

(remove jumpers and set switches as shown)

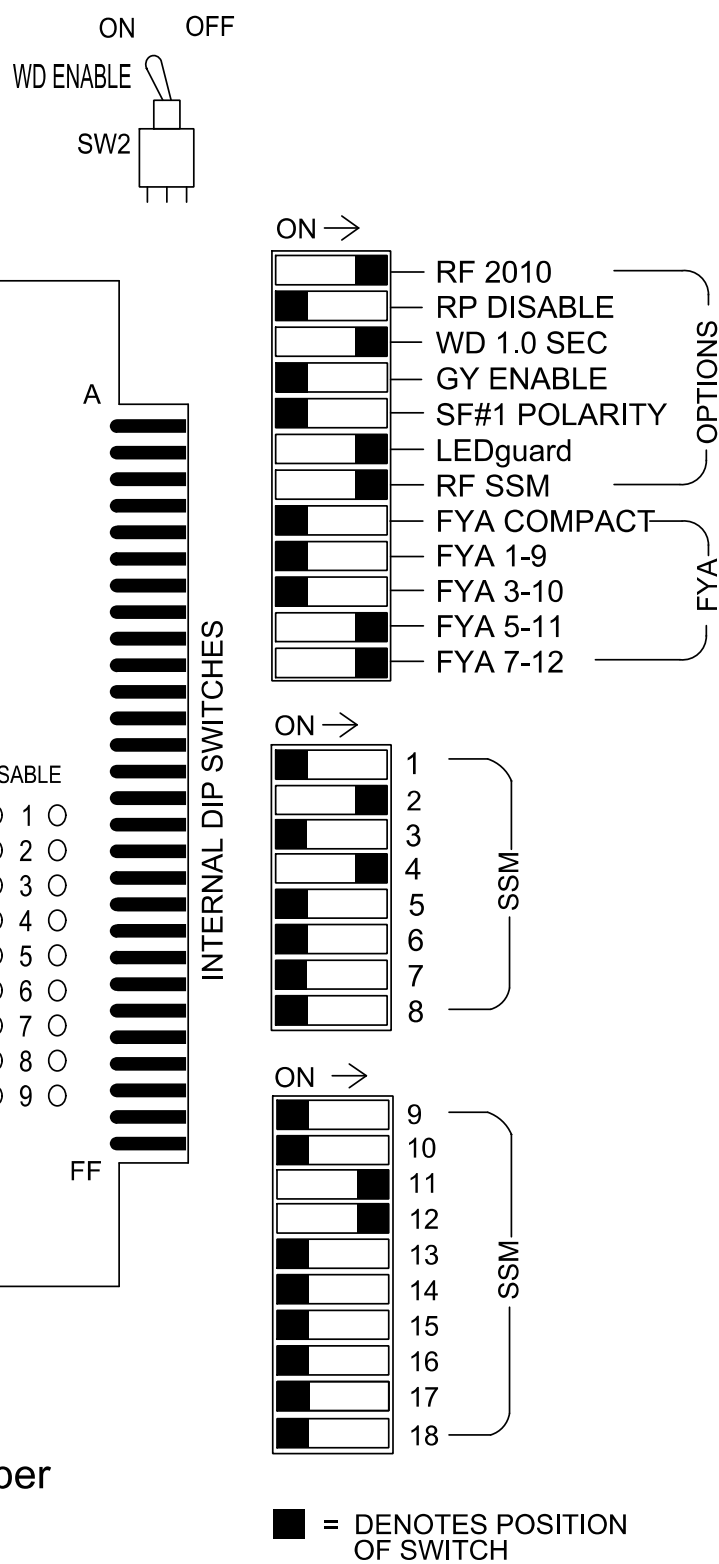
(remove jumpers and set switches as shown)

The diagram illustrates the 18 Channel Program Card, showing the component side and internal dip switches.

Component Side: The card features 18 channels, each with a unique combination of components. The components are represented by symbols: a solid black square for a component that is present, and an open circle for a component that is disabled. The channels are labeled 10-18, 11-18, 12-18, 13-18, 14-18, 15-18, 16-18, 17-18, 18-18, 19-18, 20-18, 21-18, 22-18, 23-18, 24-18, 25-18, 26-18, 27-18, 28-18, 29-18, 30-18, 31-18, 32-18, 33-18, 34-18, 35-18, 36-18, 37-18, 38-18, 39-18, 40-18, 41-18, 42-18, 43-18, 44-18, 45-18, 46-18, 47-18, 48-18, 49-18, 50-18, 51-18, 52-18, 53-18, 54-18, 55-18, 56-18, 57-18, 58-18, 59-18, 60-18, 61-18, 62-18, 63-18, 64-18, 65-18, 66-18, 67-18, 68-18, 69-18, 70-18, 71-18, 72-18, 73-18, 74-18, 75-18, 76-18, 77-18, 78-18, 79-18, 80-18, 81-18, 82-18, 83-18, 84-18, 85-18, 86-18, 87-18, 88-18, 89-18, 90-18, 91-18, 92-18, 93-18, 94-18, 95-18, 96-18, 97-18, 98-18, 99-18, 100-18, 101-18, 102-18, 103-18, 104-18, 105-18, 106-18, 107-18, 108-18, 109-18, 110-18, 111-18, 112-18, 113-18, 114-18, 115-18, 116-18, 117-18, 118-18, 119-18, 120-18, 121-18, 122-18, 123-18, 124-18, 125-18, 126-18, 127-18, 128-18, 129-18, 130-18, 131-18, 132-18, 133-18, 134-18, 135-18, 136-18, 137-18, 138-18, 139-18, 140-18, 141-18, 142-18, 143-18, 144-18, 145-18, 146-18, 147-18, 148-18, 149-18, 150-18, 151-18, 152-18, 153-18, 154-18, 155-18, 156-18, 157-18, 158-18, 159-18, 160-18, 161-18, 162-18, 163-18, 164-18, 165-18, 166-18, 167-18, 168-18, 169-18, 170-18, 171-18, 172-18, 173-18, 174-18, 175-18, 176-18, 177-18, 178-18, 179-18, 180-18, 181-18, 182-18, 183-18, 184-18, 185-18, 186-18, 187-18, 188-18, 189-18, 190-18, 191-18, 192-18, 193-18, 194-18, 195-18, 196-18, 197-18, 198-18, 199-18, 200-18, 201-18, 202-18, 203-18, 204-18, 205-18, 206-18, 207-18, 208-18, 209-18, 210-18, 211-18, 212-18, 213-18, 214-18, 215-18, 216-18, 217-18, 218-18, 219-18, 220-18, 221-18, 222-18, 223-18, 224-18, 225-18, 226-18, 227-18, 228-18, 229-18, 230-18, 231-18, 232-18, 233-18, 234-18, 235-18, 236-18, 237-18, 238-18, 239-18, 240-18, 241-18, 242-18, 243-18, 244-18, 245-18, 246-18, 247-18, 248-18, 249-18, 250-18, 251-18, 252-18, 253-18, 254-18, 255-18, 256-18, 257-18, 258-18, 259-18, 260-18, 261-18, 262-18, 263-18, 264-18, 265-18, 266-18, 267-18, 268-18, 269-18, 270-18, 271-18, 272-18, 273-18, 274-18, 275-18, 276-18, 277-18, 278-18, 279-18, 280-18, 281-18, 282-18, 283-18, 284-18, 285-18, 286-18, 287-18, 288-18, 289-18, 290-18, 291-18, 292-18, 293-18, 294-18, 295-18, 296-18, 297-18, 298-18, 299-18, 300-18, 301-18, 302-18, 303-18, 304-18, 305-18, 306-18, 307-18, 308-18, 309-18, 310-18, 311-18, 312-18, 313-18, 314-18, 315-18, 316-18, 317-18, 318-18, 319-18, 320-18, 321-18, 322-18, 323-18, 324-18, 325-18, 326-18, 327-18, 328-18, 329-18, 330-18, 331-18, 332-18, 333-18, 334-18, 335-18, 336-18, 337-18, 338-18, 339-18, 340-18, 341-18, 342-18, 343-18, 344-18, 345-18, 346-18, 347-18, 348-18, 349-18, 350-18, 351-18, 352-18, 353-18, 354-18, 355-18, 356-18, 357-18, 358-18, 359-18, 360-18, 361-18, 362-18, 363-18, 364-18, 365-18, 366-18, 367-18, 368-18, 369-18, 370-18, 371-18, 372-18, 373-18, 374-18, 375-18, 376-18, 377-18, 378-18, 379-18, 380-18, 381-18, 382-18, 383-18, 384-18, 385-18, 386-18, 387-18, 388-18, 389-18, 390-18, 391-18, 392-18, 393-18, 394-18, 395-18, 396-18, 397-18, 398-18, 399-18, 400-18, 401-18, 402-18, 403-18, 404-18, 405-18, 406-18, 407-18, 408-18, 409-18, 410-18, 411-18, 412-18, 413-18, 414-18, 415-18, 416-18, 417-18, 418-18, 419-18, 420-18, 421-18, 422-18, 423-18, 424-18, 425-18, 426-18, 427-18, 428-18, 429-18, 430-18, 431-18, 432-18, 433-18, 434-18, 435-18, 436-18, 437-18, 438-18, 439-18, 440-18, 441-18, 442-18, 443-18, 444-18, 445-18, 446-18, 447-18, 448-18, 449-18, 450-18, 451-18, 452-18, 453-18, 454-18, 455-18, 456-18, 457-18, 458-18, 459-18, 460-18, 461-18, 462-18, 463-18, 464-18, 465-18, 466-18, 467-18, 468-18, 469-18, 470-18, 471-18, 472-18, 473-18, 474-18, 475-18, 476-18, 477-18, 478-18, 479-18, 480-18, 481-18, 482-18, 483-18, 484-18, 485-18, 486-18, 487-18, 488-18, 489-18, 490-18, 491-18, 492-18, 493-18, 494-18, 495-18, 496-18, 497-18, 498-18, 499-18, 500-18, 501-18, 502-18, 503-18, 504-18, 505-18, 506-18, 507-18, 508-18, 509-18, 510-18, 511-18, 512-18, 513-18, 514-18, 515-18, 516-18

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 the 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.



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 plan.
2. Program phases 4 and 7 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk.
4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
5. The cabinet and controller are part of the US 321 Closed Loop Signal System.

Controller.....	2070LX
Cabinet.....	332 w/ Aux
Software.....	Q-Free MAXTIME
Cabinet Mount.....	Base
Output File Positions.....	18 With Aux. Output File
Load Switches Used.....	S2, S5, S7, S10, AUX S4, AUX S5
Phases Used.....	2, 4, 7
Overlap "1".....	NOT USED
Overlap "2".....	NOT USED
Overlap "3".....	*
Overlap "4".....	*
Overlap "7".....	*

*See overlap programming detail on sheet 2

(front view)

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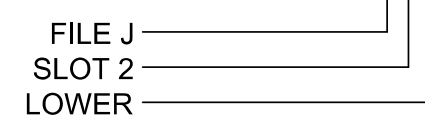
EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
2A	TB2-5,6	I2U	39	1	2	2			X	X	X	
2B	TB2-7,8	I2L	43	5	3	2			X	X	X	
4A	TB4-9,10	I6U	41	3	8	4	15.0		X		X	
4B	TB4-11,12	I6L	45	7	9	4	15.0		X		X	
7A	TB5-5,6	J5U	57	19	21 ★	7	15.0		X		X	

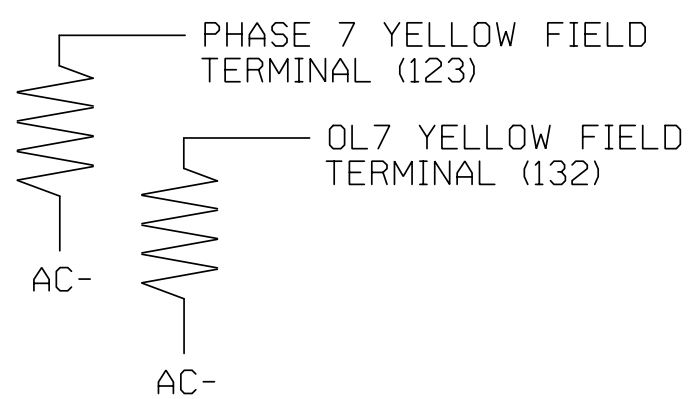
* For the detectors to work as shown on the signal plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 3.

INPUT FILE POSITION LEGEND: J2L



(install resistors as shown below)

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



STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
(704) 372-1885
NC License Number F-0991

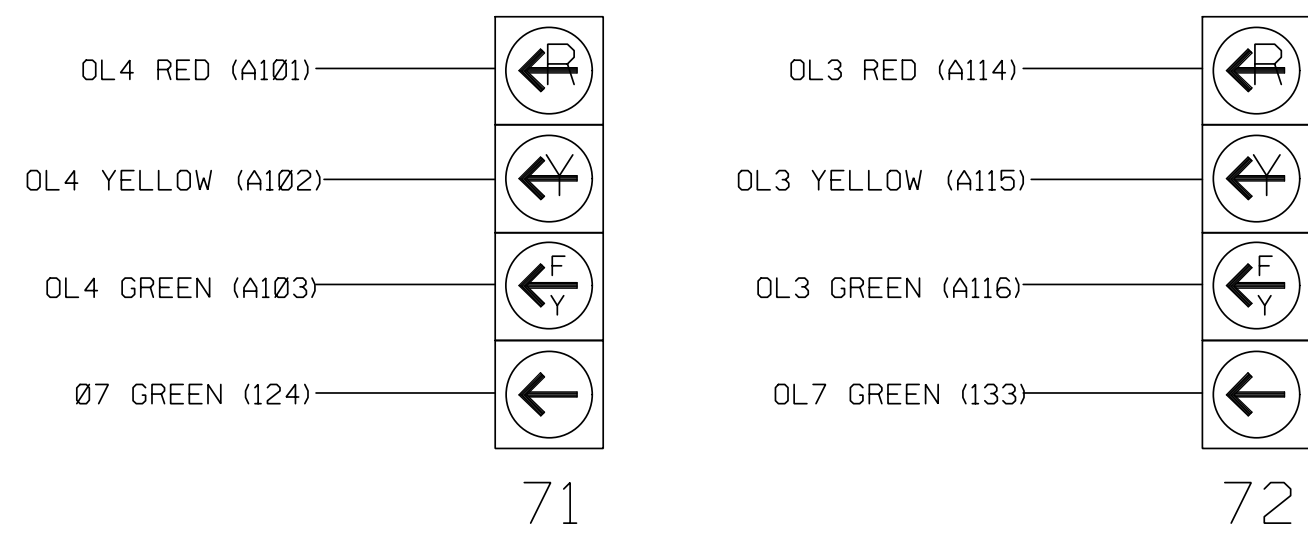
[illegible]

NU = Not Used

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

★ See pictorial of head wiring in detail this sheet.

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 11-1452
DESIGNED: Sept 2023
SEALED: 10/18/2023
REVISED: N/A

ELECTRICAL DETAIL SHEET 1 OF 3

US 321 (Hickory Boulevard) SB
at
SR 1108 (Mission Road)/
SR 1108 (Lower Cedar Valley Rd)
Division 11 Caldwell County Hudson

PLAN DATE: Sept 2023	REVIEWED BY: D.J. Darity
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PLAN DATE:	Sept 2023	REVIEWED BY:	D.J. Darity
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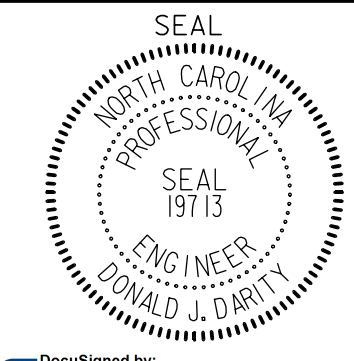
PREPARED BY: R.L. Aristondo	REVIEWED BY: T.M. Moody
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REVISIONS	INIT.	DATE

[illegible]

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DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DocuSigned by:
Donald J. Darity 10/18/2020
589F69087E72185
SIGNATURE DATE

SIG. INVENTORY NO. 11-1452