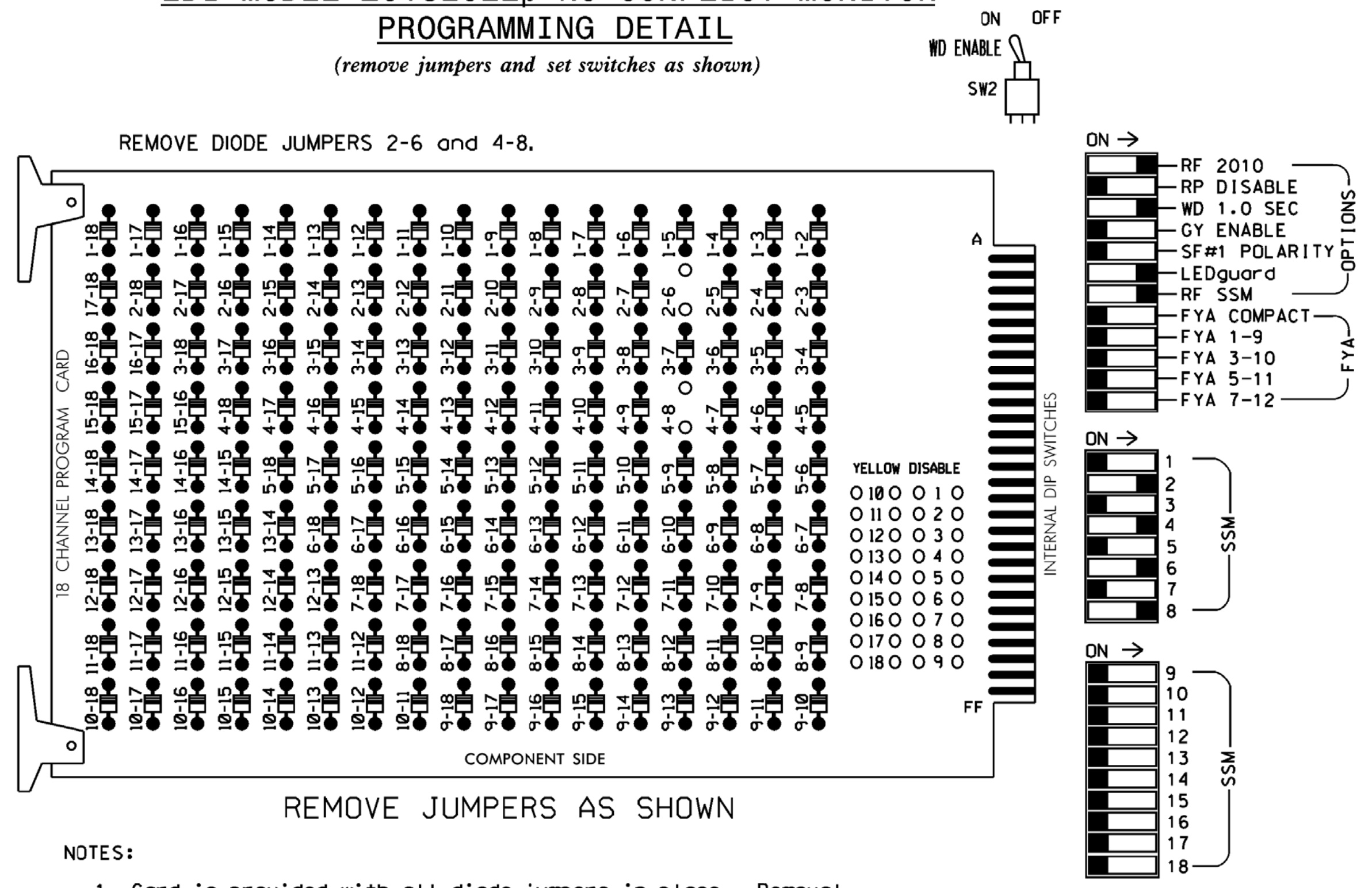


**EDI MODEL 2018ECLip-NC CONFLICT MONITOR  
PROGRAMMING DETAIL**

(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.
4. Integrate monitor with Ethernet network in cabinet.

**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 controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Burlington-Graham Signal System.

**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	NU	NU	61,62	NU	NU	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

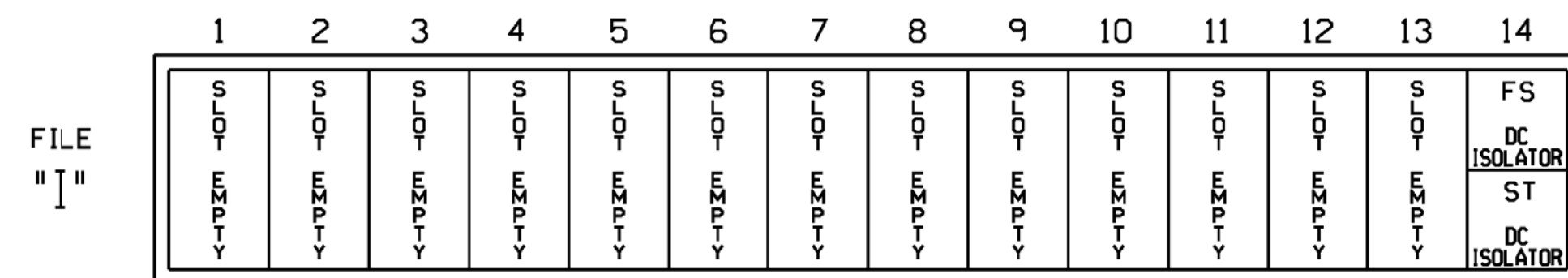
NU = Not Used

**EQUIPMENT INFORMATION**

CONTROLLER.....2070LX  
 CABINET.....336  
 SOFTWARE.....ECONOLITE ASC/3-2070  
 CABINET MOUNT.....POLE  
 OUTPUT FILE POSITIONS...12  
 LOAD SWITCHES USED.....S2,S5,S8,S11  
 PHASES USED.....2,4,6,8  
 OVERLAPS.....NONE

**INPUT FILE POSITION LAYOUT**

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE  
 ST = STOP TIME

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: G-0101  
 DESIGNED: September 2017  
 SEALED: 6/13/2018  
 REVISED: NA

Electrical Detail



12 BROAD STREET  
 ASHEVILLE, NORTH CAROLINA 28801  
 (828) 254-2201  
 FAX (828) 254-4562  
 NC LIC. NO. C-1154

ELECTRICAL AND PROGRAMMING DETAILS FOR:  
 Prepared for the Offices of:  
  
 750 N. Greenfield Pkwy, Corner, NC 27529

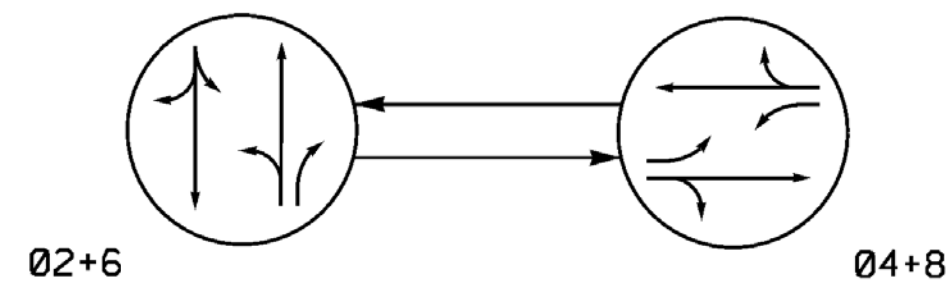
Division 7 Alamance County Graham  
 PLAN DATE: September 2017 REVIEWED BY: JB Voso  
 PREPARED BY: SE Wilson REVIEWED BY:  
 REVISIONS: INIT. DATE  
 Marshall Street at Pine Street

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
  
 SEAL 022599  
 JAMES B. VOSO  
 ENGINEER  
 James Voso 6/13/2018  
 SIGNATURE DATE  
 SIG. INVENTORY NO. G-0101

\*\*\*\*\*SYTIME\*\*\*\*\*  
 \*\*\*\*\*D\*\*\*\*\*  
 \*\*\*\*\*USER\*\*\*\*\*

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
41, 42	R	G	R
61, 62	G	R	Y
81, 82	R	G	R

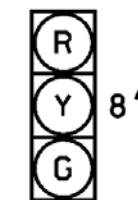
2 Phase  
Pre-Timed  
(Burlington-Graham Signal System)

NOTES

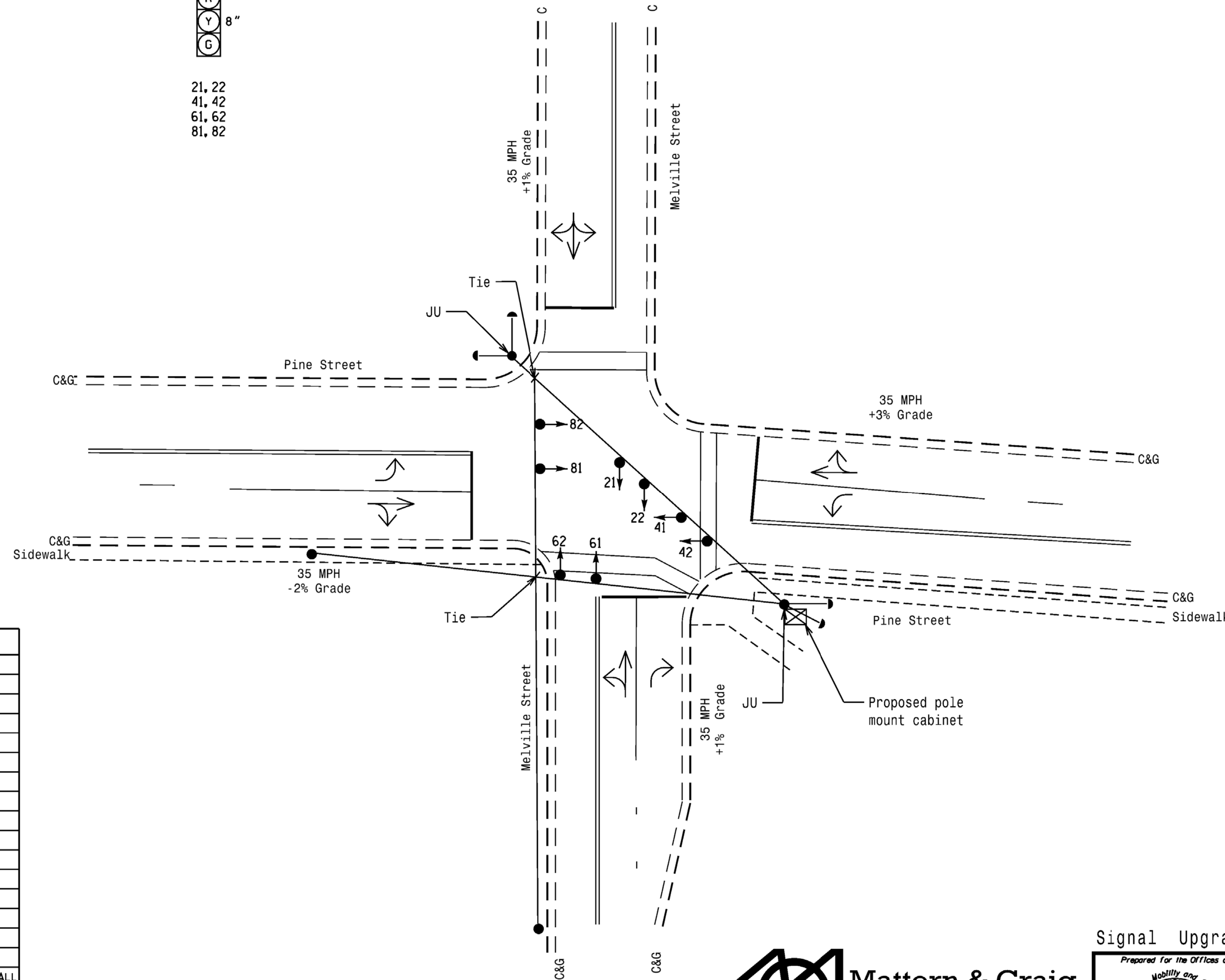
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
4. Pavement markings are existing.
5. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

SIGNAL FACE I.D.

All Heads L.E.D.



21, 22  
41, 42  
61, 62  
81, 82



ASC/3 TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Min Green *	10	7	10	7
Walk *	0	0	0	0
Ped Clear	0	0	0	0
Veh. Extension *	0.0	0.0	0.0	0.0
Max 1 *	37	31	37	31
Yellow	3.8	4.0	3.8	3.7
Red Clear	1.3	1.3	1.8	1.2
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	-	-	-
Recall Position	MAX RECALL	MAX RECALL	MAX RECALL	MAX RECALL
Dual Entry	-	-	-	-
Simultaneous Gap	X	X	X	X

\* 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.

LEGEND

- |                            |                                 |
|----------------------------|---------------------------------|
| <b>PROPOSED</b>            | <b>EXISTING</b>                 |
| ○ → Traffic Signal Head    | ● → N/A                         |
| ● → Modified Signal Head   | — Sign                          |
| ⊥ Pedestrian Signal Head   | ⊥ Sign With Push Button & Sign  |
| ⊥ Signal Pole with Guy     | ⊥ Signal Pole with Sidewalk Guy |
| ⊥ Inductive Loop Detector  | ⊥ Controller & Cabinet          |
| ⊥ Junction Box             | ⊥ Junction Box                  |
| ⊥ 2-in Underground Conduit | ⊥ Right of Way                  |
| → Directional Arrow        | → Directional Arrow             |



12 BROAD STREET  
ASHEVILLE, NORTH CAROLINA 28801  
(828) 254-2201  
FAX (828) 254-4562  
NC LIC. NO. C-1154

Signal Upgrade

Prepared for the Offices of:  
TRANSPORTATION MOBILITY AND SAFETY DIVISION  
DEPARTMENT OF TRANSPORTATION  
Signal Design Section  
750 N. Greenfield Pkwy, Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Melville Street at Pine Street

Division 7 Alamance County Graham

PLAN DATE: September 2017 REVIEWED BY: JB Voso

PREPARED BY: SE Wilson REVIEWED BY:

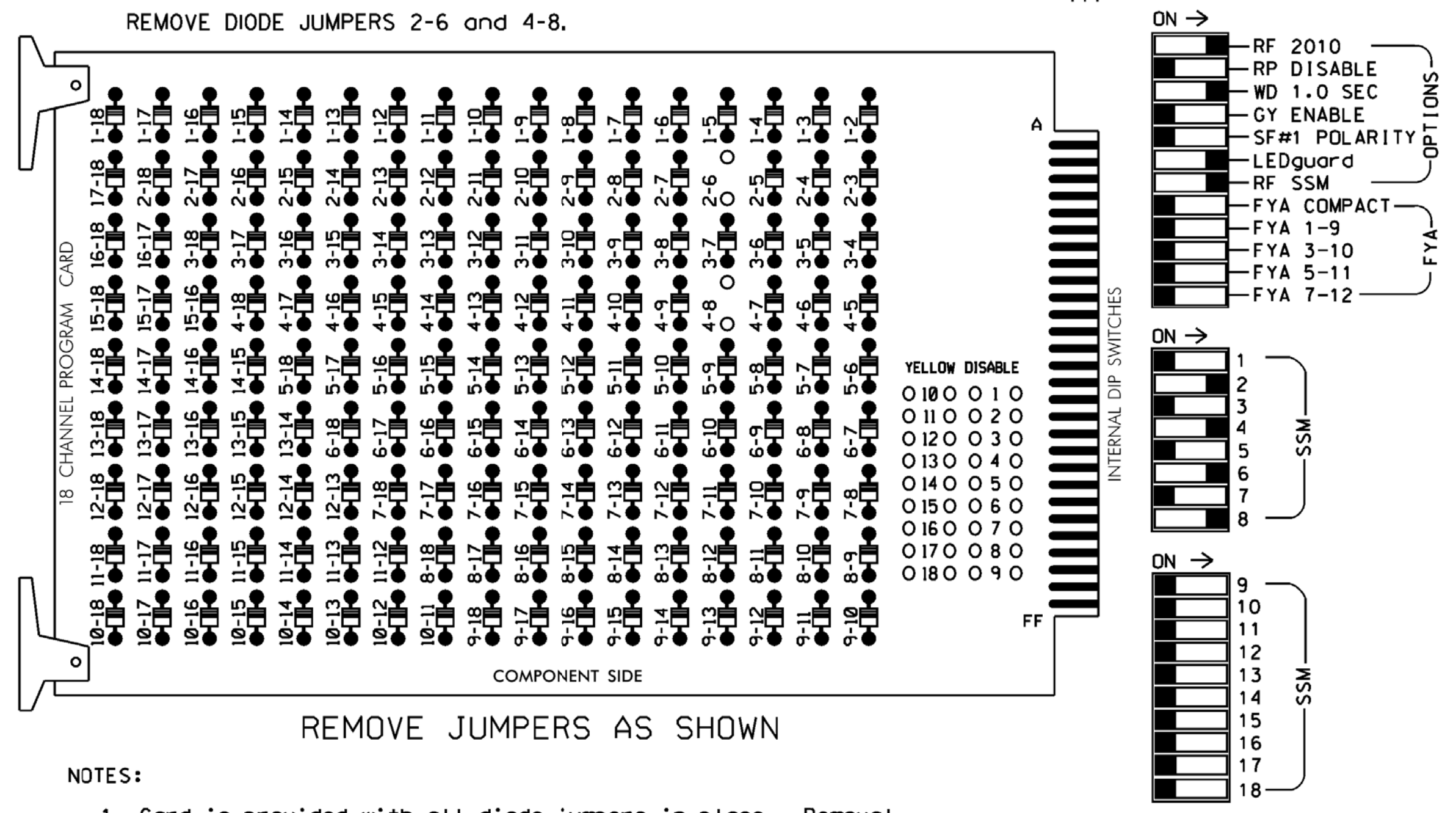
REVISIONS	INIT.	DATE

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
JAMES B. VOSO  
6/13/2018  
SIG. INVENTORY NO. C-0102

\*\*\*\*\*SYSTEM\*\*\*\*\*  
\*\*\*\*\*USER\*\*\*\*\*

**EDI MODEL 2018ECLip-NC 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.
4. Integrate monitor with Ethernet network in cabinet.

**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 controller to start up in phase 2 Green and 6 Green.
3. The cabinet and controller are part of the Burlington-Graham Signal System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070LX  
 CABINET.....336  
 SOFTWARE.....ECONOLITE ASC/3-2070  
 CABINET MOUNT.....POLE  
 OUTPUT FILE POSITIONS...12  
 LOAD SWITCHES USED.....S2,S5,S8,S11  
 PHASES USED.....2,4,6,8  
 OVERLAPS.....NONE

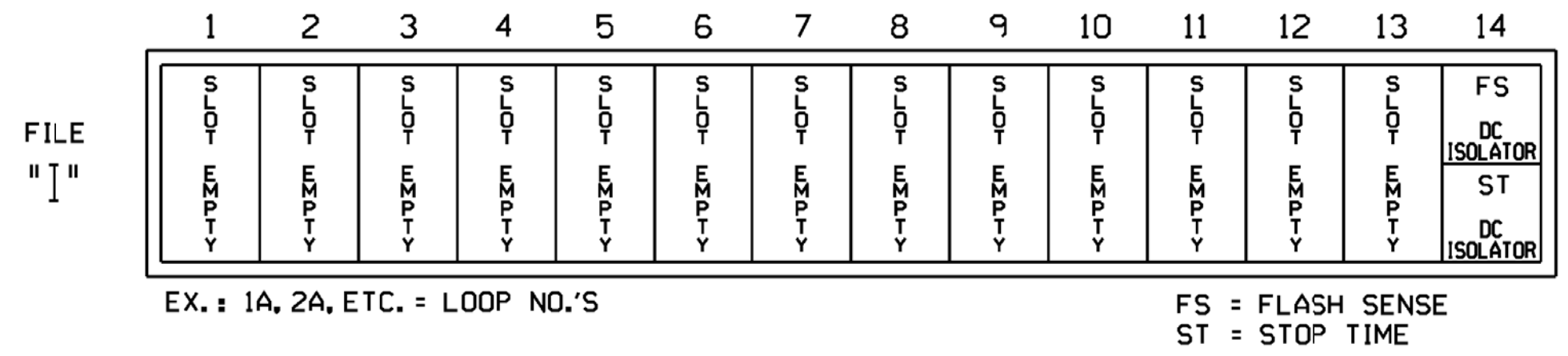
**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	NU	41,42	NU	NU	61,62	NU	NU	81,82	NU
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

NU = Not Used

**INPUT FILE POSITION LAYOUT**

(front view)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: G-0102  
 DESIGNED: September 2017  
 SEALED: 6/13/2018  
 REVISED: NA

\*\*\*\*\*SYSTEM\*\*\*\*\*  
 \*\*\*\*\*USER\*\*\*\*\*



12 BROAD STREET  
 ASHEVILLE, NORTH CAROLINA 28801  
 (828) 254-2201  
 FAX (828) 254-4562  
 NC LIC. NO. C-1154

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Melville Street at Pine Street

Division 7 Alamance County Graham

PLAN DATE: September 2017 REVIEWED BY: JB Voso

PREPARED BY: SE Wilson REVIEWED BY:

REVISIONS

INIT. DATE

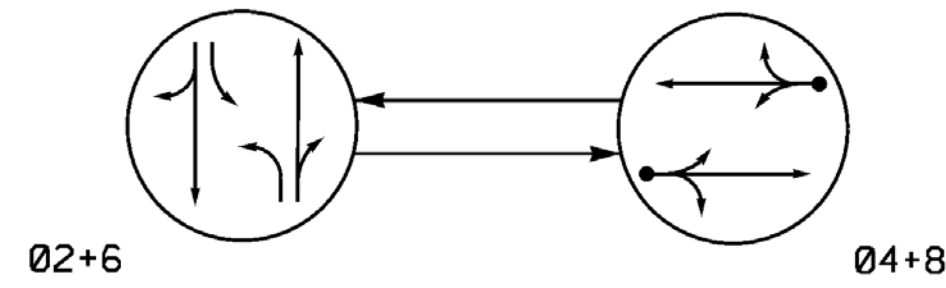
James Voso 6/13/2018

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022599 JAMES B. VOSO

SIGNATURE DATE

SIG. INVENTORY NO. G-0102

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

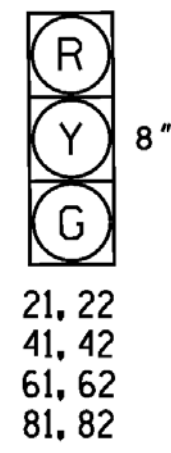
- → DETECTED MOVEMENT
- → UNDETECTED MOVEMENT (OVERLAP)
- → UNSIGNALIZED MOVEMENT
- ⚡ → PEDESTRIAN MOVEMENT

TABLE OF OPERATION

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

SIGNAL FACE I.D.

All Heads L.E.D.

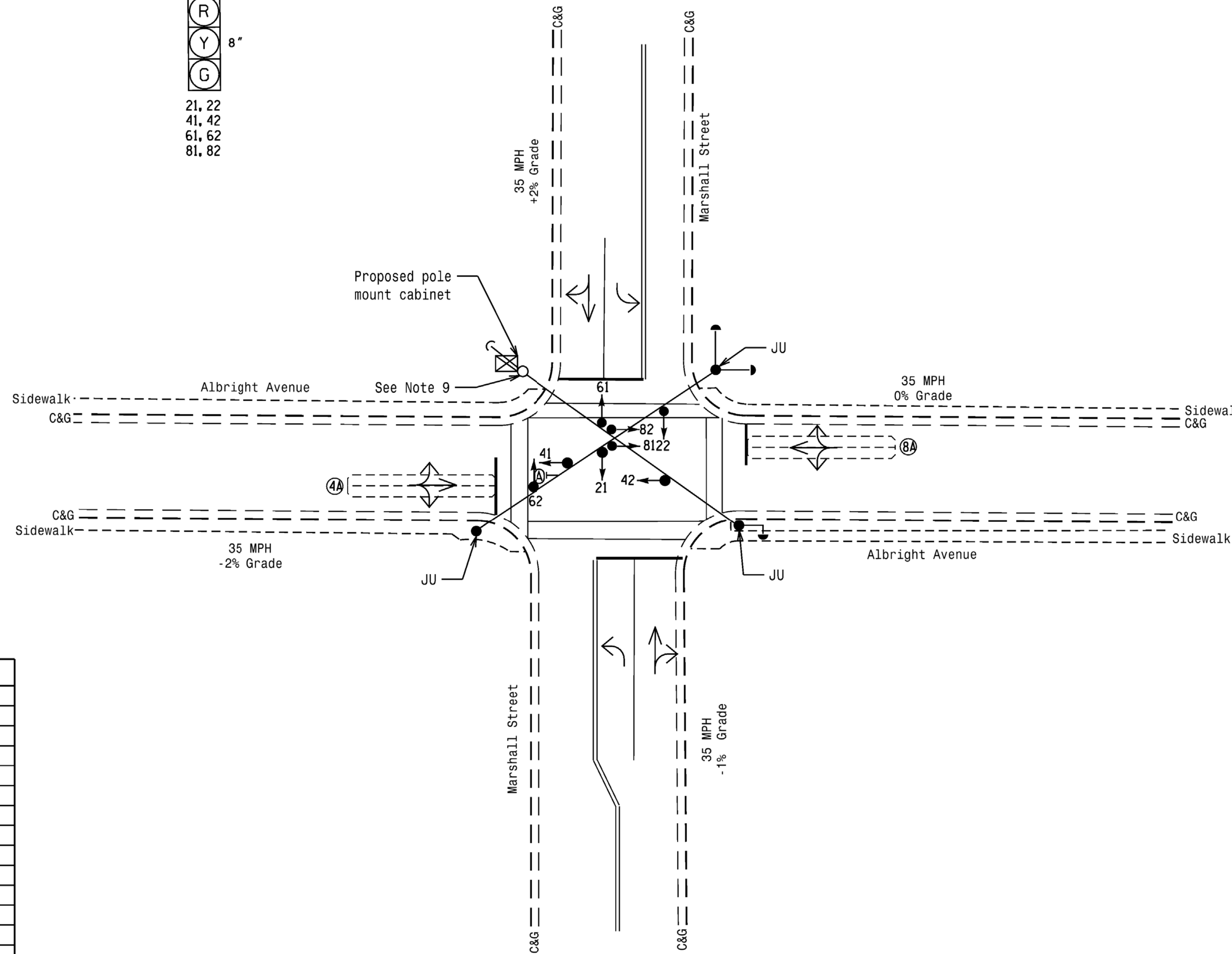


ASC/3 DETECTOR INSTALLATION CHART												
LOOP	SIZE (FT)	DETECTOR			PROGRAMMING							
		DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	LOOP	CARD	
4A	6x40	0	2-4-2	-	4	Yes	-	-	-	S	-	X
8A	6x40	0	2-4-2	-	8	Yes	-	5	-	S	-	X

2 Phase Semi-Actuated (Burlington-Graham Signal System)

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.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Wire/cable intersection for dual-ring operation.
- Contractor shall install new pole and remove existing pole once new installation is complete.
- Relocate existing signal heads to new span as shown.



ASC/3 TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Min Green *	10	7	10	7
Walk *	0	0	0	0
Ped Clear	0	0	0	0
Veh. Extension *	0.0	2.0	0.0	2.0
Max I *	37	31	37	31
Yellow	3.9	4.0	3.7	3.8
Red Clear	1.0	1.2	1.0	1.2
Actuations B4 Add *	-	-	-	-
Seconds / Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	-	-	-
Recall Position	MAX RECALL	-	MAX RECALL	-
Dual Entry	-	X	-	X
Simultaneous Gap	X	X	X	X

\* 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.

LEGEND	
PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
● → 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
⊠ Inductive Loop Detector	⊠ Inductive Loop Detector
⊠ Controller & Cabinet	⊠ Junction Box
⊠ Junction Box	⊠ Junction Box
⊠ 2-in Underground Conduit	⊠ Right of Way
→ Directional Arrow	→ Directional Arrow
Ⓐ "NO TURN ON RED" Sign (R10-11)	Ⓐ "NO TURN ON RED" Sign (R10-11)

\*\*\*\*\*SYSTEM\*\*\*\*\*  
 \*\*\*\*\*USER\*\*\*\*\*  
 \*\*\*\*\*DATE\*\*\*\*\*



12 BROAD STREET  
 ASHEVILLE, NORTH CAROLINA 28801  
 (828) 254-2201  
 FAX (828) 254-4562  
 NC LIC. NO. C-1154

Signal Upgrade

Prepared for the Offices of:  
 TRANSPORTATION MOBILITY AND SAFETY DIVISION  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 Signal Design Section  
 750 N. Greenfield Pkwy, Garner, NC 27529  
 SCALE 1"=20'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Marshall Street at Albright Avenue

Division 7 Alamance County Graham

PLAN DATE: September 2017 REVIEWED BY: JB Voso

PREPARED BY: SE Wilson REVIEWED BY:

REVISIONS

INIT. DATE

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 JAMES B. VOSO  
 022599  
 6/13/2018  
 SIGNATURE DATE

SIG. INVENTORY NO. C-0103

