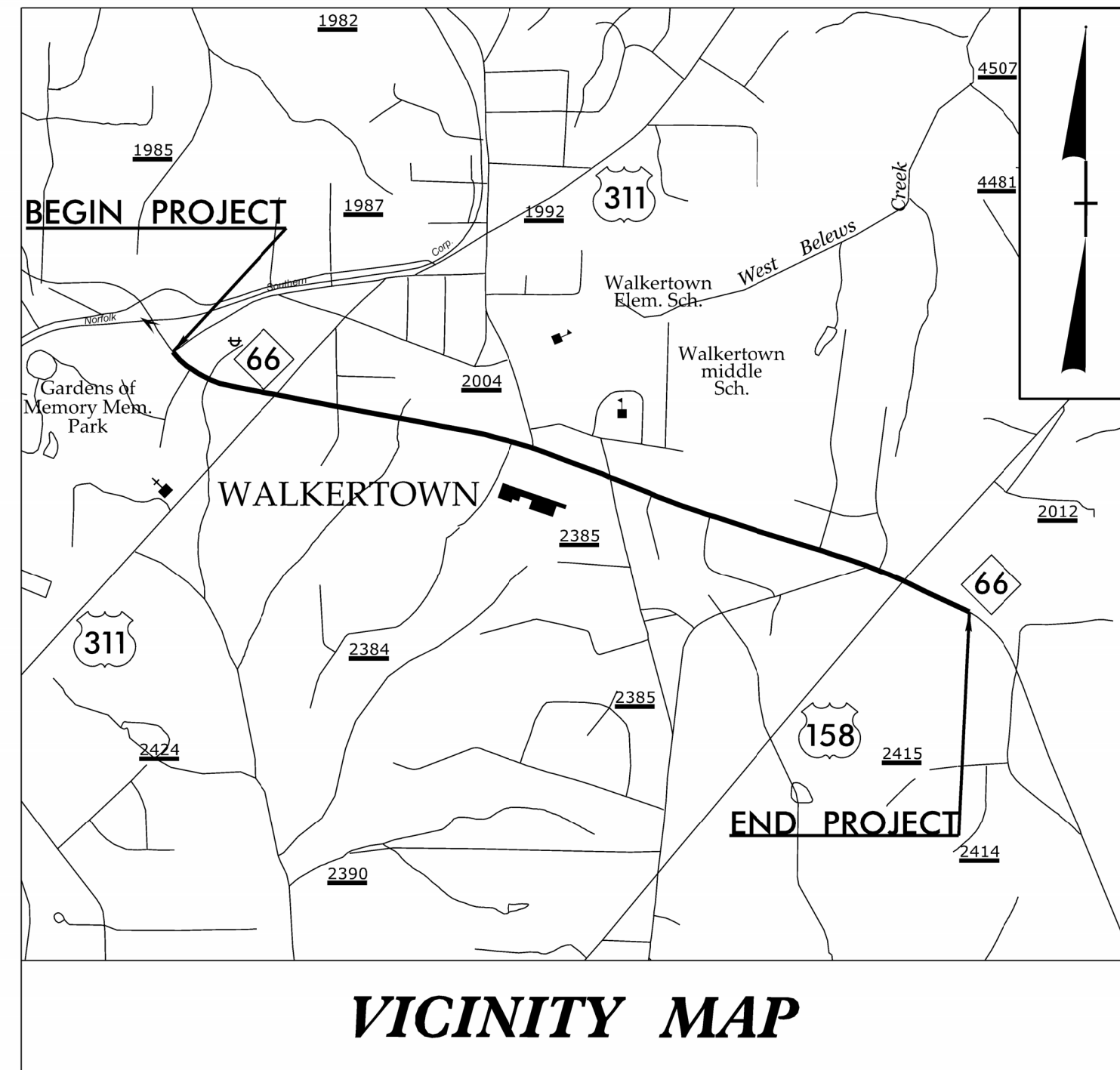


PROJECT: U-5824

CONTRACT:



VICINITY MAP

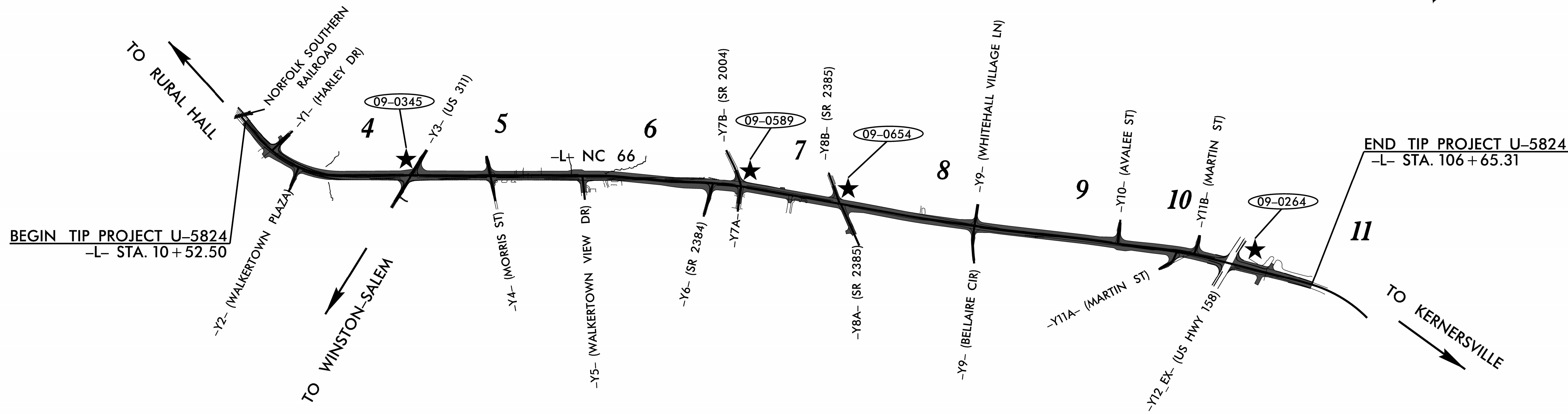
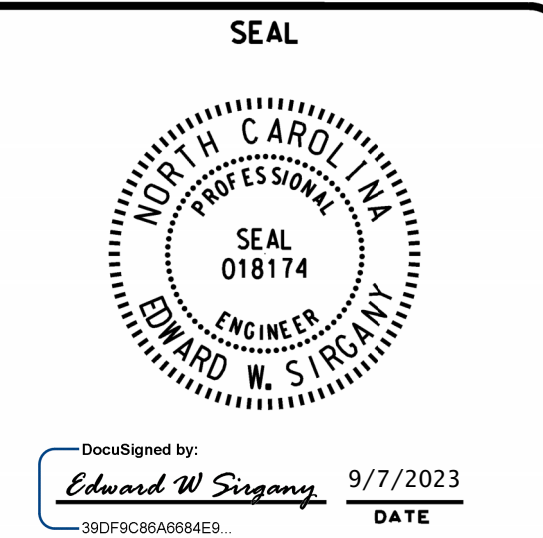
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

**LOCATION: NC 66 (OLD HOLLOW ROAD) WIDENING
FROM HARLEY DRIVE TO US 158**

TYPE OF WORK: TRAFFIC SIGNALS AND COMMUNICATIONS

Project No. U-5824 Sheet No. Sig. 1.0



BEGIN TIP PROJECT U-5824
-L- STA. 10+52.50

END TIP PROJECT U-5824
-L- STA. 106+65.31

★ SIGNAL UPGRADE

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

Sheet #	Location/Description
Sig. 1.0	Traffic Signals Title Sheet
Sig. 1.1-1.2	Standard Plate Sheets
Sig. 2.0-5.2	NC 66 (Old Hollow Road) at US 311 (New Walkertown Road)
Sig. 6.0-9.3	NC 66 (Old Hollow Road) at SR 2004 (Main Street) / Centre Stage Shopping Center
Sig. 10.0-13.2	NC 66 (Old Hollow Road) at SR 2385 (Darrow Road)
Sig. 14.0-16.2	US 158 (Reidsville Road) at NC 66 (Old Hollow Road)
Sig. M1-M8	Metal Pole Standard Drawings
SCP 1-2	Wireless Communications Plans

**TRANSPORTATION SYSTEMS
MANAGEMENT AND
OPERATIONS UNIT
CONTACTS:**

ROB ZIEMBA, PE
Central Region Signals Engineer

KEITH MIMS, PE
Signals Equipment Design Engineer

GREGG GREEN
Signals Communications Project Engineer

Prepared in the Office of:

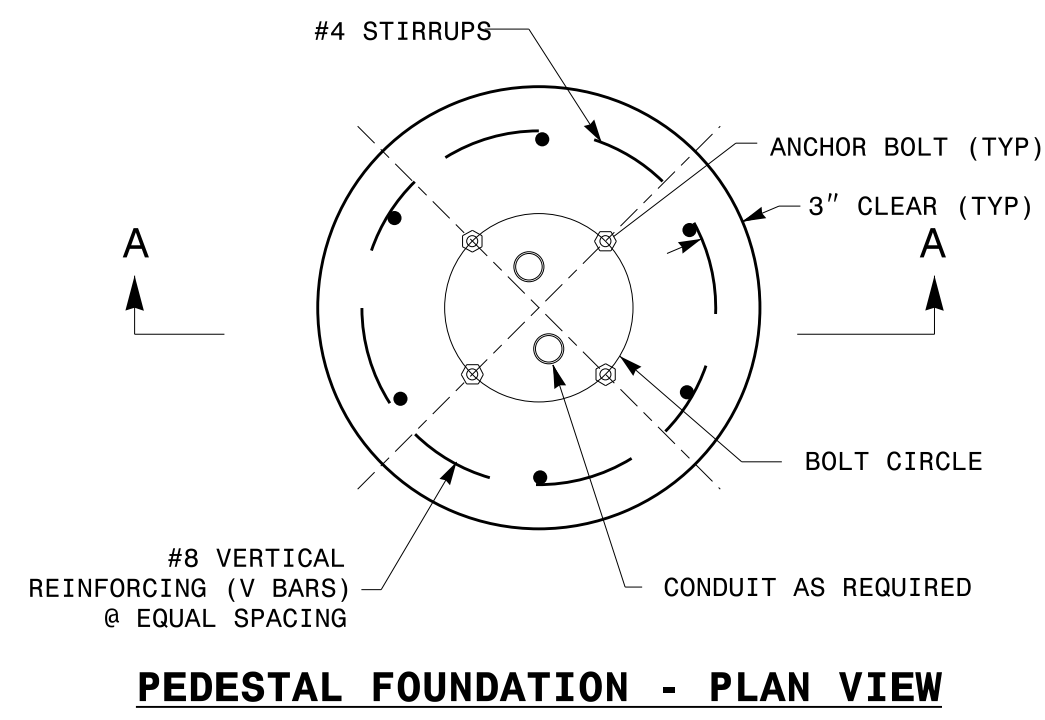
EDWARD W. SIRGAN, PE
PROJECT ENGINEER

JAMES D. SMITH, PE
PROJECT DESIGN ENGINEER

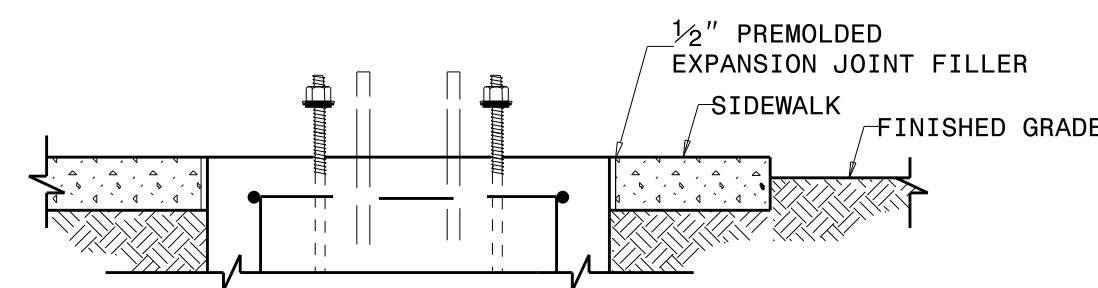
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Prepared for:

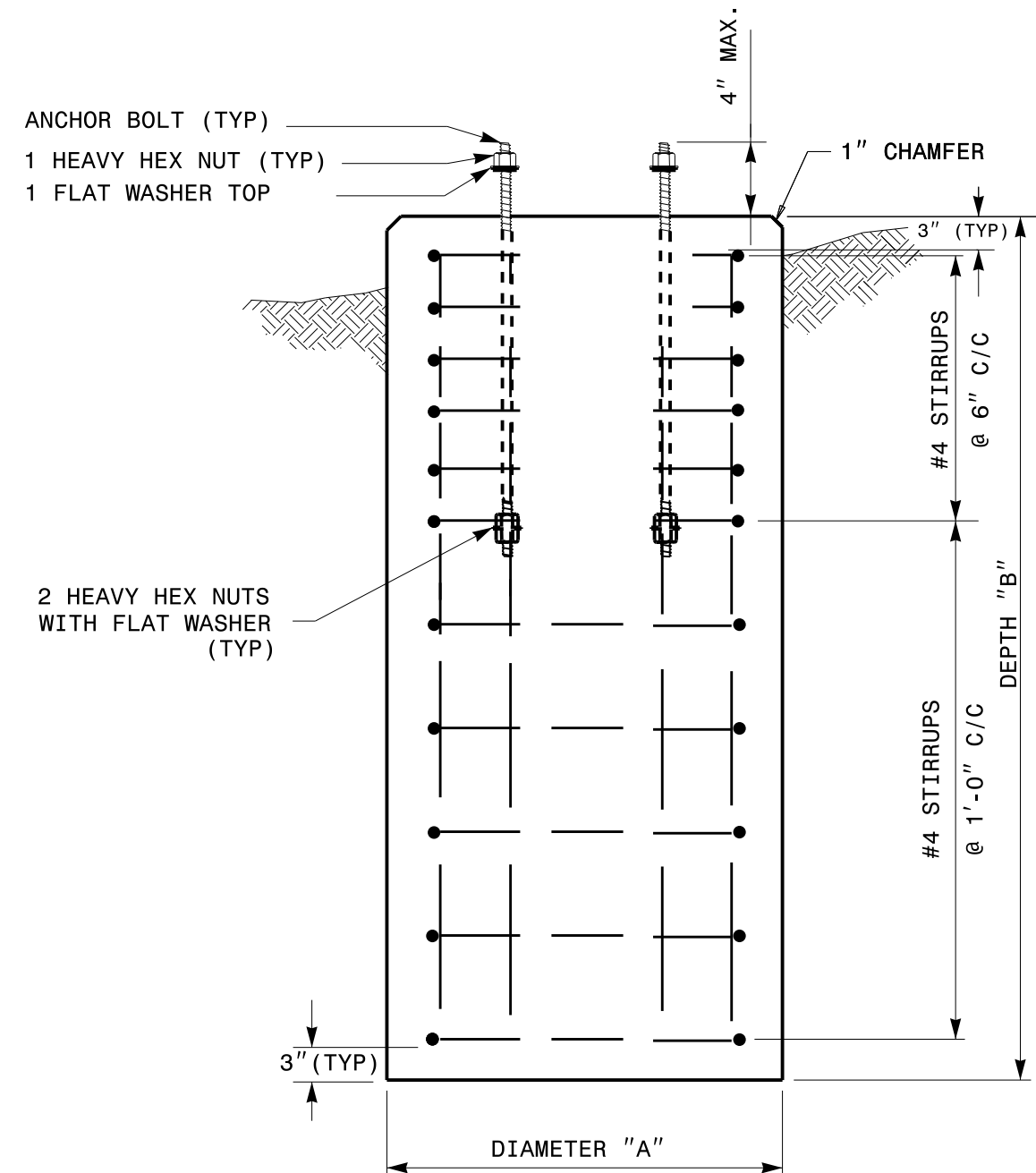
750 N. Greenfield Parkway, Garner, NC 27529



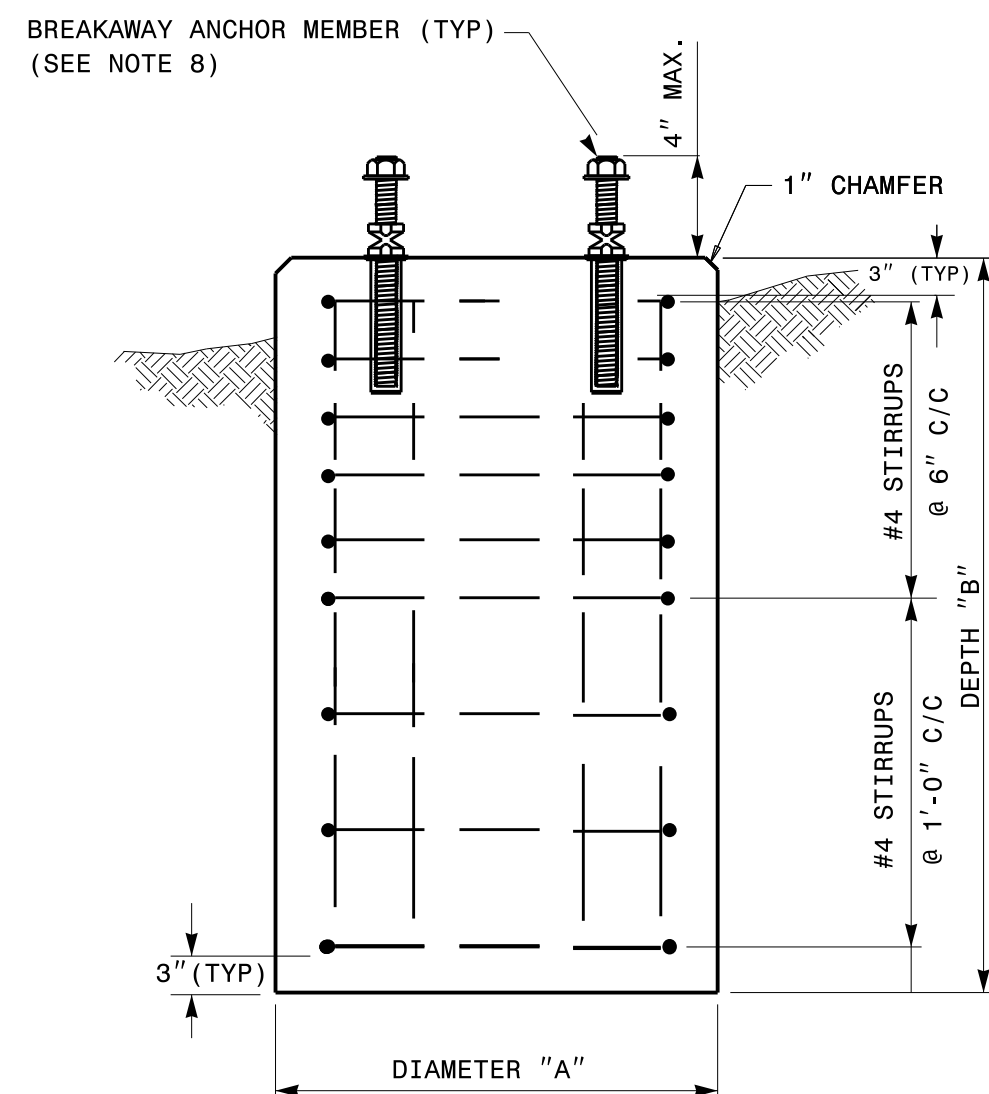
PEDESTAL FOUNDATION - PLAN VIEW



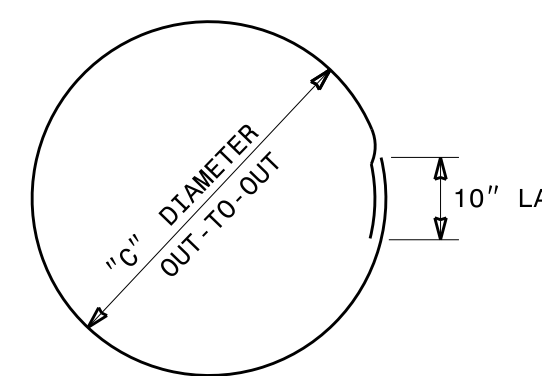
PEDESTAL FOUNDATION DETAILS FOR SIDEWALK



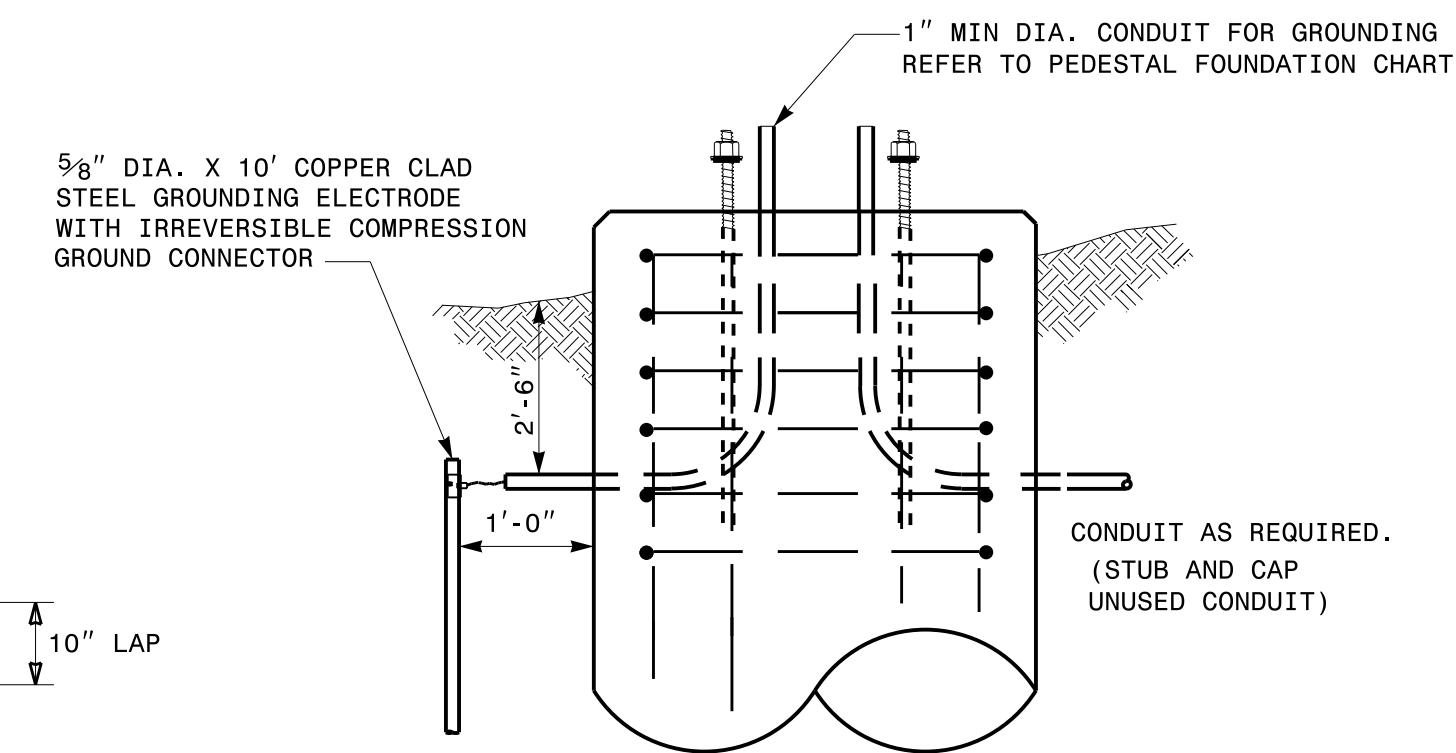
TYPES I, II & III
SECTION A-A



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:
 - SANDY TYPE SOIL
 - NO GROUND WATER WITHIN 5'-0" OF SURFACE ELEVATION
 - 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 ON 6" CENTERS	ON 12" CENTERS	TOTAL					
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

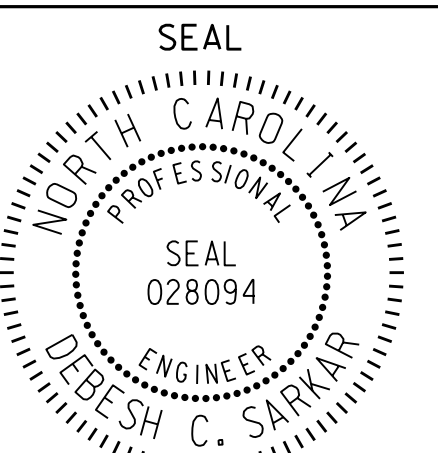
SHEET 1 OF 1
1743D01

See Plate for Title

Prepared in the Offices of:



750 N. Greenfield Parkway
Garner, NC 27529



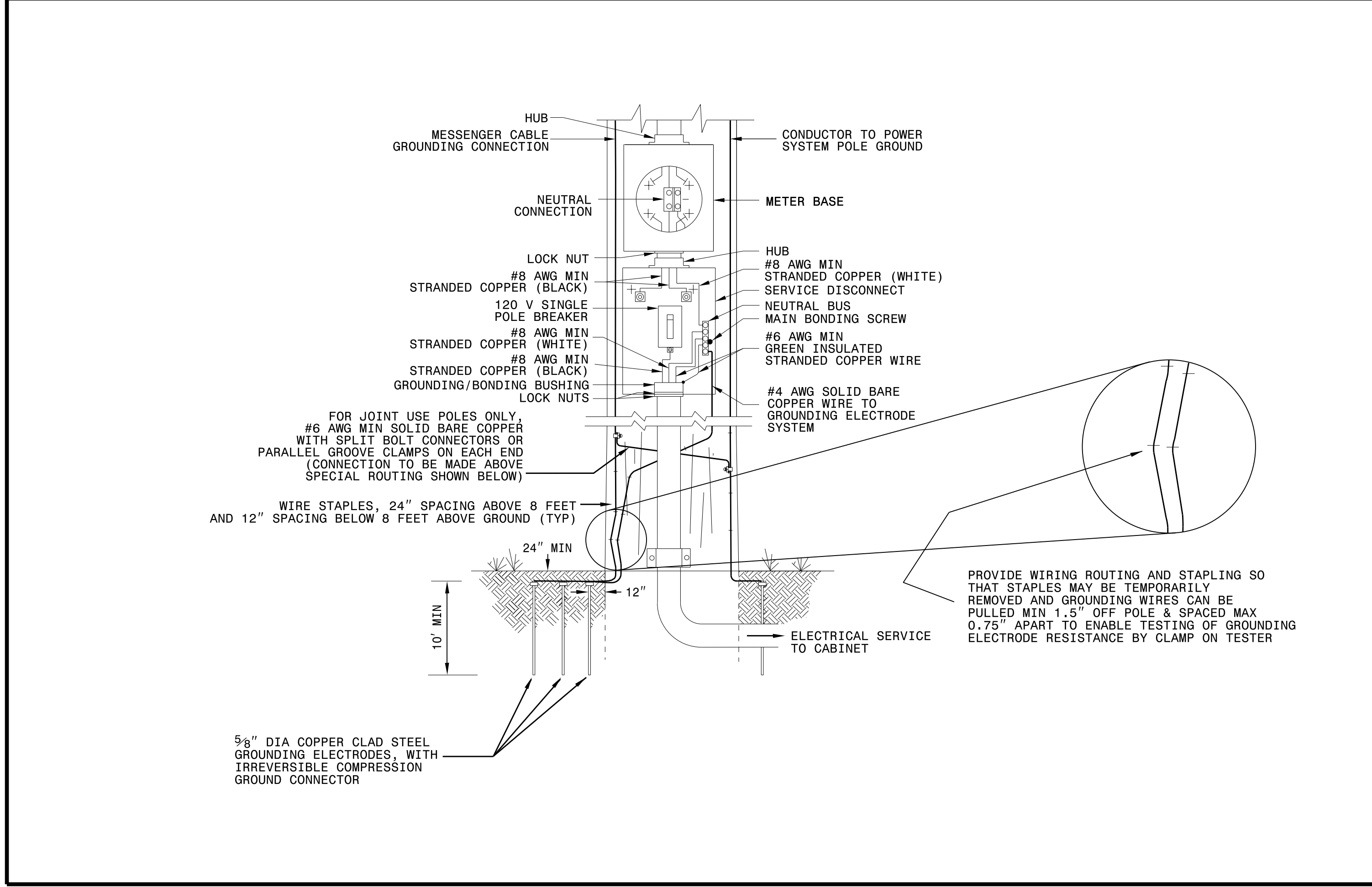
DocuSigned by:
Debesh C. Sarkar
10/11/2017
DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

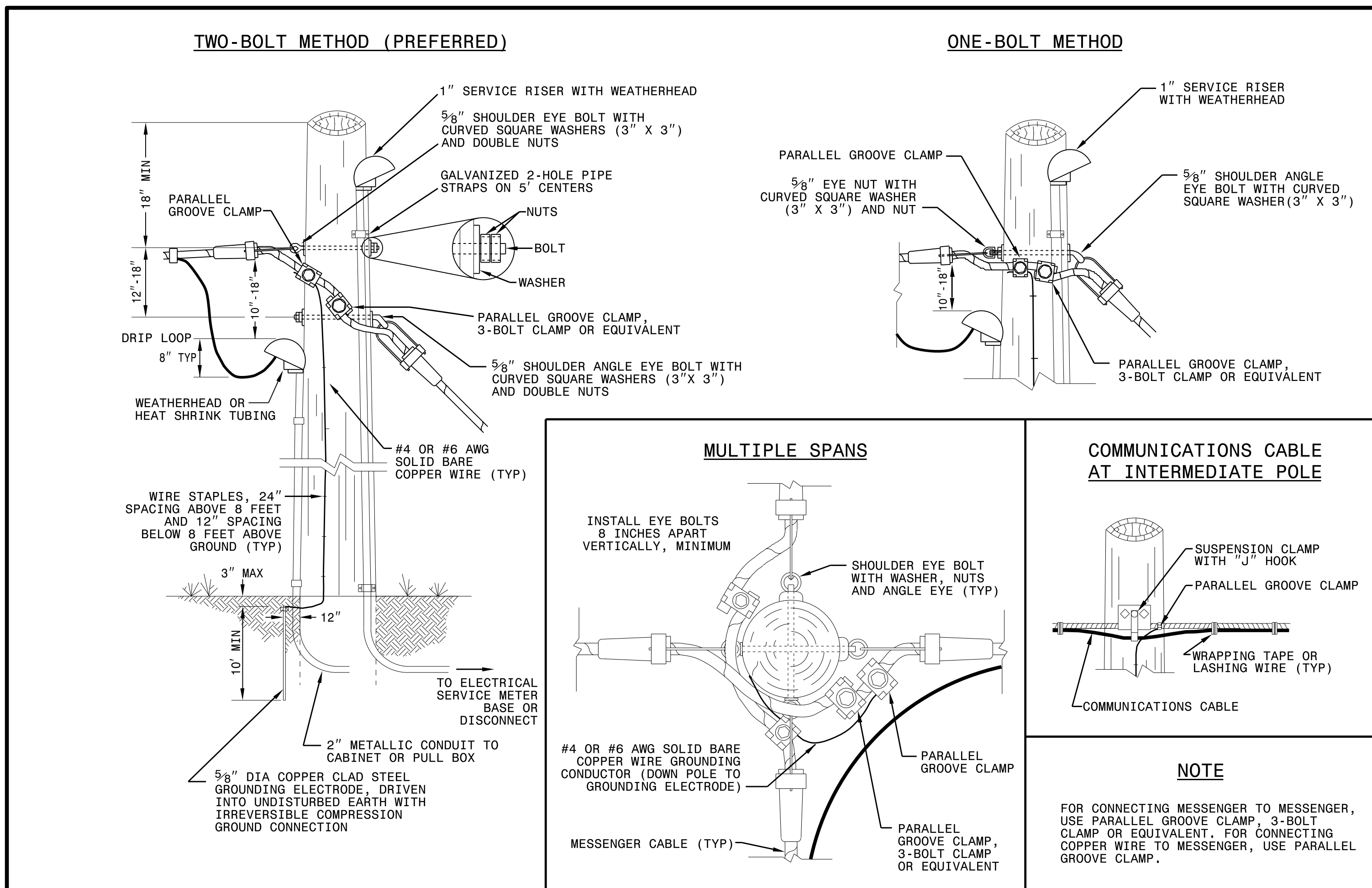
SHEET 1 OF 1
1700D01



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



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SIGNATURES COMPLETED

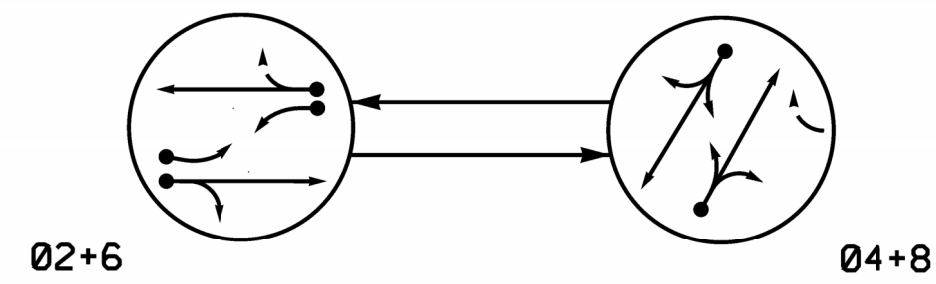
See Plate for Title

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ITS & Signals Unit
750 N. Greenfield Parkway
Garner, NC 27529

SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
MOHD A. ASLAMI
DocuSigned by:
Mohd Aslami
10/11/2017
DATE

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U:\2018_S14_Drawing\Plate_Sheets\2018_Plate_Sheet.dgn
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PHASING DIAGRAM



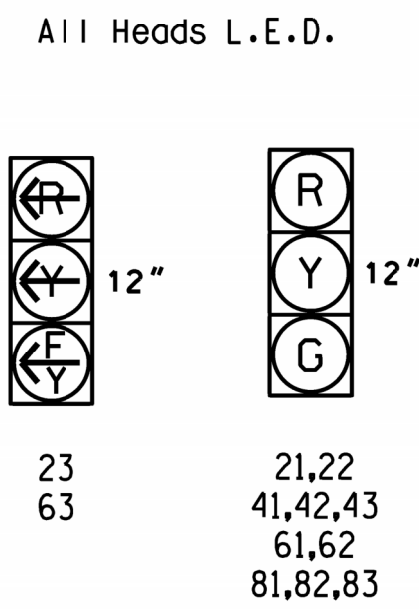
PHASING DIAGRAM DETECTION LEGEND

- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- ←- -→ UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE		
	02+6	04+8	F L S H
21,22	G	R	Y
23	F	R	Y
41,42,43	R	G	R
61,62	G	R	Y
63	F	R	Y
81,82,83	R	G	R

SIGNAL FACE I.D.



MAXTIME DETECTOR INSTALLATION CHART

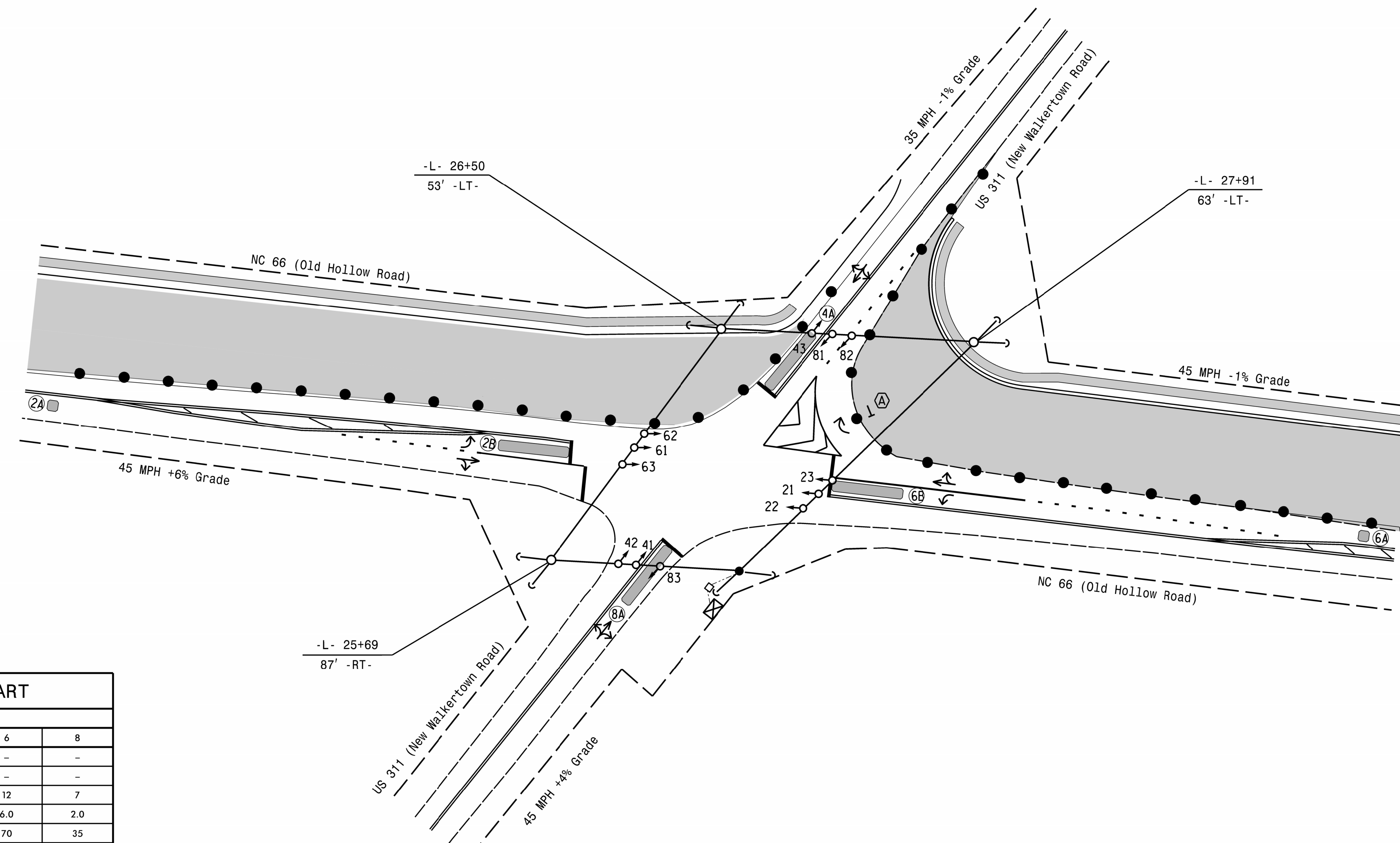
ZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING					NEW CARD	
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND INITIAL	ADDED INITIAL		CALL DURING GREEN
2A *	6X6	300	*	*	2	-	-	X	X	X	*
2B *	6X40	0	*	*	2	3.0	-	X	-	X	*
4A *	6X40	0	*	*	4	10.0	-	X	-	X	*
6A *	6X6	300	*	*	6	-	-	X	X	X	*
6B *	6X40	0	*	*	6	3.0	-	X	-	X	*
8A *	6X40	0	*	*	8	10.0	-	X	-	X	*

*Video Detection Zone

2 Phase Fully Actuated (Isolated)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing.
- This intersection uses video detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.



LEGEND

PROPOSED	EXISTING
○→ Traffic Signal Head	●→ Traffic Signal Head
○→ Modified Signal Head	N/A
↓ Sign	↓ Sign
⊥ Pedestrian Signal Head With Push Button & Sign	⊥ Pedestrian Signal Head With Push Button & Sign
○→ Signal Pole with Guy	○→ Signal Pole with Guy
○→ Signal Pole with Sidewalk Guy	○→ Signal Pole with Sidewalk Guy
▭ Video Detection Zone	▭ Video Detection Zone
⊠ Controller & Cabinet	⊠ Controller & Cabinet
□ Junction Box	□ Junction Box
- - - 2-in Underground Conduit	- - - 2-in Underground Conduit
N/A Right of Way	- - - Right of Way
→ Directional Arrow	→ Directional Arrow
(A) "YIELD" Sign (R1-2)	(A) "YIELD" Sign (R1-2)
▭ Construction Zone	▭ Construction Zone
• • Construction Zone Drums	• • Construction Zone Drums

MAXTIME TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Walk *	-	-	-	-
Ped Clear *	-	-	-	-
Min Green *	12	7	12	7
Passage *	6.0	2.0	6.0	2.0
Max 1 *	70	35	70	35
Yellow Change	4.6	3.9	4.6	4.2
Red Clear	2.2	1.7	2.2	1.2
Added Initial *	2.5	-	2.5	-
Maximum Initial *	34	-	34	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	30	-	30	-
Minimum Gap	3.0	-	3.0	-
Advance Walk	-	-	-	-
Non Lock Detector	-	X	-	X
Vehicle Recall	MIN RECALL	-	MIN RECALL	-
Dual Entry	-	X	-	X

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

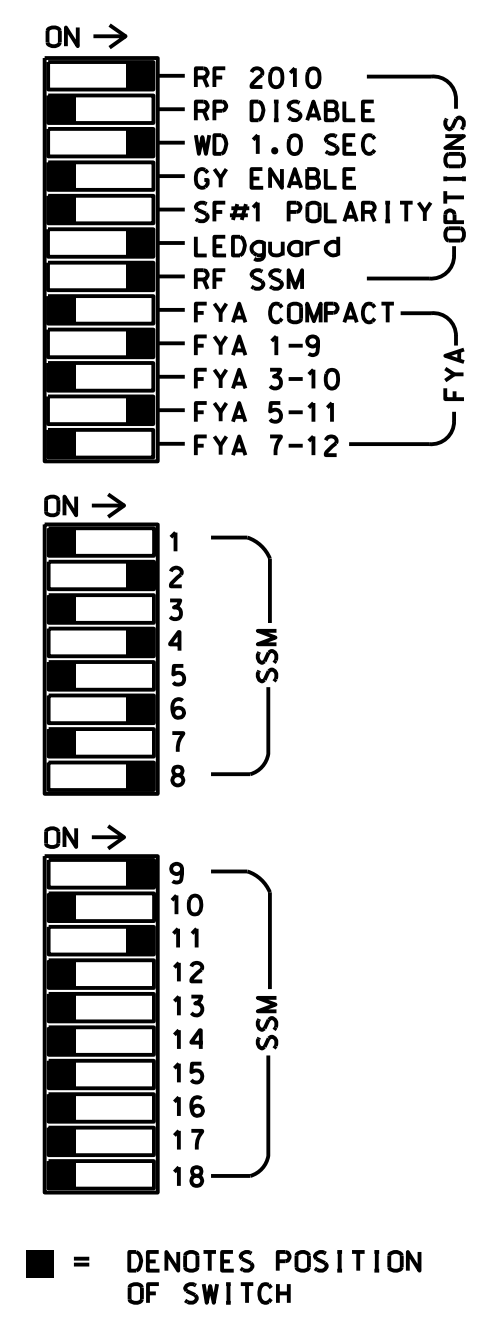
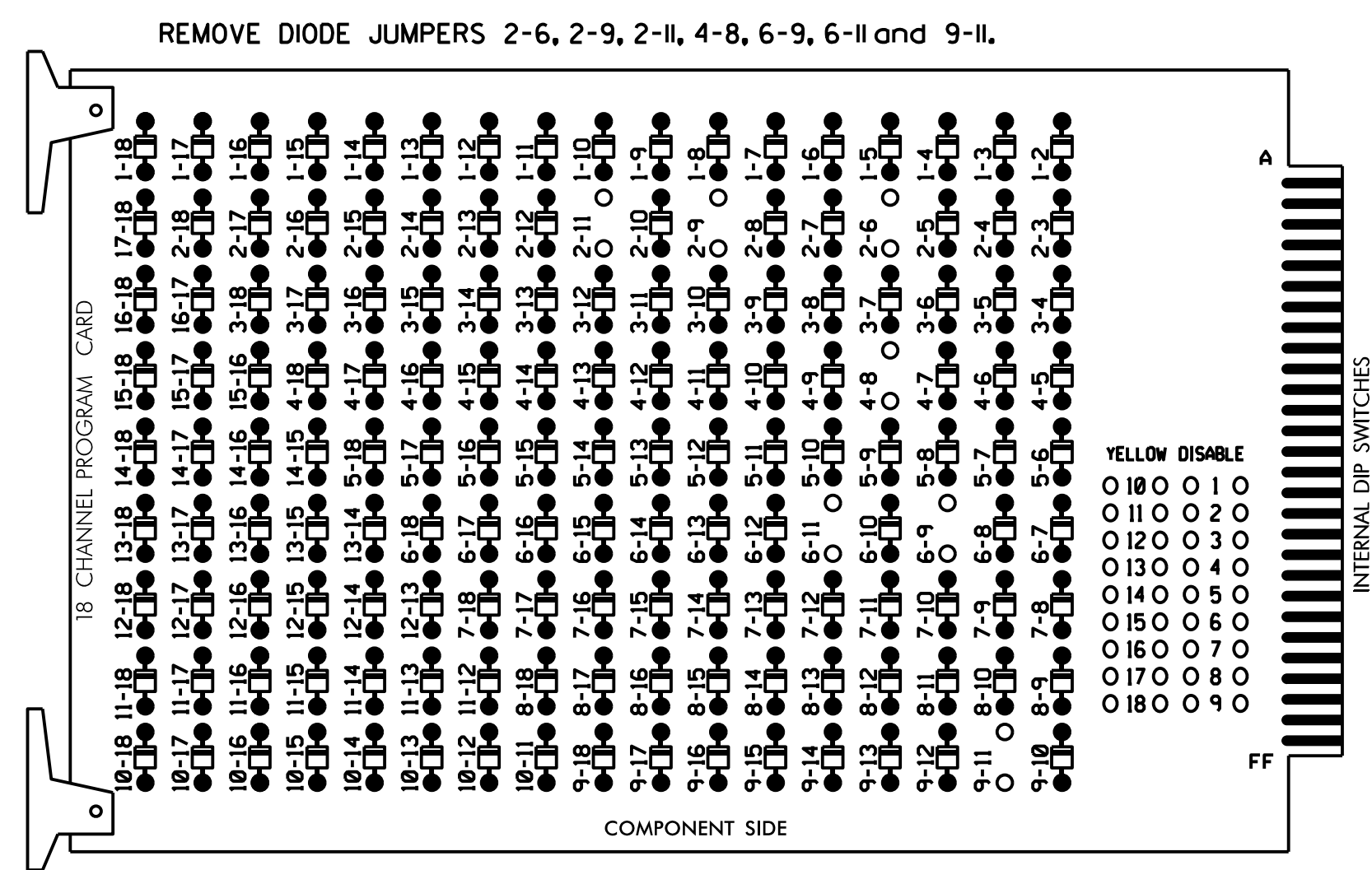
Signal Upgrade - Temporary Design 1 (TMP Phase I Step 2)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>Prepared in the Office of:</p> <p>NC FIRM LICENSE No: P-0339 320 Executive Court Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>	<p>Prepared for the Offices of:</p> <p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>NC 66 (Old Hollow Road) at US 311 (New Walkertown Road)</p> <p>Division 9 Forsyth County Walkertown</p> <p>PLAN DATE: August 2023 REVIEWED BY: J. Smith</p> <p>PREPARED BY: E. Sirgany REVIEWED BY:</p>	<p>SEAL</p> <p>Edward W. Sirgany 9/7/2023 DATE</p> <p>SIG. INVENTORY NO. 09-034571</p>
--	---	--	--

**18 CHANNEL IP CONFLICT MONITOR
PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)



NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/AUX
 SOFTWARE.....Q-FREE MAXTIME
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S5,S8,S11,AUX S1,AUX S4
 PHASES USED.....2,4,6,8
 OVERLAP "1".....*
 OVERLAP "2".....NOT USED
 OVERLAP "3".....*
 OVERLAP "4".....NOT USED
 * See overlap programming detail below.

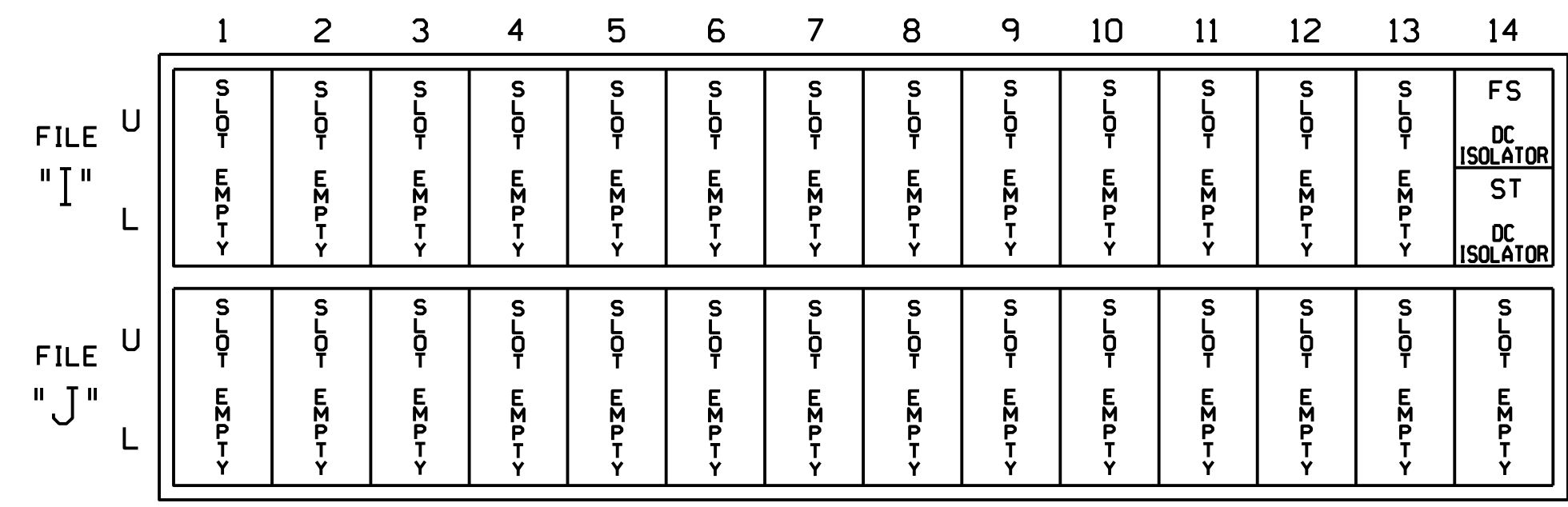
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42 43	NU	NU	61,62	NU	NU	81,82 83	NU	63*	NU	NU	23*	NU	NU
RED		128			101			134			107							
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW													A121				A114	
YELLOW ARROW													A122				A115	
FLASHING YELLOW ARROW													A123				A116	
GREEN ARROW																		

NU = Not Used
 * See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



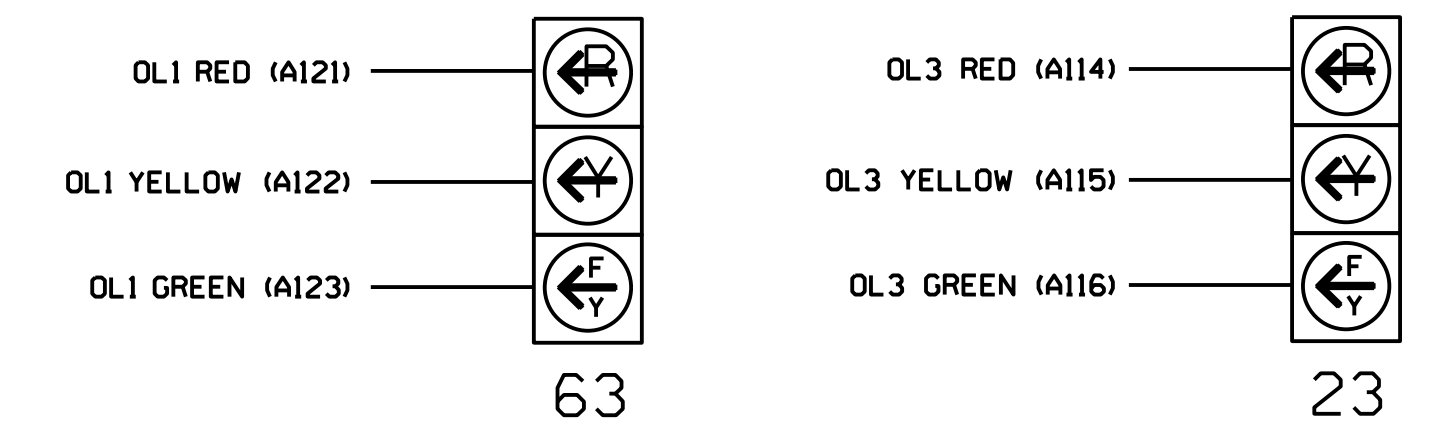
OVERLAP PROGRAMMING

Front Panel
 Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings
 Web Interface
 Home >Controller >Overlap Configuration >Overlaps
 Overlap Plan 1

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6
Modifier Phases	-	-
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



SPECIAL DETECTOR NOTE

Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection scheme shown on the Signal Design Plans.

Electrical Detail - Temporary Design 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

 NC FIRM LICENSE No: P-0339
 320 Executive Court
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

Prepared For:

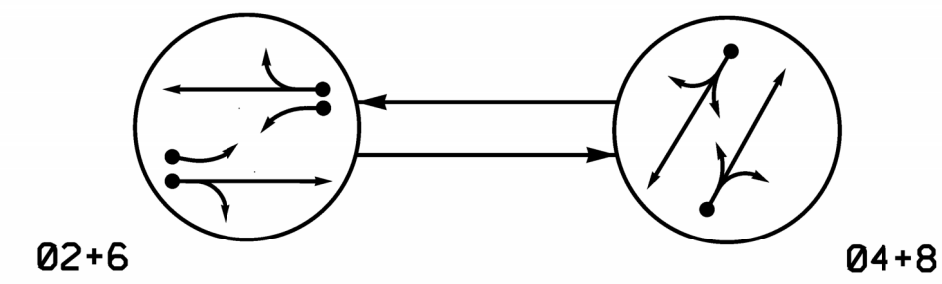
 750 N. Greenfield Pkwy, Corner, NC 27529

NC 66 (Old Hollow Road)
 at
 US 311 (New Walkertown Road)
 Division 9 Forsyth County Walkertown
 PLAN DATE: August 2023 REVIEWED BY: E. Sirgany
 PREPARED BY: J. Smith REVIEWED BY:
 REVISIONS INIT. DATE

SEAL

 DocuSigned by:
 Edward W. Sirgany 9/7/2023
 DATE
 SIG. INVENTORY NO. 09-0345T1

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

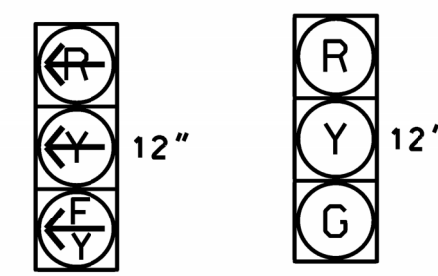
- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- ←- -→ UNSIGNALIZED MOVEMENT
- ←- -> PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE		
	02+6	04+8	FLASH
21,22	G	R	Y
23	F	R	Y
41,42,43	R	G	R
61,62	G	R	Y
63	F	R	Y
81,82,83	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



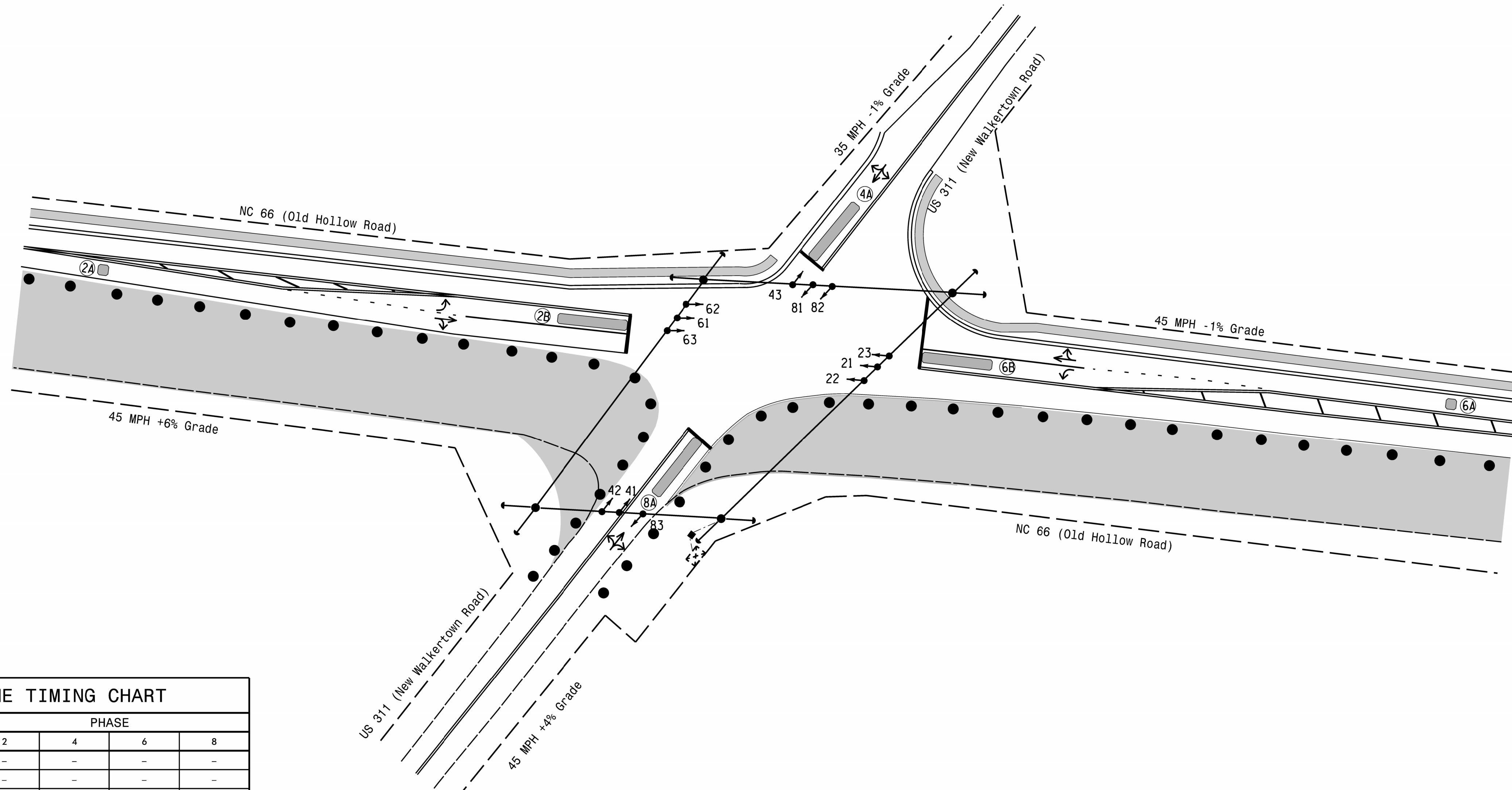
MAXTIME DETECTOR INSTALLATION CHART												
DETECTOR					PROGRAMMING							
ZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
2A *	6X6	300	*	*	2	-	-	X	X	X	-	*
2B *	6X40	0	*	*	2	3.0	-	X	-	X	-	*
4A *	6X40	0	*	*	4	10.0	-	X	-	X	-	*
6A *	6X6	300	*	*	6	-	-	X	X	X	-	*
6B *	6X40	0	*	*	6	3.0	-	X	-	X	-	*
8A *	6X40	0	*	*	8	10.0	-	X	-	X	-	*

* Video Detection Zone

2 Phase Fully Actuated (Isolated)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Reposition existing signal heads numbered 21, 22, 23, 61, 62, and 63.
- Remove existing "YIELD" sign (R1-2).
- This intersection uses video detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.



MAXTIME TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Walk *	-	-	-	-
Ped Clear *	-	-	-	-
Min Green *	12	7	12	7
Passage *	6.0	2.0	6.0	2.0
Max I *	70	35	70	35
Yellow Change	4.6	3.9	4.6	4.2
Red Clear	2.1	1.7	2.1	1.7
Added Initial *	2.5	-	2.5	-
Maximum Initial *	34	-	34	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	30	-	30	-
Minimum Gap	3.0	-	3.0	-
Advance Walk	-	-	-	-
Non Lock Detector	-	X	-	X
Vehicle Recall	MIN RECALL	-	MIN RECALL	-
Dual Entry	-	X	-	X

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

LEGEND

- | PROPOSED | EXISTING |
|--|--|
| ○→ Traffic Signal Head | ●→ Traffic Signal Head |
| ●→ Modified Signal Head | N/A |
| ⊥ Sign | ⊥ Sign |
| ⊥ Pedestrian Signal Head With Push Button & Sign | ⊥ Pedestrian Signal Head With Push Button & Sign |
| ○→ Signal Pole with Guy | ●→ Signal Pole with Guy |
| ○→ Signal Pole with Sidewalk Guy | ●→ Signal Pole with Sidewalk Guy |
| ▭ Video Detection Zone | ▭ Video Detection Zone |
| ⊠ Controller & Cabinet | ⊠ Controller & Cabinet |
| □ Junction Box | □ Junction Box |
| - - - 2-in Underground Conduit | - - - 2-in Underground Conduit |
| N/A Right of Way | - - - Right of Way |
| → Directional Arrow | → Directional Arrow |
| ▭ Construction Zone | ▭ Construction Zone |
| •• Construction Zone Drums | •• Construction Zone Drums |

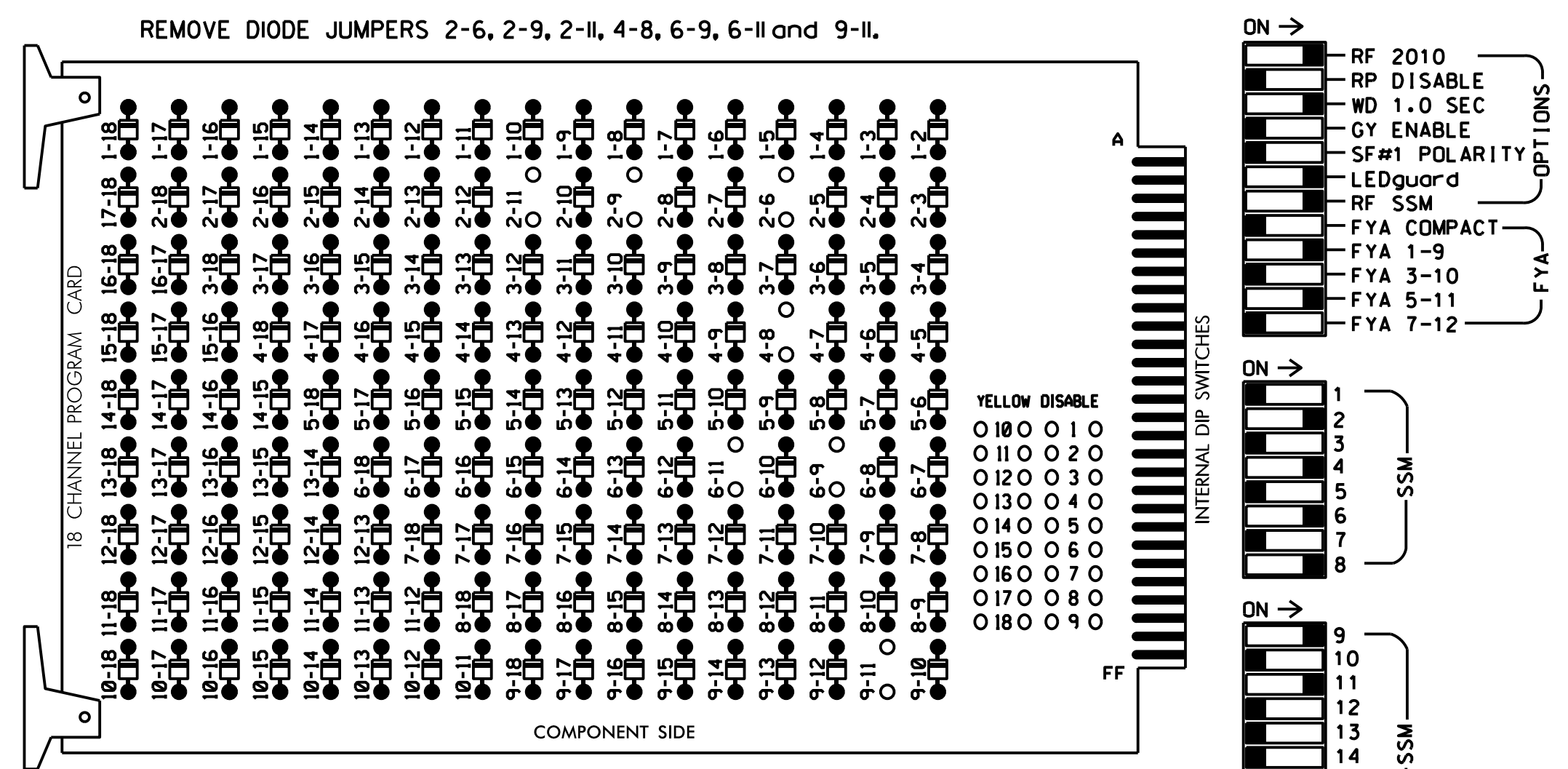
Signal Upgrade - Temporary Design 2 (TMP Phase II Step 1)

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Prepared in the Office of: NC FIRM LICENSE No: P-0339 320 Executive Court Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	Prepared for the Offices of: 750 N. Greenfield Pkwy, Corner, NC 27528	NC 66 (Old Hollow Road) at US 311 (New Walkertown Road)		SEAL EDWARD W. SIRGANI ENGINEER
		Division 9 Forsyth County Walkertown PLAN DATE: August 2023 REVIEWED BY: J. Smith PREPARED BY: E. Sirgany REVIEWED BY:	REVISIONS INIT. DATE	

**18 CHANNEL IP CONFLICT MONITOR
PROGRAMMING DETAIL**

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

- NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
 3. Ensure that Red Enable is active at all times during normal operation.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/AUX
 SOFTWARE.....Q-FREE MAXTIME
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S2,S5,S8,S11,AUX S1,AUX S4
 PHASES USED.....2,4,6,8
 OVERLAP "1".....*
 OVERLAP "2".....NOT USED
 OVERLAP "3".....*
 OVERLAP "4".....NOT USED

* See overlap programming detail below.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42 43	NU	NU	61,62	NU	NU	81,82 83	NU	63*	NU	NU	23*	NU	NU
RED		128			101			134			107							
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW													A121					A114
YELLOW ARROW													A122					A115
FLASHING YELLOW ARROW													A123					A116
GREEN ARROW																		

NU = Not Used
 * See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	FS DC ISOLATOR
FILE "J"	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	S -OF	ST DC ISOLATOR

EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME

OVERLAP PROGRAMMING

Front Panel
 Main Menu > Controller > Overlap > Overlap Parameters/Overlap Timings

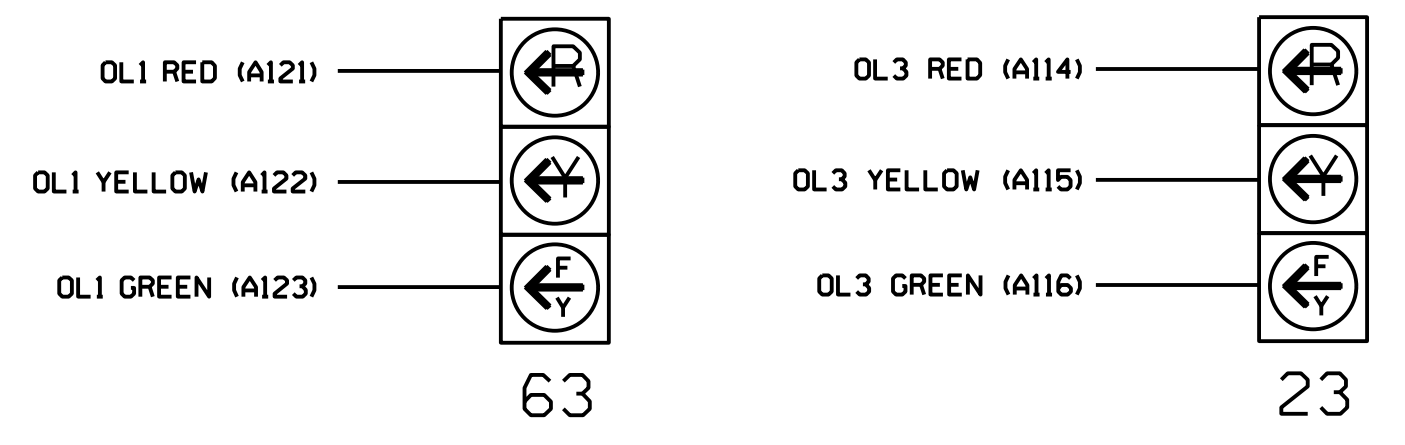
Web Interface
 Home > Controller > Overlap Configuration > Overlaps

Overlap Plan 1

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6
Modifier Phases	-	-
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



SPECIAL DETECTOR NOTE

Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection scheme shown on the Signal Design Plans.

OVERLAP PROGRAMMING

Front Panel
 Main Menu > Controller > Overlap > Overlap Parameters/Overlap Timings

Web Interface
 Home > Controller > Overlap Configuration > Overlaps

Overlap Plan 1

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6
Modifier Phases	-	-
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-0345T2
 DESIGNED: August 2023
 SEALED: 9/7/2023
 REVISED: N/A

Electrical Detail - Temporary Design 2

Prepared in the Office of:

NC FIRM LICENSE No: P-0339
 320 Executive Court
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

Prepared For:

750 N. Greenfield Pkwy, Corner, NC 27529

NC 66 (Old Hollow Road)
 at
 US 311 (New Walkertown Road)

Division 9 Forsyth County Walkertown

PLAN DATE: August 2023 REVIEWED BY: E. Sirgany

PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

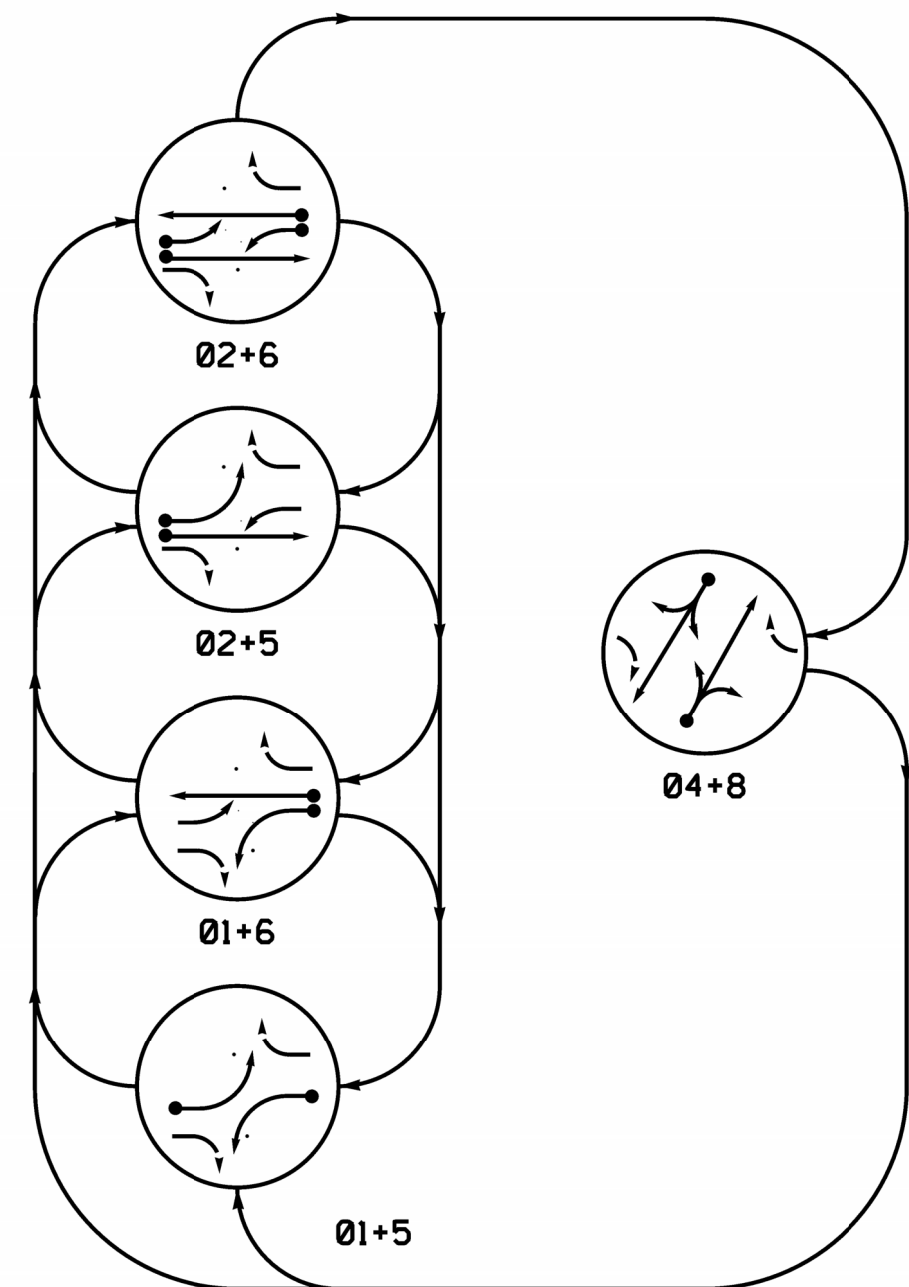
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

DocuSigned by:
 Edward W. Sirgany
 9/7/2023
 DATE

SIG. INVENTORY NO. 09-0345T2

PHASING DIAGRAM



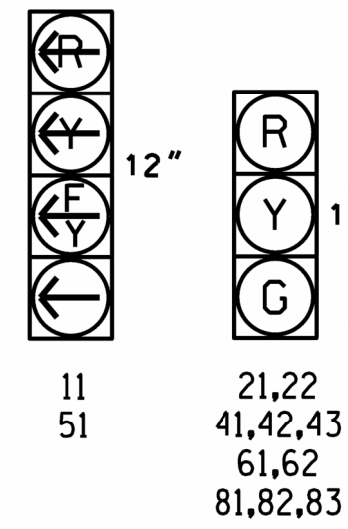
PHASING DIAGRAM DETECTION LEGEND

- ←•→ DETECTED MOVEMENT
- ←-→ UNDETECTED MOVEMENT (OVERLAP)
- ←- -→ UNSIGNALIZED MOVEMENT
- ←- - -→ PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE					
	01+5	01+6	02+5	02+6	04+8	FLDISH
11	-	-	F	F	R	Y
21,22	R	R	G	G	R	Y
41,42,43	R	R	R	R	G	R
51	-	F	-	F	R	Y
61,62	R	G	R	G	R	Y
81,82,83	R	R	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



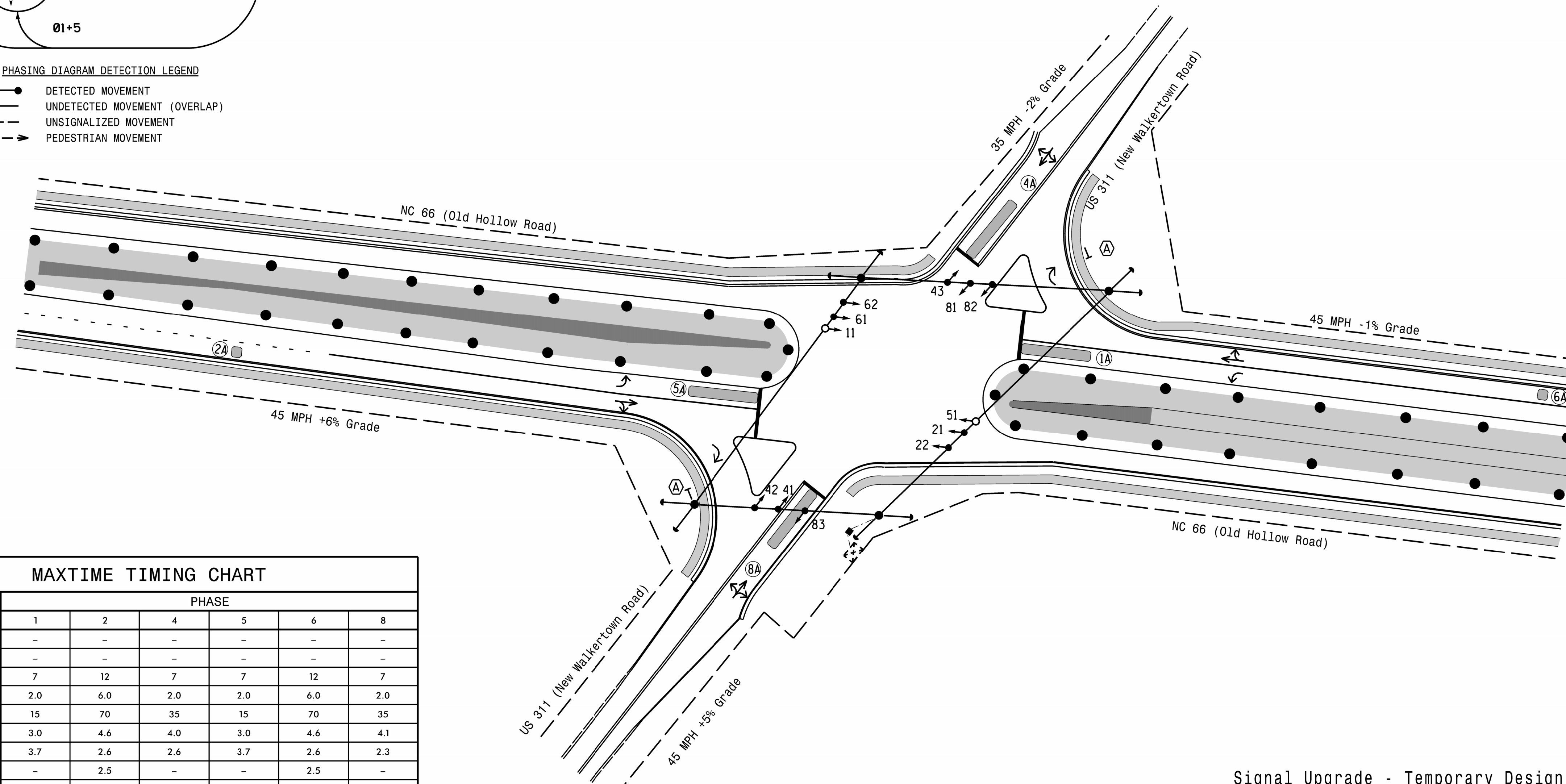
MAXTIME DETECTOR INSTALLATION CHART											
ZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING						
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A*	6X40	0	*	*	1	10.0	-	X	-	X	*
2A*	6X6	300	*	*	6	3.0	-	X	-	X	*
4A*	6X40	0	*	*	4	10.0	-	X	-	X	*
5A*	6X40	0	*	*	5	10.0	-	X	-	X	*
6A*	6X6	300	*	*	6	-	-	X	X	X	*
8A*	6X40	0	*	*	8	10.0	-	X	-	X	*

* Video Detection Zone

5 Phase Fully Actuated (Isolated)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- Reposition existing signal heads numbered 21 and 22.
- This intersection uses video detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.



PROPOSED		EXISTING	
○→	Traffic Signal Head	●→	N/A
○→	Modified Signal Head	○→	N/A
↓	Sign	↓	N/A
↓	Pedestrian Signal Head With Push Button & Sign	↓	N/A
○	Signal Pole with Guy	○	N/A
○	Signal Pole with Sidewalk Guy	○	N/A
▭	Video Detection Zone	▭	N/A
⊠	Controller & Cabinet	⊠	N/A
□	Junction Box	□	N/A
- - -	2-in Underground Conduit	- - -	N/A
N/A	Right of Way	N/A	N/A
→	Directional Arrow	→	N/A
Ⓐ	"YIELD" Sign (R1-2)	Ⓐ	N/A
▭	Construction Zone	▭	N/A
••	Construction Zone Drums	••	N/A

FEATURE	MAXTIME TIMING CHART					
	1	2	4	5	6	8
Walk *	-	-	-	-	-	-
Ped Clear *	-	-	-	-	-	-
Min Green *	7	12	7	7	12	7
Passage *	2.0	6.0	2.0	2.0	6.0	2.0
Max 1 *	15	70	35	15	70	35
Yellow Change	3.0	4.6	4.0	3.0	4.6	4.1
Red Clear	3.7	2.6	2.6	3.7	2.6	2.3
Added Initial *	-	2.5	-	-	2.5	-
Maximum Initial *	-	34	-	-	34	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	30	-	-	30	-
Minimum Gap	-	3.0	-	-	3.0	-
Advance Walk	-	-	-	-	-	-
Non Lock Detector	X	-	X	X	-	X
Vehicle Recall	-	MIN RECALL	-	-	MIN RECALL	-
Dual Entry	-	-	X	-	-	X

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

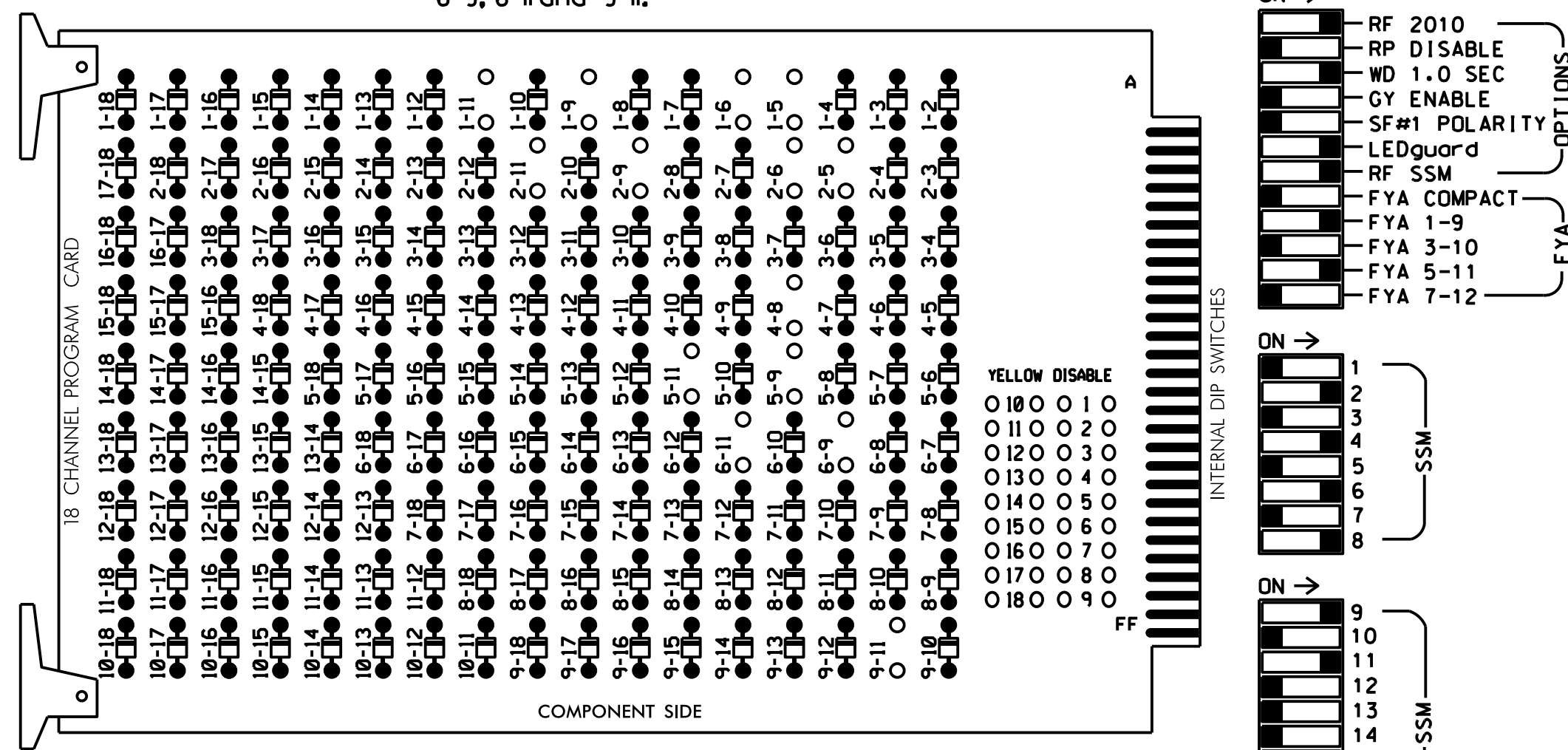
Signal Upgrade - Temporary Design 3 (TMP Phase III Step 1)

Prepared in the Office of: NC FIRM LICENSE No: P-0339 320 Executive Court Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)	Prepared For: 750 N. Greenfield Pkwy, Garner, NC 27525	NC 66 (Old Hollow Road) at US 311 (New Walkertown Road)		SEAL Edward W. Sirgany ENGINEER
		Division 9 Forsyth County Walkertown PLAN DATE: August 2023 REVIEWED BY: J. Smith PREPARED BY: E. Sirgany REVIEWED BY:		
SCALE 0 40 1" = 40'		REVISIONS INIT. DATE		9/7/2023 DATE SIG. INVENTORY NO. 09-034513

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 2-5, 2-6, 2-9, 2-11, 4-8, 5-9, 5-11, 6-9, 6-11 and 9-11.



REMOVE JUMPERS AS SHOWN

- NOTES:
- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 - Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
 - Ensure that Red Enable is active at all times during normal operation.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
 CABINET.....332 W/AUX
 SOFTWARE.....Q-FREE MAXTIME
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S5,S7,S8,S11,AUX S1,AUX S4
 PHASES USED.....1,2,4,5,6,8
 OVERLAP "1".....*
 OVERLAP "2".....NOT USED
 OVERLAP "3".....*
 OVERLAP "4".....NOT USED
 * See overlap programming detail below.

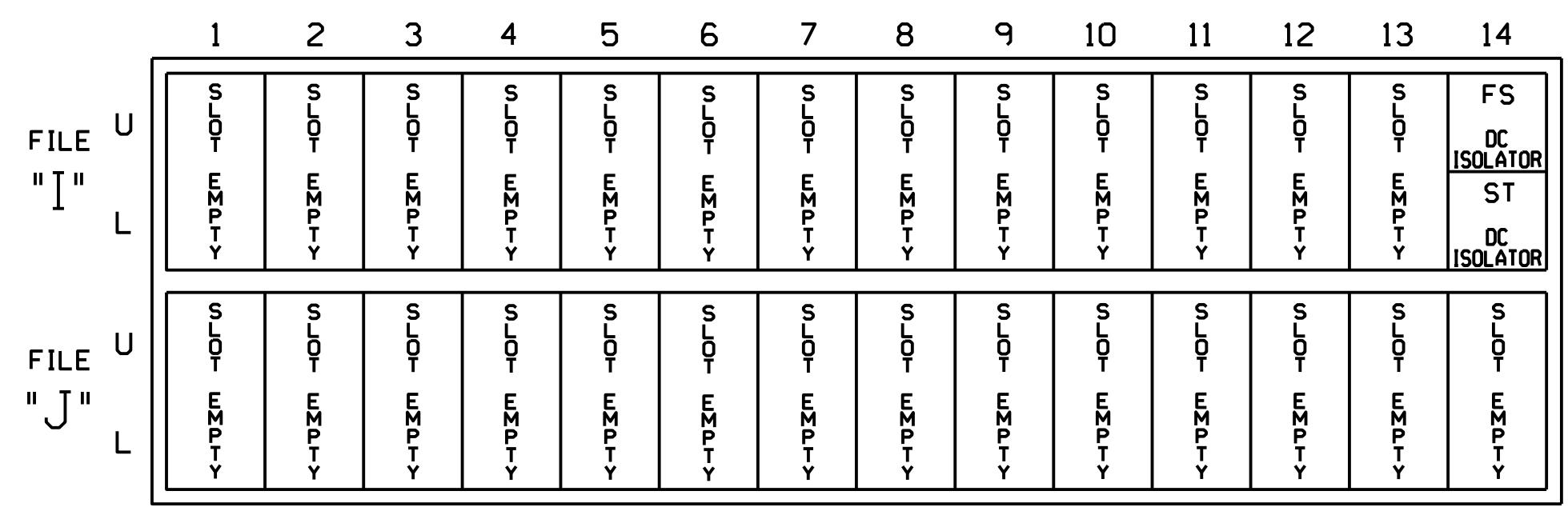
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CNU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2	3	4	4	5	6	6	7	8	8	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22	NU	NU	41,42,43	NU	51	61,62	NU	NU	81,82,83	NU	11	NU	NU	51	NU	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW													A121				A114	
YELLOW ARROW													A122				A115	
FLASHING YELLOW ARROW													A123				A116	
GREEN ARROW	127							133										

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail on this sheet.
 * See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)



EX. : 1A, 2A, ETC. = LOOP NO.'S FS = FLASH SENSE ST = STOP TIME

OVERLAP PROGRAMMING

Front Panel
 Main Menu > Controller > Overlap > Overlap Parameters/Overlap Timings

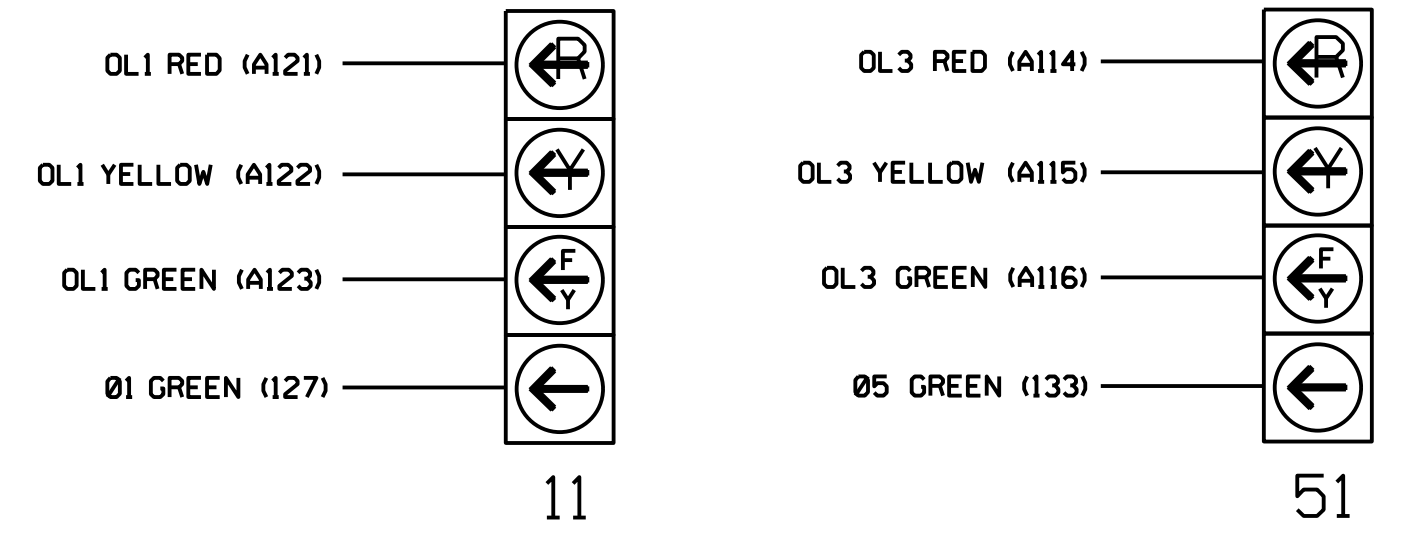
Web Interface
 Home > Controller > Overlap Configuration > Overlaps

Overlap Plan 1

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6
Modifier Phases	1	5
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

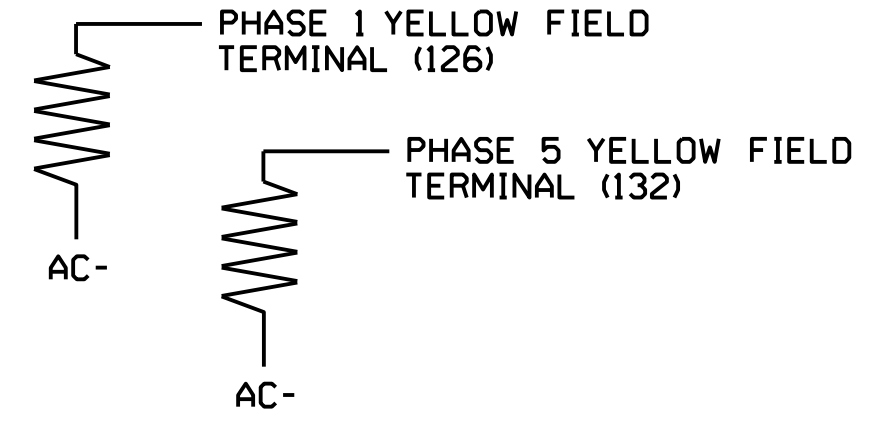


LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



SPECIAL DETECTOR NOTE

Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection scheme shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-0345T3
 DESIGNED: August 2023
 SEALED: 9/7/2023
 REVISED: N/A

Prepared in the Office of:

 NC FIRM LICENSE No: P-0339
 320 Executive Court
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

Electrical Detail - Temporary Design 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:

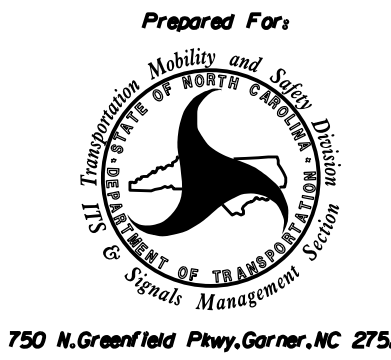
NC 66 (Old Hollow Road)
 at
 US 311 (New Walkertown Road)

Division 9	Forsyth County	Walkertown
PLAN DATE: August 2023	REVIEWED BY: E. Sirgany	
PREPARED BY: J. Smith	REVIEWED BY:	
REVISIONS	INIT.	DATE

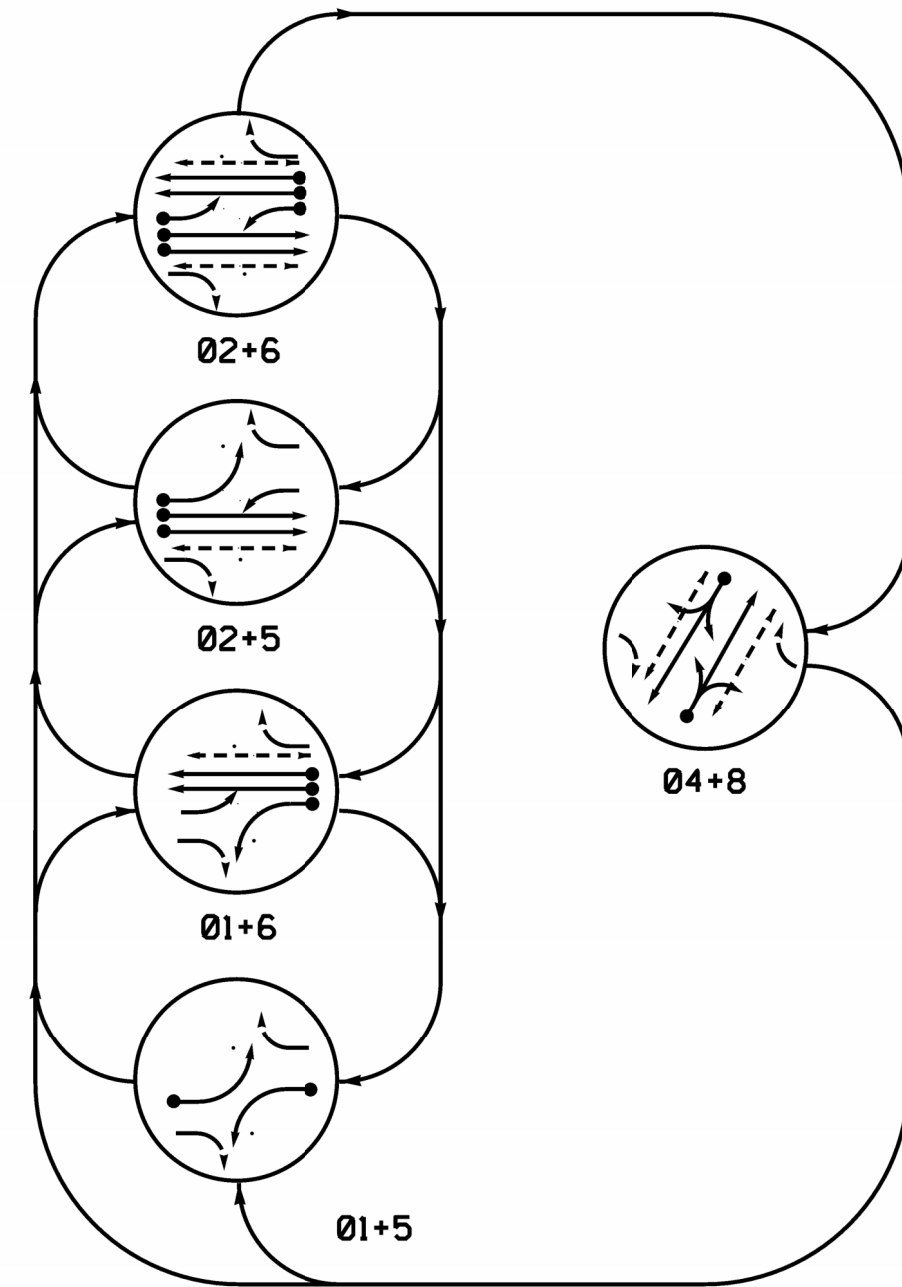
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

 SEAL 018174
 Edward W. Sirgany
 ENGINEER
 9/7/2023
 DATE
 SIG. INVENTORY NO. 09-0345T3



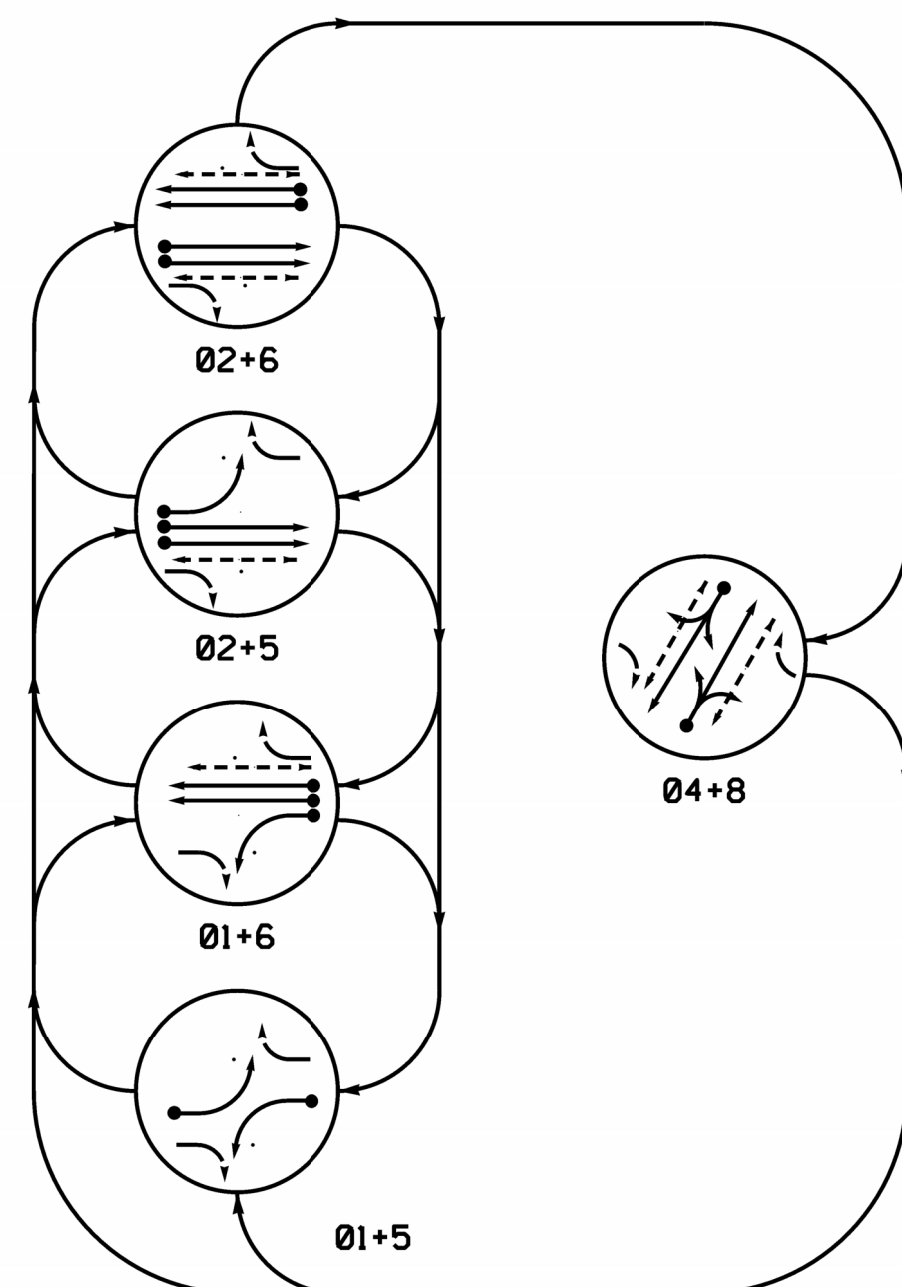
DEFAULT PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE					FLASH
	01+5	01+6	02+5	02+6	04+8	
11	---	---	---	---	---	---
21,22	R	R	G	G	R	Y
41,42,43	R	R	R	R	G	R
51	---	---	---	---	---	---
61,62	R	G	R	G	R	Y
81,82,83	R	R	R	R	G	R
P21,P22	DW	DW	W	W	DW	DRK
P41,P42	DW	W	DW	DW	W	DRK
P61,P62	DW	W	DW	W	DW	DRK
P81,P82	DW	DW	DW	DW	W	DRK

ALTERNATE PHASING DIAGRAM



ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE					FLASH
	01+5	01+6	02+5	02+6	04+8	
11	---	---	---	---	---	---
21,22	R	R	G	G	R	Y
41,42,43	R	R	R	R	G	R
51	---	---	---	---	---	---
61,62	R	G	R	G	R	Y
81,82,83	R	R	R	R	G	R
P21,P22	DW	DW	W	W	DW	DRK
P41,P42	DW	DW	DW	DW	W	DRK
P61,P62	DW	W	DW	W	DW	DRK
P81,P82	DW	DW	DW	DW	W	DRK

MAXTIME DETECTOR INSTALLATION CHART

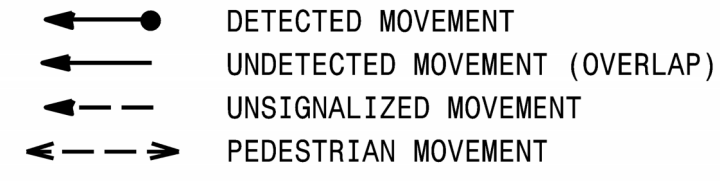
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING						
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	INITIAL	CALL	NEW CARD
1A	6X40	0	2-4-2	X	1	15.0*	-	X	X	X	X
2A	6X6	300	6	X	2	-	-	X	X	X	X
2B	6X6	300	6	X	2	-	-	X	X	X	X
4A	6X40	0	2-4-2	X	4	10.0	-	X	X	X	X
5A	6X40	0	2-4-2	X	5	15.0*	-	X	X	X	X
6A	6X6	300	6	X	6	-	-	X	X	X	X
6B	6X6	300	6	X	6	-	-	X	X	X	X
8A	6X40	0	2-4-2	X	8	10.0	-	X	X	X	X
S1	6X6	+200	6	X	-	-	-	-	-	-	-
S2	6X6	+200	6	X	-	-	-	-	-	-	-
S15	6X6	+200	6	X	-	-	-	-	-	-	-
S16	6X6	+200	6	X	-	-	-	-	-	-	-

5 Phase Fully Actuated (Old Hollow Road CLS) Signal System #: D09-29_Walkertown

NOTES

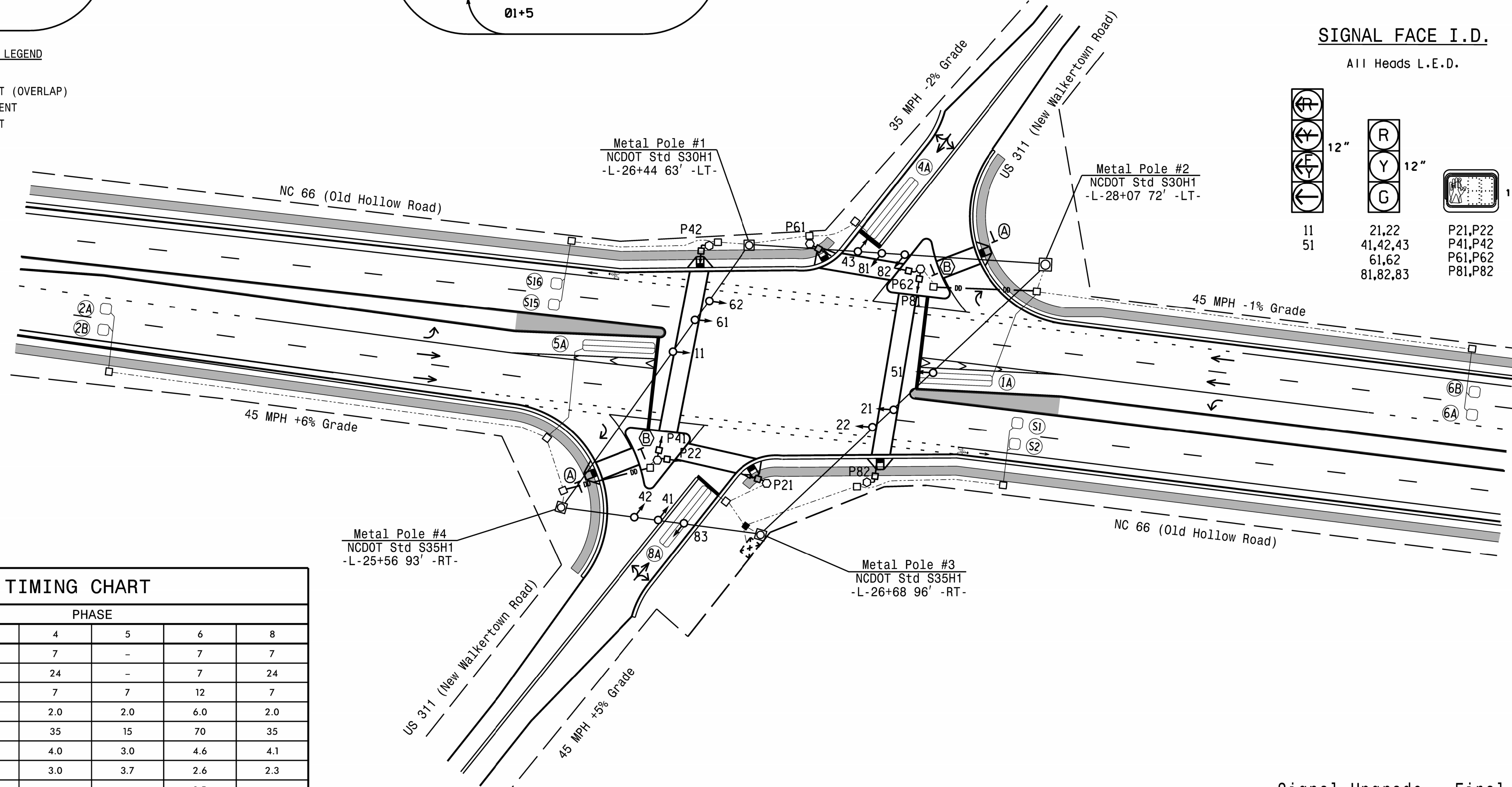
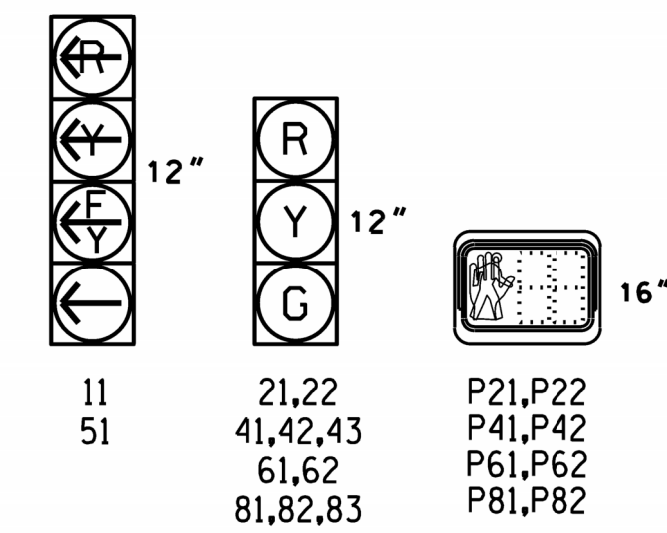
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Pedestal poles and Pedestrian signal heads shall be black in color.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND



SIGNAL FACE I.D.

All Heads L.E.D.

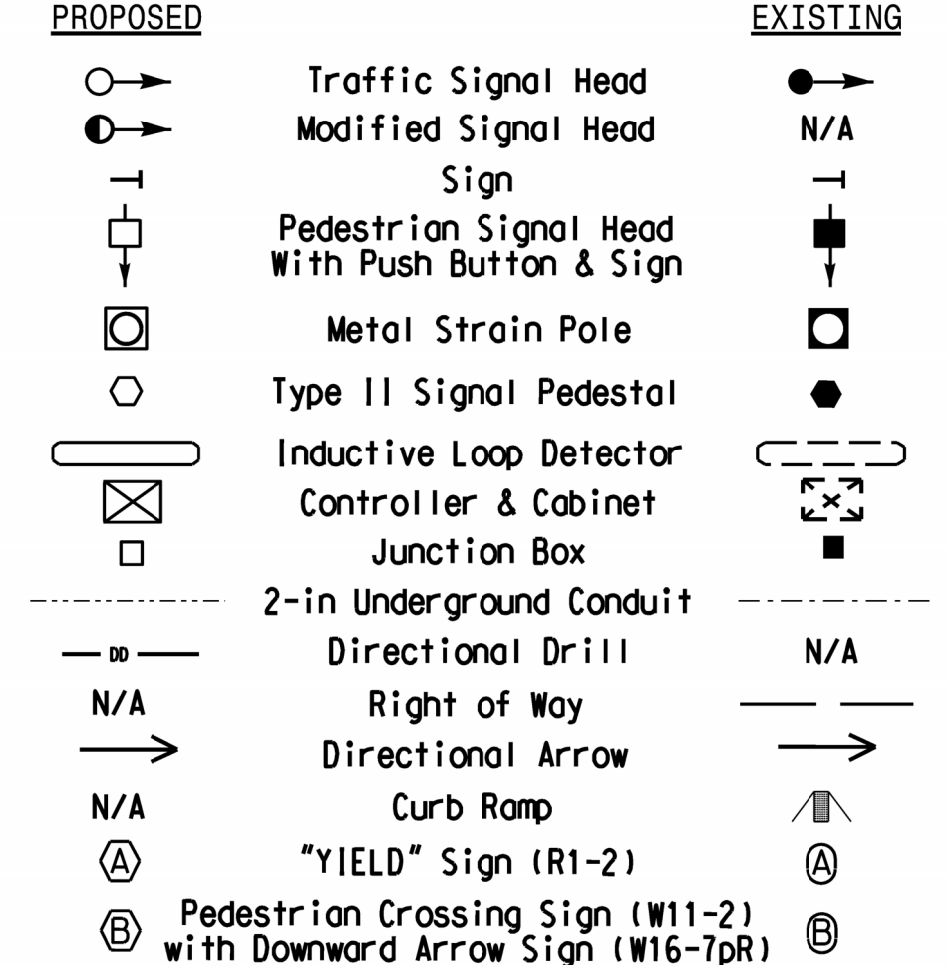


MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	4	5	6	8		
Walk *	-	7	7	-	7	7		
Ped Clear *	-	8	24	-	7	24		
Min Green *	7	12	7	7	12	7		
Passage *	2.0	6.0	2.0	2.0	6.0	2.0		
Max I *	15	70	35	15	70	35		
Yellow Change	3.0	4.6	4.0	3.0	4.6	4.1		
Red Clear	3.6	2.6	3.0	3.7	2.6	2.3		
Added Initial *	-	1.5	-	-	1.5	-		
Maximum Initial *	-	34	-	-	34	-		
Time Before Reduction *	-	15	-	-	15	-		
Time To Reduce *	-	30	-	-	30	-		
Minimum Gap	-	3.0	-	-	3.0	-		
Advance Walk	-	3	3	-	3	3		
Non Lock Detector	X	-	X	X	-	X		
Vehicle Recall	-	MIN RECALL	-	-	MIN RECALL	-		
Dual Entry	-	-	X	-	-	X		

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

LEGEND



Signal Upgrade - Final Design

Prepared in the Office of:

 NC FIRM LICENSE No: P-0339
 320 Executive Court
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

Prepared For:

 750 N. Greenfield Pkwy, Garner, NC 27525

NC 66 (Old Hollow Road) at US 311 (New Walkertown Road)
 Division 9 Forsyth County Walkertown
 PLAN DATE: August 2023 REVIEWED BY: J. Smith
 PREPARED BY: E. Sirgany REVIEWED BY:
 REVISIONS: INIT. DATE

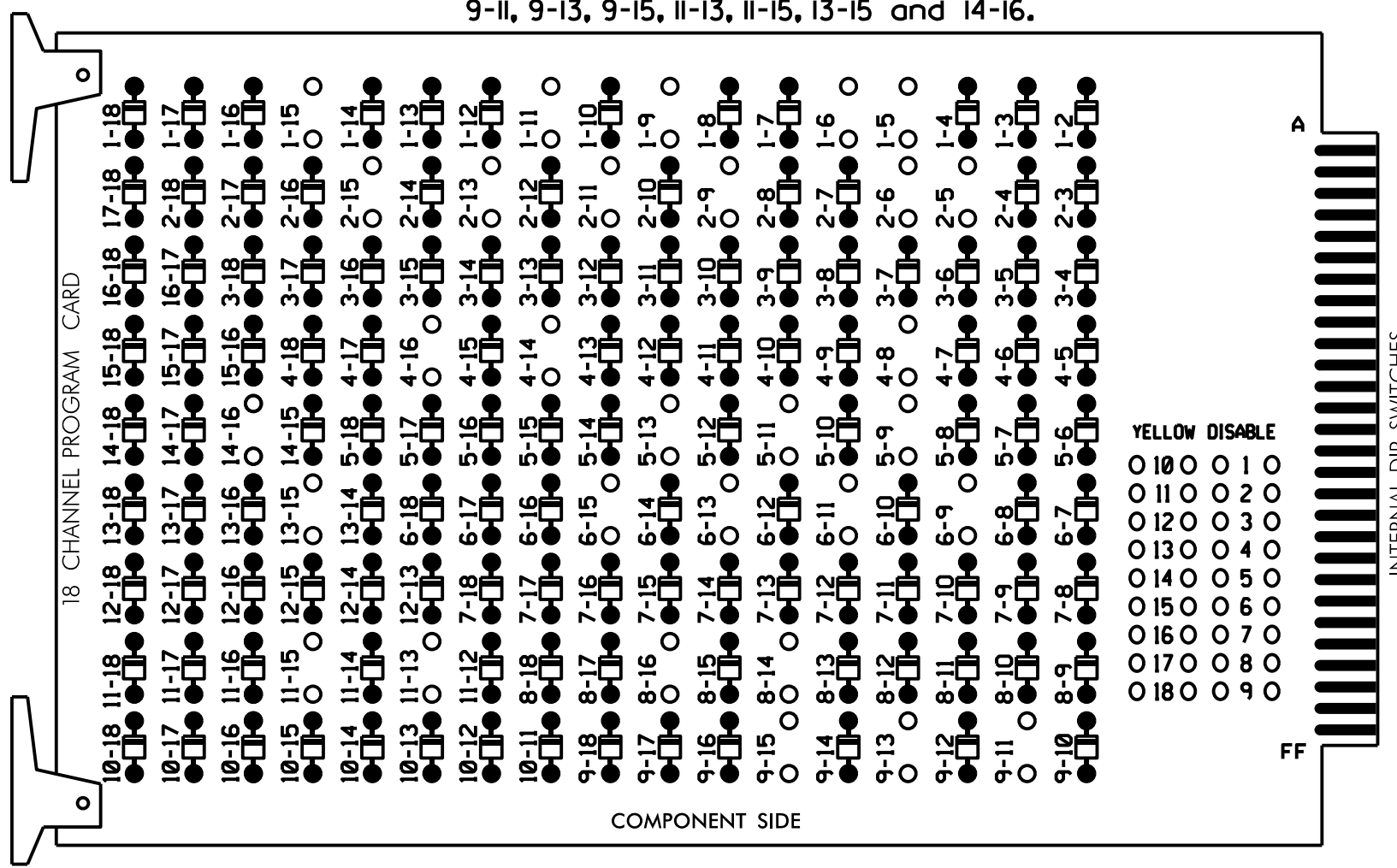
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

 Edward W. Sirgany
 9/7/2023
 DATE
 SIG. INVENTORY NO. 09-0345

18 CHANNEL IP CONFLICT MONITOR
PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



- REMOVE JUMPERS AS SHOWN
- NOTES:
- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 - Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
 - Ensure that Red Enable is active at all times during normal operation.
 - Integrate monitor with Ethernet network in cabinet.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Program phases 4 and 8 for Dual Entry.
- Program controller to start up in phase 2 Green No Walk and Phase 6 Green No Walk.
- Program phases 4 and 8 for Simultaneous Start.
- If this signal will be managed by an ATMS software, enable controller and detector logging for all enabled detectors.
- The cabinet and controller are part of the Old Hollow Road Closed Loop System.
Signal System #: D09-29-Walkertown

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
CABINET.....332 W/AUX
SOFTWARE.....Q-FREE MAXTIME
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S5,S6,S7,S8,S9,S11,S12,
AUX S1,AUX S4
PHASES USED.....1,2,2PED,4,4PED,5,6,6PED,8,8PED
OVERLAP "1".....*
OVERLAP "2".....NOT USED
OVERLAP "3".....*
OVERLAP "4".....NOT USED
* See overlap programming detail on sheet 2.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11*	21,22	P21, P22	NU	41,42, 43	P41, P42	51*	61,62	P61, P62	NU	81,82, 83	P81, P82	11*	NU	NU	51*	NU	NU
RED		128			101			134			107							
YELLOW	*	129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW																A121		A114
YELLOW ARROW																A122		A115
FLASHING YELLOW ARROW																A123		A116
GREEN ARROW	127							133										
Hand						113		104			119							
Walk								106			121							

NU = Not Used
* Denotes install load resistor. See load resistor installation detail on this sheet.
* See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	Ø 1	Ø 2	S-Ø 1	S-Ø 1	S-Ø 1	Ø 4	S-Ø 1	S-Ø 1	SYS. DET. S1	S-Ø 1	S-Ø 1	Ø 2 PED	Ø 6 PED	FS
I	1A	2A	DC ISOLATOR	DC ISOLATOR	DC ISOLATOR	4A	DC ISOLATOR	DC ISOLATOR	SYS. DET. S1	DC ISOLATOR	DC ISOLATOR	Ø 4 PED	Ø 8 PED	ST
L	NOT USED	Ø 2				NOT USED			SYS. DET. S2			DC ISOLATOR	DC ISOLATOR	DC ISOLATOR
U	Ø 5	Ø 6	S-Ø 1	S-Ø 1	S-Ø 1	Ø 8	S-Ø 1	S-Ø 1	SYS. DET. S15	S-Ø 1	S-Ø 1	S-Ø 1	S-Ø 1	S-Ø 1
J	5A	6A				8A			SYS. DET. S15					
L	NOT USED	Ø 6				NOT USED			SYS. DET. S16					

EX.: 1A, 2A, ETC. = LOOP NO.'S
FS = FLASH SENSE
ST = STOP TIME

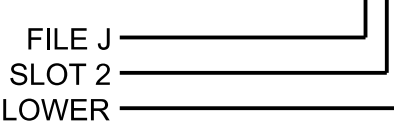
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1 *	1	15.0		X		X	
2A	TB2-5,6	I2U	39	1	29 *	6	3.0		X		X	X
2B	TB2-7,8	I2L	43	5	3	2			X	X	X	
4A	TB4-9,10	I6U	41	3	8	4	10.0		X		X	
5A	TB3-1,2	J1U	55	17	15 *	5	15.0		X		X	
6A	TB3-5,6	J2U	40	2	16	6			X	X	X	
6B	TB3-7,8	J2L	44	6	17	6			X	X	X	
8A	TB5-9,10	J6U	42	4	22	8	10.0		X		X	
* S1	TB6-9,10	I9U	60	22	13	SYS						
* S2	TB6-11,12	I9L	62	24	14	SYS						
* S15	TB7-9,10	J9U	59	21	27	SYS						
* S16	TB7-11,12	J9L	61	23	28	SYS						
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2						
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

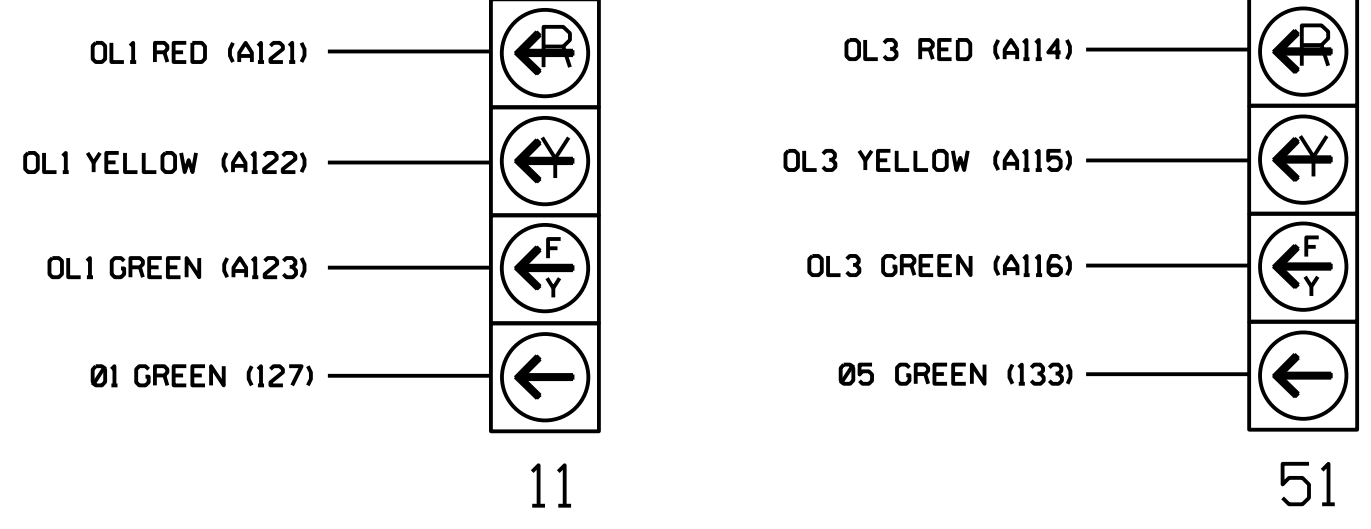
* System detector only. Remove any assigned vehicle phase.
* For the detectors to work as shown on the signal design plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on Sheet 2.

INPUT FILE POSITION LEGEND: J2L



FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

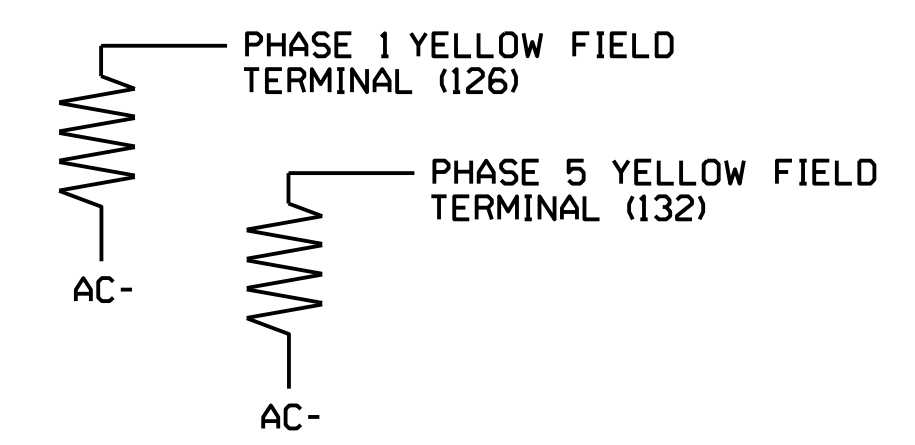
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-0345
DESIGNED: August 2023
SEALED: 9/7/2023
REVISED: N/A

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Electrical Detail - Final Design - Sheet 1 of 2

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
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Prepared For:
City of Walkertown
750 N. Greenfield Pkwy, Corner, NC 27529

NC 66 (Old Hollow Road)
at
US 311 (New Walkertown Road)
Division 9 Forsyth County Walkertown
PLAN DATE: August 2023 REVIEWED BY: E. Sirgany
PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
EDWARD W. SIRGANY
PROFESSIONAL ENGINEER
SEAL 018174
EDWARD W. SIRGANY
ENGINEER

Date Signed by:
Edward W. Sirgany 9/7/2023
DATE

SIG. INVENTORY NO. 09-0345

MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel
Main Menu > Controller > Overlap > Overlap Parameters/Overlap Timings

Web Interface
Home > Controller > Overlap Configuration > Overlaps
Overlap Plan 1

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	2	6
Modifier Phases	1	5
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu > Controller > Overlap > Overlap Parameters/Overlap Timings

Web Interface
Home > Controller > Overlap Configuration > Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	3
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	-	-
Modifier Phases	1	5
Modifier Overlaps	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

← NOTICE INCLUDED PHASE

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 5A

Front Panel
Main Menu > Controller > Detector > Veh Det Plans

Web Interface
Home > Controller > Detector Configuration > Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

Plan 2

Detector	Call Phase	Delay
1	1	3.0
29	0	3.0

1A

Detector	Call Phase	Delay
15	5	3.0
31	0	3.0

5A

MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO <u>RUN DEFAULT PHASING</u>	1	1
ACTIVE PLAN REQUIRED TO <u>RUN ALTERNATE PHASING</u>	2	2

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 11 and 51 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 3.0 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 3.0 seconds.

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

Front Panel
Main Menu > Controller > Coordination > Patterns

Web Interface
Home > Controller > Coordination > Patterns

Pattern Parameters

Pattern	Veh Det Plan	Overlap Plan
*	2	2

* The Pattern number(s) are to be determined by the Division Traffic Engineer.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-0345
DESIGNED: August 2023
SEALED: 9/7/2023
REVISED: N/A

Electrical Detail - Final Design - Sheet 2 of 2

Prepared in the Office of:



NC FIRM LICENSE No: P-0339
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Hillsborough, NC 27278
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ELECTRICAL AND PROGRAMMING DETAILS FOR:



NC 66 (Old Hollow Road)
at
US 311 (New Walkertown Road)

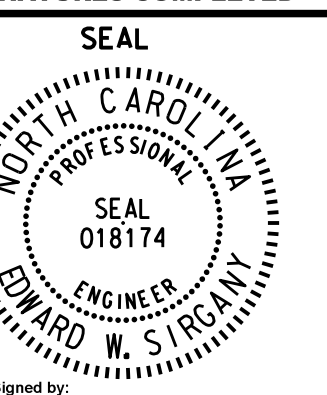
Division 9 Forsyth County Walkertown

PLAN DATE: August 2023 REVIEWED BY: E. Sirgany

PREPARED BY: J. Smith REVIEWED BY:

REVISIONS	INIT.	DATE

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DocuSigned by: Edward W. Sirgany 9/7/2023

SIG. INVENTORY NO. 09-0345