE:

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DESIGN



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DATE: _____

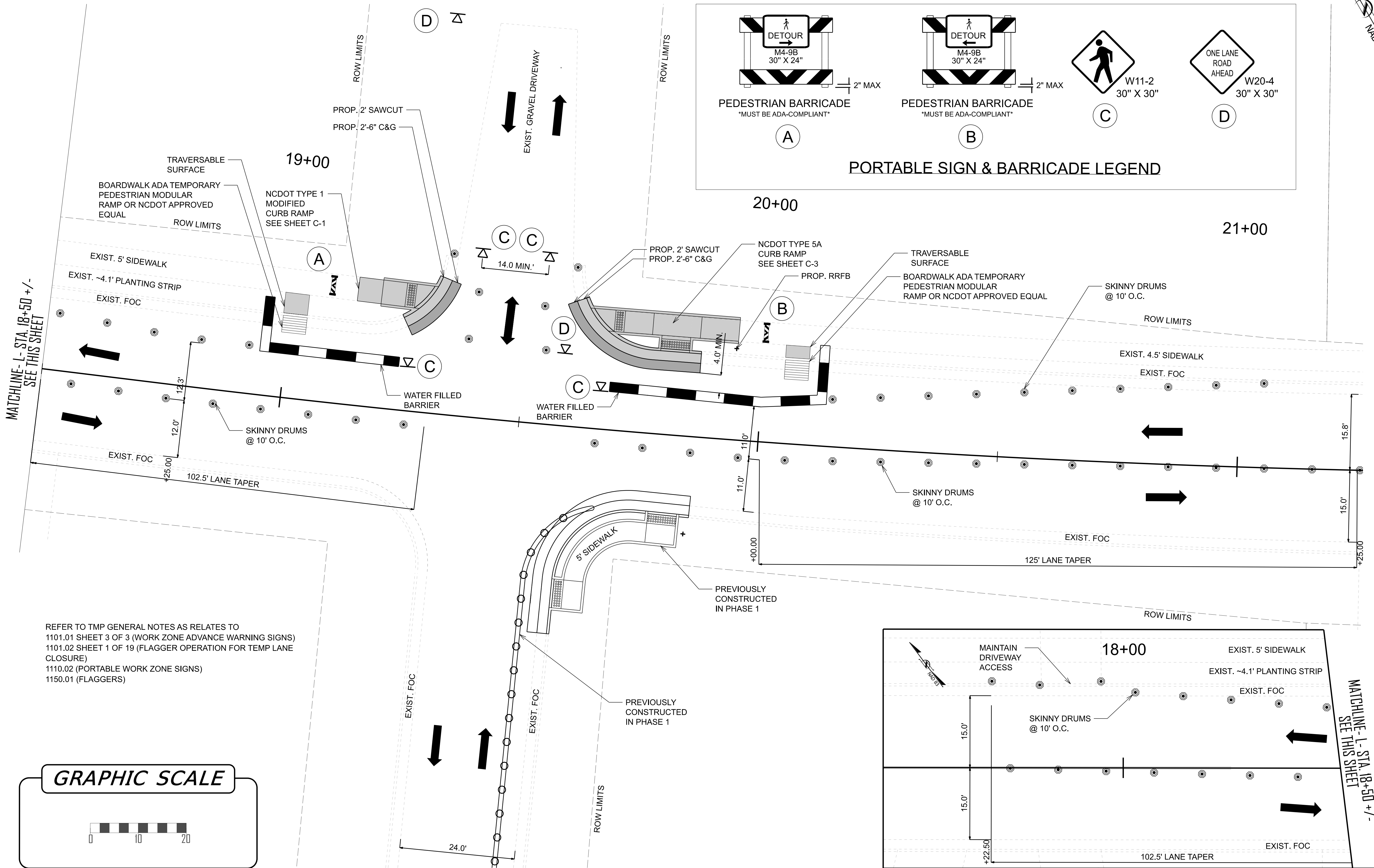
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DESIGN

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TRAFFIC MANAGEMENT PLAN
PHASE 1



REFER TO TMP GENERAL NOTES AS RELATES TO
1101.01 SHEET 3 OF 3 (WORK ZONE ADVANCE WARNING SIGNS)
1101.02 SHEET 1 OF 19 (FLAGGER OPERATION FOR TEMP LANE
CLOSURE)
1110.02 (PORTABLE WORK ZONE SIGNS)
1150.01 (FLAGGERS)

GRAPHIC SCALE



Traffic control option is included; however, the traffic control plan will be up to the selected contractor to submit plans that comply with local requirements that may differ from these plans

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TRAFFIC MANAGEMENT PLAN
PHASE 2

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APPROVED:

DATE:

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DESIGN

Task 2

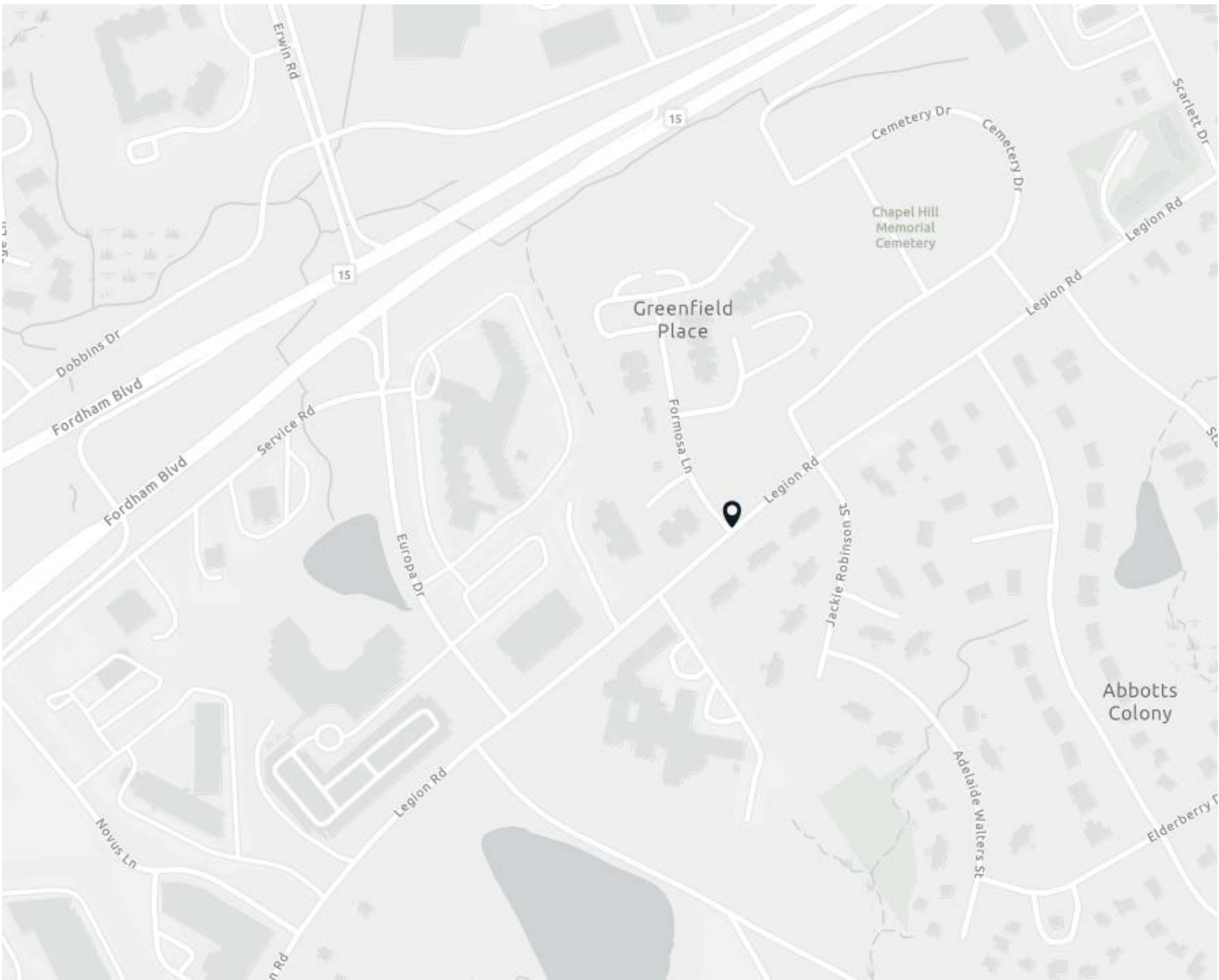
LOCATION: *ORANGE COUNTY*
SR 1741 , LEGION ROAD AT
FORMOSA LANE

TYPE OF WORK: *RRFB PEDESTRIAN CROSSING,*
PAVEMENT MARKING AND
SIGNAGE, CURB AND GUTTER ,
CURB RAMP AND MODULAR
MEDIAN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH N.C., DATED 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
846.01	CONCRETE CURB, GUTTER, AND CURB AND GUTTER
848.01	CONCRETE SIDEWALK
848.06	CURB RAMP - EXISTING CURB AND GUTTER
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNELS
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TRMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURE
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES = TYPE III
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.16	PAVEMENT MARKINGS - BICYCLE FACILITIES



VICINITY MAP

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
P62	WHITE CROSSWALK LINE (24", 90 MIL)
P102	12" YIELD LINE TRIANGLE (90 MIL)
P103	24" YIELD LINE TRIANGLE (90 MIL)
T62	WHITE CROSSWALK LINE (24", 90 MIL)

PAVEMENT MARKING GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER:

1.

INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
- | ROAD NAME | MARKING | MARKERS |
|-----------|---------------|---------|
| ALL ROADS | THERMOPLASTIC | NONE |
2.

TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES. CONTRACTOR SHALL FIELD VERIFY CURB-TO-CURB DIMENSIONS AT KEY INTERVALS TO ENSURE PROPOSED PAVEMENT MARKINGS ARE CENTERED WITHIN THE TRAVELWAY.
3.

THE CONTRACTOR SHALL ERADICATE ALL EXISTING CONFLICTING PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK USING AN APPROVED, NON-DESTRUCTIVE METHOD SUCH THAT NO TRACE OF EXISTING MARKINGS REMAIN VISIBLE. THE CONTRACTOR SHALL NOT INSTALL NEW PAVEMENT MARKINGS WITHOUT FIRST ERADICATING EXISTING PAVEMENT MARKINGS, OR AS DIRECTED BY THE FIELD ENGINEER.
4.

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO PAVEMENT MARKING APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER.

SIGNING GENERAL NOTES

- 1

THE TOWN OF CHAPEL HILL SHALL FURNISH SIGNAGE UNLESS OTHERWISE NOTED ON PLANS.
2.

ALL EXISTING SIGNS SHALL BE FIELD LOCATED BY TOWN'S CONTRACTOR.
3.

IF REMOVAL OR RELOCATION OF SIGNS ON A PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE PROJECT MANAGER. THIS WORK WILL BE COMPLETED BY THE CONTRACTOR.
4.

EXISTING SIGNS SHOWN TO REMAIN IN PLACE UNLESS OTHERWISE NOTED ON THE PLANS.

GENERAL NOTES

1.

EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND PROPOSED FEATURES TO THE ENGINEER.
2.

THE TOWN SHALL FURNISH BOTH THE RECTANGULAR RAPID FLASHING BEACONS AND MODULAR MEDIAN.
3.

NO UNDERGROUND UTILITY INFORMATION IS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONTACT NC 811FOR UTILITY LOCATIONS, OBTAIN AVAILABLE RECORD INFORMATION, AND NOTIFY ALL UTILITY OWNERS.
4.

WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, SIZE, AND MATERIAL OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
5.

THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS, AND FEATURES ADJACENT TO THE LIMITS OF WORK. AS DIRECTED BY THE ENGINEER, AND AT THE CONTRACTOR'S OWN EXPENSE, THE CONTRACTOR SHALL REPAIR, REPLACE, OR OTHERWISE MAKE GOOD ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.
6.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY TRAFFIC CONTROL TO ENSURE TRAFFIC SAFETY DURING CONSTRUCTION ACTIVITIES. THEREFORE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE PUBLIC WORKS DEPARTMENT AT LEAST 48HOURS PRIOR TO STARTING ANY WORK IN THE RIGHT-OF-WAY. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) OR AS MODIFIED BY THE ENGINEER.
7.

ALL PAVEMENT MARKINGS AND SIGNS SHALL MEET MUTCD STANDARD SPECIFICATIONS.

SEAL

APPR OED:

DAE:

SUMMARY OF QUANTITIES

TOWN OF CHAPEL HILL

SUMMARY OF QUANTITIES		
Description	Quantity	Units
Mobilization	1	LS
* Install RRFB Assembly	2	ea
* Install Modular Median	1	ea
Detectable warning Surface	20	sf
Concrete curb ramp	1	ea
Retroreflective Sign post Strip (4)	4	ea
Temporary Traffic Control	1	LS
Thermoplastic Pavement Marking Lines (24", 90 mils)	90	LF
Yield Line Thermoplastic Pavement Marking (24", 90 mils)	20	LF
* Furnished by Town		

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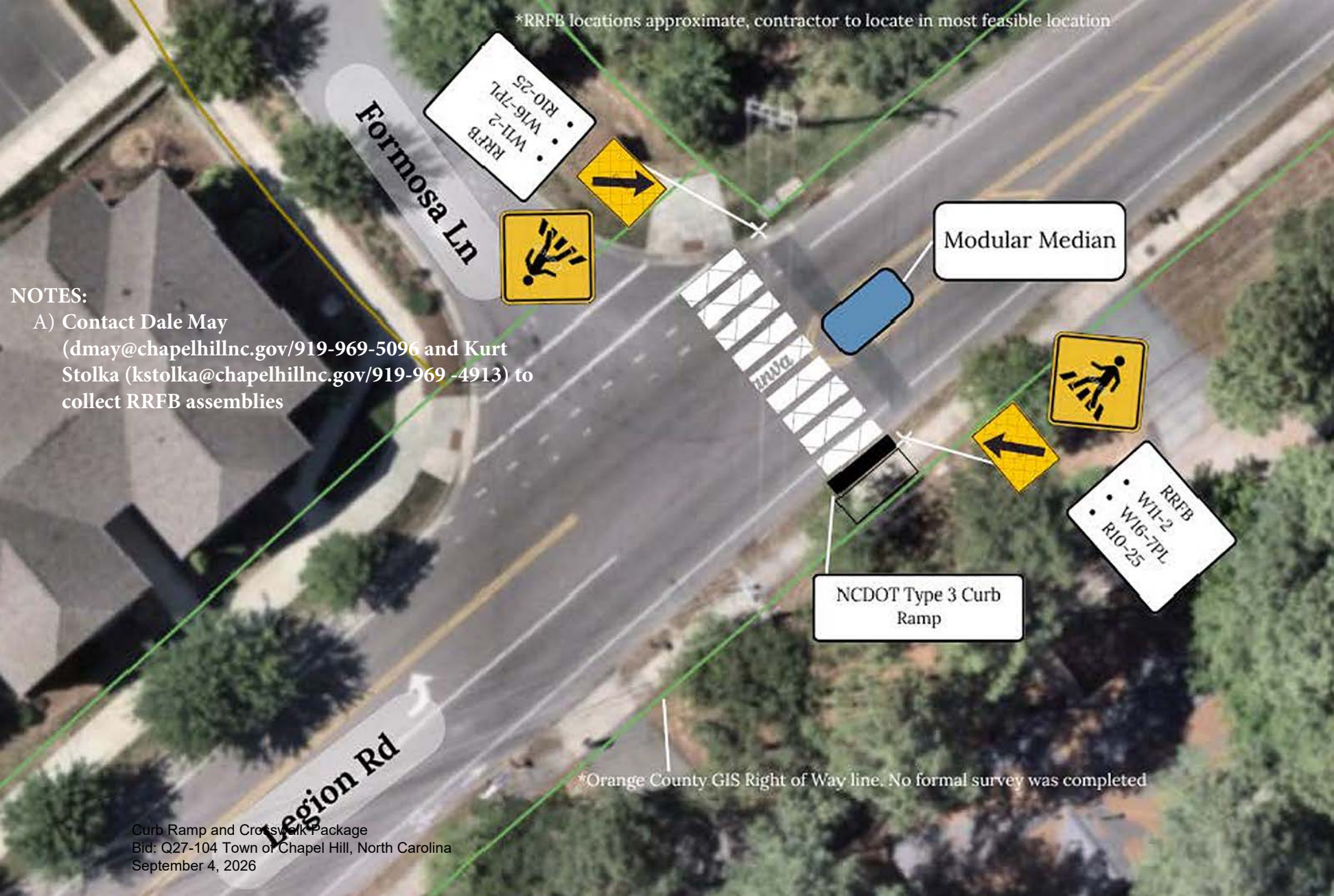
DATE:

SEAL

*RRFB locations approximate, contractor to locate in most feasible location

NOTES:

- A) Contact Dale May
(dmay@chapelhillnc.gov/919-969-5096 and Kurt
Stolka (kstolka@chapelhillnc.gov/919-969-4913) to
collect RRFB assemblies



Modular Median

NCDOT Type 3 Curb
Ramp

*Orange County GIS Right of Way line. No formal survey was completed



- ## Notes

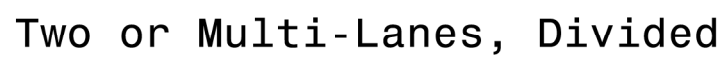
When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence.

The RFB shall flashing sequence shall provide enough time for pedestrians to cross from curb to curb. It is recommended to be a minimum of 7 seconds plus the crossing distance (D) divided by 3.5 feet/per sec., rounded up to the next whole second:

$$\text{Flash Time (sec.)} = 7 + D/3.5$$

Per Section 4L.03 of the 2023 MUTCD, RRFBs shall provide 75 flashing sequences per minute. During each 800 millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

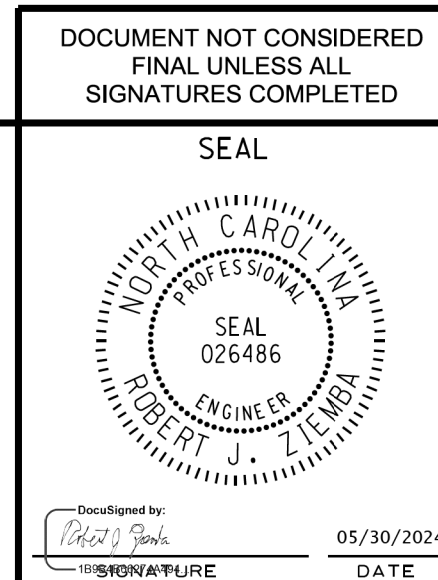
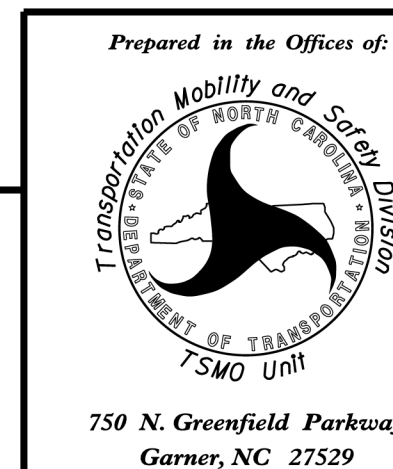
- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds.
Both RRFB indications shall be dark for approximately 250 milliseconds.



* See Note 5

* See Note 5

Standard Drawing for Rectangular Rapid Flashing Beacon

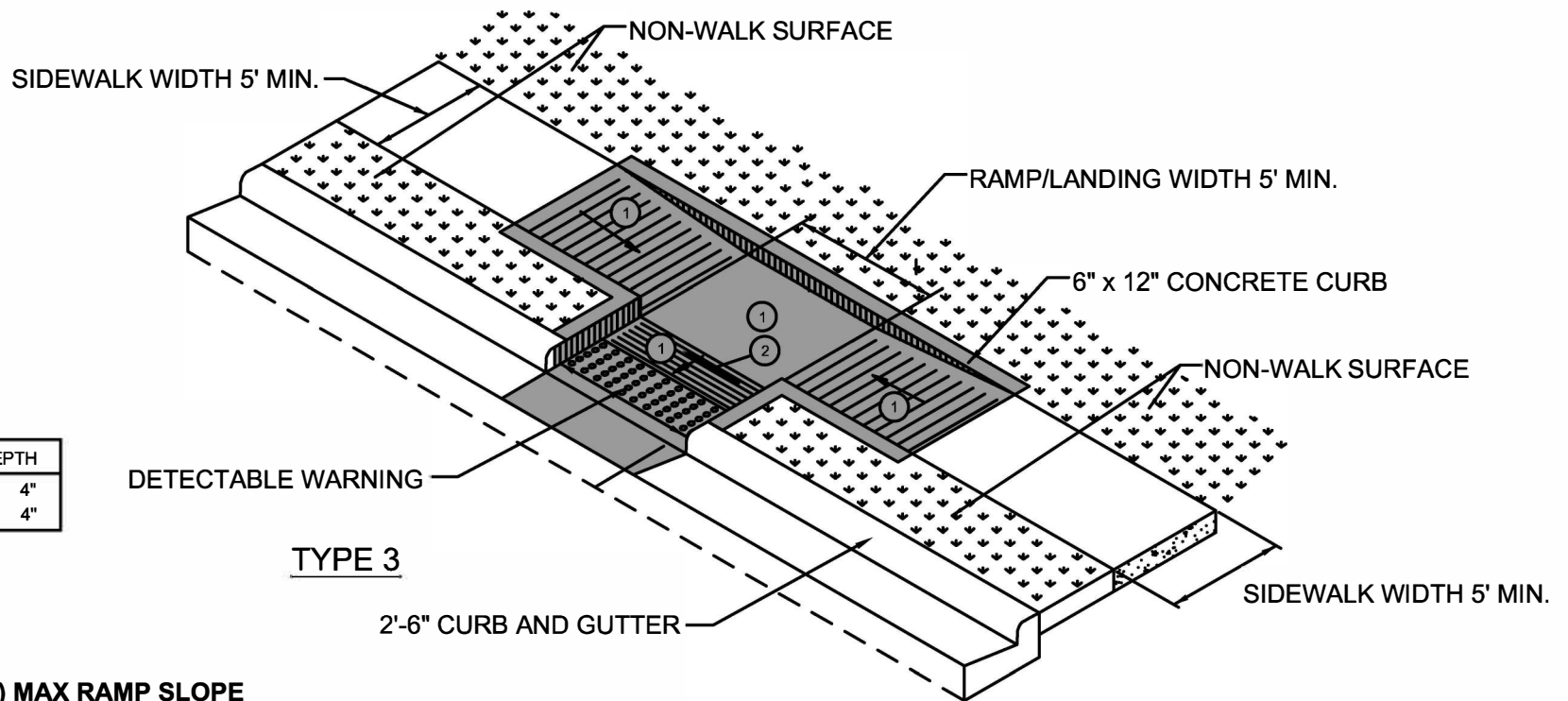


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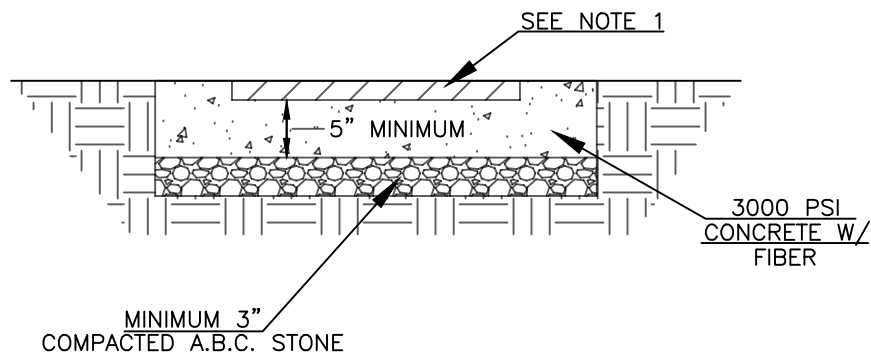
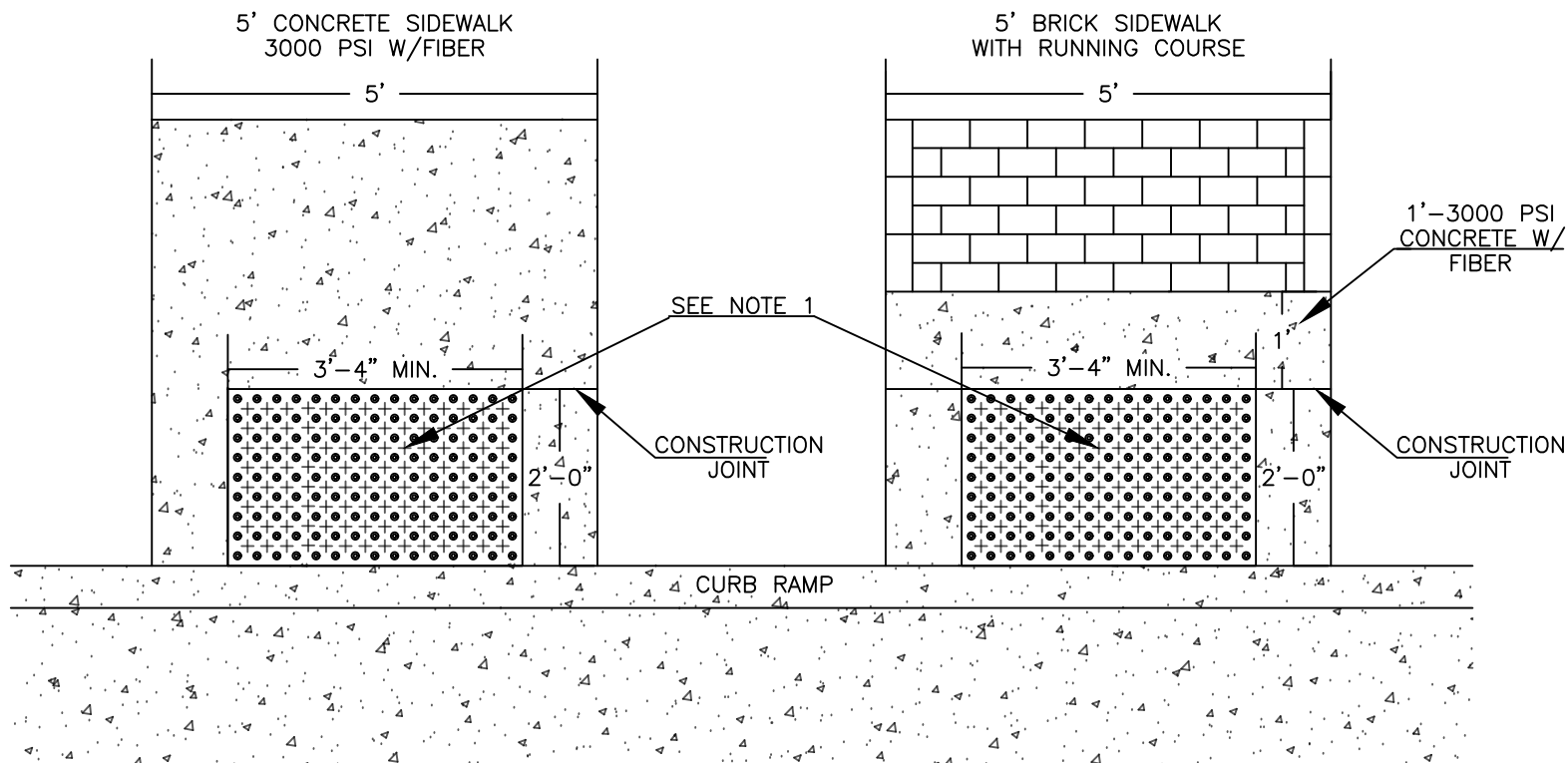


CONCRETE DEPTH	
RAMP	4"
LANDING	4"

NOTE:

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. CONSTRUCT THE WINGS (X) WITH A CURB FACE SLOPE 12:1 OR HIGHER.
5. PLACE TRUNCATED DOME FINISH ON THE RAMP PARALLEL WITH THE CURB.
6. PLACE CONTRACTION JOINTS AND EXPANSION JOINTS SCORELINES AS SHOWN.
7. OPTIONAL BACKING CURB FOR LANDSCAPE SUPPORT.

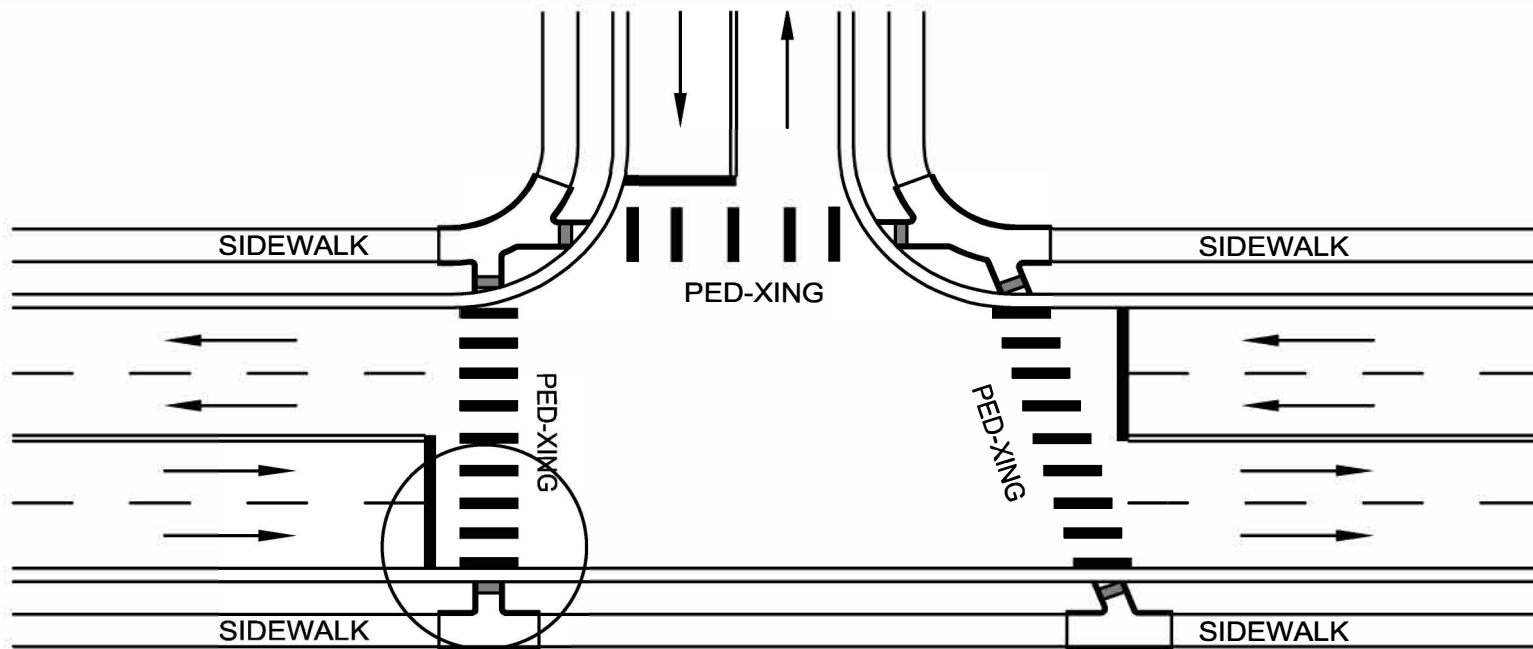
 TOWN OF CHAPEL HILL DATE: 02/2017	TOWN OF CHAPEL HILL STANDARD DETAIL	
	REVISIONS	CURB RAMP TYPE 3
	01/2026 - Logo only	
		T-2.04



NOTE:

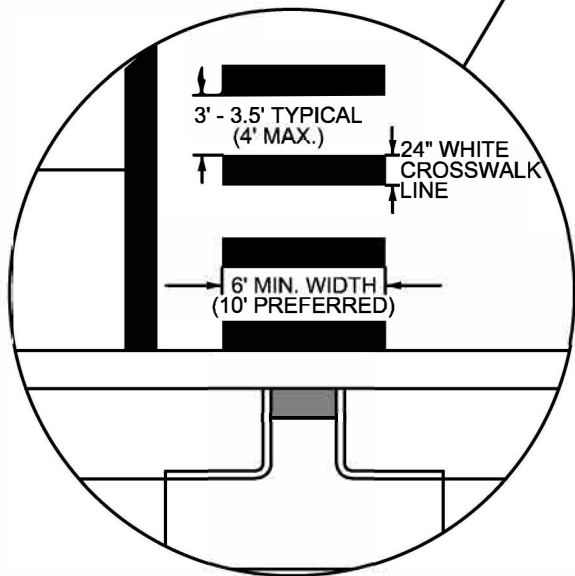
1. USE "ACCESS TILE TACTILE SYSTEMS" TRUNCATED DOME, DETECTABLE WARNING TACTILE SURFACE IN BRICK RED TO MEET CURRENT ADA SPECIFICATIONS.

 TOWN OF CHAPEL HILL	TOWN OF CHAPEL HILL STANDARD DETAIL	
	REVISIONS	ACCESSIBLE RAMP WITH DETECTABLE WARNING DOMES
	4/11/06	
	5/8/07	
	7/27/22	
	01/2026 - Logo only	
DATE: 04/2006		T-2.08



NOTES:

1. HI-VISIBILITY CROSSWALKS SHOULD BE USED AT CROSSINGS WHERE THE INTERSECTION IS SIGNALIZED OR UN-CONTROLLED BY ANY TRAFFIC CONTROL DEVICE (e.g. STOP SIGN).
2. THE CROSSWALK LINE SHOULD BE PLACED AT THE ANGLE OF THE TRAVEL LANES AND TRAVERSE THE PEDESTRIAN CROSSING.
3. A CROSSWALK LINE SHOULD BE PLACED TO AVOID WHEEL PATHS. THIS IS IDEALLY DONE BY CENTERING THE LINES AT THE EDGE OF EACH TRAVEL LANE AND IN THE CENTER OF EACH TRAVEL LANE. DUE TO VARYING LANE WIDTHS THIS IS SOMETIMES NOT POSSIBLE.
4. PLACE STOP BARS A MINIMUM OF 4 FEET FROM NEAREST CROSSWALK LINE. STOP BARS AT SIGNALIZED INTERSECTIONS SHOULD BE COORDINATED WITH THE DIVISION OR AS DIRECTED BY THE ENGINEER.
5. CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST STANDARD DRAWINGS.
6. USE 90 MIL THERMOPLASTIC FOR PAVEMENT MARKINGS.

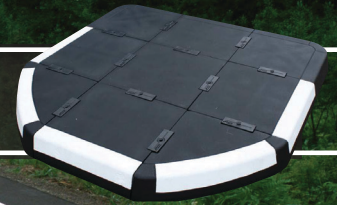


 TOWN OF CHAPEL HILL DATE: 02/2017	TOWN OF CHAPEL HILL STANDARD DETAIL	
	REVISIONS	PAVEMENT MARKINGS HI-VISIBILITY PEDESTRIAN CROSSWALK
	01/2026 - Logo only	
		T-12.01



RediPave Modular Median™

Installation Instructions

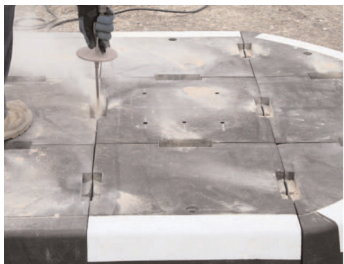


1. Insure proper maintenance of traffic is set up to ensure the safety of the workers, motorists and pedestrians.

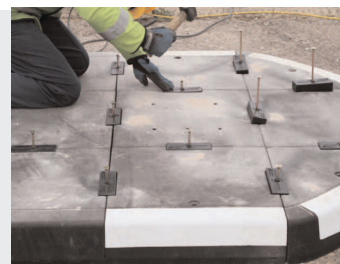


2. Mark position on road for location of medians and assemble the Redipave modules accordingly.

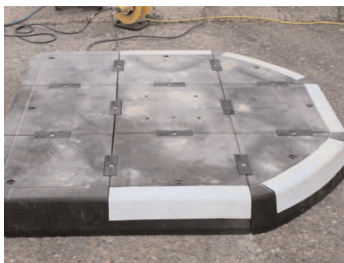
3. Ensure all module joints are butted tightly together. Start from the middle sections of the RediPave, and with a 19/32-in. drill bit, drill through the holes to a depth of 10.5 inches or greater. The drill used will be an electric Hilti T15 or T21 hammer drill (or similar) powered by a generator and a suitable power extension cord.



4. Blow out anchor holes using a long-nosed air gun, powered by a 120-psi portable compressor, Insert resin starting at base of hole, 2 to 3 pumps required using a resin gun.

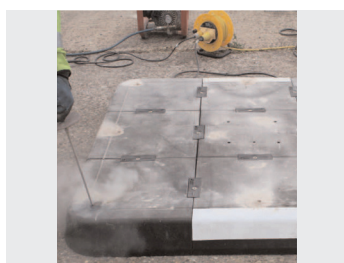
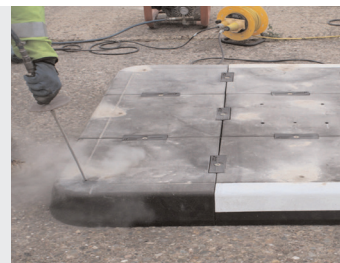


5. Insert torx screw through black plastic anchor block and attach RediPlug and tap down to surface level. Tighten with impact wrench; ensuring torx screw is firmly seated.



6. Repeat drilling, blowing, and resin for remaining middle holes and use black plastic anchor block to secure median. Once middle sections have been completed, drill remaining outside holes and blow out anchor holes using the long-nosed air gun. Thoroughly blow out holes and insert resin starting at base of hole, 2 to 3 pumps required per hole.

Warning - resin will harden within 25 minutes or less.



7. Insert torx screw and plastic washer into RediPlug. Tap assembly down to 2 3/4-in. above module surface and tighten with impact wrench, ensuring washer is firmly seated.



8. Remove all work debris, maintenance of traffic signs and barriers from site.

Installation Tools Checklist

	Orca Traffic Separator	RediPave Modular Median	RediPave Splitter	Traficop Speed Cushion	SiteCop Plus Speed Hump	SiteCop Speed Bump	RediPave Delineator Kit	Orca Delineator	Got It!	Notes
Equipment										
Heavy Duty SDS-Plus Hammer Drill	X	X	X	X	X	X		X		Drilling holes for anchor screws in pavement
3000 Watt plus Generator	X	X	X	X	X	X		X		Power for drill (Larger for multiple drills or electric compressor)
75-ft. Heavy duty extension cord	X	X	X	X	X	X		X		Power cord for drills
120-psi. Portable air compressor	X	X	X	X	X	X		X		Air gun and impact wrench (Gas powered preferred)
1/2-in. Pneumatic Impact Wrench	X	X	X	X	X	X				Anchoring screws
50-ft. Pneumatic hose	X	X	X	X	X	X		X		Air gun and impact wrench (with proper fittings for wrench and air gun)
3/8-in. Standard cordless drill							X			Drilling delineator holes
Specialty Tools										
12-in. Long Nose Air Gun (For Blowing out drilled holes)	X	X	X	X	X	X		X		
9/16-in. x 12-in. SDS-Plus Masonry Drill Bit (For drilling all holes)	X	X	X	X	X	X				1 per 150 Holes
Resin Cartridge Gun (for resin cartridge)	X	X	X	X	X	X		X		
1/2-in. Drive T40 Torque Bit (For anchor countersunk screws)		X	X	X						1 per 150 Anchors
1/2-in. Drive 17 mm Deep Socket (For hex head coach screws)	X			X	X	X				1 per 200 Anchors
1-in. x 10-in. SDS-Plus Masonry Drill (For drilling anchor holes)								X		1 per 100 Holes
19/32-in. HSS Drill Bit							X			1 per 100 Holes
6 mm Short Arm Hex Key							X			
10 mm Long Arm Hex Key							X			

Standard Tools (Suggested for all installs)

- GogglesWear for eye protection while drilling and blowing

• Rubber MalletTapping in anchor assemblies

• Ball Peen HammerTapping in anchor assemblies

• 1/2-in. RatchetBackup manual install

• Vice GripsReversing stripped anchors

• Utility KnifeVarious uses
- BrushSweeping debris from drilling

• Work GlovesHand Protection

• Retroreflective Safety VestPersonal Protection

• 25-ft. Measuring TapeAssist in layout

• Pavement Marking/ Carpenter's CrayonAssist in layout

Common Issues

1. Not all tools are present (e.g. no impact wrench)

2. Tools are not adequate in size or strength for efficiency (e.g. small compressor, non-SDS drill)

3. No backhoe and crosswalk package
4. Not loading all components (e.g. forgetting the anchor plugs from shipment)

5. Not enough people to assist (e.g. should have about 4 people (working) to move things along)

6. Poor Maintenance of Traffic (We all want to make it home)

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) DO NOT CLOSE OR NARROW TRAVEL LANES ON LEGION ROAD AT FORMOSA LANE FROM 6:00 AM - 9:00 AM AND FROM 4:00 PM TO 7:00 PM MONDAY THROUGH FRIDAY. DO NOT CONDUCT LANE CLOSURES DURING HOLIDAYS, OR OTHER HIGH-TRAFFIC EVENTS AS DIRECTED BY THE TOWN. MAINTAIN ACCESS TO ALL SIDE STREETS, DRIVEWAYS, TRANSIT STOPS, PEDESTRIAN FACILITIES, AND EMERGENCY SERVICES AT ALL TIMES.
- C) REMOVE LANE CLOSURE DEVICES WHEN WORK IS NOT ACTIVELY IN PROGRESS OR WHEN THE LANE CLOSURE IS NO LONGER NEEDED.
- D)
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 19 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- H) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON N. ESTES DRIVE.

TRAFFIC PATTERN ALTERATIONS

- I) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- J) INSTALL ADVANCE WORK ZONE WARNING SIGNS USING ROADWAY STANDARD DRAWING NO. 1101.01 SHEET 3 OF 3 WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

WATER FILLED TRAFFIC BARRIER

- L) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE TOWN UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS. TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

GENERAL NOTES

CHANNELIZING DEVICES

- M) THE TERM 'DRUMS' USED THROUGHOUT THESE TRANSPORTATION MANAGEMENT PLANS SHALL BE CONSIDERED TO INCLUDE STANDARD DRUMS, SKINNY DRUMS, OR TRAFFIC CONES WHEN APPROVED BY THE ENGINEER AND WHEN IN ACCORDANCE WITH THE MUTCD, NCDOT ROADWAY STANDARD DRAWINGS, AND THE CONTRACTORS' APPROVED TRAFFIC CONTROL PLAN.
- N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CANALIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

MISCELLANEOUS

- O) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- P) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

PHASING NOTES

PHASE 1:

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS IN ACCORDANCE WITH RSD NO. 1101.01 SHEET 3 OF 3.

STEP 2: USING RSD NO. 1101.02 SHEET 1 OF 19 FOR FLAGGING OPERATIONS DURING TEMPORARY LANE CLOSURES, INSTALL CENTERLINE PAINT AND DRUMS TO CREATE A 5' LANE SHIFT NORTH OF THE EXISTING CENTERLINE WHILE MAINTAINING TWO 10' LANES ON ESTES DRIVE AND 2' SHY DISTANCE FROM CENTER OF DRUMS.

STEP 3: COMPLETE SAWCUT, CURB AND GUTTER, CURB RAMP, SIDEWALK, AND RRFB CONSTRUCTION ON THE SOUTHEAST CORNER OF LEGION AT FORMOSA.

PHASE 2:

STEP 1: USING RSD NO. 1101.02 SHEET 1 OF 19 AND RSD NO. 1101.03 SHEET 8 OF 9 AS NEEDED, INSTALL DRUMS, AND WATER FILLED BARRIER TO CREATE A 5' LANE SHIFT NORTH OF THE EXISTING CENTERLINE WHILE MAINTAINING TWO 9 LANES ON LEGION ROAD AND 2' SHY DISTANCE FROM CENTER OF DRUMS AND WATER FILLED BARRIER.

STEP 2: INSTALL TRAVERSABLE SURFACE, ADA COMPLIANT TEMPORARY RAMPS, AND WATER FILLED BARRIER AS SHOWN ON TMP-02 TO CREATE PEDESTRIAN DETOUR. PLACE TYPE III BARRICADES AS SHOWN AND OPEN DETOUR TO PEDESTRIANS.

PHASE 3 (NOT SHOWN):

STEP 1: REMOVE PEDESTRIAN TYPE III BARRICADES, WATER FILLED BARRIER, AND TEMPORARY RAMPS. REMOVE TRAVERSABLE SURFACE AND RESTORE GRASS. REPLACE WATER FILLED BARRIER WITH DRUMS @ 10' O.C. OPEN CURB RAMPS TO PEDESTRIAN TRAFFIC.

STEP 2: USING RSD NO. 1101.02 SHEET 1 OF 19 AND RSD NO. 1101.03 SHEET 8 OF 9 AS NEEDED, INSTALL CROSSWALK THERMOPLASTIC AND CENTERLINE THERMOPLASTIC IN ORIGINAL CONFIGURATION AND REMOVE ALL TRAFFIC CONTROL DEVICES.

STEP 3: REMOVE ADVANCE WARNING SIGNAGE.

LEGEND



DIRECTION OF TRAFFIC FLOW



DIRECTION OF PEDESTRIAN TRAFFIC FLOW



PROPOSED ASPHALT CONSTRUCTION



PROPOSED CONCRETE CONSTRUCTION



SKINNY DRUM



TYPE-III BARRICADE



WATER FILLED BARRIER



PORTABLE SIGN



TEMPORARY RAMP

03RAL00404.00

TMP | DIA

APPROVED:

DATE:

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

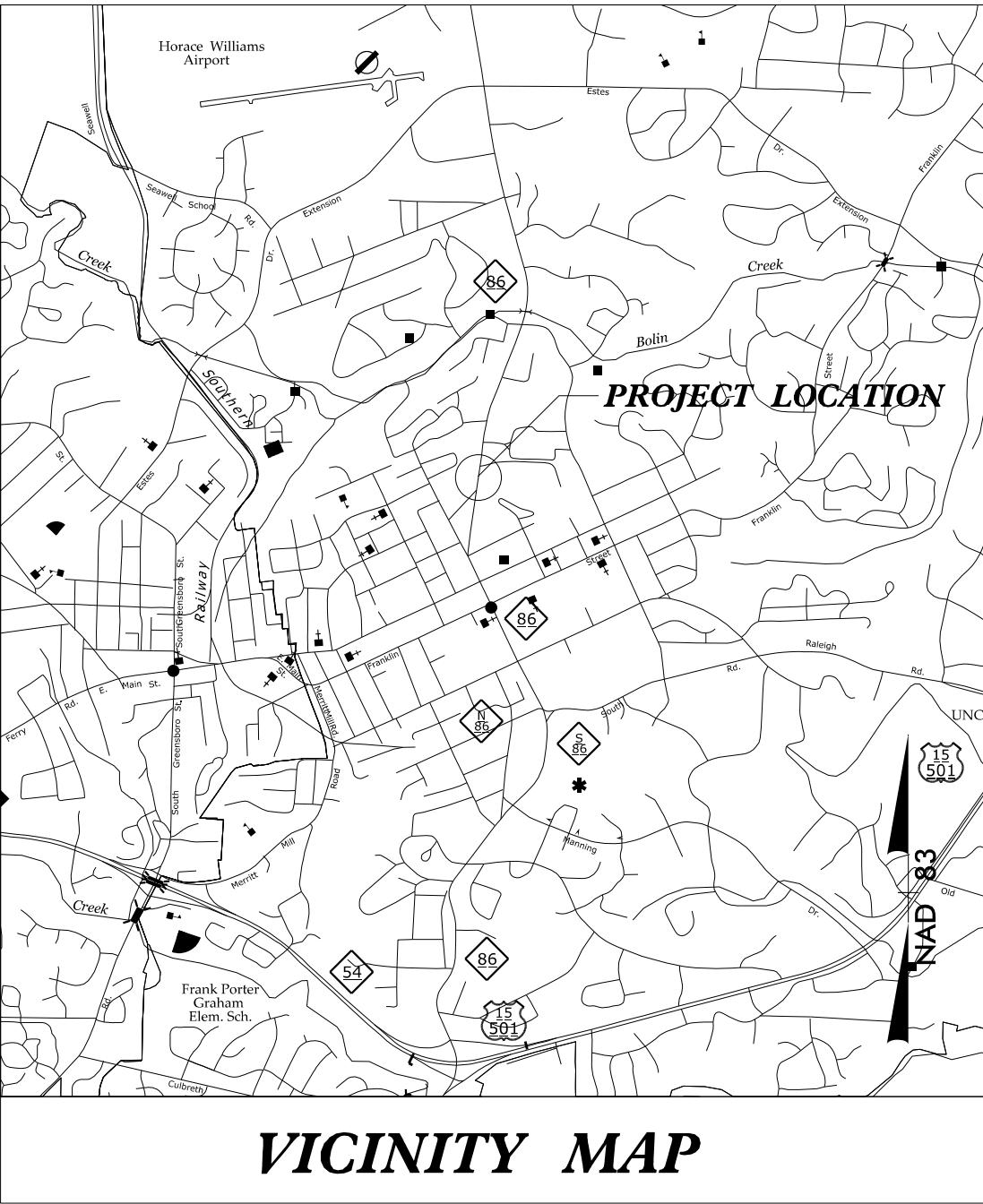
TRAFFIC MANAGEMENT PLAN
NOTES

TASK 3

TOWN OF CHAPEL HILL

LOCATION: NC 86 (MARTIN LUTHER KING JR. BLVD) SOUTH OF CENTRAL PARK LANE

TYPE OF WORK: MIDBLOCK PEDESTRIAN CROSSING, SIGNING AND DELINEATION, CURB AND GUTTER AND CURB RAMPS.



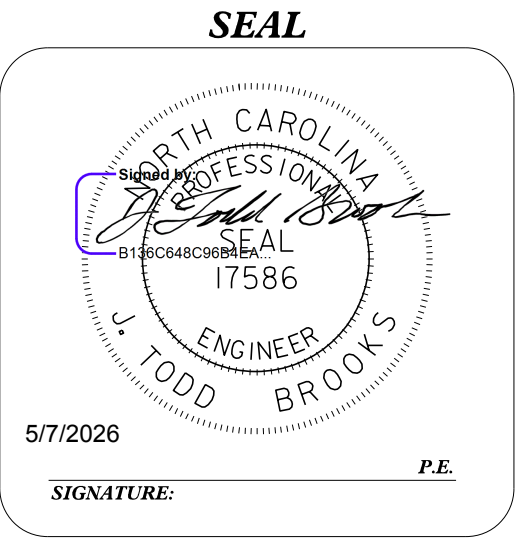
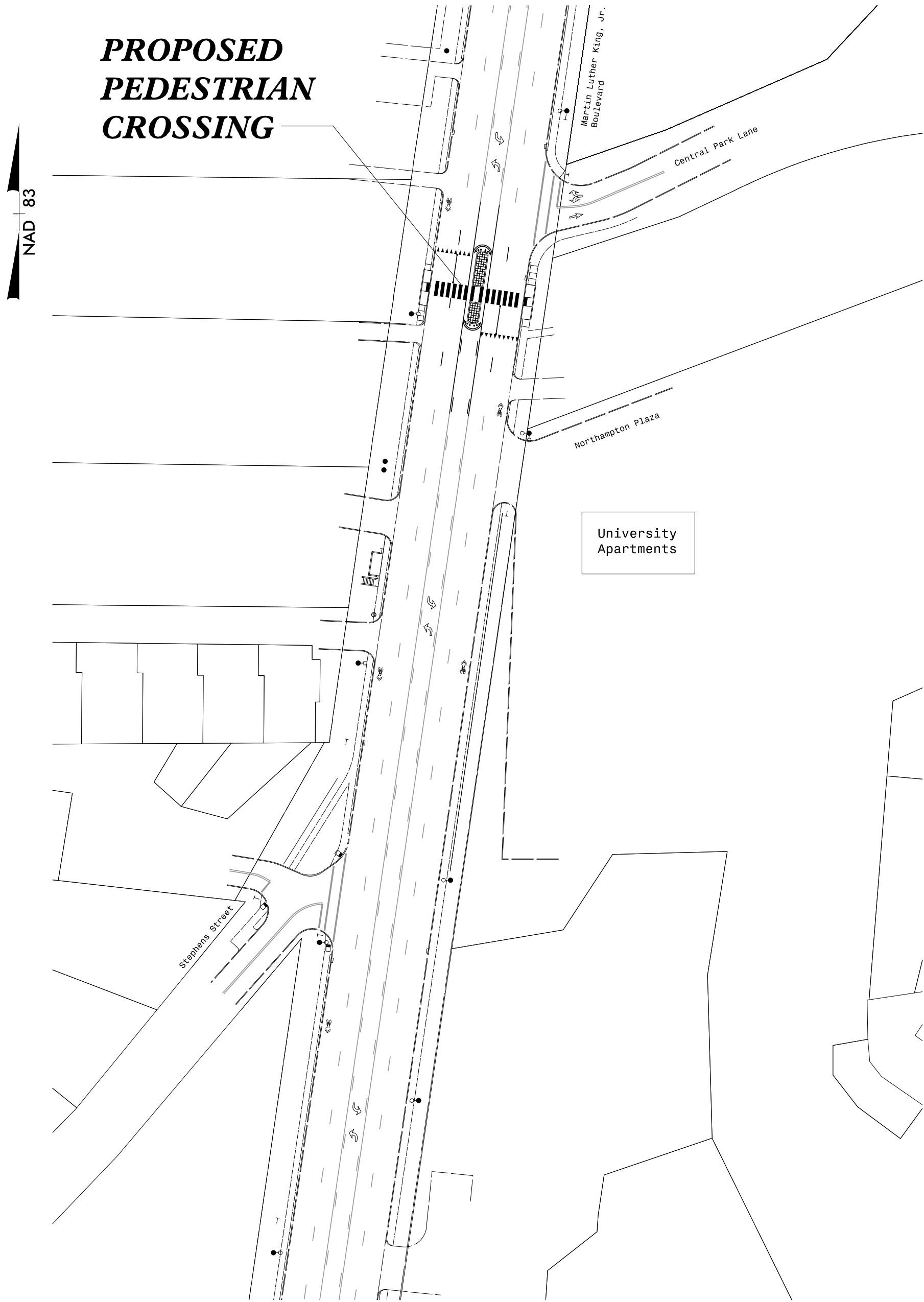
VICINITY MAP

INDEX OF SHEETS

SHEET NUMBER	SHEET TITLE
T-1	TITLE SHEET
C-1	CIVIL SHEETS
SPM-1 THRU SPM-5	SIGNING AND PAVEMENT MARKING PLAN
TMP-1 THRU TMP-8	TRANSPORTATION MANAGEMENT PLAN

STANDARD DRAWINGS

NCDOT STD. NO.	TITLE
846.01	CONCRETE CURB, GUTTER, AND CURB AND GUTTER
848.06	CURB RAMP
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGERS
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929



No.	Revision/Issue	Date
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TOWN OF CHAPEL HILL

PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
South of Central Park Lane

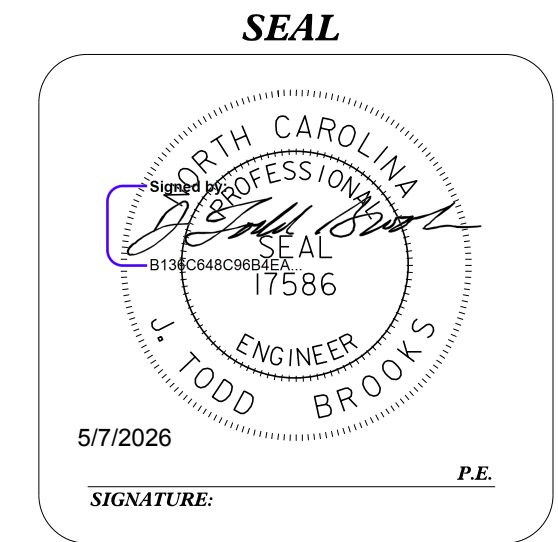
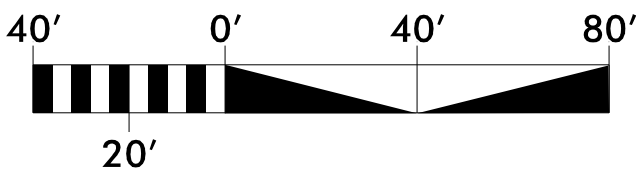
Project	Sheet
Date	T-1
Scale	NONE

NOTES

- A) DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE.
- B) CONTACT N.C. ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- C) SIDEWALKS, CURB RAMPS, AND ALL ASSOCIATED COMPONENTS WILL BE CONSTRUCTED AS PER THE DIRECTION OF THE TOWN OF CHAPEL HILL.
- D) TOWN OF CHAPEL HILL WILL FURNISH MATERIALS FOR MODULAR PEDESTRIAN REFUGE ISLAND. CONTRACTOR TO INSTALL.
- E) CUT EXISTING SIDEWALK TO BE REMOVED FOR CONSTRUCTION OF CURB RAMPS AT EXISTING SIDEWALK JOINTS. DEVIATION FROM THIS MUST BE APPROVED BY THE TOWN ENGINEER.
- F) DO NOT CLOSE SIDEWALKS ON BOTH SIDES OF ROAD SIMULTANEOUSLY. SIDEWALK SHALL REMAIN OPEN TO PEDESTRIAN TRAFFIC ON ONE SIDE OF ROAD AT ALL TIMES.
- G) REFER TO NCDOT ROADWAY STANDARD DRAWING NO. 848.06 FOR ADDITIONAL DETAILS FOR CURB RAMP CONSTRUCTION.

SEE SHEET SPM-1 FOR PROPOSED PAVEMENT MARKINGS

SEE INSET THIS SHEET



9300 HARRIS CORNERS PARKWAY
SUITE 220
CHARLOTTE, NC 28269
PHONE: 704.509.9918
NC COA No. F-0929

Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date

TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
South of Central Park Lane

Project	Sheet
Date	C-1
Scale	

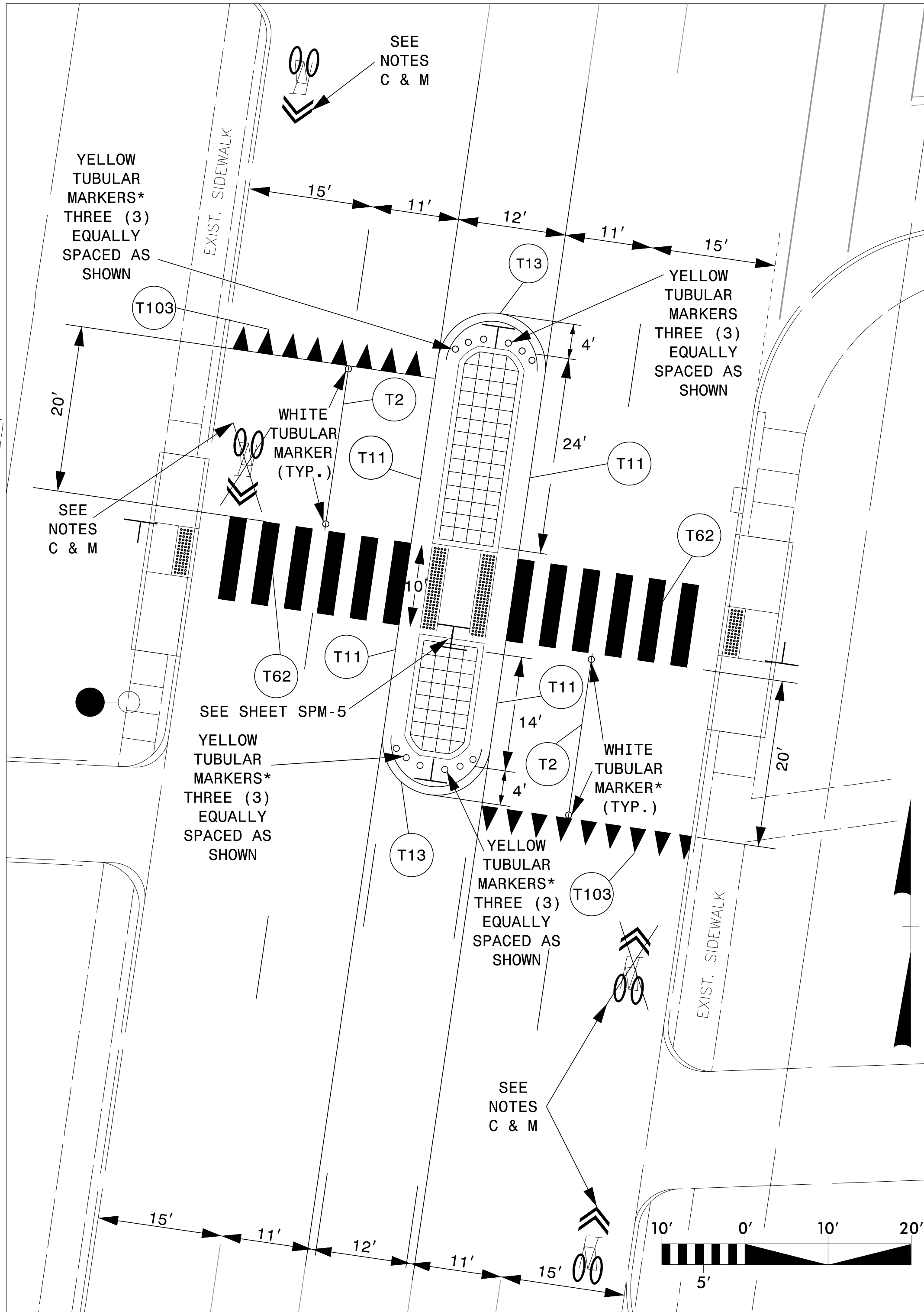
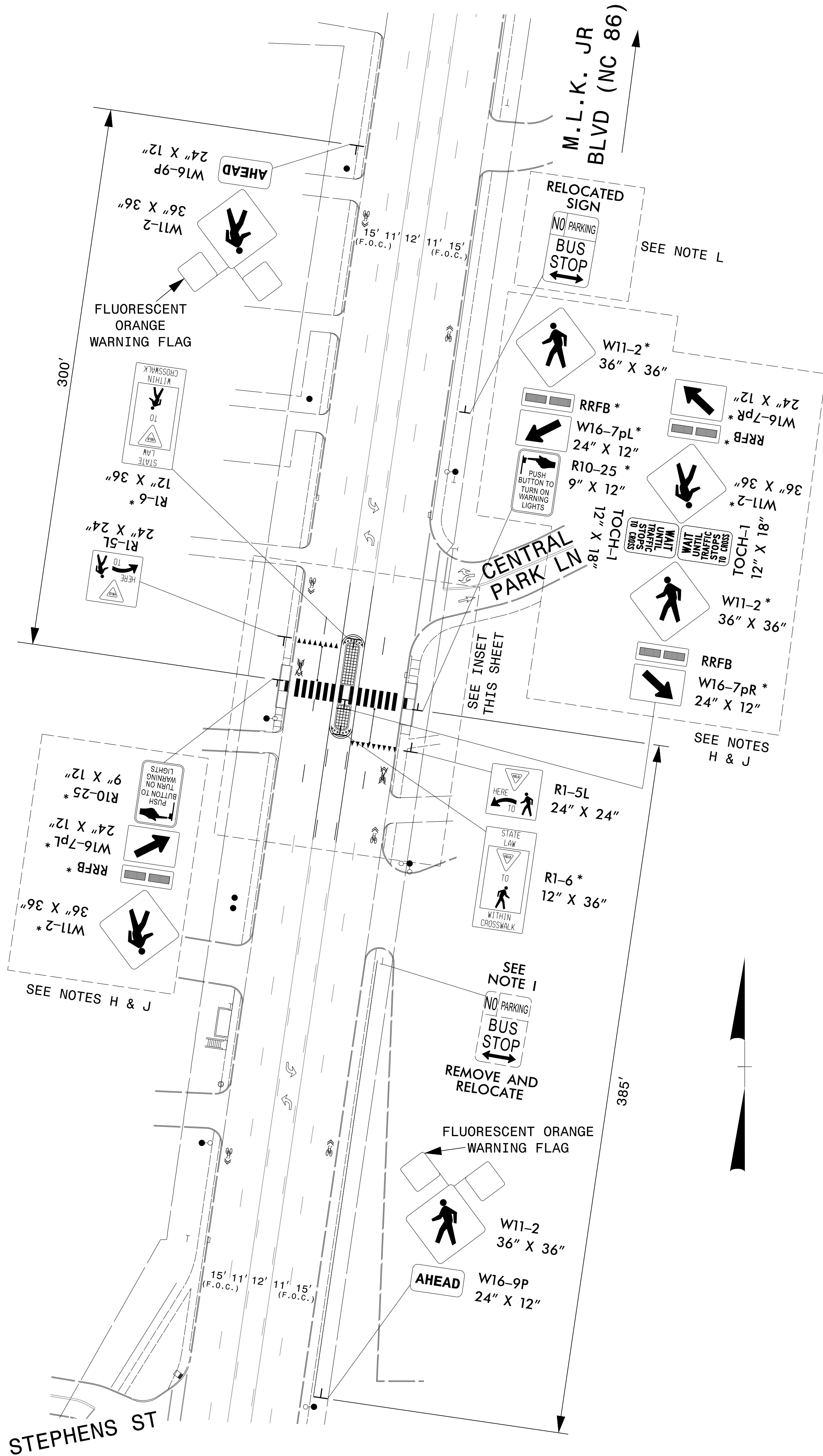
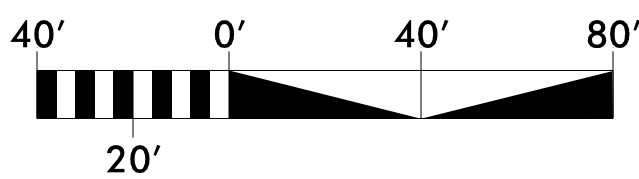
NOTES

- A) DIMENSIONS AND LOCATIONS OF EXISTING FEATURES ARE APPROXIMATE.
- B) ALL PAVEMENT MARKINGS ON ASPHALT SURFACES SHALL BE THERMOPLASTIC AND SHALL COMPLY WITH NCDOT SPECIFICATIONS AND STANDARDS, UNLESS OTHERWISE NOTED IN THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- C) THIS PROJECT WILL BE CONSTRUCTED IN CONJUNCTION AND COORDINATION WITH A PROPOSED NCDOT RESURFACING PROJECT. COORDINATE INSTALLATION OF PROPOSED CROSSWALK MARKINGS WITH REPLACEMENT OF EXISTING PAVEMENT MARKINGS BY NCDOT RESURFACING CONTRACTOR.
- D) TIE THE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- E) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.
- F) ORANGE FLAGS MAY BE REMOVED AFTER 60 DAYS AT THE DISCRETION OF THE TOWN OF CHAPEL HILL.
- G) CONTACT N.C. ONE CALL TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- H) W11-2 SIGN ASSEMBLIES AT CROSSWALK TO INCLUDE SOLAR POWERED RECTANGULAR RAPID FLASHING BEACONS (RRFB) WITH PUSHBUTTONS.
- I) REMOVE/RESET EXISTING SIGNS AS DIRECTED BY THE ENGINEER.
- J) PROVIDE 2-INCH-WIDE VERTICAL REFLECTIVE STRIP ON THE FACE OF ALL SIGN POSTS INSTALLED UNDER THIS PROJECT. SEE PROJECT SPECIAL REVISIONS.
- K) RRFB ASSEMBLIES AND R1-6 SIGN ASSEMBLIES TO BE FURNISHED BY TOWN OF CHAPEL HILL AND INSTALLED BY THE CONTRACTOR.
- L) CONTACT KATY FONTAINE AT 919.969.4957 A WEEK IN ADVANCE FOR PROPOSED SIGN LOCATION.
- M) ~~NCDOT RESURFACING PROJECT CONTRACT WILL REMOVE EXISTING SHARROW MARKINGS THEN REINSTALL THEM IN PROPOSED NEW LOCATIONS FOLLOWING PAVING.~~
- N) EXCEPT WHERE NOTED ABOVE, PAVEMENT MARKINGS ARE EXISTING/INSTALLED BY OTHERS.

* DENOTES SIGNS AND DEVICES FURNISHED BY TOWN FOR CONTRACTOR TO INSTALL

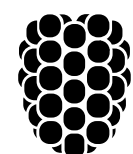
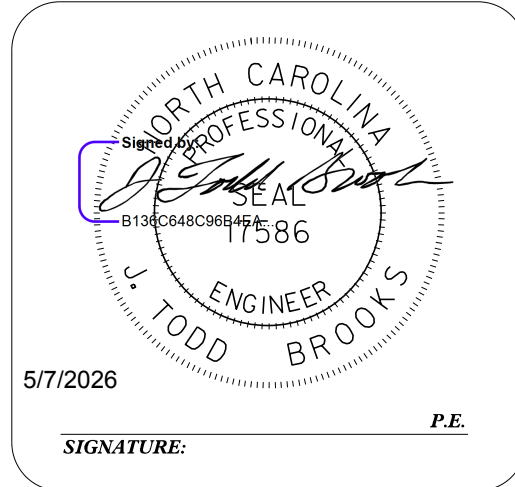
PAVEMENT MARKING SYMBOLS

SYMBOL	DESCRIPTION
T2	THERMOPLASTIC (4", 90 MILS) WHITE SOLID LANE LINE
T11	THERMOPLASTIC (4", 90 MILS) SINGLE YELLOW CENTER LINE
T13	THERMOPLASTIC (4", 90 MILS) YELLOW DOUBLE CENTER LINE
T62	THERMOPLASTIC (24", 90 MILS) WHITE CROSSWALK LINE
T103	THERMOPLASTIC (90 MILS) 24" YIELD LINE TRIANGLE



INSET

SEAL



Dewberry

2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

Town of
Chapel Hill

ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date

TOWN OF CHAPEL HILL

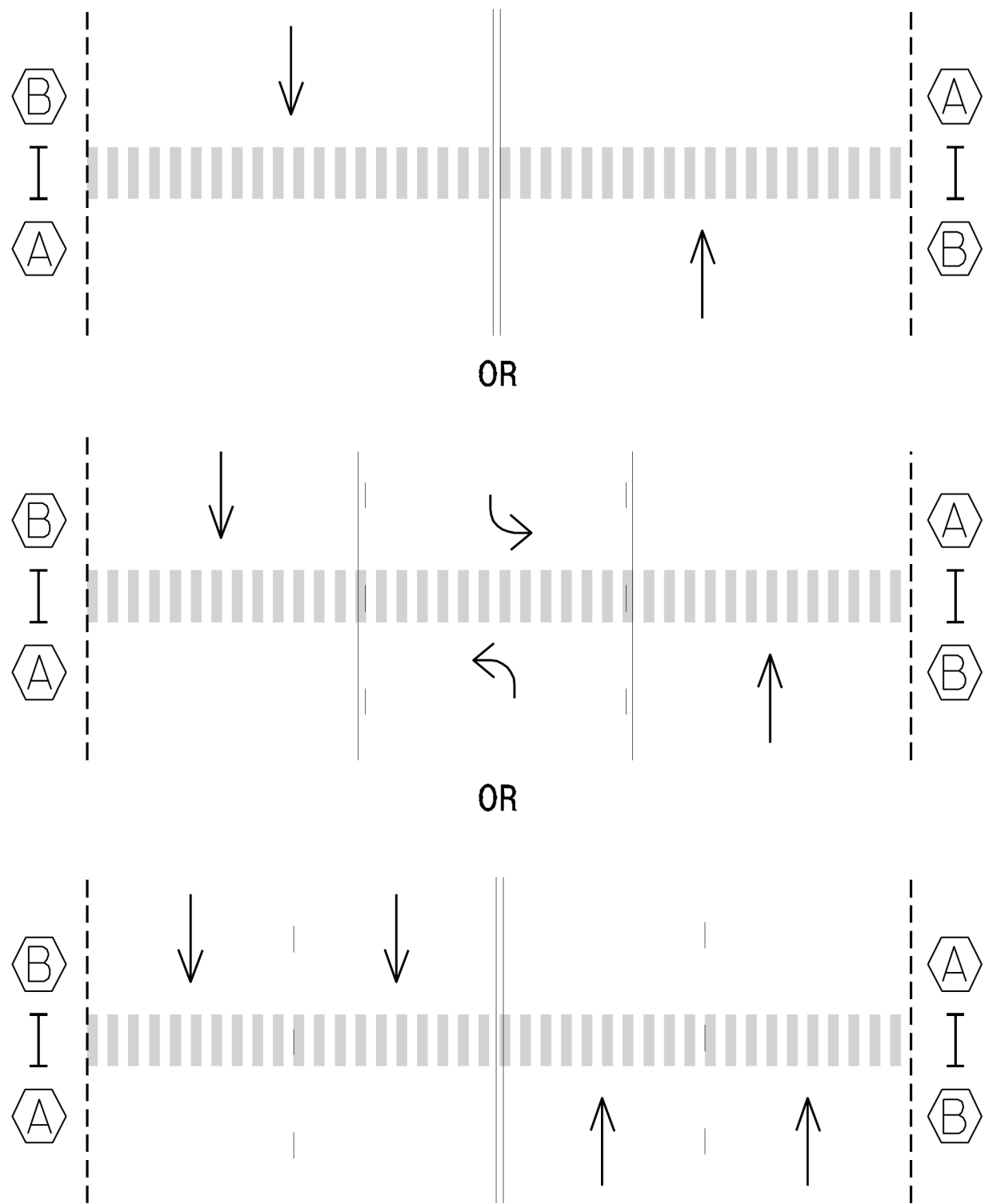
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

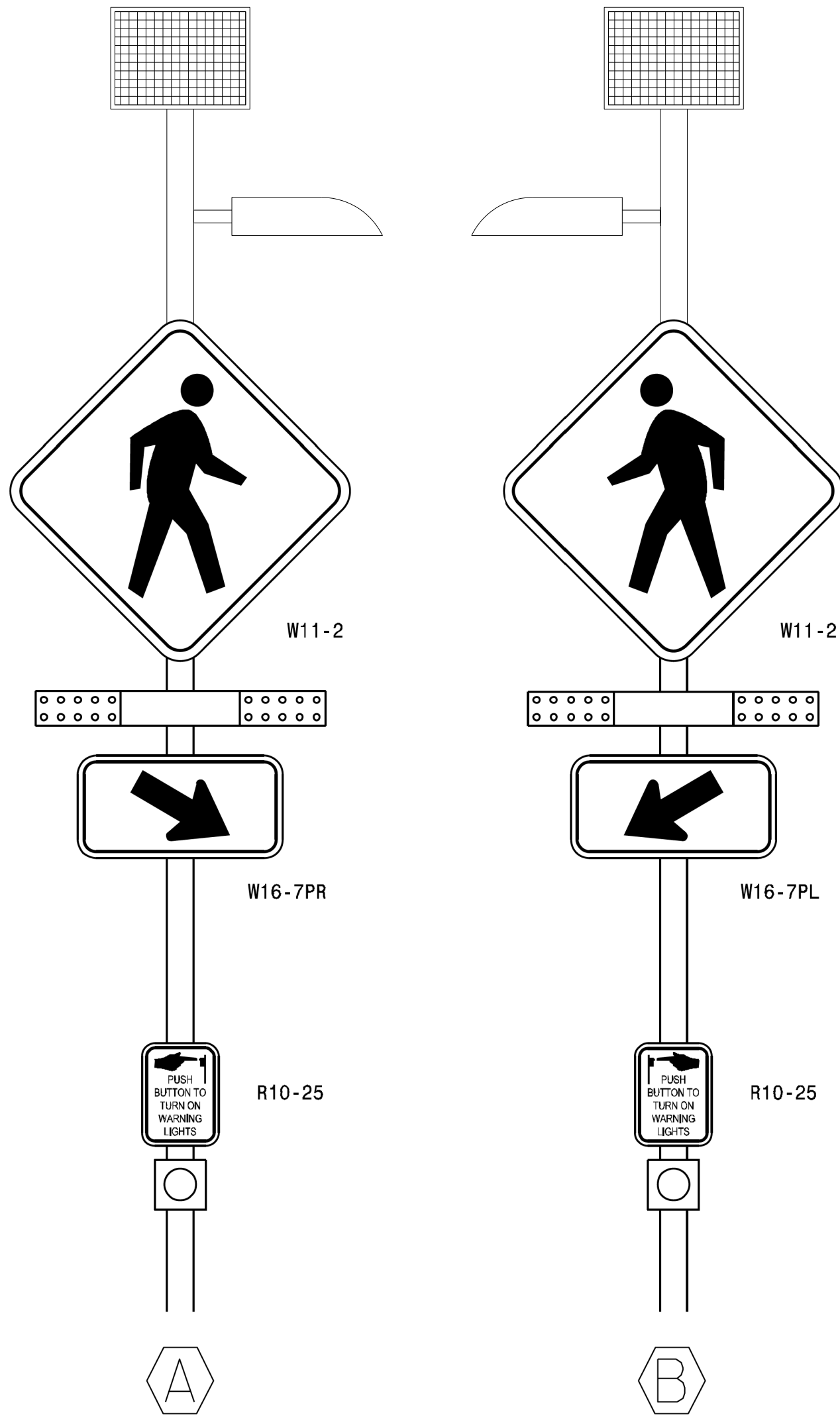
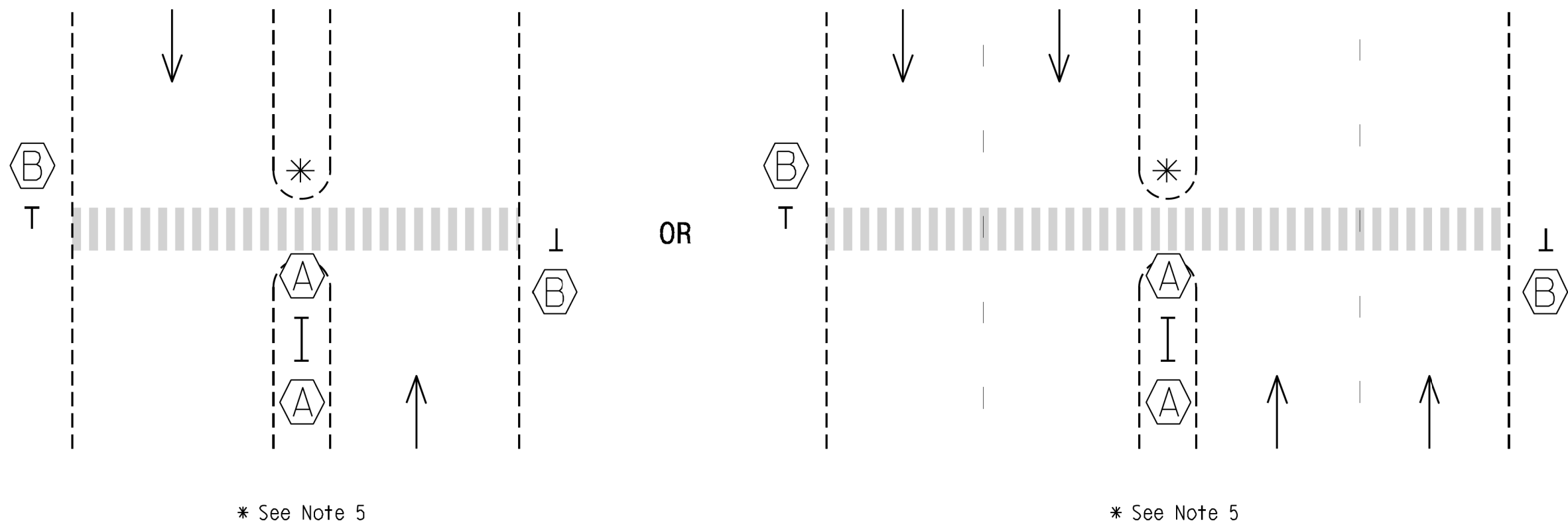
Midblock Pedestrian Crossing
NC 85 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	SPM-1
Scale	AS SHOWN

Two to Four Lanes, Undivided



Two or Multi-Lanes, Divided



RRFB Sign Detail

Notes

1. Design the RRFB in accordance with the 2023 MUTCD, 11th Edition, Chapter 4L: Rectangular Rapid-Flashing Beacons. The RRFB unit associated with a post-mounted sign and plaque should be located between the pedestrian crossing warning (W11-2) sign and the supplemental downward diagonal arrow plaque (W16-7p).
2. If needed, a supplemental RRFB with an "AHEAD" (W16-9P) or distance (W16-2P) plaque may be installed on the approach in advance of the crosswalk. The additional RRFB shall be a supplemental to and not a replacement for the RRFB at the actual crosswalk.
3. When practical, the RRFB and mounting post on the right side of the road shall be mounted on the approach side of the crosswalk closest to approaching traffic.
4. When practical, the RRFB and mounting post on the left side of the road may be mounted on the back of the post for the opposing approach.
5. A RRFB on the left side of the roadway or in the median may be individually mounted on the approach side of the crosswalk closest to approaching traffic, or, when practical, may be mounted back to back on the same post and mounted on either side of the crosswalk in the median.
6. Locate push button sign (R10-25) and push button to face crosswalk, even if it is mounted on the back side of the sign.
7. All RRFB units associated with a given crosswalk (including those with an advance crossing sign) shall, when actuated, simultaneously commence operation of their rapid-flashing indications and shall cease operation simultaneously.
8. For quantitative purposes, a single sided, post mounted RRFB and a double sided RRFB mounted on the same post are each counted as one assembly unit.
9. For additional information, see the Project Special Provisions (PSP).

Timing of RRFBs

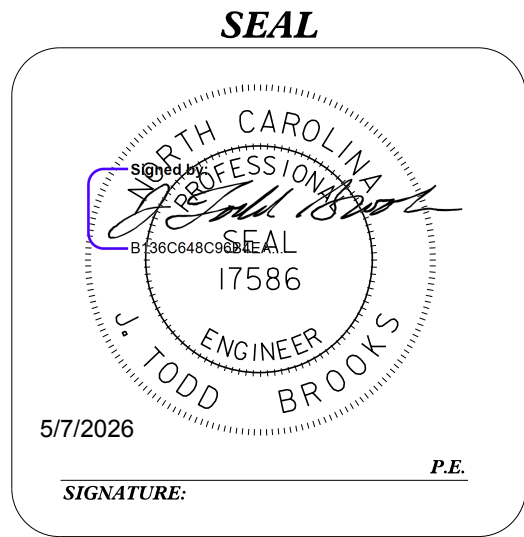
When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence.

The RRFB flashing sequence shall provide enough time for pedestrians to cross from curb to curb. It is recommended to be a minimum of 7 seconds plus the crossing distance (D) divided by 3.5 feet/per sec., rounded up to the next whole second:

$$\text{Flash Time (sec.)} = 7 + D/3.5$$

Per Section 4L.03 of the 2023 MUTCD, RRFBs shall provide 75 flashing sequences per minute. During each 800 millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 250 milliseconds.



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

Town of
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ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date
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TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
South of Central Park Lane

Project	Sheet
Date	SPM-2
Scale	

SIGN NUMBER:TOCH-1

TYPE: E

QUANTITY: 2

SIGN WIDTH: 1'-0"

HEIGHT: 1'-6"

TOTAL AREA: 1.5 Sq.Ft.

BORDER TYPE: FLUSH

RECESS: 0.25"

WIDTH: 0.25"

RADII: 1.5"

NO. Z BARS:

LENGTH:

BACKG COLOR: Yellow

COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.063" (1.6 mm) ALUMINUM

DESIGN BY: A. Beshears

CHECKED BY: J. T. Brooks

DEC 4, 2025

PROJECT ID:

LOCATION: CHAPEL HILL

DIV: 7

1'-6"

1'-0"

1.3"

3"

0.8"

3"

0.8"

2.3"

0.8"

2.3"

0.8"

1.5"

1.4"

10"

WAIT

UNTIL

TRAFFIC

STOPS

BEFORE CROSSING

BORDER

R=1.5"

TH=0.25"

IN=0.25"

Panel Style: CH.ssi

M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

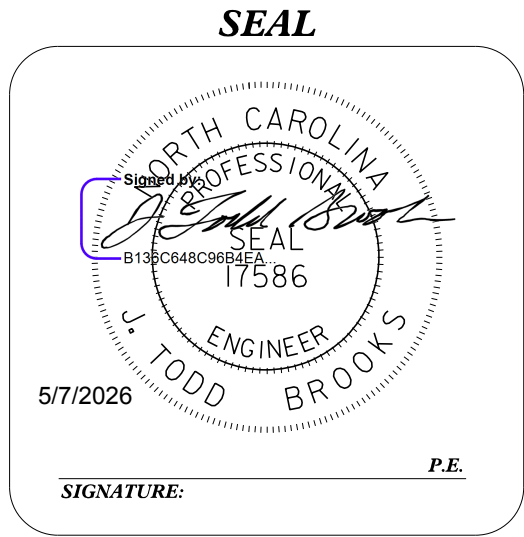
LETTER POSITIONS

Letter spacings are to start of next letter																				Series/Size Text Length			
		W	A	I	T																		C 2000
	2.4	2.5	2.3	0.8	1.5	2.4																	7.2
		U	N	T	I	L																	C 2000
	1.5	2.3	2.1	1.9	1.1	1.5	1.5																9
		T	R	A	F	F	I	C															C 2000
	1.1	1.5	1.5	1.8	1.5	1.5	0.8	1.3	1.1														9.8
		S	T	O	P	S																	D 2000
	1.6	1.7	1.7	2.1	1.7	1.6	1.5																8.9
		B	E	F	O	R	E		C	R	O	S	S	I	N	G							B 2000
	1	0.7	0.6	0.6	0.7	0.7	0.6	1.1	0.7	0.7	0.7	0.7	0.7	0.3	0.7	0.6	1						10

FILENAME: CH Signing

NORTH CAROLINA D.O.T. SIGN DETAIL

NOTE: SIGN TOCH-1 TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929



No.	Revision/Issue	Date

TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

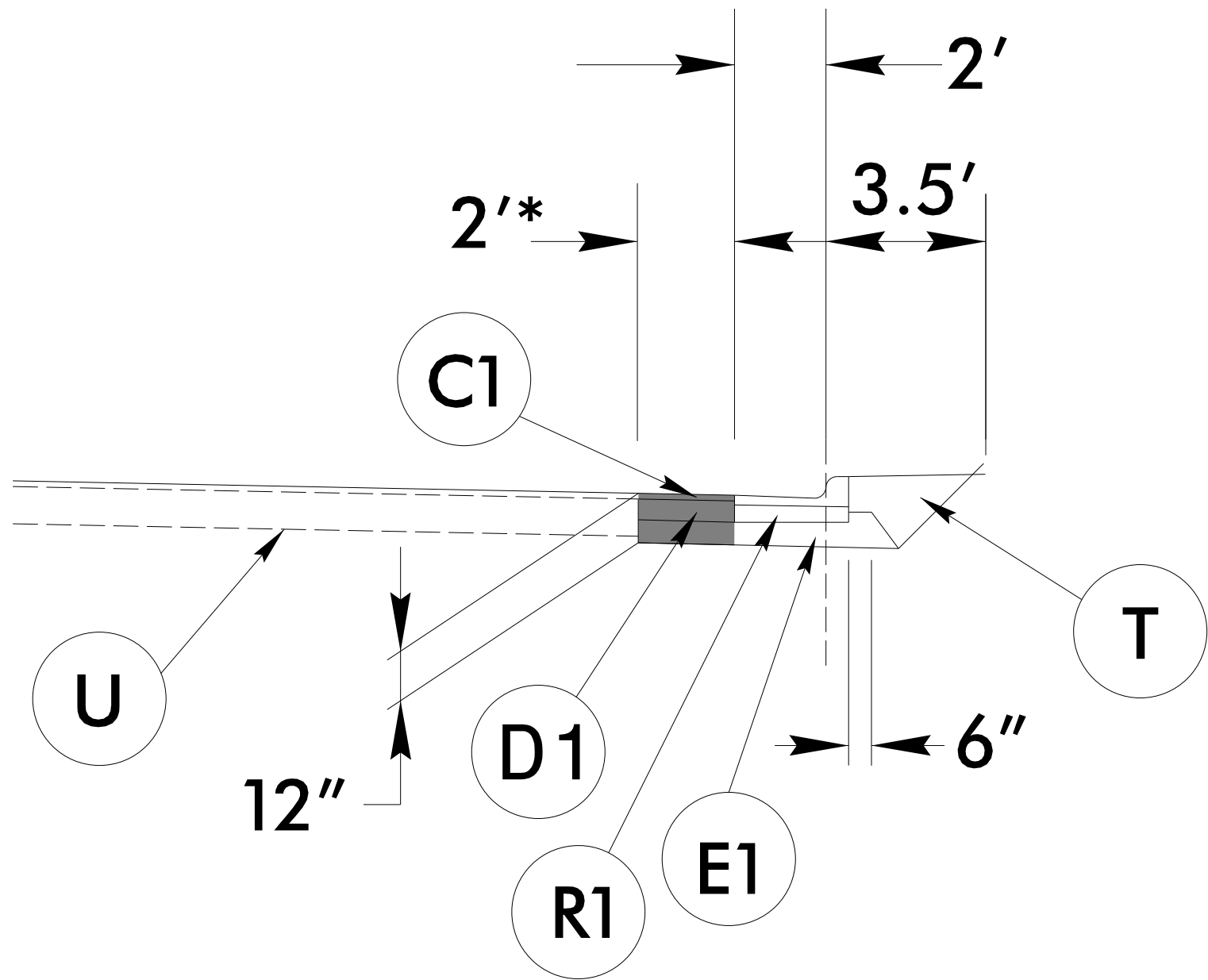
Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
South of Central Park Lane

Project	Sheet
Date	SPM-3
Scale	

PAVEMENT SCHEDULE

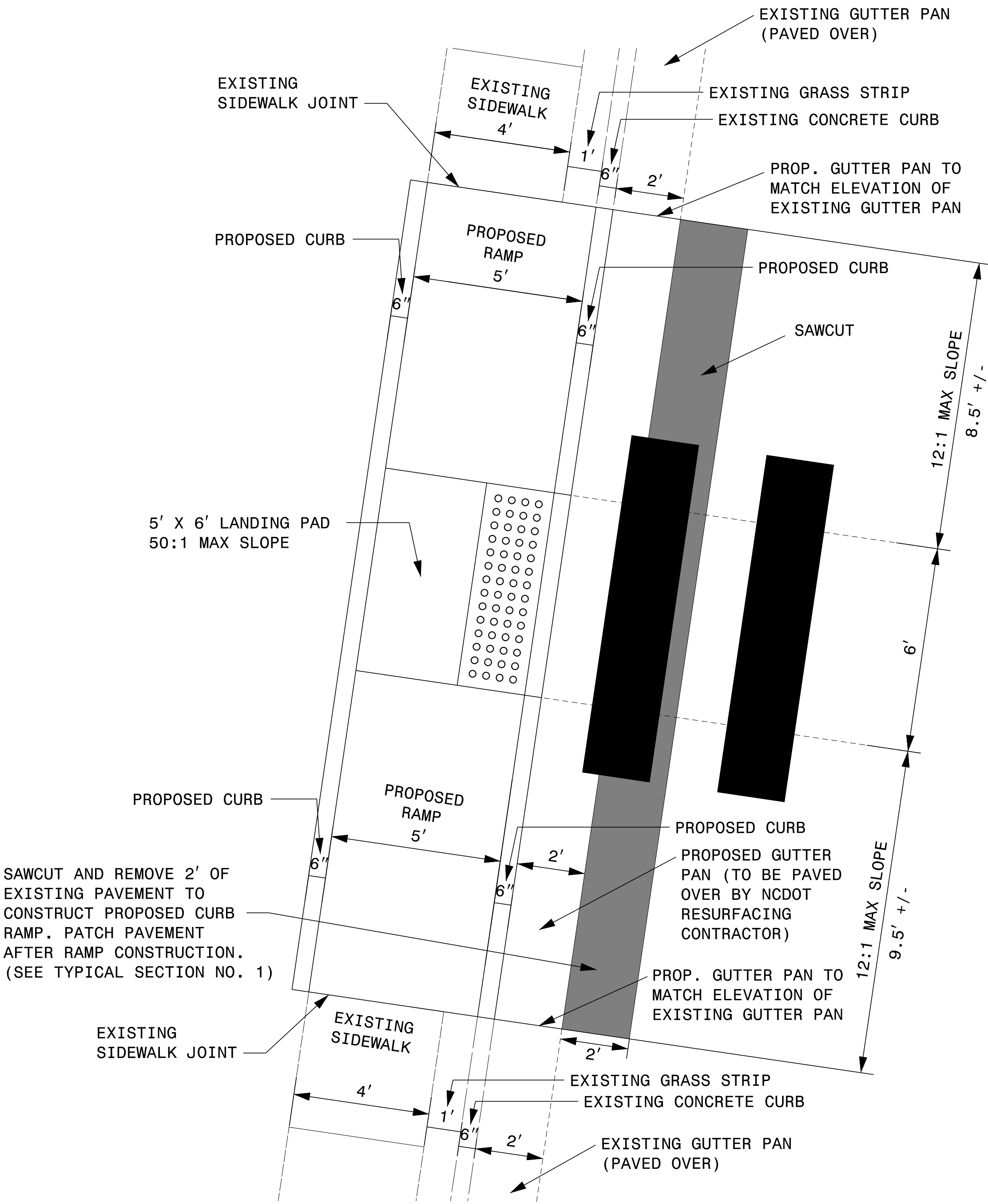
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN TWO 1.5" LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	2'-6" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: PAVEMENT DESIGN IS REUSED FROM PREVIOUS CHAPEL HILL MID-BLOCK PROJECTS. NO OFFICIAL PAVEMENT DESIGN PROVIDED FOR PROJECT



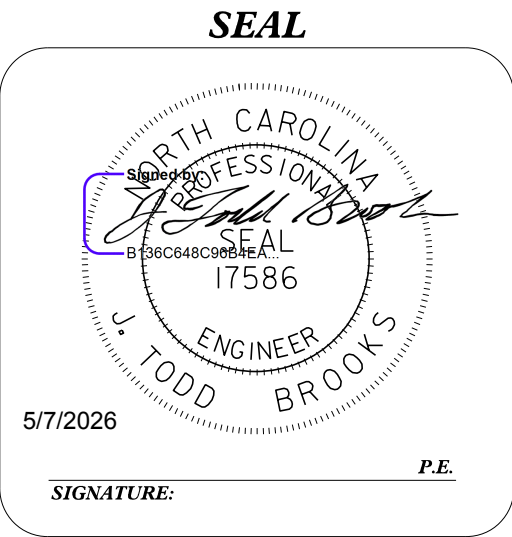
TYPICAL SECTION NO. 1

* SAWCUT EXISTING PAVEMENT A MINIMUM OF 2' FROM PLACEMENT OF NEW CURB AND GUTTER



TYPE 2 CURB RAMP WITH NO GRASS STRIP

(REFER TO NCDOT RSD NO. 848.06, SHEET 8 OF 13 FOR ADDITIONAL DETAILS)



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SUITE 410
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Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date
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TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

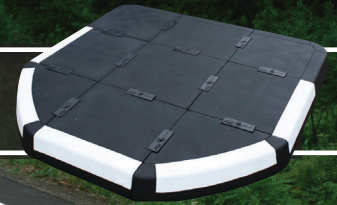
Midblock Pedestrian Crossing
NC 85 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	SPM-4
Scale	AS SHOWN



RediPave Modular Median™

Installation Instructions

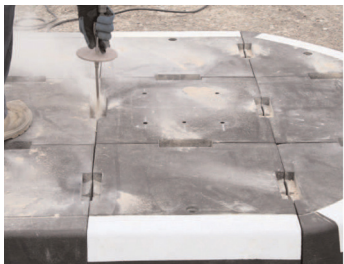


1. Insure proper maintenance of traffic is set up to ensure the safety of the workers, motorists and pedestrians.

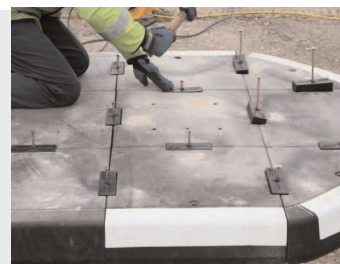


2. Mark position on road for location of medians and assemble the Redipave modules accordingly.

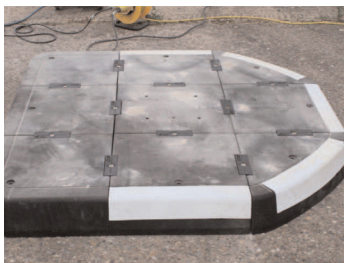
3. Ensure all module joints are butted tightly together. Start from the middle sections of the RediPave, and with a 19/32-in. drill bit, drill through the holes to a depth of 10.5 inches or greater. The drill used will be an electric Hilti T15 or T21 hammer drill (or similar) powered by a generator and a suitable power extension cord.



4. Blow out anchor holes using a long-nosed air gun, powered by a 120-psi portable compressor, Insert resin starting at base of hole, 2 to 3 pumps required using a resin gun.

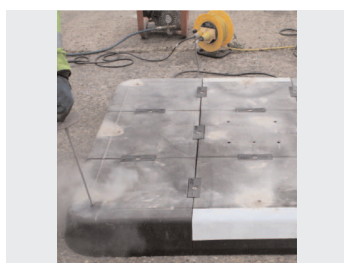
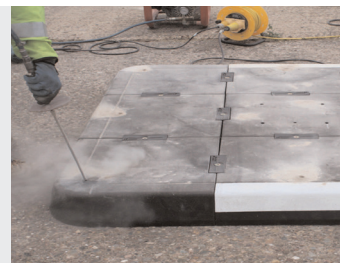


5. Insert torx screw through black plastic anchor block and attach RediPlug and tap down to surface level. Tighten with impact wrench; ensuring torx screw is firmly seated.



6. Repeat drilling, blowing, and resin for remaining middle holes and use black plastic anchor block to secure median. Once middle sections have been completed, drill remaining outside holes and blow out anchor holes using the long-nosed air gun. Thoroughly blow out holes and insert resin starting at base of hole, 2 to 3 pumps required per hole.

Warning - resin will harden within 25 minutes or less.



7. Insert torx screw and plastic washer into RediPlug. Tap assembly down to 2 3/4-in. above module surface and tighten with impact wrench, ensuring washer is firmly seated.



8. Remove all work debris, maintenance of traffic signs and barriers from site.

Installation Tools Checklist

	Orca Traffic Separator	RediPave Modular Median	RediPave Splitter	Traficop Speed Cushion	SiteCop Plus Speed Hump	SiteCop Speed Bump	RediPave Delineator Kit	Orca Delineator	Got It!	Notes
Equipment										
Heavy Duty SDS-Plus Hammer Drill	X	X	X	X	X	X		X		Drilling holes for anchor screws in pavement
3000 Watt plus Generator	X	X	X	X	X	X		X		Power for drill (Larger for multiple drills or electric compressor)
75-ft. Heavy duty extension cord	X	X	X	X	X	X		X		Power cord for drills
120-psi. Portable air compressor	X	X	X	X	X	X		X		Air gun and impact wrench (Gas powered preferred)
1/2-in. Pneumatic Impact Wrench	X	X	X	X	X	X				Anchoring screws
50-ft. Pneumatic hose	X	X	X	X	X	X		X		Air gun and impact wrench (with proper fittings for wrench and air gun)
3/8-in. Standard cordless drill							X			Drilling delineator holes
Specialty Tools										
12-in. Long Nose Air Gun (For Blowing out drilled holes)	X	X	X	X	X	X		X		
9/16-in. x 12-in. SDS-Plus Masonry Drill Bit (For drilling all holes)	X	X	X	X	X	X				1 per 150 Holes
Resin Cartridge Gun (for resin cartridge)	X	X	X	X	X	X		X		
1/2-in. Drive T40 Torque Bit (For anchor countersunk screws)		X	X	X						1 per 150 Anchors
1/2-in. Drive 17 mm Deep Socket (For hex head coach screws)	X			X	X	X				1 per 200 Anchors
1-in. x 10-in. SDS-Plus Masonry Drill (For drilling anchor holes)								X		1 per 100 Holes
19/32-in. HSS Drill Bit							X			1 per 100 Holes
6 mm Short Arm Hex Key							X			
10 mm Long Arm Hex Key							X			

Standard Tools (Suggested for all installs)

- GogglesWear for eye protection while drilling and blowing
 - Rubber MalletTapping in anchor assemblies
 - Ball Peen HammerTapping in anchor assemblies
 - 1/2-in. RatchetBackup manual install
 - Vice GripsReversing stripped anchors
 - Utility KnifeVarious uses
- BrushSweeping debris from drilling
 - Work GlovesHand Protection
 - Retroreflective Safety VestPersonal Protection
 - 25-ft. Measuring TapeAssist in layout
 - Pavement Marking/ Carpenter's CrayonAssist in layout

Common Issues

1. Not all tools are present (e.g. no impact wrench)
 2. Tools are not adequate in size or strength for efficiency (e.g. small compressor, non-SDS drill)
 3. No backhoe and crosswalk package
4. Not loading all components (e.g. forgetting the anchor plugs from shipment)
 5. Not enough people to assist (e.g. should have about 4 people (working) to move things along)
 6. Poor Maintenance of Traffic (We all want to make it home)

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

APPLICABLE STANDARDS

A) PROVIDE TRAFFIC CONTROL DEVICES AND SIGNS WHICH ARE ON THE NCDOT APPROVED PRODUCTS LIST (APL). COMPLY WITH THE FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2024 AND APPLICABLE NCDOT ROADWAY STANDARD DRAWINGS, JANUARY 2024.

TIME RESTRICTIONS

B) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS

ROAD NAME	DAY AND TIME RESTRICTIONS
MARTIN LUTHER KING JR. BLVD (NC 86)	MONDAY THRU FRIDAY 7:00 AM TO 9:00 AM 4:00 PM TO 6:30 PM SATURDAY BY APPROVAL ONLY SUNDAY ANYTIME

HOLIDAY AND HOLIDAY WEEKEND

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR’S, BETWEEN THE HOURS OF 6:00 AM DECEMBER 31ST TO 6:00 PM JANUARY 2ND. IF NEW YEAR’S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 PM THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 6:00 PM MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 6:00 PM TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE DAY AFTER INDEPENDENCE DAY.
- IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 6:00 PM TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 6:00 PM MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

SPECIAL EVENTS

- FOR UNIVERSITY OF NORTH CAROLINA HOME BASKETBALL GAMES OCCURRING AT THE DEAN E. SMITH CENTER BETWEEN TWO (2) HOURS BEFORE THE START OF THE BASKETBALL GAME AND TWO (2) HOURS AFTER THE END OF THE BASKETBALL GAME.
- FOR UNIVERSITY OF NORTH CAROLINA HOME FOOTBALL GAMES OCCURRING AT KENAN STADIUM BETWEEN THREE (3) HOURS BEFORE THE START OF THE FOOTBALL GAME AND THREE (3) HOURS AFTER THE END OF THE FOOTBALL GAME.

GENERAL NOTES CONT.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY WITHIN THE SAME LOCATION.

TRAFFIC PATTERN ALTERATIONS

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO THE TRAFFIC PATTERN ALTERATION.

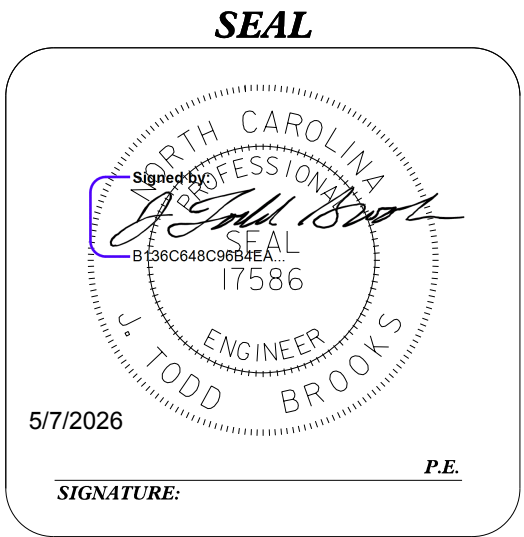
SIGNING

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

TRAFFIC CONTROL DEVICES

I) WHEN LANE CLOSURES ARE NOT IN EFFECT, MOVE CHANNELIZING DEVICES TO EDGE OF TRAVELWAY AND/OR STOCKPILE DEVICES AS APPROVED BY THE ENGINEER. DO NOT BLOCK ANY SIDEWALKS WITH CHANNELIZING DEVICES WHEN EITHER REMOVING OR INSTALLING THEM.

J) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING.



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Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date

Firm Name and Address

TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address

Midblock Pedestrian Crossing
NC 85 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	TMP-1
Date	
Scale NONE	

Curb Ramp and Crosswalk Package
Bid: Q27-104 Town of Chapel Hill, North Carolina
September 4, 2026

PHASING

PHASE I

- STEP 1:

USING NCDOT RSD NO. 1101.01, SHEET 3 OF 3, INSTALL WORK ZONE ADVANCE WARNING SIGNS ON MARTIN LUTHER KING JR. BLVD. (NC 86), STEPHENS ST. AND CENTRAL PARK LANE.
- INSTALL AND COVER THE PEDESTRIAN DETOUR SIGNING SHOWN ON SHEETS TMP-3 AND TMP-4.
- AS PER THE TOWN OF CHAPEL HILL, RELOCATE THE BUS STOP ON THE EAST SIDE OF NC 86 AT UNIVERSITY APARTMENTS. SEE SHEET TMP-3.
- STEP 2:

CLOSE THE PORTION OF THE EAST SIDE SIDEWALK AS SHOWN ON SHEETS TMP-3 AND TMP-4. UNCOVER THE PEDESTRIAN DETOUR SIGNING INSTALLED DURING PHASE I, STEP 1 AND DETOUR PEDESTRIAN TRAFFIC TO THE WEST SIDE SIDEWALK AS SHOWN ON SHEETS TMP-3 AND TMP-4. SIDEWALK CLOSURE TO REMAIN IN EFFECT DURING CONSTRUCTION OF THE EAST SIDE CURB RAMP AND THE SUBSEQUENT TIME NEEDED FOR THE CONCRETE TO CURE AND SUPPORT PEDESTRIAN TRAFFIC.
- STEP 3:

CLOSE THE OUTSIDE NORTHBOUND LANE OF NC 86 AS SHOWN ON SHEETS TMP-3 AND TMP-4. CONSTRUCT THE PROPOSED EAST SIDE CURB RAMP AS SHOWN IN THE CONSTRUCTION PLANS.
- INSTALL EAST SIDE PROPOSED SIGNING AND RECTANGULAR RAPID FLASHING BEACON AS PER THE SIGNING PLANS. DO NOT ACTIVATE THE EAST SIDE RECTANGULAR RAPID FLASHING BEACON DURING THIS PHASE AND STEP.
- STEP 4:

PLACE SKINNY DRUMS ALONG THE LENGTH OF THE NEWLY BUILT EAST SIDE CURB RAMP AS SHOWN IN INSET 3 ON SHEET TMP-3. REOPEN THE OUTSIDE NORTHBOUND LANE OF NC 86 TO TRAFFIC.
- STEP 5:

ONCE THE RECENTLY CONSTRUCTED EAST SIDE CURB RAMP HAS CURED, PLACE SKINNY DRUMS OR DRUMS IN THE GUTTER PAN OF THAT EAST SIDE CURB RAMP AND PEDESTRIAN CHANNELIZING DEVICE AS SHOWN IN INSET 3 ON SHEET TMP-5. REMOVE THE PHASE I, STEP 1 PEDESTRIAN DETOUR SIGNS AND REOPEN THE SIDEWALK ON THE EAST SIDE OF NC 86. RESTORE SERVICE AT THE EXISTING NC 86 EAST SIDE BUS STOP AT UNIVERSITY APARTMENTS.

PHASING – CONT.

PHASE II

- STEP 1:

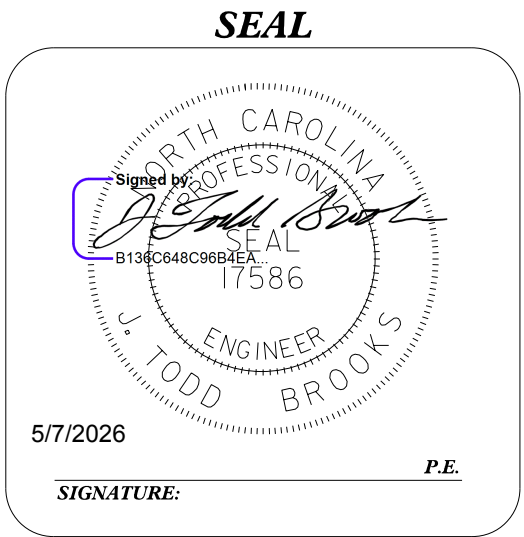
INSTALL AND COVER THE PEDESTRIAN DETOUR SIGNING SHOWN ON SHEETS TMP-5 AND TMP-6.
- STEP 2:

CLOSE THE PORTION OF THE WEST SIDE SIDEWALK AS SHOWN ON SHEETS TMP-5 AND TMP-6. UNCOVER THE PEDESTRIAN DETOUR SIGNING INSTALLED DURING PHASE II, STEP 1 AND DETOUR PEDESTRIAN TRAFFIC TO THE EAST SIDE SIDEWALK AS SHOWN ON SHEETS TMP-5 AND TMP-6. SIDEWALK CLOSURE TO REMAIN IN EFFECT DURING CONSTRUCTION OF THE WEST SIDE CURB RAMP AND THE SUBSEQUENT TIME NEEDED FOR THE CONCRETE TO CURE AND SUPPORT PEDESTRIAN TRAFFIC.
- STEP 3:

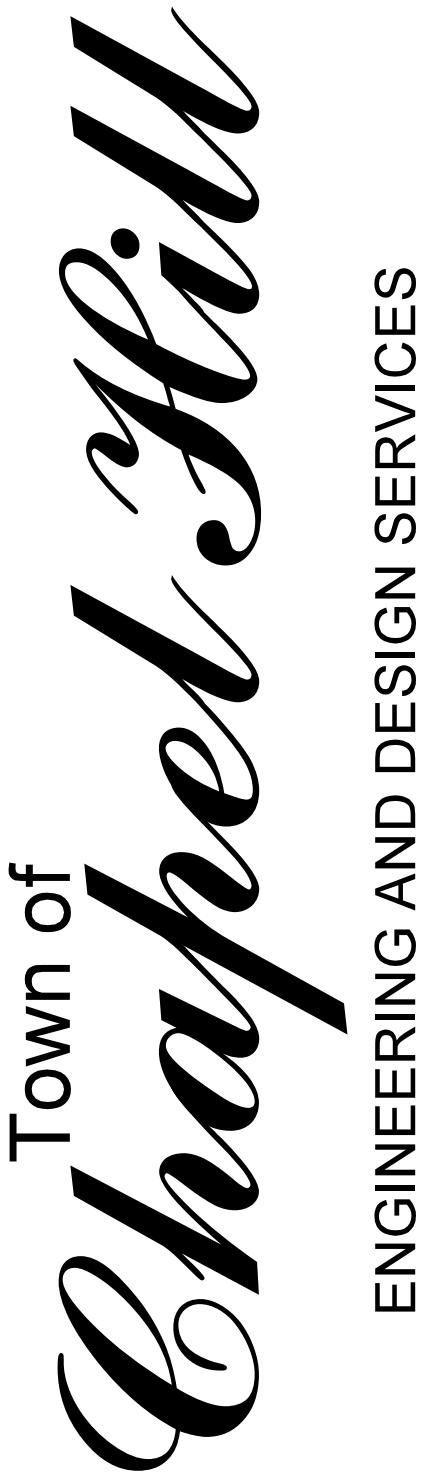
CLOSE THE OUTSIDE SOUTHBOUND LANE OF NC 86 AS SHOWN ON SHEETS TMP-5 AND TMP-6. CONSTRUCT THE PROPOSED WEST SIDE CURB RAMP AS SHOWN IN THE CONSTRUCTION PLANS.
- INSTALL WEST SIDE PROPOSED SIGNING AND RECTANGULAR RAPID FLASHING BEACON AS PER THE SIGNING PLANS. DO NOT ACTIVATE THE WEST SIDE RECTANGULAR RAPID FLASHING BEACON DURING THIS PHASE AND STEP.
- STEP 4:

PLACE SKINNY DRUMS ALONG THE LENGTH OF THE NEWLY BUILT WEST SIDE CURB RAMP AS SHOWN IN INSET 2 ON SHEET TMP-5. REOPEN THE OUTSIDE SOUTHBOUND LANE OF NC 86 TO TRAFFIC.
- STEP 5:

ONCE THE RECENTLY CONSTRUCTED WEST SIDE CURB RAMP HAS CURED, PLACE SKINNY DRUMS OR DRUMS IN THE GUTTER PAN OF THAT WEST SIDE CURB RAMP AND PEDESTRIAN CHANNELIZING DEVICE AS SHOWN IN INSET 1 ON SHEET TMP-8. REMOVE THE PHASE II, STEP 1 PEDESTRIAN DETOUR SIGNS AND REOPEN THE SIDEWALK ON THE WEST SIDE OF NC 86. RESTORE SERVICE AT THE EXISTING NC 86 WEST SIDE BUS STOP.



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TOWN OF CHAPEL HILL

PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-2
Scale	NONE

PHASING – CONT.

PHASE III

STEP 1: CONTINUE TO CLOSE THE RECENTLY CONSTRUCTED EAST AND WEST SIDE CURB RAMPS AS SHOWN IN INSETS 1 & 2 ON SHEET TMP-8.

STEP 2: CLOSE THE FOLLOWING LANES OF NC 86 AS SHOWN ON SHEETS TMP-7 AND TMP-8:

- NORTHBOUND INSIDE THROUGH LANE
- SOUTHBOUND INSIDE THROUGH LANE
- CENTER TURN LANE

INSTALL TYPE III BARRICADE AND R3-2 SIGNS AS SHOWN ON SHEETS TMP-7 AND TMP-8.

CONSTRUCT THE NC 86 PEDESTRIAN REFUGE ISLAND AS SHOWN IN THE CONSTRUCTION PLANS. SEE SHEET TMP-8.

USING THE PHASE III, STEP 2 LANE CLOSURES SHOWN ON SHEETS TMP-7 AND TMP-8, PERFORM THE FOLLOWING AS PART OF THIS STEP’S WORK:

- THE PEDESTRIAN REFUGE ISLAND FINAL SIGNING, TUBULAR MARKERS AND RECTANGULAR RAPID FLASHING BEACONS AS PER THE SIGNING PLAN. DO NOT ACTIVATE THE RECTANGULAR RAPID FLASHING BEACONS DURING THIS PHASE AND STEP.
- THE CENTER LANE’S FINAL PAVEMENT MARKINGS AS PER THE PAVEMENT MARKING PLAN.

REOPEN THE NORTHBOUND AND SOUTHBOUND INSIDE THROUGH LANES DURING PERIODS OF CONSTRUCTION INACTIVITY. SEE INSET 3 ON SHEET TMP-8 FOR SKINNY DRUM AND R3-2 SIGNING PLACEMENT AROUND THE PEDESTRIAN REFUGE ISLAND DURING PERIODS OF INACTIVITY. REIMPLEMENT THE PHASE III, STEP 2 LANE CLOSURES WHEN WORK RESUMES.

STEP 3: USING NCDOT RSD 1101.02, SHEET 3 OF 19, PLACE FINAL CROSSWALK MARKINGS, LANE LINES AND YIELD MARKINGS AS PER THE PAVEMENT MARKING PLAN.

PHASE IV

STEP 1: ACTIVATE THE PROJECT’S RECTANGULAR RAPID FLASHING BEACONS.

STEP 2: OPEN THE EAST AND WEST CURB RAMPS TO PEDESTRIAN TRAFFIC.

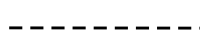
STEP 3: REMOVE WORK ZONE ADVANCE WARNING SIGNS INSTALLED DURING PHASE I, STEP 1. REMOVE ANY REMAINING TRAFFIC CONTROL DEVICES FROM THE PROJECT LIMITS.

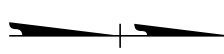
LEGEND

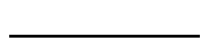
GENERAL

 DIRECTION OF TRAFFIC FLOW

 DIRECTION OF PEDESTRIAN TRAFFIC FLOW

 EXIST. PVMT.

 NORTH ARROW

 PROPOSED PVMT.

 WORK AREA

SIGNALS

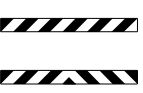
 EXISTING

PAVEMENT MARKINGS

 EXISTING LINES

 TEMPORARY LINES

TRAFFIC CONTROL DEVICES

 BARRICADE (TYPE III)

 PEDESTRIAN CHANNELIZING DEVICE

 DRUM

 SKINNY DRUM

 FLASHING ARROW BOARD

 FLAGGER

TEMPORARY SIGNING

 PORTABLE SIGN

 STATIONARY SIGN



No.	Revision/Issue	Date

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TOWN OF CHAPEL HILL

PUBLIC WORKS DEPARTMENT

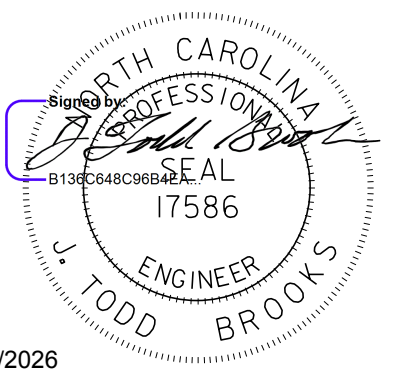
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516–8173

Project Name and Address

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-2A
Scale	NONE

SEAL

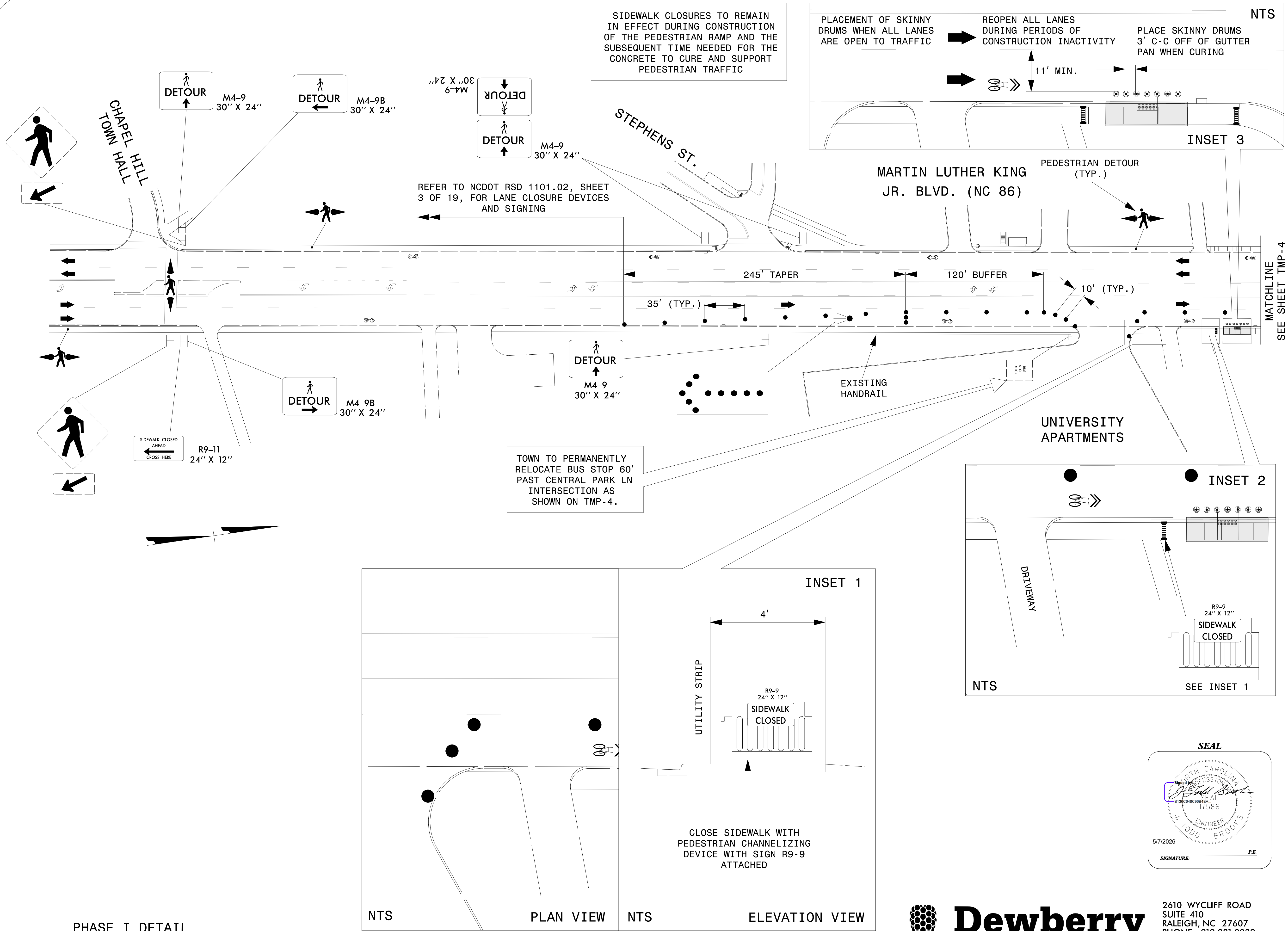


5/7/2026

SIGNATURE: P.E.



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RALEIGH, NC 27607
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Town of
Chapel Hill

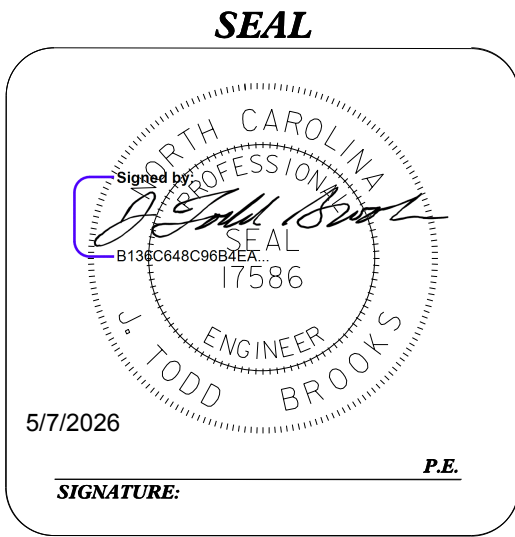
ENGINEERING AND DESIGN SERVICES

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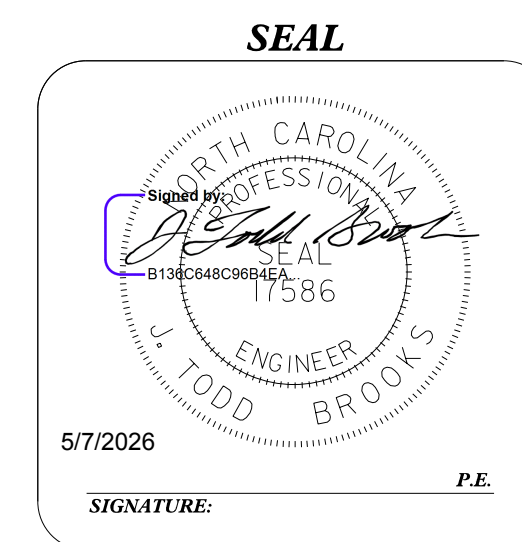
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PUBLIC WORKS DEPARTMENT
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address
Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-3
Scale	NONE



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929



Dewberry

Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

Firm Name and Address

TOWN OF CHAPEL HILL

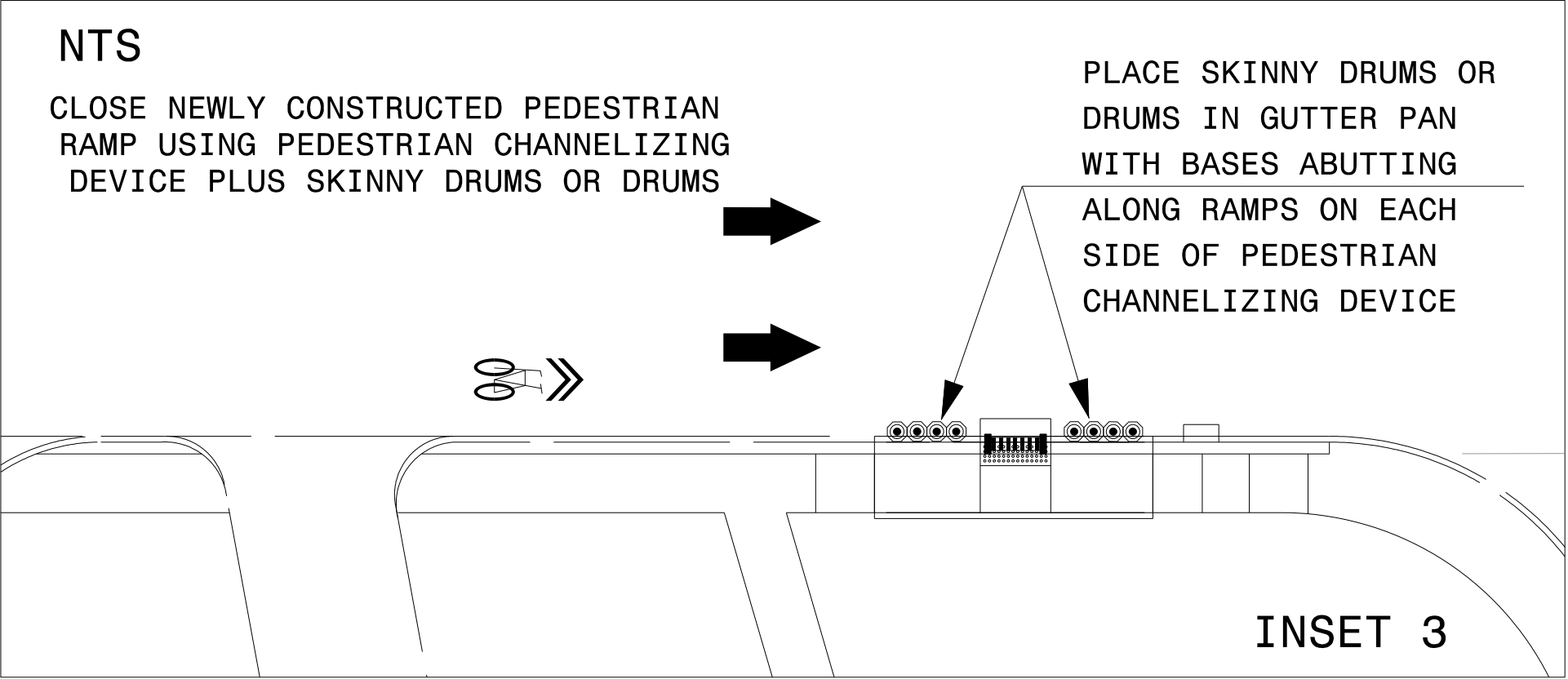
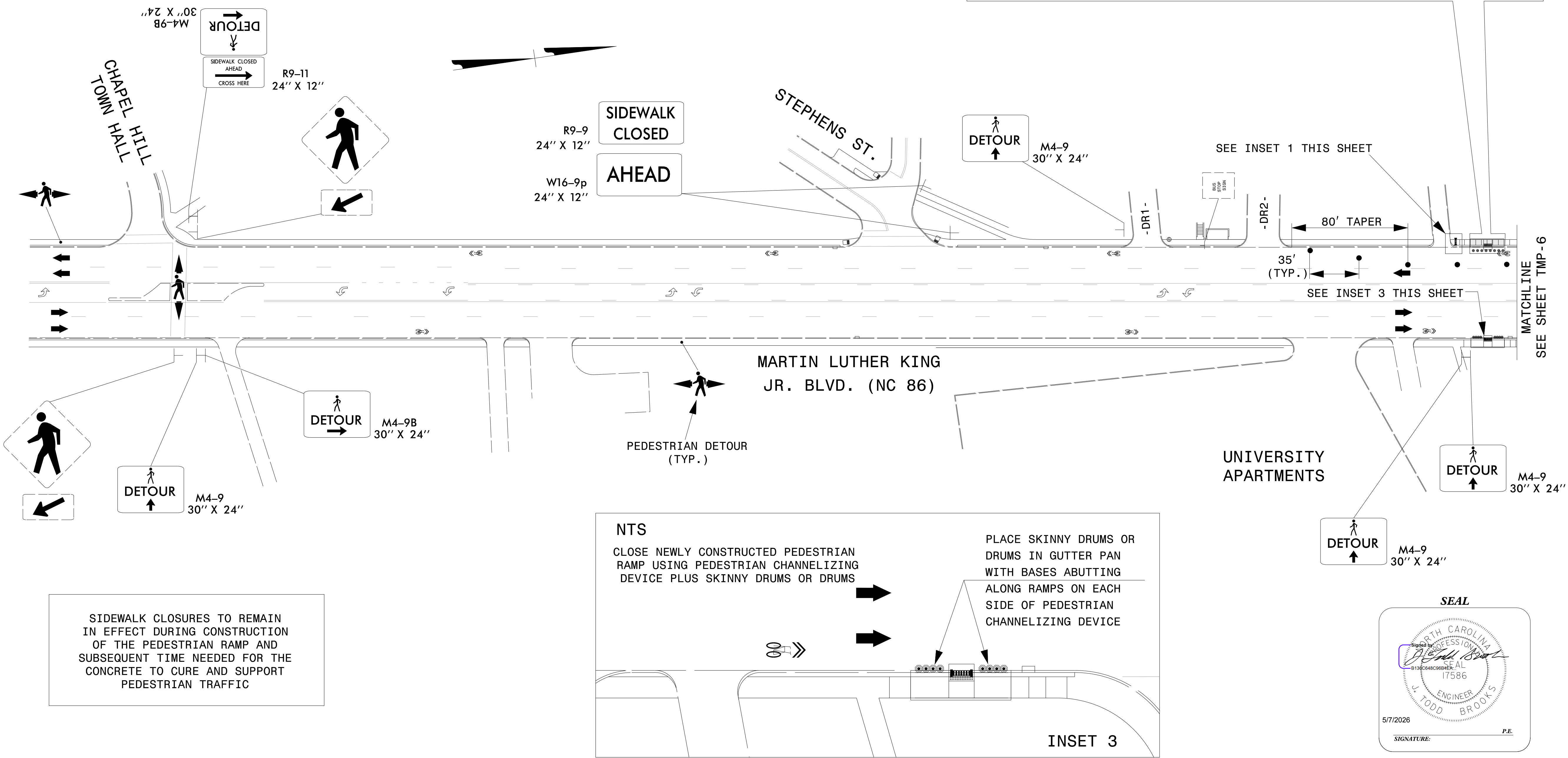
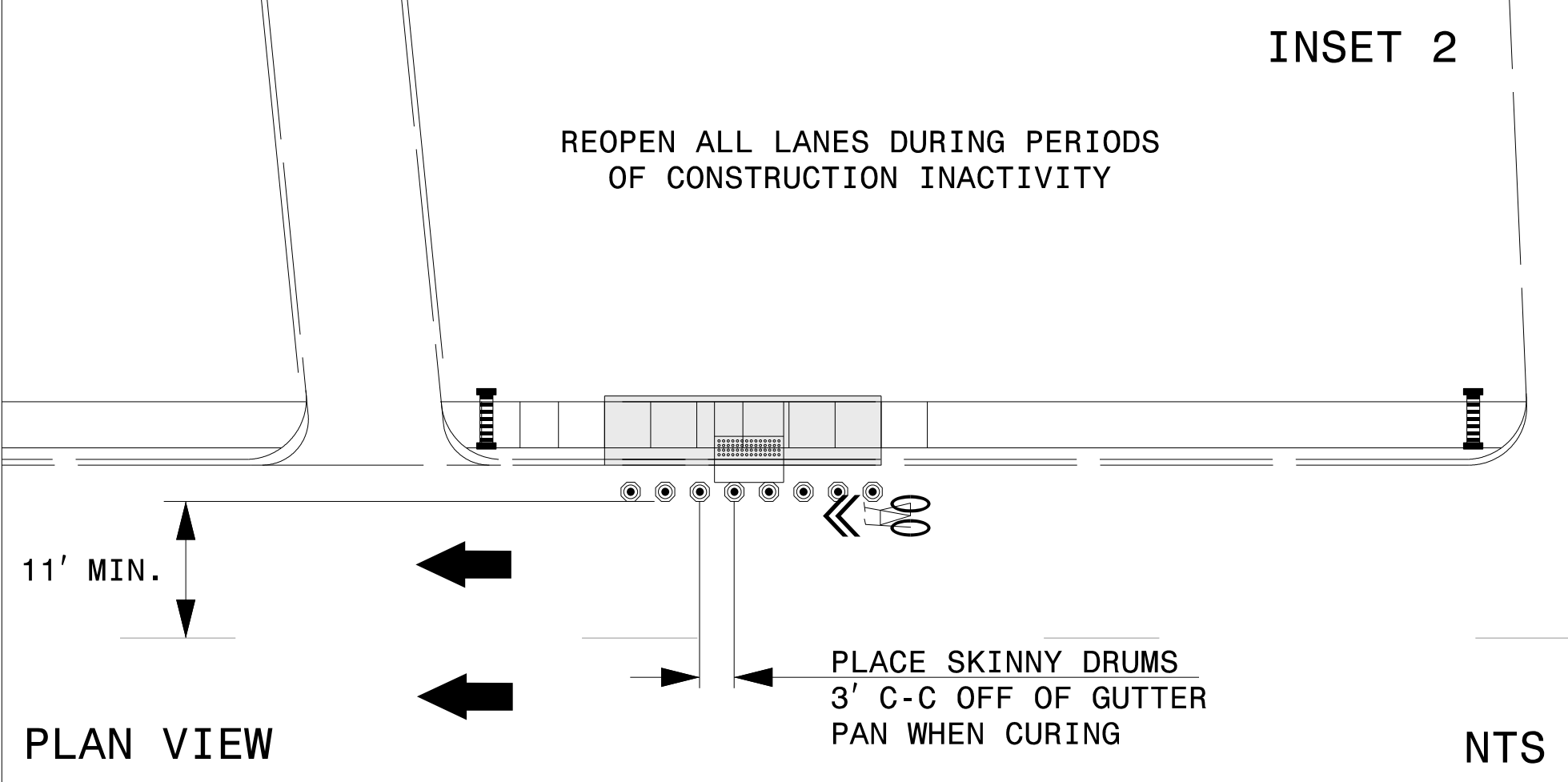
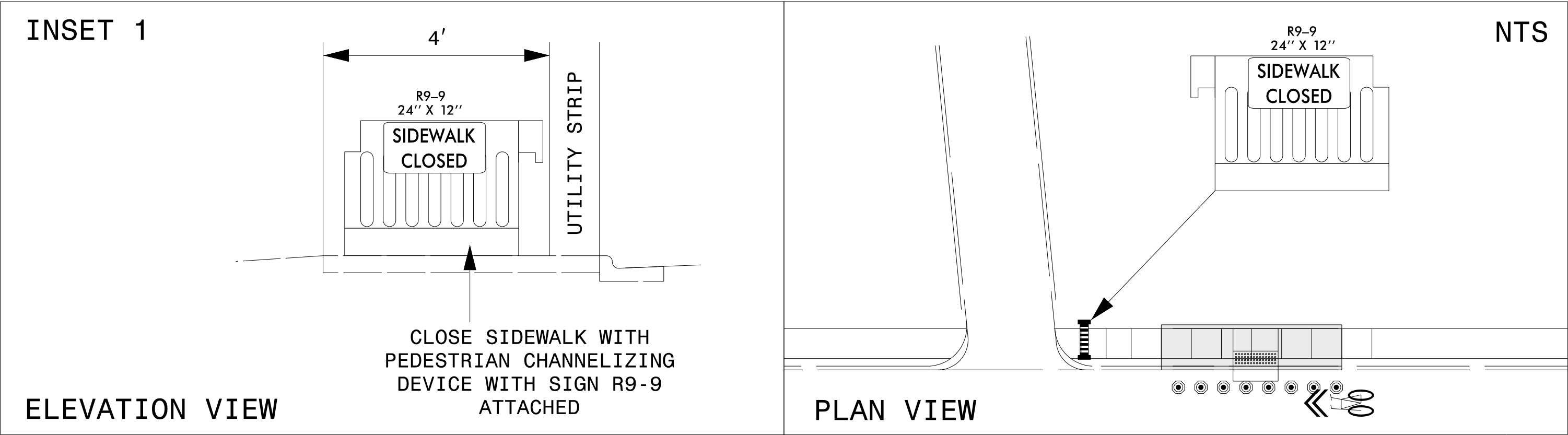
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet TMP-4
Date	
Scale NONE	



PHASE II DETAIL



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date

Firm Name and Address
TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address
Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-5
Scale	NONE

PLAN VIEW

NTS

ELEVATION VIEW

NTS

INSET 1

MATCHLINE
SEE SHEET TMP-5

CENTRAL PARK
LANE

MARTIN LUTHER KING JR. BLVD. (NC 86)

LONGVIEW
STREET



DETOUR
↑
M4-9
30" X 24"

REFER TO NCDOT RSD 1101.02, SHEET
3 OF 19, FOR LANE CLOSURE DEVICES
AND SIGNING

245' TAPER

35'
(TYP.)

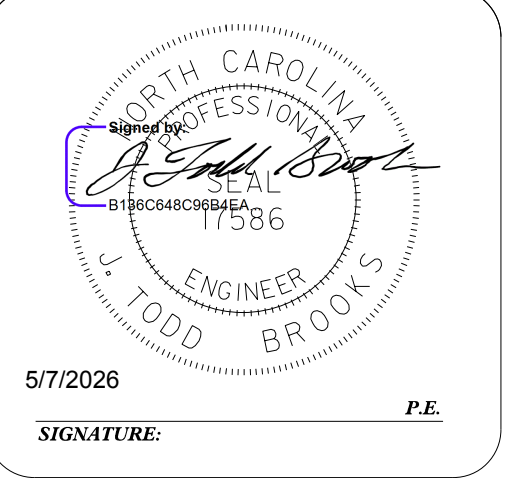
SIDEWALK CLOSED
AHEAD
←
CROSS HERE
R9-11
24" X 12"

PEDESTRIAN DETOUR
(TYP.)

DETOUR
←
M4-9B
30" X 24"

DETOUR
↑
M4-9
30" X 24"

SEAL



PHASE II DETAIL



2610 WYCLIFF ROAD
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RALEIGH, NC 27607
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NC COA No. F-0929

Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

No.	Revision/Issue	Date

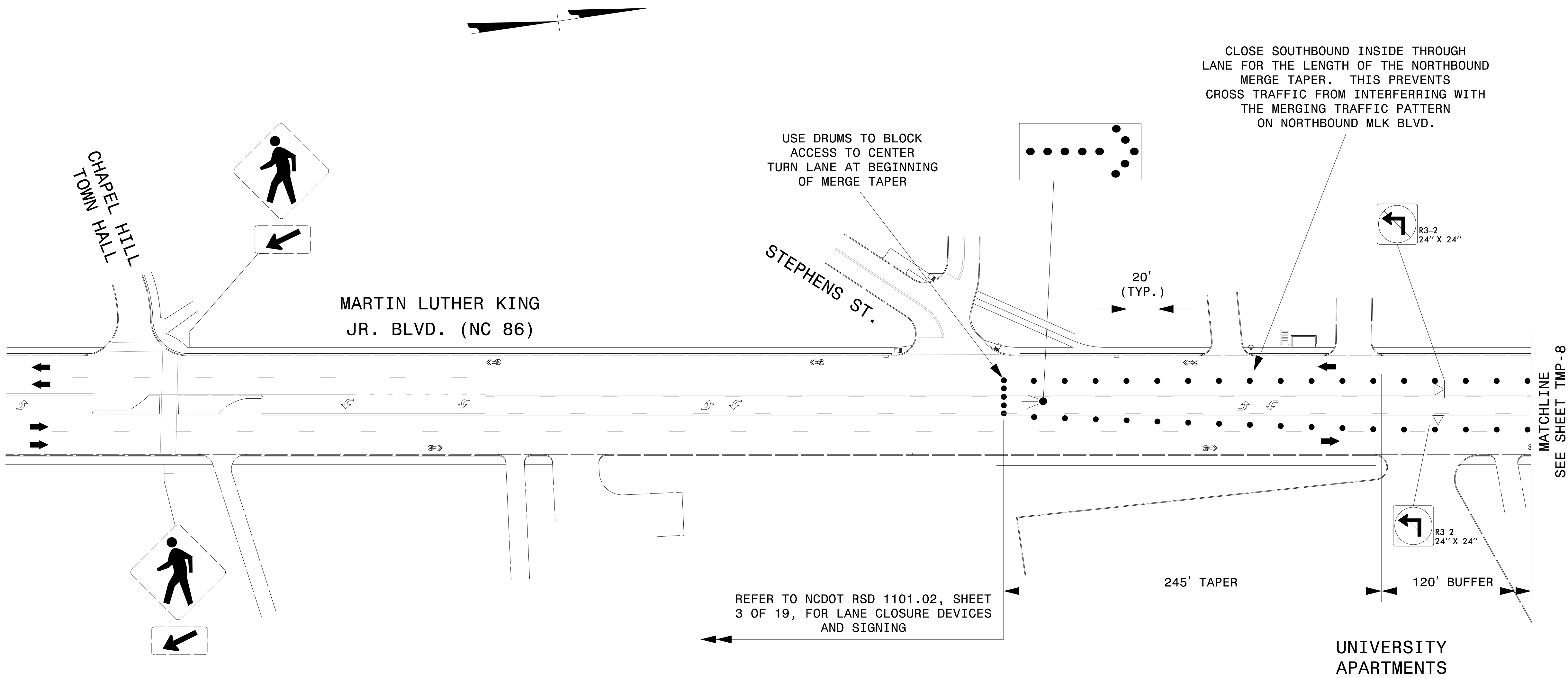
Firm Name and Address
TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT

6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address

Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-6
Scale	NONE



PHASE III DETAIL



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

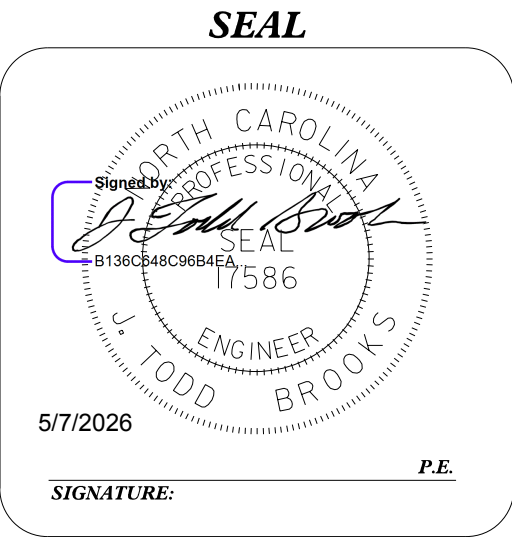
Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

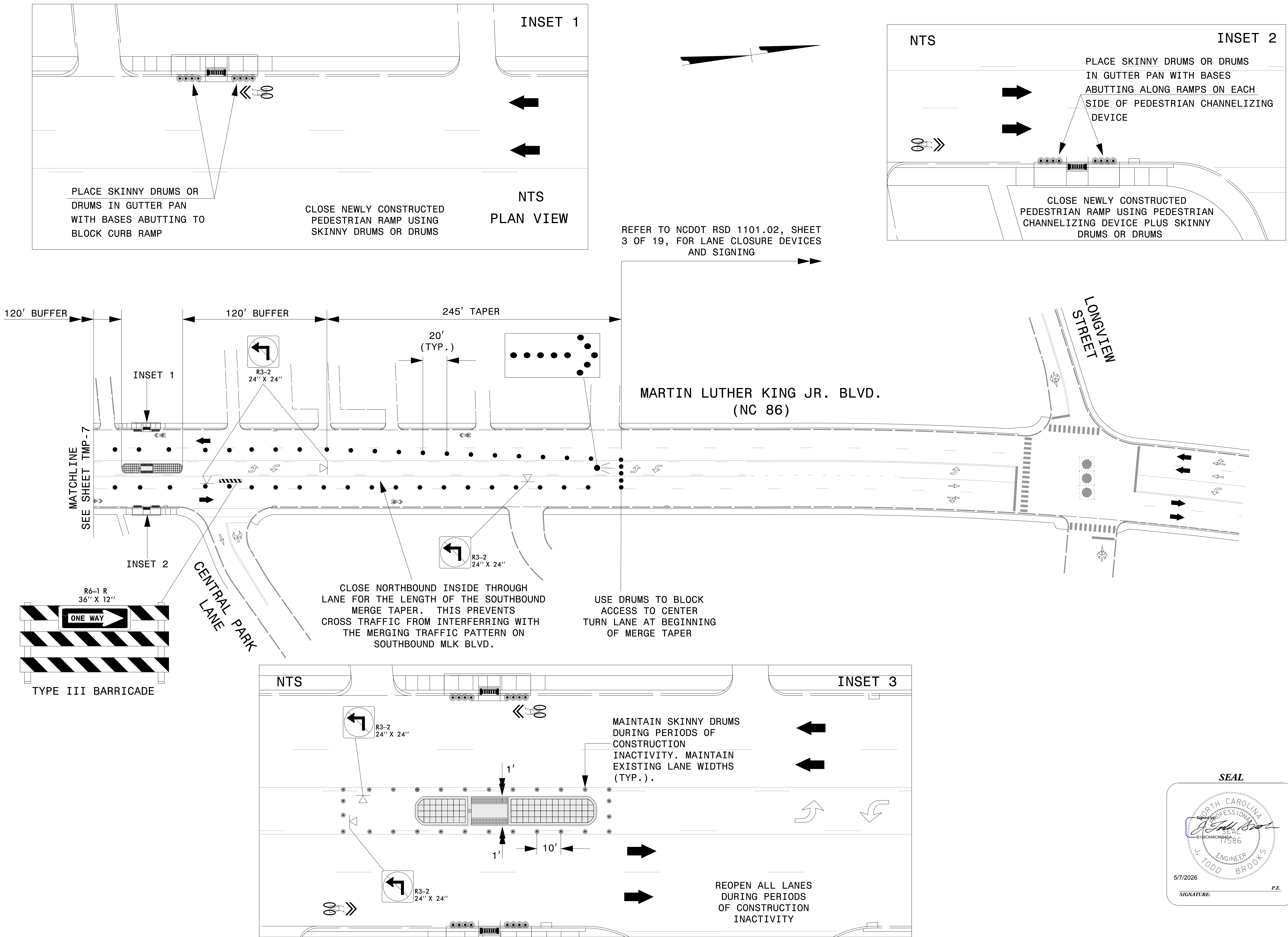
No.	Revision/Issue	Date

Firm Name and Address
TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

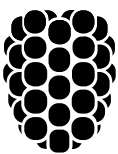
Project Name and Address
Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-7
Scale	NONE



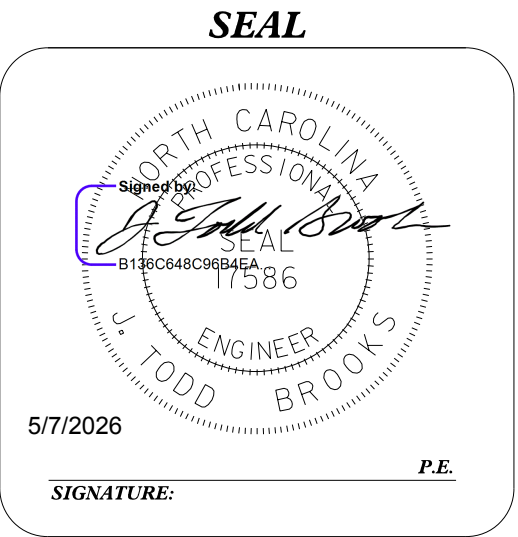


PHASE III DETAIL



Dewberry

2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929



No.	Revision/Issue	Date

Firm Name and Address
TOWN OF CHAPEL HILL
PUBLIC WORKS DEPARTMENT
6850 MILLHOUSE ROAD
CHAPEL HILL, NC 27516-8173

Project Name and Address
Midblock Pedestrian Crossing
NC 86 (Martin Luther King Jr Blvd)
south of Central Park Lane

Project	Sheet
Date	TMP-8
Scale	NONE

Town of
Chapel Hill
ENGINEERING AND DESIGN SERVICES

PROJECT SPECIAL PROVISIONS

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) South of Central Park Lane

Prepared For:

Town of Chapel Hill



Public Works Department
6850 Millhouse Road
Chapel Hill, NC 27516-81734

Prepared by:



Dewberry®

Dewberry Engineers Inc.
2610 Wycliff Road, Suite 410
Raleigh, NC 27607
Phone: (919) 881-9939

May 7, 2026

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

STANDARD SPECIAL PROVISION
ERRATA

(1-16-24)(Rev. 9-16-25)

Z-4

Revise the *2024 Standard Specifications* as follows:

Division 3

Page 3-5, Article 305-2 MATERIALS, after line 16, replace " 1032-3(A)(7)" with "1032-3" and add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Page 3-6, Article 310-2 MATERIALS, after line 9, add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Division 6

Page 6-15, Article 610-1 DESCRIPTION, line 20, replace "The work includes" with "The work includes, but is not limited to,".

Page 6-15, Article 610-1 DESCRIPTION, line 22, replace "applying the tack coat as specified." with "applying the tack coat in accordance with Section 605.".

Page 6-30, Article 610-14 DENSITY ACCEPTANCE, line 39, replace "QC process." with "QC process in accordance with Section 609.".

Page 6-31, Article 610-16 MEASUREMENT AND PAYMENT, line 13, replace "*Hot Mix Asphalt Pavement*" with "*Asphalt Concrete _____ Course, Type _____*".

Page 6-50, Subarticle 661-4(A) Equipment, lines 4-7, replace the first two sentences of the seventh paragraph with the following:

When an erected fixed stringline is utilized for longitudinal profile and cross slope control furnish and erect the necessary guide line for the equipment.

Division 8

Page 8-27, Article 846-1 DESCRIPTION, line 8, delete "4 inch" from the first paragraph.

Division 9

Page 9-17, Article 904-4 MEASUREMENT AND PAYMENT, prior to line 1, replace " Sign Erection, Relocate Type (Ground Mounted)" with "Sign Erection, Relocate Type ____ (Ground Mounted)".

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

Division 10

Page 10-51, Article 1024-4 WATER, prior to line 1, delete the “unpopulated blank row” in Table 1024-2 between “Time of set, deviation from control” and “Chloride Ion Content, Max.”.

Page 10-170, Subarticle 1081-1(C) Requirements, line 4, replace "maximum" with “minimum”.

Division 11

Page 11-11, Article 1135-3 CONSTRUCTION METHODS, lines 19-20, delete the third sentence of the first paragraph, “Do not use cones in the upstream taper of lane or shoulder closures for multi-lane roadways.”

Page 11-15, Article 1160-4 MEASUREMENT AND PAYMENT, line 24, replace “Where barrier units are moved more than one” with “Where barrier units are moved more than once”.

Division 15

Page 15-10, Article 1515-4 MEASUREMENT AND PAYMENT, lines 11, replace " All piping" with “All labor, the manhole, other materials, excavation, backfilling, piping”.

Division 16

Page 16-14, Article 1633-5 MEASUREMENT AND PAYMENT, line 20-24 and prior to line 25, delete and replace with the following " *Flocculant* will be measured and paid in accordance with Article 1642-5 applied to the temporary rock silt checks.”

Page 16-3, Article 1609-2 MATERIALS, after line 26, replace "Type 4" with “Type 4a”.

Page 16-25, Article 1644-2 MATERIALS, after line 22, replace "Type 4" with “Type 4a”.

Division 17

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 23, delete and replace “1.25” with “1-1/4”.

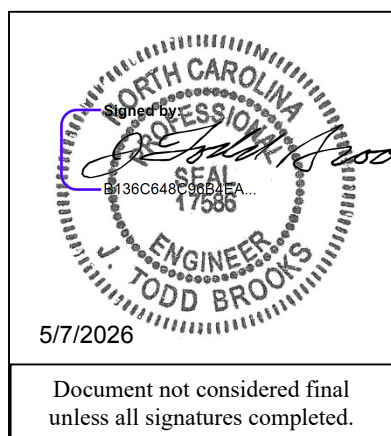
Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 24, delete and replace “)(1.25” with “, 1-1/4”.

CL

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane



Project Special Provisions

Prepared by:



Dewberry®

2610 Wycliff Road, Suite 410
Raleigh, NC 27607 • NCBEES # F-0929

GENERAL REQUIREMENTS

Materials, installation, work standards, and payment will be based on NCDOT *Standard Specifications for Roads and Structures*, dated January 2024, unless otherwise stated in these Project Special Provisions. For this project, reference to the “Department” may refer to the Town of Chapel Hill Engineering Department, at the discretion of the Engineer.

The Engineer shall be a representative of the Town of Chapel Hill Engineering Department.

These Sections of the Project Special Provisions consist of the requirements for midblock pedestrian improvement work and are generally written in the imperative mood. In sentences using the imperative mood, the subject, “*the Contractor*”, is implied. Also, implied in such language is “*shall*,” “*shall be*,” or similar wording and phrases. In material specifications, the subject may also be the supplier, fabricator, or manufacturer supplying the material, products, or equipment for use on the project. The NCDOT 2024 *Standard Specifications for Roads and Structures* will be referred to herein as “*Standard Specifications*”.

Conform to these Project Special Provisions, the Plans, the NCDOT *Roadway Standard Drawings*, and the *Standard Specifications*. The current edition of these specifications and publications in effect on the date of advertisement shall apply.

Revisions have been made to the *Standard Specifications*. These revisions have been incorporated into the applicable sections of these Project Special Provisions.

Unless otherwise stated in these Sections, furnish, store, deliver, and install all equipment, material, tools, and incidental hardware necessary to complete the required midblock pedestrian improvement work.

The intent of these Project Special Provisions is to describe the details of the construction and completion of the work that the Contractor undertakes to perform in accordance with the contract. It is understood that only the best general practice is to prevail where the Plans and Project Special Provisions describe portions of the work in general terms but not in complete detail.

In the event of conflict between these Project Special Provisions and the *Standard Specifications*, these Project Special Provisions shall govern.

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

The Engineer is responsible for administration and construction observation of the work.

Measurement and Payment

There will be no direct payment for the work covered by this Section. Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this section.

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

IN-STREET PEDESTRIAN CROSSING SIGN

Description

Install in-street pedestrian crossing signs furnished by the Town of Chapel Hill at the approach ends of pedestrian refuge islands at locations shown in the Plans.

Materials

For consistency with in-street pedestrian crossing signs in use at multiple other pedestrian crosswalks throughout Chapel Hill, the Town of Chapel Hill will provide for installation by the Contractor In-Street Pedestrian Crossing signs (R1-6) that are manufactured by Impact Recovery Systems along with surface mount fixed base and manufacturer-supplied or manufacturer-recommended anchor kit for firmly mounting the base to an asphalt pavement surface.

Contact the Town at least two (2) business days in advance to arrange pick-up of Town-furnished materials as follows:

- Pick-up Location: 6850 Millhouse Road, Chapel Hill, NC 27516
- Primary Contact: Dale May, 919-448-4389, dmay@chapelhillnc.gov
- Secondary Contact: Kurt Stolka, 919-969-4914, kstolka@chapelhillnc.gov

Return all unused materials to the Town following installation of the in-street pedestrian crossing sign according to these same procedures.

Construction Requirements

Premark the proposed locations of the in-street pedestrian crossing signs and obtain the Engineer’s approval prior to installation.

Surface mount on asphalt pavement the in-street pedestrian crossing signs at locations shown on the Plans using the manufacturer provided base and anchors. Follow the manufacturer’s installation instructions. Install assembly so that sign is facing away from the crosswalk.

Return all unused materials to the Town following installation of the in-street pedestrian crossing signs.

Measurement and Payment

Install In-Pavement Ped Crossing Sign will be measured and paid as the actual number of in-pavement pedestrian crossing signs installed and accepted. Payment will include pick-up of materials from the Town and transportation to the project site as well as return of unused materials to the Town.

Payment will be made under:

Pay Item	Pay Unit
Install In-Pavement Ped Crossing Sign	Each

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

TUBULAR MARKERS

Description

Install surface-mounted tubular markers to delineate the approach noses of pedestrian refuge islands as shown on the plans.

Materials

Comply with Article 1088-5 of the *Standard Specifications*.

For consistency with tubular markers in use at many other locations throughout Chapel Hill, provide tubular markers that are Safe-Hit® DuraPost® flexible channelizers. Provide tubular markers that are 36 inches high, 3 inches in diameter, and yellow in color with two 3-inch retroreflective white (silver) bands around the circumference of the tube spaced 3 inches apart starting 1 inch from top of tube. Retroreflective band shall be ASTM Type III or better.

Furnish each tubular marker with the manufacturer’s round surface mount base and base anchors required for mounting the tubular marker to an asphalt pavement surface.

Construction Requirements

Premark the proposed locations of the tubular markers and obtain the Engineer’s approval prior to installation.

Surface mount the in-street pedestrian crossing sign on the asphalt pavement surface at the locations shown in the plan. Rigidly attach the base of the sign to the pavement using manufacture-supplied anchors

Measurement and Payment

Install Tubular Markers (Fixed) will be measured and paid as the actual number of tubular markers satisfactorily placed and accepted by the Engineer.

Payment will be made under:

Pay Item	Pay Unit
Install Tubular Markers (Fixed)	Each

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

RETROREFLECTIVE SIGN POST STRIP**Description**

Furnish and install retroreflective sign post strips on all Contractor-furnished and installed sign posts on this project in accordance with the signing and pavement marking plans.

Materials

Furnish retroreflective sign post strips that are on the NCDOT Approved Products List (APL). Provide retroreflective sign post strips for all Contractor-furnished sign posts installed within the project limits. Provide retroreflective sign post strips on all square tube sign posts supporting RRBs and designated sign assemblies furnished and installed by the Contractor as shown on the Plans.

Provide retroreflective sign post strips made from NCDOT Grade B retroreflective sheeting applied to 0.080" sheet flat sheet aluminum. Provide strips that are the same color as the background color of the sign mounted on the post per MUTCD Section 2A.21. For example, provide strips that are white in color for sign posts on which Yield Here To Pedestrians (R1-5) signs are mounted and fluorescent yellow-green in color for sign posts on which Pedestrian Crossing (W11-2) warning signs are mounted. Provide strips for both the front and back of sign posts installed in the pedestrian refuge island in the center of the roadway.

Provide strips that are a minimum of 2 inches wide and of sufficient length to cover continuously the front of the support from bottom edge of the sign (i.e., W16-7P, W16-9P, R1-5L) to a point 2 feet above the projected edge of the adjacent roadway in accordance with MUTCD Section 2A.21. For sign posts to which a pedestrian pushbutton and R10-25 sign is attached, provide two strips, one for the section of sign post below the pushbutton and R10-25 sign and one for the post section between the R10-25 sign and the W16-7P sign.

Provide strips fabricated from durable, UV-stabilized plastic or aluminum panels. Provide all hardware and tamper-resistant fasteners required to securely fasten the strip to a perforated steel square tube sign post in accordance with the manufacturer's specifications.

Construction Requirements

Using manufacturer-recommend mechanical hardware and tamper-resistant fasteners, attach retroreflective sign post strips to the front (i.e., side facing approaching traffic) of steel square tube sign posts. Install sign post strips on both the front and back of posts installed in the pedestrian refuge island in the center of the road. Do not use straps or adhesives to mount the strip to the sign post. Do not attach strips to the sign post until after the post has been installed and all signs and pushbuttons have been attached to the post. Install strips continuously from bottom edge of the sign (i.e., W16-7P, W16-9P, R1-5L) to a point 2 feet above the projected edge of the adjacent roadway. For posts to which a pedestrian pushbutton and R10-25 sign is attached, install one strip on the section of sign post below the pushbutton and R10-25 sign and a

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

second strip on the post section between the R10-25 sign and the W16-7P sign. Do not mount signs or pushbuttons on top of sign post strips and do not drill or punch additional holes in sign post strips.

Measurement and Payment

Retroreflective Sign Post Strip (____) will be measured and paid the actual number of sign post faces to which sign post strips are attached, regardless of length of strip number of strips installed and according to the color of strip (e.g., FYG = fluorescent yellow-green; WH=White). All hardware and fasteners required to attach the strip to the sign post in accordance with the manufacturer’s recommendations and instructions will be considered incidental to furnishing and installing the retroreflective sign post strip.

Payment will be made under:

Pay Item	Pay Unit
Retroreflective Sign Post Strip (FYG)	Each
Retroreflective Sign Post Strip (WH)	Each

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

WARNING FLAG

Description

Furnish and install warning flag used to supplement signs in accordance with the plans and specifications.

Materials

(A) General

Furnish flags which are fluorescent orange in color. Each flag must be 18 inches square or larger and securely and permanently attached to one end of sturdy wooden dowel staff that is at least 24 inches long.

(B) Flag Material

Furnish fabric-type flags made of flexible, durable and waterproof material such as vinyl, vinyl coated or nylon that is rated for outdoor use. Do not provide cloth or mesh flags.

(C) Attachment Assembly

Provide all hardware, including staff holders, brackets, and fasteners, necessary to rigidly and securely attach the staffs of the warning flags to the back of the sign or sign post. Use attachment hardware for attaching flags to the back of sign panels that use non-intrusive measures such as waterproof adhesives or adhesive tapes to affix the flag brackets/holders to the back of the sign panel. Do not use mounting hardware that requires use of fasteners that penetrate the sign panel. Provide an attachment assembly that displays the two warning flags above the sign with the one flag angled to left at 30-45 degrees from vertical and the other flag angled to the right at the same angle.

(D) Approval

All materials are subject to the approval of the Engineer.

Construction Methods

Use warning flags to supplement signs by mounting the flags on the top portion of the sign that they are supplementing.

Use appropriate fastening methods to mount the flags to signs.

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

Measurement and Payment

Warning flags will be measured and paid as the actual number of warning flag sets used to supplement signs acceptably installed on the project. Payment includes all necessary attachment brackets, holders, fasteners and other hardware necessary for attaching the flag set to the sign in accordance with the Plans and this Project Special Provision.

Payment will be under:

Pay Item	Pay Unit
Warning Flags	Each

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

MODULAR ISLAND

Description

Install modular pedestrian refuge island furnished by the Town of Chapel Hill as shown on plans and described in these Project Special Provisions.

Materials

Town will furnish to the Contractor RediPave Modular Median™ modules required for the pedestrian refuge island shown in the Plans, associated fasteners and mounting hardware required to mount the modular pedestrian refuge island to the surface of asphalt pavement, and the manufacturers installation instructions.

Contact the Town at least two (2) business days in advance to arrange pick-up of Town-furnished materials as follows:

- Pick-up Location: 6850 Millhouse Road, Chapel Hill, NC 27516
- Primary Contact: Dale May, 919-448-4389, dmay@chapelhillnc.gov
- Secondary Contact: Kurt Stolka, 919-969-4914, kstolka@chapelhillnc.gov

Return all unused materials to the Town following installation of the modular median according to these same procedures.

Construction Methods

Pre-mark the location and shape of the proposed island and receive Town approval prior to installation of the modular island and any proposed pavement markings.

Collect materials from the Town and transport materials to the site.

Install island in accordance with RediPave Modular Median™ manufacturer’s instructions.

Return all unused materials to the Town following installation of the island.

Measurement and Payment

Install Modular Refuge Island will be paid at the contract lump sum for each modular island installed and accepted. Such price will be full compensation for transportation of materials and construction of the two-part island as shown on the Plans.

Payment will be under:

Pay Item	Pay Unit
Install Modular Refuge Island	Lump Sum

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

RECTANGULAR RAPID FLASHING BEACON SOLAR POWERED DISPLAY AND CONTROLLER ASSEMBLY

Description

Install Town-furnished rectangular rapid flashing beacon (RRFB) that is solar-powered and pedestrian activated. Ensure multiple RRFB units at a given crosswalk are synchronized.

Materials

The Town of Chapel Hill will furnish RRFB assemblies required for this project for installation by the Contractor. RRFB assembly includes RRFB, pushbutton with R10-25 sign, crosswalk lighting fixture, wireless communications, controller, battery, equipment cabinet, solar panel, W11-2 pedestrian crossing warning sign, W16-7p supplemental arrow, and square tube sign post with anchor sleeve. The Town will provide the Contractor with the RRFB manufacturer's installation instructions. The Town will provide the hardware and fasteners required to mount the RRFB, pushbutton, crosswalk lighting fixture, wireless communications, controller, battery, equipment cabinet, and solar panel to the Town-supplied sign post along with fasteners required to mount the sign post in its anchor sleeve. The Contractor will be responsible for providing fasteners to mount all signs to the sign post.

Contact the Town at least two (2) business days in advance to arrange pick-up of Town-furnished materials as follows:

Pick-up Location: 6850 Millhouse Road, Chapel Hill, NC 27516

Primary Contact: Dale May, 919-448-4389, dmay@chapelhillnc.gov

Secondary Contact: Kurt Stolka, 919-969-4914, kstolka@chapelhillnc.gov

Return all unused materials to the Town following installation of the RRFB assemblies according to these same procedures.

Construction Methods

For each approach to the RRFB location, use two RRFB assemblies installed at the crosswalk, one on the right-hand side of the roadway and one on the left-hand side of the roadway. Install the left-hand side assemblies back-to-back on a common post in the pedestrian refuge island in the center of the road as shown on the Plans rather than on the far-left side of the road. Install the RRFB on the same support as the associated W11-2 (Pedestrian) crossing warning sign and W16-7p plaque. Do not install an RRFB independent of the crossing signs for the approach the RRFB faces.

Ensure that the outside edges of the RRFB indications, including any housings, do not project beyond the outside edges of the W11-2 sign. Locate the RRFB between the bottom of the crossing warning sign and the top of the supplemental W16-7p plaque, rather than 12 inches above or below the sign assembly.

Town of Chapel Hill
Midblock Pedestrian Crossing
NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

Install pushbutton assembly below the RRFB and the W16-7p plaque. assembly on the right side (i.e., outside) of each approach. Mount the pushbutton at a minimum height of 3.5 feet but no higher than 4.0 feet above the adjacent pedestrian travel way.

Mount a pedestrian instructional sign R10-25 with legend “PUSH BUTTON TO TURN ON WARNING LIGHTS” adjacent to or integral with each pedestrian pushbutton on the right side (i.e., outside) of each approach. For the back-to-back RRFB assemblies installed in the modular median, install “WAIT UNTIL TRAFFIC STOPS TO CROSS” signs on the sides of the sign post perpendicular to the crosswalk (i.e., facing the sidewalks on the sides of the street) with the bottom edge of sign panel is approximately 4 feet above the surface of the refuge island. The R10-25 sign may be omitted from the pushbutton installed on the back-to-back RRFB assembly mounted on the left side (i.e., in the modular median) of each approach if it conflicts with the “WAIT UNTIL TRAFFIC STOPS TO CROSS” SIGNS mounted perpendicular to it, as directed by the Engineer.

Obtain flashing duration to be programmed into the RRFB from the Engineer.

Mount the overhead lighting fixture to the square tube sign post supporting the RRFB assembly in accordance with the manufacturer’s installation instructions. Mount the light fixture perpendicular to the RRFB and facing the crosswalk.

Install the steel square tube sign posts with anchor sleeves in accordance with Article 902-3(D) of the *Standard Specifications* and the details provided in the Plans.

Erect the W11-2 and W16-7p on the sign post supporting the RRFB assembly in accordance with the details in the plans and Article 904-3 of the *Standard Specifications*.

Measurement and Payment

Install RRFB Assembly will be measured and paid as the actual number of Town-furnished rectangular rapid flashing beacon (RRFB) assemblies installed and accepted. Installation of two RRFBs mounted back-to-back on a common sign post will be measured and paid as one RRFB assembly.

Payment will include pick-up of materials from the Town and transportation to the project site as well as return of unused materials to the Town.

“WAIT UNTIL TRAFFIC STOPS TO CROSS” signs attached to the RRFB assembly will be measured and paid for separately in accordance with Articles 901-5 and 904-4 of the *Standard Specifications*.

Attachment of all Town-furnished signs will to the RRFB assembly will be measured and paid in accordance with Article and 904-4 of the *Standard Specifications*.

Payment will be made under:

Pay Item	Pay Unit
Install RRFB Assembly	Each

Town of Chapel Hill

Midblock Pedestrian Crossing

NC 86 (Martin Luther King, Jr. Boulevard) south of Central Park Lane

DETECTABLE WARNING SURFACE:

(8-19-25)

848

SP8 R52B

Description

Install detectable warning surface at pedestrian crossings where a pedestrian access route intersects a roadway, rail line, or other travelway, as shown in the plans or as directed by the Engineer, in accordance with Section 848 of the *Standard Specifications* and this special provision.

Materials

Detectable warning surface materials shall consist of raised truncated domes found on the NCDOT APL, meet the requirements of Article 848-2 of the *Standard Specifications* and be capable of being affixed to or anchored in the concrete sidewalk, including green concrete defined as concrete that has set but not appreciably hardened, cured concrete, or asphalt pavement. Surface applied such as glued or stick down applications are prohibited for permanent installations unless approved by the Engineer.

The detectable warning surface shall be uniform in color and texture, be free of cracks or other defects. The color shall be an approximate visual match to the color specified in the contract or as approved by the Engineer.

Construction Methods

Install all detectable warning surface in accordance with the manufacturer's recommendations, Article 848-3 of the *Standard Specifications* and as approved by the Engineer. Ensure the surface is free of debris and irregularities prior to placing the detectable warning on the surface. Place in fresh concrete, before the concrete has reached initial set, or on a hardened cement concrete surface or asphalt pavement surface. Secure permanent installations with mechanical fasteners. No cutting of the coated colored truncated domes is allowed. Embossing or stamping the wet concrete to achieve the truncated dome pattern or using a mold into which a catalyst-hardened material is applied is not allowed. Detectable warning surfaces shall be 24 inches in the direction of travel and extend the full width of the flush surface. The detectable warning surface shall show no appreciable fading, lifting or shrinkage and fit contours, breaks and faults of concrete and asphalt surfaces and show no significant tearing, rollback, lifting or other signs of poor adhesion.

For new installations, place the unit flush with the surrounding surface and aligned perpendicular to the direction of pedestrian travel. When installing in green concrete, press the unit to the manufacturer's recommended depth and finish the surface around it to ensure a smooth transition.

Remove and replace any damaged or misaligned detectable warning surfaces and repair any damage to adjacent facilities prior to final acceptance at no cost to the Department. The finished

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installation shall meet all applicable ADA and Public Right-of-Way Accessibility Guidelines (PROWAG) requirements for placement, orientation, surface condition, and visual contrast.

Measurement and Payment

Detectable Warning Surface, constructed of any approved material will be measured and paid in square feet, measured along the surface which have been completed and accepted. Such price and payment will be full compensation for furnishing and installing the detectable warnings, including surface preparation, bedding material, adhesives, fasteners, anchoring methods, and all other labor, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Detectable Warning Surface	Square Foot

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TEMPORARY TRAFFIC CONTROL

General Requirements

Maintain traffic, both vehicular and pedestrian, on all roads and sidewalks in accordance with Divisions 10, 11 12 of the NCDOT *Standard Specifications* and the Transportation Management Plan (TMP). Provide temporary traffic control measures during construction of curb ramps, during installation of the modular island, during installation of the RRFB assemblies and during installation of permanent signing and pavement markings in accordance with the Transportation Management Plan.

Materials

Provide Pedestrian Channelizing Devices for closing sidewalks, crosswalks and curb ramps. The ADA compliant pedestrian traffic control devices involved in the closing or redirecting of pedestrians as designated on the Transportation Management Plan (TMP) shall be manufactured and assembled in accordance with the requirements of the Americans with Disabilities Act (ADA) and the Public Rights-of-Way Accessibility Guidelines (PROWAG) and be on the NCDOT Approved Products List (APL).

Furnish all ADA-compliant pedestrian channelizing devices for existing sidewalks that are disrupted, closed, or relocated by planned work activities. Provide ADA-compliant pedestrian channelizing devices to close, redirect, divert or detour pedestrian traffic that have the following characteristics and features:

- Modular design and have been manufactured and assembled to be connected to one another as to eliminate gaps that allow pedestrians to stray from the channelizing path.
- MASH tested and accepted by the Federal Highway Administration (FHWA).
- Provided in both solid orange and solid white units (equal number of each color), to permit installation in alternating colors to meet ADA color contrast requirements.
- Have reflective orange-and-white barricade stripes when pedestrian channelizing devices exposed to or facing vehicular traffic (reflective striping is optional for those not exposed to or facing vehicular traffic).
- Have ADA-compliant support legs or bases that extend only on the backside of the unit and do not encroach on the pedestrian path on the front side of the unit.

Pedestrian Channelizing Devices shall be manufactured and assembled to be connected as to eliminate any gaps that allow pedestrians to stray from the channelizing path.

Type III barricades are not ADA/PROWAG-compliant and are prohibited from use as or in lieu of Pedestrian Channelizing Devices.

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Provide sand bags to place atop support legs or integral weighted bases to ensure stability of the units and to keep them upright in windy conditions.

Provide a means of attaching signs such as SIDEWALK CLOSED” signs, pedestrian detour signs, etc. to the units, including all necessary fasteners. Provide signs that comply with Article 1110-2 of the *Standard Specifications*.

Construction Methods

Comply with Article 1101-15 of the *Standard Specifications*. Maintain continuous and safe pedestrian access, including but not limited to, all residences, businesses, schools and mailboxes. Conduct operations in such a manner as to limit the inconvenience to pedestrians.

Protect open excavations within or adjacent to areas subject to pedestrian traffic from pedestrian intrusion by surrounding the excavation/hazard with pedestrian channelizing devices or other method approved by the Engineer. Do not use tape, flagging, rope or plastic chain strung between barricades, cones or stakes.

Install Pedestrian Channelizing Devices so that the adjacent/abutting units are connected to each other to eliminate any gaps that allow pedestrians to stray from the channelizing path. Alternate orange and white sections in a connected line of devices. Install the Pedestrian Channelizing Devices so that the support legs/base extends only on the back side of the unit away from foot traffic and do not protrude on the pedestrian side of the unit. Install sandbags on the support legs or use integral weighted bases in accordance with the manufacturer’s instructions to ensure the stability of the device.

Mount appropriate sidewalk closure signs to these pedestrian channelizing devices to inform pedestrians of the closure.

Place the Pedestrian Channelizing Devices so that the striped rails and attached signs are facing pedestrians approaching the devices on the sidewalk or pedestrian path.

When closing an existing curb ramp or new curb ramp that has been completed but is not open to pedestrian traffic, place the Pedestrian Channelizing Device with a “CROSSWALK CLOSED” sign attached between the landing and the street and perpendicular to the crossing to block pedestrian access to the street or crosswalk.

For sidewalk closures, place a Pedestrian Channelizing Device with a “SIDEWALK CLOSED” sign attached across and perpendicular to the sidewalk to be closed.

Measurement and Payment

Temporary Traffic Control (Lump Sum) shall include but not be limited to providing Signs (portable, stationary, and/or barricade mounted), Barricades, Truck Mounted Attenuators (TMA), Portable Changeable Message Signs (PCMS), Flashing Arrow Boards (FAB), Flaggers, Cones,

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Skinny Drums, Drums and Pedestrian Channelizing Devices as shown in the applicable NCDOT *Roadway Standard Drawings* and in the Transportation Management Plan and all labor, tools, equipment and incidentals necessary to furnish, install, maintain, relocate and remove traffic control devices when no longer required.

No direct payment will be made for any sign affixed to a pedestrian channelizing device. Signs mounted to pedestrian channelizing devices will be considered incidental to the device.

Payment for *Temporary Traffic Control (Lump Sum)* will be made on the following schedule:

- (A) 70% of the unit bid price upon starting the project
- (B) 20% of the unit bid price when the project is 50% complete
- (C) 10% of the unit bid price when the project is 100% complete and all traffic control devices have been removed from the project.

Payment will be made under:

Pay Item	Pay Unit
Temporary Traffic Control	Lump Sum



DocuSigned by:
Renee B. Roach, PE
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 9-17-24

YIELD LINES PAVEMENT MARKING:

(1-15-24)(Rev. 9-17-24)

Description

Install yield lines in accordance with this special provision, Section 1205 of the *Standard Specifications* and as directed by the Engineer.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item

Pavement Markings

Section

1087

The material for yield line pavement markings shall be thermoplastic, polyurea, type III cold applied plastic, or heated-in-place thermoplastic. Paint may be used for temporary yield line pavement markings.

Application

Refer to Section 1205 of the *Standard Specifications* and refer to Division 12 of the *Roadway Standard Drawings* on application of products used for yield lines. Yield lines shall be a row of solid white isosceles triangles with 3 to 12 inches between each one, 12 to 24 inches in width, with a height 1.5 times the width. Yield lines shall point towards traffic, and they shall be placed at least 4 feet before the nearest controlled crosswalk. For unsignalized midblock crosswalks, yield lines shall be placed with the Yield Here to Pedestrians sign located 20 to 50 feet in advance of the crosswalk. Yield lines are not symbols or characters.

Measurement and Payment

Yield Line _____ Pavement Marking, __", __mils (for thermoplastic, polyurea and heated-in-place thermoplastic material), *Yield Line Pavement Marking, Type III (__")* (for Type 3 cold applied plastic material), or *Yield Line Pavement Marking, __"* (for paint material) will be measured and paid as the actual number of linear feet of pavement marking lines satisfactorily

placed and accepted by the Engineer. The quantity of lines will be the summation of the linear feet of solid line measured end-to-end of the line.

Payment will be made under:

Pay Item	Pay Unit
Yield Line _____ Pavement Marking, __", __mils	Linear Feet
Yield Line Cold Applied Plastic Pavement Marking, Type III (___")	Linear Feet
Yield Line Paint Pavement Marking, ___"	Linear Feet

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ESTIMATED QUANTITIES - FINAL

31-Aug-26

LINE #	NCDOT ITEM NO.	NCDOT SPEC SECTION	DESCRIPTION	QUANTIT Y	UNITS
1	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	8	TON
2	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	3	TON
3	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	2	TON
4	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	1	TON
5	0000100000-N	800	MOBILIZATION	1	LS
6	7980000000-N	SP	INSTALL RRFB ASSEMBLY	4	EA
7	1891000000-E	SP	DETECTABLE WARNING SURFACE	40	SF
8	2605000000-N	848	CONCRETE CURB RAMPS	2	EA
9	1891500000-N	SP	INSTALL MODULAR REFUGE ISLAND	1	LS
10	4025000000-E	901	CONTRACTOR FURNISHED, TYPE E SIGN	33	SF
11	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	66	LF
12	4102000000-N	904	SIGN ERECTION, TYPE E	18	EA
13	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE E (GROUND MOUNTED)	1	EA
14	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	1	EA
15	4360000000-N	SP	RETROREFLECTIVE SIGN POST STRIP (FYG)	4	EA
16	4360000000-N	SP	RETROREFLECTIVE SIGN POST STRIP (WH)	2	EA
17	4360000000-N	SP	INSTALL IN-PAVEMENT PED CROSSING SIGN	2	EA
18	4360000000-N	SP	WARNING FLAGS	4	EA
19	4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS
20	4600000000-N	SP	INSTALL TUBULAR MARKERS (FIXED)	16	EA
21	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	284	LF
22	4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	120	LF
23	4725000000-E	1205	THERMOPLASTIC PAVEMENT SYMBOL (90 MILS)*	2	EA
24	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")*	40	LF
25	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS*	2	EA
26	4891000000-E	SP	YIELD LINE THERMOPLASTIC PAVEMENT MARKING (24", 90 MILS)	44	LF