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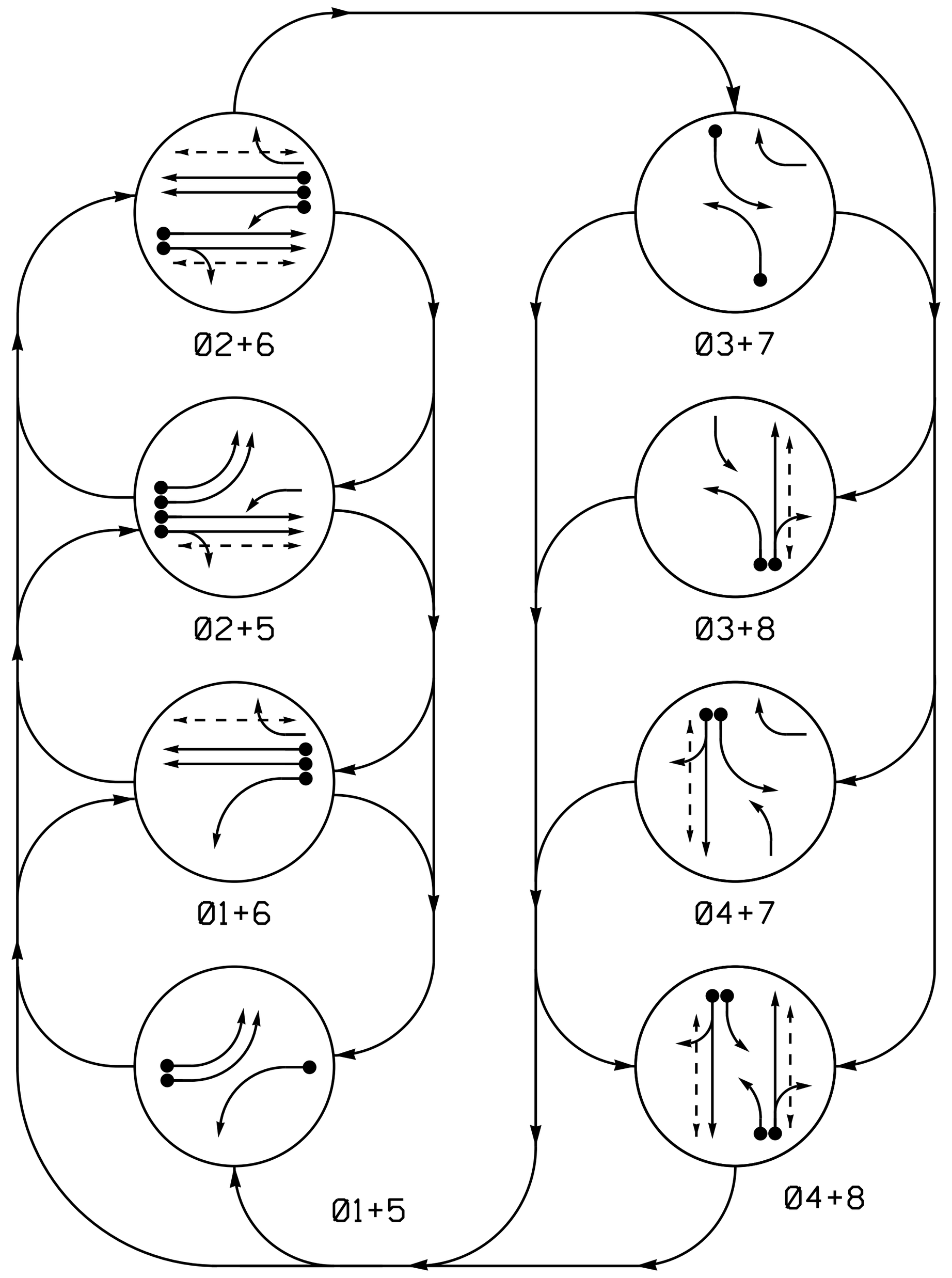
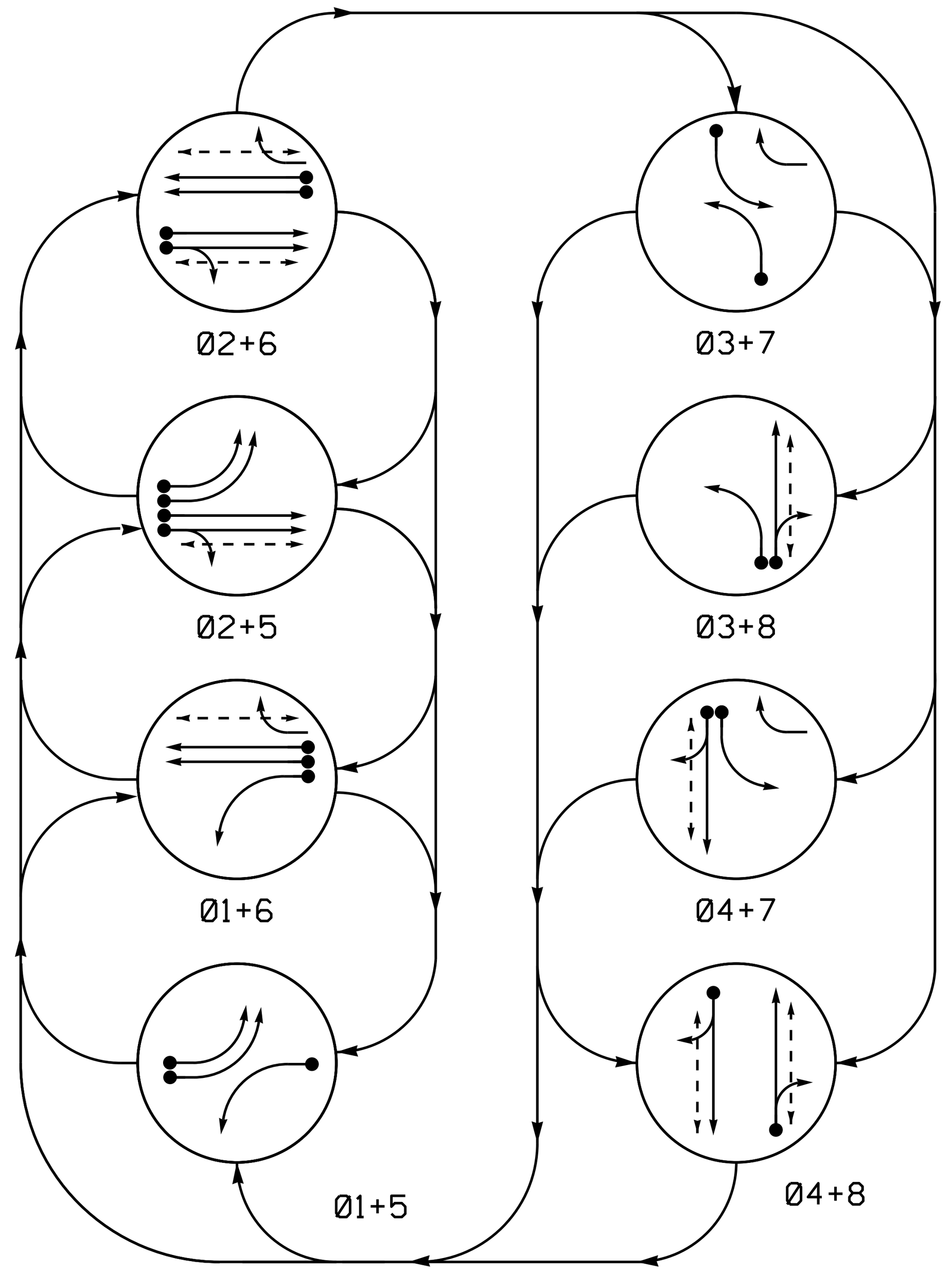
DEFAULT PHASING DIAGRAM

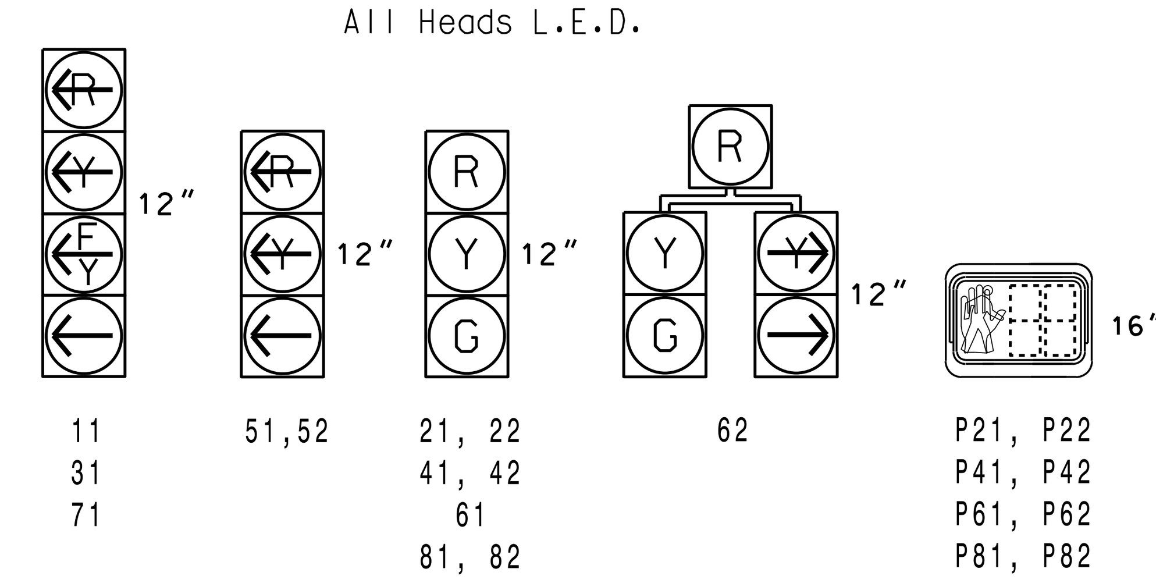


ALTERNATE PHASING DIAGRAM



SIGNAL FACE I.D.

All Heads L.E.D.



PHASING DIAGRAM DETECTION LEGEND

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

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	10 *	-	Y
					6**	Y	Y	-	-	-	-	Y
2A, 2B	6X6	70	5	Y	2	Y	Y	-	-	-	-	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15 #	-	Y
					8 ##	Y	Y	-	-	3	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	Y
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	Y
6A, 6B	6X6	70	5	Y	6	Y	Y	-	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	15 #	-	Y
					4 ##	Y	Y	-	-	3	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	Y
S1	6X6	+150	5	Y	-	Y	Y	-	-	-	Y	Y
S2	6X6	+150	5	Y	-	Y	Y	-	-	-	Y	Y

* Disable Delay During Alternate Phasing Operation
** Disable Phase 6 Call for Loops 1A during Alternate Phasing
 # Disable Delay During Alternate Phasing Operation
Disable Phase 4 & 8 Call for Loops 3A and 7A during Alternate Phasing

8 Phase
Fully Actuted
(Kernersville CLS #1)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
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. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. Pedestrians pedestals are conceptual and shown for reference only. See sheet P1-P3 for pushbuttons locations details.
10. The Division Traffic Engineer will determine the hours of use for each phasing plan.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
12. Closed loop system data:
    Master Asset #: 10905,
    Controller Asset #: 1104.

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	FLASH
11	←	←	←F/Y	←F/Y	←R	←R	←R	←R	←Y
21, 22	R	R	G	G	R	R	R	R	Y
31	←R	←R	←R	←R	←	←	←F/Y	←F/Y	←R
41, 42	R	R	R	R	R	R	G	G	R
51, 52	←	←R	←	←R	←R	←R	←R	←R	←R
61	R	G	R	G	R	R	R	R	Y
62	R	G	R	G	R/→	R	R/→	R	Y
71	←R	←R	←R	←R	←	←F/Y	←	←F/Y	←R
81, 82	R	R	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

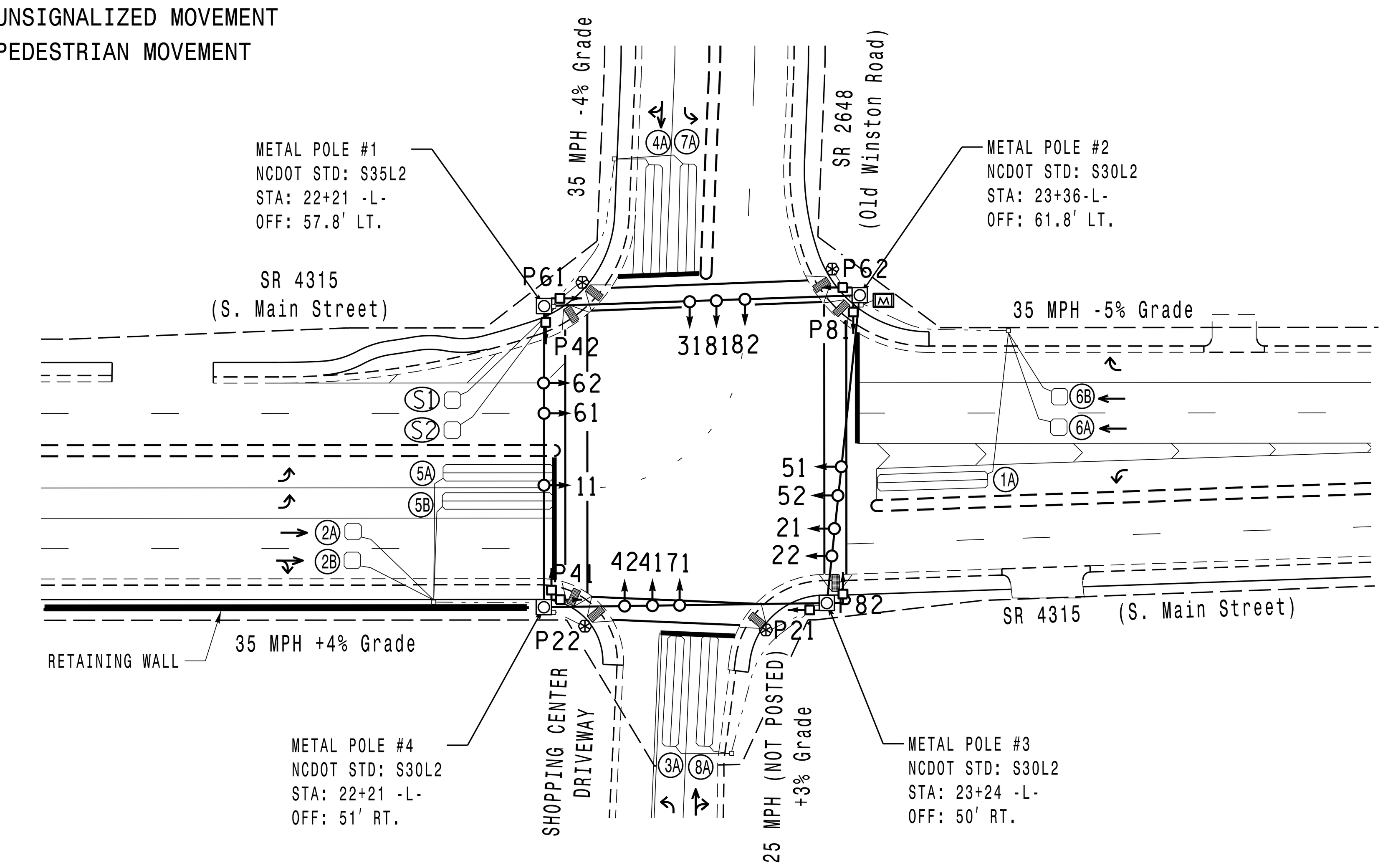
ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	FLASH
11	←	←	←R	←R	←R	←R	←R	←R	←Y
21, 22	R	R	G	G	R	R	R	R	Y
31	←R	←R	←R	←R	←	←	←R	←R	←R
41, 42	R	R	R	R	R	R	G	G	R
51, 52	←	←R	←	←R	←R	←R	←R	←R	←R
61	R	G	R	G	R	R	R	R	Y
62	R	G	R	G	R/→	R	R/→	R	Y
71	←R	←R	←R	←R	←	←R	←	←R	←R
81, 82	R	R	R	R	R	G	R	G	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DRK

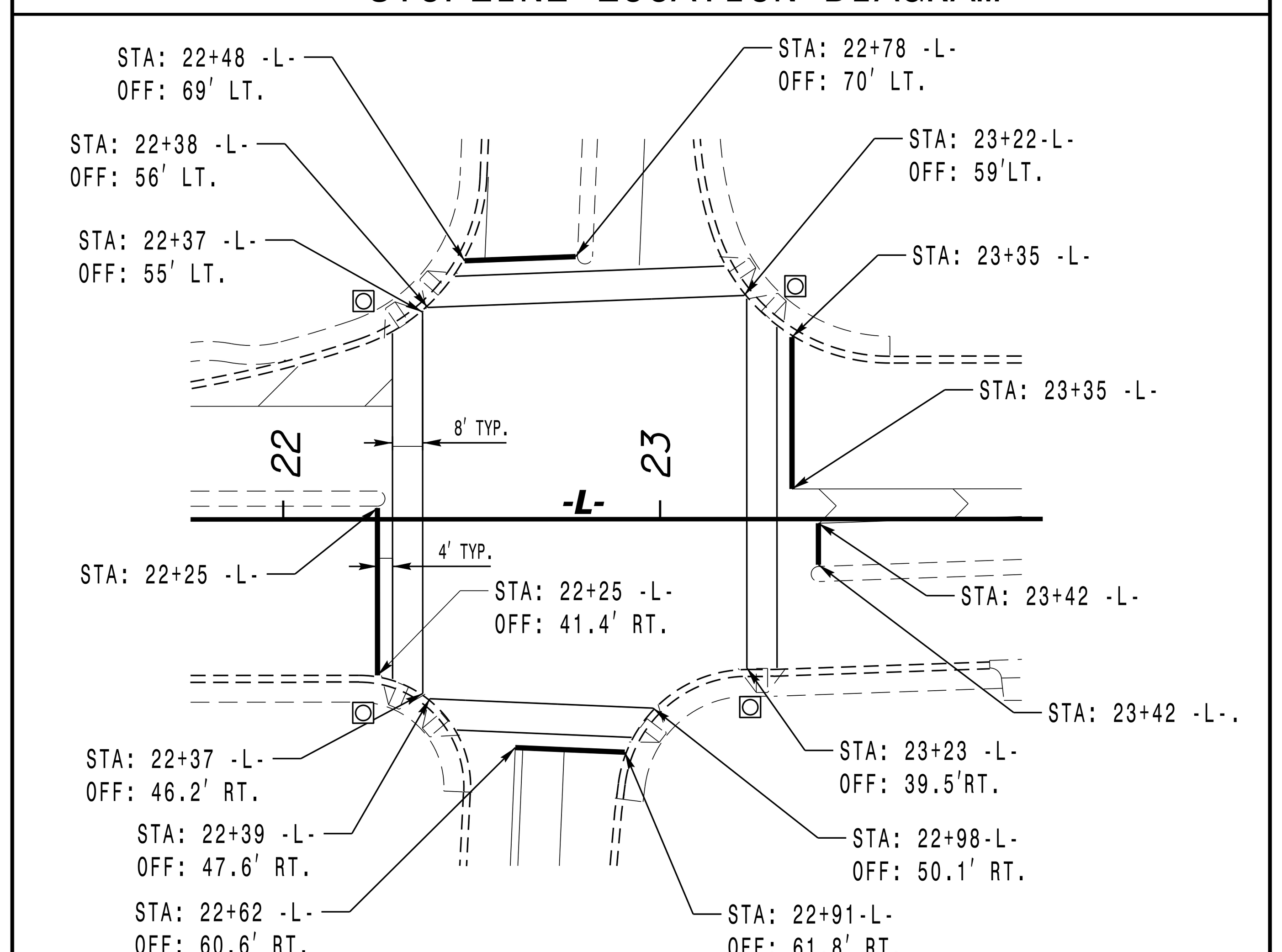
OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	10	7	7	7	10	7	7
Extension 1 *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Max Green 1 *	15	30	15	20	15	30	15	20
Yellow Clearance	3.1	4.2	3.0	4.1	3.0	4.2	3.0	4.1
Red Clearance	3.3	2.2	2.8	3.3	3.2	2.2	3.3	3.3
Walk 1 *	-	7	-	7	-	7	-	7
Don't Walk 1	-	14	-	26	-	21	-	26
Seconds Per Actuation *	-	-	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* 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.



STOPLINE LOCATION DIAGRAM



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Type I Pushbutton Post	
	Metal Strain Pole	
	Inductive Loop Detector	
	Master Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	

New Installation

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/
Shopping Center Driveway

Division 9 Forsyth County Kernersville

PLAN DATE:	April 2015	REVIEWED BY:
PREPARED BY:	M.E. Giles	REVIEWED BY:

SCALE 0 50′ 1″=50′

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by:
SIGNATURE 5/7/2015 DATE

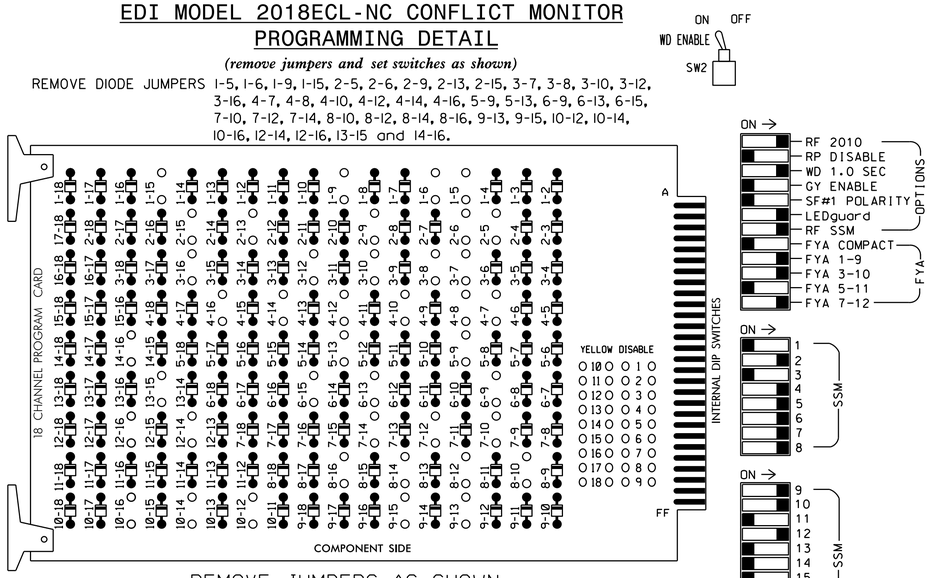
SIG. INVENTORY NO. 09-1104

PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. 2

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS I-5, I-6, I-9, I-15, 2-5, 2-6, 2-9, 2-13, 2-15, 3-7, 3-8, 3-10, 3-12, 3-16, 4-7, 4-8, 4-10, 4-12, 4-14, 4-16, 5-9, 5-13, 6-9, 6-13, 6-15, 7-10, 7-12, 7-14, 8-10, 8-12, 8-14, 8-16, 9-13, 9-15, 10-12, 10-14, 10-16, 12-14, 12-16, 13-15 and 14-16.



■ = DENOTES POSITION OF SWITCH

REMOVE JUMPERS 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. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

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 phases 4 and 8 for Dual Entry.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Start Up In Green.
5. Program phases 2, 4, 6 and 8 for 'STARTUP PED CALL'.
6. Program phases 2 and 6 for Yellow Flash and overlaps 1 and 2 as Wag Overlaps.
7. The cabinet and controller are part of the Kernersville CLS #1.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 (12-STD; 6-AUX)
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S10 S11,S12,AUX S1,AUX S2,AUX S5
PHASES USED.....1,2,3,4,5,6,7,8
OVERLAP "A".....1+2*
OVERLAP "B".....3+4*
OVERLAP "C".....NOT USED
OVERLAP "D".....7+8*

* Alternate Phasing Overlap Programming Detail shown on sheet 6.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11 ★	21,22	P21, P22	31 ★	41,42	P41, P42	51,52	61,62	P61, P62	71 ★	62	81,82	P81, P82	11 ★	31 ★	NU	NU	71 ★	NU
RED		128			101			134		*		107							
YELLOW	*	129		*	102			135				108							
GREEN		130			103			136				109							
RED ARROW							131						A121	A124			A101		
YELLOW ARROW							132				123		A122	A125			A102		
FLASHING YELLOW ARROW													A123	A126			A103		
GREEN ARROW	127			118			133			124	124								
✋			113			104			119			110							
🚶			115			106			121			112							

NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø1 1A	Ø2 2A,2B	SLOT EMPTY	WIRED INPUT ⊗	Ø3 3A	Ø4 4A	SLOT EMPTY	WIRED INPUT ⊗	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	NOT USED			NOT USED	NOT USED			SYS. DET. S2			Ø4 PED DC ISOLATOR	Ø8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	Ø5 5A	Ø6 5B	SLOT EMPTY	WIRED INPUT ⊗	Ø7 7A	Ø8 8A	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED	Ø6 6A,6B			NOT USED	NOT USED								

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

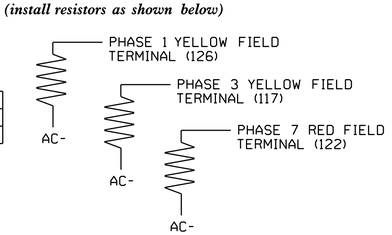
FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			10
	-	J4U	48	10	26	6	Y	Y			
	-	I1U	56	18	51**	1	Y	Y			
2A,2B	TB2-5,6	I2U	39	1	2	2	Y	Y			
3A[2]	TB4-5,6	I5U	58	20	3	3	Y	Y			15
	-	J8U	50	12	28	8	Y	Y			3
	-	I5U	58	20	53**	3	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			10
5A	TB3-1,2	J1U	55	17	5	5	Y	Y			
5B	TB3-5,6	J2U	40	2	6	5	Y	Y			
6A,6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
7A[3]	TB5-5,6	J5U	57	19	7	7	Y	Y			15
	-	I8U	49	11	24	4	Y	Y			3
	-	J5U	57	19	57**	7	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			10
* S1	TB6-9,10	I9U	60	22	11	SYS					
* S2	TB6-11,12	I9L	62	24	13	SYS					
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

* System detector only. Remove the vehicle phase assigned to this detector in the default programming.

** See input Page Assignment progrmming detail on sheets 3, 4 and 5. detector in the default programming.

[1] Add jumper from I1-W to J4-W, on rear of input file.

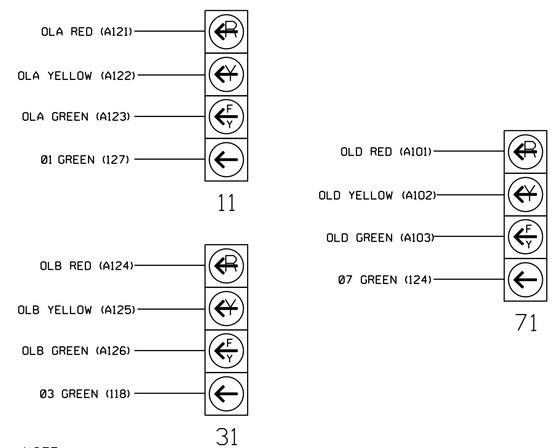
[2] Add jumper from I5-W to J8-W, on rear of input file.

[3] Add jumper from J5-W to I8-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for these signals require special logic programming. See sheet 2 for programming instructions.

Electrical Detail - Sheet 1 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

SR 4315 (S. Main Street) at SR 2648 (Old Winston Road)/ Shopping Center Driveway

Division 9 | Forsyth County | Kernersville

PLAN DATE:	April 2015	REVIEWED BY:	T. Joyce
PREPARED BY:	B. Simmons	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

DocuSigned by: George C. Brown 5/19/2015
SIGNATURE DATE

SIG. INVENTORY NO. 09-1104

18-MAY-2015 13:06
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bsimmons

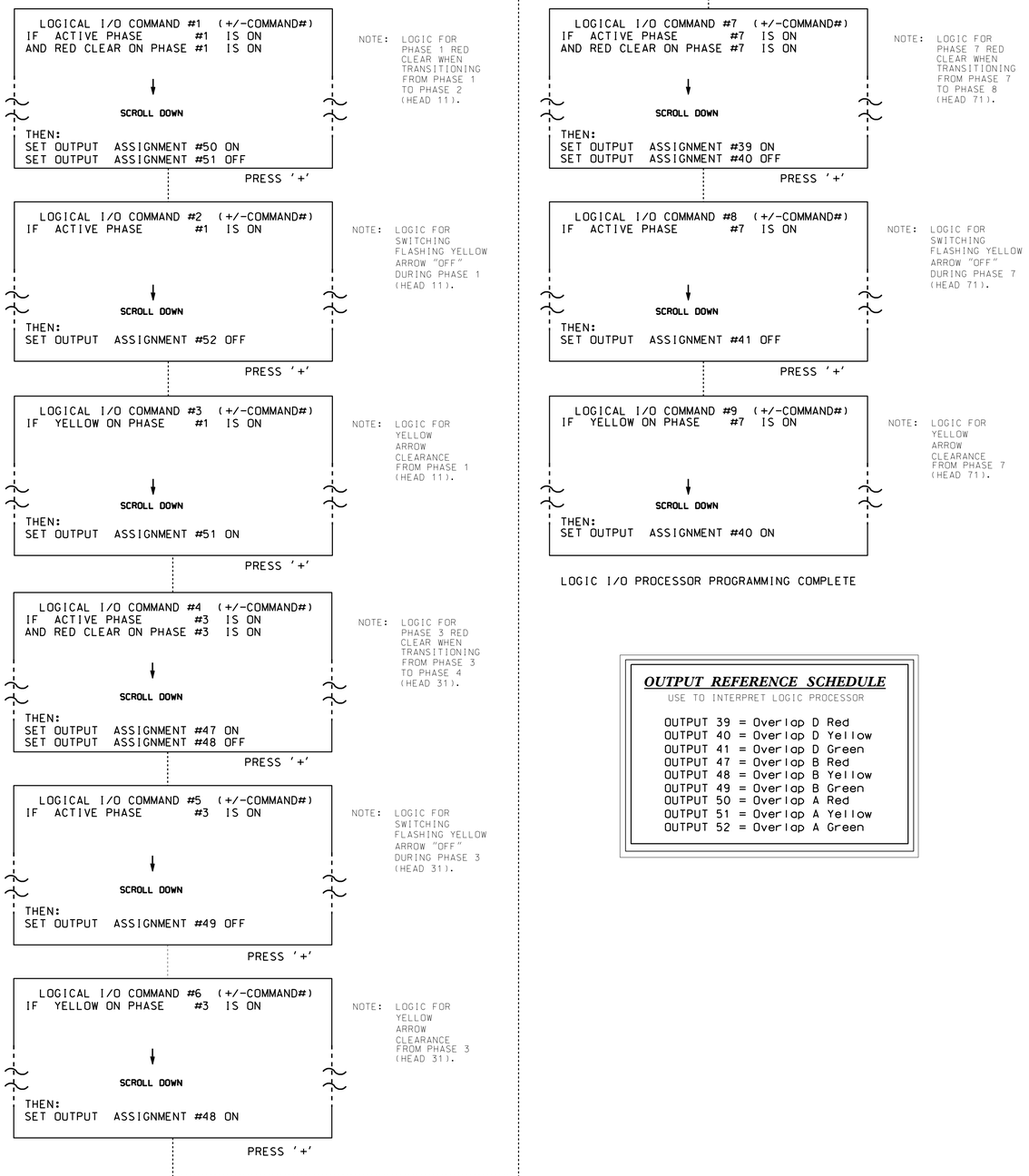
PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. 3

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, 8 and 9.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

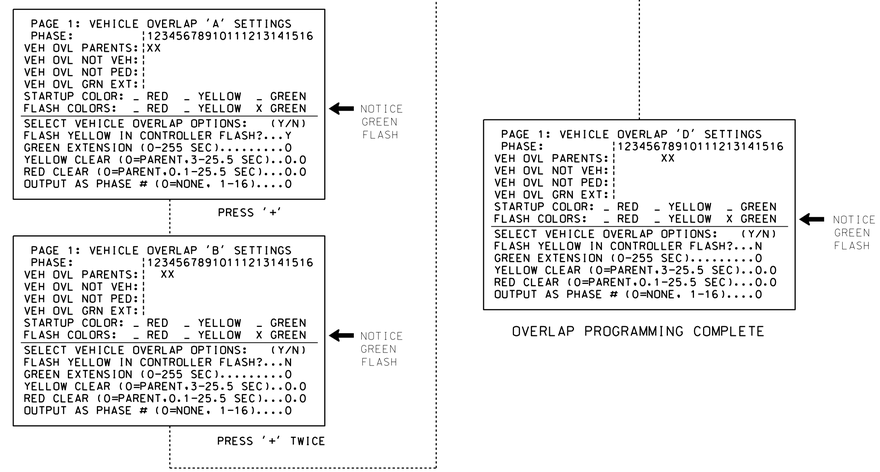
USE TO INTERPRET LOGIC PROCESSOR

OUTPUT 39 = Overlap D Red
OUTPUT 40 = Overlap D Yellow
OUTPUT 41 = Overlap D Green
OUTPUT 47 = Overlap B Red
OUTPUT 48 = Overlap B Yellow
OUTPUT 49 = Overlap B Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).



OVERLAP PROGRAMMING COMPLETE

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

Electrical Detail - Sheet 2 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/
Shopping Center Driveway

Division 9 Forsyth County Kernersville

PLAN DATE:	April 2015	REVIEWED BY:	T. Joyce
PREPARED BY:	B. Simmons	REVIEWED BY:	

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN
DocuSigned by: George C. Brown 5/19/2015
F12601E0D8E8434 DATE

SIG. INVENTORY NO. 09-1104

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bsimmons

PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. 4

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

(program controller as shown below)

NOTES: 1. This programming applies for Input Page 2 only. Input Page 1 will use standard default settings. This programming is necessary for proper detector operation during Alternate Phasing operation.

2. The first task this programming accomplishes is the disabling of Input #10 (Detector 26) so that a Vehicle Call will not be placed to Phase 6 during Alternate Phasing operation. The second task this programming accomplishes is that it reassigns Detector 51 to Input #18 so that the Delay on Loop 1A can be reduced from 10 Seconds to 0 Seconds.

From Main Menu press '5' (INPUTS), then press 'Next' to get to Input Page '2'. Press the '+' key until Input 10 is reached.

```
PAGE: 2 C1 PIN:48  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................10
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............26
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........._
SPECIAL FUNCTION ALARM (1-8)........._
TOD HOUR SYCHRONIZATION (0-23)......._
FORCE OFF RING (1-4)................._
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......._
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ Enter a 'Y' for NOT ENABLED

Default Detector Number will remain until 'NOT ENABLED' is Entered.

(Loop 1A - Phase 6)

```
PAGE: 2 C1 PIN:48  NOT ENABLED
INPUT ASSIGNMENT #.................10
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........._
SPECIAL FUNCTION ALARM (1-8)........._
TOD HOUR SYCHRONIZATION (0-23)......._
FORCE OFF RING (1-4)................._
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......._
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

Press '+' to advance to Input 18

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............1
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........._
SPECIAL FUNCTION ALARM (1-8)........._
TOD HOUR SYCHRONIZATION (0-23)......._
FORCE OFF RING (1-4)................._
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......._
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ Enter '51' to reassign the Vehicle Detector for this Input

(Loop 1A - Phase 1)

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC)............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............51
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........._
SPECIAL FUNCTION ALARM (1-8)........._
TOD HOUR SYCHRONIZATION (0-23)......._
FORCE OFF RING (1-4)................._
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......._
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

From Main Menu press '7' (DETECTORS), then press '1' for Vehicle Detectors. Press the '-' key to get to Vehicle Detector #51.

```
VEHICLE DETECTOR #51  SETTINGS (+-.1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................N
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

→ Enter 'Y' for ENABLE Detector

→ Enter '1' for Phases Assigned

→ ENSURE Delay is '0'

```
VEHICLE DETECTOR #51  SETTINGS (+-.1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

NOTE: Detector is programmed per the Input File Connection and Programming Chart shown on Sheet 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

Electrical Detail - Sheet 3 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/
Shopping Center Driveway

Division 9 | Forsyth County | Kernersville

PLAN DATE:	April 2015	REVIEWED BY:	T. Joyce
PREPARED BY:	B. Simmons	REVIEWED BY:	

REVISIONS	INIT.	DATE

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

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

DocuSigned by: George C. Brown 5/19/2015
F12601E0DBE8434 DATE

SIG. INVENTORY NO. 09-1104

18-MAY-2015 13:07
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bsimmons

PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. 5

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 3A

(program controller as shown below)

NOTES: 1. This programming applies for Input Page 2 only. Input Page 1 will use standard default settings. This programming is necessary for proper detector operation during Alternate Phasing operation.

2. The first task this programming accomplishes is the disabling of Input #12 (Detector 28) so that a Vehicle Call will not be placed to Phase 8 during Alternate Phasing operation. The second task this programming accomplishes is that it reassigns Detector 53 to Input #20 so that the Delay on Loop 3A can be reduced from 15 Seconds to 0 Seconds.

From Main Menu press '5' (INPUTS), then press 'Next' to get to Input Page '2'. Press the '+' key until Input 12 is reached.

```
PAGE: 2 C1 PIN:50  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................12
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................Y
VEHICLE DETECTOR (1-64).............28
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

Enter a 'Y' for NOT ENABLED

Default Detector Number will remain until 'NOT ENABLED' is Entered.

(Loop 3A - Phase 8)

```
PAGE: 2 C1 PIN:50  NOT ENABLED
INPUT ASSIGNMENT #..................12
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................Y
VEHICLE DETECTOR (1-64).............
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

Press '+' to advance to Input 20

```
PAGE: 2 C1 PIN:58  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................20
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................
VEHICLE DETECTOR (1-64).............3
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

Enter '53' to reassign the Vehicle Detector for this Input

(Loop 3A - Phase 3)

```
PAGE: 2 C1 PIN:58  VEHICLE DETECTOR
INPUT ASSIGNMENT #..................20
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................
VEHICLE DETECTOR (1-64).............53
PEDESTRIAN DETECTOR (1-16)..........
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10)......................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE).._ OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y).
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 3A (ALT.)

(program controller as shown below)

From Main Menu press '7' (DETECTORS), then press '1' for Vehicle Detectors. Press the '-' key to get to Vehicle Detector #53.

```
VEHICLE DETECTOR #53  SETTINGS (+-,1-64)
SETTING:                           (Y/N)
ENABLE DETECTOR.....................N
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)...............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

Enter 'Y' for ENABLE Detector

Enter '3' for Phases Assigned

ENSURE Delay is '0'

```
VEHICLE DETECTOR #53  SETTINGS (+-,1-64)
SETTING:                           (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................Y
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦  X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)...............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

NOTE: Detector is programmed per the Input File Connection and Programming Chart shown on Sheet 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

Electrical Detail - Sheet 4 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/ Shopping Center Driveway

Division 9 — Forsyth County — Kernersville

PLAN DATE: April 2015	REVIEWED BY: T. Joyce
PREPARED BY: B. Simmons	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL — North Carolina Professional Engineer, SEAL 022013, George C. Brown

DocuSigned by: George C. Brown 5/19/2015

SIG. INVENTORY NO. 09-1104

18-MAY-2015 13:08
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bsimmons

PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. 6

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 7A

(program controller as shown below)

NOTES: 1. This programming applies for Input Page 2 only. Input Page 1 will use standard default settings. This programming is necessary for proper detector operation during Alternate Phasing operation.

2. The first task this programming accomplishes is the disabling of Input #11 (Detector 24) so that a Vehicle Call will not be placed to Phase 4 during Alternate Phasing operation. The second task this programming accomplishes is that it reassigns Detector 57 to Input #19 so that the Delay on Loop 7A can be reduced from 15 Seconds to 0 Seconds.

From Main Menu press '5' (INPUTS), then press 'Next' to get to Input Page '2'. Press the '+' key until Input 11 is reached.

```
PAGE: 2 C1 PIN:49  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................11
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................Y
VEHICLE DETECTOR (1-64).............24
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)..................._
DOOR OPEN (Y/N)....................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE)..  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)..._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)..._
CHANGE INPUT PAGE (1-4)............._
CHANGE OUTPUT PAGE (1-4)............_
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

Enter a 'Y' for NOT ENABLED

Default Detector Number will remain until 'NOT ENABLED' is Entered.

(Loop 7A - Phase 4)

```
PAGE: 2 C1 PIN:49  NOT ENABLED
INPUT ASSIGNMENT #.................11
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)...................Y
VEHICLE DETECTOR (1-64)............._
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)..................._
DOOR OPEN (Y/N)....................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE)..  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)..._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)..._
CHANGE INPUT PAGE (1-4)............._
CHANGE OUTPUT PAGE (1-4)............_
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

Press '+' to advance to Input 19

```
PAGE: 2 C1 PIN:57  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................19
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............7
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)..................._
DOOR OPEN (Y/N)....................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE)..  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)..._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)..._
CHANGE INPUT PAGE (1-4)............._
CHANGE OUTPUT PAGE (1-4)............_
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

Enter '57' to reassign the Vehicle Detector for this Input

(Loop 7A - Phase 7)

```
PAGE: 2 C1 PIN:57  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................19
DEBOUNCE TIME (0-25.5 SEC)..........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............57
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................_
INVERTED PREEMPT (1-10)............._
STOP TIME (Y/N)....................._
FLASH SENSE (Y/N)..................._
DOOR OPEN (Y/N)....................._
MANUAL CONTROL ENABLE (Y/N)........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16).................._
PLAN (65=FLSH,66=FREE)..  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)..._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)....._
CHANGE OVERLAP CONTROL PAGE (1-4)..._
CHANGE INPUT PAGE (1-4)............._
CHANGE OUTPUT PAGE (1-4)............_
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 7A (ALT.)

(program controller as shown below)

From Main Menu press '7' (DETECTORS), then press '1' for Vehicle Detectors. Press the '-' key to get to Vehicle Detector #57.

```
VEHICLE DETECTOR #57  SETTINGS (+-,1-64)
SETTING:                           (Y/N)
ENABLE DETECTOR.....................N
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)...............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

Enter 'Y' for ENABLE Detector

Enter '7' for Phases Assigned

ENSURE Delay is '0'

```
VEHICLE DETECTOR #57  SETTINGS (+-,1-64)
SETTING:                           (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦      X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT)................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)...............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

NOTE: Detector is programmed per the Input File Connection and Programming Chart shown on Sheet 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

Electrical Detail - Sheet 5 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

Transportation Mobility and Safety Division, State of North Carolina Department of Transportation, Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/
Shopping Center Driveway

Division 9 | Forsyth County | Kernersville

PLAN DATE:	April 2015	REVIEWED BY:	T. Joyce
PREPARED BY:	B. Simmons	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN

DocuSigned by: George C. Brown 5/19/2015
F12601ED0BEB434...
DATE

SIG. INVENTORY NO. 09-1104

18-MAY-2015 13:08
S:\ITS&SU\ITS Signals\Workgroups\Sig Man\Simmons\Working Folder\Electrical Details\Division 09\091104_sm_ele_xxx.dgn
bsimmons

ALTERNATE PHASING ACTIVATION DETAIL

To run ALT. Phasing during Coordination - Select all page changes (as shown below) within Coordination Plan programming.

To run ALT. Phasing during Free Run - Program page changes (shown below) in separate Time Of Day events. If page 1 is used, no event programming is necessary for that particular page.

PHASING	INPUT PAGE	OVERLAP PAGE
Active Page required to run NORMAL PHASING	1	1
Active Page required to run ALTERNATE PHASING	2	2

NOTE: Pages not shown (i.e. Sequence, Phase Control, etc.) should remain as '1', or as defined by Timing Engineer.

IMPORTANTt: If Alertnate Phasing is used during Free Run and Coordination, DO NOT operate Time Of Day page change events concurrently with Coordination Plan events in the Event Scheduler. EX: Free Run page change event should end before Coordination Plan event starts and Vice-Versa.

ALTERNATE PHASING PAGE CHANGE SUMMARY

The following is a summary of what takes place when the Overlap/Input page change activates to call the "Alternate Phasing":

Overlap Page 2: Modifies Overlap Parent Phase for Heads 11, 31 and 71 to run protected turn only.

Input Page 2: Disables Phase 6 call on Loop 1A and modifies Delay Time.

Disables Phase 8 call on Loop 3A and modifies Delay Time.

Disables Phase 4 call on Loop 7A and modifies Delay Time.

OVERLAP PROGRAMMING DETAIL (ALTERNATE PHASING)

(program controller as shown below)

From Main Menu Press '8' (OVERLAPS), then '1' (VEHICLE OVERLAP SETTINGS). Press 'Next' to Advance to Page 2.

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS: ¦X
VEH OVL NOT VEH: ¦
VEH OVL NOT PED: ¦
VEH OVL GRN EXT: ¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+'

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS: ¦  X
VEH OVL NOT VEH: ¦
VEH OVL NOT PED: ¦
VEH OVL GRN EXT: ¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+' TWICE

NOTICE PAGE 2 →

```
 PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
 PHASE:          ¦12345678910111213141516
VEH OVL PARENTS: ¦      X
VEH OVL NOT VEH: ¦
VEH OVL NOT PED: ¦
VEH OVL GRN EXT: ¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 09-1104
DESIGNED: April 2015
SEALED: 5/7/15
REVISED: N/A

Electrical Detail - Sheet 6 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Transportation Mobility and Safety Division, Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 4315 (S. Main Street)
at
SR 2648 (Old Winston Road)/
Shopping Center Driveway

Division 9 Forsyth County Kernersville

PLAN DATE: April 2015	REVIEWED BY: T. Joyce
PREPARED BY: B. Simmons	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022013 ENGINEER GEORGE C. BROWN

DocuSigned by: George C. Brown 5/19/2015
F12601ED0BEB434...
DATE

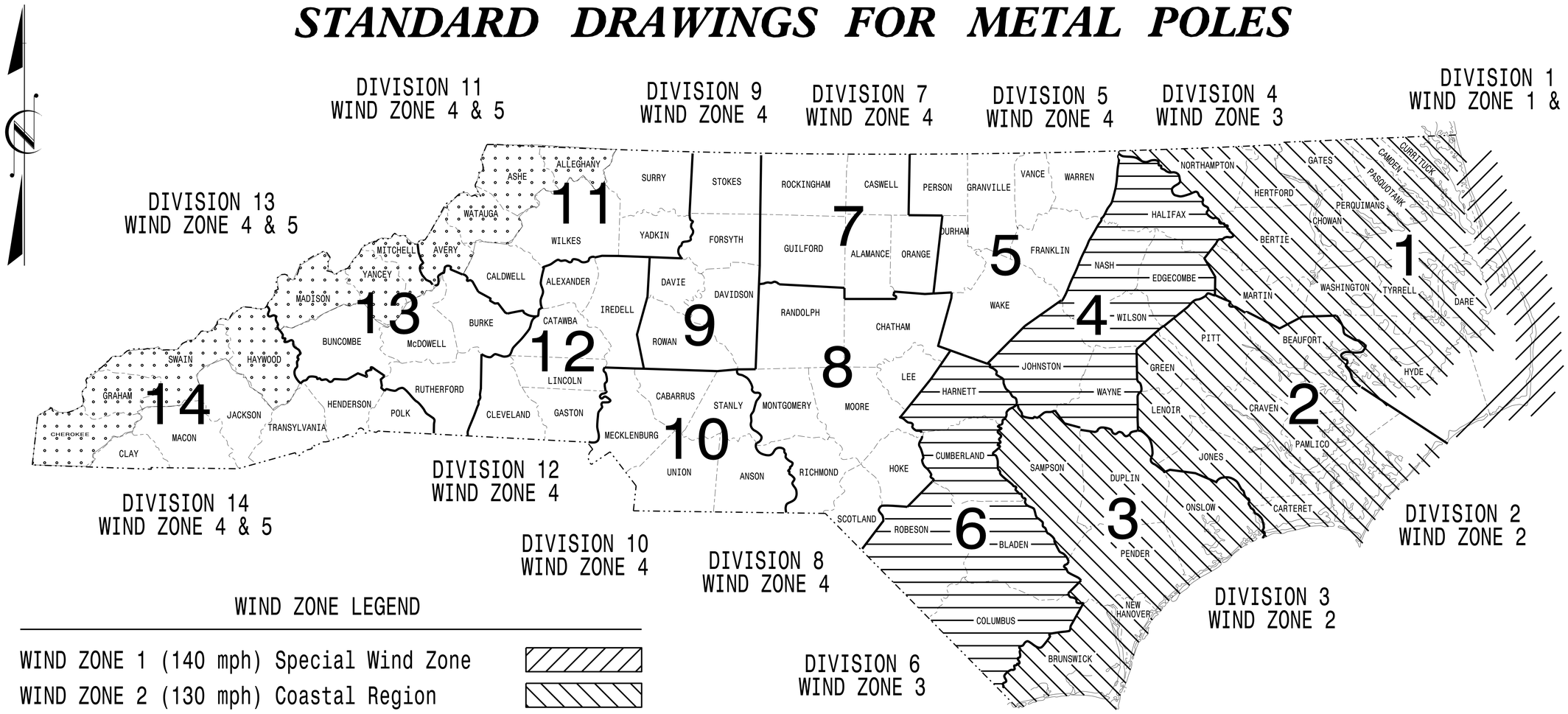
SIG. INVENTORY NO. 09-1104

PROJECT NO.	SHEET NO.
W-5510	Sig. M1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANDARD DRAWINGS FOR METAL POLES

NCDOT METAL POLE STANDARDS



WIND ZONE LEGEND

WIND ZONE 1 (140 mph) Special Wind Zone	
WIND ZONE 2 (130 mph) Coastal Region	
WIND ZONE 3 (110 mph) Eastern Region	
WIND ZONE 4 (90 mph) Central & Mtn. Region	
WIND ZONE 5 (120 mph) Special Wind Zone	

https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

Prepared in the Offices of:

Transportation Mobility and Safety Division
Signal Design Section
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

750 N.Greenfield Pkwy.Garner,NC 27529

Designed in conformance with the latest 2012 Interim to the 5th Edition 2009

AASHTO

Standard Specifications for Structural Supports for Highway Signs, Luminares, and Traffic Signals

INDEX OF PLANS

NCDOT CONTACTS:

MOBILITY AND SAFETY DIVISION – ITS AND SIGNALS UNIT

G. A. FULLER, P.E. – STATE ITS AND SIGNALS ENGNEER

G. G. MURR, JR., P.E. – STATE SIGNALS ENGINEER

D.C. SARKAR, P.E. – ITS AND SIGNALS SENIOR STRUCTURAL ENGINEER

C.F. ANDREWS – ITS AND SIGNALS JOURNEY STRUCTURAL ENGINEER

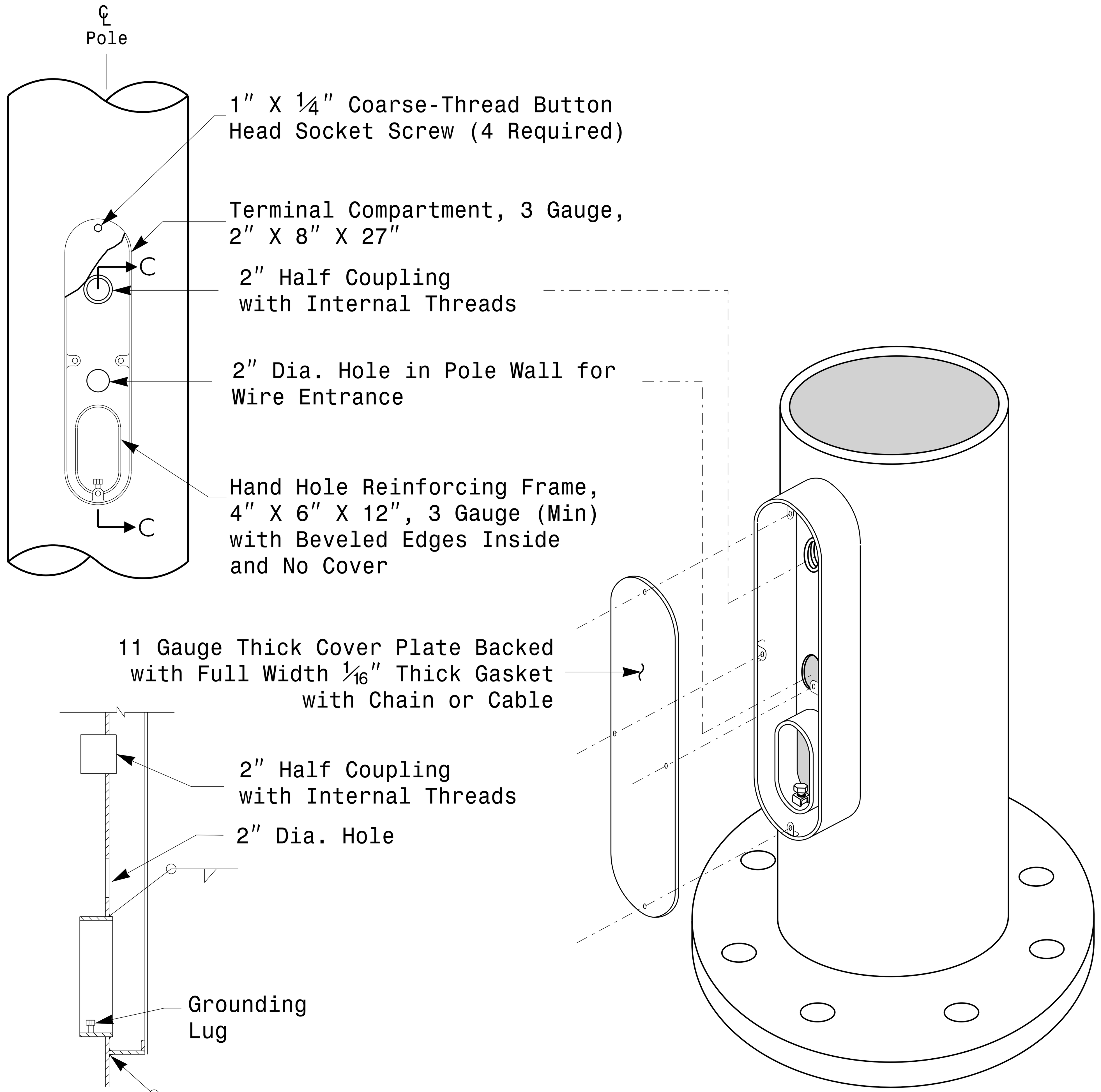
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

DocuSigned by: Debesh C. Sarkar 44EBE32E147E4C4...

8/26/2014

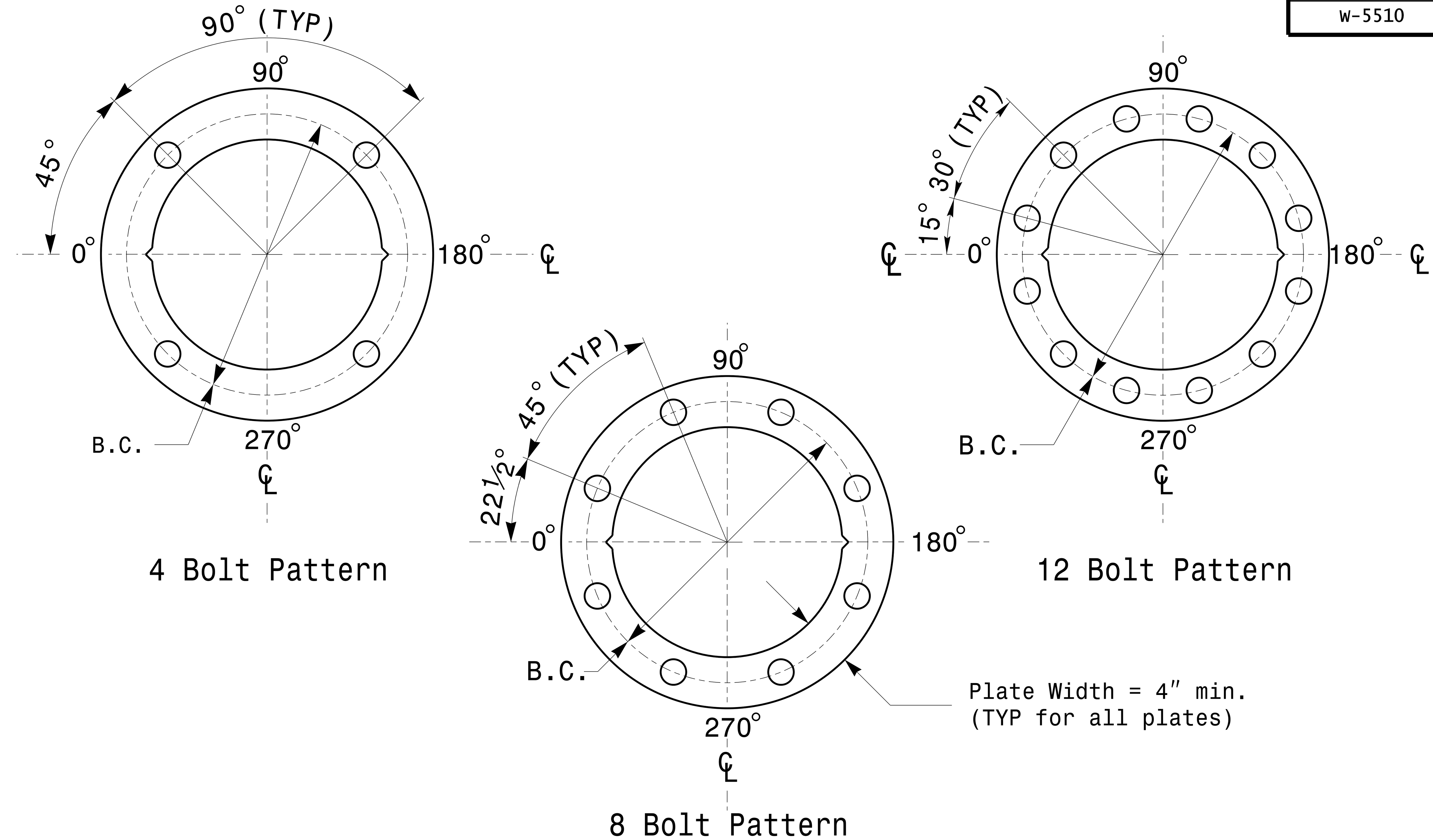
DATE



Section C-C

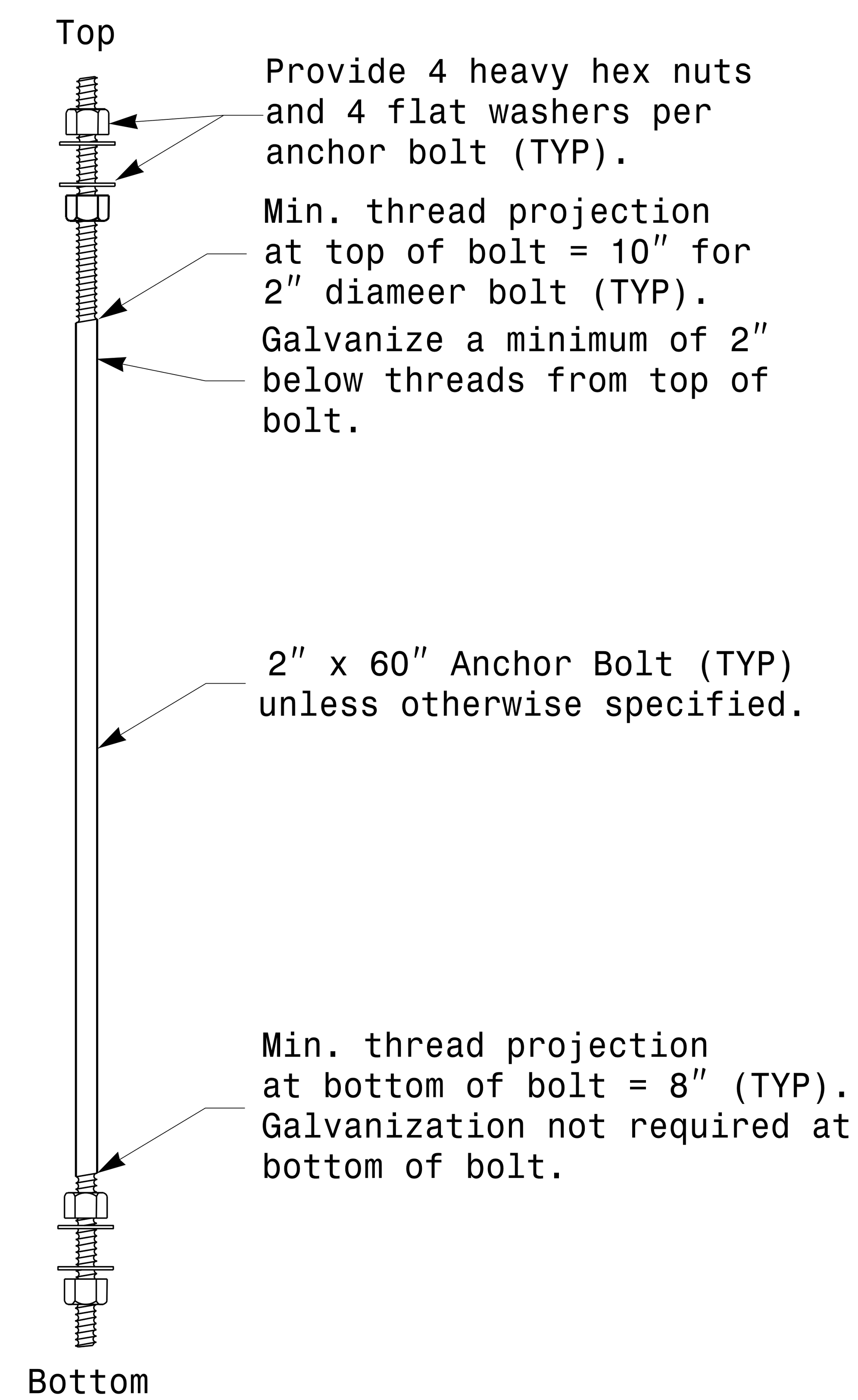
Note: Unless otherwise specified, locate Terminal Compartment 1 foot above the pole base plate at 180 degrees on the pole's radial index.

Terminal Compartment Detail



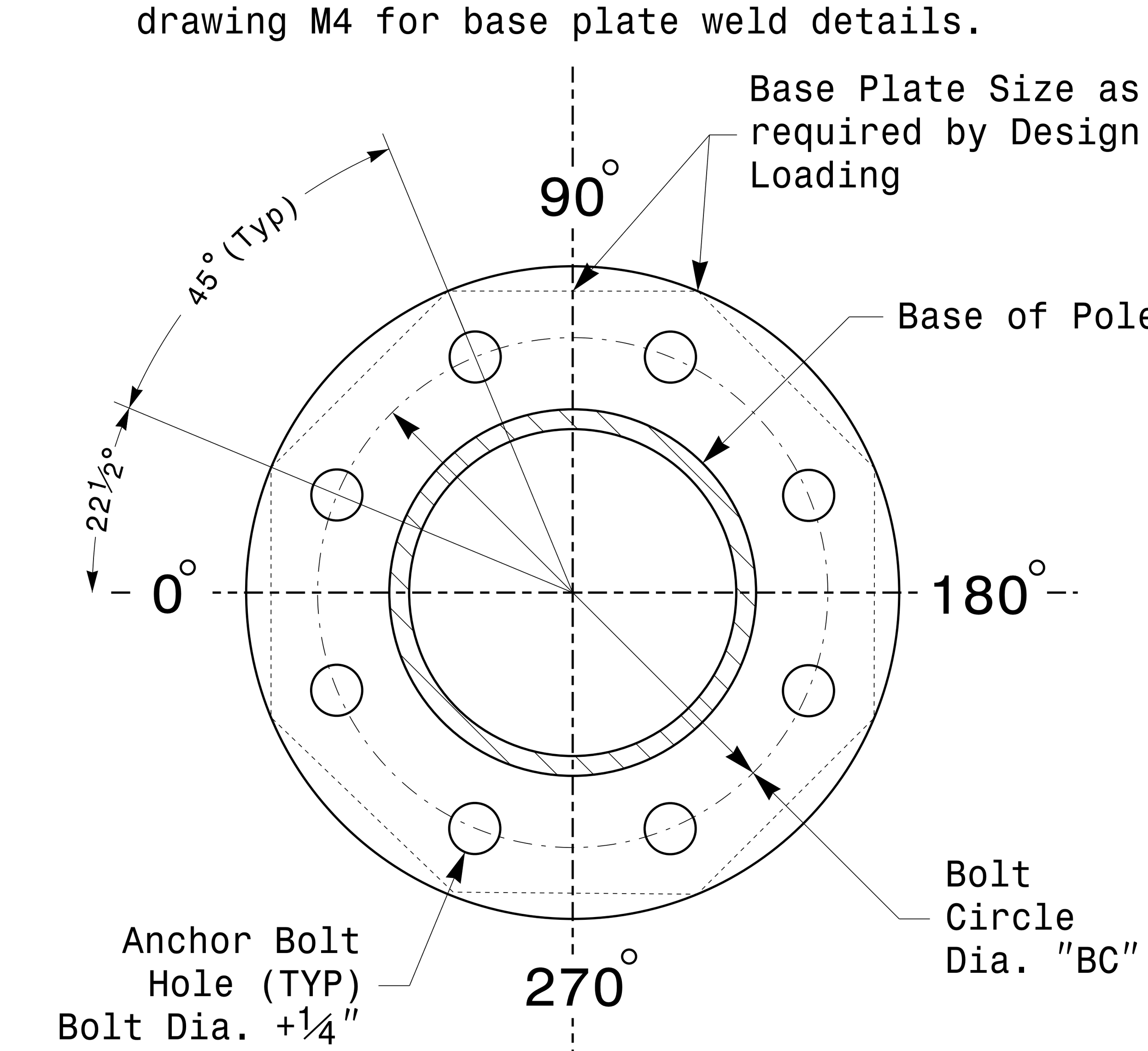
Construct Templates and Plates from ¼" min. thick Steel. Galvanizing is not required.

Base Plate Template and Anchor Bolt Lock Plate Details

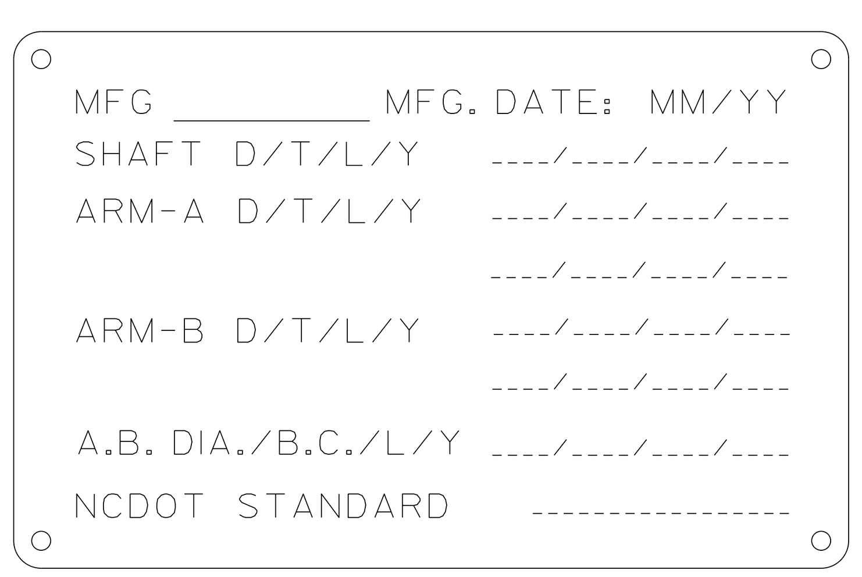


Anchor Bolt Detail

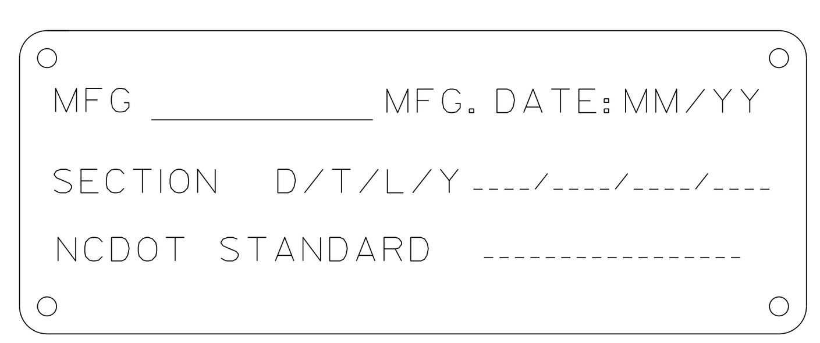
Note: See Strain Pole drawing M3 and Mast arm drawing M4 for base plate weld details.



8 Bolt Base Plate Detail



Shaft I.D. Tag
(Provide on Strain Poles and Mast Arm Poles)



Arm I.D. Tag
(Provide on each section of a multi-section mast arm)

Notes:
1) D= Diameter, T= Thickness, L= Length, Y= Yield Strength
2) A.B. = Anchor Bolt
3) B.C. = Bolt Circle of Anchor Bolts
4) If Custom Design, use "NCDOT STANDARD" line for pole I.D. number and Signal Inv. Number.
5) See drawing M4 for mounting positions of I.D. tags.

Identification Tag Details

Fabrication Details – All Poles

Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Design Section, State of North Carolina Department of Transportation
750 N.Greenfield Pkwy,Garner,NC 27529

Typical Fabrication Details Common To All Metal Poles

PLAN DATE:	AUGUST 2013	DESIGNED BY:	C.F. ANDREWS
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

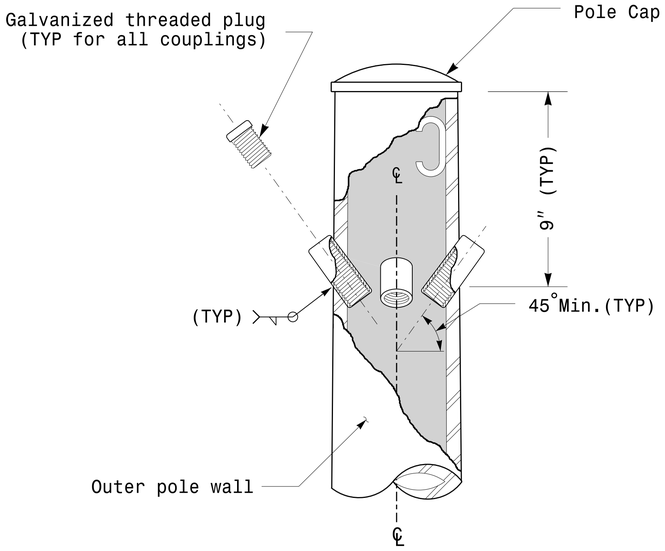
SCALE 0 NA NONE

REVISIONS	INIT.	DATE

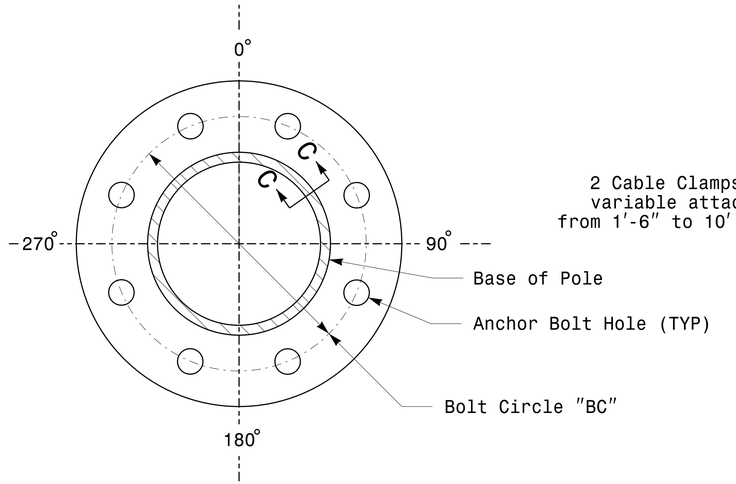
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028094 DEBESH C. SARKAR
DocuSigned by: Debesh C. Sarkar 44E8E32E147E4C4... 8/26/2014 DATE
SIG. INVENTORY NO.

26-AUG-2014 08:55
S:*ITS&SU*ITS Signals*Signal Design Section*Eastern Region*M Sheets*2012_M2_Fab Details All Poles.dgn
jgalloway

Fabrication Details – Strain Poles



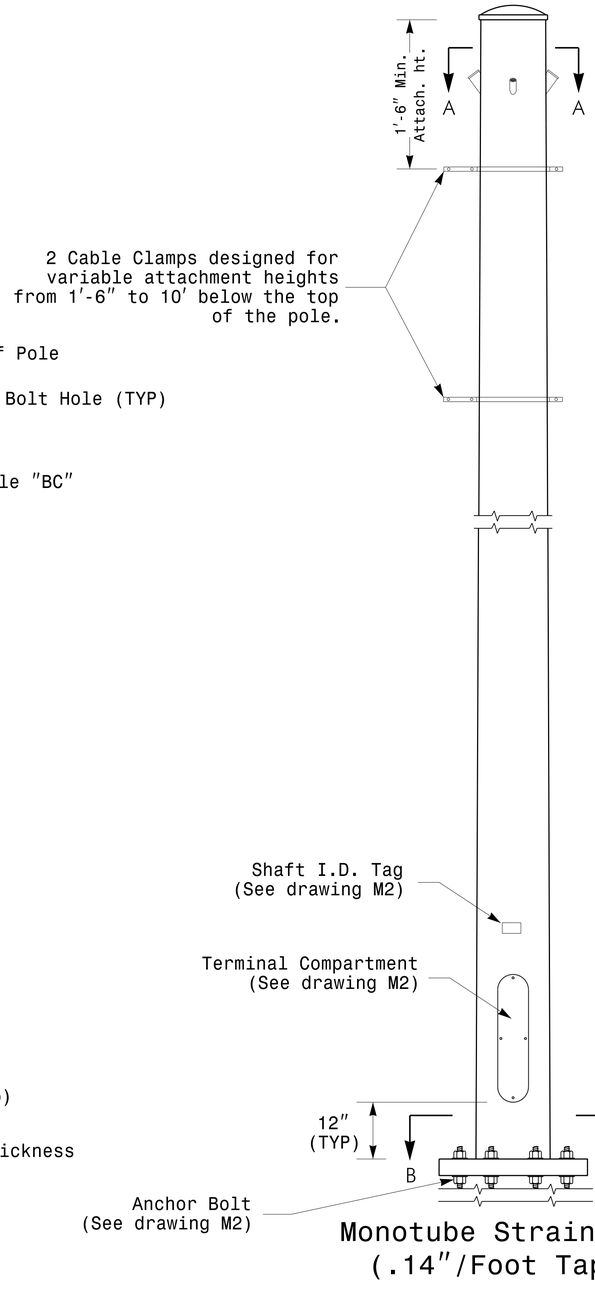
Cable Entrances at Top of Pole



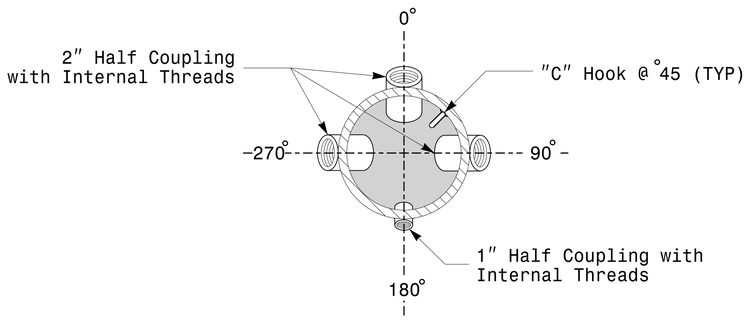
Section B-B

(See drawing M2)

Pole Base Plate

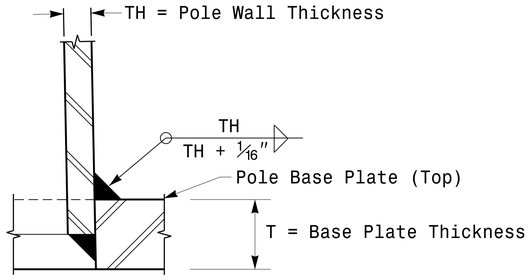


Monotube Strain Pole (.14"/Foot Taper)



Section A-A

Radial Orientation for Factory Installed Accessories at Top of Pole



Section C-C

Socket Connection Weld Detail

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

Typical Fabrication Details For Strain Poles

PLAN DATE:	AUGUST 2013	DESIGNED BY:	C.F. ANDREWS
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

SCALE: 0 NA — NONE

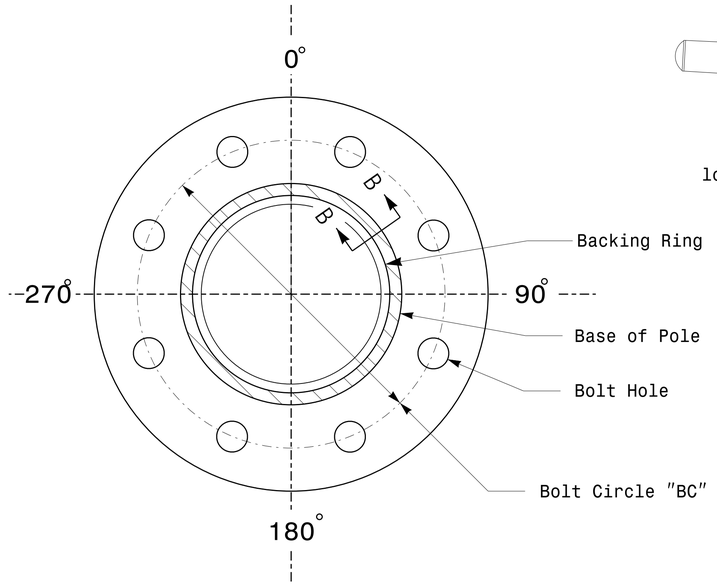
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

DocuSigned by: Debesh C. Sarkar 44E83E147E4C4... 8/26/2014 DATE

SIG. INVENTORY NO.

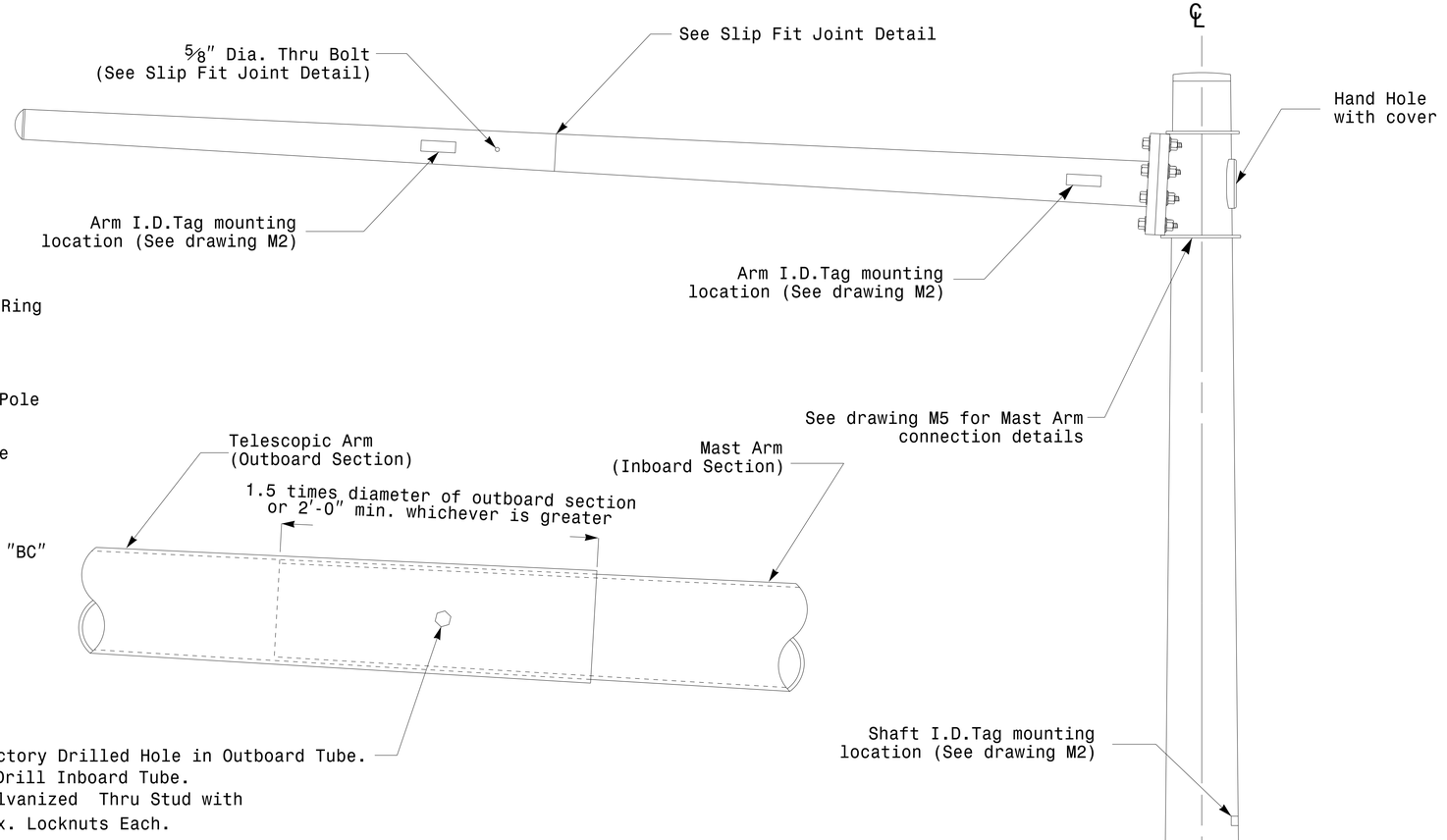
Fabrication Details – Mast Arm Poles



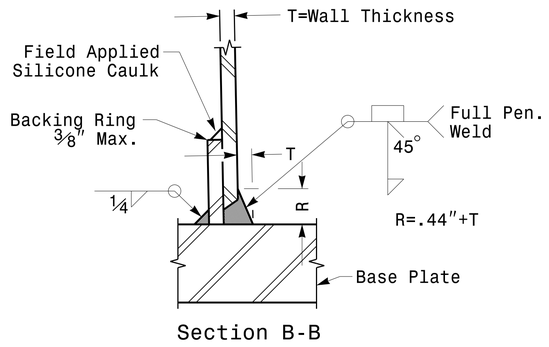
Section A-A

(See drawing M 2)

Pole Base Plate



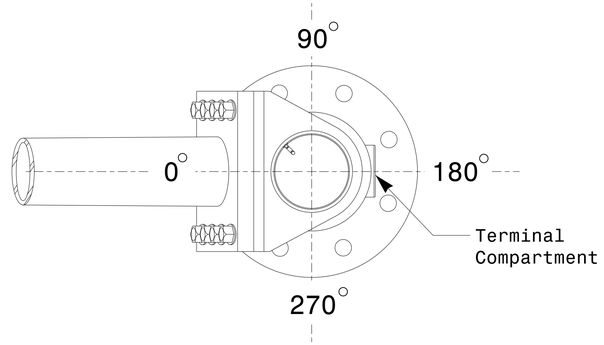
Slip Fit Joint Detail for Mast Arm



Section B-B

(Pole Attachment to Base Plate)

Full-Penetration Groove Weld Detail



Mast Arm Radial Orientation

Monotube Mast Arm Pole
(.14in./ft. taper)

Prepared In the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

Typical Fabrication Details for Mast Arm Poles

PLAN DATE:	AUGUST 2013	DESIGNED BY:	C.F. ANDREWS
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

SCALE: 0 NA — NONE

REVISIONS	INIT.	DATE

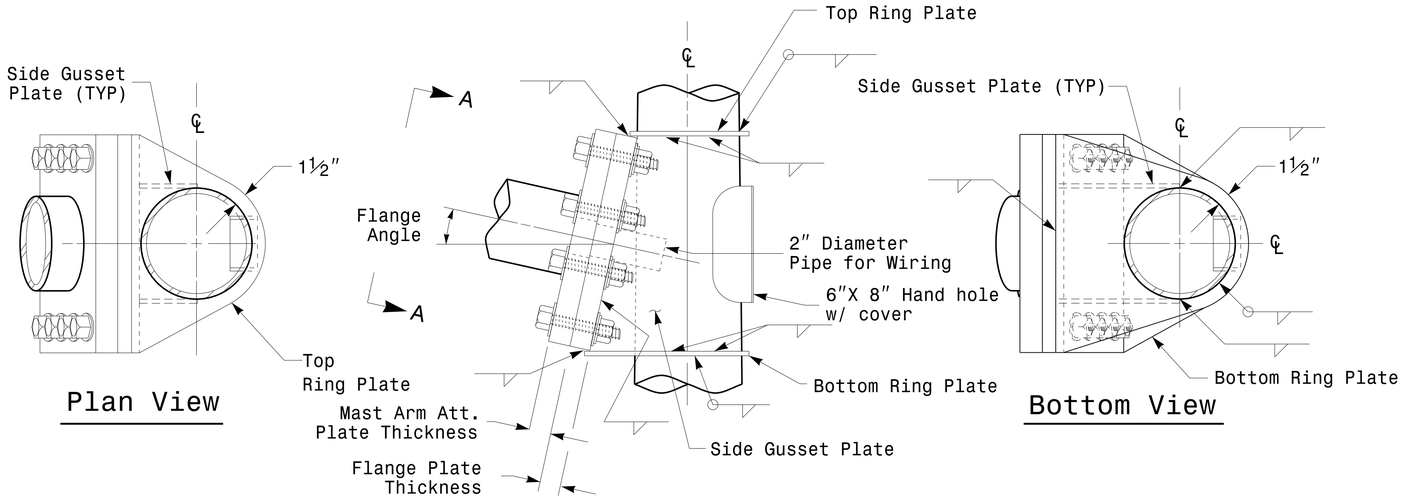
SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL 028094
ENGINEER
DEBESH C SARKAR

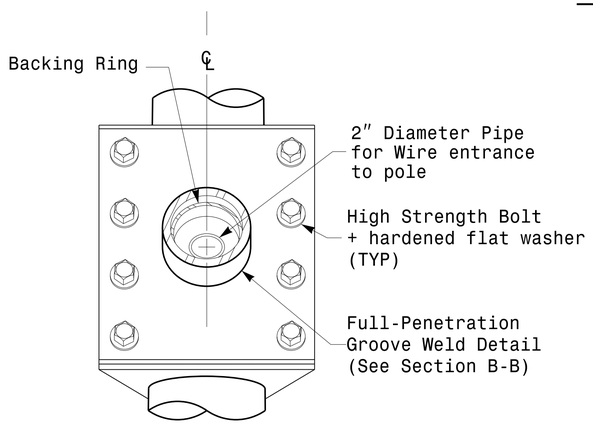
DocuSigned by: Debesh C. Sarkar
44ERE3DE147E4C4...
8/26/2014
DATE

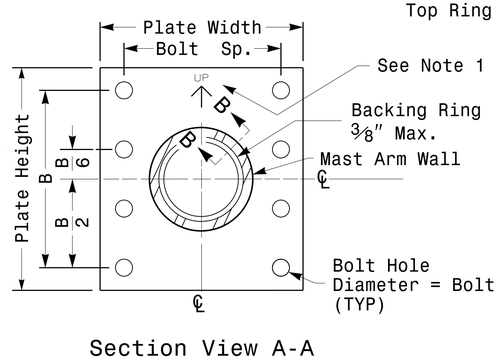
SIG. INVENTORY NO.

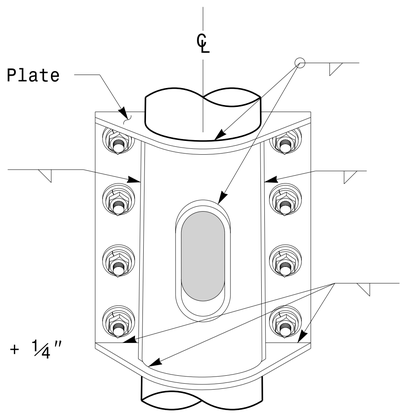
PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. M5

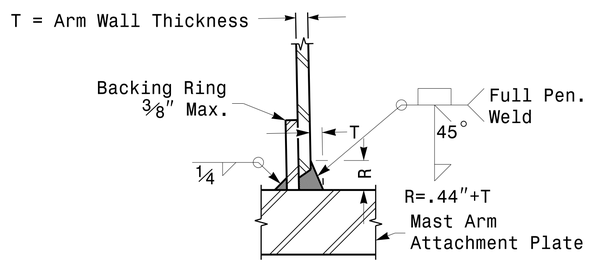
Welded Ring Stiffened Mast Arm Connection











Notes:

1. Provide a permanent means of identification above the mast arm to indicate proper attachment orientation of the mast arm.
2. Designer will determine the size of all structural components, plates, fasteners, and welds shown unless they are already specified.
3. Designer is responsible for providing appropriate drainage points.

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

Fabrication Details For Mast Arm Connection To Pole

PLAN DATE:	AUGUST 2013	DESIGNED BY:	C.F. ANDREWS
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

SCALE: 0 NA — NONE

REVISIONS	INIT.	DATE

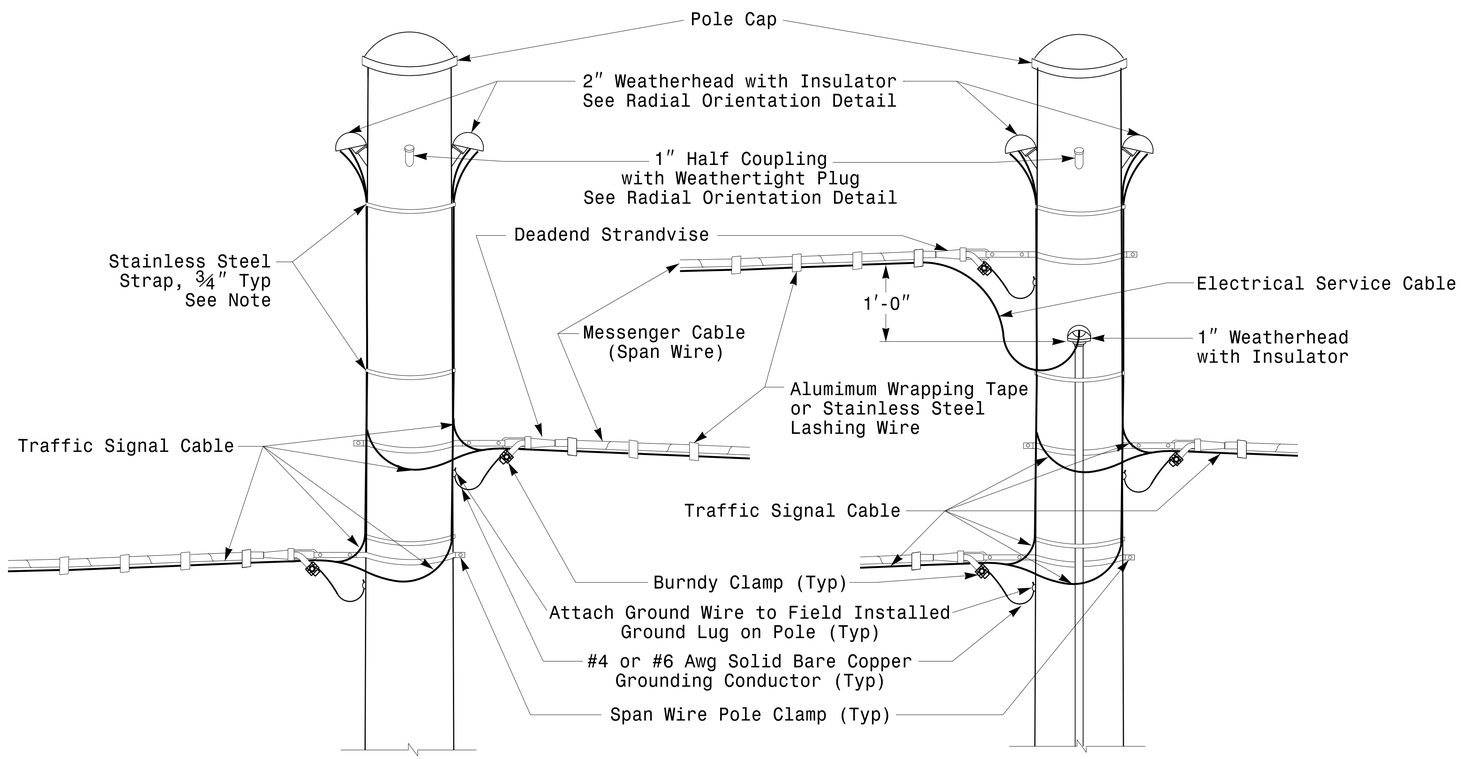
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

DocuSigned by: Debesh C. Sarkar 44EBE32E147E4C4... 8/26/2014 DATE

SIG. INVENTORY NO.

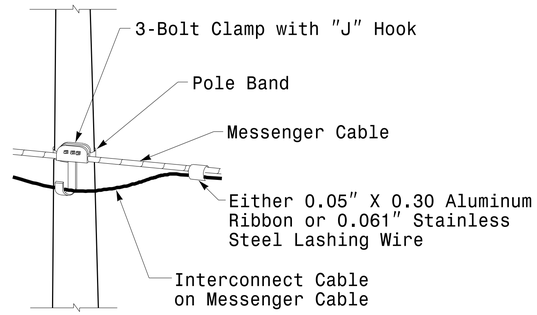
Fabrication Details – Mast Arm Poles

Construction Details – Strain Poles

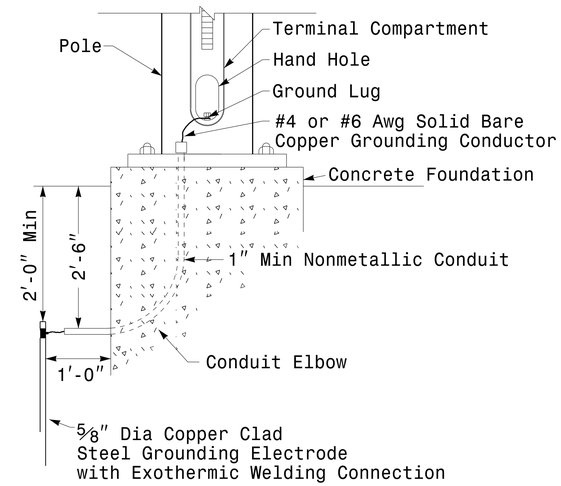


Strain Pole Attachments

Note: Strap all signal cables to the side of the pole with 3/4″ stainless steel straps when the distance between the spanwire attachment clamp and the weatherheads exceeds 36″



Attachment of Cable to Intermediate Metal Pole



Metal Pole Grounding Detail

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

Construction Details
Strain Poles

PLAN DATE:	AUGUST 2013	REVIEWED BY:	C.F. ANDREWS
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

SCALE 0 NA NONE

REVISIONS	INIT.	DATE

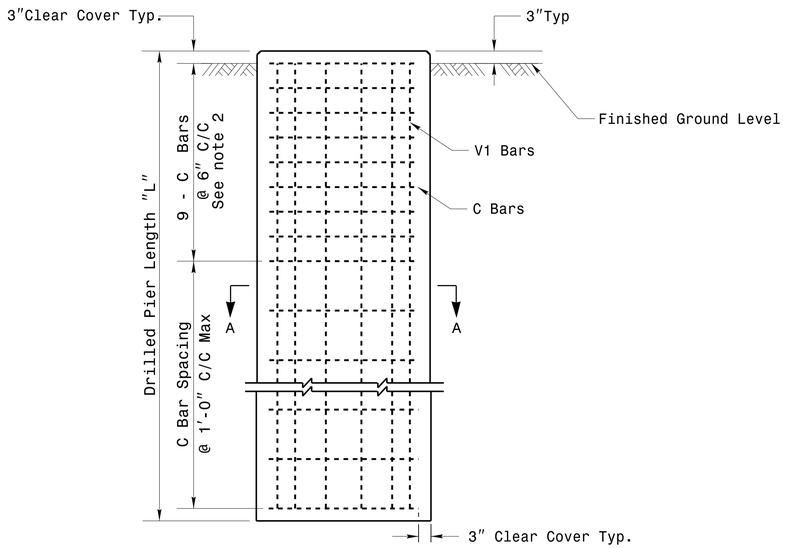
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

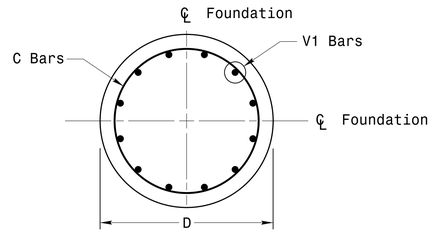
DocuSigned by: Debesh C. Sarkar 44E83E3E147E4C4... 8/26/2014 DATE

SIG. INVENTORY NO.

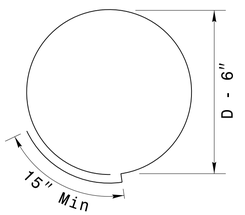
PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. M7

Reinforcing Steel Bars





Section A-A



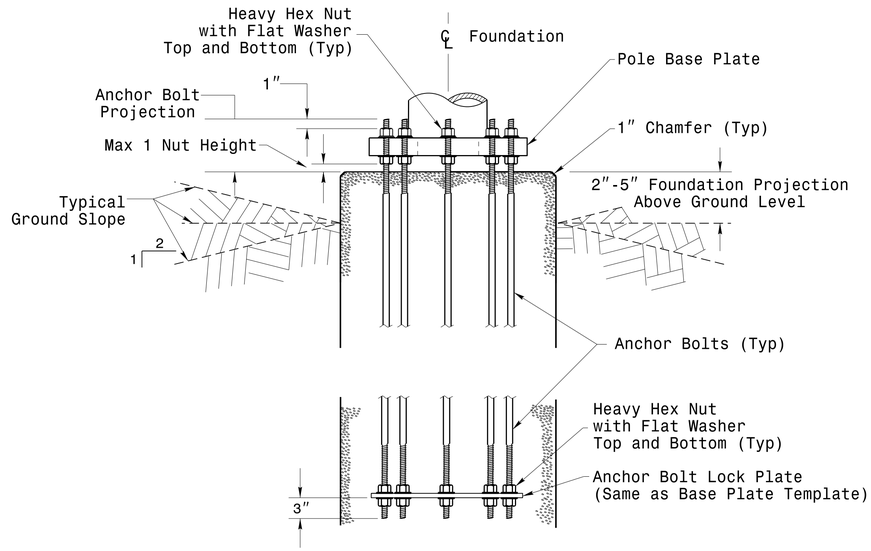
Typical "C" Bars

REINFORCING STEEL TABLE FOR STANDARD DRILL PIER SHAFT (4′–0″ DIAMETER)						
Shaft Dia (in.)	Conc. Volume (cu. yds.)	Bar Name	MIN.	Size	Type	Length
48″	.465 x L	V1	***	#8	STR.	**
		C	*	#4	CIR.	12′-6″

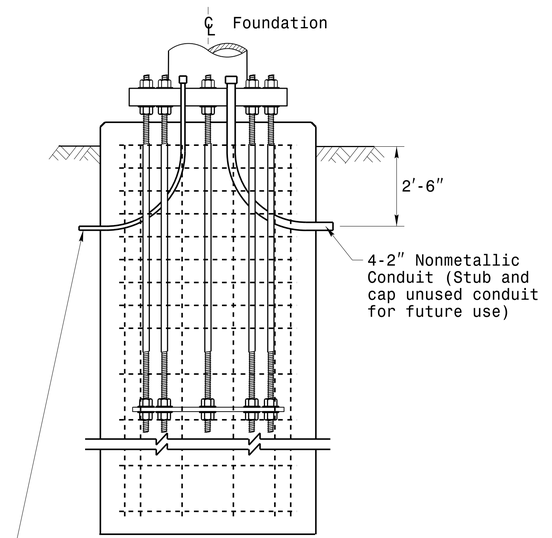
* See Note No. 1
** See Note No. 3
*** See Note No. 4

Typical Foundation Anchor Bolt Details

(Reinforcing Cage Not Shown for Clarity)



Typical Foundation Conduit Details



Notes

1. The number of C-bars is based on foundation depth and/or as required. For standard foundations, see sheets M 8 and M 9 for details.
2. Circular tie reinforcing rings may be vertically adjusted by +/- 3″ at a depth between 2′-0″ and 3′-0″ to facilitate the installation of electrical conduit entering in the cage.
3. The length of V1-bars is based on foundation depth. For standard foundations, see sheets M 8 and M 9 for details. Vertical reinforcing bars (V1) may be horizontally adjusted by +/-3″to facilitate the installation of electrical conduit entering into the cage.
4. Provide vertical reinforcement as required per design. See sheets M 8 and M9 for details.

Construction Details – Foundations

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

Construction Details
Foundations

PLAN DATE:	AUGUST 2013	DESIGNED BY:	K.C. DURIGON
PREPARED BY:	N. BITTING	REVIEWED BY:	D.C. SARKAR

SCALE
0 NA
NONE

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028094 ENGINEER DEBESH C. SARKAR

DocuSigned by:
Debesh C. Sarkar 8/26/2014
44EBE83E147E4C4... DATE

SIG. INVENTORY NO.

SATURATED SOIL CONDITION

PROJECT REFERENCE NO.	SHEET NO.
W-5510	Sig. M8

		STANDARD STRAIN POLES						STANDARD FOUNDATIONS 48" Diameter Drilled Pier Length (L) – Feet							Reinforcement			
					Reactions at the Pole Base			Clay				Sand			Longitudinal		Stirrups	
		Case No.	Pole Height (Ft.)	Base Plate BC (In.)	Axial (kip)	Shear (kip)	Moment (ft-kip)	Medium N-Value 4-8	Stiff N-Value 9-15	Very Stiff N-Value 16-30	Hard N-Value >30	Loose N-Value 4-10	Medium N-Value 11-30	Dense N-Value >30	Bar Size (#)	Quantity	Bar Size (#)	Spacing (in.)
WIND ZONE 1	LIGHT	S26L3	26	25	2	11	270	19	13	9	8	17	14.5	12.5	8	13	4	12
		S30L3	30	25	2	11	300	20	13.5	9	8	17.5	15	13	8	14	4	12
		S35L3	35	25	3	11	320	20	13.5	9.5	8	17.5	15	13	8	15	4	12
	HEAVY	S30H3	30	29	3	16	450	24.5	17	13	11	21	17.5	15	8	18	4	12
		S35H3	35	29	4	16	515	26	17.5	12	8.5	22	18.5	16	8	20	4	12
WIND ZONE 2	LIGHT	S26L2	26	23	2	10	245	18	12.5	8.5	8	16.5	14	12	8	13	4	12
		S30L2	30	23	2	10	270	19	12.5	9	8	16.5	14	12.5	8	13	4	12
		S35L2	35	23	3	10	300	19.5	13	9	8	17	14.5	13	8	14	4	12
	HEAVY	S30H2	30	29	3	15	415	25.5	15.5	11	8	20	17	14.5	8	17	4	12
		S35H2	35	29	4	15	475	25	16.5	11.5	8	21	17.5	15.5	8	19	4	12
WIND ZONE 3	LIGHT	S26L2	26	23	2	10	245	18	12.5	8.5	8	16.5	14	12	8	13	4	12
		S30L2	30	23	2	10	270	19	12.5	9	8	16.5	14	12.5	8	13	4	12
		S35L2	35	23	3	10	300	19.5	13	9	8	17	14.5	13	8	14	4	12
	HEAVY	S30H2	30	29	3	15	415	25.5	15.5	11	8	20	17	14.5	8	17	4	12
		S35H2	35	29	4	15	475	25	16.5	11.5	8	21	17.5	15.5	8	19	4	12
WIND ZONE 4	LIGHT	S26L1	26	22	2	8	190	16	11	8	8	15	12.5	11	8	12	4	12
		S30L1	30	22	2	8	205	16.5	11.5	8	8	15	13	11.5	8	12	4	12
		S35L1	35	22	3	8	230	17	12	8	8	15.5	13.5	11.5	8	12	4	12
	HEAVY	S30H1	30	25	3	12	320	20.5	14	9.5	8	18	15	13.5	8	15	4	12
		S35H1	35	25	4	12	350	21	14.5	10	8	18.5	15.5	13.5	8	16	4	12
WIND ZONE 5	LIGHT	S26L2	26	23	2	10	245	18	12.5	8.5	8	16.5	14	12	8	13	4	12
		S30L2	30	23	2	10	270	19	12.5	9	8	16.5	14	12.5	8	13	4	12
		S35L2	35	23	3	10	300	19.5	13	9	8	17	14.5	13	8	14	4	12
	HEAVY	S30H2	30	29	3	15	415	25.5	15.5	11	8	20	17	14.5	8	17	4	12
		S35H2	35	29	4	15	475	25	16.5	11.5	8	21	17.5	15.5	8	19	4	12

48" Dia. Foundations Concrete Volume (cubic yards) = (0.465) x Foundation Depth

Fabrication Design Notes:

1. Values shown in the "Reactions at the Pole Base" column represent the minimum acceptable capacity allowed for design using a design CSR of 1.00.
2. Min. base plate thickness (T) is 2.0 inches.

Foundation Selection:

1. Perform a standard penetration test at each proposed foundation site to determine "N" value.
2. Select the appropriate wind zone from M 1 drawing.
3. Select the soil type (Clay or Sand) that best describes the soil characteristics.
4. Get the appropriate standard pole case number from the plans or from the Engineer.
5. Select the appropriate column in the chart based on soil type and "N" value. Select the appropriate row based on the pole load case.
   The foundation depth is the value where the column and the row intersect.
6. Reference Drilled Shafts: Construction Procedures and Design Methods, FHWA -IF-99-025

S30H1 - Hard Clay-Stirrup Spacing: 6 in. c/c
S30H2 - Hard Clay-Stirrup Spacing: 6 in. c/c
S30H3 - Hard Clay-Stirrup Spacing: 6 in. c/c
- Dense Sand-Stirrup Spacing: 6 in. c/c
S35H1 - Hard Clay - Stirrup Spacing: 6 in. c/c
S35H2 - Very Stiff Clay-Stirrup Spacing: 6 in. c/c
- Hard Clay- Stirrup Spacing: 6 in. c/c
- Dense Sand- Stirrup Spacing: 6 in. c/c
S35H3 - Very Stiff Clay-Stirrup Spacing: 6 in. c/c
- Dense Sand-Stirrup Spacing: 6 in. c/c

Standard Strain Pole Foundation–Saturated Soil Condition

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

Standard Strain Pole Foundation for Saturated Soil Condition

PLAN DATE: SEPTEMBER 2013 | DESIGNED BY: C.B COGDELL
PREPARED BY: N. BITTING | REVIEWED BY: D. SARKAR

SCALE: 0 NA None

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL 028094
ENGINEER
DEBDESH C. SARKAR

DocuSigned by: Debdesh C. Sarkar 8/26/2014
44E8E32E147E4C4...
DATE

DRY SOIL CONDITION

Wind Zone	Load	STANDARD STRAIN POLES: Case No.	Pole Height (Ft.)	Base Plate BC (In.)	Reactions at the Pole Base: Axial (kip)	Shear (kip)	Moment (ft-kip)	STANDARD FOUNDATIONS 48" Diameter Drilled Pier Length (L) – Feet: Clay Medium N-Value 4-8	Clay Stiff N-Value 9-15	Clay Very Stiff N-Value 16-30	Clay Hard N-Value >30	Sand Loose N-Value 4-10	Sand Medium N-Value 11-30	Sand Dense N-Value >30	Reinforcement: Longitudinal Bar Size (#)	Longitudinal Quantity	Stirrups Bar Size (#)	Stirrups Spacing (in.)
WIND ZONE 1	LIGHT	S26L3	26	25	2	11	270	18	12.5	9	8	14.5	11	10	8	13	4	12
WIND ZONE 1	LIGHT	S30L3	30	25	2	11	300	18.5	13	9	8	15	11.5	10	8	14	4	12
WIND ZONE 1	LIGHT	S35L3	35	25	3	11	320	19	13.5	9.5	8	15	11.5	10.5	8	15	4	12
WIND ZONE 1	HEAVY	S30H3	30	29	3	16	450	23	16	11	8	17.5	13.5	11.5	8	18	4	12
WIND ZONE 1	HEAVY	S35H3	35	29	4	16	515	24.5	16.5	12	8.5	18.5	14	12	8	20	4	12
WIND ZONE 2	LIGHT	S26L2	26	23	2	10	245	17	12	8.5	8	14	11	9.5	8	13	4	12
WIND ZONE 2	LIGHT	S30L2	30	23	2	10	270	18	12.5	8.5	8	14.5	11	10	8	13	4	12
WIND ZONE 2	LIGHT	S35L2	35	23	3	10	300	18.5	13	9	8	14.5	11.5	10	8	14	4	12
WIND ZONE 2	HEAVY	S30H2	30	29	3	15	415	22	15	10.5	8	17	13	11.5	8	17	4	12
WIND ZONE 2	HEAVY	S35H2	35	29	4	15	475	23.5	16	11.5	8	18	13.5	12	8	19	4	12
WIND ZONE 3	LIGHT	S26L2	26	23	2	10	245	17	12	8.5	8	14	11	9.5	8	13	4	12
WIND ZONE 3	LIGHT	S30L2	30	23	2	10	270	18	12.5	8.5	8	14.5	11	10	8	13	4	12
WIND ZONE 3	LIGHT	S35L2	35	23	3	10	300	18.5	13	9	8	14.5	11.5	10	8	14	4	12
WIND ZONE 3	HEAVY	S30H2	30	29	3	15	415	22	15	10.5	8	17	13	11.5	8	17	4	12
WIND ZONE 3	HEAVY	S35H2	35	29	4	15	475	23.5	16	11.5	8	18	13.5	12	8	19	4	12
WIND ZONE 4	LIGHT	S26L1	26	22	2	8	190	15.5	10.5	8	8	13	10	9	8	12	4	12
WIND ZONE 4	LIGHT	S30L1	30	22	2	8	205	15.5	11	8	8	13	10	9	8	12	4	12
WIND ZONE 4	LIGHT	S35L1	35	22	3	8	230	16.5	11.5	8	8	13.5	10.5	9	8	12	4	12
WIND ZONE 4	HEAVY	S30H1	30	25	3	12	320	19.5	13.5	9.5	8	15	12	10.5	8	15	4	12
WIND ZONE 4	HEAVY	S35H1	35	25	4	12	350	20	14	10	8	15.5	12	10.5	8	15	4	12
WIND ZONE 5	LIGHT	S26L2	26	23	2	10	245	17	12	8.5	8	14	11	9.5	8	13	4	12
WIND ZONE 5	LIGHT	S30L2	30	23	2	10	270	18	12.5	8.5	8	14.5	11	10	8	13	4	12
WIND ZONE 5	LIGHT	S35L2	35	23	3	10	300	18.5	13	9	8	14.5	11.5	10	8	14	4	12
WIND ZONE 5	HEAVY	S30H2	30	29	3	15	415	22	15	10.5	8	17	13	11.5	8	17	4	12
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48" Dia. Foundations Concrete Volume (cubic yards) = (0.465) x Foundation Depth

Fabrication Design Notes:

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Foundation Selection:

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5. Select the appropriate column in the chart based on soil type and "N" value. Select the appropriate row based on the pole load case. The foundation depth is the value where the column and the row intersect.
6. Reference Drilled Shafts: Construction Procedures and Design Methods, FHWA -IF-99-025

S30H1 - Hard Clay-Stirrup Spacing: 6 in. c/c
- Dense Sand-Stirrup Spacing: 6 in. c/c

S30H2 - Very Stiff Clay: Stirrup Spacing: 6 in. c/c
- Hard Clay: Stirrup Spacing: 6 in. c/c
- Medium Clay: Stirrup Spacing: 6 in. c/c
- Dense Sand: Stirrup Spacing: 6 in. c/c

S30H3 - Very Stiff Clay: Stirrup Spacing: 6 in. c/c
- Hard Clay: Stirrup Spacing: 6 in. c/c
- Medium Clay: Stirrup Spacing: 6 in. c/c
- Dense Sand: Stirrup Spacing: 6 in. c/c

S35H1 - Hard Clay: tirrup Spacing: 6 in. c/c
- Dense Sand: Stirrup Spacing: 6 in. c/c

S35H2 - Very Stiff Clay: Stirrup Spacing: 6 in. c/c
- Hard Clay: Stirrup Spacing: 6 in. c/c
- Medium Clay: Stirrup Spacing: 6 in. c/c
- Dense Sand: Stirrup Spacing: 6 in. c/c

S35H3 - Very Stiff Clay: Stirrup Spacing: 6 in. c/c
- Hard Clay: Stirrup Spacing: 6 in. c/c
- Medium Clay: Stirrup Spacing: 6 in. c/c
- Dense Sand: Stirrup Spacing: 6 in. c/c

Standard Strain Pole Foundation–Dry Soil Condition

Prepared in the Offices of: Transportation Mobility and Safety Division, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

Standard Strain Pole Foundation for Dry Soil Condition

PLAN DATE: SEPTEMBER 2013 | DESIGNED BY: C.B COGDELL
PREPARED BY: N. BITTING | REVIEWED BY: D. SARKAR

SCALE 0 NA None

REVISIONS INIT. DATE

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028094 DEBESH C. SARKAR
DocuSigned by: Debesh C. Sarkar 8/26/2014
DATE

PROJECT NO.	SHEET NO.
W-5510	Sig. P1

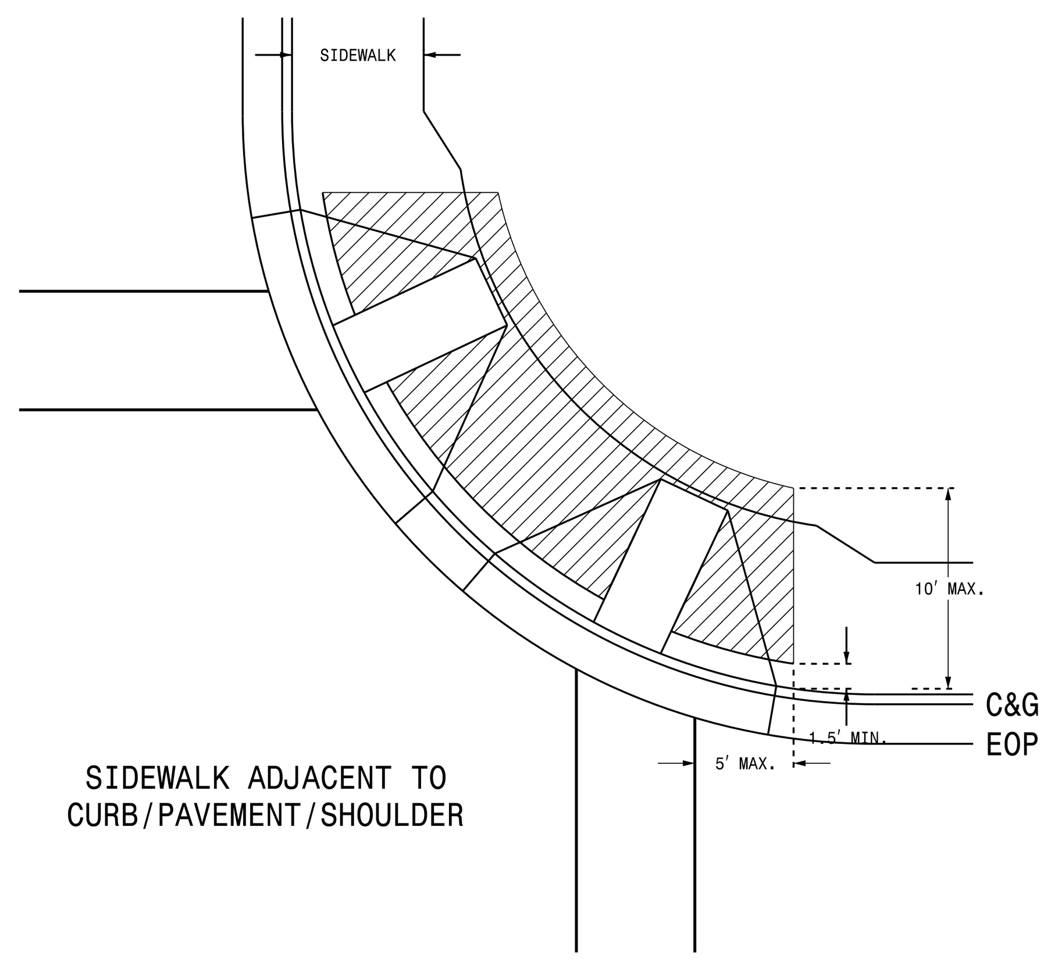
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

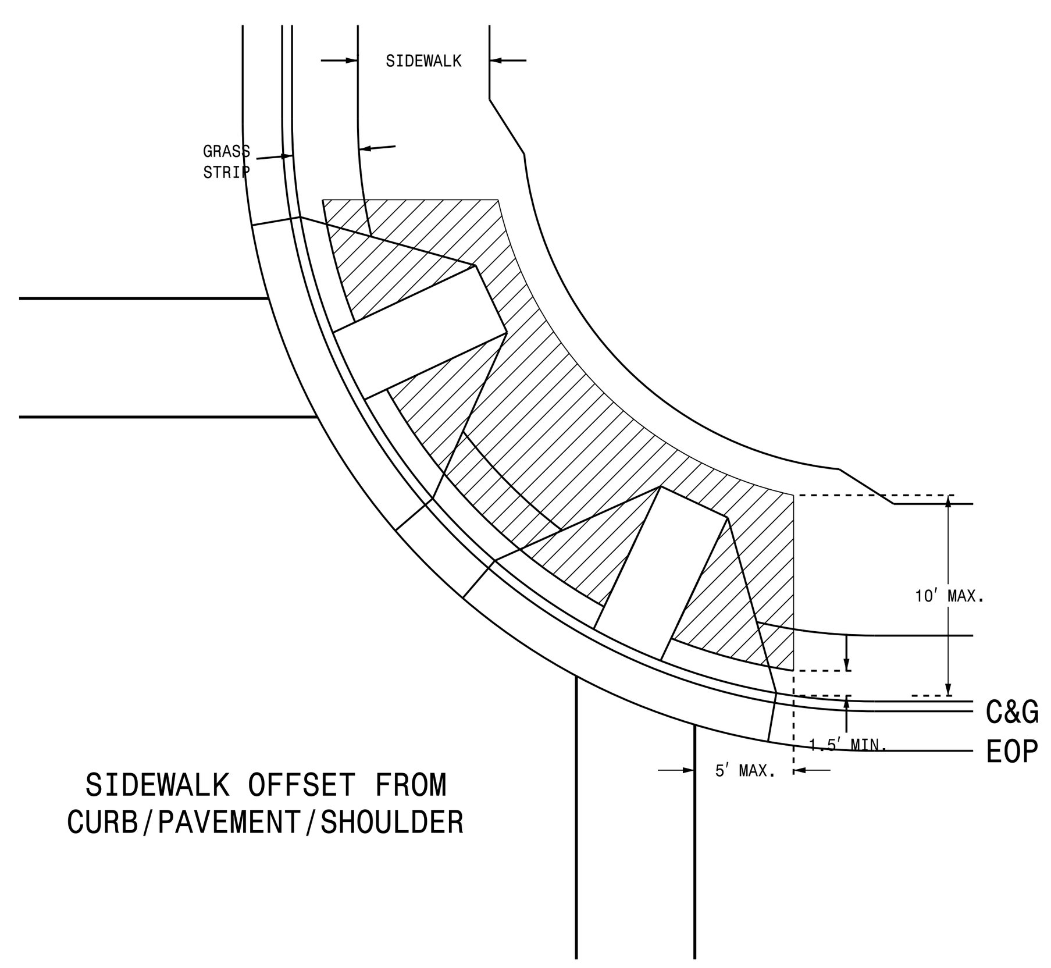
ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

PUSHBUTTON PLACEMENT
SEPARATE CURB RAMPS

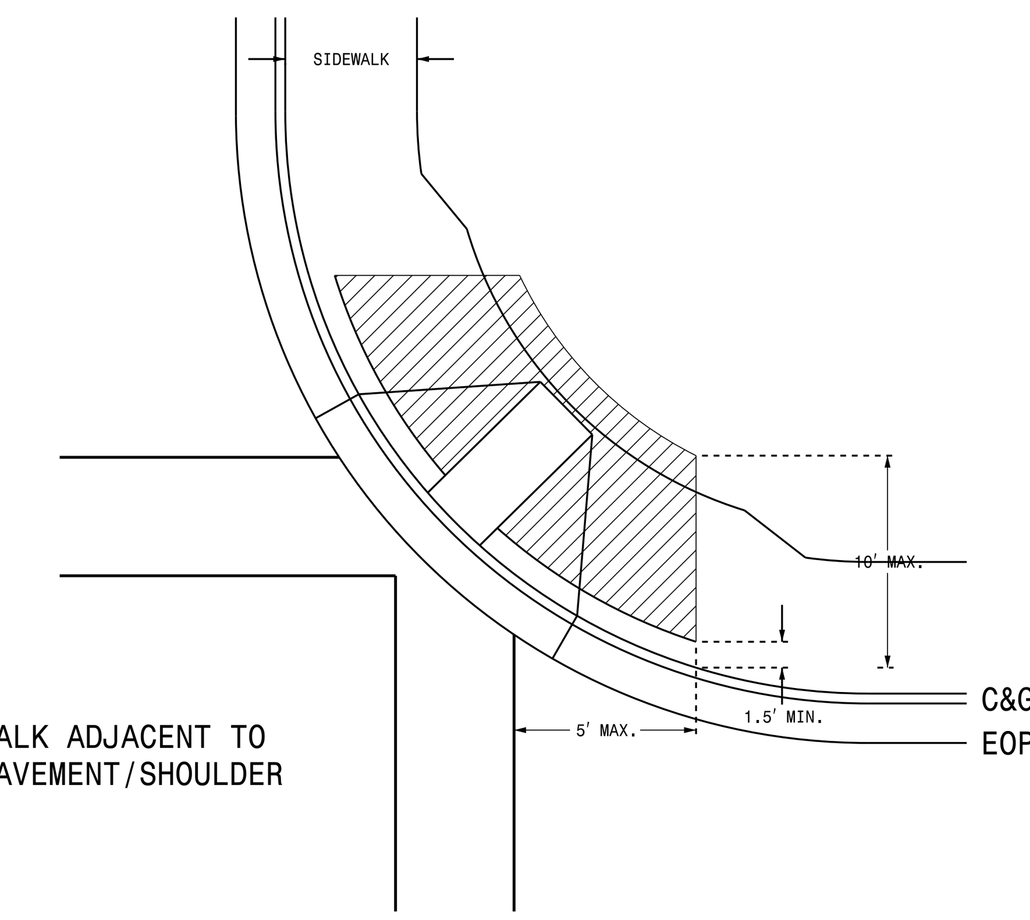


SIDEWALK ADJACENT TO CURB/PAVEMENT/SHOULDER

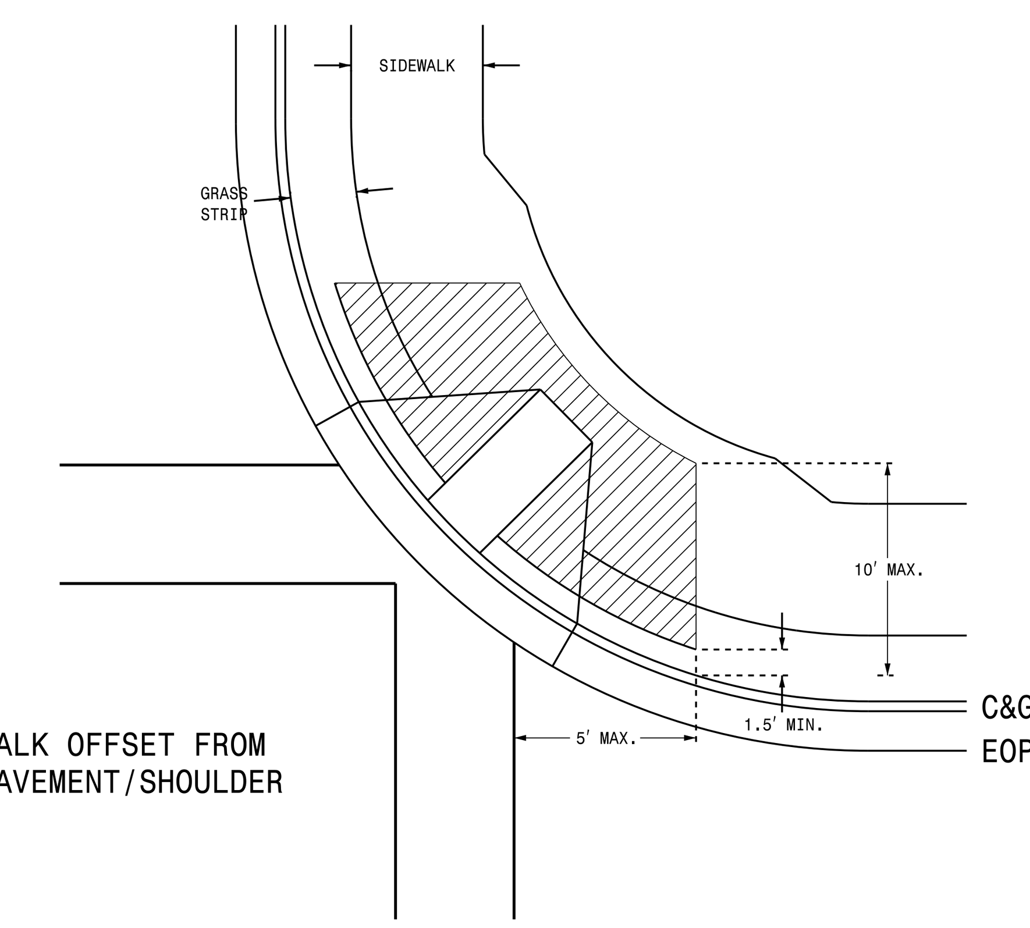


SIDEWALK OFFSET FROM CURB/PAVEMENT/SHOULDER

PUSHBUTTON PLACEMENT
SHARED CURB RAMP



SIDEWALK ADJACENT TO CURB/PAVEMENT/SHOULDER



SIDEWALK OFFSET FROM CURB/PAVEMENT/SHOULDER

NOTES

1. Pushbutton pedestals should not be located further than 10 feet from the edge of curb, shoulder, or pavement.
2. The face of the pushbutton should be parallel to the applicable crosswalk.
3. Separate pushbuttons used on the same corner should be separated by a distance of at least 10 feet.
4. Pushbuttons shall be installed adjacent to a level surface with a maximum reach distance of 10 inches.
5. Maintain 4 feet of clearance around pedestal if located in sidewalk.
6. Refer to section 1705 of the 2012 NCDOT Roadway Standard Drawings for Pushbutton Assembly details.
7. Refer to section 1743 of the 2012 NCDOT Roadway Standard Drawings for Pedestal details.
8. Contact Division Traffic Engineer for pushbutton location approval prior to installation.
9. Curb ramps are for symbolic use only and may not reflect actual design or field conditions.

LEGEND

PROPOSED

- Signal Pole
- Type I Pushbutton Post
- Type II Signal Pedestal
- Pushbutton & Sign
- Pedestrian Signal Head
- Curb Ramp
- Pushbutton Location Area

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR
PEDESTRIAN PUSHBUTTON LOCATIONS
PLACEMENT DETAIL

SHEET 1 OF 3
1705D01

See Plate for Title

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Parkway
Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by:

SIGNATURE 6/17/2014 DATE

26-AUG-2014 16:37
S:*ITS&SU*ITS Signals*Signal Design Section*Central Region*Rob's Files*Ped Sids*Pushbutton Drawings*Pushbutton Plate Drawings_20140617.dgn
rziemba

PROJECT NO.	SHEET NO.
W-5510	Sig. P2

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR

PEDESTRIAN PUSHBUTTON LOCATIONS

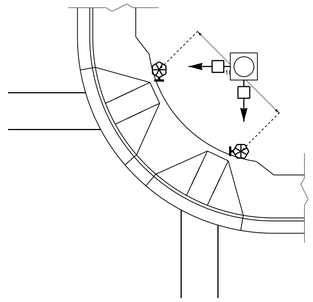
PLACEMENT DETAIL

SHEET 2 OF 3

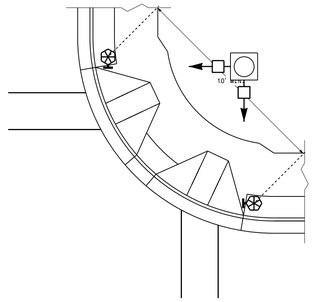
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE I)

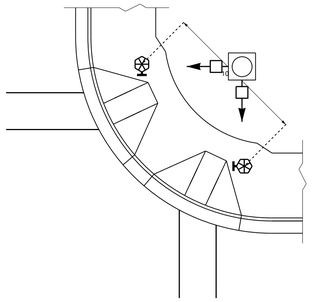
SEPARATE CURB RAMPS W/ TYPE I PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

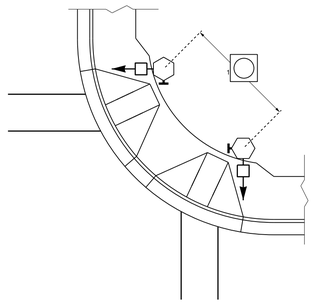
PROPOSED

LEGEND

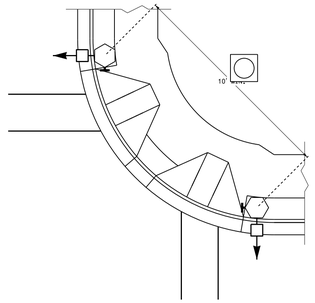
- Signal Pole
- Type I Pushbutton Post
- Type II Signal Pedestal
- Pushbutton & Sign
- Pedestrian Signal Head
- Curb Ramp
- Pushbutton Location Area

TYPICAL PUSHBUTTON LOCATIONS (CASE II)

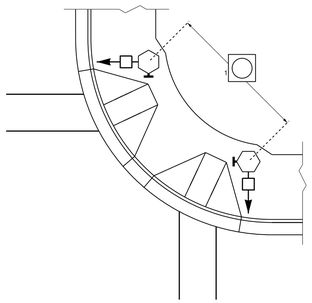
SEPARATE CURB RAMPS W/ TYPE II PEDESTALS



BACK OF SIDEWALK IS WITHIN 10'
OF CURB OR PAVEMENT/SHOULDER



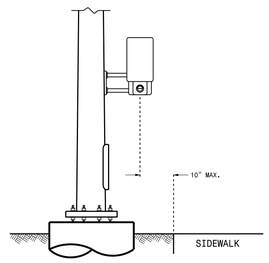
GRASS STRIP PLACEMENT IF BACK
OF SIDEWALK EXCEEDS 10' FROM
CURB OR PAVEMENT/SHOULDER



PUSHBUTTON PLACEMENT
IN WIDE SIDEWALK

OPTIONAL PUSHBUTTON EXTENSION

FACE OF PUSHBUTTON PARALLEL TO
APPLICABLE CROSSWALK



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR

PEDESTRIAN PUSHBUTTON LOCATIONS

PLACEMENT DETAIL

SHEET 2 OF 3

1705D01

See Plate for Title

Prepared in the Offices of:

Transportation Mobility and Safety Division
Signal Design Section

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by: 1B9E4B9E274A4B6...

SIGNATURE

6/17/2014

DATE

PROJECT NO.	SHEET NO.
W-5510	Sig. P3

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR

PEDESTRIAN PUSHBUTTON LOCATIONS

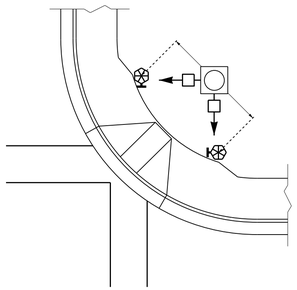
PLACEMENT DETAIL

SHEET 3 OF 3

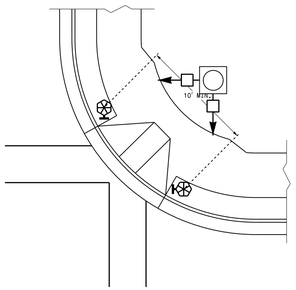
1705D01

TYPICAL PUSHBUTTON LOCATIONS (CASE III)

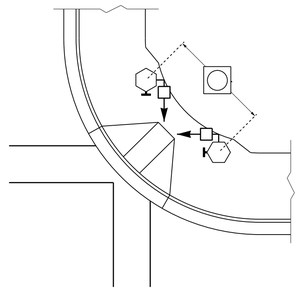
SHARED CURB RAMPS



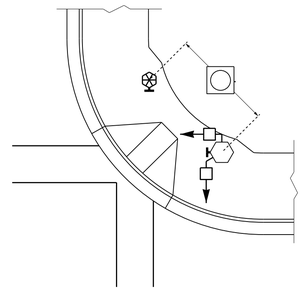
BACK OF SIDEWALK IS WITHIN 10′ OF CURB OR PAVEMENT/SHOULDER



GRASS STRIP PLACEMENT IF BACK OF SIDEWALK EXCEEDS 10′ FROM CURB OR PAVEMENT/SHOULDER

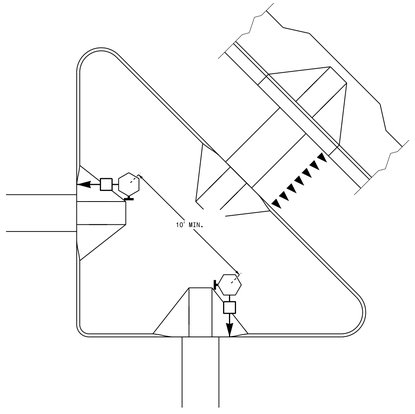


PUSHBUTTON PLACEMENT IN WIDE SIDEWALK (CORRESPONDING PUSHBUTTONS AND SIGNAL HEADS ON DIFFERENT PEDESTALS)

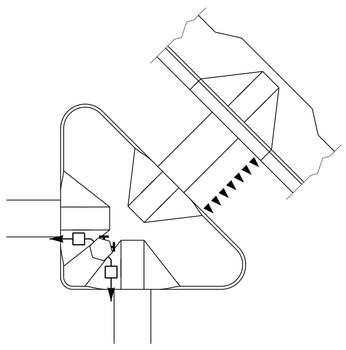


PUSHBUTTON PLACEMENT WITH SHARED TYPE II SIGNAL PEDESTAL AND TYPE I PUSHBUTTON POST

TRAFFIC ISLAND PUSHBUTTON LOCATIONS

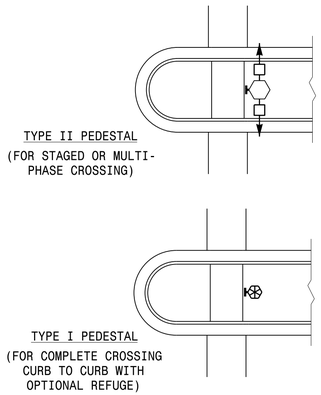


PUSHBUTTON PLACEMENT IN LARGE "PORK CHOP ISLAND" WITH SEPARATE PEDESTALS



PUSHBUTTON PLACEMENT IN SMALL "PORK CHOP ISLAND" WITH SHARED PEDESTAL

PUSHBUTTON PLACEMENT IN MEDIAN



TYPE II PEDESTAL
(FOR STAGED OR MULTI-PHASE CROSSING)

TYPE I PEDESTAL
(FOR COMPLETE CROSSING CURB TO CURB WITH OPTIONAL REFUGE)

LEGEND

PROPOSED

- Signal Pole
- Type I Pushbutton Post
- Type II Signal Pedestal
- Pushbutton & Sign
- Pedestrian Signal Head
- Curb Ramp
- Pushbutton Location Area

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

06-14

ENGLISH DETAIL DRAWING FOR

PEDESTRIAN PUSHBUTTON LOCATIONS

PLACEMENT DETAIL

SHEET 3 OF 3

1705D01

See Plate for Title

Prepared in the Offices of:

Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Parkway
Garner, NC 27529

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J ZIEMBA

DocuSigned by: 6/17/2014
SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
W-5510	SCP-1

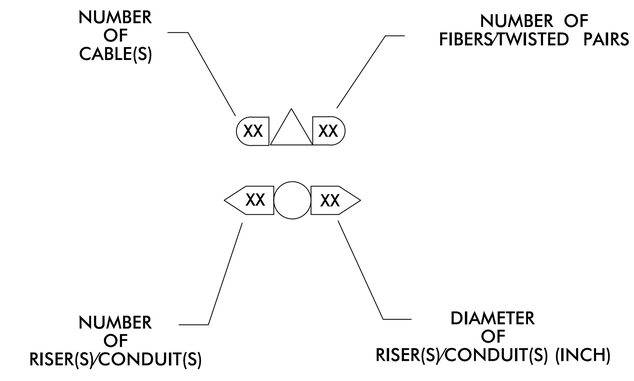
1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL REA, PE – 39, (UNDERGROUND) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
4. INSTALL SMFO CABLE
5. INSTALL MMFO CABLE
6. INSTALL FIBER OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. TRENCH
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
13. INSTALL OUTER–DUCT POLYETHYLENE CONDUIT
14. INSTALL POLYETHYLENE CONDUIT
15. DIRECTIONAL DRILL CONDUIT
16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
19. INSTALL CABLE(S) IN EXISTING RISER
20. INSTALL CABLE(S) IN NEW RISER
21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
22. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB–OUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB–OUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
26. TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
27. INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL POLE MOUNTED SPLICE CABINET
32. INSTALL BASE MOUNTED SPLICE CABINET
33. REMOVE EXISTING SPLICE CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV CAMERA WOOD POLE
38. INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
39. INSTALL JUNCTION BOX
40. INSTALL OVERSIZED JUNCTION BOX
41. REMOVE EXISTING JUNCTION BOX
42. INSTALL WOOD POLE
43. REMOVE EXISTING WOOD POLE
44. INSTALL AERIAL GUY ASSEMBLY
45. INSTALL STANDARD GUY ASSEMBLY
46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL TELEPHONE SERVICE
51. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 20 FEET OF COMMUNICATIONS CABLE
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE
58. INSTALL NEW ELECTRICAL SERVICE
59. INSTALL FIBER OPTIC TRANSCEIVER

LEGEND

- NEW FIBER OPTIC COMMUNICATIONS CABLE
- NEW TWISTED PAIR COMMUNICATIONS CABLE
- EXISTING COMMUNICATIONS CABLE
- EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- NEW DIRECTIONAL DRILLED CONDUIT
- NEW BORED AND JACKED CONDUIT
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- NEW AERIAL SPLICE ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- NEW CCTV CAMERA ASSEMBLY
- NEW STANDARD GUY ASSEMBLY
- NEW STANDARD GUY USING EXISTING ANCHOR
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING CONTROLLER AND CABINET
- EXISTING SPLICE CABINET
- NEW SPLICE CABINET
- SP — SIGNAL POLE
- XX–XXXX — SIGNAL INVENTORY NUMBER

CONSTRUCTION NOTE SYMBOLOGY KEY

- (XX) INDICATES NUMBER OF CABLES, LOOPS, ETC.
- [XX] INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- <XX INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- >XX INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)



Prepared For:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems Section

750 N. Greenfield Pkwy. , Garner, NC 27529

MAIN STREET AT OLD WINSTON ROAD CABLE ROUTING PLANS

DIVISION 9 FORSYTH COUNTY KERNERSVILLE

PLAN DATE:	SEPTEMBER 2014	REVIEWED BY:	KW SMITH
PREPARED BY:	SP PENNINGTON	REVIEWED BY:	

SCALE 0 N/A

REVISIONS	INIT.	DATE

SEAL

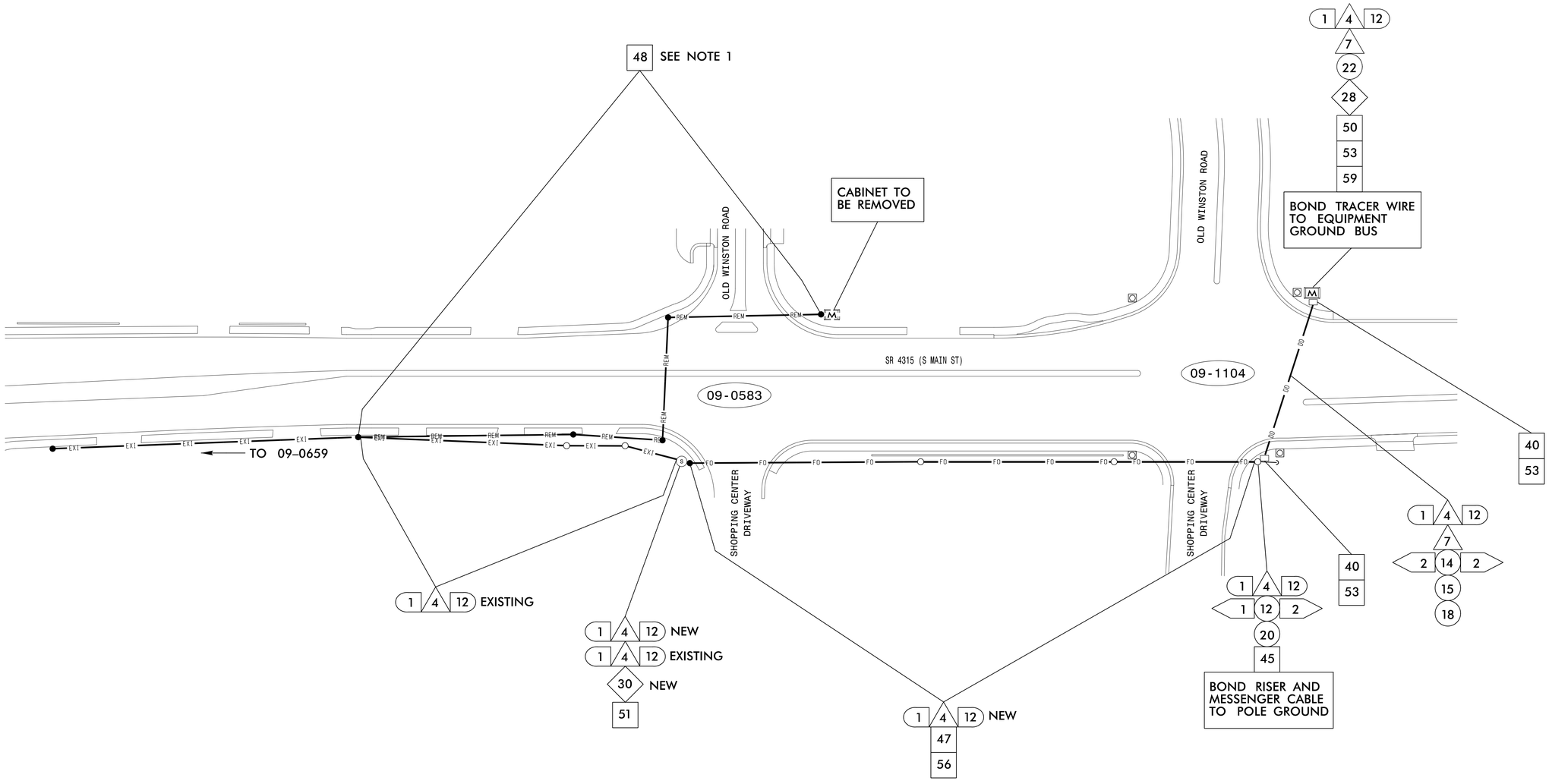
NORTH CAROLINA PROFESSIONAL SEAL 030472 ENGINEER KEVIN W. SMITH

DocuSigned by: Kevin W Smith 4/1/2015

DATE

CADD Filename:

PROJECT REFERENCE NO.	SHEET NO.
W-5510	SCP-2



NOTE:
1. BACKPULL EXISTING 12 SMFO CABLE AND TRANSFER TO NEW POLE LINE.

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000

Prepared For:
Transportation Mobility and Safety Division
Intelligent Transportation Systems Section
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Pkwy., Garner, NC 27529

MAIN STREET AT OLD WINSTON ROAD CABLE ROUTING PLANS

DIVISION 9 FORSYTH COUNTY KERNERSVILLE

PLAN DATE:	SEPTEMBER 2014	REVIEWED BY:	KW SMITH
PREPARED BY:	SP PENNINGTON	REVIEWED BY:	

SCALE 0 40' 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 030472 ENGINEER KEVIN W. SMITH

DocuSigned by: Kevin W Smith 4/1/2015
DESIGNER SIGNATURE DATE

CADD Filename:

4/1/2015 2:47:36 PM susan.pennington K:\RAL_Roadway\W5510362\45 - Kernersville\Signals\S6 - Cable Routing\CR-2.dgn

PROJECT REFERENCE NO.	SHEET NO.
W-5510	SCP-3

COLOR CODE TIA/EIA 598-A

(1) BLUE
(2) ORANGE
(3) GREEN
(4) BROWN
(5) SLATE
(6) WHITE

LEGEND

TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING / ENSURING PROPER TERMINATION.

X - FUSION SPLICE INDIVIDUAL FIBER
C - CAP AND SEAL

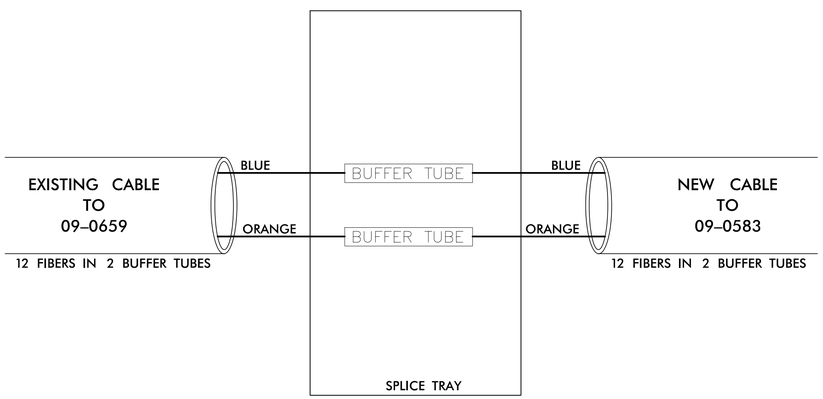
BUFFER TUBE — FUSION SPLICE ALL FIBER IN BUFFER TUBE COLOR TO COLOR

NOTE:
INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

1. SPLICE LOCATION
2. DATE
3. COMPANY NAME
4. NAME OF INDIVIDUAL PERFORMING THE SPLICE

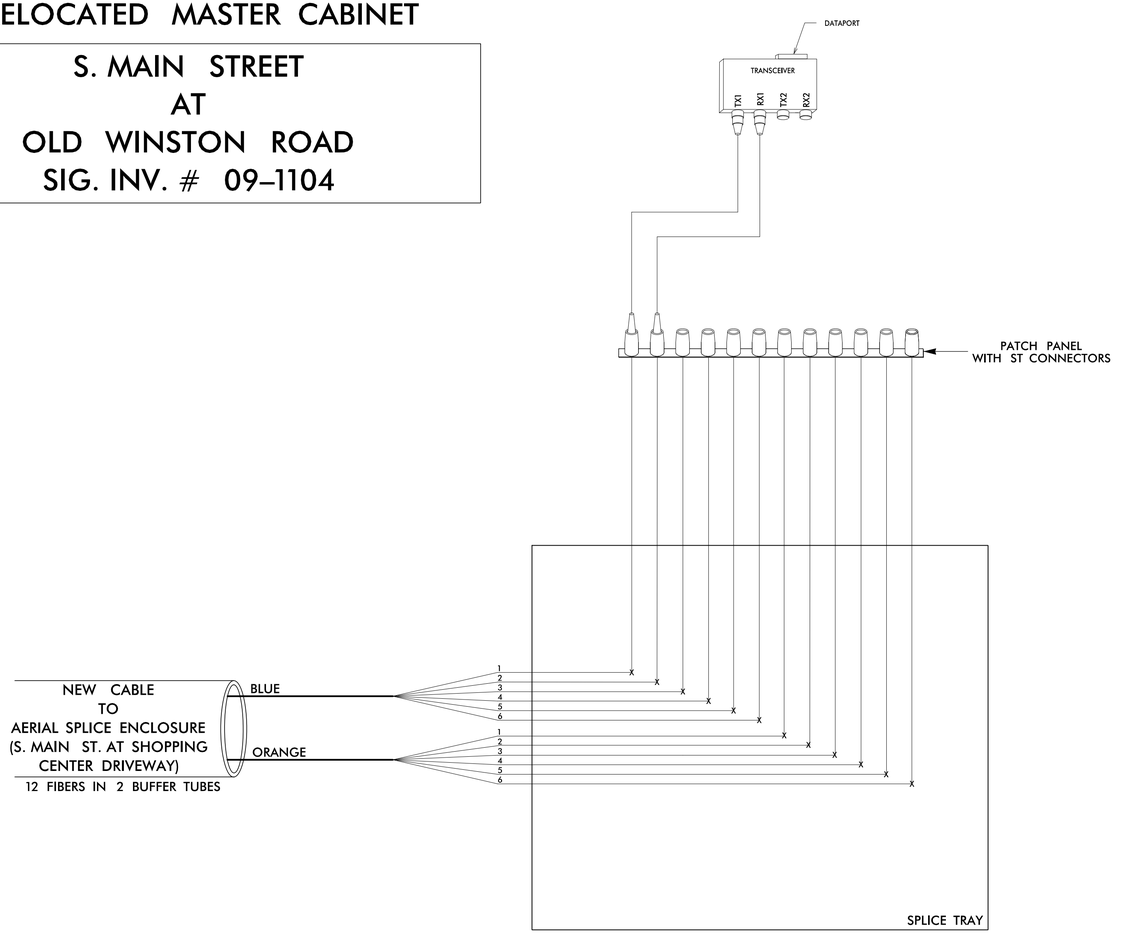
PRIOR TO INSTALLING THE COVER ON THE SLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS

NEW AERIAL SPLICE ENCLOSURE
S. MAIN STREET
AT
SHOPPING CENTER DRIVEWAY



RELOCATED MASTER CABINET

S. MAIN STREET
AT
OLD WINSTON ROAD
SIG. INV. # 09-1104



PLANS PREPARED IN THE OFFICE OF:
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NC License #F-0102
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000

Prepared For:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Pkwy., Garner, NC 27529

MAIN STREET
AT
OLD WINSTON ROAD
SPLICE DETAIL

DIVISION 9 FORSYTH COUNTY KERNERSVILLE

PLAN DATE: SEPTEMBER 2014	REVIEWED BY: KW SMITH
PREPARED BY: SP PENNINGTON	REVIEWED BY:

SCALE 0 N/A

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 030472 ENGINEER KEVIN W. SMITH

DocuSigned by: Kevin W Smith 4/1/2015
SIGNATURE DATE

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