Project No.	Sheet No.
B–4760	Sig. 1

TIP Project: B–4760

WBS: 38532.1.1

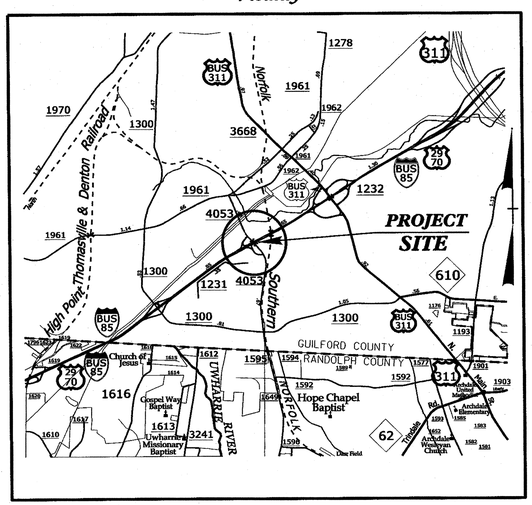
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

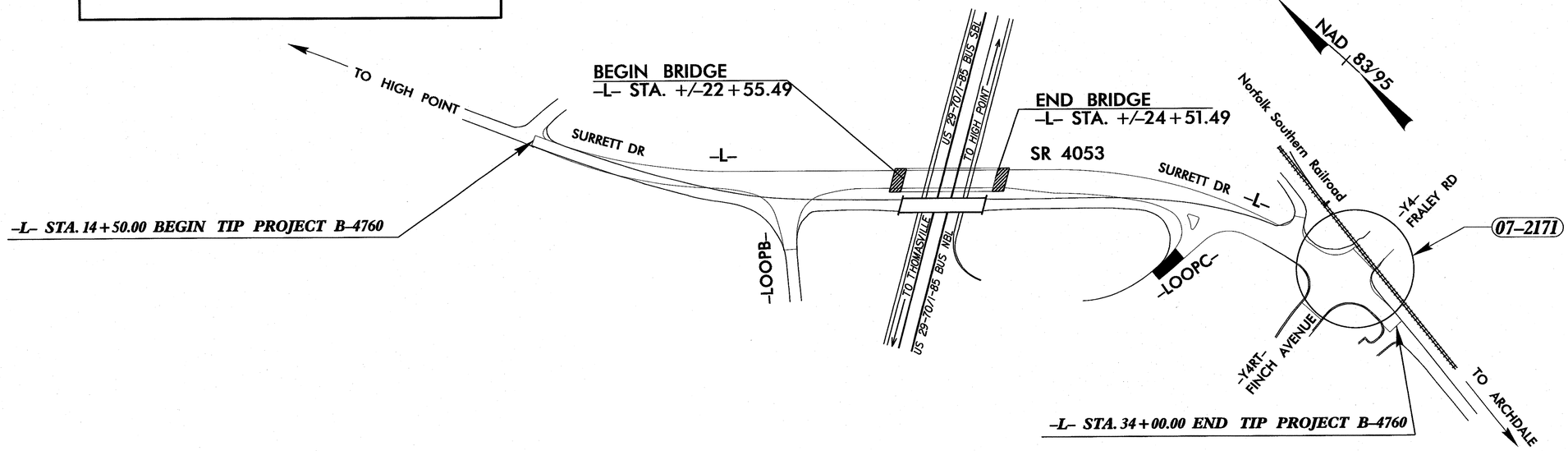
GUILFORD COUNTY

LOCATION: ***REPLACEMENT OF BRIDGE 77 ON SR 4053 (SURRETT ROAD) OVER US 29 /US 70 /I–85 BUS TO THE INTERSECTION OF SR 4053 (SURRETT DRIVE) AT FRALEY ROAD AND FINCH AVENUE***

TYPE OF WORK: TRAFFIC SIGNAL

Vicinity





TRAFFIC SIGNAL

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF HIGH POINT

Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.

Index of Plans

Sheet #	Reference #	Location/Description
Sig. 1	-------	Title Sheet
Sig. 2–6	07–2171	SR 4053 (Surrett Drive) at Fraley Road /Finch Avenue

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Robert J. Ziemba, PE – Central Region Signals Project Engineer

John T. Rowe, Jr, PE – Signal Equipment Design Engineer

Prepared In the Office of:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY DIVISION

Intelligent Transportation Systems & Signals Unit

750 N. Greenfield Parkway, Garner, NC 27529

23-MAR-2012 11:30
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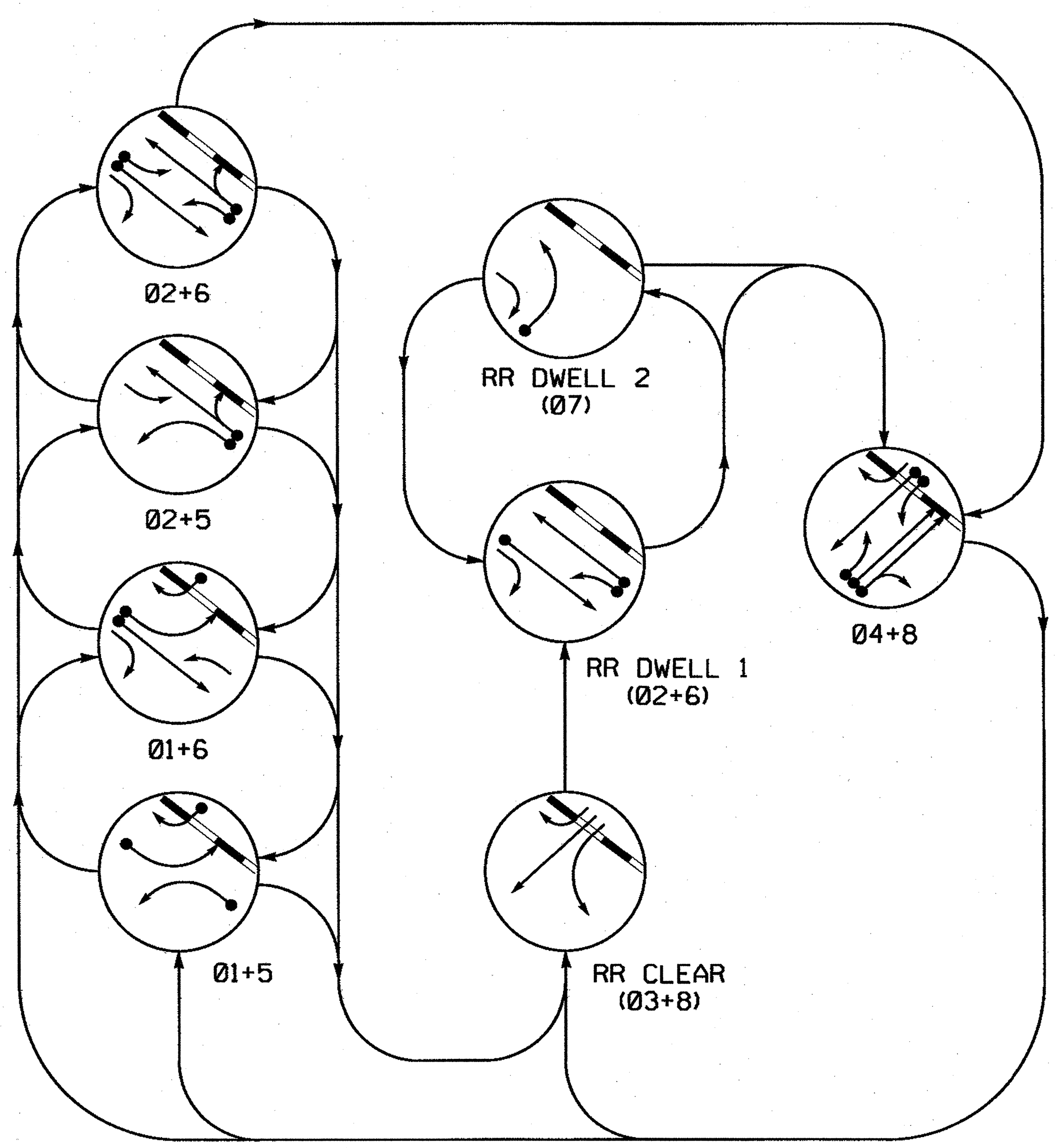
PHASING DIAGRAM



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	Ø4+8	RR CLEAR	RR DWELL 1	RR DWELL 2	FLASH
11	←	←	←F/Y	←F/Y	←R	←R	←R	←R	←Y
21, 22	R	R	G	G	R	R	G	R	Y
41	R	R	R	R	G	R	R	←/R	R
42	R	R	R	R	G	R	R	R	R
51	←	←F/Y	←	←F/Y	←R	←R	←F/Y	←R	←Y
61, 63	R	G	R	G	R	R	G	R	Y
62	R	G	R	G	R	R	G	R/→	Y
81	R	R	R	R	G	G/←	R	R	R
82	R/→	R/→	R	R	G	G	R	R	R
83	R	R	R	R	G	G	R	R	R
SIGN A	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	✱

←F/Y = Flashing Yellow Arrow
✱ See Note 7

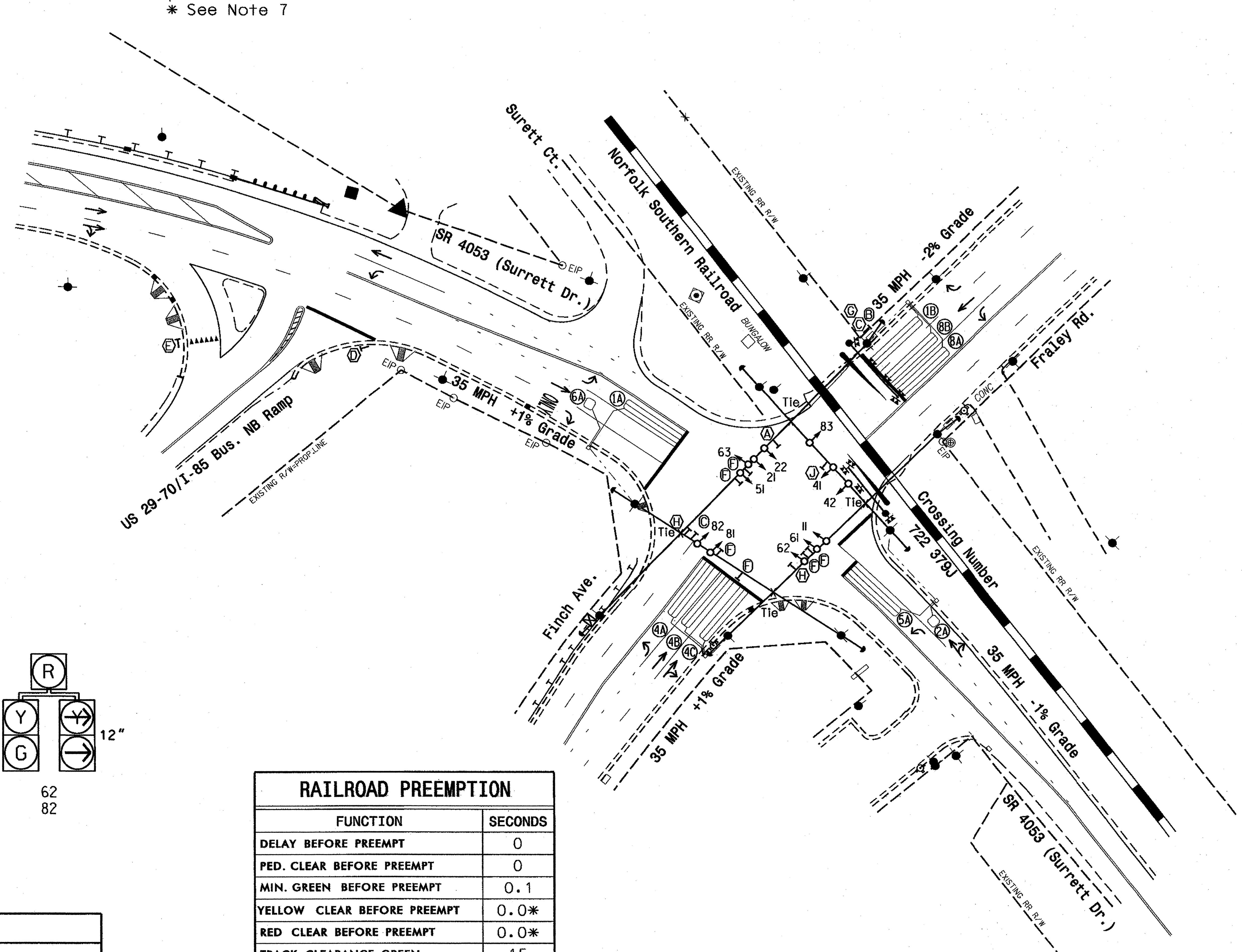
NEMA LOOP & DETECTOR INSTALLATION CHART
PEEK CONTROLLER with TS-2 CABINET

INDUCTIVE LOOPS: LOOP NO.	SIZE (ft)	DIST. FROM STOPBAR (ft)	TURNS	NEW	EXISTING	DETECTOR UNITS: NEMA PHASE	NEW	EXISTING	TIMING: FEATURE	TIME	INHIBIT DELAY DURING GREEN?
1A	6X40	0	2-4-2	X	-	1	X	-	DELAY	15	YES
						6	X	-	-	-	NO
1B	6X40	0	2-4-2	X	-	1	X	-	-	-	NO
2A	6X6	70	5	X	-	2	X	-	-	-	NO
4A	6X40	0	2-4-2	X	-	4	X	-	DELAY	3	YES
						7	X	-	DELAY	3	YES
4B	6X40	0	2-4-2	X	-	4	X	-	-	-	NO
4C	6X40	0	2-4-2	X	-	4	X	-	DELAY	10	NO
5A	6X40	0	2-4-2	X	-	5	X	-	DELAY	15	YES
						2	X	-	-	-	NO
6A	6X6	70	5	X	-	6	X	-	-	-	NO
8A	6X40	0	2-4-2	X	-	8	X	-	DELAY	3	YES
8B	6X40	0	2-4-2	X	-	8	X	-	-	-	NO

5 Phase
Fully Actuated
With Railroad Preemption
(High Point Signal System)

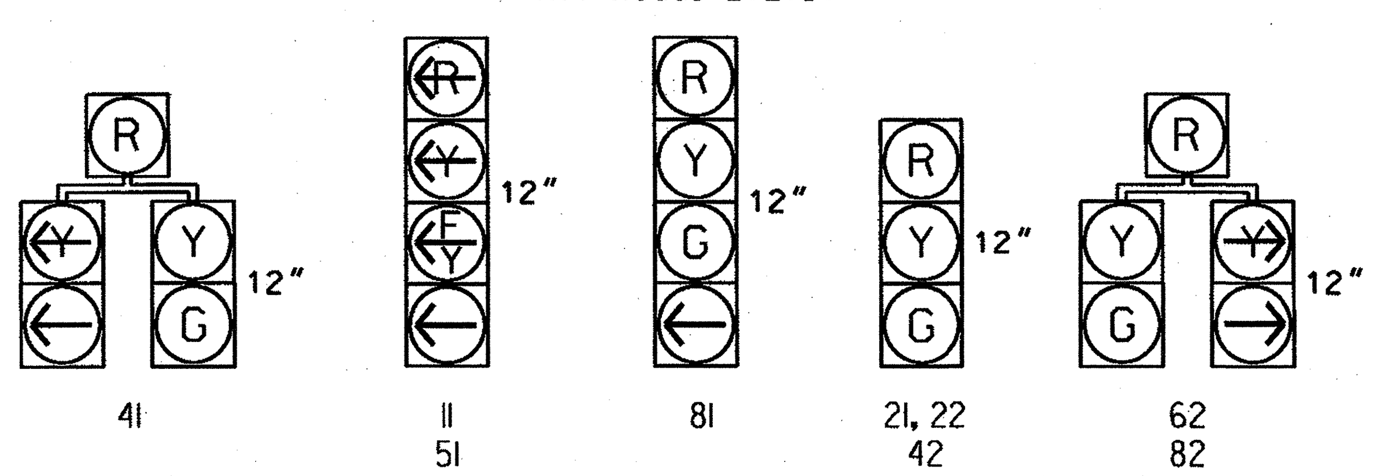
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Phase 1 and/or phase 5 may be lagged.
4. Program phase 4 and phase 8 for dual entry.
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. Ensure flashing operation does not alter operation of blankout signs.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



SIGNAL FACE I.D.

All Heads L.E.D.



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	⊏⊐ (dashed)
⊠	Controller & Cabinet	⊠ (dashed)
□	Junction Box	■
- - - -	2-in Underground Conduit	- - - -
N/A	Right of Way	— — —
→	Directional Arrow	→
N/A	Railroad Tracks	▬▭
N/A	Railroad Cantilever	✕—✕—●
N/A	Railroad Gate and Flasher	◄✕
N/A	Guardrail	⊥ ⊥
Ⓐ	"NO RIGHT TURN - TRAIN" L.E.D. Blankout Sign	Ⓐ
Ⓑ	"STOP HERE ON RED" Sign (R10-6)	Ⓑ
Ⓒ	"NO TURN ON RED" Sign (R10-11)	Ⓒ
Ⓓ	"STOP" Sign (R1-1)	Ⓓ
Ⓔ	"YIELD" Sign (R1-2)	Ⓔ
Ⓕ	Street Name Sign (D3-1)	Ⓕ
Ⓖ	"DO NOT STOP ON TRACKS" Sign (R8-8)	Ⓖ
Ⓗ	Right Arrow "ONLY" Sign (R3-5R)	Ⓗ
Ⓙ	"ONCOMING TRAFFIC MAY HAVE EXTENDED GREEN" Sign (W25-2)	Ⓙ

NEMA TIMING CHART

FEATURE	PHASE Ø1	Ø2	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN *	7 SEC.	10 SEC.	7 SEC.	7 SEC.	10 SEC.	7 SEC.	7 SEC.
PASSAGE/GAP *	1.0 SEC.	3.0 SEC.	1.0 SEC.	1.0 SEC.	3.0 SEC.	1.0 SEC.	1.0 SEC.
YELLOW CHANGE INT.	3.0 SEC.	3.9 SEC.	3.8 SEC.	3.0 SEC.	3.9 SEC.	3.0 SEC.	4.0 SEC.
RED CLEARANCE	3.1 SEC.	2.2 SEC.	1.6 SEC.	2.9 SEC.	2.2 SEC.	2.3 SEC.	2.8 SEC.
MAX. 1 *	20 SEC.	80 SEC.	40 SEC.	20 SEC.	80 SEC.	20 SEC.	40 SEC.
RECALL POSITION	NONE	MIN. RECALL	NONE	NONE	MIN. RECALL	NONE	NONE
VEHICLE CALL MEMORY	NONLOCK	LOCK	NONLOCK	NONLOCK	LOCK	NONLOCK	NONLOCK
WALK *	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.
FLASHING DON'T WALK	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.	– SEC.

* 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.

RAILROAD PREEMPTION

FUNCTION	SECONDS
DELAY BEFORE PREEMPT	0
PED. CLEAR BEFORE PREEMPT	0
MIN. GREEN BEFORE PREEMPT	0.1
YELLOW CLEAR BEFORE PREEMPT	0.0✱
RED CLEAR BEFORE PREEMPT	0.0✱
TRACK CLEARANCE GREEN	15
TRACK CLEARANCE YELLOW	4.0
TRACK CLEARANCE RED	2.8
PREEMPT DWELL MIN. GREEN	10
YELLOW CLR AFTER PREEMPT	0.0✱
RED CLEAR AFTER PREEMPT	0.0✱
PED. CLEAR THROUGH YELLOW	N

* Clearance time defaults to times used for phase during normal operation.

This signal is designed for Simultaneous Preemption

Signal Upgrade

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

SCALE 0 50 1"=50'

SR 4053 (Surrett Drive) at Fraley Road/Finch Avenue

Division 7 Guilford County High Point

PLAN DATE: February 2012	REVIEWED BY:
PREPARED BY: Sterling	REVIEWED BY:

REVISIONS	INIT.	DATE

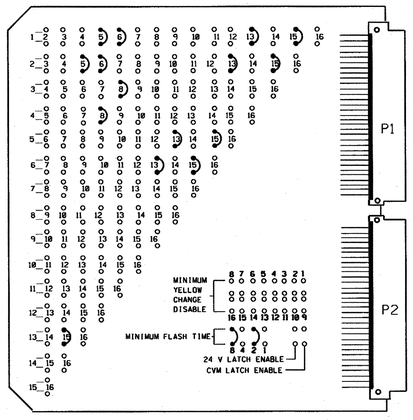
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026486 ROBERT J. ZIEMBA
SIGNATURE DATE 3/26/12
SIG. INVENTORY NO. 07-2171

27-MAR-2012 12:34
P:*TIPProjects-B*B4760*Traffic*Signals*Design*Signals*07-2171*072171_sig_dsn_20120326.dgn
rziemba

PROJECT REFERENCE NO.	SHEET NO.
B-4760	Sig. 3

EDI MODEL MMU-16LE
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL

(program card and tables as shown below)



MMU PROGRAMMING CARD

FIELD CHECK ENABLE DUAL IND ENABLE RED FAIL ENABLE	
CHANNEL NUMBER	ENABLE/ DISABLE
1	ENABLE
2	ENABLE
3	DISABLE
4	ENABLE
5	DISABLE
6	ENABLE
7	ENABLE
8	ENABLE
9	DISABLE
10	DISABLE
11	DISABLE
12	DISABLE
13	ENABLE
14	DISABLE
15	ENABLE
16	DISABLE

UNIT OPTIONS	
OPTION	SETTING
RECURRENT PULSE	ON
WALK DISABLE	OFF
LOG CVM FAULTS	ON
EXTERN WATCHDOG	OFF
24V-2=12VDC	OFF
PGM CARD MEMORY	ON
LEDgaurd	ON
FORCE TYPE 16	OFF
TYPE12-SDLC	OFF

FLASHING YELLOW ARROW	
CH. GROUP FOR PROTECTED GREEN ARROWS	CH. 1,3,5,7
ENABLE CHANNEL PAIR, FYA	
CH 1-13	ON
CH 3-14	OFF
CH 5-15	ON
CH 7-16	OFF

MMU PROGRAMMING NOTE

1. ENSURE YELLOW CHANGE PLUS RED CLEARANCE MONITORING IS ENABLED FOR ALL CHANNELS.

NOTES

1. To prevent "Flash-conflict" problems, wire all unused load switches to flash red. Verify that signal heads flash in accordance with the signal plans.
2. To prevent red failures on unused monitor channels, tie unused load switch red outputs 3,5,9,10,11,12,14 and 16 to load switch AC+ by inserting a jumper plug in the unused load switch socket from pin 1 (LS AC+) to pin 3 (red out). Make sure all flash transfer relays are in place.
3. Program controller to start up in phases 2 and 6 green.
4. Set power-up flash time to 10 seconds and implement on the Malfunction Management Unit. Set controller power-up flash time to 0 seconds.
5. Enable Simultaneous Gap-out feature, on controller unit, for all phases.
6. Program phases 4 and 8, on controller unit, for dual entry.
7. Program detector call delay and extension timing on the controller, unless otherwise specified.
8. Set all detector card unit channels to "presence" mode.
9. This controller and cabinet are part of the High Point Signal System.

SIGNAL HEAD HOOK-UP CHART

PHASE	1		2	3	4	5	6	7	8	2 PED	4 PED	6 PED	8 PED	OLA	OLB	OLC	OLD
SIGNAL HEAD NO.	11★	82	21,22	81	41,42	51★	61,62 63	41,62	81,82 83	NU	NU	NU	NU	11★	NU	51★	NU
RED	*		2R		4R		6R	*	8R								
YELLOW			2Y	*	4Y	*	6Y		8Y								
GREEN			2G		4G		6G		8G								
RED ARROW														13R		15R	
YELLOW ARROW		1Y						7Y						13Y		15Y	
FLASHING YELLOW ARROW														13G		15G	
GREEN ARROW	1G	1G		3G		5G		7G									
WALK																	
DON'T WALK																	

NU = Not Used

* Denotes install Load Resistor. See Load Resistor installation detail on sheet 2.

★ See pictorial of head wiring detail this sheet.

DETECTOR RACK SET-UP DETAIL

INSERT DETECTOR CARDS IN RACK ACCORDING TO THE DETAIL SHOWN BELOW. PARTICULAR DETECTOR CHANNELS WILL CALL PHASES INDICATED.

BIU	CH1 L3 ø1	CH1 L1 ø1	CH1 L7 ø4	CH1 L5 ø4	CH1 L11 ø6	CH1 L9 ø5	CH1 L15 ø8	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	CH2 L4 ø2	CH2 L2 ø6	CH2 L8 ø4 *	CH2 L6 ø7	CH2 NOT USED	CH2 L10 ø2	CH2 L16 ø8				

WIRE LOOPS TO TERMINALS ON LOOP PANEL AS SHOWN IN THE CHART BELOW

	LOOP NO.	LOOP PANEL TERMINALS
ADD JUMPERS FROM: L1A TO L2A, AND L1B TO L2B	1A	L1A,L1B
		L2A,L2B
	1B	L3A,L3B
	2A	L4A,L4B
ADD JUMPERS FROM: L5A TO L6A, AND L5B TO L6B	4A	L5A,L5B
		L6A,L6B
	4B	L7A,L7B
	4C	L8A,L8B
ADD JUMPERS FROM: L9A TO L10A, AND L9B TO L10B	5A	L9A,L9B
		L10A,L10B
	6A	L11A,L11B
	–	L12A,L12B
	–	L13A,L13B
	–	L14A,L14B
	8A	L15A,L15B
	8B	L16A,L16B

NOTE

BE SURE TO PROGRAM DETECTOR TYPES AND TIMERS (EXTEND AND DELAY) AS SHOWN ON THE SIGNAL PLANS.

PROGRAM CONTROLLER DETECTORS ACCORDING TO THE SCHEDULE SHOWN IN THE CHART BELOW

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME(SEC)
1	ø1	DELAY	15
2	ø6		
3	ø1		
4	ø2		
5	ø4	DELAY	3
6	ø7	DELAY	3
7	ø4		
* 8	ø4	DELAY	10
9	ø5	DELAY	15
10	ø2		
11	ø6		
12			
13			
14			
15	ø8	DELAY	3
16	ø8		

* THIS DETECTOR IS EQUIPPED WITH DELAY AND EXTEND TIMERS. PROGRAM THE TIMING REQUIRED FOR THIS DETECTOR CHANNEL ON THE DETECTOR UNIT, NOT THE CONTROLLER.

EQUIPMENT INFORMATION

CONTROLLER.....PEEK TRAFFIC 3000
CABINET .....PEEK TRAFFIC (DWG. #CWD-1038)
CABINET MOUNT.....BASE TS2-1
LOADBAY POSITIONS.....16
LOAD SWITCHES USED.....1,2,3,4,5,6,7,8,13,15
PHASES USED.....1,2,•3,4,5,6,•7,8
OLA.....*
OLB.....NOT USED
OLC.....*
OLD.....NOT USED

•used during preempt only
*see additional overlap programming on sheet 2

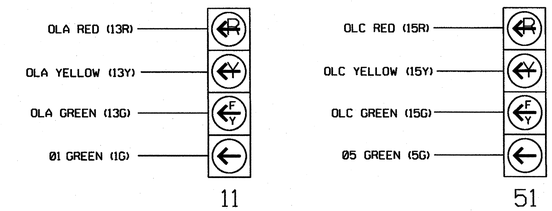
LOAD SWITCH ASSIGNMENT DETAIL

(program controller according to schedule in chart below)

LOAD SWITCH NUMBER	FUNCTION
1	ø1
2	ø2
3	ø3
4	ø4
5	ø5
6	ø6
7	ø7
8	ø8
9	ø2 PED
10	ø4 PED
11	ø6 PED
12	ø8 PED
13	OLA
14	OLB
15	OLC
16	OLD

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

1. See overlap programming instructions sheet 2.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-2171
DESIGNED: February 2012
SEALED: 3-26-12
REVISED: N/A

Electrical Detail - Sheet 1 of 4

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
Traffic Engineering and Safety Systems Branch
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SR 4053 (Surrett Drive) at Fraley Road/Finch Avenue

Division 7 | Guilford County | High Point
PLAN DATE: March 2012 | REVIEWED BY: JTR
PREPARED BY: James Peterson | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR
John T Rowe Jr 3-28-12
SIGNATURE DATE
SIG. INVENTORY NO. 07-2171

28-MAR-2012 07:46
S:\#TSAGU#ITS Signals\Workgroups\Sig Mgmt\Peterson\07217l_sht_e1a_xxx.dgn
jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
B-4760	Sig 4

PEEK 3000 FLASHING YELLOW ARROW PROGRAMMING

NOTES:
1. Flashing yellow arrow operation in a Peek signal cabinet requires the use of an EDI MMU-16LE malfunction monitoring unit.
2. The technician must rewire the cabinet so that pedestrian phasing uses load switches 9 through 12 and overlap phasing uses load switches 13 through 16.

Follow the programming below to set up the overlaps for phases 1 and 5 for flashing yellow operation in a four section signal head.

FROM THE MAIN MENU:
SELECT 3. [CHANGE DATA] THEN
SELECT 1. [CONTROLLER] THEN
SELECT 5. [OVERLAPS]

```
Overlap Menu

1. Assignments & Types
2. Startup Card & Alternate Flash
3. Double Clear (Trailing)
4. Pedestrian Overlaps
5. Advance Warning Logic
6. Leading/Advance Green Overlaps
```

```
ASSIGN O/L A ( 1 of 16)     1 1 1 1 1 1 1 1
  Phase  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 Parents X X
 FI Enab X X
 ADJ LT  X
Del Enab
O/L Type: 3 SINGL LTURN  IND  F1 Code:  1
Grn: 0 Yel: 0.0  Red: 0.0 Del:0.0
```

```
ASSIGN O/L B ( 2 of 16)     1 1 1 1 1 1 1 1
  Phase  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 Parents
 FI Enab
MOD PHS
Del Enab
O/L Type: 0 STANDARD          F1 Code:  1
Grn: 0 Yel: 0.0  Red:0.0 Del:0.0
```

```
ASSIGN O/L C ( 3 of 16)     1 1 1 1 1 1 1 1
  Phase  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 Parents          X X
 FI Enab          X X
 ADJ LT           X
Del Enab
O/L Type: 3 SINGL LTURN IND   F1 Code: 1
Grn: 0 Yel: 0.0  Red:0.0 Del: 0.0
```

```
ASSIGN O/L D ( 4 of 16)     1 1 1 1 1 1 1 1
  Phase  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 Parents
 FI Enab
 ADJ LT
Del Enab
O/L Type: 0 STANDARD          F1 Code:0
Grn: 0 Yel: 0.0  Red: 0.0 Del: 0.0
```

Follow the programming below to allow MMU monitoring of the correct channels for flashing yellow operation.

FROM THE MAIN MENU:
SELECT 3. [CHANGE DATA] THEN
SELECT 5. [COMM/SYSTEM SETUP]

```
COMMUNICATIONS & SYSTEM SETUP MENU

1.Closed Loop/UTCS Setup   6.Port 1 Setup
2.Comm Setup               7.System Name
3.Phone Numbers            8.Contact Name
4.Event Call In            9.HDLC Address
5.Log Data
```

```
BIU Enables                    Type 2 I/O Mode: 0
VALUE(YES/NO)
T/F 1    2    3    4    5    6    7    8
BIU Y    Y    N    N    N    N    N    N

DET 9   10   11   12   13   14   15   16
BIU Y    Y    N    N    N    N    N    N
```

```
MMU/Secondary to Secondary Enables
VALUE(YES/NO)

                      MMU Enable: Y
 Secondary to Secondary Enable: N
   Compatibility Check Disable: N

>>PgDn for Channel Assignments<<
```

```
MMU Channel Assignments          Phases 1-16
(0-16, 0 = None, 1-16 = Channel 1-16)
PH  1    2    3    4    5    6    7    8
CH  1    2    3    4    5    6    7    8

PH  9   10   11   12   13   14   15   16
CH  0    0    0    0    0    0    0    0
```

```
MMU Channel Assignments          Peds 1-16
(0-16, 0 = None, 1-16 = Channel 1-16)
PED 1    2    3    4    5    6    7    8
CH  0    0    0    0    0    0    0    0

PED 9   10   11   12   13   14   15   16
CH  0    0    0    0    0    0    0    0
```

```
MMU Channel Assignments     Overlaps 1-16
(0-16, 0 = None, 1-16 = Channel 1-16)
O/L A    B    C    D    E    F    G    H
CH 13    0   15    0    0    0    0    0

O/L I    J    K    L    M    N    O    P
CH  0    0    0    0    0    0    0    0
```

PEEK TRAFFIC 3000 SERIES CONTROLLER SPECIAL PHASE SEQUENCE PROGRAMMING

(program controller as shown below)

FROM MAIN MENU PRESS '3' (CHANGE DATA),
THEN PRESS '1' (CONTROLLER),
THEN PRESS '1' (SEQUENCE/STARTUP):

```
SEQ/STARTUP  VALUE(YES/NO)  1 1 1 1 1 1 1
STARTUP   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASES    . X . . . X . . . . . . . . . .
INTERVAL  :   2 ¦ (0=RED, 1=YEL, 2=GRN)
FLASH     :   0 ¦ (0-255 SECS)
RED       : 0.0 ¦ (0-25.5 SECS)
SEQUENCE  :   3 ¦ (2=SR,3=DR..SEE HELP)
   PGDN FOR SEQ, CONFIG & PHASE ENABLES
```

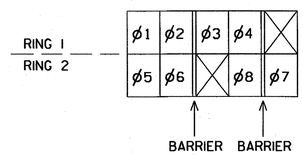
```
SEQUENCE CONFIGURATION
VALUE(YES/NO)                 1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 RING 1   X X X X . . . . . . . . . . . .
 RING 2   . . . . X X X X . . . . . . . .
 RING 3   . . . . . . . . . . . . . . . .
 RING 4   . . . . . . . . . . . . . . . .
        PGDN FOR CO-PHASES/XPED
```

```
SEQUENCE CONFIGURATION
VALUE(YES/NO) RINGS(0-4)      1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
  RINGS   1 1 1 1 2 2 2 2
CO PH 1   X X . . X X . . . . . . . . . .
CO PH 2   . . X X . . . X . . . . . . . .
CO PH 3   . . . . . . X . . . . . . . . .
CO PH 4   . . . . . . . . . . . . . . . .
```

end of programming

THE ABOVE PROGRAMMING PRODUCES
THE SPECIAL PHASE SEQUENCE SHOWN BELOW:

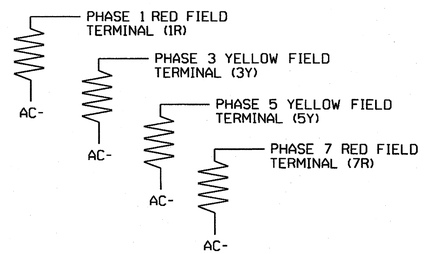
SPECIAL PHASE SEQUENCE DIAGRAM



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: 07-2171
DESIGNED: February 2012
SEALED: 3-26-12
REVISED: N/A

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 4053 (Surrett Drive) at Fraley Road/Finch Avenue

Division 7 | Guilford County | High Point

PLAN DATE: March 2012 | REVIEWED BY: JTR

PREPARED BY: James Peterson | REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Traffic Engineering and Safety Systems Branch
NCDOT Traffic Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.

SIGNATURE | DATE 3-28-12

SIG. INVENTORY NO. 07-2171

28-MAR-2012 07:47
S:\#TSS&S\#ITS Signals\#Workgroups\#Sig Mon\Peterson\#07217l_sm_ele_xxx.dgn
jtpeterson

PEEK TRAFFIC 3000 SERIES CONTROLLER
RAILROAD PREEMPTION 1 PROGRAMMING

(program controller as shown below)

FROM MAIN MENU PRESS '3' (CHANGE DATA):

```
PROGRAM MENU (PRESS 9 FOR INDEX)
1.CONTROLLER        5.COMM/SYSTEM SETUP
2.COORDINATION      6.UNIT CONFIG/SEC. CODE
3.TIME OF DAY       7.I/O STEERING
[4.PREEMPTION]      8.UTILITIES
>SHIFT-CLEAR FROM DATA SCREEN TO INDEX<
```

```
TO VIEW/PROG PREEMPTION RUN ENTER 1-6: 1
TO ERASE ONE PREEMPTION RUN ENTER 1-6: .
TO ERASE ALL PREEMPTION RUNS ENTER 99: .
TO LOAD DEFAULT VALUES ENTER 1-6: .
```

```
PREEMPTION RUN 1 MENU
[1. PER RUN DATA]
2. INTERVAL DATA
3. FLASH PLAN FOR RUN 1 INTERVALS
4. QUICK SETUP PROCEDURES
WHEN CHANGING RUN DATA, 1ST DISABLE RUN
```

```
PREEMPTION RUN 1 MENU
[1. PER RUN PARAMETERS]
2. PER RUN TIMES
3. ENTRY PARAMETERS
4. PER INTERNAL PARAMETERS
5: EXIT PARAMETERS
```

```
RUN 1 OPTIONS, PPAGE DOWN FOR MORE
     RUN ENABLE: N         OVERRIDE FLASH: N
       RAILROAD: N       GO TO HIGHER PE: N
  PE INPUT LOCK: N         NEMA PRIORITY: Y
   EARLY PE OUT: N
  MAX INTERVALS: 5         USER PRIORITY: 1
  VALUE(0-32)              VALUE(1-6)
```

```
PREEMPTION RUN 1 MENU
1. PER RUN PARAMETERS
[2. PER RUN TIMES]
3. ENTRY PARAMETERS
4. PER INTERNAL PARAMETERS
5: EXIT PARAMETERS
```

```
RUN 1 TIMES
                     DURATION TIME: 10 SECS
                        DELAY TIME:  0 SECS
                      RESERVICE TIME:  0 SECS
OMIT ALL LAST PORTION OF DELAY:  0 SECS
                     FALL MAX TIME:  0 SECS
     DURATION TIMER AS GAP TIMER:  N
```

continued at top right

cont'd. from bottom left

```
PREEMPTION RUN 1 MENU
1. PER RUN PARAMETERS
2. PER RUN TIMES
[3. ENTRY PARAMETERS]
4. PER INTERNAL PARAMETERS
5: EXIT PARAMETERS
```

```
RUN 1 ENTRY PARAMETR
 DOUBLE CLEAR OVERLAP MODE: 0  NORMAL
      RED REVERT OVERRIDE: N

  GREEN: 0.1                    YELLOW: 0.0
   WALK: 0                         RED: 0.0
PED CLR: 0              OVERLAP YELLOW: 0.0
```

```
PREEMPTION RUN 1 MENU
1. PER RUN PARAMETERS
2. PER RUN TIMES
3. ENTRY PARAMETERS
[4. PER INTERNAL PARAMETERS]
5: EXIT PARAMETERS
```

```
RUN 1 PER INTERVAL DATA       VALUE(YES/NO)
PGDN FOR MORE
                            1 1 1 1 1 1 1
FCN/IVL   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
VALID     X X X X X . . . . . . . . . . .
DWELL     . . . . . . . . . . . . . . . .
FIXED     X X X . . . . . . . . . . . . .
TENTH     . X X . . . . . . . . . . . . .
SHIFT - RT->FOR INTERVALS 17-32
```

```
RUN 1 PER INTERVAL DATA       VALUE(YES/NO)
                            1 1 1 1 1 1 1
FCN/IVL   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
EXIT      . . . X X . . . . . . . . . . .
PC->YEL   . . . . . . . . . . . . . . . .
SHIFT - RT->FOR INTERVALS 17-32
```

```
PREEMPTION RUN 1 MENU
1. PER RUN PARAMETERS
2. PER RUN TIMES
3. ENTRY PARAMETERS
4. PER INTERNAL PARAMETERS
[5: EXIT PARAMETERS]
```

```
RUN 1 EXIT CONTROLS
EXIT MODE:  0   (0= GO TO EXIT PHASES, 1=
GO TO NEXT DEMAND, 2= RESUME INTERRUPTED
SEQ, 3= EXIT TO COORDINATION)
VALUE(YES/NO)                1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASES    . . . X . . . X . . . . . . . .
CALLS     . . . . . . . . . . . . . . . .
```

```
PREEMPTION RUN 1 MENU
1. PER RUN DATA
[2. INTERVAL DATA]
3. FLASH PLAN FOR RUN 1 INTERVALS
4. QUICK SETUP PROCEDURES
WHEN CHANGING RUN DATA, 1ST DISABLE RUN
```

```
RUN 1  INTERVAL 1      VALID: X     DWELL: .
TENTHS: .  PC->YEL: .  EXIT: .      FIXED: X
TIME:  15      PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)
                            1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 COLOR    . . G . . . . G . . . . . . . .
PED COL   . . . . . . . . . . . . . . . .
          PGDN FOR OVERLAPS
```

PGDN FOR PE OUTS

PGDN FOR NEXT INTERVAL

```
RUN 1  INTERVAL 2      VALID: X     DWELL: .
TENTHS: X  PC->YEL: .  EXIT: .      FIXED: X
TIME:  4.0     PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)
                            1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 COLOR    . . Y . . . . Y . . . . . . . .
PED COL   . . . . . . . . . . . . . . . .
          PGDN FOR OVERLAPS
```

PGDN FOR PE OUTS

PGDN FOR NEXT INTERVAL

```
RUN 1  INTERVAL 3      VALID: X     DWELL: .
TENTHS: X  PC->YEL: .  EXIT: .      FIXED: X
TIME:  2.8     PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)
                            1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 COLOR    . . R . . . . R . . . . . . . .
PED COL   . . . . . . . . . . . . . . . .
          PGDN FOR OVERLAPS
```

PGDN FOR PE OUTS

PGDN FOR NEXT INTERVAL

```
RUN 1  INTERVAL 4      VALID: X     DWELL:
TENTHS: .  PC->YEL: .  EXIT: X      FIXED: .
TIME:  0       PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)
                            1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 COLOR    . G . . . G . . . . . . . . . .
PED COL   . . . . . . . . . . . . . . . .
          PGDN FOR OVERLAPS
```

```
RUN 1  INTERVAL 4      VALID: X     DWELL:
TENTHS: .  PC->YEL: .  EXIT: X      FIXED: .
TIME:  0       PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)

FUNC/OL   A B C D E F G H I M N O P
 COLOR    . . G . . . . . . . . . . .
PED COL   . . . . . . . . . . . . . . .
          PGDN FOR PE OUTS
```

PGDN FOR NEXT INTERVAL

```
RUN 1  INTERVAL 5      VALID: X     DWELL:
TENTHS: .  PC->YEL: .  EXIT: X      FIXED: .
TIME:  0       PH FLASH: .     PED FLASH: .
VALUE(0 = R/D, 1 = Y/P, 2 = G/W)
                            1 1 1 1 1 1 1
FUNC/PH   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 COLOR    . . . . . . G . . . . . . . . .
PED COL   . . . . . . . . . . . . . . . .
          PGDN FOR OVERLAPS
```

return to Preemption Run 1 menu

FROM PREEMPTION RUN 1 MENU PRESS '1' (PER RUN DATA), THEN PRESS '1' (RUN ENABLE, RR, MAX IVLS, LOCK, PRIORITY, OVR UCF):

```
RUN 1 ENABLE,RR,LOCK,PRIORITY
VALUE(YES/NO)
     RUN ENABLE: Y*        OVERRIDE FLASH: N
       RAILROAD: N       GO TO HIGHER PE: N
  PE INPUT LOCK: N         NEMA PRIORITY: Y
   EARLY PE OUT: N
  MAX INTERVALS: 5         USER PRIORITY: 1
  VALUE(0-32)              VALUE(1-6)
```

*RE-SET 'RUN ENABLE' FROM "N" TO "Y".

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-2171
DESIGNED: February 2012
SEALED: 3-26-12
REVISED: N/A

Electrical Detail - Sheet 3 of 4

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of: Traffic Engineering and Safety Systems Branch, Signals Management Section, North Carolina Department of Transportation

750 N. Greenfield Pkwy, Garner, NC 27529

SR 4053 (Surrett Drive)
at
Fraley Road/Finch Avenue

Division 7	Guilford County	High Point
PLAN DATE: March 2012	REVIEWED BY: JTR	
PREPARED BY: James Peterson	REVIEWED BY:	
REVISIONS	INIT.	DATE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 008453 JOHN T. ROWE, JR.

SIGNATURE [signature] DATE 3-28-12

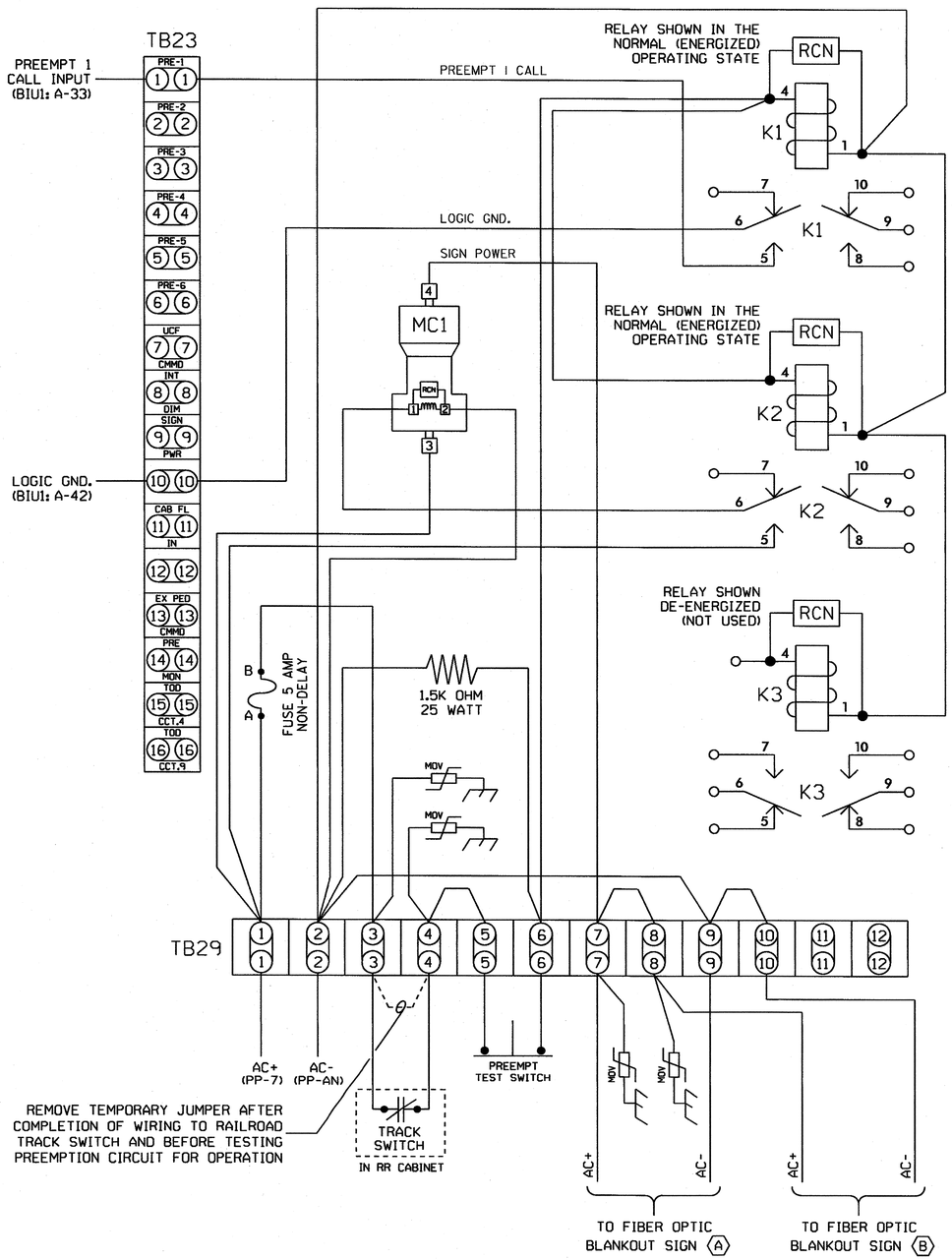
SIG. INVENTORY NO. 07-2171

28-MAR-2012 08:42
S:*ITS&SU*ITS Signals*Workgroups*Sig Man*Peterson*07-2171_sm_ele_xxx.dgn
jjpeterson

PROJECT REFERENCE NO.	SHEET NO.
B-4760	Sig 6

PEEK RAILROAD PREEMPTION PANEL WIRING DETAIL

(wire as shown)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-2171
DESIGNED: February 2012
SEALED: 3-26-12
REVISED: N/A

Electrical Detail - Sheet 4 of 4

ELECTRICAL AND PROGRAMMING DETAILS FOR:	SR 4053 (Surrett Drive) at Fraley Road/Finch Avenue	SEAL
Prepared in the Offices of: Traffic Engineering and Safety Systems Branch, North Carolina Department of Transportation, Traffic Safety Management Section	Division 7 — Guilford County — High Point	NORTH CAROLINA PROFESSIONAL SEAL 008453 ENGINEER JOHN T. ROWE, JR.
750 N. Greenfield Pkwy, Garner, NC 27529	PLAN DATE: March 2012 — REVIEWED BY: JTR	SIGNATURE — DATE: 3-28-12
	PREPARED BY: James Peterson — REVIEWED BY:	SIG. INVENTORY NO. 07-2171
	REVISIONS — INIT. — DATE	

28-MAR-2012 07:49
S:\TSS\SIGNALS\WORKGROUPS\Sig Name\Peterson\07217I_sht_ele_xxx.dgn
tpeterson