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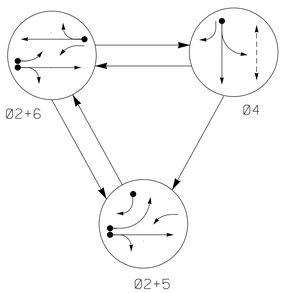
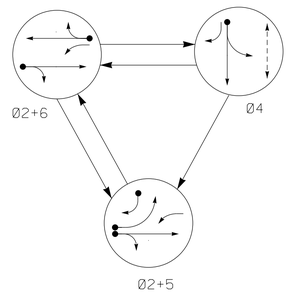
PROJECT REFERENCE NO.	SHEET NO.
A-0009CA	Sig.2.6

3 Phase Fully Actuated w/ Alternate Phasing Operation (US 129-NC 143 Closed Loop System)

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING TABLE OF OPERATION

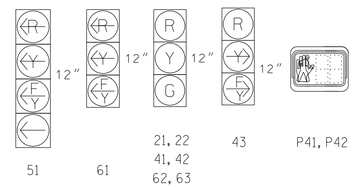
SIGNAL FACE	PHASE Ø2+5	PHASE Ø2+6	PHASE Ø4	FLASH
21,22	G	G	R	Y
41, 42	R	R	G	R
43	F Y	R	F Y	R
51	←	F Y	R	Y
61	F Y	F Y	R	Y
62,63	R	G	R	Y
P41,P42	DW	DW	W	DRK

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2+5	PHASE Ø2+6	PHASE Ø4	FLASH
21,22	G	G	R	Y
41, 42	R	R	G	R
43	F Y	R	F Y	R
51	←	R	R	Y
61	F Y	F Y	R	Y
62,63	R	G	R	Y
P41,P42	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



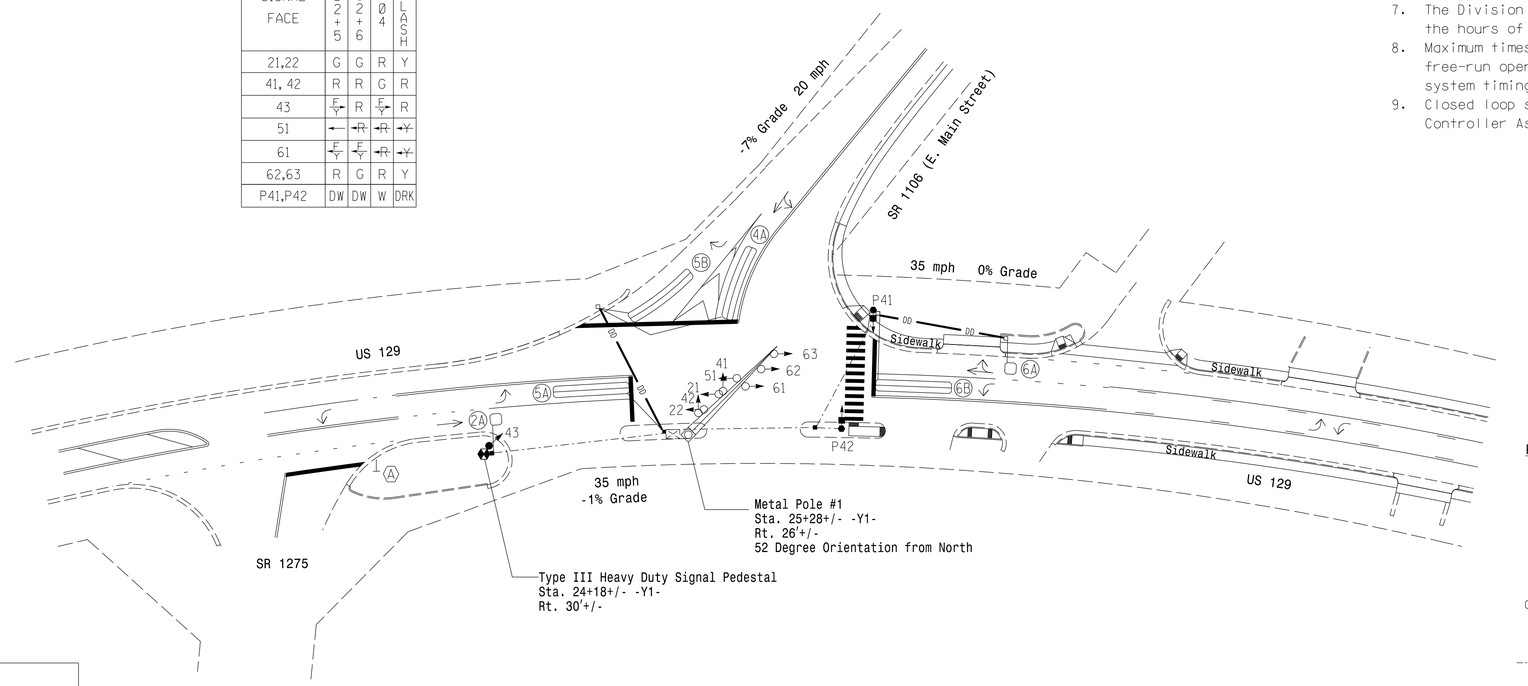
DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
2A	6X6	70	3	X	2	Yes	-	-	-	N	-	X
4A	6X40	0	2-4-2	X	4	Yes	-	3	-	N	-	X
5A	6X40	0	2-4-2	X	5	Yes	-	15*	-	N	-	X
					2#	Yes	-	-	-	N	-	X
5B	6X40	0	2-4-2	X	5	Yes	-	15	-	N	-	X
6A	6X6	70	3	X	6	Yes	-	-	-	N	-	X
6B	6X40	0	2-4-2	X	6	Yes	-	3	-	N	-	X

* Reduce delay to 3 seconds during Alternate Phasing Operation.
\# Disable phase call for loop(s) during Alternate Phasing Operation.

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. Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the flashing 'Don't Walk' time only.
7. The Division Traffic Engineer will determine the hours of use for each phasing plan.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data: Master Asset #0750, Controller Asset #0751.



LEGEND

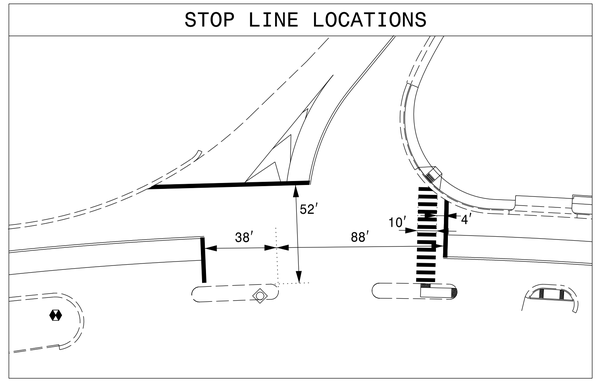
PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Type II Signal Pedestal	
	Type III Signal Pedestal	
	Metal Pole/Mast Arm	
DD	Directional Drill	N/A
	Curb Ramp	N/A
	"STOP" Sign (R1-1)	

TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 5	PHASE 6
Min Green *	10	7	7	10
Walk *	-	7	-	-
Ped Clear	-	13	-	-
Veh. Extension *	3.0	2.0	2.0	3.0
Max 1 *	40	20	15	40
Yellow	3.9	3.2	3.0	3.9
Red Clear	3.1	2.8	2.4	3.1
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	-	-
Seconds /Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Locking Detector	-	-	-	-
Recall Position	VEH RECALL	-	-	VEH 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.

STOP LINE LOCATIONS



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Signal Upgrade-Final Design

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1"=40'

US 129 at SR 1106 (E. Main Street)

Division 14 Graham County Robbinsville

PLAN DATE:	May 2022	REVIEWED BY:	M. L. Stygles
PREPARED BY:	J. Ma	REVIEWED BY:	

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 5/10/2022
SIGNATURE DATE

SIG. INVENTORY NO. 14-0751