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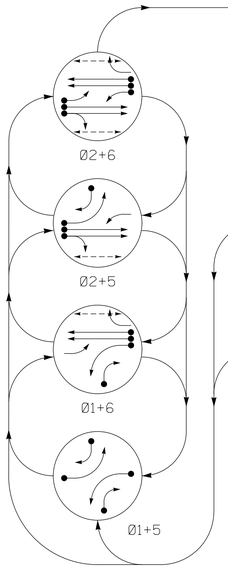
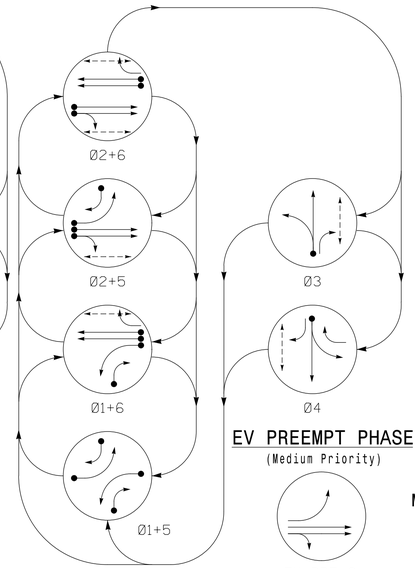
PROJECT REFERENCE NO.	SHEET NO.
SM-6114C	Sig. 1.0

6 Phase
Fully Actuated
w/ Emergency Vehicle Preemption
& Alternate Phasing
D14-06_Hendersonville

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



EV PREEMPT PHASE

(Medium Priority)

EV PRE 2
(Ø2+Ø5)

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	EV	PREE 2	FLASH
11	←	←	F Y	F Y	~~R~~	~~R~~	~~R~~	~~R~~	~~Y~~
21, 22	R	R	G	G	R	R	G	Y	
31	R	R	R	R	G	R	R	R	
32	R/	R/	R	R	G	R	R	R	
33	R	R	R	R	G	R	R	R	
41	R	R	R	R	G	R	R	R	
42	R/	R	R/	R	R	G	R	R	
51	←	F Y	←	F Y	~~R~~	~~R~~	←	~~Y~~	
61, 63	R	G	R	G	R	R	R	Y	
62	R	G	R	G	R	R/	R	Y	
F1, F2*	FY	FY	FY	FY	FY	FY	R	Y	
P21, P22	DW	DW	W	W	DW	DW	DW	DRK	
P31, P32	DW	DW	DW	DW	W	DW	DW	DRK	
P41, P42	DW	DW	DW	DW	DW	W	DW	DRK	
P61, P62	DW	W	DW	W	DW	DW	DW	DRK	

✳ See Note 10

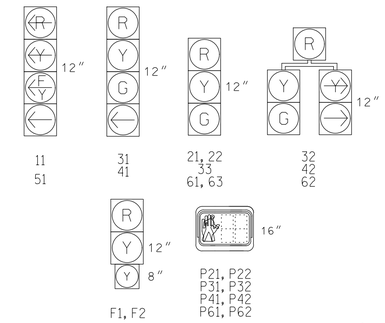
ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	EV	PREE 2	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~Y~~
21, 22	R	R	G	G	R	R	G	Y	
31	R	R	R	R	G	R	R	R	
32	R/	R/	R	R	G	R	R	R	
33	R	R	R	R	G	R	R	R	
41	R	R	R	R	G	R	R	R	
42	R/	R	R/	R	R	G	R	R	
51	←	~~R~~	←	~~R~~	~~R~~	~~R~~	←	~~Y~~	
61, 63	R	G	R	G	R	R	R	Y	
62	R	G	R	G	R	R/	R	Y	
F1, F2*	FY	FY	FY	FY	FY	FY	R	Y	
P21, P22	DW	DW	W	W	DW	DW	DW	DRK	
P31, P32	DW	DW	DW	DW	W	DW	DW	DRK	
P41, P42	DW	DW	DW	DW	DW	W	DW	DRK	
P61, P62	DW	W	DW	W	DW	DW	DW	DRK	

✳ See Note 10

SIGNAL FACE I.D.

All Heads L.E.D.

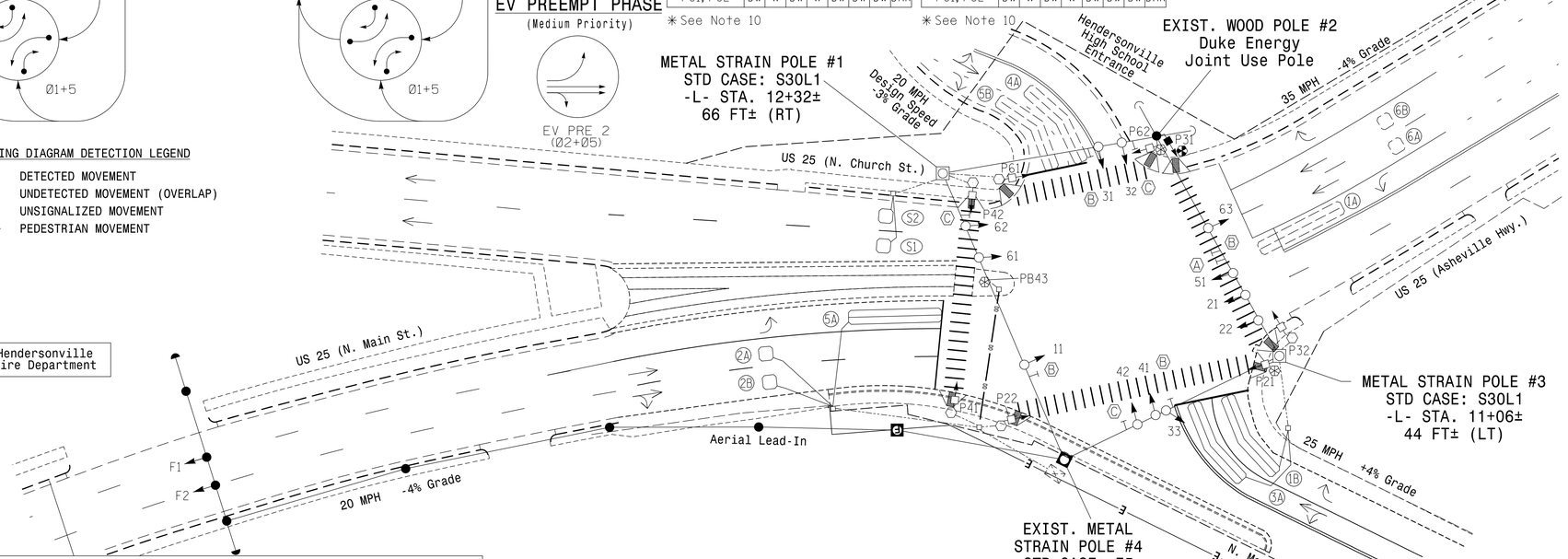


NOTES

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 1 and/or Phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Program Controller to allow an advance walk movement before serving the vehicle phase.
9. The Division Traffic Engineer will determine the Delay before Preempt and Preempt Dwell Min Green time for the emergency vehicle preemption timing.
10. For signal heads F1 & F2, flash 8" yellow section continuously. During preempt call, terminate flashing yellow to solid yellow for 4 seconds, then display red ball for duration of Emergency Vehicle Preemption.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

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



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	
	Metal Strain Pole	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
N/A	Curb Ramp	
Ⓐ	No U-TURN Sign (R3-4)	Ⓐ
Ⓑ	Left "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15L)	Ⓑ
Ⓒ	Right "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15R)	Ⓒ

TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green *	7	10	7	7	7	10
Delayed Green *	0	3	3	3	0	3
Walk *	-	7	7	7	-	7
Ped Clear	-	27	20	20	-	14
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0
Max 1 *	20	60	25	25	20	60
Yellow	3.0	4.1	3.0	3.0	3.0	4.1
Red Clear	2.6	3.9	3.6	3.2	3.3	3.9
Red Revert	2.0	2.0	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	-	X	-	-	-	X
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	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.

DETECTOR INSTALLATION CHART

DETECTOR 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	+10	2-4-2	-	1	Yes	-	15✳✳	-	N	-	-
					6#	Yes	-	3	-	N	-	X
1B	6X40	0	2-4-2	Y	1	Yes	-	15	-	N	-	-
2A, 2B	6X6	70	3	Y	2	Yes	-	-	-	N	-	-
3A	6X40	0	2-4-2	Y	3	Yes	-	3	-	N	-	-
4A	6X40	0	2-4-2	-	4	Yes	-	3	-	N	-	-
5A	6X40	0	2-4-2	Y	5	Yes	-	15✳	-	N	-	X
					2#	Yes	-	-	-	N	-	X
5B	6X40	0	2-4-2	-	5	Yes	-	15	-	N	-	-
6A, 6B	6X6	70	4	-	6	Yes	-	-	-	N	-	-
S1	6X6	+150	4	Y	-	-	-	-	-	N	X	-
S2	6X6	+150	4	Y	-	-	-	-	-	N	X	-

✳ Disable Delay During Alternate Phasing Operation.
✳✳ Reduce Delay to 3 Seconds During Alternate Phasing Operation.
Disable Phase 2 and 6 Call For Loops 1A and 5A During Alternate Phasing Operation.

EV PREEMPT

FUNCTION	PRE 2
Exit Phase(s)	2, 6
Preempt Override	OFF
Delay Time	✳✳
Ped Clear Through Yellow	Y
Terminate Phases	N
Entrance Walk	255✳
Entrance Ped Clear	255✳
Entrance Min Green	255✳
Entrance Yellow Change	25.5✳
Entrance Red Clear	25.5✳
Minimum Dwell Time	✳✳
Preempt Input Extension Time	0
Preempt Max Time	0
Exit Yellow Change	25.5✳
Exit Red Clear	25.5✳

* Allows normal phase times to be used.
** See Note #9

STV 100 Years
STV Engineers, Inc.
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Charlotte, NC 28202
(704) 372-1885
NC License Number F-0991

Signal Upgrade

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 30
1"=30'

US 25 (Asheville Hwy/N Main St) at N Church St/N Main St/ Hendersonville High School

Division 14 Henderson County Hendersonville

PLAN DATE:	February 2022	REVIEWED BY:	D. Darity
PREPARED BY:	A. Wiseman	REVIEWED BY:	J. Carroll

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 030005 ENGINEER JUSTIN T. CARROLL

DocuSigned by:
Justin T. Carroll
6340ACS0E18486...
SIGNATURE

9/16/2022
DATE

SIG. INVENTORY NO. 14-0609

9/15/2022
14-0609_US25_Hendersonville
Leonard