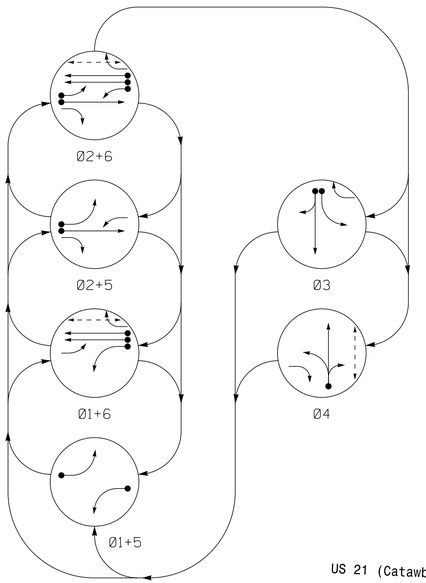
DocuSign Envelope ID: FFCE8D5B-8FAA-4721-B04C-155FDF66DB27

PROJECT REFERENCE NO.	SHEET NO.
C-5621	Sig. 3.0

3 Phase Fully Actuated Cornelius CLS D10-18

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

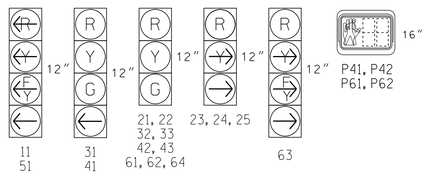
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	FLASH
11	←●	←–	←F	←F	←R	←R	←Y
21, 22	R	R	G	G	R	R	Y
23, 24, 25	R	R	→●	→–	R	→–	→Y
31	R	R	R	R	G←	R	R
32, 33	R	R	R	R	G	R	R
41	←R	←R	←R	←R	←R	G←	R
42, 43	R	R	R	R	R	G	R
51	←–	←F	←–	←F	←R	←R	←Y
61, 62, 64	R	G	R	G	R	R	Y
63	R	F→	R	F→	→–	R	→Y
P41, P42	DW	DW	DW	DW	DW	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DRK

SIGNAL FACE I.D.

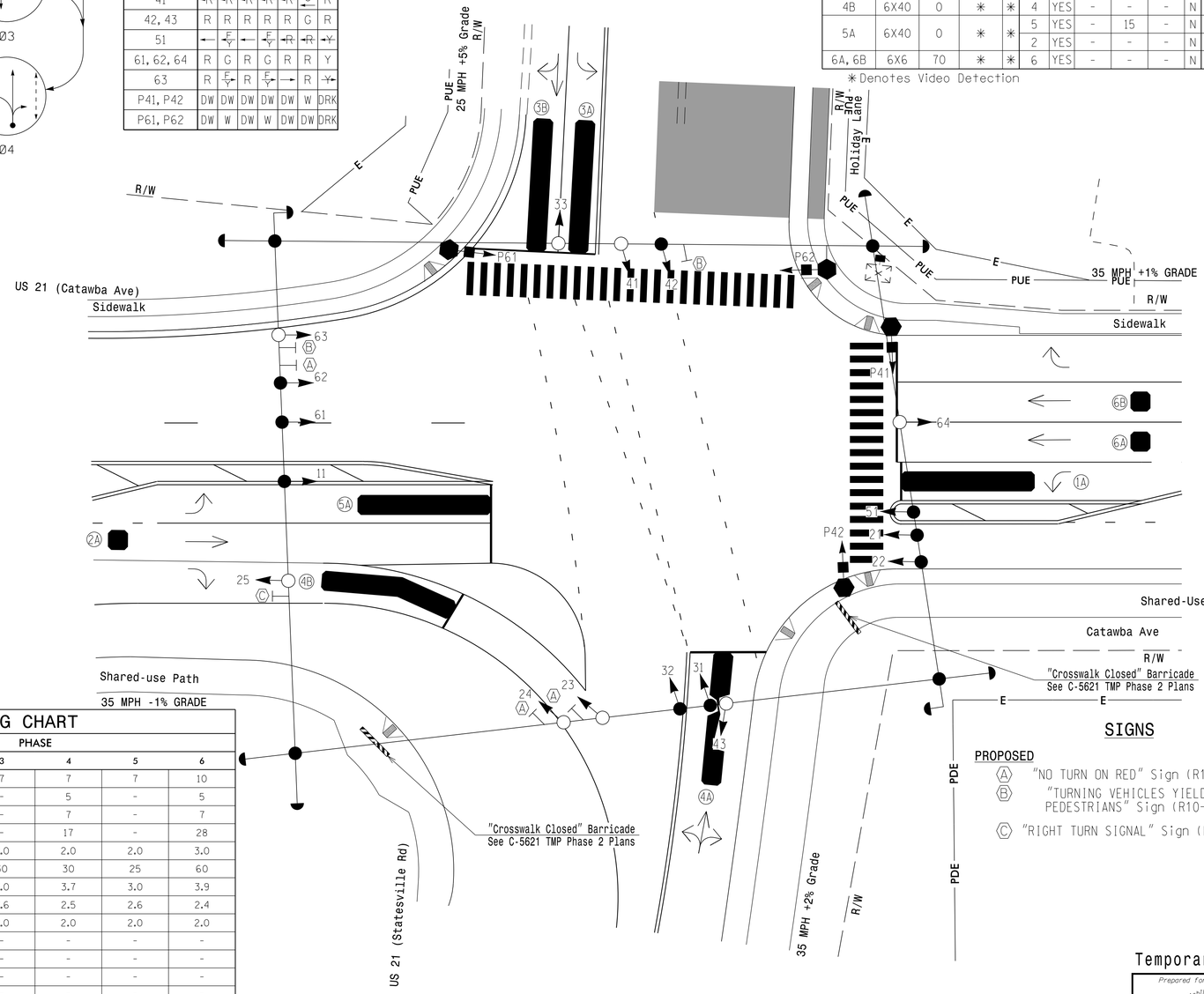
All Heads L.E.D.



ASC/3 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	0	✳	✳	1	YES	-	15	-	N	-	✳
					6	YES	-	-	-	N	-	✳
2A	6X6	70	✳	✳	2	YES	-	-	-	N	-	✳
3A	6X40	0	✳	✳	3	YES	-	3	-	N	-	✳
3B	6X40	0	✳	✳	3	YES	-	10	-	N	-	✳
4A	6X40	0	✳	✳	4	YES	-	10	-	N	-	✳
4B	6X40	0	✳	✳	4	YES	-	-	-	N	-	✳
5A	6X40	0	✳	✳	5	YES	-	15	-	N	-	✳
					2	YES	-	-	-	N	-	✳
6A, 6B	6X6	70	✳	✳	6	YES	-	-	-	N	-	✳

✳Denotes Video Detection



ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green *	7	10	7	7	7	10
Delayed Green	-	-	-	5	-	5
Walk *	-	-	-	7	-	7
Ped Clear	-	-	-	17	-	28
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0
Max 1 *	25	60	30	30	25	60
Yellow	3.0	3.9	3.0	3.7	3.0	3.9
Red Clear	3.1	2.4	3.6	2.5	2.6	2.4
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.

SIGNS

PROPOSED		EXISTING
Ⓐ	"NO TURN ON RED" Sign (R10-11A)	Ⓐ
Ⓑ	"TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15)	Ⓑ
Ⓒ	"RIGHT TURN SIGNAL" Sign (R10-10R)	Ⓒ

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018, and all applicable sections of the latest version of the generic Project Special Provisions.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Reposition existing signal heads 11, 21, 22, 31, 32, 51, 61, 62, and portable pedestrian signals P41, P42, P61, and P62
4. Rename existing signal head 44 to 42 and reposition.
5. Remove portable pedestrian signals P21 and P22.
6. Set all detector units to presence mode.
7. All pedestrian signal equipment shall be placed on portable bases to allow for relocation as required by Division 10 traffic engineer.
8. Pedestrian head and pushbutton signal cables shall be directly attached to overhead spanwire.
9. Pedestrian pedestal locations to be determined by Division 10 traffic engineer.
10. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
11. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
12. Program controller to allow an Advanced Walk movement before serving the vehicle phase.
13. This intersection uses video detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
14. See C-5621 TMP Phase 2 for pavement markings and pedestrian detour routing.
15. Portions of crosswalk masked for clarity.
16. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

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	·····
— — —	Right of Way	— — —
→	Directional Arrow	→
▬	Video Detection Zone	▬
▬	Construction Zone	▬
⬡	Type II Signal Pedestal	⬢
▯	Curb Ramp	N/A
PUE	Perm. Utility Easement	N/A
E	Temp. Construction Easement	N/A
PDE	Perm. Drainage Easement	N/A
▭	Oversized Junction Box	■

This plan supersedes the signal plan signed and sealed by S. Nick Matthews, PE on 05/31/2022.

RS&H
NC FIRM LICENSE No: F-0493
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
(919) 926-4100

Temporary Signal 2 - TCP Phase 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

US 21 (Catawba Avenue)/ Catawba Avenue at US 21 (Statesville Road)/ Holiday Lane

Division 10 Mecklenburg County Cornelius

PLAN DATE: February 2023 REVIEWED BY: S.G. Haynie
PREPARED BY: S.N. Matthews REVIEWED BY:

SCALE 0 20 1"=20'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046989 ENGINEER S. NICK MATTHEWS
DocuSigned by: S. Nick Matthews 2/21/2023
SIGNATURE DATE

Sig Inventory No. 10-0885T2

21-Feb-23 13:16:22
R:\Traffic Ops\Signals\Design\Plan Sheets\10088572_sig_dsn_20230221.dgn
21-Feb-23 13:16:22