

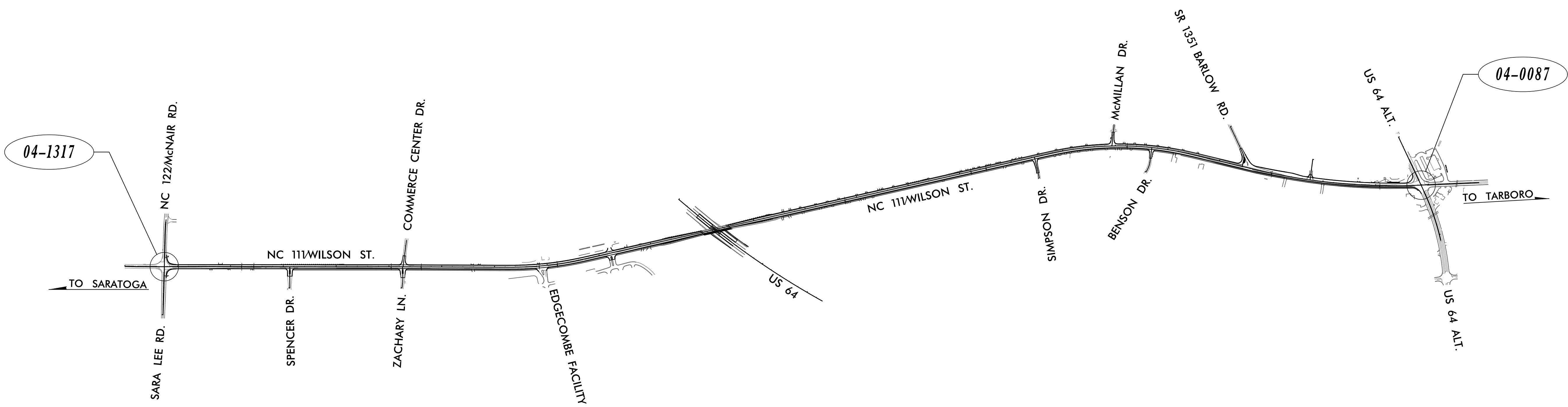
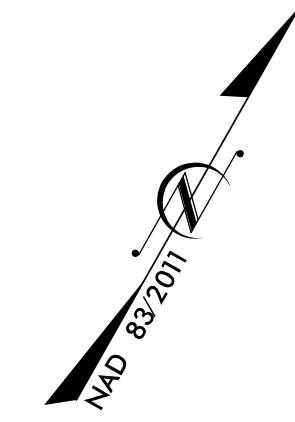
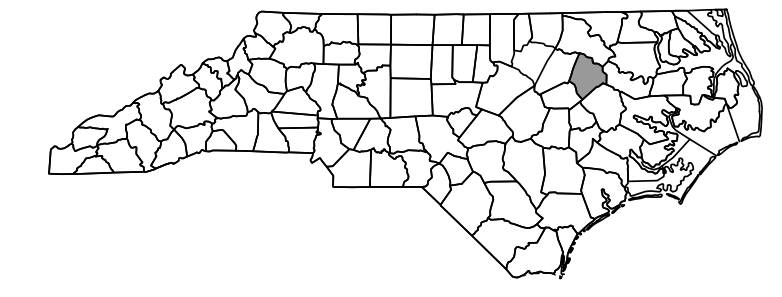
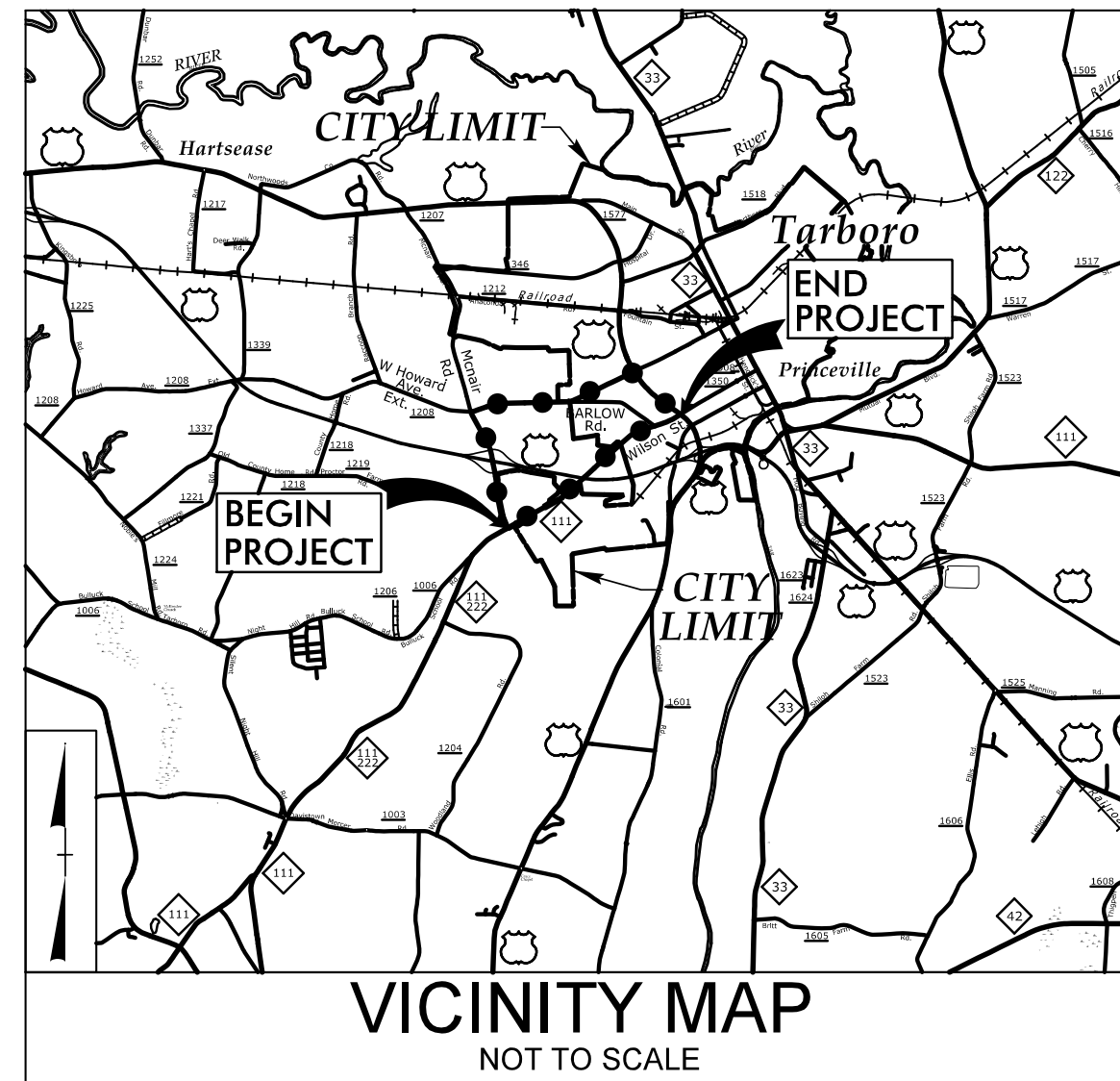
Project: U-4424

Project No.	Sheet No.
U-4424	Sig. 1.0

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

LOCATION: TARBORO - NC 111 (WILSON STREET) FROM US 64 ALTERNATE (WESTERN BOULEVARD) TO NC 122 (MCNAIR ROAD)
TYPE OF WORK: TRAFFIC SIGNALS



1001 Morehead Square Drive, Suite 610
Charlotte, NC 28203
NC LICENSE NO. F-0165

Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.

Index of Plans

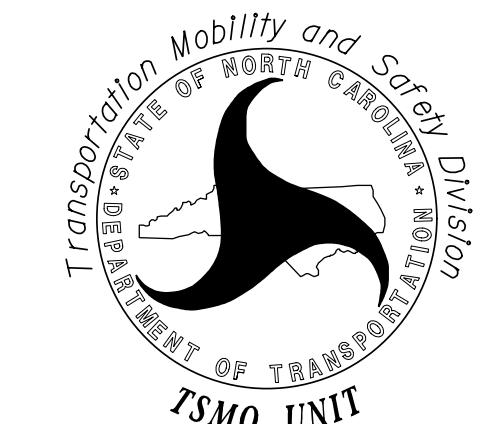
Sheet #	Reference #	Location/Description
Sig. 1.0	-----	Title Sheet
Sig. 1.1-1.2	-----	Standard Plate Sheets
Sig. 2.0-2.2	04-0087	US 64 Bypass-NC 111-122 (Western Blvd) at NC 111/SR 1350 (Wilson Street)
Sig. 3.0-3.2	04-1317	NC 111 (Wilson Street)/NC 122 at NC 122 (McNair Road)/SR 1344 (Sara Lee Road)

**TRANSPORTATION SYSTEMS
MANAGEMENT & OPERATIONS**

Contacts:

Zachary Little, PE - Eastern Region Signals Engineer
Keith M. Mims, PE - State Signal Equipment Engineer

Prepared for the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY & SAFETY DIVISION

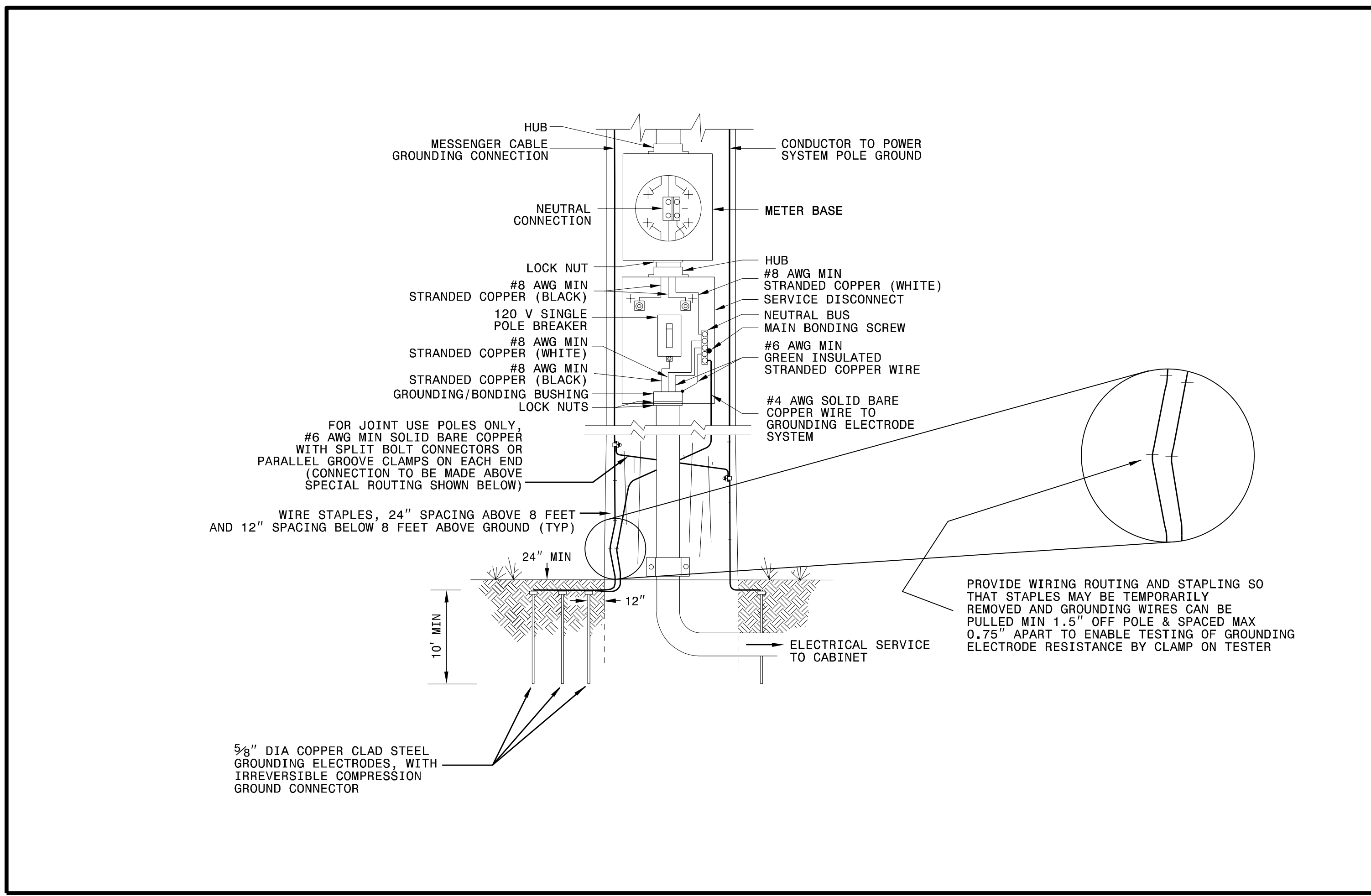


750 N. Greenfield Parkway, Garner, NC 27529

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
ELECTRICAL SERVICE GROUNDING
GROUNDING AND BONDING

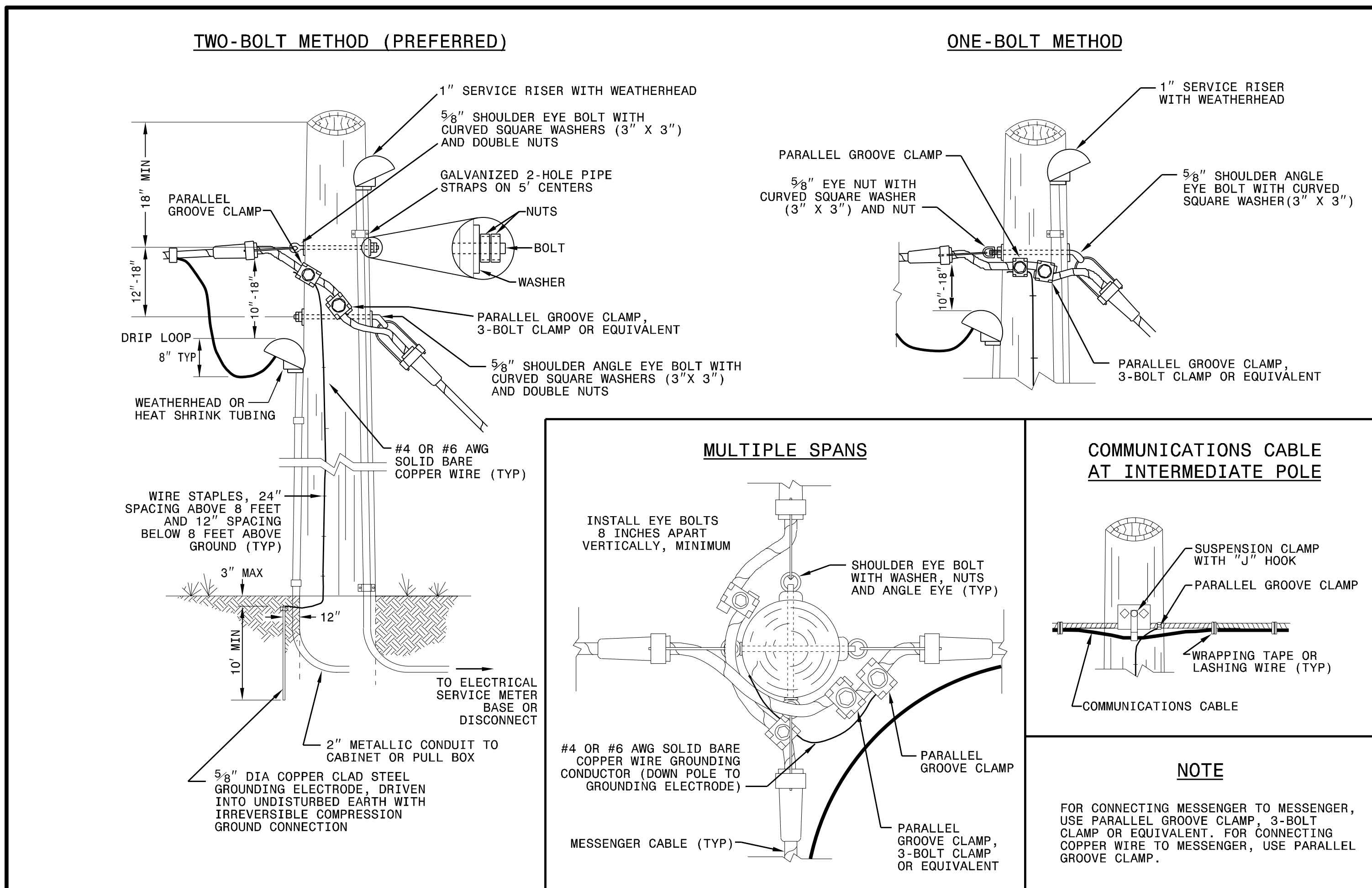
SHEET 1 OF 1
1700D01



1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
WOOD POLES
METHODS OF ATTACHMENT AND GROUNDING

SHEET 1 OF 1
1720D01



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

See Plate for Title

Prepared in the Offices of:

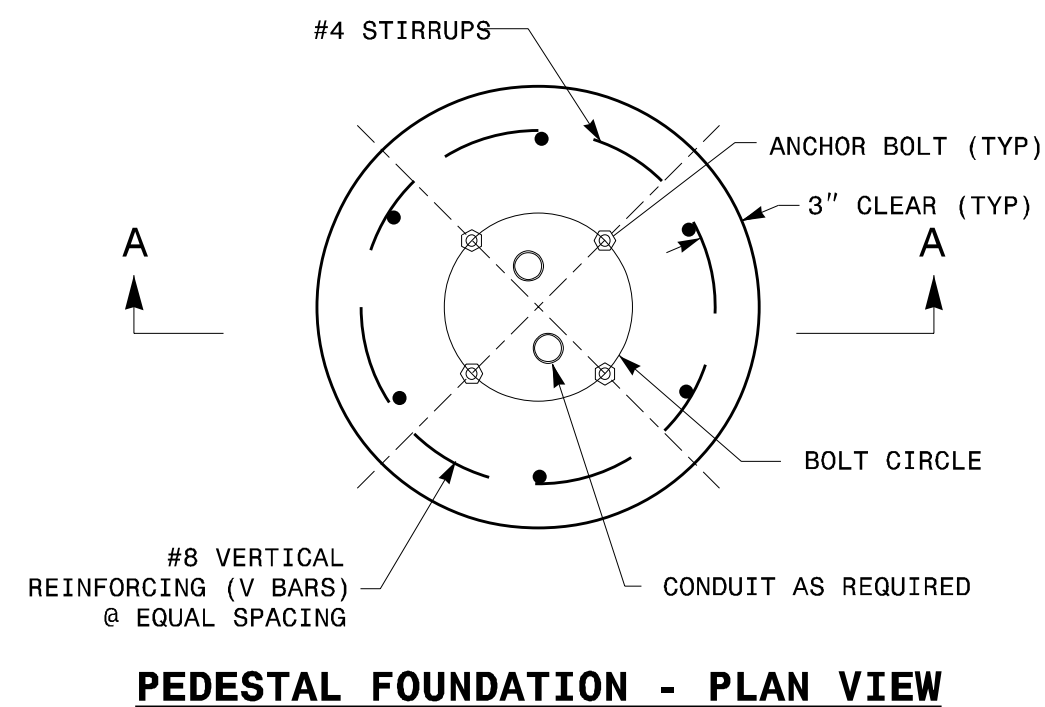
750 N. Greenfield Parkway
Garner, NC 27529

SEAL

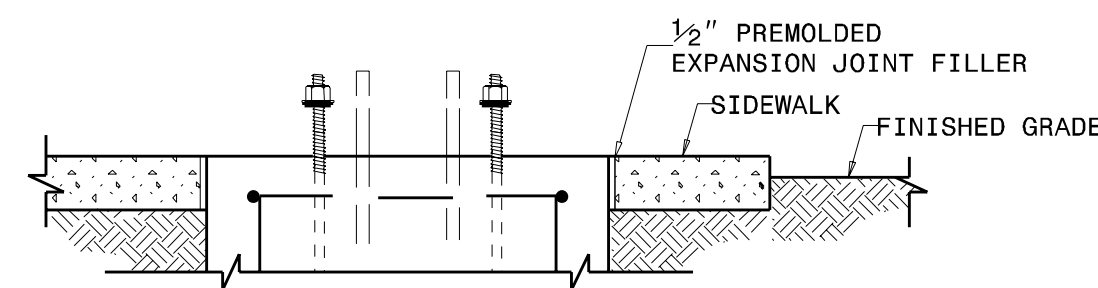
DocuSigned by:
Mohd Aslami

10/11/2017
DATE

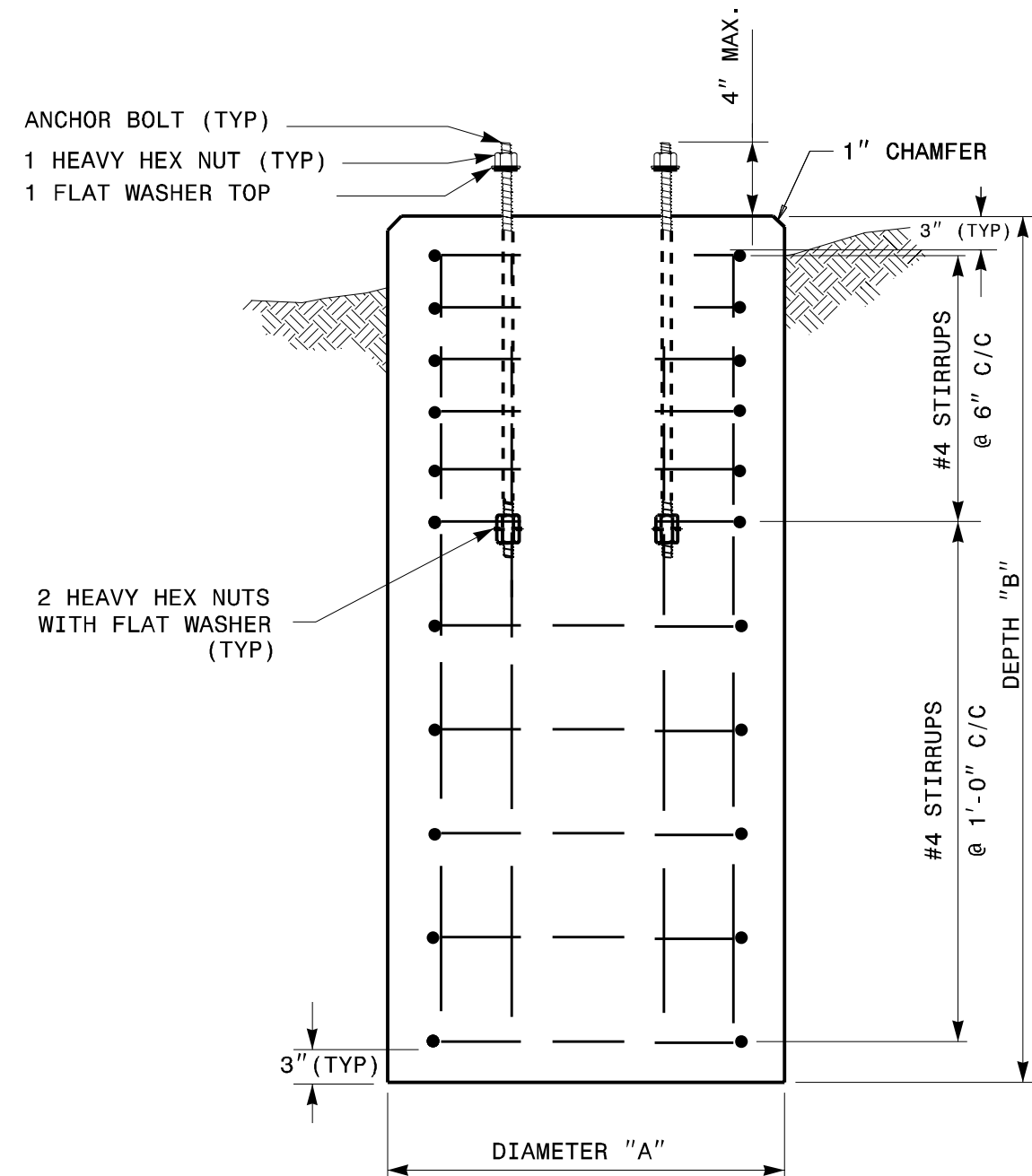
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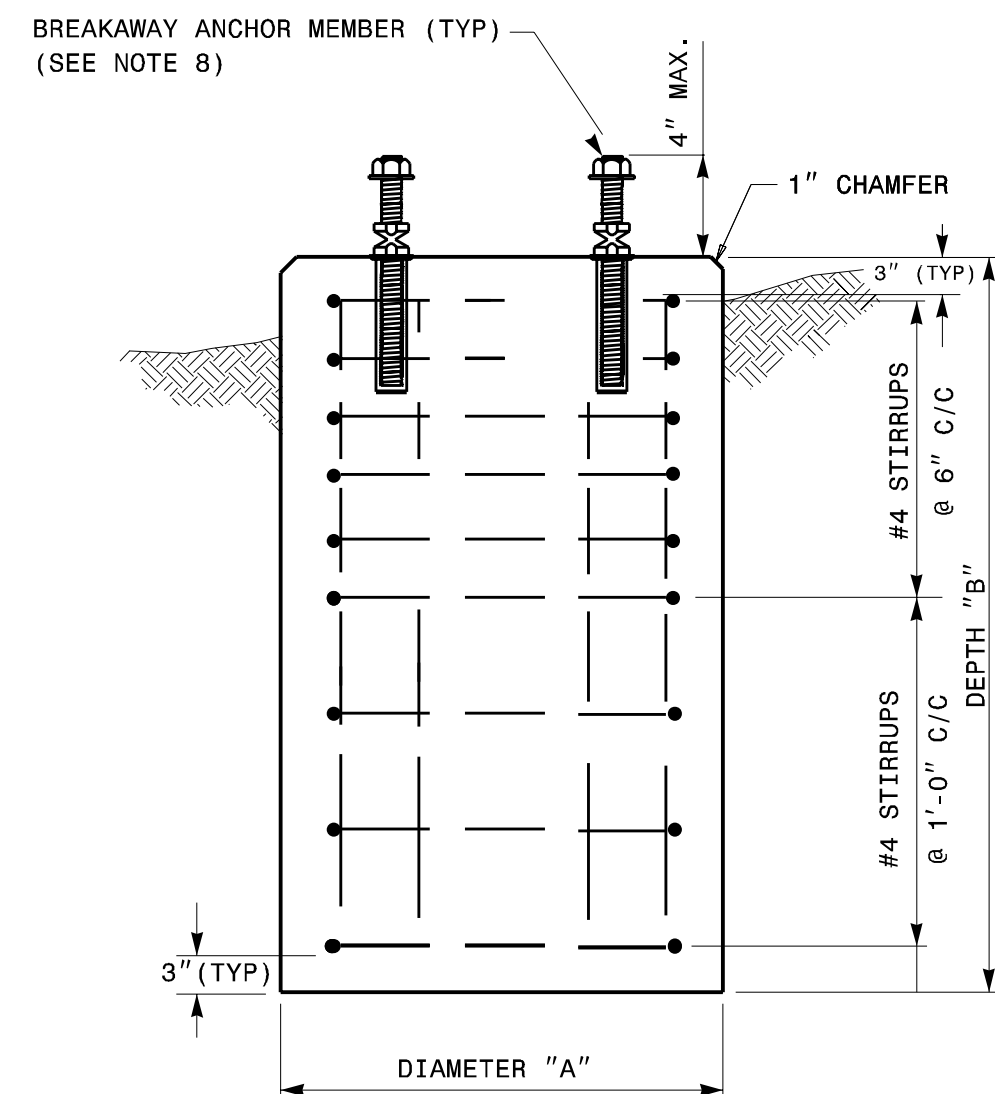
PEDESTAL FOUNDATION - PLAN VIEW



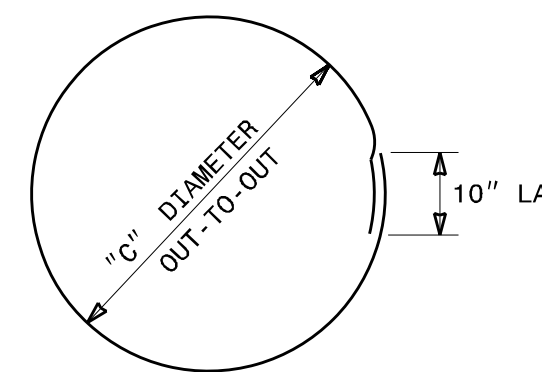
PEDESTAL FOUNDATION DETAILS FOR SIDEWALK



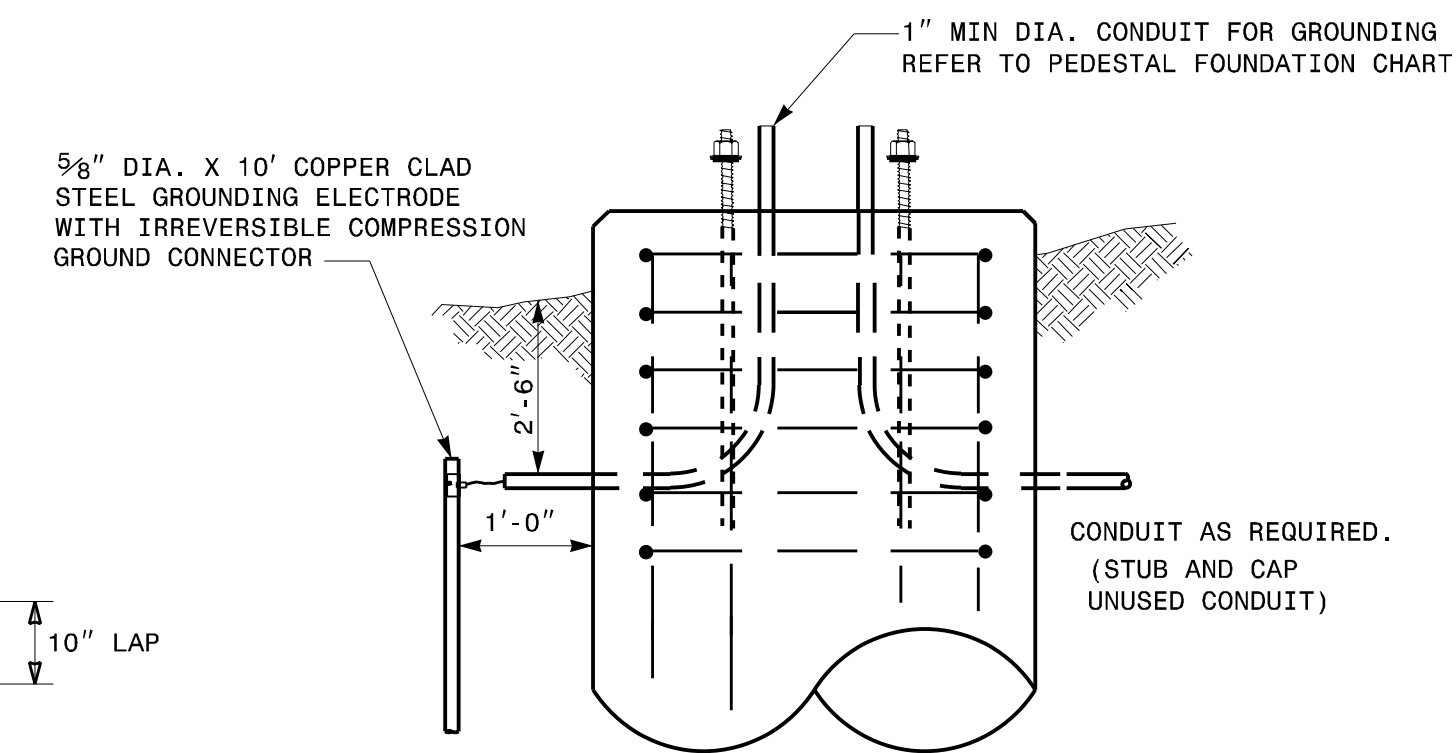
TYPES I, II & III SECTION A-A



TYPES I & II ONLY SECTION A-A



CLOSED HOOPS



GROUNDING & CONDUIT DETAIL

NOTES:

- CAST FOUNDATION AGAINST UNDISTURBED SOIL WHEREVER CONDITIONS PERMIT. IN UNSTABLE SOIL, CAST-IN-PLACE TUBE FORMS ARE ALLOWED WITH APPROVAL.
- COMPLY WITH APPLICABLE PROVISIONS OF SECTION 825 FOR CONCRETE CONSTRUCTION.
- USE CLASS "A" CONCRETE THAT MEETS THE REQUIREMENTS OF SECTION 1000 WITH A COMPRESSION STRENGTH AT 28 DAYS OF $F'c = 3000$ PSI (MIN.).
- USE ASTM GRADE 60 DEFORMED BARS FOR ALL REINFORCING STEEL.
- GRADE IS ASSUMED TO BE (8H:1V) OR FLATTER. FOUNDATION SIZE AND DEPTHS ARE BASED ON THE FOLLOWING SOIL DESIGN PARAMETERS:
 - A. SANDY TYPE SOIL
 - B. NO GROUND WATER WITHIN 5'-0" OF SURFACE ELEVATION
 - C. WIND SPEED NOT TO EXCEED 140 MPH
 IF ACTUAL CONDITIONS VARY SUBSTANTIALLY FROM THOSE ASSUMED, THE FOUNDATION DEPTH MAY BE ADJUSTED. IN THIS CASE, CONTACT THE ENGINEER.
- MAINTAIN AT LEAST 3" COVER ON ALL REINFORCEMENT.
- ORIENT CONDUIT AS REQUIRED BY THE DESIGN OR AS DICTATED BY FIELD CONDITIONS.
- USE ADHESIVE ANCHOR FOR THREADED COUPLING INSERT. FOR TYPE I MINIMUM DEPTH NECESSARY IS 0'-4 1/2" AND FOR TYPE II MINIMUM DEPTH NECESSARY IS 0'-6 5/8". FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PEDESTAL FOUNDATION TYPE AND SIZE							
TYPE	PEDESTAL DESCRIPTION	SIZE			ANCHOR BOLT		INSTALL GROUNDING SYSTEM (YES/NO)
		DIAMETER "A" FT	DEPTH "B" FT	CONCRETE VOLUME CY	DIAMETER (MIN.) IN	LENGTH FT-IN	
I	PEDESTRIAN PUSHBUTTON	2'-0"	3'-6"	.41	1/2	1'-6"	NO
II	NORMAL-DUTY	2'-0"	5'-0"	.58	3/4	2'-0"	YES
III	HEAVY-DUTY	2'-6"	7'-0"	1.27	1	4'-0"	YES

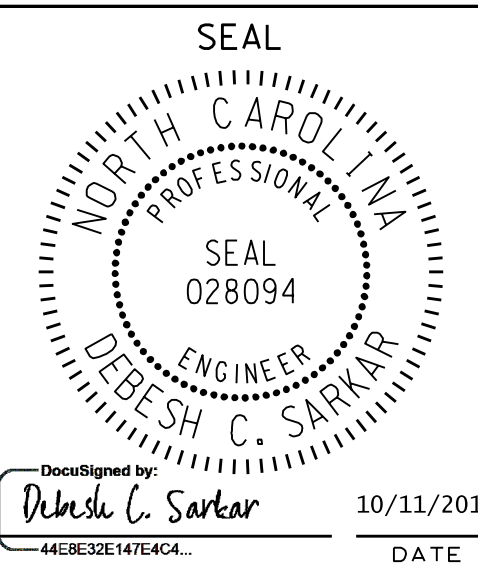
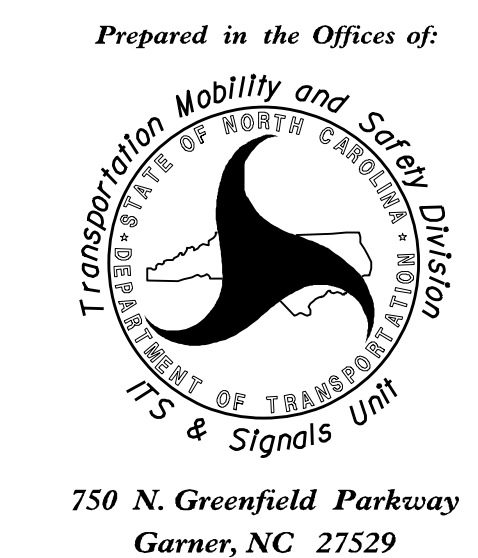
REINFORCING STEEL SCHEDULE													
TYPE	V-BAR				STIRRUP								
	SIZE #	QTY	LENGTH	WEIGHT LBS	SIZE #	QUANTITY			LENGTH	DIAMETER "C" FT	OVERLAP MIN.	WEIGHT LBS	TOTAL STEEL WEIGHT LBS
						VERTICAL SPACING	ON 6" CENTERS	ON 12" CENTERS					
I	8	6	3'-0"	56	4	0	4	4	5'-7"	1'-6"	0'-10"	15	71
II	8	6	4'-6"	86	4	5	3	8	5'-7"	1'-6"	0'-10"	30	116
III	8	6	6'-6"	122	4	7	4	11	7'-2"	2'-0"	0'-10"	53	175

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
PEDESTALS
FOUNDATIONS

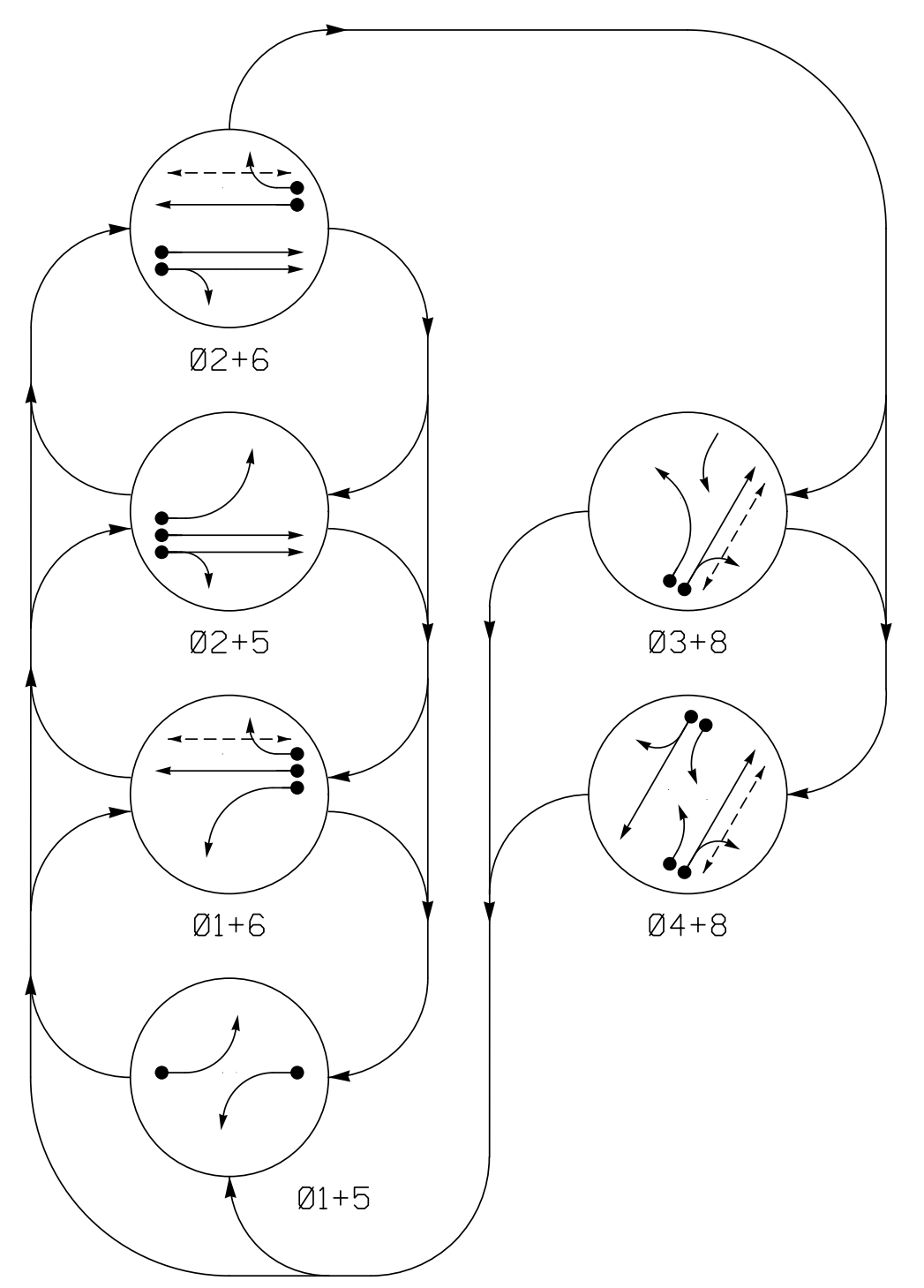
SHEET 1 OF 1
1743D01

See Plate for Title



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SIGNATURES COMPLETED

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

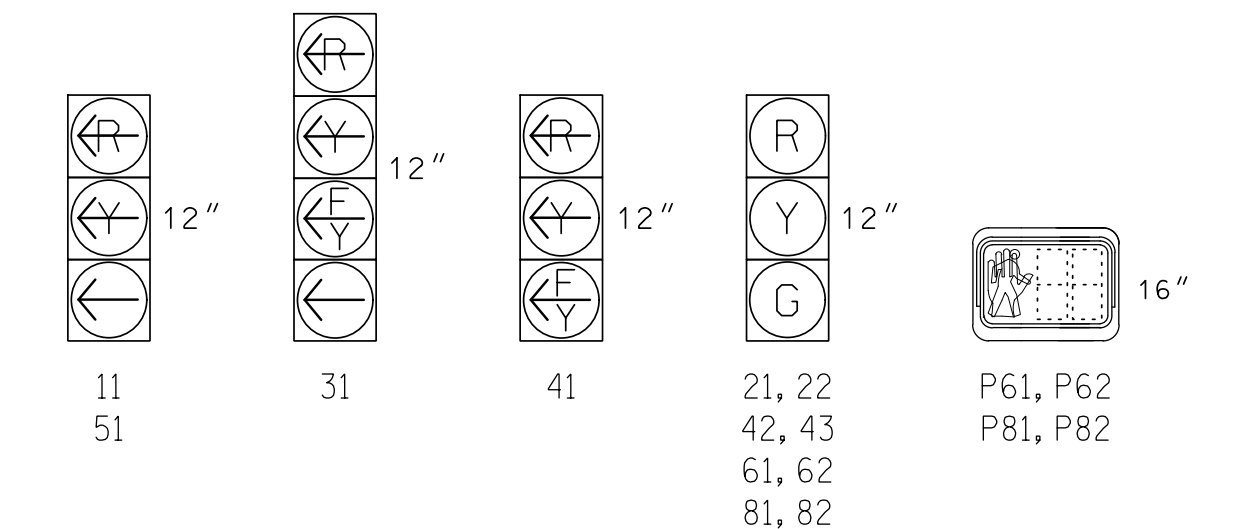
- DETECTED MOVEMENT
- ← UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ⚡ PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE							
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+8	Ø4+8	FLASHERS	FLASHERS
11	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	Y	Y
31	←	←	←	←	←	←	←	←
41	←	←	←	←	←	←	←	←
42,43	R	R	R	R	R	G	R	R
51	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	Y	Y
81,82	R	R	R	R	G	G	R	R
P61, P62	DW	W	DW	W	DW	DRK		
P81, P82	DW	DW	DW	DW	W	W	DRK	

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME		
1A	6X40	0	2-4-2	-	1	Y	Y	-	-	-	-
2A	6X6	275	EXIST	-	2	Y	Y	-	-	-	-
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	3	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-
4C	6X15	+5	EXIST	-	DISCONNECT & ABANDON					-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-
6A	6X6	300	EXIST	-	6	Y	Y	-	-	-	-
8A	6X6	300	4	Y	8	-	Y	-	-	-	-
8B	6X40	0	2-4-2	Y	8	Y	Y	Y	2.0	5	-
8C	6X15	+5	3	Y	8	Y	Y	-	-	10	-

6 Phase Fully Actuated Isolated

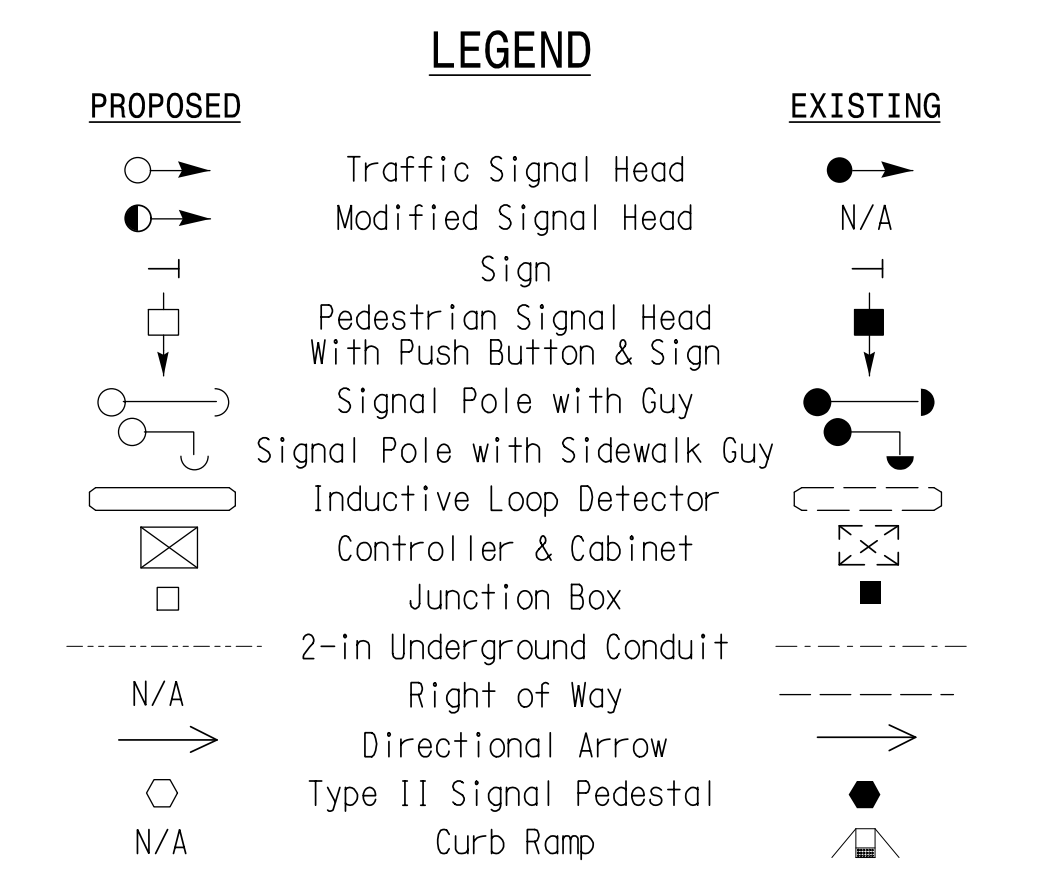
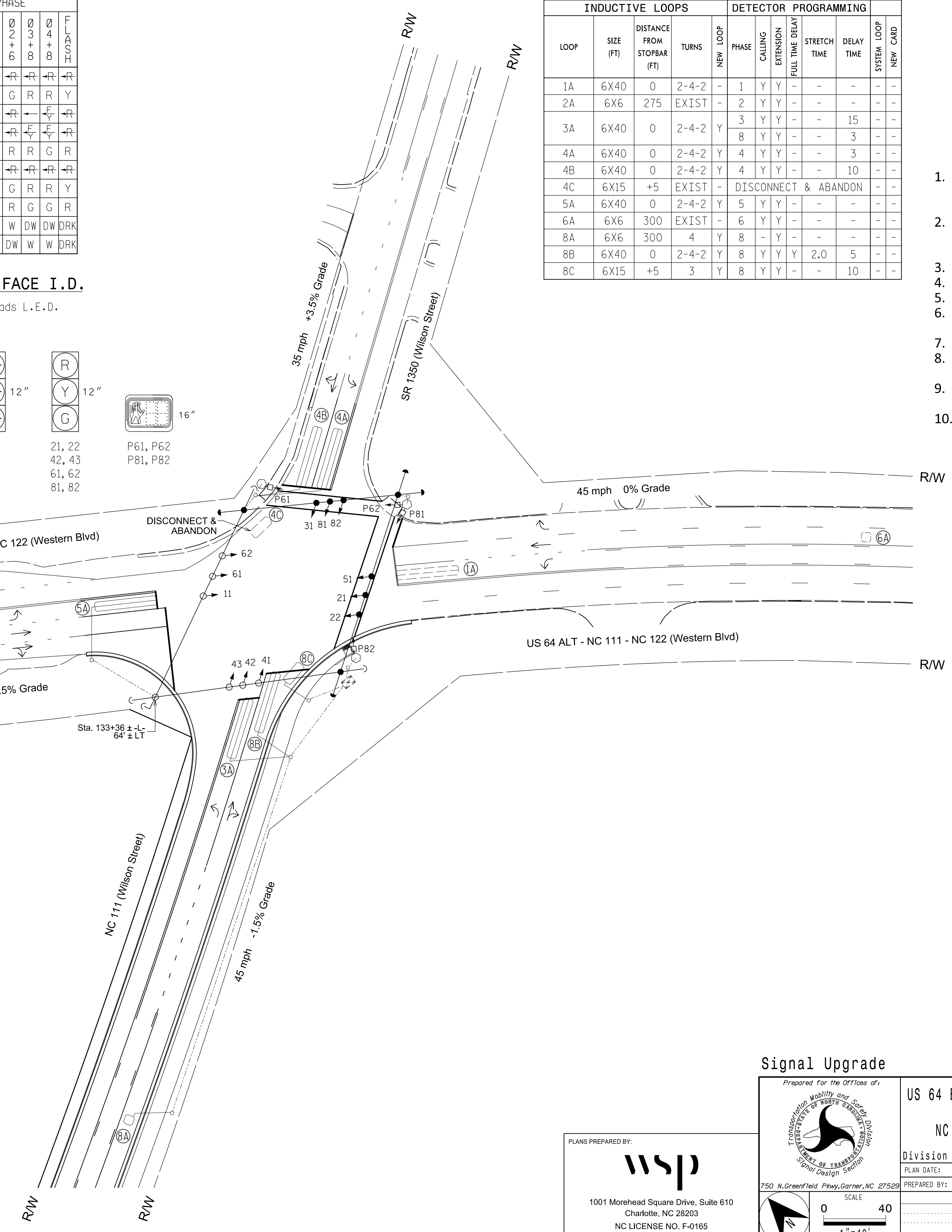
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Disconnect and abandon existing loop 4C.
4. Phase 1 and/or phase 5 may be lagged.
5. Phase 3 may be lagged.
6. Reposition existing signal heads numbered 31, 81 and 82.
7. Set all detector units to presence mode.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Refer to the Pavement Marking and Signing Plans for details on striping, stop bars, crosswalks and any other proposed pavement markings.

OASIS 2070 TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	8	
Min Green 1 *	7	12	7	7	7	12	7	
Extension 1 *	2.0	6.0	2.0	3.0	2.0	6.0	6.0	
Max Green 1 *	20	80	20	30	15	80	30	
Yellow Clearance	3.0	4.6	3.0	4.7	3.0	4.5	4.7	
Red Clearance	3.3	1.9	2.8	2.1	3.7	1.3	2.1	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Walk 1 *	-	-	-	-	-	7	7	
Don't Walk 1	-	-	-	-	-	17	22	
Seconds Per Actuation *	-	1.8	-	-	-	2.5	-	
Max Variable Initial *	-	34	-	-	-	34	-	
Time Before Reduction *	-	15	-	-	-	15	10	
Time To Reduce *	-	30	-	-	-	30	30	
Minimum Gap	-	3.0	-	-	-	3.0	3.0	
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	
Dual Entry	-	-	-	-	-	-	-	
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



Signal Upgrade

PLANS PREPARED BY:

1001 Morehead Square Drive, Suite 610
Charlotte, NC 28203
NC LICENSE NO. F-0165

Prepared For the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

US 64 Bypass-NC 111-122 (Western Blvd) at NC 111/SR 1350 (Wilson Street)

Division 4 Edgecombe County Tarboro

PLAN DATE: June 2022 REVIEWED BY: D. Moss

PREPARED BY: K. Dixon REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

Katelyn P. Dixon 03/29/23

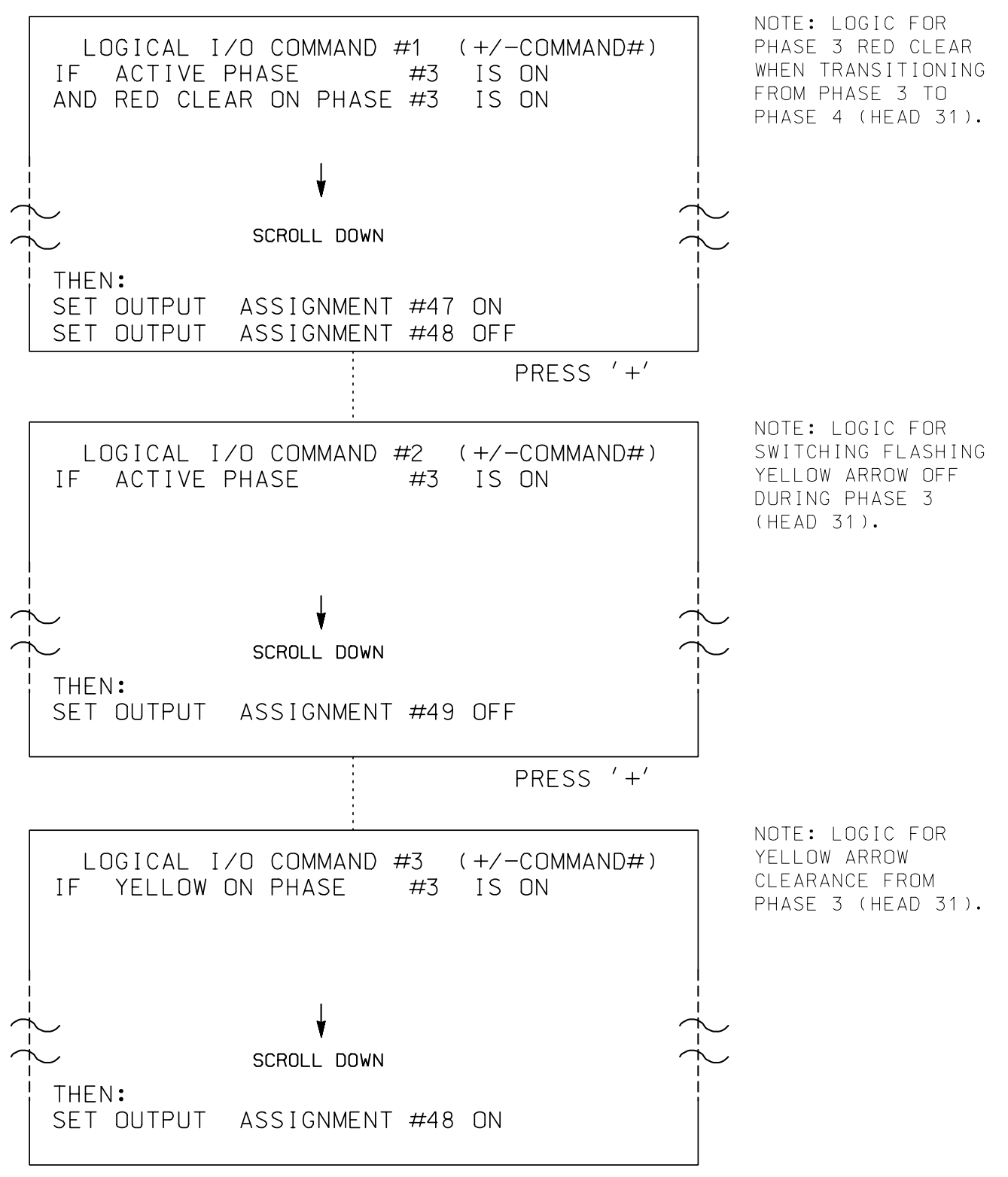
SIG. INVENTORY NO. 04-0087

2/29/2023
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 Purmel,IK

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



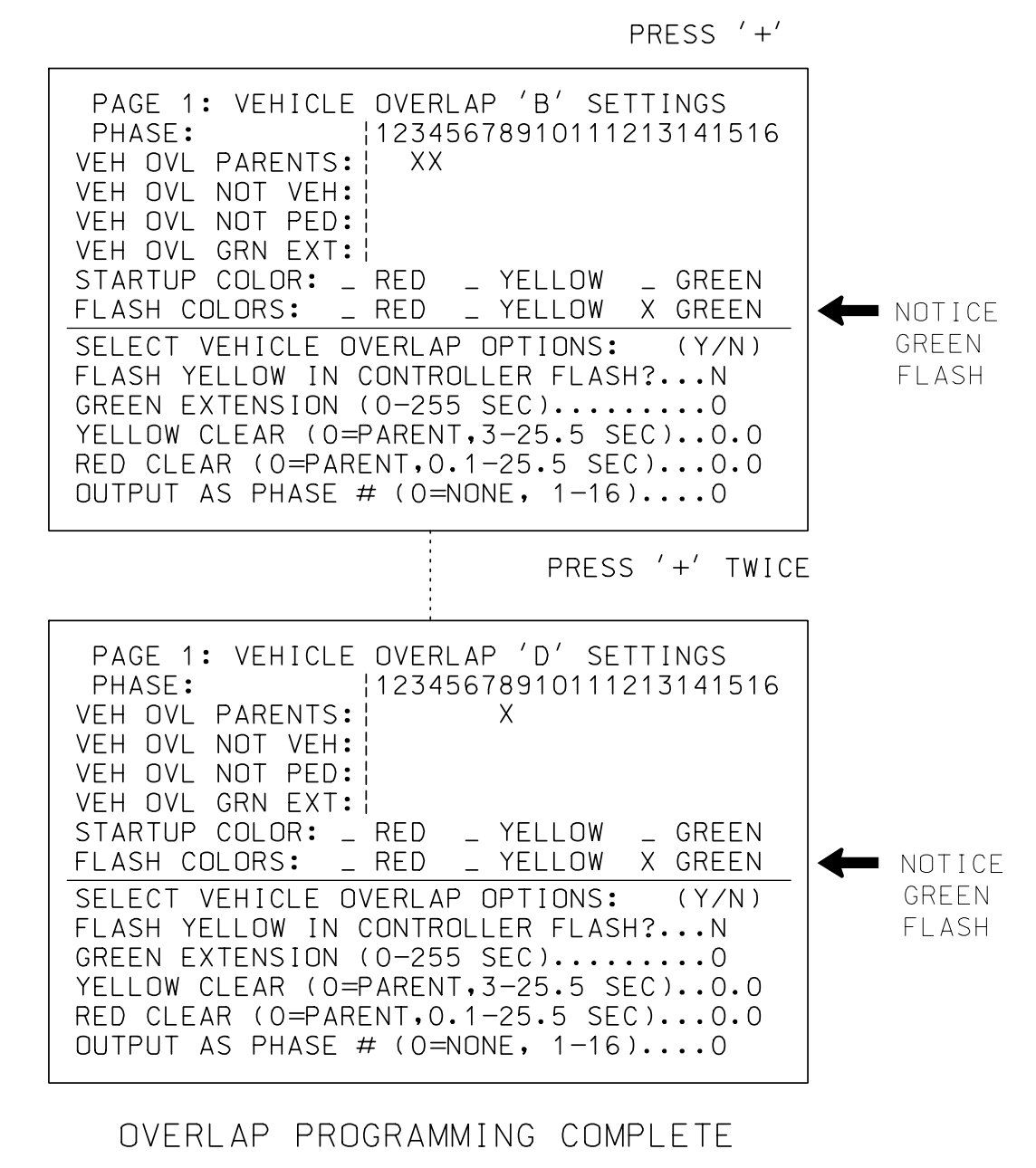
LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE	
OUTPUT 47 =	Overlap B Red
OUTPUT 48 =	Overlap B Yellow
OUTPUT 49 =	Overlap B Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).



OVERLAP PROGRAMMING COMPLETE

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-0087
DESIGNED: June 2022
SEALED: 03/29/23
REVISED: N/A

2/29/2023 10:00:00 AM: F:\01\Job\188771-06_NDDOT_NC_111\11-424\IT\off\c\KSI\gnal\k\bas\gn\sheet\040087_sm.le.dgn

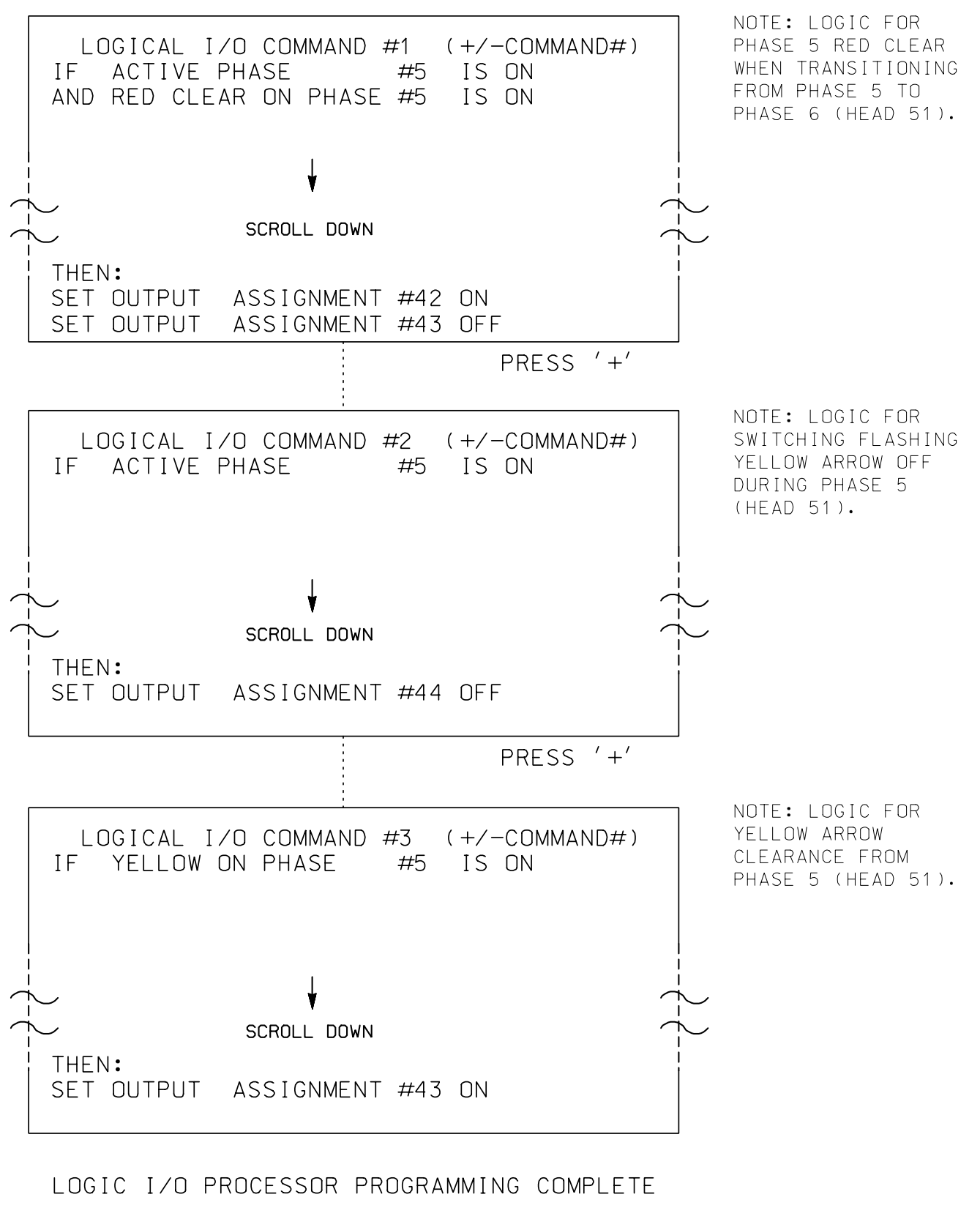
Electrical Detail - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of: 1001 Morehead Square Drive, Suite 610 Charlotte, NC 28203 NC LICENSE NO. F-0165	 750 N. Greenfield Pkwy, Garner, NC 27529	US 64 Bypass-NC 111-122 (Western Blvd) at NC 111/SR 1350 (Wilson Street)		SEAL Katelyn P. Dixon 03/29/23
		Division 4 PLAN DATE: June 2022 PREPARED BY: K. Dixon	Edgemcombe County REVIEWED BY: D. Moss REVIEWED BY:	

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

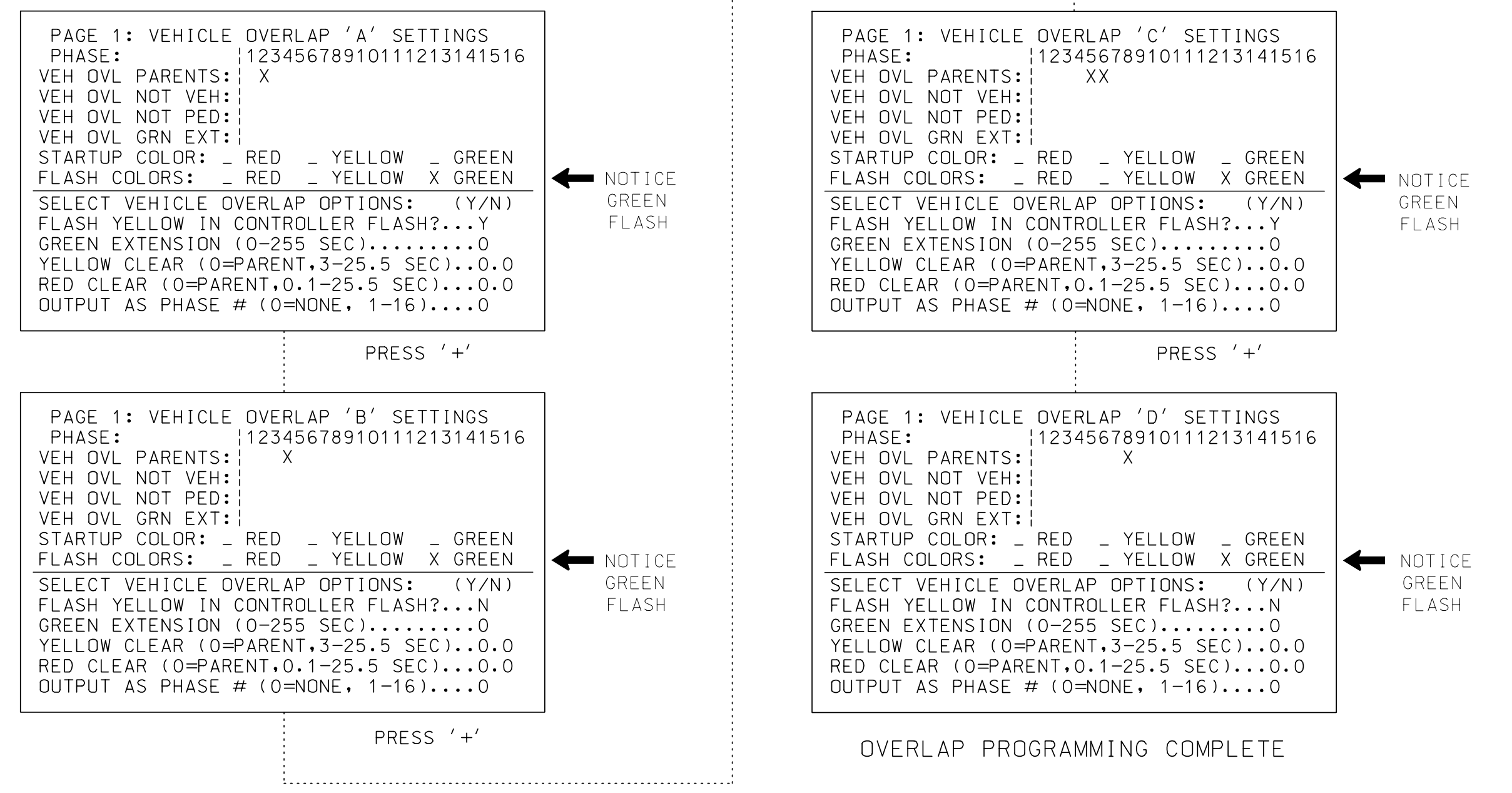
- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE	
OUTPUT 42 =	Overlap C Red
OUTPUT 43 =	Overlap C Yellow
OUTPUT 44 =	Overlap C Green

OVERLAP PROGRAMMING DETAIL (program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).



FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO ENSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

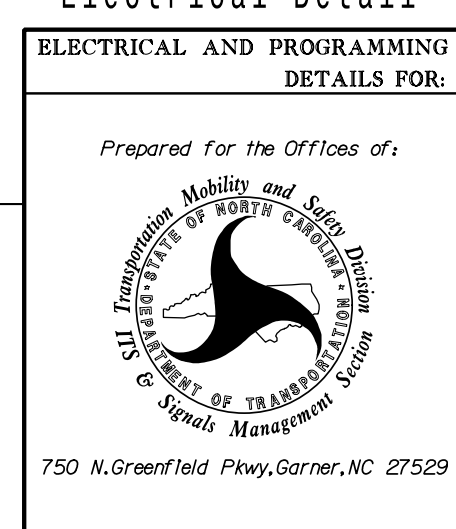
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 04-1317
DESIGNED: June 2022
SEALED: 03/29/23
REVISED: N/A

Electrical Detail - Sheet 2 of 2

PLANS PREPARED BY:
wsp
1001 Morehead Square Drive, Suite 610
Charlotte, NC 28203
NC LICENSE NO. F-0165



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 111 (Wilson Street)/NC 122 at NC 122 (McNair Road)/SR 1344 (Sara Lee Road)	
Prepared for the Offices of:	Division 4	Edgecombe County	Tarboro
PLAN DATE: June 2022	REVIEWED BY: D. Moss	PREPARED BY: K. Dixon	REVIEWED BY:
REVISIONS			
NO.	DATE	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
Katelyn P. Dixon
03/29/23
DATE
F50E34907540460
DATE
SIG. INVENTORY NO. 04-1317

3/29/2023 10:00:00 AM C:\Users\kdp\OneDrive\Documents\04-1317-sm-le.dgn