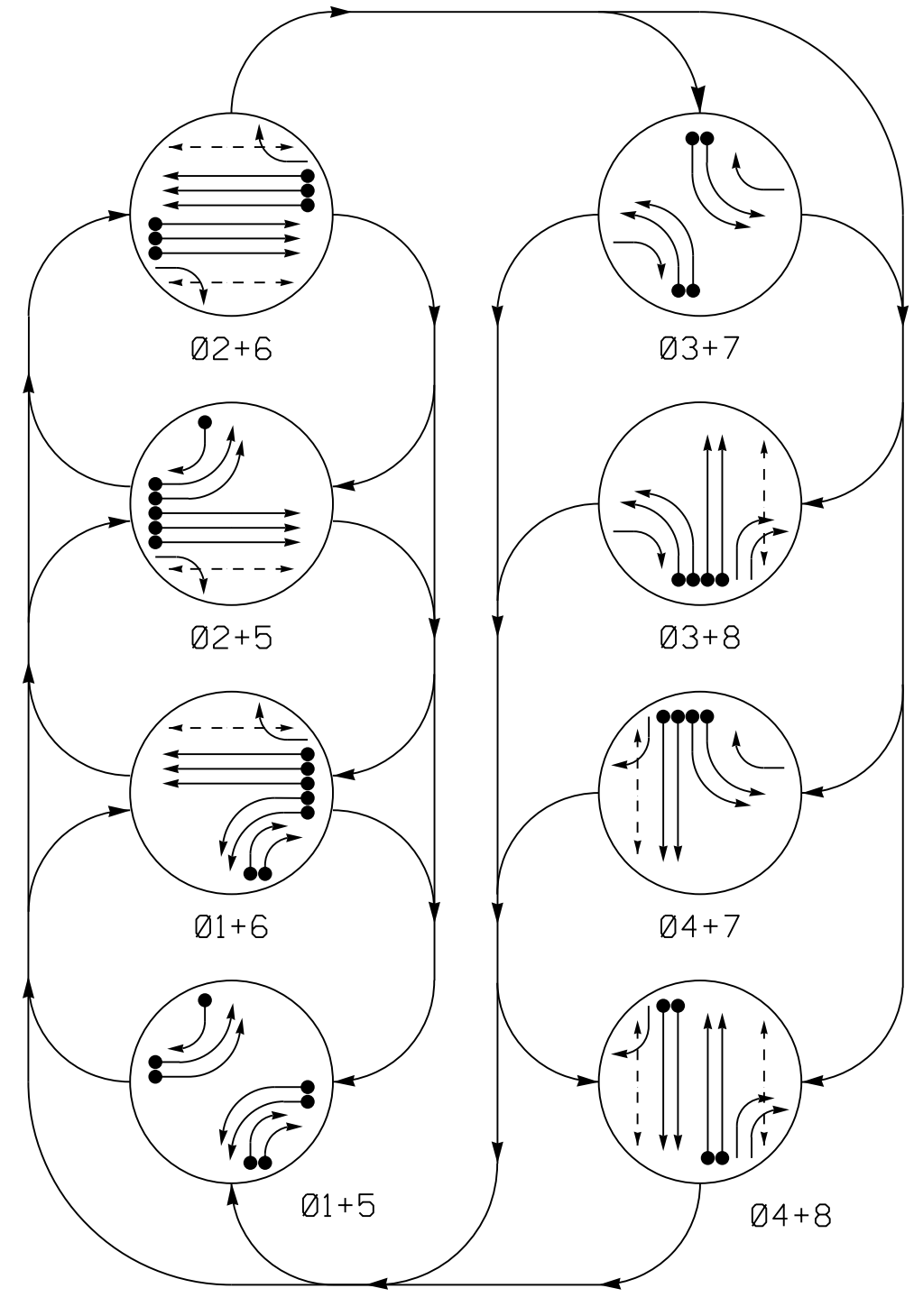


**PHASING DIAGRAM**



**PHASING DIAGRAM DETECTION LEGEND**

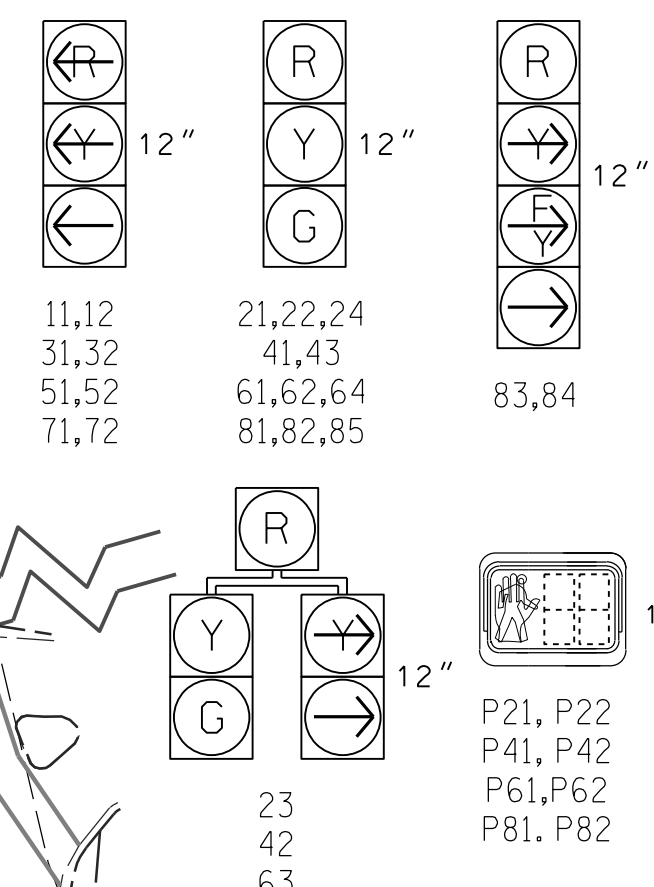
- ◀ ● ▶ DETECTED MOVEMENT
- ◀ ○ ▶ UNDETECTED MOVEMENT (OVERLAP)
- ◀ ○ ○ ▶ UNSIGNALIZED MOVEMENT
- ◀ ○ ○ ○ ▶ PEDESTRIAN MOVEMENT

**TABLE OF OPERATION**

SIGNAL FACE	PHASE								FLASH	
	01+5	02+6	03+7	04+8	01+6	02+5	03+8	04+7		
11,12	←	←	←	←	←	←	←	←	←	
21,22,24	R	R	G	G	R	R	R	R	R	Y
23	R	R	G	G	R	R	R	R	R	Y
31,32	←	←	←	←	←	←	←	←	←	
41,43	R	R	R	R	R	R	G	G	R	
42	R	R	R	R	R	R	G	G	R	
51,52	←	←	←	←	←	←	←	←	←	
61,62,64	R	G	R	G	R	R	R	R	Y	
63	R	G	R	G	R	R	R	R	Y	
71,72	←	←	←	←	←	←	←	←	←	
81,82,85	R	R	R	R	G	R	G	R		
83,84	←	←	←	←	←	←	←	←	←	
P21,22	DW	DW	W	W	DW	DW	DW	DRK		
P41,42	DW	DW	DW	DW	DW	DW	W	DRK		
P61,62	DW	W	DW	W	DW	DW	DW	DRK		
P81,82	DW	DW	DW	DW	DW	W	DW	DRK		

**SIGNAL FACE I.D.**

All Heads L.E.D.



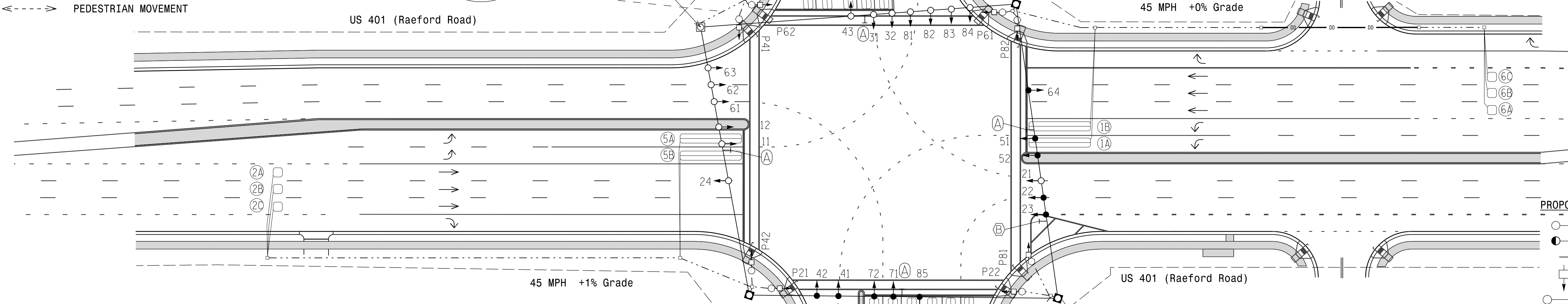
**ASC/3 DETECTOR INSTALLATION CHART**

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING							
					PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	X	1	Yes	-	-	-	S	-	X
1B	6X40	0	2-4-2	X	1	Yes	-	-	-	S	-	X
1C	6X40	0	2-4-2	X	1	Yes	-	15	-	S	-	X
1D	6X40	0	2-4-2	X	1	Yes	-	15	-	S	-	X
2A	6X6	300	5	X	2	Yes	-	-	-	N	-	X
2B	6X6	300	5	X	2	Yes	-	-	-	X	N	-
2C	6X6	300	5	X	2	Yes	-	-	-	X	N	-
3A	6X40	0	2-4-2	X	3	Yes	-	-	-	S	-	X
3B	6X40	0	2-4-2	X	3	Yes	-	-	-	S	-	X
4A	6X6	250	4	X	4	No	-	-	-	N	-	X
4B	6X6	250	4	X	4	No	-	-	-	N	-	X
4C	6X40	0	2-4-2	X	4	Yes	2.0	5	-	G	-	X
4D	6X40	0	2-4-2	X	4	Yes	2.0	5	-	G	-	X
5A	6X40	0	2-4-2	X	5	Yes	-	-	-	S	-	X
5B	6X40	0	2-4-2	X	5	Yes	-	-	-	S	-	X
5C	6X40	0	2-4-2	X	5	Yes	-	15	-	S	-	X
6A	6X6	300	5	X	6	Yes	-	-	-	X	N	-
6B	6X6	300	5	X	6	Yes	-	-	-	X	N	-
6C	6X6	300	5	X	6	Yes	-	-	-	X	N	-
7A	6X40	0	2-4-2	X	7	Yes	-	-	-	S	-	X
7B	6X40	0	2-4-2	X	7	Yes	-	-	-	S	-	Y
8A	6X6	300	5	X	8	No	-	-	-	N	-	X
8B	6X6	300	5	X	8	No	-	-	-	N	-	X
8C	6X40	0	2-4-2	Y	8	Yes	2.0	5	-	G	-	X
8D	6X40	0	2-4-2	X	8	Yes	2.0	5	-	G	-	X

**8 Phase Fully Actuated Fayetteville 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. Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Reposition existing signal head numbered #51.
- 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.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Pedestrian pedestals are conceptual and shown for reference only. See 2018 NCDOT Roadway Standard Drawings 1705.04 Sheets 1-3 for push button location details.



**ASC/3 TIMING CHART**

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green *	7	12	7	7	7	12	7	7
Walk *	-	7	-	7	-	7	-	7
Ped Clear	-	35	-	36	-	36	-	38
Veh. Extension *	2.0	6.0	2.0	6.0	2.0	6.0	2.0	6.0
Max 1 *	20	60	30	40	20	60	30	40
Yellow	3.0	4.4	3.0	4.2	3.0	4.5	3.0	4.4
Red Clear	4.4	2.7	4.3	3.1	4.0	2.7	4.1	2.8
Red Revert	-	-	-	-	-	-	-	-
Actuations B4 Add *	-	0	-	-	-	0	-	-
Seconds / Actuation *	-	1.5	-	-	-	1.5	-	-
Max Initial *	-	34	-	-	-	34	-	-
Time Before Reduction *	-	15	-	5	-	15	-	5
Time To Reduce *	-	30	-	20	-	30	-	20
Minimum Gap	-	3.0	-	3.0	-	3.0	-	3.0
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	X	X	X	X	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**

- |   |  |     |          |
|---|--|-----|----------|
| ○ | Traffic Signal Head                            | ●   | EXISTING |
| ○ | Modified Signal Head                           | N/A |          |
| ○ | Sign   | ○   |          |
| ○ | Pedestrian Signal Head With Push Button & Sign | ○   |          |
| ○ | Signal Pole with Guy                           | ○   |          |
| ○ | Signal Pole with Sidewalk Guy                  | ○   |          |
| ○ | Inductive Loop Detector                        | ○   |          |
| ○ | Controller & Cabinet                           | ○   |          |
| ○ | Junction Box                                   | ○   |          |
| ○ | 2-in Underground Conduit                       | ○   |          |
| ○ | Right of Way                                   | ○   |          |
| ○ | Directional Arrow                              | ○   |          |
| ○ | Directional Drill                              | N/A |          |
| ○ | Metal Strain Pole                              | ○   |          |
| ○ | Type II Signal Pedestal                        | ○   |          |
| ○ | "U-Turn Yield to Right Turn" (R10-16)          | ○   |          |
| ○ | Right Arrow "ONLY" Sign (R3-5R)                | ○   |          |

**Signal Upgrade - Final Design**

**Stantec**  
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Prepared for the Offices of:  
 Transportation Mobility and Safety Division  
 NORTH CAROLINA PROFESSIONAL ENGINEERS  
 STATE OF NORTH CAROLINA  
 Signal Design Section  
 750 N. Greenfield Pkwy, Garner, NC 27526  
 SCALE: 0 40  
 1" = 40'

**US 401 (Raeford Road) at NC 162 (Bunce Road) / SR 1411 (Bunce Road)**  
 Division 6 Cumberland County Fayetteville  
 PLAN DATE: March 2018 REVIEWED BY: E D Harris  
 PREPARED BY: K Williams REVIEWED BY: B L Watson  
 REVISIONS: INIT. DATE

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

Professional Engineer Seal: SEAL 29449  
 NORTH CAROLINA PROFESSIONAL ENGINEERS  
 JEFFREY L. WATSON  
 3/29/2018  
 DATE: 3/29/2018  
 SIG. INVENTORY NO. 06-0274

3/29/2018 10:41:11 AM C:\Users\jgms\Documents\Signal Design\U-4405\Sig.dwg User: jgms